
RICOH

Printer Reference

Operating Instructions

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SAFETY INFORMATION

This section contains important safety information regarding the machine. Please review all of the information contained in this section before using the machine. Doing so will help ensure user safety and prevent equipment problems or failure. When you use the machine, the following safety precautions should always be followed.

Warning:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Class A prescrites dans la norme sur le matériel brouilleur:

"Appareils Numériques", NMB-003 édictée par le ministre des Communications.



Declaration of Conformity

"The Product complies with the requirements of **the EMC Directive 89/336/EEC** and the **Low Voltage Directive 73/23/EEC.**"

Konformitäserklaring

"Das Produkt entspricht den Anforderungen der **EMV-Richtlinie 89/336/EWG** und der **Niederspannungsrichtlinie 73/23/EWG.**"

Dclaration de conformit

"Le produit remplit toutes les conditions requises par la **directive EMC 89/336/CEE** ainsi que la **directive faible voltage 73/23/CEE.**"

Dichiarazione di conformit

"Il prodotto  conforme ai requisiti della **direttiva CEE 89/336 EMC** e della **direttiva CEE sulla bassa tensione 73/23.**"

Declaracin de conformidad

"Este producto cumple con los requisitos de **la Directiva sobre Compatibilidad Electromagnetica 89/336/EEC** y con la **Directiva sobre Baja Tension 73/23/EEC.**"

Frskran om verensstmmelse

"Denna produkt uppfyller kraven enligt **EMC-direktiv 89/336/EEC** och **lgspnningsdirektiv 73/23/EEC.**"

Verklaring van conformiteit

"Dit product voldoet aan de vereisten van de **EMC-richtlijn 89/336/EEC** en de **laagspanningsrichtlijn 73/23/EEC.**"

Erklaring om overensstemmelse

"Produktet imtekommer kravene  **EMC-direktivet 89/336/EEC** og i **lavspenningsdirektivet 73/23/EEC.**"

Erklring om overensstemmelse

"Dette produkt overholder kravene  **EMC direktiver 89/336/EEC** og **lavstrmsdirektivet 73/23/EEC.**"

Declaração de conformidade

"O produto está em conformidade com os requisitos **de Directiva EMC 89/336/EEC** e a **Directiva sobre baixa-voltagem 73/23/EEC.**"

Samræmisýfirlýsing

"Tæki þetta er framleitt í samræmi við kröfur í **Tilskipun nr. 89/336/EBE** um rafsegulsviðssamhæfi og **Tilskipun nr. 72/23/EBE** um rafföng sem nutud eru innan ákvedinna spennumarka.."

Yhdenmukaisuusilmoitus

"Tuote on **EMC direktiivin 89/336/EEC** ja **heikkovirtadirektiivin 72/23/EEC mukainen.**"

EMC: CISPR-22:1985/EN 55022:1988 class B*

***Note:**

This product contains Network Interface Card (NIC) options. When using the NIC option, the product meets the requirements of EN55022 class A.

Operator Safety:

This copier is considered a CDRH class I laser device, safe for office/EDP use. The Copier contains a 15-milliwatt, 760-800 nanometer wavelength, GaAlAs laser diode. Direct (or indirect reflected) eye contact with the laser beam may cause serious eye damage. Safety precautions and interlock mechanisms have been designed to prevent any possible laser beam exposure to the operator.

Laser Safety:

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical unit in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

Warning:

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

Notice:

Product names used herein are for identification purposes only and may be trademarks of their respective companies. The manufacture disclaims any and all rights in those marks.

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

Safety During Operation

In this manual, the following important symbols are used:

 **WARNING:** *Ignoring this warning could cause serious injury or even death.*

 **CAUTION:** *Ignoring this caution could cause injury or damage to property.*

Examples Of Indications

 Symbols  means a situation that requires you take care.

 Symbols  means "Hot surface"

 Do NOT carry out the operation represented by the symbol 
This example means "Do not take apart."

 Symbols  means you MUST perform this operation. This example means "You must remove the wall plug."

WARNINGS:



- Only connect the machine to the power source described on the inside front cover of this manual.
- Avoid multi-wiring
- Do not damage, break or make any modifications to the power cord. Do not place heavy objects on it, pull it hard or bend it more than necessary. These actions could cause an electric shock or fire.
- Do not plug or unplug the power cord with your hands wet. Otherwise, an electric shock might occur.



- Make sure the wall outlet is near the machine and freely accessible so that in event of an emergency it can be unplugged easily.



- Do not remove any covers or screws other than those specified in this manual. Some parts of the machine are at a high voltage and could give you an electric shock. Also, if the machine has laser systems, direct (or indirect) reflected eye contact with the laser beam may cause serious eye damage. When the machine needs to be checked, adjusted, or repaired, contact your service representative.
- Do not take apart or attempt any modifications to this machine. There is a risk of fire, electric shock, explosion or loss of sight. If the machine has laser systems, there is a risk of serious eye damage.



- If the machine looks damaged or breaks down, smoke is coming out, there is a strange smell or anything looks unusual, immediately turn off the main and AC switches then unplug the power cord from the wall. Do not continue using the machine in this condition. Contact your service representative.
- If metal, liquid or foreign matter falls into the machine, turn off the main and AC switches, and unplug the main power cord. Contact your service representative. Do not keep using the machine with a fault or defect.



- Do not put any metal objects or containers holding water (e.g. vases, flowerpots, glasses) on the machine. If the contents fall inside the machine, a fire or electric shock could occur.



- Do not incinerate used toner or toner containers. Toner dust might ignite when exposed to an open flame. Dispose of the used toner containers according to local regulations for plastics.



- Do not incinerate the photoconductor unit. Toner dust might ignite when exposed to open flame. Dispose of the used photoconductor unit according to local regulations for plastics.

⚠ CAUTIONS:



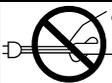
- Keep the machine away from humidity and dust. A fire or an electric shock might occur.
- Do not place the machine on an unstable or tilted surface. If it topples over, it could cause injury.



- After you move the machine, fix it with the caster fixture. Otherwise, the machine might move or come down to cause a personal injury.



- When you move the machine, unplug the power cord from the wall outlet to avoid fire or electric shock.
- When the machine will not be used for a long time, unplug the power cord.



- When you pull out the plug from the socket, grip the plug to avoid damaging the cord and causing fire or electric shock.



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



- Do not reuse stapled paper. Do not use aluminum foil, carbon-containing paper or other conductive paper. Otherwise, a fire might occur.



- When removing misfed paper, do not touch the fusing section because it could be very hot.



- This machine has been tested for safety using this supplier's parts and consumables. We recommend you only use these specified supplies.



- Do not eat or swallow toner.
- Keep toner or toner containers out of reach of children.

INTRODUCTION

This manual contains detailed instructions on the operation and maintenance for the printing capabilities of this machine. To obtain maximum versatility from this machine, all users should carefully read and follow the instructions contained in this manual.

Make sure to read the "Safety Information" section of this manual before using the machine as a printer. It contains important information related to user safety and to preventing equipment problems.

Overview

This multifunctional machine, in addition to providing you with outstanding copying capabilities, allows you to print data received from a host computer. The printer capability supports the Printer Control Language Version 5e (PCL 5e) printer language and, optionally, PostScript printing.

The data can be received on a standard parallel or serial port from the host computer or using the optional network configuration. The IDE hard disk drive provided with the machine performs numerous functions, including support for font storage, print input data spooling, and the temporary storage of print data as required for page sorting, and duplex printing. The machine prints at 300, 400 or 600 dots per inch (dpi). The engine supports a maximum speed of 40 pages per minute (ppm) when printing at 300 or 400 dpi, long edge feed of letter size paper.

The machine contains 46 PCL 5e fonts, (35 Intellifonts, 10 True Type fonts, and 1 bitmapped font) and 39 optional PostScript fonts. ➤ Refer to Appendix A for further information on the PCL 5e fonts and to Appendix B for further information on the PostScript fonts. ➤ Refer to Appendix B for further information on the memory provided with, and available for, the machine.

An optional network slot is provided for network connectivity. This slot supports an Ethernet or Token Ring card.

INTRODUCTION

The machine provides numerous printer features, including the following:

- ❑ 11 by 17 inch maximum image size.
- ❑ High quality laser print output at 300, or 600 dpi. (400 dpi is available with PostScript.)
- ❑ Support for PCL 5e and PostScript Level II printer languages.
- ❑ Ports for parallel, serial, and optional network communications with Windows 3.1, Windows 95 and Macintosh systems.
- ❑ 46 PCL 5e fonts that include 35 Intellifonts, 10 True Type fonts and 1 bitmapped font, as well as 39 optional PostScript fonts.
- ❑ Speeds of up to 40 pages per minute (ppm) at 300 or 400 dpi, long edge feed of letter size paper.
- ❑ Standard input trays that include a 500 sheet upper input tray, a 1,000 sheet large capacity input tray and a 40 sheet manual feed tray.
- ❑ Optional output trays that include a 500 sheet output bin, a 3-bin sorter, and a finishing bin which provides finishing capabilities such as stapling.
- ❑ Optional input trays that include a 1,000 sheet tray, and a 1,500 sheet tray.
- ❑ Numerous page output features, including duplexing, sorting, and job separation.

The machine operates in one of the following modes:

- ❑ Share mode
- ❑ Printer Priority mode
- ❑ Printer Only mode
- ❑ Scanner Only mode.

Share Mode

The factory default is Share mode, and the Copier screen displays when the machine is powered up. The Share mode screen shifts when the following occurs:

- A user sends a print job through any of the external Input/Output (I/O) ports (parallel, serial, or the optional network interface).
- A user presses the **[Printer/Scanner]** button on the Control Panel.

You can use the machine as a copier when the Copier screen displays. When the Share mode screen displays, you can change to the Copier screen by pressing the **[Copy]** button on the Control Panel. When jobs are printing, and you press the **[Copy]** button, the Copier screen displays after the current print job is completed. Any remaining print jobs are interrupted and will continue printing after you complete your copy job.

When the machine is in Share mode, all print jobs are received as they are sent, regardless of whether the machine is printing or copying.

You can access the various modes (for example, Printer Priority mode, Printer Only mode, or Scanner Only mode) from the Share mode screen. To perform this task, you must set the status of the machine to offline, access the Setup menu, access the Configuration menu, and specify the mode setting you want using the "Mode" selection.

When you are in Share mode, each time you request a mode change, the change is made on the job boundary (this means that the current job completes before the machine changes to the requested mode). When you are in Printer Priority mode, the machine operates in the same manner as in Share mode, except that the machine does not interrupt the currently queued print jobs to access the Copier screen.

Printer Priority Mode

When set to Printer Priority mode, the machine functions the same as when set to Share mode, except that you cannot interrupt a copier job (the **[Interrupt]** button is disabled).

Printer Only Mode

When the machine is set to Printer Only mode, only printing is allowed. When the **[Interrupt]** button is pressed, the copier interrupt request is ignored. When the **[Copy]** or **[Scanner]** button is pressed, the machine beeps to notify the user that these functions are not available.

Scanner Only Mode

When the machine is set to Scanner Only mode, only scanning is allowed. When the **[Interrupt]** button is pressed, the copier interrupt request is ignored. When a **[Copy]** button is pressed, the machine beeps to notify the user that the copy function is not available. The machine is in an offline status for print jobs.

Options

The following are available to you as options that you can add to the basic components provided with the machine:

- ❑ **PostScript option** - The PostScript option allows the machine to support Adobe PostScript Level II. When you add the PostScript option to the machine, downloading of PostScript Type 1 fonts is supported. The PostScript option includes a rasterizer for TrueType fonts that allows you to download TrueType fonts as soft fonts. No resident TrueType fonts are supported. You use the PostScript ROM expansion slot for this PostScript ROM Single Inline Memory Module (SIMM) option.
- ❑ **Network Interface Card (NIC) option** - The machine is equipped with an expansion Input/Output (I/O) slot that you can use to connect the machine to your network. Either an Ethernet or a Token Ring card can be installed in this expansion I/O slot.
- ❑ **Memory option** - The machine is configured with 8 megabytes (M) of Dynamic Random Access Memory (DRAM). A service technician can add DRAM SIMM modules in the two available DRAM SIMM sockets. The DRAM SIMM sockets accept modules of 8 M, 16 M, or 32 M. You can add up to 64 M of additional DRAM for a maximum total of 72 M of DRAM.

- ❑ **Input tray options** - The optional input trays include a 1,000 sheet tray and a 1,500 sheet tray.
- ❑ **Output options** - The output options include a finisher bin, which provides finishing capabilities such as stapling, a 500-sheet tray, and a 3-bin sorter.
- ❑ **Scanner option** - The scanner interface option consists of a SCSI connector that permits scanner data output (the interface is a SCSI II and is ISIS and Twain compliant). When you have the scanner option board installed, and have initiated the SCSI transfer program on the host computer, SCSI scanning is available and can be initiated from the Control Panel.

Using this Manual

This manual explains how to configure and use the machine as a printer. This section contains a list of the contents of this manual, the conventions used throughout the manual, and various publications that may be of further use to you when using the machine as a printer.

Contents

This guide contains the following chapters and appendices:

- ❑ **Chapter 1:Setting up the Printer** - provides information on preparing to use the machine as a printer.
- ❑ **Chapter 2:Control Panel** - describes how you use the main buttons, numeric keypad, and Control Panel menus to configure and use the printer functions.
- ❑ **Chapter 3:Using the Printer Drivers** - contains information on installing, configuring and using the printer drivers.
- ❑ **Chapter 4:Troubleshooting** - contains a list of the error messages that may display and the action you take to eliminate the error. Also contains information on how to handle print quality problems and paper jams.

- **Chapter 5: Specifications** - contains hardware specifications for the printer, interface specifications, and information on the media (paper) you can use to perform various print jobs.
- **Appendix A: Fonts** - contains information on the PCL 5e fonts you can use when printing.
- **Appendix B: Memory and Options** - contains information on the memory, provided with, and available for the machine and describes the options available for the machine, including the PostScript and Network Interface Card (NIC) options.
- **Appendix C: Tray Specifications** - contains tables that illustrates the North American and European input tray and duplex tray specifications for the machine.

A glossary and an index are provided at the end of this manual.

Conventions

The following conventions are used throughout this manual:

Square brackets - the names of the hard and soft keys and the buttons available on the machine and on the Control Panel are shown in square brackets. For example, the **[Interrupt]** button.

Italics - names of documents are shown in italics. For example, *Printer Reference Guide*.

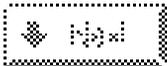
◀ indicates that the following text refers to additional sections and chapters that contain further information about the topic.



Keys that can be selected on the current menu display on the Control Panel in this manner.



Keys that have been selected on the current menu display on the Control Panel in this manner.



Keys that cannot be selected on the current menu display on the Control Panel in this manner.

Note: In general, "Notes" provide additional information to help you complete a task or further understand the text.

 **CAUTION:** In general, "Cautions" provide information important in preventing damage to your equipment, or to avoiding a situation that may cause injury to you.

 **WARNING:** In general, "Warnings" provide information important in alerting you to a situation that may cause injury to you and damage to your equipment and property if instructions are not followed correctly.

 This symbol displays to notify you that the component may be very hot and should not be touched.

 In accordance with the ISO Standard 7001, this main switch symbol means "Stand By" or "Please Wait."

 In accordance with the ISO Standard 7001, this main switch symbol means "Power On."

 In accordance with the ISO Standard 7001, this main switch symbol means "Power Off."

 This display symbol means "Ready."

Related Documents

General Reference Guide

Copier Reference Guide

Scanner Reference Guide

Network Interface documentation

PostScript Language Reference Manual, Adobe Systems Inc.

PostScript Language Reference Manual Supplement for Version 2015,
Adobe Systems, Inc.

PCL 5 Comparison Guide, Hewlett Packard Company

PCL 5 Printer Language Technical Reference Manual, Manual Part No.,
33459-90903, Hewlett Packard Company

Printer Job Language Technical Reference Manual, Hewlett Packard Com-
pany

Plug and Play Parallel Port Devices, Microsoft Corporation

General Information

The following information is provided for your general knowledge:

- ❑ For good copy quality, it is recommended that you use only the speci-
fied printer engine toner and developer.
- ❑ Some of the illustrations contained in this manual may differ slightly
from your machine.
- ❑ Some of the options described in this manual may not be available in
your country. Contact your local dealer for details on option availability.
- ❑  Refer to the *Copier Reference Guide* for basic information on the
machine and for information on using the machine as a copier.

1. SETTING UP THE PRINTER

REQUIREMENTS

Before you can use the machine as a printer you must make sure that you have met all of the environmental and electrical requirements. You must also connect the machine to your host computer using the parallel, serial, or optional Ethernet or Token Ring connection. Make sure that you have all of the cables, connectors, and electrical outlets necessary to attach the machine to your host computer or network. ➤Refer to the "Connecting the Printer to the Host" section in this chapter for further information.

Environmental Requirements

The location of the machine is important as environmental conditions can greatly affect the printer performance. Keep the following in mind when setting up the machine:

- ❑ Set up the machine in an easily accessible area with temperatures between 50 and 86 degrees Fahrenheit (10 to 30 degrees Centigrade) with a relative humidity of 15 to 90 percent, not higher than 6600 feet (2000 meters) above sea level.
- ❑ Place the printer in a large well ventilated room with an air turnover of more than 30 cubic meters, per hour, per person.
- ❑ Make sure that the machine is level in an area with little or no vibration and with a minimum clearance of 720 mm above, 20 mm on each side, 130 mm to the rear, and a comfortable working area in the front.
- ❑ Place the machine in an area with the least amount of dust, and keep the machine out of direct sunlight.
- ❑ Attempt to keep users from placing any items on top of the printer.

 **CAUTION:** *Do not place the machine directly below an air conditioning or heating vent, sudden temperature changes can cause condensation within the machine.*

Electrical Requirements

Keep the following in mind when connecting your printer to an electrical outlet:

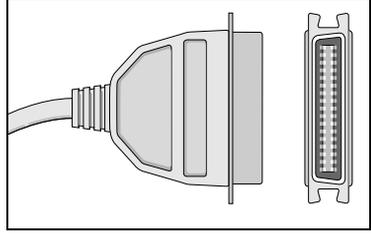
- ❑ The machine requires a dedicated power source of 120 V, 60 Hz, more than 12A (15 or 20 AMP circuit). In Europe, power requirements are 220~240V, 50Hz to 60Hz, more than 6.5A (15 or 20 AMP circuit).
- ❑ Make sure that your wall outlet is close to the machine and is easily accessible. In addition, make sure the outlet supports a three-prong plug (grounded). If a three-prong outlet is not available, purchase an adapter or replace the outlet with one that supports a three-prong plug. When you plug the machine into the outlet, make sure the plug is inserted firmly.
- ❑ Make sure that the voltage does not fluctuate more than 10 percent at any time.
- ❑ Do not place anything on top of the power cord.
- ❑ Always turn the machine off when you are finished for the day, but leave the power cord plugged in.

Parallel and Serial Cable Requirements

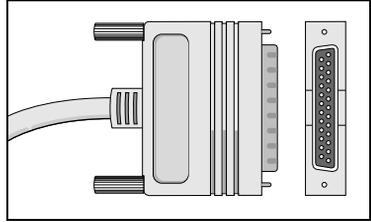
You can connect the machine to your host computer using either a parallel or a serial port. It is your responsibility to provide the cables necessary for the interface you want to use. However, four ferrite cores, designed to screen electromagnetic interference, are provided with the machine. You must attach a ferrite core around each end of the Centronics or RS-232-C cable.

SETTING UP THE PRINTER

The parallel connection provided with the machine is a standard bi-directional Centronics-compatible interface and requires a standard 36-pin parallel cable and a parallel port available on the host computer. Do not use a parallel cable that is longer than ten feet (three meters).



The serial connection is a standard RS-232-C interface and requires a standard 25-pin serial cable and a serial port available on the host computer. You can use a serial cable length of 10 feet to 50 feet (3 to 15 meters).



When you have decided on the type of connection you want to use, purchase the correct cables, in the length necessary, to attach the machine to your host computer.

⚠ CAUTION: *When you have the machine connected to a host computer, you should always turn on the host computer before you turn on the machine.*

➡ Refer to the "Specifications" chapter in this manual for the cable specifications.

Network Connections

With its high-speed output, multiple ports, support for various printer languages, and other available options, the machine is highly effective as a network printer.

When you have decided to add the Network Interface option to the machine and you have the required Ethernet or Token Ring card installed in the expansion Input/Output (I/O) slot provided for this option, you can connect the machine to your Ethernet or Token Ring network.

⚠ CAUTION: *The Ethernet or Token Ring card is installed in the expansion I/O slot by your service representative.*

To use the machine with a PC network, you can connect to the network in one of the following ways:

- ❑ Connect the machine to a computer that is connected to a local area network (LAN). If the printing software for the network resides on the computer to which you connect the machine, this computer can act as a print server, spooling and managing print jobs for the users on the network.
- ❑ Directly connect the machine to an Ethernet or Token Ring LAN by providing the appropriate physical connection. When you connect to the network in this manner, you do not have to dedicate a specific computer as the print server.

Regardless of how you connect the machine to the network, refer to the *Network interface documentation* provided with this option for further information.

Note: *Make sure to consult with your Network Administrator before deciding how you want to connect the machine to the network.*

➤ Refer to Chapter 7, "Specifications," for the cable specifications.

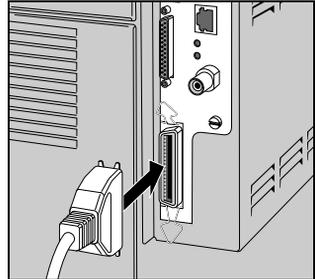
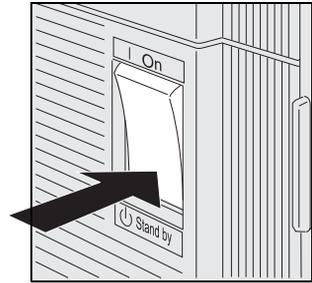
CONNECTING THE PRINTER TO THE HOST

When you have decided whether you want a parallel or a serial connection, and you have obtained the cables necessary to perform the task, you can connect the machine to your host computer.

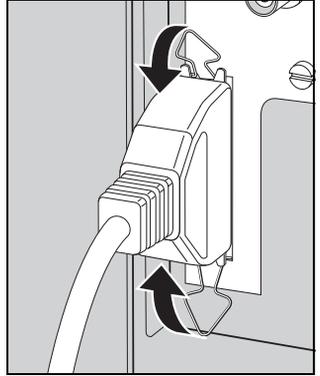
Connecting the Parallel Cable

Follow these steps to connect the machine to your host computer using a parallel interface:

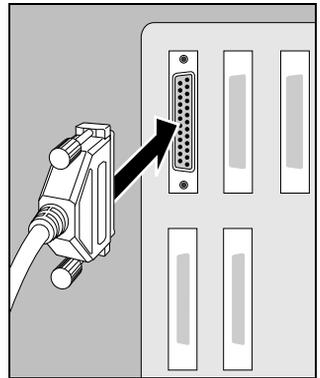
- 1** Make sure you have the cables necessary for the connection.
- 2** Make sure that both the machine and the host computer are turned off.
- 3** Plug the 36-pin end of the parallel cable into the parallel port on the side of the machine.



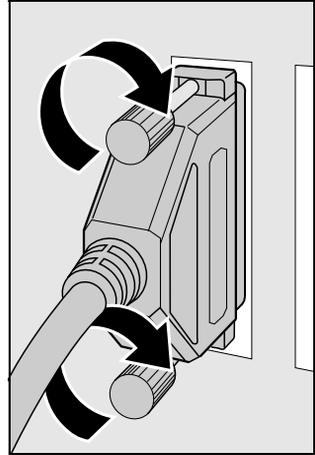
- 4** Press the wire clips on each side of the connector until the clips snap into place. This is to make sure that the cable remains in position.



- 5** Plug the 25-pin end of the parallel cable into the parallel port on the back of the host computer.

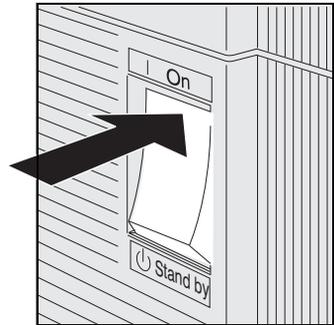


- 6** Tighten the screws on each side of the connector to make sure the cable remains in position.



- 7** Turn on the host computer.

- 8** Turn on the machine.



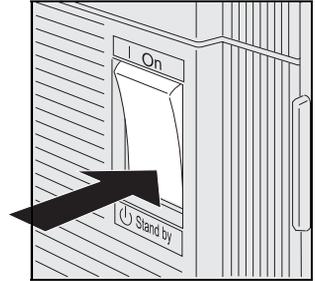
When you have completed this procedure, refer to the "Testing" section in this chapter.

Connecting the Serial Cable

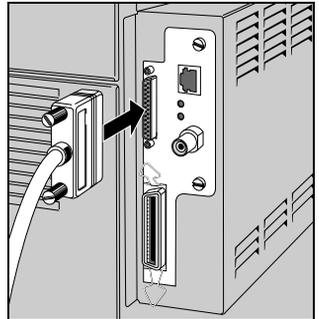
Follow these steps to connect the machine to your host computer using a serial interface:

1 Make sure you have the cables necessary for the connection.

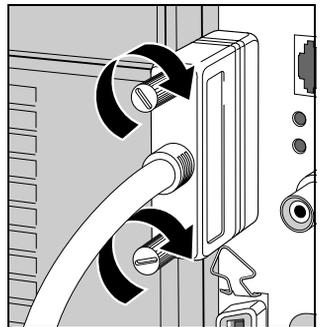
2 Make sure that both the machine and the host computer are turned off.



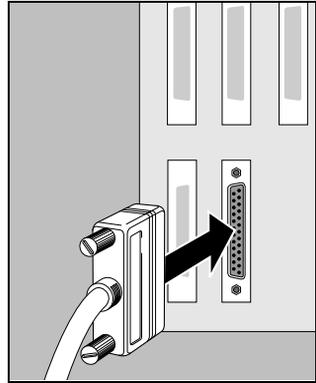
3 Plug the male end of the 25-pin serial cable into the serial port on the side of the machine.



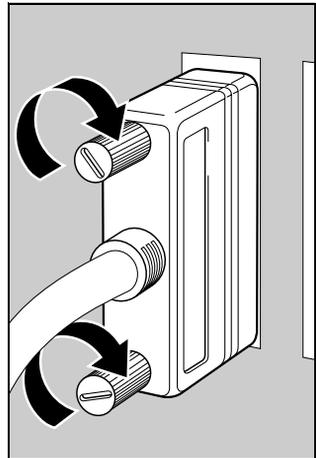
4 Tighten the screws on each side of the connector to make sure the cable remains in position.



- 5** Plug the other end of the 25-pin or 9-pin serial cable into the serial port on the back of the host computer.

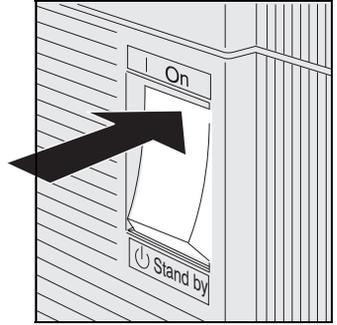


- 6** Tighten the screws on each side of the connector to make sure the cable remains in position.



- 7** Turn on the host computer.

- 8 Turn on the machine.



When you have completed this procedure, refer to the "Testing" section in this chapter.

INSTALLING THE DRIVERS

When you have connected the machine to your host computer, you must install the appropriate printer drivers to enable your applications to communicate with the printer.

Your printer is provided with diskettes that contain PCL printer driver and screen font software for Windows 3.1, Windows 95 or Macintosh systems. In addition, when you have the PostScript option installed on the machine, the PostScript printer driver software is provided for your Windows 3.1, Windows 95 or Macintosh system.

This section contains the procedures you follow to install your printer driver software and to install your screen fonts, when necessary.

Installing the Windows Font Management and Printer Screen Fonts

The PCL printer driver and screen fonts are each provided on a 3.5 inch diskette. The procedure you use to install the PCL 5e printer driver and screen fonts varies depending on your host computer operating system and is provided for Windows 3.1 and Windows 95.

Note: *To use the printer with a Macintosh computer, you must install the PostScript driver. Refer to "Installing the Macintosh PostScript Driver" section of this chapter for more information.*

Installing the PCL 5e Printer Driver on Windows 3.1

Follow these steps to install the PCL 5e printer driver on your Windows 3.1 system:

- 1** Insert the "PCL Printer Driver for Windows 3.1" diskette in the 3.5 inch disk drive on the host computer.
- 2** Close any applications that are currently running.
- 3** From the Program Manager, double-click on the **Main** icon and then double-click on the **Control Panel** icon.
- 4** From the Control Panel window, double-click on the **Printers** icon. The List of Printers window displays.
- 5** Click the **[Add>>]** button.
- 6** In the List of Printers window, scroll to the top of the list and select **Install Unlisted or Updated Printers**.
- 7** Click the **[Install]** button. The Install Driver window displays.
- 8** From the Install Driver window, select the drive in which the installation diskette is located and click **[OK]**. The Add Unlisted or Updated Printer window displays listing "your printer name."
- 9** Click **[OK]** to complete the installation.

Installing the Screen Fonts on Windows 3.1

Follow these steps to install the screen fonts on your Windows 3.1 system:

- 1** Insert the "PCL Screen Font" diskette in the 3.5 inch disk drive on the host computer.
- 2** Close any applications that are currently running.
- 3** From the Program Manager, select **Run** from the **File** menu. The Run window displays.
- 4** From the Run window type "**a:**\ (or the letter that represents the drive in which you placed the installation diskette) **install.exe**".
- 5** Click **[OK]** and follow the installation instructions that display on the screen.

Installing the PCL 5e Printer Driver on Windows 95

Follow these steps to install the PCL 5e printer driver on your Windows 95 system:

- 1** Insert the "PCL Printer Driver for Windows 95" diskette into the 3.5 inch disk drive on the host computer.
- 2** Close any applications that are currently running.
- 3** Click the **Start** button and select **Printers** from the **Settings** submenu. The Printer window displays.
- 4** From the Printers window, double-click on the **Add Printer** icon. The Add Printer Wizard window displays.
- 5** From the Add Printer Wizard window, click **[NEXT>]**. The list of printers displays.
- 6** Click **[Have Disk]**. The Install From Disk window displays.

- 7** In the Install From Disk window, type the letter for the drive that containing the installation diskette and click **[OK]**. "Your Printer Name" displays.
- 8** Click **[Next]** and follow the instructions that display on the screen to complete the installation.

Installing the Screen Fonts on Windows 95

Follow these steps to install the screen fonts on your Windows 95 system:

- 1** Insert the "PCL Screen Font" diskette into the 3.5 inch disk drive on your host computer.
- 2** Close any applications that are currently running.
- 3** Click the **Start** button and select **Run**. The Run window displays.
- 4** From the Run window type "**a:**\ (or the letter that represents the drive in which you placed the installation diskette) **install.exe**".
- 5** Click **[OK]** and follow the installation instructions that display on the screen.

Installing the Windows PostScript Printer Driver

You must install the PostScript printer driver to utilize the functionality provided by the PostScript printing option. You only need this printer driver when you have the PostScript option installed on the machine. The procedure you use to install the PostScript printer driver varies depending on your host computer operating system and is provided for Windows 3.1 and Windows 95.

Note: *To use the printer with a Macintosh computer, you must install the PostScript driver. Refer to "Installing the Macintosh PostScript Driver" section of this chapter for more information.*

Installing the PostScript Printer Driver on Windows 3.1

Follow these steps to install the PostScript printer driver on your Windows 3.1 system:

- 1** Insert the "PostScript 2 Printer Driver for Windows 3.1" diskette into the 3.5 inch disk drive on your host computer.
- 2** Close any applications that are currently running.
- 3** From the Program Manager, select **Run** from the **File** menu. The Run window displays.
- 4** From the Run window type "**a:**\ (or the letter that represents the drive in which you placed the installation diskette) **setup.exe**".
- 5** Click **[OK]** and follow the installation instructions that display on the screen.

Installing the PostScript Printer Driver on Windows 95

Follow these steps to install the PostScript printer driver on your Windows 95 system:

- 1** Insert the "PostScript 2 Printer Driver for Windows 95" diskette into the 3.5 inch disk drive on your host computer.
- 2** Close any applications that are currently running.
- 3** Click the **Start** button and select **Run**. The Run window displays.
- 4** From the Run window type "**a:**\ (or the letter that represents the drive in which you placed the installation diskette) **setup.exe**".
- 5** Click **[OK]** and follow the installation instructions that display on the screen.

Installing the Macintosh PostScript Printer Driver

The Macintosh PostScript printer driver allows your Macintosh computer to recognize the machine. You must have the PostScript option installed on the machine to use the PostScript printer driver.

Note: *To use the printer with a Macintosh computer, you must have the PostScript printing option and the PostScript printer driver installed on the machine.*

Installing the PostScript Printer Driver on Macintosh

Follow these steps to install the PostScript printer driver on your Macintosh system:

- 1** Insert the "PostScript 2 Printer Driver for Macintosh" diskette in the disk drive.
- 2** Double-click on the diskette icon.
- 3** Double-click on the "PS Printer Install" icon.
- 4** Follow the instructions that display on the screen.

TESTING

When you have attached the machine to the host computer you can test the connection and the printing functions using the Control Panel. The following test pages are available using the **[Test Menu]** selection from the Setup Menu selection on the Control Panel:

- ❑ **Print PS Fonts** - prints a PS Fonts test page.
- ❑ **Print PCL Fonts** - prints a PCL Fonts test page.
- ❑ **Print PS Demo** - prints a PS Demo test page.
- ❑ **Print PCL Demo** - prints a PCL Demo test page.
- ❑ **Print Self Test** - prints a Self Test page.

Note: *You may have to first configure the machine for the interface you have selected. You can do so using either the **[Parallel Menu]** or the **[Serial Menu]** selection from the Setup Menu.*

☛ Refer to Chapter 2 "Using the Control Panel," for further information on testing the printing capabilities of the machine and on configuring the machine for printing.

2. USING THE CONTROL PANEL

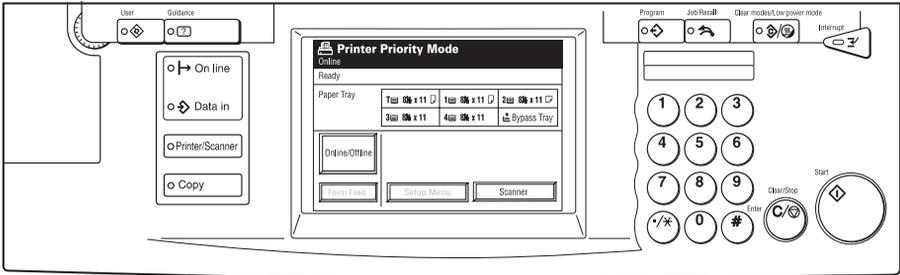
CONTROL PANEL FUNCTIONS

This chapter describes how you use the main buttons, numeric keypad, and Control Panel menus to configure and use the printer functions.

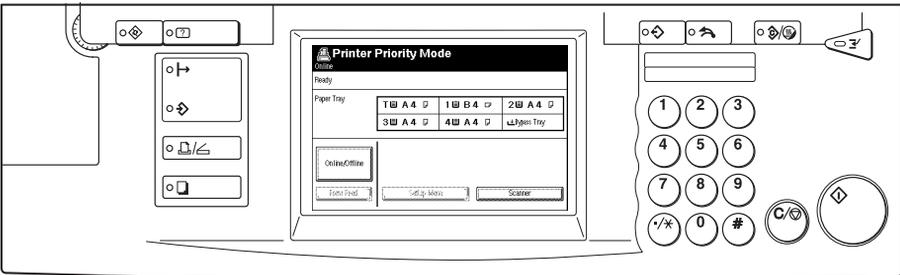
Note: *In general, you can provide most of the printer configuration specifications using the software applications (the word processing, spreadsheet software, and so forth) from which you are printing.*

You use the main buttons on the left side of the Control Panel, the numeric keypad on the right side of the Control Panel, and menu selections that display on the Control Panel screen to access the printer modes and to specify how you want the printer to function.

Control Panel (U.S. Version)



Control Panel (European Version)

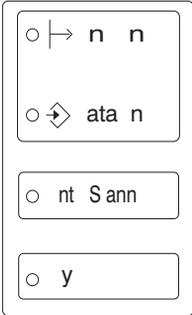


The display panel indicates the current status of the machine (for example, Printer Priority Mode).

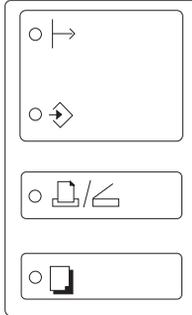
You can use the Control Panel to specify information such as which printer port you want to use and the how you want the printed output to look.

Using the Buttons and Keys

U.S.

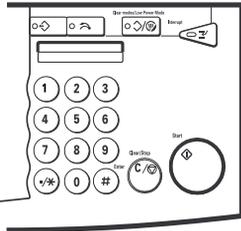


Europe

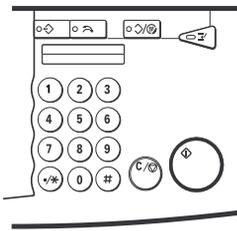


The machine has two light emitting diodes (LEDs) and two main buttons located on the left side of the Control Panel and a numeric keypad located on the right side of the Control Panel. You use these tools to configure the machine and to print.

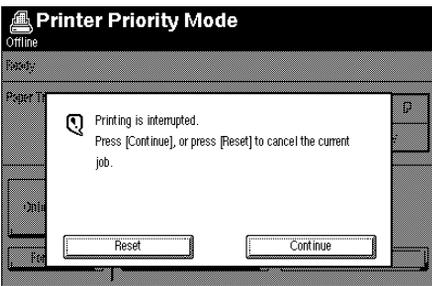
U.S.



Europe



You use these buttons, Numeric Keypad keys, and the selections that display on the Control Panel menu screen to access the printer modes and to specify how you want the printer to function.



The Control Panel displays the messages that indicate the current status of the printer, as well as error messages that indicate any problems that occur with the machine.

The Control Panel display is shared by all functions of the machine and displays the current status of the copy, print and scan jobs. After the printer has started a print job, the Control Panel contains the status for the printer. The "Status" area is blank when the machine is in Printer mode and the machine is offline.

The Control Panel also displays menus from which you can make printer configuration and print job selections.

When you first turn on the machine, the Copy Menu displays on the Control Panel. To access the Printer Mode menus, you must press the **[Printer/Scanner]** button located on the left side of the display panel. When you enter printer mode, you can use the various printer Configuration and Job Control menus to specify how you want the printer to function.

You will want to set your printer configuration default values when you first set up your printer. However, you should not have to change the printer configuration on a regular basis. Refer to the "Configuration Menu" section in this chapter for information on how to use the Configuration Menu to configure the machine for printing.

There are numerous selections you can make for each print job. For example, you can select a different paper tray, set the printer to Printer Control Language (PCL), specify the image orientation (SEF or LEF), change the default font, specify the number of lines per page, and so forth.

Note: *Most applications allow you to make choices so that your document is correctly formatted for printing. You can also use the printer driver software to perform this task. Therefore, in general, you do not have to use the Control Panel to make these types of selections.*

When you send a document to the printer, the printed format and output of the document depends on the selections you have made using the menus available from the Control Panel, as well as the print commands that you send to the printer.

Frequently, the print commands associated with a document that you send to the printer are managed by the software application and the printer driver. When you send a formatted document to the printer, the appropriate print commands are sent to the printer so that your text and graphics are printed using the formatting choices you have made.

Most of the time, you can use your software to format your document and specify how it should print. These print commands override any Control Panel settings.

The two LED indicators and the two buttons located on the left side of the Control Panel work as follows:

- U.S. Version**
 On line
 - European Version**

- This LED indicates the online status of the machine. When the status of the machine is online, the title bar on the screen displays the current operation mode. The operation modes are Share Mode, Printer Only Mode, or Printer Priority Mode.

Note: *When using the machine as a scanner, this LED is always lit.*

- U.S. Version**
 Data in
 - European Version**

- This LED indicator blinks when data is received from the host, and is on while the machine is operating or data is processed. Otherwise, this LED is off.

Note: *During duplex and reverse order printing the LED is always off.*

- U.S. Version**

 - European Version**

- When you press this button, the machine is ready to print and the Control Panel displays the Printer screen for the current operation mode (for example, Printer Priority mode). You can access the Scanner mode from the screen that displays.

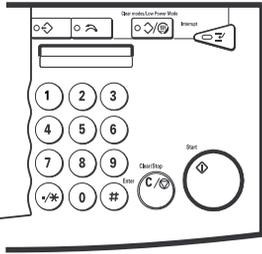
- U.S. Version**

 - European Version**

- When you press this button, the machine is set to Copier mode when the current print job is complete, and the Copy Mode screen displays. An alert message displays until the current job is complete.

When the machine is set to Printer Only or Scanner Only mode, this button is ignored and a beep sounds to indicate that the operation cannot be performed. You must use the "Mode" selection from the Configuration Menu to set the machine to Share mode or Printer Priority mode before you can use this button to access Copier mode.

In addition, you cannot use this button to change to Copier mode when the status is offline. When you do so, a beep sounds to indicate that the operation cannot be performed. You must change the machine status to online before you can perform this task.



When you are using the machine as a printer, you can use the numeric keypad, the **[Interrupt]** button located on the upper right side of the Control Panel, and the **[Clear]** button located on the lower right side of the Control Panel as follows:



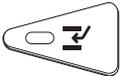
- ❑ Use these number keys as an alternate for entering values into the fields on the menu screens that display. Using these keys is the same as using the keys that display on the menu screens.



- ❑ Use this as the decimal when entering values into the fields on the menu screens that display. Using this decimal point is the same as using the decimal point that displays on the menu screen.



- ❑ Use this key to accept the data you have entered on the menu screens that display. Using this key is the same as using the **[Exit]** key that displays on the menu screens.



- ❑ When you set the machine to the Share Mode, you press this button to issue an interrupt command to the controller. When this occurs, the current print job is suspended after the current page prints and the machine switches to Interrupt Copy Mode. The alert message displays until printing of the current page is complete.

When you press this button while the machine is in Interrupt Copy mode, or if no copy operation occurs after this button is pressed, an Interrupt Restart Command is automatically issued and the machine returns to online status. You cannot use this button when the status of the machine is offline. When you attempt to do so, a beep sounds to indicate that the operation cannot be performed. You must change the status of the machine to online before you can perform this task.



- **[C/⊗ (Clear)]** - When you press this button it clears all values entered in Copier mode and resets the copy data to its default values.

When you are using the machine as a printer, several keys display on the menu screens. These keys provide the same functionality when they are available on a menu. You use these keys as follows:



- **[Prev. Menu]** - press this key to access the previous menu screen.



- **[Prev.]** - press this key to access the previous page of the current menu. When this key does not display, or is ghosted, no previous page is available. When there is more than one page to the menu, the page number displays in the top right corner (for example, 1/2 to denote that you are currently on page one of two pages).



- **[Next]** - press this key to access the next page of the current menu. When this key does not display, or is ghosted, no next page is available. When there is more than one page to the menu, the page number displays in the top right corner (for example, 2/2 to denote that you are currently on page two of two pages).



- **[Cancel]** - press this key to cancel any changes you have made to the menu fields and return to the previous menu screen.



- **[Exit]** - press this key to save the changes you have made to the menu fields and return to the previous menu screen. This is the same as pressing the **[Enter]** key available on the Numeric Keypad located on the right side of the menu display.



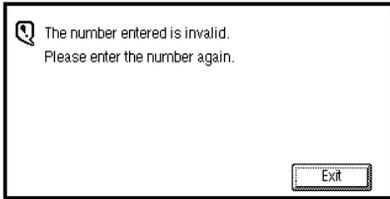
- ❑ **[Clear]** - press this key to delete the value contained in the field on the menu. This key only displays on menus that require the use of numbers (using the numeric keypad on the screen or using the Numeric Keypad located to the right of the menu screen) to enter the field value.



- ❑ **[numbers]** - use the numeric keypad that displays on the screen to specify the value for the field on the menu. This is the same as using the Numeric Keypad keys located on the right side of the menu screen.



- ❑ **[decimal point]** - use this decimal point key to enter the decimal point in the value you are entering on the menu. When the decimal point does not display, you cannot use a decimal point in the field value. This is the same as using the decimal point key available on the Numeric Keypad located on the right side of the menu screen.



- ❑ **[Exit]** - when you have entered an incorrect value, or performed an incorrect action, an error message screen displays describing the error that occurred. You must press the **[Exit]** button to acknowledge the error and return to the menu, where you can respecify the value for the field.

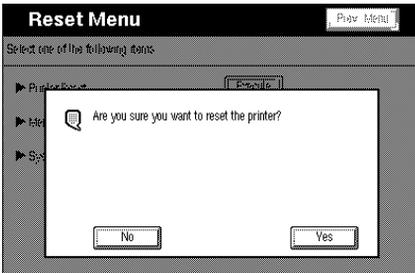


- ❑ **[Reset]** - press this key when you want to cancel the job. The suspended job is canceled, and the machine returns to online status.



- ❑ **[Continue]** - press this key when you have removed the error condition or recognized the information that displays. The machine returns to online status and continues the job.

Performing Execute Operations

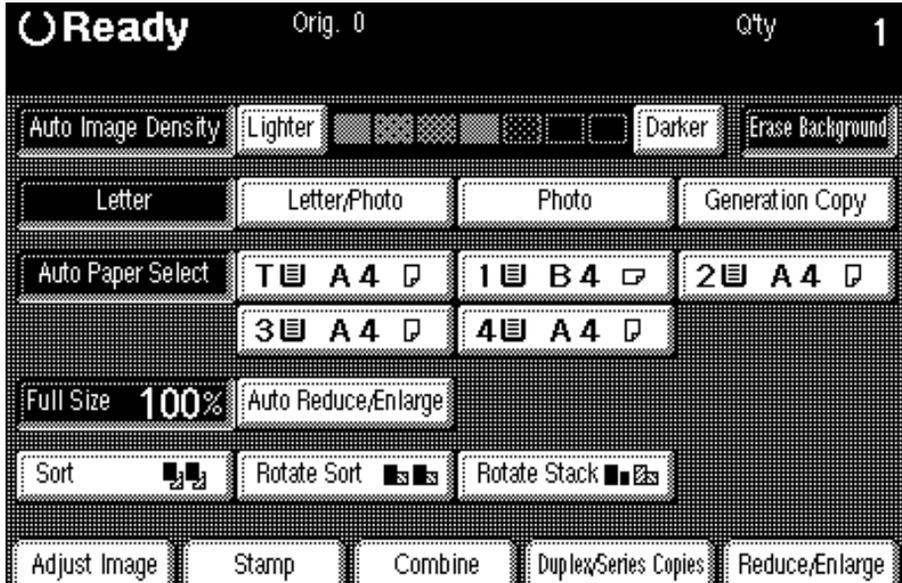


When you access a menu that allows you to execute a process, such as Reset, Flash, or Format, the Execute screen displays, requesting that you confirm that you want to execute the request.

You must press the **[Yes]** button from the Confirmation screen to continue the operation. The Execute progress screen displays until the operation is complete, at which time the Printer Priority Mode screen displays. If the execution fails a Failure screen displays. Press the **[Exit]** button on the Failure screen to return to the Printer Priority Mode screen. When you press the **[No]** button on the Confirmation screen, the operation is canceled and the previous screen displays.

ACCESSING MODES

When you first turn on the machine, the Copy menu displays on the Control Panel.



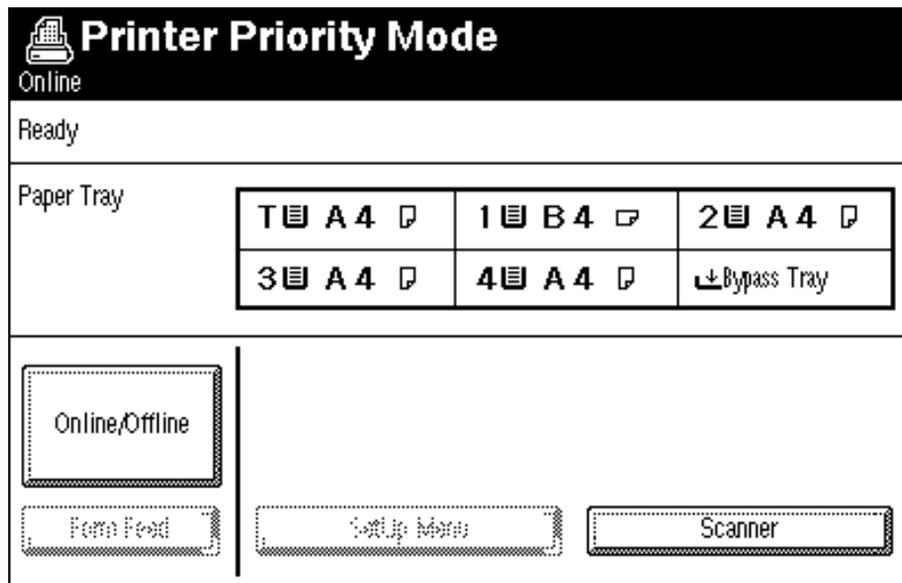
You cannot change from Copy mode to Printer mode in any of the following instances:

- A copy operation is in progress.
- The system is in Interrupt Copy mode.
- The system is in Program Setting mode within Copy mode.
- A printer error has occurred (for example, a paper jam).
- The system is set to User Tools mode.

Accessing Printer Mode

Follow these steps to access Printer mode from Copy mode:

- 1 From the Copy menu, press the **[Printer/Scanner]** button located on the left side of the display panel. The Printer mode menu displays.



Note: The Scanner button displays only if the scanner option is installed. Paper Trays 2, 3, and 4 display only when these optional trays are installed. The Bypass Tray displays only when the Bypass Tray door is open.

- 2 Make sure the printer status is set to online.
- 3 If the Printer status is set to offline, press the **[Online/Offline]** button.

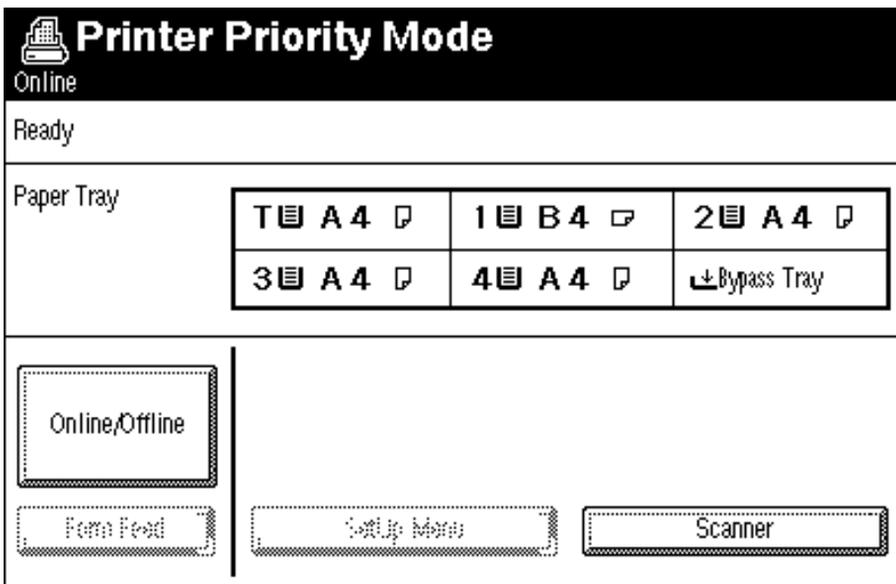
Follow these steps to access Copy mode from Printer mode:

- 1 From the Printer menu, press the **[Copy]** button located on the left side of the display panel.
- 2 Make sure the copier status is set to Ready.

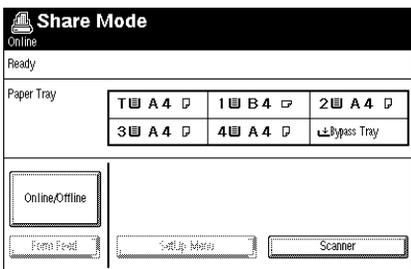
USING THE PRINTER MODE MENU

You use the buttons available on the Printer mode menu to select, access, or change any of the following:

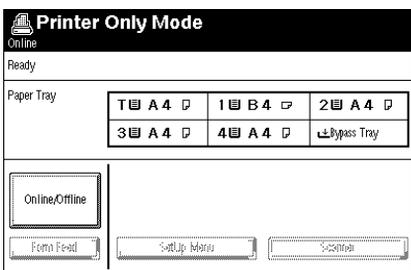
- Paper Tray options
- Online/Offline status
- Form Feed request
- Setup Menu
- SCSI Scanner mode.



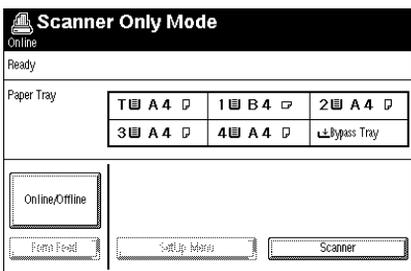
The top of the Printer mode menu displays the current mode of operation. These modes are as follows:



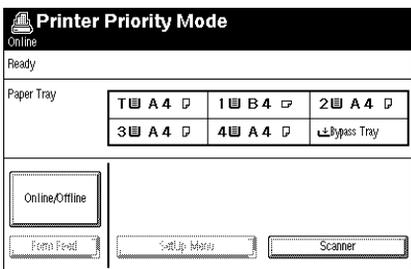
- **Share Mode** - indicates that you want to share the machine between copy, print, and scan modes with no specific priority.



- **Printer Only Mode** - indicates that you currently want to use the machine as a printer only.



- **Scanner Only Mode** - indicates that you currently want to use the machine as a scanner only.



- **Printer Priority Mode** - this indicates that you want all print jobs to take priority. In this mode normal copying, printing, and scanning is enabled, and copy interrupt is disabled.

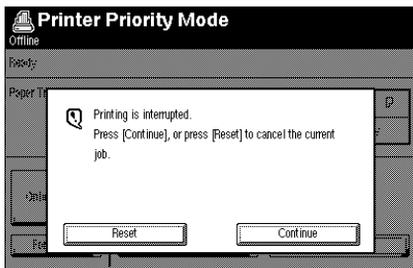
Note: When Printer Only mode is specified, the Printer mode menu screen displays when you turn on the machine (rather than the Copy mode menu).

The following information displays on the Printer mode menu:

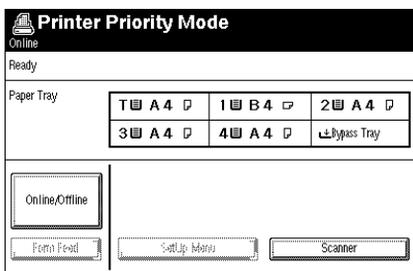


□ **Status Area** - displays the operation status of the printer. The operation status can be one of the following:

- ◆ Warming up. Please wait. - indicates that the machine is warming up after having been turned on.
- ◆ Ready - indicates that the printer function is ready for use.
- ◆ Online - indicates that the printer function is online.
- ◆ Offline - indicates that the printer function is offline.
- ◆ Errors - indicates an error condition.



□ **Message Area** - displays any error or indication messages necessary to notify you of the printer status. Refer to the "Error messages" section of the Troubleshooting chapter in this Guide for further information on the various error and indication messages.



□ **Paper Tray options** - displays information on the paper contained in each paper tray. This information includes text and icons that indicate the existence of paper, paper size, and paper orientation. When appropriate, recycled paper or special paper icons display.

Machine Status is indicated by an icon displayed in the Status Area of the Printer mode menu. The error conditions that they indicate are as follows:



The cover is open



The machine requires repair.

Tray Status is indicated by an icon displayed in the Paper Tray options area of the Printer mode menu. The Tray Status icons and the conditions they indicate are as follows:



The paper tray is closed and empty.



The paper tray is closed and paper is present.

No Icon No paper tray present.

Paper Status is indicated by an icon displayed in the Paper Tray options area of the Printer mode menu. The Paper Status icons and the conditions they indicate are as follows:

8 1/2 x 11

The paper size (U.S.). Varies according to paper used.

A4

The paper size (Europe). Varies according to paper used.



The paper is Long Edge Feed (LEF).



The paper is Short Edge Feed (SEF).



Special paper.



Recycled Paper.

No Icon

Normal paper.

The following buttons are available on the Printer mode menu:



- **[Online/Offline]** - allows you to set the printer status. The printer must be set to online to accept print and copy jobs. When the printer is set to online status and you press this button, the printer is set to offline status and the current job is suspended.

The Alert message screen displays to notify you that the job was suspended, and the offline status displays in the Status area at the top of the screen. When this occurs during printing, the printing process is suspended after the current page is printed.

When the printer status is online, you can send print jobs to the machine, and you can use the Print mode menu to change the online/offline status, or to access Scanner mode. When the printer status is offline, you can perform a Form Feed operation (in normal order printing only) and access the Setup menus you use to configure the machine for printing.



- **[Form Feed]** - allows you to request a form feed, which prints the page currently stored in memory (in normal order printing only). The form feed request is available only for PCL print jobs. You cannot use the form feed function for a Post-Script print job.

A rectangular button with a dotted border and the text "Setup Menu" centered inside.

- **[Setup Menu]** - allows you to access the menus you use to configure the printer and to specify the print selections you want to use for your print jobs. You can only use this button when the Printer mode status is offline.

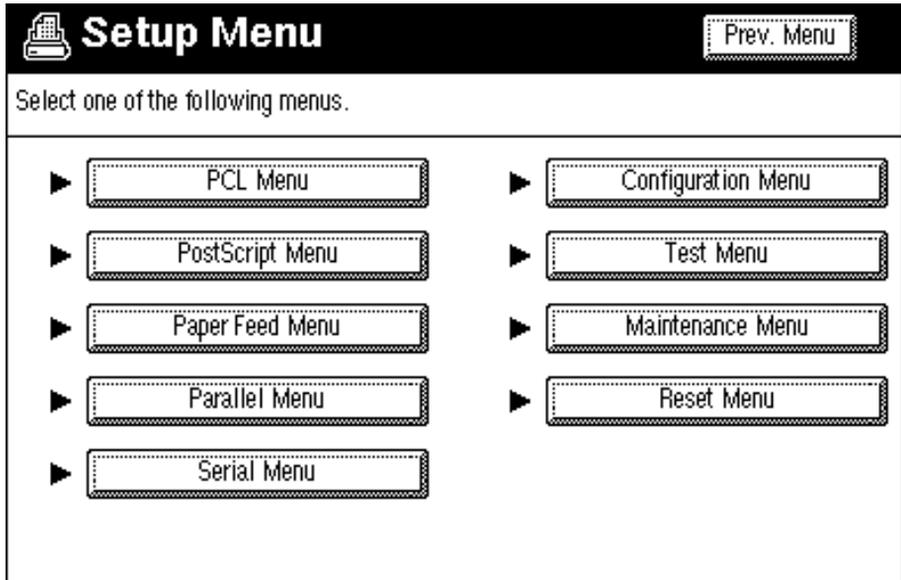
A rectangular button with a dotted border and the text "Scanner" centered inside.

- **[Scanner]** - allows you to access the Scanner mode. This button displays only when you have the scanner option available on the machine.

You can only use this button when the Printer mode status is online. When you press the button while a print job is in progress, an Alert message screen displays until the current job is complete, at which time the Scanner mode screen displays. When the Printer mode is set to Printer Only, this button is ghosted on the screen and does not function. When this occurs, you must use the "Mode" selection from the Configuration Menu to set the machine to Share Mode, Printer Priority Mode, or Scanner Only mode before you can access Scanner mode.

USING THE SETUP MENU

To access the Setup menu, press the **[Setup Menu]** button from the Printer mode menu.



The Setup menu contains the following options:

- ❑ **[PCL Menu]** - accesses the PCL Menu, allowing you to specify the options you want to use for PCL printing.
- ❑ **[PostScript Menu]** - accesses the PostScript Menu, allowing you to specify whether you want to obtain a printout of any PostScript errors that occur. This selection displays only when you have the PostScript option available on the machine.
- ❑ **[Feeder Menu]** - accesses the Feeder Menu, allowing you to specify the feeder and finishing options you want to use (in normal order printing only).
- ❑ **[Parallel Menu]** - accesses the Parallel Menu, allowing you to specify the parallel connection options you want to use.

- ❑ **[Serial Menu]** - accesses the Serial Menu, allowing you to specify the serial connection options you want to use.
- ❑ **[Network Menu]** - accesses the Network Menu, allowing you to specify the network timeout setting you want to use. This selection displays only when you have the PostScript option available on the machine.
- ❑ **[Configuration Menu]** - accesses the Configuration Menu, allowing you to specify the printer configuration options you want to use.
- ❑ **[Test Menu]** - accesses the Test Menu, allowing you to request the tests you want to perform to verify the functionality of the printer.
- ❑ **[Maintenance Menu]** - accesses the Maintenance Menu, allowing your service representative to perform maintenance operations, such as formatting the system, and to add or change password codes. This menu is password protected and is used only by your service representative.
- ❑ **[Reset Menu]** - accesses the Reset Menu, allowing you to reset the configuration values specified for the printer.

Note *Some of the menus listed above may not be available on the Setup menu depending on the options installed on your machine. For example, when you do not have the PostScript option available on your machine, the **[PostScript Menu]** button does not display.*

Accessing and Using Menus

To access a menu from the Setup Menu, press the button that corresponds to the menu you want to access. There are two types of Setting screens that display, one contains selections for the option you choose, the other allows you to use a numeric keypad to specify values for the field.

The current value for each option displays in the box located to the right of the option on the menu screen. To change the value for an option, press the **[Change]** button located beside the option you want to change. The Setting screen for that option displays.

When the screen contains selections, press the button for the selection you want to specify and press the **[Exit]** button to save the change and return to the previous menu screen.

When the screen contains numbers for use in entering a value, press the appropriate numbers that display on the Setting screen, or use the Numeric Keypad located to the right of the screen to enter the new value you want to use.

After you enter Setup changes, an alert screen is displayed. From this screen you specify when you want your changes to go into effect. The selections are as follows:

- [Printer Reset]** - terminates the current print job and places your new settings into effect immediately.
- [Continue]** - places your new settings into effect beginning at the next print job boundary and sets the machine to Online.

Using the PCL Menu

When you press the **[PCL Menu]** button from the Setup menu, the PCL menu displays. You use the PCL menu to set the PCL emulation configuration parameters. Although most software applications override these parameters, when an application does not, the values that display on this screen are used.

The options available on this screen are as follows:

- | | |
|---|--|
| <input type="checkbox"/> Orientation | <input type="checkbox"/> Point Size |
| <input type="checkbox"/> Form Length | <input type="checkbox"/> Pitch |
| <input type="checkbox"/> Font Source | <input type="checkbox"/> Symbol Set |
| <input type="checkbox"/> Font Number | |

Orientation Setting Screen

When you press the **[Change]** button for the Orientation option, the Orientation Setting screen displays.

You use this screen to specify the page orientation you want to use. The options are as follows:

- Portrait** - specifies that you want to print across the width of the page.
- Landscape** - specifies that you want to print across the length of the page.

The default setting is **Portrait**.

Form Length Setting Screen

When you press the **[Change]** button for the Form Length option, the Form Length Setting screen displays.

You use the numerical keys to change the number of lines per page you want to use. The valid range is 5 to 128, entered in increments of 1. The default value is **60**. The Form Length value changes automatically when the Paper Size is changed.

Font Source Setting Screen

When you press the **[Change]** button for the Font Source option, the Font Source Setting screen displays.

You use this screen to specify the location of the default font. The options are as follows:

- Internal** - specifies that you want to use the resident font as the default font.
- Soft** - specifies that you want to use the font downloaded from the host machine as the default font. The default is Internal.

Font Number Setting Screen

When you press the **[Change]** button for the Font Number option, the Font Number Setting screen displays.

You use the numerical keys to change the value for the default font you want to use. The valid range is 0 to 50, entered in increments of 1. The default value is **zero (0)**.

Note: *You can obtain the value for the font you want to use from the PCL Font List.*

Point Size Setting Screen

When you press the **[Change]** button for the Point Size option, the Point Size Setting screen displays.

You use the numerical keys to change the value for the point size you want to use for the selected font. The valid range is 4.00 to 999.75, entered in increments of 0.25.

You can access this Setting screen only when the specified font is a scaleable, proportional font. The default value is **12**.

Pitch Setting Screen

When you press the **[Change]** button for the Pitch option, the Pitch Setting screen displays.

You use the numerical keys to change the value for the number of characters per inch you want to use for the selected font. The valid range is 0.44 to 99.99, entered in increments of 0.01. You can access this Setting screen only when the specified font is a scaleable, fixed pitch font. The default value is **10**.

Symbol Set Setting Screen

When you press the **[Change]** button for the Symbol Set option, the Symbol Set Setting screen displays.

You use this screen to specify the collection of print characters you want to use for the selected font. The options are as follows:

- | | | | |
|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> ROMAN-8 | <input type="checkbox"/> PC-8 TK | <input type="checkbox"/> MS PUBL | <input type="checkbox"/> ISO 15 |
| <input type="checkbox"/> ISO L1 | <input type="checkbox"/> WIN L1 | <input type="checkbox"/> MATH-8 | <input type="checkbox"/> ISO 17 |
| <input type="checkbox"/> ISO L2 | <input type="checkbox"/> WIN L2 | <input type="checkbox"/> VN MATH | <input type="checkbox"/> ISO 21 |
| <input type="checkbox"/> ISO L5 | <input type="checkbox"/> WIN L5 | <input type="checkbox"/> PI FONT | <input type="checkbox"/> ISO 60 |
| <input type="checkbox"/> PC-8 | <input type="checkbox"/> DESKTOP | <input type="checkbox"/> LEGAL | <input type="checkbox"/> ISO 69 |
| <input type="checkbox"/> PC-8 D/N | <input type="checkbox"/> PS TEXT | <input type="checkbox"/> ISO 4 | <input type="checkbox"/> WIN 3.0 |
| <input type="checkbox"/> PC-850 | <input type="checkbox"/> VN INTL | <input type="checkbox"/> ISO 6 | |
| <input type="checkbox"/> PC-852 | <input type="checkbox"/> VN US | <input type="checkbox"/> ISO 11 | |

The default is **ROMAN-8**.

PostScript Menu

When you press the **[PostScript Menu]** button from the Setup menu, the PostScript menu displays. You use the PostScript menu to specify whether you want to obtain a printout of any PostScript errors that occur.

The current value for the option displays in the box to the right of the option on the screen. To change the value for the option, press the **[Change]** button located beside the option. The Setting screen for that option displays. Print Errors is the only option available on this screen.

Print Errors Setting Screen

When you press the **[Change]** button for the Print Errors option, the Print Errors Setting screen displays.

You use this screen to specify whether you want to print the PostScript Error Report. The options are as follows:

- Off** - specifies that you do not want the PostScript Error Report to print.
- On** - specifies that you do want the PostScript Error Report to print.

The default is **Off**.

Feeder Menu

When you press the **[Feeder Menu]** button from the Setup menu, the Feeder menu displays. You use the Feeder menu to set the paper feed and finishing configuration parameters. Although most software applications override these parameters, when an application does not, the values that display on this screen are used.

The options available on this screen are as follows:

- | | |
|---|--|
| <input type="checkbox"/> Page Size | <input type="checkbox"/> Output |
| <input type="checkbox"/> Paper Tray | <input type="checkbox"/> Stapling |
| <input type="checkbox"/> Auto Tray Switching | <input type="checkbox"/> Separation |
| <input type="checkbox"/> Bypass Tray Timeout | <input type="checkbox"/> Binding |

Note: *When the finisher is not installed, the Stapling option is not available and does not display on this screen. The Binding option is available only when duplex is selected.*

Page Size Setting Screen

When you press the **[Change]** button for the Page Size option, the Page Size Setting screen displays.

You use this screen to specify the paper size you want to use when paper size is not specified by your application. The options are as follows:

- | | |
|--|---|
| <input type="checkbox"/> 8½ x 11 | <input type="checkbox"/> B4 |
| <input type="checkbox"/> A4 | <input type="checkbox"/> 11 x 17 |
| <input type="checkbox"/> 8½ x 14 | <input type="checkbox"/> 8½ x 13 |
| <input type="checkbox"/> 7½ x 10½ | <input type="checkbox"/> 8 x 13 |
| <input type="checkbox"/> B5 | <input type="checkbox"/> 8½ x 13 |
| <input type="checkbox"/> A5 | <input type="checkbox"/> 5½ x 8½ |
| <input type="checkbox"/> A3 | <input type="checkbox"/> A6 |

The default for North America is **8½ x 11**. The default for Europe is **A4**.

- Note:**
- *When the specified paper size is not available in the machine when a print job is processed, the print job is suspended and the Error Suspend screen displays requesting operator interaction.*
 - *8 x 10, 11 x 15, 10 x 14, and 8 x 10½ can not be used with the printer function although they can be used with the copier function.*

Paper Tray Setting Screen

When you press the **[Change]** button for the Paper Tray option, the Paper Tray Setting screen displays.

You use this screen to specify the paper feed tray you want to use when the paper tray is not specified by your application. Only the installed Trays will display. The options are as follows:

- Auto**
- Bypass Tray**
- LCT**
- Tray 1**
- Tray 2**
- Tray 3**
- Tray 4**

The default is **LCT**.

The selection you make for this option goes into effect before the selection you made for the Page Size option. Therefore, when you want the Page Size option to take precedence, you must set this Paper tray option to **Auto**.

Auto Tray Switching Setting Screen

When you press the **[Change]** button for the Auto Tray Switching option, the Auto Tray Switching Setting screen displays.

You use this screen to specify whether you want the machine to automatically change the paper tray when the current paper tray becomes empty during a print job. When this feature is enabled and a tray runs out of paper, the machine searches for another paper tray that contains the same paper size and orientation, based on the specified tray search order.

When a paper tray runs out of paper during printing, the "No paper. Add xx Paper to xx Tray. Reset/Continue" message displays on the Control Panel.

When Auto Tray change is enabled, the following process occurs:

- When the correct paper size and orientation is available in another paper tray, the paper is fed automatically.
- The Reset key is canceled by the current print job.
- When a user presses the Continue key without adding paper, the paper is fed from the paper tray that most closely matches the specified paper size.
- When a user presses the Continue key after adding different paper, the newly added paper is used.

When Auto Tray change is disabled, the following process occurs:

- When the correct paper size and orientation is loaded, the paper is fed.
- The Reset key is canceled by the current print job.
- When a user presses the Continue key without adding paper, the "No paper. Add xx Paper to xx Tray. Reset/Continue" message displays again.
- When a user presses the Continue key after adding different paper, the newly added paper is used.

The options are as follows:

- Off** - specifies that you do not want the machine to automatically change paper trays when the current tray becomes empty during the print job.
- On** - specifies that you want the machine to automatically change paper trays when the current tray becomes empty during the print job and another tray contains paper of the same size and orientation.

The default is **On**.

Bypass Tray Timeout Setting Screen

When you press the **[Change]** button for the Bypass Tray Timeout option, the Bypass Tray Timeout Setting screen displays.

You use the numerical keys to change the number of seconds after which a message displays to request that the user open the Bypass Tray for use with the print job. The timer stops when the Bypass Tray is closed. The valid range is 5 to 300, entered in increments of 1. The default is 300 seconds.

When a print job specifies a Bypass Tray paper feed and the Bypass Tray door is closed, the "Please open the Bypass Tray" message displays. When the Bypass Tray is open but not paper is loaded, the "No Paper. Please add xx paper to Bypass Tray." message displays. When paper is loaded in the Bypass Tray, the paper feeds automatically until the job is complete. When a Large Capacity Tray (LCT) feed is specified in the following print job and the Bypass Tray has not been closed, the "Please close the Bypass Tray" message displays.

When either the "Please open the Bypass Tray" or the "No Paper. Please add xx paper to Bypass Tray." message displays and the user does not respond within the timeout period specified on this screen, the Bypass Tray print job is canceled and the next print job begins printing.

Output Setting Screen

When you press the **[Change]** button for the Output option, the Output Setting screen displays.

You use this screen to specify the output operation you want to use. For the 500 sheet tray or the finisher, the options are as follows:

- **Reverse** - specifies that the output is face-up and in ascending page order. When you select this option, the host input data is rasterized and stored in the order received. The data is then retrieved from the HDD and printed in reverse order so that the output is delivered face-up in the correct page sequence from page one to the end. When multiple originals are requested, the output consists of sets of originals in the correct page sequence (for example, three sets each in 1,2,3,4,5 page order).
- **Normal** - specifies that the data is printed immediately in the order received by the printer. You use the Normal option to obtain high speed printer performance. When you select this option, the host input data is rasterized and printed immediately, so that the output is in the sequence received by the printer. When multiple originals are requested, the output consists of sets of originals of each page (for example, three sets each in 1,1,1; 2,2,2; 3,3,3 page order).
- **Duplex** - specifies that the data is printed on both sides of each page, face-up, and in ascending page order. When you select this option, the host input data is rasterized. The odd numbered pages are stored in the HDD and the even numbered pages are printed and stacked in the duplex tray. When this process is complete, the odd numbered pages are retrieved from the HDD and printed on the reverse side of the stacked even numbered pages in reverse order, so that the output is delivered face-up in the correct page sequence from page 1 to the end. You can not print more than 50 originals at one time in this mode.

The default is **Reverse**.

For the 3-bin sorter, the options are as follows:

- ❑ **Reverse** - specifies that the output is face-up and in ascending page order. When you select this option, the host input data is rasterized and stored in the order received. The data is then retrieved from the HDD and printed so that the output is delivered face-down in the correct page sequence from page one to the end. When multiple originals are requested, the output consists of sets of originals in the correct page sequence (for example, three sets each in 1,2,3,4,5 page order).
- ❑ **Normal** - specifies that the data is printed immediately in the order received by the printer and delivered face-down. You use the Normal option to obtain high speed printer performance. When you select this option, the host input data is rasterized and printed immediately, so that the output is in the sequence received by the printer and delivered face-down. When multiple copies are requested, the output consists of a set of copies of each page (for example, three sets each in 1,1,1; 2,2,2; 3,3,3 page order).
- ❑ **Duplex** - specifies that the data is printed on both sides of each page, face-up, in the order received by the printer. When you select this option, the host input data is rasterized. The odd numbered pages are stored in the HDD and the even numbered pages are printed and stacked in the duplex tray. When this process is complete, the odd numbered pages are retrieved from the HDD and printed on the reverse side of the stacked even numbered pages in reverse order, so that the output is delivered face-up in the order received by the printer. You can not print more than 50 originals at one time in this mode.

The default is **Reverse**.

Stapling Setting Screen

When you press the **[Change]** button for the Stapling option, the Stapling Setting screen displays.

Note: *This Setting screen is available only when the finisher is installed.*

You use this screen to specify whether you want stapling, and if so, where you want the staple on the printed copy. The options are as follows:

- None** - specifies that you do not want stapling.
- One Portrait** - specifies that you want one staple placed at the top left corner of the portrait page.
- One Landscape** - specifies that you want one staple placed at the top left corner of the landscape page.
- Two Portrait** - specifies that you want two staples on the portrait page. The staples are placed along the left side of the page when long edge feed is used. The staples are placed along the top of the page when short edge feed is used.
- Two Landscape** - specifies that you want two staples on the landscape page. The staples are placed along the top of the page when long edge feed is used. The staples are placed along the left side of the page when short edge feed is used.

The default is **None**.

Note: *After adding the new staples, several pages will be printed without stapling.*

The following illustrates the one staple and two staple options for simplex and duplex printing. The X in the two staple illustration indicates output configurations that are not compatible because the binding edge and feeding edge do not match. Although the machine will perform these stapling configurations, they should be avoided.

		1 Staple					
		Portrait			Landscape		
		Simplex	Duplex Long Edge	Duplex Short Edge	Simplex	Duplex Long Edge	Duplex Short Edge
Long Edge Feed							
Short Edge Feed							

		3 Staps					
		tat			and a		
		S	n dd	S t dd	S	n dd	S t dd
n dd d							
S t dd d							

Separation Setting Screen

When you press the **[Change]** button for the Separation option, the Separation Setting screen displays.

You use this screen to specify whether you want the machine to automatically separate the print jobs. The separation is implemented either as a mechanical offset, or with a sheet of paper, and depends on the type of trays installed on your machine. Table 2-1 lists the separation used according to the installed tray types.

Note: *When using the Bypass tray, this function is not available.*

Table 2-1 Job Separation

Installed Tray Type	Offset	Sheet
1 Bin Tray		○
1 Bin Finisher	○	
3 Bin Sorter (1 st Tray)	○	
3 Bin Sorter (2 nd and 3 rd Tray)		○

The separation setting options are as follows:

- Off** - specifies that you do not want the machine to separate the print jobs.
- On** - specifies that you want the machine to automatically separate the print jobs.

The default is **Off**.

Binding Setting Screen

When you press the **[Change]** button for the Binding option, the Binding Setting screen displays.

You use this screen to specify the setting you want to use to print a book or tablet print job in duplex mode. The options are as follows:

- Long** - specifies that you want long edge binding, like a book.
- Short** - specifies that you want short edge binding, like a calendar or tablet.

The default is **Long**.

Note: *This option is available only when the Output option is set to **Duplex**.*

Parallel Menu

When you press the **[Parallel Menu]** button from the Setup menu, the Parallel menu displays. You use the Parallel menu to set the parallel interface configuration parameters. Although most software applications override these parameters, when an application does not, the values that display on this screen are used.

The options available on this screen are as follows:

- Personality**
- Bidirectionality**
- I/O Timeout**

Personality Setting Screen

When you press the **[Change]** button for the Personality option, the Personality Setting screen displays.

You use this screen to set the page description language you want to use for the print jobs received through the parallel port. The options are as follows:

- Auto** - specifies that you want the page description language used for the print jobs to switch automatically based on the data received by the parallel port.
- PCL** - specifies that you want to use the PCL page description language for the print jobs received by the parallel port.
- PostScript** - specifies that you want to use the PostScript page description language for the print jobs received by the parallel port.

The default is **Auto**.

Bidirectionality Setting Screen

When you press the **[Change]** button for the Bidirectionality option, the Bidirectionality Setting screen displays.

You use this screen to specify the bi-directional operation on the parallel port. The options are as follows:

- Off** - specifies that you do not want to allow two-way communication between the controller and the host.
- On** - specifies that you want to allow two-way communication between the controller and the host.

The default is **Off**.

Note: *You can set the Bidirectionality option to **On** only when the software application located on the host supports a bi-directional parallel port.*

I/O Timeout Setting Screen

When you press the **[Change]** button for the I/O Timeout option, the I/O Timeout Setting screen displays.

You use the numerical keys to change the value for the number of seconds after which an incomplete print job should end and the next port in the polling sequence should be set. The valid range is 5 to 300, entered in increments of 1. The default is **30** seconds.

Serial Menu

When you press the **[Serial Menu]** button from the Setup menu, the Serial menu displays. You use the Serial menu to set the serial interface configuration parameters. Although most software applications override these parameters, when an application does not, the values that display on this screen are used.

The options available on this screen are as follows:

- | | |
|---|--|
| <input type="checkbox"/> Personality | <input type="checkbox"/> DTR Polarity |
| <input type="checkbox"/> Baud Rate | <input type="checkbox"/> Stop Bits |
| <input type="checkbox"/> Parity | <input type="checkbox"/> Data Bits |
| <input type="checkbox"/> Handshake | <input type="checkbox"/> I/O Timeout |

Personality Setting Screen

When you press the **[Change]** button for the Personality option, the Personality Setting screen displays.

You use this screen to set the page description language you want to use for the print jobs received through the serial port. The options are as follows:

- Auto** - specifies that you want the page description language used for the print jobs to switch automatically based on the data received by the serial port.
- PCL** - specifies that you want to use the PCL page description language for the print jobs received by the serial port.
- PostScript** - specifies that you want to use the PostScript page description language for the print jobs received by the serial port.

The default is **Auto**.

Baud Rate Setting Screen

When you press the **[Change]** button for the Baud Rate option, the Baud Rate Setting screen displays.

You use this screen to set the baud rate for the serial port in bits per second (bps). The baud rate is a unit used to measure the data transmission speed. The options are as follows:

- | | |
|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> 1200 | <input type="checkbox"/> 9600 |
| <input type="checkbox"/> 2400 | <input type="checkbox"/> 19200 |
| <input type="checkbox"/> 4800 | <input type="checkbox"/> 38400 |

The default is **9600** bps.

Note: *You must set the baud rate for the serial port to the same baud rate set at the host.*

Parity Setting Screen

When you press the **[Change]** button for the Parity option, the Parity Setting screen displays.

You use this screen to specify how the parity bit is used during error checking. The options are as follows:

- None**
- Odd**
- Even**

The default is **None**.

Note: *You must set the parity for the serial port to the same parity setting as the host.*

Handshake Setting Screen

When you press the **[Change]** button for the Handshake option, the Handshake Setting screen displays.

You use this screen to specify the type of handshake that occurs between the serial port and the host. The options are as follows:

- XON/XOFF**
- DTR/DSR**
- Robust XON**

The default is **XON/XOFF**.

DTR Polarity Setting Screen

When you press the **[Change]** button for the DTR Polarity option, the DTR Polarity Setting screen displays.

You use this screen to specify the polarity of the DTR for the serial port from the host. The options are as follows:

- High**
- Low**

The default is **High**.

Stop Bits Setting Screen

When you press the **[Change]** button for the Stop Bits option, the Stop Bits Setting screen displays.

You use this screen to specify the number of stop bits in each character. The options are as follows:

- 1**
- 2**

The default is **1**.

Note: *You must set the stop bits for the serial port to the same stop bit setting as the host.*

Data Bits Setting Screen

When you press the **[Change]** button for the Data Bits option, the Data Bits Setting screen displays.

You use this screen to specify the number of data bits in each character. The options are as follows:

- 8**
- 7**

The default is **8**.

***Note:** You must set the stop bits for the serial port to the same stop bit setting as the host.*

Network Menu

When you press the **[Network Menu]** button from the Setup menu, the Network menu displays. You use the Network menu to specify the network timeout setting you want to use.

The current value for the option displays in the box to the right of the option on the screen. To change the value for the option, press the **[Change]** button located beside the option. The Setting screen for that option displays. I/O Timeout is the only option available on this screen.

I/O Timeout Setting Screen

When you press the **[Change]** button for the I/O Timeout option, the I/O Timeout Setting screen displays.

You use the numerical keys to change the value for the number of seconds after which an incomplete print job should end and the next port in the polling sequence should be set. The valid range is 5 to 300, entered in increments of 1. The default is **30** seconds.

Configuration Menu

When you press the **[Configuration Menu]** button from the Setup menu, the Configuration menu displays. You use the Configuration menu to specify the printer configuration options you want to use. Although most software applications override these parameters, when an application does not, the values that display on this screen are used.

The options available on this screen are as follows:

- | | |
|---|---|
| <input type="checkbox"/> Resolution | <input type="checkbox"/> Spooling |
| <input type="checkbox"/> Copies | <input type="checkbox"/> Smoothing |
| <input type="checkbox"/> Jam Recovery | <input type="checkbox"/> Mode |
| <input type="checkbox"/> Auto Continue | <input type="checkbox"/> SCSI ID |

Resolution Setting Screen

When you press the **[Change]** button for the Resolution option, the Resolution Setting screen displays.

You use this screen to specify the print resolution in dots per inch (dpi). The options are as follows:

- 300**
- 400**
- 600**

The default is **400** dpi.

Copies Setting Screen

When you press the **[Change]** button for the Copies option, the Copies Setting screen displays.

You use the numerical keys to change the value for the number of copies of each page that will print for each print job. The valid range is 1 to 999, entered in increments of 1. The default is **1** copy. The value you enter in the field is limited by the paper output tray specifications.

Jam Recovery Setting Screen

When you press the **[Change]** button for the Jam Recovery option, the Jam Recovery Setting screen displays.

You use this screen to specify whether you want the jam recovery feature on or off. When a printing paper jam occurs while the jam recovery feature is on, all pages affected by the paper jam are reprinted. The options are as follows:

- Off** - specifies that you do not want the jam recovery.
- On** - specifies that you do want jam recovery.

The default is **On**.

Note: *When the Jam Recovery feature is set to On, the data for a page is until the page exits the printer. Therefore, printer performance may be lower than when the Jam Recovery feature is set to Off.*

Auto Continue Setting Screen

When you press the **[Change]** button for the Auto Continue option, the Auto Continue Setting screen displays.

You use this screen to specify whether you want the printer to control the continuation of printing after a system error occurs. The options are as follows:

- Off** - specifies that you do not want printing to continue automatically.
- On** - specifies that you do want printing to continue automatically.

Note: *When a error occurs stating the system cannot be recovered, these options are not valid and you must reset the machine.*

The default is **On**.

Spooling Setting Screen

When you press the **[Change]** button for the Spooling option, the Spooling Setting screen displays.

You use this screen to specify whether you want to use the hard disk to spool the print jobs. The options are as follows:

- Off** - specifies that you do not want to use the hard disk to spool the print jobs.
- On** - specifies that you do want to use the hard disk to spool the print jobs.

The default is **Off**.

Note: *The spooling function is enabled only when the Parallel Port Bidirectionality setting is **Off**.*

Smoothing Setting Screen

When you press the **[Change]** button for the Smoothing option, the Smoothing Setting screen displays.

You use this screen to specify whether you want to use the paper edge smoothing feature. The options are as follows:

- Off** - specifies that you do not want to use the paper edge smoothing feature.
- On** - specifies that you do want to use the paper edge smoothing feature.

The default is **On**.

Mode Setting Screen

When you press the **[Change]** button for the Mode option, the Mode Setting screen displays.

You use this screen to specify the operation mode for the machine. The options are as follows:

- Share** - indicates that you want to share the machine between copy, print, and scan modes with no specific priority.
- Printer Only** - indicates that you currently want to use the machine as a printer only.
- Scanner Only** - indicates that you currently want to use the machine as a scanner only.
- Printer Priority** - indicates that you want all print jobs to take priority. The default is Share.

Note: *When Printer Only Mode is specified, the Printer mode menu screen displays when you turn on the machine (rather than the Copy mode menu).*

SCSI ID Setting Screen

When you press the **[Change]** button for the SCSI ID option, the SCSI ID Setting screen displays.

You use this screen to specify the SCSI ID. The options are as follows:

- | | |
|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> 0 | <input type="checkbox"/> 4 |
| <input type="checkbox"/> 1 | <input type="checkbox"/> 5 |
| <input type="checkbox"/> 2 | <input type="checkbox"/> 6 |
| <input type="checkbox"/> 3 | <input type="checkbox"/> 7 |

The default is **3**.

Test Menu

When you press the **[Test Menu]** button from the Setup menu, the Test menu displays. You use the Test menu to request the test pages you want to print to verify the functionality of the printer.

To print a test page, press the **[Print]** button located beside the test you want to perform. The machine prints the test page you selected.

The tests available on this screen are as follows:

- Print PS Fonts** - prints a PS Fonts test page.
- Print PCL Fonts** - prints a PCL Fonts test page.
- Print PS Demo** - prints a PS Demo test page.
- Print PCL Demo** - prints a PCL Demo test page.
- Print Self Test** - prints a Self Test page.

Reset Menu

When you press the **[Reset Menu]** button from the Setup menu, the Reset menu displays. You use the Reset menu to reset the configuration values specified for the printer.

To perform a reset function, press the **[Execute]** button located beside the function you want to perform.

The reset functions available on this screen are as follows:

- Printer Reset** - cancels the print jobs currently being processed and clears the temporary soft fonts, temporary macros, and stored page data from memory. This function clears all page images intended for reverse printing from the disk and ejects any duplex printing pages contained in the duplex bin. This function does not change any of the menu settings.

- **Menu Reset** - performs a Printer Reset function and restores some of the menu settings to their system default values. You use the Reset Menu function to restore to the default settings those values that have been changed by users, while retaining those values set based on the physical printer setup. The parameters that are not restored to the default values are as follows:
 - ◆ **Bypass Tray Size**
 - ◆ **Bidirectionality**
 - ◆ **Baud Rate**
 - ◆ **Parity**
 - ◆ **Handshake**
 - ◆ **DTR Polarity**
 - ◆ **Stop Bits**
 - ◆ **Data Bits**
 - ◆ **SCSI ID**
 - ◆ **Passwords**

- **System Reset** - performs a System Reset function and restores all of the menu settings, except for Page Count, to the system default values.

Note: *You should perform a System Reset when you first activate your machine to make sure that all of the NVRAM system defaults are initialized and set correctly.*

When you press the **[Execute]** button for any of the reset functions, the Confirmation screen displays.

Press the **[Yes]** button on the Confirmation screen to continue with the reset function. The In Progress screen displays, notifying you that the reset function is being performed.

When the reset function is complete, the Printer Priority Mode screen displays and the machine status is set to Online and Ready.

If you performed a reset from the Reset Menu or from a System Reset, the mode setting is set to **Share**.

SWITCHING BETWEEN EMULATIONS

The printer automatically switches the print input between the PCL 5e and PostScript languages. You use the Parallel menu or the Serial menu to specify the personality settings you want to use for the parallel and serial ports. You can specify PCL, PostScript, or Automatic Switching.

The network port is always set to Automatic Switching.

3. USING THE PRINTER DRIVERS

OVERVIEW

This chapter provides information on using the PCL 5e and PostScript printer driver software provided with the machine.

- Note:**
- *If you are using Stapling or Job Separation, do not turn on Collation from your software application - use the machine Control Panel instead. If you select Collation from an application (e.g. MS Word), it will only apply to the first batch of a job.*
 - *You must use the printer driver designed for this machine for best results.*

PCL 5E PRINTER DRIVER

The machine is provided with software containing PCL 5e printer language for Windows 3.1 and Windows 95.

You use the standard Windows 3.1 or Windows 95 PCL printer driver software to print documents from your applications. You can also use the PCL driver to change printer settings independently of your applications.

Note: *You can use the printer Control Panel to change many of the printer settings. However, the selections you make using the printer driver software overrides your Control Panel selections.*

Windows 3.1

This sections contains information on the PCL 5e print parameters and options available for your Windows 3.1 system.

Setup Window

In general, you access the Setup window by selecting "Print" or "Print Setup" from the File menu available from your application. You can also access the Setup window by accessing the Control Panel and double-clicking on "Printers." A list of the currently available printers displays. Select the printer you want to use and click the **[Setup]** button to access the Setup window.

The **[Options]** button available on this window accesses the Options window. The **[Fonts]** button access the Font Installer window, which you use to install fonts when necessary. The **[Configuration]** button accesses the Configuration window, which you use to specify the input and output paper devices.

The following lists the descriptions and parameters for the fields contained on the Setup window.

Field	Parameter	Description
Paper Size	8.5 x 11 in 8.5 x 14 in 11 x 17 in 7.25 x 10.5 in 5.5 x 8.5 in A3 (297 x 420 mm) A4 (210 x 297 mm) A5 (148 x 210 mm) A6 (105 x 148 mm) B4 (257 x 364 mm) B5 (182 x 257 mm) 8 x 13 in 8.5 x 13 in 8.25 x 13 in	Allows you to specify the output paper size you want to use. When you are formatting your job, you can select any paper size, regardless of the limitations of the currently selected input tray. This allows you to format your job for any paper size and select the correct paper tray when you want to print the job. The Measurement setting for the host PC is verified when the driver is installed. The default paper size is A4 when the Measurement setting is Metric and is 8.5 x 11 when the Measurement setting is not metric. The default value for North America is 8.5 x 11 in . The default value for Europe is A4 .

Field	Parameter	Description
Paper Source	Auto Tray Select Large Capacity Tray Tray 1 Tray 2 Tray 3 Tray 4 Bypass Tray	Allows you to specify the input paper tray you want to use. The default value is Auto Tray Select .
Copies	1 to 999	Allows you to specify the number of copies you want to print. You can enter this parameter using your keyboard or using the incremental spin buttons. The default value is 1 .
Orientation	Portrait Landscape	Allows you to specify the orientation of the printed output. The default value is Portrait .

Options Window

To access the Options window, click the **[Options]** button available on the Setup window. The following lists the descriptions and parameters for the fields contained on the Options window.

Field	Parameter	Description
Halftone	Text Photographic	Allows you to specify the Halftone resolution you want to use. The default value is Text .
Graphics Mode	HP-GL/2 Raster	Allows you to specify the graphic print quality. The default value is HP-GL/2 .
Graphics Quality	High Medium Low	Allows you to specify the print quality you want to use. The default value is High .

Field	Parameter	Description
Print TrueType as Graphics	On Off	<p>Allows you to specify whether you want to print TrueType fonts as graphics. This field is only active when you specify Raster as the Graphics Mode and High as the Graphics Quality.</p> <p>The default value is Off.</p>
Reverse Print Order	On Off	<p>Allows you to specify whether you want to use the Reverse Print Order feature, which delivers the printed output face-up in the correct order.</p> <p>When you enable this feature, the host input data is rasterized and stored in the order received. The data is then retrieved from the HDD and printed in reverse order so that the output is delivered face-up in the correct page sequence from page 1 to the end.</p> <p>When you request multiple copies, the output consists of sets of copies in the correct page sequence (for example, three sets each in 1,2,3,4,5 page order).</p> <p>The default value is On.</p>
Job Separation	On Off	<p>Allows you to specify whether you want to use Job Separation, indicating that you want the machine to automatically separate the print jobs.</p> <p>The separation is implemented either as a mechanical offset, or with a sheet of paper, depending on the type of trays installed on the machine.</p> <p>When a mechanical offset is used, the finisher activates a jogger mechanism that moves the shift tray slightly to the right or to the left for each job. This makes it easy to determine where the end of a set or job occurs. Job separation is especially useful for separating collated jobs.</p> <p>The default value is Off.</p>

USING THE PRINTER DRIVERS

Field	Parameter	Description
Duplex	Off Long Edge Binding Short Edge Binding	<p>Allows you to specify that you want the output printed in duplex format.</p> <p>Off specifies that you do not want to use duplex printing.</p> <p>Long Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the left edge of the paper, like a book. In Landscape mode, this setting produces output that you can bind along the top edge of the paper, like a calendar.</p> <p>Short Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the top edge of the paper, like a calendar. In Landscape mode, this setting produces output that you can bind along the left edge of the paper, like a book.</p> <p>The default value is Off.</p>
Edge Smoothing	On Off	<p>Allows you to specify that you want to use the Edge Smoothing feature, thus enhancing print quality. When Edge Smoothing is enabled, the printer reduces ragged edges, providing printed output with smooth curved and diagonal lines.</p> <p>The default value is On.</p>
Printer Output Tray	1 st Output Bin 2 nd Output Bin 3 rd Output Bin	<p>Allows you to specify that you want to use the printer output tray and to select the output tray you want to use.</p> <p>The default value is 2nd Output Bin.</p>
Staple	Off 1 Staple 2 Staples	<p>Allows you to specify whether you want to use the stapling option, and if so, how many staples you want to use to staple the printed output. This feature is available only when the optional stapler is installed</p> <p>Off species that you do not want stapling.</p> <p>The default value is Off.</p>
Resolution	600 dpi 300 dpi	<p>Allows you to specify the output resolution for the printer.</p> <p>The default value is 300 dpi.</p>

Font Installer Window

To access the Font Installer window, click the **[Fonts]** button available on the Setup window. You use the Font Installer window to install fonts when necessary.

The following lists the descriptions and parameters for the fields contained on the Font Installer window. The Font Installer window contains the **[Move]** button you use to move the selected font, the **[Copy]** button you use to copy the selected font, the **[Delete]** button you use to delete the selected font and the **[Edit]** button you use to make changes to the selected font. The Font Installer window also contains the **[Add Fonts]** button you use to install new fonts and the **[Copy Fonts to a New Port]** button you use to copy the selected fonts to the port you specify.

Field	Parameter	Description
Select a Font	List box containing the fonts currently installed	Allows you to select the Font you want to use, modify, delete edit, or copy. The font you select displays in the area located on the right of the screen.
Status	Permanent Temporary	Allows you to specify whether the changes to the selected font are permanent or temporary.

Configuration Window

To access the Configuration window, click the **[Configuration]** button available on the Setup window. You use the Configuration window to specify the input and output paper devices. The following lists the descriptions and parameters for the fields contained on the Configuration window.

Field	Parameter	Description
Input Paper Device	None 1000-sheet Tray Unit 1500-sheet Tray Unit	Allows you to specify that you want to use an optional input tray when one is installed. You select the optional tray you want to use from that list that displays. The list that displays is based on the optional input trays that are available on the machine. The default value is None .
Output Paper Device	Copy Tray 3-bin Sorter Finisher	Allows you to specify that you want to use an optional output device when one is installed. You select the optional device you want to use from that list that displays. The list that displays is based on the optional output devices that are available on the machine. The default value is Copy Tray .

Windows 95

This sections contains information on the PCL 5e print parameters and options available for your Windows 95 system.

Properties Window

In general, you access the Properties window by selecting Print from the File menu and clicking the **[Properties]** button, or by selecting Print Setup from the File menu when available from your application. You can also access the Properties window by clicking the **[Start]** button and selecting Printers from the Settings submenu. A list of icons representing the printers available to you displays. Double-click on the icon that represents the printer you want to use. The Printers window displays with a list of the currently queued print jobs displays. Select Properties from the Printer menu available on the Printers window. The Properties window displays.

Depending on the manner in which you access it, the Properties window contains from four to six tabs. You use these tabs to specify the parameters and options you want to use for your print jobs.

General Tab

The General tab displays only when you access the Properties window using the "Printers" selection from the Settings submenu. This tab contains general description information about the printer and allows you to print a test page. Refer to the documentation provided with your operating system for further information on this tab.

Details Tab

The Details tab displays only when you access the Properties window using the "Printers" selection from the Setting. This tab contains setup information about the printer driver and the printer ports. Refer to the documentation provided with your operating system for further information on this tab.

Paper Tab

The following lists the descriptions and parameters for the fields contained on the Paper tab.

Field	Parameter	Description
Paper Size	8.5 x 11 in 8.5 x 14 in 11 x 17 in 7.5 x 10.5 in 5.5 x 8.5 in A3 (297 x 420 mm) A4 (210 x 297 mm) A5 (148 x 210 mm) A6 (105 x 148 mm) B4 (257 x 364 mm) B5 (182 x 257 mm) 8 x 13 in 8.5 x 13 in 8.25 x 13 in	<p>Allows you to specify the output paper size you want to use.</p> <p>When you are formatting your job, you can select any paper size, regardless of the limitations of the currently selected input tray. This allows you to format your job for any paper size and select the correct paper tray when you want to print the job.</p> <p>The Measurement setting for the host PC is verified when the driver is installed. The default paper size is A4 when the Measurement setting is Metric and is 8.5 x 11 when the Measurement setting is not metric.</p> <p>The default value for North America is 8.5 x 11 in.</p> <p>The default value for Europe is A4.</p>
Paper Source	Auto Tray Select Large Capacity Tray Tray 1 Tray 2 Tray 3 Tray 4 Bypass Tray	<p>Allows you to specify the input paper tray you want to use.</p> <p>The default value is Auto Tray Select.</p>
Copies	1 to 999	<p>Allows you to specify the number of copies you want to print. You can enter this parameter using your keyboard or using the incremental spin buttons.</p> <p>The default value is 1.</p>
Orientation	Portrait Landscape	<p>Allows you to specify the orientation of the printed output.</p> <p>The default value is Portrait.</p>

Graphics Tab

The Graphics tab includes a **[Font]** button you use to access the Font Installer window. You use the Font Installer window to install fonts when necessary (refer to the "Font Installer Window" section in this chapter for further information on the Font Installer window).

The following lists the descriptions and parameters for the fields contained on the Graphics tab.

Field	Parameter	Description
Halftone	Text Photographic	Allows you to specify the Halftone resolution you want to use. Selecting Text provides lower resolution and faster printing speeds. The default value is Text .
Graphics Mode	HP-GL/2 Raster	Allows you to specify the graphic print quality. Selecting HP-GL/2 provides faster printing speeds with slightly diminished print quality. Selecting Raster incorporates raster and bitmap formats and produces high print quality. The default value is HP-GL/2 .
Print TrueType as Graphics	On Off	Allows you to specify whether you want to print TrueType fonts as graphics. This field is only active when you specify Raster as the Graphics Mode. The default value is Off .
Resolution	600 dpi 300 dpi	Allows you to specify the output resolution for the printer. The default value is 300 dpi .
Edge Smoothing	On Off	Allows you to specify that you want to use the Edge Smoothing feature, thus enhancing print quality. When Edge Smoothing is enabled, the printer reduces ragged edges, providing printed output with smooth curved and diagonal lines. Edge smoothing results in reduced printing speeds. The default value is On .
Graphics Quality	High Medium Low	Allows you to specify the print quality you want to use. The value is automatically set to High when you select HP-GL/2 as the Graphics Mode, regardless of what you specify in this field. The default value is High .

Device Options Tab

The following lists the descriptions and parameters for the fields contained on the Device Options tab.

Field	Parameter	Description
Reverse Print Order	On Off	<p>Allows you to specify whether you want to use the Reverse Print Order feature, which delivers the output face-up in the bin in ascending order.</p> <p>When you enable this feature, the host input data is rasterized and stored in the order received. The data is then retrieved from the HDD and printed in reverse order so that the output is delivered face-up in the correct page sequence from page 1 to the end.</p> <p>When you request multiple copies, the output consists of sets of copies in the correct page sequence (for example, three sets each in 1,2,3,4,5 page order).</p> <p>When you select Long Edge Binding or Short Edge Binding as the Duplex option, do not send the OUTPUT PJL command. When you select 1 Staple or 2 Staples as the Staple option, make to send the OUTPUT PJL command with the REVERSE setting specified. When you select Bypass Tray as the Paper Source options, make sure to send the OUTPUT PJL command with the NORMAL setting specified.</p> <p>The default value is On.</p>
Job Separation	On Off	<p>Allows you to specify whether you want to use Job Separation, indicating that you want the machine to automatically separate the print jobs.</p> <p>The separation is implemented either as a mechanical offset, or with a sheet of paper, depending on the type of trays installed on the machine.</p> <p>When a mechanical offset is used, the finisher activates a jogger mechanism that moves the shift tray slightly to the right or to the left for each job. This makes it easy to determine where the end of a set or job occurs. Job separation is especially useful for separating collated jobs.</p> <p>This option is available only when the optional finisher is installed.</p> <p>The default value is Off.</p>

Field	Parameter	Description
Duplex	Off Long Edge Binding Short Edge Binding	Allows you to specify that you want the output printed in duplex format. Off specifies that you do not want to use duplex printing. Long Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the left edge of the paper, like a book. In Landscape mode, this setting produces output that you can bind along the top edge of the paper, like a calendar. Short Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the top edge of the paper, like a calendar. In Landscape mode, this setting produces output that you can bind along the left edge of the paper, like a book. The default value is Off .
Staple	Off 1 Staple 2 Staples	Allows you to specify whether you want to use the stapling option, and if so, how many staples you want and where you want to staple the printed output. This feature is available only when the optional stapler is installed. Off species that you do not want stapling. The default value is Off .
Printer Output Tray	1 st Output Bin 2 nd Output Bin 3 rd Output Bin	Allows you to specify that you want to use the printer output tray and the output you want to use. The default value is 2nd Output Bin .

Configuration Tab

The following lists the descriptions and parameters for the fields contained on the Configuration tab.

Field	Parameter	Description
Input Paper Device	None 1000-sheet Tray Unit 1500-sheet Tray Unit	Allows you to specify that you want to use an optional input tray when one is installed. You select the optional tray you want to use from that list that displays. The list is based on the optional input trays that are available on the machine. The default value is None .
Output Paper Device	Copy Tray 3-bin Sorter Finisher	Allows you to specify that you want to use an optional output device when one is installed. You select the optional device you want to use from that list that displays. The list is based on the optional output devices that are available on the machine. The default value is Copy Tray .

POSTSCRIPT PRINTER DRIVER

A Windows 3.1 or Windows 95 PostScript printer driver is available as an option for the machine. The optional PostScript printer driver allows the machine to support Adobe PostScript Level II. The PostScript option also allows you to download PostScript Type I fonts and includes a rasterizer that allows you to download TrueType fonts as soft fonts.

Note: *You can use the printer Control Panel to change many of the printer settings. However, the selections you make using the printer driver software overrides your Control Panel selections.*

Windows 3.1

This section contains information on the PostScript print parameters and options available for your Windows 3.1 system.

Properties Window

In general, you access the Properties window by selecting "Print" or "Print Setup" from the File menu available from your application. You can also access the Properties window by accessing the Control Panel and double-clicking on "Printers." A list of the currently available printers displays. Double-click on the printer you want to use. The Printer window displays, providing a list of the current print jobs. Double-click on **[Properties]** to access the Properties window.

The Properties window contains six tabs. You use these tabs to specify the parameters and options you want to use for your print jobs.

Paper Tab

The following lists the descriptions and parameters for the fields contained on the Paper tab.

Field	Parameter	Description
Output Format	PostScript Encapsulated PostScript	Allows you to select the PostScript output you want to use. PostScript enables normal printing. Encapsulated PostScript creates a single page image file that you can use with applications that accept this file format. The default value is PostScript .

USING THE PRINTER DRIVERS

Field	Parameter	Description
Paper Source	Auto Tray Select Tray 1 Tray 2 Tray 3 Tray 4 Bypass Tray Large Capacity Tray	Allows you to specify the input paper tray you want to use. The default value is Auto Tray Select .
Paper Size	8.5 x 11 in 8.5 x 14 in 11 x 17 in 7.5 x 10.5 in 5.5 x 8.5 in A3 (297 x 420 mm) A4 (210 x 297 mm) A5 (148 x 210 mm) A6 (105 x 148 mm) B4 (257 x 364 mm) B5 (182 x 257 mm) 8.25 x 13 in 8.5 x 13 in 8 x 13 in	Allows you to specify the output paper size you want to use. A window displays an image of the selected paper size. The default value for North America is 8.5 by 11 in . The default value for Europe is A4 .
Orientation	Portrait Landscape Rotated Landscape	Allows you to specify the orientation of the printed output. The default value is Portrait .
Scaling	25 to 400 percent	Allows you to specify the percent of scaling to enlarge or reduce the printed image. The default value is 100% .

Field	Parameter	Description
Copies	1 to 999	<p>Allows you to specify the number of copies you want to print. You can enter this parameter using your keyboard or using the incremental spin buttons.</p> <p>The default value is 1.</p>
Watermarks	(None) CONFIDENTIAL COPY DRAFT	<p>Allows you to print a simulated watermark on each page of your printed document.</p> <p>When you choose a watermark, you can limit the watermark to print only on the first page by checking the First Page Only checkbox.</p> <p>The default value is (None).</p>
Layout	1 page up/sheet 2 pages up 4 pages up 6 pages up 9 pages up 16 pages up	<p>Allows you to specify the number of multiple pages you want to print on a single sheet of paper.</p> <p>When you want to print multiple pages, you can specify that you want to print a border around the page by checking the Print Page Border checkbox.</p> <p>The default value is 1 up.</p>

Features Tab

The following lists the descriptions and parameters for the fields contained on the Features tab. To specify the printer parameters you want, use the drop-down list boxes to select the option you want to use for each available feature. The items that display depend on the options you have available on the machine.

Field	Parameter	Description
Duplex	Off Long Edge Binding Short Edge Binding	<p>Allows you to specify that you want the output printed in duplex format.</p> <p>Off specifies that you do not want to use duplex printing.</p> <p>Long Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the left edge of the paper, like a book. In Landscape mode, this setting produces output that you can bind along the top edge of the paper, like a calendar.</p> <p>Short Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the top edge of the paper, like a calendar. In Landscape mode, this setting produces output that you can bind along the left edge of the paper, like a book.</p> <p>The default value is Off.</p>
Total Printer Memory	8, 16, 24, 32 or 40 MB or more	<p>Allows you to specify how much of the printer memory is available. The default value is 8 MB.</p>

Field	Parameter	Description
Separation	True False	<p>Allows you to specify whether you want to use the job separation feature provided by the optional finisher.</p> <p>The separation is implemented either as a mechanical offset, or with a sheet of paper, depending on the type of trays installed on the machine.</p> <p>When a mechanical offset is used, the finisher activates a jogger mechanism that moves the shift tray slightly to the right or to the left for each job. This makes it easy to determine where the end of a set or job occurs. Job separation is especially useful for separating collated jobs.</p> <p>This option is available only when the optional finisher is installed.</p> <p>The default value is False.</p>
Output Paper Device	Copy Tray 3-bin Sorter Finisher	<p>Allows you to specify which output bin you want to use when an optional output device is installed. The options contained in the list are based on the optional output devices that are available on the machine.</p> <p>The default value is Copy Tray.</p>
Resolution	600 dpi 400 dpi 300 dpi	<p>Allows you to specify the output resolution for the printer.</p> <p>The default value is 400 dpi.</p>
Staple	Off 1Portrait 1Landscape 2 Portrait 2 Landscape	<p>Allows you to specify whether you want to use the stapling option, and if so, how many staples you want and where you want to staple the printed output.</p> <p>Off specifies that you do not want stapling.</p> <p>One Portrait specifies that you want one staple placed at the top left corner of the portrait page.</p> <p>One Landscape specifies that you want one staple placed at the top left corner of the landscape page.</p>

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Field	Parameter	Description
Staple (cont.)		Two Portrait specifies that you want two staples on the portrait page. The staples are placed along the left side of the page when long edge feed is used. The staples are placed along the top of the page when short edge feed is used. Two Landscape specifies that you want two staples on the landscape page. The staples are placed along the top of the page when long edge feed is used. The staples are placed along the left side of the page when short edge feed is used. This feature is available only when the optional stapler is installed. The default value is Off .
Auto Tray Switching	On Off	Allows you to specify whether you want to use Auto Tray Switching. When you enable Tray Switching, the printer switches to an alternate paper tray when the current tray is empty. The default value is On .
Printer Output Tray	1 st Output Bin 2 nd Output Bin 3 rd Output Bin	Allows you to specify which bin you want to use. The default value is 2 nd output Bin .
Edge Smoothing	On Off	Allows you to specify whether you want to use Edge Smoothing. The default value is On .
Input Paper Device	None 1000-sheet Tray Unit 1500-sheet Tray Unit	Allows you to specify that you want to use an optional input tray when one is installed. The default value is None .

Fonts Tab

The Fonts tab contains the **[Font Downloader]** button you use to access the Font Installer window, which you use to install fonts when necessary.

The following lists the descriptions and parameters for the fields contained on the Fonts tab.

Field	Parameter	Description
Send TrueType Fonts to This Printer as:	Type 1 Type 3 Type 42 Don't Send	Allows you to specify how your printer uses TrueType fonts. You can override this setting individually for each font using the "TrueType Substitutions for All Printers" list. Type 1 sends the TrueType fonts to the printer as outline PostScript fonts. Type 3 sends the TrueType fonts to the printer as bitmapped PostScript fonts. Type 42 packages the TrueType fonts for the printer. Don't Send uses the TrueType fonts that are resident or supplied. The default value is Type 1 .
Substitute PostScript Fonts for TrueType Fonts on This Printer.	On Off	Allows you to specify whether you want to substitute PostScript fonts for TrueType fonts. When you enable this option, your documents print faster. However, some printed fonts may be slightly different than the screen fonts. The default value is On .
TrueType Substitutions for All Printers	List of TrueType fonts and the available substitutions	Allows you to specify the Post Script font you want to use in place of each TrueType font included in the list.

PostScript Tab

The following lists the descriptions and parameters for the fields contained on the PostScript tab.

Field	Parameter	Description
Performance Options	Use PostScript Level 2 Features Send Data in Binary	Allows you to specify the manner in which your system sends document data to your printer. Use the Enabling the Use PostScript Level 2 Features option to use the available PostScript Level 1 features when sending the print data. Use the Send Data in Binary option to send binary data to your printer. To use this option, your printer must be set up to receive binary data. The default value is Use PostScript Level 2 Features .
PostScript Timeout Values	Job Timeout - Seconds Wait Timeout - Seconds	Allows you to specify the timeout information in seconds. When you specify zero, the job is not canceled. Job Timeout indicates how long a print job can run before it is canceled. Wait Timeout indicates how long the printer will wait for the print data before the print job is canceled. The default values are Job timeout - 0 Wait timeout -120 Note: Do not specify zero when you are using a networked printer.
Margins	Default None	Allows you to add or remove margins from your PostScript output. The default value is Default .

Field	Parameter	Description
Protocol Options	Default - Serial/Parallel None (Apple Talk)	Allows you to specify your PostScript communications setting. When Default - Serial/ Parallel is enabled, you can end your print jobs using the Ctrl+D command. The default value is Default - Serial/Parallel .
PostScript Performance	Optimize for Speed Optimize for Portability	Allows you to specify the printer performance level that you want to use. When you enable Optimize for Speed, your print jobs complete in a faster time period, but many not print successfully when your printer has a limited amount of memory. Enable Optimize for Portability creates print jobs that will print on a variety of printers. The default value is Optimize for Speed .

Job Control Tab

The Job Control tab also contains the **[Download]** button, which you use to send the PostScript header to the printer. When you perform this task, the PostScript header resides on the printer until the printer is restarted and the Already Downloaded option is automatically enabled.

The following lists the descriptions and parameters for the fields contained on the Job Control tab.

Field	Parameter	Description
Printer Mode	ASCII Mode Binary Mode	Allows you to specify the data format you want to use to communicate with the printer. The default value is ASCII Mode .
PostScript Header	Download Each Job Already Downloaded	Allows you to control the manner in which PostScript headers are downloaded. Download Each Job sends a PostScript header with each print job. Already Downloaded indicates that the header is already resident on the printer. When you click the [Download] button, this option is automatically selected. The default value is Download Each Job .

Field	Parameter	Description
Send Error Handler With Each Job	On Off	Allows you to specify whether you want to enable PostScript error printing. This option is not available when you enable Optimize for Portability on the PostScript tab. The default value is Off .
Do Not Download Fonts	On Off	Allows you to specify that you do not want soft fonts downloaded to the printer. Enable this option only when the soft fonts are already available to your printer. The default value is Off . Note: This does not affect TrueType fonts.

Watermark Tab

The following lists the descriptions and parameters for the fields contained on the Watermark tab. The Watermark tab also contains the **[Edit]** button you use to make changes to the selected watermark, the **[Add]** button you use to add a watermark to your list, and the **[Delete]** button you use to delete the selected watermark.

Field	Parameter	Description
Select a Watermark	List box containing the currently available Watermarks	Allows you to select the Watermark you want to use, delete, or edit. The watermark you select displays in the area located on the right of the screen.

Watermark Window

You access the Watermark window when you select a watermark from the Watermark tab and click the **[Edit]** button, or when you click the **[Add]** button from the Watermark tab. You use this window to specify the information for the watermark you are creating or modifying. The following lists the descriptions and parameters for the fields contained on the Watermark window.

Field	Parameter	Description
Watermark Text	Text Font Size Style Print In Foreground Print Outline Only	Allows you to create or edit the watermark text, font, size, and style. Also allows you to specify the mode you want to use when printing a watermark.
Angle	-90 to 90 degrees	Allows you to rotate the Watermark from -90 to +90 degrees.
Position	Automatically Center Watermark Position Relative to Center (x, y)	Allows you to adjust the position of a watermark. on the page.

WINDOWS 95

This section contains information on the PostScript print parameters and options available for your Windows 95 system.

Properties Window

In general, you access the Properties window by selecting Print from the File menu and clicking the **[Properties]** button, or by selecting Print Setup from the File menu when available from your application. You can also access the Properties window by clicking the **[Start]** button and selecting Printers from the Settings submenu. A list of icons representing the printers available to you displays. Double-click on the icon that represents the printer you want to use. The Printers window displays with a list of the currently queued print jobs displays. Select Properties from the Printer menu available on the Printers window. The Properties window displays.

Depending on the manner in which you access it, the Properties window contains from five to eight tabs. You use these tabs to specify the parameters and options you want to use for your print jobs.

General Tab

The General tab displays only when you access the Properties window using the "Printers" selection from the Settings submenu. This tab contains general description information about the printer and allows you to print a test page. Refer to the documentation provided with your operating system for further information on this tab.

Details Tab

The Details tab displays only when you access the Properties window using the "Printers" selection from the Setting. This tab contains setup information about the printer driver and the printer ports. Refer to the documentation provided with your operating system for further information on this tab.

Paper Tab

The Paper tab contains the **[More Options]** button you use to access the More Paper Options window, which allows you to specify additional paper parameters. The Paper tab also contains the **[Unprintable Area]** button you use to access the Unprintable Area window, which allows you to specify page margin parameters.

The following lists the descriptions and parameters for the fields contained on the Paper tab.

Field	Parameter	Description
Paper Size	8.5 x 11 in 8.5 x 14 in 11 x 17 in 7.5 x 10.5 in 5.5 x 8.5 in A3 (297 x 420 mm) A4 (210 x 297 mm) A5 (148 x 210 mm) A6 (105 x 148 mm) B4 (257 x 364 mm) B5 (182 x 257 mm) 8.25 x 13 in 8.5 x 13 in 8 x 13 in	Allows you to specify the output paper size you want to use. The default value for North America is 8.5 x 11 in . The default value for Europe is A4 .
Layout	1 up 2 up 4 up 6 up 9 up 16 up	Allows you to specify the number of multiple pages you want to print on a single sheet of paper. When you want to print multiple pages, you can specify that you want to print a border around the page by checking the Print Page Border checkbox. The default value is 1 up .

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Field	Parameter	Description
Orientation	Portrait Landscape Lotate Landscape	Allows you to specify the orientation of the printed output. The default value is Portrait .
Paper Source	Auto Tray Select Tray 1 Tray 2 Tray 3 Tray 4 Bypass Tray Large Capacity Tray	Allows you to specify the input paper tray you want to use. The default value is Auto Tray Select .
Copies	1 to 999	Allows you to specify the number of copies you want to print. You can enter this parameter using your keyboard or using the incremental spin buttons. The default value is 1 .

More Paper Options Window

To access the More Paper Options window, click on the **[More Options]** button available on the Paper tab. The following lists the descriptions and parameters for the fields contained on the More Paper Options window.

Field	Parameter	Description
Printing on both sides (duplex printing)	None Flip on long side Flip on short edge	Allows you to specify that you want the output printed in duplex format. Off specifies that you do not want to use duplex printing. Flip on long side specifies that, when printing in Portrait mode, you want to bind your output along the left edge of the paper, like a book. In Landscape mode, this setting produces output that you can bind along the top edge of the paper, like a calendar. Flip on short edge specifies that, when printing in Portrait mode, you want to bind your output along the top edge of the paper, like a calendar. In Landscape mode, this setting produces output that you can bind along the left edge of the paper, like a book. The default value is None .
Printer Output Tray	1 st Output Bin 2 nd Output Bin 3 rd Output Bin	Allows you to specify which output bin you want to use when an optional output device is installed. The options contained in the list are based on the optional output devices that are available on the machine. The default value is 1st Output Bin .

Unprintable Area Window

To access the Unprintable Area window, click on the **[Unprintable Area]** button available on the Paper tab. The following lists the descriptions and parameters for the fields contained on the Unprintable Area window.

Field	Parameter	Description
Units	Inches Millimeters	Allows you to specify the units of measure you want to use for the margin settings. The default value is Inches (U.S.).
Top	0.28 to 5.50 inches 7.1 to 139.7 mm	Allows you to specify the top margin for the printed image. The default value is 0.28 inches (7.1 mm) .
Bottom	0.18 to 5.50 inches 4.6 to 139.7 mm	Allows you to specify the bottom margin for the printed image. The default value is 0.18 inches (4.6 mm) .
Left	0.18 to 4.250 inches 4.6 to 108 mm	Allows you to specify the left margin for the printed image. The default value is 0.18 inches (4.6 mm) .
Right	0.28 to 5.50 inches 4.6 to 108 mm	Allows you to specify the right margin for the printed image. The default value is 0.18 inches (4.6 mm) .

Graphics Tab

The following lists the descriptions and parameters for the fields contained on the Graphics tab.

Field	Parameter	Description
Resolution	600 dpi 400 dpi 300 dpi	Allows you to specify the output resolution for the printer. The default value is 400 dpi .
Halftoning	Use printer settings Use settings below Screen frequency Screen angle	Allows you to select the Halftone setting you want to use. When you select Use settings below, you enter the screen frequency and angle settings you want to use to override the default halftone settings for the printer. The default value is Use printer settings .
Special	Print as a negative image Print as a mirror image	Allows you to manipulate the printed image. Print as a negative image allows you to specify whether you want to print the job as a negative. Areas that appear black on the screen print as white, and areas that appear white on the screen print as black. Print as a mirror image allows you to specify whether you want to print the document as a mirror image of the screen.
Scaling	25 to 400 percent	Allows you to specify the percent of scaling to enlarge or reduce the printed image. The default value is 100% .

Fonts Tab

The following lists the descriptions and parameters for the fields contained on the Fonts tab. The Fonts tab contains the **[Edit the Table]** button you use to access the Font Substitution Table window, which allows you to specify font substitution criteria. The Fonts tab also contains the **[Send Fonts As]** button you use to access the Send Fonts As window, which allows you to further specify your font criteria.

Field	Parameter	Description
Send TrueType fonts to the printer according to the font Substitution Table.	On Off	Allows you to specify whether you want to replace TrueType fonts with built-in printer fonts. You can specify this information for each font using the font substitution table. You access the font substitution table by clicking the [Edit the Table] button. The default value is On .
Always use built-in printer fonts instead of TrueType fonts.	On Off	Allows you to specify whether you want to substitute PostScript fonts for TrueType fonts. When you enable this option, your documents print faster. However, some printed fonts may be slightly different than the screen fonts. The default value is Off .
Always use TrueType fonts.	On Off	Allows you to specify whether you always want to use TrueType fonts. When you enable this option, your documents print more slowly. However, the printed fonts look exactly the same as the screen fonts. The default value is Off .

Font Substitution Table Window

To access the Font Substitution Table window, click on the **[Edit the Table]** button available on the Fonts tab. The following lists the descriptions and parameters for the fields contained on the Font Substitution Table window.

Field	Parameter	Description
For the TrueType font:	Lists the available TrueType fonts you can replace with PostScript fonts.	Allows you to select the TrueType fonts you want to replace.
Printer font for:	Lists the PostScript fonts you can use in place of the TrueType font you selected.	Allows you to specify the PostScript font you want to use for the substitution.

Send Fonts As Window

To access the Send Fonts As window, click on the **[Send Font As]** button available on the Fonts tab. The following lists the descriptions and parameters for the fields contained on the Send Fonts As window.

Field	Parameter	Description
Send TrueType fonts as:	Outlines Bitmaps Type 42 Don't Send	Allows you to specify how your printer uses TrueType fonts. You can override this setting individually for each font using the Font Substitution window. Outlines sends the TrueType fonts to the printer as outline PostScript fonts. Bitmaps sends the TrueType fonts to the printer as bitmapped PostScript fonts. Type 42 packages the TrueType fonts for the printer. Don't Send uses the TrueType fonts that are resident or supplied. The default value is Outlines .
Threshold to switch between downloading bitmap or outline fonts, measured in pixels (at the current resolution).	1 to 99.99	Allows you to specify the font size, in pixels, at which the PostScript driver will switch from a TrueType font to a bitmap fonts. The default value is 99.99 .

Field	Parameter	Description
Favor system TrueType fonts over printer fonts that have the same name.	On Off	Allows you to specify which fonts have priority. When you enable this option, your documents print faster. However, some printed fonts may look slightly different than the screen fonts. The default value is Off .
PostScript fonts	In Native Format Don't Send	Allows you to specify whether you want soft fonts downloaded to the printer. Select Don't Send only when the soft fonts are already available to your printer. The default value is In Native Format . Note: This does not affect your TrueType fonts.

Device Options

Tab The following lists the descriptions and parameters for the fields contained on the Device Options tab. To specify the printer feature parameters you want, select the feature and select the option you want to use for the feature from the Change Setting for list box. The items that display depend on the options you have available on the machine.

Field	Parameter	Description
Available printer memory (in KB)	0 to 25600	Allows you to specify how much of the printer memory is available to spool print strings.

Field	Parameter	Description
Auto Tray Switching	On Off	Allows you to specify whether you want to use Auto Tray Switching. When you enable Tray Switching, the printer switches to an alternate paper tray when the current tray is empty. The default value is On .
Job Separation	On Off	<p>Allows you to specify whether you want to use the job separation feature provided by the optional finisher.</p> <p>The separation is implemented either as a mechanical offset, or with a sheet of paper, depending on the type of trays installed on the machine.</p> <p>When a mechanical offset is used, the finisher activates a jogger mechanism that moves the shift tray slightly to the right or to the left for each job. This makes it easy to determine where the end of a set or job occurs. Job separation is especially useful for separating collated jobs.</p> <p>This option is available only when the optional finisher is installed.</p> <p>The default value is Off.</p>

Field	Parameter	Description
Staple	Off 1 Portrait 1 Landscape 2 Portrait 2 Landscape	<p>Allows you to specify whether you want to use the stapling option, and if so, how many staples you want and where you want to staple the printed output.</p> <p>Off specifies that you do not want stapling.</p> <p>One Portrait specifies that you want one staple placed at the top left corner of the portrait page.</p> <p>One Landscape specifies that you want one staple placed at the top left corner of the landscape page.</p> <p>Two Portrait specifies that you want two staples on the portrait page. The staples are placed along the left side of the page when long edge feed is used. The staples are placed along the top of the page when short edge feed is used.</p> <p>Two Landscape specifies that you want two staples on the landscape page. The staples are placed along the top of the page when long edge feed is used. The staples are placed along the left side of the page when short edge feed is used.</p> <p>This feature is available only when the optional stapler is installed.</p> <p>The default value is Off.</p>
Output Paper Device	Copy Tray 3-bin Sorter Finisher	<p>Allows you to specify which output bin you want to use when an optional output device is installed. The options contained in the list are based on the optional output devices that are available on the machine.</p> <p>The default value is Copy Tray.</p>
Edge Smoothing	On Off	<p>Allows you to specify whether you want to use Edge Smoothing. The default value is On.</p>
Input Paper Device	None 1000-sheet Tray Unit 1500-sheet Tray Unit	<p>Allows you to specify that you want to use an optional input tray when one is installed.</p> <p>The default value is None.</p>

PostScript Tab

The following lists the descriptions and parameters for the fields contained on the PostScript tab. The PostScript tab contains the **[Send Header Now]** button, which you use to send the PostScript header to the printer. When you perform this task, the PostScript header resides on the printer until the printer is restarted and the Assume header is downloaded and retained option is automatically enabled. The PostScript tab also contains **[Advanced]** button you use to access the Advanced PostScript Options window.

Field	Parameter	Description
PostScript output format:	PostScript (optimize for speed) PostScript (optimize for portability - ADSC) Encapsulated PostScript (EPS) Archive format PJI archive format	Allows you to specify the PostScript output mode you want to use. Depending on the mode you specify, you can increase speed, allow portability, and enable compatibility with Encapsulated PostScript (EPS), Archive format, and PJI archive format. The default value is PostScript (optimize for speed) .
PostScript header	Download header with each print job Assume header is downloaded and retained	Allows you to control the manner in which PostScript headers are downloaded. Download header with each print job sends a PostScript header with each print job. Assume header is downloaded and retained indicates that the header is already resident on the printer. When you click the [Send Header Now] button, this option is automatically selected. The default value is Download header with each print job .
Print PostScript error information	On Off	Allows you to specify whether you want to enable PostScript error printing. This option is not available when you enable Encapsulated PostScript. The default value is On .

Field	Parameter	Description
PostScript timeout values	Job timeout Wait timeout	Allows you to specify the timeout information in seconds. When you specify zero, the job is not canceled. Job Timeout indicates how long a print job can run before it is canceled. Wait Timeout indicates how long the printer will wait for the print data before the print job is canceled The default values are Job timeout - 0 Wait timeout -120 Note: Do not specify zero when you are using a networked printer.

Advanced PostScript Options Window

To access the Advanced PostScript Options window, click on the **[Advanced]** button available on the PostScript tab. The parameter settings contained on this window were specified for optimal printer performance. You should not change these setting unless you have a specific reason for the change.

The following lists the descriptions and parameters for the fields contained on the Advanced PostScript Options window.

Field	Parameter	Description
PostScript language level	Use PostScript Level 1 features Use PostScript Level 2 features	Allows you to specify the PostScript language level you want to use with your printer. The default value is Use PostScript Level 2 features .
Bitmap compression	Compress bitmap images No bitmap compression	Allows you to specify the manner in which bitmap images are sent to the printer. Compressing the images uses less printer memory and prints faster. The default value is Compress bitmap images .

Field	Parameter	Description
Data format	ASCII data Tagged binary communication protocol Pure binary data Send CTRL+D before job Send CTRL+D after job	Allows you to specify the data format you use to communicate with the printer. Also allows you to specify when to send the Ctrl+D command to the printer. The default value is ASCII data and Send CTRL+D after job .
Display alert for applications incompatible with driver features.	On Off	Allows you to specify whether you want to print an alert when an application is unable to display printer alert information on the screen. The default value is Off .

Watermark Tab

The following lists the descriptions and parameters for the fields contained on the Watermark tab. The Watermark tab also contains the **[Edit]** button you use to make changes to the selected watermark, the **[Add]** button you use to add a watermark to your list, and the **[Delete]** button you use to delete the selected watermark.

Field	Parameter	Description
Select a Watermark	List box containing the currently available Watermarks	Allows you to select the Watermark you want to use, delete, or edit. The watermark you select displays in the area located on the right of the screen.

Watermark Window

You access the Watermark window when you select a watermark from the Watermark tab and click the **[Edit]** button, or when you click the **[Add]** button from the Watermark tab. You use this window to specify the information for the watermark you are creating or modifying. The following lists the descriptions and parameters for the fields contained on the Watermark window.

Field	Parameter	Description
Watermark Text	Text Font Size Style Print In Foreground Print Outline Only	Allows you to create or edit the watermark text, font, size, and style. Also allows you to specify the mode you want to use when printing a watermark.
Angle	-90 to 90 degrees	Allows you to rotate the Watermark from -90 to +90 degrees.
Position	Automatically Center Watermark Position Relative to Center (x, y)	Allows you to adjust the position of a watermark. on the page.

MACINTOSH POSTSCRIPT PRINTER DRIVER

The Macintosh PostScript printer driver allows the printer to support Adobe PostScript Level II. The PostScript option allows you to download PostScript Type 1 fonts, and includes a rasterizer that allows you to download TrueType fonts as soft fonts. This section contains information using the PostScript printer driver for Apple Macintosh.

Note: The PCL 5e drivers are not available for the Macintosh. Using the machine with a Macintosh requires the PostScript option

Installable Options Window

To access the Installable Options window, select the printer from the list and click the **[Setup]** button. A list of PostScript Printer Description (PPD) files displays. Make sure the correct PPD file is highlighted and verify that the correct printer name displays at the bottom of the window. Click the **[Select]** button to access the Installable Options window.

You use the Installable Options window to specify the availability of printer accessories and memory. The following lists the descriptions and parameters for the fields contained on the Installable Options window.

Field	Parameter	Description
Total Printer Memory	8, 16, 24, 32, 40 MB or more	Allows you to specify how much of the printer memory is available. The default value is 8 MB .
Input Paper Device	None 1000-sheet Tray Unit 1500-sheet Tray Unit	Allows you to specify that you want to use an optional input tray when one is installed. The default value is None .
Output Paper Device	Copy Tray Finisher 3-bin sorter	Allows you to specify which output bin you want to use when an optional output device is installed. The options contained in the list are based on the optional output devices that are available on the machine. The default value is Copy Tray .

Page Setup Window

To access the Page Setup window, select Page Setup from the File menu. You use the Page Setup window to specify printing features for the current print job.

The **[Options]** button available on this window accesses the Printer Options window. The **[Print]** button access the Print Options window. The **[Margins]** button accesses the Margins window, which you use to set the page margins for the print job.

The following lists the descriptions and parameters for the fields contained on the Page Setup window.

Field	Parameter	Description
Paper	8.5 x 11 in 8.5 x 14 in 11 x 17 in 5.5 x 8.5 in A3 (297x420 mm) A4 (210x297 mm) A5 (148x210 mm) A6 (105x148 mm) B4 (257x364 mm) B5 (182x257 mm) 7.5 x 10.5 in 8 x 13 in 8.5 x 13 in 8.25 x 13 in	Allows you to select a paper size for the current print job. The default value for North America is 8.5 x 11 in . The default value for Europe is A4 .
Layout	1 up 2 up 4 up 6 up 9 up 16 up	Allows you to specify the number of multiple pages you want to print on a single sheet of paper. The default value is 1 up . Note: An illustration of the layout displays on the left side of the window.

Field	Parameter	Description
Reduce or Enlarge	25 to 400 percent	Allows you to use your keyboard to specify the percentage by which you want to shrink or enlarge the printed image. The default value is 100 percent .
Orientation	Portrait Landscape Rotate Landscape	Allows you to select the icon that corresponds to page orientation you want to use. The default value is Portrait .

Printer Options Window

To access the Printer Options window, from the Page Setup window, click the **[Options]** button. You use the Printer Options window to specify text and graphics attributes for the print job. The following lists the descriptions and parameters for the fields contained on the Printer Options window.

Field	Parameter	Description
Flip Horizontal	On Off	Allows you to specify whether you want to print the document as a mirror image of the screen. The default value is Off .
Flip Vertical	On Off	Allows you to specify whether you want to print the document upside down. The default value is Off .
Invert Image	On Off	Allows you to specify whether you want to print the job as a negative. Areas that appear black on the screen print as white, and areas that appear white on the screen print as black. The default value is Off .
Substitute Fonts	On Off	Allows you to specify whether you want the printer to substitute PostScript printer fonts for Macintosh screen fonts. When you select this option, your job prints faster and uses less memory. The default value is On .
Smooth Graphics	On Off	Allows you to specify whether you want the printer to rasterize bitmap image output to improve the appearance of graphics. The default value is On .

Field	Parameter	Description
Precision Bitmap Alignment	On Off	Allows you to specify whether you want to print bitmap graphics more precisely. Select this setting when you use a low-resolution monitor. The default value is Off .
Unlimited Downloadable Fonts in a Document	On Off	Allows you to specify whether you want the printer to print without substituting printer fonts for Macintosh screen fonts. When you select this option, your print job may print more slowly. However, the appearance of your output matches the screen more closely. The default value is Off .
Larger Print Area	On Off	Allows you to specify whether you want to use a larger print area. The default value is Off .

Print Options Window

To access the Print Options window, from the Page Setup window, click the **[Print]** button. You use the Print Options window to specify printer attributes. The following lists the descriptions and parameters for the fields contained on the Print Options window.

Field	Parameter	Description
Cover Page	None Before document After document	Allows you to specify the manner in which you want to print cover pages. Cover pages can be useful for separating individual documents in large print runs. None specifies that you do not want to print a cover page. Before document specifies that you want to print a cover page at the beginning of each document. After document specifies that you want to print a cover page at the end of each document. The default value is None .

Field	Parameter	Description
Print	Black and White Color/Grayscale ColorSync Color Matching PostScript Color Matching	<p>Allows you to specify the manner in which you want to print graphics.</p> <p>Black and White specifies that you want to print in black and white only.</p> <p>Color/Grayscale specifies that you want the printer to render color images and text in shades of gray. Use this setting when you want to print documents that contain color or grayscale images, such as photographs.</p> <p>ColorSync Color Matching specifies that you want to use color conversion on the Macintosh printer. When you select this option, you must specify a Printer Profile value. This option is available only when the ColorSync software is installed. You must use this option when you want color conversions and have only a PostScript Level 1 printer.</p> <p>Postscript Color Matching specifies that you want to use color conversion on the Macintosh printer. When you select this option, you must specify a Printer Profile value. This option is available only when the ColorSync software is installed. Use this option when your printer is not color calibrated and is a PostScript Level 2 printer.</p> <p>The default value is Black and White.</p>
Printer Profile		<p>Allows you to select a printer profile for your color printer. When you select ColorSync Color Matching or PostScript Color Matching for the Print option, you must select a Printer Profile value.</p> <p>The default value is Printer's Default.</p>

USING THE PRINTER DRIVERS

Field	Parameter	Description
PostScript error handling	No special reporting Summarize on screen Print detailed report	<p>Allows you to specify the manner in which you want the printer to notify you when a PostScript error occurs. When an error occurs, the printer completes the current job and performs a soft reset.</p> <p>However, when a fatal error occurs (when the printer stops printing), you must turn the power to the printer off and back on.</p> <p>No special reporting specifies that you do not want the printer to notify you of a PostScript error.</p> <p>Summarize on screen specifies that you want the printer to notify you of a PostScript error by displaying an error message on your monitor.</p> <p>Print detailed report specifies that you want the printer to notify you of a PostScript error by printing a PostScript error report.</p> <p>The default value is No special reporting.</p>
Auto Tray Switch	On Off	<p>Allows you to specify whether you want the printer to automatically switch to an empty output tray when the currently selected output tray is full.</p> <p>The default value is On.</p>
Duplex	Off Long Edge Binding Short Edge Binding	<p>Allows you to specify that you want the output printed in duplex format.</p> <p>Off specifies that you do not want to use duplex printing.</p> <p>Long Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the left edge of the paper, like a book. In Landscape mode, this setting produces output that you can bind along the top edge of the paper, like a calendar.</p> <p>Short Edge Binding specifies that, when printing in Portrait mode, you want to bind your output along the top edge of the paper, like a calendar. In Landscape mode, this setting produces output that you can bind along the left edge of the paper, like a book.</p> <p>The default value is Off.</p>

Field	Parameter	Description
Job Separation	On Off	<p>Allows you to specify whether you want to use the job separation feature provided by the optional finisher.</p> <p>The separation is implemented either as a mechanical offset, or with a sheet of paper, depending on the type of trays installed on the machine.</p> <p>When a mechanical offset is used, the finisher activates a jogger mechanism that moves the shift tray slightly to the right or to the left for each job. This makes it easy to determine where the end of a set or job occurs. Job separation is especially useful for separating collated jobs.</p> <p>This option is available only when the optional finisher is installed.</p> <p>The default value is Off.</p>
Staple	Off One Portrait One Landscape Two Portrait Two Landscape	<p>Allows you to specify whether you want to use the stapling option, and if so, where you want to staple the printed output.</p> <p>None specifies that you do not want stapling. One Portrait specifies that you want one staple placed at the top left corner of the portrait page.</p> <p>One Landscape specifies that you want one staple placed at the top left corner of the landscape page.</p> <p>Two Portrait specifies that you want two staples on the portrait page. The staples are placed along the left side of the page when long edge feed is used. The staples are placed along the top of the page when short edge feed is used.</p> <p>Two Landscape specifies that you want two staples on the landscape page. The staples are placed along the top of the page when long edge feed is used. The staples are placed along the left side of the page when short edge feed is used.</p> <p>This feature is available only when the optional stapler is installed.</p> <p>The default value is Off.</p>
Print Output Tray	1 st Output Bin 2 nd Output Bin 3 rd Output Bin	<p>Allows you to specify an output tray.</p> <p>The default value is 1st Output Bin.</p>

USING THE PRINTER DRIVERS

Field	Parameter	Description
Resolution	600 dpi 400 dpi 300 dpi.	Allows you to specify the printer resolution in dots per inch (dpi) for PostScript output. The default value is 400 dpi .
Edge Smoothing	On Off	Allows you to specify that you want to enhance print quality using edge smoothing. This feature reduces ragged edges, providing printed output with smooth curved and diagonal lines. The default value is On .

Printer Window

To access the Printer window, select Print from the File menu. You use the Printer window to specify printing features for the current job. The **[Options]** button available on this window accesses the Printer Options window. The following lists the descriptions and parameters for the fields contained on the Print window.

Field	Parameter	Description
Copies	1 to 999	Allows you to specify the number of copies you want to print. The default value is 1 .
Pages	All From/To	Allows you to specify the portion of the document you want to print. All specifies that you want to print the entire document. From/To allows you to enter the beginning and ending page numbers to specify the portion of the document you want to print. The default value is All .
Paper Source	All First page from Remaining from	Allows you to specify the manner in which you want the printer to select input trays for the print job. All - specifies that you want to use a single paper source for the entire document. First page specifies the paper source you want to use for the first page of the document. This option is useful when you want to print a document with a cover page, such as a report, or a business letter using letterhead for the first page only. Remaining from specifies the paper source you want to use for the remaining pages of the document. This option is enabled only when you select First page from. The default value is All .
Destination	Printer File	Allows you to specify the output destination for the print job. The default value is Printer .

4. TROUBLESHOOTING

This chapter provides information that may be helpful when print quality problems, clearing problems and error messages occur while you are using your printer.

When an error requiring operator intervention occurs on the machine, the Error Suspend screen displays on the control panel and the machine is set to Offline mode. You must use the Reset and Continue buttons available on the Error Suspend screen to correct the error and continue using the machine.

When you specify On as the Auto Continue setting on the Configuration menu and an error occurs, the Error Suspend screen displays and the machine is set to Offline mode. When no operator intervention occurs for the amount of time specified for the Auto Continue timeout setting (the default is 30 seconds), the machine is set back to Online mode as though the Continue button were pressed and the print jobs resume.

When a print job requires the use of the manual tray, the "Please open the Bypass Tray" message displays. When the bypass tray is not opened within the time specified (the default is 300 seconds, which is five minutes), the print job is cancelled and the next job begins printing.

PRINT QUALITY PROBLEMS

This section contains information on the print quality problems that may occur while using the printer, as well as the actions you can take to solve the problems. Table -1 lists the print quality problems and provides possible solutions.

Table -1 Print quality problems

Problem	Description	Action:
Background Scatter	Toner is scattered on the page. This problem is usually isolated to a specific area on the page.	<input type="checkbox"/> Make sure you are using paper or transparencies designed for use with laser printers and copy machines (refer to the "Specifications" chapter in this manual for further information). <input type="checkbox"/> When the back of a printed page has background scatter, check for toner buildup on the rollers or separation pad inside of the printer.
Black Page	The page prints entirely in black.	<input type="checkbox"/> Check that the toner cartridge is installed correctly. <input type="checkbox"/> Check for damage to the toner cartridge or for a defective toner cartridge.
Character Voids	White areas are printing where characters should print in solid black.	<input type="checkbox"/> Make sure you are using paper or transparencies designed for use with laser printers. <input type="checkbox"/> Make sure that you are printing on the correct side of the paper.
Dropouts	Characters are printing incompletely or not at all.	<input type="checkbox"/> When this occurs on one page only, the sheet of paper may be defective. <input type="checkbox"/> Adjust the print density slide. <input type="checkbox"/> Make sure that you are using paper or transparencies designed for use with laser printers.
Entire document does not print	You sent a print job, but the entire job did not print.	<input type="checkbox"/> Check the configuration to make sure that it is set to print the entire job and not specific pages.

TROUBLESHOOTING

Problem	Description	Action:
Faded Area	A block of faded vertical white lines prints or an area of the printed matter is faded.	<ul style="list-style-type: none"><input type="checkbox"/> Check for low toner.<input type="checkbox"/> Check that the paper surface is suitable for the printer. Avoid using shiny, highly textured, coated, or erasable typewriter paper.
Fragments or confusing data	Fragments or data, or data unrelated to your print job is printing.	<ul style="list-style-type: none"><input type="checkbox"/> Check that you are using the correct printer driver.<input type="checkbox"/> Check that you have the correct interface cable.
Horizontal Lines	Horizontal black streaks or smears print on the page.	<ul style="list-style-type: none"><input type="checkbox"/> Check for damage to the toner cartridge.<input type="checkbox"/> Check that the toner cartridge is installed correctly.
Multiple Blank Pages	All pages are entirely white.	<ul style="list-style-type: none"><input type="checkbox"/> Check whether you have completely removed the sealing tape from the toner cartridge.<input type="checkbox"/> Check for an empty toner cartridge.<input type="checkbox"/> If none of the above are the cause of the problem you may be experiencing data loss. If this is the case, your printer may need to be serviced.
No printing occurs	You sent a print job, but the printer is not producing a printed copy.	<ul style="list-style-type: none"><input type="checkbox"/> If this is the first time you have used the printer, make sure that you have correctly removed all of the packaging materials from the printer.<input type="checkbox"/> If the printer has worked previously, check that the interface cables are secure.
Printed image is too light	The printer output is too light.	<ul style="list-style-type: none"><input type="checkbox"/> Check that the toner cartridge is positioned correctly. Verify whether the toner is low.<input type="checkbox"/> Check that the printing drum is positioned correctly.

Problem	Description	Action:
Repeating Patterns	Marks or shadows of characters print in a repeated pattern on each page.	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure that the paper path is not dirty. <input type="checkbox"/> Make sure that you are using paper or transparencies designed for use with laser printers and copy machines. <input type="checkbox"/> Check for damage to the toner cartridge. The toner cartridge can become damaged from overexposure to bright lights.
Single Blank Page	A page is entirely white.	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure that the page length setting is correct for the paper size. <input type="checkbox"/> Verify whether the network sharing device is generating a blank separator page. <input type="checkbox"/> Check whether two or more pages fed into the printer at the same time. <input type="checkbox"/> Verify whether an extra page command is being sent from your software application. This may be caused by a forced page break directly above or below a natural page break. <input type="checkbox"/> If none of the above are the cause of the problem you may be experiencing data loss. If this is the case, your printer may need to be serviced.
Stains	Small, black, round dots or inconsistent stains print on the page.	<ul style="list-style-type: none"> <input type="checkbox"/> Make sure that you are using paper that is manufactured for use with laser printers and copy machines. <input type="checkbox"/> Make sure that you are printing on the correct side of the paper. <input type="checkbox"/> Check for buildup of toner on the printer rollers. <input type="checkbox"/> Check for damage to the toner cartridge.
Vertical Lines	Vertical black streaks or smears print on the page.	<ul style="list-style-type: none"> <input type="checkbox"/> Check for damage to the toner cartridge.

PRINTER PROBLEMS

This section contains information on the paper jam and printer problems that may occur while using the printer, as well as the actions you can take to solve the problems. Refer to the *Copier Reference Guide* for further information on basic maintenance tasks (for example, adding toner, paper, and staples).

Jam Recovery

When a paper jam occurs while printing is in progress and the jam recovery feature is set to "On," the affected pages are retrieved from the hard disk and are reprinted. Jam recovery is always on for those printing modes that use the hard disk drive to temporarily sort image data. You can use the "JAMRECOVERY" selection on the Configuration Menu to determine whether jam recovery is on.

When the "JAMRECOVERY" selection on the Configuration Menu is set to "On," the data for a page is retained on the hard drive until the page exits the printer. This guarantees that all paper jams are recoverable. When the "JAMRECOVERY" selection on the Configuration Menu is set to "Off," the job may still recover from a jam. This recovery depends on where the jam occurred and the number of pages that are being maintained by the printer.

Since more print data is retained when the "JAMRECOVERY" selection is set to "On," printer performance may be slower than for print jobs not using the hard disk drive.

Solving Printer Problems

This section provides solutions to some of the printer problems you may encounter while using your printer. Table -2 lists the basic problems that may occur with your printer and the actions you can take to correct the problems.

Table -2 Basic problem resolution

Condition	Action
The printer does not activate when the main switch is turned on.	Make sure that the power cord is properly plugged in to an appropriate power outlet.
The printer has turned off.	Turn on the main switch.
The printer is printing fragments or confusing data.	Verify that you have the correct interface cable.
Printed image is too light.	Verify that the toner cartridge is positioned correctly. Verify whether the toner is low.
Paper runs out.	Add paper.
Stapling does not occur.	<p>Verify whether there are staples jammed in the stapler. If so, remove the jammed staples.</p> <p>Check if the staple cartridge is empty. If so, load a new staple cartridge (after loading a new staple cartridge, staples may not be ejected the first few times you use the stapler).</p> <p>Turn over the paper in the feeder tray. If this does not correct the problem, change to a paper stock with less curl.</p>

Table -3 lists the printer conditions that may occur, and the action you can take to correct the conditions.

Table -3 Printer condition resolution

Condition	Action
Disk Error	<p>The printer suspends operation and waits for user confirmation when a disk error is detected. When you confirm the disk error message, the disk subsystem is disabled and the printer starts again without the disk after you turn the power off and back on. When this occurs, any jobs in progress or spooled are lost.</p> <p>Note:Even if a disk error occurs, the copier function is available.</p> <p>A flag is set in NVRAM to indicate that a disk error was detected. When a power on occurs with this flag set, the printer operates without disk services. You must perform a SYSTEM RESET to clear this flag.</p>
Frequent misfeeds	<p>Verify that the size and weight of the paper you are using meets the paper specifications for the printer.</p> <p>Verify whether the paper is folded, wrinkled, damp, or curled.</p> <p>Verify that the paper is correctly placed in the paper tray.</p> <p>Check for any pieces of misfed paper or other foreign objects in the machine.</p> <p>Verify that the page size setting is correct for the paper contained in the feeder tray.</p>
Please open Bypass Tray	<p>The "Please open Bypass tray" message displays when a print job specifying Bypass feed is ready to print and the Bypass tray door is closed. This message is followed by a "No paper. Add size paper to Bypass Tray" message. These messages are repeated when the Bypass tray runs out of paper.</p> <p>When the bypass tray is not opened within a specific time period, the job will be canceled automatically. The time period is called the bypass tray time-out. You can set the manual time-out using the Control Panel menus.</p> <p>To avoid manually fed paper (such as transparencies) from jamming in the duplexer or stapling stack, manual feed print jobs cannot be duplexed or stapled.</p>

Condition	Action
Print Overrun	Reduce the printer resolution and send the print job again. Print overruns do not occur in Pre-image buffer mode. When you add SIMM memory to the printer, a full page buffer of the requested paper size can be utilized, and banding mode is not used.

When you encounter a printer problem and none of the information available in this section solves the problem, contact your Service Representative. Attempting to repair the printer yourself is not covered by the warranty and may cause further damage to the printer. When you contact your Service Representative, make sure to have the following information available:

- ❑ A record of the problem that occurred and the steps you took to eliminate the problem.
- ❑ The name number of the printer.
- ❑ Configuration information for the printer.
- ❑ Information on the printer driver you are using.

ERROR MESSAGES

The ONLINE operation screen of the printer contains three fields and two buttons. The current operation mode displays in the top field. The operating status (which contains the READY status) displays in the next field. The third field contains system messages and is blank during normal operation. When a unique condition occurs, this field displays the error messages.

Table -4 lists the messages that display in this field and provides an indication of what occurred to cause the message, and the action you can take to eliminate the error.

Table -4 Error messages

Message	Description	Action
Add Staples.	The machine is almost out of staples.	Place more staples in the finisher. This message is informational only.
Check tray. Set the <tray> correctly.	The specified tray is open.	Close the specified tray. When the tray is closed, printing resumes automatically.
Controller error. Please call for Service.	A hardware or software problem has occurred with the controller causing a diagnostic error during power on.	Contact your service representative. Although the printing function is not available, you can use the copy function of the machine by pressing the [COPY] button.

Message	Description	Action
<p>Controller disk error. Please call for service.</p>	<p>A disk error has occurred during printing. The current print data is lost. A disk error can indicate a number of minor or serious problems.</p> <p>When a disk error first occurs, the disk drive attempts the command again, utilizes extensive error correction capabilities, and remaps transparent bad sectors. The printer disk drive provides an error free media, and no attempt is made to maintain bad sector tables.</p> <p>When all of these internal measures fail, the "Disk Error" message displays.</p>	<p>Turn off the machine and turn it on again. When the error persists, contact your service representative. Although the printing function is not available, you can use the copy function of the machine by pressing the [COPY] button.</p>
<p>Cover Open</p>	<p>A door is open on the machine.</p>	<p>Follow the instructions that display and close the specified door.</p>
<p>Duplex tray failure has occurred.</p>	<p>The duplex tray has a mechanical problem.</p>	<p>Call your service representative.</p> <p>Turn the machine off and back on to use the printer for print jobs that do not require the use of the duplex tray.</p>
<p>Engine Fatal Error.</p>	<p>An engine error occurred during printing.</p>	<p>Contact your service representative.</p>

TROUBLESHOOTING

Message	Description	Action
Ethernet failure. Network communication is not available.	An Ethernet error occurred during power up of the machine. The network card was unable to establish communication with the network. Note: When a network card is installed in the machine, but is not connected to a network, this error does not display. This error occurs only when the network card does not initialize correctly. The initialization process can take several minutes to complete.	Check the Ethernet settings. Press the [Continue] button to use the machine without the network connection.
Faulty disk, or disk not found. Press [Continue] . The printer restarts with diskless operation.	A disk error (faulty disk, disconnection) has occurred. After turning off the machine off and then back on, the error message will no longer display.	Press the [Continue] to restart the printer with diskless operation.
Jam.	A paper jam has occurred.	Follow the instructions that display to remove the paper jam from the machine and press the [Continue] button to resume printing. Press the [Reset] button to cancel the print job.
Memory overflow.	The print job was too complex to be interpreted by the memory available, causing a memory overflow to occur during printing.	Press the [Continue] button to resume printing. Only part of the data will print. Press the [Reset] button to cancel the print job. To print the job correctly, add more memory to the machine.

Message	Description	Action
<p>No paper. Add <size> paper to <tray>.</p> <p>Note: The <size> parameter specifies both the paper size and the paper direction.</p>	<p>The specified tray has run out of paper of the specified size.</p> <p>Note: When tray switching is enabled and the specified paper size is available a secondary input tray, the secondary tray is used and this message does not display.</p>	<p>Fill the specified tray with paper of the specified size. When the tray is full, printing resumes automatically.</p> <p>Press the [Continue] button to continue printing without filling the specified tray with paper of the specified size. When tray switching is enabled, paper of an incorrect size is used from a secondary tray. When tray switching is not enabled, the error displays again.</p> <p>Press the [Reset] button to cancel the print job.</p> <p>Note: When tray switching is not enabled, you can fill the specified tray with an incorrect paper size and press the [Continue] button to continue printing.</p>
<p>No paper. Add <size> paper Bypass tray.</p> <p>Note: The <size> parameter specifies both the paper size and the paper direction.</p>	<p>The manual feed tray has run out of paper of the specified size.</p>	<p>Fill the manual feed tray with paper of the specified size. When the tray is full, printing resumes automatically.</p> <p>Press the [Reset] button to cancel the print job.</p>
<p>Please close the Bypass Tray.</p>	<p>The print job does not require the use of the manual feed tray, but the tray is open.</p>	<p>Close the manual feed tray. Printing does not continue until the manual feed tray is closed.</p>
<p>Please open the Bypass Tray.</p>	<p>The print job requires the use of the manual feed tray.</p>	<p>Open the manual feed tray. When the bypass tray is not opened within the time specified (the default is 300 seconds, which is five minutes), the print job is cancelled and the next job begins printing.</p>

TROUBLESHOOTING

Message	Description	Action
Print overrun error.	<p>A print overrun has occurred on a file that is being printed in banding mode. When the printer is in banding mode, a complex page may not have enough time to image a band while the engine is printing the previous band.</p> <p>The portion of the page after the print overrun occurred will not print.</p>	<p>Press the [Continue] button to resume printing.</p> <p>Press the [Reset] button to cancel the job.</p> <p>To print the image correctly, add more memory to the machine, or reduce the resolution of the image and resend the job.</p>
Printing is interrupted. Press [Continue] , or press [Reset] to cancel the current job.	A paper jam has occurred.	<p>Follow the instructions that display to remove the paper jam from the machine and press the [Continue] button to continue printing.</p> <p>Press [Reset] to cancel the print job.</p> <p>When Jam Recovery is set to Off, the remainder of the print job is cancelled and the next print job prints when the paper jam is removed.</p>
Remove the paper in the duplex tray.	A paper jam has occurred in the duplex tray.	<p>Follow the instructions that display to remove the paper jam from the machine and press the [Continue] button to continue printing.</p> <p>Press [Reset] to cancel the print job.</p> <p>When Jam Recovery is set to Off, the remainder of the print job is cancelled and the next print job prints when the paper jam is removed.</p>

Message	Description	Action
Remove the paper in the staple unit.	A paper jam has occurred in the stapling area of the finisher.	<p>Follow the instructions that display to remove the paper jam from the machine and press the [Continue] button to continue printing.</p> <p>Press [Reset] to cancel the print job.</p> <p>When Jam Recovery is set to Off, the remainder of the print job is cancelled and the next print job prints when the paper jam is removed.</p>
Serial communication error. Please set up communication parameters again.	A serial port communication error occurred during printing.	Check the serial port settings. When the serial port problem is fixed, press [Reset] to cancel the print job.
Shift tray is full. Remove the copies.	A bin overflow occurred at the 1-bin finisher.	Remove the printed output from the 1-bin finisher. When the output is removed, printing resumes automatically.
The spooling area of the disk is full. Press [Continue] to resume printing. The current print job will be split.	<p>The spooling area available on the disk is full. Input spooling is temporarily disabled due to lack of room on the hard disk drive.</p> <p>The spooling area of the disk contains both spooling data and page image data used for reverse order and duplex printing. The spooling area is limited to allow for the space required by page image data.</p>	<p>Press the [Continue] button to complete printing of the pages already sent to the disk. The remaining data is then sent to the hard disk and printed in the order received. Therefore, although the entire job prints, the output is not in the order specified.</p> <p>Press the [Reset] button to cancel the print job.</p> <p>Note: Since the printing of all pages already sent to the disk, including multiple copies, must complete before the remaining data can be sent, the final output is collated incorrectly.</p>

TROUBLESHOOTING

Message	Description	Action
The used toner bottle is full.	The used toner container is full.	Replace the used toner container in the machine. Printing cannot resume until the used toner container is replaced.
The used toner bottle is nearly full.	The used toner container is almost full.	Replace the used toner container in the machine. This message is informational only.
Token Ring failure. Network communication is not available.	<p>A Token Ring error occurred during power up of the machine. The network card was unable to establish communication with the network.</p> <p>Note: When a network card is installed in the machine, but is not connected to a network, this error does not display. This error occurs only when the network card does not initialize correctly. The initialization process can take several minutes to complete.</p>	Check the Token Ring settings. Press the [Continue] button to use the machine without the network connection.
Toner End.	The toner bottle is empty.	Replace the toner bottle. Printing cannot resume until the toner bottle is replaced.
Toner is almost used up.	The toner bottle is almost empty.	Replace the toner in the machine. This message is informational only.
<tray> failure has occurred. Please call for service.	The specified tray has a mechanical problem.	<p>Call your service representative.</p> <p>Turn the machine off and back on to use the printer for print jobs that do not require the use of this tray.</p>
Warming up. Please wait.	The machine is warming up.	This message is informational only. No action is required.

5. SPECIFICATIONS

This section contains the electrical and hardware specifications for your printer, including information on the feeders, finisher, and options. It also provides information on the output capabilities of the printer.

Electrical and Hardware Specifications

This section contains the electrical and hardware specifications for your printer, including information on the feeders, finisher, and options. Table 5-1 lists the basic printer information and specifications.

Note: All specifications are subject to change without notice.

Table 5-1. Basic printer information

Component	Specification
Resolution:	300, 400, 600 dots per inch (dpi)
Paper weight:	Upper tray - 60 to 105 gsm (16 to 28 lb) Bypass tray - 60 to 157 gsm (16 to 42 lb) Large capacity tray - 60 to 128 gsm (16 to 34 lb)
Paper capacity:	Upper tray - 500 sheets or less than 53 mm, 2.08 in Bypass tray - 40 sheets or less than 4 mm, 0.15 in Large capacity tray - 1000 sheets or less than 120 mm, 4.72 in
Optional tray capacity:	A3, 11 by 17 in - 200 sheets B4 or smaller - 500 sheets B5 or smaller - 200 sheets
Printing speed:	40 pages per minute at 300 or 400 dpi, long edge feed on letter size paper
Toner replacement:	Bottle exchange (700g)
Power source:	120V, 60Hz, more than 12.0A (15 or 20 AMP circuit) (U.S.) 220~240V, 50/60Hz, more than 6.5A (15 or 20 AMP circuit) (Europe)
Power consumption:	Warm-up - less than 0.90 kilowatts (kw) Stand-by - less than 0.22 kw Maximum - less than 1.44 kw
Noise emission: Sound pressure level	Stand-by - 25 dB amperes (A) Printing - 59 dB (A) *The measurements are made according to ISO 7779 at the operator position
Noise emission: Sound power level	Stand-by - 40 decibels (dB) Printing - 69 dB (A) * The measurements are made according to ISO 7779 at the operator position

Component	Specification
Standard Centronics-compatible interface:	Standard 36-pin parallel cable and a parallel port available on the host computer. Do not use a parallel cable that is longer than ten feet (three meters).
Standard RS-232-C interface:	Standard 25-pin serial cable and a serial port available on the host computer. You can use a serial cable length of 10 feet to 50 feet (3 to 15 meters).
*Printer options:	1000 sheet tray unit 1500 sheet tray unit Finisher bin 3-bin sorter Memory expansion to 72 MB (including the 8MB of base memory) Network interface card PostScript kit

*Printer options may vary based on your country.

Use the following precautions for the power connection:

- Connect the machine to a dedicated power source that meets the specifications listed in Table 5-1.
- Voltage must not fluctuate more than 10 percent.
- Make sure that the wall outlet is near the printer and easily accessible.
- Make sure that the printer plug is firmly inserted into the outlet.
- Do not set anything on top of the power cord.

Table 5-2 lists the printer size specifications.

Table 5-2. Printer size

Component	Width	Depth	Height
Printer with input tray and paper tray unit	115 cm 45.3 in	65.5 cm 25.8 in	102.4 cm 40.4 in
Printer with finisher, and paper tray unit	172.2 cm 67.8 in	65.5 cm 25.8 in	111.0 cm 43.8 in

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Table 5-3 lists the printer weight specifications.

Table 5-3 Printer weight

Component	Weight
Printer with input tray and paper tray unit	137.5 kg 303.2 lb
Printer with finisher, and paper tray unit	178.5 kg 393.6 lb

Table 5-4 lists the optional printer equipment specifications.

Table 5-4. Optional equipment

Component	Specification
Finisher:	Staple position: Top, bottom, two staples Staple replenishment: Cartridge exchange (5,000 staples per) Power source: DC 24V (from printer) Power consumption: 48 W Weight: 35 kg, 77.2 lb Dimensions (W x D x H): 67.1 x 51.4 x 95.0 cm / 26.5 x 20.3 x 37.5 in
1000 sheet tray unit:	Paper weight: 52 to 105 gsm (14 lb to 28 lb) Paper capacity: 1,000 sheets (500 sheets of 80 gsm per tray) Power source: DC 24V, 5V, AC 120V (from printer) Power consumption: 50 W (average) to 110.5 W (maximum) Weight: 36 kg, 79.4 lb Dimensions (W x D x H): 62.0 x 63.2 x 39.0 cm / 24.5 x 24.9 x 15.4 in
1500 sheet tray unit:	Paper weight: 52 to 105 gsm (14 lb to 28 lb) Paper capacity: 1,500 sheets (500 sheets of 80 gsm per tray) Power source: DC 24V, 5V, AC 120V (from printer) Power consumption: 50 W (average) to 110.5 W (maximum) Weight: 38 kg, 83.8 lb Dimensions (W x D x H): 62.0 x 63.2 x 39.0 cm / 24.5 x 24.9 x 15.4 in
3-bin sorter:	Paper weight: (Face up) bin 1, 52 to 157 gsm (14 lb to 42 lb) bins 2 and 3, 52 to 105 gsm (14 lb to 28 lb) (Face down) 64 to 105 gsm (17 lb to 28 lb) Power source: DC 24V, 5V, AC 120V (from printer) Power consumption: 30W Weight: 13 kg, 28.7 lb Dimensions (W x D x H): 46.8 x 48.3 x 49 cm / 18.4 x 19 x 19.3 in

Component	Specification
Network interface card:	Required Ethernet or Token Ring card installed in the expansion Input/Output (I/O) slot on the printer to connect to an Ethernet or Token Ring network (refer to the <i>Network Printer Manager and User Guide for Printer Servers</i> for further information on the network connection).
PostScript kit:	Expansion ROM SIMM memory installed in the PostScript ROM expansion slot.

Table 5-5 lists the environmental specifications.

Table 5-5.Environmental Information

Component	Specification
Temperature:	10 to 30 degrees Centigrade
Humidity:	15 to 90 percent
Air circulation:	30 cubic meters, per person, per hour
Clearance:	28 inches above 1 inch on each side 5 inches in the rear
Altitude:	No higher than 2,000 meters (6,600 feet) above sea level

Avoid the following:

- Exposure to direct sunlight or strong light (more than 1,500 lux)
- Dusty areas
- Areas with corrosive gasses
- Frequent strong vibrations
- Direct exposure to cold air from an air conditioner or heated air from a heater (sudden temperature changes may cause condensation within the printer).

Printer Capabilities

This section contains information on the functionality of the printer bins as well as information and illustrations on the output capabilities of the machine.

Tray and Bin Functionality

This section contains information on the functionality of the 500 sheet tray, and the 1-bin finisher and 3-bin sorter.

The 500 sheet tray provides the following functionality:

- Face up
- Normal and reverse order
- Duplexing (face up)
- Document and Group sort
- Separation sheets.

The 1-bin finisher provides the following functionality:

- Face up
- Normal and reverse order
- Duplexing (face up)
- Document and Group sort
- Doggy tail separation
- Stapling.

Note: *Stapling is not available when you specify normal order.*

The 3-bin sorter (available for printing and copying functions) provides the following functionality:

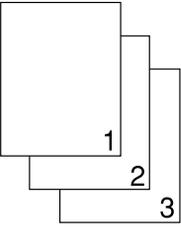
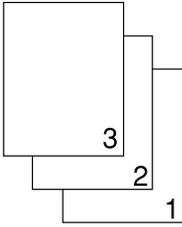
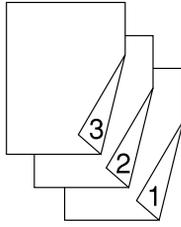
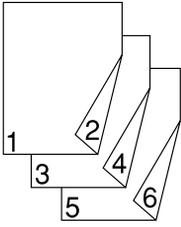
- Face up and face down
- Normal and reverse order
- Duplexing (face up)
- Document and Group sort
- Offset separation and separation sheets
- Bin selection.

Note: *Offset separation is available only when job separation is set to ON and the first bin is selected. Separations sheets are available only when job separation is set to ON and the second or third bin is selected.*

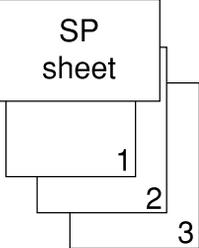
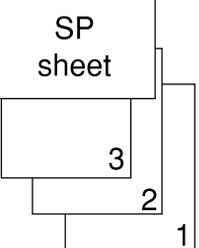
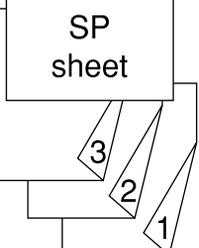
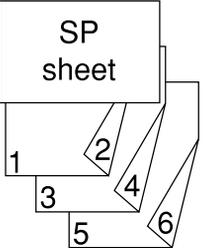
Output Capabilities

This section contains information and illustrations on the output capabilities of the machine.

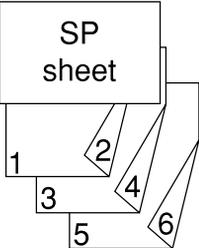
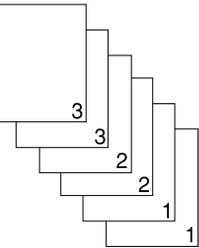
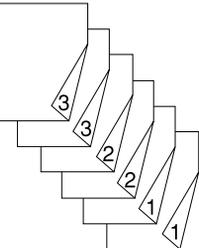
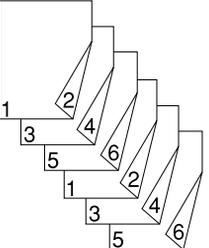
Single copy

Reverse order	Normal order	Normal order, face down, 3-bin sorter	Duplex
			

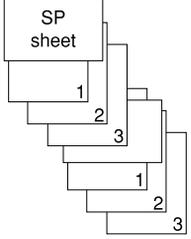
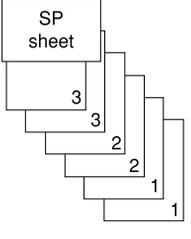
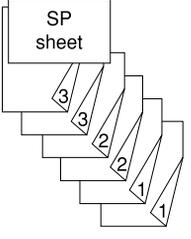
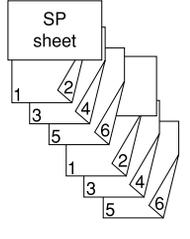
Single copy with job separation

Reverse order	Normal order	Normal order, face down, 3-bin sorter	Duplex
			

Multiple copies

Document sort reverse order	Group sort normal order	Group sort normal order 3-bin sorter	Duplexing
			

Multiple copies with job separation

Document sort reverse order	Group sort normal order	Group sort normal order 3-bin sorter	Duplexing
			

Note: Job separation sheets are available only when another paper tray is loaded with paper of the same size in the opposite orientation (for example, when the job prints on 8 1/2 x 11 SEF, 8 1/2 x 11 LEF must be available for a separation sheet).

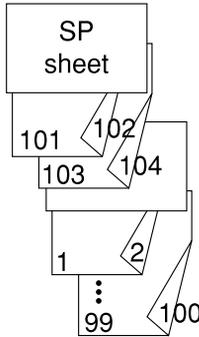
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Single copy with duplexing (over 30/50 sheets)

When a duplexed document exceeds 50 sheets, a separation sheet is inserted after every 50th sheet.

Print stream:

1. Print duplexed pages 1-100.
2. Separation sheet inserted.
3. Print pages 101-104.
4. Separation sheet inserted (end of job).

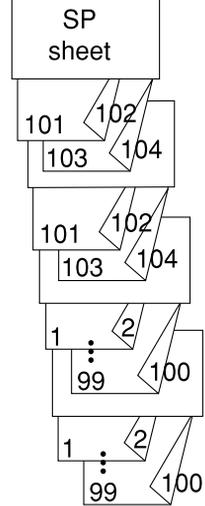


Multiple copy with duplexing (over 30/50 sheets)

When multiple copies of a duplexed document exceed 50 sheets, a separation sheet is inserted after every 50th sheet.

Print stream (2 copies of a 104 page document):

1. Print pages 1-100 (1st copy).
2. Separation sheet inserted.
3. Print pages 1-100 (2nd copy).
4. Separation sheet inserted.
5. Print pages 101-104 (1st copy).
6. Separation sheet inserted.
7. Print pages 101-104 (2nd copy).
8. Separation sheet inserted (end of job).



Note: The threshold value of 30 or 50 sheets is set by the service technician.

INTERFACE

This section provides information on the types of connectors and cables you use to connect your printer to your host computer. You can connect the printer to your host computer using either a parallel or a serial port. It is your responsibility to provide the cable necessary for the interface you want to use to connect to your host computer. The cable is not provided with the machine.

To use the machine with a PC network, you can connect to the network in one of the following ways:

- ❑ Connect the machine to a computer that is connected to a local area network (LAN). If the printing software for the network resides on the computer to which you connect the machine, this computer can act as a print server, spooling and managing print jobs for the users on the network.
- ❑ Directly connect the machine to an Ethernet or Token Ring LAN by providing the appropriate physical connection. When you connect to the network in this manner, you do not have to dedicate a specific computer as the print server.

Regardless of how you connect to the network, you will probably choose to use a parallel interface for your connection as this interface can handle more data than the serial interface in a shorter period of time.

Refer to the "Setting up the Printer" chapter in this manual for information on how to connect the printer to your host computer.

Serial Interface

The serial connection is a standard connector for serial port interfaces and requires a standard serial cable and a serial port available on the host computer. You can use a serial cable length of 10 feet to 50 feet (3 to 15 meters).

RS-232-C Serial Interface

The printer provides a standard RS-232-C 25-pin connector for a serial port interface. Most IBM-compatible computers have a serial port, designated COM1, that has a 25-pin connector.

Table 5-6 lists the 25-pin designations and associated signals for serial communications.

Table 5-6. RS-232-C 9-pin serial pin designations

Code	Signal	Pin
GND	Signal Ground	1
TD-232	Transmit Data	2
RD-232	Receive Data	3
(N/C)	(Not Connected)	4
(N/C)	(Not Connected)	5
DSR	Data Set Ready	6
GND	Signal Ground	7
(N/C)	(Not Connected)	8
(N/C)	(Not Connected)	9
(N/C)	(Not Connected)	10
(N/C)	(Not Connected)	11
(N/C)	(Not Connected)	12
(N/C)	(Not Connected)	13
(N/C)	(Not Connected)	14
(N/C)	(Not Connected)	15
(N/C)	(Not Connected)	16
(N/C)	(Not Connected)	17
(N/C)	(Not Connected)	18
(N/C)	(Not Connected)	19

Code	Signal	Pin
DTR	Data Terminal Ready	20
(N/C)	(Not Connected)	21
(N/C)	(Not Connected)	22
(N/C)	(Not Connected)	23
(N/C)	(Not Connected)	24
(N/C)	(Not Connected)	25

The wiring tables and diagrams below show the signal path and connection configuration for a 25-pin to 25-pin configuration. Table 5-7 lists the 25-pin to 25-pin signal path configuration.

Table 5-7. 25-pin printer to 25-pin computer signal path configuration

Printer Code	Pin	Pin	PC Host Code
GND	1	1	GND
TXD	2	3	RXD
RXD	3	2	TXD
RTS	4	8	CD
CTS (NC) 5	5	8	CD
DSR	6	20	DTR
GND	7	7	GND
CD (NC)	8	4	RTS
CD (NC)	8	5	CTS
DTR	20	6	DSR

Parallel Interface

The parallel connection is a standard Centronics-compatible interface and requires a standard 36-pin parallel cable and a parallel port available on the host computer. Do not use a parallel cable that is longer than ten feet (three meters). In general, parallel ports are used more frequently than serial ports because they send data to the printer more quickly.

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Table 5-8 lists the Centronics parallel pin designations and associated signals.

Table 5-8. Centronics Parallel pin designations

Code	Signal	Pin
STROBE	Strobe	1
D<0>	Data	2
D<1>	Data	3
D<2>	Data	4
D<3>	Data	5
D<4>	Data	6
D<5>	Data	7
D<6>	Data	8
D<7>	Data	9
ACK*	Acknowledge	10
BUSY	Busy	11
PE	Paper Error	12
SEL	Select Out	13
AUTOFD*	Auto Feed	14
(N/C)	(Not Connected)	15
GND	Ground	16
GND	Ground	17
+5 VDC	5 Volts Direct Current	18
GND	Ground	19
GND	Ground	20
GND	Ground	21
GND	Ground	22
GND	Ground	23
GND	Ground	24
GND	Ground	25
GND	Ground	26
GND	Ground	27
GND	Ground	28
GND	Ground	29
GND	Ground	30
INIT*	Initialization	31
FAULT*	Fault	32
(N/C)	(Not Connected)	33
(N/C)	(Not Connected)	34
(N/C)	(Not Connected)	35
SELIN	Select In	36

MEDIA

To ensure good printing results, use only paper and transparencies that are designed for use with laser printers.

Note: *Make sure that any paper you use is free of wrinkles, rips, dust and oil residue. Using print media that does not meet the media guidelines contained in this section can cause damage to your printer.*

A. FONTS

This section contains information on the fonts that are supported by the printer. This section also contains information on how to select supported fonts and how to use additional fonts.

Fonts are the style of characters you can use for your printed documents, for example, Times New Roman (abcdefghijklmnop ABCDEFG) and Wingdings (☺☹ⓂⓃⓄⓅⓆⓇⓈⓉⓊⓋⓌⓍⓎⓏⓐⓑⓓⓔⓕⓖⓗⓙⓚⓛⓜⓝⓞⓟⓠⓡⓢⓣⓤ⓶⓷⓸⓹⓺⓻⓼⓽⓾⓿).

The two basic types of fonts are scaleable and bitmap. When you send a document to the printer, you can specify that you want the printer to set the scaleable fonts to the size you want. This allows you to print scaleable font characters using almost any available font size. Bitmap fonts are predefined and are not scaled or changed during printing. However, for each bitmap font, you can specify a point size (height of the font), pitch (number of characters per inch), and orientation (portrait or landscape).

Using Fonts

This section contains information on the fonts that are supported by the printer, as well as information on how you can use these fonts in your print jobs.

Built-In Fonts

Built-in fonts are provided with the printer for both the PCL 5e and PostScript printer languages.

Note: *The PostScript fonts are only available when you have the PostScript option.*

PCL 5e Built-in Fonts - the PCL 5e built-in fonts consist of both scaleable and bitmap fonts. The supported fonts and symbol sets are listed in this section.

□ The following PCL 5e scaleable fonts are provided with the printer:

- | | | |
|-------------------------------|-----------------------------------|---|
| ◆ Albertus Extra Bold | ◆ <i>CG Times Bold Italic</i> | ◆ <i>Marigold</i> |
| ◆ Albertus Medium | ◆ <i>CG Times Italic</i> | ◆ Symbol (Συμβολ) |
| ◆ Antique Olive | ◆ <i>Coronet</i> | ◆ Times New Roman |
| ◆ Antique Olive Bold | ◆ Clarendon Condensed | ◆ Times New Roman Bold |
| ◆ <i>Antique Olive Italic</i> | ◆ Courier | ◆ <i>Times New Roman Bold Italic</i> |
| ◆ Arial | ◆ Courier Bold | ◆ <i>Times New Roman Italic</i> |
| ◆ Arial Bold | ◆ <i>Courier Bold Italic</i> | ◆ Univers Bold |
| ◆ <i>Arial Bold Italic</i> | ◆ <i>Courier Italic</i> | ◆ Universe Bold Italic |
| ◆ <i>Arial Italic</i> | ◆ Garamond Antiqua | ◆ Universe Condensed Bold |
| ◆ CG Omega | ◆ Garamond Halbfett | ◆ Universe Condensed Bold Italic |
| ◆ CG Omega Bold | ◆ <i>Garamond Kursiv</i> | ◆ Univers Medium |
| ◆ CG Omega Bold Italic | ◆ <i>Garamond Kursiv Halbfett</i> | ◆ Universe Medium Condensed |
| ◆ <i>CG Omega Italic</i> | ◆ Letter Gothic | ◆ <i>Universe Medium Condensed Italic</i> |
| ◆ CG Times | ◆ Letter Gothic Bold | ◆ <i>Universe Medium Italic</i> |
| ◆ CG Times Bold | ◆ <i>Letter Gothic Italic</i> | ◆ Wingdings ☞✦✧☪☵☶☷☸☹☺☻☼ |

FONTS

The following Symbol Sets, used for scaleable typefaces, are provided with the printer:

- | | | |
|----------------------|------------------------|-------------------------|
| ◆ ASCII | ◆ Legal | ◆ PS Text |
| ◆ Desktop | ◆ Math-8 | ◆ Roman-8 |
| ◆ ISO French | ◆ MC Text1 | ◆ Symbol1 (Συμβολ) |
| ◆ ISO German | ◆ Microsoft Publishing | ◆ Ventura International |
| ◆ ISO Italian | ◆ Names | ◆ Ventura Math |
| ◆ ISO Latin 1 | ◆ PC-8 | ◆ Ventura US |
| ◆ ISO Latin 2 | ◆ PC-8 DN | ◆ Windows 3.0 Latin 1 |
| ◆ ISO Latin 5 | ◆ PC-850 | ◆ Windows Latin 1 |
| ◆ ISO Norwegian | ◆ PC-852 | ◆ Windows Latin 2 |
| ◆ ISO Spanish | ◆ PC-Turk | ◆ Windows Latin 5 |
| ◆ ISO Swedish | ◆ PI Font | ◆ Wingdings1 |
| ◆ ISO United Kingdom | ◆ PS Math | |

- The PCL 5e Line Printer bitmap font is provided with the printer. This bitmap font is available in medium, 16.65 pitch, 8.5 points, landscape and portrait, in six typefaces.

PostScript Fonts - the optional PostScript built-in fonts consist of Type I scaleable fonts. These include text fonts, Zapf Dingbats, and Symbol fonts. For Type I fonts, the character set determines which characters and special symbols are available with a specific font.

The text fonts use the ISO Latin 1 character set, which includes the standard alphabet of all uppercase and lowercase letters, standard punctuation characters, the digits 0 through 9, and some special characters. The Zapf Dingbats character set includes characters such as special bullets and checkmarks. The Symbol character set includes math symbols and Greek characters. The printer can interpret any PostScript Level I or Level II page description file.

In addition, depending on the software you use to create the document you want to print, the optional PostScript language provides you with the capability to manipulate the text contained in a PostScript file, allowing you to perform tasks such as stretching, rotating, bending, defining the shape, scaling, and clipping the text.

□ The following PostScript Type I scaleable fonts are provided with the printer when you have the PostScript option:

- ◆ Courier
- ◆ **Courier Bold**
- ◆ *Courier Bold Oblique*
- ◆ *Courier Oblique*
- ◆ Helvetica
- ◆ **Helvetica Bold**
- ◆ *Helvetica Bold Oblique*
- ◆ *Helvetica Oblique*
- ◆ Helvetica Condensed
- ◆ **Helvetica Condensed Bold**
- ◆ *Helvetica Condensed Bold Oblique*
- ◆ *Helvetica Condensed Oblique*
- ◆ Helvetica Narrow
- ◆ **Helvetica Narrow Bold**
- ◆ *Helvetica Narrow Bold Oblique*
- ◆ *Helvetica Narrow Oblique*
- ◆ ITC Avant Garde Book
- ◆ *ITC Avant Garde Book Oblique*
- ◆ ITC Avant Garde Demi
- ◆ *ITC Avant Garde Demi Oblique*
- ◆ **ITC Bookman Demi**
- ◆ *ITC Bookman Demi Italic*
- ◆ ITC Bookman Light
- ◆ *ITC Bookman Light Italic*
- ◆ *ITC Zapf Chancery Medium Italic*
- ◆ ITC Zapf Dingbats (♣*■▼▲)
- ◆ New Century Schoolbook Roman
- ◆ **New Century Schoolbook Bold**
- ◆ *New Century Schoolbook Bold Italic*
- ◆ *New Century Schoolbook Italic*
- ◆ Palatino Roman
- ◆ **Palatino Bold**
- ◆ *Palatino Bold Italic*
- ◆ *Palatino Italic*
- ◆ Symbol (Συμβολ)
- ◆ Times Roman
- ◆ **Times Roman Bold**
- ◆ *Times Roman Bold Italic*
- ◆ *Times Roman Italic*

Additional Fonts

Additional fonts are available as follows:

- When you print a document, the software used to create the document may download additional fonts. These downloaded fonts can include TrueType fonts available from Windows and Macintosh software.

Note: *When you have the PostScript option, documents previously formatted with TrueType fonts print using PostScript Type 1 fonts when the TrueType font is not available. The machine automatically substitutes the TrueType font with the closest matching PostScript Type 1 font.*

- You can download additional soft fonts from diskettes to your printer using a software utility designed for this purpose. Software of this type includes Adobe Type Manager, which you can use to download PostScript soft fonts as necessary.

Downloading Soft Fonts (PCL only)

Before downloading soft fonts, consider the following:

- Downloaded fonts take up RAM and hard disk memory on your printer. Therefore, you may want to limit the number of fonts you use at any one time. If you need to use numerous fonts other than those resident on the printer, you should expand the printer RAM.
- When more than one person is using the machine as a printer, you should decide which fonts will be downloaded, and the ID numbers to be used, before they are downloaded. When the printer is connected to a network, the System Administrator should be consulted before any fonts are downloaded.

- When you download soft fonts, make sure to follow the directions provided with your utility software. Regardless of what utility you use, you must assign the font a status as follows:
 - ◆ **Font Status** - The font status is designated as either temporary or permanent. When you assign temporary status to a font, it remains available until the printer is reset, the font is deleted, the job is finished, or the printer is turned off. When you assign permanent status to a soft font, it remains available until the font is deleted or the printer is turned off.

Deleting Soft Fonts

Soft fonts are deleted when the following conditions occur:

- The printer is turned off.
- A new font is downloaded using the same ID number as an existing font.

Selecting Fonts

You can select fonts for use in your print job as follows:

- Using your document software.
- Using the printer control panel.

Note: *The printer defaults to the Control Panel settings for the font when no software commands and no PCL printer commands are received.*

B. MEMORY AND OPTIONS

This section contains information on the memory provided with, and available for, the machine. It also contains instructions on installing additional DRAM SIMM modules.

Configuration

The machine is provided with an internal fixed hard disk and supports ROM and RAM memory in static and expandable configurations.

Hard Disk

The machine is provided with an IDE hard disk. The disk is used to store downloaded fonts, spool print input data, and store print image data, as required for face-up output, and duplex printing.

Partitioning

The hard disk partitioning is used as follows:

- ❑ Permanent Partition - used by PCL 5e for font and macro storage. This partition is formatted by an explicit command received from the printer Control Panel.
- ❑ PostScript Partition - used exclusively by the PostScript option. This separate partition allows PostScript to format its disk as required by the PostScript command programs without affecting the other disk partitions.

Dynamic Random Access Memory

The base configuration of the machine includes eight megabytes (8 MB) of onboard Dynamic Random Access Memory (DRAM). You can request additional DRAM SIMM modules. Up to 64 MB of additional DRAM can be requested for a maximum of 72 MB of DRAM. The DRAM specifications are as follows:

- ❑ 72 pin
- ❑ 8, 16, or 32 MB DRAM SIMM module.
- ❑ 70 nanoseconds or faster.

Note: *The machine allocates PostScript memory according to the recommendations specified by Adobe. Based on the amount of RAM installed, a fixed amount of RAM is allocated for storage of incoming input data.*

Installing DRAM SIMM Modules

Installation of DRAM SIMM modules is performed by a service technician.

This section contains general information on the optional PostScript function available with the machine. This information includes supported fonts, supported languages, and programming references.

Features

The PostScript option is a page description language from Adobe Systems, Inc. that is available with many IBM compatible and Macintosh software applications. Your software application can use the PostScript language to provide page information to the printer. During printing, this information is interpreted by the printer to produce the specified page output.

The PostScript option supports Adobe PostScript Level II, provides 39 built-in typefaces, and can print each typeface in any point size.

The PostScript option also supports the downloading of PostScript Type I fonts and includes a rasterizer that allows you to download TrueType fonts as soft fonts. Resident PostScript TrueType fonts are not supported.

In addition, depending on the software you use to create the document you want to print, the PostScript language provides you with the capability to manipulate the text contained in a PostScript file, allowing you to perform tasks such as stretching, rotating, bending, defining the shape, scaling, and clipping the text.

Note: *The PostScript language is different than other languages that use control codes and basic printer commands such as Line Feed and Form Feed are not used or understood. Therefore, you cannot use the PostScript option with software applications that do not support the PostScript language.*

For more information on the PostScript language, refer to the PostScript Language Reference Manual.

NETWORK INTERFACE

This section contains general information on the Network Interface option, including the supported networks and protocols.

Features

The machine provides one expansion I/O slot that you use for network connectivity. This I/O slot supports an Ethernet or Token Ring card. The optional network connection card is installed by your service representative.

The following are the network operating systems and protocols supported by the machine.

- IPX/SPX (Novell NetWare)
- TCP/IP
- Apple

For more information on network connectivity and how to connect the machine to the network using a parallel or serial cable, refer to the "Setting Up the Printer" chapter in this manual. For detailed information on using the machine with a network connection, refer to the network interface documentation provided with this option.

C. TRAY SPECIFICATIONS

NORTH AMERICA TRAY SPECIFICATIONS

This section contains a table that illustrates the North America input tray and duplex tray specifications for the machine. The following symbols are used in this table:

- – Available for standard input tray operation
- ★ – Available for manual input tray operation
- ◆ – Available for duplex tray operation
- V – Not available

Table C-1. North America paper tray specifications

Paper Name	Standard Input Tray	Manual Input Tray	Bank Input Tray	LCT	Duplex
DLT (11"x17")	○	★	○	V	◆
LG (8½"x14")	○	★	○	V	◆
LT-SRT (8½"x11")	○	★	○	V	◆
LT-LONG (11"x8½")	○	V	○	○	◆
EXEC-SRT (7¼"x10½")	V	★	V	V	V
HLT-SRT (5½"x8½")	V	★	V	V	V
HLT-LONG (8½"x5½")	○*1	V	V	V	V
A3	○	★	○	V	◆
B4	○	★	○	V	◆
FOLIO (8¼"x13")	○	★	○	V	◆
A4-SRT	○	★	○	V	◆
A4-LONG	○	V	○	○	◆
B5-SRT	V	★	V	V	◆
A5-SRT	V	★	V	V	V
A5-LONG	○	V	V	V	◆
A6-SRT	V	★	V	V	V
F/GL (8"x13")	○	★	○	V	◆
Foolscap (8½"x13")	○	★	○	V	◆

*1.If equipping the 3-bin tray, this is not available

You can use B5 in the manual tray only. When you use the machine as a printer, you cannot perform a duplex operation using the manual tray.

EUROPEAN TRAY SPECIFICATIONS

This section contains a table that illustrates the European input tray and duplex tray specifications for the machine. The following symbols are used in this table:

- - Available for standard input tray operation
- ★ - Available for manual input tray operation
- ◆ - Available for duplex tray operation
- V - Not available

Table C-2. European paper tray specifications

Paper Name	Standard Input Tray	Manual Input Tray	Bank Input Tray	LCT	Duplex
DLT (11"x17")	○	★	○	V	◆
LG (8 1/2"x14")	○	★	V	V	◆
LT-SRT (8 1/2"x11")	○	★	○	V	◆
LT-LONG (11"x8 1/2")	○	V	○	○	◆
EXEC-SRT (7 1/4"x10 1/2")	V	★	V	V	V
HLT-SRT (5 1/2"x8 1/2")	V	★	V	V	V
HLT-LONG (8 1/2"x5 1/2")	○*1	V	V	V	V
A3	○	★	○	V	◆
B4	○	★	○	V	◆
FOLIO (8 1/4"x13")	○	★	○	V	◆
A4-SRT	○	★	○	V	◆
A4-LONG	○	V	○	○	◆
B5-SRT	○	★	V	V	◆
B5-LONG	○	V	○	V	◆
A5-SRT	V	★	V	V	V
A5-LONG	○	V	V	V	◆
A6-SRT	V	★	V	V	V
F/GL (8"x13")	○	★	○	V	◆
Foolscap (8 1/2"x13")	○	★	○	V	◆

*1.If equipping the 3-bin tray, this is not available

When you use the machine as a printer, you cannot perform a duplex operation using the manual tray.

GLOSSARY

This section contains a list of the acronyms you may use while working with the printer and the printer documentation.

ASCII	American Standard Code for Information Interchange
ATP	AppleTalk Transaction Protocol
bpi	bits per inch
bps	bits per second
cpi	characters per inch
CPK	Control Panel Kernel
CPU	Central Processing Unit
CR	Carriage Return
^D	End of job indicator for PostScript
DIMM	Dual Inline Memory Module
DMA	Direct Memory Access
DOS	Disk Operating System
dpi	dots per inch
DRAM	Dynamic Random Access Memory
EBCDIC	Extended Binary Coded Decimal Interchange Code
EEPROM	Electrically Erasable Programmable Read Only Memory
ENET	Ethernet network
EOF	End of File

EOS	End of Session
ESC	Escape (ASCII character 0x1b)
ETX	End of Text (ASCII character 0x03)
FF	Form Feed (ASCII character 0x0c)
FIS	Font Interchange Standard
GRS	Graphics Services Module
HP	Hewlett Packard
HPGL/2	Hewlett Packard Graphics Language level 2
IBM	International Business Machines
I/O	Input/Output
ips	inches per second
IPX/SPX	Internetwork Packet Exchange/Sequenced Packet Exchange
LAN	Local Area Network
LED	Light Emitting Diode
LF	Line Feed Character
LLAP	LocalTalk Link Access Protocol
LPD	line printer daemon
lpi	lines per inch
MB	Megabyte
MPT	Multi-Purpose Tray

GLOSSARY

NIC	Network Interface Card
NVRAM	Non-Volatile Random Access Memory
OS	Operating System
OSS	Operating System Software
PC	Personal Computer
PCL	Printer Control Language
PCL5	Printer Control Language - Version 5
PCMCIA	Personal Computer Memory Card International Association
PDL	Printer Description Language
PJL	Printer Job Language
ppm	pages per minute
RAM	Random Access Memory
ROM	Read Only Memory
SCSI	Small Computer Systems Interface
SDD	Serial Device Driver
SIMM	Single Inline Memory Module
SOH	Start of Header (ASCII character 0x01)
spi	spots per inch
STX	Start of Text (ASCII character 0x02)
TES	terminate and stay resident terminal emulation program
UCS	Universal Character Set

UCSB	Universal Character Set Buffer
VM	Virtual Memory
XON	Transmit On (ASCII character 0x11)
XOFF	Transmit Off (ASCII character 0x13)

TERMS

This section contains a list of the terms you may use while working with the printer and the printer documentation.

A3	Standard international paper size (11.69 in by 16.54 in or 297 mm by 420 mm).
A4	Standard international paper size (8.27 in by 11.69 in or 210 mm by 297 mm).
AppleTalk	Local area network (LAN) from Apple Computer that is built into Macintosh computers.
application	Software program used to process information.
ASCII	American Standard Code for Information Interchange. Standard 7- or 8-bit code representing alphanumeric and numerous nonprinting character by assigning to each a binary number from 128 available characters. Used for the exchange of information among data communication and data processing systems and their associated equipment.
asynchronous	Data communication transmission that are controlled by start and stop characters, causing the time intervals between the transmission of data blocks to be unequal in length.

B4	Standard international paper size (9.84 in by 13.9 in or 250 mm by 353 mm).
baud rate	Establishes the transmission speed of data for a serial connection between the machine and a host computer.
bit	Abbreviation for a binary digit. This is the smallest unit of information recognized by a computer.
bitmap font	Font that is predefined and not scaleable or changeable when printing.
bps	Bits per second. The rate at which data is transferred during serial communication.
buffer	Area of memory used for storage during the transfer of data between two devices. built-in fonts Fonts provided with the printer (also called internal fonts)
byte	Number of bits (usually fixed at 8) that are processed as a single binary value. C5 Standard international envelope size (6.38 in by 9.02 in or 162 mm by 229 mm).
Centronics	Standard type of parallel interface connector used to connect the machine to a host computer.
character set	PostScript term that refers to specific sets of letters, numbers, punctuation marks, and special symbols.
configuration	Settings required to allow your computer to communicate properly with the machine. Also describes the process of specifying the required settings.
dpi	Characters per inch. Expression of the fixed-pitch font size that allows the font to be set in increments of one horizontal inch. See also <i>pitch</i> .

data bits	Serial port setting that allows you to specify the number of bits used in print data.
default	Value retained in the memory for use when input is not specified by the user for a required variable.
DIN-8	Standard serial connector used to connect the machine to a host computer.
Document Description Language	(DDL) Printer language used to describe print jobs to a laser printing system. DDL describes the input (type, format, characteristics), performs the processing functions (logical processing), and describes the output (type, format, font selection, accounting options) for an entire print job.
dot	Printed element (in pixels). The number of dots that print in an inch is used to measure the total resolution (300 dots per inch).
dpi	Dots per inch. The number of dots that print in an inch. These are used to form a character or graphic on the printed page.
drivers	Software used to provide printer characteristics. Printer drivers convert software commands into printer language.
duplex	Printing on two sides of a single sheet of paper.
emulation	Simulating of the function of another software or hardware product.
Embedded Printer Commands	Option supported by some applications allowing a user to manually enter printer commands.
Escape Sequence	PCL 5 commands beginning with an escape character that are used to control printer functions. These commands are usually sent by applications. However, they can be sent manually by the user.

Ethernet	Local area network (LAN) that provides the capability to transmit data between devices through a cable.
fixed-pitch font	Font for which each character is the same width.
font	Set of characters for a specific typeface family, each having the same point size, style, orientation, and weight.
font character istics	Symbol set, spacing, pitch, point size, style, stroke weight, and typeface that specify the appearance of a font.
font width	The horizontal spacing of a font.
hexadecimal	System of numbering using a base of 16.
image area	Area of the printed page that can contain graphics or text.
initialize	Setting all computer system information to the starting or default values.
internal fonts	Fonts provided with the printer (also called built-in fonts).
IPX	Internetwork packet Exchange. Protocol that provides connectionless service between nodes to transport higher layer packets. Connectionless service is communication in one direction that does not require an acknowledgement (delivery is assumed).
keyword	Required portion of a command.
landscape	Printing orientation in which graphics and text are printed parallel to the long edge of the paper.
Legal	Standard international paper size (8.5 in by 14 in or 216 mm by 356 mm).
Letter	Standard international paper size (8.5 in by 11 in or 216 mm by 279 mm).

line feed	Control character used to specify that the printer begins printing in the current character position on the following line. Also used to specify a line end.
line printer daemon	(LPD) Common print protocol.
long-edge feed	Moving the paper through the machine in the direction of the paper length.
Megabyte	(MB) Unit made up of one million bytes.
monochrome	Printing in one color.
network	Hardware and software system that allows multiple users to share common resources, including printers, using connected computers and terminals.
Network Interface card	Optional processor board (NIC) that provides the machine with an interface to a network.
offset	Printed sets of output placed in varying positions in the output bin to separate collated sets.
operating system	Software that controls the low-level tasks in a computer system (for example, input or output and memory management). The operating system is active when the computer is running.
orientation	Specifies whether the lines on the printed output are parallel to the long edge of the paper (landscape) or the short edge of the paper (portrait).
origin	Upper left corner of a page.
Page Description Language	(PDL) Printer language used to describe pages within a print job to a laser printing system. PDL describes the input (type, format, characteristics), performs the processing functions (logical processing), and describes the output (type, format, font selection, accounting options) for a page within a print job.

page end	Command character (form feed) that terminates the current page.
parameter	Portion of a command, other than the keyword. See also <i>keyword</i> .
parity	Serial port setting used to detect transmission errors.
physical page	Actual page size used during printing.
pica	<ol style="list-style-type: none">1. Unit of measurement equal to twelve points (approximately 1/6 of an inch).2. 10-pitch typeface with ten characters per inch each 12 points in height. See also <i>point</i>.
pitch	Width of a fixed-pitch font specified in characters per horizontal inch.
pixel	Acronym for a single element of a picture. This is the smallest addressable point on a bitmapped screen to which color and intensity can be assigned.
point	A unit of measurement equal to 0.0139 of an inch. Used to express type, size, and leading spaces. There are 12 points to a pica and approximately 72 points to an inch. See also pica.
PostScript	Printer language (PS) created by Adobe Systems, Inc.
printer driver	Software that allows a host computer to communicate with a printer.
proportional-space font	Characteristic of a font family in which characters are assigned individual horizontal spacing. Proportionally spaced fonts are used by publishing applications to improve appearance and readability.
protocol	Controls the signals used to establish the serial connection between the machine and a host computer.
queue	Managed database of documents waiting to be processed.

RAM	Random Access Memory. Portion of memory where print data, macros, and downloaded fonts are stored.
raster graphics	Graphic created using a pattern of printed dots.
Raster image processor	(RIP) Processor board that builds a raster image that is passed to the printer.
rasterization	Transformation of an image onto a page using bitmap dots.
resolution	Number of dots per inch (dpi) or spots per inch (spi). The greater the number of dots or spots per inch, the higher the resolution and the clearer the image. The terms dots, spots, and pixels are synonymous.
RS-232	Standard serial interface connector used to connect the machine to an IBM host computer.
RS-422	Standard serial interface connector used to connect the machine to an Apple host computer.
scale	Adjusting font or image size according to specified proportions.
set	Multiple copies of a single print job.
short-edge feed	Moving the paper through the printer in the direction of the paper width (the short side of a sheet of paper).
simplex printing	Printing on one side of a single sheet of paper.
soft font	Fonts available on diskettes for downloading to the memory of the printer (also called downloadable fonts).
spacing	Fixed or user-selected distance between individual printed characters on a horizontal line.

spooling	Process of releasing data from main memory and temporarily storing it until a peripheral device is ready to accept it (for example, storing print data before sending it to a printer).
spot	Single element of a picture element imaged by the printer (also called a dot or a pixel).
SPX	Sequenced Packet Exchange. Connection-oriented protocol used to guarantee delivery and error control of packets. The sender returns an acknowledgment of receipt or failure.
statement	Detailed instructions contained in a program step that is written according to specific rules called syntax.
string	Connected sequence of alphanumeric characters treated as one unit of data by a program.
stroke weight	Thickness of a character (for example, medium or bold).
style	Shape of a font (for example, upright or italic).
symbol set	Specialized sets of characters available for a specific font.
syntax	Rules governing the structure of expressions contained in a programming language.
TES	Terminate and stay resident terminal emulation program. The printer server supports this protocol and allows the user to use TEX for printer server login.
throughput	Measure of the number of pages printed during a specific unit of time, usually expressed as pages per minute.
Treatment	Emphasis placed on a font (for example, italic or bold). Treatment describes both style and stroke weights.
truncated	Cut off before completion, as when data transfer from a host to a printer is canceled before all data is transmitted.

typeface

Features that give the font type a uniform appearance.

weight

Perceived blackness of a character affected by varying the width of the stroke. Weight is expressed in general terms as either bold or roman.