



User's Guide

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ENERGY STAR® PROGRAM

Our company, as a partner in the Energy Star Program, considers that this product satisfies the appropriate standard covered in this program.

NOTE:

The 70 and 92 PPM printers come with the power management mode enabled and will go into a "Sleep" mode after 7 minutes (70 PPM) or 15 minutes (92 PPM) if there is no printing or communications with the printer.

These are default settings and should remain in these conditions to get the energy saving benefits of Energy Star.



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About This Manual

This manual provides easy access to the information you need to operate the 70 PPM or 92 PPM (Pages Per Minute) laser printer.

NOTE:

This User's Guide is intended to be viewed online. When viewing it online, use the bookmarks and page reference links for easy navigation throughout the document.

To find out about a specific topic, refer to:

- Chapter 1: **Printer Overview** – For printer components and features.
- Chapter 2: **Operator Control Panel** – To access and use the liquid crystal display (LCD) window and the menus screens.
- Chapter 3: **Paper Handling** – For media recommendations and paper handling procedures.
- Chapter 4: **Care and Maintenance** – For detailed instructions on replacing consumables, clearing paper jams, and cleaning and maintaining the printer.
- Chapter 5: **Troubleshooting** – For information on printing problems and printer error and warning messages.
- Chapter 6: **Web Utilities** – For information on accessing the printer via the Internet or your company's Intranet.
- Appendix A: **Safety Information** – For safety information and printer characteristics, including environmental and electrical requirements.
- Appendix B: **Printer Specifications** – For printer specifications.
- Appendix C: **Paper Specifications** – For media specifications and printing guidelines.
- **Glossary** – For definitions of terms and acronyms.

Audience

This manual is written for those persons responsible for operating the printer. A basic understanding of computer equipment and its operations is required.

Manual Conventions

The following conventions are used in this manual:

- **Bold** and *Italics* are used sparingly for emphasis.
- Information you enter: ***Looks Like This.***
- Key Names (or Labels): *Look Like This.*
- System messages: Look Like This.
- Variable user information: *Looks Like This.*

Pay particular attention to Notes, Cautions, and Warnings. These alert you to critical information, as follows:

NOTE:

Provides important additional information.

CAUTION!

Alerts you to an operating procedure, practice, or condition that, if not strictly observed, might result in damage to the equipment.

WARNING!

Alerts you to an operating procedure, practice, or condition that, if not strictly observed, can result in safety hazards to personnel, severe injury, or loss of life.

For More Information

Refer to the following related documents for more details about your printer.

- *Read Me First*
- *Unpacking and Setup Instructions*
- *Engine Maintenance Manual*
- *Controller Maintenance Manual*
- *Illustrated Parts List (IPL)*

Chapter 1

Printer Overview

What This Chapter Provides

This chapter describes the parts and functions of the printer.

- [Printer Features](#)
- [I/O Configurations](#)
- [Operator Control Panel](#)
- [Printer Views](#)

Printer Features

The printers are high-speed, shared-use laser printers for a production printing environment. They incorporate a wide variety of features:

- High-Speed and High-Quality Printing.
 - Print speed is up to 70 or 92 pages per minute (ppm), A4/Letter (Simplex) depending on the printer model.
 - The printing output is at a resolution of 600 dots per inch (dpi), assuring razor-sharp graphic and text output, even at very small point sizes.

- Flexible Paper Source and Delivery.

Paper Source:

- Standard – Two 500-sheet universal paper trays and one 2000-sheet universal paper cassette.
- Standard – 150-sheet capacity Multi-bypass Tray (MBT) for automatically printing small jobs, or manually feeding single sheets (including transparencies, labels, and odd-sized print media).
- Option – High Capacity Feeder with 3000-sheet capacity.

Paper Delivery:

- Standard - 2,500-sheet (Elevator Tray), 200-sheet (Upper Tray) capacity Finisher.
- Option – Container Stacker with 1,500 to 6,000-sheet capacity and stacking capability.
- Multiple Original Printing (MOP) – for printing of multiple collated document sets without multiple file transfers. Processes PCL and PostScript jobs once, stores the images on disk, and prints each set from disk (after the first set).
- Virtual Printer Technology (VPT[®]) – allows a single printer to offer print services, or *virtual printers*, each of which is configured by the Network Administrator.
- Web Utilities – for remote access to the printer through the Internet or your company's Intranet.
- Ergonomic operation.
 - The easy-to-read display clearly shows the operational status of the printer.
- Component-based consumables.
 - User replaceable toner and staples.
- High-volume printing.
 - Three standard paper cassettes with approximately 3000-sheet capacity total and the Multi-bypass Tray (MBT) with a 150-sheet capacity.
 - Optional High Capacity Feeder (HCF) adds up to 3000 additional sheets.
 - Together they allow continuous printing of up to 6150 sheets.

-
- Supports a wide-range of media types (copier, bond, letterhead, special application, recycled, overhead transparencies, labels) and sizes. See “Paper” on [page 2-2](#) for more information.
 - Printer Language Support.
 - Optional PostScript Level III (Adobe) printer language.
 - Optional IPDS printer language
 - PCL5e and PCL XL printer language.
 - TIFF and PDF printer language
 - Network.
 - Ethernet 10/100/1000 Base-T.
 - Network Protocol.
 - TCP/IP and LPR/LPD with onboard network.
 - IPP
 - Easy installation of additional fonts and macros using the PCL Startup File.

I/O Configurations

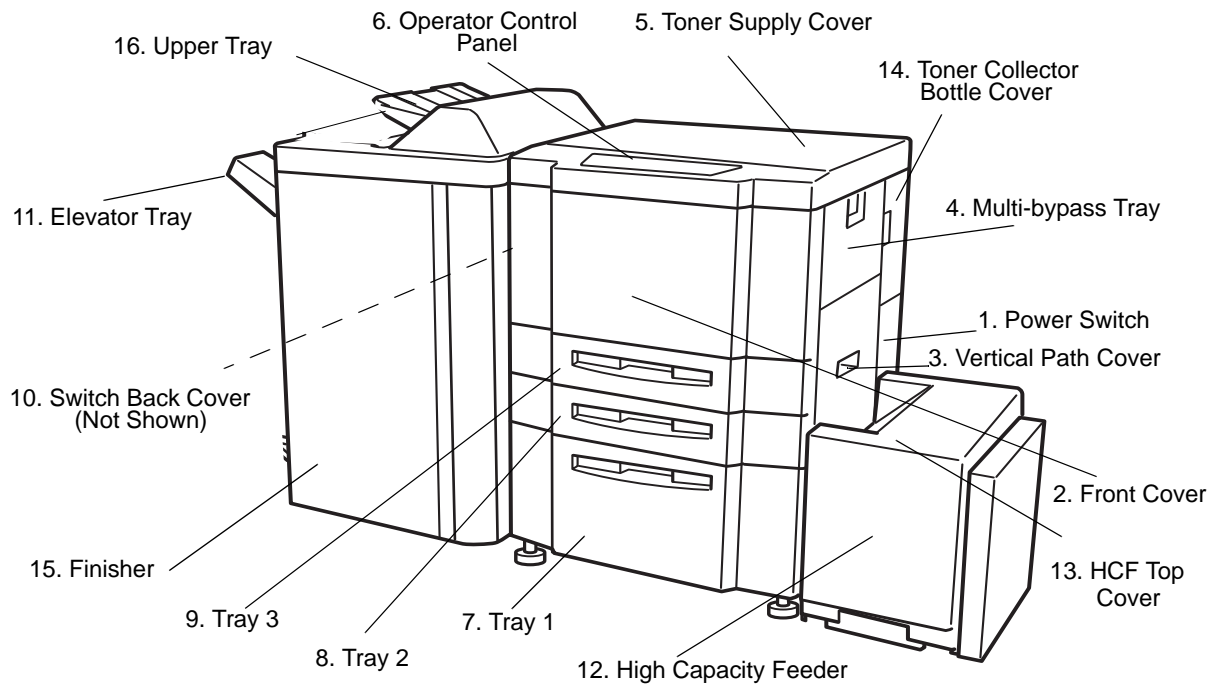
- Bi-directional 1284C Parallel interface with Compatibility, Nibble, Byte, and ECP Mode support.
- Ethernet 10/100/1000 Base-T.

Operator Control Panel

The Operator Control Panel (OCP) is your physical interface to the printer's features and functions. From the control panel, you can monitor the printer's operating status and configure the specific printer functions.

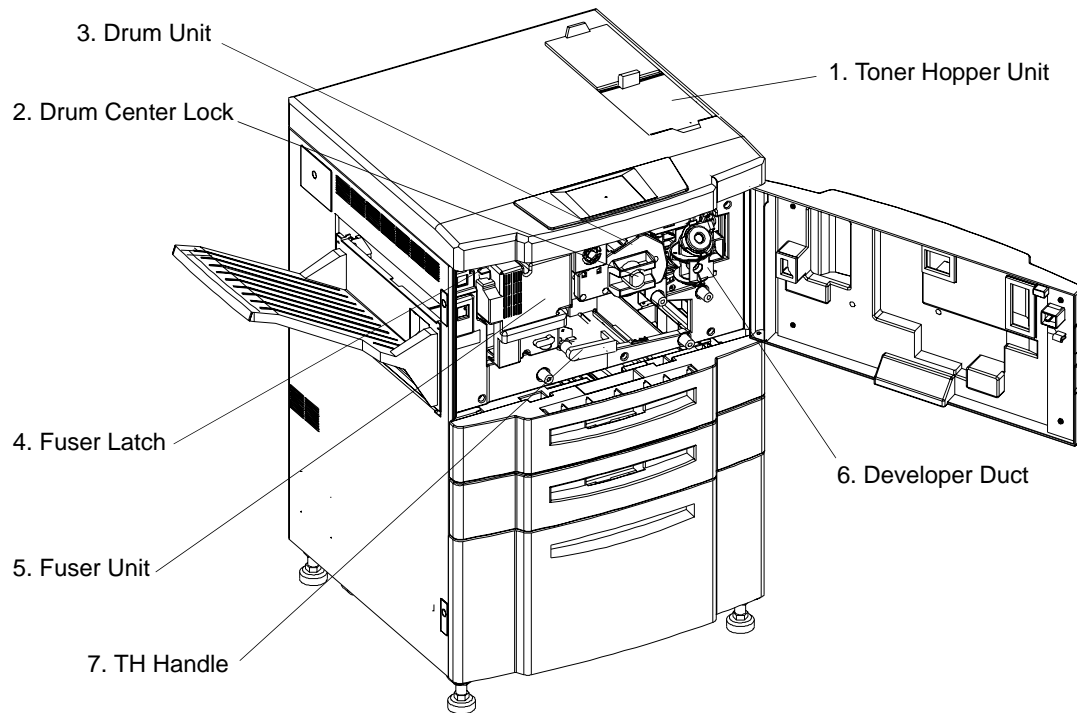
[See Chapter 2](#) for detailed information about the OCP.

External View of the Printer



Key	Component	Description
1	Power Switch	Press to turn the printer on and off.
2	Front Cover	Open to replace units, clear paper jams, or clean the inside of the printer.
3	Vertical Path Cover	Open to clear paper jams.
4	Multi-bypass Tray (MBT)	Holds up to 150 sheets of paper.
5	Toner Supply Cover	Open to replenish the toner supply.
6	Operator Control Panel (OCP)	Displays printer status and menu information.
7	Tray 1	Holds up to 2,000 sheets of paper.
8	Tray 2	Holds up to 500 sheets of paper.
9	Tray 3	Holds up to 500 sheets of paper.
10	Switch Back Cover	Open to clear paper jams.
11	Elevator Tray	Output tray.
12	High Capacity Feeder (HCF)	Holds up to 3,000 sheets of paper.
13	HCF Top Cover	Open to clear paper jams.
14	Toner Collector Bottle Cover	Open to replace the toner collector bottle.
15	Finisher	For stacking, job offset, and stapling.
16	Upper Tray	Output tray.

Internal View of the Printer



Key	Component	Description
1	Toner Hopper Unit	Install the toner bottle here.
2	Drum Center Lock	Holds the drum in place.
3	Drum Unit	OPC drum.
4	Fuser Latch	Provides access to the fuser unit.
5	Fuser Unit	Fuses the toner on the paper.
6	Developer Duct	Mount the developer bottle onto the developer duct to replace consumed developer.
7	TH Handle	Handle of the toner transfer unit.

Chapter 2

Operator Control Panel

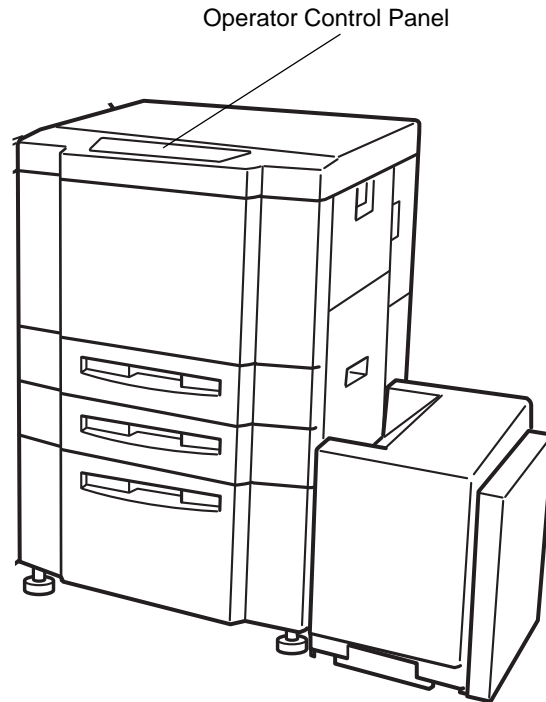
What This Chapter Provides

This chapter contains information on the following topics.

- [OCP Description](#)
- [Menu Structure](#)
- [Using the Menu Screens](#)
- [Passwords](#)

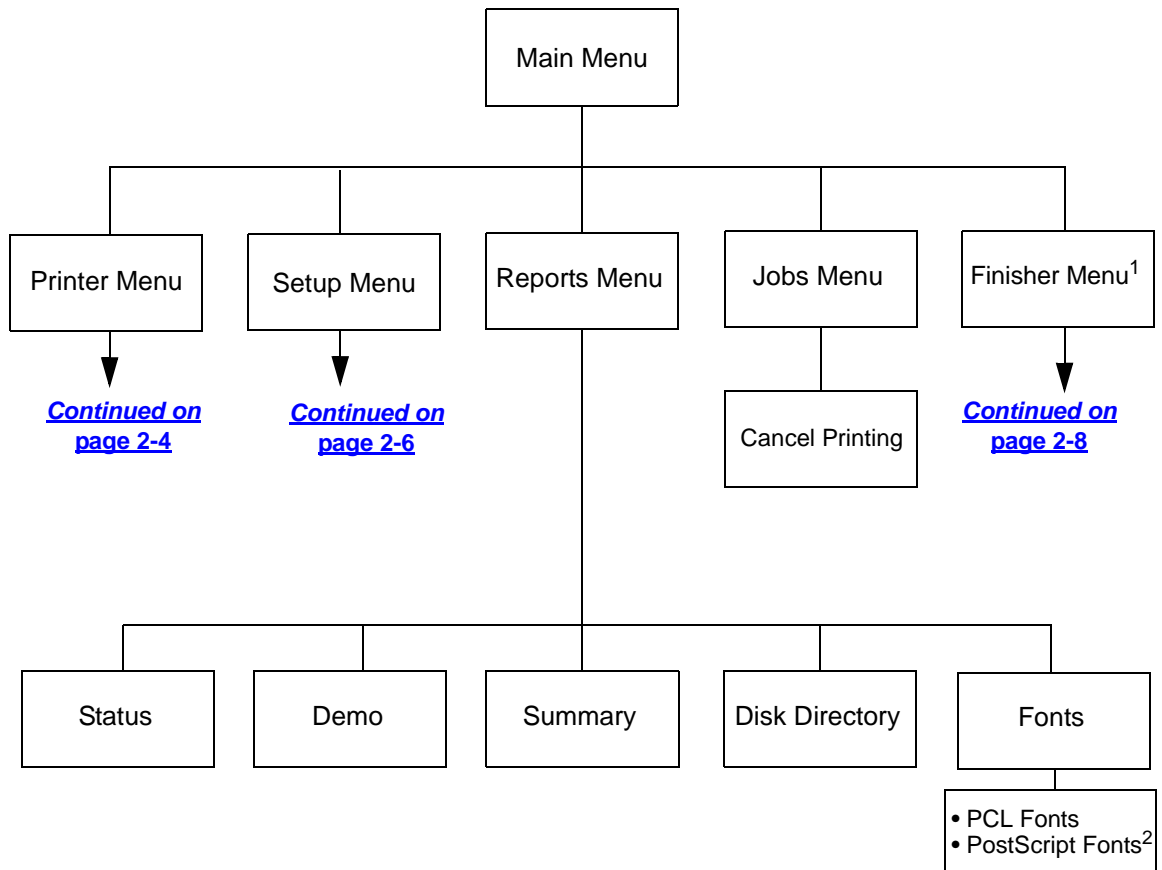
OCP Description

The Operator Control Panel (OCP) is a touch panel display that you use to set up print options and monitor job and printer status. It is also used by the Network Administrator to configure the printer and by the Service Technician to perform maintenance on the printer.



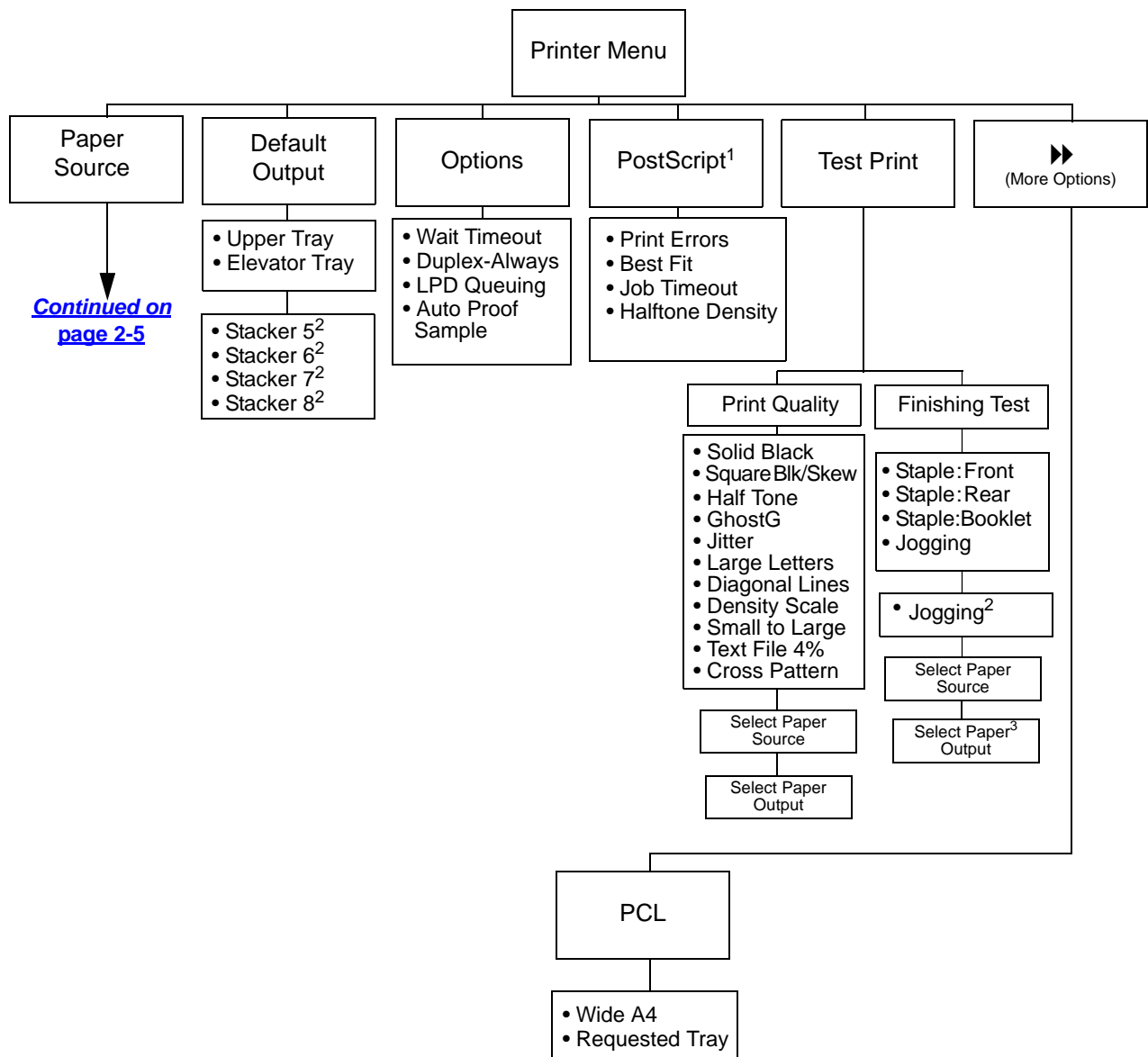
Menu Structure

The OCP menu is structured as shown in the following flowcharts. Each box in the chart represents an OCP display screen. Use this flowchart to assist you in setting print job options.



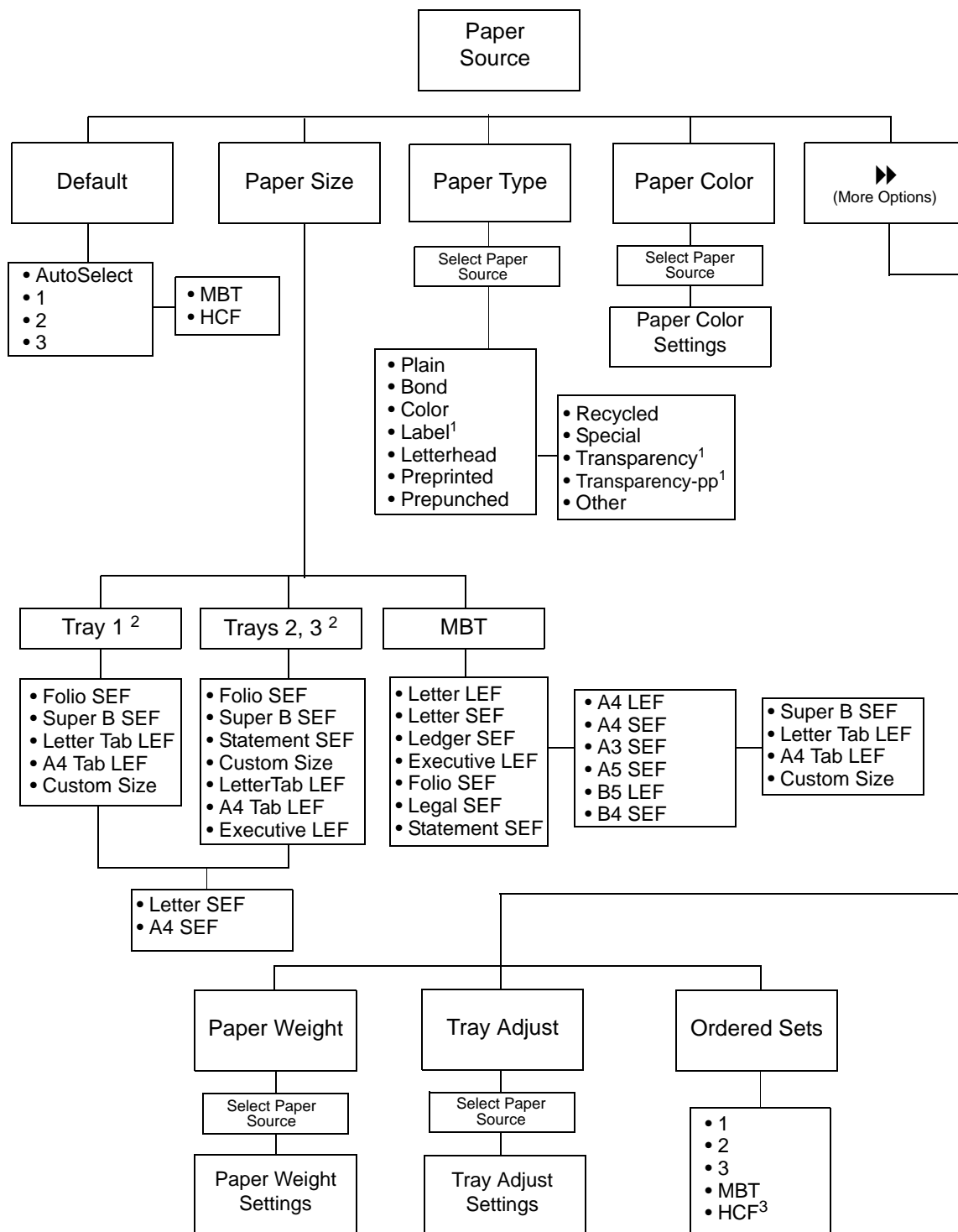
¹ The Finisher Menu is only displayed when a Container Stacker is installed.

² Available when PostScript is installed.



¹ Available when PostScript is installed.

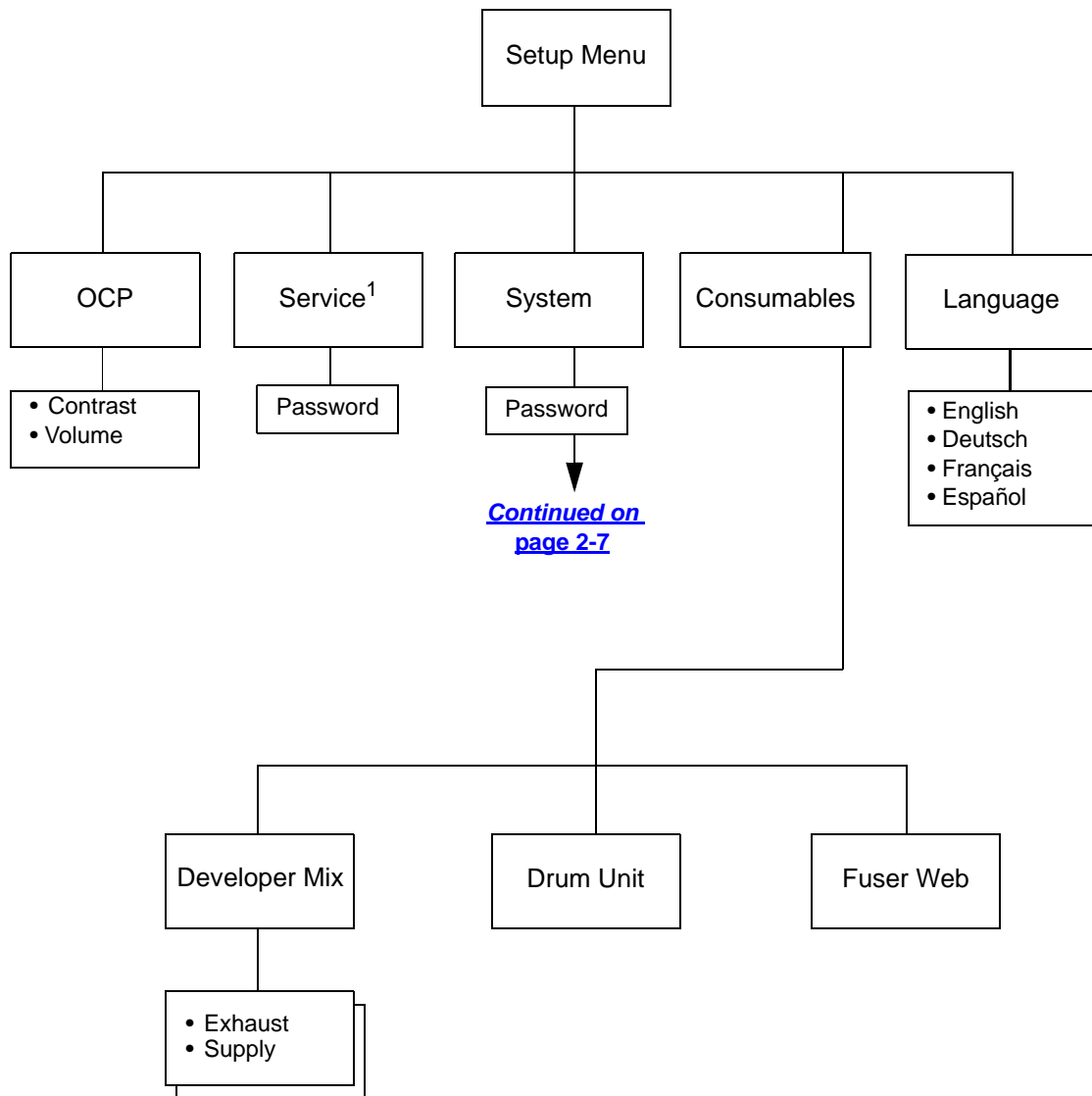
² Available when the Container Stacker is installed.



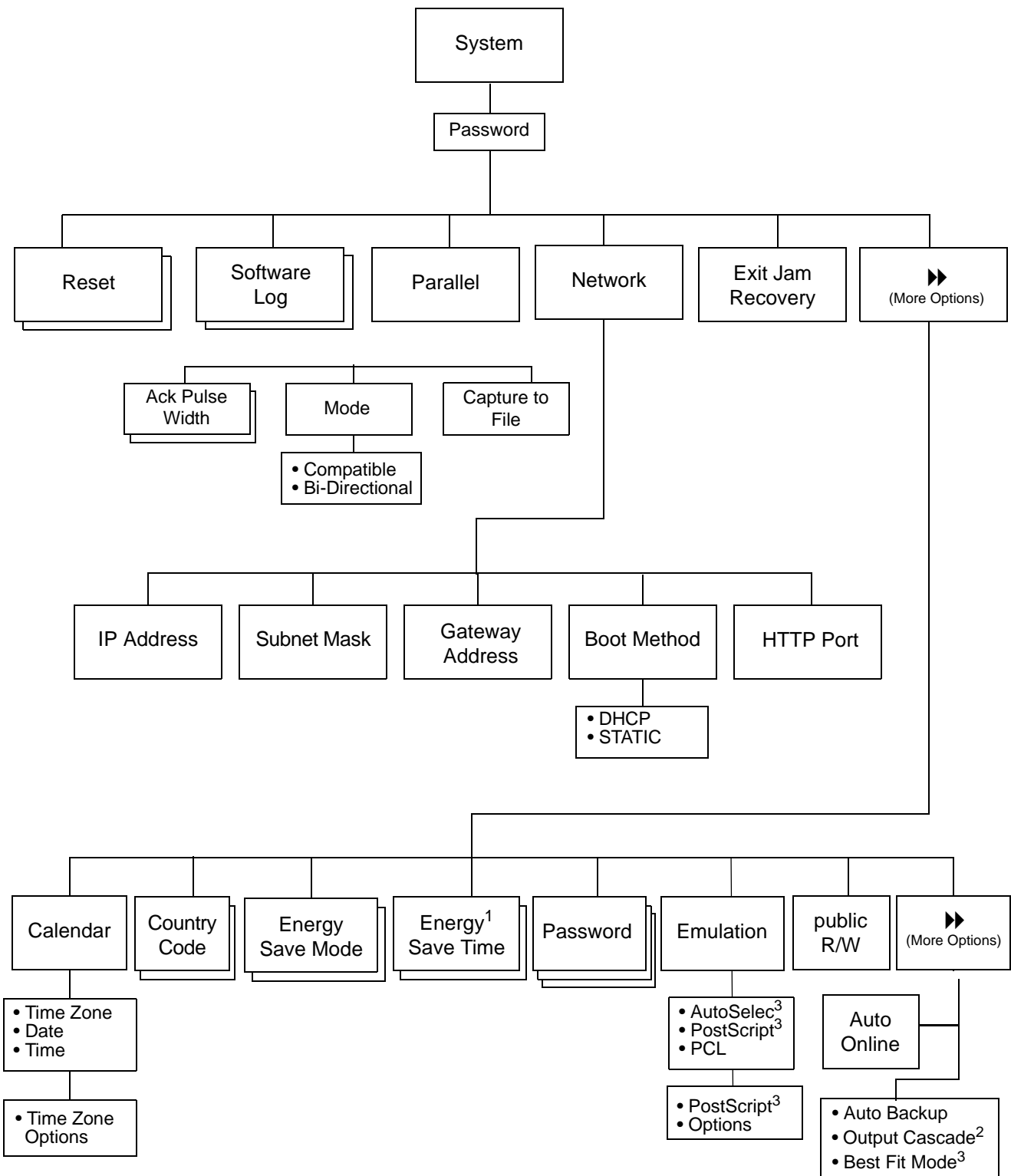
¹ Available when MBT is selected.

² Available when the sensor plate in the tray is set to the first position.

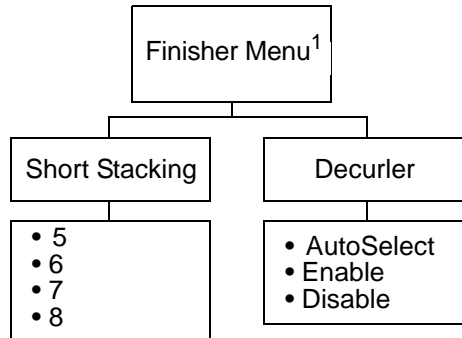
³ Available when the HCF is installed.



¹ Service menu items are for Service Technicians only and are not discussed in this manual.



¹ Available when Energy Save Mode is enabled.
² Available when the Container Stacker is installed
³ Available when PostScript is installed.



¹ Available when the Container Stacker is installed.

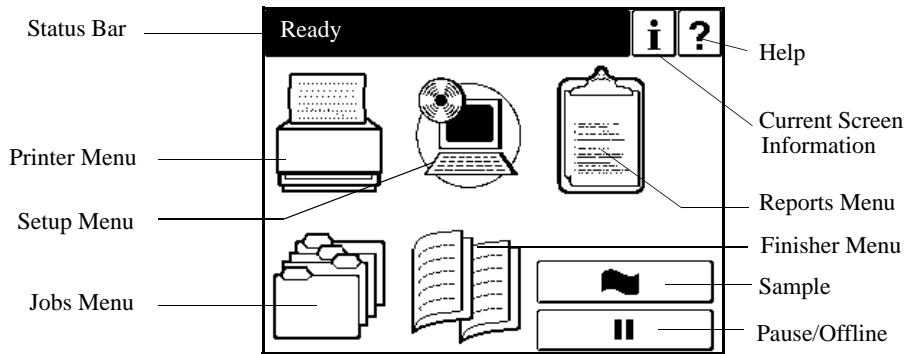
Using the Menu Screens

The menus are accessed via the touch panel. Each OCP screen consists of icons that you use to make selections. The icons that are used through the OCP screens are shown below. Examples of the OCP screens are shown on the following pages..

Icon or Button	Name	Function
?	Help	Touch to display Help on the current screen.
i	Information	From the Main Menu, displays information about the printer and consumables. From relevant screens, displays an illustration of the paper trays or finisher trays.
	Pause/Offline	Touch to pause the printer.
▶	Resume/Online	When the printer is offline, touch to return to Ready status.
▲	Return to Main Menu/Cancel	Touch to cancel the current selection and return to the Main Menu .
◀	Previous Menu	Touch to cancel the current selection and return to the previous screen or menu.
▶▶	More Options	Touch to display additional options for the current selection.
■	Enter or Accept	Confirm or Done. Touch to confirm your selection and return to the previous screen or menu.
📄	Sample	Touch to duplicate a currently printing page and output to the sample tray.
Clr	Clear Button	Touch to erase entire entry.
Del	Delete Button	Touch to erase last character entered.
1 - 9	Ten Key	Use to enter numeric values.
[-] [⊙] [+]	Volume	Use to adjust volume of the OCP touch pad.
[-] [●] [+]	Contrast	Use to adjust the contrast level of the OCPdisplay.
	Status Bar	Displays the current screen name and/or any system messages.

Main Menu

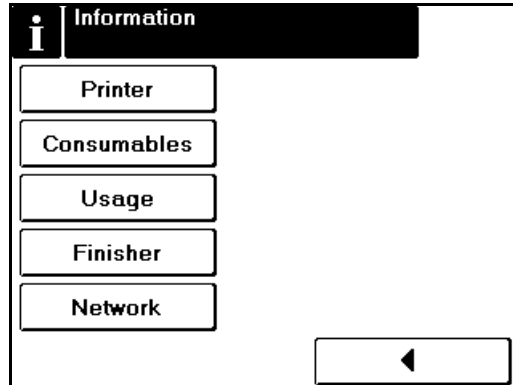
1. The Main Menu screen is shown below. A description of the elements that make up the screen follows.



Icon	Function
?	Touch to open Main Menu Help.
i	Touch to display information about the printer and consumables.
	Touch to pause the printer.
📄	Touch to duplicate a current printing page and output to the <ul style="list-style-type: none"> •Standard Finisher: Upper tray •Container Stacker: Sample tray
Status Bar	Consists of one or two lines of text for displaying messages and instructions.
Printer Menu	Touch to display the Printer Menu .
Setup Menu	Touch to display the Setup Menu .
Reports Menu	Touch to display the Reports Menu .
Jobs Menu	Touch to display the Jobs Menu .
Finisher Menu	Touch to display the Finisher Menu . Available only when a Container Stacker is installed.

Information

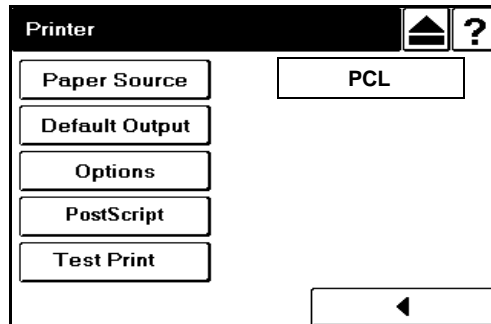
When you select Information from Main Menu, this screen is displayed. You use it to confirm about printer settings and consumables described as below.



- **Printer**
Displays information about the engine and controller software revision, error counts, and the current paper type and source settings.
- **Consumables**
Displays the status of the consumables: Toner, Developer Mix., Drum, and Fuser Web.
- **Usage**
Displays current information regarding print density, preventative maintenance, and page counts.
- **Finisher**
Displays information regarding the status of the Finisher.
- **Network**
Displays information such as MAC and IP Address, Gateway Address, Subnet Mask and HTTP Port.

Printer Menu

When you select Printer from the Main Menu, this screen is displayed. You use the Printer Menu to gain access to the printing options described in the table below.



- Paper Source
 - Default

Defines the default paper tray. Use this when the paper source is not designated by a host command. If a command from the host defines the paper source, the OCP setting is ignored. When “AutoSelect” is selected, tray is automatically selected according to paper size and/or paper type defined by host.
 - Paper Size

When Paper Size is selected the paper size of the currently selected paper source is displayed. When the “Custom Size Switch” in the tray is set to “Standard”, paper size is automatically detected. See [“Setting the Custom Paper Size Values” on page 3-16](#) for more information.
 - Paper Type

Defines the paper type to desired input tray. The paper type screen displays currently selected paper type, and the option buttons to select another paper type. See [“Setting the Paper Type” on page 3-17](#) for more information.
 - Paper Color

Sets the paper color for the selected input tray. The paper color screen displays the currently selected paper color, and the option buttons to select another paper color. There are 7 pre-defined colors and up to 80 custom colors to choose from. Custom colors are defined using the Web Utilities. See [“Setting the Paper Color” on page 3-17](#) for more information.
 - Paper Weight

Defines the paper weight for the input tray. The paper weight screen displays the currently defined paper weight, and the options to redefine the paper weight settings. Options include bond, index and g/m². See [“Setting the Paper Weight” on page 3-17](#) for detailed information and instructions.

- ❑ Tray Adjust

The print position can be adjusted vertically and horizontally using the Tray Adjust option. When printing in duplex mode, you can set different tray adjust values for the front side and back side of the paper. See [“Setting the Tray Adjust Values” on page 3-16](#) for detailed information and instructions.

- ❑ Ordered Sets

You can define an ordered set by specifying the number of pages in the set and the paper source tray(s) that contain the ordered set pages. The printer will support input tray cascading for ordered sets based on paper size and media type. See [“Ordered Sets” on page 3-18](#) for detailed information and instructions.

- Default Output

Use this option when the output tray is not designated by a host command. Options include Upper Tray, Elevator Tray and Stacker 5, 6, 7 and 8, (if installed). If a command from the host defines the output tray, the OCP setting is ignored.

- Options

- ❑ Wait Timeout

Defines the time period (in seconds) from reception of last data to the reception of next data. If data is not received within the defined period, the job is terminated. A command from the host will override the OCP setting.

- ❑ LPD Queuing

Can be set to enable or disable. The factory default is disabled. When enabled the printer will accept and queue additional print jobs while a data transfer is in process for another job.

- ❑ Duplex Always

Can be set to enable or disable. When set to enable, the printer will always print in duplex mode.

- ❑ Auto Proof Sample

This function provides automatic proof sample printing instead of manually pressing the Sample button on the OCP. The auto proof sample interval is 0 - 5,000 pages in 500 sheet increments (0, 500, 1,000, 1,500, ... 5,000). For example, if the interval is set to “500”, the printer will automatically output a proof sample to the sample tray every 500 sheets. If the interval is set to “0”, the function is disabled.

- PostScript

- ❑ Print Errors

Can be set to enable or disable. When set to enable, the printer will print an error page when a PostScript error occurs.

- Best Fit

Can be set to enable or disable. When enabled, if the requested paper size is not present in any tray, the printer will select the closest available paper size and scale the image to fit. Best Fit works in conjunction with the Best Fit Mode option in the System Menu.

- Job Timeout

Defines the time limit for processing of the PostScript job. The valid range is 0 or 15 - 999.

- Halftone Density

Halftone Density can be adjusted to Light, Medium, Dark or Custom.

NOTE:

The Halftone Density menu is only displayed when the Halftone Selection in the Service menu is enabled.

- Test Print

Use this button to print a test pattern for checking the print quality or the print position. A list of test patterns is shown on [page 2-4](#).

- PCL

- Wide A4

Can be set to enable or disable. When set to enable, the printer changes the margin/printable area of A4 paper so that 80 10-pitch characters may be printed on a line.

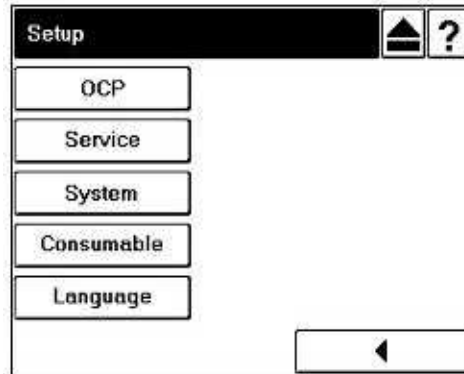
- Requested Tray

Exclusively - Printer should print from the requested tray only.

First - Printer should print from the requested tray first.

Setup Menu

When you select Setup from the Main Menu, this screen is displayed. Use it to gain access to the Setup option screens that are described in the table below.



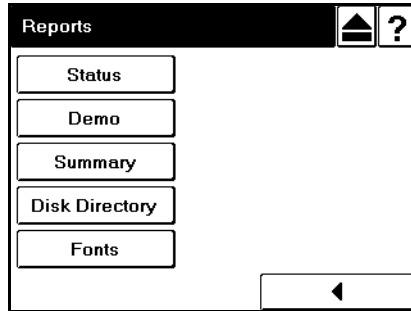
- OCP
 - Volume
The volume of the OCP touch pad can be adjusted within a range of 0 to 5. The factory default is 3.
 - Contrast
The contrast of the OCP can be adjusted within a range of 1 to 16. The factory default is 10.
- Service
The Service option is used by an Authorized Service Technician and is password protected.
- System
The System option is password protected. Contact your System Administrator for access to these options.
 - Reset
Press to reboot the printer.
 - Software Log
Press to create a software log. A power cycle is required after creating the log.
 - Parallel
 - Network
Defines the parameters of the network. The network is displayed as 10/100/1000 (AUX). Other Network parameters include: *IP Address, Subnet Mask, Gateway Address, Boot Method, HTTP Port*
 - Calendar
Time Zone - GMT -12:00 to GMT +12:00.
Date - 0000/00/00 (Year/Month/Day)
Time - Set printer clock

-
- ❑ Country Code
Select the appropriate country code used in international phone numbers. A complete list is available in your telephone book or on the Internet. Country Code is not necessarily related to language. The default setting is 1.
 - ❑ Energy Save Mode
Can be set to enable or disable.
 - ❑ Energy Save Time
When Energy Save Mode is enabled use this option to set the wait time (in minutes) before the printer enters Energy Save Mode.
 - ❑ Password
Use to change the System password. The system password is used by your System Administrator and provides access to the system parameters.
 - ❑ Emulation
Options are AutoSelect, PostScript and PCL.
 - ❑ Public R/W
Can be set to enable or disable. Enable allows read/write when SNMP community name is Public.
 - ❑ Auto Online
Can be set to enable or disable. When disabled, if the offline button is pressed the printer will remain in an offline status until the button is pressed again. When enabled, the printer will automatically return to an online status within 3-5 minutes without pressing the button.
 - ❑ Auto Backup Time
Valid range is 0 - 23 (corresponding to the hour of the day). A system data backup will be performed if the printer is on at the set time.
 - ❑ Best Fit Mode
Can be set to Standard or Compatible. Best Fit Mode works in conjunction with the Best Fit setting.
Standard: Mode for PostScript Version 3015 command sets.
Compatible: Mode for PostScript Version 3011 command sets.
 - ❑ Output Cascade
Lower to Upper - The lower trays are given priority within each stacker.
Upper to Lower- The upper trays are given priority within each stacker.

Available only when the optional Container Stacker is attached. When two Container Stackers are attached the setting applies to both. The priority between Container Stackers is Container Stacker 1 first, then Container Stacker 2.
 - Consumables
Use to replace the Developer Mix, Drum Unit, and Fuser Web
 - Language
Use to set the OCP language to English, Deutsch, Français, or Español.

Reports Menu

When you select Reports from the Main Menu, this screen is displayed. You use it to print the reports described below.

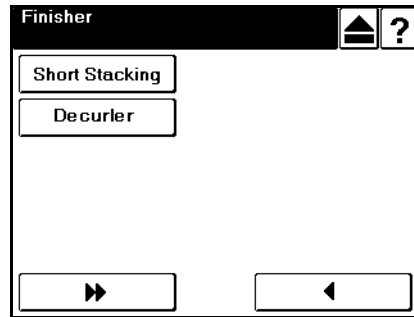


- **Status**
Touch to print a status report and return to the Main Menu. The status report shows the current configuration of the printer and printer usage information.
- **Demo**
Touch to print a demo report and return to the Main Menu. The demo report shows the printer specifications such as speed, paper handling, resolution, etc.
- **Summary**
Touch to print a summary report and return to the Main Menu. The summary report shows processor, connectivity, RAM and other miscellaneous information.
- **Disk Directory**
Touch to print a disk directory report and return to the Main Menu.
- **Fonts**
Touch to print the fonts summary options (PCL fonts and Postscript fonts).

Finisher Menu for the Container Stacker

When you have the optional Container Stacker installed and you select the Finisher icon from the Main Menu, this screen is displayed. You use it to gain access to the Container Stacker options.

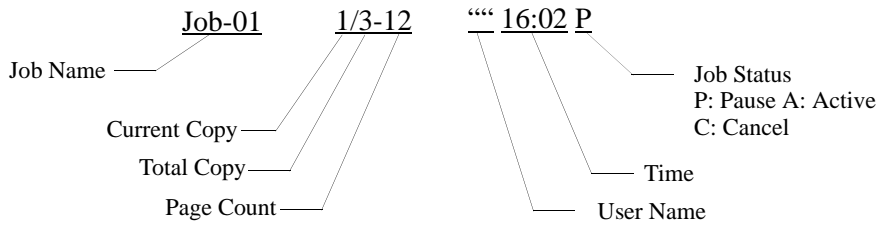
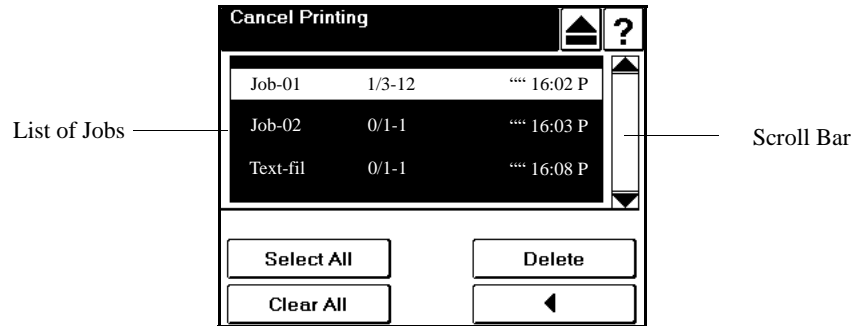
For additional information on the Container Stacker, refer to the *Container Stacker User's Guide*.



- Short Stacking
Can be set to enable or disable. When enabled, the paper stack is limited to 75% of the stacker capacity.
- Decurler
The options for the Decurler are AutoSelect, enable, or disable. Activating the decurler may cause paper jams when printing with 28 lb. bond or heavier paper.

Jobs Menu

When you select Jobs icon from the Main Menu, this screen is displayed. You use the Jobs Menu to cancel print jobs in the printer.



- **Scroll Bar**
Touch to scroll the list of jobs.
- **Select All**
To cancel all print jobs, press Select All, then press Delete.
- **Clear All**
Press Clear All to deselect all print jobs.
- **Delete**
To cancel a single job, touch the job name, then press Delete.

Passwords

Passwords provide security to restrict access to system parameters and certain printer maintenance functions. Two types of passwords are available with your printer: a system password and a service password.

The system password is used by your System Administrator and provides access to the system parameters. The service password is used by your Service Technician and provides access to service and maintenance functions as well as the system parameters. For additional information, contact your System Administrator.

NOTE:

If the system password is lost it must be set up again. Contact your authorized Service Technician.

Chapter 3

Paper Handling

What This Chapter Provides

This chapter contains information on the following topics.

- [Paper Weights](#)
- [Unacceptable Paper](#)
- [Storing Paper](#)
- [Paper Sizes, Types, and Trays](#)
- [Loading Paper](#)
- [Setting Custom Paper Size Values](#)
- [Setting Tray Adjust Values](#)
- [Setting the Default Paper Source](#)
- [Setting the Paper Type](#)
- [Setting the Paper Weight](#)
- [Setting the Paper Color](#)
- [Ordered Sets](#)

Paper

To obtain good print quality, use the recommended paper and properly position it in the correct trays. For the desired paper orientation, see the labels on the trays. Refer to [Appendix C](#) for detailed information about paper specifications and printing on special print media.

Paper Weights

The printer accepts the following paper weights in all paper trays, including the MBT and HCF:

- Bond paper: 16-53 lb (60-199 g/m²)
- Index paper: 90-110 lb (163-199 g/m²)

Paper Color

The printer accepts color paper in all paper trays, including the HCF. The seven pre-defined colors are listed below. Additionally, you can define up to 80 custom colors using the Web Utilities.

- White
- Pink
- Yellow
- Buff
- Goldenrod
- Blue
- Green

Unacceptable Paper

Avoid using the following media as they cause paper jams and print quality problems.

- Excessively thick or thin paper
- Paper that has already been printed (preprinted letterhead is allowed)
- Wrinkled, torn, or bent paper
- Moist or wet paper
- Curled paper
- Paper with an electrostatic charge
- Glued paper
- Paper with special coating
- Colored paper with surface treatment
- Paper unable to withstand temperature of 302°F (150° C)
- Thermal paper

-
- Carbon paper
 - Paper with paper fasteners, ribbons, tape, etc., attached
 - Heavily textured paper
 - Label stock with exposed backing sheets

Storing Paper

Store the paper properly to avoid print quality problems and paper jams.

- Store paper horizontally, in a flat, dry location to avoid wrinkling, bending, curling, etc.
- Store paper away from direct sunlight.
- Store any unused paper in its original packing.

Paper Sizes, Paper Types, and Printer Input Trays

The following tables show which paper sizes and types can be used with the printer's input trays. The paper size is shown in both millimeters and inches. The term *SEF* indicates the paper is being fed into the printer short edge first and the term *LEF* indicates the paper is being fed into the printer long edge first.

Paper Size	Leading Edge mm/inch	Side Edge mm/inch	Tray 1, 2, 3	HCF	MBT
A5 (SEF)	149.0/5.83	210.0/8.26	2, 3 only		✓
B5 (LEF)	257.0/10.13	182.0/7.17	✓		✓
A4 (SEF)	210.0/8.3	297.0/11.7	✓		✓
A4 (LEF)	297.0/11.7	210.0/8.3	✓	✓	✓
B4 (SEF)	257.0/10.1	364.0/14.3	✓		✓
A3 (SEF)	297.0/11.7	420.0/16.5	✓		✓
Letter (LEF)	279.0/11.0	216.0/8.5	✓	✓	✓
Letter (SEF)	216.0/8.5	279.0/11.0	✓		✓
Tabstock (Letter LEF)	374.0/11.0	279.0/9.0	✓		✓
Tabstock (A4 LEF)	297.0/11.7	225/8.85	✓		
Folio (SEF)	216.0/8.5	330.0/13.0	✓		✓
Legal (SEF)	216.0/8.5	356.0/14.0	✓		✓
Ledger (SEF)	279.0/11.0	432.0/17.0	✓		✓
Super B (SEF)	305.0/12.0	457.0/18.0	✓		✓
Statement (SEF)	216.0/8.5	140.0/5.5	2, 3 only		✓
Executive (LEF)	267.0/10.5	184.0/7.255	2, 3 only		✓
Custom (0.1 mm/0.1 in. increments)	139.7 to 304.8/ 5.5 to 12.0	182.0 to 457.2/ 7.2 to 18.0	✓*		✓

* Tray 1 can be adjusted; however, the physical settings are limited to standard paper sizes. Use of custom size paper may result in skewing.

Paper Type	Tray 1, 2, 3	HCF	MBT
Label			✓
Letterhead	✓	✓	✓
Pre-printed	✓	✓	✓
Pre-punched	✓	✓	✓
Plain	✓	✓	✓
Bond	✓	✓	✓
Color	✓	✓	✓
Special	✓	✓	✓
Other	✓	✓	✓
Transparencies			✓

Loading Paper

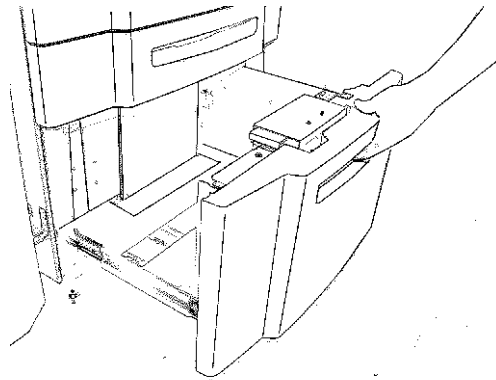
Load paper into the trays according to the instructions that follow. See [“Loading Special Media”](#) on page 3-12 for directions on loading prepunched and preprinted paper, as well as tab stock. Paper can be loaded while a print job is running, except into the tray that is currently in use.

Loading Paper in Tray 1

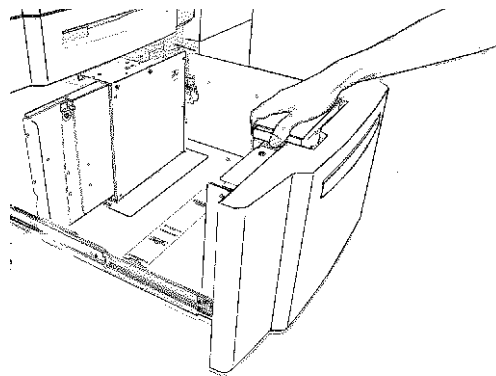
WARNING!

Do not open Tray 1 if the Fuser Unit is pulled out. The printer may tip over causing personal injury or damage to the printer.

1. Open the tray by pulling it by the handle.

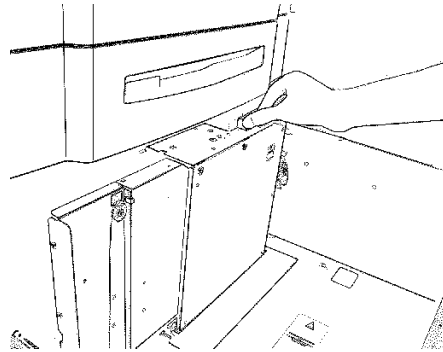


2. Adjust the size guide to the proper size. The available sizes are marked on the tray.

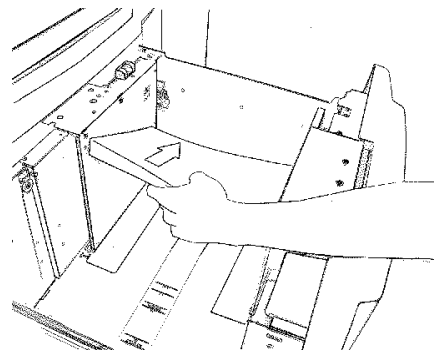


-
3. Adjust the sensor plate to the proper size. Size markers are located on the sensor plate in the following order: *triangle* (special), B5, A5, LGR, LGL, LTR, B4, A3, and A4.

If the paper size you need is not listed, set the sensor plate to *triangle* (the first position). Then, in Step 6, you will select the paper size from the OCP display.



4. Place the paper into the tray.



NOTE:

The paper should be loaded no higher than the Max. level indicator. The Max. level indicator is located inside the tray.

5. Close the tray.
6. If you set the sensor plate to *triangle* in Step 3, select the paper size from the OCP by making the following selections:

Printer / Paper Source / Paper Size / tray #/ paper size

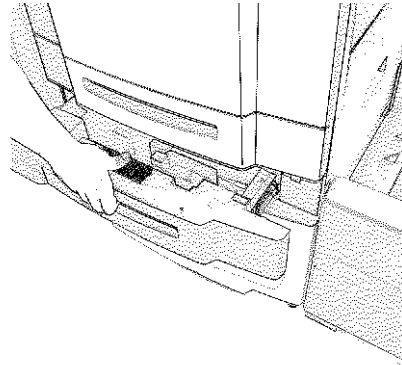
7. Adjust the paper weight. The default paper weight is 20 lb. bond. If necessary, change the paper weight by making the following selections:

Printer / Paper Source / ► / Paper Weight / tray #

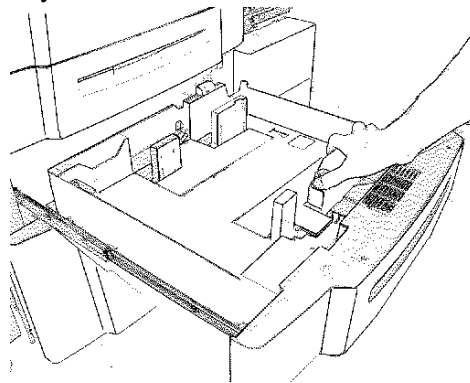
8. Select Index, Bond, or g/m², then use the keypad to input the weight and press ■.

Loading Paper in Tray 2 or 3

1. Open the tray.

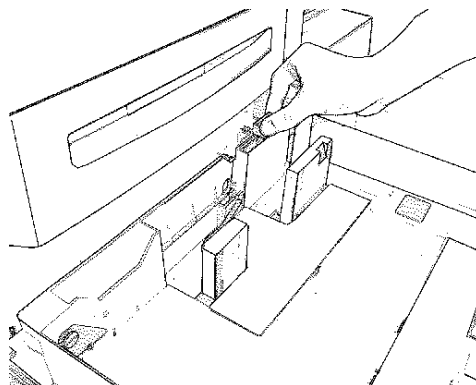


2. Adjust the size guide to the proper size. The available sizes are marked on the bottom of the tray.

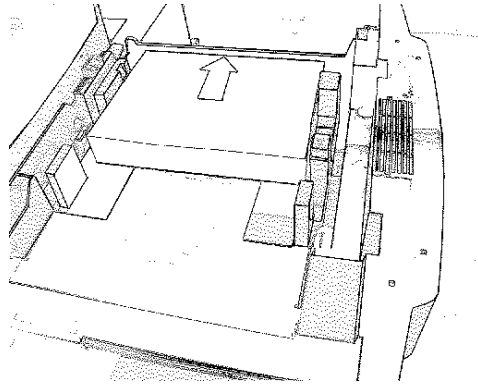


3. Adjust the sensor plate to the proper size. Size markers are located on the sensor plate in the following order: *triangle* (special), B5, A5, LGR, LGL, LTR, B4, A3, and A4.

If the paper size you need is not listed, set the sensor plate to *triangle* (the first position). Then, in Step 6, you will select the paper size from the OCP display.



-
4. Place the paper into the tray.



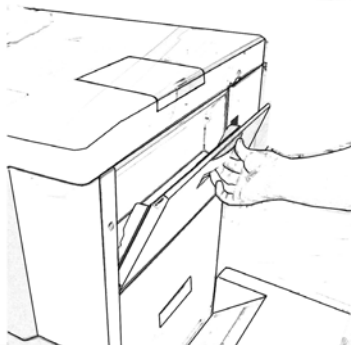
NOTE:

The paper should be loaded no higher than the Max. level indicator. The Max. level indicator is located inside the tray.

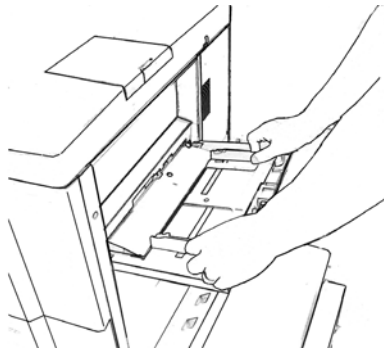
5. Close the tray.
6. If you set the sensor plate to *triangle* in Step 3, select the paper size from the OCP by making the following selections:
Printer / Paper Source / Paper Size / tray # / paper size
7. Adjust the paper weight. The default paper weight is 20 lb. bond. If necessary, change the paper weight by making the following selections:
Printer / Paper Source / ▶▶ / Paper Weight / tray #
8. Select Index, Bond, or g/m^2 , then use the keypad to input the weight and press ■.

Loading Paper into the MBT

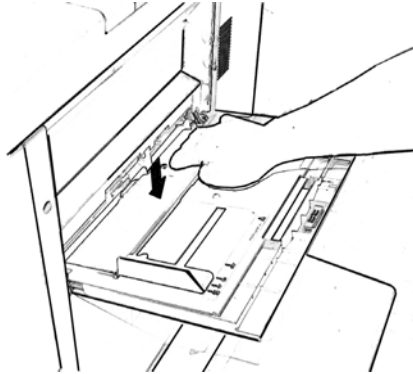
1. Open the MBT by pulling it by the handle.



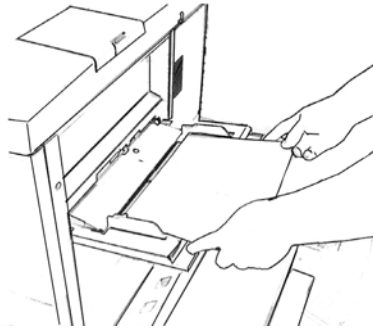
2. Adjust the size guide to the proper size. The paper size positions are marked on the bottom of the tray and on the top of the size guide.



3. Push down the paper tray.



4. Set the paper onto the tray.

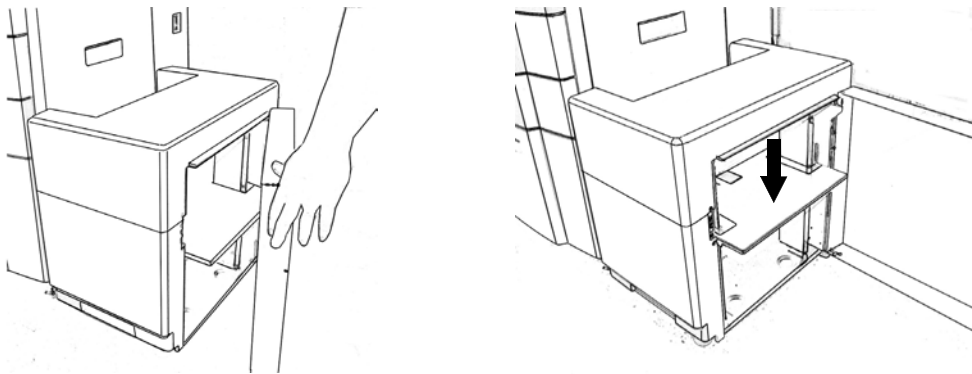


Loading Paper into the HCF

WARNING!

The table inside the HCF automatically descends when you open the door of the HCF. Do not allow anything to be caught between the table and the bottom of the HCF.

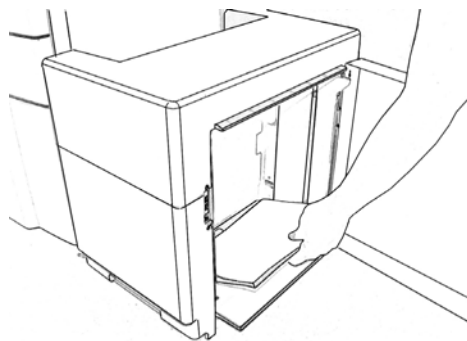
1. Open the door of the HCF by pulling it by the handle. The table inside the HCF automatically moves to its lowermost position and stops.



2. Set the paper into the HCF. (The HCF is set to handle Letter LEF or A4 LEF size only. A service call is required to change from one size to the other.)

NOTE:

The paper should be loaded no higher than the Max. level indicator. The Max. level indicator is located inside the HCF.



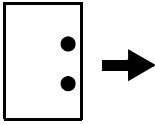
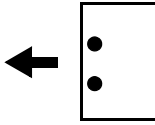
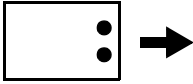
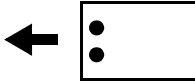

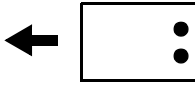
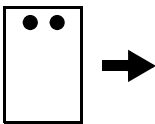
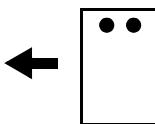
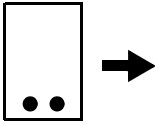
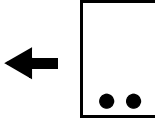
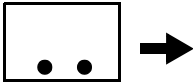
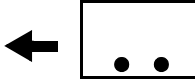
3. Close the door.

Loading Special Media

Pre-punched Paper

Load pre-punched paper as indicated in the following diagrams. Refer to [Appendix C](#) for more information about using pre-punched paper.

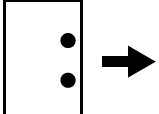
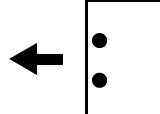
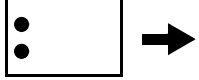
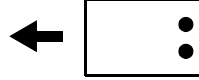
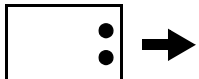
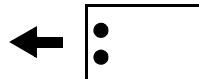
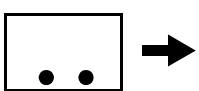
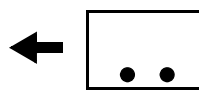
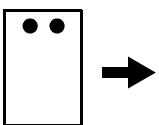
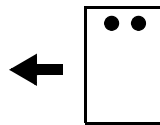
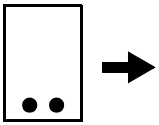
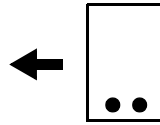
Table 0-1. Simplex Printing (Single-sided)

Paper Size	Orientation	Loading into	
		Tray 1 - 3	MBT or HCF
Letter/A4	Portrait and Landscape		
Ledger/A3	Portrait		
Ledger/A3	Landscape		
Letter/A4	Portrait		
Letter/A4	Landscape		
Ledger/A3	Portrait and Landscape		



Arrows indicate paper feed direction.

Table 0-2. Duplex Printing (Double-sided)

Paper Size	Orientation (Long Edge Bind)	Loading into	
		Tray 1 - 3	MBT or HCF
Letter/A4	Portrait and Landscape (Long Edge Bind)		
Ledger/A3	Portrait (Short Edge Bind)		
Ledger/A3	Landscape (Short Edge Bind)		
Ledger/A3	Portrait and Landscape (Long Edge Bind)		
Letter/A4	Portrait (Short Edge Bind)		
Letter/A4	Landscape (Short Edge Bind)		



Arrows indicate paper feed direction.

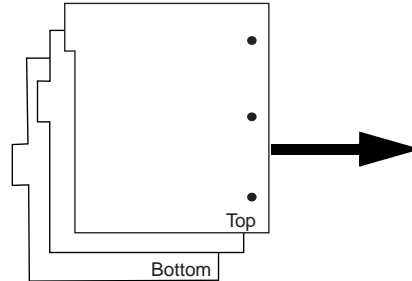
Loading Pre-printed Paper

Load pre-printed paper as indicated in the following table. Refer to [Appendix C](#) for more details about using pre-printed paper.

Paper Type	Print Mode	Loading Into	
		Tray 1 - 3	MBT/HCF
Front/Back Side Predetermined	Simplex	Front side down	Front side up
	Duplex	Paper up to 9 in. (feed direction), front side down Paper longer than 9 in. (feed direction), front side up	Front side up
Page Number Predetermined	Simplex	First sheet on top, face down	First sheet on top, face up
	Duplex	Paper up to 9 in. (feed direction), first sheet on top, face down Paper longer than 9 in. (feed direction), first sheet on top, face up	First sheet on top, face up

Loading Tab Stock

1. Load tab stock as shown in the illustration below.



NOTE:

Avoid bending the tabs or the corners of the tab dividers as this will increase the likelihood of a jam occurring during the printing process. If a jam does occur, refer to [page 4-25](#) for instructions on jam recovery.

In the main paper trays, place the straight edge of the tab stock against the straight *right* leading edge of the paper tray. The tabs should be on the *left*, also known as the trailing edge. In the MBT, place the straight edge into the machine. Tab stock cannot be used in the HCF.

Load only complete tab sets. The first tab in the set should be on top of the stack and the last tab on the bottom. Adjust the paper guides so that they hold the tab stock securely in position in the tray.

NOTE:

You must set the sensor plate in the tray to the first position (denoted by a triangle).

2. Select the paper size from the OCP by making the following selections. (If the tab stock is not 9 in. by 11 in., select Custom Size.)

Printer / Paper Source / Paper Size / tray number / LetterTab or Custom Size

3. If you selected Custom Size in step 2, see “[Setting the Custom Paper Size Values](#)” on [page 3-16](#) for instructions on entering the custom paper size.

Setting the Custom Paper Size Values

If the paper size you have selected is a custom size you must set the paper size using the OCP. First, follow the steps for loading paper into the desired tray, then perform these steps.

1. On the Custom Paper Size screen, touch the value box for the leading edge (the arrow in the illustration points to the leading edge). The Custom Paper Size Input screen is displayed.
2. Using the number pad, enter the value for the leading edge of the paper.
3. Press the **■** key. The display returns to Custom Paper Size and the value you have entered is shown.
4. Touch the value box for the side edge. The display returns to Custom Paper Size Input.
5. Using the number pad, enter the value for the side edge of the paper.
6. Press the **■** key. The display returns to Custom Paper Size and now both values you have entered are displayed.
7. Press the **■** key. Your custom paper size settings are now saved.

Setting the Tray Adjust Values

The tray adjust feature is used when it is necessary to shift the image on the printed page. You can shift the image feed direction +1.0 in (25.4 mm) or -0.5 in (12.6 mm) and you can shift the image ± 0.5 in. (12.6 mm) in the scan direction. When printing in duplex mode, you can set different tray adjust values for the front side and back side of the paper.

1. To display the Tray Adjust screen, make the following selections from the OCP:
Printer / Paper Source/ ►► / Tray Adjust / tray number
2. On the Tray Adjust screen, touch the left-most value box. The Tray Adjust Input screen is displayed.
3. Using the number pad, enter the value for the feed direction of the paper. For example, entering +1.0 moves the image 1.0 in. to the right on the printed page.
4. Press the **■** key. The display returns to the Tray Adjust screen and the value you have entered is shown.
5. Touch the bottom-most value box. The display returns to Tray Adjust Input.
6. Using the number pad, enter the value for the scan direction of the paper. For example, entering +0.5 moves the image 0.5 in. to the top of the printed page.
7. Press the **■** key. The display returns to the Tray Adjust screen and now both values you have entered are displayed.
8. Press the **■** key. Your tray adjust settings are now saved.

Setting the Default Paper Source

The Default Paper Source feature is used when the paper source is not specified in the job.

1. To set the Default Paper Source make the following selections from the OCP:

Printer / Paper Source / Default / Tray # or AutoSelect / ■

Setting the Paper Type

The Paper Type feature is used when the type of paper being used is anything other than Plain.

1. To set the paper type for each tray make the following selections from the OCP:

Printer / Paper Source / Paper Type / Tray # / desired paper type / ■

Setting the Paper Weight

The Paper Weight feature is used when the paper weight being used is anything other than 20 lb..

1. To set the paper weight for each tray make the following selections from the OCP:

Printer / Paper Source / >> / Paper Weight / Tray #

Using the number pad, enter the value for paper weight and press the ■ key.

Setting the Paper Color

The Paper Color feature is used when the paper color being used is anything other than white.

1. To set the paper color for each tray make the following selections from the OCP:

Printer / Paper Source / Paper Color / >> / Tray #

Ordered Sets

Using the OCP or the WEB you can define an ordered set by specifying the number of pages (12 max.) in the set and the paper source tray(s) that contain the ordered set pages. The printer will support input tray cascading for ordered sets based on paper size and media type

NOTE:

The printer can support only one ordered set size at a time; therefore, make sure the paper size and media type for each tray in the cascade are the same.

PCL tray grouping is also supported for ordered sets. All trays in a group must have the same configuration to allow cascading. Trays not included in the group must have a different configuration.

NOTE:

For more information on PCL Tray Grouping refer to the Web Utilities Guide and/or the PCL Programming Guide.

In the event that a paper jam, job cancellation, or other recoverable printer error occurs while printing ordered sets, the printer will prompt you to clear the paper path. When the paper path is clear, press Continue on the OCP. The printer will automatically remove the remaining sheets of the ordered set to the sample tray, reprint the set(s) that were in the paper path, and complete the job.

Some examples of ordered sets are:

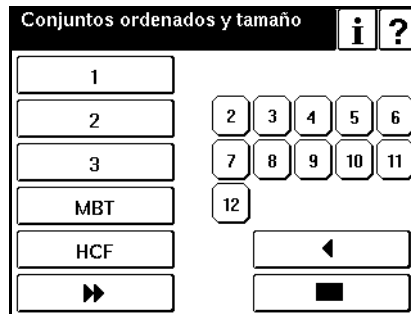
- Tabs
- NCR
- Prenumbered pages
- Special forms

Define the Ordered Sets

1. From the OCP make the following selections:

Printer / Paper Source / ▶▶ / Ordered Sets

The Ordered Sets and Size screen will be displayed.



2. Select the tray(s) and the number of pages in the set.
3. Press the ■ key. Your settings are now saved.
4. Load the ordered set pages into the tray(s).

NOTE:

*When loading ordered media to a tray you must load the paper in complete sets
If you print a subset of the complete set the unused pages will be delivered to the
sample tray.*

Chapter 4

Care and Maintenance

What This Chapter Provides

This chapter contains the following information:

- [Replacing Consumables](#)
- [Clearing Paper Jams](#)
- [Cleaning the Printer](#)
- [Handling and Storing Consumables](#)

Replacing Consumables

When a consumable needs to be replaced, the printer stops printing and displays an error message indicating which consumable should be replaced. The following table shows the life expectancy of each consumable.

Consumable	Average Life Expectancy
Toner	36,000 images (5% coverage ¹)
Developer Mix	480,000 images (600,000 drum rotations)
Drum Unit	400,000 images (500,000 drum rotations)
Fuser	<ul style="list-style-type: none">• 1,600,000 images, or• 4,000 hours (time that heater of fuser unit has been turned on) (70ppm)• 3,000 hours (time that heater of fuser unit has been turned on) (92ppm)
Fuser Cleaning Web	320,000 images
Toner Collector Bottle	Every other refill of the toner

NOTE:

“Image” means paper size of Letter/A4 LEF. Other page sizes will have “images” based on Length of Form/8.5”.

Standard toner collector bottle replacement is every other toner supply. However, depending on print density requirements, the replace toner collector bottle message may be displayed at varying frequencies.

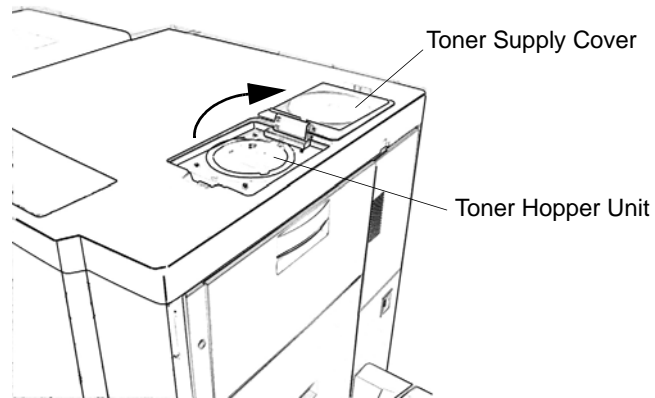
External factors can affect the average yield of consumables. Some of these factors are:

- Humidity
- Temperature
- Type of paper
- Run length of jobs
- Adequate ventilation around equipment
- Image coverage on page
- Print Utilization - if less than 80%, projected consumable life may become shorter
- Print density

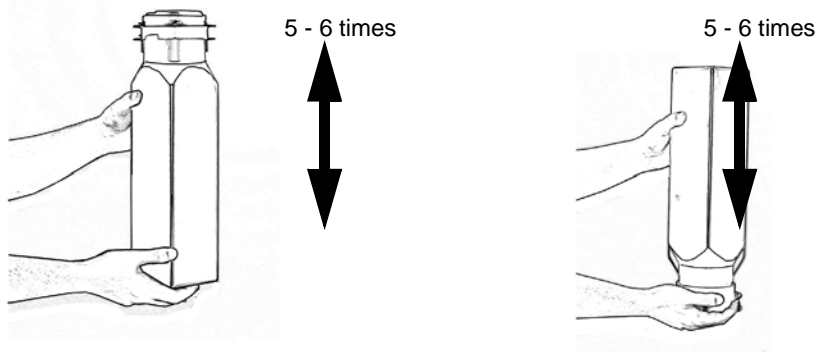
¹ Coverage is calculated per printed sheet and is defined as the ratio of area with toner to the total area of the sheet. Toner usage is based on 5% coverage when the toner density level is set to the default value. The following items affect toner coverage: the printed image content, the paper used, and the condition and calibration of the printer. Actual toner usage may vary due to these factors.

Adding Toner

1. Open the Toner Supply Cover.



2. Make sure that the mouth of the toner bottle is closed. Shake the toner bottle up and down about six times, then turn the toner bottle upside down and shake it again.



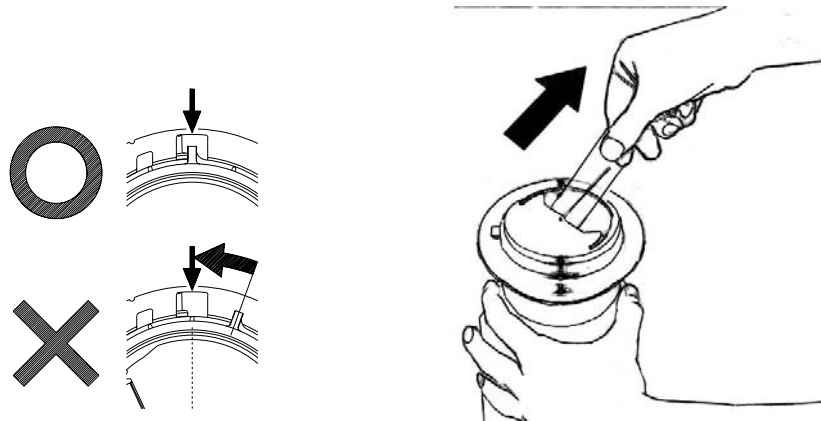
CAUTION!

Toner is not harmful to the human body, but if some toner has come in contact with your skin or clothes, you should wash it immediately with cold water.

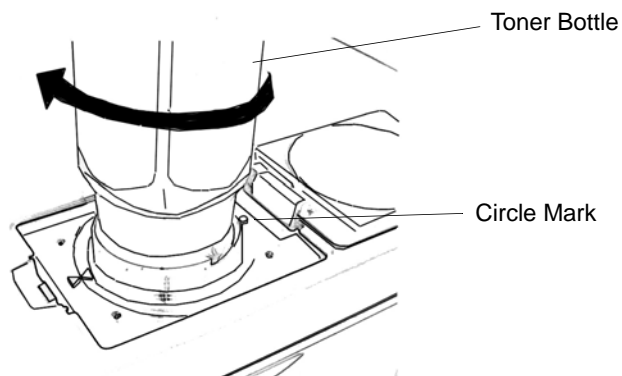
3. Peel the toner seal film.

NOTE:

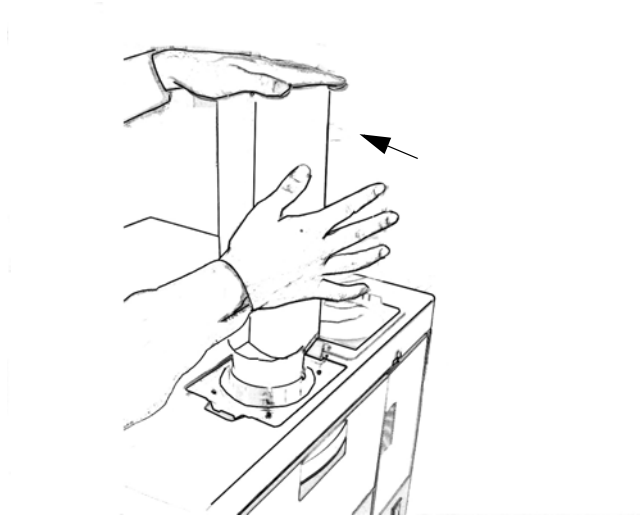
Before peeling the toner seal film, make sure that the projection of the toner bottle cap is located at the click point. If it is not, turn the bottle cap counterclockwise to move the projection to the click point as shown in the figure below, and then peel the seal film.



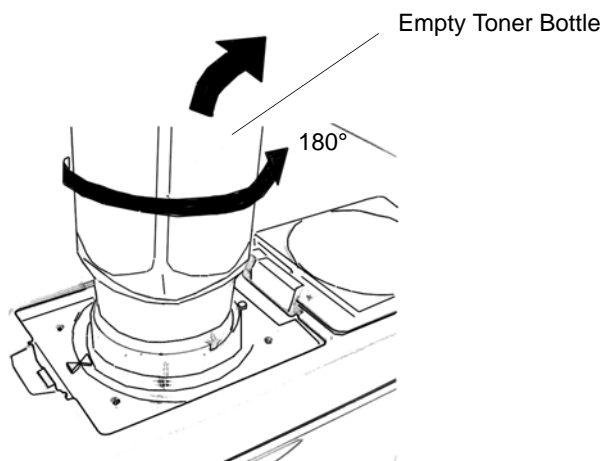
4. Install the toner bottle into the Toner Hopper Unit so that the triangle marks on the bottle mouth and the Toner Hopper Unit line up. Turn the bottle in a half circle until the triangle mark on the bottle comes to fit the circle mark on the Toner Hopper Unit.



-
5. Hold the top of the bottle and tap the side to transfer the toner into the Toner Hopper Unit.



6. When the toner bottle is empty, turn it back in a half circle and take it out.

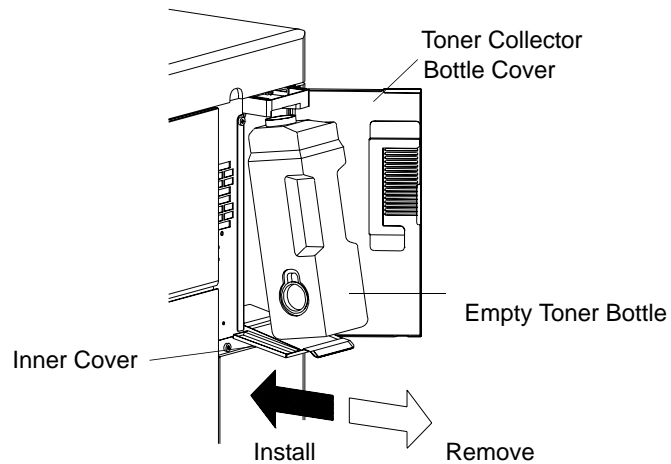


7. Close the Toner Supply Cover and discard the empty toner bottle.

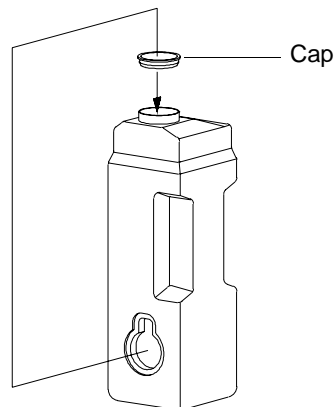
Replacing the Toner Collector Bottle

When the OCP displays the message `Toner Bottle Full`, replace the Toner Collector Bottle with a new empty bottle.

1. Open the Toner Collector Bottle Cover and the Inner Cover. (The Toner Cover Door is located at the right side of the printer next to the MBT.)
2. Remove the old Toner Collector Bottle.



3. Remove the cap from the side of the Toner Collection Bottle and place it on top of the bottle to seal it.



4. Install a new Toner Collector Bottle. (See illustration for Step 2.)
5. Close the Inner Cover and the Toner Collector Bottle Cover.

-
6. Dispose of the full toner bottle properly.

WARNING!

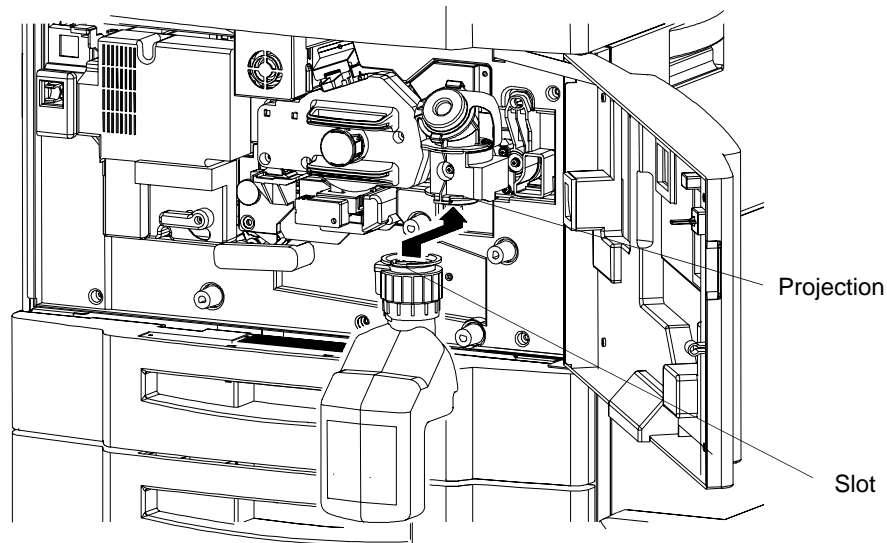
Waste materials should be disposed of or incinerated under conditions which meet all federal, state and local environmental regulations. Since regulations may vary from one region to another, check with the agency that governs waste disposal in your area for proper procedures.

Replacing the Developer Mix

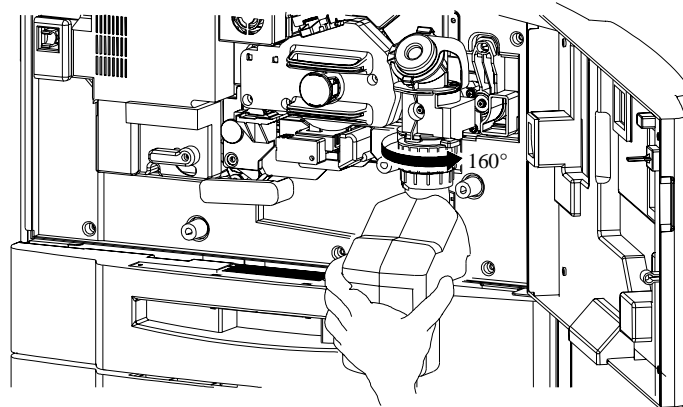
Replacing the developer mix is a two-phase process. First you exhaust the Developer Mix, and then you supply it.

Exhausting the Developer Mix

1. Take the empty developer bottle out of the box.
2. Open the Front Cover of the printer.
3. Attach the empty developer bottle to the Developer Unit Duct so that the slot on the bottle fits the projection on the duct.



-
4. Lock the empty developer bottle by turning the developer bottle cap about 160 degrees in the direction shown below.



CAUTION!

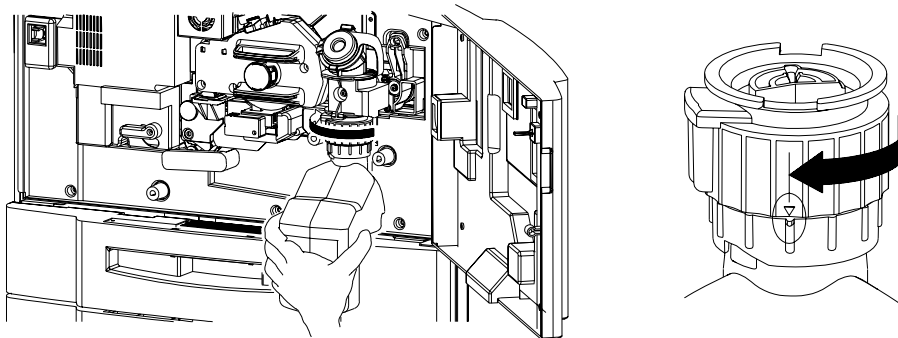
Hold the developer bottle when you turn the cap so that the bottle is not turned together with the cap.

5. To start the exhaust process, make the following selections from the OCP:

Setup / Consumable / Developer Mix / Exhaust ■

The exhaust process takes approximately 2 minutes.

6. Remove the developer bottle by turning the bottle cap back about 160 degrees in the direction shown below.




Supplying the Developer Mix

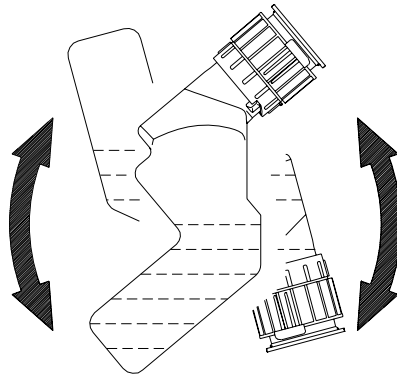
Be sure to use only the developer mix that is specified for the printer. Using developer that is not specified for the printer may degrade print quality or cause damage to the printer. Refer to the table below to determine the correct developer mix for your printer.

Printer Model	Developer Mix	
	Part Number	Label Color
DDP70	(399071-900)	White
DDP70k, DDP70e, and DDP92	404030 (337600-003)	Green*

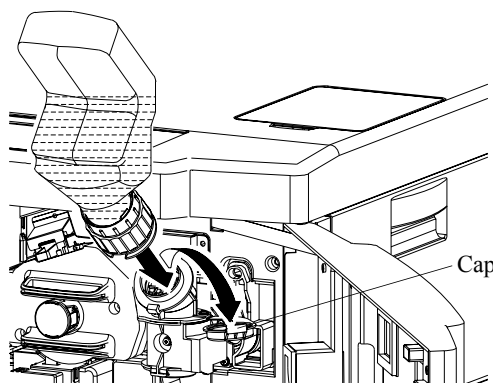
* Use developer mix **Type-K** (with a green label) when the seal shown at right is pasted on the duct of the developer unit.



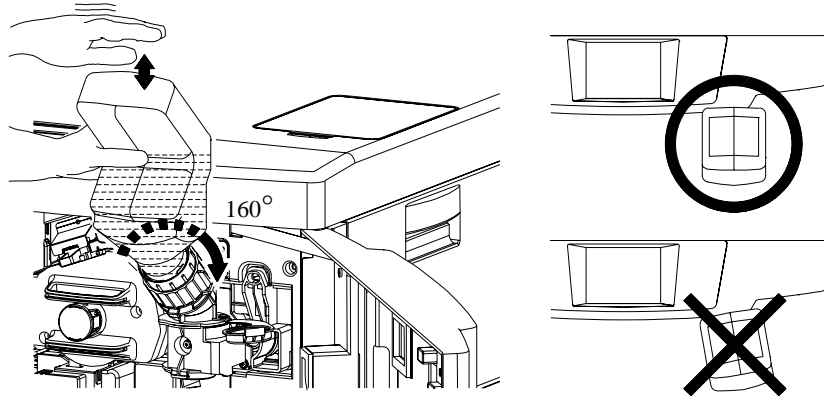
1. Take the new developer bottle out of the box and shake it.



2. Remove the duct cap from the developer duct.
3. Place the new developer bottle onto the developer unit duct.



-
4. Lock the bottle in place by turning the developer bottle cap about 160 degrees in the direction shown below.



CAUTION!

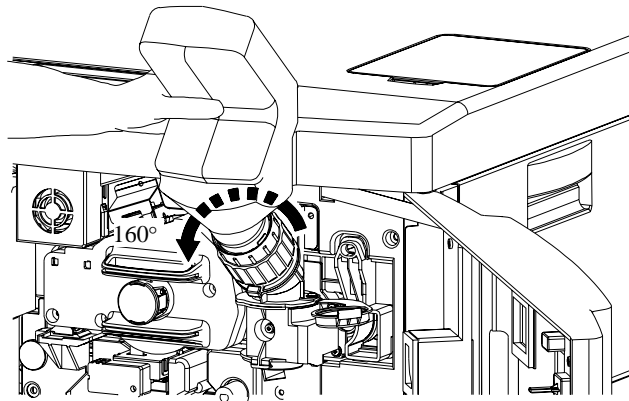
Hold the developer bottle when you turn the cap so that the bottle is not turned together with the cap.

5. To start the replacement process, make the following selections from the OCP:

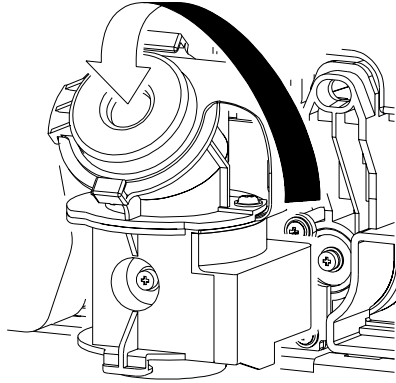
Setup / Consumable / Developer Mix / Supply ■

The replacement process takes approximately 2 minutes. (Maximum replacement time is 4½ minutes.)

6. Turn the cap back about 160 degrees in the direction shown and remove the developer bottle.



-
7. Place the duct cap back on the developer duct.



8. Clean any spilled developer from the printer.
9. Close the Front Cover.

NOTE:

Save the empty developer bottle for use during the next developer exhaust process.

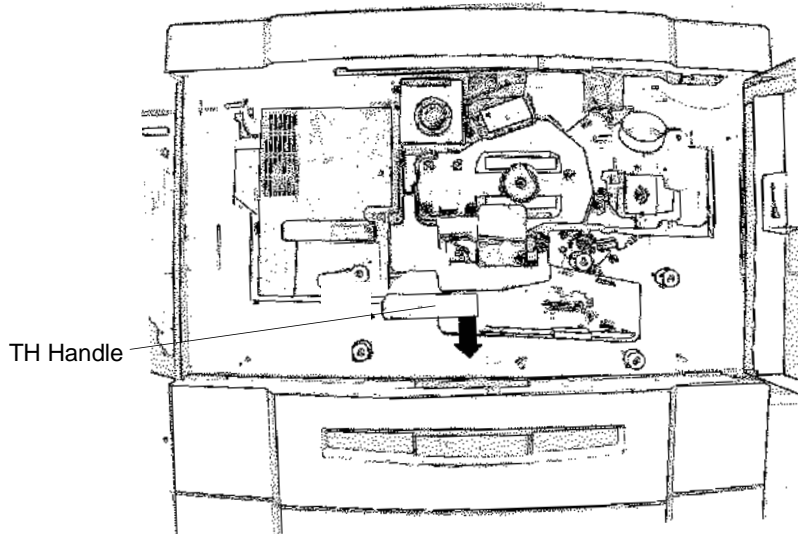
Replacing the Drum Unit

To remove the Drum Unit:

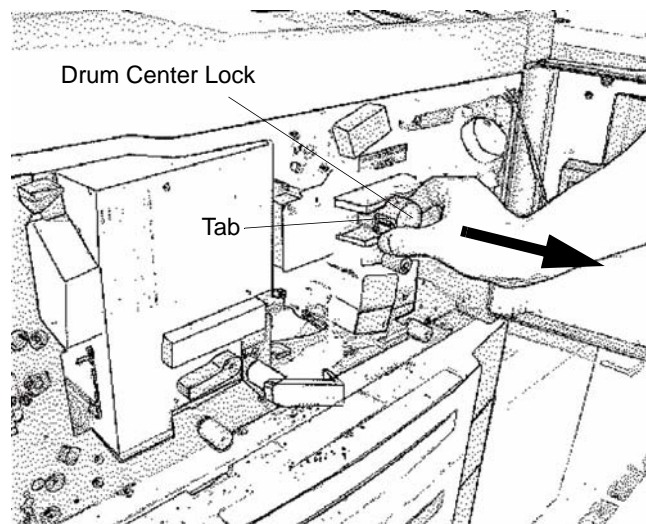
CAUTION!

*When handling the drum unit **do not touch** the green surface of the drum and do not set the unit down with the green surface touching anything.*

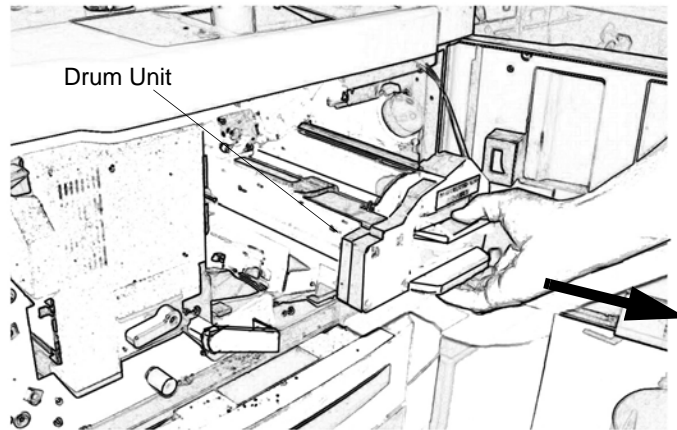
1. Open the Front Cover of the printer.
2. Turn the handle clockwise to release the Drum Unit.



3. Turn the Drum Center Lock until the tab on the side of the lock appears. Push the tab to release the Lock. Pull the drum center lock out of the center shaft.



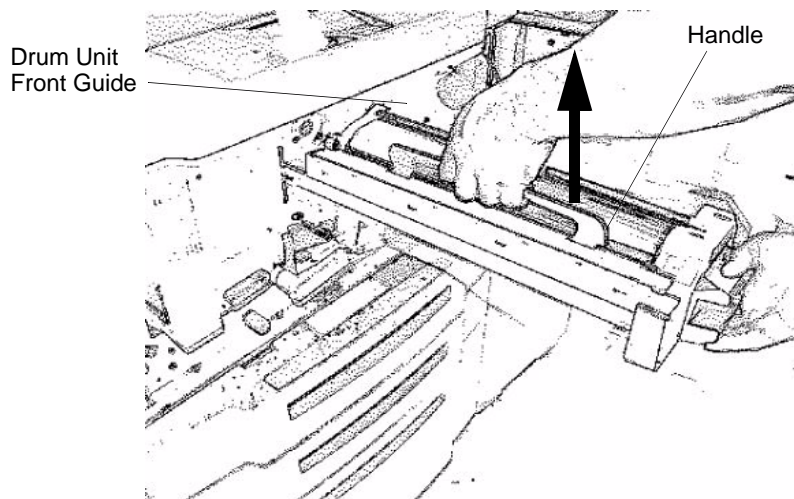
-
4. Using the grip of the front side of the drum unit, pull it out until the stopper behind the unit catches, then hold the handle and lift the drum unit to remove it.



:

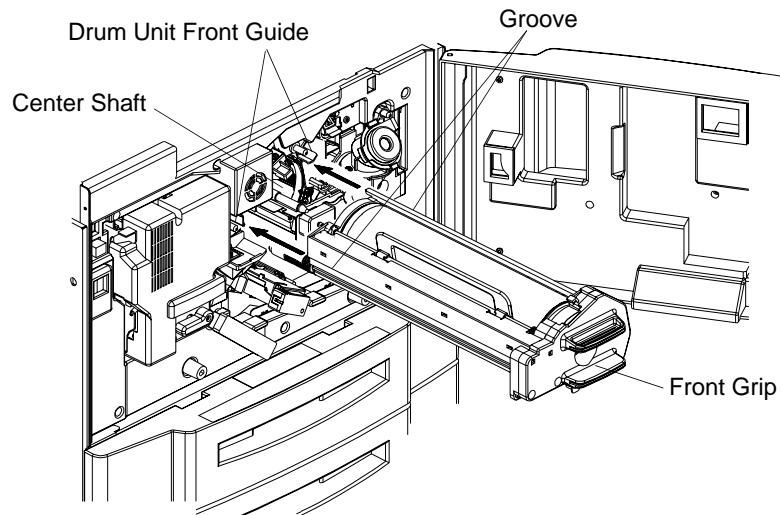
CAUTION!

*When handling the drum unit **do not touch** the green surface of the drum and do not set the unit down with the green surface in contact with the table.*



To install the new Drum Unit:

1. Align the groove on both sides of the Drum Unit to the Drum Unit Front Guides that are located on the front side of the Console Frame. Push the front grip of the Drum Unit until the Drum Unit is set in the proper position.



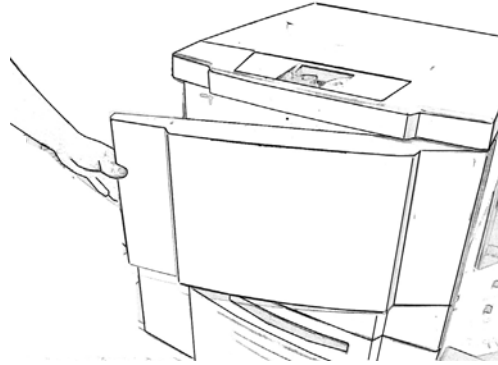
2. Replace the Drum Center Lock on the Center Shaft. Push the lock until it latches. Make sure the lock is latched by pulling. It should not come back out.
3. Turn the handle counterclockwise to close the TH unit.
4. Close the Front Cover of the printer.
5. To clear the usage counter for the Drum Unit, make the following selections from the OCP:

Setup / Consumable / Drum Unit / ■

Replacing the Fuser Cleaning Web

To remove the Fuser Unit:

1. Open the Front Cover of the printer.

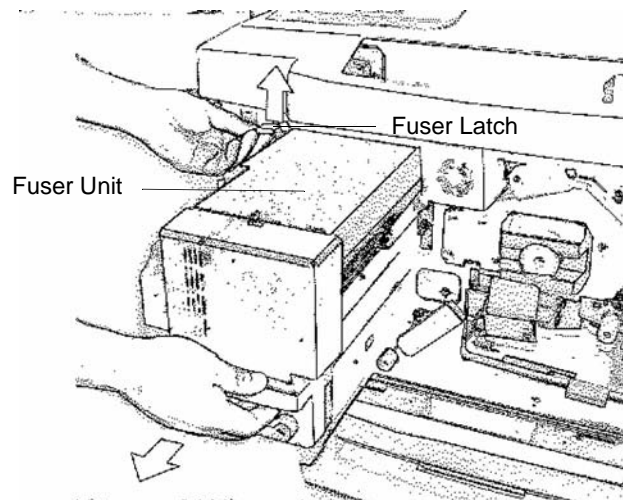


WARNING!

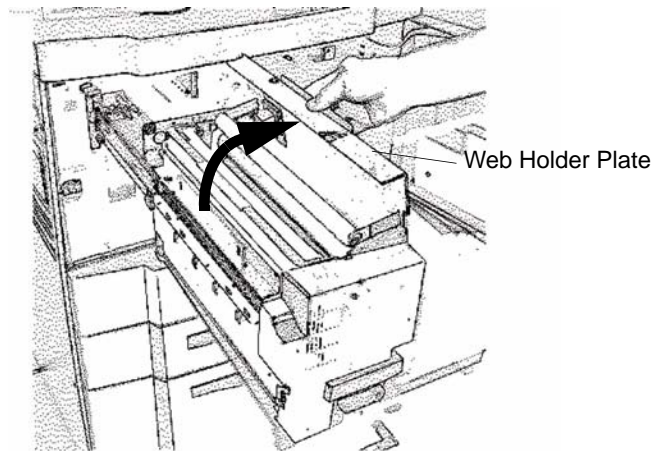
The Fuser Unit is very hot. Do not touch any parts of the Fuser Unit except those parts which are used to replace the Fuser Cleaning Web.

Do Not open the Fuser Unit and Tray 1 at the same time. The printer may tip over causing personal injury or damage to the printer.

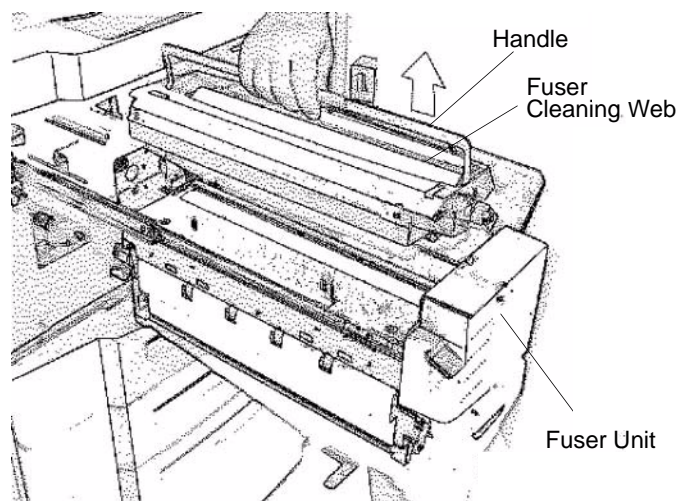
2. Hold up the Fuser Latch and pull out the Fuser Unit.



-
3. Open the Web Holder Plate as shown below.

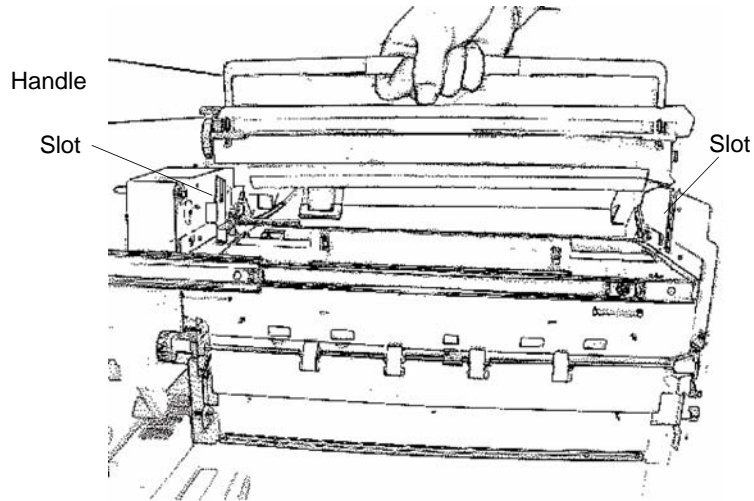


4. Pull the handle up and use it to lift the Fuser Cleaning Web out of the Fuser Unit.



To install the new Fuser Cleaning Web:

1. Slide the Fuser Cleaning Web into the slots of the Fuser Unit and lock it into place by pushing down the handle.



2. Close the Web Holder Plate and push the Fuser Unit back in.
3. Close the Front Cover.
4. To clear the usage counter for the Fuser Web, make the following selections from the OCP:

Setup / Consumable / Fuser Web / ■

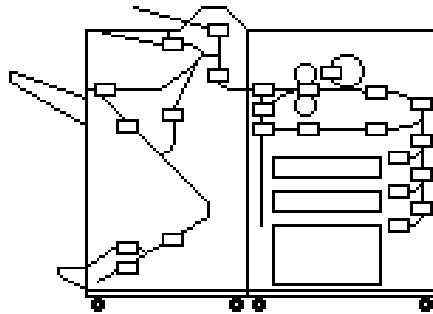
Replacing Staples

For staple replacement instructions refer to the finisher user's guide.

Clearing Paper Jams

This section addresses printer paper jams only. If a paper jam occurs in the finisher, refer to your option-specific finisher user's guide.

The location of a paper jam is displayed on the OCP.



When clearing a paper jam, remove paper that is located in the Vertical Path Cover area first, then clear the remaining paper as indicated on the OCP display..

NOTE:

The Vertical Path Cover is also referred to as the "Input Station Cover" (IS Cover).

Vertical Path (IS) Cover

Follow the steps below to clear paper from the Vertical Path Cover

1. Open the Vertical Path Cover and remove the jammed paper. Paper along the paper path is automatically ejected from the Vertical Path Cover.

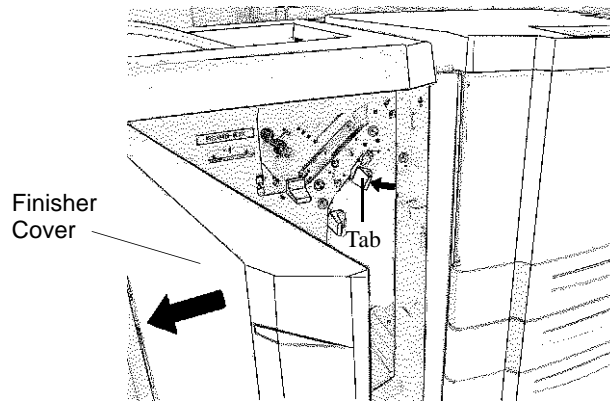


2. Close the Vertical Path Cover.
3. Touch ► on the OCP to clear any error messages.

Switch Back Area

Follow the steps below to clear paper from the Switch Back Area.

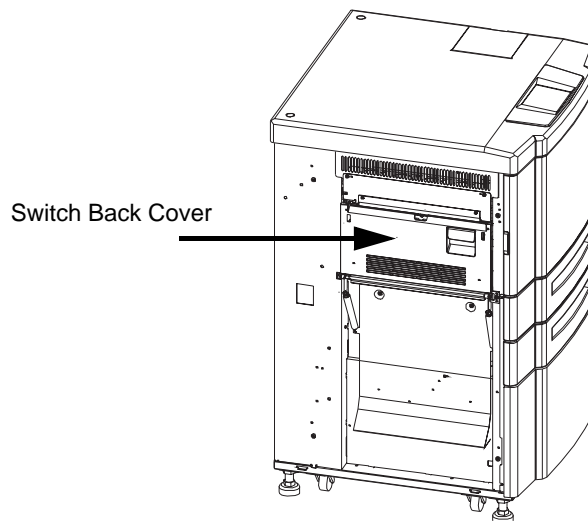
1. Open the Finisher Cover and the Tab.



2. Open the Switch Back Cover.

NOTE:

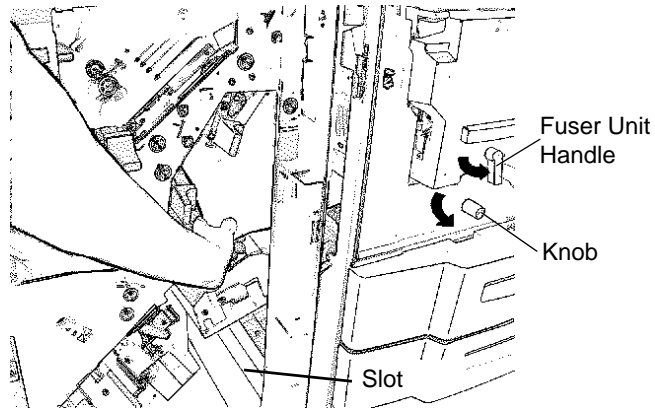
The Switch Back Cover is located on the left side of the printer, but is accessed from inside of the Finisher.



-
3. Turn the Fuser Unit Handle to the RELEASE position and rotate the purple knob in the direction shown below to remove the jammed paper.

NOTE:

The jammed paper may come out of the slot below the cover.

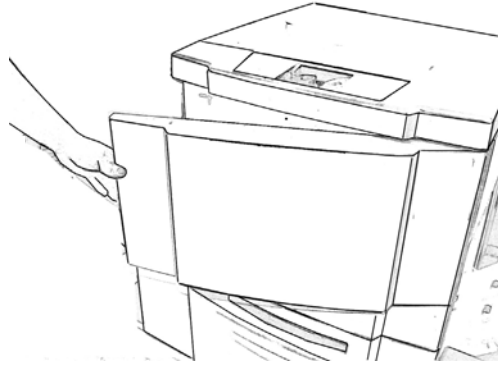


4. Close the Switch Back Cover. Then close the Tab and the Finisher Cover.
5. Touch ► on the OCP to clear any error messages.

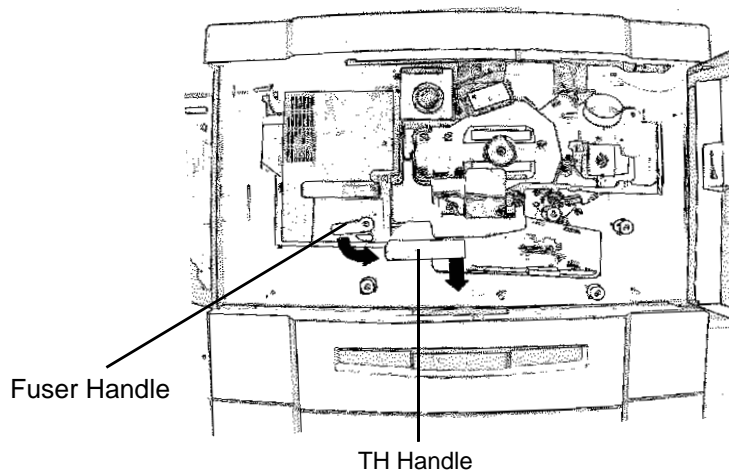
Paper Feed Block Area

Follow the steps below to clear paper from the Paper Feed Block area.

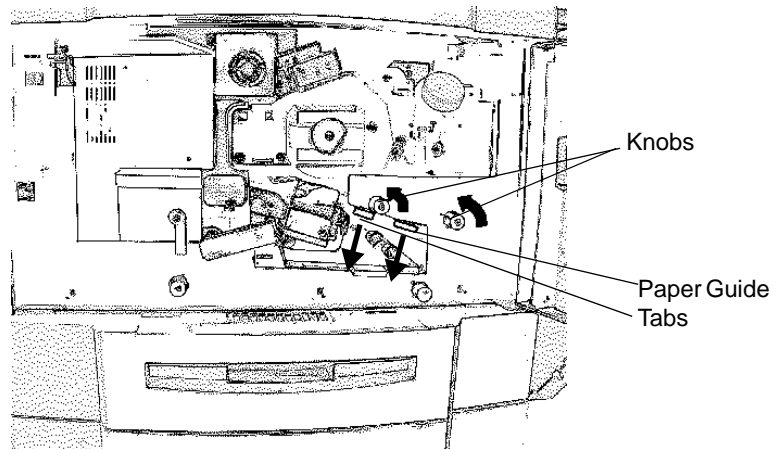
1. Open the Front Cover.



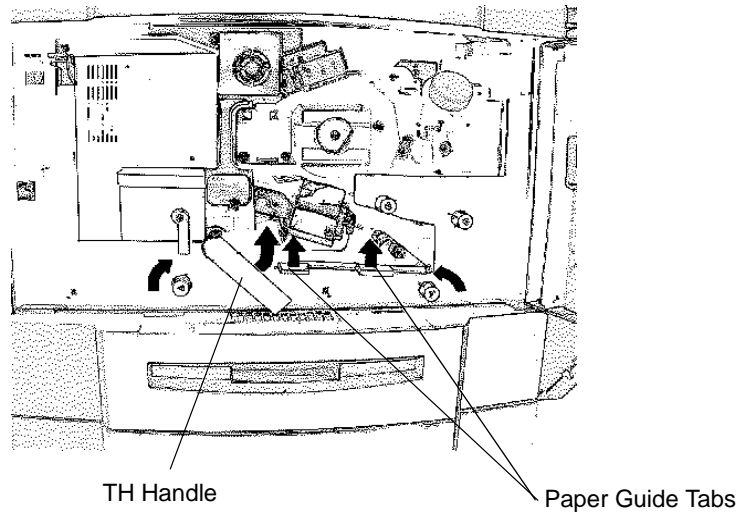
2. Turn the TH handle and Fuser handle to the RELEASE position.



-
3. Rotate the purple knobs as shown below to remove any jammed paper.



4. Turn the TH handle to the LOCK position.
5. In duplex printing, remove any jammed paper from the Paper Guide Tab. While holding the Paper Guide Tab up, rotate each purple knob as shown below to remove any jammed paper.



6. Turn the TH Handle and the Fuser handle to the LOCK position.
7. Close the Front Cover.
8. Touch ► on the OCP to clear any error messages.

Trays 1, 2, and 3

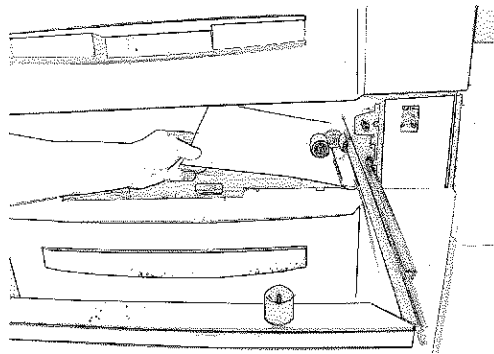
Follow the steps below to clear paper from Trays 1, 2, and 3.

Tray 1

WARNING!

Do not open Tray 1 if the Fuser Unit is pulled out. The printer may tip over causing personal injury or damage to the printer.

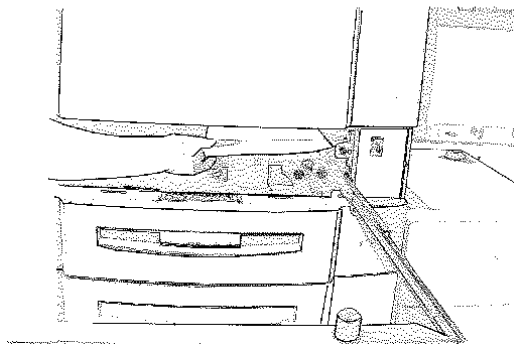
1. Open the tray and remove the jammed paper.



2. Close the tray.
3. Touch ► on the OCP to clear any error messages.

Tray 2 or 3

1. Open the tray and remove the jammed paper.

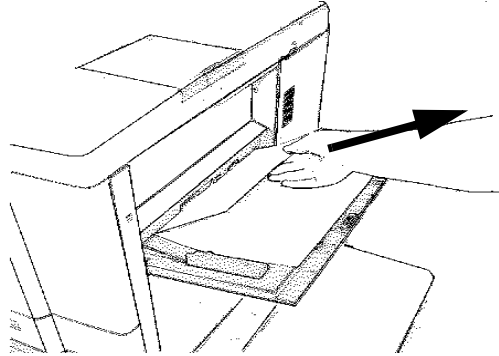


2. Close the tray.
3. Touch ► on the OCP to clear any error messages.

Multi-bypass Tray

Follow the steps below to clear paper from the MBT.

1. Remove the jammed paper by pulling it out in the direction shown below.



2. Touch ▶ on the OCP to clear any error messages.

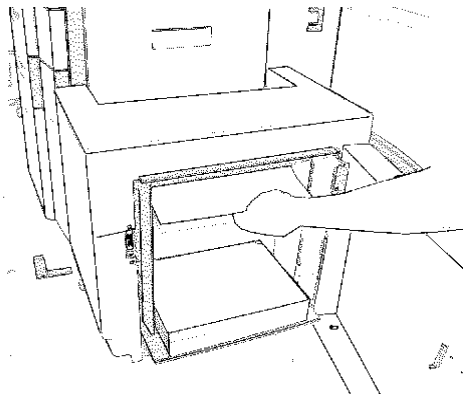
High Capacity Feeder

Follow the steps below to clear paper from the optional HCF.

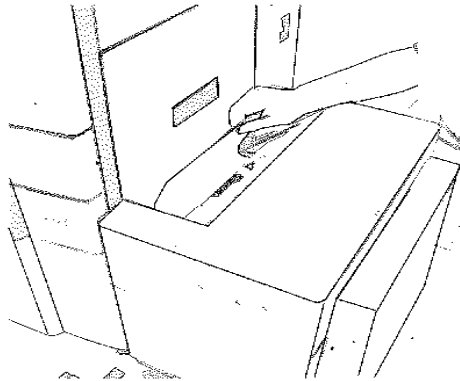
WARNING!

The table inside the HCF automatically descends when you open the door of the HCF. Do not allow anything to be caught between the table and the bottom of the HCF.

1. Open the door of the HCF and remove any jammed paper.



-
2. Take out the Top Cover and remove any jammed paper.



3. Return the Top Cover to its original position and close the door of the HCF.
4. Touch ► on the OCP to clear any error messages.

Tab Stock Jam Recovery

If a jam occurs when the tab stock is in the paper path, follow the steps below to clear the printer and resume your print job. If there is no tab stock in the paper path, proceed as you would for any paper jam.

1. Clear the jammed paper and tab stock from the paper path.
2. Determine which tab in the set was affected by the jam.
3. Open the paper tray that contains the tab stock. Remove tab stock from the stack until the tab position that jammed is on top. Close the paper tray.
4. Return the printer to the on-line position and your print job will resume automatically.

NOTE:

To avoid issues that may result from a paper jam, It is recommended that you use the Ordered Set feature when printing on Tab Stock. See “[Ordered Sets](#)” on page 3-18.

Cleaning the Printer

In order to maintain print quality, thoroughly clean the printer following the instructions below. When cleaning the printer, pay particular attention to the notes and cautions for safe maintenance.

CAUTION!

Power OFF the printer prior to cleaning.

Do not use solvent on the printer. Using solvent may dissolve the plastic and paint of the printer.

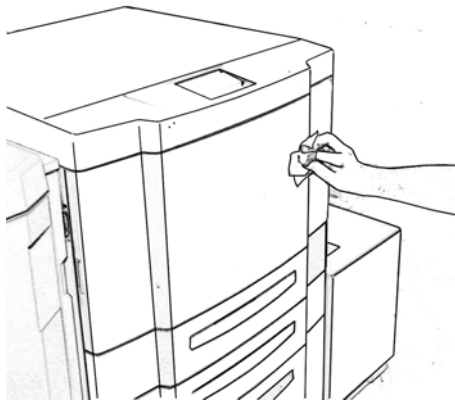
Do not use cleaning solutions to clean inside and around the printer. Use only a water-moistened cloth.

NOTE:

If the toner gets on your clothes, wipe it off with a dry cloth first and wash the clothes in COLD water. Be careful not to use hot water as it permits the toner to permeate into the fabric. Although the toner is nontoxic, avoid breathing toner particles.

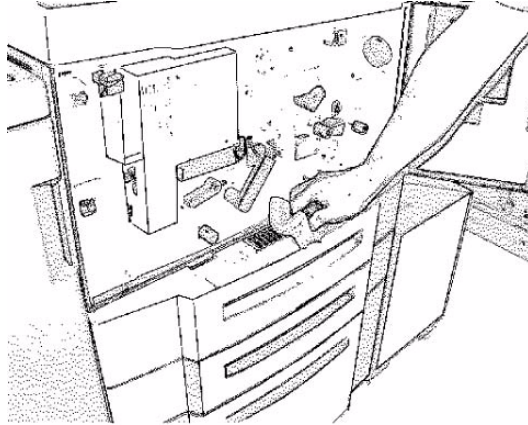
Cleaning the Printer Covers

1. Wipe with a water-moistened, lint-free, soft cloth.
2. Dry with a clean, lint-free soft cloth.



Cleaning the Inside of the Printer

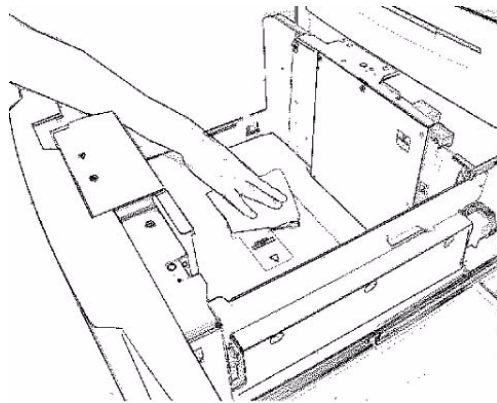
1. Open the Front Cover.
2. Using a dry, lint-free cloth, clean inside the Front Cover by wiping any visible toner away.



3. Close the Front Cover.

Cleaning Trays 1, 2 and 3, the MBT, and HCF

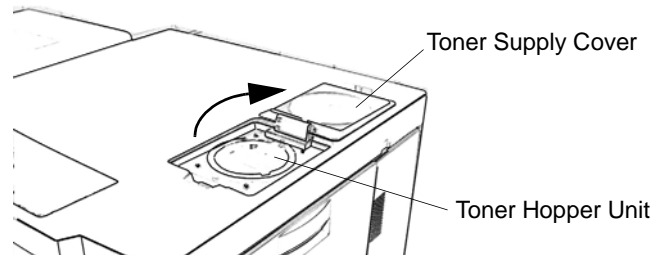
1. Open the tray and remove the paper.
2. Clean inside the tray, especially the corners, by wiping any visible toner away with a dry lint-free cloth.



3. Load the paper back into the tray and close the tray.

Cleaning the Toner Bottle Joint

1. Open the Toner Supply Cover.
2. Clean inside the Toner Supply Cover by wiping any visible toner away with a dry, lint-free cloth.



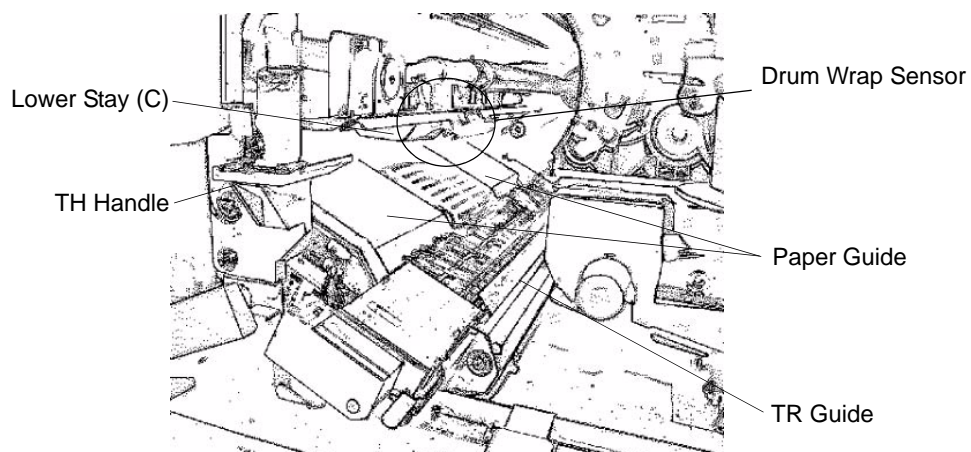
3. Close the Toner Supply Cover.

Cleaning the Conveyance Belt Area

NOTE:

When cleaning in the area surrounding the Drum Wrap Sensor, do not touch the Drum Wrap Sensor or the hook of the Drum Wrap Sensor Holder.

1. Open the Front Cover.
2. Turn the TH Handle to the RELEASE position.
3. Remove the Drum Unit. Refer to [page 4-12](#) for instructions.
4. Using a dry, lint-free cloth, *gently* wipe the visible dust from the Paper Guide, TR Guide, Drum Wrap Sensor, and the Lower Stay (C).



CAUTION!

Use care to avoid damaging the Plastic Grid.

-
5. Replace the Drum Unit.
 6. Turn the TH Handle to the LOCK position.
 7. Clean up any spilled Developer using a dry, lint-free cloth or a vacuum.
 8. Close the Front Cover.

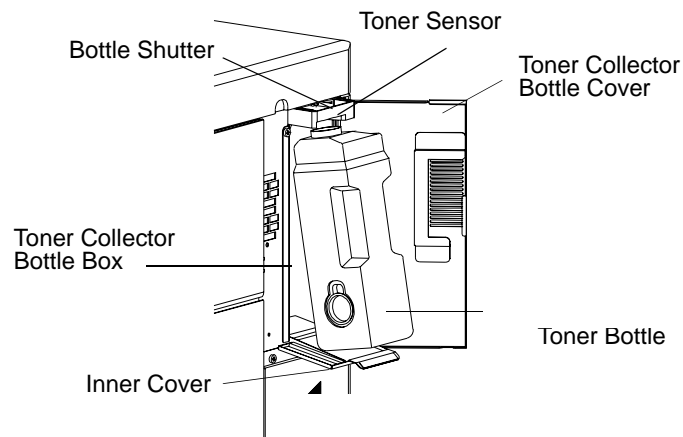
Cleaning the Toner Collector Bottle Area

1. Turn off the power.

NOTE:

If the power is not turned off prior to removing the Toner Collector Bottle, the counter will be reset.

2. Open the Toner Collector Bottle Cover and the Inner Cover.
3. Remove the Toner Collector Bottle.
4. Clean the Toner Collector Bottle Cover, Toner Collector Bottle Box, the surface of the Bottle Shutter, and the Inner Cover by wiping any visible toner away with a dry, lint-free cloth.



5. Replace the Toner Collector Bottle.
6. Close the Inner Cover and the Toner Collector Bottle Cover.

CAUTION!

Do not clean the Toner Sensor located on the underside of the Bottle Shutter.

Handling and Storing Supplies and Consumables

Paper

Proper handling and storing of paper are important to optimize the performance of the printer. For best results, follow the instructions below.

When Loading

- Be careful not to damage, crease, or fold paper when handling.
- Eliminate any damaged paper before loading paper into the tray.
- Do not load different types of paper into the same tray.
- Remove any paper previously loaded in the tray when loading new paper. Do not put new paper on the paper formerly loaded in the tray.

When Storing

- Wrap the remaining paper to keep the proper moisture content.
- Store the wrapped paper in an air-conditioned room. There should not be a significant temperature difference between a paper storage environment and a printer operating environment. It may cause paper jams.

When Paper Jams Frequently Occur

- Replace the paper. Even if paper brands are same, characteristics may be slightly different due to different environmental storage conditions.
- Turn over the paper in the tray. This should not be applied when using paper whose front side or back side is prearranged such as letterhead forms.

Toner and Developer


Proper handling and storage of the toner bottle and developer bottle are important to optimize printer performance. For best results, follow the instructions below.

When Purchasing

- Use only toner and developer which are specified for the printer. Print quality may be degraded and troubles may occur if using toner and developer that does not meet the specification.

Printer Model	Developer Mix	
	Part Number	Label Color
DDP70	(399071-900)	White
DDP70k, DDP70e, and DDP92	404030 (337600-003)	Green*

* Use developer mix **Type-K** (with a green label) when the seal shown at right is pasted on the duct of the developer unit.



- Store the toner bottle and developer bottle in a well air-conditioned place. If the temperature is over 104°F (40°C), the toner and developer may solidify. The recommended storing temperature is 14°F - 104°F (-10°C~40°C). The recommended relative humidity is 5% to 80%. Do not store for longer than 3 years after the date of manufacture.
- Do not expose developer to the air. If exposed, developer may rust and degrade printing quality.

Chapter 5

Troubleshooting

What This Chapter Provides

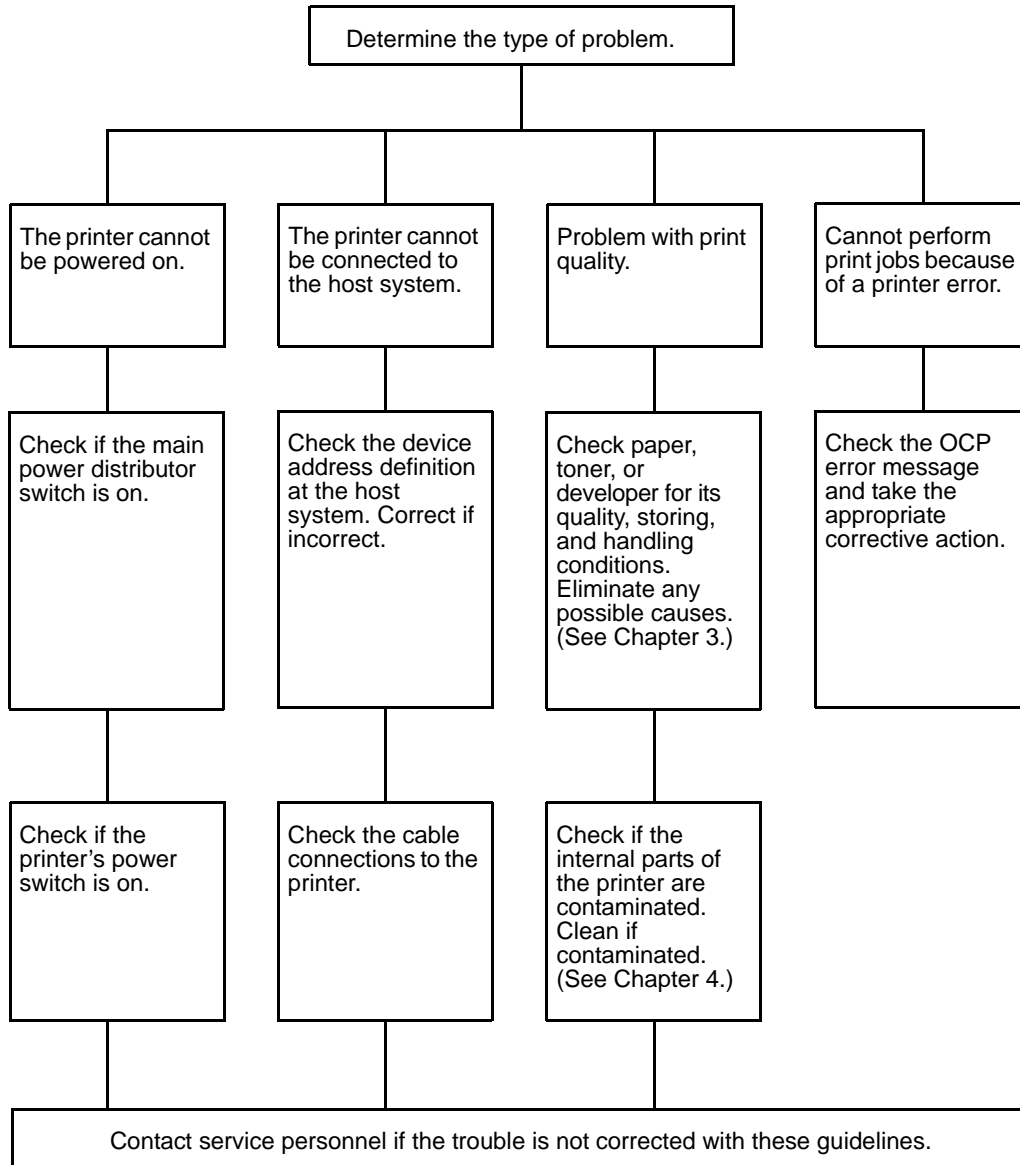
This contains the following information.

- [Guidelines Flowchart](#)
- [Basic Troubleshooting Tips](#)
- [General Printing Problems](#)
- [Print Quality Problems](#)
- [Duplex Printing Problems](#)
- [Printing Notes](#)
- [OCP Display Messages](#)
- [Printer Limitations](#)
- [Network Problems](#)

NOTE:

The following sections provide troubleshooting guidelines. If you are still unable to resolve a problem, contact your authorized service center.

Guidelines Flowchart



Basic Troubleshooting Tips

The following are some common situations that can cause a variety of problems. Before you look for a specific problem use the tips in this list.

- Check the power and all cables to the printer.
- Check the printer OCP for information.
- If possible, print the Status Page from the Reports menu and verify that the settings match your configuration.
- Check the current status of the printer.
 - The current status appears on the OCP.

If the printer is processing your job, the status message reflects this.

If your print job does not appear in the status message, another user's job may be printing before yours or the printer may already have finished printing your job.

If your job is waiting to print, it appears in the list for the print queue.

- If used with a MicroPress Server, check the Status field in the DDP-MP main window.

General Printing Problems

If this happens	Try this
Paper handling problems (jams)	<ul style="list-style-type: none"> • Check pick rollers and clean area of problem paper source. • Straighten paper stack of problem paper source. • Confirm paper size in printer driver, paper tray, and OCP.
Printer does not respond to a Print command	<ul style="list-style-type: none"> • Try printing a Status Page from the Reports menu. If you are able to print the Status Page but still cannot print a file from your computer, contact your system administrator or your authorized service/support center. • Verify that you printed to the correct queue. • If you are still unable to print, contact your system administrator.
Message requests a paper size that you do not have	<ul style="list-style-type: none"> • Cancel the job. • Change the page size in the Print option of your application. • Resubmit the job.
Status Page does not print	<ul style="list-style-type: none"> • If the OCP shows a diagnostic or error message, take the appropriate corrective action. • If the OCP is completely blank, shut down and restart the printer. When the printer reaches Ready status, try printing a Status Page from the Reports menu. If the Status Page still fails to print, contact your authorized service/support center.
Print settings for your job output do not match the settings you gave	<ul style="list-style-type: none"> • Verify that you did not override the setting for job in another place.
Stops printing	<ul style="list-style-type: none"> • Verify that you did not make any OCP selections during the print job.
Paper does not pick	<ul style="list-style-type: none"> • Try printing any Test Print from the OCP.
IP address is changed automatically	<ul style="list-style-type: none"> • Verify that you did not use DHCP mode for IP Address. Change to STATIC mode from the Web Interface.
PostScript error page is printed	<ul style="list-style-type: none"> • Verify the Postscript data format.
Drum Wrap	<ul style="list-style-type: none"> • Paper fibers should run parallel to the paper feed direction. See Appendix C. • Paper curl should be less than 10 mm. See Appendix C.
Stacked Paper Sticks	<ul style="list-style-type: none"> • Too much paper on the Finisher. <ul style="list-style-type: none"> - Remove the stacked paper from the Finisher. • Print density is too high.
Staple function is not working	<ul style="list-style-type: none"> • Perform a stapling test using the Test Print.
Job offset is not working	<ul style="list-style-type: none"> • Perform a job offset test using the Test Print.
Incorrect font is printed.	<ul style="list-style-type: none"> • Print a font list report to confirm the font is available. • Confirm the printer driver setting. • Refer to the README file in the printer driver CD-ROM.

Print Quality Problems

If this happens	Try this
Pages have toner streaks	Clean the printer as described in Chapter 4.
Page is wrinkled or printed characters are blurred	<ul style="list-style-type: none"> • Paper does not meet specification. - See "Media Guidelines" on page C-1 • Moisture content is too high. - Replace with newly unwrapped paper. • The side guide is not adjusted properly. - Adjust to proper size. • OCP setting does not match loaded paper. - Load the correct size paper • Print density is too high. - Contact your authorized Service Technician (Note 1)
Paper is streaked, spotted, or smudged (Note 2)	<ul style="list-style-type: none"> • The inside of the printer is dirty. - Clean the inside of the Printer • Print density is too high. - Contact your authorized Service Technician (Note 1) • Change of paper settings. - Print a Cross Pattern test print to remove dirt. • The Drum may be damaged. - Replace the drum. (Note 2)
Voids or vertical voids	<ul style="list-style-type: none"> • Moisture content is too high. - Replace with newly unwrapped paper. • Paper does not meet specification. • Creased or wrinkled paper is loaded in the tray. - Removed damaged paper or replace with newly unwrapped paper. • Print density is too high. - Contact your authorized Service Technician (Note 1) • There may be condensation inside the printer. - Turn on the printer power and leave it for 30-60 minutes, then start printing. • The drum unit may be damaged. - Replace the drum unit.
The tip or back end of paper is dirty	<ul style="list-style-type: none"> • Clean the NIP Guide and the TR Guide. See "Cleaning the Conveyance Belt Area" on page 4-28. • Clean the Finisher Exit Roller.
Part of solid printing is scraped or scratched	<ul style="list-style-type: none"> • Print Density is too high - Contact your authorized Service Technician (Note 1)
Printing is too dark	<ul style="list-style-type: none"> • Print Density is too high - Contact your authorized Service Technician (Note 1) • Print Density is too high after initial power up. - Contact your authorized Service Technician (Note 1)
<p>Note 1: <i>Print Density Adjustment is a Service Menu item and requires an Authorized Service Technician.</i></p> <p>Note 2: <i>A paper jam may cause staining of the fuser unit. Print several pages to remove the stain. Cleaning or replacement of the fuser unit is required in some cases.</i></p>	

Duplex Printing Problems

If this happens	Try this
Duplex pages print upside down	Change the Duplex print option (Short Edge or Long Edge Binding) that specifies how the second image is placed relative to the first image.
Paper Jam	<ul style="list-style-type: none">• Confirm paper weight setting in the OCP.• Use paper (grain long) with fibers that run in parallel with the paper feed direction.

Printing Notes

- Paper jams (e.g. E134) may occur at the Switch Back Station, when using thick (stiff) paper.
- Banding may occur when printing half tones. This happens when paper enters the fuser unit or exits the regist rollers.
- Print position may gradually shift backward on the page when printing on thick paper.
- Multiple paper feed may occur if you are using paper that does not meet specifications.
- Paper jams (E118, E119, E128, E134, etc.), stacker jams, poor stacking accuracy and poor staple accuracy may occur on paper with too much curl.
- Print start position may change based on paper size and weight.
- Print density may degrade when printing more than 30% print coverage.
- Stacking accuracy may degrade when printing thin long paper.
- The paper exit rollers on the Finisher may quickly become contaminated when printing outside of the printable area.
- Print density may darken after replacing the developer mix.
- Scratches may occur if the OPC Drum is touched.
- To avoid paper jams, print speed is reduced when printing with tray combinations.
- Perform a test print to check print quality prior to starting daily print jobs and prior to starting jobs requiring high print quality.
- Continuous half-tone or solid black printing may cause print quality degradation.
- Frequent high black-to-white ratio and high-density printing can cause print quality to degrade. Check the print quality periodically and clean the inside of the printer.
- A high black-to-white ratio on duplex print jobs can cause paper to stick to the finisher. To avoid this problem, remove paper from the finisher stack frequently or lower the print density.
- Print density may be high for several thousand pages after powering on the printer. If this is the case, set the print density to “Light” for several thousand pages, then return the print density to “Medium”.
- Print density may be gradually decreased by continuous low-density printing. Print several hundred pages of a half-tone pattern to increase print density.
- After continuous printing of thick paper, the first sheet of a new print job may pick up dirt from the fuser unit. Run a cross-pattern test print to remove dirt.
- Print speed is decreased when paper thickness continuously alternates.

OCP Display Messages

The OCP displays the printer status with 1- to 2-line messages. There are three types of messages: status, warning, and error messages. The following table lists the messages in alphabetical order. Each message is explained and a corrective action is given when applicable.

For information on messages not explained here, please refer to your option-specific user's guide.

Message	Description	Corrective Action
Call for Service Exxx or <i>other text</i>	Any "Call for Service" message requires a service call for problem resolution. Line 2 is the error code.	Contact your authorized Service Technician and provide the error code displayed on the OCP.
Container x Top Cover Open Close Cover	The top cover of the container is open. x is the container number.	Close the cover.
Container xV Path Cover Open Close Cover	The v path cover of the container is open. x is the container number.	Close the cover.
Deleting Jobs	Status message. The selected jobs are being deleted from the print queue.	Wait for the printer to return to a Ready state.
Developer Bottle Not Set Set Developer Bottle E01E	The developer bottle is not seated properly.	Reseat the bottle.
Developer Error Retry Exhausting E048	An error occurred when operating the developer.	Retry. If the error occurs again, contact an authorized Service Technician.
Developer Error Retry Operation E047	An error occurred when replacing the developer mix.	Retry. If the error occurs again, contact an authorized Service Technician.
Developer Mix End of Life Replace Developer E012	The developer mixture needs to be exchanged.	Replace developer. Printing will resume when the developer is replaced.
Drum Unit End of Life Replace Drum Unit E016	The photoconductive drum needs to be replaced.	Replace the Drum Unit. Printing will resume when the Drum Unit is replaced.
Drum Wrap Sensor Error Clean Wrap Sensor E018	The drum wrap sensor level is abnormal.	Contact your authorized Service Technician.
Drum Wrap Remove Paper E118	Simplex paper is wrapped around the drum.	Remove the jammed paper.
Drum Wrap Remove Paper E119	Duplex paper is wrapped around the drum.	Remove the jammed paper.
Duplex-Always	Duplex-Always mode is enabled.	Contact your System Administrator for additional information.
Elevator Tray Paper Full Remove Paper E009	The output tray of the finisher is full.	Remove paper from the elevator tray.
Elevator Tray Paper Full Remove Paper E00A	Paper did not stack properly in the output tray of the finisher.	Remove paper from the elevator tray.
Enter new password	Passwords are for use by System Administrators and Service Technicians only.	Contact your System Administrator for additional information.

Message	Description	Corrective Action
Enter new password again	Passwords are for use by System Administrators and Service Technicians only.	Contact your System Administrator for additional information.
Enter service password	You must provide the service password to gain access to the selected menu item.	Contact your System Administrator if you need access to menu items that are password protected.
Enter system password	You must supply the system password to gain access to the selected menu item.	Contact your System Administrator if you need access to menu items that are password protected.
Finisher Front Cover Open Close Cover E03F	The front cover of the finisher is open.	Close the cover.
Front Cover Open Close Cover E043	Self-explanatory.	Close the cover.
Fuser Unit End of Life Replace Fuser Unit E015	The fuser unit needs to be replaced.	Contact your authorized Service Technician.
Fuser Web End of Life Replace Fuser Web E014	The fuser cleaning web needs to be replaced.	Replace the Fuser Cleaning Web. Printing will resume when the Fuser Cleaning Web is replaced.
HCF Open Close Tray E023	The door of the high capacity feeder is open.	Close the door.
HCF Top Cover Open Close Cover E046	Self-explanatory.	Close the cover.
Heater Off Mode	Status message	None
Input Keycode	A valid keycode is required to activate this feature.	Contact your System Administrator or authorized Service Technician.
Input Station Cover Open Close Cover E044	The IS cover is also referred to as the <i>vertical path cover</i> .	Close the cover.
Insufficient Disk Space One Copy Job	There is not enough space for the requested operation. Only one copy is printed.	Increase disk space or send job multiple times.
Invalid Password	A valid password is required to access this area of the OCP.	Retry password. If incorrect, contact your System Administrator.
Invalid Time Server Address	Incorrect value in time server IP address field.	Check the time server IP address via the Web Utilities.
Invalid Value	Incorrect value entered.	Re-enter value.
LED Eraser Not Set Set Erase Lamp E080	The LED eraser is not set.	Contact your authorized Service Technician.
Lifting <i>Tray Name</i>	The specified tray is moving into the feed position.	Status message. Wait for the printer to return to a Ready state.
Loading Fail Network	Status message.	Wait for the printer to return to a Ready state.
Loading Network	Status message.	Wait for the printer to return to a Ready state.
Low on Front Staples	Status message.	Have replacement staples available.
Low on Rear Staples	Status message.	Have replacement staples available.
Low Toner - Recovery E09A	In process of supplying the toner.	Wait for the printer to return to a Ready state.

Message	Description	Corrective Action
MBT Load xx E090	The wrong paper size is loaded in the multi-bypass tray.	Load the MBT with the requested paper size.
Network Load Failed	Network connection error.	Check the Ethernet cable of the NIC.
Open Stacker Full	The output tray is full.	Remove the paper from the tray.
Out of Front Staples Load Staples	The front stapler unit of the finisher is out of staples.	Replace the front staple cartridge.
Out of Rear Staples Load Staples	The rear stapler unit of the finisher is out of staples.	Replace the rear staple cartridge.
Paper in Duplex Path Remove Paper E05C	Paper jam on return path 1.	Remove the jammed paper.
Paper in Fin Holding Path Remove Paper	Paper jam in holding path.	Remove the jammed paper.
Paper in Fin Sheet Path Remove Paper	Paper jam in sheet path.	Remove the jammed paper.
Paper in Finisher Remove Paper E064	Paper jam in entrance path of the finisher.	Remove the jammed paper.
Paper in Finisher Remove Paper E065	Paper jam in exit path of the finisher.	Remove the jammed paper.
Paper in Finisher Remove Paper E066	Paper jam in bypass of the finisher.	Remove the jammed paper.
Paper in Finisher Remove Paper E067	Paper jam in staple tray of the finisher.	Remove the jammed paper.
Paper in Finisher Remove Paper E068	Paper jam in exit path of the finisher sub tray.	Remove the jammed paper.
Paper in Fuser Remove Paper E070	Paper jam in fuser unit.	Remove the jammed paper.
Paper in Input Station Remove Paper E050	Paper jam on IS path 1.	Remove the jammed paper.
Paper in Input Station Remove Paper E051	Paper jam on IS path 2.	Remove the jammed paper.
Paper in Input Station Remove Paper E052	Paper jam on IS path 3.	Remove the jammed paper.
Paper in Input Station Remove Paper E072	Paper jam on feed path of tray table 5.	Remove the jammed paper.
Paper in Input Station Remove Paper E056	Paper jam on IS timing path.	Remove the jammed paper.
Paper in Open Stacker	Output from a previous print job is on the tray.	Remove the paper from the tray.
Paper in Paper Exit Remove Paper E05E	Paper jam on IS path 12.	Remove the jammed paper.
Paper in Regist. Station Remove Paper E057	Paper jam on skew path.	Remove the jammed paper.
Paper in Return Path Remove Paper E05C	Paper jam on return path 1.	Remove the jammed paper.
Paper in Return Path Remove Paper E05D	Paper jam on return path 3.	Remove the jammed paper.

Message	Description	Corrective Action
Paper in Stacker x Remove Paper	Paper jam in stacker. x is the stacker number.	Remove the jammed paper.
Paper in Stacker x Top Remove Paper	Paper jam in stacker. x is the stacker number.	Remove the jammed paper.
Paper in Stacker x V Path Remove Paper	Paper jam in stacker. x is the stacker number.	Remove the jammed paper.
Paper in Switch Back Remove Paper E05B	Paper jam on switch back path.	Remove the jammed paper.
Paper in Switch Back Remove Paper E05F	Paper jam on flip path.	Remove the jammed paper.
Paper in Transfer Station Remove Paper E05A	Paper jam on drum.	Remove the jammed paper.
Paper Jam Container x Path y Remove Paper	Paper jam in container stacker. x is the container number, y is the path number.	Remove the jammed paper.
Paper Jam Duplex Path Remove Paper E194	Paper jam on return path 3.	Remove the jammed paper.
Paper Jam Fin Bypass Remove Paper	Paper jam in finisher bypass.	Remove the jammed paper.
Paper Jam Fin Exit Remove Paper	Paper jam in finisher exit.	Remove the jammed paper.
Paper Jam Fin Sheet Path Remove Paper	Paper jam in finisher sheet path.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D0	Paper jam in finisher path.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D1	Paper jam in finisher path.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D2	Paper jam in finisher path.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D3	Paper jam in finisher path.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D4	Paper jam in stapler tray of finisher.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D5	Paper jam in the finisher exit.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D6	Paper jam in the bypass of the finisher.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D7	Paper jam in finisher exit.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D8	Paper jam in finisher path.	Remove the jammed paper.
Paper Jam Finisher Remove Paper E1D9	Paper jam in the exit sub tray of the finisher.	Remove the jammed paper.
Paper Jam Fuser Remove Paper E128	Paper jam before flip path.	Remove the jammed paper.
Paper Jam Fuser Remove Paper E129	Paper jam on flip path.	Remove the jammed paper.

Message	Description	Corrective Action
Paper Jam HCF Remove Paper E190	Paper jam before IS path 5.	Remove the jammed paper.
Paper Jam HCF Remove Paper E192	Paper jam on IS path 5.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E181	Paper jam on IS path 1.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E182	Paper jam before IS path 2.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E185	Paper jam on IS path 2.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E186	Paper jam before IS path 3.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E189	Paper jam on IS path 3.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E191	Paper jam on IS path 5.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E193	Paper jam before IS path 5.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E18A	Paper jam before IS timing path.	Remove the jammed paper.
Paper Jam Input Station Remove Paper E18B	Paper jam on IS timing path.	Remove the jammed paper.
Paper Jam MBT Remove Paper E18C	Paper jam before MBT timing path.	Remove the jammed paper.
Paper Jam Paper Exit Remove Paper E134	Paper jam before paper out path.	Remove the jammed paper.
Paper Jam Paper Exit Remove Paper E135	Paper jam on paper out path.	Remove the jammed paper.
Paper Jam Regist. Station Remove Paper E110	Paper jam before skew path (simplex).	Remove the jammed paper.
Paper Jam Regist. Station Remove Paper E111	Paper jam on skew path (simplex).	Remove the jammed paper.
Paper Jam Regist. Station Remove Paper E112	Paper jam before skew path (duplex).	Remove the jammed paper.
Paper Jam Regist. Station Remove Paper E113	Paper jam on skew path (duplex).	Remove the jammed paper.
Paper Jam Return Path Remove Paper E138	Paper jam before return 1 path.	Remove the jammed paper.
Paper Jam Return Path Remove Paper E139	Paper jam on return 1 path.	Remove the jammed paper.
Paper Jam Return Path Remove Paper E13A	Paper jam before return 2 path.	Remove the jammed paper.
Paper Jam Return Path Remove Paper E13B	Paper jam on return 3 path.	Remove the jammed paper.
Paper Jam Stacker Input Remove Paper	Paper jam in stacker input.	Remove the jammed paper.

Message	Description	Corrective Action
Paper Jam Stacker x Remove Paper	Paper jam in stacker. x is the stacker number.	Remove the jammed paper.
Paper Jam Stacker x Top Remove Paper	Paper jam in stacker. x is the stacker number.	Remove the jammed paper.
Paper Jam Stacker x V Path Remove Paper	Paper jam in stacker. x is the stacker number.	Remove the jammed paper.
Paper Jam Switch Back Remove Paper E130	Paper jam before switch back path.	Remove the jammed paper.
Paper Jam Switch Back Remove Paper E131	Paper jam on switch back path.	Remove the jammed paper.
Paper Jam Tray 1 Remove Paper E180	Paper jam before IS 1 path.	Remove the jammed paper.
Paper Jam Tray 1 Remove Paper E183	Paper jam on IS 1 path.	Remove the jammed paper.
Paper Jam Tray 2 Remove Paper E184	Paper jam before IS 2 path.	Remove the jammed paper.
Paper Jam Tray 2 Remove Paper E187	Paper jam on IS 2 path.	Remove the jammed paper.
Paper Jam Tray 3 Remove Paper E188	Paper jam before IS 3 path.	Remove the jammed paper.
Paper Jam Tray 3 Remove Paper E18D	Paper jam on IS 3 path.	Remove the jammed paper.
Paper Out HCF Load xxx E005	The high capacity feeder is out of paper. xxx is the paper size.	Load the requested paper in the HCF.
Paper Out MBT Load xxx E004	The multi-bypass tray is out of paper. xxx is the paper size.	Load the requested paper in the MBT.
Paper Out Tray 1 Load xxx E001	Tray 1 is out of paper. xxx is the paper size.	Load the requested paper in tray 1.
Paper Out Tray 2 Load xxx E002	Tray 2 is out of paper. xxx is the paper size.	Load the requested paper in tray 2.
Paper Out Tray 3 Load xxx E003	Tray 3 is out of paper. xxx is the paper size.	Load the requested paper in tray 3.
Paper Out <i>Tray Name</i>	The specified paper tray is out of paper.	Load paper into the tray.
Paper Skew Duplex Path Remove Paper E154	Skewed paper in duplex path.	Remove the jammed paper.
Paper Skew HCF Remove Paper E155	Skewed paper in HCF tray.	Remove the jammed paper.
Paper Skew MBT Remove Paper E153	Skewed paper in MBT tray.	Remove the jammed paper.
Paper Skew Tray 1 Remove Paper E150	Skewed paper in tray 1.	Remove the jammed paper.
Paper Skew Tray 2 Remove Paper E151	Skewed paper in tray 2.	Remove the jammed paper.
Paper Skew Tray 3 Remove Paper E152	Skewed paper in tray 3.	Remove the jammed paper.
Pause/Offline	The printer was taken offline.	Touch ► to return to Ready status.

Message	Description	Corrective Action
PM Counter Exceeded	The printer has printed more than 400,000 pages. Service maintenance is required.	Contact your authorized Service Technician.
PM Counter Warning	The printer has printed more than 390,000 pages.	Be aware that preventative service maintenance is required at 400K pages.
Preserving Parameters	The printer is saving user setting.	-
Printing xxx / yyy	Status message. Displays the number of copies printed / the number of copies requested.	Wait for the printer to return to a Ready state.
Processing	Status message. The printer is processing print job data.	Wait for the printer to return to a Ready state.
Ready	The printer has warmed up and initialized and is idle while waiting for data.	None.
Resetting	Status message. The printer is resetting the configuration.	Wait for the printer to return to Ready state.
Sleep Mode	The Energy Save time has been reached and the printer is in energy saving mode.	Touch the OCP to initialize the printer.
Stacker x Basket Not Set Check Basket	The stacker basket is not seated properly. x is the stacker number.	Reseat the basket.
Stacker x Basket Size Change Basket	The stacker basket is the wrong size for the requested paper type. x is the stacker number.	Change the basket.
Stacker x Front Cover Open Close Cover	Self-explanatory.	Close the cover.
Stacker x Mixed Paper Empty Basket	The stacker contains paper from a previous job.	Remove the paper.
Stacker x Paper Full Remove Paper	The stacker is full. x is the stacker number.	Remove the paper.
Stacker x Top Cover Open Close Cover	The top cover of the indicated stacker is open. x is the stacker number.	Close the cover.
Stacker xV Path Cover Open Close Cover	The V path cover of the indicated stacker is open. x is the stacker number.	Close the cover.
Sub Tray Cover Open Close Cover	Self-explanatory.	Close the cover.
Sub Tray Paper Full Remove Paper	Self-explanatory.	Remove the paper.
Switch Back Cover Open Close Cover E045	Self-explanatory.	Close the switch back cover (on the left side of the printer).
Toner Collector Bottle Full Replace Bottle E010	Self-explanatory.	Replace the toner collector bottle.
Toner Collector Not Set Check Toner Bottle E01D	The toner collector bottle is not seated properly.	Reseat the bottle.
Toner Low Add Toner	Print quality will diminish until toner is replenished.	Supply toner.

Message	Description	Corrective Action
Toner Out Supply Toner E011	The toner supply is empty	Supply toner.
Tray 1 Open Close Tray E020	Self-explanatory.	Close the tray.
Tray 1, 2, or 3 Open	Self-explanatory.	Close the tray.
Tray 1, 2, or 3 Load xxx E090	The wrong paper size is loaded in the tray.	Load the specified tray with the requested paper size.
Tray 1, 2, or 3 Load xxx	The specified tray needs paper.	Load the specified tray with the requested paper size.
Tray 2 Open Close Tray E021	Self-explanatory.	Close the tray.
Tray 3 Open Close Tray E022	Self-explanatory.	Close the tray.
Waiting for data	Status message. May appear if: 1) a large file is being processed, 2) the network connection is slow, or 3) a print job was not terminated correctly.	Wait for the printer to return to Ready state.
Warming up	Status message. Displayed during the power up cycle.	Wait for the printer to reach a Ready state.

Printer Limitations

- The following types of paper are printed from the MBT only with PCL.
 - Transparency
 - Pre-punched Transparency
 - Label
- The following paper types will print simplex even if duplex is specified.
 - Transparency
 - Pre-punched Transparency
 - Label
 - Tab Stock
- Duplex printing cannot occur when the paper source is the MBT.
- The printer does not staple a single page job.
- The following paper types are jogged even if staple is specified.
 - Transparency
 - Pre-punched Transparency
 - Label
- When errors such as paper jams or paper empty occur during printing, print performance may be reduced after the errors are cleared.
- The MBT cannot be included in PCL Tray Auto Select. If the MBT is included, printing will stop and the OCP will prompt you to load the correct paper size to the MBT (even when paper is already loaded in the MBT).
- When the Finisher runs out of staples the action will reflect the setup defined in the Web Utilities (System/Finisher)
 - Stop: Error message will appear on the OCP.
 - Continue: Printing will occur with job offset.
- If stapling is requested, the job will be delivered offset with no stapling under the following circumstances: If the staple job contains more than 50 sheets, if the thickness of the paper is more than 5.0 mm, or if the paper weight is over 34 lbs.
- If stapling is specified but not collating, the job will not be stapled.
- When stapling and face-up delivery are both specified, the job will be delivered face up and offset with no stapling.

-
- When stapling and upper tray are both specified, the job will be delivered stapled in the elevator tray.
 - When offset printing and upper tray are both specified, the job is delivered to the Upper Tray with no offset.
 - When stapling and offset are both specified, the job is delivered stapled with no offset.
 - For collated output disable the application software and enable the printer driver.
 - When report and test printing are chosen from the OCP while a job is printing, the report and test are printed after the current job is complete.

Network Problems

The following lists some common causes and solutions for network problems. If you suspect printing problems are network related, contact your System Administrator.

1. Is the Ethernet cable broken or otherwise abnormal?

Change the Ethernet cable.

2. Is the host interface running normally?

Test printing using a different host.

3. Is there a printer problem?

Execute a print test to confirm the printer is operating properly.

4. Is the network cable connected to the printer?

Were both ends of the network cable connected prior to powering on the printer?

Chapter 6

Web Utilities

Features

The Web Utilities give you the power to access the printer through the Internet or your company's Intranet. You can use the Web Utilities to perform many functions, including the following:

- Check the status of:
 - Trays
 - Finisher
 - Consumables
- Print:
 - Error logs
 - Statistical reports
 - Accounting reports
 - Early warning reports
- View:
 - Network settings
 - Usage information
 - Revision information
- Delete active print jobs or pending print jobs
- Download/view all printer user's documentation
- Update printer configuration settings
- Modify System and Service passwords
- Access related sites

Web Utilities Access

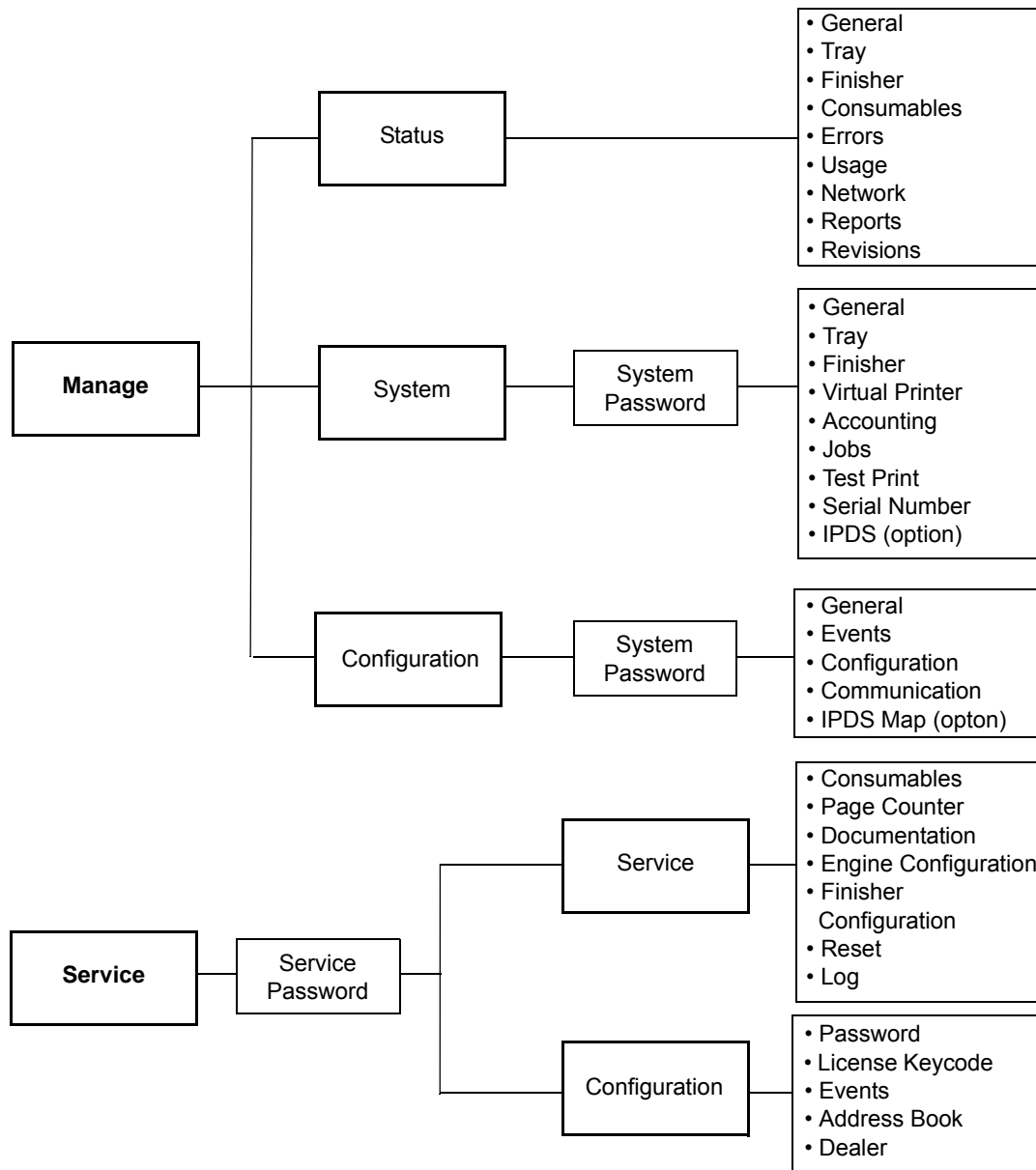
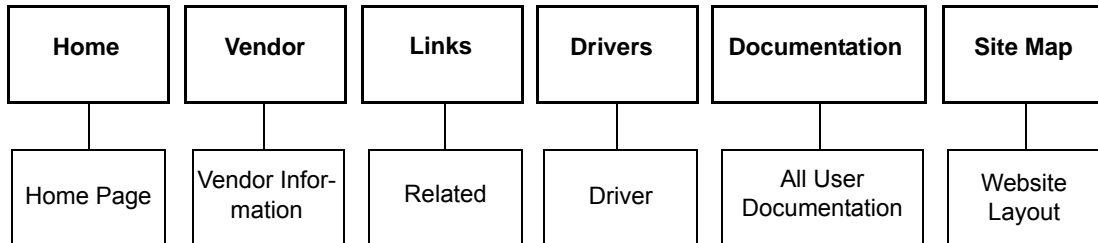
The Web Utilities are designed to assist three different types of user:

- The Operator (you)
- The System Administrator
- The Service Technician

Not all Web Utilities are available to each type of user. Access to certain utilities is limited by a password. The Web Site Layout identifies the utilities that are available and specifies when a password is required.

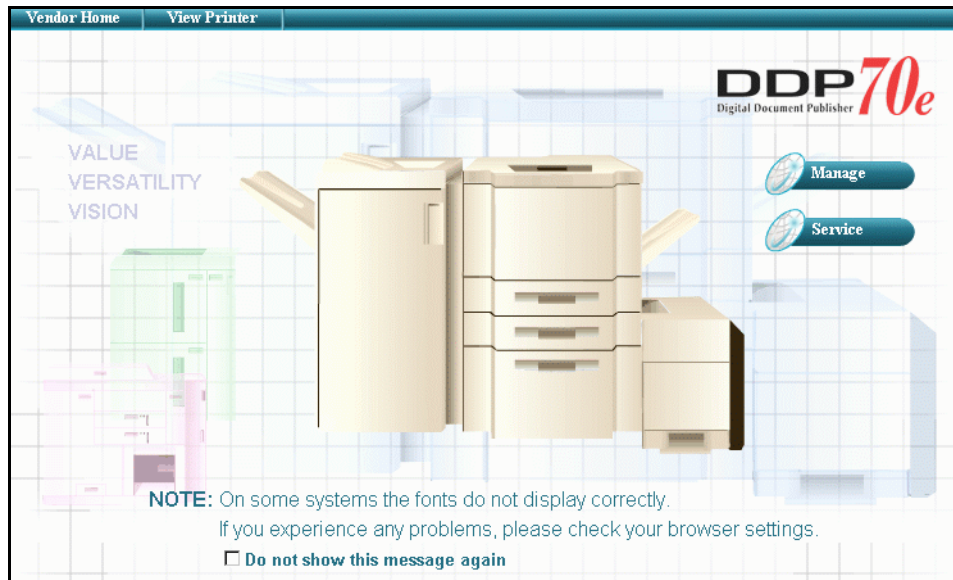
Web Site Layout

The general layout of each Web Page (except the Home Page) is the same. There is a menu bar on the left side of the page, and another one at the top of the page. Use the menu bars to select the desired utility. The chart below shows you where to find a specific utility.



Using the Web Utilities

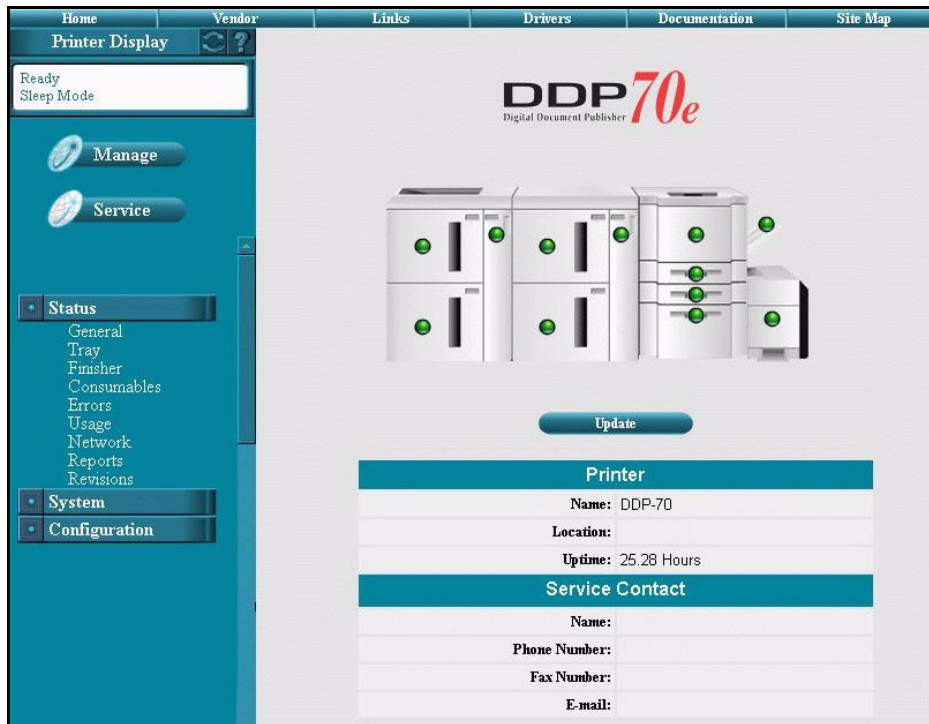
1. Start your Internet browser application.
2. To display the Home Page, enter the IP address or DNS name of the printer. (See your System Administrator for this information, or print a Configuration Report using the printer Operator Control Panel.)



You can make a selection from the Home Page or wait 15 seconds for the Printer Status page to be automatically displayed.

-
3. The Printer Status page displays the status of the print engine, paper trays, finisher, and consumables.

The following Printer Status page illustrates a 70 ppm printer with the Container Stacker and High Capacity Feeder installed. Note that only options that are installed on your system will be displayed on this page.



The status of each item is indicated with a colored button.

- Green indicates a normal condition.
- Yellow indicates a warning condition (e.g., low paper, low toner, consumable near end of life).
- Red indicates an obstacle to printing, such as an empty condition, consumable at end of life, paper jam, or door open.

The Printer Status page refreshes automatically every 30 seconds. Optionally, you can click the Update button to refresh the printer status display on demand.

From the Printer Status page, click the Web Utility that you want to use. The Web Utilities are located on the Upper Menu (Documentation, Vendor, Links, Drivers, and Site Map) and Left Menu (Manage and Service).

For additional information, refer to the *Web Utilities* document provided with your printer.

Appendix A

Safety Information

General

- For the safety of the personnel and the product, operate the equipment according to the instructions in this user's guide. The manufacturer will not be responsible for any problems or damage that arise from improper use.
- Electrical specifications and safety regulations differ from country to country. Only purchase products and consumables designed to be used in your country. Do not take the product or consumables to other countries.

Laser Safety

This printer is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the printer does not emit hazardous laser radiation.

Since radiation emitted inside the printer is completely confined within the protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 1976. These regulations apply to laser products marketed in the United States. The label on the printer indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

This printer is classified as a Class 1 laser product both under EN60825 and the Code of Federal Regulations, 1040.10 of Title 21.

LOUKAN 1 LASERLAITE
CLASS 1 LASER APPARAT

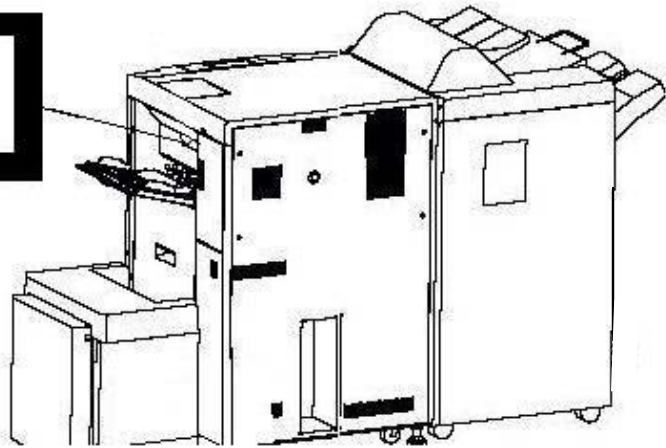
Internal Laser Radiation

Maximum Radiation Power: 5mW x 2 diodes
Wave Length: 675nm

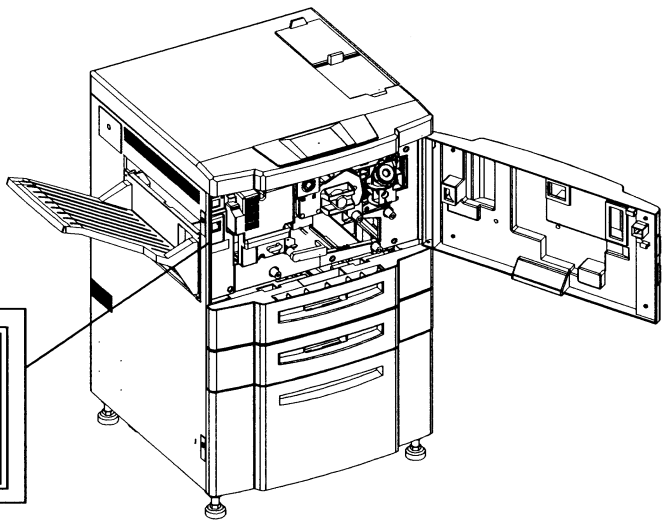
WARNING!

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

**CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT**



**DANGER - INVISIBLE LASER RADIATION
WHEN OPEN AND INTERLOCK DEFEATED
AVOID DIRECT EXPOSURE TO BEAM**



Certifications

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of 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 this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. If this occurs, users are required to correct the interference at their own expense.

Use of shielded cables is required to comply with Class A limits in Subpart B of Part 15 of FCC Rules.

Do not make any changes or modifications to the equipment other than those specified in this user's guide.

You may find the following booklet prepared by the Federal Communications Commission helpful: *How to Identify and Resolve Radio - TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

Canadian Certification

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

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

VCCI Notice (Japan)

This is a class 1 product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, you may be required to take corrective actions.

Declaration of Conformity for Safety/EMI

The Printer, Finisher, High Capacity Feeder, and Container Stacker conform to the directives and standards shown below. For further information or to request a copy of the Declaration of Conformity, contact your Distributor.

70/92 ppm

1. EMC directive 89/336/EEC, 92/32/EEC

Emission:EN 55022 (Class A) / 1998
EN61000-3-2 (Class A) / 1995 / A1: 1998 / A2 : 1998
EN61000-3-3 / 1995
Immunity:EN55024 / 1998
IEC1000-4-2 / 1995/A1:1998
IEC1000-4-3 / 1995
IEC1000-4-4 / 1995
IEC1000-4-5 / 1995
IEC1000-4-6 / 1996
IEC1000-4-11 / 1994

2. Low Voltage Directive 73/23/EEC incl. Amendments:

EN60950:1992+A1:1993+A2:1993+A3:1995+A4:1997+A11:1997
EN60825-1:1994+A11:1996

3. CE Marking Directive 93/68/EEC

This equipment has been tested and found to comply with the limits for a class A Information Technology Equipment in accordance with the European Standard EN55022.

These limits are designed to provide reasonable protection against unacceptable interference in either commercial or industrial environments. This equipment generates, uses, and can radiate radio signals and if it is not installed and used in accordance with the instructions detailed in this user's guide, it may cause unacceptable interference to radio communication installations and equipment. The operation of this equipment in a residential area is likely to cause unacceptable interference in which case you may be required to correct the source of the interference at your own expense.

In order to maintain compliance to the class A regulations, shielded cables must be used with this equipment. Operation of this equipment without shielded cables is likely to cause interference to radio and television receivers thereby degrading their reception.

Please be aware that changes and modifications made to the equipment without prior approval of the manufacturer could negate your permission to operate the equipment.

Declaration of Conformity for RoHS

The Printer, Finisher, High Capacity Feeder, and Container Stacker conform to the directives and standards shown below. For further information or to request a copy of the Declaration of Conformity, contact your Distributor.

70/92 ppm

1. Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC

When Installing and Relocating the Printer

Power Specifications

Printer Model	Rated Voltage	Rated Frequency	Rated Current
70 ppm	200-240V	50/60 Hz	10A
92 ppm	200-240	50/60	12A

Power Cords

WARNING!

Connect the power plug only to a properly rated power outlet. Otherwise, a fire or shock hazard may result.

Never use multi-plug adaptors to plug multiple power plugs into the same power source. Be sure to operate the printer on a sole-use receptacle. Multiple connectors can cause overheating and a fire could result.

Ensure that the plug connection is free of dust. In a damp environment, a contaminated connector can draw a non-negligible amount of current that can generate heat and eventually cause a fire over an extended period of time.

To prevent the risk of electric shocks and personal injury, fire, and printer damage:

- Always use the power cord provided with your printer. When an extension power cord is required, always use a properly rated cord.

If the power cord is not provided, use the following types of power cords:

- For North America:
3 wires, Type SJT 3x16 AWG (3x1.33 mm²) or thicker
Rated min. 250V/10A (with grounding plug, NEMA 6-15P).
- For Europe
3 wires, min. 3x1.5 mm²
Harmonized (<HAR>), Rated min. 250V/10A (with grounding plug).

WARNING!

The printer must be connected to the grounding power outlet for safe and proper operation.

Apparatet må kun tilkoples jordet stikkontakt.

Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk.

Für einen sicheren und ordnungsgemäßen Betrieb muß der Drucker an eine geerdete Steckdose angeschlossen werden.

- Do not attempt to rework, pull, bend, chafe, or otherwise damage the power cord. Do not place a heavy object on the cord.
- Never touch a power cord with wet hands.

-
- If your printer produces smoke, excessive heat, unusual noises or odors, or if any liquid is spilled into the printer, immediately switch off and unplug the printer.
 - If the power cord is broken or insulated wires are exposed, be sure to get them replaced. (Do not use the damaged cord.)

CAUTION!

Never unplug or replug the printer while it is on.

- When unplugging the printer, grasp the plug instead of the cord.
- Be sure to switch off and unplug the printer before accessing its interior for cleaning or maintenance.
- When the printer is not used over an extended period of time, switch it off and unplug it.
- Once a month, unplug the printer and check that:
 - the power cord is plugged firmly into a receptacle.
 - the power cord is not cracked or frayed.
 - the plug is not excessively heated, rusted, or bent.
 - the plug and receptacle are free of dust.

NOTE:

If you notice any unusual conditions, contact your service representative.

Positioning the Printer Safely

To prevent the risk of electric shocks and personal injury, fire, and printer damage:

- Switch off the printer before connecting the interface cable or optional accessory.

CAUTION!

Do not place the printer near heaters or volatile, flammable, or combustible materials.

- Place the printer on a level and sturdy surface that can withstand the printer's weight. If tilted, the printer may fall over and cause injuries.
- Do not place the printer in a hot, humid, dusty, or poorly ventilated environment.
- When moving the printer, be sure to unplug the power cord from the outlet. If the printer is moved with the power cord connected, it can cause damage to the cord.
- When moving the printer, do not tilt it more than 10 degrees. If tilted excessively, the printer may fall over and cause injuries.
- If you need to move the printer over a long distance, consult your Technical Representative.

Environmental Limits

- The printer is capable of operating normally within the following recommended environmental limits:
 - Temperature range: 50°-89°F (10°-32°C).
 - Humidity range: 20-80% RH (no condensation).

NOTE:

Sudden temperature fluctuations can affect print quality. Rapid heating of a cold room can cause condensation inside the printer, directly interfering with image transfer.

- Do not expose the printer to direct sunlight, or the printer's performance may decline.

Operating Precautions

- Take care not to allow ties, sleeves, shirts and long hair to be caught in the printer while operating.
- Be careful not to touch the hazardous parts near the caution labels.
- Be sure to avoid accidentally powering on the printer or pressing switches on the operator's panel while operating the printer.
- Never touch the high voltage portions of the printer, where caution labels are attached, when the printer is on. It may cause personal injuries if accidentally touched.
- Make sure that the printer paper complies with the supplies specifications. Printing on paper which does not comply with the specifications may result in paper jams and print quality degradation.
- Properly load the paper into the hopper to prevent paper skew and paper jams.
- It is absolutely necessary to follow the procedures and instructions described in this manual in order to optimize the printer's performance and to assure its safe.

Safety Precautions

- Always keep the area around the printer tidy. Use the printer under the proper lighting (500-1,000 lux.). Keep sufficient space around the printer so the hoppers can be pulled forward. Space required in the vicinity of the printer is as follows:
 - Front side: 1.2 meters
 - Left, right and rear side: 1 meter
- Do not place anything on the printer.
- Do not open any covers during printing operation. It may cause personal injuries if moving elements or electrical parts are accidentally touched.
- Be particularly careful when working in the fuser unit area. Do not touch the inside of the fuser unit. The fuser unit becomes very hot (approx. 190°C) and it may cause personal injuries if accidentally touched.
- Toner and developer are comprised of powdery particles. Avoid inhaling toner or developer when it accidentally spills and circulates. If it spills on the floor, immediately clean it with water-damped cloth. Do not leave it on the floor. It may cause accidents if stepped on as they are slippery beads of metal.
- Limit your operations to those described in this manual. Contact the field engineer or service technician for further operations which are not explained in this manual.
- This equipment generates ozone. Long-term exposure should be limited to 0.1 ppm calculated as an 8 hr. time weighted average concentration. Provide proper ventilation. Avoid installing the unit in a small room (≤ 1000 cubic feet). If installing in a space smaller than 1000 cubic feet, frequent ventilation is necessary

Care of Printer Supplies

- Store the paper, toner, and other supplies in a place free from direct sunlight and away from any heating apparatus. Keep them in a dry, cool, clean environment.
- Store paper that has been removed from its wrapper, but not loaded into the drawer, in a sealed, plastic bag in a cool, dark place.
- If your hands become soiled with toner, wash them with soap and water immediately.

Appendix B

Printer Specifications

What This Appendix Contains

This appendix contains specification information pertaining to the following topics.

- [Base Printer](#)
- [I/O Configurations](#)
- [Consumables](#)

Specifications

Base Printer

Design and specifications are subject to change without notice.

Item	Specification
Imaging Method	Electro-Photography
Exposure System	Semiconductor 2 laser beam (laser diode) scanning
Image Resolution	600 x 600 dots per inch (dpi)
Warm-up Time	Less than 240 seconds after deep sleep mode at room ambient 68°F (20° C)
Continuous Print Speed in Simplex mode from Tray 1	Up to 70 pages per minute (ppm) A4/Letter (LEF) from Trays 1, 2, or 3. (70 ppm printer) Up to 92 pages per minute (ppm) A4/Letter (LEF) from Trays 1, 2, or 3. (92 ppm printer)
Printable Area	Full size of the paper
Controller	Egret 3R controller with PowerPC 750FX 800 MHz
Maximum Monthly Duty Cycle	70 ppm: Up to 600K 92 ppm: Up to 800K
Nominal Voltage	200 to 240V
Nominal Frequency	50 Hz or 60 Hz
Power Consumption	70 ppm: 10A 92 ppm: 12A
Noise Level	65 dBA in operation 54 dBA in standby
Heat Output (BTU)	70 ppm: 6654 BTU/Hr. 92 ppm: 9444 BTU/Hr.
Operating Temperature and Humidity	Temperature range: 50° to 90°F (10° to 32°C) Humidity range: 20-80% RH (no condensation)
Dimensions	1000 x 650 x 665 mm (H x W x D)
Weight	374.7 lbs. (170 kg)
Memory Capacity	256 MB

I/O Configurations

Options are end-user installable with a screwdriver. Only one daughter card can be installed in each slot at the same time.

Port	Type
IEEE 1284C parallel port	Standard
Ethernet ---10/100/1000 Base T	n/a

Consumables

The expected life of consumables follows.

Consumable	Life Expectancy
Toner (900 g bottle)	36,000 (5% coverage ¹)
Developer Mix (1.5 Kg bottle)	480,000 images (600,000 drum rotations)
Drum Unit	400,000 images (500,000 drum rotations)
Fuser Unit	1,600,000
Fuser Cleaning Web	320,000
Toner Collector Bottle	Every other refill of the toner

¹ Coverage is calculated per printed sheet and is defined as the ratio of area with toner to the total area of the sheet. Toner usage is based on 5% coverage when the toner density level is set to the default value (1.3 optical density for solid black areas printed on Xerox 4200 paper). The following items affect toner coverage: the printed image content, the paper used, and the condition and calibration of the printer. Actual toner usage may vary due to these factors.

Appendix C

Paper Specifications

Media Guidelines

Several types of media can be used in the printer, provided they meet certain guidelines. This appendix provides criteria for purchasing print media. You will also find guidelines for printing on special print media.

General Media Recommendations

Use high-quality xerographic paper for printing applications. The paper should be of good quality, free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges.

There are many brands of high quality xerographic paper available to choose from. Refer to [“Paper Specifications” on page C-2](#) when purchasing paper.

Paper Specifications

Characteristics	Recommendation
Paper Grade	No. 1 or No. 4 Xerographic (Note 1)
Fiber Composition	100% chemical wood pulp
Color	White or pastel color
Ash Content	18% maximum (Notes 2 and 4)
Filler	Kaolin or china clay (aluminosilicate) or calcium carbonate. Titanium dioxide or magnesium silicate may be added to improve brightness.
Grain Direction	Parallel to the long dimension (grain long)
CaCO ₃ Content	0% (Paper that contains CaCO ₃ can drastically reduce fuser life.)
Cutting Method	Rotary precision cut (Lennox, Will, or equivalent)
Cutting Tolerance	Length and width: ± 0.787 mm (± 0.031 in.) Squareness: all corners $90^\circ \pm 0' 6''$
Basis Weight	16 to 110 lb. (60 to 199 g/m ²) (See Notes 3 and 4)
Caliper	16 to 19 lb. (60 to 72 g/m ²): 3.5 to 5.0 mils (90 to 127 μ m) 20 to 24 lb. (75 to 90 g/m ²): 3.2 to 4.0 mils (81 to 102 μ m)
Smoothness (Sheffield)	16 to 19 lb. (60 to 72 g/m ²): 70 to 170 Sheffield units 20 to 24 lb. (75 to 90 g/m ²): 100 to 200 Sheffield units
Porosity (Gurley)	10 sec./100 ml minimum
Coefficient of Static Friction	0.35 to 0.62 (Notes 3 and 5)
Surface Sizing	Starch - Do not use synthetic surface sizing
Internal Sizing	Acid Rosin or synthetic (alkylketene dimer or alkyl-succinic anhydride)
Stiffness (Taber)	16 to 19 lb. (60 to 72 g/m ²): MD 1.4 min./CD: 0.5 min. 20 to 24 lb. (75 to 90 g/m ²): MD 1.7 to 4.5 min./CD: 0.8 to 2.4 min.
Moisture Content	3.7% to 5.5% by weight (Notes 3 and 4)
Surface Resistivity	5×10^9 to 1×10^{12} ohms (Notes 3 and 6)

NOTES:

1. The No. 1 or No. 4 designation applies only in the U.S.
2. Testing method - Technical Association of the Pulp and Paper Industry (TAPPI).
3. Testing method - American Society for Testing and Materials (ASTM).
4. Testing method - International Organization for Standardization (ISO).
5. Use 127 mm/min (5.0 in./min.) pull rate.
6. Isolate the test specimen from the metal backing plate with a piece of smooth, nonconductive polyester film, at least 0.254 mm (0.010 in.) thick; use 100 volts.

Paper Weight

Paper weight (also referred to as basis weight) for the U.S. market is measured as the weight in pounds of a ream of paper in the basic size for that grade of paper. The basic size differs between the various grades of paper. For cross reference information of basis weight for different paper types, see the table below.

Using the metric system, basis weight is measured as the weight of one square meter of paper and is expressed in grams per square meter or g/m².

General media weight guidelines for the printer are:

PAPER TYPE (GRADE) U.S. MARKET				METRIC
	BOND* LEDGER* XEROGRAPHIC LASER	OFFSET*	INDEX*	
BASIC SIZE	17 in. x 22 in. 432 x 599 mm	25 in. x 38 in. 635 x 965 mm	25.5 in. x 30.5 in. 648 x 775 mm	g/m ²
BASIS WEIGHT	16	40	33	60
	20	50	42	75
	24	60	50	90
	28	70	58	105
	32	80	67	120
	36	90	75	135
	40	100	83	150
	42	105	90	163
	44	110	92	175
	53	135	110	199

NOTES:

1. *Commercially available paper is in bold.*
2. *Paper denoted with (*) should not be used unless specifically formulated for laser printers. Refer to [page C-2](#) for additional information.*
3. *All weights are for 500 sheets.*

Paper Color

Colored paper refers to pastel-colored paper only. Dark colors may affect printer operation. Colored paper should meet the same specifications as white. It is also recommended that colored paper be tested for potential problems before ordering large quantities.

Paper Composition

Use paper made from 100% chemical wood pulp. Paper that contains mechanically-pulped wood or cotton is not recommended due to natural impurities, such as CaCO_3 , that can contaminate the surface of the photoconductor, thereby decreasing the life of the photoconductor and/or the fuser.

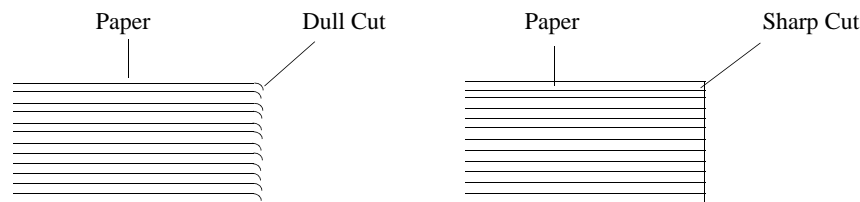
Do not use coated paper containing material that will melt, vaporize, offset, discolor, or release hazardous emissions when exposed to high temperatures.

CAUTION!

Do not use paper that contains CaCO_3 as it can drastically reduce fuser life.

Paper Cut

Paper cut is another significant factor affecting printer performance. The cut sheet is produced by cutting a larger stack of paper. If a dull cutter is used, the paper will have ragged edges, or what is called a “burr.” This burr can cause such problems as paper jam, multiple feed, and large amounts of paper dust. Refer to “[Paper Specifications](#)” on [page C-2](#) for additional information.



Paper Friction

The frictional properties of paper are very important for reliable paper picking. Improper friction properties can cause poor pick up and multi-sheet feeding. High quality xerographic paper has uniform friction. Refer to “[Paper Specifications](#)” on [page C-2](#) for additional information.

Paper Smoothness

Paper smoothness affects print quality and paper handling. Paper should not have a rough texture. A rough texture provides poor toner adhesion, particularly in “black fill” areas. Neither should the paper be too smooth, as this can also affect toner adhesion. Paper that is too smooth has inadequate friction and can cause paper handling difficulties. Do not use paper with embossed or raised surfaces. Spotty printing and misfeeding may occur. Refer to “[Paper Specifications](#)” on [page C-2](#) for additional information.

Paper Fusing

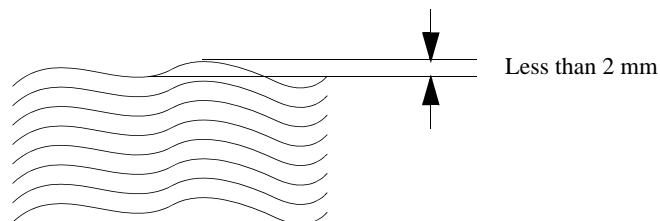
Paper used in the printer must withstand the effects of the fusing process. It should not melt, discolor, vaporize, offset, or delaminate at the following temperature for 1/2 second: 205°C (401°F).

Moisture

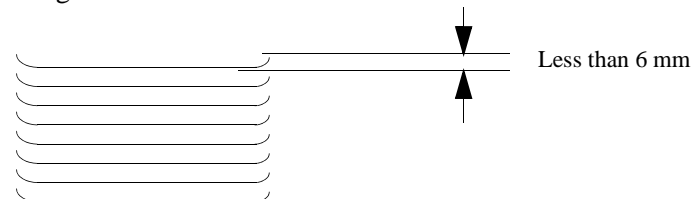
Moisture affects both paper curl and print quality. Excessive moisture can cause the following things:

- Wavy edges
- Tight edges
- Paper curl
- Faded printing

An increase in humidity can cause paper to develop wavy edges. This occurs because the edges absorb moisture while the rest of the ream remains unaffected. This can cause paper skewing and inability to pick paper. Wave is measured as shown below. Do not use paper with a wave of more than 2 mm.



If there is a decrease in humidity the edges can lose moisture. This causes them to contract resulting in tight edges. Tight edges are measured as shown below. Do not use paper with tight edges of more than 6 mm.

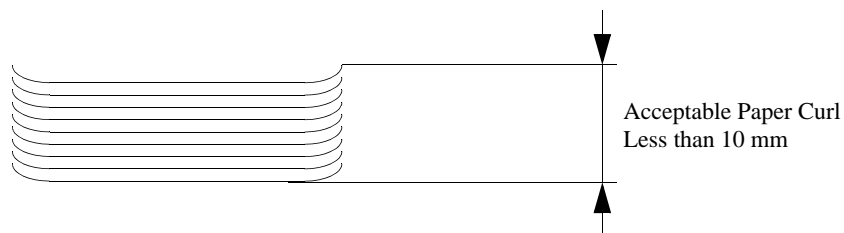


Paper Curl

Paper curl is a very significant factor in printer performance. It can affect the printer in the following ways:

- Paper jam, paper skew and ability to be picked up
- Paper stacking uniformly in the output stacker
- Paper wrinkles through the heat roller (fuser).

Nearly all paper has curl or a tendency to curl. Curl can occur after the paper passes through the printer's fuser where it is exposed to high temperatures. In most paper, curl results from unusually large, sudden, or uneven changes in the moisture content.



How to Avoid Paper Curl

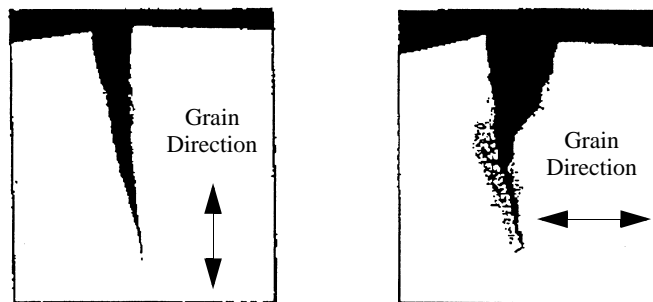
- Use high-quality xerographic paper.
- Store the paper in a moderate environment (40% to 60% relative humidity).
- Minimize humidity changes throughout the day in the printer room.
- Minimize the humidity difference between the paper storage area and the printer room. If the humidity difference is considerable, move the paper into the printer room a few days before to allow the paper to adjust to the printer room environment.
- Wrap the unused paper properly in moisture-resistant wrappers to protect the paper from moisture absorption or loss.

Recycled Paper

Recycled paper is made from used paper. The used paper is dissolved into fibers and then mixed with new paper fibers. However, various kinds of low-grade used paper (such as newspapers and magazines) are added to high-grade old paper. The paper manufacturer must have a high level of expertise and exercise strict controls regarding the use of used paper in recycled paper production. Therefore, it is recommended that paper sold as xerographic recycled paper also be sufficiently tested before using. The most important factor is the length of time the paper can keep its stabilized quality. It is recommended that a small sample (about 2,000 sheets) of recycled paper be tested in the printer and the reliability in paper feed and print quality is confirmed continuously over several months.

Grain Direction

The direction of paper fibers greatly affects paper curl and deformation. High quality xerographic paper is manufactured with the fibers oriented evenly in the same direction (grain long). The direction of the grain can be determined by tearing the paper. A clean tear indicates the grain direction as shown below.



Paper Smoothness

Paper smoothness affects print quality and paper handling. Paper should not have a rough texture. A rough texture provides poor toner adhesion, particularly in “black fill” areas. Neither should the paper be too smooth, as this can also affect toner adhesion. Paper that is too smooth has inadequate friction and can cause paper handling difficulties. Do not use paper with embossed or raised surfaces. Spotty printing and misfeeding may occur.

Special Media

The printer can use special media that has been designed and treated for xerographic use.

- Preprinted paper
- Prepunched paper
- Index paper
- Adhesive labels
- Perforated paper
- Tab paper
- Transparencies

It is recommended that a small sample (500 to 1000 sheets) of the special paper be tested before production quantities are purchased. Testing small samples can give a fairly good indication of what to expect in terms of print quality and toner adhesion; however, only long term tests involving several thousand sheets can begin to provide reliable data about characteristics like environmental changes, paper path reliability, paper dust contamination, loose filler, etc. It is recommended that initial orders of special supplies be limited to a 30-60 day supply until it has have proven to perform well over a long period of time.

Preprinted Paper

It is very important to work closely with the paper supplier when designing and ordering preprinted paper. To avoid problems with preprinted forms, observe the following guidelines:

- Forms must be printed with heat-resistant ink that will not melt, vaporize, delaminate, or release hazardous emissions when subject to heat. [Refer to “Paper Fusing” on page C-5](#) for additional information.
- Minimize the amount of ink used in printing. Avoid print designs that use large quantities of ink. Perform screen printing if a large area needs to be printed.

Ink Recommendations

Ink used in preprinting should be non-volatile and oily. Ink suitable for pre-printing is cured by:

- Ultraviolet or heat (cured for 1 day)
- Oxidative polymerization (cured for 7 days)
- Ink cured by heat (Tinplate Ink)

Before using preprinted forms, make sure the ink is completely cured to prevent it from transferring to the printer's rollers and contaminating the internal printer mechanism.

The following inks are not suitable for preprinting:

- Quick set ink
- Ink dried by evaporation
- Cold set ink
- Ink dried by sedimentation or deposition
- Ink dried by penetration

NOTE:

Preprinted paper should still meet the paper specifications after the preprinting process is complete.

Paper Curl in Preprinted Paper

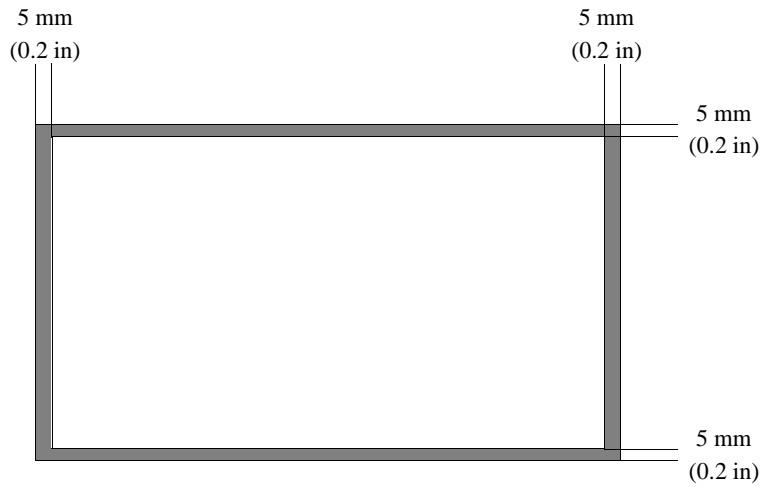
Preprinting can result in paper curl. Generally, the amount of paper curl depends on which side of the paper is printed first. [Refer to "Paper Curl" on page C-6](#) for more information.

Prepunched Paper

Prepunched paper should be flat and without deformation. Do not use paper with ragged or damaged hole edges. Any paper pieces resulting from the punching operation and paper dust should be removed before using.

Use prepunched paper with holes that conform to the following specifications:

- Maximum of four holes.
- Maximum hole diameter of 8.0 mm (0.315 in.).
- Holes must not be located in or protrude into the shaded area shown below.



Adhesive Labels

An adhesive label is paper with a pressure-sensitive adhesive backing. Label stock consists of three components: the top or face sheet, the adhesive, and the liner or carrier sheet, sometimes referred to as the backing. Note the following points about label stock:

- When exposed to the heat of the fuser, the label stock should not curl significantly, and the adhesive should remain stable so that it does not release any hazardous emissions. Refer to “Paper Fusing” on page C-5 for more information.
- No adhesive should be exposed between the labels or along the edge of the label backing.

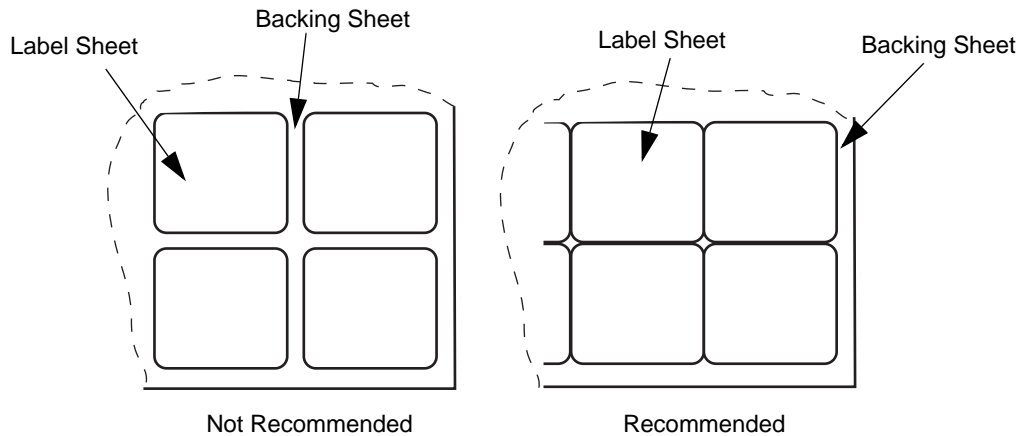
CAUTION!

Adhesive that comes in contact with the printer may contaminate the photoconductor and the internal printer mechanism. To test label stock for adhesive exposure, press a sheet of plain paper against a sheet of label stock. The plain paper should not adhere to the label stock at all.

- Do not use labels with wrinkles, bubbles or any indication of delamination.
- Fan the label stock before loading it into the tray.
- Do not use label stock when printing in duplex mode.
- Do not use label stock that has some of the labels removed.
- Purchase minimum quantities of label stock to avoid the need to store it for longer than 6 months from the date of manufacture.
- Test any label stock you are considering to verify its performance in your printer.

Adhesive Label Configuration

The illustration on the left shows label stock with space between the individual labels. This can cause paper jams and/or labels to peel off during the printing process. The illustration on the right shows the recommended label stock without spaces between the individual labels. Refer to “Adhesive Label Specifications” on page C-13 when purchasing label stock.



Storing Labels

- Store the labels in a clean, dry location where the temperature can be maintained at 18° to 24°C (64° to 70°F) and the relative humidity does not exceed 55%.
- Allow the labels to adjust to the printer room environment before opening the label carton or package. Move the labels into the printer room at least 24 hours prior to opening the carton or package.
- Leave the labels in the original package until printing is ready to begin. Replace the unused labels in the original package and then reseal the package with tape or store the unused labels in a plastic bag.
- Do not leave labels in the hopper of an inactive printer overnight or for long periods of time.
- Use the labels on a first-in, first-out basis.

Adhesive Label Specifications

Use the following specifications when purchasing label stock.

Characteristics	Recommendation
Total Basis Weight Notes 2 and 4	32 lb. (160 g/m ²) (includes face sheet, adhesive, and carrier)
Caliper Notes 1, 2, and 4	5.7 mils (145 μm) maximum (includes face sheet, adhesive, and carrier)
Face Stock Smoothness (Sheffield) Notes 1, 2, and 3	100-200 Sheffield units
Coefficient of Static Friction	0.35 to 0.62
Surface Sizing	Starch - Do not use synthetic surface sizing
Internal Sizing	Acid rosin or synthetic (alkylketene dimer or alky-succinic anhydride)

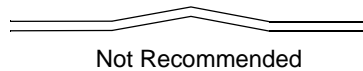
NOTES:

1. Testing method - *Technical Association of the Pulp and Paper Industry (TAPPI)*.
 2. Testing method - *International Organization for Standardization (ISO)*.
 3. The test must be conducted on a large, unscored section of face stock to prevent interference by the score lines.
 4. Refers to the adhesive label, including the face stock, adhesive, and the carrier sheet.
-
-

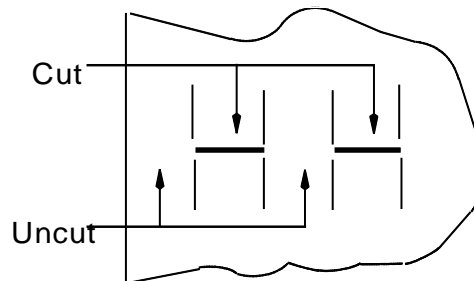
Perforated Paper

A perforation is a series of holes punched through the paper to aid in the separation of one piece from another. Perforated paper can cause jams, misfeeds, and even printer damage. The following guidelines should be used when ordering perforated paper:

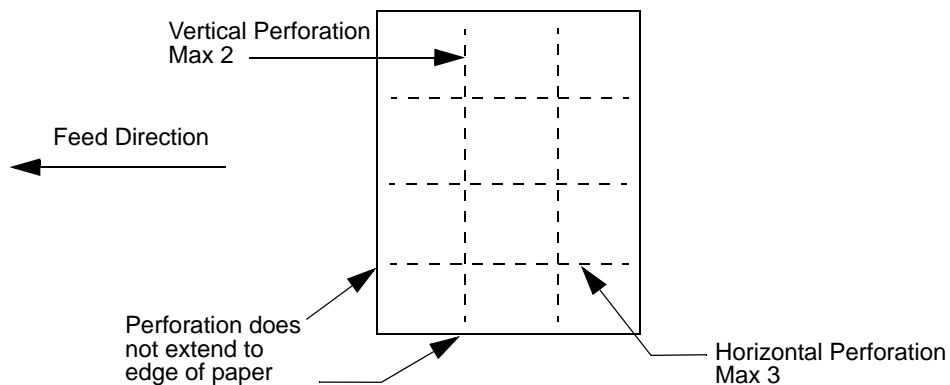
- Perforations should be free from any burrs and paper dust to avoid multiple feed, contamination, or paper jam problems.
- Avoid use of perforations that are not flat.



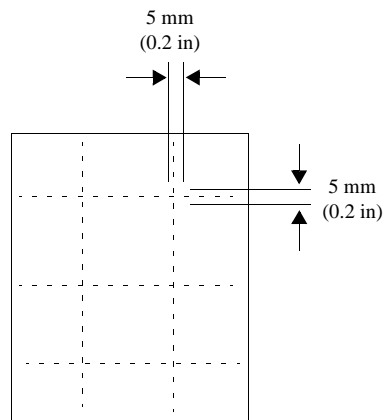
- The ratio of cut to uncut in a perforated line should be 1:1.



- Perforations must not extend to the edge of the page. The minimum distance from perforation to edge of the pages is 50 mm.
- The maximum number of perforated lines per page is 3 horizontal and 2 vertical.



- Do not print within a 5 mm area around the perforations.



Tab Stock

The following sizes and weights of tab stock are supported.

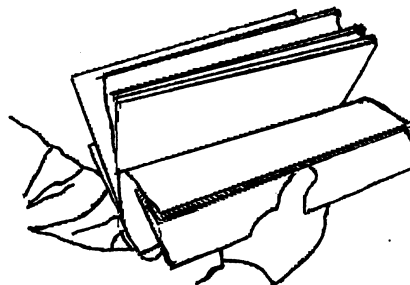
Tab Cut	Paper Size	Paper Weight
3-cut	A4/Letter	90 lb./110 lb.
5-cut	A4/Letter	90 lb./110 lb.
8-cut	A4/Letter	90 lb./110 lb.

Transparencies

Transparency stock is used primarily to create images that can be used with projection equipment. Transparencies are made from polyester film that has been specially coated to allow toner to stick to it. Transparencies cannot be printed in duplex mode.

When using transparencies, the following suggestions may improve performance.

- To reduce sticking, fan the transparencies before loading.



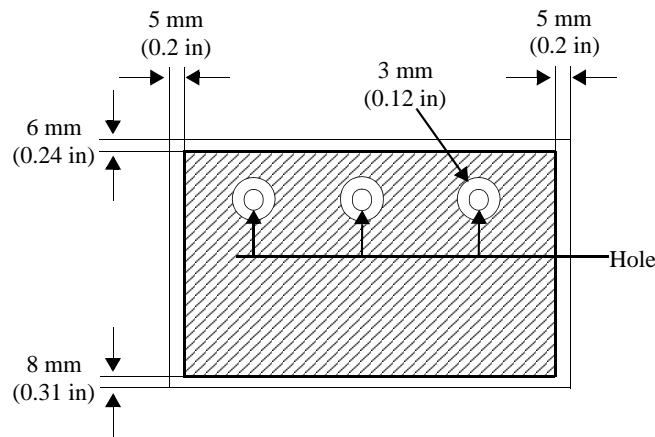
- If excessive paper jams should occur in the paper path after the fusing process, load transparencies in the MBT and print them in face-up mode.

Printing Guidelines

Printable Area

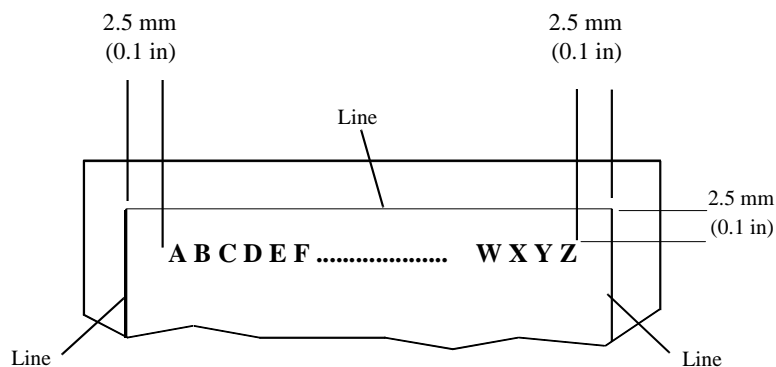
Printable area means the area of the page on which you can print. Print quality can degrade when printing outside the following print area:

- The printable area is 6 mm (0.24 in) from the top, 8 mm (0.31 in) from the bottom, and 5 mm (0.2 in) from the left and right sides of the paper.
- The printable area is 3 mm (0.12 in) from the edge of any punched holes to minimize printer contamination.
- The printable area is marked with diagonal lines.



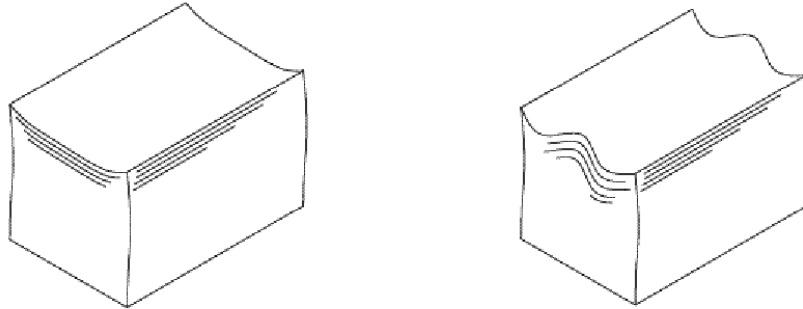
Preprinted Lines

When using a form with preprinted lines the text must be placed a minimum of 2.5 mm (0.10 in) away from the lines.



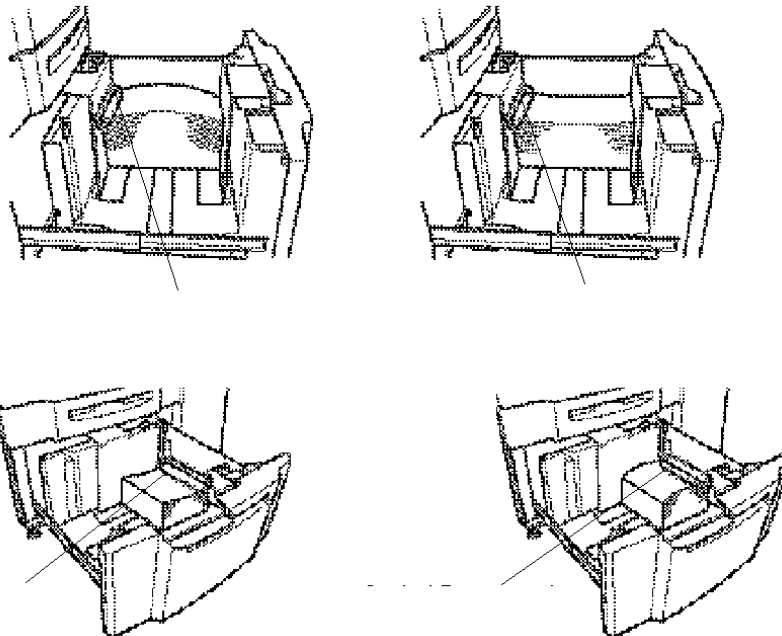
Proper Paper Handling

Paper is easily affected by storage conditions such as temperature and humidity. If the proper moisture content of the paper is not maintained, the paper may become deformed and cause paper jams.



Take the following precautions to avoid paper problems:

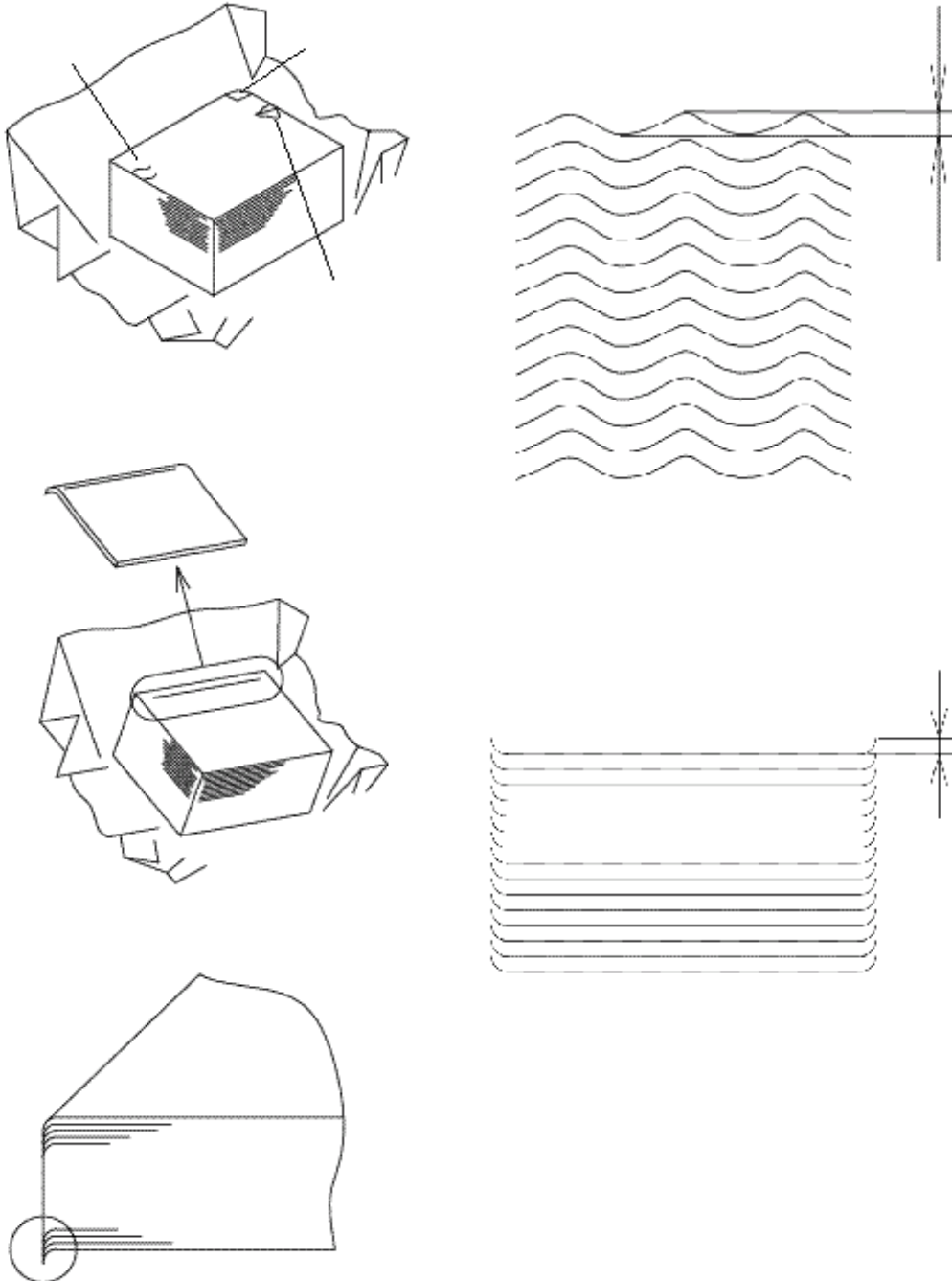
1. Unwrap paper just before printing. The packaging is made of moisture-proof materials to protect the paper from humidity.
2. If the paper is curled or warped, load the paper as shown below.



3. Check for paper curl that may have occurred during the night or when air conditioners or ventilators have been turned off for an extended period of time. If the paper has curled, approximately 200-300 sheets from the top of the pile should be turned over, as shown above, or removed.

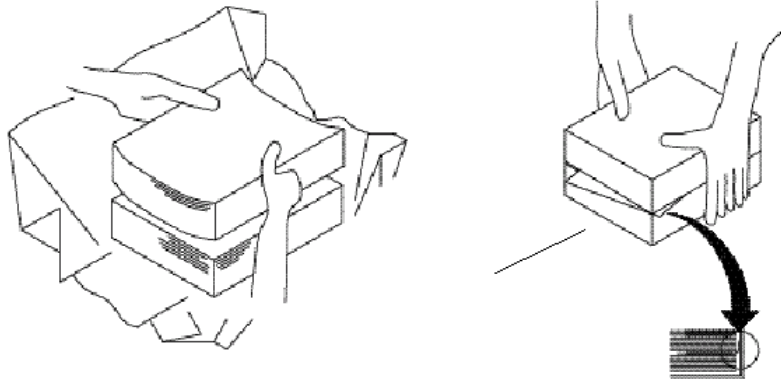
Check Paper Quality

Carefully examine the paper when unwrapping or before loading into the tray. Discard paper with creases, tears, dog-eared corners, curled edges, wavy edges, or tight edges as it may cause paper jams or paper skewing.

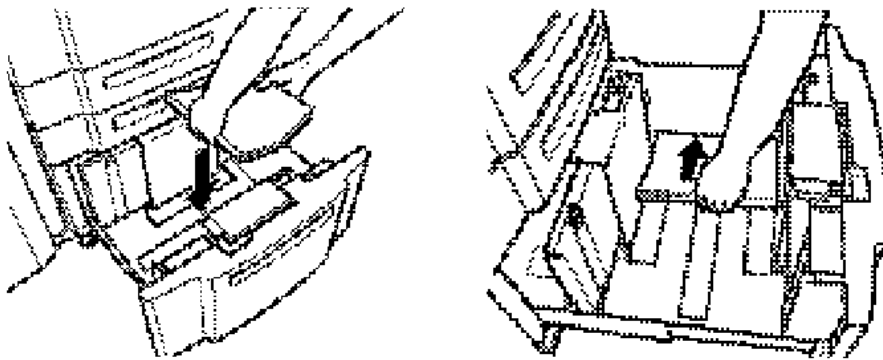


Loading Paper

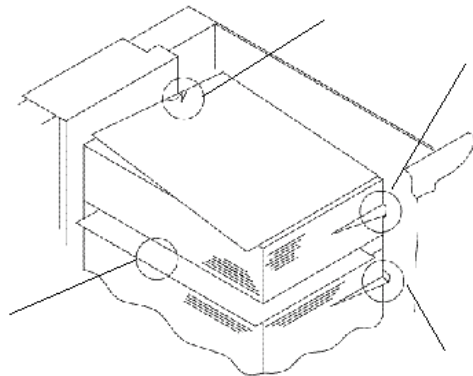
1. Do not pick up or hold too much paper at one time. For example, when loading 1000 sheets of paper, load them 200-250 sheets at a time.



2. Gently place the paper vertically in the tray. Do not slide the paper into the tray.



Check to see that paper is correctly loaded. Look for tears, disarranged sheets, folded edges or dog-eared corners that may have occurred during loading.



Glossary

Numbers

10/100/1000 BaseT. IEEE 802.3 specification, using unshielded twisted pair wiring and running at 10/100/1000 Mbps.

A

ANSI. *American National Standards Institute.* The coordinating body for voluntary standards groups within the United States. ANSI is a member of the International Organization for Standardization (ISO).

ASCII. *American Standard Code for Information Interchange.* A standardized coding system for assigning numerical codes to letters and symbols.

Auto Cascade. Automatically chooses the next paper tray when the first tray is empty.

B

Baud. A unit of speed in data transmission equal to one bit per second.

Bi-directional. Bi-directional parallel signals allow printer status messages to appear on the computer screen.

Bit. A binary digit (0 or 1), which is the smallest unit of information used by a printer or computer.

Bits per second (bps). Not same as *baud*.

Byte. A unit of information consisting of 8 bits.

C

Cache memory. Dynamic memory used for short term. Allows rapid access to frequently used data.

Cancel. A button on which the user clicks to end a specific process or action.

CD-ROM. *Compact Disc Read-only Memory.*

Centronics Parallel. An IBM-PC communications standard. An interface for connecting printers and other peripheral devices to a computer. *Also see Parallel Interface.*

Consumables. Items such as toner and/or developer (EP Cartridge) that the printer consumes.

Control Code. A type of PCL language command. An ASCII character that initiates a printer function.

Controller. The board that controls the engine. Contains firmware, I/O connectors, RAM, and the main CPU.

CPI. *Characters Per Inch.*

CPU. *Central Processing Unit.*

D

Data. Factual information, commonly organized for analysis.

Database. Body of data manipulated by a database program.

Density. The degree of darkness of a printed image.

Desktop. Refers to the working area on the screen where the cursor is active on your computer.

Dialog box. A box that appears on the screen to request information.

DOS. *Disk Operating System.*

DOT. Use *dot*, not *bit* to describe an individual screen pixel.

Dots per inch (dpi). A measure of the resolution of a printed page.

Download. The process of transferring data from a host to a printer's or print server's internal memory or hard drive.

E

EMI. *Electro-Magnetic Interface.*

Emulations. Printer's ability to imitate another printer by accepting and acting on the same commands as the emulated printer (e.g., LJ III emulation).

Escape Sequence. PCL escape sequences consist of two or more characters. The first character is always the escape character, identified by the ^EC symbol and is a control code the printer uses to identify a string of characters as a printer command. As the printer monitors incoming data from a computer, it *looks* for the character. When it appears, the printer reads it and its associated characters as a command to be performed, and not as data to be printed.

ESD. *Electro-static Discharge.*

Ethernet. A baseband LAN specification invented by Xerox Corporation and developed jointly by Xerox, Intel, and Digital Equipment Corporation. Ethernet networks operate at 10 Mbps using CSMA/CD to run over coaxial cable.

Exit. To leave or quit a program.

F

Face down. Printed pages that exit the printer printed side down.

Face up. Printed pages that exit the printer printed side up.

Factory Defaults. Printer settings applied when the printer is manufactured.

H

HCF. *High Capacity Feeder.*

HDD. *Hard Disk Drive.*

I

IEEE. *Institute of Electrical and Electronic Engineers.*

Image Area. Refers to the printable area of a page.

Initialize. To establish the initial default status of the printer by turning on the printer.

I/O Connector. Input/output connector that attaches the computer to the printer is connected here (e.g., parallel, serial, LocalTalk, Ethernet).

IP. Internet Protocol. This is layer 3 (network layer) protocol that contains addressing information and some control information that allows packets to be routed.

ITU-TSS. An international organization that develops communications standards. Formerly, CCITT.

L

LAN. *Local Area Network.*

LCD. *Liquid Crystal Display.*

LED. *Light Emitting Diode.* A semiconductor light source that emits visible light or infrared radiation.

M

MAC. *Media Access Control.*

MBT. *Multi-bypass Tray.* For automatic printing of small jobs or manual feeding of single sheets (including bond, postcard, overheads, labels, and odd-sized print media).

N

NIC. Network Interface Card.

O

OCP. Operator Control Panel.

Operating System. Software that controls the execution of programs.

Orientation. Position of the print on the page. In Portrait orientation, the print runs from the top to bottom margins across the narrow width of a sheet of paper. In Landscape orientation, the print runs from the left to right margins along the length of a sheet of paper.

OSI. *Open Systems Interconnection.* A logical structure for network operations (ISO), to enable multi-vendor equipment interoperability. A seven-layer network protocol standard.

P

Paper Size. Physical dimensions of the paper.

Parallel Interface. An interface that sends data 8 bits at a time. The printer's parallel interface may be configured for bidirectional (two-way) communications between a user system and the printer.

Parity check. The process of checking the integrity of a character.

PCL. Hewlett-Packard *Printer Control Language.*

PDF. *Portable Document Format.*

PDL. *Page Description Language.*

Pixel. In electronic publishing, a basic unit of digital imaging.

Porosity. The ratio of the volume of pores in a material to the volume of the whole, as in a percentage of the volume of pores through which light may pass through paper.

Port. Designates a pathway for the flow of data in or out of a device.

PostScript. A registered trademark of Adobe Systems, Inc.

PPD. *PostScript Printer Description file.*

Printable area. Area of the physical page in which the printer is able to place a dot.

PROM. *Programmable Read-Only Memory.*

PWB. *Printed Wiring Board.*

Q

Queue. A destination for a sequence of stored data or programs awaiting processing, as in files waiting in line to be sent to the printer.

R

RAM. *Random Access Memory.* A type of internal memory that stores data temporarily.

ROM. *Read-only Memory.* A type of internal memory that is used to store programs and data vital to the printer's basic operation permanently.

S

SCSI. *Small Computer System Interface.*

Serial interface. An interface that sends data one bit at a time over a single line.

SIMM. *Single In-line Memory Module.*

SNMP. *Simple Network Management Protocol.* Printer Monitor uses SNMP to retrieve printer status and to intercept traps generated by the printer whenever its status changes. The information is displayed through a graphical interface

Startup. The act or process of setting into operation or motion, as in starting up your system with a *startup* disk.

Symbol set. A predefined set of characters (glyphs) and the numeric codes that the computer sends to the printer to represent the characters.

System. A broad term to include a computer and any peripheral devices, accessories, and software.

T

TCP/IP. *Transmission Control Protocol/Internet Protocol.* The two best known protocols often thought of as one protocol. TCP corresponds to layer 4 (transport layer) of the OSI reference model, and provides reliable data transmission. IP corresponds to layer 3 (network layer) and provides connectionless datagram service. U.S. Department of Defense developed TCP/IP in the 1970s to support the construction of worldwide internetworks.

Telnet. Standard Internet terminal emulation protocol.

Token Ring. A token passing LAN developed and supported by IBM.

Toner. Imaging material used in electrophotography and some off-press proofing systems. The material that is used to create the physical image on the page.

V

Virtual printer. A logical printer definition within the physical printer. To the network server and workstations, each *virtual printer* appears as a single physical printer.

VMS. Digital Equipment Corporation (DEC) operating system.

VPT. Virtual Printer Technology. The virtual printer feature of a printer that allows it to appear as multiple printers to other network workstations.

W

WAN. *Wide Area Network.*

Z

Zone. A logical group of nodes within a network separated by routers, bridges, or gateways.

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