

*The Xerox
DocuPrint NC60
Network Color Laser Printer*

User Guide

Version 1.0

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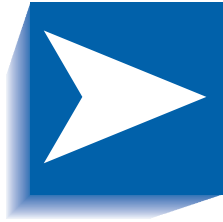
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This printer contains an emulation of the Hewlett Packard PCL 5C command language (recognizes HP PCL 5C commands) and processes these commands in a manner compatible with Hewlett Packard LaserJet printer products.

This product includes an implementation of LZW licensed under U.S. Patent 4,558,302.

Changes are periodically made to this document. Technical updates will be included in subsequent editions.

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Safety Notes

The Xerox DocuPrint NC60 color laser printer and the recommended consumable supplies have been designed and tested to meet strict safety requirements. Attention to the following notes will ensure the continued safe operation of your printer.

Note, Caution and Warning Symbols

Throughout this User Guide and the other DocuPrint guides, several symbols are used to emphasize useful, important and critical information. They are as follows:



This symbol indicates particularly useful or helpful information about your printer.



This symbol indicates a caution against performing any action that may damage your printer or degrade performance.



This symbol indicates a warning against performing any action that may lead to physical injury.

When used in a step, the above symbols appear smaller but are of equal importance.

Electrical Safety

- Use the power cord supplied with your DocuPrint NC60 printer.
- Do not use a ground adapter plug to connect the printer to a power source receptacle that lacks a ground connection terminal.
- Plug the power cable directly into a properly grounded electrical outlet. Do not use an extension cord. If you do not know whether an outlet is grounded, ask an electrician to check the outlet.



You may get a severe electrical shock if you do not connect the grounding conductors correctly.

- Do not place the printer where people may step on the power cable.
- Do not place objects on the power cable.

- Do not override or disable electrical or mechanical interlocks.
- Do not obstruct the ventilation openings. These openings are provided to prevent overheating of the printer.



Do not push objects into slots and openings on the printer. Making a contact with a voltage point or shorting out a part could result in fire or electrical shock.

- If you notice unusual noises or odors, switch off the printer power immediately. Disconnect the power cable from the electrical outlet. Call an authorized Xerox service representative to correct the problem.
- If any of the following conditions occur, switch off the printer power immediately, disconnect the power cable, and call an authorized Xerox service representative.
 - The power cable is damaged or frayed.
 - Liquid is spilled into the printer.
 - The printer is exposed to water.
 - Any part of the printer is damaged.

The power cord is attached to the printer as a plug-in device at the back of the printer. In the event it is necessary to remove all electrical power from the printer, disconnect the power cord from the power receptacle.

Laser Safety



The use of controls or adjustments, or the performance of procedures other than those specified herein, may result in a hazardous radiation exposure.

This equipment complies with all applicable safety standards. With specific regard to laser, the equipment complies with performance standards for laser products set by government agencies as a Class 1 laser product. It does not emit hazardous light; the beam is totally enclosed during all modes of customer operation and maintenance.

When performing various operator functions, you may see laser warning labels. These labels are for the service mode and are placed on or near panels or shields that require a tool for removal. These panels are not to be removed.

Maintenance Safety

- Do not attempt any maintenance procedure that is not specifically described in the documentation supplied with your printer.
- Do not use aerosol cleaners. The use of supplies that are not approved may cause poor performance and could create a dangerous condition.
- Use the supplies and cleaning materials only as directed in this manual. Keep all of these materials out of the reach of children.
- Do not remove the covers or guards that are fastened with screws unless you are installing optional equipment. Power should be OFF when performing these installation. Except for user installable options, there are no parts that you can maintain or service behind these covers.
- Follow the maintenance procedures provided in *Chapter 4: Maintaining the Printer*.

Operational Safety

Your Xerox printer and supplies were designed and tested to meet strict safety requirements. These include safety agency examination, approval, and compliance with established environmental standards.

Your attention to the following safety guidelines will help to ensure the continued safe operation of your printer.

- Use the material and supplies specifically designed for your printer. The use of unsuitable materials may result in poor performance and possibly a hazardous situation.
- Follow all warnings and instructions marked on, or supplied with, the printer, options and supplies.
- Place the printer in a dust free area where the temperature range is 50° F to 90° F (10° C to 32° C) and the relative humidity is 15% to 85%.
- Choose a location for the printer allowing sufficient space around the printer for operation and maintenance. The minimum recommended room size is 10 cubic meters/353 cubic ft. or approximately 8 ft. x 8 ft. x 8 ft. / 242 cm x 242 cm x 242 cm.
- Place the printer in an area where there is adequate space for ventilation and servicing. The recommended minimal spacing for operations is 10 in. (25 cm) behind the printer, 10 in. (25 cm) on either side of the printer, and 24 in. (61 cm) in front of the printer. For Service, the suggested spacing is 4 ft. x 4 ft. (1.2m x 1.2m).

- Do not place the printer near a heat source.
- Do not place the printer in direct sunlight.
- Do not place the printer in line with the cold air flow from an air conditioning system.
- Place the printer on a level, solid surface with adequate strength for the weight of the machine. The machine weight without any packaging materials is 89 pounds (40 kg).
- The printer is heavy. Exercise care in moving or relocating the printer. Follow the recommended procedure when moving the printer from one location to another. See the section “Moving Your DocuPrint NC60” (page 1-15).



Do not tilt the printer. Tipping or moving the machine will cause fuser oil spillage, which will permanently damage your printer.

-
- Do not put containers of coffee or other liquids onto the printer.
 - Do not block or cover the slots and openings on the printer. Without adequate ventilation, the printer may overheat.



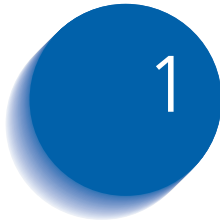
Be careful when working in areas identified with a warning symbol. These areas may be very hot and could cause personal injury.

- Frequent operation of the on/off switch is not recommended.
- Keep hands, hair, and neckties away from the exit feed rollers.
- Do not remove a media tray while printing.
- Do not open the covers while printing.
- Do not switch off the printer power while printing.
- Do not move the printer while printing.

Ozone Safety

This printer produces ozone during normal operation. The ozone produced is heavier than air, and the quantity is dependent on copy volume. Providing the proper environmental parameters, as specified in the Operational Safety section of these Safety Notes, ensures that concentration levels meet safe limits.

If you need additional information about ozone, request the Xerox publication, OZONE, 600P83222, from your Xerox Authorized Reseller or Xerox Support.



Getting to Know Your Printer

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Introduction

In this chapter, you will become familiar with the features of your printer and learn where to locate specific printer parts.

Before you use your printer, make sure that you perform all of the steps outlined in the *Quick Installation Guide* that came with your printer, and connect the necessary print cables.

The Xerox DocuPrint NC60 color laser printer provides brilliant full color laser prints on ordinary paper. Recognizing that you may have special needs, Xerox offers several optional equipment items to better meet your requirements. These are explained in detail in *Appendix C: Printer Options*.

Xerox, or your Xerox authorized reseller, may have provided some or all of these options. First verify your exact equipment options before proceeding further. If you see features described in this section that are not available with the equipment you have, you can easily add them yourself. For more information, refer to the separate *Supplies/Options Guide* provided with your printer.

Printer Features

Your DocuPrint NC60 has many special features that allow you to achieve the color printing results you need for your specific print job. Features vary slightly according to the options you are using and the memory installed in your printer. This section will help you become familiar with your printer's features and capabilities.

Print Speed

Print speeds for printing on standard (Letter/A4) media are as follows:

- Monochrome (Black & White):
 - Fast Black mode: 16 PPM (pages per minute)
 - Standard mode: 12.2 PPM
- Color (4-pass, CMYK): 3 PPM
- Fast Blue (2-pass, CK): 6.1 PPM (PostScript only)
- ZipColor (3-pass, CMY): 4 PPM (PostScript only)
- Full color transparencies: 1.7 PPM
- Monochrome transparencies: 6.1 PPM

Resolution

The resolution of your printed image is determined by the number of printed dots per inch (dpi). The DocuPrint NC60 provides the following resolution modes:

- Standard Mode (600 x 600 x 1 dpi)
- 1200 Quality Mode (PostScript only)

Resident Fonts

The following fonts are included with your printer:

- 35 Adobe Type 1 fonts (for use with PostScript only)
- 35 Intellifonts (for use with PCL 5C and PostScript)
- 10 TrueType fonts (for use with PCL 5C and PostScript)



PostScript Level 3 provides a total of 147 downloadable fonts. These are available on the DocuPrint NC60 CD-ROM.

Connectivity

The DocuPrint NC60 supports the Win 95/Win98 Plug & Play standards and has the following standard interfaces:

- Parallel port (IEEE 1284-B), ECP compatible
- Serial port (DB9), RS-232C
- 10 MB Ethernet (10Base-T & 10Base-2)

Optional Interfaces include:

- 100 MB Ethernet
- Token Ring (UTP & DB9)

The following network Operating Systems are supported:

- Novell
 - NetWare 3.1x, 4.1x (NDS & BEM), 5.0 (NDS & BEM)
 - NDPS 1.1
- Microsoft
 - Windows for Workgroups 3.1x (Peer-to-peer)
 - Windows 95 (Peer-to-peer)
 - Windows 98 (Peer-to-peer)
 - Windows NT 3.51 and 4.0
- UNIX
 - Sun OS 4.x
 - Sun Solaris 2.4+
 - HP/UX 9.x+
 - IBM AIX 4.x

- IBM
 - Warp Server 4.0
 - LAN Server 4.0
 - OS/2 Warp 4.0 (Peer-to-peer)
 - OS/2 Warp Connect 3.0 (Peer-to-peer)
- Apple
 - AppleTalk

The following network protocols are supported:

- Novell IPX
- AppleTalk (EtherTalk/TokenTalk)
- NetBEUI
- TCP/IP
- SNMP
- DLC/LLC
- HTTP

Color Matching Systems

The following host-based color matching systems can be used with the DocuPrint NC60:

- PANTONE
- Apple ColorSync 2.0 and 2.5
- Windows Image Color Matching (ICM) 1.0 and 2.0



For more detailed information on printer specifications and connectivity, consult the System Administrator Guide on the DocuPrint CD.

Printer Driver Software

The printer driver is a piece of software that is loaded on your workstation. Use of the proper printer driver for your operating system and printer model is essential for getting the best in color printing. It is important for two reasons:

1. Printer drivers provide access to features unique to your printer. Although there are many print options and features that are a part of the software applications you use, your printer also contains many distinctive features of its own. For example, your DocuPrint NC60 drivers enable you to use the Xerox Intelligent Color feature that is available in your printer.
2. To print effectively, it is necessary for you to install the correct printer driver. You can use either the PostScript printer driver (recommended) or the PCL 5c printer driver. The PostScript printer driver allows access to more of the exclusive and powerful Xerox printing features. For more information about available drivers and operating systems supported by your DocuPrint NC60, see the *System Administrator Guide* on the DocuPrint CD.



Application specific files that enable you to use your DocuPrint NC60 with PageMaker, FreeHand, and QuarkXpress are included in the installation software.

Printer Components

External Components

Use Figures 1.1 and 1.2 to identify the main exterior components of your DocuPrint NC60.

Figure 1.1 Printer Components, Front View

Front View

- 1 Fuser Cover
- 2 Control Panel
- 3 Media Server (optional)
- 4 Manual Bypass Feeder Slot
- 5 Manual Bypass Feeder Guide
- 6 Tray 1
- 7 Media Exit Area
- 8 Top Rear Cover Release
- 9 Front Cover
- 10 Front Cover Releases (2)
 - Optional Lower Feeder not shown (see *Appendix C: Printer Options*).

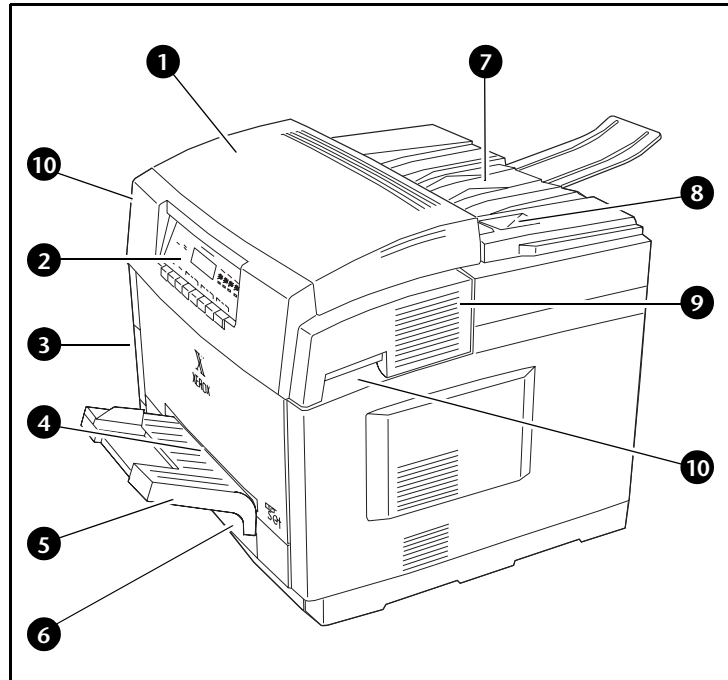
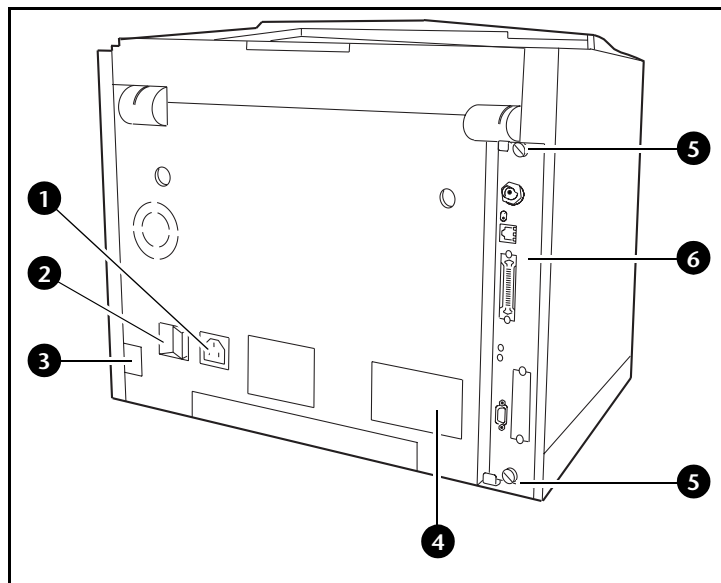


Figure 1.2 Printer Components, Rear View

Rear View

- 1 Power Cord Receptacle
- 2 On/Off Switch
- 3 Lower Feeder Electrical Connection
- 4 Safety Certification and Voltage Information Label
- 5 Controller Pullout Panel Screws
- 6 Interface Connectors (see page 1-11)

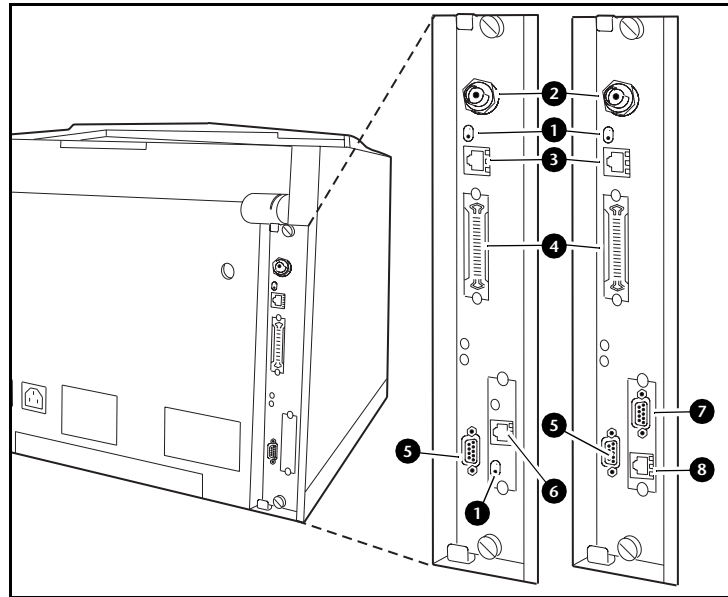


Interface Connectors

Your printer interface connectors are located on the back of the printer as shown in Figure 1.3. Your printer comes equipped with a standard Centronics parallel connector, serial connector, and 10 MB Ethernet. In addition, space is provided for an optional Network Interface card (either Ethernet 10/100 or Token Ring).

Figure 1.3 Connection Interface Area

- 1 Network Indicator LEDs
- Ethernet (10MB)**
- 2 BNC
- 3 RJ45
- Parallel**
- 4 P1284B
- Serial**
- 5 DB9
- Options**
- Ethernet (10/100)*
- 6 RJ45
- Token Ring*
- 7 DB9
- 8 RJ45



The installation of the optional 10/100 Ethernet card or Token Ring card will disable the standard 10 MB Ethernet connector.

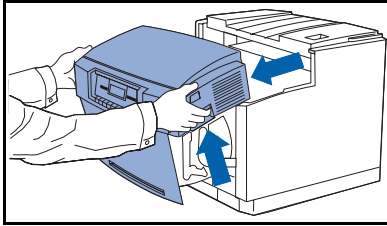


Detailed information about Network Interface Connectivity can be found in the Technical Information Guide on the Printer Management Software CD.

Covers

The DocuPrint NC60 has three covers, which are identified in Figure 1.1 on page 1-9. Use the following instructions to open each cover and gain access to the internal components of your printer.

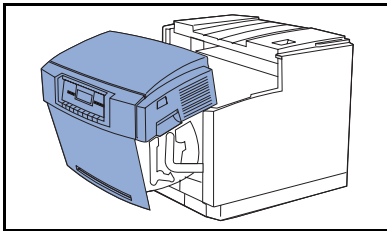
To Open the Front Cover:



- 1 Simultaneously grasp the two latches, located on the front cover, and pull up to release them.



Do not attempt to open the Front Cover if the paper tray is partially removed. Permanent damage will occur.

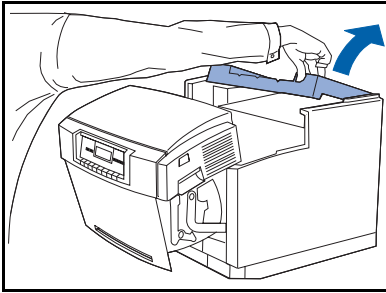


- 2 Gently pull the cover up and toward you until it rests in a lowered position.



Do not leave the covers open for an extended period of time. Prolonged exposure to light will damage the print drum.

To Open the Top Rear Cover:

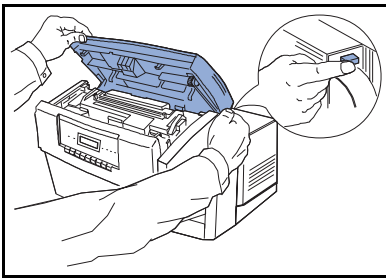


- 1 Lift the release button, located on the Top Rear Cover.
- 2 Lift the cover up until it stands in an upright position.

To Open the Fuser Cover:



The Front Cover must be opened before you can open the Fuser Cover.



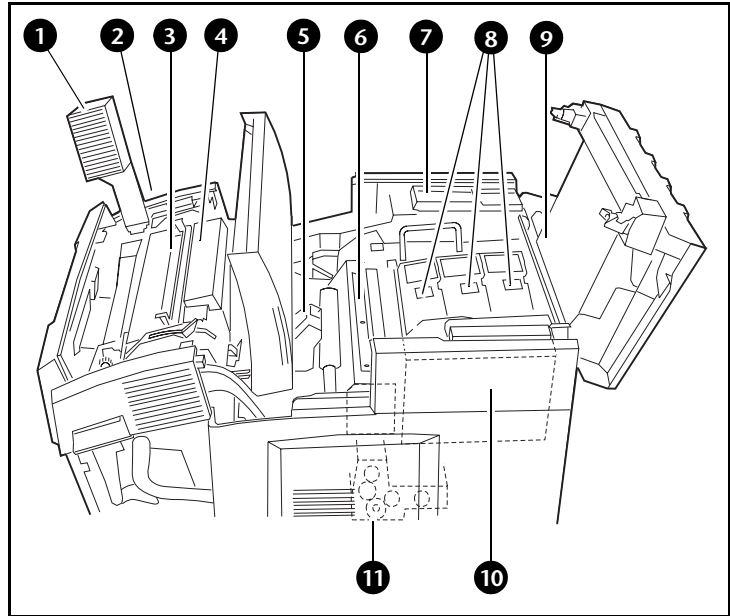
- 1 Press the green Fuser Cover release button, located on the Front Cover as shown.
- 2 Lift the Fuser Cover straight up and back until it rests in an upright position.

Internal Components

Figure 1.4 shows how the DocuPrint NC60's internal components are arranged. Two important groups of internal components of your printer are the Consumables (replenishable substances used by the printer that should be kept on hand) and Maintenance Items (the parts that require replacement). See the separate *Supplies/Options Guide* to order these items.

Figure 1.4 Internal view of components

- 1 Ozone Filter
- 2 Fuser Area
- 3 Fuser Cleaner Roller
- 4 Fuser Oil Bottle
- 5 Toner Collector
- 6 Print Drum
- 7 Black Toner Refill Doors
- 8 Color Toner Refill Doors
- 9 Serial Number Plate
- 10 Color Developer Unit
- 11 Black Developer Unit



Instructions on how to replace Consumables and Maintenance Items are packaged with each replacement item.

Moving Your DocuPrint NC60



Please use caution when moving your printer.

If you need to move/relocate your printer, refer to the following descriptions to determine which type of move is desired.




- Simple Move

If you want to move the printer within the same building (i.e., office to office, different floor), refer to the Simple Move procedure.

- Complex Move

If you want to move the printer via a freight carrier, ***it is highly recommended that you use the Xerox Repack Kit to avoid printer damage.*** Refer to the Supplies/Options Guide for the proper part number.

Simple Move

- 1 Power off the printer.
 -  **After turning off the printer, allow the Fuser to cool to a safe temperature before handling.**
- 2 Disconnect the power cord and interface cables.
- 3 Open the Front Cover (see page 1-12).
- 4 Open the Top Cover (see page 1-13) and remove the Fuser assembly.
- 5 Place the Fuser in a separate box and do not allow the Fuser to tip. Keep the Fuser level during transportation.
 -  **It is critical to keep the Fuser level at all times during transportation. Permanent damage can occur to the printer if the Fuser is allowed to tip, spill oil, and be placed back into the printer.**
- 6 Close the Top and Front Covers.
- 7 When the printer arrives at its new location, reinstall the Fuser assembly.
 -  **If there is evidence of oil on the outside of the Fuser, or if you suspect oil has been spilled, DO NOT PLACE THE FUSER INTO THE PRINTER. A new Fuser should be installed.**

Complex Move

It is highly recommended that you use the Xerox Repack Kit for carrier shipments. Failure to do so could result in permanent damage to the printer.

Refer to the Supplies/Options Guide for the proper part number of the Xerox Repack Kit. Follow the instructions included with the Repack Kit, which contains a shipping carton, packaging materials and detailed instructions to prepare your printer for carrier shipment.

DocuPrint Documentation

Your DocuPrint NC60 is packaged with documentation in both printed form and on CD. There are two CDs:

- **DocuPrint NC60 CD**, which contains documentation and printer drivers.
- **Printer Management Software CD**, which contains various Xerox-provided client software and the documentation for them.

This section serves as a roadmap for the printed and CD documentation

Printed Documentation

Your DocuPrint NC60 was packaged with the following pieces of printed documentation:

- **Quick Install Guide**, which shows you how to get your printer up and running.
- **User Guide** (this book), which provides you with the basic information needed to use your printer. (More detailed information is contained in the *System Administrator Guide* on your DocuPrint NC60 CD.)
- **Quick Network Install Guide**, which briefly shows you how to connect your printer to a network in your specific environment. (More detailed Network/Environment information is contained in the *Technical Information Guide* on your Printer Management Software CD.)

DocuPrint NC60 CD

Your DocuPrint NC60 was also packaged with a CD that contains the following pieces of documentation as PDF files:

- **User Guide** (electronic version of this book)
- **System Administrator Guide**

The System Administrator Guide contains a considerable amount of more detailed information.

- **Supplies/Options Guide**



DocuPrint NC60 printer drivers are also contained on this CD. The majority of driver documentation is provided via the Help files included with the drivers.

Printer Management Software CD

User Guides are provided for each of the major printer management utilities. Consult the booklet enclosed with the CD for more information.



Since both the DocuPrint NC60 CD and the Printer Management Software CD contain so much important information, please ensure that you save them and keep them in a safe place.

Using the CDs

The documentation on the Product CD is provided as PDF files, which are opened in Adobe Acrobat Reader (provided on the CD if you do not already have it installed). These files contain hypertext links that enable you to jump from the Table of Contents or Index directly to the page where you are looking for information, as well as from page to page where information is cross-referenced. Simply move the cursor over a hypertext link and it changes to a pointing finger. Then click on the link to jump to the link's destination.

The PDF files also enable you to print the specific pages you need, rather than printing an entire chapter or manual.

Both the DocuPrint NC60 CD and the Printer Management Software CD are provided with installation booklets in their respective jewel cases. You can also refer to the ReadMe files on the CDs for more information.



2

Loading Print Media

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Recommended Media

Your DocuPrint NC60 will produce brilliant color images on a wide variety of print media. Carefully choosing the media for your printer is important in achieving the very best images and in ensuring trouble-free operation. Selecting quality paper and transparencies is recommended for avoiding potential problems with heat-intensive printing. Xerox strongly recommends that you only use media and transparencies designed for use in color laser printers. Tell this to your suppliers.

The paper you use should be dust-free, and have cleanly cut edges. Don't use curled, wrinkled, or damp paper. Also note that smoother surface paper will produce sharper output resolution and better image detail. For the best results, DO NOT use recycled paper, textile transfers, glossy paper, photographic paper, embossed letterhead paper, rough textured paper, linen, vellum or pre-printed forms. Pre-printed letterhead paper designed for use in laser printers or color copiers will perform well.

Paper

16 - 24 lb. (60-90 g/m²) can be fed automatically via the universal media tray. Several types of papers are sold by Xerox resellers, or Xerox. Not all media is available in all locations, though. Some of the popular Xerox sold papers include Xerox 4024DP, Color Expressions, Xerox 60, Xerox 80, and Xerox Colotech 90.

Transparencies

Your DocuPrint NC60 is ideal for creating bright, vivid color transparencies, for use with an overhead projector. Best results will be obtained by using Xerox brand transparencies, which are especially designed for the best images. Note that transparencies can be printed from either the Manual Bypass Feeder Slot or the Universal Media Tray.



For best performance do not load more than 75 transparencies in the universal media tray or exceed the transparency fill line indicated in the tray.

Labels and Envelopes

Black and white images can easily be printed on laser-quality labels and envelopes from the Manual Bypass Feeder Slot. **DO NOT attempt to print labels or envelopes in color, or via the Universal Media Tray, as jams will occur.** Best results will be obtained by carefully selecting media that is designed for use in laser printers.



Attempting to print in color on labels could result in damage to your printer.

Loading the Media Tray

How to Load the Tray With Paper

The universal paper tray can be used for standard paper weights of 16 - 24 lb. (60-90 g/m²) and any of the supported paper sizes:

- Letter (8.5x11 in.)
- A4 (210x297 mm)
- Legal (8.5x14 in.)
- Executive (7.25x10.5 in.)
- A5 (148x210 mm)
- Invoice (5.5x8.5 in.)
- SP. Folio (216x315 mm)
- Folio (8.5x13 in.)
- 8x10
- B5 (176x250 mm)

The printer automatically detects the standard sizes (letter, A4, legal and executive). If none of the standard sizes is detected, the printer utilizes the custom paper size set in the Control Panel. You must set this to the current paper size (see *Chapter 3: Printing*).

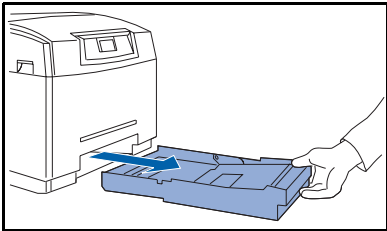


The DocuPrint NC60 is not designed to print double-sided (duplex) prints. Attempting to produce double-sided prints will damage your printer.



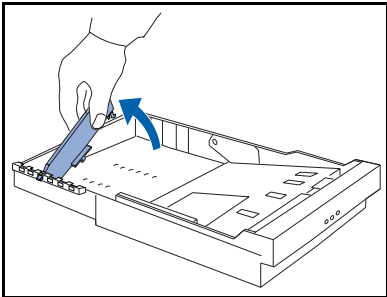
The maximum capacity for transparencies in the universal paper tray is 75 or the maximum transparency fill line on the tray. Attempting to overload the tray may cause jams.

To load the tray with paper:

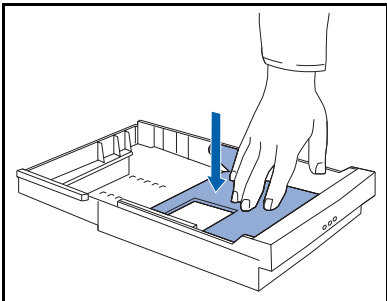


- 1 Grasp the handle of the tray, and completely remove it from the printer.

! Do not attempt to load paper into a partially removed tray, as this may bend the paper tabs on the tray and lead to paper jams.

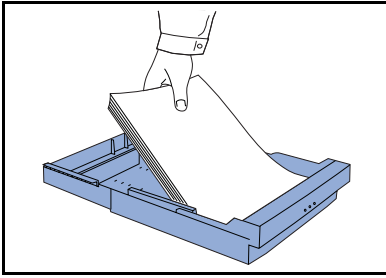


- 2 Adjust the side and back edge guides to accommodate the paper to be loaded. To adjust the back edge guide, carefully pull the guide as shown, place it into the holes indicated for the size desired, and then gently press the guide securely into the holes.



- 3 Press down on the metal pressure plate until it is flat against the bottom of the tray.

Loading the Media Tray



- 4 Gently fan the paper and place it into the tray so that the side to be printed is facing up and the edge of the paper nearest to the tray handle is inserted under the tabs as shown. Do not fill the tray above the maximum fill line indicated.



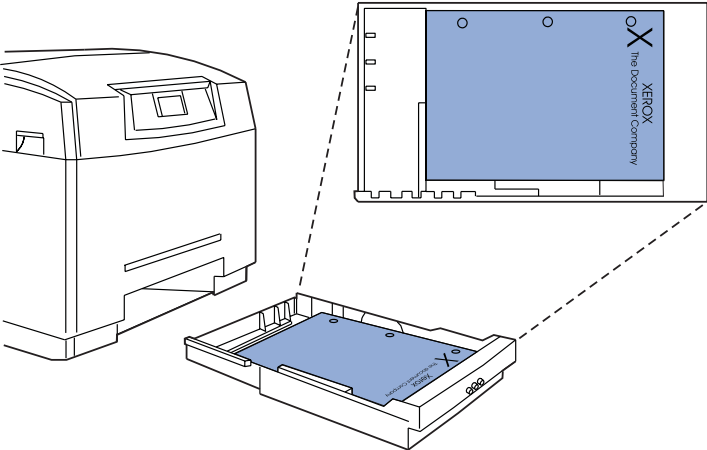
Do not place the paper in the tray and attempt to force it under the tabs at the front of the tray. This will bend the tabs which may result in paper jams.

- 5 Reinsert the tray into the printer.

How to Load the Tray With Letterhead and Three-Hole Paper

Load letterhead and three-hole paper in the same way that you load plain paper (with the printed side up). The typical orientation of letterhead and three-hole paper is shown in Figure 2.1.

Figure 2.1 Letterhead and Three-Hole Paper Loaded In The Media Tray



How to Load the Tray With Transparencies

Load transparencies in the same way that you load paper. Use recommended transparencies for optimum performance. **Do not fill the tray with more than 75 sheets or above the maximum transparency fill mark.**



Your DocuPrint NC60 automatically detects transparencies at the time of printing and adjusts the print settings to optimize transparency quality.

Transparency Tray

If your printer has two trays, you can designate one of the trays as the transparency tray. The printer will automatically feed from the designated transparency tray if the media is selected as “Transparency” in the driver.

You can designate a tray as the “Transparency Tray” through either the printer's Control Panel or the CentreWare DP software or CentreWare Internet Services. See the *System Administrator Guide* on the DocuPrint NC60 CD for more information about how to designate a tray as a Transparency Tray by using the Control Panel. To designate a tray by using CentreWare DP, refer to the *CentreWare DP User Guide* on the Printer Management Software CD.



If you have a designated transparency tray, you can very easily insert separator sheets after each transparency. See Chapter 3: Printing for details.

The Manual Bypass Feeder Slot

The Manual Bypass Feeder Slot, located on the front of the printer just above the media tray, allows you to print on:

- A single sheet of media 16 to 24 lb. (60 - 90 g/m²) or letterhead paper.
- A transparency.
- A sheet of laser-quality labels (print in black only).
- A laser-quality envelope (print in black only).
- A cover for a document set on a different stock from 16 - 24 lb. (60 - 90 g/m²) or letterhead paper.



In order to use the Manual Bypass Feeder Slot, you must attach the Manual Bypass Feeder Tray and feed the media one sheet at a time.

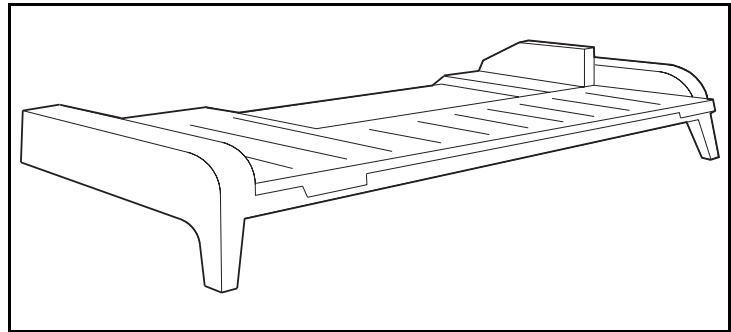


Inserting a sheet of media in the Manual Bypass Feeder Slot will force printing on that sheet. This will override all application, driver or printer settings.

The Manual Bypass Feeder Tray

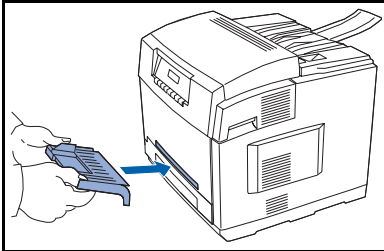
Your DocuPrint NC60 comes with a removable Manual Bypass Feeder Tray. This tray attaches to the front of the printer and guides individual sheets or envelopes as they enter the Manual Bypass Feeder Slot. The Manual Bypass Feeder Tray aligns each sheet correctly and helps to ensure that it enters the printer smoothly.

Figure 2.2 The Manual Bypass Feeder Tray

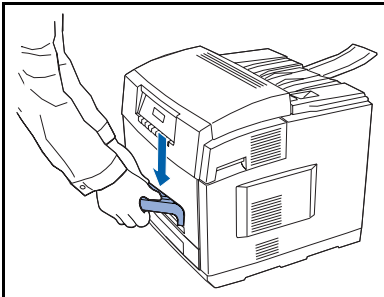


How to Attach the Manual Bypass Feeder Tray

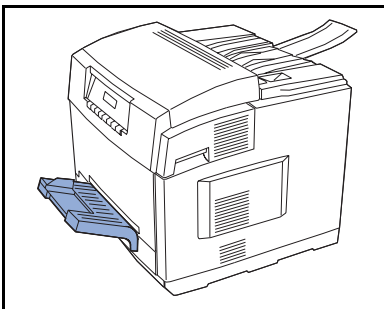
To attach the Manual Bypass Feeder Tray to the front of the printer:



- 1 Orient the tray so that the edge with the two small tabs and the support arms is facing the printer.
- 2 Align the tabs on the edge of the tray with the indentations just inside of the Manual Bypass Feeder Slot, and insert the edge of the tray into the slot.



- 3 Press gently on the top of the tray above the tabs until the tabs fit securely into the indentations.



- 4 Rest the support arms against the front of the printer.

How to Use the Manual Bypass Feeder Slot

Media inserted in the Manual Bypass Feeder Slot overrides the Paper Source selection in your driver. You can use this to print a page (or cover) in a document set on a different media than the remainder of the document. Simply insert the media before the page is printed.

To print normally from the Manual Bypass Feeder Slot:

In your printer driver:

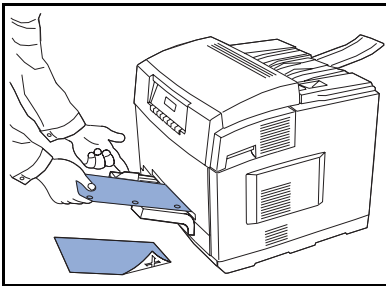
- 1 Select Manual Feed as the Paper Source in the DocuPrint NC60 printer driver.
- 2 For envelopes or labels, select the correct option in the Media Type in the DocuPrint NC60 printer driver.

At your printer:

- 3 When prompted by the Control Panel message, place the media print-side down on the Manual Bypass Feeder Tray.



Before you load a sheet of labels into the Manual Bypass Feeder Slot, make sure that the edges of the labels are not loose or sticking up. Loose edges can get stuck when the sheet passes through the printer and can cause jams that are difficult to clear.



- 4 Place the media against the right edge of the Manual Bypass Feeder Tray. Push the side edge guide against the left side of the media. The media should be flat against the tray without any wrinkles or bent edges.
- 5 Push the media into the Manual Bypass Feeder Slot. The media will be pulled into the printer.



The DocuPrint NC60 is not designed to print double-sided (duplex) prints. Attempting to produce double-sided prints will damage your printer.





3

Printing

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Introduction

This chapter discusses the following issues related to printing:

- The use of printer drivers

Features of the PostScript and PCL printer drivers are compared and described.

- The use of the Control Panel

Basic functionality is described, including procedures for printing and deleting password-protected files, and printing internal pages.

- The use of the optional Media Server

This section discusses printing files directly from a disk in the optional Media Server.

- Internet Printing

There is a brief discussion of web printing through IPP, Xerox's Workset technology that provides built-in Email Send and Receive capability, distribute and print functionality and remote monitoring.

Printing Options

With the DocuPrint NC60, you have a variety of options for submitting a file for printing, depending on your environment and preferences. These options are listed in Table 3.1. For more detailed information on a particular option, refer to the applicable User Guide located on the Printer Management CD.

Table 3.1 DocuPrint NC60 Printing Options

Method	Option	Description
Print directly from application.	Direct connected printing	The port is set to LPT1: (or equivalent)
	Through a network	The port is set to a network queue.
	Through the mail port monitor	The port is set to the Xerox mail port monitor and the printer has an Email address.
Print via a print file submission.	Media Server	Copy the print file to a floppy disk for use in the optional Media Server.
	CentreWare DP	Send the print file to the printer using CentreWare DP (Novell and NT networks).
	CentreWare for SUN/Solaris	Send the print file to the printer using CentreWare for SUN/Solaris (UNIX SUN or Solaris platforms).
	Xerox CentreWare TTY for UNIX	Send the print file to the printer using CentreWare TTY for UNIX (other supported UNIX platforms).
	CentreWare Internet Services	Send the print file to the printer using CentreWare Internet Services (embedded Web server).
	Attachment to a mail note	Send the print file to the printer as an attachment to a mail note (requires printer have an Email address).

Printer Driver Options

Your DocuPrint NC60 printer offers many special features that are designed to produce the highest quality color and black & white prints while giving you the flexibility you need to print a variety of documents. These features are accessed through the NC60 printer drivers and are described in this chapter.

The way these features are accessed depends on both the DocuPrint NC60 printer driver that you are using and your operating system. Not all the features described in this chapter are available in all operating systems. Use the descriptions in this chapter as a general guide to help you take advantage of the features available.

The information in this chapter is organized by printer driver type (by the features specific to the PostScript printer drivers and the features specific to the PCL 5C printer drivers). Not all features are available for all drivers. Refer to the section that matches the printer driver you use.

PostScript vs. PCL 5C Printer Driver Feature Comparison

**Table 3.2 DocuPrint NC60
PostScript vs. PCL 5C**

Feature	PostScript	PCL 5C
Secure Print ¹	Yes (see page 3-8)	Yes (see page 3-39)
Proof Print ¹	Yes (see page 3-9)	Yes (see page 3-40)
Hold Job	Yes (see page 3-15)	Yes (see page 3-46)
Intelligent Color	Yes (see page 3-27)	Yes (see page 3-47)
Vivid Color	Yes (see page 3-27)	No
Photo Mode	Yes (see page 3-27)	Yes (see page 3-47)
ZipColor	Yes (see page 3-27)	No
Fax Friendly Black	Yes (see page 3-28)	No
Fast Blue	Yes (see page 3-28)	No
Expert Color Control	Yes (see page 3-30)	No
Document Halftone	Yes (see page 3-31)	No
1200 Quality	Yes (see page 3-31)	No
ImageFix	Yes (see page 3-32)	No
IntelliRes	Yes (see page 3-32)	No
Black Overprint	Yes (see page 3-32)	No
Edge Smoothing	Yes (see page 3-33)	Yes
Enhanced Alignment	Yes (see page 3-33)	Yes
Watermarks	Yes (see page 3-37)	No
Page Overlays	No	Yes (see page 3-54)

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Table 3.2 DocuPrint NC60
PostScript vs. PCL 5C (continued)

Feature	PostScript	PCL 5C
Separators ²	Yes	Yes
Front Cover	Yes	Yes
Gray Scale	Yes	Yes
Save Toner	Yes	Yes
Unadjusted	Yes	Yes
Quad Dot	Yes	No
Smooth Screen	Yes	No
Use Application Color Space	Yes	No
Disable CMYK Coverage Limit	Yes	No
Process Black Graphics	Yes	No
Save Settings	Yes	Yes
Restore Settings	Yes	Yes
Table 3.2 Page 2 of 2		

¹ Requires Hard Disk option.

² Requires optional Tray 2.

PostScript Printer Driver Features

Your DocuPrint NC60 PostScript printer driver includes many unique features provided by Xerox. These unique features are provided to aid you in producing high quality color as well as black and white prints. For information on other features not described here, select Help in your driver.

Paper/Output Job Type

The Job Type menu enables you to select special document output and control features provided by your DocuPrint NC60. Keep in mind that your DocuPrint NC60 may be configured with optional equipment. Therefore, you may need to configure your printer driver to recognize the installed options and special features supported by your DocuPrint NC60. Be sure to check the System (Printer) Configuration tab within your printer driver to configure the Installable Options.

- Normal Print

The Normal Print option simply means that the job will NOT be processed with any special delivery or output features. Normal Print is the default setting.

- Secure Print (requires Hard Disk option)

The Secure Print option is designed for printing confidential documents. This feature automatically holds your document within the hard drive on your DocuPrint NC60. When you're ready to retrieve your job, you go to the Control Panel and release the job so it will print when you are ready to retrieve it.

To send a Secure Print job, you need to enter a 4-digit numeric password, where each digit of the password can be any numeric value between 0 - 7. See *"Print a Password Job"* (page 3-66).

- Proof Print (Sample Set) (requires Hard Disk option)

The Proof Print option enables you to print and proof a single copy of a document before printing the remaining document sets/copies. The remaining sets are held in the printer's hard drive until you release the job at the Control Panel by entering a four-digit numeric password. Each digit of the password can be any numeric value between 0 - 7. See *"Print a Password Job"* (page 3-66).



If no Hard Disk is installed, the job is not printed and is deleted.

When using this feature, be sure to determine if the Print dialog in your application provides a Collate option. If it does, you must turn the Collate option OFF in order for the Proof Print feature to work properly. If you do not turn off the Collate option within your application, the application may render the entire job as a single document.



Be sure to print or delete your password jobs at the printer. Password jobs are held indefinitely on the hard disk until printed or deleted.

Copies

The Copies feature enables you to select the number of copies or document sets that will be printed.

Select Paper

The Paper Selection dialog enables you to choose the paper and media options for your documents. Click the Cover Sheet and Separators buttons for additional options.



If the paper size or media type you select in the printer driver are not available in the tray, the printer will request the proper media. If the printer contains an acceptable alternative medium, you can select this by pressing the Up or Down Value key to display the choice, then press the Enter key to accept the source.

- Paper Size

This field contains a list of the paper sizes that are supported by your DocuPrint NC60. Keep in mind that the available paper sizes and default settings may vary according to your locale, the Job Type, and the finishing features you have selected.

Some paper sizes or types may not be valid selections for certain types of print jobs.

- Media Type

This field contains a list of the media types that are supported by your DocuPrint NC60.

- Paper

If no other media type is selected, paper is the default medium.

- Transparencies

A sensor in the paper path of the printer detects the presence of transparencies. When transparencies are detected, the printer adjusts itself so that transparency print quality is enhanced. You may use tray 1, tray 2, or the Manual Feed slot to feed transparencies for print.



For printers equipped with two trays: If a Transparency Tray has been designated at the Control Panel or through the CentreWare DP and CentreWare Internet Services software, select transparencies in the printer driver to feed automatically from the designated transparency tray.

- Envelopes/Labels

For printing on envelopes or labels, the printing will be in black only, and the paper source will be restricted to the Manual Feed slot.

- Paper (Media) Source

The Paper (Media) Source field enables you to select from the available paper trays on your DocuPrint NC60. If the Paper Source is set to Auto Select, the printer automatically selects a tray that matches the paper size settings for the job. The Auto Select setting is the default.

This printer offers a variety of Paper Size and Media Type selections. When these features are available, the Auto Select feature will use the Paper Size and Media Type settings in your driver to pick the right tray for the job, even if a paper tray is specified. If the size and type are not currently loaded in an available tray, the printer will prompt you to load the correct media.

- Front Cover

This dialog provides a way to choose the paper that will be used for the First Page (Front Cover) of your document.

- Front Cover Different

Select this option when you would like the first page of your document to be printed on different paper stock. This setting enables you to specify the paper size or media type to be used for the front cover page of the document.

- Separators (requires Tray 2, Lower Feeder option)

This dialog provides a way to choose the paper that will be used to separate each printed transparency.

— Separators

The Separators feature enables you to specify whether paper separator pages will be inserted between each transparency sheet.

Image Orientation

- Portrait orientation prints an image that is taller than it is wide. When you view a page that is printed with a Portrait orientation, you hold it with the long edges to the sides.
- Landscape orientation prints an image that is wider than it is tall. When you view a page that is printed with a Landscape orientation, you hold it with the short edges to the sides.
- Rotated Landscape orientation creates a document that is wider than it is tall, but the images on each page are rotated 180 degrees.

Collation

Collated printing means that two or more copies of a document are printed and delivered as separate document sets, rather than separate sets of each page.

Collation selected - 1,2,3; 1,2,3; 1,2,3

Collation not selected - 1,1,1; 2,2,2; 3,3,3

Keep in mind that collated output may vary based on the amount of memory in the printer, the optional equipment installed on the printer, and the complexity of your print jobs.



The Collate setting in certain applications may conflict with the Collation setting in your Xerox printer drivers, causing unexpected results. To avoid conflicts, turn collation OFF in your application print dialog and ON in your printer driver. Do NOT select collation in both the application and the printer driver.



If your printer does not have sufficient RAM—nor a Hard Disk option installed—to completely store the entire job, the job is collated in smaller segments and printed with the requested copy count. Subsequent collated segments are printed until the entire job is complete.

Hold Job

Select Hold Job to delay printing for a set period of time. This enables you to get to the printer to load special media, or to print out confidential material.

When you select this option, a message will remind you that you have a limited period of time to press the Enter button on the Control Panel in order to initiate the print activity. If you do not press the Enter button within the preset timeout, the job will be printed from the printer's memory. The Hold Job timeout is set from the Control Panel or through the CentreWare DP or CentreWare Internet Services software.

Fonts

The Fonts tab contains options that enable you to control the way True Type fonts are handled by the printer driver and the printer.

- Use Substitution Table

The Substitution Table helps you select a printer font that is the closest match for the True Type font being generated by the application. When the Use Substitution Table check box is selected, the Substitution Table becomes active.

The Font Substitution Table contains two list boxes:

- For True Type Font - lists the TrueType fonts that are resident on your computer.
- Use Font Comparable To - lists the PostScript fonts that are resident on the DocuPrint NC60.

Example...

If the Arial font is highlighted as the True Type Font, and Helvetica is highlighted as the Comparable Font, the printer driver is suggesting that the PostScript Helvetica font is the closest font that the printer can print to match the Arial TrueType font resident on your computer.

- Edit the Table

This button opens the Font Substitution Table, where you can change the settings that define how True Type fonts are handled by your DocuPrint NC60.

- Always Send to Printer

Select Always Send to Printer when you want to send all the TrueType fonts contained within your documents to the printer. This setting may result in slower printing, but it will help ensure that the printed document will look the same as it does on your computer. It will also result in more consistent document output when the same document is printed on different printers.

- Always Substitute Printer Fonts

This option instructs the printer to substitute the default printer fonts for any TrueType fonts it encounters within a print job. When this option is selected, the printer will substitute fonts automatically as the job is being processed. This setting may improve printing speed, but it may also result in documents that look different when they are printed on different printers.

When using this option, the printed fonts in your document may not look the same as the fonts you see on your computer.

- Update Soft Fonts

If, after installing a font, you do not see the new font in your application's list of available fonts, exit from the application and then use this option to automatically inform the printer driver of the newly installed font. When you restart your application, the list of fonts available to the application is updated.

- Send Fonts As

- Send As

The Send As field contains several options which define how your DocuPrint NC60 will receive and process TrueType fonts. This setting affects the selections available within the Font Substitution table.

- Outlines (Type 1) - a scalable, vector-based font that defines each character as a set of instructions which determine the shape and size of the character.
- Bitmaps (Type 3) - a non-scalable, rasterized format that contains data for each pixel. Large, complex bitmaps require considerably more memory and processing time than other formats.
- True Type (Type 42) - scalable, vector-based fonts. This is the best way to print TrueType fonts. You should also use this setting if you are unable to print documents due to a shortage of printer memory when using the Outline or Bitmaps settings.
- Don't Send - select this option when you do not want to send one or more True Type fonts to the printer.

— Send PostScript Fonts As

- Native Format (Type 1) - the set of 35 PostScript fonts that are commonly installed on most PostScript printers.
- Don't Send - useful only if you have a spooler in your system configuration that can supply these fonts. Don't Send does not substitute printer fonts for PostScript fonts. When a PostScript font is not available, the default printer font, usually Courier, is used.

This feature is intended for users with advanced font management experience.

- Restore (Use) Defaults

Click the Restore (Use) Defaults button to reset the TrueType Fonts options to the printer driver default settings.

PostScript

The PostScript tab gives you access to the basic PostScript features that are common to all PostScript drivers (as opposed to the other tabs that are used to control the special Xerox features).

PostScript Output Format

- **Optimize for Speed**
Select this option when print processing speed is more important than file portability. This option will create PostScript output that is optimized for faster printing. However, it might not allow the full use of some network print spooler features.
- **Optimize for Portability**
Select this option when file and page portability is more important than print processing speed. This option will create output that conforms with the Adobe Document Structuring Conventions (ADSC). Choosing this option ensures that each PostScript page is independent of all other pages in a document. These self-contained page objects help documents print successfully on network spooler-based printers as well as on remote printers. Choose this option if you intend to print to a sophisticated spooler.



If you experience printing or compatibility problems with some applications, try printing the document with different PostScript settings.

- Encapsulated PostScript (EPS)

You can produce EPS (Encapsulated PostScript) files of a SINGLE PAGE created in one application and insert it into a document in another application. The contents of the page can include any combination of text, graphics, and images. You can also use the EPS file for creating archives and for printing documents on remote printers (such as printers at a service bureau).

It is generally best to use an application to create EPS files. When this is not possible, you can set up the DocuPrint printer driver to create EPS files (select EPS as the Job Type). The EPS files created by the printer driver, however, do not include on-screen preview images. When placed in a document, EPS files created by the driver appear as blank spaces, as black boxes, or as boxes with X's, which are placeholders for the image. When printed, the EPS image will appear on the page as expected.

Not all applications can place EPS files in their documents, so be sure to check your application documentation to see if it supports the use of Encapsulated PostScript files.

- Archive Format

This option improves file portability because it suppresses many of the settings that might be specific to a particular printer and might therefore prevent the file from printing. Choose this option only if you want long-term storage or intend to widely distribute a file that might be printed on unknown destination devices.

PostScript Header

- Download Header With Each Print Job

This option configures the printer driver to send header information to the DocuPrint NC60 each time you print a document. This may result in slower job processing, but it insures that the printer will have the correct PostScript information needed to print your documents the way they appear on your computer.

This option is strongly recommended for use with shared network printers.

- Assume Header is Downloaded and Retained

This setting may be used when the correct PostScript Header information has already been downloaded to the DocuPrint NC60 and is currently resident in printer memory. If you print to a local printer, this setting may save printing time because the driver will not send the header with each job. However, this setting is not recommended for shared network printers.

This option will be selected automatically when you click the Send Header Now button.

- Send Header Now

Click this button to send the PostScript Header to the DocuPrint NC60 immediately. The header will be retained in the printer until it is restarted.

Print PostScript Error Information

When this option is selected, an error sheet is printed when an error occurs during the formatting or transmission of a job. The error sheet indicates the page where the error occurred and the type of error.

PostScript Timeout Values

- Job Timeout

The Job Timeout defines a time limit for the completion of each print job. The printer will cancel jobs that have not completed printing within the Job Timeout interval.

A value of zero means that the job is never canceled. If your DocuPrint NC60 is shared, do not specify a value of zero.

- Wait Timeout

The Wait Timeout defines how long your printer will wait to receive data during a print job. If the printer has to wait more than that number of seconds to receive data after a print job has started, it cancels the print job and prepares to receive a new document. The driver provides this time-out to allow a printer to recover from a computer malfunction.

For network-shared printers, be sure to set a reasonable time-out value that prevents your computer from using excessive amounts of printer time during a malfunction.

Advanced PostScript Options

- PostScript Language Level

To optimize your DocuPrint NC60 features, make sure the PostScript language level is set to the highest level that your printer supports. Only consider using a lower PostScript language level if printing problems occur.

The printer driver automatically sets the default value to the highest PostScript language level supported by the DocuPrint NC60.

- Data Format

- ASCII Data

Use the ASCII Data option to send all data in Adobe Communication Protocol. ASCII Data format allows the file to print on any printer.

- Tagged Binary Communications Protocol

Use the Tagged Binary Communications Protocol option to send all data except special characters in binary (8-bit) format over parallel or serial ports. With this option, you do not need to set up the DocuPrint NC60 to receive binary data.

- Pure Binary Data

Use the Pure Binary Data option to send all data in pure binary format.

- Send EOF (CTRL+D) Before/After Job

The Send EOF Before/After options direct the printer driver to send the “CTRL+D” character before/after each PostScript job. This character resets the system for the next job.

If your driver provides a “Send EOF After Job” setting, it should always be selected when printing to a DocuPrint NC60 via a direct parallel port connection. If this setting is not selected, the system may not be able to separate individual jobs that are sent to it via the parallel port.

- Display Alert for Incompatible Applications

Select this option to display an alert message when driver features (such as N-up, Watermarks, Negative Image, Mirror Image, or Scaling) are incompatible with the application you are using. You can choose among these options:

- Attempt to print the document using the current driver settings, despite incompatibilities.
- Turn off the current driver settings for this print job only and proceed with printing.
- Cancel the print job.

Printer Configuration

The options on this tab enable you to configure your printer driver to match the options that are installed on your DocuPrint NC60. You should print a configuration sheet for your printer, check the current configuration and installed options, then modify the options on this tab to match the printer configuration.

- Installable Options

The Installable Options list is where you customize your printer driver to match the optional equipment installed on your DocuPrint NC60. Select the items in the Installable Options list to identify the optional equipment on your printer.

- Memory Configuration

The Memory Configuration setting specifies the amount of memory that is installed in your DocuPrint NC60.



You can print a Configuration Sheet to determine how much memory is installed in your DocuPrint NC60. The Total System Memory is listed in Megabytes (MB).

Xerox Features **Intelligent Color**

When you choose Intelligent Color, the DocuPrint NC60 provides the optimum set for mixed content documents. This will produce the best output for documents containing text and bitmap graphics.

Vivid Color

Vivid Color produces bright, solid colors and should be used for documents with graphics that include charts and graphs. Use for most full color business documents.

Photo Mode

Photo Mode is the best color setting to use for photographs or bitmap images from photo CDs.

ZipColor

The ZipColor setting increases the color printing speed of your DocuPrint NC60 by eliminating the printing cycle normally used for black toner. The black portions of your documents are instead created by combining cyan, magenta and yellow toner to create a process black color. This setting is ideal for rush jobs because it enables the DocuPrint NC60 to render images approximately 33% faster. Use when full color print speed is most important and very little black text is used in the document.

This setting is not recommended for documents containing substantial amounts of black image content or black text or when image quality is more important than printing speed.

Grayscale

Grayscale changes all the colors for the document you select into black, white, and shades of gray. Use this setting when you would like to print color documents in monochrome for speed or when color information is not important.

Fax Friendly

Fax Friendly changes your color document to patterns of black and white. The different colors are rendered as distinguishable black and white patterns. For example, a pie chart which contains wedges of different solid colors will be printed with a different pattern replacing each color so that the distinction between the pieces is maintained. Color text is also rendered as a pattern, but the character is outlined. Anything that is black in your document remains black and is not rendered as a pattern.

Use Fax Friendly to print a color document in a black and white mode so that it can be used as a fax original or for black and white copying.

Fast Blue

Fast Blue prints a color document only in shades of blue (cyan) and black. All color text and images in the document are rendered in shades of blue while the text and images that were originally black remain black. The shades of blue maintain the distinction between parts of your document which were originally in different colors.

Use Fast Blue to print color documents at twice the speed of full color, while retaining more color information than when using Grayscale.

Save Toner

Save Toner reduces the toner consumption needed to print in color. The hues of each color do not change but the colors are less saturated.

Use Save Toner to decrease the overall toner consumption, produce lower cost prints, and provide draft copies of your document.

Unadjusted

Unadjusted uses your application settings and does not use any of the printer driver default settings. Use this print mode when your application or operating system has a color matching system (such as PANTONE or Image Color Matching).



If you don't use Unadjusted print mode in conjunction with your color matching system, the colors may not be what you expect.

Expert Color Control

Expert Color Control enables you to fine-tune the colors in your printed document. The Color Adjustment controls enable you to adjust the lightness, contrast, and saturation settings for your documents. The Color Balance controls enable you to adjust the range between contrasting colors.

- Lightness

Lightness relates to the brightness of the color produced. A higher setting lightens the colors on the document overall, while a lower setting darkens the colors overall.

- Contrast

Contrast adjusts the difference between light and dark color. A lower setting gives a slight variation from light to dark, and a higher setting gives a greater variation from light to dark on your entire document.

- Saturation

Saturation affects the intensity of color or the amount of chromatic color in proportion to its lightness. For example, this is the aspect that distinguishes a pale red from a bright red. A lower setting provides less color saturation (is less colorful), while a higher setting provides a higher color saturation (is more colorful) on your document overall.

- Color Balance

The three bars indicate a range between Cyan and Red, Magenta and Green, and Yellow and Blue. As you slide the bar, the saturation of the color increases in the direction you slide the bar, and the saturation of the color that the bar moves away from decreases. For example, when you slide the bar toward red, the amount of red increases on your document overall while simultaneously the amount of cyan decreases.

Document Halftone

Halftone is the process by which images are printed as a pattern of many small dots. The size and density of the dots produce shades of light and dark in the image when it is printed. Also, different combinations of the four primary toner colors produce an extensive range of possible colors. You can choose from three Halftone Settings--Quad Dot, Smooth Screen and 1200 Quality.

- Quad Dot

Quad Dot produces clear, well-defined pictures and graphics. It could result in faster printing.

- Smooth Screen

Smooth Screen halftones distribute the halftone dots in a more random pattern in order to produce a smoother effect for color sweeps. It also provides smoother fine lines with less visible grain.

- 1200 Quality

1200 Quality produces a smooth gradation of tones and finer detail in images such as photographs. You can use this feature to produce finer halftone steps and more grayscales.

Image Enhancement

- ImageFix

This option is the best setting to use for photographs or bitmap images. It automatically enhances RGB images if the exposure level, color balance, sharpness, brightness, or contrast settings in the original image have not been optimized. Good images will not be affected by this setting.

- IntelliRes

This selection improves the appearance of documents you print from your web browser. Many images, including web images, are of low resolution and do not look well when printed. The exclusive imaging technology built into IntelliRes will analyze these images and optimize them for printing on your printer.

Advanced Features

- Black Overprint

Select this feature to print black text and graphics over color backgrounds in order to overcome possible misregistration (thin white outlines around the black edges).

- Use Application Color Space

Select this feature to use the color space specifications provided by the application, as opposed to the color space specifications provided by the DocuPrint NC60. The color space specifications provided by the DocuPrint NC60 are optimized to give the best printed results. However, finer control of the color space through the application is sometimes desired. If your application cannot support this feature, the DocuPrint NC60 default color space is used.

- Disable CMYK Coverage Limit

Select this feature to remove the 250% toner coverage limit. The CMYK Coverage Limit should only be disabled when you use a color management system such as PANTONE or ICM.



Disabling the CMYK Coverage Limit may result in excessive toner usage. This may cause permanent damage to the fuser if it occurs frequently.

- Edge Smoothing

Select this feature to reduce the rough or jagged edges of black text and line art.

- Enhanced Alignment

If your documents contain black lines, or black text placed directly next to colored areas, you may want to select Enhanced Alignment. When used, your DocuPrint NC60 will automatically adjust itself to improve the black image alignment next to colored areas. Note that this feature is most valuable when black and colored areas directly touch.



This feature will result in slower print speeds. For black lines or text over color areas, use “Black Overprint” for best results.

- Process Black Graphics

When this setting is selected, the black graphics of your documents are created by combining cyan, magenta and yellow toner to create a process black color. This feature may reduce gloss differences in some documents that have gray regions next to color regions. Black text is not affected.

Graphics Resolution

The resolution setting affects the amount of detail that is reproduced on graphic images. Graphics resolution is measured in dots per inch (dpi). Therefore, a 600 dpi setting renders images using 600 dots (pixels) per every inch of the image.

The image quality of printed documents typically increases with higher resolution (dpi) and bits per pixel settings, but it often results in slower print speed and increased toner consumption.

Halftoning

- Use Printer's Settings

Choose this option if you would like to use the default halftone screen settings that are available on your DocuPrint NC60. See the section *“Document Halftone”* (page 3-31) for available selections.

- Use Settings Below

Choose this option if you would like to adjust the halftone screen settings within the printer driver. This makes it possible to adjust the screen frequency and angle settings.



Do not change these settings unless you have experience using halftones and are familiar with the requirements of your application and printer.

- Screen Frequency / Angle

These settings specify the values for the number of lines per inch (frequency) and angle of the pattern that you want to use for halftone screens. If you are getting a moire pattern when you print graphics such as photographs or detailed images, you might want to adjust these settings. However, the default printer settings should work in most cases.

Some applications might be incompatible with the Halftoning feature and might ignore any values you specify. Also, the DocuPrint NC60 might use halftoning procedures that do not use the frequency and angle values you specify.

Special

- Print as a Negative Image

The Negative Image option converts the black image areas in the original to white, the white image areas to black, and any dark gray image areas to light gray. Printing a negative image may be useful for documents that have a substantial amount of dark background and/or light text and images.

Excessive use of the Negative Image option can cause premature toner depletion and possible printer damage.

- Print as a Mirror Image

This option flips the page image from left to right, thereby reversing the image and all associated text. This is like turning over a printed transparency and viewing the back of it.

Scaling (Reduce / Enlarge)

The scaling factor specifies the amount that the image is enlarged or reduced when it is printed. The scaling range for the DocuPrint NC60 is from 25 percent to 400 percent, although the limits may vary with different printer drivers and operating systems. The default is 100 percent.

Defaults

Click the Defaults button to return all settings on the current tab to the original installation default settings.

Layout **Page Layout / N Pages Up**

Click in the N Pages Up field to select the page layout options which can be applied to your document.

Draw Outlines

When printing multiple images per page, the Draw Outlines feature will print a line around the perimeter of each page image. This feature helps delineate or separate the individual page images.

Watermarks

The Watermark feature lets you create and print background text, independent of that provided by the printing application, across the first page or every page of a document. The watermark definitions you create can be used on any document.

The Watermark list box contains a list of all the watermarks that are currently available. If you select a watermark within this list, it will be printed on your document(s). If you do not want a watermark to print, select (None).

Some applications may not support watermark printing.

PCL 5C Printer Driver Features

Your DocuPrint NC60 PCL 5C printer driver includes several unique features provided by Xerox. These unique features are provided to aid you in producing high quality color as well as black and white prints. For information on other features not described here, select Help in your driver.



It is recommended that you use the PostScript printer driver for best all around quality.

Paper/Output Job Type

The Job Type menu enables you to select special document output and control features provided by your DocuPrint NC60. Keep in mind that your DocuPrint NC60 may be configured with optional equipment. Therefore, you may need to configure your printer driver to recognize the installed options and special features supported by your DocuPrint NC60. Be sure to check the System (Printer) Configuration tab within your printer driver to configure the Installable Options.



Documents which are held for an extended period of time will be deleted automatically. The time limit for held jobs can be modified on each DocuPrint NC60. Check with your System Administrator for specific time limits.

- Normal Print

The Normal Print option simply means that the job will print in a normal manner. No password is required. Normal Print is the default setting.

- Secure Print (requires Hard Disk option)

The Secure Print option is designed for printing confidential documents. This feature automatically holds your document within the Hard Disk on your DocuPrint NC60. When you're ready to retrieve your job, you go to the Control Panel and release the job so it will print when you are ready to retrieve it.

To send a Secure Print job, you need to enter a 4-digit numeric password, where each digit of the password can be any numeric value between 0 - 7. See *"Print a Password Job"* (page 3-66).

- Proof Print (Sample Set)

The Proof Print option enables you to print and proof a single copy of a document before printing the remaining document sets/copies. The remaining sets are held in the printer's print queue until you release the job at the Control Panel.

To send a proof print, you need to enter a 4-digit numeric password, where each digit of the password can be any numeric value between 0 - 7. See “Print a Password Job” (page 3-66).



When using this feature, be sure to determine if the Print dialog in your application provides a Collate option. If it does, you must turn the Collate option OFF in order for the Proof Print feature to work properly. If you do not turn off the Collate option within your application, the application may render the entire job as a single document.



Be sure to print or delete your password jobs at the printer. Password jobs are held indefinitely on the hard disk until printed or deleted.

Copies

The Copies feature enables you to select the number of copies or document sets that will be printed.

Select Paper

The Paper Selection dialog enables you to choose the paper and media options for your documents. Additional features for the First (Cover) Page and Transparency Separators are contained on separate tabs within this dialog.



You must configure your printer driver to match the paper/media that is loaded in your DocuPrint NC60. If the System Configuration options are inaccurate or invalid for any particular paper tray, the options available in the Paper/Output and Paper Selection dialogs may be inaccurate or inaccessible.

- Paper Size

This field contains a list of the paper sizes that are supported by your DocuPrint NC60. Keep in mind that the available paper sizes and default settings may vary according to your locale, the Job Type, and the finishing features you have selected.

Some paper sizes or types may not be valid selections for certain types of print jobs.

- Paper Source

The Paper (Media) Source field enables you to select from the available paper trays on your DocuPrint NC60. If the Paper Source is set to Auto Select, the printer automatically selects a tray that matches the paper size settings for the job. The Auto Select setting is the default.

This printer offers a variety of Paper Size and Media Type selections. When these features are available, the Auto Select feature will use the Paper Size and Media Type settings in your driver to pick the right tray for the job, even if a paper tray is specified. If the size and type are not currently loaded in an available tray, the printer will prompt you to load the correct media.

- Media Type

This field contains a list of the media types that are supported by your DocuPrint NC60.

- Paper: If no other media type is selected, paper is the default medium.
- Transparencies: A sensor in the paper path of the DocuPrint NC60 detects the presence of transparencies. When transparencies are detected, the DocuPrint NC60 adjusts itself so that transparency print quality is enhanced. You may use tray 1, tray 2, or the Manual Feed slot to feed transparencies for print.



For printers equipped with two trays: If a Transparency Tray has been designated at the Control Panel or through the CentreWare DP software, click on the transparencies radio button to feed stock automatically from the designated transparency tray.

- Envelopes/Labels: For printing on envelopes or labels, the printing will be in black only, and the paper source will be restricted to the Manual Feed slot.

- Front Cover Different

Select this option when you would like the first page of your document to be printed on different paper stock. This setting enables you to specify the paper size or media type to be used for the front cover page of the document.

- Separators (requires Tray 2, Lower Feeder option)

The Separators feature enables you to specify whether paper separator pages will be inserted between each transparency sheet.

Image Orientation

- Portrait orientation prints an image that is taller than it is wide. When you view a page that is printed with a Portrait orientation, you hold it with the long edges to the sides.
- Landscape orientation prints an image that is wider than it is tall. When you view a page that is printed with a Landscape orientation, you hold it with the short edges to the sides.

Collation

Collated printing means that two or more copies of a document are printed and delivered as separate document sets, rather than separate sets of each page.

Collation selected - 1,2,3; 1,2,3; 1,2,3

Collation not selected - 1,1,1; 2,2,2; 3,3,3

Keep in mind that collated output may vary based on the amount of memory in the printer, the optional equipment installed on the printer, and the complexity of your print jobs.



The Collate setting in certain applications may conflict with the Collation setting in your Xerox printer drivers, causing unexpected results. To avoid conflicts, turn collation OFF in your application print dialog and ON in your printer driver. Do NOT select collation in both the application and the printer driver.



If your printer does not have sufficient RAM—nor a Hard Disk option installed—to completely store the entire job, the job is collated in smaller segments and printed with the requested copy count. Subsequent collated segments are printed until the entire job is complete.

Hold Job

Select Hold Job to delay printing for a set period of time. This enables you to get to the DocuPrint NC60 to load special media, or to print out confidential material.

When you select this option, a message will remind you that you have a limited period of time to press the Enter button on the Control Panel in order to initiate the print activity. If you do not press the Enter button within the preset timeout, the job will be printed from the printer's memory. The Hold Job timeout is set from the Control Panel or through the CentreWare DP or CentreWare Internet Services software.

Xerox Features **Intelligent Color**

Intelligent Color produces bright, solid colors and should be used for documents with graphics that include charts and graphs. Use this setting for most full color business documents

Photo Mode

Photo Mode is the best color setting to use for photographs or bitmap images from photo CDs.

Grayscale

Grayscale changes all the colors for the document you select into black, white, and shades of gray.

Save Toner

Save Toner reduces the toner consumption needed to print in color. The hues of each color do not change but the colors are less saturated.

Use Save Toner to decrease the overall toner consumption, produce lower cost prints, and provide draft copies of your document.

Unadjusted Color

Unadjusted uses your application settings and does not use any of the printer driver default settings. Use this print mode when your application or operating system has a color matching system (such as PANTONE or Image Color Matching).



If you don't use Unadjusted print mode in conjunction with your color matching system, the colors may not be what you expect.

Resolution

The resolution setting affects the amount of detail that is reproduced on graphic images. Graphics resolution is measured in dots per inch (dpi). Therefore, a 600 dpi setting renders images using 600 dots (pixels) per every inch of the image.

The image quality of printed documents typically decreases with lower resolution (dpi), but it results in faster print speed.

Enhanced Alignment

If your documents contain black lines, or black text placed directly next to colored areas, you may want to select Enhanced Alignment. When used, your DocuPrint NC60 will automatically adjust itself to improve the black image alignment next to colored areas. Note that this feature is most valuable when black and colored areas directly touch.



This feature will result in slower print speeds. For black lines or text over color areas, use “Black Overprint” for best results.

Edge Smoothing

Select this feature to reduce the rough or jagged edges of black text and line art.

Graphics Font Options...

- Download as TrueType

TrueType fonts are vector-based, scalable typefaces that have been defined by Apple Computer Inc.

- Download as Bit Image

This option will download all fonts as raster-based, non-scalable typefaces. Large bitmap images require more memory and processing time.

Use Printer Fonts

This option instructs the DocuPrint NC60 to substitute the default printer fonts for any TrueType fonts it encounters within a print job. When this option is selected, the DocuPrint NC60 will substitute fonts automatically as the job is being processed. This setting may improve printing speed, but it may also result in documents that look different when they are printed on different printers.

When using this option, the printed fonts in your document may not look the same as the fonts you see on your computer.

Graphics Mode

The Graphics Mode options specify how the printer driver sends graphic information to the DocuPrint NC60. These selections usually work in conjunction with the Image Quality and Gray Scale selections.

- Raster converts images to raster graphics.
- Vector requires less memory for some patterns and shapes. This selection is the system default.

If you encounter an error or the image is unsatisfactory when using the Vector option, select the Raster option and reprint your job.

Fonts **Move >>**

The Move button becomes active when you select one or more fonts. This button moves the selected font(s) from one list to the other.

Copy

Click the Copy button to copy one or more of the fonts from the Available Fonts list to the Installed Fonts list, or vice versa. The copy button becomes active when you select one or more fonts in the lists.

<< Delete

The Delete button becomes active when you select one or more fonts. This button removes the selected font(s) from the list.

Edit

Click the Edit button if you need to change the name of a font that you are installing. If you purchase a disk-based font that has the same name as a font you are already using, you should change the name of the font because you cannot change the name of a printer resident PCL 5C font.

Permanent

Select Permanent if you want to save the font(s) onto the hard disk in the DocuPrint NC60. The fonts will be retained on the printer until they are deleted.

Temporary

Select Temporary if you want to save the font(s) into printer memory (RAM). The font(s) will be discarded when the DocuPrint NC60 is restarted.

Add Fonts

Click the Add Fonts button to select and load scalable typefaces, fonts, or font support files for your DocuPrint NC60. This button invokes a dialog where you must define the drive/path where the fonts/files are located.

Copy Fonts to New Port

If you are using more than one PCL 5C printer, or if you change the port your printer is connected to, you can use this feature to copy your installed disk-based fonts to the other printer on that port.

To move or copy fonts to a new port:

1. Click the Copy Fonts To New Port button.
2. Select the port you want to use.
3. Click the OK button.
4. Select the fonts that you want to move or copy.
(When you select a font, an arrow appears between the two boxes indicating the direction of the Move or Copy.)
5. Choose the Move or Copy button.
6. If you are moving or copying disk-based fonts, you can now select Permanent or Temporary for the new port.
7. Click the End Copy Fonts to New Port button.

Overlays

A Page Overlay is a group of user-created PCL commands and/or data that is downloaded and stored in the printer. Page overlays can be invoked repeatedly for printing portions of documents that are used frequently. For example, company letterhead can be created as a page overlay and stored in the printer. Whenever a letter is printed, the page overlay command for the letterhead can be sent to the printer, and the letterhead will be printed on each page.



Page overlays eliminate the need to download the same information repeatedly, thus saving transmission time. However, the trade off is that they consume user memory, except where they are downloaded to the printer hard disk.

Overlays

This area lists the Page Overlays that are currently available. Click the Create Overlay button to add your own overlays to this list.

Selected Overlay Status

This area of the dialog provides additional status information for the overlay that is currently selected.

Overlay Creation Status

This area of the dialog provides additional status information during the overlay creation process.

Load Overlay

Click the Load Overlay button to locate and load a page overlay file that is stored on your computer or diskette.

Create Overlay

Click the Create Overlay button when you want to create a Page Overlay file. This button invokes a dialog where you can specify the name of the overlay file and the location where it will be created. This will initiate the Overlay creation process. The next print job will create an overlay file to the file name and location specified.

Delete Overlay

Click the Delete Overlay button to delete an overlay from the list of overlays.

Download Now

Click the Download Now button to download an overlay to the printer.

Delete All

Click the Delete All button to delete the overlays that are stored on your printer or computer. A dialog will enable you to choose the location(s) where the overlay files will be deleted.

Query Page Overlay

This option causes a Message box to appear whenever a Page Overlay is sent to the printer. This requests confirmation that you wish to download a page overlay. If this option is unchecked, the selected page overlay file will always be sent to the printer.

This option is not active if No Overlay is selected or if the present selected overlay has been permanently downloaded to the printer.

Printer Configuration

The options on this tab enable you to configure your printer driver to match the options that are installed on your DocuPrint NC60. You should print a Configuration Sheet for your printer, check the current configuration and installed options, then modify the options on this tab to match the printer configuration.



Some printer driver features require optional equipment to be installed on your printer and configured within the Installable Options list. Problems may occur if the printer driver settings do not correspond with the installed equipment.

Installable Options

The Installable Options list is where you customize your printer driver to match the optional equipment installed on your DocuPrint NC60. Simply click on the items in the Installable Options list to identify the optional equipment on your DocuPrint NC60.

Memory Configuration

The Memory Configuration setting specifies the amount of memory that is installed in your DocuPrint NC60.

You can print a Configuration Sheet to determine how much memory is installed in your DocuPrint NC60. The Total System Memory is listed in Megabytes (MB).

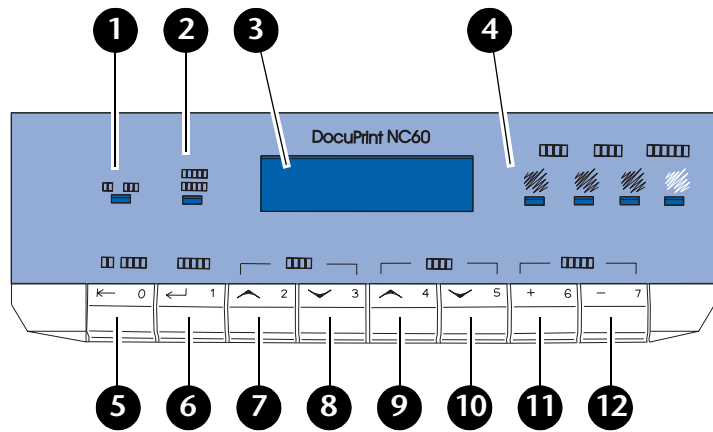
Using the Control Panel

The DocuPrint NC60 Control Panel (Figure 3.1) serves three purposes:

1. It displays information about the status of the printer (or the job in process) and
2. It provides the means for changing printer settings to control how the DocuPrint NC60 operates.
3. It allows you to print internal pages or password pages stored on the optional hard drive.

Figure 3.1 DocuPrint NC60 Control Panel

- 1 On Line LED
- 2 Press Enter LED
- 3 Two line, user interface display
- 4 Color Process LEDs
- 5 On Line/Off Line key
Password #0
- 6 Enter key
Password #1
- 7 Menu Up key
Password #2
- 8 Menu Down key
Password #3
- 9 Item Up key
Password #4
- 10 Item Down key
Password #5
- 11 Value Up key
Password #6
- 12 Value Down key
Password #7



The Display

The Control Panel's display performs two functions.

- It informs you of printer status conditions, such as when toner is low, when a paper tray is empty, when a job is in process, and so on. For example, when you turn on the printer, you see the following message on the display:

```
Ready
```

This message appears whenever the printer is online and ready to accept print jobs. The display will also show:

```
Processing...
```

when processing data, and:

```
Waiting
```

when waiting for more data.

- It presents a hierarchy of menu options and settings to configure and control the printer.

For example, when you press **Menu Up** or **Menu Down**, you will see the following two-line message on the display:

```
Menus  
Item Menu
```

(such as `System Menu` or `Job Menu`)

See the section “*Menu Options*” (page 3-63) for information on the Menu system hierarchy.

The Keys The Control Panel keypad consists of eight keys, identified with international symbols and/or labeled in English. The keys are also numbered 0 - 7.

Table 3.3 describes the function of each key.

Table 3.3 Control Panel keys and their functions

Key	Description
On Line	<ul style="list-style-type: none"> • If the Printer is On-line and not in the menu system, pressing this key causes a transition to Off-line. All pages currently in the paper path are printed and then printing pauses until the printer is placed On-line. Data are still accepted over all network interfaces. • If the printer is On-line and in the menu system, pressing this key exits the menu system. The printer remains On-line. • If the printer is Off-line and not in the menu system, pressing this key causes the printer to change to the On-line state. • If the printer is Off-line and in the menu system, pressing this key exits the Menu system. The printer state changes to On-line.
Enter	<ul style="list-style-type: none"> • If the current display is a value for an item, pressing this key causes the value to be entered as the current default value for this item. • If the current display is an action to be invoked (e. g. "PCL Font List", "Restart Printer"), pressing this key causes the action to occur. • If not in the menu system, and the "Press Enter" LED indicates that a partial page exists, pressing this key causes an implied PCL reset and the partial page is ejected. • If a paper mismatch condition exists, and a request to use an alternate paper is displayed, pressing this key causes printing on the paper currently loaded in the selected tray (Print Anyway).

Table 3.3 Page 1 of 3

Table 3.3 Control Panel keys and their functions *(continued)*

Key	Description
Menu Up	<ul style="list-style-type: none"> • If not in the menu system, pressing this key enters the menu system and displays the first menu. • If in the menu system, pressing this key causes the Control Panel to scroll through the menus in order bottom to top.
Menu Down	<ul style="list-style-type: none"> • If not in the menu system, pressing this key enters the menu system and displays the last menu. • If in the menu system, pressing this key causes the Control Panel to scroll through the menus in order top to bottom.
Item Up	<ul style="list-style-type: none"> • If in the menu system, pressing this key causes the Control Panel to scroll through the items in the current menu in order from bottom to top. • If not in the menu system, this key is ignored.
Item Down	<ul style="list-style-type: none"> • If in the menu system, pressing this key causes the Control Panel to scroll through the items in the current menu in order from top to bottom. • If not in the menu system, this key is ignored.
Table 3.3 Page 2 of 3	

Table 3.3 Control Panel keys and their functions *(continued)*

Key	Description
Value Up	<ul style="list-style-type: none"> • If in the menu system, and an item is displayed, pressing this key causes the Control Panel to scroll through the values for the current item in order bottom to top. Pressing this key displays the default value for the current item. When setting a numeric value, pressing this key increases the value by the step amount. It is subject to auto-repeat if held down by more than 1 second. • If not in the menu system, and a paper mismatch condition does not exist, this key is ignored. • If a Paper Mismatch condition exists, pressing this key scrolls through the alternate paper that may be used instead of the requested paper.
Value Down	<ul style="list-style-type: none"> • If in the menu system, and an item is displayed, pressing this key causes the Control Panel to scroll through the values for the current item in order top to bottom. Pressing this key displays the default value for the current item. When setting a numeric value, this key decreases the value by the step amount. It is subject to auto-repeat if held down by more than 1 second. • If not in the menu system, and a paper mismatch condition does not exist, this key is ignored. • If a Paper Mismatch condition exists, pressing this key scrolls through the alternate paper that may be used instead of the requested paper.
Table 3.3 Page 3 of 3	

The Indicator Lights

The Control Panel contains six indicator lights. Table 3.4 describes the function of each light.

Table 3.4 Indicator lights and their functions

Light	Description
On Line	When the printer is On-line this LED is on. When the printer is Off-line, this LED is off. When transitioning from On Line to Off Line, this LED flashes. This LED flashes to indicate that data are being processed.
Press Enter	This LED is on when a printer condition exists which requires that the Enter key be pressed.
Color Process Black Cyan Magenta Yellow	These four LEDs are on while the engine is processing the corresponding toner color. When an out of toner condition is encountered, the LED corresponding to the low toner flashes.

Menu Options

Figure 3.2 on the following pages shows a menu map of which variables can be controlled at the DocuPrint NC60 Control Panel. Details of all the available settings for the variables in these menus are contained in the *System Administrator Guide* on the DocuPrint CD.

In addition, the *System Administrator Guide* lists all the operations associated with the DocuPrint NC60 Control Panel keys and lists the specific key processes which need to be executed to set any of these DocuPrint NC60 variables.



Printer settings selected in your application or printer driver will be used instead of these settings in the Control Panel.

Figure 3.2 DocuPrint NC60 Control Panel Menu Map

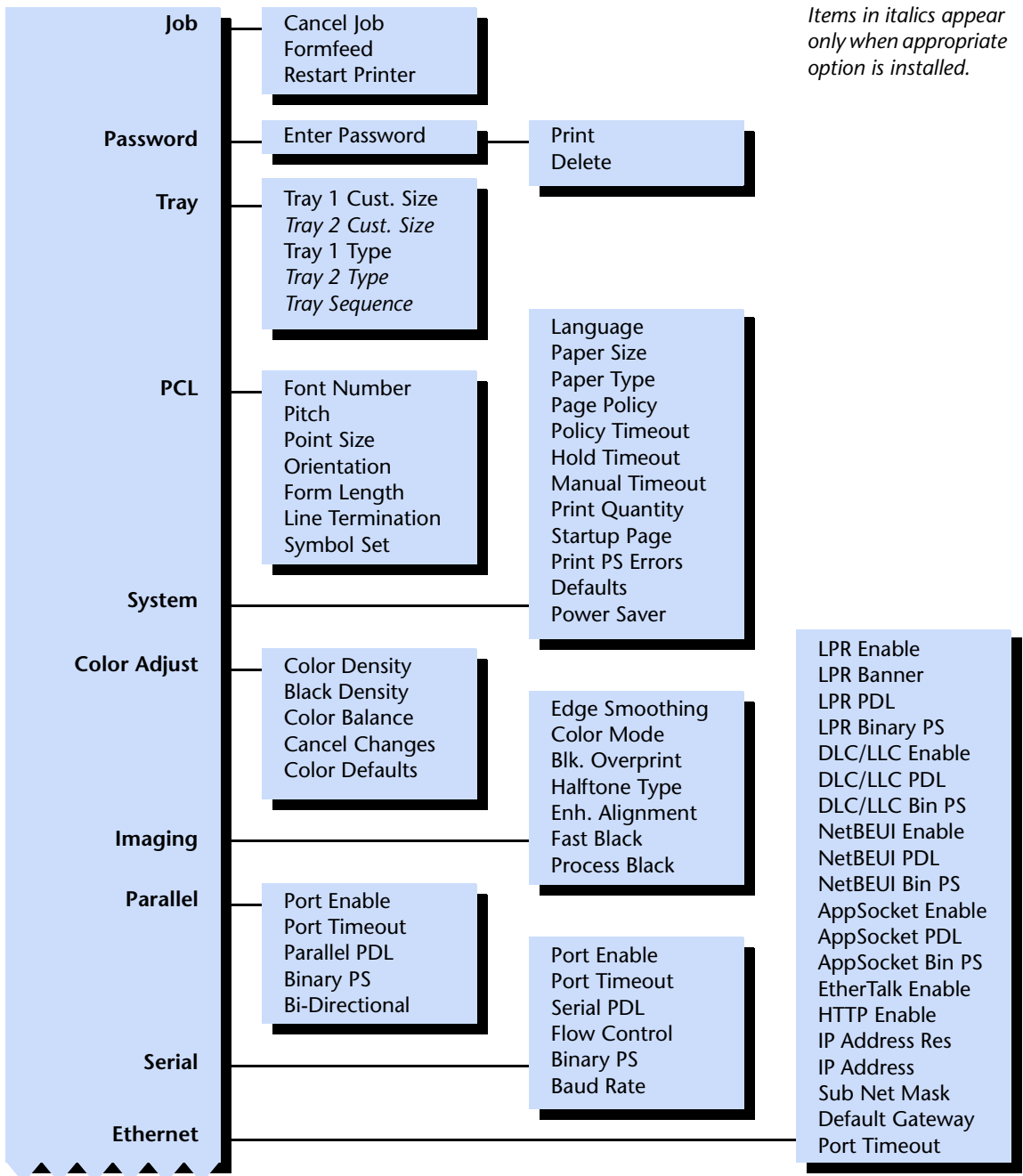
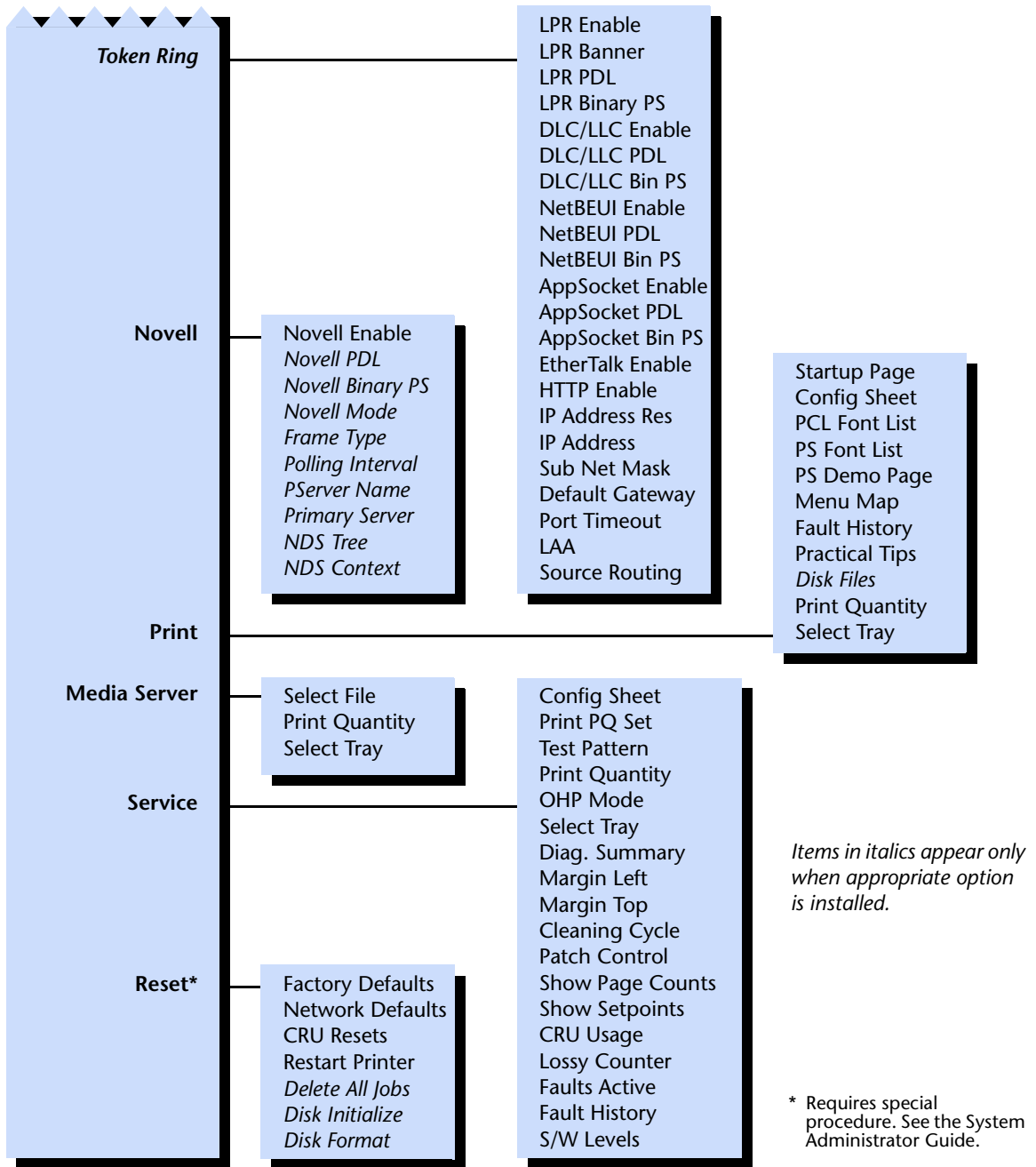


Figure 3.2 DocuPrint NC60 Control Panel Menu Map (continued)



Print a Password Job

To print a password print job sent to the printer and stored in the optional hard drive, follow these steps:

- 1 At the Control Panel, press Menu Up or Menu Down until you see:

```
Menus
Password Menu
```

- 2 Press Item Up or Item Down and you will see:

```
Enter password
_xxx
```

- 3 Enter your numeric password and you will see:

```
All Jobs      =
Print
```

- 4 Press Enter to print all jobs.

OR:

- 5 Press Item Up or Item Down to scroll through the jobs.

- 6 Press Enter when the job you wish to print is shown.

- 7 Repeat Steps 5 and 6 as desired.

- 8 When done, press On Line.

Delete a Password Job

To delete a password print job sent to the printer and stored in the optional hard drive, follow these steps:

- 1 At the Control Panel, press Menu Up or Menu Down until you see:

```
Menus
Password Menu
```

- 2 Press Item Up or Item Down and you will see:

```
Enter password
_XXX
```

- 3 Enter your numeric password and you will see:

```
All Jobs      =
Print
```

- 4 Press Value Up or Value Down and you will see:

```
All Jobs      =
Delete
```

- 5 Press Enter to delete all jobs.

OR:

- 6 Press Item Up or Item Down to scroll through the jobs.

- 7 Press Enter when the job you wish to delete is shown.


- 8 Repeat Steps 6 and 7 as desired.

- 9 When done, press On Line.

Print an Internal Page

To print an internal printer page, follow these steps:

- 1 At the Control Panel, press Menu Up or Menu Down until you see:



Menus
Print Menu

- 2 Press Item Up or Item Down and you will see the page you wish to print. See the Menu Map on page 3-65 for a list of internal pages.
- 3 Press Enter to print the page.
 - *If the item has several choices, press Value Up or Value Down until the desired choice is shown, then press Enter.*

Using the Optional Media Server

The Media Server, an optional disk drive that you can order and install, enables you to print PostScript and PCL 5C files directly at the printer from a standard High Density, 3.5-inch, MS DOS formatted disk, with a 1.4 MB maximum capacity. Any DocuPrint NC60 can easily be upgraded with a Media Server Option.

The optional Media Server adds several advantages to your DocuPrint NC60:

- A convenient way to print on special media (such as transparencies) in a networked environment
- A way to print if your network or computer is disabled
- The assurance of the confidentiality of your documents when printing in a networked environment
- The convenience of sharing your printer with anyone with walk-up service for printing files from a disk
- A way to elevate your print job to priority status (The Media Server print requests supersede the network print queue.)



Do not attempt to print an application file through the Media Server. See the section "Print to File" (page 3-70)

Print to File

There may be times when you do not want to send your document directly to the printer. You may want to print your document using the Media Server or store your document as a print file (with the specific feature settings) to a hard drive. There are three ways to do this—through your printer driver, your application software, or your operating system. For information about how to **Print to File** using your application software or your operating system, consult your specific software or operating system manuals.

When you **Print to File** using your DocuPrint NC60 printer driver, the printer driver creates a file which contains the contents of your document and the feature settings you have selected. If you **Print to File** after making selections in the DocuPrint NC60 color features, you must print the document on a DocuPrint NC60 in order for those features to be implemented in your document. This file will be saved as either a PostScript or PCL 5C file depending upon the driver that is being used, and must fit on one floppy disk to use the Media Server.

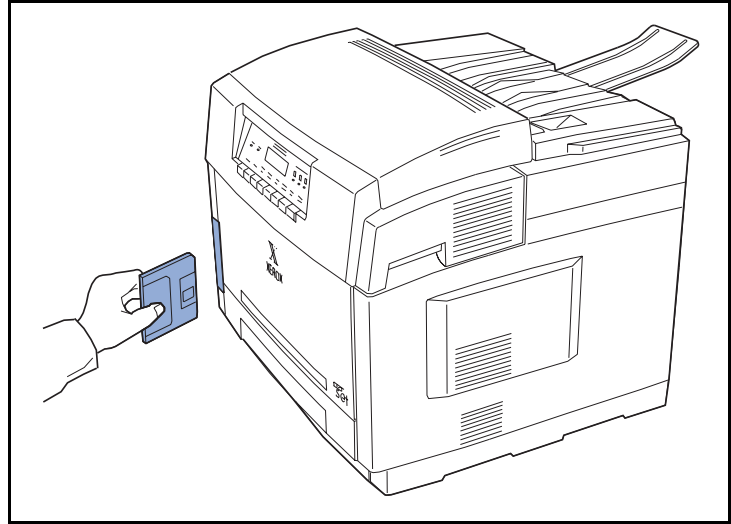


When printing a file from the Media Server, the printer's Control Panel default settings for input tray and number of copies will override any such settings specified in the file. You may therefore need to change these settings at the Control Panel, as described on page 3-73.

How to Print From the Media Server

You can print your print file with the default settings or customize your own print settings. If you have saved the file with specific application settings, print using the Media Server Menu defaults. If you wish to add information not previously saved in the file, use the Media Server Menu options to customize file settings such as print quantity.

Figure 3.3 Using the Media Server



To print from the Media Server:

- 1 Create a PostScript or PCL 5C printer file. (You cannot print an application file at the Media Server. You must use the Print to File utility.) Save the printer file you created on a standard High Density, 3.5-inch, MS DOS formatted disk.
- 2 Insert the disk into the Media Server's disk drive as shown in Figure 3.3 on page 3-71.

- 3 Press Menu Up or Menu Down until you see:



Menus
Media Server Menu

- 4 Press Item Up or Item Down until you see:



Media Server Menu
Select File

- 5 Press Value Up or Value Down until you see:



Select File
Filename

- 6 Press Enter when the file shown on the display window is the file you want to print.

To set the quantity and/or select a tray from which to print:

- 1 To set the number of copies to be printed, press Menu Up or Menu Down until you see:

```
Menus
Media Server Menu
```

- 2 Press Item Up or Item Down until you see:

```
Media Server Menu
Print Quantity
```

- 3 Press Value Up or Value Down until you see the quantity you want to print (1-999):

- 4 Press Enter.

- 5 To select a tray from which to print (or to select Manual Feed), press Item Up or Item Down until you see:

```
Media Server Menu
Select Tray
```

- 6 Press Value Up or Value Down until you see the tray you want to use (or Manual Feeder).

- 7 Press Enter.

Internet Printing

Your DocuPrint NC60 is equipped with both IPP (Internet Printing Protocol) and Email Send and Receive capability, giving it full functionality over the Internet.

IPP

IPP (the Internet Printing Protocol) enables you to query printer capabilities, submit print jobs, and monitor the status of those jobs over the Internet. Using IPP, you will be able to submit jobs to any printer, near or far, by simply knowing the printer's URL (web address). IPP's status monitoring capability will let you know when your documents have been successfully printed.

Email Send and Receive

Using Xerox Mailport Monitor

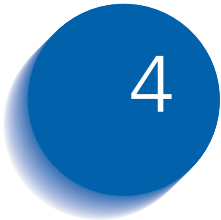
Using Xerox's Email enabled printers, you can distribute documents to several printers at once with a single mouse click. By simply setting your printer driver port to the Xerox mailport monitor you can enter the Email address of each destination printer. A job can be sent to all the printers by selecting "print" from any Windows application. In addition, an Email reply could be sent back to you when each printer receives the job, assuring you that your document reached each destination.



For information on setting up your printer for Internet printing, see the System Administrator Guide.

As a Mail Note Attachment

You can also print to an Email enabled printer with a simple mail note. To print via Email Send, you must first create a PostScript or PCL 5C printer file (as you would for use with the Media Server). You would then send the printer file as an Email attachment to the remote printer's Email address.



Maintaining the Printer

<i>Regular Printer Maintenance</i>	<i>4-2</i>
<i>Cleaning the Printer</i>	<i>4-2</i>
<i>Density and Color Balance Adjustment Procedure</i>	<i>4-4</i>

Regular Printer Maintenance

Your DocuPrint NC60 is designed to need very little ongoing maintenance other than the replacement of maintenance items as they reach end of use. It is recommended that maintenance items are replaced when the end of use warnings appear on the control panel to avoid untimely image quality problems. However, it is always good practice to periodically clean any loose toner or foreign matter in your printer. See the *System Administrator Guide* on the DocuPrint CD for procedures and cautions.



For optimum performance, keep the printer out of direct sunlight. Faded images, light areas or dark bands may result.

Cleaning the Printer

For optimum performance, do not place the printer near vents or dust-producing equipment. Particles in the air may enter the printer and cause failures in internal mechanisms.

For best results, clean the outside of the printer with a damp cloth. Power the printer off before cleaning. Do not use detergents.

For instructions on cleaning the inside of the printer, refer to the *System Administrator Guide* on the DocuPrint CD.

Replacing Toner, Oil and Other Consumables

When the printer displays warning messages to replace a consumable, you should do so as soon as possible. A list of printer supplies is contained in the Supplies/Options Guide. Specific instructions for replacing each consumable and maintenance Item are included with the individual replacement packages.

Density and Color Balance Adjustment Procedure

You may notice, over the course of using the printer, that colors may change. For example, reds may begin to take on a purple cast, or blues may take on a green cast. This happens during the normal use of a color printer and can be easily remedied by using the Density/Color Balance Adjustment procedure described in the *System Administrator Guide* on the DocuPrint CD.

This Control Panel procedure involves printing a test page and adjusting the densities and colors based on the appearance of the Test Page. You may need to repeat this procedure and test your adjustments until you achieve the desired effect.

See the *System Administrator Guide* on the DocuPrint CD for instructions.



Troubleshooting

- Before You Begin Troubleshooting* 5-2
- Error Messages* 5-4
- How to Clear A Media Jam* 5-5
- Print Quality Problems* 5-11
- Additional Sources of Troubleshooting Assistance* 5-16

Before You Begin Troubleshooting

If it becomes necessary for you to take corrective actions, note the following safety tips and then begin your troubleshooting by checking for possible hardware, software, and printer maintenance issues.



Do not use tools or sharp objects to clear jams since this may damage the printer. Do not touch the surface of the Print Drum or the Transfer Drum. Touching these surfaces may damage them.



Avoid contact with the Fuser area, which may be hot.



Avoid tipping the fuser if removed. Tipping the Fuser will result in oil spillage. Oil spillage may not be visible and may result in permanent printer damage. If you suspect the fuser has been tipped, do not reinstall it. Replace the fuser instead.

Also, be sure to observe the safety guidelines and recommendations provided in the Safety Notes.

If your printer is not operating properly, make sure that the following hardware and software issues have been considered.

Hardware

- Is the printer plugged in?
- Is the printer switched on?

Software

- Is the correct printer driver installed and selected for your printer configuration?

Printer Maintenance

An improperly seated tray or an open cover will delay your print job. You can avoid these problems by regularly taking the following precautions.

- Insert media trays properly and securely.
- Keep covers securely closed.

Consumables

Empty toner dispenser, low oil, or full waste collector will delay your print job.

- Keep consumables and maintenance items in supply.
- Add or replace when prompted by printer.



Specific instructions for replacing each Consumable and Maintenance Item are included with the individual replacement packages.

Error Messages

Your DocuPrint NC60 displays messages on the Control Panel when operator intervention is required. There are two types of message that require action:

- Printer fault messages are those that relate to printer shutdown, such as a paper jam. Action must be taken to resolve the fault.
- Attention messages do not result in printer shutdown, but warn of action that should be taken to avert a shutdown.

The two-line display of the Control Panel provides information about the condition of the printer and the suggested or required course of action. For a complete listing of these messages, along with detailed descriptions and instructions, refer to the *System Administrator Guide* on the DocuPrint CD.

How to Clear A Media Jam

This section describes areas where media could jam and gives basic instructions for clearing jams in each of these areas. Use these instructions to safely remove jammed media from your printer. The printer is designed to automatically shut down when a jam occurs, but will resume your print job at the point at which it was interrupted after the jam has been cleared.

You can greatly reduce the incidence of media jams by following these simple guidelines.

- Use media that is in good condition (not torn, wrinkled, or moist).
- Use recommended types, amounts, sizes, and weights of media. (Refer to *Chapter 2: Loading Print Media*.)
- Load all media properly, and make sure that it is properly oriented for printing. (You can also try turning the media over if jams occur.)
- Fan paper before loading into the tray.
- Select the correct Media Type in your printer driver.



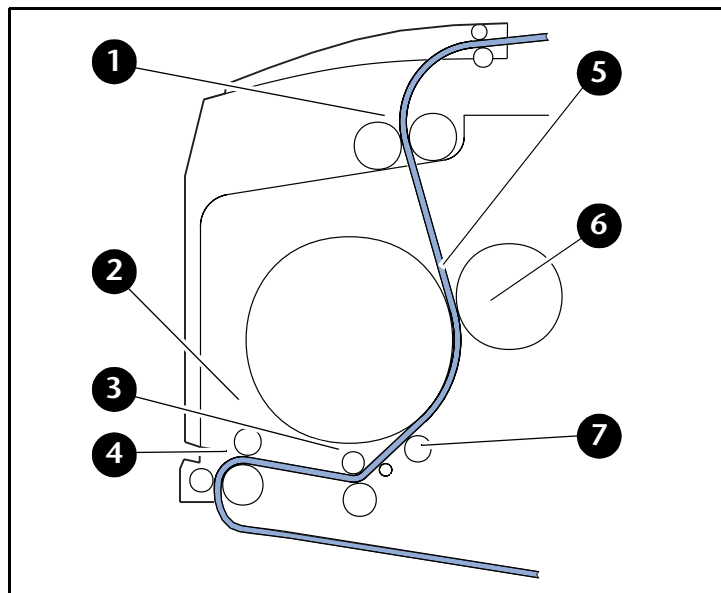
A jammed transparency may not be easily visible; use the media jam diagrams and information that follow to help you locate and remove transparency jams.

Media Jam Areas

Figure 5.1 illustrates the areas where a media jam might occur.

Figure 5.1 Media Path

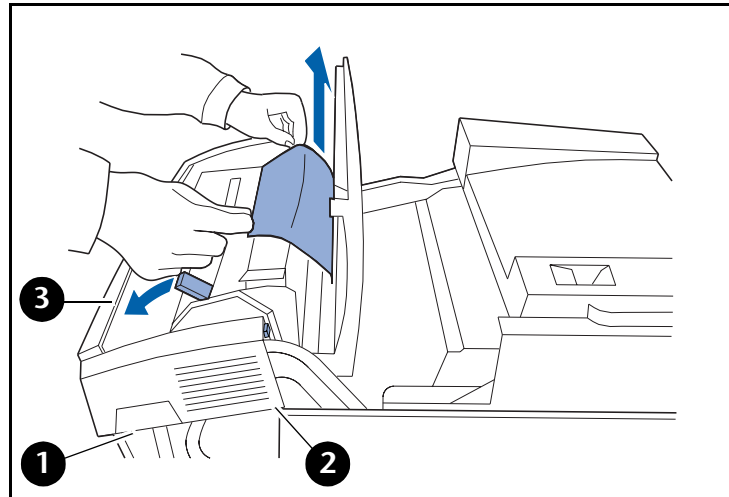
- 1 Fuser/Output Area E5-E8
- 2 Transfer Drum Area E6
- 3 Input/Transfer Drum Area E1-E4
- 4 Tray and Manual Feed Slot Area E1-E3
- 5 Transfer Drum/Print Drum Area E4-E6
- 6 Print Drum
- 7 Grounding Roller E4



Exposure to prolonged periods of direct light may damage the Print Drum. Close the printer covers promptly after you have cleared a jam.

Fuser/Output Area Jam

Figure 5.2 Fuser/Output/Print Drum Area Jam



- 1 Open the Front Cover. (See page 1-12.)
- 2 Open the Fuser Cover. (See page 1-13.)
- 3 Release the Roller by shifting the Release Lever as shown.
- 4 Locate the lodged material by looking inside the Fuser area.



Exercise caution as some internal printer surfaces are hot.



Do not remove the Fuser to clear a jam.

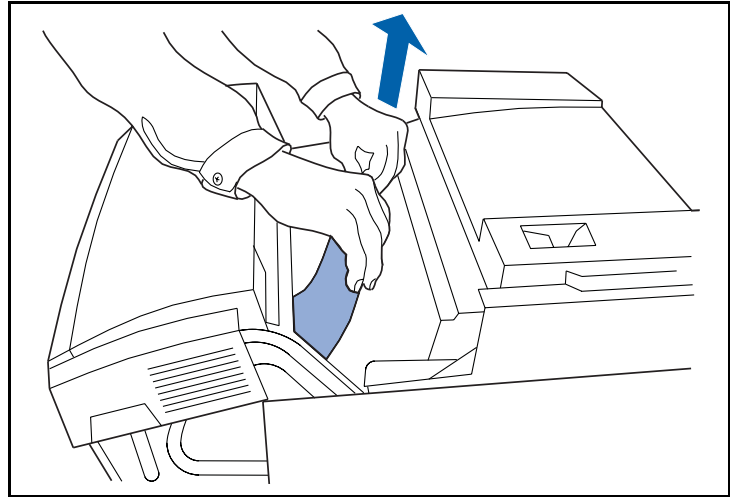


If media wraps around a roller in the Fuser, replace the Fuser. Use only recommended media.

- 5** Reach into the Fuser area, and gently grasp the exposed corners of the jammed material.
- 6** Pull gently up and toward you until the material is completely dislodged.
- 7** Close the Roller Release.
- 8** Close the Fuser Cover and the Front Cover.

Input/Transfer Drum/ Print Drum Area Jam

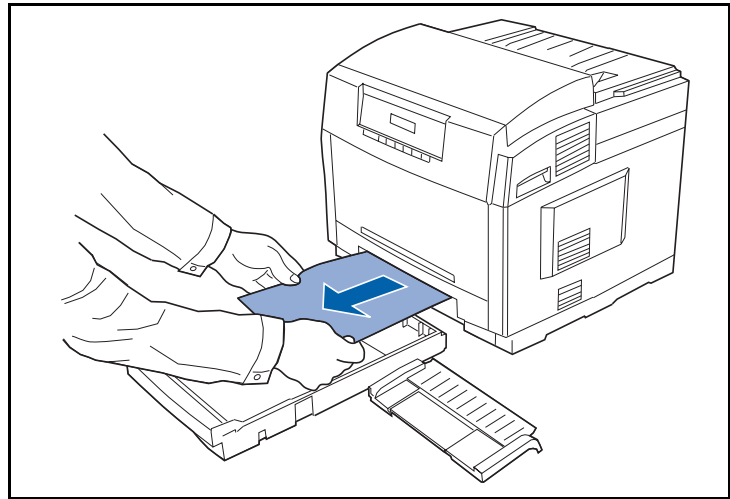
Figure 5.3 Input/Transfer Drum/Print Drum Area Jam



- 1 Open the Front Cover.
- 2 Locate the lodged material by looking inside the Input/Transfer Drum area.
- 3 Reach into the Input/Transfer Drum area, and gently grasp the exposed corners of the jammed material.
- 4 Pull gently up and toward you until the material is completely dislodged.
- 5 If the material has adhered to the Transfer Drum, peel it away from the drum surface.
 - ⚠ **Do not use tools or sharp objects to clear jams since this may damage the printer. Do not touch the surface of the Print Drum or the Transfer Drum. Touching these surfaces may damage them.**
- 6 Close the Front Cover.

Tray/Manual Feed Slot Jam

Figure 5.4 Tray/Manual Feed Slot Jam



- 1 Remove Tray 1, Tray 2, or the Manual Feed Tray (as indicated by the error code) from the printer.



Do not attempt to open the front cover if the paper tray is partially removed. Permanent damage will occur.

- 2 Grasp the exposed corners of the jammed material gently.
- 3 Pull the material slowly toward you until it is completely dislodged.
- 4 Reinsert the paper tray or the Manual Feed Tray.

Print Quality Problems

Some common print quality problems, their causes, and potential remedies are described in Table 5.1 on page 5-12. If you are unable to correct a print defect after you have followed the recommendations in Table 5.1, refer to the *System Administrator Guide* for additional help.

To reduce the incidence of print defects:

- Maintain a stable environment for the printer. (Refer to *Appendix A: Printer Specifications* for environmental specifications.)
- Use the media recommended for this printer. (Refer to *Chapter 2: Loading Print Media*.)
- Align the media with the paper edge guides in the paper tray.
- Protect the Print Drum from prolonged exposure to direct light.
- Do not tip the fuser, as oil spillage will occur.

Also observe the procedures for cleaning the printer and adjusting the Color Balance that are outlined in the *System Administrator Guide* on the DocuPrint CD.

Table 5.1 Print Defects and Potential Remedies


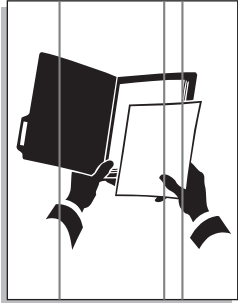
Print Defects	Common Causes	Potential Remedies
<p>Background Smudges</p> <p>Unwanted black and/or colored or shaded areas that appear on the page</p> 	<p>The printer is exposed to direct sunlight.</p> <p>The printer is exposed to excessive temperature and/or humidity.</p> <p>The Print Drum needs to be replaced.</p> <p>The Black/Color Developer Cartridge needs to be replaced.</p>	<p>Move the printer to a location out of the sunlight.</p> <p>Place the printer in a less severe temperature and humidity condition.</p> <p>Replace the Print Drum.</p> <p>Replace the appropriate Developer Cartridge.</p>
<p>Dark Vertical Lines</p> <p>Black or colored vertical lines that streak the page</p> 	<p>The Print Drum is scratched or damaged.</p> <p>Dry ink (toner) is on the Fuser rollers.</p> <p>Fuser needs to be replaced.</p> <p>The Print Drum charger is dirty.</p> <p>The Print Drum charger cleaner is mislocated.</p>	<p>Remove and inspect the Print Drum. Replace it if any scratch or damage is visible.</p> <p>Install a new Fuser Cleaner Roller, included in the Fuser Oil Kit.</p> <p>Replace the Fuser.</p> <p>Clean Print Drum charger. See <i>System Administrator Guide</i>.</p> <p>Make sure the Print Drum charger cleaner is seated all the way to the left.</p>

Table 5.1 Page 1 of 4

Table 5.1 Print Defects and Potential Remedies (continued)


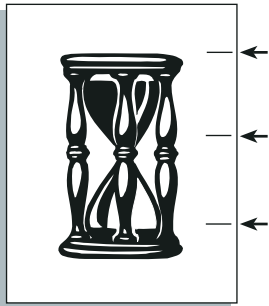
Print Defects	Common Causes	Potential Remedies
<p>Light, Vertical Lines</p> <p>Light areas (without color) that streak the page</p> 	<p>The Print Drum is scratched or damaged.</p> <p>The Print Drum charger is dirty.</p> <p>The Print Drum charger cleaner is mislocated.</p>	<p>Remove and inspect the Print Drum. Replace it if any scratch or damage is visible.</p> <p>Clean the Print Drum Charger.</p> <p>Make sure the Print Drum charger cleaner is seated all the way to the left.</p>
<p>Repeating Defects</p> <p>Marks that recur uniformly:</p> <ol style="list-style-type: none"> 1. Once every page 2. Every 3.66 inches (93mm) 3. Every 2.5 inches (64mm) 	<p>The Print Drum is scratched or damaged.</p> <p>There is toner on the Fuser Rollers.</p> <p>The Fuser cleaner is improperly installed.</p> <p>There is toner on the Grounding Roller.</p>	<p>Remove and inspect the Print Drum. Replace it if a scratch or damage is visible.</p> <p>To clean up any residual toner, run a blank sheet of paper through the printer.</p> <p>Reinstall the Fuser cleaner assembly.</p> <p>Clean the Grounding Roller.</p>

Table 5.1 Page 2 of 4

Table 5.1 Print Defects and Potential Remedies (continued)

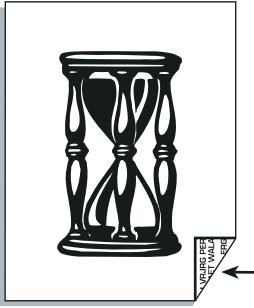
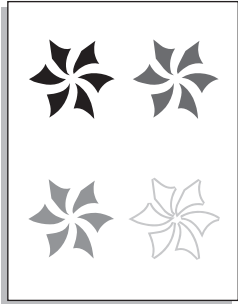
Print Defects	Common Causes	Potential Remedies
<p>Back-Side Contamination</p> <p>Toner that has been deposited on the non-imaged side of the prints</p> 	<p>Toner on the Fuser Rollers.</p> <p>The Fuser cleaner is improperly installed.</p> <p>There is dirt in the paper path.</p>	<p>To clean up any residual toner, run a blank sheet of paper through the printer.</p> <p>Reinstall the Fuser cleaner assembly.</p> <p>Clean the paper path. See the <i>System Administrator Guide</i> on the DocuPrint CD.</p>
<p>Missing Color</p> <p>One or more colors that are light or missing from the print</p> 	<p>The Developer for the missing color needs replacement.</p>	<p>Replace the color or black Developer as appropriate.</p>

Table 5.1 Page 3 of 4

Table 5.1 Print Defects and Potential Remedies (continued)


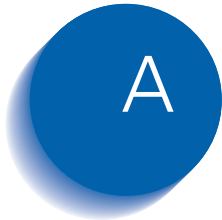
Print Defects	Common Causes	Potential Remedies
<p>Color Misregistration</p> <p>Color that has shifted outside of the designated area or has been superimposed over another color area</p> 	<p>Incorrect media.</p>	<p>Use only recommended media.</p>

Table 5.1 Page 4 of 4

Additional Sources of Troubleshooting Assistance

If you encounter an error message, problem, or print defect that you are unable to correct by using your User Guide or the On-Line Help system, you may need to contact your System Administrator or refer to the *System Administrator Guide* on the DocuPrint CD. For more complicated problems, contact your Xerox reseller or Xerox Support for assistance.



Printer Specifications

Physical Specifications A-2
Environmental Specifications A-3
Electrical Specifications A-4
Performance Specifications A-5
Controller Specifications A-6

Physical Specifications

Dimensions (without Optional Lower Feeder)

- 18.5" (w) x 16.5" (d) x 16.5" (h)
- 470 mm (w) x 419 mm (d) x 419 (h)

Weight (without Optional Lower Feeder)

- 89 lbs. (40 kg)

Optional Tray Dimensions

- 18" (w) x 17" (d) x 4" (h)
- 460 mm (w) x 432 mm (d) x 102 mm (h)

Optional Tray Weight

- 20 lbs. (9.1 kg)

Environmental Specifications

Temperature

- Operating: 50° to 90° F (10 to 32° C)
- Storage: 14° to 104° F (-10 to 40° C)

Humidity

- Operating: 15% to 85% RH
- Storage: 10% to 90% RH

Sound Level

- 54 dbA Running (Max.)
- 47 dbA Standby (Max.)

Electrical Specifications

Power Requirements

- 110-130V, 50/60 Hz, 15 A,
- 200-260V, 50/60 Hz, 10-15 A,
- Energy Star Compliant

Power Consumption

- 300 W av. / 1000 W max.

Performance Specifications

Resolution

- Black: 600x600 dpi
- Color: 600 x 600
- 1200 Quality (PostScript only)

Print Speed

- Black: up to 16 ppm (pages/min)
- 2 Color: up to 6 ppm
- 4 Color: up to 3 ppm
- ZipColor: up to 4 ppm

Controller Specifications

Intel i960 processor, operating at 66/33 MHz

Memory

- 64 MB DRAM / 8 MB FLASH ROM Standard
- Upgradable to a maximum of 128 MB

Page Description Languages (PDL)

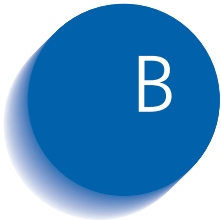
- Adobe PostScript 3.0 and PCL 5c Coresident

Resident Fonts

- 35 Type 1 (PostScript only)
- 35 Intellifonts (PostScript and PCL 5C)
- 10 TrueType (PostScript and PCL 5C)

Interfaces

- P1284B with ECP, Unidirectional, Nibble & Reverse Byte Modes (Windows 95/98 Plug and Play Standard)
- Serial DB9 (DTE)
- Ethernet 10Base2 and 10BaseT
- Optional: Fast Ethernet 10/100BaseT, Token Ring



Notices and Certifications

<i>FCC Notices...USA</i>	<i>B-2</i>
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<i>60 HZ, 115V</i>	<i>B-5</i>
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<i>CE Certification</i>	<i>B-6</i>
<i>Ethernet/Token Ring Accessories</i>	<i>B-6</i>
<i>EN55022</i>	<i>B-7</i>
<i>Safety Extra Low Voltage Safety Approval</i>	<i>B-8</i>

FCC Notices...USA

Radio Frequency **BASE PRINTER**

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or a experienced radio/TV technician for help.

Changes or modifications to this equipment not specifically approved by the Xerox Corporation may void the authority granted by the FCC to operate this equipment.

Shielded cables must be used with this equipment to maintain compliance with FCC regulations.

BASE PRINTER WITH TOKEN RING CARD OR WITH 10/100 ETHERNET CARD

The DocuPrint NC60 has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The FCC Class B limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your point of purchase or service representative for additional suggestions.

The manufacturer is not responsible for any radio or television interference caused by using other than recommended cables or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate this equipment.

To assure compliance with FCC regulations on electromagnetic interference for a Class B computing device, use a properly shielded and grounded cable. Use of a substitute cable not properly shielded and grounded may result in a violation of FCC regulations.

Certifications...Canadian

60 HZ, 115V

The equipment is listed by the Underwriters Laboratories, UL 1950, certified by Canadian Standards Association, CSA22.2, No. 950

European Markets

CE Certification

The CE marking applied to this product symbolizes Xerox Limited Declaration of Conformity with the following applicable directives of the European Union as of the dates indicated:

January 1, 1995: - Council Directive 73/23/EEC amended by Council Directive 93/68/EEC, approximation of the laws of the member states related to low voltage equipment.

January 1, 1996: - Council Directive 89/336/EEC, approximation of the laws of member states related to electromagnetic compatibility.

A full declaration, defining the relevant Directives and referenced standards, can be obtained from your Xerox Limited representative.

Changes or modifications to this equipment not specifically approved by Xerox Limited may result in non-compliance with one or more of the directives listed above.

Shielded cables must be used with this equipment to maintain compliance with the EMC directive (89/336/EEC).

Ethernet/Token Ring Accessories

NOTE: This is still a Class B product with either of these options installed.

EN55022

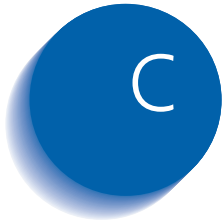
Configuration	Specification
Base Printer	EN55022-B
Base Printer with Token Ring	EN55022-B
Base Printer with 100MB Ethernet	EN55022-B

Safety Extra Low Voltage Safety Approval

The DocuPrint NC60 printing system is in compliance with various governmental agencies and national safety regulations. All system ports meet the requirements for Safety Extra Low Voltage (SELV) circuits for connection to customer-owned devices and networks.

Additions of customer-owned or third-party accessories attached to the system must meet or exceed the requirements listed above.

Since this system consists of several modules requiring external connection, it must be installed per the Xerox Installation procedure.



Printer Options

<i>Optional Equipment</i>	<i>C-2</i>
<i>How to Install Additional Memory</i>	<i>C-5</i>
<i>Memory Installation Procedure</i>	<i>C-7</i>

Optional Equipment

Optional equipment is available which allows you to add special features to your printer or upgrade your printer system to meet your particular needs. Table C.1 on page C-3 provides a brief description of each enhancement available. The part number needed to place an order can be found on the enclosed sheet.



Normally, the optional equipment kits come with installation instructions. However, the memory upgrade kit instructions are included in this appendix because they are not included with the memory kits.

To order any of the equipment listed below, see the separate *Supplies/Options Guide* or call your authorized Xerox reseller.

Table C.1 DocuPrint NC60 Optional Equipment

Optional Kits	Content	Use	Requirements
Hard Drive	One - Hard drive	Allows for secure job and proof job printing, storage of fonts and demo pages, and increases the productivity of multiple-page jobs via electronic pre-collation.	None
Media Server	One - 3½" HD Floppy Drive	Prints PCL 5C and PostScript files from a DOS Formatted disk.	Standard High Density, 3.5-inch, 1.44 MB, MS DOS formatted disk.
Lower Feeder	One Lower Feeder assembly	One Universal Tray enables Auto Tray Switching for continuous printing. Doubles paper capacity or enables dedicated transparency tray or tray for covers or separator sheets.	None
Universal Tray	One - Media Tray	Additional media tray. Interchangeable with Tray 1 or Tray 2.	None
Ethernet 10/100 Card	One- Ethernet Network Interface Plug in card	Provides 10/100 MBPS Ethernet network capability for IPX/SPX, TCP/IP, DLC/LLC, SNMP and EtherTalk protocols. Comes standard with Flash memory for easy field upgrades.	None.

Table C.1 DocuPrint NC60 Optional Equipment *(continued)*

Optional Kits	Content	Use	Requirements
<p>Token Ring Card</p>	<p>One - Token Ring Network Interface Plug in card</p>	<p>Provides network capability utilizing IPX/SPX, TCP/IP, DLC/LLC, SNMP and TokenTalk protocols. Comes standard with Flash memory for easy field upgrades.</p>	<p>None</p>
<p>Memory Upgrade</p>	<p>One - 8 MB Memory SIMM One - 16 MB Memory SIMM One - 32 MB Memory SIMM</p>	<p>Increases the random access memory (RAM) of your printer. Improves performance and handling of large jobs. (Installation information is included in the next section.)</p>	<p>None</p>

How to Install Additional Memory

Your DocuPrint NC60 comes with a total of 64 MB of DRAM memory and 8 MB of Flash. You can increase the random access memory of your DocuPrint NC60 to a maximum of 128 MB.

More RAM increases the font capability and enhances the speed of data transfer and complex page processing. Certain memory amounts are required to support enhancements to your DocuPrint NC60.

Memory kits are available in four configurations, packaged in single units each:

- 32 MB
- 16 MB
- 8 MB

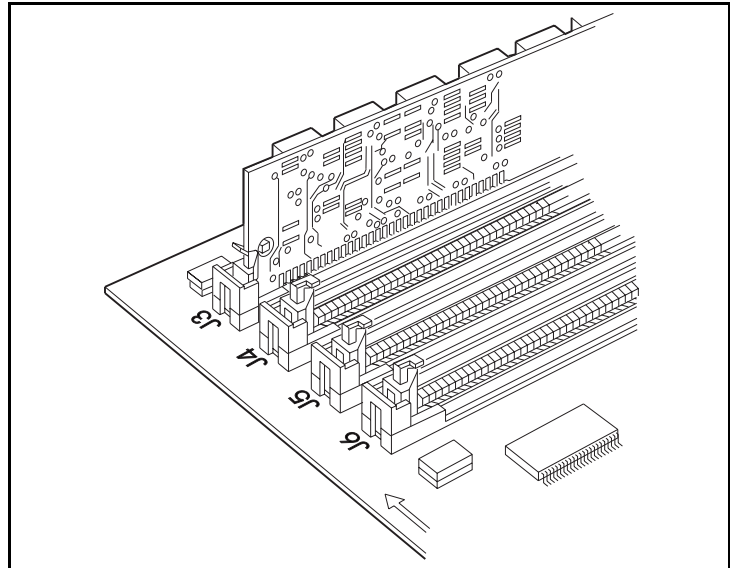
The DocuPrint NC60 utilizes industry standard SIMMs with the following specifications:

- 72 pin, 50 ns (or faster) SIMMs
- 32 bit wide (non parity)
- EDO

When you install additional memory in your printer, the memory SIMMs should be added by inserting them into slots contained in the pullout panel on the rear of your printer.

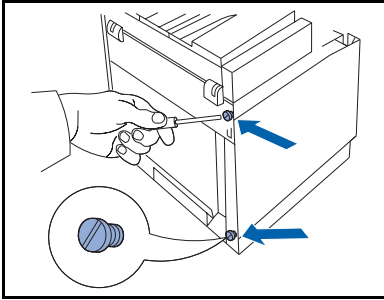
Memory slots appear as illustrated in Figure C.1. This shows one additional memory SIMM installed.

Figure C.1 The NC60 Memory Board Configuration

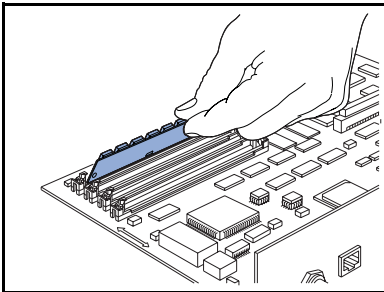


Memory Installation Procedure

Each Memory Upgrade Kit contains one memory SIMM.

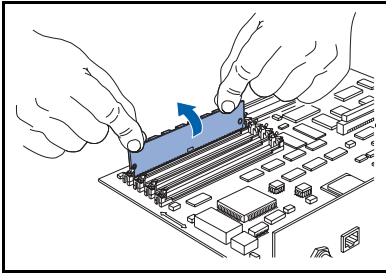


- 1 Switch the printer off.
- 2 Loosen the screws on the rear of the printer that hold the pullout panel in place.
- 3 Pull the panel out of the printer, and place it flat-side down on a level surface.



- 4 Use your index finger and thumb to grasp one end of the SIMM, and remove it from the envelope. Align the SIMM with the slot that you will install it in.

How to Install Additional Memory



- 5** With both hands, grasp the ends of the SIMM between your index fingers and thumbs, and tilt it upright until it snaps into place between the end brackets on the board.
- 6** Repeat steps 4 and 5 to install any additional SIMMs.
- 7** Slide the panel back into the printer, and tighten the screws.
- 8** Close the Front Cover, and switch the printer on again.

For more information about optional equipment including additional memory, see the *Supplies/Options Guide*.



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