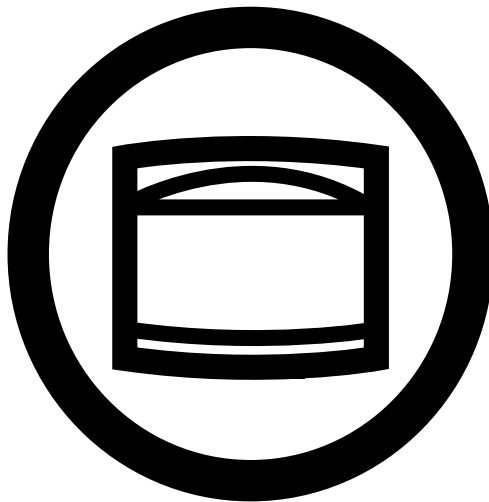




Colorwriter LSR 2000+ Printer
User Guide



Printing Systems InfoCenter
<http://www.printers.digital.com>

EK-LCPL-UG .A01
Digital Equipment Corporation
Maynard, Massachusetts

First Printing, August 1996

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This 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. These 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 the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a dealer or an experienced radio or television technician for help.

Modifications: The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Digital Equipment Corporation may void the user's authority to operate the equipment.

Cables: Connections to this device must be shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

DOC Compliance Notice

This equipment does not exceed the Class B limits for radio noise emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.

DOC Avis de Conformation

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

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CDRH Regulations

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 1, 1976. These regulations apply to laser products marketed in the United States. The label on the printer indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

Acoustics

Declared values per ISO 9296 and ISO 7779:

Sound Power Level

$L_{WA,d}$, B

| Product | Idle | Operate |
|---------------|------|---------|
| LNC01 (color) | 6.2 | 7.0 |
| LNC01 (b&w) | 6.2 | 6.9 |

(1 B = 10 dBA)

Sound Pressure Level

L_{pAm} , dBA
(bystander positions)

| Idle | Operate |
|------|---------|
| 44 | 53 |
| 44 | 52 |

Current values for specific configurations are available from Digital representatives.

Schallemissionswerte

Wertangaben nach ISO 9296 und ISO 7779/DIN EN27779:

Schalleistungspegel

$L_{WA,d}$, B

| Gerät | Leerlauf | Betrieb |
|---------------|----------|---------|
| LNC01 (color) | 6,2 | 7,0 |
| LNC01 (b&w) | 6,2 | 6,9 |

(1 B = 10 dBA)

Schalldruckpegel

L_{pAm} , dBA
(bystander positions)

| Leerlauf | Betrieb |
|----------|---------|
| 44 | 53 |
| 44 | 52 |

Aktuelle Werte für spezielle Ausrüstungsstufen sind über die Digital Equipment Vertretungen erhältlich.

Class 1 Laser Product (100-120V/220-240V models)

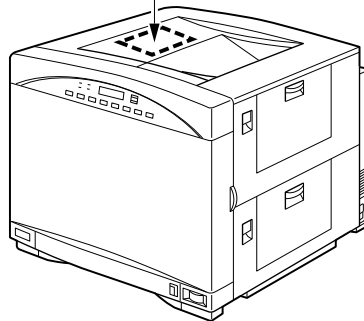
Laser radiation could be hazardous to the human body. For this reason, laser radiation emitted inside this printer is hermetically sealed within the protective housing and external cover. In the normal operation of the product by the user, no radiation can leak from the machine.

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

The label shown below is attached to this printer.

| | |
|---|---|
|  | DANGER - Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM. |
| | CAUTION - INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. |
| ATTENTION | - RAYONNEMENT LASER INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU. |
| VORSICHT | - UNSICHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN. |
| ATTENZIONE | - RADIAZIONE LASER INVISIBILE IN CASO DI APERTURA. EVITARE L'ESPOSIZIONE AL FASCIO. |
| PRECAUTION | - RADICIÓN LASER INVISIBLE CUANDO SE ABRE. EVITAR EXPONERSE AL RAYO. |
| VARO! | - ÄÄVÄTTÄESSÄ OLET ALTITINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN. |
| WARNING! | - OSYNLIG LASERSTRÄLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRÄKTA EJ STRÄLEN. |
| ADVARSEL! | - USYNLIG LASER STRÄLNING, NÄR DENNE ER ÅBEN. UNDGÅ BESTRÅLING. |
| ADVARSEL | - USYNLIG LASERSTRÅLING, NÄR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN. |
| 注意 | - このカバーの内側では不可視レーザー光が放射されています。 レーザー光にさらされないようにしてください。 |

RSS-8169




WARNING: When servicing the machine or laser module, follow the procedures specified in the manual so that there are no hazards from the laser. The use of controls, adjustments, or performance of procedures other than those specified in this manual may result in hazardous laser radiation exposure.

WARNING: The label shown above is intended as a warning to persons disassembling the Raster Laser Scanner unit for internal alignment or repair purposes. It does not apply to any of the maintenance procedures specified in this manual.

Contents

Preface

| | | |
|---|---|------|
| | About the Colorwriter LSR 2000 ⁺ | xiii |
| | About this guide | xiv |
| | Related documentation | xv |
|  | Important safety information | xiv |
| | Handling the Colorwriter | xvi |
| | Choosing a location for the Colorwriter | xvi |
| | Unpacking and setting up the Colorwriter | xvii |
| | Operating the Colorwriter | xvii |
| | Protecting the LCD display | xix |
| | Ozone emission | xix |
| | Energy Star compliance | xix |

Chapter 1: Introduction to Color Printing and the Colorwriter

| | | |
|--|---|-----|
| | The properties of color | 1-1 |
| | The physics of color | 1-1 |
| | CIE color model | 1-2 |
| | Hue, saturation, and brightness | 1-3 |
| | Additive and subtractive color systems | 1-3 |
| | Printer gamut | 1-5 |
| | Traditional color printing and Colorwriter printing | 1-6 |
| | Controlling printed color | 1-7 |
| | The role of color management | 1-8 |

Chapter 2: Operating the Printer

| | |
|---|------|
| Printer control panel overview | 2-2 |
| Activity lights | 2-2 |
| Buttons | 2-3 |
| Display window | 2-4 |
| Resetting default setup options | 2-4 |
| Status messages | 2-4 |
| Warning, service, and error messages | 2-5 |
| Menu options | 2-5 |
| Using the density control panel | 2-6 |
| Density adjustment | 2-7 |
| Test patterns | 2-8 |
| Using the optional paper feeder unit | 2-10 |
| Handling and storing paper | 2-11 |
| Storing printouts | 2-11 |
| Handling transparency film | 2-12 |
| Loading the paper cassette | 2-13 |
| Loading paper into the multipurpose tray | 2-18 |
| Loading transparency film | 2-23 |

Chapter 3: Printing from Macintosh Computers

| | |
|---|------|
| Printing from applications | 3-1 |
| Printing pages from the multipurpose tray | 3-6 |
| Using Colorwriter LSR utilities | 3-7 |
| Using the Colorwriter LSR Downloader | 3-7 |
| Printing with the Colorwriter LSR Downloader | 3-10 |
| Downloading and managing printer fonts | 3-12 |
| Using the Colorwriter LSR Spooler | 3-17 |
| Duplicating, copying, moving, and deleting jobs | 3-22 |
| Changing print settings for a job | 3-24 |
| Using the job log | 3-25 |

| | |
|-------------------------------|------|
| Application notes | 3-29 |
| Adobe Illustrator 5.0 and 5.5 | 3-29 |
| Aldus PageMaker 5.0 | 3-31 |
| Adobe Persuasion 3.0 | 3-36 |
| Adobe Photoshop 2.5 and 3.0 | 3-37 |
| Macromedia FreeHand 5 | 3-40 |
| Microsoft PowerPoint 4.0 | 3-42 |
| QuarkXPress 3.2 and 3.3 | 3-44 |
| Other QuickDraw applications | 3-50 |

Chapter 4: Printing from PC-compatible Computers

| | |
|--|------|
| Printing to the Colorwriter from Windows | 4-2 |
| Printing from applications | 4-2 |
| Saving files to print at a remote location | 4-2 |
| Configuring Windows printing options | 4-3 |
| Configuring printing options on Windows 3.x | 4-3 |
| Configuring printing options on Windows 95 | 4-10 |
| Configuring printing options on Windows NT | 4-13 |
| Printing pages from the multipurpose tray | 4-13 |
| Using Colorwriter utilities | 4-15 |
| Using the Colorwriter LSR Downloader | 4-15 |
| Printing with the Colorwriter LSR Downloader | 4-18 |
| Downloading and managing printer fonts | 4-20 |
| Using the Colorwriter LSR Spooler | 4-24 |
| Duplicating, copying, moving, and deleting jobs | 4-29 |
| Changing print settings for a job | 4-31 |
| Using the job log | 4-32 |
| Using the Colorwriter LSR Manager | 4-36 |
| Application notes | 4-37 |
| Aldus PageMaker 5.0 for Windows 3.1 | 4-37 |
| Adobe Photoshop 2.5 and 3.0 for Windows 3.1 | 4-40 |
| CorelDRAW 5.0 for Windows 3.1 | 4-44 |
| Microsoft PowerPoint 4.0 for Windows 3.1 | 4-45 |

Chapter 5: Printing from UNIX Workstations

| | |
|--|-----|
| Printing to the Colorwriter from UNIX Workstations | 5-1 |
|--|-----|

Chapter 6: Printing from OpenVMS Systems

| | |
|---------------------------------------|-----|
| Printing from DCPS to the Colorwriter | 6-1 |
|---------------------------------------|-----|

Chapter 7: Administering Print Jobs over the NetWare Print Server

| | |
|--|-----|
| Monitoring queued print jobs | 7-1 |
| Printing a PostScript file | 7-2 |
| Using AppleTalk with Macintosh computers on an IPX (Novell) network | 7-4 |
| Printing directly to the Colorwriter | 7-4 |

Appendix A: Error and Warning Messages

| | |
|--|-----|
| Printer control panel error messages | A-1 |
| Printer control panel warnings | A-3 |
| Startup diagnostic error service calls | A-4 |
| Printer control panel service calls | A-4 |

Appendix B: Setup Menus

Appendix C: Maintenance

| | |
|---|------|
| Identifying the parts of the printer | C-1 |
| Cleaning and handling the printer | C-5 |
| Cleaning the cabinet | C-5 |
| Cleaning the paper pickup area | C-5 |
| Using the wire cleaner | C-6 |
| Cleaning the separation corona wire | C-6 |
| Cleaning the window of the density detection sensor | C-8 |
| Handling the Colorwriter | C-10 |
| Storing and handling toner cartridges | C-15 |
| Replacing a toner cartridge | C-16 |
| Tips for replacing the toner cartridge | C-21 |
| Replacing the silicone oil bottle | C-22 |
| Using the drum cartridge kit | C-25 |
| Moving the printer | C-34 |

Appendix D: Troubleshooting

| | |
|---|------|
| Power problems | D-1 |
| Initialization problems | D-2 |
| Printing large files | D-2 |
| Print quality and paper problems | D-3 |
| Paper jams | D-4 |
| When using the optional paper feeder unit | D-7 |
| Checking the transfer drum area | D-8 |
| Checking the fixing assembly area | D-12 |
| Correcting abnormal printouts | D-16 |

Appendix E: Specifications

| | |
|----------------------------|-----|
| Colorwriter specifications | E-1 |
| Paper requirements | E-3 |
| Unacceptable paper | E-4 |
| Effective printing area | E-5 |

Appendix F: Ordering Accessories and Supplies

| | |
|----------------------------|-----|
| Optional paper feeder unit | F-1 |
| Optional paper cassette | F-2 |
| Upgrade kits | F-2 |
| Ordering consumables | F-3 |
| Toner cartridges | F-3 |
| Silicone oil | F-4 |
| Drum cartridge kit | F-5 |
| Transparency film | F-6 |
| Paper | F-6 |

Appendix G: Ordering Related Documentation

| | |
|----------------------------------|-----|
| Technical support | G-1 |
| Electronic orders | G-2 |
| Telephone and direct mail orders | G-2 |

Appendix H: Obtaining Service

| | |
|--|-----|
| Questions to ask before calling the service center | H-1 |
|--|-----|

Glossary

Index

Preface

In today's business environment, the pressure is on to produce professional, polished documents and sharp, color-specific renderings and presentations. The pressure is compounded by the need to produce these materials in a fast and cost-effective manner. Generating them in your own efficient environment results in higher productivity, especially when crisp output and color quality is of paramount concern.

About the Colorwriter LSR 2000⁺

The Digital Colorwriter LSR 2000⁺ represents the highest standards in continuous tone color laser technology. Equipped with a Fiery™ XJe controller, and combined with Digital's well-known product reliability and support, the Colorwriter LSR 2000⁺ provides top performance and photographic quality for large, complex files consisting of text, graphics, and images. The Colorwriter not only performs at speeds up to five times faster than typical desktop models, it does so with print quality previously found only in more expensive color laser printers.

With its Adobe®PostScript®level 2 capabilities, Kodak Precision and ICC color profiles, and flexibility in page layout, the Colorwriter fits extremely well into graphic arts, prepress, and desktop publishing environments. The complex images necessitated by computer-aided design and engineering are similarly well met with this printer's high-resolution reproduction. Furthermore, word processing documents, spreadsheets, and other presentations all reflect the highest quality output when the Colorwriter LSR 2000⁺ is the source.

The Colorwriter LSR 2000⁺ offers four different color rendering dictionaries (CRDs) to allow a wide range of color output and to assure that whatever is being printed looks as it should, from photographs to computer-designed presentations. Switching between CRDs is effortless; the LCD control panel makes it possible to use a new CRD without restarting the Colorwriter. The Colorwriter is also Energy Star compliant, which means it can be left on between print jobs without wasting electricity. A customizable power saver mode allows the user to specify when the printer will power-down its mechanical parts. After a brief warmup, the Colorwriter is ready to receive jobs, allowing you to concentrate on your print jobs, instead of your printer.

About this guide

This guide provides an introduction to desktop color printing, an overview of the printer and how to operate it, how to use the software provided, and what you need to know about using the printer in a networked environment. It also outlines routine maintenance procedures, includes troubleshooting information, and explains how to order accessories, supplies, and documentation. Specifications are also included.

NOTE: When referring to the printer, the terms Colorwriter, Colorwriter LSR, and Colorwriter LSR 2000⁺ are used interchangeably in this manual.

The audience for this guide is anyone who will be printing to the Colorwriter LSR 2000⁺.

PCK **NOTE:** In this manual, software or features that are part of the Professional Color Kit (PCK) are indicated with a small PCK icon. The Professional Color Kit is an optional feature set available for the Colorwriter.

The following major topics are included:

- Introduction to desktop color printing
- Using the control panels
- Printing from various computers and workstations
- Error messages
- Setup menus
- Maintenance
- Troubleshooting
- Specifications
- Ordering supplies and documentation
- Obtaining service

Related documentation

This guide is part of a set of printed documentation (Order Number: EK-LCPLD-DK) that also includes the following:

- The *Colorwriter LSR 2000⁺ Printer Getting Started* describes how to install the Colorwriter and the user software for the Colorwriter, and how to set up printing from Macintosh[®] and Windows computers. You'll also learn how to set up the Colorwriter from the printer control panel.
- The *Quick Reference Card* shows how to set up manual feed printing, clear paper jams, replace toner, and use the drum cartridge kit.

A clear plastic pocket is included in the documentation pack. If you adhere it to the side of the printer, you can use it to keep the Quick Reference Card with the printer.

- Printed *Release Notes* describe last-minute additions and changes to the documentation or software.
- Return the *Printer Registration Card* to register your Colorwriter and receive special offers and new product information.
- *Warranty Card*

For information about ordering related documentation, see Appendix G.

In addition to the printed documentation, you should read the on-line Read Me files on the CD that contains user software, printer files, and screen fonts. The following manual is included in online form on the CD:

- The *PostScript Language Printer Addendum* describes the parameters and resources present in the implementation of the PostScript interpreter for the Colorwriter, which has PostScript language features and capabilities that might not be present in other PostScript output devices.

Important safety information

This printer is a high-precision electronic device. Therefore be sure to read these safety instructions carefully before you begin.

Follow all warnings and instructions marked on the printer and consumables, such as the toner cartridges and silicone oil bottles.

Handling the Colorwriter



- Do not place this printer on an unstable cart, stand, or table.
- The printer alone weighs approximately 110 lb (50 kg). Do not attempt to move it by yourself. It should always be moved by two or more people.



- When carrying the printer, be sure to hold it horizontally. Tilting the printer may cause the silicone oil to spill.
- When the printer is in use, the fixing assembly and delivery areas become extremely hot. Be careful not to touch these areas.
- Before moving the printer, be sure to turn it off and then unplug the power cable.

Choosing a location for the Colorwriter

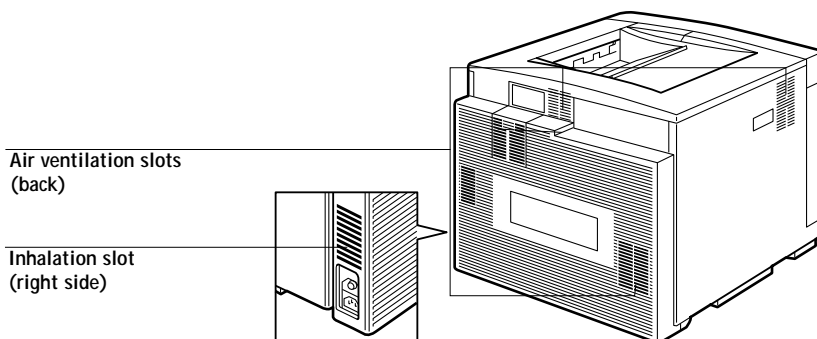
- Do not expose the printer to a wet environment.
- Make sure the printer is level (at less than a 1% angle); otherwise a REPLACE FIXING UNIT PUMP error message will be displayed on the control panel.
- Do not directly expose the printer to a chemical environment, for example, an experimental laboratory. The exterior of the printer is made of plastic, and the outside covering may fade, become deformed, or melt.

Unpacking and setting up the Colorwriter

- Before connecting the printer to a power source, check the voltage rating label on the back of the printer to ensure that the printer voltage matches that of the power source. If the voltage label is missing, contact the nearest authorized dealer or your place of purchase.
- Avoid using an extension cord. If it is unavoidable, be sure to take the following precautions. Failure to do this may lead to overheating or fire, or cause lights to flicker due to a drop in voltage.
 - Be sure not to exceed the allowed rating current of the extension cord. Make sure that the total ampere rating of the products plugged into the extension cord does not exceed the extension cord ampere rating.
 - Use a short extension cord. Do not connect several extension cords together.
- When connecting cables or disconnecting cables from the printer, make sure that the power switch is in the off position.
- Be sure to turn off the power before unplugging or plugging in the printer power cord or interface cable.

Operating the Colorwriter

- Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the printer and protect it from overheating, these openings should never be blocked or covered.



- The printer is equipped with a 3-wire grounding type plug, which has a third (grounding) pin. This plug will fit into only a grounding-type power outlet. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding type plug.
- Unplug this printer from the wall outlet before cleaning. Use a damp cloth for cleaning. Do not spray liquid or aerosol cleaners directly on the cabinet or the openings, as the spray could penetrate the printer and damage internal parts.
- Do not attempt to service this printer by yourself, except as instructed in this manual. Opening or removing covers that are intended to be removed only by qualified service personnel may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to qualified service personnel.



- Operation of this printer should always be supervised by a responsible adult. To avoid injury, do not allow children access to the interior of any electrical product and do not let them touch any electrical contacts or gears that are exposed.



- This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock.
- Do not make contact with any inside part of this unit while it is plugged in.
- Avoid operating the printer when the waste toner bottle and/or silicone oil bottle is not installed; otherwise, the printer may be damaged.
- Do not attempt to modify the printer.
- Do not remove the warning or instruction labels on the printer.
- Do not dispose of the used waste toner box or the silicone oil box into a fire.

Protecting the LCD display

Do not subject the Colorwriter to strong shocks. The Colorwriter has a liquid crystal display (LCD) that is made of glass and can break. If the display window breaks and the liquid crystal material leaks out, do not inhale, ingest, or touch it. If the material gets on your skin or clothing, wash it off with soap and water immediately.

Ozone emission

This printer meets the requirements for ozone emission of the applicable standard published by Underwriters' Laboratories, Inc. (UL). Ozone (O₃) is a colorless gas by-product of the electrophotographic process. Ozone is discharged only while the printer is printing, and is emitted through the exhaust port on the rear, left side of the printer. Only service personnel should replace the ozone filter.



Those who are particularly sensitive to ozone odor may feel sick if exposed to it for long periods of time. To avoid this, make sure that the following measures are taken:

- Install the printer in a large, well ventilated room.
- Avoid facing the exhaust port directly toward users.
- Be sure that the ozone filter is replaced periodically by the service person.
- Avoid using the printer without a filter.

Energy Star compliance

The Colorwriter comes equipped with a power saver mode that can reduce the total power consumption of the printer to less than 45 watts—a 65 percent reduction in electricity use. In power saver mode, the fan and fuser are turned off after a user- defined period of inactivity. With the power saver feature, the Colorwriter complies with the EPA (Environmental Protection Agency) guidelines for an Energy Star compliant device (United States only).

Chapter 1: Introduction to Color Printing and the Colorwriter

This chapter provides information about:

- The properties of color
- Traditional color printing and Colorwriter printing
- Controlling printed color

The properties of color

Color theory is an attempt to systematize the properties of color perception, which by nature is relative and changeable. A color appears different depending on the other colors around it, and individuals vary in their abilities to perceive color.

This section introduces concepts that are basic to color theory. You will encounter some of these ideas (such as hue, saturation, and brightness) when you work with color in applications, while others are useful background information. Since color is a complex topic, consider this a starting point for experimentation and further research.

The physics of color

Humans are sensitive to electromagnetic radiation at wavelengths between 400 nanometers (purplish blue) and 700 nanometers (red). This range is called the visible spectrum of light. We see pure spectral light as intensely saturated or pure colors. Sunlight at mid day, which we perceive as white or neutral light, is composed of light from across the visible spectrum in more or less equal proportions. Shining sunlight through a prism separates it into its spectral components, resulting in the familiar rainbow of colors (plate 1).

Most light sources we encounter in our daily environment are like the sun in that they emit a mixture of many light wavelengths, although the particular distribution of wavelengths can vary considerably. Light from a tungsten light bulb contains much less blue light than sunlight. Tungsten light appears white to

the human eye which can, up to a point, adjust to the different light sources. However, colored objects appear different under tungsten light than they do under sunlight because of the different spectral makeup of the two light sources.

The mixture of light wavelengths emitted by a light source is reflected selectively by different objects, and the mixture of light reflected appears as different colors. Some of these mixtures appear as relatively saturated colors, but most appear to us as grays or impure hues of a color.

CIE color model

In the 1930s, the Commission Internationale de l'Eclairage (CIE) defined a standard color space to help in the communication of color information. This color space was based on research about the nature of color perception. The CIE chromaticity diagram (plate 2) is a two-dimensional model of color vision. The arc around the top of the triangle encompasses the pure or spectral colors, from blue violet to red. Although the CIE chromaticity diagram is not perceptually uniform—some areas of the diagram seem to compress color differences relative to others—it is a good tool for illustrating some interesting aspects of color vision.

By mixing two spectral colors in different proportions, we can create any of the colors that are found on the straight line drawn between them in the diagram. Applying this rule, notice how it is possible to create the same gray by mixing blue-green and red light as you can by mixing yellow-green and blue-violet light. This is possible because of a phenomenon peculiar to color vision called **metamerism**. The eye does not distinguish individual wavelengths of light. Therefore, different combinations of spectral light can produce the same perceived color.

Notice how purple colors, which do not exist in the spectrum of pure light, are found at the bottom of the diagram. Purples are mixtures of red and blue light—the opposite ends of the spectrum.

Hue, saturation, and brightness

A color can also be described in terms of three varying characteristics: its hue, or tint (the qualitative aspect of a color—red, green, or blue); its saturation, or the purity of the color; and its brightness, or relative position between white and black. While the CIE chromaticity diagram (plate 2) conveys hue and saturation, a three-dimensional color model is required to show the brightness component as well (plate 3).

Many computer applications offer dialog boxes in which you choose colors by manipulating hue, saturation, and brightness. For example, Adobe Photoshop™ uses a Color Picker that can be reconfigured according to preference.

Additive and subtractive color systems

Color devices used in desktop publishing and printing simulate the range of visible colors using a set of primary colors that are combined to create other colors. Two methods of creating a range of colors from a set of primary colors exist. Computer monitors and scanners use the **additive color model**. Color laser printers such as the Colorwriter, and traditional printing processes using ink on paper, use the **subtractive color model**.

Additive (RGB) color

Color devices that use the additive color model produce a range of colors by combining varying amounts of red, green, and blue light. These colors are called the **additive primaries** (plate 5). White is created by adding the maximum amount of red, green, and blue light available; black is found wherever all three colors are absent. Grays are created by adding varying amounts of all three colors together. Combining varying amounts of any two of the additive primaries creates a third, saturated hue.

A familiar device that uses this color model is the computer monitor (plate 6). Monitors have red, green, and blue phosphors that emit varying amounts of light to display a given color. Scanners create digital representations of colors by measuring their red, green, and blue components through colored filters.

Subtractive (CMY and CMYK) color

The subtractive color model is used in color printing, as well as in color photographic prints and transparency film. While the additive color model simulates the visible spectrum of color by adding light of three primary hues, the subtractive color model uses a “white” or neutral light source containing light of many wavelengths. Inks, toners, or other **colorants** are used to selectively absorb (subtract) certain wavelengths of light that would otherwise be reflected from or transmitted through the media in question.

The **subtractive primaries** are cyan, magenta, and yellow; they absorb red, green, and blue light respectively (plate 7). Combining any two of the subtractive primaries creates a new color that is relatively pure or saturated. For example, you can make red by combining magenta and yellow, which absorb green and blue light respectively. White is found wherever no colorant is applied. Combining all three subtractive primaries yields a dark color that could be considered “black” in the print. However, color printing has traditionally used a four-color process inks set: **C**yan, **M**agenta, **Y**ellow, and **blacK** (CMYK). The addition of black ink assists in a number of areas, including registration between the different ink colors, contrast, and rendition of black text. Digital color printers such as the Colorwriter use cyan, magenta, yellow, and black toners.

The CMYK colorants used both in offset printing and in digital color printers are to some degree transparent. When one layer of colorant is applied on top of another, you see the effect of both. To create a range of intermediary colors, a method is required for varying the amount of each colorant that is applied. A technique called **halftoning** is used in offset printing, while color printers typically use a proprietary system for applying toner that is similar to halftoning.

Although the toner is applied in a system similar to halftoning, the spots of toner are so fine and close together that output resembles a photograph, and the Colorwriter is normally referred to as **continuous tone (contone)** device.

Even if your color printing is done exclusively on the Colorwriter, you will encounter concepts from traditional printing on press if you use high-end graphics applications. For example, color controls in illustration applications such

as Adobe Illustrator™ are geared toward specifying color for offset printing using process and spot colors. Many applications allow you to specify the screening used for each printing plate.

Screen frequency settings are generally ignored by the PostScript interpreter when it processes your document for the Colorwriter.

Printer gamut

Different color reproduction techniques have different color capabilities. The range of colors that can be produced with a given color device is called its **gamut**. Color transparency film and color monitors have large gamuts, whereas the color gamut that can be produced using process inks or CMYK toners on paper is comparatively small. This is why some colors that a computer monitor can display, especially bright saturated colors, cannot be reproduced exactly in printer output—nor can they be reproduced on printing presses using process colors. To a lesser extent, a color printer can print some colors that cannot be displayed on a monitor.

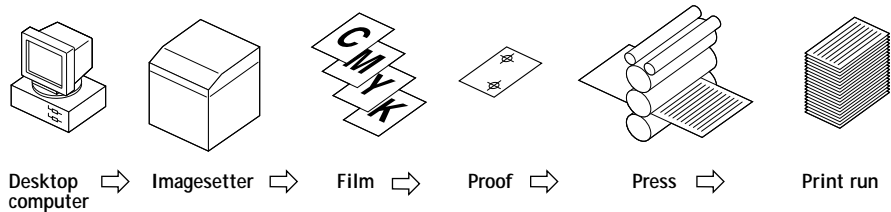
You will need to take the gamut of your printer into account when designing on a color monitor, particularly when using applications that use the RGB color model, such as presentation packages, pixel-editing applications, and painting applications. RGB colors that are outside of the color printer's gamut are “mapped” to printable CMYK colors. This process is sometimes referred to as **gamut mapping**; it takes place when RGB image data is converted to CMYK, either on your workstation or on the printer. The result may be a darkening or desaturation of certain colors that appear bright and saturated on the monitor. EFICOLOR **color rendering dictionaries (CRDs)** or **separation tables**, described in the section “The role of color management” on page 1-8, provide a choice of color rendering styles, each of which uses different gamut mapping methods.

Traditional color printing and Colorwriter printing

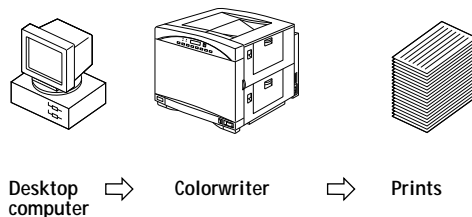
Until recently, most color printing was done on a printing press using one of several printing technologies—offset lithography, flexography, and gravure. All of these traditional printing techniques require a large amount of preparation before a print run can take place. Colorwriter printing eliminates most of this preparation. By streamlining the process of color printing, the Colorwriter makes short print runs economically feasible.

In contemporary offset lithographic printing, digital files from desktop computers are output to an imagesetter, which creates film separations. The film is then used to make a prepress proof, which is an accurate predictor of the final print job, and provides an opportunity to make corrections before going to press. Once the proof is approved, the printer makes plates from the film and runs the print job on the press.

Traditional color printing process



Colorwriter printing process



With a Colorwriter, you simply print the file. The Colorwriter processes the PostScript information in the file and sends four bitmaps (one each for cyan, magenta, yellow, and black) to the printer's laser-based print engine. The print emerges from the printer shortly afterward. The ease of Colorwriter printing makes experimentation possible that would be too costly on press, allowing almost unlimited fine-tuning of color and design elements.

Controlling printed color

The following factors affect printer consistency, as well as color fidelity and overall output quality:

Maintenance and supplies

The paper and toner used in a printer affect printed color. For best results, use the paper and toner recommended by the manufacturer of the printer.

Problems such as streaking and insufficient or excessive amounts of one or more toner colors indicate the need for maintenance or repair. Replacing a toner cartridge as soon as the low toner message appears on the Printer Control Panel is one of the easiest ways to maintain color consistency.

Calibration

Color output from the laser-based print engine in your Colorwriter is subject to changes in temperature and humidity, and is prone to drift over time. The printer's internal sensor monitors these changes and corrects the output toner densities so as to obtain an optimal maximum density and an optimal curve of intermediate densities.

This internal calibration occurs whenever the power is turned on and every 30 minutes while the power is on. It also occurs after a sudden environmental change, after a prescribed number of prints, and when a new toner or drum cartridge is installed. The printer monitors its output density by imaging a pattern of toner densities on the transfer drum, and measuring the light reflected from the pattern.

Building on the printer's internal calibration, you have additional options for controlling color output. You can monitor printed output by making standard test prints at regular intervals, visually examining and comparing them. You can do this conveniently by printing the Test Page and saving the result. Using the Colorwriter density control panel you can make small changes in the density of individual toner colors. We recommend that you leave the density control panel in the neutral (center) position before calibrating the Colorwriter with the Fierey Print Calibrator™.

If you have a **densitometer**, you can measure your printed output to monitor the range of output densities. Where color accuracy and consistency are crucial, regular calibration of the printer is advisable.

PCK In this manual, software or features that are part of the Professional Color Kit (PCK) are indicated with a small PCK icon. The Professional Color Kit is an optional feature set available for the Colorwriter.

PCK The Fiery Print Calibrator, a Macintosh application provided with the Colorwriter, together with a **Status T densitometer**, help to automate the calibration process. You use the Calibrator to print and measure color patches and compensate for changes in print densities. The strip-reading X-Rite DTP 32 densitometer makes calibration a quick and simple process.

The Calibrator application compares measured toner densities with a set of target densities, and downloads a software correction to the Colorwriter that brings the toner densities close to the target. You can use the Colorwriter profile included with the calibration software as a target, you can edit the target maximum density and midtone density for each process color, or you can create a set of custom targets.

Calibrations performed with the Fiery Print Calibrator reside on the printer, and are applied as **transfer curves** to all print jobs.

The role of color management

A properly maintained and calibrated Colorwriter print engine will give consistent output from day to day. However, the method you use for matching color output from the Colorwriter across different devices depends on the type of color data you send to the printer.

- **CRDs**—With scanners, presentation packages, or other applications that specify colors as RGB values, use CRDs to make the image displayed on the color monitor similar to the printed output. If you specify RGB colors in Photoshop, use the Colorwriter separation tables to achieve the same effect.

- **Color Profiles**—Two sets of color profiles are provided on the User Software CD: standard and calibrated. You should install and use the calibrated versions of the profiles only if you have used the Fiery Print Calibrator to calibrate your Colorwriter. Otherwise, use the standard profiles. There will be a significant difference in color reproduction if the incorrect profiles are used.
 - Kodak Precision Transform files are included for applications that use the Kodak Precision Color Management System. Refer to your application documentation for the installation and use of these files.
 - ColorSync (ICC) color profiles are included for use with Macintosh systems that support ColorSync 2.0. To install the profile, you should copy the profiles to the ColorSync Profiles folder, inside the Preferences folder in your System Folder.
- **Swatch color matching**—With illustration or page layout applications that specify colors as CMYK values, use the CMYK Reference Pages and the PANTONE Reference Books. From these pages you can see how various C, M, Y, K combinations look when printed by the Colorwriter, and can determine the CMYK data to specify in order to obtain the printed colors you want. Using the PANTONE Reference Books you can determine the nearest CMYK values to match a given color in the printed PANTONE Color libraries for coated and uncoated paper.

CRDs—color management on the Colorwriter LSR 2000

Because the Colorwriter is a PostScript Level 2 printing device, it has the ability to use custom CRDs (color rendering dictionaries). CRDs are used for converting RGB data sent to the printer into CMYK data used by the printer's print engine, tailored to its particular color response. CRDs are designed to give a close match between the monitor and printed output.

CRDs work with both Macintosh and Windows applications. You can select a CRD by choosing it from the Rendering Style pop-up menu:

- In the Print Options dialog box when using PostScript Level 2 printer drivers such as the Adobe PostScript Printer Driver or Apple LaserWriter 8.0 or later on the Macintosh
- In the Features tab in the Printer Setup dialog box using the Adobe PS 3 PostScript Printer Driver in Windows 3.x applications.

You can choose from four color rendering styles, each of which has a different way of translating color image data to the CMYK color space of your printer. Choosing the appropriate color rendering style will give you the best results within the capabilities of your printer.

Guidelines for using color rendering styles follow:

- **Photographic rendering** preserves tonal relationships in images and is best for continuous tone photographs. With this rendering style, unprintable colors are mapped to printable colors in a way that retains differences in lightness, slightly sacrificing color accuracy as necessary. Photographic rendering typically often gives less saturated output when printing out-of-gamut RGB colors than Solid Color rendering does.
- **Solid Color rendering** is appropriate when color accuracy is crucial, and does the best job of preserving the saturation of displayed colors. With this rendering style, unprintable colors are mapped to the closest printable colors. Note that Solid Color rendering may not be appropriate for printing saturated RGB color blends, since artifacts such as banding may occur.
- **Presentation rendering** is appropriate for bright saturated colors used in illustrations and graphs for business presentations—such as graphics created using Microsoft PowerPoint. It does not try to match printed colors precisely to displayed colors. Presentation rendering typically gives denser output than the other two color rendering styles and is recommended for presentations that are printed on transparency materials.
- **Monitor Color rendering** is appropriate when you want the best match between colors as they are displayed on your computer monitor and colors in the printed output. Monitor rendering matches printed colors to displayed colors by taking into account the lightness of colors when rendering them in the printed output. While it is similar to Presentation rendering for some colors, blues will appear lighter and less purple, and greens will appear more olive green than grass green, and lighter.

You can use CRDs when:

- Printing from presentation packages, word processors, spreadsheets, and other applications that send RGB information to the Colorwriter
- Printing scans and other RGB images from Adobe Photoshop

- Saving RGB EPS images from Adobe Photoshop and placing them in other applications

If you work with RGB data in Photoshop for Macintosh or Windows, you can load Colorwriter separation tables to perform the same function as the CRDs built into the printer. Separation tables are used when you print to the Colorwriter, when you save separations, and when you change color mode within Photoshop. Colorwriter user software includes separation tables for Photographic and for Solid Color rendering. To load the separation tables, see the instructions in Chapter 6 of *Getting Started*. See Chapters 3 and 4 of this manual for additional application notes.

Swatch color matching

When you use applications that specify color as CMYK data, swatch color matching allows you to match color output from presses or other printers. The Colorwriter comes with support for printing reference pages of CMYK data and PANTONE colors. By choosing a color from one of these pages, and specifying the CMYK percentages shown beside the color, you can be sure of obtaining the same color from the Colorwriter.

You can make it even more reliable by calibrating your Colorwriter before printing the reference pages and your final output. Swatch color matching is not suitable for matching monitor and printer color.

The Macintosh or Windows CMYK Reference Pages, on the user software disks, are PostScript files that print eleven pages of swatches in graduated combinations of yellow, magenta, and cyan, and smaller patches that include 25, 50 and 75% black. The process colors are shown in 10% increments. You can produce these colors from any application that specifies colors as CMYK percentages.

The PANTONE color matching system is a standard color system within the graphic arts and prepress industries. It specifies hundreds of spot colors, each identified with a unique number. Each PANTONE color is simulated on the printer by printing an appropriate combination of process (CMYK) colors. The ability to simulate PANTONE colors is a basic form of color management.

Colorwriter support for the PANTONE color matching system consists of the Macintosh and Windows PANTONE Reference Book for coated and uncoated papers, included with the user software.

With the PANTONE Reference Book files, you can quickly print a book of PANTONE color simulations, accompanied by their CMYK percent values, on your Colorwriter. You can give this PANTONE Reference Book to all designers who specify PANTONE colors in their Macintosh and Windows applications. Designers can pick PANTONE colors from the book and then specify the colors in their applications by entering the CMYK values manually. You can use the CMYK Reference pages the same way.

Chapter 2: Operating the Printer

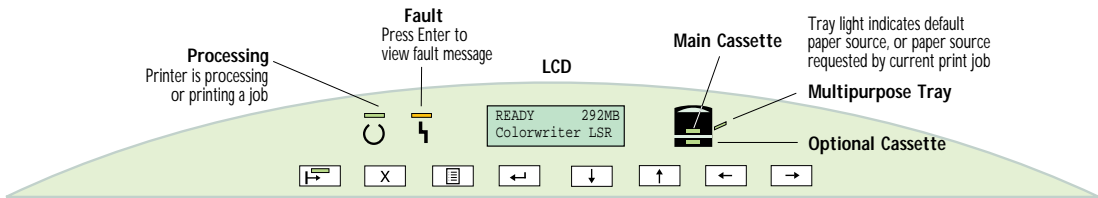
This chapter contains basic information on operating the Colorwriter. You'll find instructions on:

- Using the printer control panel
- Using the display window
- Using the density control panel
- Loading paper into the optional paper feeder unit
- Handling and storing paper
- Loading the paper cassette
- Loading paper into the multipurpose tray
- Loading transparency film

Printer control panel overview

The printer control panel on the front of the Colorwriter enables you to set options and view information about print jobs, in addition to displaying status information about the Colorwriter. The printer control panel is comprised of the following parts:

- Activity lights
- Buttons
- Display window



For a list of error messages that may be displayed on the printer control panel, see Appendix A. For a more detailed map of printer control panel information, see Appendix B.

Activity Lights

The activity lights indicate printer status and have the following meanings:



Lit when the printer is online and ready to print new jobs.



Flashes when the printer is receiving data, processing, printing, or the Downloader or Spooler is connected.



Lit when the printer requires operator intervention. Flashes when the printer is warming up or there is an error that prevents printing.



Main cassette light is lit when the main (upper) paper cassette is selected as the default tray or requested by the current print job.











Lower cassette light is lit when the optional (lower) paper cassette is selected as the default tray or requested by the current print job.



Multipurpose tray light is lit when the multipurpose tray is selected as the default tray or requested by the current print job.

Buttons

The buttons enable you to control print jobs and choose print options; they have the following meanings:

-  Suspends and resumes printing. Brings the printer offline for setup or for changing language of LCD screens.
-  Cancels the “oldest” job processing or printing. This button is active only when the Processing or Printing message appears.
-  At startup, or at the PRINTER OFFLINE screen, accesses the setup menus. In the setup menus, takes you back to the SELECT FUNCTION screen. When the Colorwriter is online, switches between the status windows and the Print Pages menu (and the warning window if a message is being displayed).
-  Selects the currently displayed choice on the second line of the display window and proceeds to the next option.
-  Takes you to the next entry in the list. In a fixed-length list, takes you to the next item in the list. When entering text, decrements to the previous character in the alphabet. Hold down the ↓ button to decrement rapidly.
-  Takes you to the previous entry in the list. In a fixed-length list, takes you to the previous item in the list. When entering text, increments to the next character in the alphabet. Hold down the ↑ button to increment rapidly.
-  In the setup menus, backspaces the cursor to the previous text-entry position. In a text field, deletes the current character as it backspaces.
-  In the setup menus, advances the cursor to the next text-entry position.

Display window

The display window is an LCD panel on the printer control panel that provides information on the status of the Colorwriter, enables you to print special pages, and enables you to view and edit printer setup information. For information about using the Printer Setup menu, see Chapter 4 of *Getting Started*.

Resetting default setup options

You can reset the setup options so that they are identical to the settings that came with the Colorwriter. For a complete description of the default setup options, see Chapter 4 of *Getting Started*.

TO RESET THE COLORWRITER'S DEFAULT SETUP OPTIONS:

1. Restart the Colorwriter by turning it off and then back on.
2. When the printer control panel displays the message "Press menu for setup" press the ↑ and ↓ buttons simultaneously.

The current settings are deleted. SELECT FUNCTION appears on the control panel.

3. Press the Menu button to initialize the printer.

The default setup options are restored to the Colorwriter.

Status messages

When the Colorwriter is printing normally, status information appears in the control panel. The messages are:

- INITIALIZING—Displays while the printer is initializing.
- READY—Appears when the printer is ready to print but not processing or printing a job. Also displays the free disk space and printer name.
- PROCESSING—Displays the name of the job currently processing.
- PRINTING—Displays the name of the job currently printing.
- CANCELING JOB—Appears when you cancel a print job.
- POWER SAVER MODE—Appears when the printer's Energy Star feature is active.

For further explanation of status messages, see Appendix A of this manual.

Warning, service, and error messages

If there is a printing problem, the fault light is lit, and an error message appears on the control panel. You can press the Menu button when an error message is displayed to see the other control panel screens. For information about error messages, see Appendix A.

Menu options

To display a list of special pages you can print from the Colorwriter control panel, press the Menu button. Use the ↓ and ↑ buttons to select the page you want to print, and then press the Enter button. The table below lists the special pages you can print.

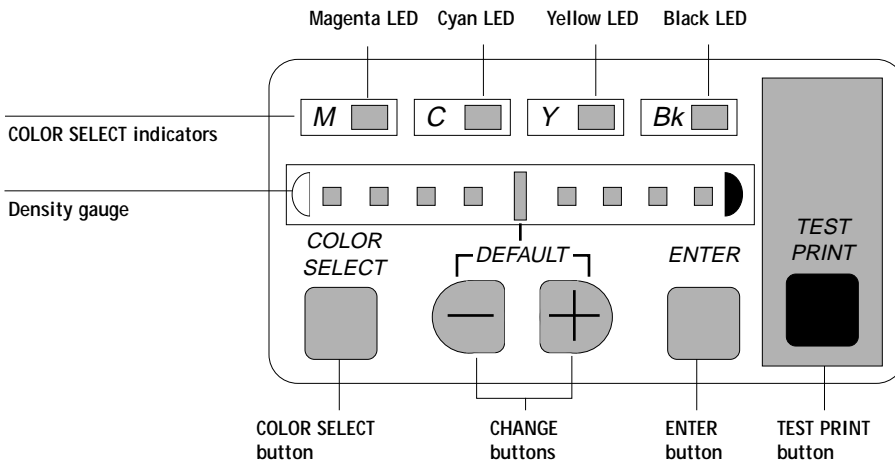
| Page | Description |
|---------------|--|
| Test Page | Prints a page with color and grayscale samples. Printing a test page enables you to detect printer problems. The following information also appears on the test page: printer name, product name, system software version, memory configuration, ethernet address, default paper size, and whether or not the optional cassette is installed. |
| Job Log | Prints the job log. For information on the fields in the job log and on printing the job log in other forms, see the section on using the job log with the Macintosh or Windows Colorwriter LSR Spooler (for Macintosh, Chapter 3; for Windows, Chapter 4). |
| Configuration | Prints the configuration page, which gives the current device configuration. This page lists the selected options for all Setup settings. Always print this page before calling service or upgrading memory. |
| Help Map | Prints an overview of the screens you can access from the printer control panel. |
| Color Pages | Prints the color reference charts. These pages display the RGB, CMY, and PANTONE color equivalents available from the Colorwriter. |
| Demo Page 1 | Prints a color page that is representative of what might be produced in a corporate environment. |
| Demo Page 2 | Prints a page that demonstrates RIP processing time. |

Using the density control panel

This section describes the density control panel located on the back of the Colorwriter. You can use the density control panel to:

- Change color density settings
- Change test pattern pages

The parts of the density control panel are shown in the following illustration:



M Lights when magenta is selected.

C Lights when cyan is selected.

Y Lights when yellow is selected.

Bk Lights when black is selected

Density gauge Indicates the currently selected color density or test print pattern.

COLOR SELECT Press this button to select one of the color selection indicators (M, C, Y, Bk) to change the density.

-/+ Use these buttons to change the density or to select a test pattern for the TEST PRINT function.

| | |
|------------|---|
| ENTER | After you select a new density for one of the color selection indicators (M, C, Y, Bk), press this button to save the new density for the selected color indicator. |
| TEST PRINT | Prints a built in test pattern (solid color, solid white, gradation, horizontal lines, vertical lines, or grid). Use the test print to check the results of a density change. |

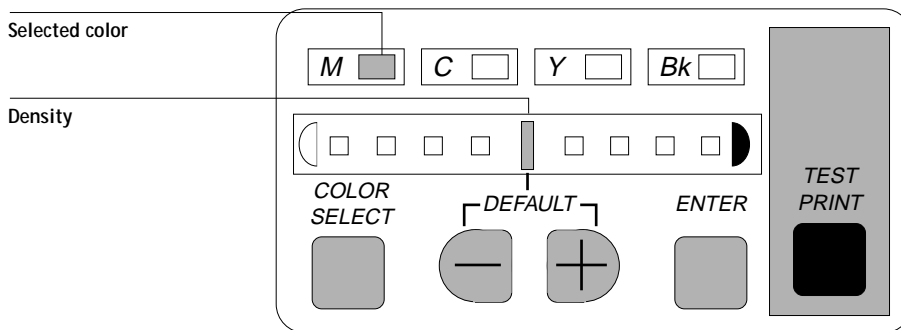
Density adjustment

Use the following procedure to customize the color density for printed pages. Note that you can change the color density while your job is printing. Before you calibrate the Colorwriter with the Fiery Print Calibrator, we recommend setting the density control panel to the neutral (center) position.

TO ADJUST COLOR DENSITY:

1. Press COLOR SELECT to select a color to change.

The LED lights up indicating the selected color and density.



2. Press + or – to change the density.

When you change the density from the current setting, the density gauge LED flashes.

3. Press ENTER to save the new density setting.

The density gauge LED stops flashing when the new color density settings have been saved. Turning the printer on and off does not change the color density settings. The new settings remain in memory until they are changed again.

When the printer is on, or the density control panel is not used for at least 30 seconds, it enters OFF mode. In OFF mode, the COLOR SELECT indicators go off and only the density gauge default LED (middle) lights if all the colors are set at the factory-shipping value. Otherwise all LEDs will go off.

If you press the + and - buttons for at least 5 seconds, all color densities are initialized to the default settings and the panel enters OFF mode.

Test patterns

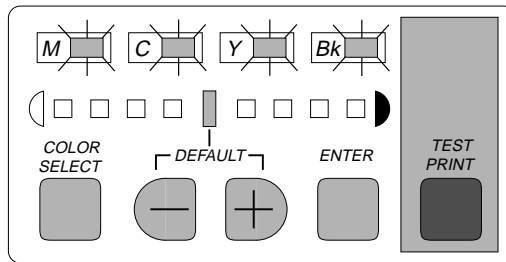
When the printer is idle, you can print a test pattern to check the printer color quality. Six test patterns are available and can be selected using the density control panel. If you change the test pattern, the alert button on the status panel flashes and jobs cannot be printed. Turning off the printer resets the test pattern to the default page (horizontal lines). The test pattern is printed from the main cassette and differs from the Test Page printed from the printer control panel.

2

TO CHANGE THE TEST PATTERN:

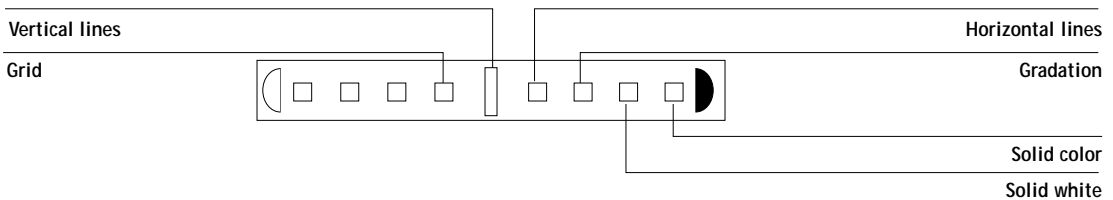
1. While holding down COLOR SELECT, press ENTER eight times.

All color indicator LEDs will flash to indicate the shift to the test pattern selection mode.



2. Press + and - to select a test pattern.

See the figure below for the relationship between the density gauge LEDs and the test patterns available. If you select another test pattern, the density gauge LED for the selected pattern will flash.



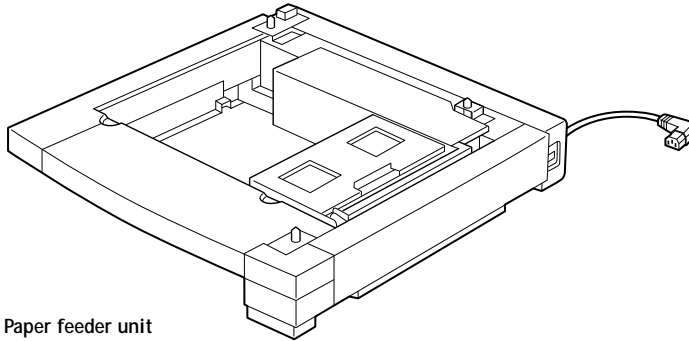
3. Press ENTER to save the changes.

The LED stops flashing to indicate that the new test pattern has been saved.

Using the optional paper feeder unit

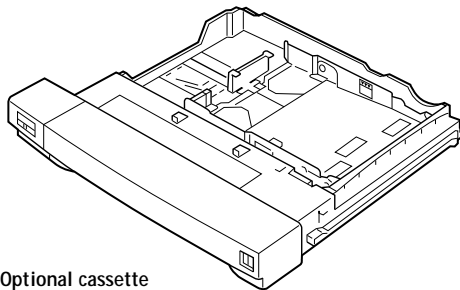
The optional paper feed unit gives you two distinct advantages:

- Increases the paper supply by approximately 250 sheets of 20-pound (80 g/m² stock), in addition to the 250-sheet capacity in the main cassette and the 100-sheet multipurpose tray.
- Adds flexibility in paper size. For example, you can store letter-size paper in the main cassette and A4-size paper in the paper feeder unit. Thus, you can switch the paper source from your computer without walking to the printer to change the paper size.



Paper feeder unit

The optional paper feeder unit comes with a cassette (shown below), which can hold about 250 sheets of plain paper. The supported paper sizes are Letter, A4, B5, and Legal. For instructions on attaching the optional paper feed unit, setting the paper size, and loading paper, see Chapter 2 of *Getting Started*.



Optional cassette

NOTE: The locking pins are included in the paper feeder unit package. Be careful not to lose them.

Handling and storing paper

Appropriate paper handling and storage keeps the paper in the best condition for printing. Follow the instructions below for handling and storing paper.

- Store unused paper in its wrapping to protect the paper against humidity.
- Do not store paper directly on the floor as the floor is generally humid.
- Use a specially designed storage box if you need to store paper in a very humid place.
- Put paper on a flat surface and do not stack the paper too high, to prevent excessive in-ream paper curl.
- Do not subject paper to direct sunlight or a humid environment.
- If the paper is moved to a place with a very different temperature, let the paper set there for about a day before you use it; otherwise paper curl or wrinkles will result.

For a list of unacceptable paper types, see page E-4.

Storing printouts

Note the following precautions for storing color printouts:

- Printed color hardly fades under normal room light. If you plan to keep the color printouts for a long period (more than two years), put them in a binder. (Sometimes the Printed color appears to change when in fact it is a color change in the paper itself.)
- Do not store color printouts together with PVC materials such as clear holders. The toner may melt, causing the paper and the PVC materials to stick together.
- Use only non-solvent glues to glue color printouts together.
- Solvents will dissolve the toner. Before using a glue, test it on unwanted printouts.

- Before inserting any color printout between printed pages, make sure the pages are completely dry, otherwise, the ink may cause the toner to melt.
- Store color printouts flat. If they are folded or wrinkled, the toner may come off.
- Store color printouts at room temperature. High temperature will cause the toner to melt and colors to mix.

Handling transparency film

Use the recommended transparency film for optimum printing results (see page F-6). This transparency film is designed exclusively for color laser printers. Under no circumstances should it be used with black and white laser printers or other types of color printers.

NOTE: Do not load transparency film into the paper cassette. Use the multipurpose tray instead. For information, see page 2-23.

Printed transparency film should be picked up as soon as it comes out of the printer. This prevents possible interference with succeeding copies. Make sure no silicone oil gets on the transparency film. It is recommended that you use the face down tray. Avoid high temperatures and high humidity. Be sure to store any unused transparency film in its protective bag.

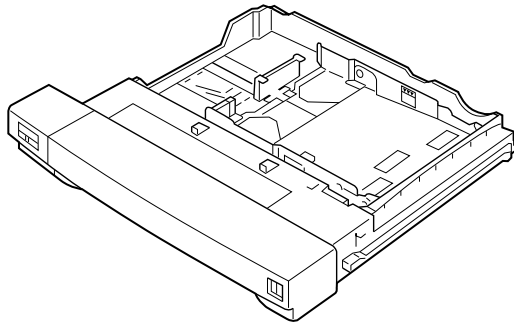
NOTE: Not all print media can be used on this printer. Always print a few pages before you purchase a large quantity of paper. For recommended paper to achieve optimum results, see page E-3.

Loading the paper cassette

The universal paper cassette included in the printer package can hold about 250 sheets of 20-pound (80 g/m² stock). The paper sizes supported are Letter, A4, B5, and Legal.



The Colorwriter is not designed to print on envelopes or labels. Attempting to print on those materials could damage the printer.



Before printing in an application, specify the paper size. If you specify a paper size other than what is in the printer, an error message appears on the printer control panel and the job will not print.

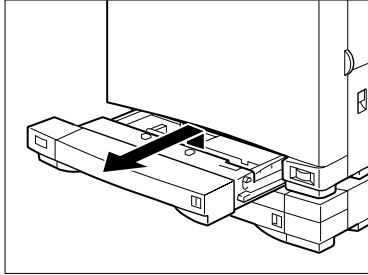
For a description of paper requirements, see Appendix E.

This section describes how to use the paper cassette. Before loading paper into the cassette, always fan the paper first to loosen any sheets that are stuck together.

NOTE: Do not load transparency film into the paper cassette. Use the multipurpose tray instead. For information, see page 2-18.

TO REMOVE THE PAPER CASSETTE:

- While pushing up the handle on the underside of the cassette, pull out the paper cassette.



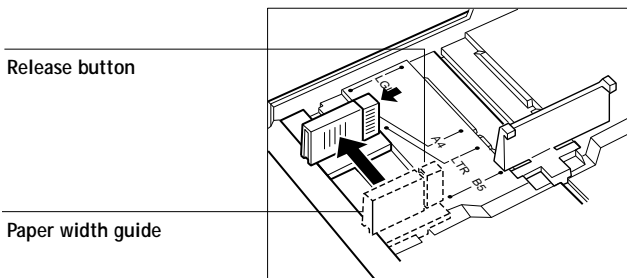
NOTE: To increase the paper supply, you can also add the optional paper feeder unit which comes with a universal paper cassette as well. For information on installing the feeder unit, see page 2-8 of *Getting Started*.

TO SET THE PAPER SIZE:

1. Place the cassette on a flat surface.

NOTE: The next two steps (2 and 3) are required for the printer to accept the new paper size.

2. While pressing the release button, slide the paper width guide until the desired paper width is selected (as marked on the tray), then release the button to lock.

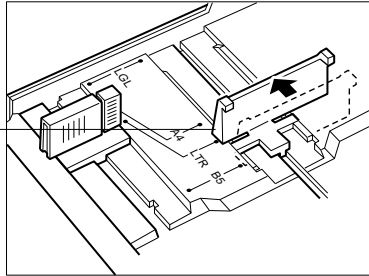


2

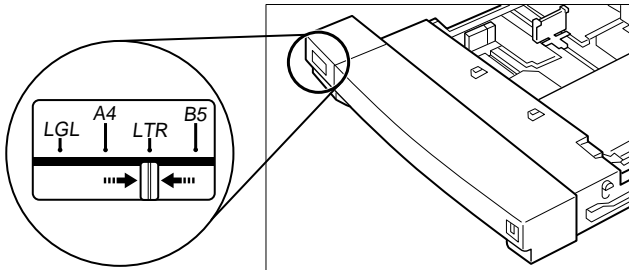
2-15 Loading the paper cassette

3. While lifting the paper length guide slightly, slide it until the desired paper length is selected (as marked on the tray), then release the guide to lock it.

Paper length
guide

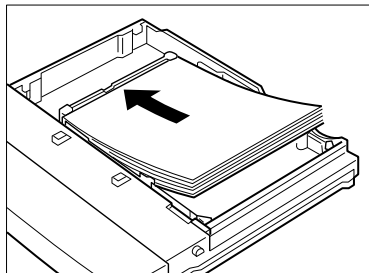


4. Set the size guide on the front of the cassette to the corresponding paper size.
The size guide provides you with a visual indication of the paper size loaded in the cassette.



TO LOAD PAPER:

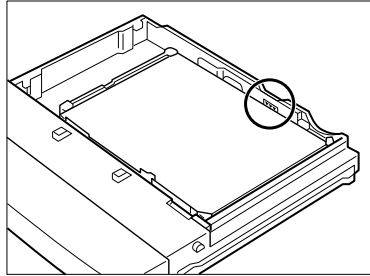
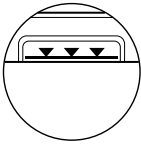
1. Place the cassette on a flat surface. Then place a stack of paper into the paper cassette, with the side you want printed on facing up and the bottom edge going into the cassette first.



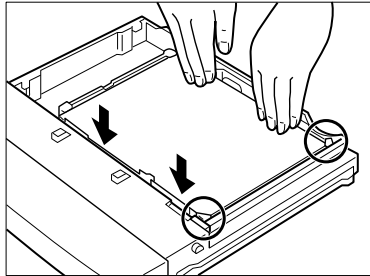
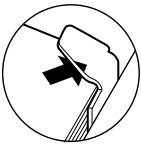
2

2-16 Loading the paper cassette

2. Check to see that the paper stack does not exceed the paper limit mark, otherwise a paper jam may result.

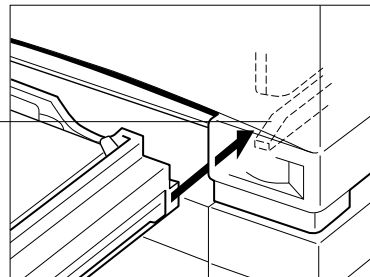


3. Press down on the paper so that it stays under the two retaining clips, otherwise a paper jam may result.



4. Align the paper cassette so that it rests on the rails inside the paper feeder unit.

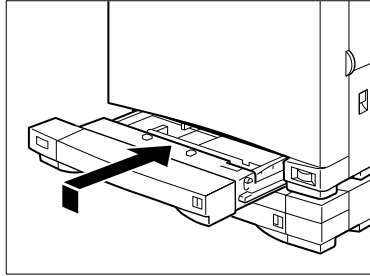
Rails



2

2-17 Loading the paper cassette

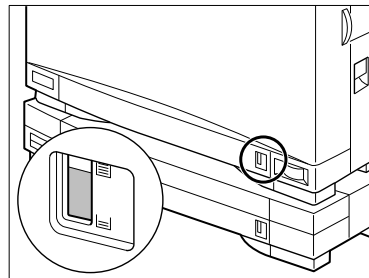
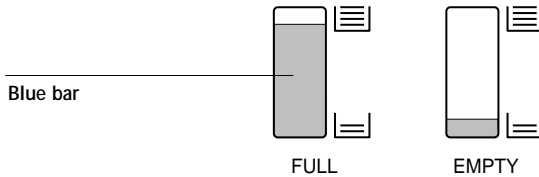
5. While pressing the handle upward, slide the cassette all the way into the paper feeder unit until it clicks into place.



The cassette is now ready to supply paper.

TO READ THE PAPER AMOUNT INDICATOR:

- The blue bar goes out of view as the paper is used. When the blue bar is completely out of view, refill the cassette.



With optional paper feeder unit

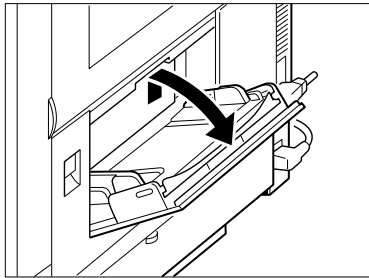
Loading paper into the multipurpose tray

The multipurpose tray holds about 100 sheets of paper. Various paper sizes and types are supported, including transparency film. See “Paper requirements” on page E-3 for a list of paper types supported. The tray can be closed when not in use.

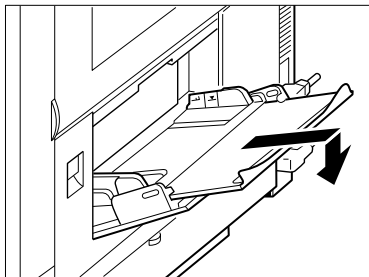
For information on loading transparency film, see page 2-23.

TO OPEN OR CLOSE THE MULTIPURPOSE TRAY:

1. Pull on the latch to open the multipurpose tray.

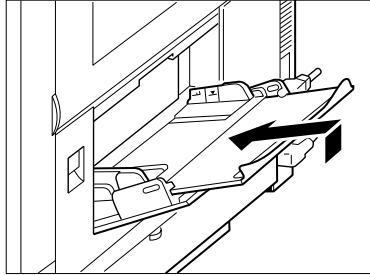


2. Pull out the extension tray, then gently press down to lock it.

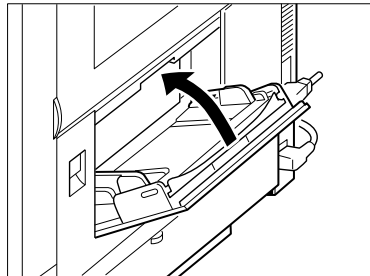


TO CLOSE THE MULTIPURPOSE TRAY:

1. Lift the end of the extension tray slightly, then push it into the multipurpose tray.

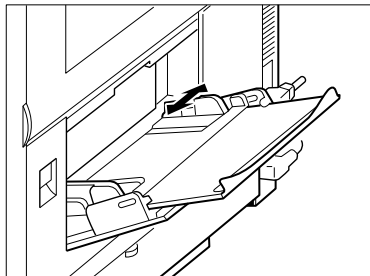


2. Close the multipurpose tray.



TO LOAD PLAIN PAPER:

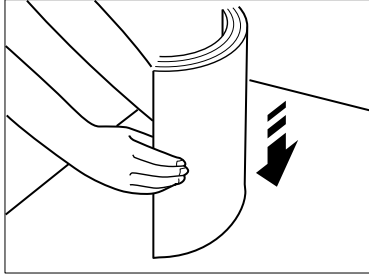
1. Adjust the paper guides to the desired paper size.



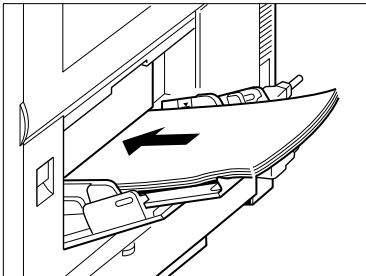
2

2-20 Loading paper into the multipurpose tray

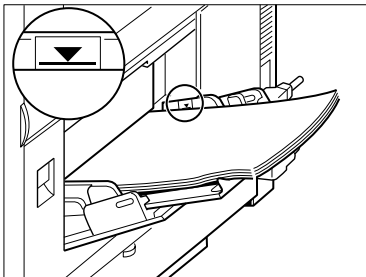
2. Tap a stack of paper on a flat surface to align its edges.



3. Insert the paper stack as far as it can go into the printer, making sure the print side is facing down and the top of the page is going into the printer first.



4. Check that the paper stack does not exceed the paper limit mark.



2

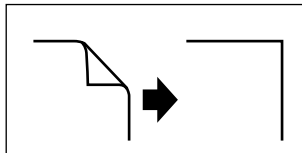
NOTE: Do not load the multipurpose tray with different sized paper at the same time.

Do not place anything but paper on the multipurpose tray. Also, avoid pressing or applying excessive force to the multipurpose tray.

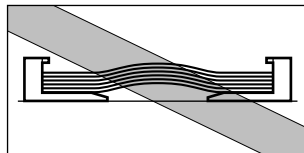
Do not add paper when there is still paper in the multipurpose tray; otherwise incorrect paper feed or a paper jam may occur. Add paper only when the multipurpose tray is empty.

If printed pages come out of the printer curled, you can correct the problem by reversing the paper stack in the multipurpose tray so that the bottom of the stack faces up.

If the leading edge of the paper to be used is curled, straighten it out as much as possible before loading it into the tray.



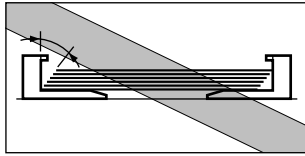
Do not set the paper guides so tight that the paper stack bends.



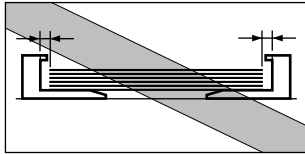
2

2-22 Loading paper into the multipurpose tray

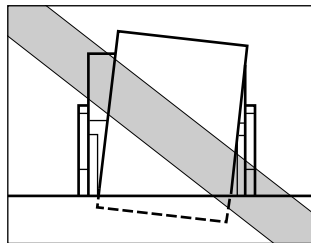
Do not set the paper guides so loose that the paper stack is not evenly aligned.



Do not set the paper guides so that there is space between the guides and the paper.



Do not place the paper into the multipurpose tray at an angle.

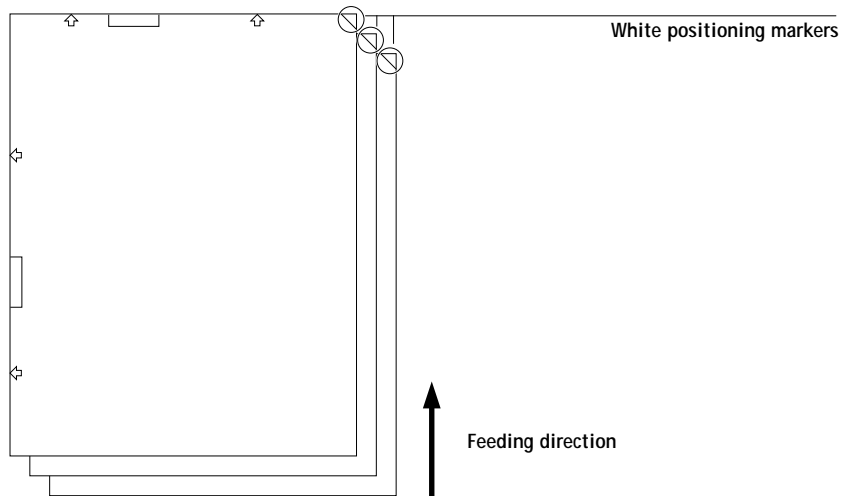


2

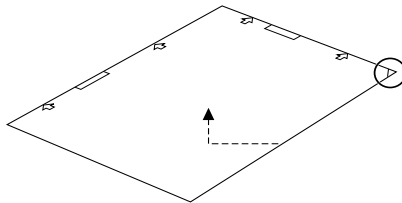
Loading transparency film

Transparency film can be loaded into the multipurpose tray only. About 20 sheets can be loaded at a time.

For optimal color print quality, use our letter-size or A4-size transparency film. For details, contact an authorized service representative. The transparency film has the following color markers for correct insertion:

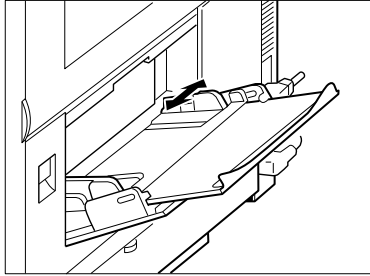


When feeding transparency film into the printer, position each sheet so that the white positioning marker (triangle) is on the upper right. The Colorwriter accepts short edge feed only. Looking at a transparency with its white marker positioned at the upper right, the side facing away from you is the print side.

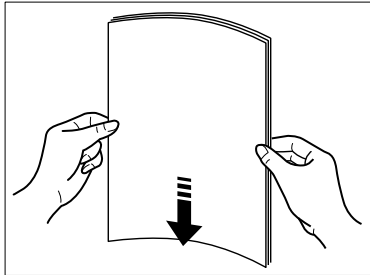


TO LOAD TRANSPARENCY FILM:

1. Open the multipurpose tray (see page 2-18 for this procedure).
2. Adjust the paper guides to accept transparency film (A4 or Letter size).

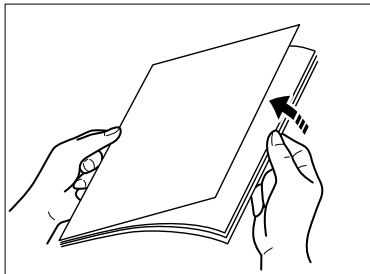


3. With the white positioning marker on the upper right, tap a stack of transparency film on a flat surface to align its edges.



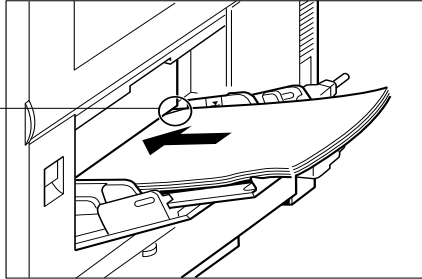
NOTE: When tapping, try to hold the edges and avoid touching the print sides.

4. Before loading, fan the stack of transparency film to prevent sticking. Be careful not to scratch or leave fingerprints on the print sides.



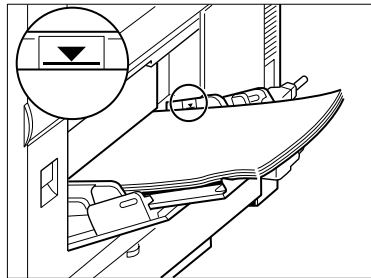
5. Position each sheet so that the white positioning marker is on the upper right as shown, and push it as far as it can go into the printer.

White positioning marker



NOTE: When you hold the transparency film this way, the print side is facing down on the multipurpose tray. Therefore try to keep the print sides free of scratches or fingerprints when placing them on the tray.

6. Check that the transparency film does not exceed the paper limit mark.



7. Make sure the proper paper delivery is selected.

For information about handling transparency film, see page 2-12.

Chapter 3: Printing from Macintosh Computers

You can print to the Colorwriter from any Macintosh computer with Ethernet installed. First, select the Colorwriter LSR 2000⁺ as the current printer with the Chooser desk accessory, then print the file from within your application. You may use the Page Setup or Print dialog box to set printing options after you select the Colorwriter in the Chooser.

Printing from applications

You can print to the Colorwriter from Macintosh applications by selecting the desired Colorwriter or Colorwriter queue in the Chooser. If you have installed the Adobe PostScript Printer Driver 8.0 or later or the LaserWriter printer driver version 8.0 or later, you can use the Print Options dialog box to override some of the printer settings on the Colorwriter. (We recommend that you use the Adobe PostScript Printer Driver.) For information about achieving the best printing results from specific applications, see “Application notes” on page 3-29.

TO SELECT THE COLORWRITER AS THE CURRENT PRINTER:

1. Make sure that the Colorwriter is connected to your network and turned on.
2. Select Chooser from the Apple menu.
3. Click the PSPrinter icon or the LaserWriter 8.0 icon to select the driver.
Select PSPrinter if you are using the Adobe PostScript Printer Driver; select LaserWriter 8 if you are using the LaserWriter printer driver.
4. If your network is divided into zones, select the zone in which the Colorwriter is located.
5. Select the Colorwriter in the list that appears.

The names of all supported printers in the zone display in the Chooser window. Unless your system administrator has renamed it, the printer is named Colorwriter LSR.

PCK If you have the PCK option, and your system administrator has enabled all connections, you can select Colorwriter LSR_Direct to print to the direct connection and bypass spooling, Colorwriter LSR_Print to print to the Print queue, or Colorwriter LSR_Hold to print to the Hold queue.

NOTE: If your system administrator disabled one of these connections the corresponding name will not appear in the Chooser. If your Colorwriter has the 16MB configuration, only a single name will appear in the Chooser, representing the direct connection.

6. Make sure that AppleTalk is Active and then click the close box to quit the Chooser.

Turning off Background Printing prevents the Macintosh from spooling the printing jobs. The Colorwriter remains selected as the current printer until you choose a new printer in the Chooser.

TO PRINT FROM A MACINTOSH APPLICATION:

1. Make sure that any printer description files needed by the application are installed on your Macintosh.

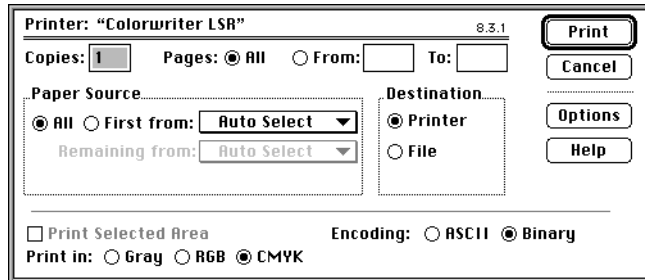
See Chapter 6 of *Getting Started* for information on which files you need and where to install them.

2. Open the file you want to print from within the application.
3. Choose Page Setup from your application's File menu.
4. Select the printing options you want in the Page Setup dialog box and click OK. If the LaserWriter Page Setup dialog box lets you select from a list of available printers, select the Colorwriter LSR 2000⁺.

NOTE: The **Text Smoothing**, **Graphics Smoothing**, and **Faster Bitmap Printing** options have no effect on your printed document when you print with the Colorwriter.

5. Choose Print from the application's File menu.

6. Select the options you want and click Print.



NOTE: Print and Print Options dialog boxes vary among printer drivers and applications.

If you can select a **Paper Source**, specify the paper tray to use for the job. For example, you can use this dialog box to specify that the job should be printed on the media in the **Multipurpose** tray.

7. Click Options to set additional information for the print job.

NOTE: These additional options are available if you are using the Adobe PostScript Printer Driver or the Apple LaserWriter driver version 8.0 or later.



The options in the lower part of this dialog box are specific to the Colorwriter. They override default settings in the Printer Setup from the control panel.

Scroll to see all the options.

Make sure that **Color/Grayscale** or **ColorSync Color Matching** is chosen from the Print pop-up menu, otherwise your file may print in black and white.

Choosing **ColorSync Color Matching** allows you to use the ColorSync 2.0 profiles. With this option, make sure you also select the Colorwriter profile.

Click **Save** after you change the options to make the new settings your default settings. Don't click **Save** if you want to use the Colorwriter defaults for each job.

NOTE: This affects printing from all applications, not just the one you are using.

If you select **Printer's Default**, the Colorwriter prints with the instructions entered during Setup for Color Mode and Rendering Style. The options you can specify are:

Color Mode—CMYK/Grayscale

Specify the color mode for the document. Select **CMYK** if it is a color document. Select **Grayscale** if it is a grayscale document or if you want a color document to print in grayscale.

Paper Type—Plain Paper/Transparency

Use this option to specify the type of media to be printed on. Select **Plain Paper** if you will be printing on standard printer paper. Select **Transparency** if you will be printing on a transparency.

Rendering Style—Photographic/Presentation/Monitor/Solid Color

Use this option to select a default color rendering dictionary (CRD) to be used when you print an RGB file from the Adobe PostScript Printer Driver or an application such as Adobe Photoshop that supports PostScript Level 2.

Selecting the appropriate color rendering dictionary for the type of image you are printing assures optimum color output on the Colorwriter. The **Photographic** CRD optimizes the range of colors on the Colorwriter to produce the best results for photographic or bitmapped images. The **Presentation** CRD optimizes the output of pure, saturated colors such as those used in business presentations, and is especially suited for printing transparencies. The **Solid Color** CRD is most useful for printing spot colors such as those found in company logos. The **Monitor** CRD improves the correspondence between colors as they are displayed on the computer monitor and colors in the printed output.

NOTE: Color rendering dictionaries are not used when CMYK files are sent to the Colorwriter, nor are they used when RGB files are sent from PostScript Level 1 applications when using any printer driver or QuickDraw applications when using the LaserWriter 7.x or other PostScript Level 1 printer drivers.

Brightness—85% Lightest/90% Lighter/95% Light/100% Normal/105% Dark/110% Darker/115% Darkest

Change the Brightness setting if a file prints too dark or too light. Select **85%** for a substantially lighter image, **115%** for a substantially darker image, or one of the options in between.

PCK You can override this setting in the Colorwriter LSR Spooler Override Print Settings window (see page 3-24).

8. In the Printer Setup dialog box, click OK to accept the changes.

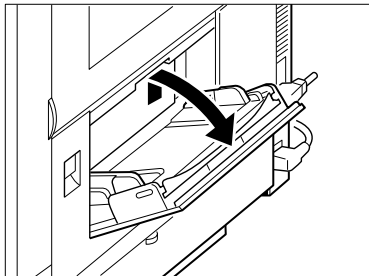
Printing pages from the multipurpose tray

You can use the Colorwriter to print manually fed pages if you want to print on special paper, such as letterhead or colored paper, or a transparency.

TO PRINT PAGES USING THE MULTIPURPOSE TRAY:

1. Open the multipurpose tray and insert a sheet of paper or a transparency.

For information on using transparency film, see page 2-23. For information on loading multiple sheets of paper into the multipurpose tray, see page 2-18. Be sure to use the page size specified in the Page Setup dialog box of your application.



2. From your application, select Multipurpose Tray as the Paper Source in the Page Setup or Print dialog box.

If you want to print on a transparency, click Options in the Print dialog box, choose Transparency for the Paper Type, and choose Presentation for the Rendering Style. Some applications provide these options from different dialog boxes.

3. Click Print in your application's Print dialog box.

A message appears on your Macintosh screen and on the printer control panel reminding you to insert paper in the multipurpose tray. Click OK.

The job prints on the page that was inserted in the multipurpose tray. If you did not specify the correct size for the page you are printing, the page may not be centered when it prints.

Using Colorwriter LSR utilities

PCK The Macintosh utilities enable you to perform additional functions with your Colorwriter. The following utilities are included on the Colorwriter User Software CD:

- The Colorwriter LSR Downloader
- The Colorwriter LSR Spooler
- The Fiery Print Calibrator

PCK **NOTE:** The Colorwriter LSR utilities can be used only if you have a Colorwriter LSR 2000⁺ with the PCK option installed.

Using the Colorwriter LSR Downloader

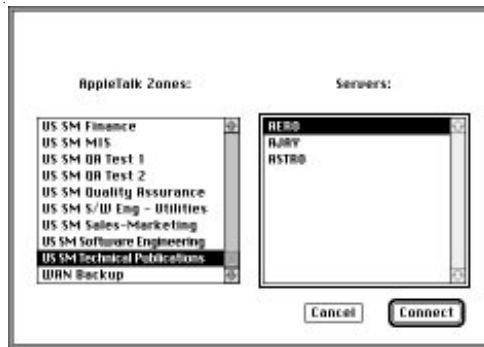
PCK You can use the Colorwriter LSR Downloader to:

- Print PostScript and Encapsulated PostScript (EPS) files.
- Check the status of the Colorwriter.
- Manage the PostScript printer fonts stored on the Colorwriter hard disk.

NOTE: You can also use standard LaserWriter downloaders, such as the Adobe Font Downloader, with the Colorwriter LSR 2000⁺. The Colorwriter LSR Downloader was designed specifically for the Colorwriter LSR 2000⁺ printer. You cannot use it with any other printer.

TO VIEW STATUS INFORMATION WITH THE COLORWRITER LSR DOWNLOADER:

1. Double-click the Colorwriter LSR Downloader icon.
2. Select the Colorwriter LSR 2000⁺ in the Chooser window that appears and click Connect.



You see the Colorwriter LSR Downloader window, with a File menu, icons, the Colorwriter Status window, and a status bar at the bottom of the screen.



Icons for some menu functions are displayed in the Toolbar at the top of the window. Click the button to perform the function. You can toggle the display of the Toolbar by choosing Toolbar in the View menu. The icons are:



Open Colorwriter

Click this button to connect to a different Colorwriter or Colorwriter queue



Download

Click this button to download a file or font to the Colorwriter



Display font list

Click this button to display a list of the fonts on the Colorwriter's hard disk.



Display status window

Click this button to display the status window for the current Colorwriter.

The Print Status region displays the printer status, the user name, and document name of the job currently printing.

The RIP Status region displays the server status, the user name, and the document name of the job currently processing.

The Download Progress bar displays the number of bytes processed when you download a job to the printer.

The Colorwriter Hard Disk area displays the amount of available disk space on the Colorwriter LSR 2000⁺.

You can click the Display Font List button or choose **Font List** from the File menu to view font information in the window.

3. To select a different Colorwriter choose Open from the File menu, select another Colorwriter in the Chooser window that appears, and click Connect.
4. To close a particular Downloader window, click to make it active, and choose Close from the File menu. To close the application, choose Quit from the File menu.

Printing with the Colorwriter LSR Downloader

Printing PostScript files with Colorwriter LSR Downloader is fast—generally faster than printing from within applications. If you regularly print large files, be sure to try printing with the Colorwriter LSR Downloader.

TO DOWNLOAD A FILE WITH THE COLORWRITER LSR DOWNLOADER:

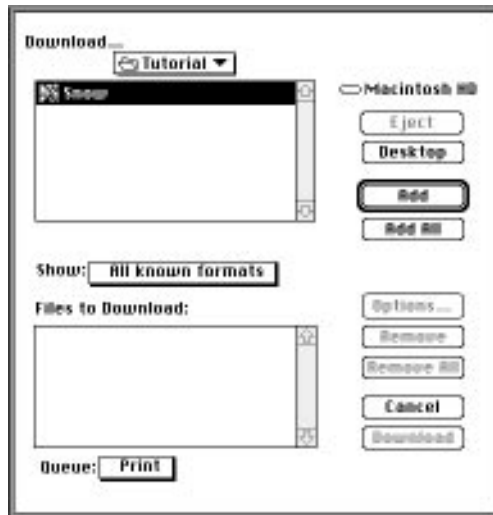
1. Use your application to generate a PostScript or EPS file.

You can save a PostScript file by selecting the PostScript option in the application's Print dialog box. With some applications, you can save Encapsulated PostScript (EPS) files.

If you experience problems printing EPS files with the Colorwriter LSR Downloader, you can print the file directly from the application in which you created it.

2. Double-click the Colorwriter LSR Downloader icon.
3. Choose Download from the File menu or click the Download button.

A dialog box containing a list of files appears.



4. Select the file type to display in the Show pop-up menu.

You can leave this at the default **All known formats**, or select **All Files**. **All known formats** will list all files in formats supported by the Colorwriter LSR Downloader; **All Files** will list all files.

NOTE: You can download files and fonts in the same batch.

5. Select where to download the file in the Queue pop-up menu.

You can select the **Print** queue, **Hold** queue, or **Direct** connection. Disabled queues will not appear in the pop-up menu. Fonts automatically go to the Direct connection.

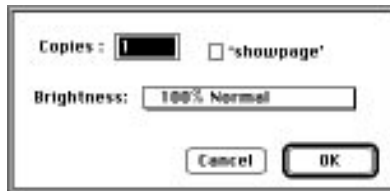
6. Select the filename and click Add.

You can use the dialog box to move to different drives and directories to select files to download. Click **Add All** to add all files in a folder.

If you change your mind about a file, select the filename in the **Files to Download** list and click **Remove**.

Click **Remove All** to remove all files from the **Files to Download** list.

7. To change attributes of a job, select it and click Options.



8. Specify the following information in the dialog box and click OK.

Copies—Specify the number of copies you want by entering the number in the **Copies** text box.

Brightness—Change the Brightness setting if the printed results are too dark or too light. Select **85%** for a substantially lighter image, **115%** for a substantially darker image, or one of the options in between these two values.

NOTE: Some applications, including Adobe Photoshop, provide transfer functions that let you specify density settings for an image. If the file you are printing includes transfer functions, the Colorwriter LSR Downloader **Brightness** options will have no effect on your printout. For more information on using transfer functions, see the documentation for your application.

'showpage' (after EPS files)—In most cases, you do not need to use this option. Select the **'showpage'** option only if an EPS file fails to print without it. This option adds a “showpage” PostScript language command at the end of the print job. If you select this option unnecessarily, extra blank pages may print.

9. Repeat steps 7 and 8 for any other jobs as needed.
10. When you have selected all files, click Download.
11. Press Command-Period (.) to cancel downloading.

Downloading and managing printer fonts

Before printing a PostScript or EPS file that requires fonts that are not resident on the Colorwriter LSR 2000+ hard disk, you must download the fonts manually.

The Colorwriter comes with PostScript fonts. These include regular, bold, italic, and bold italic versions of Courier, Times, Helvetica, Helvetica Narrow, Helvetica Condensed, ITC Avant Garde, Palatino, ITC Bookman, and New Century Schoolbook. Also included are ITC Zapf Dingbats, ITC Zapf Chancery, and ITC Symbol.

NOTE: You cannot use the Colorwriter LSR Downloader to download TrueType fonts. For information on downloading fonts from a Windows computer, see page 4-20.

TO DOWNLOAD A PRINTER FONT:

1. Double-click the Colorwriter LSR Downloader icon.
2. Make sure the direct connection is selected.
If necessary, select **Open** from the File menu to open a new connection.
3. Choose Download from the File menu.
4. Select the printer fonts you want to download and click Add, or double-click the printer font name. Choose Add All to add all of the fonts in the current folder.
Printer fonts are usually stored in the Fonts folder or Extensions folder inside the System Folder. Select the Fonts or Extensions folder from within the System Folder, and click **Open**. A list of available fonts appears.
5. Repeat Step 4 for all fonts you want to download.
If you change your mind, select the font in the **Files to Download** list and click **Remove**. Click **Remove All** to remove all files from the list.
6. When you have selected all fonts, click Download.

Printer fonts and Macintosh screen fonts

Like all PostScript fonts, the fonts included with the Colorwriter LSR 2000⁺ come in two forms: printer fonts and screen fonts. The printer fonts are installed permanently on the Colorwriter LSR 2000⁺ hard disk. The screen fonts which are included with the Colorwriter LSR 2000⁺ should be installed on your Macintosh. If you are using these fonts in documents you print on a LaserWriter, they are probably already installed. If not, you'll need to install them yourself. See Chapter 6 in *Getting Started* for instructions.

Occasionally, you may want to use PostScript fonts that are not included with the Colorwriter LSR 2000⁺. If so, you'll need to install both the screen fonts and the printer fonts on your computer. To do this, follow the instructions from the font manufacturer.

Downloading printer fonts to the Colorwriter

In general, each time you print from within an application, the application automatically downloads any fonts used in your document that are not already

installed on the Colorwriter LSR 2000⁺, as long as the printer fonts are installed in your System Folder. These fonts remain in the Colorwriter only until your document has printed. If you print the same document again, your application must download the fonts again.

If you regularly use one or more fonts from the Macintosh that are not already installed on the Colorwriter, you can save time by downloading them to the Colorwriter with the Colorwriter LSR Downloader. Fonts you download to the Colorwriter remain installed until you remove them using the Colorwriter LSR Downloader, no matter how many times the Colorwriter is turned off and on. You'll probably want to download fonts you use on a regular basis to the Colorwriter.

Before you print PostScript or Encapsulated PostScript (EPS) files using the Colorwriter LSR Downloader, make sure that all fonts included in your file are installed on the Colorwriter. If your file contains fonts that are not installed on the Colorwriter, the text in these fonts will not print correctly and may not print at all. With some drivers, you can include fonts when you create PostScript files. See your application software for information.

TO VIEW FONT INFORMATION:

1. Choose Font List from the File menu or click the Font List button.

The Font List window is displayed with the Update, Print, and Delete buttons in the titlebar.



The icons in the Font list window are:



Update

Click this icon to update the information in the font list window.



Print Font
List

Click this icon to print the font list.



Delete

Select a font and click this icon to delete it from the Colorwriter hard disk.

2. Click the Update button to update the information in the list.
3. Click the Print Font List button to print the font list.
4. Highlight a font and click the Delete button to delete the font.

Shift-click to select multiple fonts.

NOTE: The 39 printer fonts included with the Colorwriter (resident fonts) are locked. Locked fonts appear with a lock icon next to the name and cannot be deleted.

Using the Colorwriter LSR Spooler

PKK The Colorwriter LSR Spooler lets you monitor and manipulate the print jobs that you send to the Colorwriter. It also lets system administrators track and manage all users' print jobs.

Colorwriter LSR Spooler jobs can be in one of the following queues:

- | | |
|---------|---|
| Print | Print jobs sent to the Colorwriter Print queue appear in the Print queue list. You can move and manipulate these jobs as described below. |
| Hold | Jobs sent to the Hold queue remain in the Hold queue until they are moved to the Print queue or deleted. If you need to print the same document frequently, you can send it to the Hold queue and move a copy of the job to the Print queue every time you need to print it. You can also print large jobs to the Hold queue and then move them to the Print queue when other users are not printing. |
| Printed | The jobs most recently printed by the Colorwriter are saved in the Printed queue. You can drag these jobs back to the Print queue to print additional copies. The number of jobs saved in the Printed queue is set by your System Administrator in the Printer Setup. |

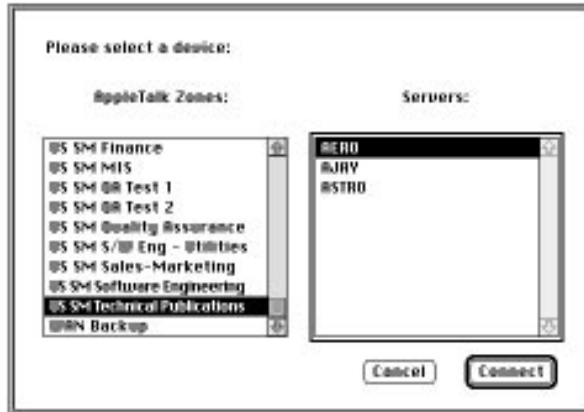
Jobs in the queues are stored on the Colorwriter hard disk. Make sure that you leave enough space on the hard disk for fonts and other Colorwriter LSR Spooler jobs. Files printed to the direct connection are not available from the Colorwriter LSR Spooler.

You can use the Colorwriter LSR Spooler job log for job accounting purposes, or just to view information about jobs printed to the Colorwriter. The job log can be printed to the Colorwriter or saved as a file and viewed in other applications.

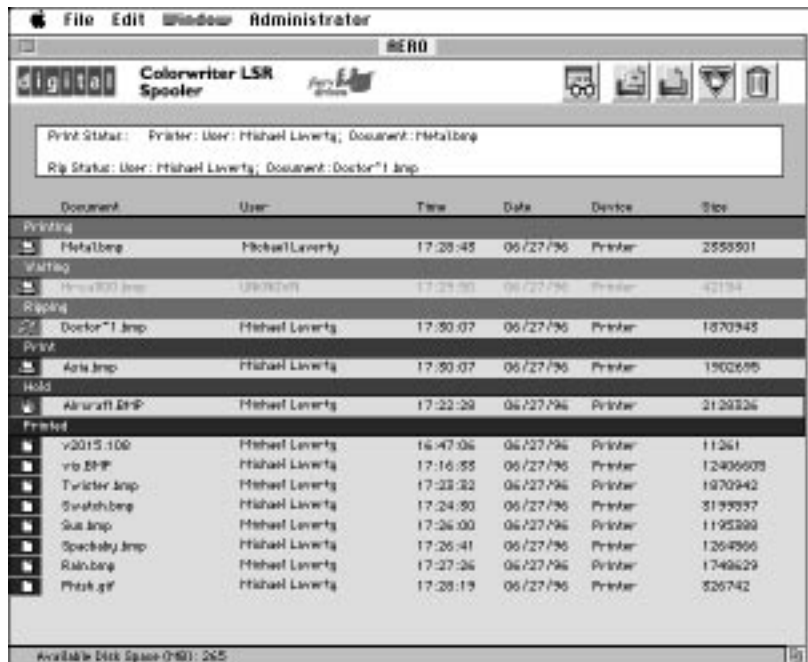
TO USE THE COLORWRITER LSR SPOOLER:

1. Double-click the Colorwriter LSR Spooler icon.

2. Select the Colorwriter LSR 2000⁺ from the list of devices, and click Connect.










The Colorwriter LSR Spooler main window and File, Edit, Window, and Administrator menus appear.



The job list includes information about the document name, user name, time and date sent, print device, and file size.

The window is split into regions that correspond to the different queues and steps in the printing process. You can click and drag a job to the Print or Hold region of the window to move it to the corresponding queue.

The icons provide information about the job:

| | | | |
|----------|---|--------------|---|
| Printing |  | Print icon | The job that is currently printing appears in this list. It can be selected and deleted to cancel printing. |
| Waiting |  | Print icon | Jobs that have been processed and are waiting to be printed appear in this list. They are dimmed because they cannot be canceled, their settings cannot be changed, and they cannot be moved. |
| Ripping |  | RIP icon | Jobs that are processing appear in the scroll list, but they are dimmed because their settings cannot be changed and they can't be moved. |
| Print |  | Print icon | Jobs that are waiting to be printed that have not been processed appear with the Print icon. This list shows jobs in the order they will be printed. |
| Hold |  | Hold icon | Jobs in the Hold queue appear with the Hold icon. You can move the job to the Print queue to print it. |
| Printed |  | Printed icon | Jobs that have been printed are saved in the Printed queue and appear with the Printed icon. Jobs are stored in the Printed queue until the limit set in the Printer Setup on the control panel is reached. |
| Printed |  | Alert icon | If a PostScript error occurred while a job was printing, it appears in the Printed queue with an Alert icon next to it. You can double-click the Alert icon to display the error message. |

Icons also appear above the scroll list. The icons are:



Update

Click this icon to update the information in the Colorwriter LSR Spooler main window.



Duplicate and Print

Drag a job onto this icon or select the document and click this icon to move a duplicate of the job to the Print queue.



Print

Drag a job onto this icon or select the document and click this icon to move it to the Print queue.



Hold

Drag a job onto this icon or select the document and click this icon to move it to the Hold queue.

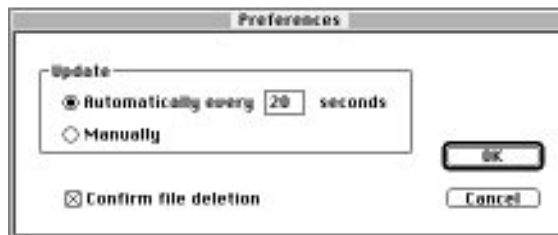


Delete/
Cancel

Drag a job onto this icon or select the document and click this icon to delete it or cancel processing or printing it. You will be asked to verify that you want to delete the job. You can eliminate the verification notice by turning off the **Confirm file deletion** option in the Preferences window.

3. Choose Preferences from the Edit menu to specify how the Colorwriter LSR Spooler behaves.

The Preferences window appears.



You can use this window to specify that the Colorwriter:

Update Automatically every *n* seconds or **Update Manually**—This option lets you specify whether the Colorwriter LSR Spooler main window is automatically updated every 20 seconds (or at an interval that you set), or whether it is updated

only when you choose the Update command from the Window menu. By default, the Colorwriter LSR Spooler main window is updated automatically every 20 seconds.

NOTE: When automatic updating is on, data from the Colorwriter is transmitted over the network very frequently. This data adds to the network traffic, and may slow down other network jobs. For optimum network performance, turn off automatic updating in the Colorwriter LSR Spooler Preferences dialog box; when you want to view updated information in the Colorwriter LSR Spooler windows, choose Update from the Window menu or click the Update icon.

Confirm file deletion—Select this if you want a confirmation dialog box to appear before you delete a file.

4. If you selected Manual updating in the Preferences window, choose Update from the Window menu to update the information in the Colorwriter LSR Spooler window.

To manage print jobs, see page 3-22.

To use the job log, see page 3-25.

5. To display information about a different Colorwriter, choose Open Colorwriter LSR from the File menu.

The Chooser window appears.

6. Select the Colorwriter LSR 2000⁺ in the Chooser.

The Colorwriter LSR Spooler main window appears and displays information about the Colorwriter you selected.

7. You can move between Colorwriter LSR Spooler windows by choosing the Colorwriter LSR 2000⁺ name in the Window menu.

8. Choose Close from the File menu to close the connection to the current Colorwriter; choose Quit from the File menu to quit the Colorwriter LSR Spooler application.

Duplicating, copying, moving, and deleting jobs

Users can always move, delete, and configure their own print jobs. If a password has been set, users can manipulate only their own print jobs; the Colorwriter system administrator (or anyone with Colorwriter LSR Spooler password access) can move, prioritize, delete, and configure jobs for all users.

You can move your jobs from the Hold queue and the Printed queue to the Print queue. If, for example, you frequently print the same file, you can send it to the Hold queue and later drag a copy of the file to the Print queue. By copying rather than moving a job, you leave a copy of the job in the Hold queue so that you can print the job again later. You can also duplicate a job if you want to have multiple copies of a job in the same queue.

Duplicating jobs

When you duplicate a job, the Colorwriter creates a reference to the original file, so duplicate files do not require the full amount of disk space on the Colorwriter. As long as one of the duplicates remains, the Colorwriter saves the file, so you can delete all but one reference to a file.

TO DUPLICATE A JOB WITHIN A QUEUE:

1. Select the job that you want to copy by clicking its name.

The selected job is highlighted. If you want to select more than one job, Shift-click to select multiple, adjacent jobs; Command-click to select multiple, non-adjacent jobs in the list.

2. Choose Duplicate Job from the Edit menu.

The job appears at the bottom of the queue.

TO DUPLICATE AND PRINT A JOB:

1. Select the job that you want to copy by clicking its name.

The selected job is highlighted. If you want to select more than one job, Shift-click to select multiple, adjacent jobs; Command-click to select multiple, non-adjacent jobs in the list.

2. Click the Duplicate and Print icon, or drag the job to the Duplicate and Print icon. The job appears at the bottom of the Print queue.

TO COPY A JOB TO ANOTHER QUEUE:

1. Select the job that you want to copy by clicking its name.
The selected job is highlighted. If you want to select more than one job, Shift-click to select multiple, adjacent jobs; Command-click to select multiple, non-adjacent jobs in the list.
2. Click Command-D to duplicate the job.
3. Drag the duplicate job to either the Hold or Print queue icon or to the Hold or Print section of the job list.
A copy of the job is moved to the queue you have selected, but the original job still appears in the Hold or Printed queue so that you can print the job at another time.

TO MOVE A JOB WITHIN A QUEUE:

1. Choose Password from the Administrator menu and enter the password.
If there is no password, go to step 2.
2. Select the job that you want to move by clicking its name.
The selected job is highlighted. If you want to select more than one job, Shift-click to select adjacent jobs in the list; Command-click to select multiple, non-adjacent jobs in the list.
3. Drag the file to the new location in the queue.

TO MOVE JOBS BETWEEN QUEUES:

1. Select the job that you want to move by clicking its name.

The selected job is highlighted. If you want to select more than one job, Shift-click to make selections of adjacent jobs in the list; Command-click to select multiple, non-adjacent jobs in the list.

2. Move the selected job to another queue by dragging it to the queue icon of your choice or to the Hold or Print section of the job list.

For example, move a job that is currently in the Hold queue to the Print queue by dragging the job to the Print queue icon.

TO DELETE A JOB FROM ANY OF THE QUEUES:

1. Select the job that you want to delete by clicking its name.
2. Drag the selected job to the Delete icon or click the Delete icon.

You can also choose **Delete** from the Edit menu to delete a selected job.

If a password has been set, you can only delete your own jobs; system administrators who enter the Colorwriter LSR Spooler password can delete any job. See page 3-28 for more information.

Changing print settings for a job

You can use the Override Print Settings window to set certain printing parameters for a job. The settings in this dialog box override the settings made in the Print Options window and the control panel Printer Setup.

You can only change printing parameters for jobs in the Hold, Print, and Printed queue sections of the Colorwriter LSR Spooler main window.

If a password has been set, you can only change print settings for your jobs; system administrators who enter the Colorwriter LSR Spooler password can change print settings for any job. See page 3-28 for more information.

TO CHANGE PRINT SETTINGS FOR A JOB:

1. Double-click a job or select the job and choose **Override Print Settings** from the **Edit** menu.

The **Override Print Settings** dialog box appears.



2. Select the new settings.

Select any of the options in the pop-up menus. If you select **Default Settings**, the job will use the settings in the **Print** dialog box.

3. Click **OK** to make changes.

Using the job log

With the Colorwriter LSR Spooler, you can view and print a log of all the jobs printed to the Colorwriter. You can also save the job log as a text file that you can then import into a spreadsheet or word processing application for job accounting purposes. All printed or downloaded jobs are listed in the job log.

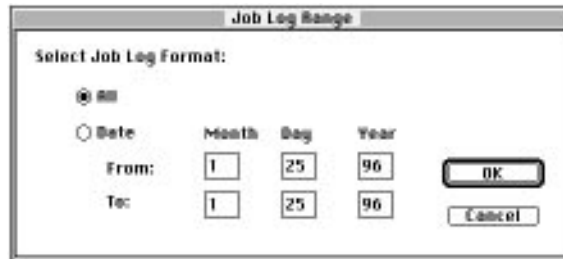
TO DISPLAY, PRINT, AND SAVE THE JOB LOG:

1. Choose **Show Job Log** from the **Window** menu.

You can move between the **Job Log** and **Main** windows for a server by choosing them in the **Window** menu.

- Specify the period for the job log in the dialog box that appears.

Click **All** to view all jobs since the job log was cleared; click **Date** if you want to specify a period of time for the job log, and enter the dates you want.



- Click **OK**.

| Status | Document | User | Date | Start Time | End Time | Process Time | Size | Device |
|--------|--------------------------|-----------------|----------|------------|----------|--------------|----------|----------|
| OK | Microsoft word - Documen | Unknown | 06/25/96 | 10:31:37 | 10:32:21 | 00:00:06 | 22829 | PP Inter |
| OK | Microsoft Word - Documen | Unknown | 06/25/96 | 10:32:37 | 10:33:22 | 00:00:06 | 22829 | Printer |
| OK | CONFIGURATION | OPERATOR | 06/25/96 | 17:33:23 | 17:36:51 | 00:00:05 | 6065 | Printer |
| OK | Microsoft Word - clbp360 | Unknown | 06/26/96 | 09:50:09 | 09:54:10 | 00:00:21 | 30298 | Printer |
| Error | DEMO PAGE 2 | OPERATOR | 06/26/96 | 14:59:07 | 14:59:13 | 00:00:06 | 65602 | Printer |
| OK | TEST PAGE | OPERATOR | 06/27/96 | 15:12:08 | 15:16:30 | 00:00:46 | 320592 | Printer |
| OK | http://www.u-netsurf.or | Unknown | 06/27/96 | 16:06:13 | 16:07:28 | 00:00:38 | 1724063 | Printer |
| OK | Microsoft Imager - TEST3 | Unknown | 06/27/96 | 16:06:52 | 16:07:47 | 00:00:24 | 170677 | Printer |
| OK | JOB LOG | OPERATOR | 06/27/96 | 16:07:28 | 16:08:10 | 00:00:06 | 13192 | Printer |
| OK | Microsoft Imager - 95QUE | Unknown | 06/27/96 | 16:28:18 | 16:28:53 | 00:00:12 | 25314 | Printer |
| OK | v2015.108 | Michael Laverty | 06/27/96 | 16:47:07 | 16:48:01 | 00:00:18 | 11261 | Printer |
| OK | vis.BMP | Unknown | 06/27/96 | 17:22:13 | 17:25:44 | 00:02:51 | 12406605 | Printer |
| OK | Twister.bmp | Unknown | 06/27/96 | 17:25:10 | 17:26:22 | 00:00:31 | 1870942 | Printer |

The Job Log window displays a list of all the jobs and the following information about them: status, document name, user name, date, start time, end time, process time, file size, print device, paper size, media, number of originals, number of color pages, number of black and white pages, and total number of pages.

Use the scroll bar at the bottom of the window to view all fields in the Job Log window.

The text in the Status column provides information about the job:

| | |
|--------|---|
| OK | The job was printed normally. |
| ERROR | A PostScript error occurred while a job was processing. You can double-click ERROR to display the error message. A dialog box displays the PostScript error. Click OK to close the dialog box. |
| CANCEL | The job was canceled before printing was completed. |

4. To print the job log, choose **Print Job Log** from the File menu or click the **Print** icon at the top of the window.

The information displayed in the Job Log window prints to the current Colorwriter. When you print the job log, totals are printed for all appropriate columns.

5. To save the job log as a file that you can view with a different application, choose **Export Job Log** from the File menu or click the **Export** icon at the top of the window.
6. Enter a name for the log file, and click **Save**.

The job log is saved as a text file, and the Job Log window reappears.

You can view the information in any application that can read a text file. Items are separated by tabs.

7. If an Administrator password was set, and you entered the password, you can choose **Delete Job Log** from the File menu to clear the job log.

The system administrator can also print and clear the job log from the control panel.

TO USE ADMINISTRATOR FUNCTIONS:

1. Choose Password from the Administrator menu.
This option is only available if a password was created on the Colorwriter.
2. Enter the password in the window that appears.



This password is initially set in the Setup on the control panel. Once it is set, only persons with the password can move, override, and delete all users' jobs in the Colorwriter LSR Spooler main window, and re-order jobs within a queue.

Application notes

This section provides special instructions for optimizing color output with the following Macintosh applications:

- Adobe Illustrator 5.0 and 5.5
- Aldus PageMaker 5.0
- Adobe Persuasion 3.0
- Adobe Photoshop 2.5 and 3.0
- Macromedia FreeHand 5
- Microsoft PowerPoint 4.0
- QuarkXPress 3.2 and 3.3
- Other QuickDraw applications

NOTE: Make sure the Colorwriter is selected in the Macintosh Chooser before you specify information within applications.

Adobe Illustrator 5.0 and 5.5

In general, you should use the Adobe PostScript Printer Driver, although LaserWriter 8.0 and 7.1 are also supported.

Choosing fill and line colors

You can create fill and line colors using the process color model (entering a percentage for cyan, magenta, yellow, and black) or choose a named color using one of the four color matching systems supplied. Note that displayed versions of colors you choose may not match Colorwriter output exactly.

Monitor calibration

To calibrate your monitor to resemble the Colorwriter's output more closely, follow the instructions in the *Adobe Illustrator User Guide*. You will need to create a progressive color bar like the one found in that guide, and print it on the Colorwriter.

Working with imported files

You should use EPS files for all raster artwork that will be placed in Illustrator documents. If the image is RGB, it should be saved from Adobe Photoshop, since Photoshop includes PostScript information in RGB EPS files that activates the Colorwriter CRDs. Using this type of image file, the image will print from Illustrator as it does from Photoshop. For details, see “Exporting image files to other applications” on page 3-39. Note that using a different file format will compromise the printed output of RGB bitmaps, since no CRD will be activated.

If you use a pixel-editing application other than Photoshop, you should separate the image to CMYK before importing it. CMYK raster images from high-end scanners are typically separated for offset printing, and may need some color correction to print properly on your Colorwriter.

Selecting options when printing

Illustrator files can be printed directly to the Colorwriter without using Adobe Separator™. No special settings for Colorwriter printing are typically required in the Print and Page Setup dialog box. It is necessary to make selections in the Print Options dialog box only if:

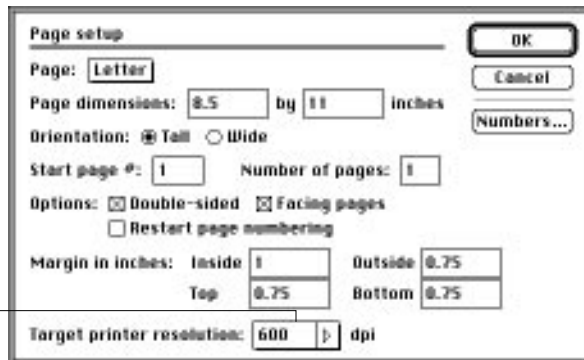
- The Illustrator document you are printing includes a placed photographic image saved from Photoshop as an RGB EPS file.
- You want to choose a specific feature such as Paper Type.

Aldus PageMaker 5.0

In general, you should use the Adobe PostScript Printer Driver, although LaserWriter 8.0 and 7.1 are also supported.

TO CHANGE THE PAGE SETUP DIALOG BOX:

1. Choose Page setup from the File menu.
2. Choose options in the Page setup dialog box when you begin creating the PageMaker document.
3. Enter 600 dpi for "Target printer resolution," as shown below:



Choose 600 from the pop-up menu

Choosing fill and line colors

You can create fill and line colors using the process (CMYK), RGB, or HSB color model, or choose a named color using one of the four color matching systems supplied. Note that displayed versions of colors you choose may not match the printer output exactly.

Working with imported files

You should use EPS files for all artwork that will be placed in PageMaker documents *unless you are using the option-print feature*.

If the image is RGB, it should be saved from Adobe Photoshop, since Photoshop includes PostScript information in RGB EPS files that activates the Colorwriter CRDs. Using this type of image file, the image will print from PageMaker as it

does from Photoshop. For details, see “Exporting image files to other applications” on page 3-39. Note that using a different file format will compromise the printed output of RGB bitmaps, since no CRD will be activated.

If you use a pixel-editing application other than Photoshop, you should separate the image to CMYK before importing it. CMYK bitmaps from high-end scanners are typically separated for offset printing, and may need some color correction to print properly on your Colorwriter.

Imported files and option-print

EPS files will not print correctly when using the option-print feature, described in the following section. Use CMYK TIFF files instead.

Selecting options when printing

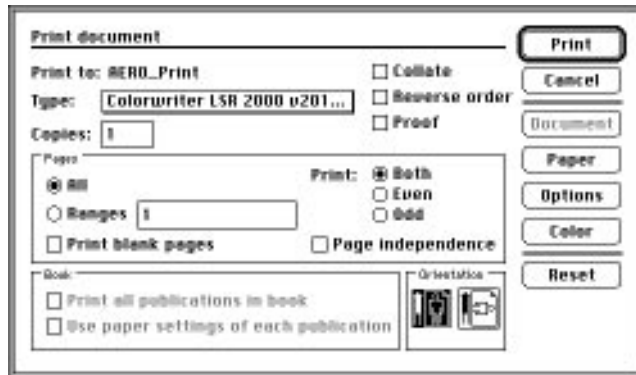
You can print two ways in PageMaker 5.0:

- By choosing Print from the File menu, as is standard with other applications. You will not be able to use printer features (such as choosing a Paper Type or Rendering Style) that are normally available with PostScript Level 2 printer drivers.
- By using the option-print feature (hold down the option key while choosing Print from the File menu).

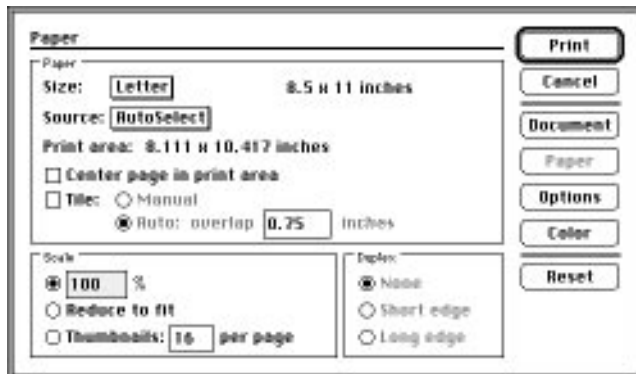
NOTE: If you use the option-print feature, EPS files will print at the low resolution used for their screen previews. Therefore, this method is recommended only when you need to choose a printer-specific feature. Additional instructions on using option-print are found on page 3-35.

TO CHOOSE OPTIONS WHEN PRINTING:

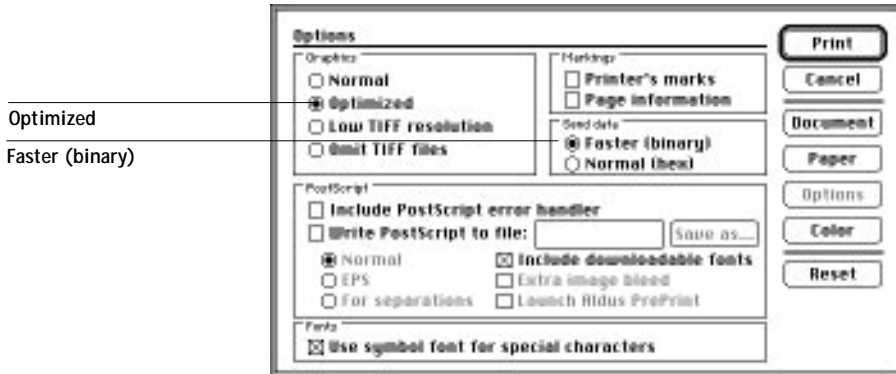
1. From the Type pop-up menu in the Print dialog box, choose the printer file for your Colorwriter.
2. To access more print options, click Paper, Options, or Color.



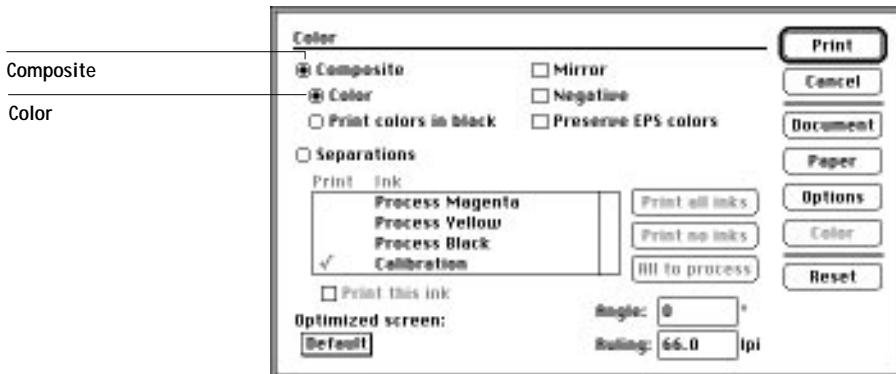
3. In the Paper dialog box, choose a paper size and a paper tray.



4. In the Options dialog box, click Optimized and click Faster (binary).

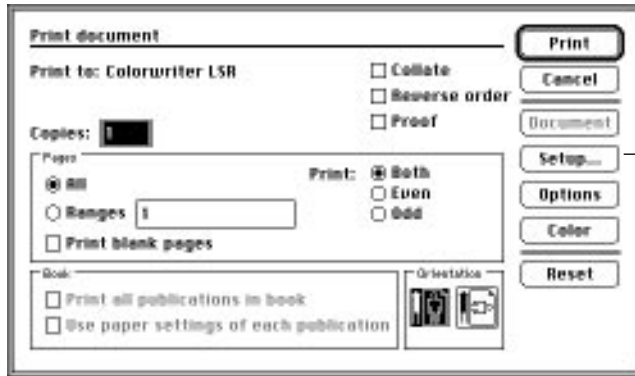


5. In the Color dialog box, click Composite and click Color.



Using option-print

To use the option-print feature, hold down the option key while selecting Print from the File menu. In the Print document dialog that is displayed, the Paper button is replaced by the Setup button, which you use to access printer features.



Click Setup to access printer features (a Page Setup dialog box is displayed initially)

Choose a paper size



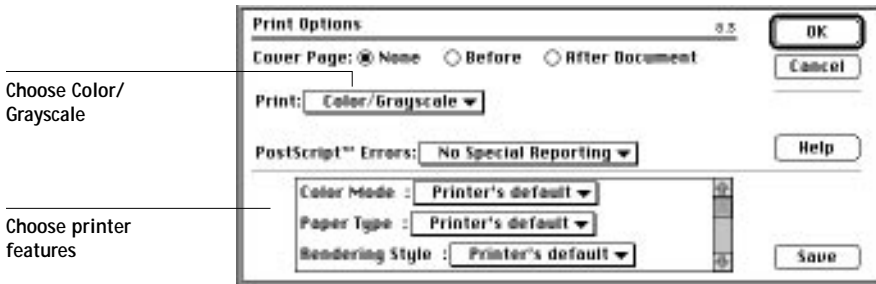
Click OK (a Printer dialog box is displayed)

Choose a paper tray



Click to return to the Print document dialog box

Click to display the Print Options dialog box



Adobe Persuasion 3.0

Presentations created in Persuasion can be printed to the Colorwriter on plain paper or on transparency film for projection. For best results, you should use the Colorwriter's built-in CRDs. Note that you will need to use a PostScript Level 2 printer driver, such as the Adobe PostScript Printer Driver.

Working with imported files

You can import graphics in EPS, PICT, Windows Metafile, and Photo CD formats into Persuasion. EPS files are recommended for printing to the Colorwriter. However, if you plan to show the presentation on a monitor as well as in hardcopy form, you may want to use a PICT file, which will display with better quality. Note that RGB EPS and PICT files may print differently.

All RGB files imported into Persuasion are affected by your choice of rendering style in the Print Options dialog box. Because the CRD that is best suited to the presentation's other picture elements may not be appropriate for imported photographic images, you may want to have these images bypass the CRD altogether. To do this, separate the image and save it as a CMYK EPS file using a pixel-editing application such as Adobe Photoshop.

Selecting options when printing

To use the CRD when printing from Persuasion, choose **Calibrated Color/Grayscale** in the Print Options dialog box. In general, you should choose **Presentation** or **Solid Color** for Rendering Style. For detailed instructions on setting print options, see “Printing from applications” on page 3-1.

NOTE: To print your presentation on transparency film, you must use the multipurpose tray. For instructions, see “Printing pages from the multipurpose tray” on page 3-6.

Adobe Photoshop 2.5 and 3.0

The files in the Separation Tables folder on the user software CD are for use with Adobe Photoshop. These files provide EFICOLOR data conversions when you use Photoshop to convert images from one mode to another, such as between RGB, Lab color, and CMYK color spaces.

Mode conversions are commonly used when you use Photoshop to print an image specified in RGB mode to a printer (such as the Colorwriter) that uses CMYK toner colors. They are also used when you use Photoshop to save separations.

EFICOLOR color conversions that involve RGB data should start with a standardized RGB color space. This is provided by the Calibrated RGB file, which is loaded into Photoshop's Monitor Setup.

In general, you should use the Adobe PostScript Printer Driver, although LaserWriter 8.0 and 7.1 are also supported.

TO PRINT FROM PHOTOSHOP TO THE COLORWRITER:

1. Make sure you have installed a copy of Calibrated RGB monitor settings file in the Photoshop folder.
2. If you use Photoshop 2.5, make sure the plug-in called “Don't Tag RGB PostScript®” is *not* placed in the Photoshop Plug-ins folder.

This plug-in disables Colorwriter CRDs when printing RGB files.

3. From the Chooser, select the PSPrinter icon, and then select the name of your Colorwriter.
4. Load the Calibrated RGB monitor settings file, as described in the next section.

Loading Calibrated RGB monitor settings

The Calibrated RGB monitor settings file ensures consistent results when using Colorwriter CRDs. You need to load the settings file only once. The settings remain loaded unless you change them.

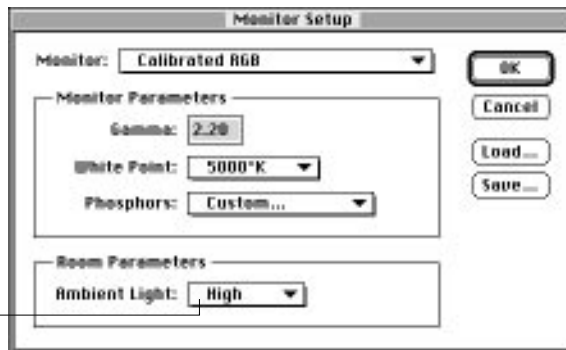
TO LOAD THE CALIBRATED RGB MONITOR SETTINGS FILE:

1. Start Photoshop, choose Preferences from the File menu, and choose Monitor Setup from the submenu.

The Monitor Setup dialog box is displayed.

2. Click Load to load the Calibrated RGB file.
3. Choose High from the Ambient Light pop-up menu.

Before you apply the settings, you should see this:



IMPORTANT: Choose High

4. Click OK to apply the settings.

NOTE: Changing settings in the Monitor Setup dialog box will affect your printed output from RGB images. If you're not sure whether the Calibrated RGB settings are loaded, load them again.

Selecting options when printing

You must select the “Print in RGB” option in the Print dialog box to use the Colorwriter’s built-in CRDs.

You need to make selections in the Print Options dialog box only if:

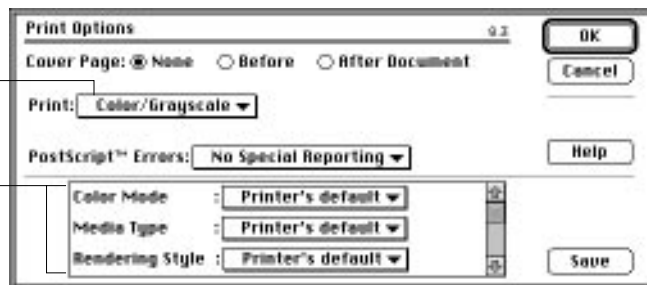
- You previously chose a rendering style other than Photographic for your saved set of print options.
- You want to choose a feature such as Paper Type.



Click to display the Print Options dialog box

Click Binary

IMPORTANT: Click Print in RGB to use the printer CRDs



Choose Color/Grayscale

Choose Photographic for Rendering Style and any other printer-specific features

Exporting image files to other applications

If you’re preparing an image to import into another application, you should save it as an EPS format file. Photoshop puts PostScript information in RGB EPS files that activates the Colorwriter CRDs. Performing any needed rotating, cropping, and resizing to the image in Photoshop before saving it will speed printing from the application the image is placed in.

Macromedia FreeHand 5

In general, you should use the Adobe PostScript Printer Driver, although LaserWriter 8.0 and 7.1 are also supported.

Choosing fill and line colors

You can create fill and line colors using the process (CMYK), RGB, or HSL color models, or choose a named color using one of the color matching systems supplied. Note that displayed versions of colors you choose may not match Colorwriter output exactly.

Working with imported files

You should use EPS files for all raster artwork that will be placed in FreeHand documents.

If the image is RGB, it should be saved from Adobe Photoshop, since Photoshop includes PostScript information in RGB EPS files that activates the Colorwriter CRDs. Using this type of image file, the image will print from FreeHand as it does from Photoshop. For details, see “Exporting image files to other applications” on page 3-39. If you use a different file format it will compromise the printed output of RGB bitmaps since no CRD will be activated.

If you use a pixel-editing application other than Photoshop, you should separate the image to CMYK before importing it. CMYK raster images from high-end scanners are typically separated for offset printing, and may need some color correction to print properly on your Colorwriter.

NOTE: EPS separations should be saved *without* the DCS option selected. DCS files placed in FreeHand documents print at the low resolution used for the screen viewing on the Colorwriter.

Selecting options when printing

Refer to the following illustrations to choose options when printing.

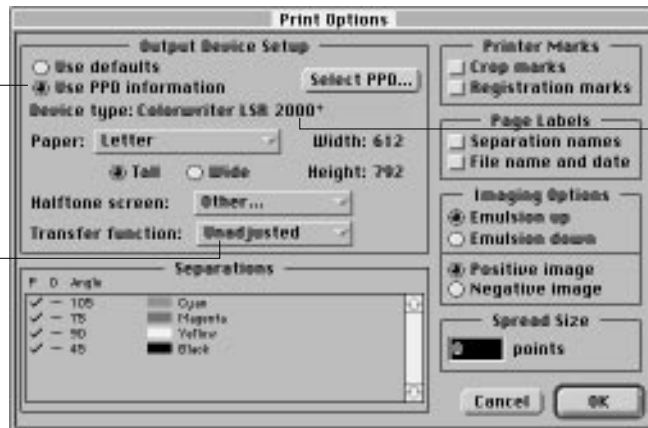


Click Composite proof

Click to set FreeHand Print Options

Click to set Output Options

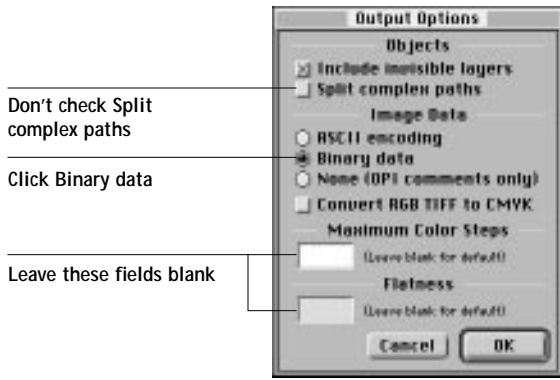
Click to set printer-specific Print Options



Click Use PPD Information

Choose Unadjusted

Your printer model appears here, provided it is selected in the Chooser



You need to set printer-specific Print Options (by clicking Options in the Print dialog box) only if:

- The FreeHand document you are printing includes a placed photographic image saved from Photoshop as an RGB EPS file.
- You want to choose a feature such as Paper Type.

Microsoft PowerPoint 4.0

Presentations created in PowerPoint can be printed to the Colorwriter on plain paper or on transparency film for projection.

In general, you should use the Adobe PostScript Printer Driver, although LaserWriter 8.0 and 7.1 are also supported.

Working with imported files

Use EPS format files for all raster images you want to import into PowerPoint. They print at their full resolution on a Colorwriter (rather than the low resolution used for the screen preview).

NOTE: Importing TIFF and PICT files into PowerPoint may cause printing problems. You should avoid using them.

All RGB files imported into PowerPoint are affected by your choice of CRD in the Print Options dialog box. Because the CRD that is best suited to the presentation's other picture elements may not be appropriate for imported photographic images, you may want to have photographs bypass the CRD altogether. To do this, separate the image and save it as a CMYK EPS file using a pixel-editing application such as Adobe Photoshop.

Selecting options when printing

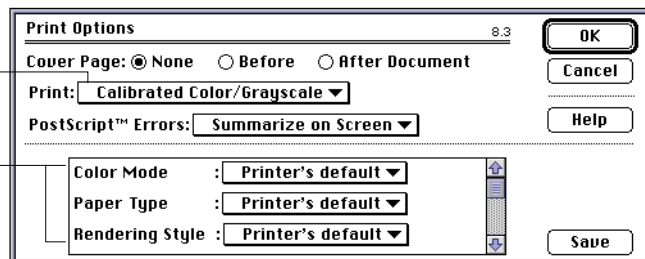
Refer to this section to select options in the Print and Print Options dialog boxes. To use a CRD when printing from PowerPoint, choose **Calibrated Color/Grayscale** in Print Options. In general, you should choose **Presentation** or **Solid Color** for the Rendering Style (CRD).



Click to display the Print Options dialog box

IMPORTANT: Choose Calibrated Color/Grayscale

Choose Presentation or Solid Color for Rendering Style, and any other printer-specific features



NOTE: To print your presentation on transparency media, see “To load transparency film:” on page 2-24, and “Printing pages from the multipurpose tray” on page 3-6.

QuarkXPress 3.2 and 3.3

This section gives condensed instructions for using QuarkXPress 3.2 and 3.3 with the EFICOLOR color management system. For further instructions for using QuarkXPress with EFICOLOR, see *Using the EFICOLOR XTension with QuarkXPress*, included with QuarkXPress.

In general, you should use the Adobe PostScript Printer Driver, although LaserWriter 8.0 and 7.1 are also supported.

NOTE: You do not need the EFICOLOR color management system to print from QuarkXPress.

TO USE QUARKXPRESS:

- Make sure you have installed the QuarkXPress PDF file and the EFICOLOR color management system.

The PDF file comes with the Colorwriter user software; EFICOLOR comes with QuarkXPress.

Use the following table for reference.

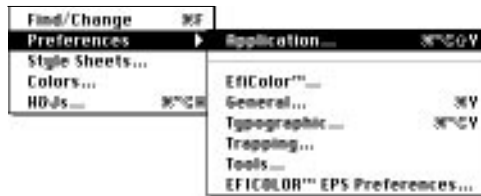
| Make sure this file: | Is installed on your hard disk drive: |
|---|--|
| QuarkXPress PDF file for your printer | <ul style="list-style-type: none"> • QuarkXPress 3.2: In the folder where QuarkXPress is located • QuarkXPress 3.3: In the PDF folder, inside the folder where QuarkXPress is located |
| EFICOLOR XTension and the EFICOLOR EPS XTension | <ul style="list-style-type: none"> • QuarkXPress 3.2: In the folder where QuarkXPress is located • QuarkXPress 3.3: In the XTension folder, inside the folder where QuarkXPress is located |

The EFICOLOR XTension is included with QuarkXPress 3.2 and 3.3. If you are missing this file, run the QuarkXPress Installer.

Setting QuarkXPress preferences

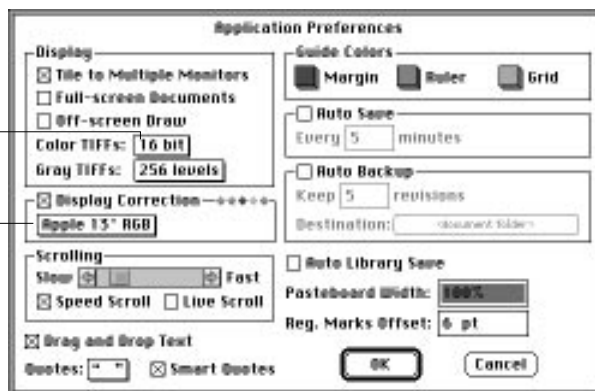
Use the Preferences settings shown in this section to activate EFICOLOR color management.

Application Preferences on the Edit menu

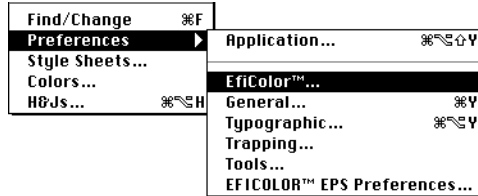


For accurate display of TIFF images, choose 16 bit or 32 bit

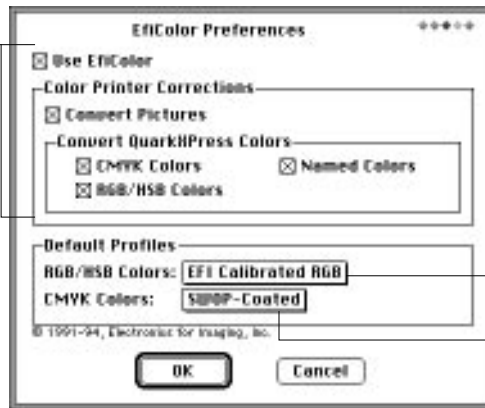
Click Display Correction and choose the profile for your monitor



EFICOLOR Preferences on the Edit menu



Click the checkboxes to activate all of these options



Choose Calibrated RGB

Choose SWOP-Coated or the Colorwriter profile

NOTE: Default profiles selected for EFICOLOR preferences become *source profiles* for vector-based artwork that is either created in QuarkXPress or imported into QuarkXPress. (Source profiles are explained in detail on page 3-47.) If you choose SWOP-Coated for a default CMYK profile, EFICOLOR converts process colors to simulate on your Colorwriter how they would print on a press that meets SWOP standards. If you want process colors in vector-based artwork to print on the Colorwriter without conversion, choose your Colorwriter profile for a default CMYK profile.

Working with imported files

The following file formats are supported by the EFICOLOR color management system, and are converted to print correctly on your Colorwriter:

- TIFF
- PICT
- Scitex CT
- EPS and DCS files created by Adobe Illustrator 5.5 and earlier, Adobe Photoshop 3.0 and earlier, and Aldus FreeHand 4.5 and earlier

NOTE: QuarkXPress sends only the low-resolution preview of placed DCS files to composite printers such as the Colorwriter. These previews may not give an accurate representation of the image as it will print on a printing press.

Assigning source profiles and color rendering styles

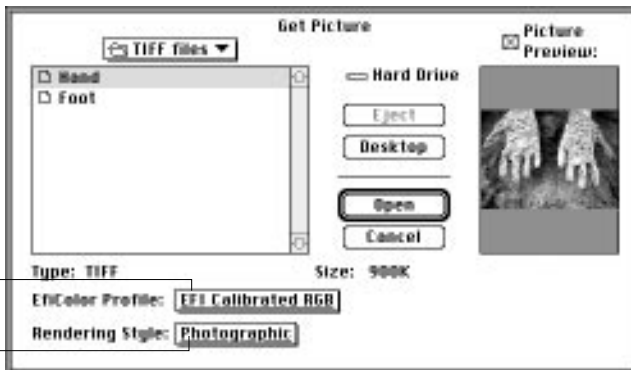
Each color image file imported into a QuarkXPress document has a source profile and a color rendering style associated with it that determine how EFICOLOR processes the image when you print. Source profiles describe the color device originally used to display, print, or scan an image. If you are importing an image that was created or edited on a monitor, you should choose the corresponding monitor profile. If you are importing a CMYK file that was prepared for offset printing, choose the printer profile corresponding to the offset process or proofing system.

You assign source profiles and color rendering styles in different places, depending on the type of file that is imported. Source profiles for vector artwork—files created in illustration applications such as Adobe Illustrator—are assigned on a global basis in EFICOLOR Preferences (See page 3-46). Source profiles and color rendering styles for raster images can be set on an image-by-image basis as shown in the following sections.

Importing TIFF and PICT files

Assign a source profile and color rendering style to TIFF and PICT image files in the Get Picture dialog box when you import them.

Get Picture on the File menu

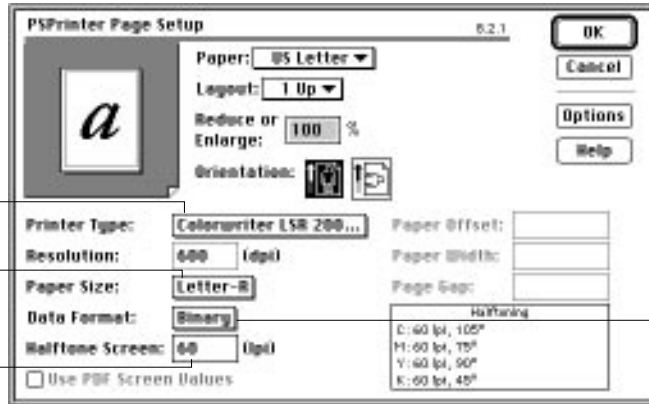


Choose a source profile for the image

Choose a color rendering style for the image

Page Setup

Refer to the following illustrations to select options in the Page Setup dialog box.



Choose the Colorwriter LSR 2000.PDF file

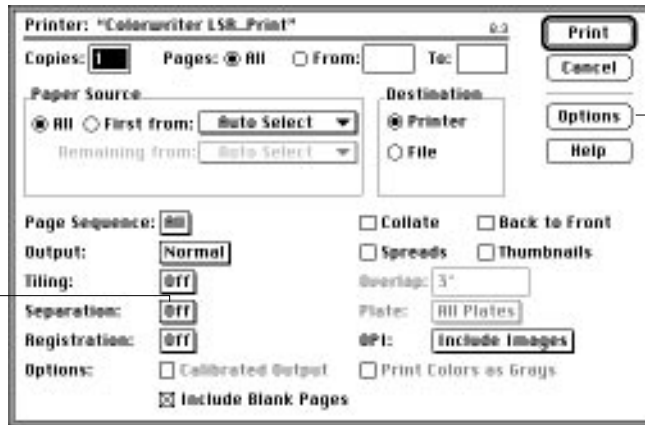
Choose an output paper size

Contone printing: Enter 200 for the highest possible quality. Enter 100 for faster printing.

Choose Binary

Setting options when printing

It is necessary to make selections in the Print Options dialog box only if you want to choose a printer-specific feature such as Paper Type.



Click to display the Print Options dialog box

Make sure Separation is off



Choose Color/Grayscale

Other QuickDraw applications

This section contains guidelines for printing from other QuickDraw applications. (Almost all word processors, spreadsheets, and presentation packages are QuickDraw applications; they rely on QuickDraw rather than the PostScript language to send words and pictures to printers. Examples include Microsoft Word, Excel, PowerPoint, and Aldus Persuasion.) Since most QuickDraw applications function similarly for Colorwriter printing, the instructions here are applicable to many printing scenarios. Note that you will need to use a PostScript Level 2 printer driver, such as the Adobe PostScript Printer Driver.

Be sure to read the application's *User Guide*, as well the ReadMe file if one is included, for additional information about printing.

Working with imported files

Although your application may allow you to import a variety of file formats, we recommend using EPS format files for all raster images you want to import; some applications have printing problems when using file formats such as TIFF and PICT.

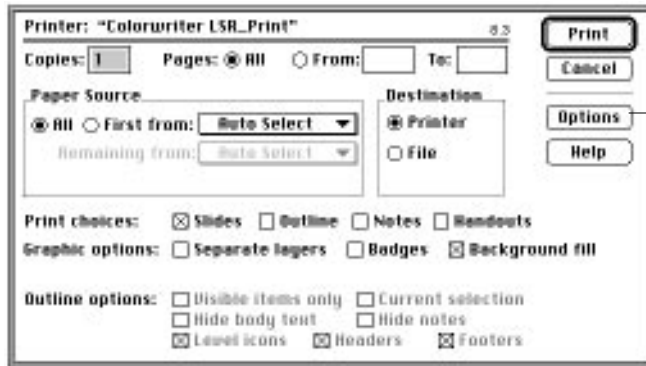
If the image is RGB, it should be saved from Adobe Photoshop, since Photoshop includes PostScript information in RGB EPS files that activates the Colorwriter CRDs. Using this type of image file, the image will print from your application as it does from Photoshop. For details, see “Exporting image files to other applications” on page 3-39.

Note that all RGB files imported into your document are affected by your choice of CRD in the Print Options dialog box. Because the CRD that is best suited to other picture elements in your document or presentation may not be appropriate for imported photographic images, you may want to have photographs bypass the CRD altogether. To do this, separate the image and save it as a CMYK EPS file using a pixel-editing application such as Adobe Photoshop.

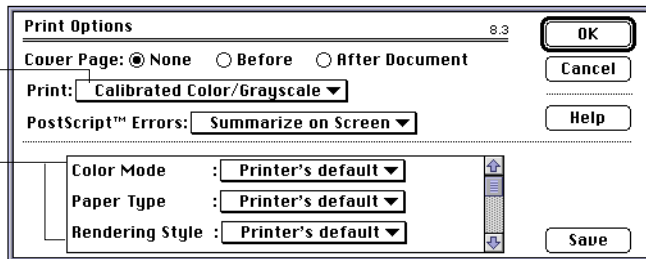
If you use a pixel-editing application other than Photoshop, you should separate the image to CMYK before importing it. CMYK bitmaps from high-end scanners are typically separated for offset printing, and may need some color correction to print properly on your Colorwriter.

Selecting options when printing

Refer to this section to select options in the Print and Print Options dialog boxes. To use a CRD when printing from your application, choose **Calibrated Color/Grayscale** in Print Options.



Click to display the Print Options dialog box



IMPORTANT: Choose Calibrated Color/Grayscale

For detailed instructions on setting print options, see page 3-3

4

Chapter 4: Printing from PC-compatible Computers

The Colorwriter enables you to print from an IBM PC-compatible computer connected to the Colorwriter over a network or directly to the parallel port. This chapter gives some tips on printing from PCs using Windows 3.x, Windows 95 or Windows NT, and includes the following topics:

- Printing to the Colorwriter from Windows
- Configuring Windows printing options
- Printing pages from the multipurpose tray
- Using the Colorwriter LSR Downloader
- Using the Colorwriter LSR Spooler
- Application notes

Printing to the Colorwriter from Windows

For information on setting up the Windows environment for printing with the Colorwriter, see Chapter 6 of *Getting Started*, which describes how to set up your network and enable a connection to the parallel port, IPX (Novell) networks, and TCP/IP networks. For information on how to install the Colorwriter Windows utilities, also see Chapter 6 of *Getting Started*.

You can print files directly to the Colorwriter from within your Windows application. If you plan to print files at another location, you should follow the procedures described below. You can print from a PC connected to the parallel port on the Colorwriter or by using a network protocol supported by the Colorwriter.

Printing from applications

Once you have installed the PostScript printer driver and the Colorwriter PPD (PostScript printer description), and set the proper port as described in Chapter 5 and Chapter 6 of *Getting Started*, you should be able to print directly from most Windows applications by choosing the Print command from within the application.

For information about achieving the best printing results from specific applications, see “Application notes” on page 4-37.

Saving files to print at a remote location

If you are preparing files to take to a service bureau or other location, you can print your final files to disk in PostScript format. You can also print to disk to create a file to be downloaded with the Colorwriter LSR Downloader. If you will be sending files to a service bureau, you should check with the service bureau before printing files to disk.

Configuring Windows printing options

Printing options are configured by using the PostScript printer driver that corresponds to your particular system. The following table refers to the printer driver installation for each type of Windows operating system.

| Using: | PostScript Driver: | Installation |
|-------------|---|---|
| Windows 3.x | PostScript level 1 or PostScript level 2 | page 6-43 or page 6-41 of <i>Getting Started</i> |
| Windows NT | Features similar to PostScript level 1 | page 6-26 of <i>Getting Started</i> |
| Windows 95 | PostScript level 2 | page 6-18 of <i>Getting Started</i> |

The following sections describe how to configure printing options with each operating system.

Configuring printing options on Windows 3.x

Although we recommended that you use the Adobe PostScript Printer Driver (ADOBEPS.DRV) included with the Colorwriter, you can also use the PostScript printer driver (PSCRIPT.DRV) included with your Windows software. Once you have installed the Colorwriter PPD (PostScript printer description), you can select the printer settings you prefer. You can also change these settings from within your application when you send a file to the Colorwriter. This setup is different for the Adobe PostScript Printer Driver and the Windows PostScript printer driver.

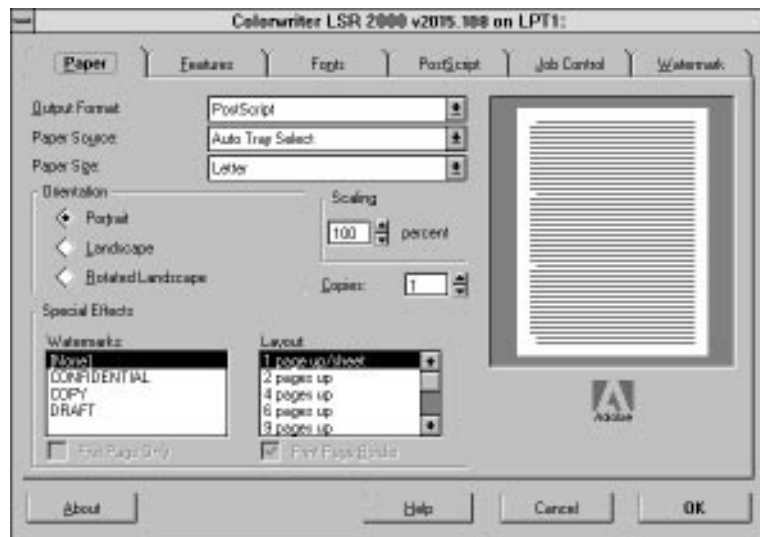
Make sure you follow the procedure that corresponds to the driver you are using:

- If you are using the Adobe PostScript Printer Driver, see the following procedure.
- If you are using the Windows PostScript printer driver, see page 4-7.

TO CHANGE THE PRINTER SETUP WITH THE ADOBE POSTSCRIPT PRINTER DRIVER FOR WINDOWS 3.X:

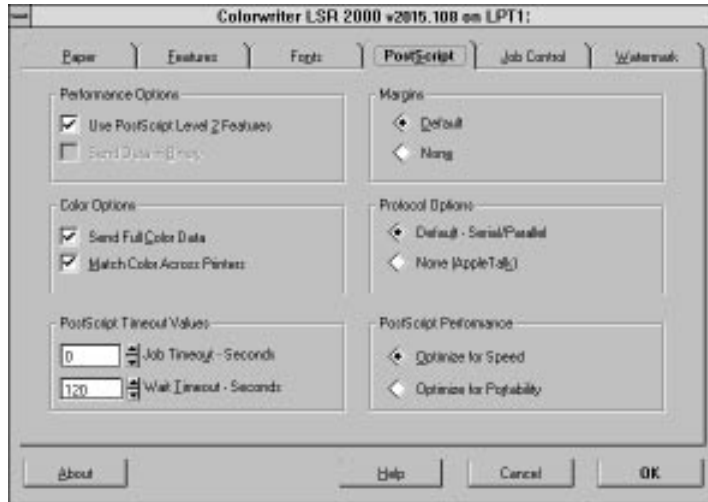
1. In the Main group of the program manager, double-click the Control Panel icon.
2. In the Control Panel window, double-click the Printers icon.
3. In the Printers dialog box, select the Colorwriter LSR 2000 v2015.108 in the Installed Printers box. Then click the Setup button.
4. Select the paper size and paper orientation in the Print Setup dialog box.

In the **Paper Source** drop-down list, specify the paper tray to use for the job. For example, you can use this dialog box to specify that the job should be printed on the media in the **Multipurpose** tray.



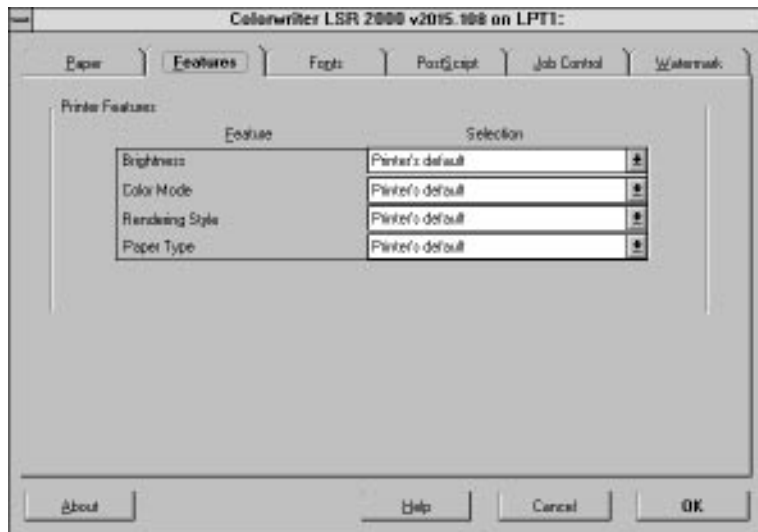
5. Click the PostScript tab in the Print Setup dialog box.

6. Select the appropriate information for your file and click OK.



NOTE: Setting **Match Color Across Printers** activates the color rendering dictionaries.

7. Click the Features tab to display the Features window, select the appropriate settings, and then click OK.



The options in this window are specific to the Colorwriter.

NOTE: The settings you select in the PostScript Options, Features, and Print Setup windows override the settings specified in Printer Setup on the Colorwriter. You can override the Brightness setting in the Colorwriter LSR Spooler Override Print Settings window.

If you select **Printer's Default** for Color Mode and Rendering Style in the Features dialog box, the Colorwriter prints with the configuration instructions that were entered in the Setup at the printer control panel.

The options you can specify are:

Color Mode—CMYK/Grayscale

Specify the color mode for the document. Select **CMYK** if it is a color document. Select **Grayscale** if it is a grayscale document or if you want a color document to print in grayscale.

Paper Type—Plain Paper/Transparency

Use this option to specify the type of media to be printed on. Select **Plain Paper** if you will be printing on standard paper. Select **Transparency** if you will be printing on a transparency.

Rendering Style—Photographic/Presentation/Monitor/Solid Color

Use this option to select a color rendering dictionary (CRD) to be used when you print an RGB file from the Adobe PostScript Printer Driver or an application such as Adobe Photoshop 2.5 (or later) that supports PostScript Level 2.

Selecting the appropriate color rendering dictionary for the type of image you are printing assures optimum color output on the Colorwriter. The **Photographic** CRD optimizes the range of colors on the Colorwriter to produce the best results for photographic or bitmapped images. The **Presentation** CRD optimizes the output of pure, saturated colors such as those used in business presentations, and is especially suited for printing transparencies. The **Solid Color** CRD is most useful for printing spot colors such as those found in company logos. The **Monitor** CRD improves the correspondence between colors as they are displayed on your computer monitor and colors in the printed output.

Color rendering dictionaries are not used when CMYK files are sent to the Colorwriter, nor are they used when RGB files are sent using a PostScript Level 1 driver such as PSCRIPT.DRV for Windows 3.1 or the Windows NT PostScript printer driver.

Brightness—85% Lightest/90% Lighter/95% Light/100% Normal/105% Dark/110% Darker/115% Darkest

Change the Brightness setting if a file prints too dark or too light. Select 85% for a substantially lighter image, 115% for a substantially darker image, or one of the options in between.

8. In the Printer Setup dialog box, click OK.

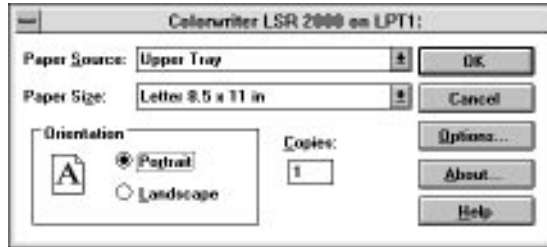
You can also use the Windows PostScript printer driver (PSCRIPT.DRV) included with your Windows 3.x software, although we recommend that you use the Adobe PostScript Printer Driver (ADOBEPS.DRV) included with the Colorwriter.

TO CHANGE THE PRINTER SETUP WITH THE WINDOWS 3.X POSTSCRIPT PRINTER DRIVER:

1. Double-click the Printers icon in the Control Panel window.
2. In the Printers dialog box, select the Colorwriter in the Installed Printers list box and click Setup.

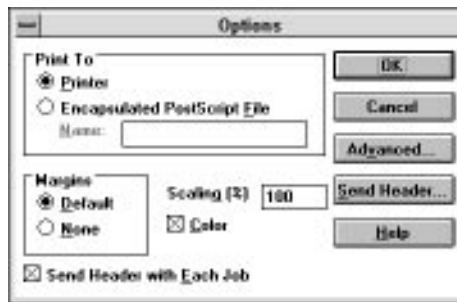


3. Use the Print Setup dialog box to specify information about the printer setup such as the paper source, paper size, and paper orientation.



NOTE: Print Setup dialog boxes vary across applications.

4. Click Options in the Print Setup dialog box.



Do not use the **Encapsulated PostScript File** option when you are printing to the Colorwriter. This option is for files you wish to import into other applications.

Make sure that the **Color** checkbox is selected.

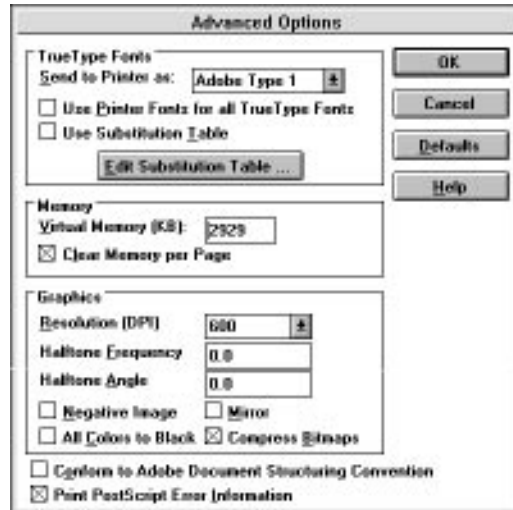
Make sure that the **Send Header with Each Job** checkbox is selected. This option ensures that all the correct PostScript information is sent to the Colorwriter.

Select the **Default** option under **Margins** for best printing results.

You can change the size of the image by changing the **Scaling** factor in this dialog box, or you can control the image size from within your application.

5. Click **Advanced** to set additional options.

The **Advanced Options** dialog box appears. This dialog box allows you to set advanced printing options.



You can use this dialog box to choose how to send TrueType fonts to the Colorwriter. In most cases, you should set the **Send to Printer** option to Adobe Type 1, and select the **Use Substitution Table** option. For a higher accuracy of font rendition, download the exact font you want from your application (i.e., do not select **Use Substitution Table**). Click **Help** for more information about TrueType conversion options.

The **Virtual Memory** box is set automatically. Click **Help** for information about changing this setting.

The **Clear Memory per Page** should be on. Click **Help** for information about this option.

The **Resolution** box displays only the option of 600 dpi because the Colorwriter is a 600 dpi printer.

Selecting **Negative Image** changes black to white, blue to yellow, red to green, and so forth. This option may not have an effect in all applications.

The effect of selecting **All Colors to Black** varies from one application to another. In some applications this option has no effect.

4

Selecting **Mirror** prints a mirror image of the original.

The **Conform to Adobe Document Structuring Convention** option should be off. Special effects created with some applications will not print if this option is selected.

6. Click OK.
7. When you have set the printing options, close all the dialog boxes.

Configuring printing options on Windows 95

TO CONFIGURE PRINTING OPTIONS ON WINDOWS 95:

1. Double-click the My Computer icon.
2. Double-click the Printers icon.
3. Click the icon for the Colorwriter to select it.
4. Choose Properties from the File menu.

The Colorwriter Properties window appears with the General tab displayed.

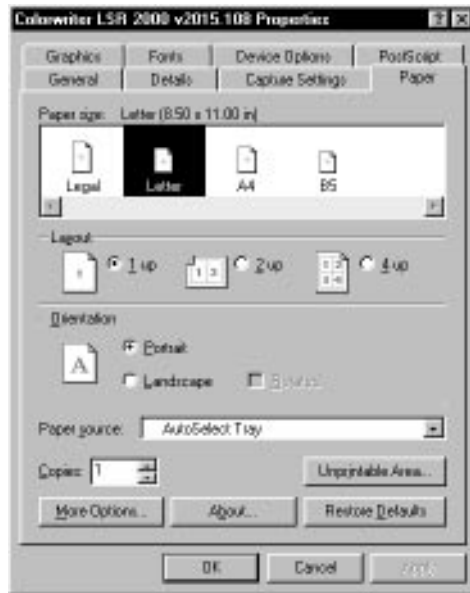


4

4-11 Configuring Windows printing options

The Colorwriter Properties window contains eight tabs that allow you to configure printing options.

5. Specify the Paper source and the number of copies that you want printed. You may also use this tab to set orientation and layout options.



6. Choose the Device Options tab.

The Device Options tab allows you to change the Color Mode, Rendering Style, Brightness, and settings for the Optional Cassette (if installed) of the Colorwriter.



7. To change a setting, select the feature in the Printer features area, and then select one of the options in the "Change settings for" list. Click OK when you have entered the settings you want.

If you select Printer's Default for any of the Printer features, the Colorwriter prints with its default value, or with a setting entered during Printer Setup on the Control Panel.

NOTE: The settings you select in the Paper, Features, Device Options, and PostScript tabs of the Properties window override the settings specified in the Printer Setup on the Colorwriter. This window can be used for entering both job-specific and printer-specific settings.

Configuring printing options on Windows NT

The Windows NT PostScript printer driver that you install with the Colorwriter PPD does not give your applications access to all the paper and tray selection options and printer features that you get with the PostScript level 2 drivers you can install on Windows 3.1 or Windows 95. For example, it does not provide a means of altering the settings for Brightness, Color Mode, or Rendering Style for all your print jobs.

Adobe Photoshop gives you access to two rendering styles when you print RGB files to the Colorwriter, if you have installed the Monitor Setup file and loaded the Separation tables for Photographic or Solid Color rendering (see *Getting Started*, page 6-70).

Once you have printed a job to the Colorwriter, you can override the print settings for Rendering Style and Brightness from the Colorwriter LSR Spooler (see page 4-31).

Applications differ in offering access to the Colorwriter paper trays. In general, to print to the Colorwriter Multipurpose tray, select Manual Feed from printing options dialog boxes, Print Setup, or Page Setup dialog boxes.

Printing pages from the multipurpose tray

You can use the Colorwriter's multipurpose tray if you want to print on special paper, such as letterhead or colored paper, or on a transparency.

TO PRINT PAGES USING THE MULTIPURPOSE TRAY:

1. Open the multipurpose tray and insert the paper, or insert a transparency.
Be sure to use the page size specified in the Page Setup dialog box of your application.
2. From your application's Print Setup, Page Setup, or Print dialog box, select Multipurpose Tray as the Paper Source.

If you want to print on a transparency, choose **Transparency** for the **Media Type**, and choose **Presentation** for the **Rendering Style**.

4

These options are available if you are using Windows 95 with the Microsoft PostScript driver (see “Configuring Windows printing options” on page 4-3 or “Configuring printing options on Windows 95” on page 4-10. Some applications provide these options in a different dialog box.

3. Click Print in your application.

The job prints on the page that was inserted in the multipurpose tray. If you did not specify the correct size for the page you are printing, the page may not be centered when it prints.

Using Colorwriter utilities

PCK The Windows utilities enable you to perform additional functions with your Colorwriter. The following utilities are included on the Colorwriter User Software CD:

- Colorwriter LSR Downloader
- Colorwriter LSR Spooler
- Colorwriter LSR Manager

The Windows Colorwriter utilities are supported by the Windows 95 and the Windows NT operating systems, communicating with the printer with TCP/IP or IPX/SPX (Novell) network protocols. The Colorwriter utilities are not supported by the Windows 3.x operating system.

PCK NOTE: Colorwriter utilities require a Colorwriter with the Professional Color Kit option (PCK) installed.

Using the Colorwriter LSR Downloader

PCK You can use the Colorwriter LSR Downloader to:

- Print PostScript and Encapsulated PostScript (EPS) files.
- Check the status of the Colorwriter.
- Manage the PostScript printer fonts stored on the Colorwriter hard disk.

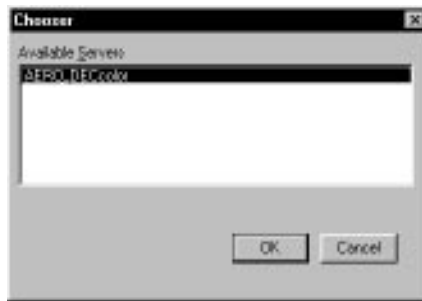
NOTE: You can also use standard LaserWriter downloaders, such as the Adobe Font Downloader, with the Colorwriter. The Colorwriter LSR Downloader was designed specifically for the Colorwriter. You cannot use it with any other printer.

TO VIEW STATUS INFORMATION WITH THE COLORWRITER LSR DOWNLOADER:

1. Choose Colorwriter LSR Downloader from the Windows 95 Start button or appropriate Windows NT program group.

The Colorwriter LSR utilities function the same way on Windows 95, Windows NT, and Macintosh computers.

2. Select the Colorwriter in the Chooser window that appears and click OK.



You see the Colorwriter LSR Downloader window, with icons, a Status window, File and Window menus, and a status bar at the bottom of the screen.



Icons for some menu functions display in the Toolbar at the top of the window. Click the button to perform the function. You can toggle the display of the Toolbar by choosing Toolbar in the View menu. The icons are:



Open

Click this button to connect to a different Colorwriter.



Download

Click this button to download a file or font to the Colorwriter



Display font list

Click this button to display a list of printer fonts on the Colorwriter's hard disk.



Display status window

Click this button to display the status window for the current Colorwriter.



About the Downloader

Click this button to view version information about the Colorwriter LSR Downloader.

The Print Status area displays the status and the user name and document name of the job currently printing.

The RIP Status area displays the status and the user name and document name of the job currently processing.

The Download Progress bar dynamically displays the progress of the job being downloaded.

The Hard Disk area displays the amount of available disk space on the Colorwriter.

You can click the Display Font List button or choose Font List from the File menu to view font information in the window.

3. To select a different Colorwriter or Colorwriter connection, choose Open from the File menu, select the Colorwriter LSR 2000⁺ in the chooser dialog that appears, and click OK.

You can only select a different Colorwriter if it has been previously configured on your system; it must be listed in the NET_WSCK.INI file. It is recommended that you use the Colorwriter LSR Manager for this purpose (see *Getting Started*).

4. To close the window, choose Close from the File menu; to close the application select Exit from the File menu.

Printing with the Colorwriter LSR Downloader

Printing PostScript files with Colorwriter LSR Downloader is fast—generally faster than printing from within applications. If you regularly print large files, be sure to try printing with the Colorwriter LSR Downloader.

TO DOWNLOAD A FILE OR FONT WITH THE COLORWRITER LSR DOWNLOADER:

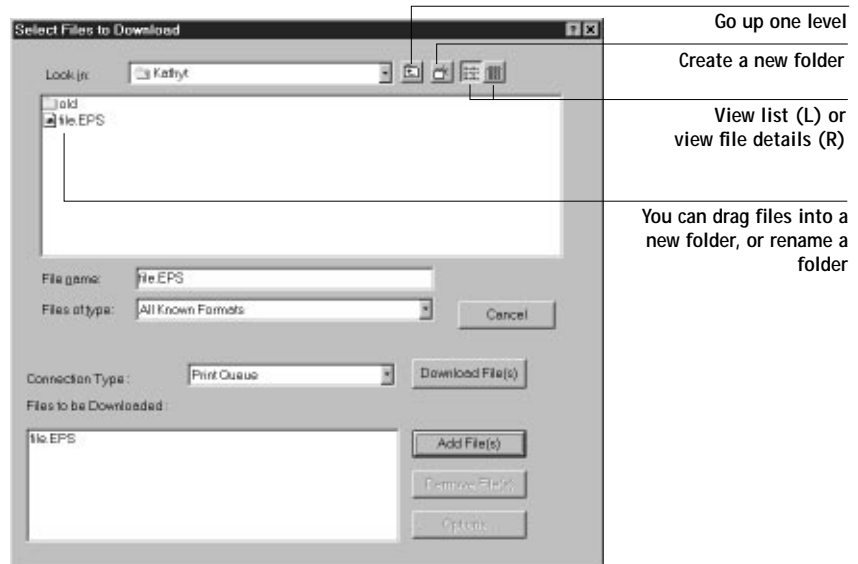
1. Use your application to generate a PostScript or EPS file.

You can save a PostScript file by selecting the File option in the application's Print dialog box. With some applications, you can save Encapsulated PostScript (EPS) files.

If you experience problems printing EPS files with the Colorwriter LSR Downloader, you can print the file directly from the application in which you created it.

2. Double-click the Colorwriter LSR Downloader icon.
3. Choose Download from the File menu or click the Download button.

A dialog box containing a list of files appears.



4. Select the file type to display in the Show pop-up menu.

You can leave this at the default **All known formats**, or select **All Files**. **All known formats** will list all files in formats supported by the Colorwriter LSR Downloader; **All Files** will list all files.

The File name field displays the name(s) of the selected file(s) before you click Add.

NOTE: You can download files and fonts in the same batch. See page 4-20 for more information about downloading fonts.

5. Select where to download the file in the Queue pop-up menu.

You can select the **Print** queue, **Hold** queue, or **Direct** connection. If the connection is not enabled, an error message will be displayed. Fonts are automatically downloaded to the Direct connection.

6. Select the filename and click Add File(s).

You can use the dialog box to move to different drives and directories to select files to download.

If you change your mind about a file, select the filename in the **Files to be Downloaded** list and click **Remove File(s)**.

7. To change attributes of a job, select the filename and click Options.



8. Specify the following information in the dialog box and click OK.

Copies—Specify the number of copies you want by entering the number in the **Copies** text box.

Brightness—Change the Brightness setting if a file prints too dark or too light. Select **85%** for a substantially lighter image, **115%** for a substantially darker image, or one of the options in between.

NOTE: Some applications, including Adobe Photoshop, provide transfer functions that let you specify density settings for an image. If you saved a Photoshop file as EPS and included transfer functions, the Colorwriter LSR Downloader **Brightness** options will have no effect on your printout. For more information on using transfer functions, see the documentation for your application.

'showpage' after EPS files—In most cases, you do not need to use this option. Select the **'showpage'** option only if an EPS file fails to print without it. This option adds a “showpage” PostScript language command at the end of the print job. If you select this option unnecessarily, extra blank pages may be printed.

9. Repeat steps 7 and 8 for any other jobs as needed.
10. When you have selected all files and fonts, click Download.
11. To cancel downloading, press the Escape key.

Downloading and managing printer fonts

Before printing a PostScript or EPS file that requires PostScript fonts that are not resident on the Colorwriter hard disk, you must download the fonts manually.

The Colorwriter comes with PostScript fonts installed. These include regular, bold, italic, and bold italic versions of Courier, Times, Helvetica, Helvetica Narrow, Helvetica Condensed, ITC Avant Garde, Palatino, ITC Bookman, and New Century Schoolbook. Also included are ITC Zapf Dingbats, ITC Zapf Chancery, and ITC Symbol.

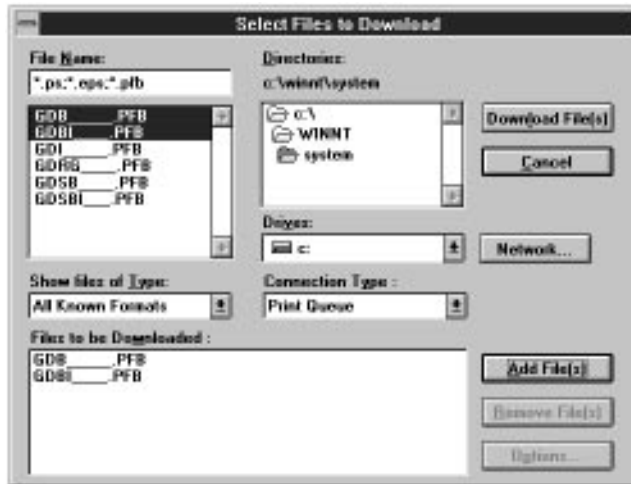
Windows screen fonts that correspond to the printer fonts installed on the Colorwriter are not supplied with the Colorwriter. However, the Windows operating system substitutes a similar font for screen display.

NOTE: If you are using TrueType fonts, you can print them by converting them to Adobe Type 1 fonts. To do this with the Adobe PostScript Printer Driver, click the Fonts tab and select **Send TrueType Fonts to This Printer as Type 1**. To do this with the Windows 95 PostScript printer driver, click the Fonts tab and select **Always use built-in printer fonts instead of True Type fonts**.

Occasionally, you may want to use Adobe Type 1 fonts that are not included with the Colorwriter. If so, you'll need to install both the screen fonts and the printer fonts on your computer. To do this, follow the instructions from the font manufacturer.

Downloading printer fonts to the Colorwriter LSR 2000⁺

If your applications regularly use one or more fonts that are not already installed in the Colorwriter, you can save time by downloading them to the Colorwriter hard disk with the Colorwriter LSR Downloader. Fonts you download to the Colorwriter hard disk remain installed until you remove them using the Colorwriter LSR Downloader, no matter how many times the Colorwriter is turned off and on. You'll probably want to download fonts you use on a regular basis to the Colorwriter.



NOTE: The fonts you can download must be Windows PostScript printer outline fonts, with a file extension of .pfb. You cannot use the Colorwriter LSR Downloader to download TrueType fonts.

Before you print PostScript or Encapsulated PostScript (EPS) files using the Colorwriter LSR Downloader, make sure that all fonts included in your file are installed in the Colorwriter. If your file calls for fonts that are not installed on the

Colorwriter, the text in these fonts will not print correctly and may not print at all. With some applications, you can include fonts when you create PostScript files. See your application software for information.

TO VIEW FONT INFORMATION:

1. Choose Font List from the File menu or click the Font List button.

The Font List window is displayed with the Update, Print, and Delete buttons in the titlebar.



4

The icons in the Font list window are:



Update

Click this icon to update the information in the font list window.



Print
Font List

Click this icon to print the font list.



Delete

Select a font and click this icon to delete it.

2. Click the Update button to update the information in the list.
3. Click the Print Font List button to print the font list.
4. Highlight a font and click the Delete button if you want to delete the font.

Shift-click to select multiple fonts.

NOTE: The 39 printer fonts included with the Colorwriter (resident fonts) are locked. Locked fonts appear with a lock icon next to the name and cannot be deleted.

PCK Using the Colorwriter LSR Spooler

The Colorwriter LSR Spooler utility lets you monitor and manipulate the print jobs that you send to the Colorwriter. It also lets system administrators track and manage all users' print jobs.

Colorwriter LSR Spooler jobs can be in one of the following queues:

- | | |
|---------|---|
| Print | Normal print jobs sent to the Colorwriter print queue appear in the Print queue or are added to the end of the print queue. You can move and manipulate these jobs as described below. |
| Hold | Jobs sent to the Hold queue remain in the Hold queue until they are moved to the Print queue or deleted. If you need to print the same document frequently, you can send it to the Hold queue and move a copy of the job to the Print queue every time you need to print it. You can also print large jobs to the Hold queue and then move them to the Print queue when other users are not printing. |
| Printed | The jobs most recently sent to the Colorwriter are saved in the Printed queue. You can drag these jobs back to the Print queue to print additional copies. The number of jobs saved in the Printed queue is set by your system administrator in the Setup. |

Jobs in the queues are stored on the Colorwriter hard disk. Make sure that you leave enough space on the hard disk for fonts and other Colorwriter LSR Spooler jobs.

Files printed to the direct connection are not available from the Colorwriter LSR Spooler.

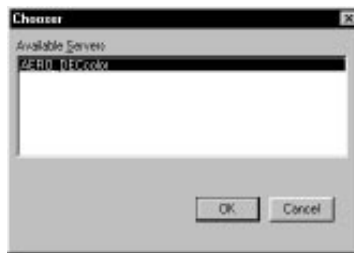
You can use the Colorwriter LSR Spooler job log for job accounting purposes, or just to view information about jobs printed to the Colorwriter. The job log can be printed to the Colorwriter or saved as a file and viewed in other applications.

TO USE THE COLORWRITER LSR SPOOLER:

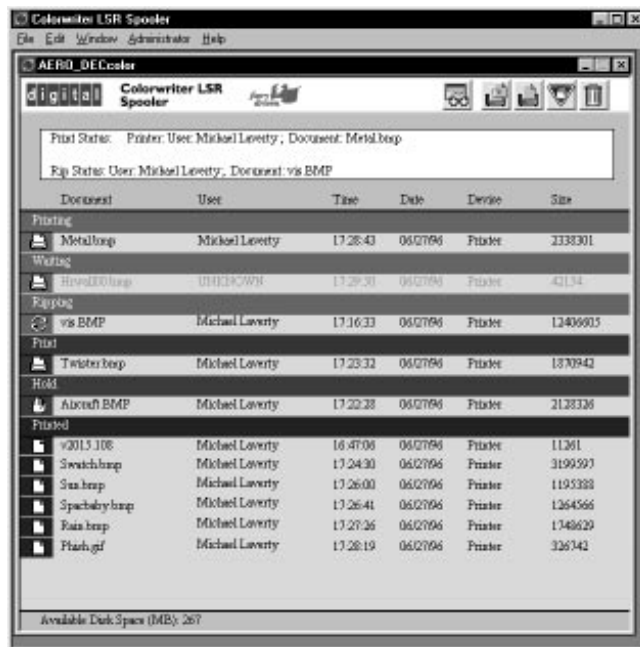
1. Choose Colorwriter LSR Spooler from the Windows 95 Start button or appropriate Windows NT program group.

The Colorwriter LSR utilities function the same way on Windows 95, Windows NT, and Macintosh computers.

2. Select the Colorwriter LSR 2000⁺ in the window that appears, and click OK.










The Colorwriter LSR Spooler main window and File, Edit, Window, Help, and Administrator menus appear.



In the main window, the job list includes information about the document name, user name, time and date sent, print device, and file size.

The job list is split into regions that correspond to the different queues and steps in the printing process. You can click and drag a job to the Print or Hold region of the window to move it to the corresponding queue.

The icons provide information about the job:

| | | | |
|----------|---|--------------|---|
| Printing |  | Print icon | The job that is currently printing appears in this list. It can be selected and deleted to cancel printing. |
| Waiting |  | Print icon | Jobs that have been processed and are waiting to be printed appear in this list. They are dimmed because they cannot be canceled, their settings cannot be changed, and they cannot be moved. |
| Ripping |  | RIP icon | Jobs that are processing appear in the scroll list, but they are dimmed because their settings cannot be changed and they can't be moved or canceled. |
| Print |  | Print icon | Jobs that are waiting in the Print queue and have not been processed appear with the Print icon. This list shows jobs in the order they will be printed. |
| Hold |  | Hold icon | Jobs in the Hold queue appear with the Hold icon. You can move the job from the Hold queue to the Print queue to print it. |
| Printed |  | Printed icon | Jobs that have been printed are saved in the Printed queue and appear with the Printed icon. Jobs are stored in the Printed queue until the limit set in the Printer Setup on the control panel is reached. |
| Printed |  | Alert icon | If a PostScript error occurred while a job was printing, it appears in the Printed queue with an Alert icon next to it. You can double-click the Alert icon to display the error message. |

Icons also appear above the scroll list. The icons are:



Update

Click this icon to update the information in the Colorwriter LSR Spooler main window.



Duplicate and Print

Drag a job onto this icon or select the document and click this icon to move a duplicate of the job to the Print queue.



Print

Drag a job onto this icon or select the document and click this icon to move it to the Print queue.



Hold

Drag a job onto this icon or select the document and click this icon to move it to the Hold queue.



Delete/
Cancel

Drag a job onto this icon or select the document and click this icon to delete it or cancel processing or printing it. You will be asked to verify that you want to delete the job. You can eliminate the verification notice by turning off the **Confirm file deletion** option in the Preferences window.

3. Choose Preferences from the Edit menu to specify how the Colorwriter LSR Spooler behaves.

The Preferences dialog box appears.



You can use this window to specify that the Colorwriter:

Update Automatically every *n* seconds or Update Manually—This option lets you specify whether the Colorwriter LSR Spooler main window is automatically updated every 20 seconds (or at an interval that you set), or whether it is updated only when you choose the Update command from the Window menu. By default, the Colorwriter LSR Spooler main window is updated automatically every 20 seconds.

NOTE: When automatic updating is on, data from the Colorwriter is transmitted over the network very frequently. This data adds to the network traffic, and may slow down other network jobs. For optimum network performance, turn off automatic updating in the Colorwriter LSR Spooler Preferences dialog box; when you want to view updated information in the Colorwriter LSR Spooler windows, choose Update from the Window menu or click the Update icon.

Confirm file deletion—Select this if you want a confirmation dialog box to appear before you delete a file.

4. If you selected Manual updating in the Preferences window, choose Update from the Window menu to update the information in the Colorwriter LSR Spooler window.

To manage print jobs, see page 4-29.

To use the job log, see page 4-32.

5. Choose Close from the File menu to close the connection to the current Colorwriter; choose Quit from the File menu to quit the Colorwriter LSR Spooler application.
6. To display information about a different Colorwriter, choose Open from the File menu.

A selection window appears.

7. Select the Colorwriter LSR 2000⁺ in the selection window.

The Colorwriter LSR Spooler main window appears and displays information about the Colorwriter you selected.

You can move between Colorwriter LSR Spooler windows by choosing the Colorwriter name in the Window menu. You can move between the Job Log and Main windows for a Colorwriter by choosing them in the Window menu. You can also use the Cascade option in the Window menu to organize windows on your Desktop.

8. Choose Close from the File menu to close the connection to the current Colorwriter; choose Exit from the File menu to quit the Colorwriter LSR Spooler application.

Duplicating, copying, moving, and deleting jobs

Users can always move, delete, and configure their own print jobs. If a password has been set, users can manipulate only their own print jobs; the Colorwriter system administrator (or anyone with Colorwriter LSR Spooler Password access) can move, delete, prioritize and configure jobs for all users. You can move your jobs from the Hold queue and the Printed queue to the Print queue. If, for example, you frequently print the same file, you can send it to the Hold queue and later drag a copy of the file to the Print queue. By copying rather than moving a job, you leave a copy of the job in the Hold queue so that you can print the job again later. You can also duplicate a job if you want to have multiple copies of a job in the same queue.

Duplicating jobs

When you duplicate a job, the Colorwriter creates a reference to the original file, so duplicate files do not require the full amount of disk space on the Colorwriter. As long as one of the duplicates remains, the Colorwriter saves the file, so you can delete all but one reference to a file.

TO DUPLICATE A JOB WITHIN A QUEUE:

1. Select the job that you want to copy by clicking its name.

The selected job is highlighted. If you want to select more than one job, Shift-click to select multiple, adjacent jobs; Ctrl-click to select multiple, non-adjacent jobs in the list.

2. Choose Duplicate Job from the Edit menu.

The job appears at the bottom of the queue.

TO DUPLICATE AND PRINT A JOB:

1. Select the job that you want to copy by clicking its name.

The selected job is highlighted. If you want to select more than one job, Shift-click to select multiple, adjacent jobs; Ctrl-click to select multiple, non-adjacent jobs in the list.

2. Click the Duplicate and Print icon, or drag the job to the Duplicate and Print icon. The job appears at the bottom of the Print queue.

TO COPY A JOB TO ANOTHER QUEUE:

1. Select the job that you want to copy by clicking its name.
The selected job is highlighted. If you want to select more than one job, Shift-click to select multiple, adjacent jobs; Ctrl-click to select multiple, non-adjacent jobs in the list.
2. Choose Duplicate Job from the Edit menu.
3. Drag the duplicate job to either the Hold or Print queue icon or to the Hold or Print section of the job list.
The original job still appears in the Hold or Printed queue so that you can print the job at another time.

TO MOVE A JOB WITHIN A QUEUE:

1. Choose Password from the Administrator menu and enter the password.
If there is no password, go to step 2.
2. Select the job that you want to move by clicking its name.
The selected job is highlighted. If you want to select more than one job, Shift-click to select adjacent jobs in the list; Ctrl-click to select multiple, non-adjacent jobs in the list.
3. Drag the file to the new location in the queue.

TO MOVE JOBS BETWEEN QUEUES:

1. Select the job that you want to move by clicking its name.
The selected job is highlighted. If you want to select more than one job, Shift-click to make selections of adjacent jobs in the list; Ctrl-click to select multiple, non-adjacent jobs in the list.
2. Move the selected job to another queue by dragging it to the queue icon of your choice or to the Hold or Print section of the job list.

For example, move a job that is currently in the Hold queue to the Print queue by dragging the job to the Print queue icon.

TO DELETE A JOB FROM ANY OF THE QUEUES:

1. Select the job that you want to delete by clicking its name.
2. Drag the selected job to the Delete icon or click the Delete icon.

You can also choose **Delete** from the Edit menu to delete a selected job.

If a password has been set, you can only delete your own jobs; system administrators who enter the Colorwriter LSR Spooler password can delete any job. See page 4-35 for more information.

Changing print settings for a job

You can use the Override Print Settings window to set certain printing parameters for a job. The settings in this dialog box override the settings entered in your application, in your printer driver options, or the control panel Printer Setup.

You can only change printing parameters for jobs in the Hold, Print, and Printed queue sections of the Colorwriter LSR Spooler main window.

If a password has been set, you can only change print settings for your jobs; system administrators who enter the Colorwriter LSR Spooler password can change print settings for any job. See page 4-35 for more information.

TO CHANGE PRINT SETTINGS FOR A JOB:

1. Double-click a job or select the job and choose **Override Print Settings** from the **Edit** menu.

The **Override Print Settings** window appears.



2. Select the new settings.

Select any of the options in the pop-up menus. If you select **Default Settings**, the job will use the settings in the **Print** dialog box.

3. Click **OK** to make changes.

Using the job log

With the Colorwriter LSR Spooler, you can view and print a log of all the jobs printed to the Colorwriter. You can also save the job log as a text file that you can then import into a spreadsheet or word processing application for job accounting purposes. All printed or downloaded jobs are listed in the job log.

TO DISPLAY, PRINT, AND SAVE THE JOB LOG:

1. Choose **Show Job Log** from the **Window** menu.

You can move between the **Job Log** and **Main** windows for a server by choosing them in the **Window** menu.

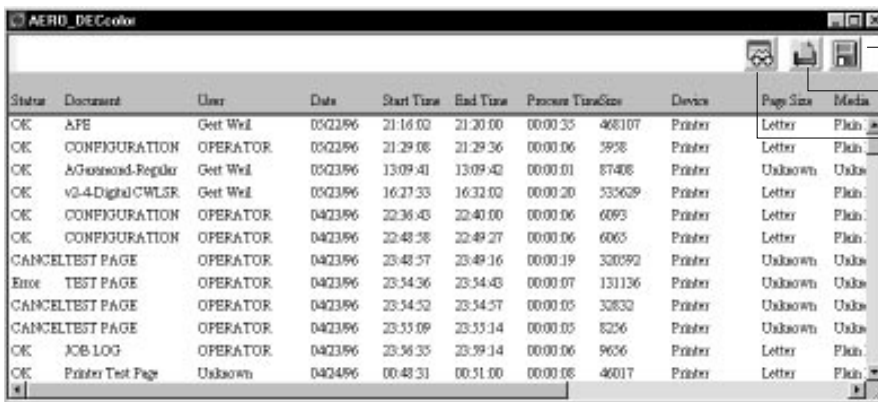
4

2. Specify the period for the job log in the dialog box that appears.

Click **All** to view all jobs since the job log was cleared; click **Date** if you want to specify a period of time for the job log, and enter the dates you want.



3. Click OK.



The image shows a screenshot of a window titled "AERO_DEColor". It contains a table with columns: Status, Document, User, Date, Start Time, End Time, Process Time, Size, Device, Page Size, and Media. The table lists various print jobs. On the right side of the window, there are three icons: a printer (Print icon), a document with a magnifying glass (Export icon), and a document with a refresh symbol (Update icon).

| Status | Document | User | Date | Start Time | End Time | Process Time | Size | Device | Page Size | Media |
|-----------------|----------------------|----------|----------|------------|----------|--------------|--------|---------|-----------|---------|
| OK | APE | Get Well | 05/23/96 | 21:16:02 | 21:20:00 | 00:00:35 | 468107 | Printer | Letter | Plain |
| OK | CONFIGURATION | OPERATOR | 05/23/96 | 21:29:08 | 21:29:36 | 00:00:06 | 5958 | Printer | Letter | Plain |
| OK | A/Guestcard-Register | Get Well | 05/23/96 | 13:09:41 | 13:09:42 | 00:00:01 | 87408 | Printer | Unknown | Unknown |
| OK | v2-4-Digital-CWLSR | Get Well | 05/23/96 | 16:27:33 | 16:32:02 | 00:00:20 | 535629 | Printer | Letter | Plain |
| OK | CONFIGURATION | OPERATOR | 04/23/96 | 22:36:43 | 22:40:00 | 00:00:06 | 6093 | Printer | Letter | Plain |
| OK | CONFIGURATION | OPERATOR | 04/23/96 | 22:48:58 | 22:49:27 | 00:00:06 | 6065 | Printer | Letter | Plain |
| CANCELTEST PAGE | | OPERATOR | 04/23/96 | 23:48:57 | 23:49:16 | 00:00:19 | 300392 | Printer | Unknown | Unknown |
| Error | TEST PAGE | OPERATOR | 04/23/96 | 23:54:36 | 23:54:43 | 00:00:07 | 131136 | Printer | Unknown | Unknown |
| CANCELTEST PAGE | | OPERATOR | 04/23/96 | 23:54:52 | 23:54:57 | 00:00:05 | 30832 | Printer | Unknown | Unknown |
| CANCELTEST PAGE | | OPERATOR | 04/23/96 | 23:55:09 | 23:55:14 | 00:00:05 | 8256 | Printer | Unknown | Unknown |
| OK | JOB LOG | OPERATOR | 04/23/96 | 23:58:35 | 23:59:14 | 00:00:06 | 9636 | Printer | Letter | Plain |
| OK | Printer Test Page | Unknown | 04/24/96 | 00:48:31 | 00:51:00 | 00:00:08 | 46017 | Printer | Letter | Plain |

Export icon

Print icon

Update icon

The Job Log window displays a list of all the jobs and the following information about them: status, document name, user name, date, start time, end time, process time, file size, print device, paper size, media, number of originals, number of color pages, number of black and white pages, and total number of pages.

Use the scroll bar at the bottom of the window to view all fields in the Job Log window.

The text in the Status column provides information about the job:

- | | |
|--------|---|
| OK | The job was printed normally. |
| ERROR | A PostScript error occurred while a job was processing. You can double-click ERROR to display the error message. A dialog box displays the PostScript error. Click OK to close the dialog box. |
| CANCEL | The job was canceled before printing was completed. |

4. To print the job log, choose **Print Job Log** from the File menu or click the **Print** icon at the top of the window.

The information displayed in the Job Log window prints to the current Colorwriter. When you print the job log, totals are printed for all appropriate columns.

5. To save the job log as a file that you can view with a different application, choose **Export Job Log** from the File menu or click the **Export** icon at the top of the window.
6. Enter a name for the log file, and click **Save**.

The job log is saved as a text file, and the Job Log window reappears.

You can view the information in any application that can read a text file. Items are separated by tabs.

7. If a password was set, and you entered the Administrator password, you can choose **Delete Job Log** from the File menu to clear the job log.

The system administrator can also print and clear the job log from the control panel.

TO USE ADMINISTRATOR FUNCTIONS:

1. Choose Password from the Administrator menu.
This menu is active only if a password was created on the Colorwriter.
2. Enter the password in the window that appears.



This password is set in the Setup on the control panel. Once it is set, only persons with the password can move, override, prioritize and delete all users' jobs in the Colorwriter LSR Spooler main window.

PCK Using the Colorwriter LSR Manager

The Colorwriter LSR Manager configures a special network layer that allows the Colorwriter LSR Spooler and the Colorwriter LSR Downloader to communicate with the printer over IPX or TCP/IP networks. The Colorwriter LSR Manager application runs on Windows 95 and Windows NT systems.

After installing the utilities, and before using them, run the Colorwriter LSR Manager to make sure that the network configuration is correct.

The main screen of the Colorwriter LSR Manager includes buttons that enable you to launch the Colorwriter LSR Downloader and Colorwriter LSR Spooler without exiting the Colorwriter LSR Manager.

For a detailed description of the Colorwriter LSR Manager and how to use it to run the Colorwriter LSR Spooler and the Colorwriter LSR Downloader, see page 6-60 of *Getting Started*.

Application notes

This section provides special instructions for optimizing color output with the following applications:

- Aldus PageMaker 5.0 for Windows 3.1
- Adobe Photoshop 2.5 and 3.0 for Windows 3.1
- CorelDRAW 5.0 for Windows 3.1
- Microsoft PowerPoint 4.0 for Windows 3.1

In general, you should use the Adobe PostScript Printer Driver for Windows 3.x and Windows 95, although the Windows PostScript printer driver is also supported.

Before you start:

- Make sure you or your system administrator has installed your Colorwriter as a PostScript printer. Make sure that any additional printer files for your applications are installed.

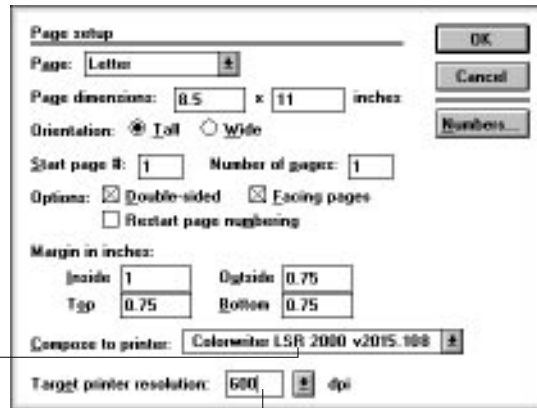
For installation, see Chapter 6 of *Getting Started*.

Aldus PageMaker 5.0 for Windows 3.1

Your PageMaker package may include a small document with the heading “PRINTING ALERT!” stating that only the Microsoft PostScript Printer Driver can be used with PageMaker 5.0. You may disregard this warning. In general, you should use the Adobe PostScript Printer Driver for Windows to print from PageMaker, but you can also use the Microsoft Windows PostScript printer driver version 3.56 supplied with PageMaker.

Page setup

Choose options in the Page setup dialog when you *begin* creating the PageMaker document. Refer to the illustration below for settings applicable to the Colorwriter.



Choose the Colorwriter here

Choose 600 from the pop-up menu

Choosing fill and line colors

You can create fill and line colors using the process (CMYK), RGB, or HSB color model, or choose a named color using one of the four color matching systems supplied. Note that displayed versions of colors you choose may not match Colorwriter output exactly.

Working with imported files

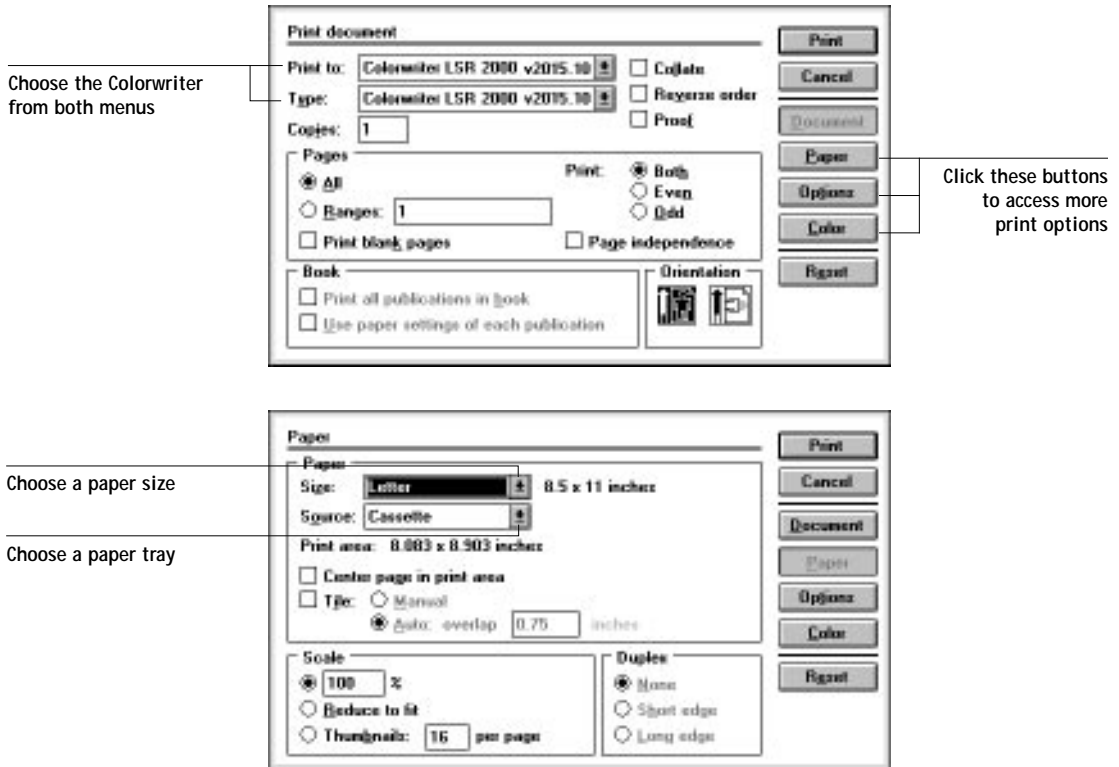
RGB raster images should be saved from Adobe Photoshop as EPS files before they are placed in PageMaker documents. Photoshop includes PostScript information in RGB EPS files that activate the Colorwriter CRDs. Using this type of image file, the image prints from PageMaker as it does from Photoshop; using a different format compromises the printed output of RGB bitmaps, since no CRD is activated. For details, see "Exporting image files to other applications" on page 4-43.

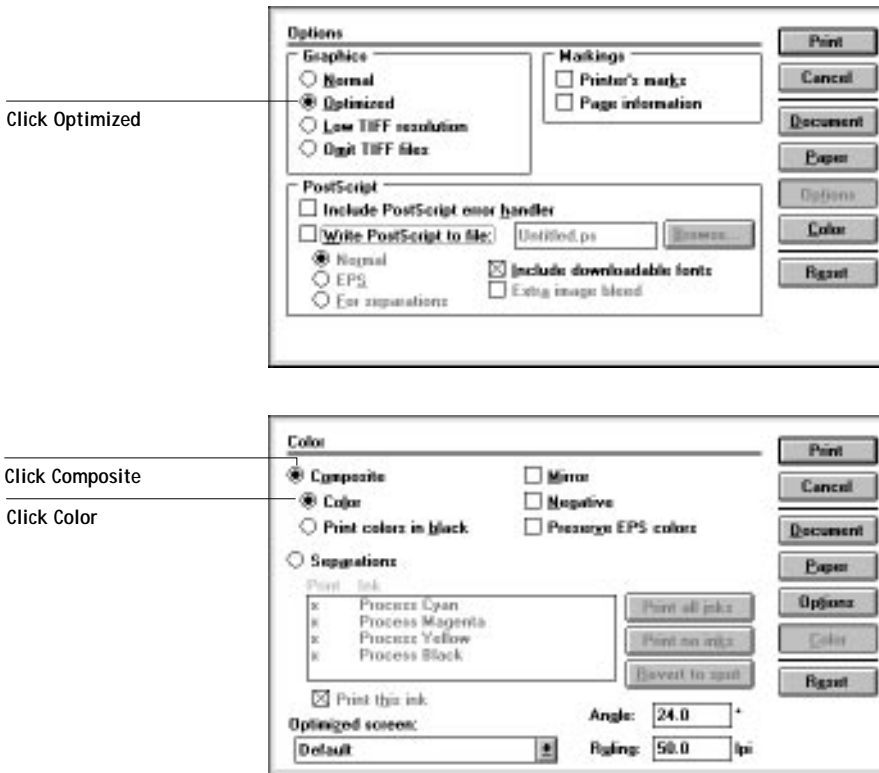
If you use a pixel-editing application other than Photoshop, you should separate the image to CMYK. Note that CMYK bitmaps are often separated for offset printing and may need adjustment to print properly on your Colorwriter.

Selecting options when printing

Refer to this section to select options in the Print dialog box.

NOTE: You cannot access Adobe PostScript Printer Driver options from PageMaker 5.0. Settings made for Adobe PostScript Printer Driver options from the Windows Control Panel have no effect.





Adobe Photoshop 2.5 and 3.0 for Windows 3.1

This section explains how to print from Photoshop using the Colorwriter's built-in CRDs. This way of printing is convenient and fast, and is ideal when the Colorwriter is the final printing device. Note that you can use this technique to print only RGB images, such as scans made with a desktop scanner.

The Separation Tables that come with the Colorwriter user software provide EFICOLOR data conversions when you use Photoshop to convert images from one mode to another, such as between RGB, Lab color, and CMYK color spaces.

Mode conversions are commonly used when you use Photoshop to print an image specified in RGB mode to a printer (such as the Colorwriter) that uses CMYK toner colors. They are also used when you use Photoshop to save separations.

EFICOLOR color conversions that involve RGB data should start with a standardized RGB color space. This is provided by the Calibrated RGB file, which is loaded into Photoshop's Monitor Setup.

Loading Calibrated RGB monitor settings

Calibrated RGB monitor settings ensure consistent results. You need to load the settings file only once. The settings remain loaded unless you change them.

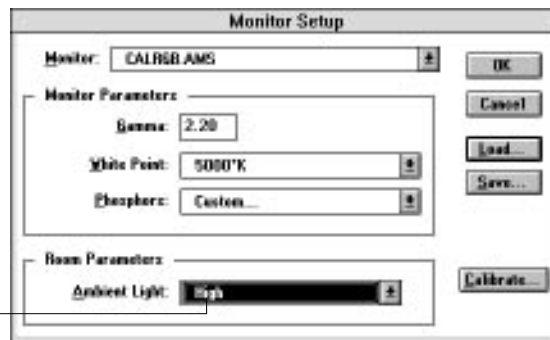
TO LOAD THE CALIBRATED RGB MONITOR SETTINGS FILE:

1. Copy the file of Calibrated RGB monitor settings (called calrgb.ams) from the Colorwriter user software CD into the directory where you keep Photoshop.
2. Start Photoshop, choose Preferences from the File menu, and choose Monitor Setup from the submenu.

The Monitor Setup dialog box is displayed.

3. Click Load and load the file called calrgb.ams. Choose High from the Ambient Light menu.

Before you apply the settings, you should see this if you are using Photoshop 3.0:



Make sure that High is selected here

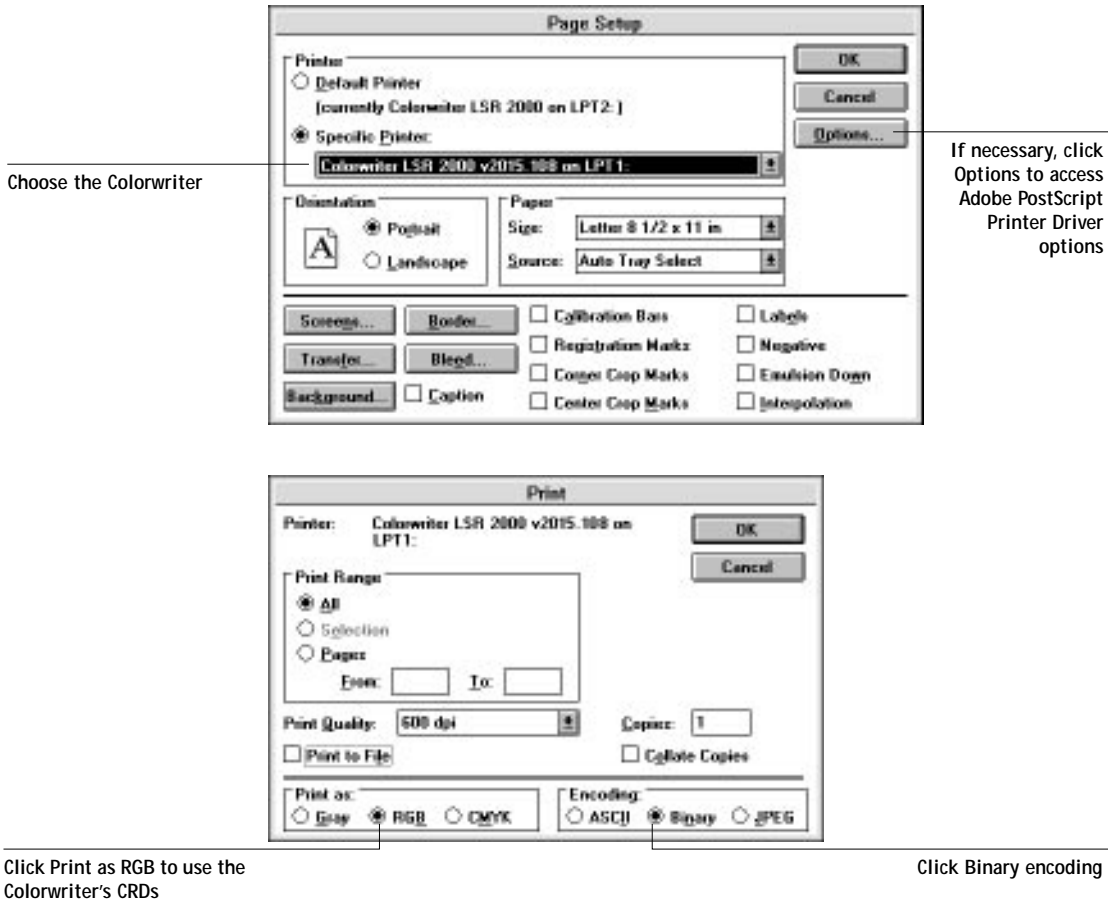
Note that this dialog box looks slightly different in Photoshop 2.5.

4. Click OK to apply the settings.

NOTE: Changing settings in the Monitor Setup dialog box affects your printed output from RGB images. If you're not sure whether the Calibrated RGB settings are loaded, load them again.

Selecting options when printing

Consult the following illustrations when selecting options in the Page Setup and Print dialog boxes. Note that you must select **Print as RGB** in the Print dialog box to use the Colorwriter's built-in CRDs.



Setting Adobe PostScript Printer Driver options

No special settings are required for printing from Photoshop; it is necessary to change Adobe PostScript Printer Driver options only if:

- You previously chose a rendering style other than Photographic.

- You want to choose a feature such as Paper Type.

You can access Adobe PostScript Printer Driver options in Photoshop by clicking the Options button in the Page Setup dialog box.

Exporting image files to other applications

Photoshop is a PostScript Level 2 application. As such, it puts information that activates the Colorwriter CRDs in PostScript files that it writes. For this reason, you should save RGB Encapsulated PostScript (EPS) images from Photoshop when the image will be imported into another application and printed to a Colorwriter. The image will be printed using a CRD when imported into almost any application.

Perform any needed rotating, cropping, and resizing on the image in Photoshop before saving it, to speed printing from the application the image is placed in. When saving the file, select binary encoding in the EPS Format dialog box, and do *not* include transfer functions or halftone screens, as shown in the following illustration.



NOTE: If you later experience problems printing the exported image, substitute an ASCII encoded version of the same image, and print the document again. Binary encoding occasionally causes printing problems with some system configurations.

CoreDRAW 5.0 for Windows 3.1

The Color Manager

The Color Manager is a color management system that is integrated into CoreDRAW and other Core applications. Because the Color Manager does not include profiles for the Colorwriter, this section suggests other ways to get predictable results when printing to the Colorwriter from CoreDRAW. These methods include importing raster images saved from Adobe Photoshop in the RGB EPS file format to activate Colorwriter CRDs.

If you have considerable experience working with color, and want to use the Color Manager, consider creating a custom printer profile for your Colorwriter. You will need a spectrophotometer or colorimeter for accurate results. For details, see section 3 of the CoreDRAW 5 *User Guide*, Volume 1.

Choosing fill and line colors

You can create fill and line colors using the process (CMYK), RGB, or HSB color model, or choose a named color using one of the three color matching systems supplied. Note that displayed versions of colors you choose may not match Colorwriter output exactly.

Working with imported files

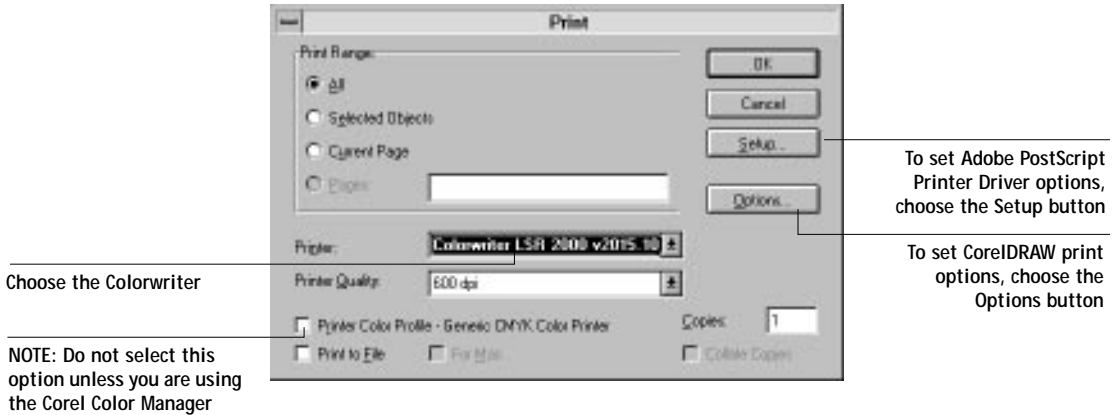
We recommend using EPS files for all artwork that will be placed in CoreDRAW documents.

If the image is RGB, it should be saved from Adobe Photoshop, since Photoshop includes PostScript information in RGB EPS files that activates the Colorwriter CRDs. Using this type of image file, the image prints from CoreDRAW as it does from Photoshop. For details, see “Exporting image files to other applications” on page 4-43. Note that using a different file format compromises the printed output of RGB bitmaps, since no CRD is activated.

If you use a pixel-editing application other than Photoshop, we recommend separating the image to CMYK before importing it. CMYK bitmaps from high-end scanners are typically separated for offset printing, and may need some color correction to print properly on your Colorwriter.

Selecting options when printing

Refer to this section to select options in the Print dialog box.



Setting Adobe PostScript Printer Driver options

No special settings are required for printing from CorelDRAW; it is necessary to change Adobe PostScript Printer Driver options only if:

- Your CorelDRAW document contains a placed RGB EPS file, and you previously chose a rendering style other than Photographic.
- You want to choose a feature such as Paper Type.

You can access Adobe PostScript Printer Driver options in CorelDRAW by clicking the Setup button in the Print dialog box.

Microsoft PowerPoint 4.0 for Windows 3.1

Presentations created in PowerPoint can be printed to the Colorwriter on plain paper or on transparency film for projection.

Choosing a template

PowerPoint comes with templates that determine the background for each slide, as well as a color scheme and placement for text. To select a template, choose Presentation Template from the Format menu, and double-click a template name to apply it to all slides in the presentation. If none of the templates for color overheads suit your needs, try one of the templates for color slides.

If you use one of the templates for color slides, you must change the Slide Setup for printing with the Colorwriter. Choose Slide Setup from the File menu, enter the appropriate page size, and click OK to apply the changes.

Working with imported files

In addition to the clip art included with PowerPoint, images from other applications in many formats can be imported. You should use EPS files for all raster artwork that will be placed in PowerPoint documents.

If the image is RGB, save it from Adobe Photoshop since Photoshop includes PostScript information in RGB EPS files that activates the Colorwriter CRDs. Using this type of image file, the image prints from PowerPoint as it does from Photoshop. For details, see “Exporting image files to other applications” on page 4-43. Note that using a different file format compromises the printed output of RGB raster images, since no CRD is activated.

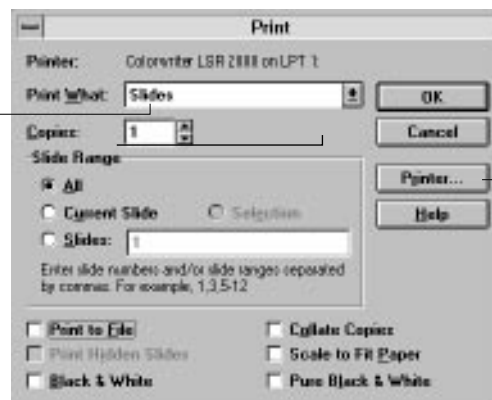
If you use a pixel-editing application other than Photoshop, separate the image to CMYK before importing it. CMYK bitmaps from high-end scanners are typically separated for offset printing, and may need some color correction to print properly on your Colorwriter.

Selecting options when printing

Refer to this section to select options in the Print and Print Setup dialog boxes.

To print a single slide on a page, choose Slides

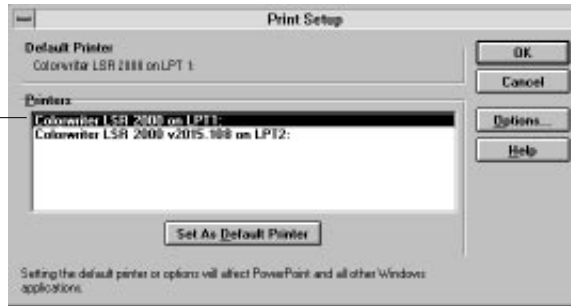
To print several slides on a page, choose Handouts (2, 3, or 6 slides per page)



Click to display the Print Setup dialog box, where you can select the Colorwriter

4

Select the Colorwriter



It is possible to have multiple instances of the Colorwriter driver installed on your PC. Each driver may have different connections or setup preferences. However, installing the Adobe driver and the Microsoft driver on the same system for the same printer may produce unpredictable results. If you find that you have both drivers installed, it is recommended that you remove one of them. Enter the Setup of the driver after selecting the driver from the Control Panel Printers Icon. Click the About button to determine which driver you have selected. Click the Remove button to remove the driver of your choice.

Chapter 5: Printing from UNIX Workstations

This chapter provides information about printing to the Colorwriter directly from UNIX. Although Colorwriter utilities are not available on UNIX workstations, jobs printed to the Colorwriter are sent to the Print queue and can be manipulated from Macintosh and PC computers on the network.

The queue name and Colorwriter printer name are established by your system administrator. In general, the queue name should be appended to the name of the Colorwriter, for example, *DefaultPrinterName_print*.

For information on setting up printing from TCP/IP, see Chapter 5 of *Getting Started*.

Printing to the Colorwriter from UNIX Workstations

You can use UNIX commands to print PostScript files and text files to the Colorwriter. In general, the basic printing commands (*lpr*, *lpq*, *lprm*) can be used to send print jobs to a Colorwriter. See your UNIX manual pages or other documentation for information about UNIX commands.

NOTE: Make sure that the files are either PostScript or text files. These are the only formats you can use to print from UNIX. Files may arrive at the printer without a file type designation that would distinguish between PostScript and text files. The printer makes the distinction based on the first characters in the file. A file is treated as a text file unless it begins with “%!” which indicates a PostScript file.

TO PRINT A FILE TO THE COLORWRITER:

- On a UNIX system running SunOS 4 or other BSD-based variant, use the *lpr* command to send a job to the Colorwriter.

The *lpr* command creates a printer job in a spooling area. Use this format:

```
lpr -P<queuename> -#<copies> <filename>
```

For example, if your Colorwriter queue is named `colorwriterq`, your file is named `Sample`, and you want to print two copies, you would type:

```
lpr -Pcolorwriterq -#2 Sample
```

- On a UNIX system running Solaris 2, use the `lp` command to send a job to the Colorwriter.

Use this format:

```
lp -d <queuename> <filename>
```

For example, if your Colorwriter queue is named `colorwriterq` and your file is named `Sample`, you would type:

```
lp -d colorwriterq Sample
```

To print multiple copies:

```
lp -d colorwriterq -n # Sample
```

TO MANAGE THE COLORWRITER QUEUE FROM A UNIX WORKSTATION:

- On a UNIX system running SunOS 4 or other BSD-based variant, use the `lpq` command to see printer jobs in the queue.

```
lpq -P<queuename>
```

For example, if the queue name for your Colorwriter is `colorwriterq`, you would type:

```
lpq -Pcolorwriterq
```

Your workstation displays the contents of the queue.

- On a UNIX system running Solaris 2, use the `lpstat` command to see printer jobs in the queue.

```
lpstat -o <queuename>
```

For example, if your Colorwriter queue is named `colorwriterq`, type:

```
lpstat -o colorwriterq
```

The job ID includes the printer name.

Chapter 6: Printing from OpenVMS Systems

This chapter provides information about printing to the Colorwriter from DECprint Supervisor for OpenVMS (DCPS) on VMS systems. DCPS (version 1.3) is the print client used on OpenVMS systems.

Printing from DCPS to the Colorwriter

To print to the Colorwriter from OpenVMS, DCPS must be installed on the system. DCPS v1.3 provides full support for the Colorwriter. The Colorwriter can be used with DCPS v1.2 or earlier, but an optional DCPS OPEN license is required; not all print command qualifiers are supported, even with the optional license installed.

The OpenVMS operating system with DCPS v1.3 has commands that allow you to submit and manage print jobs to the Colorwriter. OpenVMS also provides commands for defining and managing print queues for print job entries. For a full description of the commands listed below, see the *DCL Command Dictionary*, which is part of the OpenVMS document set.

Commands to define and manage print queues:

Define/Form

Delete/Form

Delete/Queue

Initialize/Queue

Set Queue

Show Queue

Show Queue/Form

Start/Queue

Start/Queue/Manager

Stop/Queue

Stop/Queue/Abort

Stop/Queue/Manager/Cluster

6

6-2 | Printing from DCPS to the Colorwriter

Stop/Queue/Next

Stop/Queue/Requeue

Stop/Queue/Reset

Stop/Queues/On_Node

Commands to enter and manage print jobs:

Delete/Entry

Print

Set Entry

Show Entry

Stop/Queue/Entry

Chapter 7: Administering Print Jobs over the NetWare Print Server

The Colorwriter LSR 2000⁺ with the Professional Color Kit (PCK) option installed supports simultaneous connections to three different Novell NetWare print servers. This chapter contains information on:

- Monitoring queued print jobs
- Printing a PostScript file over the NetWare print server

NOTE: Make sure you have set up your Novell server or servers with a print server and print queue for the Colorwriter, and then configure your printer to connect to the print queue you set up on the Novell server. See page 5-22 of *Getting Started* for information on how to create a print server, and page 5-27 of *Getting Started* for instructions on how to connect the Colorwriter to the Novell network.

PCK Monitoring queued print jobs

Network administrators can monitor, move, and delete jobs from the Colorwriter queue from any one of the the NetWare print servers, using the NetWare Print Console utility.

TO MONITOR QUEUED PRINT JOBS:

1. Log in to the NetWare server as the Supervisor.
2. At the NetWare MS-DOS prompt, type PCONSOLE.
The Available Options menu is displayed.
3. Select Print Queue Information.
PCONSOLE displays a list of queues on the current server.
4. Highlight the Colorwriter queue and press Enter.
The Print Queue Information menu is displayed.
5. Select Current Print Job Entries.
NetWare displays a list of current jobs in the Colorwriter queue on the NetWare server, in order of priority.

From the list you can:

- Delete jobs

Use the arrow keys to highlight one or more jobs and Press Del to delete the job from the queue. Queue operators can delete any job; queue users can delete only their own jobs.

- Change the number of copies, the print priority, and the print time

Highlight a job and press Enter to display the Print Queue Entry Information window. From this window you can place the job on user or operator hold. If you have operator privileges, you can also change the priority, change the number of copies, and defer printing.

6. Press Esc to exit PCONSOLE windows.

Since NetWare jobs that are transmitted to the Direct connection are usually processed immediately, a series of Colorwriter jobs queued on the NetWare server can monopolize the Colorwriter on a mixed network. If this becomes a problem, you can change two settings in Network Setup on the Control Panel: connect the NetWare server to the Colorwriter Print queue, or increase the IPX Poll Interval, to let other network jobs print.

Entering an administrator password on the control panel keeps casual users from changing NetWare and other options in Setup screens.

Printing a PostScript file

In addition to downloading PostScript files, PostScript files can be printed directly from applications that create them.

Such files may arrive at the printer without a file type designation that would distinguish between PostScript and text files. The printer makes the distinction based on the first characters in the file.

NOTE: The printer treats the file as a text file unless it begins with “%!” which is the convention for the beginning of a PostScript file.

TO PRINT A POSTSCRIPT FILE OVER IPX (NOVELL) NETWORKS:

1. Set up the server and the Colorwriter as described in Chapter 5 of Getting Started.
2. On your workstation, at the NetWare MS-DOS prompt, type PCONSOLE.
You do not need Supervisor privileges to print a PostScript file. However, you must be logged into a NetWare file server that has a Colorwriter queue.
The Available Options menu is displayed.
3. Choose Print Queue Information and press Enter.
4. From the list of Print Queues, select the Colorwriter queue. and press Enter.
The Print Queue Information menu is displayed.
5. From the Print Queue Information menu, choose Current Print Job Entries.
6. Press the Ins key to select the directory containing the file you want to print, and press Return.
For example, to print a SAMPLE.PS file, in the New Print Job to be Submitted window, select or type the following:
C:\SAMPLE.PS
When you press Return, the configuration choices are displayed.
7. Press Return to select the default print job configuration.
8. In the Print Job Configurations window, press Esc to leave the default settings.
The Colorwriter needs no additional information for printing a raw PostScript file.
9. Press Return to save changes.
The Colorwriter prints the selected PostScript file.

Using AppleTalk with Macintosh computers on an IPX (Novell) network

Macintosh users on an IPX network can print to the Colorwriter:

- Directly, using AppleTalk and bypassing the NetWare server
- Through a NetWare server running NetWare for Macintosh

Since the Colorwriter supports both AppleTalk and IPX protocols at the same time, it's not necessary to use the second option. However, a network administrator may choose to route all print jobs through a server.

PKK NOTE: Colorwriters configured with 16MB of memory can be attached to a single NetWare server. Colorwriters configured with 32MB or 48MB of memory may be attached to as many as three NetWare servers.

Printing directly to the Colorwriter

Due to the layered design of networks, Ethernet cable can transmit data using more than one network protocol. When Macintosh computers are connected to an IPX network, they can continue to transmit data over Ethernet cable using AppleTalk protocols. If the Colorwriter is on the same network, Macintosh computers can see and print to the Colorwriter, provided that AppleTalk is enabled on the Macintosh and in Colorwriter Setup.

A

Appendix A: Error and Warning Messages

When an error interferes with printing, you will see a message on the printer control panel. Only two messages are displayed at a time on the printer control panel (one warning message and one error message) even when more than one of each error condition is present. The messages are displayed until the problem conditions are resolved. For example, when yellow toner is low, even though the black toner may also be low, only the “Low Toner Yellow” message is displayed. For tips and procedures on how to correct certain printing problems, see *Appendix D: Troubleshooting*.

Following are the messages (listed in alphabetical order), with the appropriate corrective action for each one. Some error messages refer you to specific parts of the printer. For an illustration of the printer parts, see page C-1.

Printer control panel error messages

The following operation errors cause the fault LED to flash and printing to stop. Contact an authorized service representative.

| Message | Corrective action/additional information |
|-------------------------------------|---|
| DOOR OPEN | The door on the printer is open. The printer will resume printing when it is closed. |
| LOAD ____ | The printer is not loaded with the paper size specified. The printer will resume printing when the required paper is loaded. |
| LOAD ____ PAPER IN MAIN CASSETTE | The printer's main cassette is not loaded with the paper size specified. The printer will resume printing when the main cassette is loaded with the required paper. |
| LOAD ____ PAPER IN MP TRAY | The printer's multipurpose tray is not loaded with the paper size specified. The printer will resume printing when the multipurpose tray is loaded with the required paper. |
| LOAD ____ PAPER IN OPT TRAY | The printer's optional cassette is not loaded with the paper size specified. The printer will resume printing when the optional cassette is loaded with the required paper. |



| Message | Corrective action/additional information |
|--------------------------------|---|
| LOAD ____ TRANS. IN MP TRAY | The printer's multipurpose tray is not loaded with the transparency size specified. The printer will resume printing when the multipurpose tray is loaded with the required transparency. |
| NO FIXING UNIT | The printer will resume printing when you have replaced the fixing unit. |
| NO OPTIONAL CASS | There is no optional cassette in the paper feeder. The printer will resume printing when the paper cassette is inserted. |
| NO PHOTO DRUM | The printer will resume printing when you have replaced the photo drum. |
| NO TONER CART. ____ | There is no toner cartridge for the specified color. The printer will resume printing when the toner cartridge is replaced. |
| PAPER JAM ____ | There is a paper jam at the specified location. The printer will resume printing when the paper jam is cleared. |
| PRINTER BUSY | The printer is being serviced or printing a test page from the console on the rear of the printer. |
| PRINTER OFFLINE | The printer is off line. The printer will resume printing when it is back online (when you press the online button on the printer control panel). |
| REPLACE FIXING OIL | The fixing oil bottle in the fixing assembly is empty. The printer will resume printing when the fixing oil is replaced. |
| REPLACE FIXING UNIT PUMP | This message indicates one or more of the following conditions: the printer is at more than a 1% angle from level, the sensor is stuck, the sensor is dirty, or the fixing unit pump needs replacement. Check to make sure the printer is level and check the sensor before replacing the fixing unit pump. |
| REPLACE FIXING WEB | The printer will resume printing when the fixing assembly unit is replaced. This should be done by an authorized service representative. |
| REPLACE TONER CART. ____ | Toner is low for the specified color and the control panel; option was set on LOW TONER ERROR. |
| REPLACE WASTE TONER | The printer's waste toner container is full. |



Printer control panel warnings

The following warnings cause the fault LED to light and the message to be displayed on the printer control panel until the problem is fixed.

NOTE: The printer continues to print while the warnings are displayed.

| Message | Explanation |
|------------------------------|--|
| DISK FULL | The Colorwriter LSR 2000 ⁺ hard disk is full. Allow pending jobs to finish printing before sending any new jobs. If this problem occurs often, consider deleting jobs in the Hold queue and Printed queue, and deleting fonts that were downloaded to the printer. |
| CLEAN SENSOR & TRANSFER DRUM | The sensor and transfer drum need to be cleaned for optimal print quality. |
| LOW DRUM LIFE | The drum life is low. Prepare a new drum. The printer will continue to print until the drum is worn out, and then it will display the message, "Replace drum." |
| LOW FIXING OIL | The fixing oil is low. The printer will continue to print until it runs out of oil, and then it will display the message: "Replace fixing oil." |
| LOW FIXING WEB | The fixing assembly unit life is low. The printer will continue to print until the fixing web is worn out, and then it will display the message, "Replace fixing web." |
| LOW TONER — | The toner for the specified color is low. If you set LOW TONER ERROR to YES (in System Setup on the printer control panel), this message is displayed and printing stops until the toner is replaced. If you set LOW TONER ERROR to NO, then it will display the message: REPLACE TONER CART, and the printer will continue to print until it runs out of toner. We recommend that you keep replacement toner for all colors on hand, and when you order, always order all four colors at the same time. |
| LOW DRUM LIFE | Drum life is low and the drum should be replaced. The printer will continue to print until it displays the message NO PHOTO DRUM. |



Startup diagnostic error service calls

Startup diagnostic tests are performed on the printer controller board every time the Colorwriter LSR 2000⁺ is powered up. Diagnostic test names are displayed briefly, followed by the message DIAGS PASSED.

If a startup test fails, an error number is displayed on the control panel. When you see a startup test failure, note the error number and turn off the printer. Contact an authorized service representative to restore your printer to working order, and report the error number. There are no user-serviceable parts on the controller board.

If no characters appear on the LCD display, there is a problem with one or more SIMMs (single in-line memory modules) in Bank 0. An example of a diagnostic test failure follows.

| Message | Action required |
|-------------------------------|--|
| DRAM TEST FAILED NOTE #320 | Notify an authorized service technician. |

Printer control panel service calls

Operation errors cause the fault LED to flash and printing to stop. Contact an authorized service representative to restore your printer to working order.

| Message | Explanation |
|------------------------------|---|
| CALL FOR SERVICE NOTE #A1 | A1 Fixing unit failure (low temperature) |
| CALL FOR SERVICE NOTE #A2 | A2 Fixing unit failure (warm-up abnormal) |
| CALL FOR SERVICE NOTE #A3 | A3 Fixing unit failure (high temperature) |
| CALL FOR SERVICE NOTE #A4 | A4 Fixing unit failure |



| Message | Explanation |
|------------------------------|---|
| CALL FOR SERVICE NOTE #A5 | A5 Fixing unit failure (unknown) |
| CALL FOR SERVICE NOTE #A6 | A6 Fixing unit failure (heater cut off) |
| CALL FOR SERVICE NOTE #B1 | B1 BD failure |
| CALL FOR SERVICE NOTE #B2 | B2 Laser failure |
| CALL FOR SERVICE NOTE #C5 | C5 Polygon motor failure (abnormal startup) |
| CALL FOR SERVICE NOTE #D0 | D0 Motor failure |
| CALL FOR SERVICE NOTE #D2 | D2 Motor failure (drum motor) |
| CALL FOR SERVICE NOTE #D3 | D3 Motor failure (main motor) |
| CALL FOR SERVICE NOTE #D4 | D4 Motor failure (controller fan) |
| CALL FOR SERVICE NOTE #D5 | D5 Motor failure (fixing unit fan) |
| CALL FOR SERVICE NOTE #D6 | D6 Motor failure (electric fan) |
| CALL FOR SERVICE NOTE #E5 | E5 Be sure toner cartridge is installed correctly |
| CALL FOR SERVICE NOTE #E6 | E6 Developer unit failure (pressing error) |
| CALL FOR SERVICE NOTE #F1 | F1 DC controller failure (abnormal memory) |
| CALL FOR SERVICE NOTE #F2 | F2 DC controller failure (abnormal voltage) |



| Message | Explanation |
|------------------------------|--|
| CALL FOR SERVICE NOTE #F3 | F3 DC controller failure (thermal/humidity unit) |
| CALL FOR SERVICE NOTE #F4 | F4 DC controller failure (abnormal density sensor) |
| CALL FOR SERVICE NOTE #F5 | F5 DC controller failure (print engine) |
| CALL FOR SERVICE NOTE #F6 | F6 DC controller failure (abnormal IC) |


B

Appendix B: Setup Menus

This appendix reproduces the Help Map, which provides information about Setup menus and options, and also summarizes the status screens and pages you can print from the printer control panel. To print out a full-size version of the Help Map from the printer control panel:

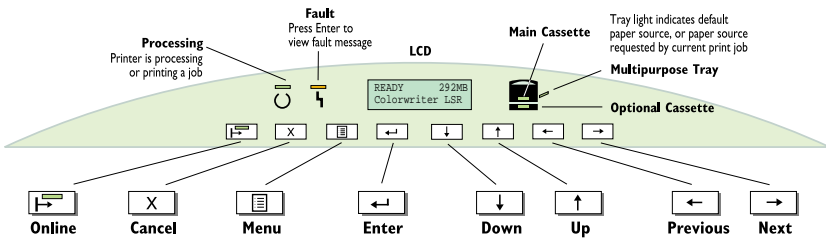
- Press the Menu button to display PRINT PAGES.
- Press the ↓ or ↑ buttons until HELP MAP is displayed.
- Press the Enter button.

B-2 Setup Menus



Colorwriter LSR 2000+
HIGH PERFORMANCE NETWORK COLOR PRINTER

Help Map
page 1 of 3



| When printer is online: | Processing | Fault | Menu | Enter | Down | Up | Previous | Next |
|--|---|-----------------------------------|--|---|---|--|-------------|-------------|
| Brings printer offline (unlit) and lets you access Setup | Printer is processing or printing a job | Press Enter to view fault message | From the Ready or Power Saver Mode screens, displays the Print Pages menu. | In Print Pages menu, selects current choice and starts printing. Displays fault message | In Print Pages menu, displays other pages. In case of multiple faults, displays more messages | No function | No function | No function |
| During Setup: | No function | No function | Displays previous level menu. At top level, prompts to exit setup. | Selects a menu or accepts current choice and proceeds to next item | Scrolls to display menu options or characters | Backspace or advance cursor for text entry | No function | No function |
| Offline: | Brings printer online (lit) | No function | Lets you enter Setup (when offline and during powerup). | No function | No function | No function | No function | No function |

Navigating the Setup menus

Access the setup menus from the **READY** screen (next page), or from startup (below). Within a setup menu:

Up and Down keys display other options

Enter key accepts current selection and proceeds.

Menu key displays higher level menu or cancels current selection.

When you have completed setup, press the **Menu** key until you are prompted to exit setup, and save changes. If you see the **OFFLINE** screen, press **Online** to update settings.

The message **KEY NOT VALID** reminds you to press a different key.

Professional Color Kit (PCK) features

The Professional Color Kit, provided with the Colorwriter LSR in the 32 and 48 MB memory configurations, adds the following features:

- Support for spooling and job storage (queues) on the printer's hard disk
- Support for remote utilities: Downloader, Spooler, LSR Manager, and Print Calibrator
- Larger memory area for image compression
- Faster image processing
- Ability to connect up to 3 Novell servers

Setup options included with the PCK are indicated with an asterisk (*)

Startup screens

Switch the printer on

```


graph LR
    A[TESTING: TESTNAME] -- All tests pass --> B[PRESS MENU FOR SETUP]
    B -- No button pressed --> C[LOADING SYSTEM...]
    B -- Menu button pressed --> D[SELECT FUNCTION RUN SETUP]
    C --> E[READY 292MB Colorwriter LSR]
    D -- See top line, next page --> E
        
```

Printer ready

Printer online, ready to receive a print job

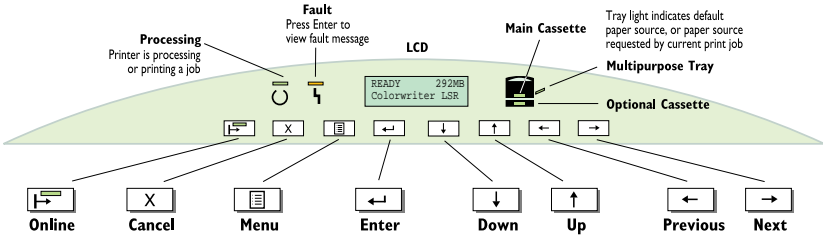
READY 292MB Colorwriter LSR

B-3 Setup Menus



Colorwriter LSR 2000+
HIGH PERFORMANCE NETWORK COLOR PRINTER

Help Map
page 1 of 3



The diagram shows the printer's control panel with an LCD displaying 'READY 292MB Colorwriter LSR'. Buttons include Online, Cancel, Menu, Enter, Down, Up, Previous, and Next. Trays are labeled Main Cassette, Multipurpose Tray, and Optional Cassette. A Fault indicator is also shown.

| When printer is online: | When printer is processing or printing a job: | Processing: | Fault: | Enter: | Down: | Up: | Previous: | Next: |
|-----------------------------|--|---|-----------------------------------|---|---|---|-------------|-------------|
| Brings printer online (lit) | Brings printer offline (unlit) and lets you access Setup | Printer is processing or printing a job | Press Enter to view fault message | In Print Pages menu, selects current choice and starts printing. Displays fault message | In Print Pages menu, selects current choice and starts printing. Displays fault message | In Print Pages menu, displays other pages. In case of multiple faults, displays more messages | No function | No function |
| No function | No function | Stops printing the current job | No function | Selects a menu or accepts current choice and proceeds to next item | Scrolls to display menu options or characters | Backspace or advance cursor for text entry | No function | No function |
| Brings printer online (lit) | No function | Lets you enter Setup (when offline and during powerup). | No function | No function | No function | No function | No function | No function |

Navigating the Setup menus

Access the setup menus from the **READY** screen (next page), or from startup (below). Within a setup menu:

Up and Down keys display other options

Enter key accepts current selection and proceeds.

Menu key displays higher level menu or cancels current selection.

When you have completed setup, press the Menu key until you are prompted to exit setup, and save changes. If you see the **OFFLINE** screen, press **Online** to update settings.

The message **KEY NOT VALID** reminds you to press a different key.

Professional Color Kit (PCK) features

The Professional Color Kit, provided with the Colorwriter LSR in the 32 and 48 MB memory configurations, adds the following features:

- Support for spooling and job storage (queues) on the printer's hard disk
- Support for remote utilities: Downloader, Spooler, LSR Manager, and Print Calibrator
- Larger memory area for image compression
- Faster image processing
- Ability to connect up to 3 Novell servers

Setup options included with the PCK are indicated with an asterisk (*)

Startup screens

Switch the printer on

```

    graph LR
      A[TESTING: TESTNAME] -- "All tests pass" --> B[PRESS MENU FOR SETUP]
      B -- "No button pressed" --> C[LOADING SYSTEM...]
      B -- "Menu button pressed" --> D[SELECT FUNCTION RUN SETUP]
      C --> E[READY 292MB Colorwriter LSR]
      D -- "See top line, next page" --> F[See top line, next page]
    
```

Printer ready

Printer online, ready to receive a print job

READY 292MB Colorwriter LSR



Help Map page 3 of 3

Setup menus

SYSTEM SETUP

PRINTER NAME
 DATE (MM/DD/YY)
 SYSTEM TIME
 PRINT START PAGE
 PRINT TO PSERROR
 PRINT COVER PAGE
 LOW TONER ERROR
 POWER SVNGS (M)
 LOCAL MESSAGES

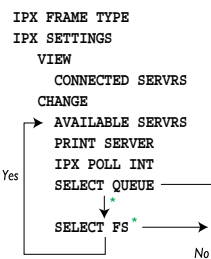
PRINTER SETUP

ENABLE DIRECT Q*
 ENABLE PRINT Q*
 ENABLE HOLD Q*
 ENABLE PRINTED*
 JOBS TO SAVE*
 COLOR MODE
 PAPER SIZE
 PAPER SOURCE
 DEFAULT CRD

*PCK feature (see page 1)

NETWORK SETUP

ENABLE APPLETALK
 APPLETALK ZONE
 ENABLE IPX
 ENABLE TCP/IP
 IP ADDRESS
 SUBNET MASK
 GATEWAY ADDRESS
 ENABLE PARALLEL
 TIMEOUT (S)
 IGNORE EOF



JOB LOG SETUP

AUTO PRINT
 if Yes, AUTO CLEAR

CHANGE PASSWORD

NEW PASSWORD
 VERIFY PASSWORD

CLEAR JOB LOG

(or CLEAR LOG/QUEUES*)

CLEAR JOB LOG (or CLEAR LOG/QUEUES*)
 CONFIRM CLEAR

What the printer control panel (LCD) can tell you

Status

READY 292MB
 Colorwriter LSR

| | |
|-------------------------|--|
| READY | The printer is ready to accept a print job |
| POWER SAVER MODE | After a brief warmup, the printer will be ready |
| PROCESSING | Busy processing (flashing Processing light); exits Power Saver mode |
| PRINTING | Busy printing (flashing Processing light); shows hard disk space available |
| PRINTER OFFLINE | Printer is offline; press Menu to change settings |
| CANCELING | A job is being canceled |
| INITIALIZING | The printer is starting up |

Fault conditions



When fault light flashes, press Enter to view the message

LOAD LTR PAPER IN MAIN CASSETTE

The paper cassette is empty or the job requested a paper size that is not loaded

LOW DRUM LIFE

Prepare a new drum, and replace when you see the message to replace the drum

WARNING MESSAGE +

Plus sign indicates more than one warning. Press the Up/Down key to view additional warning(s). Press the Enter key to continue.

CALL FOR SERVICE NOTE # A1

Printer needs servicing; printing cannot continue

Appendix C: Maintenance

This appendix provides a diagram identifying the parts of the printer and contains maintenance information about:

- Cleaning and handling the printer
- Storing and handling toner cartridges
- Replacing a toner cartridge
- Replacing the silicone oil bottle
- Using the drum cartridge kit
- Moving the printer

NOTE: Maintenance on the printer should be done before 60,000 letter-size printouts. At the same time, the following items should also be replaced: ozone filter, air filter, separation corona wire assembly, transfer drum cleaner unit, and fuser (110 v or 220 v).

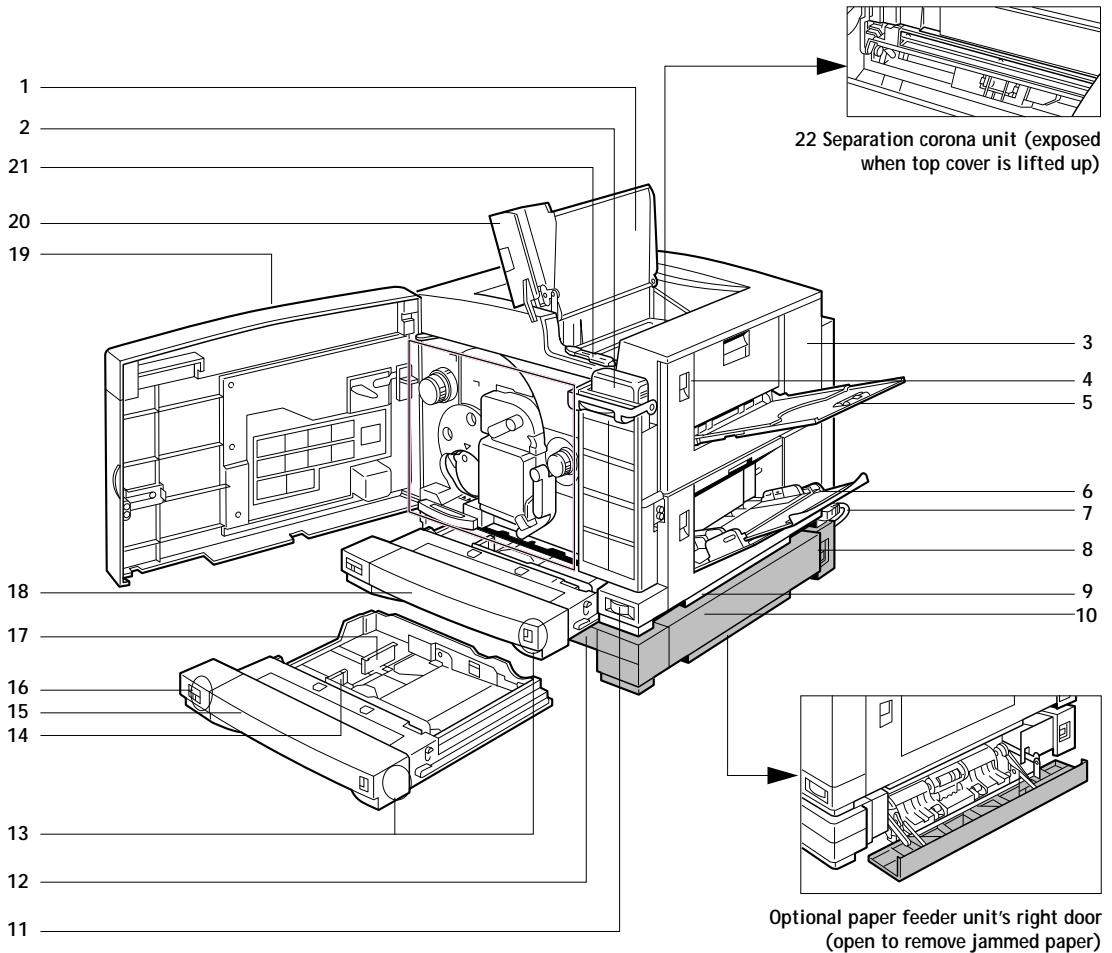
Several of the maintenance procedures in this appendix are also detailed on the Quick Reference Card that came with your Colorwriter documentation. Adhere the clear plastic pocket to your printer and use it to keep the Quick Reference Card handy, so you always have ready access to these procedures: replacing toner, replacing the drum cartridge, installing or reinstalling the waste toner bottle, cleaning the corona wire, and replacing the silicone oil bottle.

Identifying the parts of the printer

The following illustration (showing the front and right side of the printer) will help you identify the parts of the printer for maintenance and troubleshooting purposes.

C

C-2 Identifying the parts of the printer



1 Top cover (open)

For access to the transfer drum to remove jammed paper or for replacing the separation corona unit.

2 Silicone oil bottle (cover opened)

The silicone oil is used at the fixing rollers to fix the toner.

3 Fixing assembly cover (closed)

For removing jammed paper at the output area or for replacement of the fixing assembly.



4 Release knobs

Open the fixing assembly cover and the feeder unit cover for troubleshooting or maintenance.

5 Face-up tray (open)

When opened, the face-up tray holds printouts when they come out facing up. When the tray is closed, the face-down tray is used instead. The tray can hold about 50 sheets of plain paper at 20 lb (80 g/m²).

6 Multipurpose tray (open)

Holds about 100 sheets of plain paper at 20 lb (80 g/m²) or 20 sheets of transparency film.

7 Route cable (attached)

Required if the optional paper feeder unit is installed. It connects the power outlet on the feeder unit with the power receptacle (now serving as power inlet) on the printer body.

8 Power receptacle (on paper feeder unit)

Plug in the supplied power cord here, then connect the other end to an AC power (100-120V or 220-240V depending on the voltage model of the printer package).

9 Right door

For access to the feeder area on the optional paper feeder unit to remove jammed paper.

10 Feeder unit cover (closed)

For removing jammed paper at the feeder area or replacement of the drum cleaning unit.

11 Power switch

When the switch sticks out, the printer is turned off. When the switch remains pressed, the printer is turned on.

12 Paper feeder unit (optional)

Comes with a universal cassette.

13 Paper volume indicator

Indicates the paper level. When the blue bar is almost invisible, it is time to refill the cassette.

14 Paper width selector

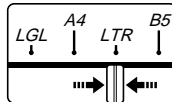
Sets the width of the paper loaded.

15 Paper cassette (universal type) for the paper feeder unit (optional)

Holds about 250 sheets of Letter-, A4-, Legal-, or B5-size paper at 20 lb (80 g/m²).

16 Paper size indicator

As your reminder, slide the knob to the position corresponding to the paper size actually set in the paper cassette.

**17 Paper length guide**

Sets the size of the paper loaded.

18 Paper cassette (universal type) standard

Holds about 250 sheets of Letter-, A4-, Legal, or B5-size paper at 20 lb (80 g/m²).

19 Front door (opened) at on-line status, the "DOOR OPEN" error message appears when opened.

For access to the printer's internal parts for troubleshooting or maintenance.

20 Face-down tray

Holds about 100 sheets of plain paper at 20 lb (80 g/m²).

21 Wire cleaner (stored inside the printer)

Used to clean the separation corona wire inside the separation corona unit, as well as the window of the density detection sensor. For more information on using the wire cleaner, see page C-6.

22 Separation corona wire

Located inside the separation corona unit, which should be cleaned with the cleaning brush stored inside the printer.

Cleaning and handling the printer

Regular cleaning and careful handling of the printer keep the printer in the best condition and maintain optimal print quality.

Cleaning the cabinet

Use a soft cloth slightly moistened with water or a mild detergent solution. Avoid using any solvents, such as alcohol, benzene, or any spray, which might damage the finish. When cleaning is finished, wipe the cabinet with a dry cloth.

The process of cleaning the printer may disperse some toner inside the printer. For a more complete cleaning, therefore, wait a few minutes to let the toner settle, then clean again.

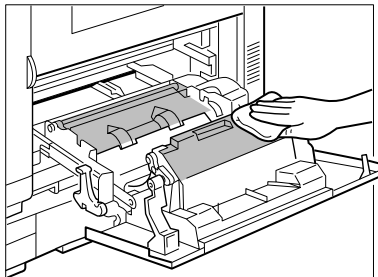


- Before cleaning the printer, always unplug it from the AC outlet after turning off the power switch of the printer. We also recommend removing any interface cable connected to the printer.
- Do not spill water or detergent into the printer. Otherwise the printer could be damaged and electric shock could occur.

Do not lubricate the printer. The printer does not require lubrication.

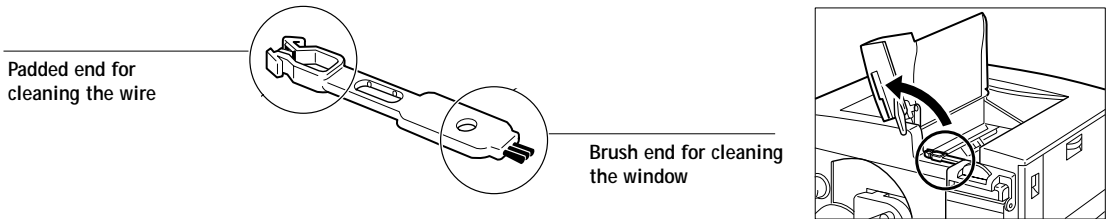
Cleaning the paper pickup area

Paper dust may collect inside the paper pickup area and affect the print quality. Periodically wipe the area with a soft, clean cloth moistened with water. Then dry the paper pickup area with a soft, clean cloth. To open the paper pickup feeder, see page D-5.



Using the wire cleaner

The wire cleaner is oblong, each end is used to clean a different part. Use the padded end to clean the separation corona wire, and use the brush end to clean the window of the density detection sensor. The wire cleaner is stored in the printer as shown in the illustration. The following steps explain how to clean each part.



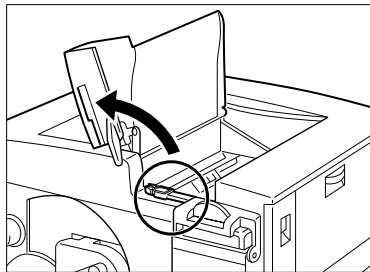
NOTE: When cleaning a part is necessary, be sure to use the end of the cleaner that is intended for cleaning that part.

Cleaning the separation corona wire

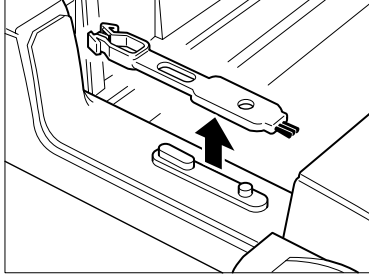
Every time you replace the drum cartridge, or if the print output has toner spots, use the padded end of the wire cleaner to clean the separation corona wire inside the separation corona unit.

TO CLEAN THE SEPARATION CORONA WIRE:

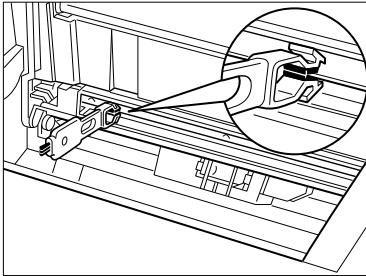
1. Turn off the printer and open the front door and top cover to reveal the separation corona unit and wire cleaner.



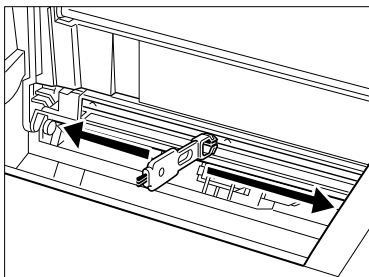
2. Remove the wire cleaner from inside the printer.



3. Place the padded end of the wire cleaner on the separation corona unit.

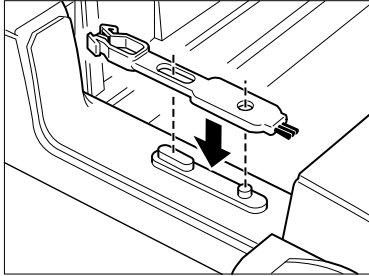


4. Clean the separation corona wire by moving the wire cleaner from side to side several times.



NOTE: The separation corona wire is very thin and delicate, so take care when cleaning.

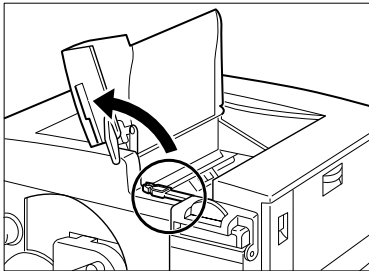
5. After cleaning, replace the cleaner in its storage place and close the top cover and the front door. Then, turn on the printer to resume printing.



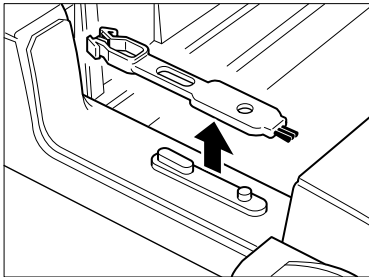
Cleaning the window of the density detection sensor

When there is a density detection error or if the window is soiled with toner residue or dust, clean the window with the brush end of the wire cleaner.

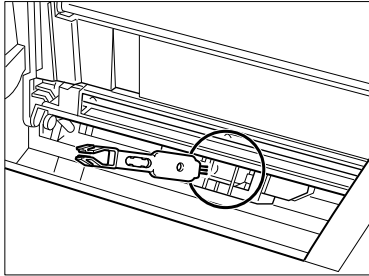
1. Turn off the printer and open the front door and top cover to reveal the window of the density detection sensor.



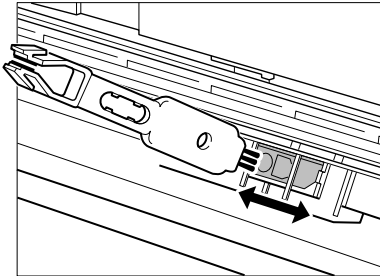
2. Remove the wire cleaner from inside the printer.



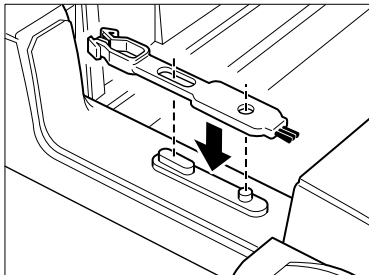
3. Place the brush end of the wire cleaner on the window surface as shown.



4. Clean the surface with the brush and remove any dirt.



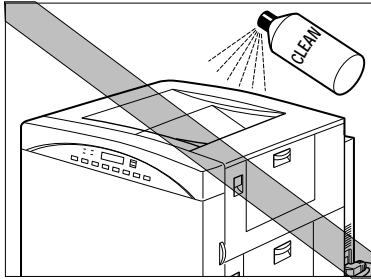
5. After cleaning, replace the cleaner in its storage place and close the top cover and the front door. Then, turn on the printer to resume printing.



Handling the Colorwriter

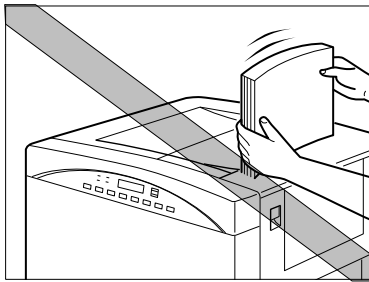


Avoid spraying cleaning solution directly onto the printer's exterior, as the spray could penetrate into the ventilation slots and damage the internal circuits.

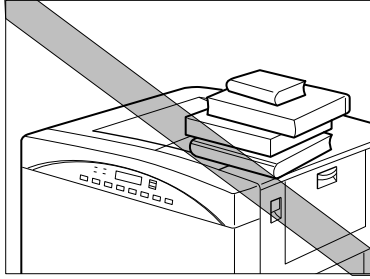


This printer is a precision machine. Handle it with care.

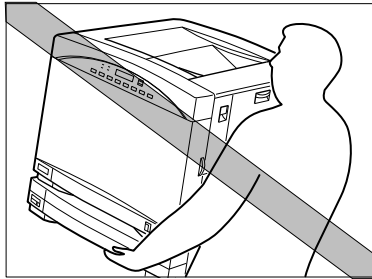
- Do not make the printer vibrate while printing.
- Do not open the printer while printing.
- Do not arrange paper stacks by tapping them on the top of the printer while printing.



- Do not put anything on the printer.



The printer weighs 110 lb (about 50 kg). It should always be moved by two or more persons. Do not attempt to move it by yourself. For more information, see page C-34.

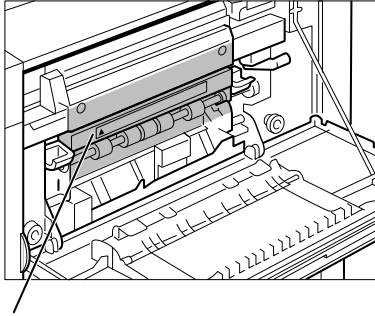


The inside of the printer gets hot while printing.

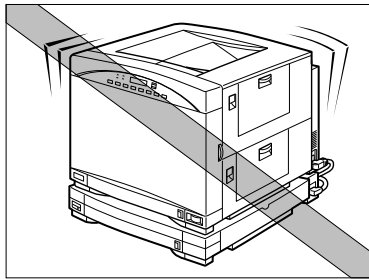


- Be careful when cleaning the inside, or removing paper jams, as the fixing assembly gets very hot.

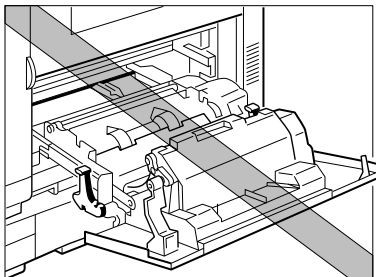
- Do not cover the printer right after you have finished using it. Turn off the printer and wait until it cools down.



Do not close the front door abruptly, or expose the printer to any vibration.

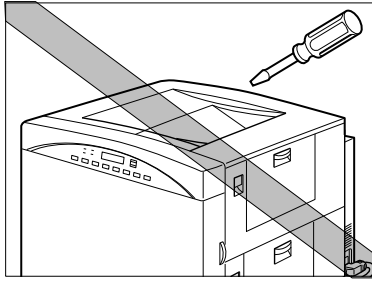


Do not touch the electrical contacts, gears, or the laser beam devices. Doing so may damage the printer or cause the print quality to deteriorate.

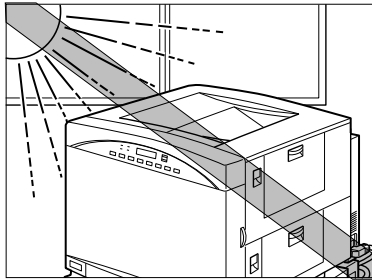




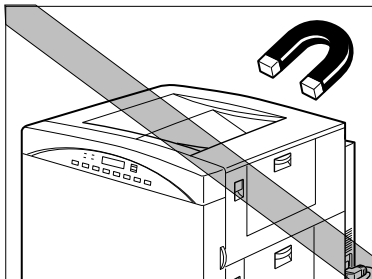
Do not attempt to disassemble the printer.



To avoid light and dust, do not leave the front door open unnecessarily. Avoid bright sunlight to protect the photosensitive drum from damage.



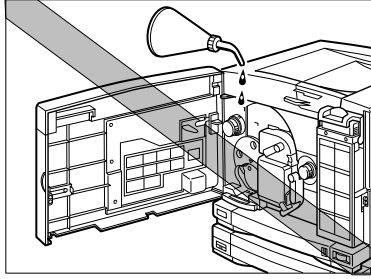
Avoid magnetic fields.



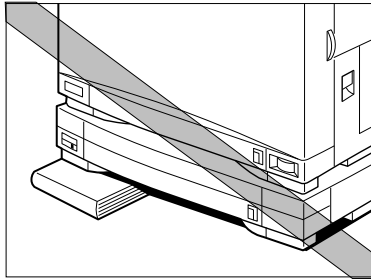
C



Do not lubricate the printer.



Do not tilt the printer.



Storing and handling toner cartridges

Poor print quality can result if toner becomes caked or unequally distributed inside the cartridges. Follow the instructions below when handling the cartridges.

- Store the cartridges in their protective bag. Do not open the bag until you are ready to install the cartridge in the printer.
- Do not store the cartridges where they will be exposed to direct sunlight.
- Do not stand a cartridge on end, and do not turn it upside down. If the toner becomes caked in the cartridge, it may prove impossible to free it even by shaking the cartridge, which results in print quality deterioration.
- Do not store the cartridges at high temperature or high humidity, or where the temperature or humidity can change abruptly.
- Store the toner cartridges horizontally in a cool, dry location away from sunlight. Maximum storage temperature: 30°C (86°F). Maximum storage humidity: 80% without condensation.
- Do not store the cartridges in salty air or where there are corrosive gases such as aerosol spray.
- Remove the cartridges from the printer when transporting the printer. (Put the cartridges in their original protective bag to avoid exposure to light.)
- Do not attempt to disassemble the cartridges.
- Use of only Digital toner cartridges is recommended. (See information on ordering supplies on page F-1.)
- The printer uses the rectangular, transparent windows at the top and bottom of a toner cartridge to detect the toner level. When handling a toner cartridge, avoid touching or scratching the windows or the toner level detection mechanism may not work properly.
- Be sure to replace a used toner cartridge with the same color one. Never insert a toner cartridge where its color does not match the color markers on the rotary; otherwise printing problems may result.



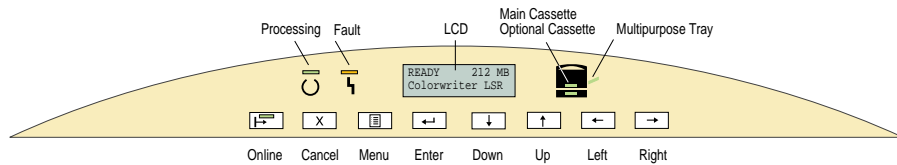
Do not place the cartridges in fire. Toner powder is flammable.

Replacing a toner cartridge

Each toner cartridge prints about 4,000 sheets of Letter- or A4-size paper, when toner coverage of the toner cartridge on the paper is at 4.5% dot ratio. This, however, does not mean all four of the toner cartridges will run out at the same time. Depending on the particular color toner used in a full color print job, some may last longer than others.

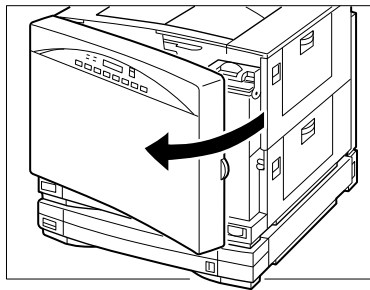
While it is difficult to make a general rule, if the printouts contain a lot of space not covered by toner, then the warning signal may not appear even after 4,000 prints. On the other hand, if each printout continuously uses a lot of multiple-color printing or contains less unprinted area, then the color toner indicator appears before 4,000 sheets are printed.

According to the instructions (or messages) displayed on the LCD window, perform the following operation to replace the appropriate color toner cartridge.

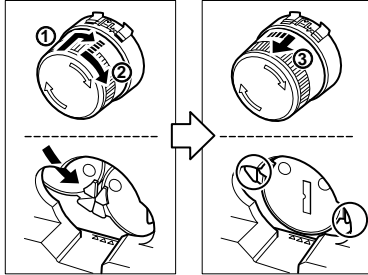


TO REPLACE A USED TONER CARTRIDGE:

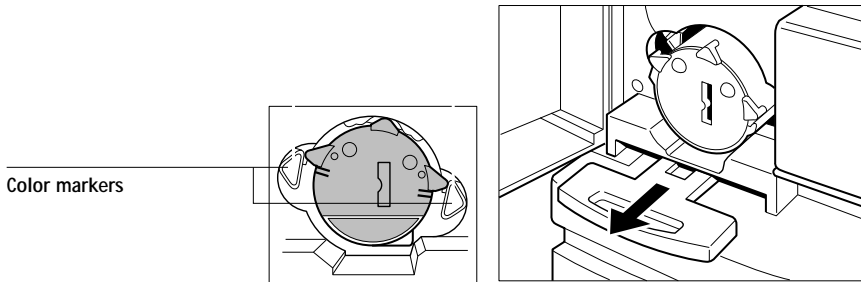
1. Make sure the power switch is turned off. Then open the front door.



2. While pressing the rotary knob ①, turn it in the direction of the arrow ② until the markers for the color indicated by the message on the status panel appear on the rotary. When this is done, the rotary knob pops out and is locked ③.

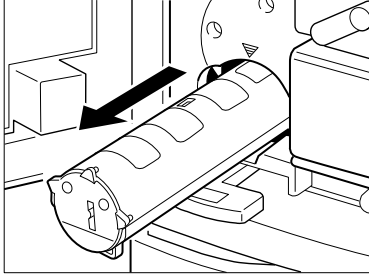


3. Make sure the rotary knob is locked and the two color markers are fully visible. Then pull the eject handle to pop out the end of the toner cartridge.



4. Remove the new cartridge from its bag.

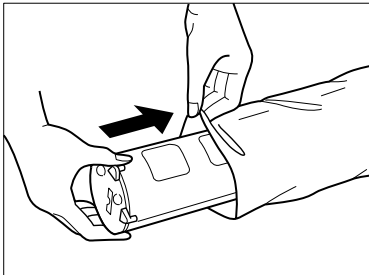
5. While holding the cartridge with one hand, slide it out as shown.



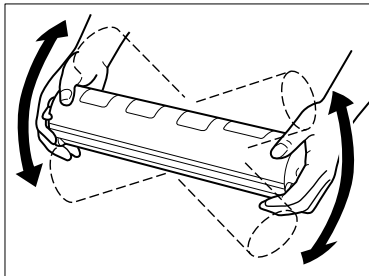
6. Hold the cartridge with one hand from the end with the opening seal, insert it into the protective bag of the new cartridge and dispose of it.

NOTE: We recommend holding the used toner cartridge from the end with the opening seal to avoid getting your hands dirty.

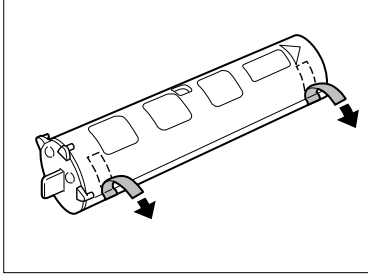
Do not try to rock the used cartridge; otherwise toner leakage may occur.



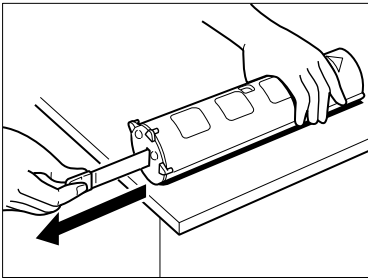
7. Prepare a new toner cartridge of the desired color by rocking it up and down five or six times to distribute the toner evenly, as shown.



8. Remove the two protective tapes.



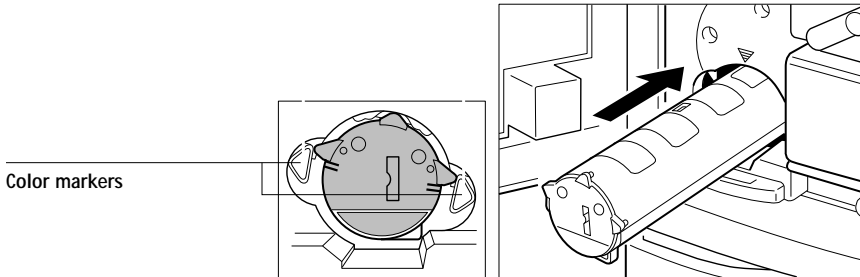
9. Place the toner cartridge on a flat surface, then pull the sealing tape completely out in the indicated direction. The tape may break if not pulled out in this direction.



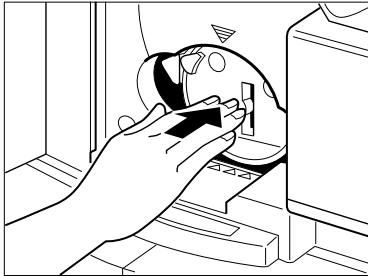
NOTE: Do not pull the sealing tape diagonally, as it may snap.

Avoid touching the windows on the top and bottom of the cartridge.

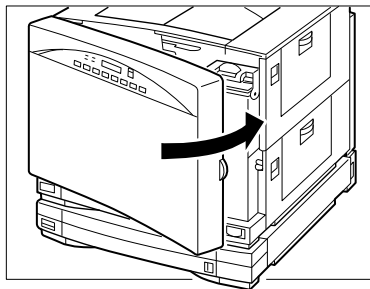
10. Hold the cartridge with the arrow label facing up, then slide it completely into the rotary until it snaps into place. Avoid touching the windows on the top and bottom of the cartridge.



11. Insert the toner cartridge all the way into the printer. Make sure the end of the cartridge is aligned with the marks.



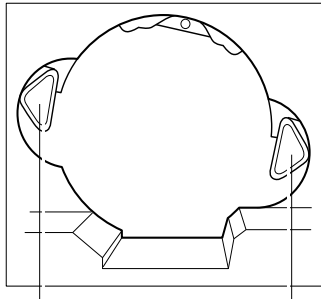
12. Close the front door.



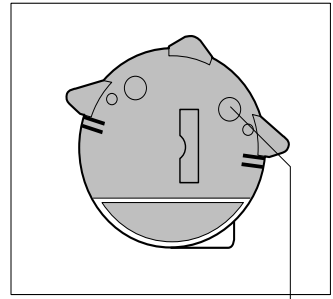
Tips for replacing the toner cartridge

Be sure to observe the following when changing the toner cartridge:

- This printer uses four color toner cartridges: cyan, magenta, yellow, and black. Each color cartridge has its own holder in the printer's rotary. When loading a toner cartridge, make sure its color matches the color markers on the printer.

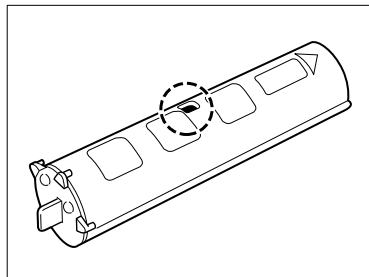


Color markers on the printer



Color markers on the toner cartridge

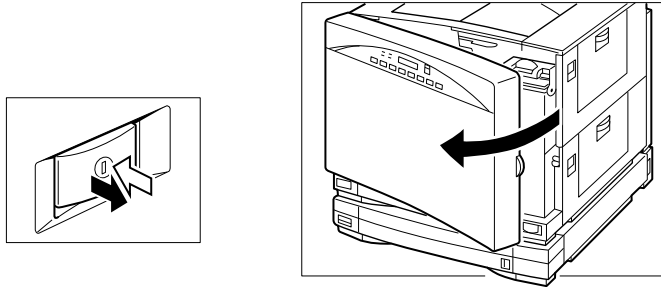
- If the printer is operated with the toner cartridge inserted in the wrong holder, the print quality will decrease and may result in printer malfunction. Therefore, be sure to insert the cartridges correctly.
- If you pull the eject handle when the color markers are not fully visible, the toner cartridge cannot pop out and this may damage the handle.



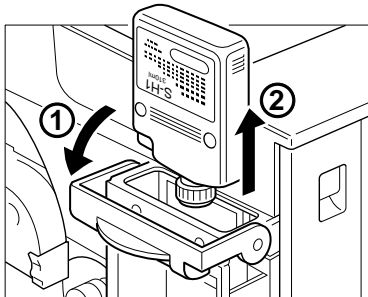
Replacing the silicone oil bottle

Silicone oil is used in the final fixing process before the paper comes out of the printer. To prevent toner offset caused by toner on the fixing rollers, the upper roller remains in contact with the cleaning belt saturated with silicone oil supplied from the silicone oil bottle. When the oil level is low, replace the silicone oil bottle with a new one, as follows.

1. Make sure the power switch is turned off. Then open the front door.



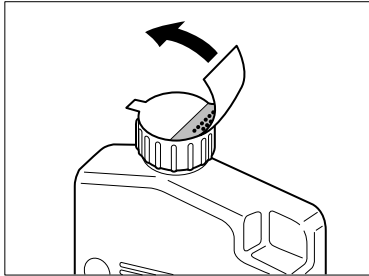
2. Open the stopper completely ①. Then, lift up the used silicone oil bottle completely ②. Be careful as some silicone oil may drip out of the bottle.



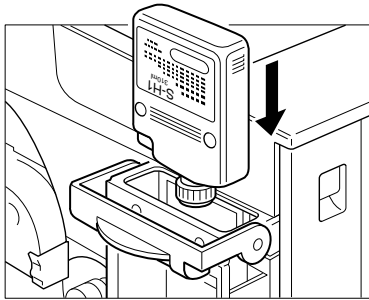
NOTE: To prevent possible oil leakage, do not place the removed oil bottle upside down or drop it to the floor.

Do not dispose of the used silicone oil bottle in a flame of any kind.

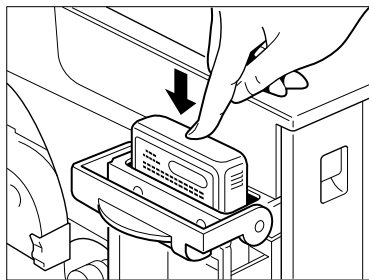
3. Peel off the seal from the new silicone oil bottle and put it on the old bottle. Do not shake the bottle or the oil may spill out.



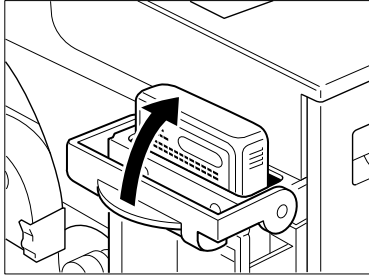
4. Insert the new bottle into the compartment with the label facing towards you and the spout on the right and facing down.



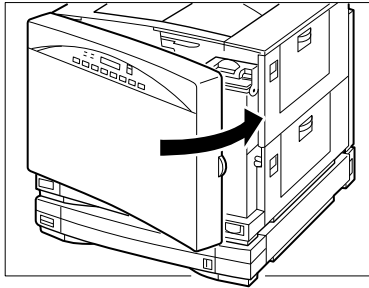
5. Press the bottle down until it goes completely into the compartment.



6. Close the cover completely.



7. Then, close the front door.



The oil is very slippery, and may present a skidding or slipping hazard. Following a spill or leak, use absorbent material to contain and collect excess oil for salvage or disposal. Thoroughly clean the floor or other contaminated surface (such as a ladder) and do not leave any traces of the oil. Use an all-purpose alkaline cleaner, or have the surface (including carpeting) cleaned commercially. Petroleum distillates may be used, except on plastic or vinyl surfaces. Dispose of absorbed material in accordance with applicable federal, state, and local requirements.

Do not operate the printer when no silicone oil bottle is installed; otherwise the printer may be damaged.

NOTE: This printer uses a special type of oil called silicone oil to prevent toner offset when the toner is fixed. For this reason, when a new printer is first used, the first one or two printouts may be stained with this oil. This may also occur after the fixing assembly has been replaced by the service personnel.

Using the drum cartridge kit

A message displayed on the printer control panel indicates that the drum cartridge needs replacing. When black vertical streaks or toner spots appear on the printouts after the message appears, replace the drum cartridge immediately, following the procedure below. Also replace the waste toner bottle next to the drum cartridge.

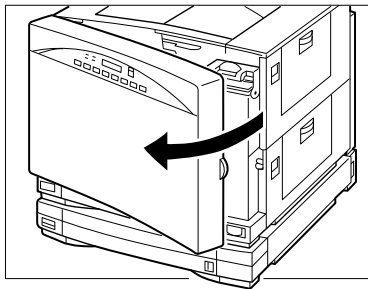
If you continue printing with a depleted drum cartridge, the print quality will diminish and the printer may malfunction.

NOTE: Each time you replace the drum cartridge, clean the wire inside the separation corona unit using the wire cleaner stored inside the printer.

When replacement is necessary, be sure to use a new drum cartridge. The printer may not function properly if replaced with a partly used drum cartridge.

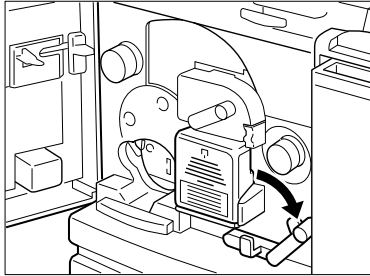
TO REPLACE THE DRUM CARTRIDGE:

1. Make sure the power switch is turned off. Then open the front door.

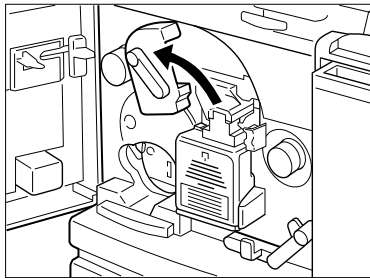


2. Before you push down the release handle, make sure the toner cartridge rotary is properly positioned for installing/removing the toner cartridge.

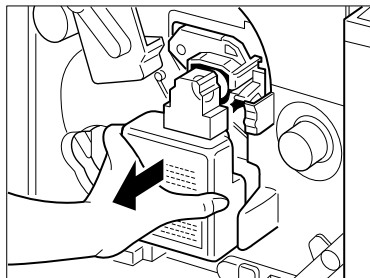
3. Push down the release handle to unlock the waste toner bottle and the drum cartridge.



4. Push the handle on the drum cartridge door in the direction of the arrow to open the door fully.

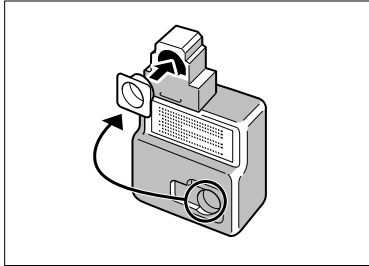


5. Pull out the waste toner bottle.

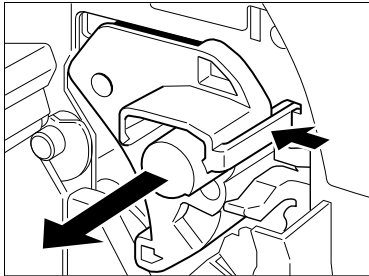


6. If necessary, tap the top of the waste toner box to settle the used toner contained inside it.

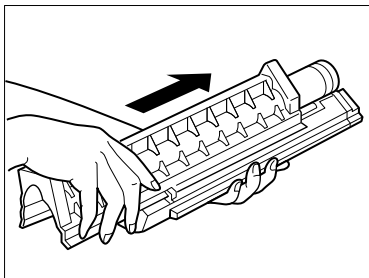
7. Remove the sealing cap provided and plug it into the opening on the used waste toner bottle to cap it immediately.



8. While pressing the green tab on the right side of the drum, pull out the drum cartridge.

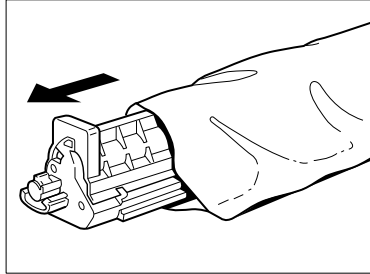


9. Attach the drum cartridge cover (removed earlier) to the used drum cartridge.



NOTE: Dispose of the used drum cartridge according to local regulations.

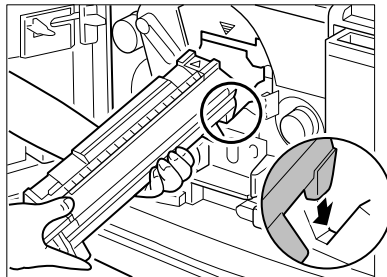
10. Remove the new drum cartridge from its protective bag.



NOTE: Do not open the protective bag or drum cartridge cover until you are ready to install it into the printer.

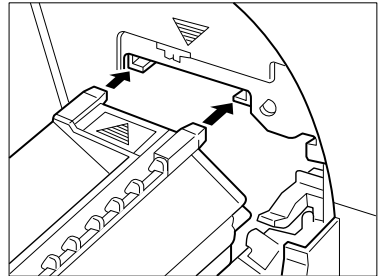
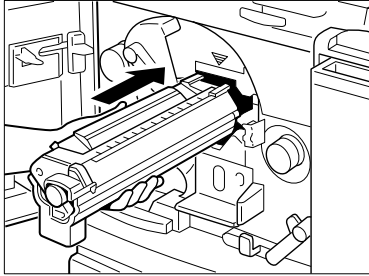
Do not expose the drum cartridge to direct sunlight.

11. Direct the end with the ▼ mark towards the printer and insert the drum cartridge cover into the V-shaped opening, as shown.

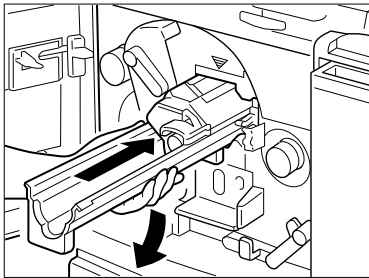


NOTE: Do not apply excessive force to the protective cover while handling the drum cartridge. Otherwise, the photosensitive drum may be scratched.

12. While holding the cover with one hand and the cartridge horizontally, place the drum on the rails of the compartment and gently slide the drum in.



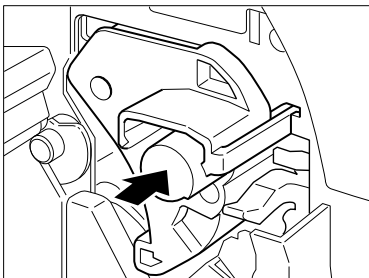
13. When the drum cartridge is completely inside the printer, remove the cover.



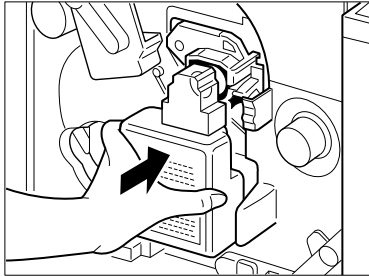
NOTE: Save the drum cartridge cover for future use to cover a used photosensitive drum.

Avoid touching the surface of the photosensitive drum with your fingers

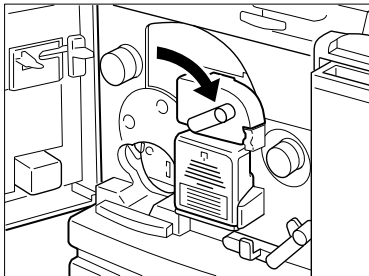
14. Push the drum cartridge all the way in until the green tab on its end is locked.



15. With the opening facing the printer, attach the new waste toner bottle to the printer.

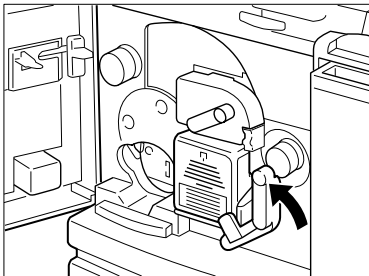


16. Close the drum cartridge door.



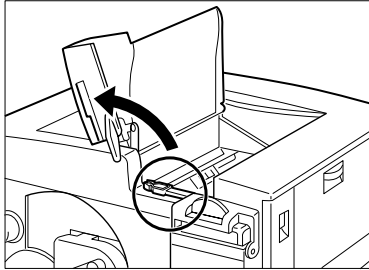
NOTE: Make sure the drum cartridge is fully inserted into the printer before closing the door.

17. Push up the release handle to lock the drum cartridge.

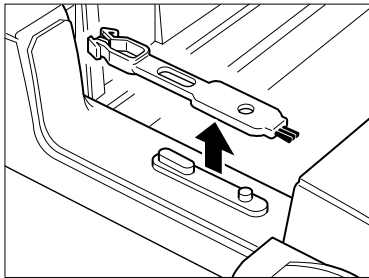


TO CLEAN THE SEPARATION CORONA WIRE:

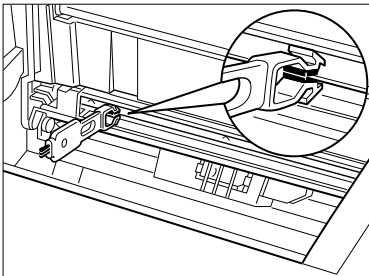
1. Open the top cover to reveal the separation corona unit and the wire cleaner.



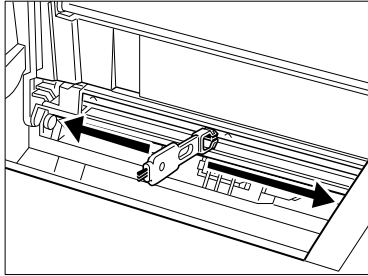
2. Remove the wire cleaner from inside the printer.



3. Place the wire cleaner on the separation corona unit.

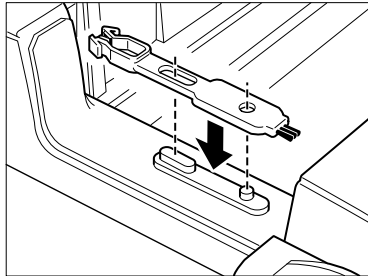


4. Clean the separation corona wire by moving the wire cleaner from side to side several times.

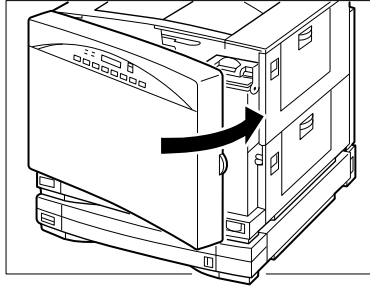


NOTE: The separation corona wire is very thin and delicate, so take care not to break it.

5. After cleaning, replace the brush in its original place and close the top cover.



6. Close the front door.



This completes the replacement of the drum cartridge and the waste toner bottle, as well as the cleaning of the separation corona wire.

7. Turn on the power again.

NOTE: If you cannot push up the release handle completely, do not continue by force or the printer may be damaged. Instead, remove the drum cartridge and re-install it again, making sure that the drum cartridge is completely inside the printer.

Do not attempt to remove the used toner from the toner bottle nor reuse it. Doing so may cause printer malfunction.

Do not dispose of waste toner in a flame of any kind.

Moving the printer

Before moving the printer, follow these guidelines:

- Open the photosensitive drum door and remove the waste toner bottle.
- Drop the transfer drum lever and remove the drum cartridge. Store the drum cartridge in the drum cover.
- Remove the toner cartridges.
- Fix the transfer drum unit with the transfer drum fixing screw.
- Open the front door and remove the oil bottle. Remove oil from the fixing unit.
- Tape shut the transfer drum lever and the photosensitive drum door.
- Tape shut the front door, the fixing unit cover, and the pick-up cover.

Before moving the printer to a new location, be sure to remove any silicone oil in the printer with the oil pump included in the printer package (see “To remove the silicone oil:” on page C-35). Also remove the drum cartridge (see “To replace the drum cartridge:” on page C-25), the four toner cartridges (see “To replace a used toner cartridge:” on page C-16), and the waste toner bottle.

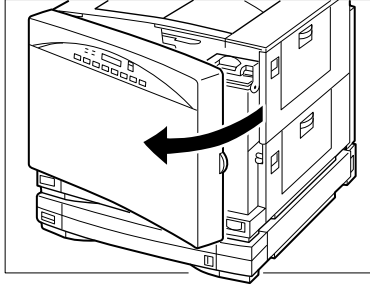
Remove any oil from the oil catch tray with the oil removing tool and transfer the oil to the oil storage bottle. Move the lever up and down about 50 times. Then remove any oil in the bottle case and oil catch tray again. Repeat this three times. Wash off any silicone oil from your hands with a mild detergent.



Neglecting this operation will cause oil leakage inside the printer and may damage the unit.

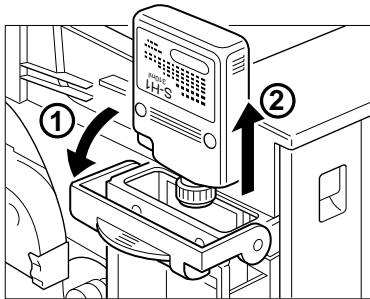
TO REMOVE THE SILICONE OIL:

1. Make sure the power switch is off, then open the front door.



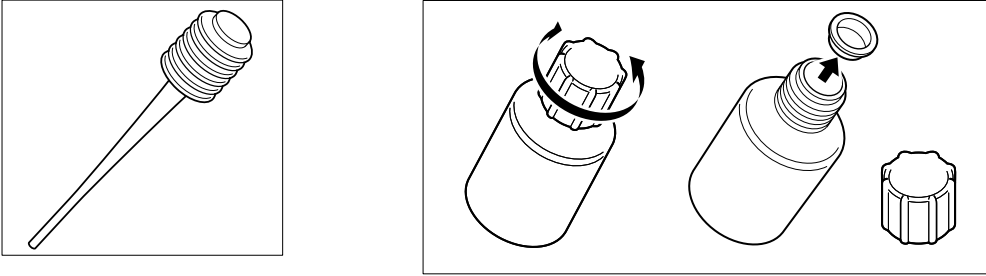
2. Open the stopper completely ① and lift out the silicone oil bottle from the holder ②.

Be careful as oil may drip from the bottle. Store it on a flat level surface, away from direct sunlight.

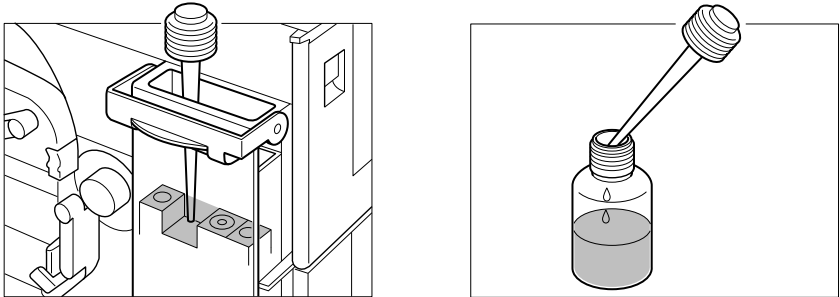


3. Prepare the oil pump and oil recycle bottle.

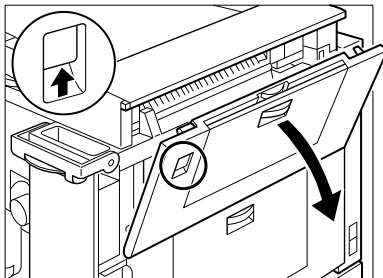
4. **Uncap the oil recycle bottle and remove the inner cap.**
Place the bottle on a flat, level surface, away from direct sunlight.



5. **Pump the oil from the holder with the oil pump and transfer it to the recycle bottle.** Repeat until most of the oil has been pumped out.

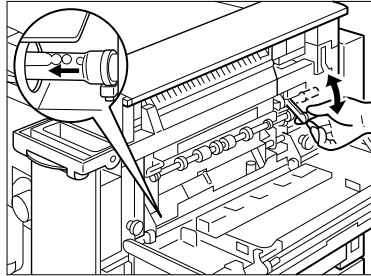


6. **Push up the release knob to open the fixing assembly door.**



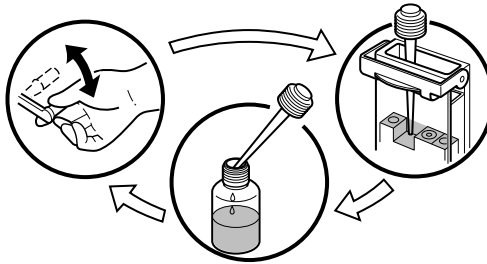
7. Then push down the jam release lever about 50 times to guide the silicone oil from the fixing assembly into the holder.

About 40 cc of oil may be contained in the fixing assembly.



The fixing assembly and the delivery areas may be hot. Be careful when using the lever.

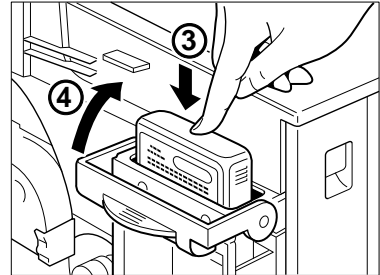
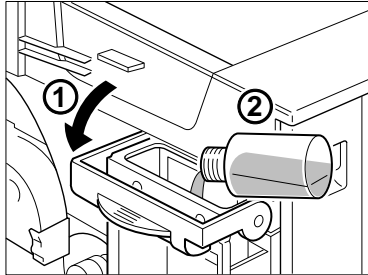
8. Pump the oil from the holder with the oil pump and transfer it to the recycle bottle.



9. Repeat the procedure described in steps 7 and 8 three or four times until most of the oil has been removed from the fixing assembly.
10. Replace the inner cap on the oil recycle bottle and recap it securely. Close the stopper completely, then close the front door.

The printer can now be moved. The oil recycle bottle can contain about 100 cc of silicone oil. Store the silicone oil bottle and the recycle bottle on a flat, level surface, away from direct sunlight.

11. After moving the printer, replace the silicone oil into the printer. To do this, open the front door, then open the stopper completely ①. Uncap the recycle bottle and slowly pour the oil back into the holder ②. Finally, replace the silicone oil bottle into the holder ③, then close the stopper ④ and front door securely.



NOTE: Do not add any oil to the printer other than what was removed.

The oil is very slippery and may cause skidding or slipping if spilled. Use an absorbent material to contain and collect spilled oil for disposal. Thoroughly clean any oily surface with an all-purpose alkaline cleaner, or have the surface (carpeting, for example) commercially cleaned. Except for cleaning plastic and vinyl surfaces, petroleum distillates can be used. Dispose of absorbed material according to federal, state and local regulations.

NOTE: Do not incinerate the used oil recycle bottle or the oil pump.

Never use any oil other than the suggested one.

Do not operate the printer without the silicone oil bottle installed; otherwise the printer may be damaged.

Keep the oil recycle bottle and oil pump clean and free of any foreign objects when handling or storing.

D

Appendix D: Troubleshooting

This appendix contains information about:

- Power problems
- Printing large files
- Initialization problems
- Print quality and paper problems
- Paper jams
- Correcting abnormal printouts

If a printer problem occurs, use the checklist below to solve the problem. If a problem persists or is not covered here, call an authorized dealer or the place of purchase.

See Appendix A for lists of messages that may appear on the printer control panel with the appropriate corrective action for each one.



AVOID ELECTRIC SHOCK. If the printer does not work properly even after taking the suggested measures, do not attempt further adjustment and do not try to disassemble the printer. The printer contains high-voltage parts which may cause electric shock when touched. Turn off the printer and unplug it from the AC outlet. Then call your authorized warranty service provider or a qualified Digital Multivendor Customer Services engineer. See Appendix H for more details.

Power problems

Is power supplied to the AC outlet?

- Check the AC outlet.

Is the power cord securely plugged into the AC outlet?

- Check the power cord connection.

Is the printer turned on?

- Make sure the power switch remains pressed (that is, on).

Does the printer's voltage rating match that of the AC outlet?

- Check the voltage of the printer as well as the AC outlet.

Initialization problems

Is the printer level (at less than a 1% angle)?

- If the printer is not level the error message REPLACE FIXING UNIT PUMP is displayed.

Is the printer attached to the network?

- When a transceiver is attached to the printer but not to the network, the Colorwriter fails to power up to the ready state and hangs at the LOADING SYSTEM screen. Connecting the network at any time will allow the printer to complete the powerup and initialization. Ensure that the connector latch is secure.

Printing large files

You cannot print a job whose file size exceeds the amount of available space on the Colorwriter's hard disk. If you try to print such a job, you will get a PostScript limitcheck error.

If you consistently print large (over 100MB) files, and have insufficient disk space, the following tips may help you maintain the largest possible amount of available disk space:

- Using the Colorwriter LSR Downloader, delete fonts you have downloaded to the Colorwriter and no longer use. When possible, let the application download the fonts it needs.
- Using the Colorwriter LSR Spooler, delete the jobs in the Hold queue and the Printed queue that you no longer use. To free up more space, you can disable the Hold queue and the Printed queue from Printer Setup on the printer control panel.
- Run a few tests to match the resolution of your files to the resolution needed for good printed results. If your files are so large because you are sending high resolution raster image data to the printer, try printing the file at 300 or 150 dpi.

Print quality and paper problems

Is the correct paper type used?

- See “Paper requirements” on page E-3 and check the paper type.

Are toner cartridges inserted in the correct order?

- See “Replacing a toner cartridge” on page C-16 and make sure the toner cartridges are installed in the correct order.

Is there slight graying on the pages?

- Be sure to clean the printer periodically; see “Cleaning and handling the printer” on page C-5 for information on how to do this. After using the printer for prolonged periods of time, there may be slight gray shading on the pages. You may be able to eliminate the shading by using the wire cleaner (as explained in Appendix C) or replacing the toner cartridge.

Is the silicone oil bottle stopper, drum cover, or transfer drum release handle properly set back?

- See “Replacing the silicone oil bottle” on page C-22, “Using the drum cartridge kit” on page C-25, and “To replace a used toner cartridge:” on page C-16 and make sure they are properly set back in the original place.

Is the printer displaying a message about the fuser?

- When the message appears, the fuser is good for about 500 more printouts. The fuser must be replaced or it will stop functioning.

Does the paper loaded exceed the paper limit mark?

- Make sure the stack does not exceed the paper limit mark.

Is the paper stack correctly aligned?

- Make sure the paper stack is correctly aligned in the main and optional cassettes or in the multipurpose tray.

Is the correct paper type used?

- See “Paper requirements” on page E-3 and check the paper type.

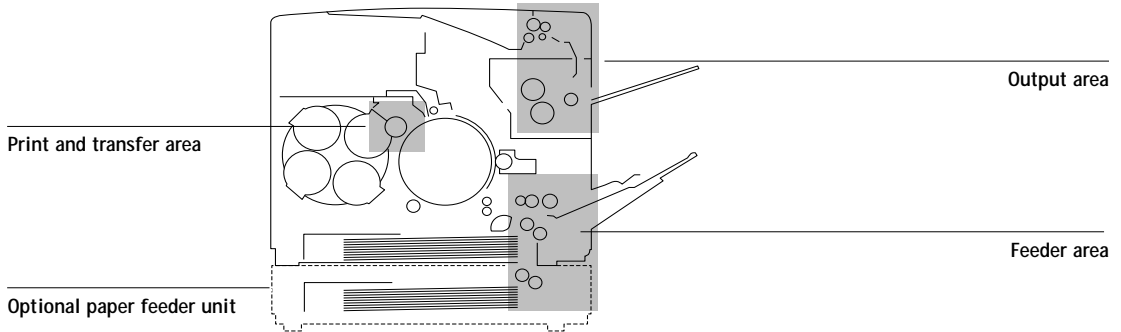
Is there any jammed paper inside the printer?

- Make sure no paper remains inside the printer after a paper jam.

D

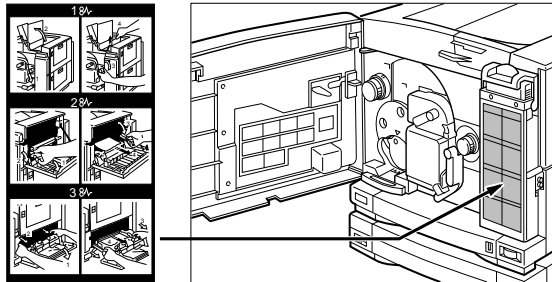
Paper jams

There are three possible paper jam locations: the feeder area, the print and transfer area, and the output area.



If a paper jam occurs, follow the instructions described in the following pages to remove the jammed paper in a way appropriate to the actual jam site on the printer.

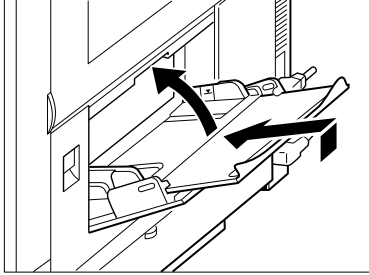
The instruction label on the oil bottle holder also gives instructions for clearing paper jams.



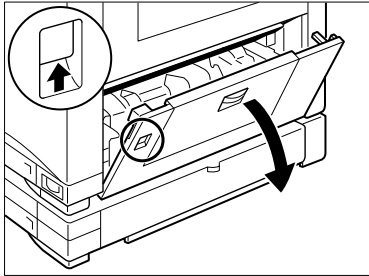
Several of the procedures in this appendix are also detailed on the Quick Reference Card that came with your Colorwriter documentation. Adhere the clear plastic pocket to your printer and use it to keep the Quick Reference Card handy, so you have ready access to procedures for clearing paper jams.

CHECKING THE FEEDER AREA:

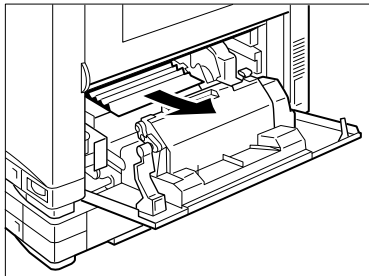
1. Make sure the multipurpose tray is closed.



2. Push up the release knob to open the feeder door.



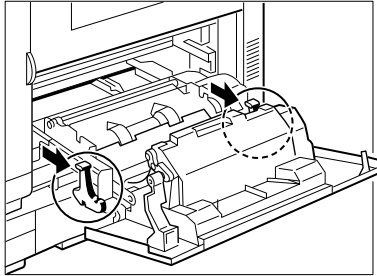
3. Remove the jammed paper if you can find it.



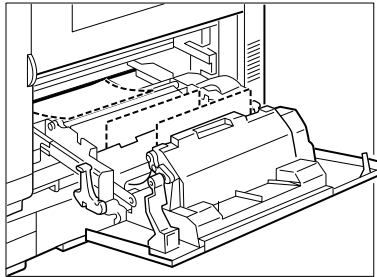
D

D-6 Paper jams

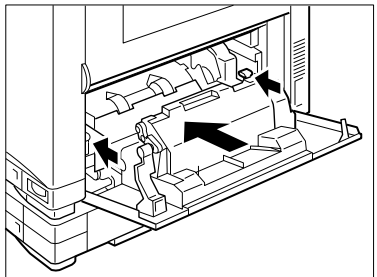
4. If the jammed paper is not visible or if it is difficult to remove, pull the two green levers and slide out the entire feeder unit.



5. Carefully remove the jammed paper in the likely spots as indicated.



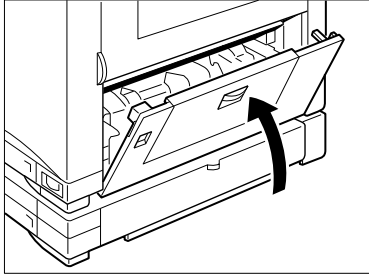
6. Push the levers to slide the feeder unit back into the printer.



D

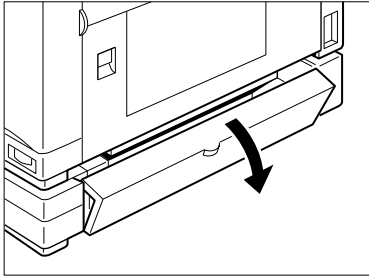
D-7 Paper jams

7. Close the feeder door.

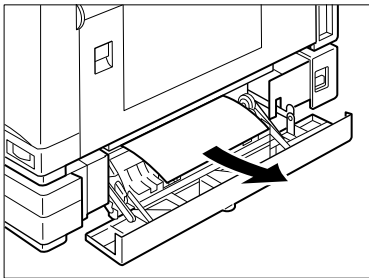


When using the optional paper feeder unit

1. Pull the tab to open the optional cassette feeder door.

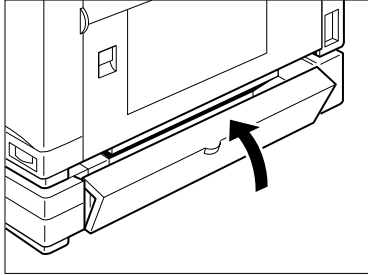


2. Carefully remove the jammed paper.



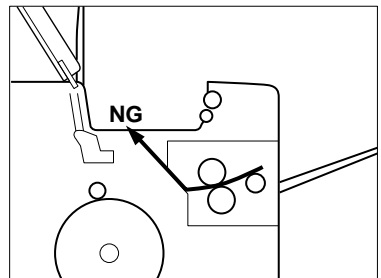
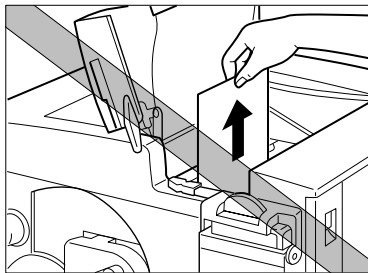
D

3. Close the door and resume printing.



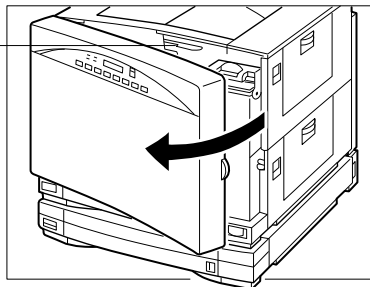
Checking the transfer drum area

NOTE: Even if the trailing edge of the jammed paper is visible over the transfer drum, avoid pulling it out from the top cover side. The toner is not fixed onto the paper and falls off to scatter inside the printer. It will lead to the permanent print deterioration in extreme cases. In such cases, use the procedure on page D-13 to remove the jammed paper.



1. Open the front door.

Tab

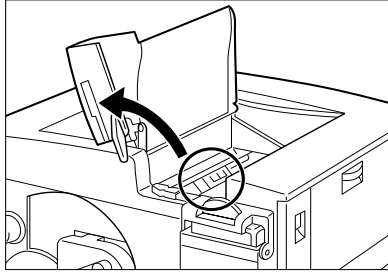


D

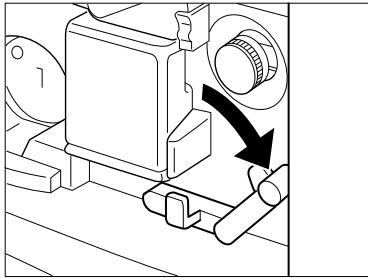
D-9 Paper jams

2. Use the tab identified in step 1 to raise the top cover.

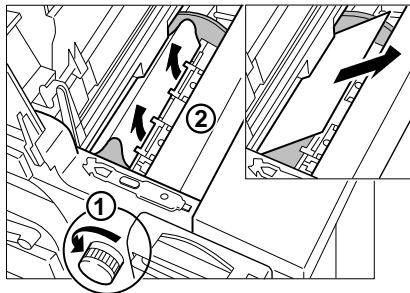
Avoid touching the window of the density detection sensor, which is used to adjust the grayscale.



3. Push down the handle to unlock the transfer drum.



4. Turn the transfer drum knob in the direction of the arrow ① until the top edge of the paper is visible ②.



5. Release the top edge of the paper by gently pulling a corner of the paper.



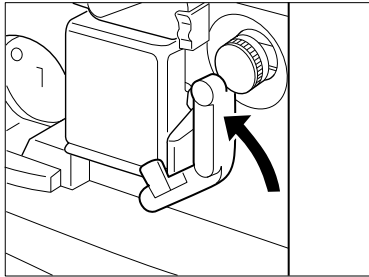
Be careful not to stain the density detection sensor with the non-fixed toner. Remove the jammed paper by pulling at a slight angle.

NOTE: Do not touch the print on the paper.

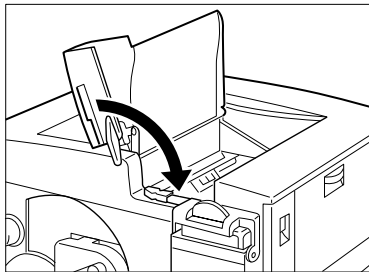
6. While turning the knob, gently pull out the jammed paper.

NOTE: Be careful not to touch the transfer drum.

7. Pull up the handle to lock the transfer drum.



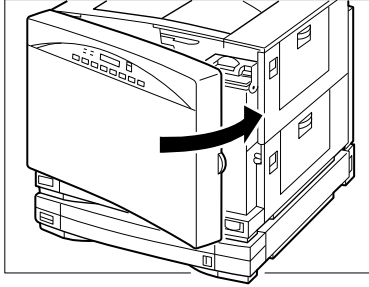
8. Lower the tab to close the top cover.



D

D-11 Paper jams

9. Close the front door and resume printing.



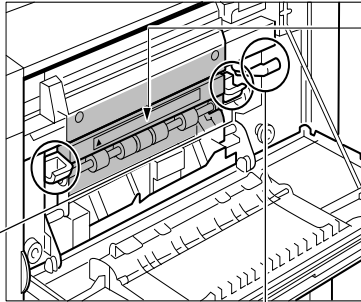
D

D-12 Paper jams

Checking the fixing assembly area



The fixing assembly and delivery areas may be hot. Wait until the printer has completely cooled off. Be careful when accessing the knobs and lever.

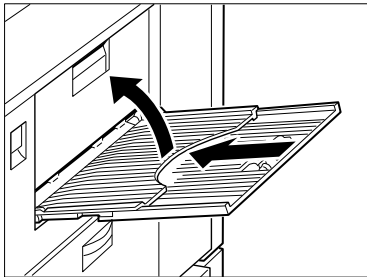


Jam release lever

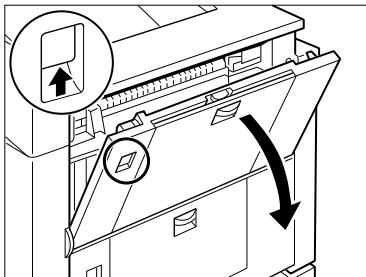


CAUTION! HOT SURFACE. AVOID CONTACT ACHTUNG HEISS 고온부위 高温注意
ATTENTION! TEMPERATURE ELEVÉE PRECAUTION! / ATTENZIONE! ALTA TEMPERATURA

1. Close the face-up tray if it is open.

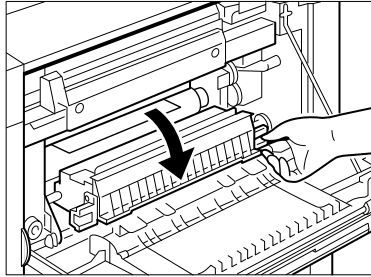


2. Push up the release knob to open the fixing assembly door.

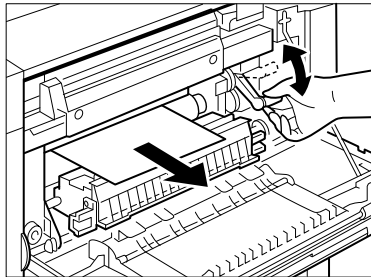


If the leading edge of the paper is visible, follow the procedure below to remove the jammed paper.

3. Pull the release knobs and open the guide cover.



4. While repeatedly pushing down and releasing the lever, remove the jammed paper completely from the printer.

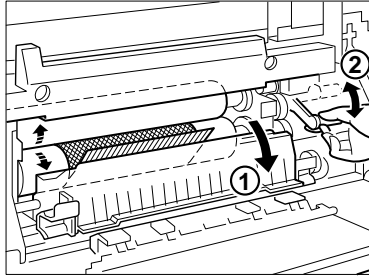


Be sure to open the guide cover first before operating the release lever. Not doing so will result in loosening the cleaning belt inside so that it will come out from the printer.

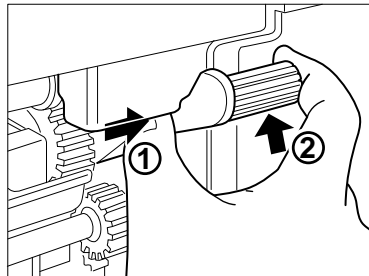
NOTE: Avoid pulling out the jammed paper, as it may rip and remain inside the printer.

If the jammed paper is wound up onto either the upper or lower fixing roller, follow the procedure below to remove the paper.

5. First, open the guide cover ①, then move the lever up and down until the trailing edge of the jammed paper is visible ②.



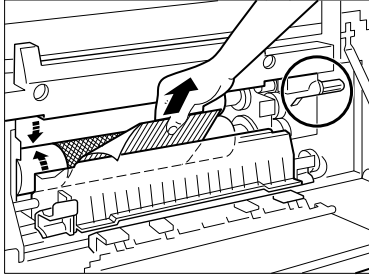
To pull out the paper, hold and slide the release lever as shown to unlock both fixing rollers ①. It is properly set when the lever is seated in the slit on the metal plate ②.



While sliding the lever, be careful not to put your fingers too far into the printer because the wheels and the metal plate are exposed nearby.

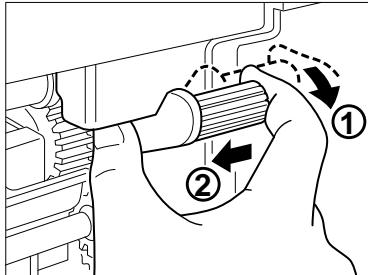
Be sure to open the guide cover first before operating the release lever. Not doing so will result in loosening the cleaning belt inside so that it will come out from the printer.

6. Slowly pull out the jammed paper from the printer while holding the printer with your hand.



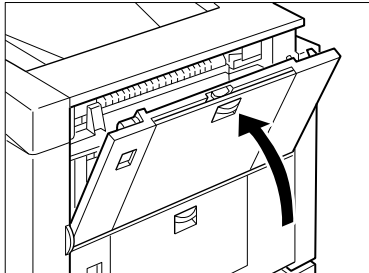
Before pulling out the trailing edge of the paper, make sure the guide cover has been opened.

7. Finally, set the lever back to its original position, and close the guide cover (①, ②).



NOTE: If you get silicone oil on your hands while removing the jammed paper, wash them with a mild detergent.

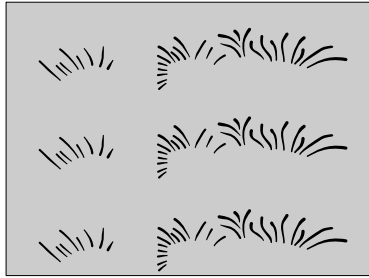
8. Close the fixing assembly door and resume printing.



Correcting abnormal printouts

If abnormal images similar to the following examples are printed, follow the procedures below to correct them.

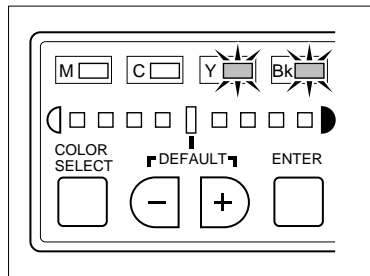
Example 1



TO CORRECT EXAMPLE 1:

1. While pressing the COLOR SELECT button on the density control panel (on the back of the printer), press ENTER three times.

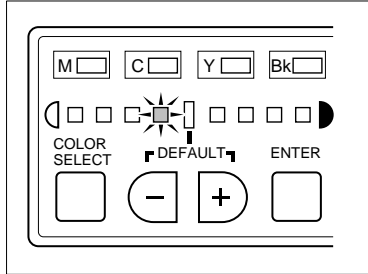
The Y and Bk indicators flash and the separation high voltage control mode is set.



D

D-17 Correcting abnormal printouts

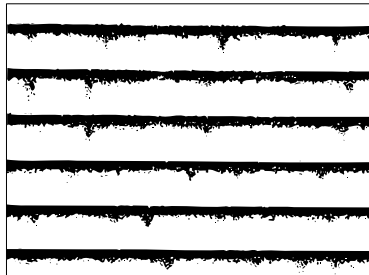
2. Use the +/- buttons to move the level indicator to the position shown, then press the ENTER button to set the separation high voltage ON.



3. Print out the page again and check the results.

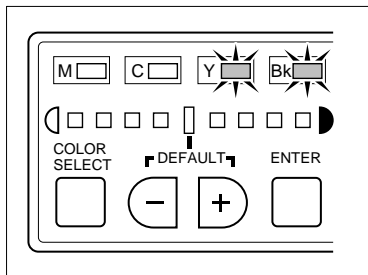
NOTE: If the abnormal printout no longer occurs, reset to the default setting.

TO CORRECT EXAMPLE 2:



1. While keeping the COLOR SELECT button on the density control panel pressed, press ENTER three times.

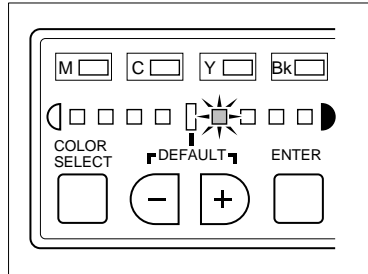
The Y and Bk indicators flash and the separation high voltage control mode is set.



D

D-18 Correcting abnormal printouts

2. Use the +/- buttons to move the level indicator to the position shown, then press the ENTER button to set the separation high voltage OFF.



3. Print out the page again and check the results.

NOTE: If the abnormal printout no longer occurs, reset to the default setting.

Appendix E: Specifications

This appendix contains specifications for the Colorwriter LSR 2000⁺ and the kinds of paper you can use in it.

Colorwriter specifications

| Category | Specification |
|------------------|--|
| Printer type: | Desktop color page printer |
| Printing method: | Electrophotographic process via laser beam scanning |
| Color process: | Full color development with C, M, Y, K or monochrome printing selectable |
| Print quality: | Continuous tone at 600 X 600 dots per inch Automatic temperature and humidity monitoring and recalibration |
| Processor speed: | 100 MHz RISC |
| Print speed: | Maximum 3 pages per minute in full-color or 12 pages per minute in monochrome print using A4-size plain paper via cassette feed |
| Connectivity: | Autosensing ports: Centronics parallel, Ethernet (RJ45 and AUI built-in, BNC optional) Simultaneous auto-switching protocols: Ethertalk, TCP/IP, Novell Netware IPX |
| Language: | Adobe PostScript Level 2 |
| Memory: | 16MB (standard), 32MB, 48MB (maximum) |
| Hard disk: | Minimum of 341MB SCSI |
| First print: | Approximately 40 seconds in full color or 25 seconds in monochrome print using A4-size plain paper via cassette feed at 20°C (68°F). |
| Warm-up: | 4.5 minutes at 20°C (68°F) for 100V and 220V input 3.5 minutes at 20°C (68°F) for 120V and 240V input |



| Category | Specification |
|-------------------------------|--|
| Paper feed: | |
| Via cassette: | Maximum stacking height: 25 mm (approximately 250 sheets of plain paper at 20 lb (80g/m ²) or 150 sheets at 24 lb (90 g/m ²) |
| Via MP tray: | Maximum stacking height: 10 mm (approximately 100 sheets of plain paper at 20 lb (80 g/m ²) or 50 sheets at 24 lb (90 g/m ²) (transparency film must use MP tray feed; you can load up to 20 sheets of transparency film at a time.) |
| Feeding Direction: | Short edge feed only |
| Paper stock: | |
| Via cassette: | Acceptable 16 to 24 lb (61 to 90 g/m ²) |
| Via MP tray: | Acceptable 16 to 28 lb (61 to 105 g/m ²) |
| Paper output: | |
| With face-down tray: | Approximately 100 sheets of plain paper at 20 lb (80 g/m ²) |
| Via face-up tray: | Approximately 20 sheets of plain paper at 20 lb (80 g/m ²) |
| Paper size: | |
| Via cassette: | Universal paper cassette (A4, Letter, B5 or Legal size) |
| Via MP tray: | Acceptable in 216 x 356 mm to 182 x 257 mm |
| Printable media: | Cassette-sized plain paper only, including letter head |
| Via cassette: | Dedicated transparency film (A4- or letter-size only) and plain paper listed above. |
| Via MP tray: | |
| Duty cycle: | Up to 20,000 pages per month |
| Warranty: | 1 year on-site |
| Weight: | 110 lbs (without paper) |
| Dimensions: | 21.3" W x 22.8" D x 18.1" H |
| Safety standards | Energy Star, FDA, UL 1950, CSA 22.2 #950, EN 60950 |
| Emissions standards (class B) | FCC, VDE, EN55022, VCCI |

Paper requirements

Using the correct paper ensures good print quality, prevents paper jams, and extends the printer life.

| Loading | Paper | Size | Weight/Delivery | Capacity |
|-------------------|-------------------|---|---|---|
| Cassette | Plain | Any size from 216 x 356 mm to 184 x 267 mm, including: Letter (8-1/2" x 11") A4 (210 x 297 mm) Legal (8-1/2" x 14") B5 (182 x 257 mm) | 16 to 24 lb (61 to 90 g/m ²) | Up to a 25-mm stack height (about 250 sheets of 20 lb (80 g/m ²) paper) |
| Multipurpose Tray | Plain | Any size from 216 x 356 mm to 184 x 267 mm, including: Letter (8-1/2" x 11") A4 (210 x 297 mm) Legal (8-1/2" x 14") B5 (182 x 257 mm) | 16 to 28 lb (61 to 105 g/m ²) | Up to a 10-mm stack height (about 100 sheets of 20 lb (80 g/m ²) paper) |
| | transparency film | Letter (8-1/2" x 11") A4 (210 x 297 mm) | — | About 20 sheets |

NOTE: This printer does not accept envelopes and labels.

For printing on transparency film, use the multipurpose tray only, and make sure the proper paper delivery is selected prior to printing.

When feeding transparency film, position each sheet so that the white positioning marker (triangle) is on the upper right.

When tapping the transparency film (to avoid multiple feeds), be careful not to scratch or leave fingerprints on the print sides. If you look at a transparency with its white marker positioned on the right, the side facing away from you is the print side.

This printer accepts short edge feed only.

Unacceptable paper

Avoid using the following types of paper:

- Too thick or too thin
- Wet paper
- Highly textured or rough paper
- Curled, creased, or damaged paper
- Non-rectangular paper (such as aerograms)
- Paper with cutouts or perforations
- Paper with irregular shape
- Paper with wrinkles or rips
- Damaged paper
- Paper with special coating

During the fusing process, paper is exposed to high temperature. Therefore, the following types of paper should not be used:

- Thermal paper
- Paper that deforms or discolors at high temperature
- Paper that offsets (leaves toner on the backs of printed pages) at high temperature
- Pre-printed paper which contains ink that will deteriorate at high temperature (such as invoices and company letterheads)
- Adhesive paper

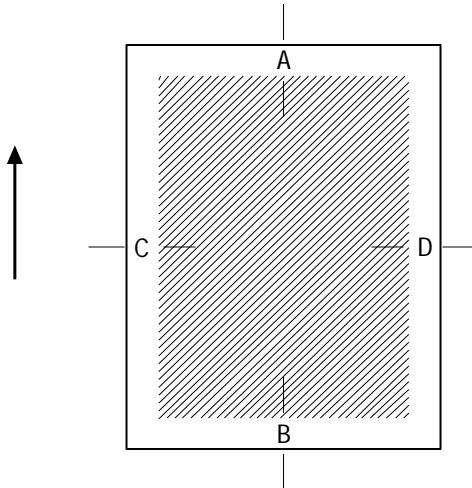
NOTE: Using paper that deforms or deteriorates in quality at high temperature may damage this printer. In particular, pre-printed paper and coated paper should be checked first to ensure that it meets the heat compatibility specifications.

Paper that could damage this printer:

- Carbon paper
- Paper with staples, ribbons, tape, and so forth

Effective printing area

The shaded area in the figure below indicates the printable area on a sheet of paper.



| Paper Size | Border Width (mm) | | | |
|---------------------------|-------------------|-----|-----|-----|
| | A | B | C | D |
| Letter, A4, Legal, and B5 | 10.0 | 5.0 | 5.0 | 5.0 |

F

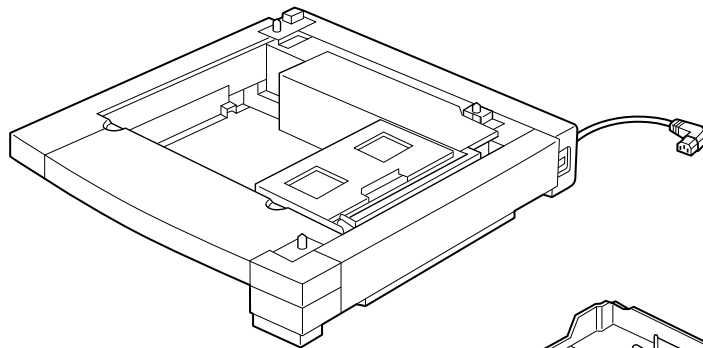
F-1 Optional paper feeder unit

Appendix F: Ordering Accessories and Supplies

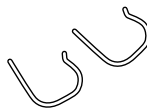
For high quality and reliability, use genuine Digital accessories and supplies. This appendix lists the accessories and supplies available for the Colorwriter. Contact your local authorized Digital reseller or Digital sales office for more information. In North America, call 1-800-DIGITAL (1-800-344-4825).

Optional paper feeder unit

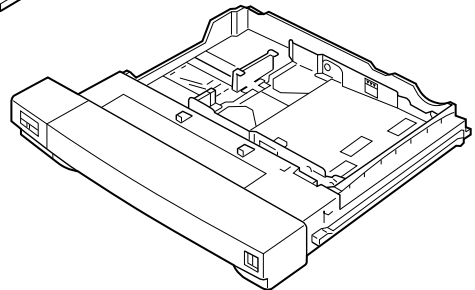
This option (LNC1X-TA) comes with the paper feeder unit, an optional (universal) cassette, and two locking pins to secure the paper feeder unit to the printer body.



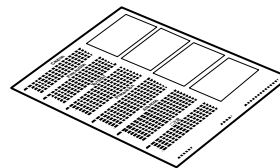
Paper feeder unit



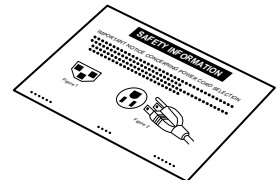
Locking pins (2)



Optional (universal) cassette



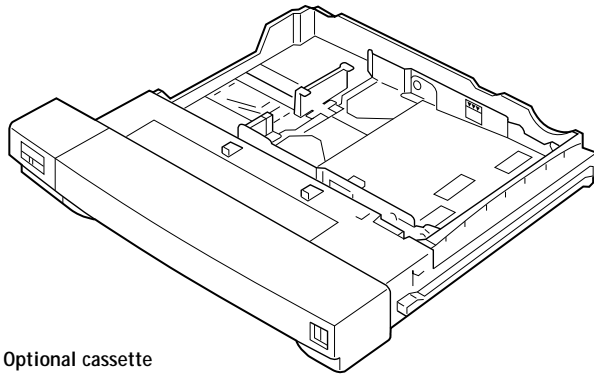
Caution sheet



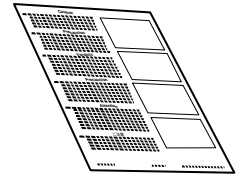
Safety information sheet

Optional paper cassette

You can purchase a universal paper cassette (LNC1X-TB) which can hold any size from 216 x 356 mm to 184 x 267 mm, including Letter, A4, Legal, and B5 paper. You can load only plain paper from 16- to 24-lb (61 to 90 g/m²) into a paper cassette, and the maximum capacity is about 250 sheets at 20 lb (80 g/m²).



Optional cassette



Caution sheet

Upgrade kits

The following upgrade kits are available:

| Memory upgrade kit | Contents | Part Number |
|--------------------|-----------------|-------------|
| 16MB to 32MB | 16MB (4x4) + CD | LNCIX-CD |
| 16MB to 48MB | 32MB (4x8) + CD | LNCIX-CE |
| 32MB to 48MB | 16MB (4x4) + CD | LNCIX-CD |
| v1 32MB to v2 32MB | CD | LNCIX-CF |

Instructions for installing the SIMMs are included in the kit itself.

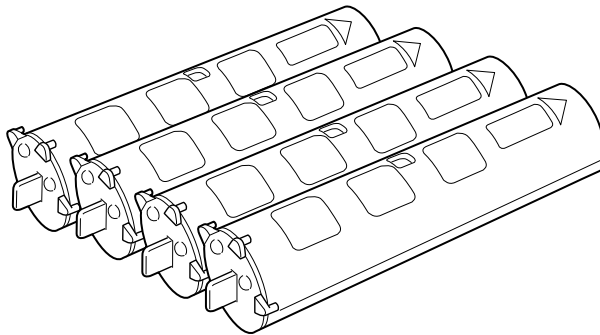
Ordering consumables

You will want to keep a supply of the following consumables on hand—especially if your site has more than one printer in service. For high quality and reliability, use genuine Digital supplies and accessories.

Toner cartridges

Use of the genuine toner cartridges designed for this printer is recommended. Four types of color toner cartridges are available: cyan, magenta, yellow, and black.

| Description | Part Number |
|-------------------------|-------------|
| Cyan toner cartridge | LNC1X-AB |
| Magenta toner cartridge | LNC1X-AC |
| Yellow toner cartridge | LNC1X-AD |
| Black toner cartridge | LNC1X-AA |



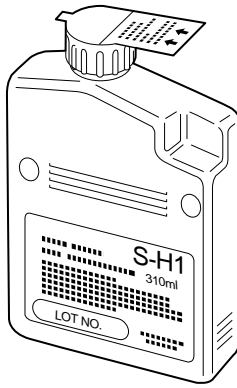
NOTE: Each color toner cartridge typically lasts for about 4,000 prints of A4- or Letter-size paper (when printing at 5% print density). The actual cartridge life, however, depends on how much toner of each toner cartridge is used for each print; the more toner from a particular toner cartridge is used for each print, the shorter the cartridge life for the particular color toner cartridge will become. For details, see “Storing and handling toner cartridges” on page C-15.

A Material Safety Data Sheet is available for toner cartridges.

Before installing a toner cartridge, be sure to remove the two pieces of protective tape.

Silicone oil

Silicone oil is used in the final fixing process before the paper comes out of the printer. To prevent toner offset caused by toner on the fixing rollers, the upper roller remains in contact with the cleaning belt impregnated with silicone oil supplied from the silicone oil bottle (LNC1X-AF).



You will probably need to replace the silicone oil after about 10,000 pages of full color.

A Material Safety Data Sheet is available for silicone oil.



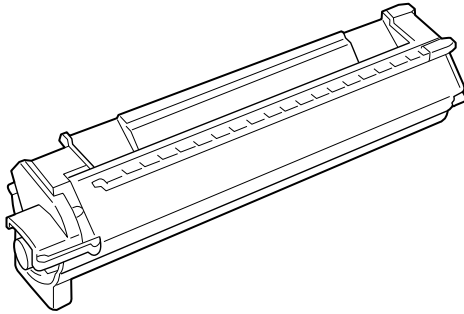
The oil is very slippery, and may present a skidding or slipping hazard. Following a spill or leak, use absorbent material to contain and collect excess oil for salvage or disposal. Thoroughly clean the floor or other contaminated surface (such as a ladder) and do not leave any traces of the oil.

Use an all-purpose alkaline cleaner, or have the surface (including carpeting) cleaned commercially. Petroleum distillates may be used, except on plastic or vinyl surfaces. Dispose of absorbed material in accordance with applicable federal, state and local requirements.

- Do NOT use any other than the specified silicone oil.
- Do not dispose of the used silicone oil bottle in a flame of any kind.
- Do not operate the printer when no silicone oil bottle is installed; otherwise the printer may be damaged.

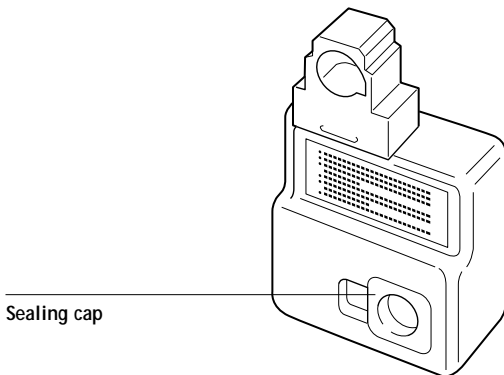
Drum cartridge kit

Each drum cartridge kit (LNC1X-AE) contains a drum cartridge and two waste toner bottles. When you replace the drum cartridge, be sure to always replace the waste toner bottle as well.



You will probably need to replace the drum cartridge after about 5,000 to 30,000 pages, based upon the use of color per page. OPC drum life is an estimate only, and is dependent on the mix of color images and black only images being printed. The frequency of the auto calibration and the amount of continuous versus intermittent printing that occurs will also contribute to the overall drum life.

After you remove the cap from the new waste toner bottle, be sure to use this sealing cap to recap the used waste toner bottle before storing it away.



Transparency film

For optimum printing results, use only the transparency film specifically for the Colorwriter LSR 2000[†]. Under no circumstances should this type of transparency be used with other laser printers. In addition, remember to feed transparency film via the multipurpose tray only.

| Description | Quantity | Part Number |
|-------------------------------|-----------|-------------|
| Letter-size transparency film | 50 sheets | LNC1X-AG |
| A4-size transparency film | 50 sheets | LNC1X-AH |

Paper

While most 17–28 lb paper is usable, high brightness print media, such as Hammermill's LaserPrint 24 lb paper, is recommended for this color laser printer. Also, Teslin[™] for laser printers and colored paper are acceptable. It is a good idea to experiment using different types or brands of paper (as long as it complies with these specifications). Make sure you are satisfied with the results before purchasing large quantities of paper.

For more details about print media, see “Paper requirements” on page E-3.

NOTE: Do not attempt to print labels on the printer.



Appendix G: Ordering Related Documentation

The following documentation is included in the Document Package for the Colorwriter LSR 2000⁺ printer:

- *Getting Started*
- *User Guide*
- *Quick Reference Card*
- *Release Notes*
- *Registration Card*
- *Warranty Card*

The order number for the Colorwriter LSR 2000⁺ Document Package is **EK-LCPLE-DK**.

In addition to the specific Colorwriter LSR 2000⁺ documentation listed above, the following documents provide general PostScript language information:

- *PostScript Language Reference Manual Supplement for Version 2013*
by Adobe Systems Incorporated, March 31, 1993.
Available through the Adobe Systems Developer Support organization
- *PostScript Language Reference Manual, Second Edition*
by Adobe Systems Incorporated, ISBN 0-201-18127-4.
Available in bookstores

Technical support

If you need help deciding which documentation best meets your needs call 800-DIGITAL (800-344-4825).



Electronic orders

If you wish to place an order through your account at the Electronic Store, dial 800-234-1998, using a modem set to 2400- or 9600-baud. You must be using a VT terminal or terminal emulator set at 8 bits, no parity. If you need assistance using the Electronic Store, call 800-DIGITAL (800-344-4825) and ask for an Electronic Store specialist.

Telephone and direct mail orders

In North America:

| From | Call | Write |
|-------------|--|---|
| U.S.A. | DECdirect Phone: 800-DIGITAL (800-344-4825) Fax: 800-513-4778 | Digital Equipment Corporation Merrimack Communications Center P.O. Box 9501 Merrimack, NH 03054 |
| Puerto Rico | Phone: 809-781-0505 Fax: 809-749-8300 | Digital Equipment Corporation, Inc. 3 Digital Plaza, 1st Street Suite 200 Metro Office Park San Juan, Puerto Rico 00920 |
| Canada | Phone: 800-344-4825 Fax: 613-591-4021 | Digital Equipment of Canada Ltd. 100 Herzberg Road Kanata, Ontario, Canada K2K 2A6 Attn: DECdirect Sales |

For international orders, contact your local Digital subsidiary or approved distributor.



For internal orders:

| For | Call | Write |
|---|---------------------------------|---|
| Internal Orders ^a (for software documentation) | DTN: 264-4446 (603) 884-4446 | U.S. Software Supply Business Digital Equipment Corporation 10 Cotton Road Nashua, NH 03063-1260 |
| Internal Orders (for hardware documentation) | DTN: 264-4446 (603) 884-4446 | U.S. Software Supply Business Digital Equipment Corporation 10 Cotton Road Nashua, NH 03063-1260 |

- a. Call to request an Internal Software Order Form (EN-01740-07).



Appendix H: Obtaining Service

Use MCS On-line to learn about new services and special offers, or to browse through Digital's service menu. Our world wide web page is at:
<http://www.digital.com/-i/mcs/mcsoww.html>

Before calling the service center, check Appendix D, "Troubleshooting." Often you can solve the problem yourself.

If not, try to determine if the problem is a:

- Software application problem.
- Generic PostScript problem.
- Software driver problem.
- Hardware problem, such as print quality.

If you cannot correct a problem with the Colorwriter LSR 2000⁺ printer, request servicing from your authorized warranty service provider or a qualified Digital Multivendor Customer Services engineer.

Questions to ask before calling the service center

To ensure the best possible service, read the following series of questions and answers before you call the Digital service center.

Who should call for service?

Typically, the system manager should place the call for service.

Where should you call?

In the continental United States: If you purchased on-site warranty support at the time of sale, call Digital at 1-800-354-9000

If you do not have on-site warranty support and are returning the printer to Digital for service, call 1-800-225-5385.

For per call service information, call your local sales office.

In Alaska, Hawaii, Canada, and Europe: Call your local sales office for service.

**What does the service center need to know?**

Write down the serial and model numbers located on the label at the rear of the printer.

How should you describe the problem?

Summarize the problem. Make a note of:

- The file, application, host computer, and connectivity you were using when the printer failed.
- Any indicators on the printer control panel, such as an error message.
- Any strange noises.

Stay by the printer and host system, if possible, because the service engineer may ask you to try some tasks.

Glossary

additive color model

A system in which color is produced by combining primary lights additively. The additive primaries are red, green, and blue. When added together in proper amounts, these colors produce white. An RGB video monitor is based on an additive color model.

additive primaries

Red, green, and blue light that is used in additive color systems. The additive primaries combine to produce white.

banding

Visible steps between shades in a gradient.

bit depth

Amount of information required for each pixel in a raster image. Black and white images require only one bit per pixel. Photographic quality color images can require 24 or 32 bits per pixel.

Calibrated RGB

An RGB color space used by EFICOLOR color management software as an interchange standard. The Calibrated RGB color space is defined according to the following specifications for a color monitor: SMPTE phosphors, a white point D50, and gamma of 2.2.

calibration

The process of ensuring that a device behaves consistently with respect to a set of specifications.

color gamut

See gamut.

color rendering dictionary (CRD)

A feature found in PostScript Level 2 color printers that gives improved matching between the monitor and printed output. Color rendering dictionaries are used by the printer's PostScript interpreter when converting RGB data sent to the printer to CMYK data used by the print engine.

color rendering style

A feature of EFICOLOR color management software that allows you to maintain the best possible translation of color from one color device to another. The EFICOLOR color rendering styles are: Solid Color, Photographic, Presentation, and Monitor color.

color space

A model for representing color in terms of measurable values, such as the amount of red, green, and blue in an image. RGB and CMYK color spaces are based on color devices—monitors and printers respectively. Other color spaces, such as CIELAB are based on mathematical

models, and are device-independent—they are not based on the color response of a particular device.

colorant

An ink, die, toner, paint or other pigment that modifies the color of what it is applied to.

composite printer

Any printer that can print directly in color without first creating color separations. A composite is an early proof of a printing job.

continuous tone

An image containing gradient tones.

custom color system

A system of named color swatches that can be matched on press using process or spot colors. PANTONE and TruMatch are examples of custom color systems.

densitometer

An instrument that measures density according to a specified standard. Status T densitometers are commonly used in the graphic arts industry.

density

A precise measurement of the light energy transmitted or reflected by a surface in the presence of a standard light source.

four-color printer

A printing device that uses cyan, magenta, yellow, and black ink or toner.

gamut

A range of colors. A device gamut is the range of colors that a device, such as a printer, can produce. An image gamut is the range of colors in a particular image.

gamut mapping

The process whereby EFICOLOR color management software compresses—“maps”—the colors in a digital image to fit the color gamut of a particular device.

gradient fill

A color or grayscale fill made of smooth transitions between two different colors or shades.

Graphics device interface (GDI)

Graphics and display technology used by computers running Windows. GDI applications rely on GDI rather than the PostScript language to send words and pictures to printers.

halftoning

A method for representing an original continuous tone image using a pattern of dots of various sizes. The pattern is determined by the line frequency, screen angle, and dot shape.

metamerism

Phenomenon where two colors composed of different combinations of light wavelengths appear identical. The colors are called “metamers.”

moiré

An undesirable pattern in images made using halftone screens. Moiré can be caused by improper screen angles, improper alignment of halftone screens, or by certain types of patterns in the image itself.

Monitor color rendering

A color rendering style that optimizes the match between monitor display and printer output.

named color

A color that is defined according to a custom color system. For example, PANTONE 107 C is a named color.

offset lithography

Printing in which ink is transferred from printing plates to a rubber blanket and then from the blanket to paper.

Photographic rendering

A color rendering style that preserves tonal relationships in images. Unprintable colors are mapped to printable colors in a way that retains differences in lightness, slightly sacrificing color accuracy as necessary.

pixel

The smallest distinct element of a raster image or an image displayed on a monitor.

PostScript Level 2

Current version of Adobe Systems' PostScript language, which is used to print and display pictures and text. PostScript

Level 2 includes many enhancements to older versions of PostScript, including improved color matching and the ability to control printer-specific features from applications.

prepress proof

A print made from a set of film separations, or from an electronic file, to simulate the results of printing. A film proof is the last opportunity to catch problems before the final printing.

Presentation Graphics rendering

A color rendering style that does not try to precisely match printed colors to displayed colors. It is appropriate for bright saturated colors used in illustrations and graphs.

process colors

The four ink colors used to simulate full-spectrum color images: process yellow, magenta, cyan, and black.

QuickDraw

Graphics and display technology built into Macintosh computers. QuickDraw applications rely on QuickDraw rather than the PostScript language to send words and pictures to printers.

raster image

Electronic representation of a page or image using a grid of points (called pixels) that are numerically defined. Raster images can be black and white, grayscale, indexed color, or photographic quality color.

separation

The process of separating a color image into the primary color components for printing—cyan, magenta, yellow, and black. Also used to refer to the four sheets of film that result from the process of separating a color image.

Solid Color rendering

A color rendering style used when color accuracy is crucial. Unprintable colors are mapped to the closest printable colors. It does the best job of preserving the saturation of displayed colors.

source profile

A profile used by EFICOLOR to determine the context for the color values specified in a digital image.

spot color

A color that is printed on its own separation plate when separations are specified. A spot color is printed using a special ink for that color, in contrast to process colors that are printed using combinations of cyan, magenta, yellow, and black.

Status T

A spectral response for graphic arts reflection densitometers defined by ANSI (the American National Standards Institute.)

subtractive color model

A system in which color is produced by combining colorants such as paint, inks, or dyes on media such as paper or transparent film or acetate. The subtractive primaries are cyan, magenta, and yellow. All printing devices use the subtractive color model, as do photographs and transparency film. Many printers use cyan, magenta, yellow, *and* black colorants.

subtractive primaries

Cyan, magenta, and yellow colorants used in subtractive color systems. Combining the subtractive primaries produces darker colors.

SWOP

The abbreviation for Specifications for Web Offset Publications. A standard of specifications for separations, proofs, and color printing usually designed for magazine production.

vector image

Graphic illustration created on computers where picture elements are defined mathematically as lines or curves between points. Includes artwork created in illustration and page layout applications.

Index

A

- activity lights 2-2
- additive color model 1-3
- additive primaries 1-3
- adjusting
 - color density 2-7 to 2-8
 - paper guides 2-21 to 2-22
- administrator. *See* system administrator
- Adobe Font Downloader 3-7, 4-15
- Adobe Illustrator
 - choosing fill and line colors 3-29
 - imported files, working with 3-30
 - monitor calibration 3-29
 - notes for optimizing (Macintosh) 3-29 to 3-30
- Adobe Illustrator files
 - selecting print options for 3-30
- Adobe Persuasion
 - notes (Macintosh) 3-36 to 3-37
 - selecting print options 3-37
 - working with imported files 3-36
- Adobe Photoshop
 - Ambient Light pop-up menu 3-38, 4-41
 - application note (Macintosh) 3-37 to 3-39
 - application note (Windows) 4-40 to 4-43
 - ASCII versus binary encoding 4-43
 - Calibrated RGB monitor settings
 - loading 3-38, 4-41
 - Color Picker 1-3
 - exporting from 3-39, 4-43
 - Monitor Setup dialog box 3-38, 4-41
 - Print in RGB option 3-39, 4-42
 - selecting print options 3-39, 4-42
 - transfer functions 3-12, 4-20
 - using CRDs with 1-10
- Adobe PostScript Printer Driver 1-9, 3-36, 3-50, 4-37, 4-39, 4-42, 4-45
 - Windows 4-3
- Adobe PostScript Printer Driver 8.x
 - Macintosh 3-1
- ADOBEPS.DRV 4-3, 4-4
- Adobe Systems, ordering
 - documentation G-1
- Adobe Type 1 fonts 4-9
- Advanced Options dialog box,
 - Windows 4-9
- advancing cursor in printer control panel 2-3
- Aldus PageMaker
 - application note (Macintosh) 3-31 to 3-36
 - application note (Windows) 4-37 to 4-40
 - choosing fill and line colors 4-38
 - page setup 3-31, 4-38
 - selecting print options 3-32, 4-39
 - working with imported files 3-31, 4-38
- All Colors to Black option 4-9
- Apple LaserWriter 8.0 printer driver 1-9
 - applications
 - optimizing output with 3-29 to 3-52
 - printing color from 1-10
 - QuickDraw 3-50 to 3-52
 - applications (Macintosh)
 - printing from 3-1 to 3-5
- audience for this guide *xiv*
- available printers
 - viewing in Chooser 3-1

B

- backspacing cursor in printer control panel 2-3
- banding, and Solid Color rendering 1-10
- bitmapped images
 - optimizing 3-4
- Black LED, on density control panel 2-6
- blends, printing 1-10
- blue bar, indicator on universal paper cassette 2-17
- Brightness option
 - in Colorwriter LSR Downloader 3-11, 4-19
 - in Colorwriter LSR Spooler, Windows 4-7
 - print option (Macintosh) 3-5
- bypassing
 - Colorwriter LSR Spooler 3-2
- bytes processed, displayed on printer control panel 2-4

C

- cabinet, cleaning C-5
- Calibrated RGB monitor settings
 - loading in Photoshop 3-38, 4-41
- calibration
 - of monitors in Adobe Illustrator 3-29
 - reasons for 1-7
 - utility for 1-8
- Cancel button 2-3
- Canceling Job, status message on printer control panel 2-4
- canceling printing jobs 2-3
- cartridges. *See* toner cartridges
- changes, documentation and software xv
- changing
 - brightness setting 3-5
- characters, deleting in text fields on printer control panel 2-3
- charts. *See* color reference charts
- Chooser, Macintosh 3-1

choosing

- Multipurpose tray option 3-3
- CIE chromaticity diagram 1-2, 1-3
- CIE color model 1-2
- cleaning
 - corona wire C-6 to C-8, C-31 to C-33
 - density detection sensor window C-8 to C-9
 - paper pickup area C-5
 - printer xviii, C-5 to C-14
 - printer cabinet C-5
 - wire cleaner C-6
- clearing
 - paper jams xv
- CMYK color model
 - conversion of image data from RGB 1-9 to 1-12
 - conversion of RGB image data to 1-5
- CMYK files
 - and color rendering dictionaries 3-5
- color
 - additive model 1-3
 - hue, saturation, and brightness 1-1
 - physics of 1-1
 - subtractive model 1-3, 1-4
 - subtractive primaries 1-4
 - three-dimensional model 1-3
- color (printed)
 - accuracy of 1-10
 - controlling 1-7 to 1-12
 - photographic rendering 1-10
- colorants 1-4
- color blends
 - printing 1-10
- color calibration
 - reasons for 1-7
- color copies. *See* printouts
- color density, adjusting 2-7 to 2-8

- color documents
 - specifying color mode in Print dialog box 3-4
- Color/Grayscale option 3-3
- color image data
 - translating to CMYK 1-9 to 1-12
- color management 1-8 to 1-12
- Color Mode option 3-4, 4-6
- color monitors
 - designing on 1-5
 - gamut of 1-5
 - matching color to printed output 1-9 to 1-12
- color monitors, *see* monitors
- color pages
 - printing 2-5
- Color Pages option 2-5
- Color Picker, in Adobe Photoshop 1-3
- color printers
 - laser-based print engines 1-6
 - maintaining consistency of 1-7 to 1-12
 - paper used in 1-7
- color printing
 - advantages of Colorwriter 1-6
 - traditional vs. Colorwriter 1-1 to 1-6
- color printouts. *See* printouts
- color quality
 - printing test patterns for 2-8 to 2-9
- color range 1-5
- color reference charts, printing 2-5
- color rendering dictionaries xiii, 1-8 to 1-11
 - and PostScript Level 1
 - applications 3-5
 - See also* Rendering Style option
- color rendering dictionaries. *See* CRDs
- color rendering styles
 - banding and 1-10
 - guidelines 1-10
 - in QuarkXPress 3-47
- Monitor 1-10
- Photographic 1-10
- Presentation Graphics 1-10
- Solid Color 1-10
- colors (saturated)
 - optimizing 3-4
- Color Select button, on density control panel 2-6
- color select indicators, on density control panel 2-6
- COLOR SELECT key 2-6
- Colorwriter LSR_Direct 3-2
- Colorwriter LSR Downloader
 - choosing a printer 3-9, 4-17
 - printing with 3-10, 4-18
- Colorwriter LSR_Hold 3-2
- Colorwriter LSR Macintosh utilities
 - using 3-7 to 3-28
- Colorwriter LSR Manager 4-36
- Colorwriter LSR_Print 3-2
- Colorwriter LSR Spooler
 - changing print settings 3-24, 4-31
 - copying jobs 3-23, 4-30
 - deleting jobs 3-24, 4-31
 - duplicating jobs 3-22, 4-29
 - moving jobs 3-24, 4-30
 - preferences 3-20, 4-27
- Commission Internationale de l'Eclairage 1-2
- computer monitors, *see* monitors
- Configuration option 2-5
- configuration page, printing 2-5
- Confirm file deletion option 3-21, 4-28
- connecting
 - to printer 1-8, 3-2, 4-15, 4-24, 7-1
- consistency (printed color),
 - maintaining 1-7 to 1-12
- controller xiii
- Control Panel, Windows 4-4
- control panel. *See* printer control panel; density control panel

- conversion
 - RGB image data to CMYK 1-5
 - copying jobs in Colorwriter LSR
 - Spooler 3-23, 4-30
 - CorelDRAW
 - application note (Windows) 4-44 to 4-45
 - choosing fill and line colors 4-44
 - Color Manager 4-44
 - selecting print options 4-45
 - working with imported files 4-44
 - corona wire
 - cleaning C-6 to C-8, C-31 to C-33
 - covers, opening and removing xviii
 - CRDs xiii, 1-8 to 1-11, 4-42, 4-43
 - choosing 1-9
 - defined 1-9 to 1-12
 - see* Rendering Style option
 - using with Adobe Photoshop 4-40
 - CRD. *See* Rendering Style option
 - curled paper, preventing 2-21
 - cursor, moving in setup menus 2-3
 - customizing
 - color density 2-7 to 2-8
 - Cyan LED, on density control panel 2-6
- D**
- damage
 - avoiding C-12
 - decrementing text characters on printer control panel 2-3
 - defaults
 - printer, resetting 2-4
 - print options, setting 3-4
 - deleting jobs in Colorwriter LSR
 - Spooler 3-24, 4-31
 - Demo Page
 - printing 2-5
 - Demo page option 2-5
 - densities
 - correcting 1-8
 - densitometer 1-8
 - density
 - customizing 2-7 to 2-8
 - density control panel
 - using 2-6 to 2-9
 - density detection sensor window
 - cleaning C-8 to C-9
 - Density gauge 2-6
 - density gauge, on density control panel 2-6
 - disk space, message on printer control panel 2-4
 - displaying setup menus 2-3
 - display window 2-4 to 2-5
 - documentation xv
 - related G-1 to G-3
 - documents
 - specifying color mode in Print dialog box 3-4
 - downloading
 - files (from Macintosh) 3-10
 - fonts (from Macintosh) 3-13
 - downloading files and fonts 4-15, 4-24, 4-36
 - drum cartridge
 - handling while moving printer C-34
 - drum cartridge kit F-5
 - replacing C-25 to C-33
 - duplicating jobs in Colorwriter LSR
 - Spooler 3-22, 4-29
 - dust, avoiding C-13
- E**
- EFICOLOR EPS XTension 3-44
 - EFICOLOR XTension 3-44
 - electrical contacts, touching C-12
 - electric shock xviii
 - electromagnetic radiation 1-1
 - Electronic Store, ordering
 - documentation G-2

- Enable Direct setup option 1-8, 3-2, 4-15, 4-24, 7-1
- enabling/disabling
 - connecting to printer 1-8, 3-2, 4-15, 4-24, 7-1
- Encapsulated PostScript File option 4-8
- Energy Star compliance xix, 2-4
- engines (laser based)
 - calibration of 1-7
- Enter button, on density control panel 2-6
- envelopes, printing on 2-13
- environment for printer xvi
- EPS files 3-7, 4-15
- error, printer control panel activity
 - light 2-2
- error messages A-1 to A-2
- error messages, displayed on printer control panel 2-5
- Ethernet 7-4
- extension cords, use of xvii
- exterior of printer xvi

F

- Features window 4-5
- Fiery controller xiii
- Fiery Print Calibrator utility 1-8
- Fiery XJ Downloader (Macintosh)
 - downloading fonts 3-13
- files
 - Adobe Illustrator, working with 3-30
 - printing to disk 4-2
- fill colors
 - in Adobe Illustrator 3-29
- film, in offset printing 1-6
- film. *See* transparency film
- filter, ozone xix
- flexography 1-6
- font list
 - displaying 3-9, 3-16, 4-17, 4-23
 - printing 3-9, 3-16, 4-17, 4-23

- fonts
 - downloading from Macintosh 3-13
 - enabling access by users 1-8, 3-2, 4-15, 4-24, 7-1
 - See also* screen fonts
- FreeHand. *See* Macromedia FreeHand

G

- gamut 1-5
 - out-of-gamut RGB colors, printing 1-10
- gamut mapping 1-5
- gauging amount of paper in universal cassette 2-17
- gears, touching C-12
- glues 2-11
- gravure 1-6
- grayscale documents
 - specifying color mode in Print dialog box 3-4
- grounding type plug xviii

H

- halftoning 1-4
- handling
 - general instructions C-10 to C-14
 - paper 2-11 to 2-12
 - printer xvi
 - transparency film 2-12
- help map
 - printing 2-5
- Help Map option 2-5
- Hold queue 3-17, 4-24
 - printing to 3-2
- hue, saturation, and brightness 1-1
- humidity
 - protecting paper from 2-11

I

- Illustrator. *See* Adobe Illustrator
- imported files
 - from Adobe Illustrator 3-30

- improving
 - print quality C-5 to C-14
- incrementing characters on printer
 - control panel 2-3
- inhalation slot xvii
- Initializing, status message on printer
 - control panel 2-4
- interpreter xv
- IPX (Novell)
 - managing printer queue on the server 7-2
 - managing print jobs 7-1
 - with Macintosh computers 7-4

J

- job log
 - in Colorwriter LSR Spooler 3-25, 4-32
 - printing 2-5
- Job Log option 2-5
- job name, of current print job 2-4
- jobs
 - canceling oldest 2-3

L

- label, voltage rating xvii
- labels, printing on 2-13
- laser-based print engines 1-6
- laser beam devices, touching C-12
- LaserWriter Printer Driver 8.x 3-1
- LCD
 - precautions for handling liquid xix
- light
 - from sun 1-1
 - sources of 1-1
 - spectral components 1-1, 1-2
 - Tungsten 1-1
 - visible spectrum 1-1
- light, avoiding C-13
- lights (printer). *See* activity lights
- lights, on printer control panel 2-2

- line colors
 - in Adobe Illustrator 3-29
- liquid crystal display. *See* LCD
- loading
 - paper 2-15 to 2-17
 - transparency film 2-12, 2-13
- location
 - choosing for printer xvi
- locking pins 2-10
- logos
 - optimizing 3-4
- lower/upper paper cassette selected light 2-2
- lpr command 5-1
- lubrication, avoiding C-14

M

- Macintosh applications
 - printing from 3-1 to 3-5
- Macintosh computers
 - on IPX (Novell) network 7-4
- Macromedia FreeHand
 - selecting print options 3-41
 - working with imported files 3-40
- Magenta LED, on density control panel 2-6
- magnetic fields, avoiding C-13
- maintenance C-1 to C-38
 - general C-10 to C-14
 - when to do C-1
- manual feed printing
 - setting up xv
- manual feed tray. *See* multipurpose tray
- manuals xv
- mapping (gamut) 1-5
- measuring
 - toner densities 1-8
- media F-6
 - See also* paper; transparency film
- Media Type option
 - Macintosh Print dialog box 4-6

- Menu button 2-3
 - menu entry, displaying next/previous 2-3
 - messages
 - error, displayed on printer control panel 2-5
 - status, on printer control panel 2-4
 - metamerism 1-2
 - Microsoft PowerPoint
 - application note (Macintosh) 3-42 to 3-43
 - choosing a template 4-45
 - selecting print options 3-43, 4-46
 - working with imported files 4-46
 - Microsoft Windows PostScript Printer Driver 4-37
 - Mirror option 4-10
 - model number location H-2
 - moisture, printer exposure to xvi
 - Monitor rendering style 1-10, 4-6
 - monitors 1-3
 - calibration in Adobe Illustrator 3-29
 - phosphors 1-3
 - Monitor Setup dialog box, in Adobe Photoshop 3-38, 4-41
 - monitors. *See* color monitors
 - moving
 - printer xvi
 - moving jobs in Colorwriter LSR
 - Spooler 3-24, 4-30
 - moving printer C-34 to C-38
 - multipurpose tray
 - adjusting paper guides in 2-21 to 2-22
 - amount of paper to load 2-18
 - amount of transparency film to load 2-23
 - loading paper into 2-18 to 2-25
 - loading transparency film into 2-23 to 2-25
 - opening/closing 2-18 to 2-19
 - paper limit mark 2-20
 - using 3-6, 3-6, 4-13 to 4-14
 - using for transparency film 2-12, 2-13
 - multipurpose tray activity light 2-2
 - Multipurpose tray option
 - choosing 3-3
- N**
- Negative Image option 4-9
 - Next button 2-3
 - non-solvent glues 2-11
- O**
- obtaining
 - service H-1 to H-2
 - offset lithography 1-6
 - offset printing 1-6
 - film 1-6
 - plates 1-6
 - OK button 2-3
 - Online activity light 2-2
 - Online button 2-3
 - on-site warranty support H-1
 - opening
 - printer covers xviii
 - opening/closing
 - multipurpose tray 2-18 to 2-19
 - operator intervention, printer control panel activity light 2-2
 - optimizing
 - Adobe Illustrator files 3-29 to 3-30
 - images 3-4
 - output 3-29 to 3-52
 - saturated colors 3-4
 - spot colors 3-4
 - optional cassette 2-10
 - optional paper cassette F-2
 - optional paper feeder unit 2-10, 2-14, F-1 to F-2
 - options (printer)
 - setting 2-2

- ordering
 - documentation G-2
 - related documentation G-1 to G-3
 - supplies F-1 to F-6
 - out-of-gamut RGB colors, printing 1-10
 - output
 - matching to color monitors 1-9 to 1-12
 - optimizing through
 - applications 3-29 to 3-52
 - output. *See* printouts
 - overheating xvii
 - overlays. *See* transparency film
 - Override Print Settings window, Colorwriter LSR Spooler 3-24, 4-31
 - overriding
 - Printer Setup options 3-3
 - overview of manual xiv
 - ozone emission xix
- P**
- PageMaker. *See* Adobe PageMaker
 - pages, printing from printer control panel 2-5
 - Page Setup dialog box
 - selecting print options in 3-2
 - PANTONE colors
 - printing samples of 2-5
 - paper
 - avoiding jams 2-16
 - back side printing incorrectly 2-13
 - curled, preventing 2-11, 2-21
 - estimating amount in cassette 2-17
 - gamut of 1-5
 - handling and storing 2-11 to 2-12
 - increasing supply of 2-14
 - increasing supply of in printer 2-10
 - loading into multipurpose tray 2-18 to 2-25
 - loading into universal paper cassette 2-15 to 2-17
 - multipurpose tray activity light 2-2
 - optional cassette 2-10
 - optional paper feeder unit 2-10, F-1 to F-2
 - printer control panel activity lights 2-2
 - print side 2-15
 - recommended brands F-6
 - setting size of 2-14 to 2-15
 - storage recommendations 2-11
 - use in color printers 1-7
 - paper (special)
 - printing options for 4-13 to 4-14
 - paper amount indicator, reading 2-17
 - paper cassette
 - optional F-2
 - paper cassette (lower/upper) selected, printer control panel activity light 2-2
 - paper cassette (optional) 2-10
 - paper feeder unit (optional) 2-10
 - paper guides
 - adjusting 2-21 to 2-22
 - paper jams
 - clearing xv
 - paper jams, avoiding 2-16
 - paper length guide, in universal paper cassette 2-15
 - paper limit mark 2-16
 - paper limit mark, in multipurpose tray 2-20
 - paper pickup area
 - cleaning C-5
 - paper sizes
 - supported 2-10
 - using various 2-10
 - Paper Source option 3-3
 - paper tray
 - multipurpose 4-13 to 4-14
 - specifying 3-3
 - paper width guide, in universal paper cassette 2-14

- password, entering in Colorwriter LSR
 - Spooler 3-28, 4-35
- PCONSOLE 7-1
- PDF file, for QuarkXPress 3-44
- Persuasion. *See* Adobe Persuasion
- phosphors, in monitors 1-3
- photographed images
 - optimizing 3-4
- photographic prints 1-4
- Photographic rendering style 1-10, 3-4, 4-6
- photographic transparencies 1-4
- photographs
 - printing 1-10
- Photoshop. *See* Adobe Photoshop
- physics of color 1-1
- pins, locking 2-10
- plates, in offset printing 1-6
- plug xviii
- PostScript files
 - printing to 4-2
- PostScript interpreter, parameters and resources xv
 - PostScript Language Printer Addendum* xv
 - PostScript Language Reference Manual, Second Edition* G-1
 - PostScript Language Reference Manual Supplement for Version 2013* G-1
- PostScript Level 1 applications
 - printing from 3-5
- PostScript Level 2 1-9 to 1-12
 - printer drivers 3-36, 3-50
- PostScript options 4-4
- PowerPoint. *See* Microsoft PowerPoint
- Power Saver Mode, status message on printer control panel 2-4
- precautions xvi to xviii
- preferences, Colorwriter LSR
 - Spooler 3-20, 4-27
- prepress proof 1-6
- Presentation Graphics rendering style 1-10
- Presentation rendering style 3-4, 4-6
- presentations
 - color rendering style appropriate for 1-10
 - optimizing 3-4
- presentation software, printing color from 1-10
- Previous button 2-3
- Printed queue 3-17, 4-24
- print engines (laser based)
 - calibration of 1-7
- printer
 - general handling instructions C-10 to C-14
 - selecting 3-1 to 3-2
- printer control panel
 - activity lights 2-2
 - activity lights on 2-2
 - buttons on 2-3
 - Canceling Job 2-4
 - display window on 2-4 to 2-5
 - error messages A-1 to A-2
 - overview 2-2
 - Power Saver Mode 2-4
- printer control panel service calls A-4 to A-6
- printer control panel warnings A-3
- printer description files 3-2
- printer drivers
 - PostScript Level 2 1-9
 - Windows 4-3
- printer drivers (Macintosh)
 - Adobe PostScript Printer Driver 8.x 3-1
 - PostScript Level 1 3-5
- printer files, Read Me files for xv
- printer fonts 3-12, 4-20
 - downloading from Macintosh 3-13

- printer queues. *See also* Hold queue; Print queue; Printed queue
- printers
 - available, viewing 3-1
- Printer's Default setting 3-4, 4-6
- Printers dialog box, Windows 4-7
- printer setup
 - with Adobe PostScript Printer Driver for Windows 4-4
 - with Windows PostScript Printer Driver 4-7
- Printer Setup menu
 - Enable Direct option 1-8, 3-2, 4-15, 4-24, 7-1
- Printer Setup options
 - overriding 3-3
- printing
 - back side of paper printing
 - incorrectly 2-13
 - blends 1-10
 - bytes processed message during 2-4
 - Canceling Job status message 2-4
 - from Colorwriter LSR
 - Downloader 3-10, 4-18
 - from multipurpose tray 4-13 to 4-14
 - from Windows applications 4-2
 - to Hold queue 3-2
 - indicated by printer control panel
 - activity light 2-2
 - LaserWriter 7.x printer drivers 3-5
 - list of fonts 3-9, 3-16, 4-17, 4-23
 - from Macintosh applications 3-1 to 3-5
 - offset 1-6
 - from PostScript Level 1
 - applications 3-5
 - Power Saver Mode status message 2-4
 - from presentation software 1-10
 - to Print queue 3-2
 - from QuickDraw applications (using LaserWriter 7.x drivers) 3-5
 - suspend/resume 2-3
 - test patterns 2-8 to 2-9
 - to disk 4-2
 - transparency film 2-12
 - using PostScript Level 1 printer drivers 3-5
- printing (color)
 - traditional vs. Colorwriter 1-1 to 1-6
- Printing, status message on printer control panel 2-4
- printing methods
 - flexography 1-6
 - gravure 1-6
 - offset lithography 1-6
- printing options
 - for special paper 4-13 to 4-14
 - for transparency films 4-13 to 4-14
- printing technologies 1-6
- Print in RGB option, in Adobe Photoshop 3-39, 4-42
- print jobs
 - viewing information about 2-2
- Print message 2-3
- print options
 - selecting for Adobe Illustrator files 3-30
 - selecting in Page Setup dialog box 3-2
 - setting defaults 3-4
- Print Options dialog box 3-3 to 3-5
- printouts
 - storing 2-11 to 2-12
 - temperature effect on 2-12
- Print Pages menu 2-3
- print quality
 - improving C-5 to C-14
 - printing test patterns for 2-8 to 2-9
- Print queue 3-17, 4-24
 - printing to 3-2
- print queues
 - viewing contents of 5-2, 7-1

- prints
 - toner cartridge lifespan C-16
- Print Setup dialog box, Windows 4-8
- print side of paper 2-15
- print speed xiii
- prism 1-1
- problems
 - obtaining service H-1 to H-2
- problems, printing 2-5
- processing, printer control panel activity
 - light 2-2
- Processing, status message on printer
 - control panel 2-4
- process inks set 1-4
- Process message 2-3
- productivity xiii
- proofs, prepress 1-6
- PSCRIPT.DRV 4-3, 4-7
- pumping
 - silicone oil from printer C-35 to C-38
- PVC material 2-11

Q

- QuarkXPress
 - application note (Macintosh) 3-44 to 3-50
 - color rendering styles 3-47
 - EFICOLOR EPS XTension 3-44
 - EFICOLOR XTension 3-44
 - importing TIFF and PICT files 3-48
 - page setup 3-49
 - PDF file for 3-44
 - setting preferences 3-45
 - setting print options 3-50
 - source profiles 3-46, 3-47
 - working with imported files 3-47 to 3-50

- queues
 - See also* Hold queue; Print queue;
 - Printed queue
 - viewing lpd jobs 5-2
 - viewing NetWare jobs 7-1
- QuickDraw applications 3-50, 3-52
- quick reference card xv

R

- raster images 3-47
- reading
 - paper amount indicator 2-17
- Read Me files xv
- Ready, status message on printer control panel 2-4
- receiving data, printer control panel
 - activity light 2-2
- reference charts. *See* color reference charts
- release button, in universal paper cassette 2-14
- Release Notes* xv
- removing
 - printer covers xviii
 - silicone oil from printer C-35 to C-38
 - universal paper cassette 2-14
- Rendering Style option
 - in Macintosh Print Options dialog 4-6
- Rendering Style options (Macintosh) 3-4
- Rendering Style pop-up menu 1-9
- replacing
 - drum cartridge kit C-25 to C-33
 - silicone oil bottle C-22 to C-24
 - toner xv
 - toner cartridges C-16 to C-21
- resetting
 - Colorwriter defaults 2-4
 - test patterns 2-8

- resume/suspend printing button 2-3
 - RGB color blends, printing 1-10
 - RGB color model
 - conversion of image data to
 - CMYK 1-5, 1-9 to 1-12
 - RGB files
 - and color rendering dictionaries 3-5
 - rocking toner cartridges C-18
- S**
- safety information xvi to xviii
 - saturated colors
 - optimizing 3-4
 - scanners 1-3
 - scans
 - printing 1-10
 - screen fonts
 - Read Me files for xv
 - Scroll up/down buttons 2-3
 - selecting
 - choices in printer control panel 2-3
 - print options, for Adobe Illustrator files 3-30
 - selecting printer 3-1 to 3-2
 - Send Header with Each Job option 4-8
 - separation corona wire. *See* corona wire
 - separation voltage control D-17
 - serial number location H-2
 - service
 - obtaining H-1 to H-2
 - service bureaus
 - preparing files for 4-2
 - service call messages A-4 to A-6
 - servicing printer xviii
 - setting
 - paper size 2-14 to 2-15
 - setting up printer xvii to xviii
 - setup menus
 - displaying 2-3
 - moving cursor 2-3
 - 'showpage' after EPS files option 3-12, 4-20
 - silicone oil F-4
 - leakage C-34
 - precautions for moving printer xvi
 - removing from printer C-35 to C-38
 - silicone oil bottle xviii
 - replacing C-22 to C-24
 - SIMM kits F-2
 - size guide, in universal paper cassette 2-15
 - software
 - changes to xvi
 - presentation, printing color
 - from 1-10
 - Read Me files for xv
 - software version, message on printer control panel 2-4
 - Solid Color rendering style 1-10, 3-4, 4-6
 - solvents, effect on toner 2-11
 - source profiles, in QuarkXPress 3-46, 3-47
 - special pages, printing from printer control panel 2-5
 - special paper
 - printing options for 4-13 to 4-14
 - spectral colors 1-2
 - spectral components of light 1-1, 1-2
 - speed, printer xiii
 - Spooler
 - see* Colorwriter LSR Spooler
 - spooling
 - bypassing 3-2
 - spot colors
 - optimizing 3-4
 - spray cleaners, using C-10
 - spreadsheet software, printing color
 - from 1-10
 - status (printer), checking 2-2
 - status information 2-2
 - status messages, on printer control panel 2-4

- Status T densitometer 1-8
 - storing
 - paper 2-11 to 2-12
 - printouts 2-11 to 2-12
 - toner cartridges C-15
 - transparency film 2-12
 - subtractive color model 1-3, 1-4
 - subtractive primaries 1-4
 - sunlight 1-1
 - sunlight, avoiding C-13
 - supplies
 - drum cartridge kit F-5
 - optional paper cassette F-2
 - optional paper feeder unit F-1 to F-2
 - ordering F-1 to F-6
 - silicone oil F-4
 - SIMM kits F-2
 - toner cartridges F-3
 - support. *See* warranty support
 - suspend/resume printing button 2-3
 - system administrator
 - printer features 7-1
- T**
- TCP/IP (UNIX)
 - printing 5-1
 - technical support phone number G-1
 - temperature
 - effect on printouts 2-12
 - test page
 - printing 2-5
 - Test Page option 2-5
 - test patterns 2-7
 - printing 2-8 to 2-9
 - resetting 2-8
 - Test Print button, on density control panel 2-6
 - TEST PRINT key 2-7
 - test prints
 - use of 1-7
 - text, deleting in text fields on printer control panel 2-3
 - three-dimensional color model 1-3
 - tilting, avoiding C-14
 - tilting printer xvi
 - toner
 - distributing in replacement cartridge C-18
 - replacing xv, 1-7
 - solvents' effect on 2-11
 - toner cartridges F-3
 - color markers on printer C-21
 - disposing C-18
 - handling while moving printer C-34
 - replacing C-16 to C-21
 - storing C-15
 - toner densities
 - correcting 1-8
 - measuring 1-8
 - Toolbar in Colorwriter LSR
 - Downloader 3-9, 4-17
 - transfer curves 1-8
 - translation
 - of color image data to CMYK 1-9 to 1-12
 - transparencies (photographic) 1-4
 - transparency film 3-42, F-6
 - direction for feeding into printer 2-12, 2-23
 - handling 2-12
 - loading into multipurpose tray 2-23 to 2-25
 - recommended brand 2-23
 - storing 2-12
 - uses for 3-36
 - transparency film, loading 2-12, 2-13
 - transparency films
 - gamut of 1-5
 - printing options for 4-13 to 4-14
 - transporting printer C-34 to C-38

troubleshooting
 back side of paper printing
 incorrectly 2-13
 TrueType fonts 4-9
 Tungsten light 1-1
 turret knob C-17

U

universal cassette 2-10
 universal paper cassette
 blue bar indicator 2-17
 loading paper into 2-15 to 2-17
 paper length guide 2-15
 paper sizes and amounts 2-13
 removing 2-14
 setting paper size 2-14 to 2-15
 UNIX (TCP/IP)
 printing 5-1
 UNIX systems
 managing queues 5-2
 unpacking printer xvii to xviii
 upper/lower paper cassette selected, printer
 control panel activity light 2-2
 user guide xv
 using
 Colorwriter LSR Macintosh
 utilities 3-7 to 3-28
 density control panel 2-6 to 2-9
 multipurpose tray 4-13 to 4-14
 utilities
 calibrator 1-8
 Macintosh, using 3-7 to 3-28

V

vector images 3-46, 3-47
 ventilation xix
 ventilation slots xvii
 vibration C-10
 visible spectrum of light 1-1
 voltage rating label xix
 voltage symbol xviii

W

Warning light 2-5
 warnings xviii to xxi, A-3
 warranty support H-1
 waste toner bottle xx
 handling while moving printer C-34
 replacing C-26 to C-30
 weight
 of printer xvi
 Windows
 PostScript printer driver 4-3
 window. *See also* display window
 wire cleaner C-6
 word processor software, printing color
 from 1-10
 world wide web page address H-1

Y

Yellow LED, on density control panel 2-6
 You 3-6

Z

zone
 selecting printers in 3-1 to 3-2