QMS® *magicolor*® 2 DeskLaser User's Guide

1800486-001C

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Introduction

In This Chapter . . .

- "About the Documentation" on page 1-2
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About the Documentation

You received the following documentation with your QMS *magicolor* 2 DeskLaser:

	QMS* magicolor *2 DeskLaser Installation Guide (In hard copy and on the *QMS* magicolor *2 DeskLaser Print System Documentation and Software* CD-ROM.)	This handout assists in getting the printer up and running. It is to be used as a quick setup reference only and should be used in conjunction with the full *Setup Guide* and *User's Guide*.
	QMS magicolor 2 DeskLaser Setup Guide (In hard copy and on the *QMS* magicolor *2 DeskLaser Print System Documentation and Software* CD-ROM.)	This manual contains detailed, illustrated instructions to guide you as you unpack and set up your printer, connect it to a computer via the parallel or Ethernet interface, and install the Windows 95/98 or Windows NT printer drivers.
	QMS magicolor 2 DeskLaser User's Guide (On the *QMS* magicolor *2 DeskLaser Documentation and Software* CD-ROM.)	You're looking at this manual right now. The following section, "About this Manual," tells you what's included in this manual.

About This Manual

This manual guides you through the day-to-day operation of your printer and provides troubleshooting information. It is organized as follows:

1	**Introduction**	Presents an overview of this manual.
2	**Working with the Printer Drivers**	Explains how to configure the printer drivers, share the printer, and use both the Status Monitor and the QMS Network Print Monitor.
3	**Printing**	Describes how to refill the media cassette, print on different types of media, prevent media jams, and cancel a print job, as well as how to replace a toner cartridge.
4	**Control Panel**	Introduces the parts of the control panel and discusses how to use the keys and the configuration menu.
5	**Printer Options**	Explains how to install available options, and how to update system software and printer drivers.
6	**Maintenance**	Describes how to handle and clean your printer.
7	**Media Jams**	Explains how to locate and clear media jams.
8	**Troubleshooting**	Interprets printer and QMS Network Print Monitor status messages, explains how to remove a media jam, and discusses various output problems.
9	**Repacking the Printer**	Describes how to repack the printer for storage or shipment.

A	**QMS Customer Support**	Provides product sales and support telephone numbers and describes how to communicate with QMS through the Internet.
B	**Technical Specifications**	Provides print engine, controller, environmental, print media, consumable, and cabling specifications.
C	**TCP/IP Concepts**	Defines TCP/IP terminology and then discusses subnetting and Internet routing.
D	**Notices**	Lists manual and legal notices.
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Typographic Conventions

The following typographic conventions are used in this manual:

`Mixed-Case Courier`	Text you type, and messages and information displayed on the screen
`Mixed-Case Italic Courier`	Variable text you type; replace the italicized word(s) with information specific to your printer or computer
`UPPERCASE COURIER`	Information displayed in the printer message window
lowercase italic	Variable information in text
UPPERCASE	File and utility names
↵	Press the Enter key (PC)
^	Press and hold down the Ctrl key (PC)
🎥	In Adobe Acrobat PDF versions of the manual, click to play a QuickTime video clip of the procedure described in the text.

» **Note:** *Notes contain tips, extra information, or important information that deserves emphasis or reiteration.*

◆ **Caution:** *Cautions present information that you need to know to avoid equipment damage, process failure, or extreme annoyance.*

✹ **WARNING!** *Warnings indicate the possibility of personal injury if a specific procedure is not performed exactly as described in the manual.*

ACHTUNG! *Bitte halten Sie sich exakt an die im Handbuch beschriebene Vorgehensweise, da sonst Verletzungsgefahr bestehen könnte.*

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Introduction 1-5

2

Working with the Printer Drivers

In This Chapter . . .

Introduction

This chapter explains how to configure the QMS *magicolor* 2 DeskLaser printer drivers, share the printer, and use both the DeskLaser Printer Status Monitor and the QMS Network Print Monitor.

Configuring the Windows 95/98 Printer Driver

This section explains how to configure the QMS *magicolor* 2 DeskLaser Windows 95/98 printer driver. Online help is also available while you're configuring the printer driver. Just choose any Help button.

» **Note:** *If you're using Windows NT, refer to "Configuring the Windows NT 4.0 Printer Driver" on page 2-21.*

Setting the Printer Driver Defaults

» **Note:** *Changes you make here apply to all documents. However, most changes you make through your application override these settings.*

1 Open the printer driver.

    a   From the Windows 95/98 Start menu choose Settings.

    b   Choose Printers.

    c   In the Printers window, select the QMS *magicolor* 2 DeskLaser printer driver.

2   From the File menu choose Properties.

The following tabs appear in the QMS *magicolor* 2 DeskLaser Properties window
through the Start menu: General, Details, Sharing (optional), Paper, Quality, and
Image Settings.

■   **General**—Allows you to name the printer, use a separator page, and print a
test page. See your Windows documentation.
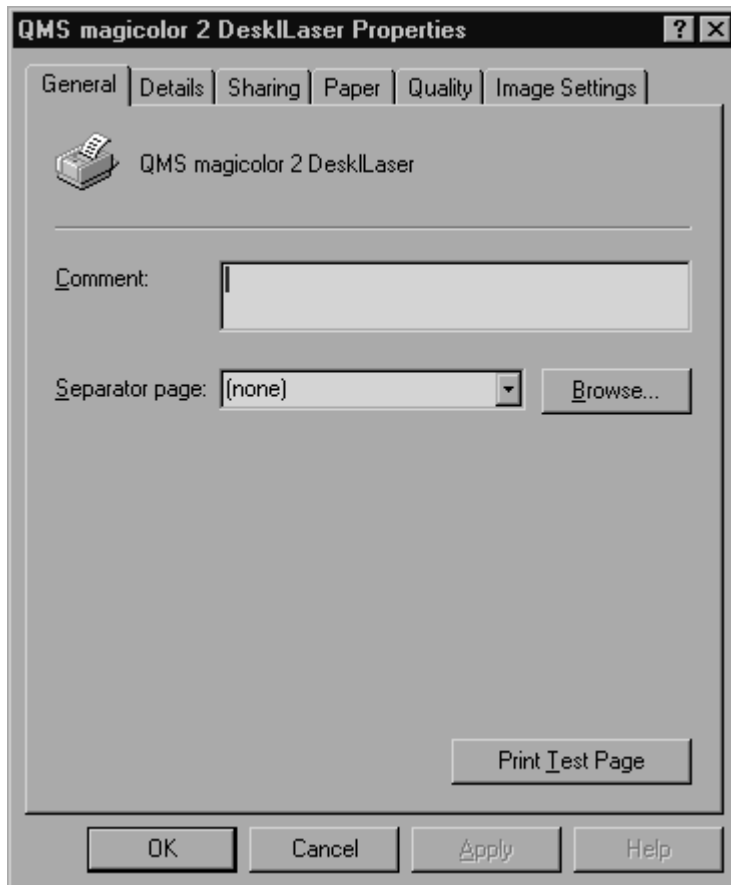
■ **Details**—Allows you to set interface connection details. See your Windows
documentation.
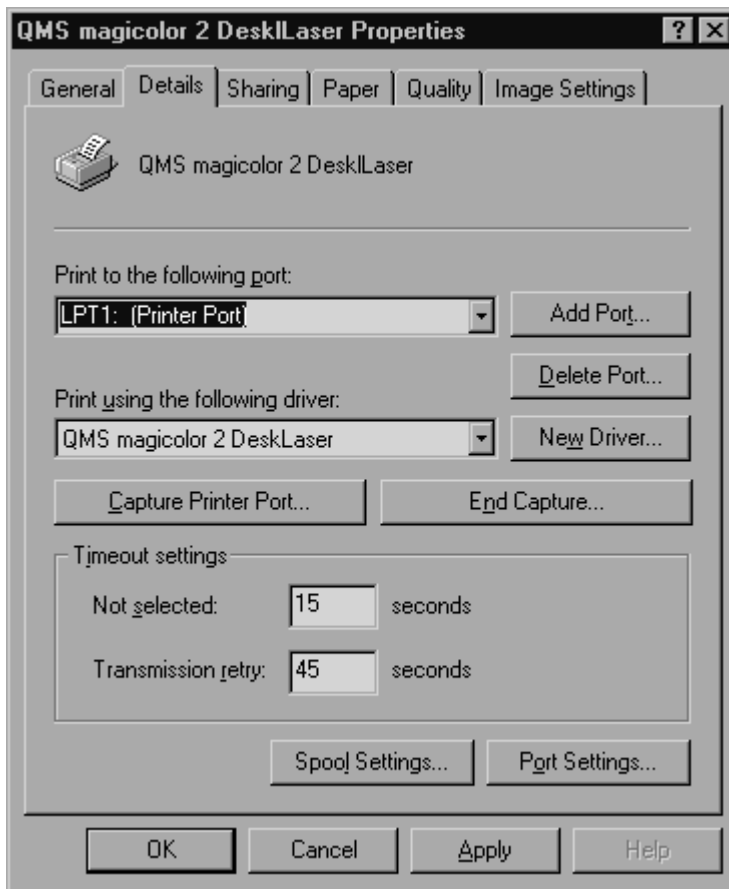
■ **Sharing** (optional)—Allows you to set up the printer so others on the network can use it. See "Sharing the Printer" on page 2-42.

QMS magicolor 2 DeskILaser Properties   [?] [X]

General | Details | Sharing | Paper | Quality | Image Settings |

    ◉ N̲ot Shared

    ○ S̲hared As:

        Share N̲ame: [QMS]

        C̲omment: [   ]

Na̲me: Access Rights:

    [A̲dd...]   [R̲emove]

    [OK]   [Cancel]   [A̲pply]   [Help]
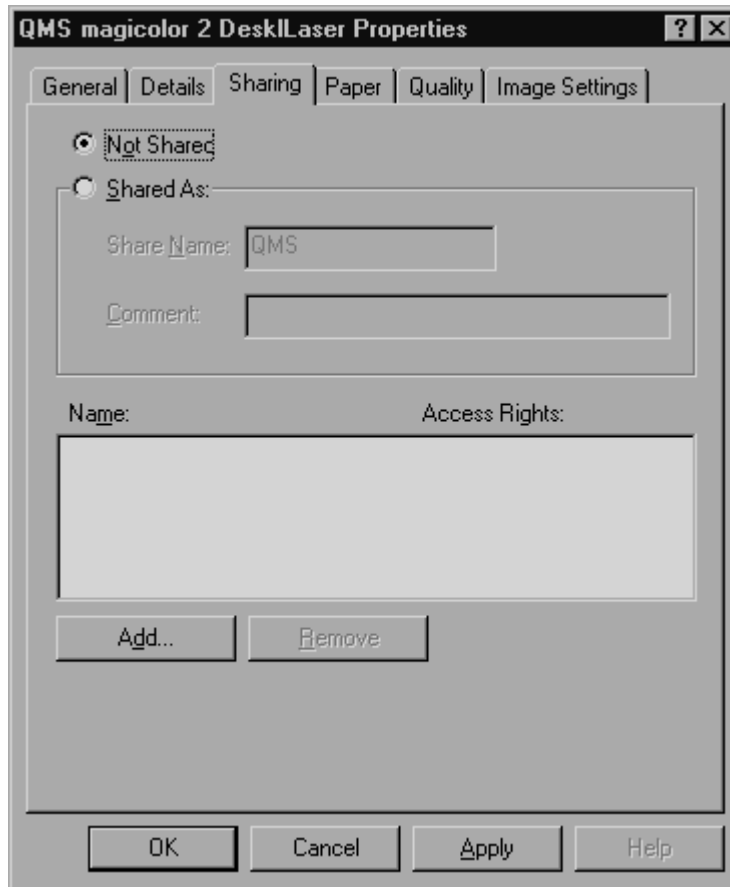
» **Note:** *The optional Sharing tab does not appear when you choose Properties from the application.*

■ **Paper**—Allows you to provide information about the document type and location of the media you want to print on. See "Configuring Paper Options" on page 2-8.

Working with the Printer Drivers   **2-5**

■ **Quality**—Allows you to provide information about halftoning and resolution of the printing. See "Configuring Quality Options" on page 2-14.

■ **Image Settings**—Allows you to provide settings for color format, image brightness and contrast, color balance, and color matching. See "Configuring Image Settings Options" on page 2-17.

3 **Make your selections, and then choose OK to save your changes and return to the Printers window.**

4 **Close the Printers window.**

Configuring the Printer Driver for the Current Print Job

» **Note:** *Any changes you make here apply only to the current document. These changes override most default settings you made through the Printers window.*

1 **From the application's File menu choose Print (or, in some cases, Print Setup or Page Setup).**

2 **In the Print, Print Setup, or Page Setup dialog box, select the QMS *magi-color* 2 DeskLaser printer driver.**

3 **Choose the Properties button.**

Three tabs appear:

■ **Paper**—Allows you to provide information about the document type and location of the media you want to print on. See "Configuring Paper Options" on page 2-8.

■ **Quality**—Allows you to provide information about halftoning and resolution of the printing. See "Configuring Quality Options" on page 2-14.

■ **Image Settings**—Allows you to provide settings for color format, image brightness and contrast, color balance, and color matching. See "Configuring Image Settings Options" on page 2-17.

Windows 95/98 users can customize the image on the Image Settings tab:

■ Double-click on the image.

■ Browse to find the bitmap image file you want to use.

■ Double-click the bitmap image filename.

The new image now appears on the Image Settings tab.

To restore the original image on the Image Settings tab in Windows 95/98, the file is named QMIMAGE.BMP and is stored in `c:\windows\system` after the driver has been installed. To restore it, double-click on the image, point to the directory, and select the file. If the file has been deleted, the driver has to be reinstalled. The file is not stored by itself on the CD-ROM, but is embedded within SETUP.EXE.

» **Note:** *General, Details, and Sharing tabs are not available. See "Setting the Printer Driver Defaults" on page 2-2 for information.*

4 **Make your selections, and then choose the OK button to return to the Print, Print Setup, or Page Setup dialog box.**

5 **Either print the file or close the dialog box.**

Configuring Windows 95/98 Options through the Application

Configuring Paper Options

The Paper tab allows you to provide information about the type and location of the media you want to print on. In addition, its Document Type settings are essential for customization of the Quality and Image Settings tabs. The Document Type is Automatic Mode only if Auto is selected.

» **Note:** *Settings chosen on the Image Settings and Quality tabs override settings automatically selected by a Document Type.*

Paper Size

Purpose	Sets the media size.		
Choices	**Size**	**Inches**	**Millimeters**
	A4	8.27 x 11.7	210.0 x 297.0
	B5 (ISO)	6.9 x 9.8	176.0 x 250.0
	B5 (JIS)	7.2 x 10.1	182.0 x 257.0
	Envelope #10	4.125 x 9.5	105.0 x 241.3
	Envelope DL	4.3 x 8.7	110.0 x 220.0
	Executive	7.25 x 10.5	184.0 x 267.0
	Folio	8.5 x 13.0	215.9 x 330.2
	Foolscap	8.0 x 13.0	203.2 x 330.2
	Legal	8.5 x 14.0	215.9 x 355.6
	Letter	8.5 x 11.0	215.9 x 279.4
	SP Folio	8.5 x 12.4	215.9 x 315.0
	Quarto	8.0 x 10.0	203.2 x 254.0
Default	Letter 8.5 x 11.0 in (215.9 x 279.4 mm)		
Hot Key	ALT+P		

Paper Type

Purpose	Sets the type of media to be printed.
Choices	**Standard** [Plain Paper] mode—Long-grain paper (16–24 lb; 60–90 g/m²)
	Transparency mode—Transparencies (24–41.75 lb; 90–157 g/m²)
	Thick Stock mode—Long-grain thick stock (up to 60 lb [225.6 g/m²] cover, glossy stock 80 lb book [118 g/m²], 90 lb index [163 g/m²]), envelopes, labels, transfer media
Default	Standard
Hot Key	ALT+Y
Notes	Duplex Options are only available when Standard is the Paper Type.

Paper Source

DeskLaser

Tray selected
when printer first
turned on.

Shows currently
selected paper
tray.

Upper Tray

Optional
Lower Tray

Duplex Model

Tray selected
when printer first
turned on.

Upper Tray

Lower Tray

Shows currently
selected paper
tray.

Purpose	Sets the input source (cassette/tray) from which print media is pulled into the printer
Choices	**Upper Tray**—The cassette in the standard (upper) position. **Lower Tray**—The cassette in the lower position (only available on printers with the lower input feeder).
Default	None
Hot Key	ALT+S
Notes	When the printer is first turned on, the Upper Tray is selected. After that, the printer uses the last cassette selected.

Document Type

Purpose	Allows you to identify the type of document you are printing.
Choices	**Auto** (Automatic Mode)—Coarse halftoning and color/monochrome settings automatically selected (halftone and color format options are disabled when Auto is selected)
	Graph (Business Graphics)—Designed for color business graphics created in spreadsheet, charting, and graphing applications (Coarse halftoning; color)
	Photo (Photographic Images)—Designed for color photographic images (Coarse halftoning; color)
	Art (Graphic Arts)—Designed for color line art (coarse halftoning; color)
	Mono (Grayscale)—Designed for monochrome documents with text and/or graphics (Coarse halftoning; monochrome)
Default	Auto
Hot Key	ALT+T—Use the arrow keys to select other Document Types.
Notes	Settings on the Image Settings and Quality tabs override settings automatically selected by a Document Type. The Graph, Photo, Art, and Mono settings determine the choices for the Color Match section on the Image Settings tab. If your business graphic uses neighboring (rather than contrasting) colors or gradients, do not choose Graph. See "Configuring Image Settings Options" on page 2-17.

Copies

Purpose	Sets the number of copies to be printed.
Choices	1-999
Default	1
Additional Choices	See "Collate" on page 2-12 See "Reverse Page Order" on page 2-12
Hot Key	ALT+C

Collate

Purpose	Collates multiple copies of documents when enabled.
Choices	**Enabled (selected)**—All pages of the document are printed before the next copy is printed.
	Disabled—All copies of each page are printed before the next page is printed.
Default	Disabled
Hot Key	ALT+E
Notes	If you are making multiple duplex copies of a job that has an uneven number of pages, deselect collation in the application and then select Collate in the driver on the Paper tab.

Reverse Page Order

Purpose	Prints pages in reverse order when enabled.
Choices	**Enabled (selected)**—All pages of the document are printed before the next copy is printed.
	Disabled—All copies of each page are printed before the next page is printed.
Default	Disabled
Hot Key	ALT+R

Orientation

Purpose	Sets the orientation (printing direction) of the print media.
Choices	**Portrait**—Printing along the short edge of the page (vertical page orientation)
	Landscape—Printing along the long edge of the page (horizontal page orientation)
Default	Portrait
Hot Keys	Portrait—ALT+O Landscape—ALT+L

Printing on Both Sides (Duplex Printing)

Purpose	Allows you to specify whether and how your print job will be duplexed. Duplexing is printing on both sides of each page.
Choices	**None**
	Flip on Long Edge—Prints flipped horizontally on the long edge as in a loose-leaf notebook.
	Flip on Short Edge—Prints flipped vertically on the short edge as on a clipboard.
Default	None
Hot Keys	ALT+X selects the Duplex options list. From there, use the ALT-down arrow or ALT-up arrow keys to choose the required option.
Notes	Auto duplexing is supported only on the DeskLaser Duplex Model.
	Duplex options are only available when Standard is the Paper Type.

About... Button

The About... button displays the copyright and version number of the printer driver.

Cancel Button

The Cancel button allows you to cancel your changes and exit from the Properties window.

Help Button

The Help button gives you access to online help.

OK Button

The OK button allows you to save your changes and exit from the Properties window.

Restore Defaults Button

The Restore Defaults button on the Paper tab allows you to restore all of the tabs to their default settings (with the exception of the Resolution option on the Quality tab).

Working with the Printer Drivers **2-13**

Configuring Quality Options

The Quality tab allows you to provide information about the quality of halftoning and resolution. Document Type settings on the Paper tab are essential for customization of the Quality tab.

» **Note:** *Settings chosen on the Quality and Image Settings tabs override settings automatically selected by a Document Type on the Paper tab.*

Halftoning

Purpose	Selects the style of halftoning to use.
Choices	**Line art pattern**—Provides a halftone designed specifically for printing business graphics.
	Fine pattern—Provides a higher line frequency halftone than Coarse pattern for more detail in graphics and images but fewer shades of color.
	Coarse pattern—Provides a general-purpose halftone with line frequency suitable for printing most text, graphics, and images at 600 dpi.
	Air Brush—Provides a high-speed error diffusion-type halftoning for printing photographs or pictures that don't have sharp, well-defined edges at 600 dpi.
Default	Coarse pattern
Hot Key	ALT+T—Use the arrow keys to select other radio buttons. ALT+R—Resolution.
Notes	The image to the right of Halftoning radio buttons changes to reflect your choice.
	These choices are grayed out if Auto is the selected Document Type on the Paper tab. See "Document Type" on page 2-11.

Resolution

Purpose	Selects print resolution to use.
Choices	600 x 600 dots per inch
	300 x 300 dots per inch
Default	600 x 600 dots per inch
Hot Key	ALT+R—Use the arrow keys to select another radio button.

Cancel Button

The Cancel button allows you to cancel your changes and exit from the Properties window.

Help Button

The Help button gives you access to online help.

OK Button

The OK button allows you to save your changes and exit from the Properties window.

Restore Defaults Button

The Restore Defaults button on the Quality tab allows you to restore the options on this tab to their default settings.

Configuring Image Settings Options

The Image Settings tab allows you to provide settings for color format, image brightness and contrast, color balance, and color matching. Document Type settings on the Paper tab are essential for customization of the Image Settings tab.

» **Note:** *Settings chosen on the Image Settings and Quality tabs override settings automatically selected by a Document Type on the Paper tab.*

Working with the Printer Drivers   **2-17**

Color Format

Purpose	Selects color or monochrome printing.
Choices	**Mono**—Monochrome (black only)
	CMYK—Full color (cyan, magenta, yellow, and black)
Default	CMYK
Hot Key	ALT+F
Notes	You must select a Document Type other than Auto on the Paper tab to activate these settings.
	This Mono setting is designed only for text. If your document also contains graphics, choose the Mono Document Type on the Paper tab for grayscale printing. See "Document Type" on page 2-11.

Image

Purpose	Allows you to customize the brightness (lightness and darkness) and contrast of an image.
	Brightness—Increase for a lighter print; decrease for darker.
	Contrast—Increase for higher contrast print; decrease for lower contrast.
Choices	-50% (darkest) to +50% (lightest)
Default	The center setting (0%) on each slider bar.
Hot Key	Brightness—ALT+I (capital i) Contrast—ALT+O
Notes	The settings on the slider bars can be changed using the arrow keys on the keyboard.

Color Balance

Purpose	Allows you to customize the
	Saturation Red Strength Green Strength, and Blue Strength of an image.
Choices	-50% (least) to +50% (most)
Default	The center setting (0%) on each slider bar.
Hot Key	ALT+C—This hot key takes you to the Saturation choice in Color Balance. From there, use ALT+C again to tab down to choose the other sections such as Red Strength.
Notes	The Color Match button toggles between Color Match and Color Balance options. These options are not available if Mono is selected in the Color Format section of this tab or if Mono or Auto is selected in the Document Type section of the Paper tab. The settings on the slider bars can be changed using the arrow keys on the keyboard.

Color Match

Purpose	Selects the method for color matching.
Choices	**Disabled**
	Use Windows' matching—Used in Windows 95/98 and ICM-based applications (for example, PhotoShop and CorelDRAW). The ICC profile is located in the C:\WINDOWS\SYSTEM\COLOR directory under the name of QMC2DL.ICM
	Use Driver's matching
	If you choose either Use Driver's matching or Use Windows' matching, three other selections are available: **Match for business graphics** **Match for photo images** **Match for computer art**

Working with the Printer Drivers   **2-19**

Default	Default defined by the Document Type selected on the Paper tab: **Disabled**—Disables Color Matching **Use Driver's matching**, or **Use Windows' matching**
Hot Key	ALT+L—Takes you to the color matches
Notes	The Color Balance button toggles between Color Match and Color Balance options. All choices are grayed out if Mono is the Document Type or if Mono is selected in the Color Format section of the Image Settings tab. The last three choices are grayed out if Auto is the Document Type or if Disabled is chosen for Color Match. See "Document Type" on page 2-32.

Cancel Button

The Cancel button allows you to cancel your changes and exit from the Properties window.

Color Balance Button

This returns you to the Color Match button.

Color Match Button

This returns you to the Color Balance button.

Help Button

The Help button gives you access to online help.

OK Button

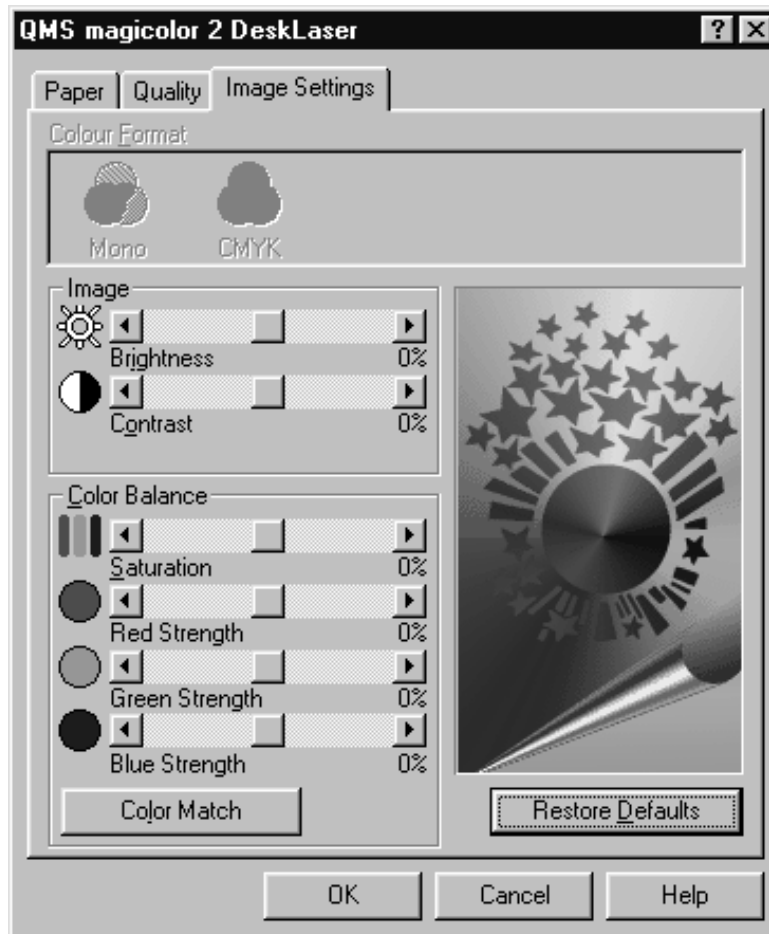The OK button allows you to save your changes and exit from the Properties window.

Restore Defaults Button

The Restore Defaults button on the Image Settings tab allows you to restore the options on this tab to their default settings. The Restore Defaults also depends on the settings on the Paper tab.

Configuring the Windows NT 4.0 Printer Driver

This section explains how to configure the QMS *magicolor* 2 DeskLaser Windows NT 4.0 printer driver. Context-sensitive Windows online help is also available while you're configuring the printer driver. Just choose any Help button.

» **Note:** *If you're using Windows 95/98, refer to "Configuring the Windows 95/98 Printer Driver" on page 2-2 for complete information.*

Methods of Configuration

There are three methods you can use to configure the printer driver. However, these three methods don't all have the same options.

This section explains how to use these three methods. The following sections explain the options available through each configuration method.

Device Settings

1   **From the Windows NT Start menu choose Settings.**

2   **From the Settings menu choose Printers.**

3   **In the Printers window, select the QMS *magicolor* 2 DeskLaser printer icon.**

---

4   From the File menu choose Properties.

Five tabs appear in the QMS *magicolor* 2 DeskLaser Properties window through the Start menu: General, Ports, Scheduling, Sharing, and Security.

■ **General**—Allows you to name the printer, specify a location, specify a driver to be used, install a new or updated printer driver, use a separator page between documents, specify a specialized print processor/data type, and print a test page. See your Windows documentation.
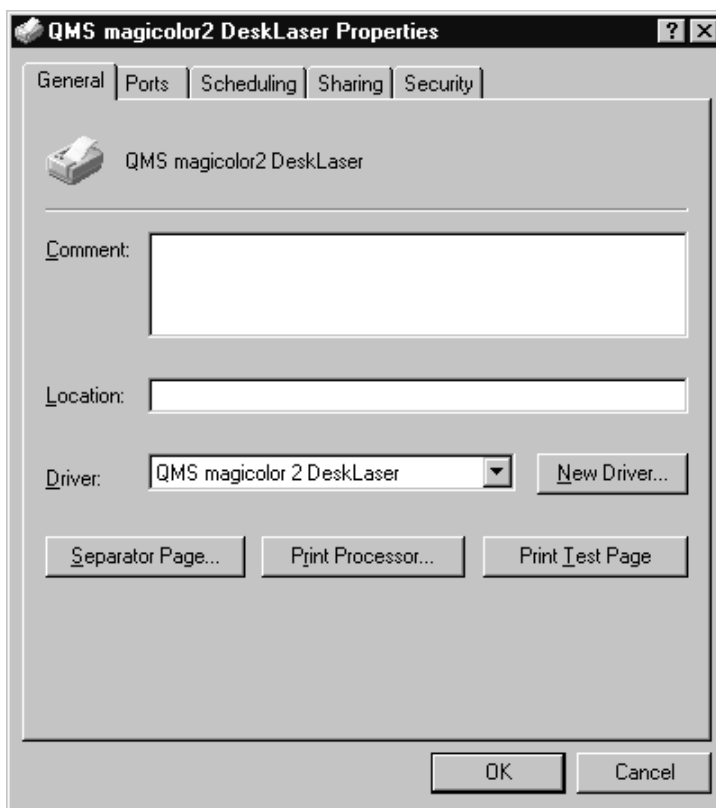
■ **Ports**—Lists the available ports (under Ports), the associated port monitor (under Description), and a comma-delimited list of printers that use the port (under Printer). Allows you to add, delete, or configure ports. It also allows the printer to get setting and status information from other printing devices, and enables printer pooling (printing to two or more identical printing devices through one logical printer). See your Windows documentation.
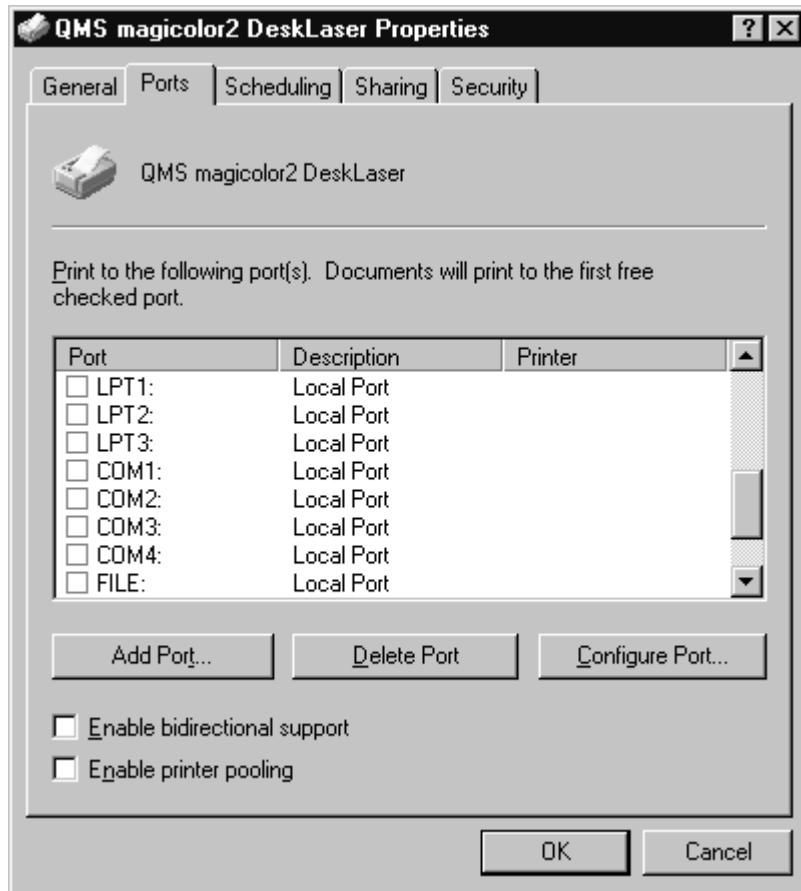
■ **Scheduling**—Allows you to configure the printer for availability and set the spooling information. The slider bar specifies the default document priority (higher-priority documents are put before lower-priority documents). See your Windows documentation.
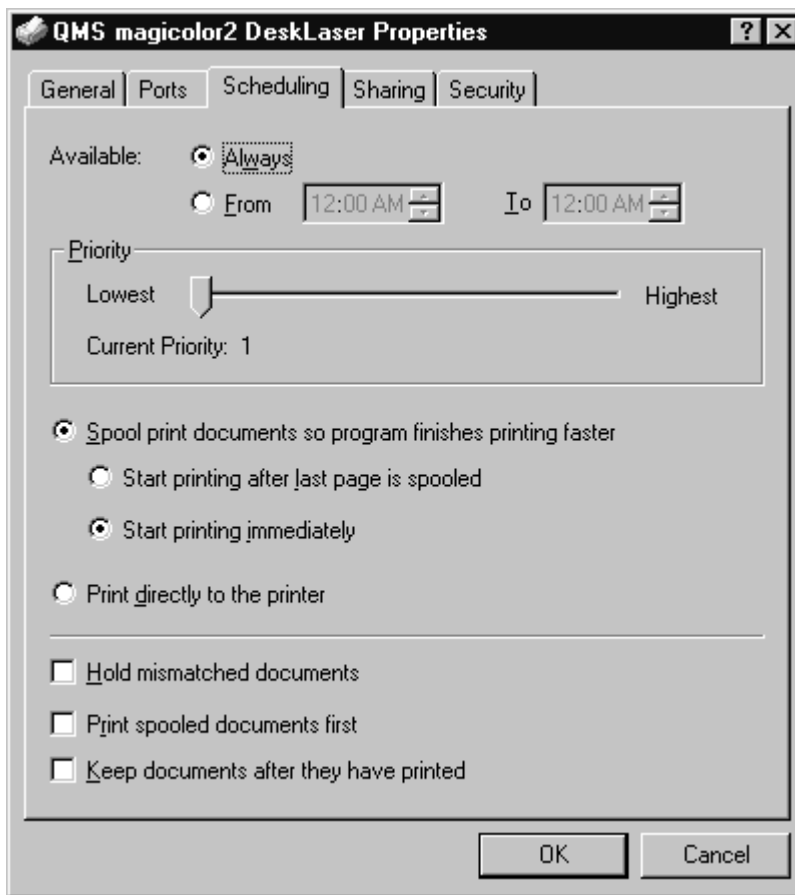
■ **Sharing**—Allows you to share the printer and install alternate drivers. See your Windows documentation.
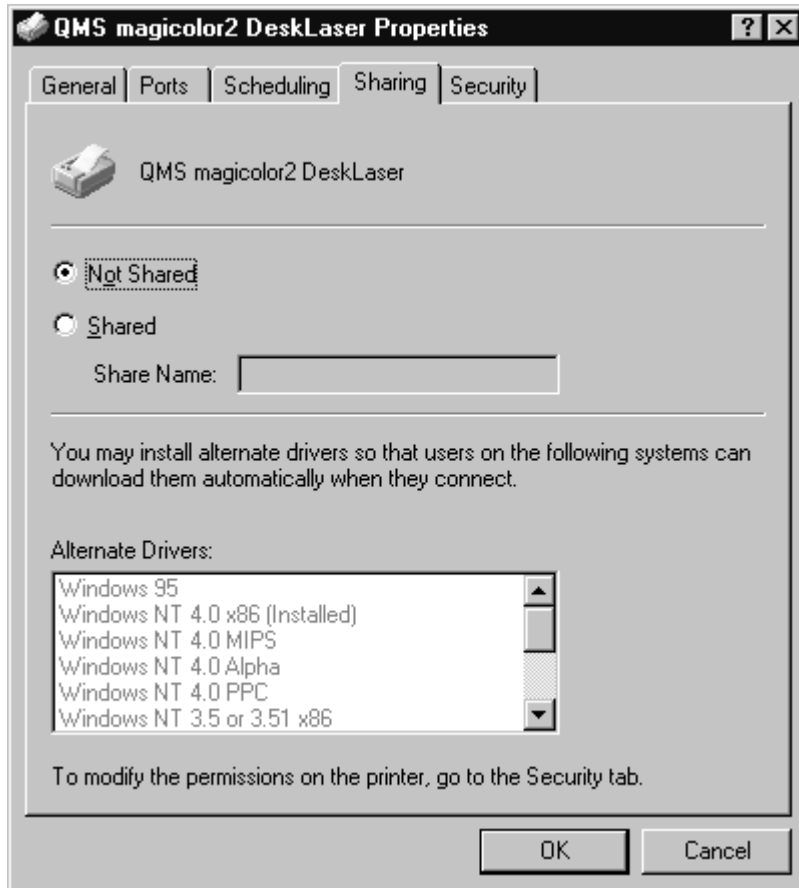
■ **Security**—Allows you to modify the permissions to limit access on the printer, view or set auditing information, or view or take ownership of the selected item(s). See your Windows documentation.
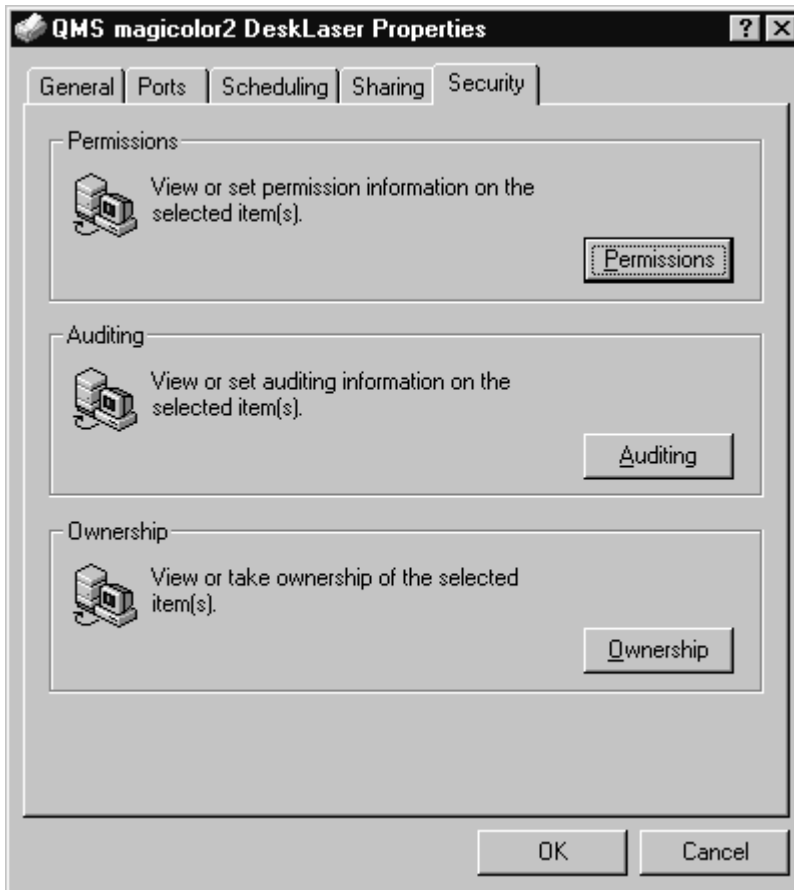
5 Make your option selections, and then choose OK.

Your changes are saved and you are returned to the Printers window.

Default Document Properties

» **Note:** *Changes you make here apply to all documents. However, any changes you make through your application (Document Properties settings) override the Default Document Properties settings.*

1 Open the printer driver.

a From the Windows NT Start menu choose Settings.

b From the Settings menu choose Printers.

c In the Printers window, select the QMS *magicolor* 2 DeskLaser printer icon.

2 From the File menu choose Default Document Properties.

■ Three tabs appear in the QMS *magicolor* 2 DeskLaser Default Document Properties window:

■ **Paper**—Allows you to provide information about the type and location of the media you want to print on. See "Configuring Paper Options" on page 2-29.

■ **Quality**—Allows you to provide information about halftoning and resolution of the printing. See "Configuring Quality Options" on page 2-35.

■ **Image Settings**—Allows you to provide settings for color format, image brightness and contrast, color balance, and color matching. See "Configuring Image Settings Options" on page 2-38.

3 Make your selections, and then choose OK to save your changes and return to the Printers window.

Document Properties

» **Note:** *Any changes you make here apply only to the current document. These changes override any settings you made through the Default Document Properties window.*

1 From the application's File menu choose Print (or, in some cases, Print Setup).

2 In the Print or Print Setup dialog box, select the QMS *magicolor* 2 DeskLaser.

---

3 Choose the Properties button.

Three tabs appear in the QMS *magicolor* 2 DeskLaser Document Properties window:

■ **Paper**—Allows you to provide information about the type and location of the media you want to print on. See "Configuring Paper Options" on page 2-29.

■ **Quality**—Allows you to provide information about halftoning and resolution of the printing. See "Configuring Quality Options" on page 2-35.

■ **Image Settings**—Allows you to provide settings for color format, image brightness and contrast, color balance, and color matching. See "Configuring Image Settings Options" on page 2-38.

4 Make your selections, and then choose the OK button to return to the Print or Print Setup dialog box.

A Note About Default Settings

Because Windows NT remembers the configuration changes you make to the driver, reinstalling the driver does not restore the factory default configuration. Therefore, the following configuration tables provide the factory defaults in case you need to reset them manually.

Configuring Windows NT 4.0 Options through the Application

Configuring Paper Options

The Paper tab allows you to provide information about the type and location of the media you want to print on. In addition, its Document Type settings are essential for customization of the Quality and Image Settings tabs. The Document Type is Automatic Mode only if Auto is selected.

» **Note:** *Settings chosen on the Image Settings and Quality tabs override settings automatically selected by a Document Type.*

Working with the Printer Drivers   **2-29**

Paper Size

Purpose	Sets the media size.		
Choices	Size	Inches	Millimeters
	A4	8.27 x 11.7	210.0 x 297.0
	B5 (ISO)	6.9 x 9.8	176.0 x 250.0
	B5 (JIS)	7.2 x 10.1	182.0 x 257.0
	Envelope #10	4.125 x 9.5	105.0 x 241.3
	Envelope DL	4.3 x 8.7	110.0 x 220.0
	Executive	7.25 x 10.5	184.0 x 267.0
	Folio	8.5 x 13.0	215.9 x 330.2
	Foolscap	8.0 x 13.0	203.2 x 330.2
	Legal	8.5 x 14.0	215.9 x 355.6
	Letter	8.5 x 11.0	215.9 x 279.4
	SP Folio	8.5 x 12.4	215.9 x 315.0
	Quarto	8.0 x 10.0	203.2 x 254.0
Default	Letter 8.5 x 11.0 in (215.9 x 279.4 mm)		
Hot Key	ALT+P		

Paper Type

Purpose	Sets the type of media to be printed.
Choices	**Standard**—Long-grain paper (16–24 lb; 60–90 g/m²) **Transparency**—Transparencies (24–41.75 lb; 90–157 g/m²) **Thick stock**—Long-grain thick stock cover (up to 60 lb [225.6 g/m²], glossy stock 80 lb book [118 g/m²], 90 lb index [163 g/m²]), envelopes, labels, transfer media
Default	Standard
Hot Key	ALT+Y
Notes	Duplex Options are only available when Standard is the Paper Type.

Paper Source

DeskLaser

Tray selected
when printer first
turned on.

Shows currently
selected paper
tray.

Upper Tray

Optional
Lower Tray

Duplex Model

Tray selected
when printer first
turned on.

Upper Tray

Lower Tray

Shows currently
selected paper
tray.

Purpose	Sets the input source (cassette/tray) from which print media is pulled into the printer
Choices	**Upper Tray**—The cassette in the standard (upper) position. **Lower Tray**—The cassette in the lower position (only available with the lower input feeder).
Default	None
Hot Key	ALT+S
Notes	When the printer is first turned on, the Upper Tray is selected. After that, the printer uses the last cassette selected.

Working with the Printer Drivers

Document Type

Purpose	Allows you to identify the type of document you are printing.
Choices	**Auto** (Automatic Mode)—Coarse halftoning and color/monochrome settings automatically selected (halftone and color format options are disabled when Auto is selected)
	Graph (Business Graphics)—Designed for color business graphics created in spreadsheet, charting, and graphing applications (Coarse halftoning; color)
	Photo (Photographic Images)—Designed for color photographic images (Coarse halftoning; color)
	Art (Graphic Arts)—Designed for color line art (coarse halftoning; color)
	Mono (Grayscale)—Designed for monochrome documents with text and/or graphics (Coarse halftoning; monochrome)
Default	Auto
Hot Key	ALT+T—Use the arrow keys to select other Document Types.
Notes	Settings on the Image Settings and Quality tabs override settings automatically selected by a Document Type. The Graph, Photo, Art, and Mono settings determine the choices for the Color Match section on the Image Settings tab. If your business graphic uses neighboring (rather than contrasting) colors or gradients, do not choose Graph. See "Configuring Image Settings Options" on page 2-38.

Copies

Purpose	Sets the number of copies to be printed.
Choices	1-999
Default	1
Additional Choices	See "Collate" on page 2-33 See "Reverse Page Order" on page 2-33
Hot Key	ALT+C

Collate

Purpose	Collates multiple copies of documents when enabled.
Choices	**Enabled (selected)**—All pages of the document are printed before the next copy is printed. **Disabled**—All copies of each page are printed before the next page is printed.
Default	Disabled
Hot Key	ALT+E

Reverse Page Order

Purpose	Prints pages in reverse order when enabled.
Choices	**Enabled (selected)**—All pages of the document are printed before the next copy is printed. **Disabled**—All copies of each page are printed before the next page is printed.
Default	Disabled
Hot Key	ALT+R

Orientation

Purpose	Sets the orientation (printing direction) of the print media.
Choices	**Portrait**—Printing along the short edge of the page (vertical page orientation) **Landscape**—Printing along the long edge of the page (horizontal page orientation)
Default	Portrait
Hot Keys	Portrait—ALT+O Landscape—ALT+L

Working with the Printer Drivers

Printing on Both Sides (Duplex Printing)

Purpose	Allows you to specify whether and how your print job will be duplexed. Duplexing is printing on both sides of each page.
Choices	**None**
	Flip on Long Edge—Prints flipped horizontally on the long edge as in a loose-leaf notebook.
	Flip on Short Edge—Prints flipped vertically on the short edge as in a clipboard.
Default	None
Hot Keys	ALT+X selects the Duplex Options list. From there, use the ALT-down arrow or ALT-up arrow keys to choose the required option.
Notes	Auto duplexing is supported only on the DeskLaser Duplex Model.
	Duplex options are only available when Standard is the Paper Type.

About... Button

The About... button displays the copyright and version number of the printer driver.

Cancel Button

The Cancel button allows you to cancel your changes and exit from the Properties window.

Help Button

The Help button gives you access to online help.

OK Button

The OK button allows you to save your changes and exit from the Properties window.

Restore Defaults Button

The Restore Defaults button on the Paper tab allows you to restore all of the tabs to their default settings (with the exception of the Resolution option on the Quality tab).

Configuring Quality Options

The Quality tab allows you to provide information about the quality of halftoning and resolution. Document Type settings on the Paper tab are essential for customization of the Quality tab.

» **Note:** *Settings chosen on the Quality and Image Settings tabs override settings automatically selected by a Document Type on the Paper tab.*

Halftoning

Purpose	Selects the style of halftoning to use.
Choices	**Line art pattern**—Provides a halftone designed specifically for printing business graphics.
	Fine pattern—Provides a higher line frequency halftone than Coarse pattern for more detail in graphics and images but fewer shades of color.
	Coarse pattern—Provides a general-purpose halftone with line frequency suitable for printing most text, graphics, and images at 600 dpi.
	Air Brush—Provides a high-speed error diffusion-type halftoning for printing photographs or pictures that don't have sharp, well-defined edges at 600 dpi.
Default	Coarse pattern
Hot Key	ALT+T—Use the arrow keys to select other radio buttons ALT+R—Resolution
Notes	The image to the right of Halftoning radio buttons changes to reflect your choice. These choices are grayed out if Auto is the selected Document Type on the Paper tab. See "Document Type" on page 2-32.

Resolution

Purpose	Selects print resolution to use.
Choices	600 x 600 dots per inch
	300 x 300 dots per inch
Default	600 x 600 dots per inch
Hot Key	ALT+R—Use the arrow key to select another radio button.

Cancel Button

The Cancel button allows you to cancel your changes and exit from the Properties window.

Help Button

The Help button gives you access to online help.

OK Button

The OK button allows you to save your changes and exit from the Properties window.
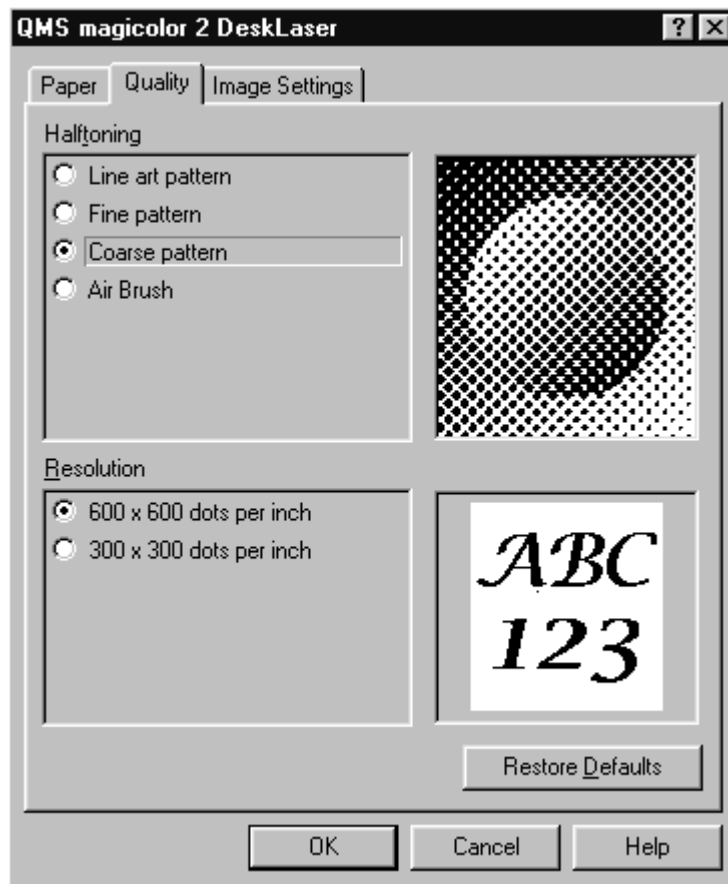
Restore Defaults Button

The Restore Defaults button on the Quality tab allows you to restore the options on this tab to their default settings.

Configuring Image Settings Options

The Image Settings tab allows you to provide settings for color format, image brightness and contrast, color balance, and color matching. Document Type settings on the Paper tab are essential for customization of the Image Settings tab.

» **Note:** *Settings chosen on the Image Settings and Quality tabs override settings automatically selected by a Document Type on the Paper tab.*

Color Format

Purpose	Selects color or monochrome printing.
Choices	**Mono**—Monochrome (black only)
	CMYK—Full color (cyan, magenta, yellow, and black)
Default	CMYK
Hot Key	ALT+F
Notes	You must select a Document Type other than Auto on the Paper tab to activate these settings.
	This Mono setting is designed only for text. If your document also contains graphics, choose the Mono Document Type on the Paper tab for grayscale printing. See "Document Type" on page 2-32.

Image

Purpose	Allows you to customize the brightness (lightness and darkness) and contrast of an image.
	Brightness—Increase for a lighter print; decrease for darker.
	Contrast—Increase for higher contrast print; decrease for lower contrast.
Choices	-50% (darkest) to +50% (lightest)
Default	The center setting (0%) on each slider bar.
Hot Key	Brightness—ALT+I (capital i) Contrast—ALT+O
Notes	The settings on the slider bars can be changed using the arrow keys on the keyboard.

Color Balance

Purpose	Allows you to customize the
	    Saturation
	    Red Strength
	    Green Strength, and
	    Blue Strength
	of an image.

Choices	-50% (least) to +50% (most)

Working with the Printer Drivers 2-39

Default	The center setting (0%) on each slider bar.
Hot Key	ALT+C—This hot key takes you to the Saturation choice in Color Balance. From there, use ALT+C again to tab down to choose the other sections such as Red Strength.
Notes	The Color Match button toggles between Color Match and Color Balance options.
	These options are not available if Mono is selected in the Color Format section of this tab or if Mono or Auto is selected in the Document Type section of the Paper tab.
	The settings on the slider bars can be changed using the arrow keys on the keyboard.

Color Match

Purpose	Selects the method for color matching.
Choices	Disabled
	Use Windows' matching—Used in Windows 95/98 and ICM-based applications (for example, PhotoShop and CorelDRAW). The ICC profile is located in the C:\WINDOWS\SYSTEM\COLOR directory under the name of QMC2DL.ICM
	Use Driver's matching
	If you choose either Use Driver's matching or Use Windows' matching, three other selections are available:
	Match for business graphics
	Match for photo images
	Match for computer art
Default	Default defined by the Document Type selected on the Paper tab:
	Disabled—Disables Color Matching
	Use Driver's matching, or
	Use Windows' matching
Hot Key	ALT+L—Takes you to the color matches; there are no hot keys for the last three selections

Notes	The Color Balance button toggles between Color Match and Color Balance options.
	All choices are grayed out if Mono is the Document Type or if Mono is selected in the Color Format section of the Image Settings tab. The last three choices are grayed out if Auto is the Document Type or if Disabled is chosen for Color Match. See "Document Type" on page 2-32.

Cancel Button

The Cancel button allows you to cancel your changes and exit from the Properties window.

Color Balance Button

This returns you to the Color Match button.

Color Match Button

This returns you to the Color Balance button.

Help Button

The Help button gives you access to online help.

OK Button

The OK button allows you to save your changes and exit from the Properties window.

Restore Defaults Button

The Restore Defaults button on the Image Settings tab allows you to restore the options on this tab to their default settings. The Restore Defaults also depends on the settings on the Paper tab.

Sharing the Printer

The QMS *magicolor* 2 DeskLaser allows printing via two communication protocols:

- Ethernet

  Users who intend to print over a network using TCP/IP need to install the QMS Network Print Monitor. See "Install a Network Print Monitor" on page 35 in the *QMS* magicolor *2 DeskLaser Setup Guide*.

- Parallel

  See "Sharing Over a Parallel Connection" on page 2-42.

# Sharing Over a Parallel Connection

Windows 95/98

» **Note:** *This section explains how to configure the QMS* magicolor *2 DeskLaser printer driver in Windows 95/98 for sharing. If you're using Windows NT 4.0, refer to "Windows NT 4.0" on page 2-44.*

1 **From the Windows 95/98 Start menu choose Settings.**

2 **From the Settings menu choose Control Panel.**

3 **Double-click on the Network.**

4   In the Network window, choose the Access Control tab.
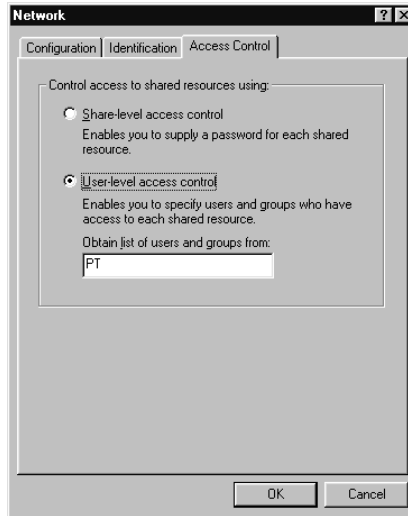
5   Select your access control: share-level or user-level.

Share-level access control enables you to supply a password for each shared resource.

User-level access control enables you to specify users and groups who have access to each shared resource.

If your printer is connected to your workstation via the parallel interface and you want to let others print to it, you have to set it up as a shared printer:

1   From the Windows 95/98 Start menu choose Settings.

2   From the Settings menu choose Printers.

3   In the Printers window, select the QMS *magicolor* 2 DeskLaser icon.

4   From the File menu choose Sharing.

»   **Note:** *If Sharing isn't available, do the following to add File and Printer Sharing services:*

   a   From the Windows 95/98 Start menu choose Settings.

   b   From the Settings menu choose Control Panel.

   c   Open the Network folder.

Working with the Printer Drivers   2-43

     d   On the Configuration tab, choose the Add button.

     e   In the Select Network Component Type window, select Service, and then choose the Add button.

     f   In the Select Network Service window, select Microsoft, and then select the File and Print sharing entry that matches your network.

     g   Choose the OK button, and follow the instructions.

     h   Restart your computer for the changes to take effect.

5   On the Sharing tab, select the Shared As: radio button.

6   If you use

     a   **Share-level access control**, you can enter a

        Share name—a name for the printer.

        You'll use this name and the computer's name to identify the printer.

        Comment—a location or other description.

        This is optional, but it will help others locate and identify your printer.

        Password

     b   **User-level access control**, you can choose the Add button and then select specified users to share the printer.

7   Choose the OK button.

     Verify that the listed users are correct.

8   Choose the OK button.

     An outstretched hand is added to the bottom of the printer's icon in the printer folder to indicate that the printer can be shared.

Windows NT 4.0

» **Note:** *This section explains how to configure the QMS* magicolor *2 DeskLaser printer driver in Windows NT 4.0 for sharing. If you're using Windows 95/98, refer to "Windows 95/98" on page 2-42. Printer sharing can be used only with attached computers that are running either Windows 95/98 or Windows NT 4.0.*

If your Windows NT 4.0 printer driver was not configured for sharing when originally installed, use the following instructions to add sharing:

1   **From the Windows NT Start menu choose Settings. Then choose Printers.**

2   **In the Printers window, select the QMS *magicolor* 2 DeskLaser icon.**

3   **From the File menu, choose Properties.**

4   **From the Properties dialog box, choose the Sharing tab.**

5   **After the Sharing tab displays, select Shared As.**

6   **In the Share Name edit box, type the name of the printer.**

    You'll use this name and the computer's name to identify the printer.

7   **If you're sharing your printer with a Windows NT 4.0 workstation, skip to step 9 below.**

8   **If you're sharing your printer with a Windows 95/98 workstation, perform these steps:**

    a   In the Alternate Drivers list box, select the Windows 95/98 operating system and choose OK.

    b   If the operating system on your PC does not have the QMS *magicolor* 2 DeskLaser printer driver for Windows 95/98, you will be prompted to install it. Insert the *QMS* magicolor *2 DeskLaser Documentation and Software* CD-ROM, and choose OK.

        The required files are copied to the appropriate directory.

9   **On the Security tab, select Permissions.**

10 **On the Printer Permissions window, select Add.**

11 **Select user(s) to add, and their type of access.**

12 **Choose OK to accept the changes.**

    Verify that the list is correct.

13 **Choose OK to close Printer Permission.**

14 **Choose OK to close the Properties window.**

Sharing Someone Else's Printer

Windows 95/98

Use the following instructions to print to a printer that someone else has already set up as a shared printer:

1 **From the Windows 95/98 Start menu, choose Settings.**

2 **From the Settings menu, choose Printers.**

3 **In the Printers window, select the printer driver you are using.**

4 **From the File menu, choose Properties.**

5 **From the Properties dialog box, choose Add Port.**

   From the Add Port window, make sure Network is selected.

6 **Choose Browse.**

7 **In the Browse list, double-click on the computer that is sharing the printer.**

» **Note:** *You also could click on the "+" to the left of the computer name.*

8 **Choose the printer you want to connect to.**

9 **Choose OK.**

10 **Choose OK on the Add Port window to select the new port.**

11 **Choose OK on the Details tab to save the changes.**

12 **Print to this printer just as if it were connected directly to your computer.**

Windows NT 4.0

Use the following instructions to print to a printer that someone else has already set up as a shared printer:

1 **From the Windows NT Start menu, choose Settings.**

2 **From the Settings menu, choose Printers..**

3 **In the Printers window, select the printer driver you are using.**

4 **From the File menu, choose Properties.**

5 **On the Ports tab, choose Add Port.**

6   **On the Printer Ports window, select Local Port from the list of available ports.**

7   **Choose OK.**

8   **On the Port Name window, type the path to the shared printer using the convention**

   $\backslash\backslash host\text{-}name\backslash shared\text{-}printer\text{-}name$

   where $host\text{-}name$ is the name of the computer where the driver is shared from and the $shared\text{-}printer\text{-}name$ is the name the driver is shared as.

9   **Choose OK to accept the new port name.**

10   **Choose Close on the printer ports window to close the window.**

11   **Choose OK on the Properties window to save the changes.**

12   **Print to this printer just as if it were connected directly to your computer.**

Removing Users from Sharing

You have two options for removing users from sharing: remove individual users from sharing and cancel all sharing.

Remove Individuals from Sharing Windows 95/98

1   **From the Windows 95/98 Start menu, choose Settings.**

2   **From the Settings menu, choose Printers.**

3   **In the Printers window, select the QMS *magicolor* 2 DeskLaser icon.**

4   **From the File menu choose Sharing.**

»   **Note:** *You may also right-click the icon to choose Sharing.*

5   **Select the user(s) to remove.**

6   **Choose the Remove button to remove the specified user(s).**

   Their access rights show as Deleted.

7   **Choose the OK button to close the Properties window.**

Cancel All Sharing Windows 95/98

When you shut down the computer or restart, the printer will no longer be shared.

You may also cancel all sharing without having to restart.

1 **From the Windows 95/98 Start menu, choose Settings.**

2 **From the Settings menu, choose Printers.**

3 **In the Printers window, select the QMS *magicolor* 2 DeskLaser icon.**

4 **From the File menu, choose Sharing.**

5 **On the Sharing tab, choose the Not Shared radio button.**

6 **Choose the OK button.**

The outstretched hand is removed from the bottom of the printer's icon in the printer folder.

Remove Individuals from Sharing Windows NT 4.0

1 **From the Windows NT 4.0 Start menu choose Settings.**

2 **From the Settings menu choose Printers.**

3 **In the Printers window, select the QMS *magicolor* 2 DeskLaser icon.**

4 **From the File menu, choose Properties.**

» **Note:** *You may also right-click the icon to choose Properties.*

5 **On the Security tab, choose the Privileges button.**

6 **Select the user(s) to remove.**

7 **Choose the Remove button to remove the specified user(s).**

8 **Choose the OK button to accept the changes.**

9 **Choose the OK button to close the Properties window.**

Cancel All Sharing Windows NT 4.0

When you shut down the computer or restart, the printer will no longer be shared.

You may also cancel all sharing without having to restart.

1   **From the Windows NT 4.0 Start menu, choose Settings.**

2   **From the Settings menu, choose Printers.**

3   **In the Printers window, select the QMS *magicolor* 2 DeskLaser icon.**

4   **From the File menu, choose Sharing.**

5   **On the Sharing tab, choose the Not Shared radio button.**

6   **Choose the OK button.**

    The outstretched hand is removed from the bottom of the printer's icon in the printer folder.

Working with the Printer Drivers 2-49

Using the Printer Status Monitor

The QMS *magicolor* 2 DeskLaser printer Status Monitor displays a graphic with continuous detailed reporting of the status of your print job. This Status Monitor is also referred to as the Despooler.

» **Note:** *The first time you use the QMS* magicolor *2 DeskLaser printer, the printer Status Monitor appears by default.*

Windows 95/98

Using the Printer Status Monitor

The Status Monitor observes a printer which has bidirectional communication with a computer.

If you prefer, you can use the QMS Network Print Monitor described in "Using the QMS Network Print Monitor" on page 2-56.
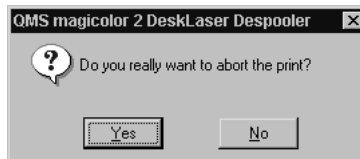
You can run one or both monitors.

1   **From the Windows Start menu, choose Settings.**

2   **From the Settings menu, choose Printers.**

3   **In the Printers window, right-click on the QMS *magicolor* 2 DeskLaser printer icon.**

4   **Make your option selection.**

   ■   Run Status Monitor.

   ■   Show Monitor during print.

The printer Status Monitor window is shown below.
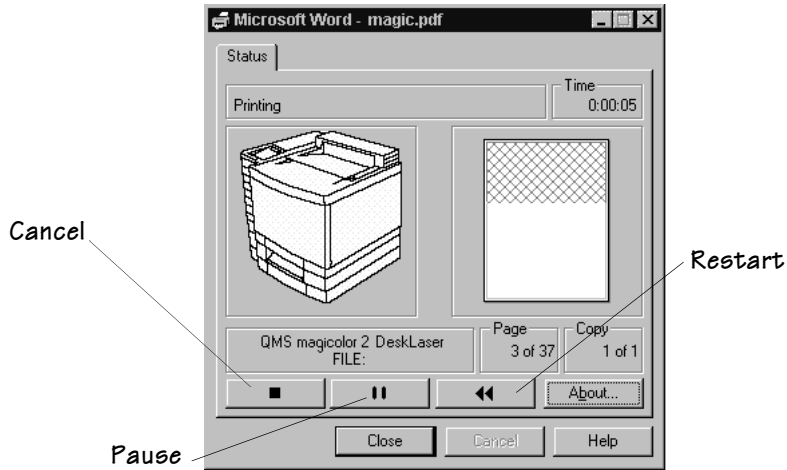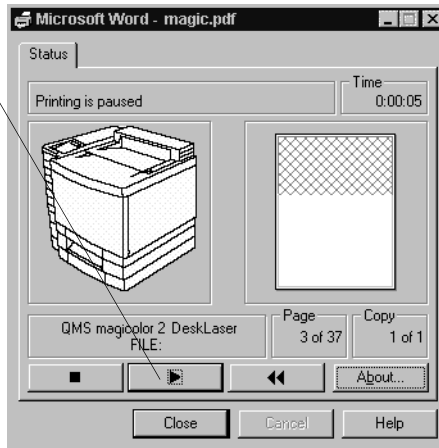

1   Choose the Cancel button to cancel printing.

The following screen appears:

Working with the Printer Drivers   **2-51**

2 Choose the Pause button to pause printing.

» **Note:** *The button icon changes shape and functions as a Restart button.*

3 To restart a paused job, use the Restart button.

» **Note:** *Requeue is available only for Windows 3.1.*

4 Choose the About... button to display information about the Status Monitor Despooler.

Disabling the Windows 95/98 Printer Status Monitor

1 From the Windows Start menu, choose Settings.

2 From the Settings menu, choose Printers.

3   In the Printers window, right-click on the QMS *magicolor* 2 DeskLaser
      printer icon.

4   Remove the check mark from the Show Monitor during print box.

# Windows NT 4.0

Using the Printer Status Monitor

The Status Monitor observes a printer which has bidirectional communication with a
computer.

1   From the Windows Start menu, choose Settings.

2   From the Settings menu, choose Printers.

3   In the Printers window, right-click on the QMS *magicolor* 2 DeskLaser
      printer icon.

4   Choose Enable Status Monitor.

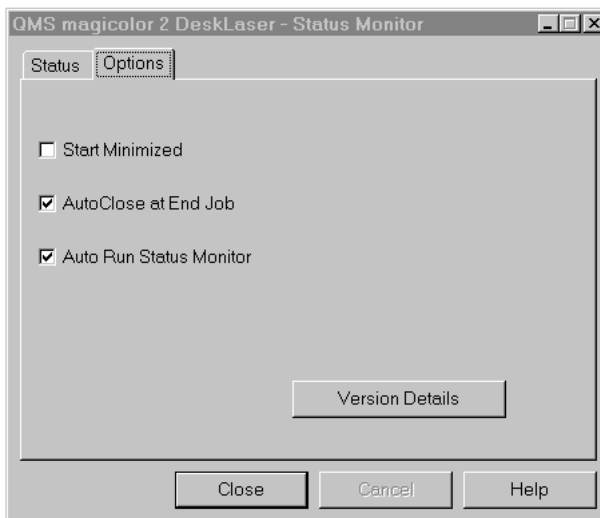5   Choose the Status Monitor's Status tab to display the printer status.

If you choose the Pause Job button, it becomes Resume Job.
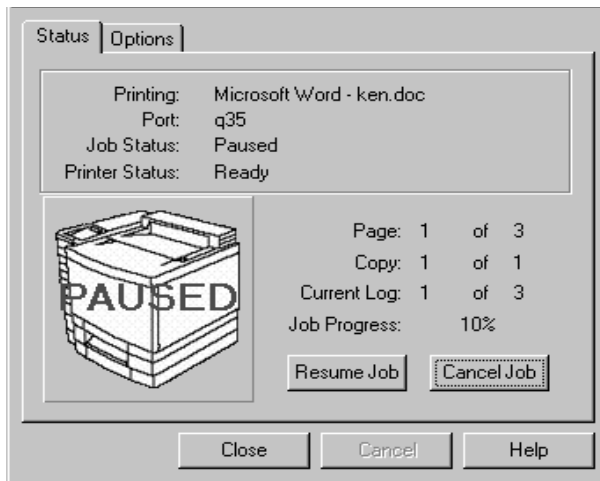
6   Choose the Status Monitor's Options tab to select options:

a   Select Start Minimized to display the minimized Status Monitor button in the status area.

    b   Select AutoClose at End Job to close the Status Monitor at the end of a print job.

    c   Select Auto Run Status Monitor to run the Status Monitor automatically.

    d   Choose the Version Details button to display version information for the Despooler.

If you prefer, you can use the QMS Network Print Monitor described in "Using the QMS Network Print Monitor" on page 2-56.

You can run one or both monitors.

Disabling the Windows NT 4.0 Printer Status Monitor

1   From the Windows Start menu, choose Settings.

2   From the Settings menu, choose Printers.

3   In the Printers window, right-click on the QMS *magicolor* 2 DeskLaser printer icon.

4   Uncheck the Enable Status Monitor.

5   From the Options tab, remove the check marks from the AutoClose at End Job and the Auto Run Status Monitor boxes.

Working with the Printer Drivers   **2-55**

Using the QMS Network Print Monitor

The QMS Network Print Monitors (QMSMON) for Windows 95/98 and Windows NT are designed specifically for QMS printers using TCP/IP protocol to transport print jobs and Print Manager to access printer status information.

The Print Monitor's Print Spooler (both workstation and server versions) controls the printing environment for both local and remote print jobs submitted through shared resources via TCP/IP. The Print Spooler "monitors" or "despoolers" are configured to service print jobs in a particular queue.
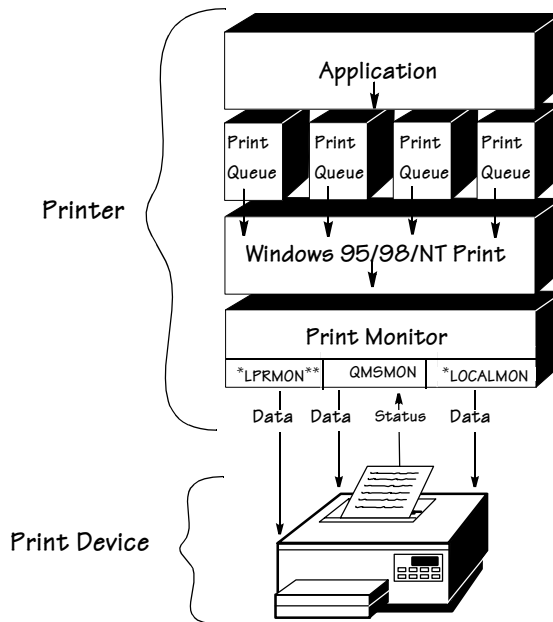
*See your Microsoft Windows documentation for details on the LPRMON and LOCALMON print monitors.

**LPRMON is present only on Windows NT systems.

◆ **Caution:** *When printing over the Ethernet interface, do not cancel a print job in the QMS Print Monitor for Windows 95/98 while the job is paused.*

Components

■ Status Component

This component obtains information from the printer, such as print job "go/nogo" and error or warning conditions. Status information displays in Print Manager through the print queue status dialog box. Status information comes from either the Windows Print Spooler, the QMS Network Print Monitor, or the printer, depending on where the job is in the printing process. See chapter 8, "Troubleshooting," for more information on status messages.

■ Send Component

» **Note:** *The QMS Network Print Monitor uses TCP/IP socket 35 for high-performance data transfer.*

This component transports print jobs to a specific QMS print device. When a job is sent to a print device by the QMS Network Print Monitor, it utilizes all allocated Windows operating system resources to transport the job. If a connection is broken while a job is being transported, the monitor gives control back to the Print Monitor Print Spooler. Any job sent to the printer while it is recovering from the break in communication is flushed from the Windows print queue.

■ Configuration Component

This component configures the port name, Internet address, time delays, and problem sound alert. It consists of the Add QMS Port and Configure QMS Port dialog boxes. All configuration changes made via this component are automatically recorded in the Windows system registry.

See chapter 8, "Troubleshooting," for more information on the status messages that display.

Windows NT 4.0

1   From the Start menu, choose Settings.

2   From the Settings menu, choose Printers.

3 Double-click the printer icon.

Whenever a print job is sent to that port, its status is reported in a status window:

The following table explains the status window field names:

Field Name	Explanation
Status	The current state of the print job in process. A print job either proceeds in a normal error-free state or it is in an error state. Error states can be nonvolatile like PAPER OUT or PAPER JAM or volatile like the inability to connect to a target printer (this state is displayed as Printer Not Responding).
Document Name	**The document's title (it may also be the filename.)** » **Note:** *Remote Downlevel Document displays when the client workstation, spooling jobs to an NT server, does not transmit complete job information. See your Microsoft Windows NT documentation for more information on this message.*
Owner	The document owner.
Printed at	The time the print job is submitted to the NT Print Spooler.
Pages	The number of pages in the document.
Size	The document size.
Priority	The document priority in the queue. Range of Priorities is 1-99.

See chapter 8, "Troubleshooting," for more information on the status messages that display.

❖

3

Printing

In This Chapter . . .

Introduction

This chapter describes how to refill the media cassette, print on different types of media, prevent media jams, and cancel a print job, as well as how to replace a toner cartridge.

Two types of media cassettes are available for the *magicolor* 2 DeskLaser: the standard letter/A4 cassette and the optional universal cassette. Both cassettes work in either the upper or lower input feeder location. In addition, the printer processes media in one of three modes—Standard [Plain Paper], Thick Stock, and Transparency—to adjust for the fusing rate for envelopes, labels, glossy stock, thick stock, transfer media, and transparency media.

Loading the Media Cassette

This section discusses loading the media cassette with paper. If you're using another type of media, refer to "Using Media Other than Plain Paper" on page 3-6 for information.

Paper Specifications

Input	Cassette	Letter/A4 or universal
	Location	Upper input feeder or optional lower input feeder for standard (plain paper) media
	Capacity	250 sheets of 20 lb (75 g/m^2) paper; capacity for other weights varies accordingly
Type		■ Any standard or recycled office paper suitable for plain-paper laser printers, such as – Xerox 4024 – Hammermill Laser Print ■ Letterhead/memo paper
Weight		■ Long-grain plain paper, 16–24 lb bond (60–90 g/m^2)
Print Mode		■ Standard (Plain Paper)

| Duplexing	■ Supported up to 28 lb bond (105 g/m²). See "Printing on Both Sides (Duplex Printing)" on page 3-23.
Notes	We do not recommend using perforated or prepunched paper.
	You should test any stock thicker than 24 lb (90 g/m²) to ensure that its performance is acceptable.

Prepare the Paper

1   Take a stack of about 250 sheets (½ ream).

»   **Note:** *Don't unwrap the paper above the printer as this might cause paper particles to fall into the printer.*

2   Holding the stack with one hand, fan the paper with the other.

This gets air through the sheets and prevents static buildup.

3   Take off the top and bottom sheets.

Residual glue buildup on these sheets may cause media jams.

Load the Cassette 🎥

1   **Remove the media cassette from the printer.**

2   **Adjust the media guides to fit the size media you're loading.**

Squeeze the retainers at the ends of the left width guide and/or the length guide, move the guide to the appropriate media size (sizes are listed on the cassette), and release the retainers.
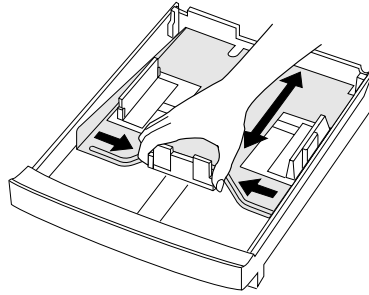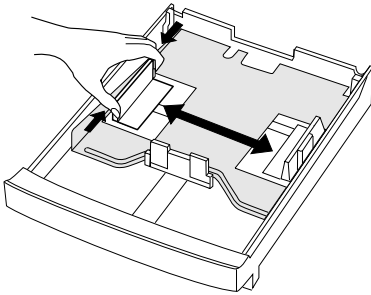

3   **Push the media pressure plate down to lock it in position.**
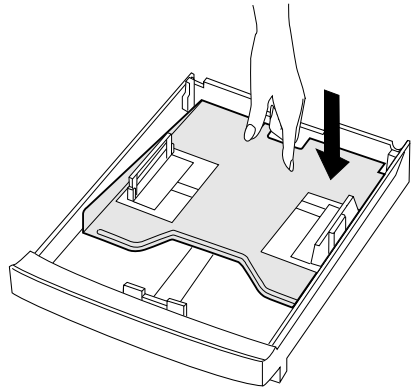
4   Load the media.

■   A fill limit mark is provided on the
inside left side of the cassette. The
media cassette holds 250 sheets of
20 lb bond (75g/m^2) paper. (Paper
is packed in reams of 500 sheets.)
Do not overfill the cassette.

■   The printing side of the paper
should face up. An arrow on the
paper package label indicates the
face-up side of the paper.
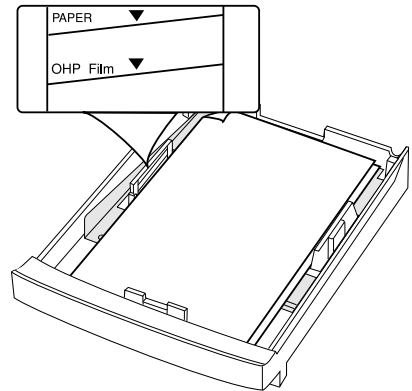
**5   Slide the media cassette back into the printer.**

Using Letterhead and Memo Media

Formatting	Format letterhead or memo data within your application. Try printing your data on a plain sheet of paper first to check placement.	
Input	Cassette	Letter/A4 or universal
	Location	Upper or lower input feeder
	Capacity	Up to 250 sheets, depending on the thickness of the media
Type	See "Paper Specifications" on page 3-2.	
Weight	See "Paper Specifications" on page 3-2.	
Print Mode	Standard	
Notes	Check your application documentation for other information about printing on letterhead and memo media.	

Loading and Printing Letterhead and Memo Media 🎥

1   **In the printer driver (Paper tab, Paper Type option),
    select Standard.**

2   **Remove the media cassette from the printer (and
    remove any media in the cassette).**

3   **Load the new media.**

»   **Note:** *Load the media printing-side up (1-sided
    printing) or printing-side down (2-sided printing) with
    the **top** of the media (the letterhead or memo
    information) toward the back of the cassette.*
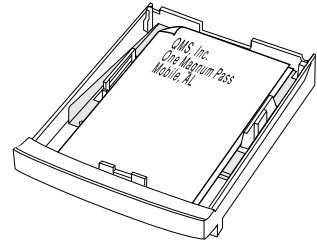
Using Media Other than Plain Paper

◆   **Caution**: *Although the QMS magicolor 2 DeskLaser was designed for occasional
    printing on a wide range of media types, it is not intended to print exclusively on a
    single media type except plain paper. Continuous printing on media other than plain
    paper (such as envelopes, glossy stock, labels, thick stock, transfer media, or
    transparencies) may adversely affect print quality or reduce engine life.*

Using Envelopes

Formatting	Your printer receives the instructions to print on envelopes from your application.
	■ When formatting data for envelopes, leave at least a 0.16" (4.06 mm) margin from the edges of the envelope.
	■ Print on the front side only. Some parts of the envelope consist of three layers of paper—the front, back, and flap. Anything printed in these layered regions may be lost or faded.
	■ See your application documentation for specific information on printing envelopes.

| Input	Cassette	Letter/A4
	Recom-mended Location	Upper input feeder only
	Capacity	Up to 15, depending on the thickness of the envelopes
Type	■ Use common office envelopes with diagonal joints, sharp folds and edges, and ordinary gummed flaps, such as – Commercial #10: Great White – International DL: Great White	
Print Mode	Thick Stock	
Notes	◆ **Caution:** Choose envelopes *without* fasteners, clasps, transparent windows, peel-off strips for sealing, or material that will melt, vaporize, offset, discolor, or emit dangerous fumes at the fusing temperature (392° F/200° C). These items will seriously damage your printer. ■ Do not print envelopes from the lower input feeder. ■ Use envelopes with a smooth exterior surface. Envelopes with a rough surface may jam in the media cassette. ■ Print *only* on the address side of the envelope. ■ Envelopes should be dry. Do not preseal envelopes.	

Loading and Printing Envelopes

◆ **Caution:** *Envelopes should only be printed from the upper input feeder.*

1   In the printer driver (Paper tab, Paper Type option), select Thick Stock.

**2   Place the envelopes on a flat surface, and flatten them by pressing down the corners.**

3 **Flex the envelope stack (including the edges) to
remove any stiffness.**

4 **Correct any dog-eared corners, and then tap the
envelopes on a flat surface to align them.**
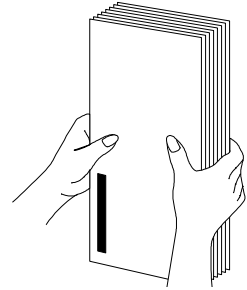
5 **Remove the media cassette from the printer (and remove any media in the
cassette).**

6 **Adjust the media guides to the length and width of the envelopes.**

Squeeze the retainers at the ends of the left width guide and/or the length guide,
move the guide to the appropriate location (media sizes are listed on the cassette),
and release the retainers.

» **Note:** *Make sure the guides are snug enough to keep the envelopes straight, but
not so tight that they buckle the envelopes.*
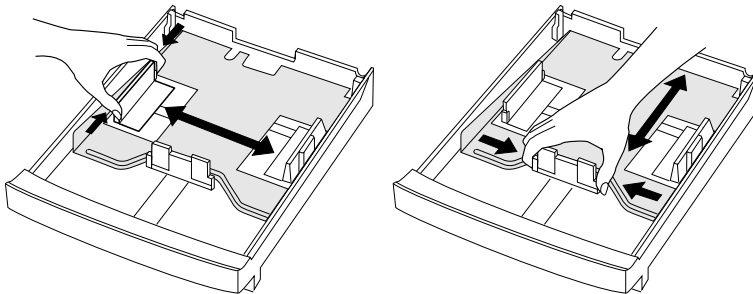
7 **Place the envelope stack into the cassette with the printing-side up.**

» **Note:** *Check your application documentation to determine if the flap should be
placed on the left or on the right. You can also print a single envelope to check the
orientation before printing multiple copies.*

8 **Insert the cassette into the printer.**

The media cassette must be located in the upper input feeder.

9   **Open the flap of each envelope immediately (before it cools) after the enve-
lope is delivered to the output tray.**

»   **Note:** *Because the envelopes pass through heated rollers, the gummed area on
the flaps may seal. Using envelopes with emulsion-based glue avoids this
problem.*

Using Glossy Stock

Formatting	Format the information to be printed on the glossy (book) stock within your application. Try printing your data on a plain sheet of paper first to check placement.	
Input	Cassette	Letter/A4 or universal
	Recom- mended Location	Upper input feeder
	Capacity	Up to 50 sheets, depending on the thickness of the glossy stock
Type	■ We recommend – Warren Spectratech Coated Lustro Laser Gloss	
Weight	80 lb book (118 g/m^2)	
Print Mode	Thick Stock	

Loading and Printing Glossy Stock

1   **In the printer driver (Paper tab, Paper Type option), select Thick Stock.**

2   **Remove the media cassette from the printer (and remove any media in the
cassette).**

3   **Load the new media.**

4   **Slide the media cassette back into the printer.**

Printing   **3-9**

Using Labels

Formatting	Format label data within your application. Try printing your data on a plain sheet of paper first to check placement.	
Input	Cassette	Letter/A4 or universal
	Recom-mended Location	Upper input feeder
	Capacity	Up to 50, depending on the thickness of the labels
Type	■ Use only labels recommended for laser printers, such as – Avery 5260	
Weight	24–42 lb (90–157 g/m^2)	
Print Mode	Thick Stock	

Notes	■ Adhesive label stock should have pressure-sensitive (peel and stick) adhesive backing.
	
	■ Use only label stock in sizes letter or A4.
	
	■ A label consists of a face sheet (the printing surface), adhesive, and a carrier sheet.
	
	   – The face sheet must adhere to the plain paper specifications listed in "Paper Specifications" on page 3-2.
	
	   – The face sheet surface must cover the entire carrier sheet, and no adhesive should come through on the surface.
	
	   – The adhesive and carrier sheet must withstand the fusing temperature (392° F/200° C).
	
	■ Avoid using labels with exposed adhesive; it may stick to the toner cartridge or the fixing roller, causing labels to peel off and media jams to occur.
	
	■ Check your application documentation for other information on printing labels.	

Loading and Printing Labels

1   In the printer driver (Paper tab, Paper Type option), select Thick Stock.

2   Remove the media cassette from the printer (and remove any media in the cassette).

3   Load the new media.

»   **Note:** *If your label stock has a top-of-page, place the top-of-page toward the rear
of the printer.*

4   Slide the media cassette back into the printer.

Using Thick Stock

The number of sheets of up to 43 lb bond (163 g/m²), 60 lb cover (162 g/m²), and 90 lb
index (163 g/m²) thick stock a media cassette can hold should be tested by the user to
ensure that its performance is acceptable. Do not exceed the fill level on the inside left
side of the cassette.

Input	Cassette	Letter/A4 or universal
	Recom-mended Location	Upper input feeder
	Capacity	Capacity varies according to media used
Type	■ Thick stock, such as	
	– Weyerhaeuser Cover/Card	
	– Hammermill ColorCopyCover	
	– Warren Spectratech Index	
Weight	■ Long-grain thick stock, up to 43 lb bond (163 g/m²)/60 lb cover (162 g/m²)/90 lb index (163 g/m²)	
Print Mode	■ Thick Stock	
Notes	You should test any thick stock to ensure that its performance is acceptable.	

Loading and Printing Thick Stock

1   In the printer driver (Paper tab, Paper Type option), select Thick Stock.

**2   Remove the media cassette from the printer (and remove any media in the
cassette).**

◆   **Caution:** *Do not mix thick stock with any other media in the same cassette, as this
will cause printer jamming.*

3   Load the new media.

Printing   **3-11**

Using Transfer Media

Formatting	Format the information to be printed on the transfer media within your application. Try printing your data on a plain sheet of paper first to check placement.	
Input	Cassette	Letter/A4 or universal
	Recom-mended Location	Upper input feeder
	Capacity	Up to 50 sheets, depending on the thickness of the transfer media
Type	■ We recommend	
	– Conde Systems LaserMprints	
Print Mode	Thick Stock	

Loading and Printing Transfer Media

1   **In the printer driver (Paper tab, Paper Type option), select Thick Stock.**

2   **Remove the media cassette from the printer (and remove any media in the cassette).**

3   **Load the new media.**

Using Transparencies

Formatting	Format the information to be printed on the transparencies within your application. Try printing your data on a plain sheet of paper first to check placement.	
Input	Cassette	Letter/A4 or universal
	Recom-mended Location	Upper input feeder
	Capacity	Up to 50 sheets, depending on the thickness of the transparencies
		» **Note:** *If you have problems feeding 50 sheets, try loading only 5 to 10 sheets at a time. Loading a large number of transparencies at a time may cause static buildup, thus causing feeding problems.*

Type	■ Use any transparencies (also known as OHP film) that meet normal photo-copier standards and that can withstand the fusing temperature (392° F/ 200° C). We recommend
	– Xerox 3R3117
	– 3M CG3700
	– 3M CG3710
	■ Use only transparency sizes letter and A4.
Weight	24–41.75 lb (90–157 g/m^2)
Print Mode	Transparency
Notes	■ Do not fan transparencies before printing.
	■ Be sure to feed the striped edge as the trailing edge, although the transparency vendor may recommend that the striped edge is first into the printer.
	■ Keep the media path clean. Transparencies are especially sensitive to a dirty media path. If there are shadows on either the top or the bottom of the sheets, refer to chapter 6, "Maintenance," for instructions on how to clean the printer.
	■ Check your application documentation for other information about printing on transparencies.
	■ Remove transparencies from the output tray immediately to avoid static buildup.

Loading and Printing Transparencies

1 **In the printer driver (Paper tab, Paper Type option), select Transparency.**

2 **Remove the media cassette from the printer (and remove any media in the cassette).**

3 **Load the new media.**

Media Sizes and Imageable Areas

Your printer supports full-color printing on several media sizes. Each media size has a certain imageable area, the maximum area on which the printer can print clearly and without distortion. This area is subject to both hardware limits (the physical media size and the margins required by the printer) and software constraints (the amount of memory available for the full-page frame buffer).

» **Note:** *All media is fed in the portrait (short edge first) orientation.*

» **Note:** *The standard letter/A4 and universal cassettes are interchangeable between the upper and the lower input feeders.*

Media	Media Size		Imageable Area*		Input Source/ Location**
	Inches	**Millimeters**	**Inches**	**Millimeters**	
A4	8.2x11.7	210.0x297.0	7.87x11.30	200.0x287.0	L or U
A5	5.8x8.3	148.0x210.0	5.40x7.87	138.0x200.0	L or U
B5 (ISO)	6.9x9.8	176.0x250.0	6.50x9.45	166.0x240.0	L or U
B5 (JIS)	7.2x10.1	182.0x257.0	6.78x9.72	172.0x247.0	L or U
Com 10	4.1x9.5	105.0x241.3	3.74x9.11	95.0x231.3	L or U/ Upper only
DL Envelope	4.3x8.7	110.0x220.0	3.93x8.27	100.0x210.0	L or U/ Upper only
Executive	7.3x10.5	184.0x267.0	6.85x10.12	174.0x257.0	L or U
Folio	8.5x13.0	215.9x330.2	8.02x12.61	205.9x320.2	U
Foolscap	8.0x13.0	203.2x330.2	7.61x12.61	193.2x320.2	U
Legal	8.5x14.0	215.9x355.6	8.11x13.61	205.9x345.6	U
Letter	8.5x11.0	215.9x279.4	8.11x10.61	205.9x269.4	L or U
SP Folio	8.5x12.4	215.9x315.0	8.11x12.00	205.9x305.0	U
Statement	5.5x8.5	139.7x215.9	5.11x8.11	129.7x205.9	L or U
UK Quarto	8.0x10.0	203.2x254.0	7.60x9.61	193.0 x244.0	L or U

* The imageable area is reduced by 2mm for the front side of a duplexed page.

** L = Letter/A4 cassette

U = Universal cassette

Imageable Area

Plain Paper

» **Note:** *The nonguaranteed print areas are areas on which you can print, but image
quality in these areas is less than perfect.*

Media Feed
Direction

Nonprintable Area
0.197" (5 mm)

Nonguaranteed Area—
First Page of a Duplexed
Page 0.078" (2 mm)

Nonprintable
Area
0.118" (3 mm)

Guaranteed
Area

Nonguaranteed
Area
0.078" (2 mm)

Nonprintable Area
0.197" (5 mm)

Printing   **3-15**
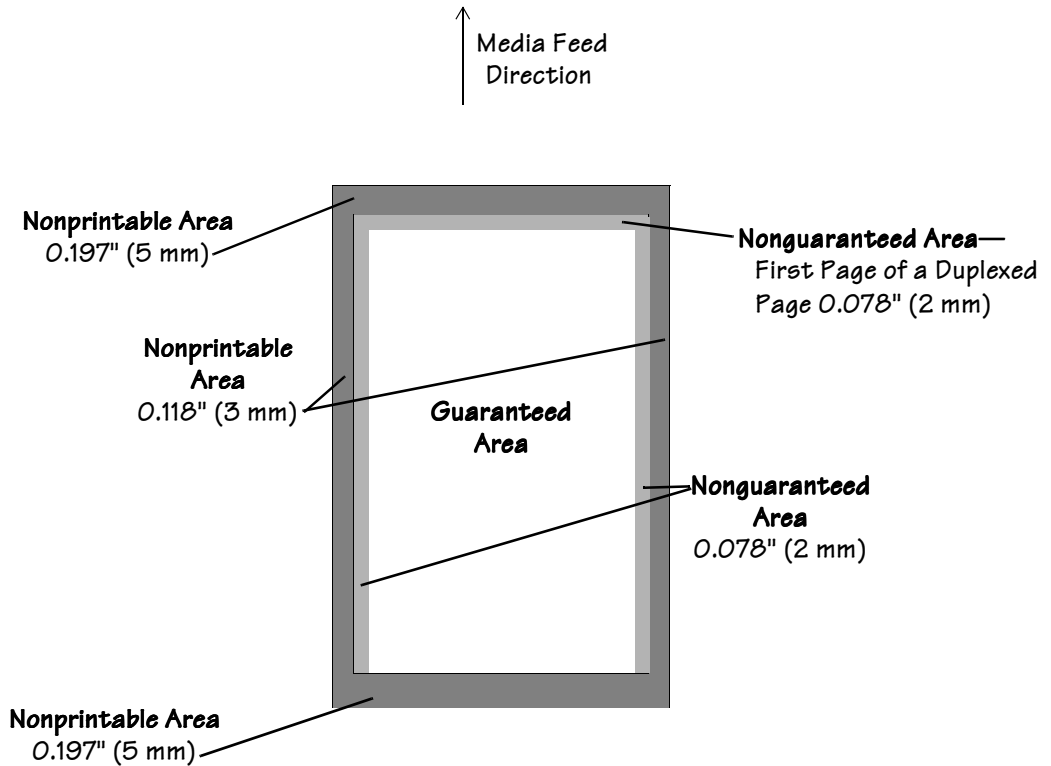
Glossy Stock, Labels, Thick Stock, Transfer Media, Transparencies

Media Feed
Direction

Nonprintable Area
0.197" (5 mm)

Nonguaranteed Area
0.197" (5 mm)

Nonprintable
Area
0.118" (3 mm)

Guaranteed
Area

Nonguaranteed
Area
0.078" (2 mm)

Nonguaranteed Area
0.197" (5 mm)

Nonprintable Area
0.197" (5 mm)

Envelopes

Nonprintable Area
0.197" (5 mm)

Nonprintable Area
0.118" (3 mm)

Nonprintable Area
0.197" (5 mm)

Nonguaranteed Print Area

Guaranteed Print Area

1.654"
(42 mm)

0.630"
(16 mm)

#10: 2.679" (68 mm)
DL: 1.576" (40 mm)

Nonprintable Area
0.118" (3 mm)

#10: 2.679" (68 mm)
DL: 1.576" (40 mm

» **Note:** *Media feed direction determined by your application.*

Printing   **3-17**

Page Margins

Margins are set through your application. Some applications allow you to set custom page sizes and margins while others have only standard page sizes and margins from which to choose. If you choose a standard format, you may lose part of your image (due to imageable area constraints). If you can custom-size your page, use those sizes given for the imageable area for optimum results.

Image Alignment

If for any reason, you need to change the image alignment, adjust the margins or page size through your application.

Media Size versus Cassette Size

Ensure that the media size matches the cassette size (for example, letter/A4 media must be loaded only when the cassette is set to letter/A4 size). Since the cassette sends a media size signal to the printer controller, using a wrong size media could cause a media jam, incorrect positioning of the image, or a clipped image.

Storing Media

How you store paper and other media can make a big difference in print quality and printer operation. Improperly stored media increases the chance of jams during printing and can drastically affect the appearance of your work. Keep media in good condition by storing it

- In its wrapper
- On a flat surface
- In a closed cabinet
- In a cool, dry area

Using Toner Cartridges

Characters and images are created in your laser printer through a process that applies toner (made of carbon particles) to the page in the printer's fusing unit. When an image is formed, a positive electrical charge is applied to transfer the image to the page. The toner cartridge contains the toner and the photosensitive drum (which functions like photographic film) needed to operate the laser printer.

Toner Cartridge Life

A toner cartridge contains enough toner to print the following number of letter/A4-size pages:

Color	Rated life @ normal 5% page* coverage
Black	10,000 pages
Yellow	6,000 pages
Magenta	6,000 pages
Cyan	6,000 pages

When toner runs low in a cartridge, `x toner Empty` displays in the message window. It's your option whether to continue printing; usually, parts of the page print lighter.

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* A **plane** is a single pass of the OPC belt (one toner color). For example, a one-color, single-sided (simplex) print job makes one pass (one plane), and a two-color print job makes two passes (two planes). A single-sided color **page** (also called a **face**) consists of four passes (or planes) of the OPC belt, since most color print jobs use all four toner colors. A two-sided (also known as duplex or two-faced) color page may consist of up to eight passes of the OPC belt, since most color print jobs use all four toner colors.

Consumable life is expressed in simplex pages (1 face). A duplex page (2 faces) is equivalent to two simplex pages.

Printing 3-19

Extending Toner Cartridge Life

Sometimes, you can increase the life of the toner cartridge by taking it out of the printer and redistributing the toner—hold the cartridge with both hands and then gently rock it from side-to-side (as you do for a new cartridge) five or six times horizontally.

◆ **Caution:** *Do not hold the toner cartridge vertically.*

If the `x toner Empty` message remains in the message window, you must replace the toner cartridge.

The printer stops 330 pages after detecting that toner in a cartridge is low. `x toner Empty` displays in the message window.

Refilled Toner Cartridges

Refilled toner cartridges may produce variations in toner quality and reliability and may reduce the print quality of your documents. In addition, toner leaks affect your warranty.

Ordering Toner Cartridges

Choosing the right consumables for your QMS *magicolor* 2 DeskLaser not only increases its reliability and performance, but also minimizes the risk of damage. Only QMS toner cartridges are designed to meet the exact specifications of your QMS printer, guaranteeing maximum performance, efficiency, and long life.

In the US, call 1 (800) 523-2696 for information on ordering toner cartridges and other consumables. In other countries, see appendix A, "QMS Customer Support," for the telephone number of the QMS office nearest you.

Toner Cartridge Storage

■ Keep toner cartridges in their packaging until you're ready to install them.

■ Store toner cartridges in a cool, dry location away from sunlight (due to heat). The maximum storage temperature is 95° F (35° C) and the maximum storage humidity is 80% without condensation.

■ Keep toner cartridges level during storage. Do not stand or store cartridge on their ends, hold them vertically, or turn upside down; the toner inside the cartridges may become caked or unequally distributed.

- Keep toner cartridges away from salty air environments and corrosive gases such as aerosols.

- Keep toner cartridges away from disk drives and floppy disks. The magnets in the cartridge can damage stored data.

Replacing a Toner Cartridge

Your printer uses four toner cartridges: black, yellow, magenta, and cyan.

1   Open the printer's front cover.

2   Remove and discard the empty toner cartridge.

◆   **Caution**: *Put the old toner cartridge in a trash receptacle. Do not dispose of it by burning.*

3   Remove the toner cartridge from its shipping carton.

4   Distribute the toner in the cartridge.

Holding a cartridge with both hands, gently rock it five or six times horizontally.

Tab

◆   **Caution:** *Do not hold the toner cartridge vertically.*

Pull the tab to remove the tape.
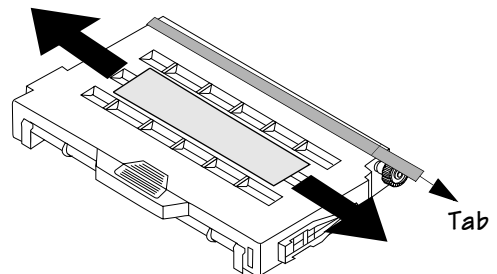
5   Remove the protective cover.
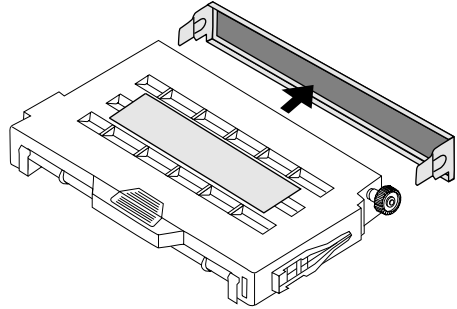
◆   **Caution**: *Each toner cartridge has a colored label that corresponds to a colored label to the right of the cartridge slots. Always install the toner cartridge in the slot with a label of the same color. If a toner cartridge doesn't slide in easily, don't force it.*

6   Install the toner cartridge.

Align the toner cartridge with the cartridge guides, and gently push the cartridge into the printer until you begin to feel resistance. Then pull the cartridge back about 1/4 inch.

◆   **Caution:** *Do not push the toner cartridge in until you hear a click. If you hear a click, you've locked in into place against the OPC belt cartridge and your prints may be smudged.*

»   **Note:** *While the cartridges may appear not to be fully inserted, gently closing the front cover will guide them to their proper operating position.*

Colored Labels
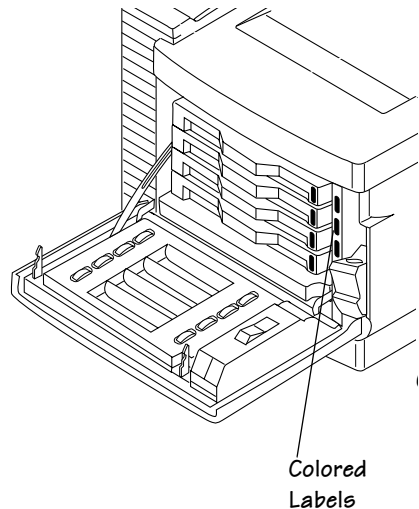
7   **Close the printer's front cover.**

8   **Check the status message in the message window.**

If it reads `x toner Empty`, use the Service/Clear care menu to remove it.

Printing on Both Sides (Duplex Printing)

DeskLaser—Manual Duplexing

While the basic QMS *magicolor* 2 DeskLaser does not have a duplexing option, you can duplex print manually: Print on one side of the paper, remove any curl from the printed sheet(s), reinsert the printed sheet(s) into the media cassette (blank side up and the top of the page toward the back of the printer), and then print the second side.

»   **Note:** *Paper jams may occur if the printed sheet(s) reinserted in the media cassette are not entirely flat.*

Duplex Model—Auto Duplexing

Duplex printing can be done automatically with the duplex model printer. There is no need to manually reinsert the paper.

Duplexing is supported for standard media up to 28 lb bond (105 g/m^2). The duplexing options are Flip on Long Edge (prints flipped horizontally as in a loose-leaf notebook) or Flip on Short Edge (prints flipped vertically as on a clipboard), and are only available when Standard is the Paper Type.

In the printer driver (Paper tab, Duplex Options), select Flip on Long Edge or Flip on Short Edge.

»   **Note:** *Consumable life is expressed in simplex pages (1 face). A duplex page (2 faces) is equivalent to two simplex pages.*

Continuous Printing

Media Types

◆ **Caution**: *Although the QMS* magicolor *2 DeskLaser was designed for occasional printing on a wide range of media types, it is not intended to print exclusively on a single media type except plain paper. Continuous printing on media other than plain paper (such as envelopes, glossy stock, labels, thick stock, transfer media, or transparencies) may adversely affect print quality or reduce engine life.*

Print Runs

After 200 1-sided pages (or 100 2-sided pages) of a **continuous** print run of plain paper, the *magicolor* 2 DeskLaser automatically pauses for 3 minutes to cool down the engine. This occurs for monochrome or color printing.

After this initial cooldown pause, the printer automatically resumes its printing. From that point forward while doing continuous printing, the 3-minute cooldown pause occurs every 50 pages until the continuous printing stops.

After an extended idle period, this 50-page interval automatically resets to 200 pages.

This process is provided to maintain the rated duty cycle of the printer and to ensure reliable printer operation with optimum output quality.

Cancelling a Print Job

Cancelling from the Control Panel

To cancel all pages currently received by the printer, press the Cancel key on the printer control panel.

Cancelling from the Computer

To cancel all pages of the print job not yet received by the printer, cancel the job at your computer.

◆ **Caution:** *When printing over the Ethernet interface, do not cancel a print job in the QMS Print Monitor for Windows 95/98 while the job is paused.*

Cancelling a multipage print job through the print queue or the application Status Monitor dialog box will also cancel the next print job.

» **Note:** *Since all pages of a multipage print job may not have been received by the printer at the time you're trying to cancel the job, you may have to cancel the job both at the printer and at your computer.*

If you cancel a job and it has not completely spooled, pressing the Cancel key may also cancel the next job in the queue.

❖

4

Control Panel

In This Chapter . . .

- "Message Window" on page 4-2
- "Control Panel Indicators" on page 4-3
- "Control Panel Keys" on page 4-4
- "Printer Configuration" on page 4-5

Introduction

The control panel, located on the front of the printer, allows you to direct the printer's operation. In addition, it displays the current status of the printer, including any condition that needs your attention.

A 2-line, 16 characters/line, message window displays status and configuration information.

4 indicators provide printer status information.

4 keys are used in printer configuration.

2 keys access frequently used printer functions.
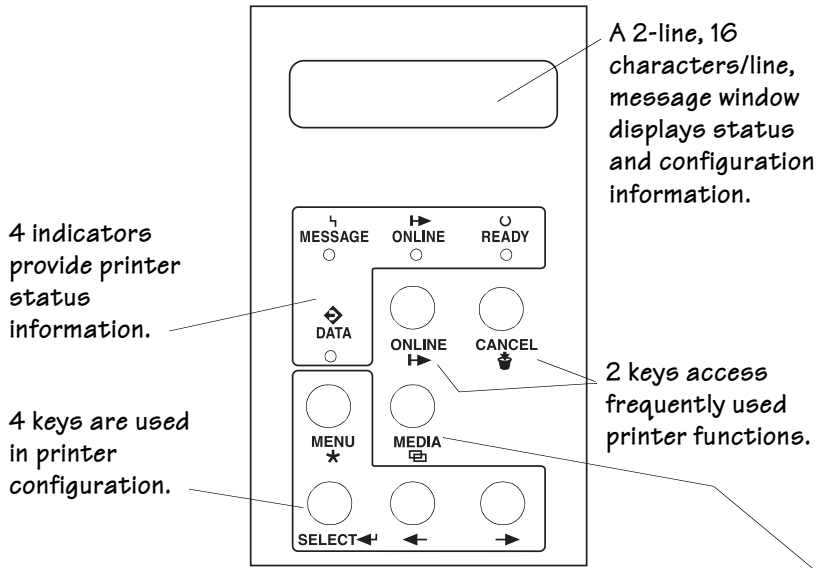
» **Note:** *Media and Copy keys have no function on DeskLaser and DeskLaser duplex models.*

Message Window

The message window has two functions:

■ It displays status and error information. See chapter 8, "Troubleshooting," for an annotated list of status and error messages.

■ It displays configuration options. Configuration is discussed later in this chapter.

Message Language

Messages and configuration options can be displayed in six languages. See "Setting the Message Window Language" on page 4-9 for more information.

Control Panel Indicators

Four indicators display printer status information.

Indicator	Off	On	Blinking
⟳ READY	The printer is not ready to print.	The printer has finished warming up and is ready to print.	The printer is warming up, or the printer is in Energy Saver mode.
➡ ONLINE	The printer is off line and not ready to accept data.	The printer is on line and ready to accept data.	
↳ MESSAGE	No problem.	The printer requires operator attention (usually accompanied by a status message in the message window).	
◆ DATA	The printer is not receiving data.	The printer is receiving data through one or more of its simultaneous interfaces (usually accompanied by a status message in the message window).	

Control Panel Keys

Online and Cancel Keys

These keys access frequently used printer functions. (Media and Copy keys have no function on DeskLaser and DeskLaser duplex models.)

Key	Function
ONLINE ➡	The Online key switches the printer between on-line and off-line status.
	When off line, the printer continues printing until it has finished all jobs received, but it doesn't accept any new data. Although jobs continue to compile and print using the data already received, a job may be interrupted, causing it to wait for more incoming data before printing resumes. Press the Online key once to put the printer back on line and ready to accept new print jobs.
CANCEL ♣	If the printer is on line, press the Cancel key to cancel the page currently printing. To cancel the entire print job, use the printer driver.
	If the printer is off line and you're in the configuration menu, press the Cancel key to exit from the configuration menu without saving any selections.

Menu, Select, Previous, and Next Keys

The Menu, Select, Previous, and Next keys are used in printer configuration. Before using any of these keys, press the Online key to take the printer off line.

Key	Function
MENU ✱	The Menu key provides access to the printer's configuration menu. First press the Online key to take the printer off line, and then press the Menu key to enter the configuration menu. When you're changing the printer configuration, press the Menu key to cancel a change (before pressing the Select keys).
SELECT◄┘	Press the Select key to access a menu or to choose a displayed menu option.
◄━	Press the Previous key to return to the previous selection or option for the current menu. When changing character information, use this key to return to the previous choice for the current input character.
━►	Press the Next key to advance to the next selection or option in the current menu. When changing character information, use this key to advance to the next choice for the current input character.

Printer Configuration

You can configure the printer in the following ways:

■ **Through the Windows 95/98 or Windows NT 4.0 printer driver**—Most of the configuration is done in this way. See chapter 2, "Working with the Printer Drivers."

■ **Through the printer control panel**—Several options are available. The rest of this section explains how to use the configuration menu.

The Configuration Menu

Idle

ONLINE
▶

MENU
✳

✳ Press the Menu key to move through the menus.

Energy saver — SELECT↵ — 1 hr →
2 hr ←
Off
15 min
30 min
45 min

✳

Language — SELECT↵ — English →
German ←
French
Italian
Spanish
Dutch

✳

Internet address — SELECT↵ — 000.000.000.000

✳

Subnet mask — SELECT↵ — 000.000.000.000

✳

Router — SELECT↵ — 000.000.000.000

✳

Service Pages # *xxxx* — SELECT↵ — Clear care

✳

Board test — SELECT↵ — Perform test

✳

Test page — SELECT↵ — Print test page

✳

Ethernet HW address — SELECT↵ — HW:080086 *xxxxxx* HW address

Accessing the Configuration Menu

To access the configuration menu, make sure the printer is idle (`Idle` displays in the message window), then press the Online key to take the printer off line (the Online indicator is not lighted), and finally press the Menu key.

For example, the following table shows how to use control panel keys to access the printer configuration menu. Press the control panel keys in the order shown. The printer responds by displaying a status message or configuration menu in the message window.

Press this key	to...	The message window reads...
Online/ Offline	Turn off the Online indicator and ready the printer for configuration.	`Idle`
Menu	Access the configuration menu.	`Energy saver`

» **Note:** *The printer must be off line and idle before you can access the configuration menu.*

Selecting Configuration Menu Options

Once you access the configuration menu, you use the control panel keys to move through the menu. Use the following keys:

Press this key...	to...
Menu	Advance through the available menus: Energy saver, Language, Internet address, Subnet mask, Router, and Eth. HW address (Ethernet Hardware address). (Service, Board Test, and Test Page have different functions. They are explained in chapter 8, "Troubleshooting.")
Select	Save an option.

For example, the instructions below show how to change the Energy Saver time interval from 1 hour to 15 minutes.

Press this key...	to...	The message window reads...
Online/ Offline	Turn off the Online indicator and ready the printer for configuration.	`Idle`

Control Panel 4-7

Menu	Access the Energy saver menu.	`Energy saver`
Select	Access the Energy saver menu options.	`1 hr`

Next (3 times)	Advance through the Energy saver menu options to 15 min.	`2 hr`
		`Off`
		`15 min`

Select	Select and save 15 min.	`Selected*`
		
		`Energy saver`

*Selected displays for 1.5 seconds before the message window again reads `Energy saver`.

Setting Energy Conservation

The QMS *magicolor* 2 DeskLaser is Energy Star compliant. The Energy Saver menu allows you to specify whether the printer changes to a low-power state (the engine remains on, but the fuser turns off) after the printer is inactive for a specified length of time. When a print job is received, the printer returns to normal power within 70 seconds.

Menu	Energy saver
Choices	Off, 15 min, 30 min, 45 min, 1 hr, 2 hr
Default	1 hr

Setting the Message Window Language

Status and error messages as well as configuration menus and options can be displayed in the message window in one of six languages.

Menu	Language
Choices	Dutch, English, French, German, Italian, Spanish
Default	English

Setting the Internet Address

The Internet Address menu allows you to set the printer's network (Internet) address. The address is in the format *xxx.xxx.xxx.xxx*.

Menu	Internet address
Choices	Each *xxx.xxx.xxx.xxx* triplet can have a value of 001–254.
Default	000.000.000.000
Notes	■ If you're using the Ethernet interface, this address must be set, and it must be unique.
	■ Once you save your changes to this menu, the printer automatically reboots.
	■ The address must consist only of numbers and periods. Selecting a letter or another symbol results in an error message.
	■ Any *xxx* value between 1 and 9 must begin with 00 (for example, 1 is entered as 001, and 9 is entered as 009).
	■ Any *xxx* value between 10 and 99 must begin with 0 (for example, 10 is entered as 010, and 99 is entered as 099).

Setting the Subnet Mask

The Subnet Mask menu allows you to set the printer's subnet mask. The address is in the format *xxx.xxx.xxx.xxx*.

Menu	Subnet mask
Choices	Each *xxx.xxx.xxx.xxx* triplet can have a value of 001–254.
Default	000.000.000.000
Notes	■ If subnets are not used with your network, the subnet mask should remain 000.000.000.000. (Check with your network administrator.) This allows the interface to provide automatic sensing of gateways. If you identify a subnet mask, this automatic sensing is disabled.
	■ Once you save your changes to this menu, the printer automatically reboots.
	■ The address must consist only of numbers and periods. Selecting a letter or another symbol results in an error message.
	■ Any *xxx* value between 1 and 9 must begin with 00 (for example, 1 is entered as 001, and 9 is entered as 009).
	■ Any *xxx* value between 10 and 99 must begin with 0 (for example, 10 is entered as 010, and 99 is entered as 099).

Setting the Router Address

The Router menu allows you to set the Internet address of a router. The address is in the format *xxx.xxx.xxx.xxx*.

Menu	Router
Choices	Each *xxx.xxx.xxx.xxx* triplet can have a value of 001–254.
Default	000.000.000.000
Notes	■ If gateways are not used with your network, the router address should remain 000.000.000.000. (Check with your network administrator.)
	■ Once you save your changes to this menu, the printer automatically reboots.
	■ The address must consist only of numbers and periods. Selecting a letter or another symbol results in an error message.
	■ Any *xxx* value between 1 and 9 must begin with 00 (for example, 1 is entered as 001, and 9 is entered as 009).
	■ Any *xxx* value between 10 and 99 must begin with 0 (for example, 10 is entered as 010, and 99 is entered as 099).

Using the Service Menu

The Service menu allows you to identify the number of faces that have been printed (see chapter 8, "Troubleshooting,") and to clear service messages (see chapter 6, "Maintenance").

Using the Board Test Menu

The Board Test menu allows you to test the printer's flash, Ethernet, ASICS, and DRAM. For complete information, see chapter 8, "Troubleshooting."

Using the Test Page Menu

The Test Page menu allows you to verify that the printer is able to print. For complete information, see chapter 8, "Troubleshooting."

Setting the Ethernet HW (Hardware) Address

The Ethernet HW Address menu allows you to override the printer's factory-default Ethernet hardware address.

Menu	Ethernet HW address
Choices	000000–EFFFFF
Default	The printer's serial number in the form
	HW:080086 *xxxxxx*
Notes	Once you save your changes to this menu, the printer automatically reboots.
	◆ **Caution:** *During normal printer operation, you should never have to use this option. It is available only in the rare event that the printer's Ethernet hardware address is lost.*

❖

5

Printer Options

In This Chapter . . .

Introduction

The following options are available for your printer. Contact your local vendor for purchase information.

Media Cassettes	250-sheet letter/A4 standard media cassette
	250-sheet universal cassette (for all supported media sizes)
Lower Feeder	Includes a 250-sheet standard media cassette.
	» **Note:** *The lower input feeder is optional on the DeskLaser model without the duplexer.*
Memory	8, 16, 32 MB DRAM SIMMs
	See FAQ 7191 for a list of each approved SIMM, its manufacturers and part numbers, and the QMS products on which it can be used. You can access QMS FAQs through the Internet at http://www.qms.com/support/support_set.htm.
System Software	Updated system software with the latest printer enhancements.
Printer Drivers	Updated printer drivers that support the latest printer enhancements.

Additional Media Cassettes

The standard printer configuration provides a 250-sheet letter/A4 standard cassette. Additional media cassettes provide two main benefits:

- Additional supported media sizes (universal cassette)

- Expanded flexibility to switch media size, color and type without having to unload and load media. Keep replacement cassettes close by, and you can easily change media by slipping one cassette out and another in.

- Increased media-feed capacity (requires installation of an optional lower feeder).

Lower Input Feeder

The lower input feeder increases your printer's media feed capacity by 250 sheets for a total of 500 sheets. In addition, the extra standard media cassette allows you to change easily between different sizes (up to legal), colors, and types of media. The lower input feeder is positioned under the printer, so no extra space is necessary.

- If you have the QMS *magicolor* 2 CXE or GXE without a duplexer, follow the instructions below to install the optional lower input feeder.

- If you have a QMS *magicolor* 2 EXD, the lower input feeder is already installed.

What's in the Kit?

- Input feeder unit

- Letter/A4 standard media cassette

- Two small metal brackets with screws

- Two plastic side covers (one left and one right)

» **Note:** *There may be other pieces shipped with the lower input feeder; however, they are not required for this procedure.*

If anything is missing, call your local vendor. See appendix A, "QMS Customer Support," for locations and telephone numbers.

Unpacking the Lower Input Feeder

1   Remove the feeder from the shipping carton, and place it on a flat surface.

2   Remove any tape and packing material from the feeder.

Save the packing material in case you ever have to move or ship the feeder to a new location.

Installing the Lower Input Feeder

 WARNING! *Your printer weighs approximately 66 lbs (30 kg) without consumables. Your printer plus duplexer weighs approximately 66 lbs (30 kg) without consumables. Be sure to have help when lifting and moving it. If consumables are installed, be sure to keep the printer level when moving it to prevent accidental spills.*

ACHTUNG! *Das Gewicht dieses Druckers beträgt ohne Verbrauchsmaterial ca. 30 kg. Bitte versuchen Sie niemals, den Drucker alleine anzuheben oder zu transportieren. Achten Sie bitte darauf, daß der Drucker mit eingebauten Tonerkartuschen nur waagerecht transportiert wird.*

**1   Turn off the printer, and then disconnect the power cord and all interface cables from the printer.**

2   Move the input feeder to a table or flat surface near the printer.

 WARNING! *If consumables are installed, be sure to keep the printer level when moving it to prevent accidental spills.*

ACHTUNG! *Achten Sie bitte darauf, das der Drucker mit eingebauten Tonerkartuschen nur waagerecht transportiert wird.*

3   Set the printer on top of the input feeder.

Be sure to align the printer and input feeder as precisely as possible. This makes the following steps easier.
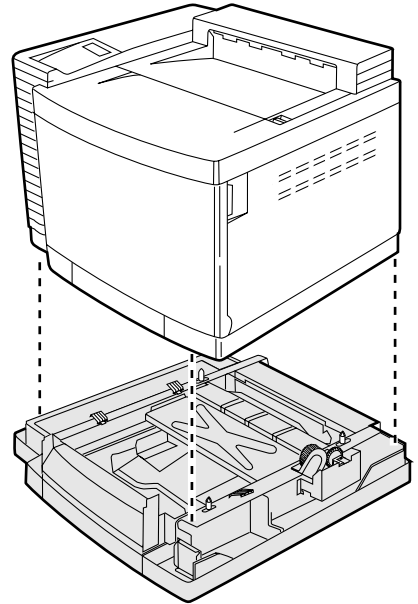
4   Install the two metal brackets underneath the sides of the printer.

Holding the bracket at a slight angle, slide it up into the hole underneath the printer before setting it to vertical.

Printer

Lower Input Feeder

Bracket

Right-Front View
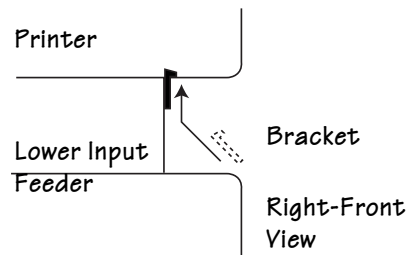
5 **Make sure that the hole in each metal bracket is lined up with the corresponding hole on the input feeder.**

6 **Use the thumbscrews to attach the two brackets to the lower input feeder.**

Printer   Side View

Lower Input Feeder

7 **Remove the lower input feeder cover plate. You will switch this cover plate with the one from the printer after the cables have been connected.**

8 **Locate the cable at the left rear of the optional feeder, and connect it to the printer.**

9 **Reinsert the two cover plates.**

Lower Input Feeder Cover Plate

Printer Cover Plate
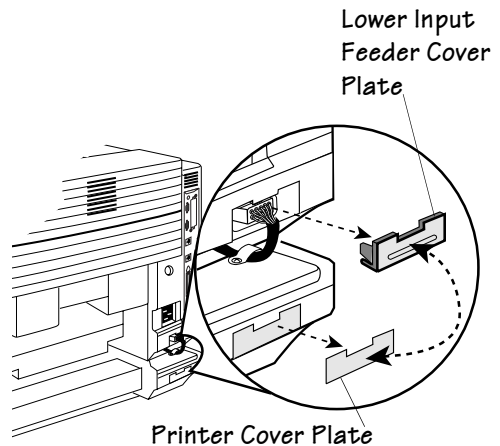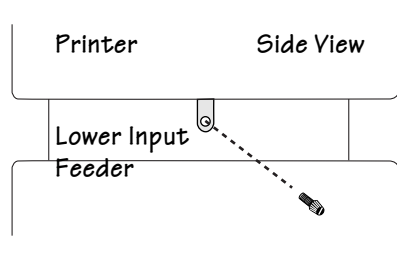
**10 Snap the plastic side covers onto
the appropriate sides of the input
feeder.**

The input feeder is now installed.

» **Note:** *If you move the printer with the
lower input feeder attached, lift the unit
by the four bottom corners of the
feeder, not by the feeder's cassette slot
and not by the printer itself.*

11 Plug in the printer and turn it on.

» **Note:** *In compliance with UL
guidelines, "The appliance inlet is
considered to be the main disconnect
device."*
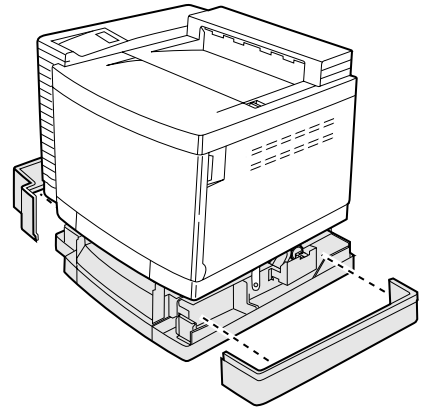
Single In-Line Memory Modules

Single in-line memory modules (or SIMMs) are compact circuit boards with sur-
face-mount memory chips. The QMS *magicolor* 2 DeskLaser comes with 8 MB RAM.
The QMS magicolor 2 DeskLaser duplex model comes with 32 MB RAM. However,
you can upgrade the printer to a maximum of 64 MB of RAM through the installation of
additional SIMMs. When upgrading, 8, 16, and 32 MB SIMMs with a refresh rate of
2 KHz must be used. Additional memory allows you to print complex images on large
page sizes.

Antistatic Protection 📽

◆ **Caution:** *It's very important to protect the printer controller board and any associated daughterboard or module from electrostatic damage while performing any task involving the controller board.*

If an antistatic wrist strap is provided in your printer option kit, attach one end of it to your wrist and the other end to any convenient electrical ground (for example, the bare metal chassis of equipment, as on the back of a computer, that is plugged in but turned off). Never attach the wrist strap to any piece of equipment with an electrical current present. Turn off all power switches first. Plastic, rubber, wood, painted metal surfaces, and telephones are not acceptable grounding points. The printer isn't an acceptable grounding point either because it must be unplugged before you perform this task.

If you don't have an antistatic wrist strap, discharge your body's static electric charge by touching a grounded surface before you handle any printer boards or components and before removing the controller board. Also avoid walking around after grounding yourself.

How the Computer and Printer Use Memory

Computer

When you print a file, the QMS *magicolor* 2 DeskLaser printer driver uses the computer's memory to

1 **Send data from the Windows display to the Spooler (a file on the disk) and then**

2 **Compress the data and send it from the Spooler to the selected port, either parallel or Ethernet.**

Some applications use hard disk storage on the computer to render the image. However, in all Windows environments, if the computer runs out of memory, Windows informs you. If this happens, you have the option of allowing the printer to start printing the job while it is still being spooled rather than waiting for it to be completely spooled before starting the print process. (See "Files Fail to Print" in chapter 8, "Troubleshooting" for more information.)

Printer

Typically, most files print with the 8 MB of memory that comes standard on your QMS *magicolor* 2 DeskLaser and 32 MB on the DeskLaser duplex model. However, some files may exceed this amount. If the printer doesn't have enough memory, a `Printing need more memory` message displays in the printer's message window.

Installation Procedure 🎥

◆ **Caution:** *It's very important to protect the printer controller board and SIMM from electrostatic damage. Before performing this procedure, review the antistatic caution in "Antistatic Protection" on page 5-8.*

Always handle circuit boards by the edges only.

1 Turn off the printer, and then disconnect the power cord and all interface cables from the printer.

2 **Remove the printer's controller board.**

Loosen two screws, one on each end of the I/O connector panel, and, using the tab on the lower side of the connector panel, pull the controller board from the printer.

» **Note:** *This illustration shows the printer without the duplexer.*
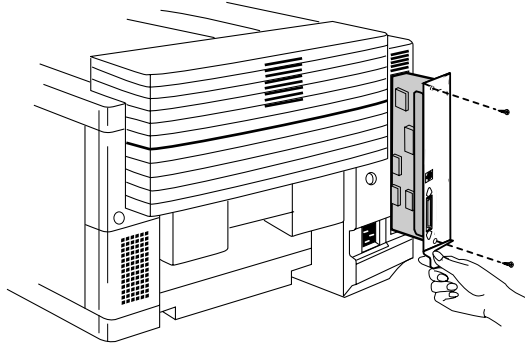
3 **Position the controller board on a flat surface so the controller board lies flat and the I/O connector panel is facing you.**

4 **If you need to remove a SIMM before installing one, remove it as follows; otherwise skip to step 5.**

» **Note:** *If all the SIMM connectors are filled and you want to install more memory, you have to exchange one or more SIMMs for SIMMs with a greater memory capacity.*

a Using both thumbs, pull the latches (one on each side of the SIMM connector) outward.

b Tilt the SIMM backward to a 45° angle away from the SIMM connector.

c Lift the SIMM out.

5 **Remove the new SIMM from its antistatic bag.**

6 **Insert the new SIMM into the SIMM connector.**

a Hold the SIMM at a 45° angle to the controller board, with the notch on the right side and the bottom edge in the connector.

» **Note:** *You can insert a SIMM in any SIMM connector as long as DRAM and the SIMM connector before the one you're installing are occupied.*

b Tilt the SIMM up to a 90° angle until you feel it snap into place.

When seated, the SIMM stands upright, firmly in place. If you cannot snap the SIMM into place, do not force it. Reposition it, making sure that the bottom of the SIMM is seated completely in the connector.

7 **Repeat steps 5–6 for each additional SIMM being installing.**

8 **Reinstall the controller board into the printer.**

Gently slide the controller board into the printer until it is fully seated, and then tighten the two screws.

9 **Reconnect all interface cables.**

10 **Reconnect the power cord, and turn on the printer.**

» **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

Updating System Software

The system software in your QMS *magicolor* 2 DeskLaser is stored in flash ROM, read-only memory that can be erased and rewritten to "in a flash." This allows you to update the system software over the parallel interface without opening up the printer and installing new PROMs. Updated system software allows you to take advantage of future enhancements to the printer.

Use this procedure for both Windows 95/98 and Windows NT 4.0 systems:

1 **Turn on the PC and the printer.**

2 **Insert the QMS *magicolor* 2 DeskLaser system software disk or CD-ROM in the appropriate disk drive on your PC.**

---

3   **Access the Run... command:**

■   **Windows 95/98**   From the Start menu choose Run...

■   **Windows NT 4.0**   From the Start menu choose Run...

4   **With the printer on line and `Idle`, in the Run dialog box type**

   `x:\copy /b wps.sum lptl↵`

where *x* is the letter of the disk drive in which you inserted the system software disk or CD-ROM.

The downloading process takes less than a minute. During the downloading process, the Disk light blinks, and the messages `New kernel...`, `Erasing flash`, and `Writing flash` appear in the printer's message window.

After the updated system software has been written to flash ROM, the printer reboots (`Booting...`) with the new system image, and returns to `Idle`.

»   **Note:** *As the printer reboots, watch the message window for a message verifying the amount of memory currently installed in the printer and identifying the current version number of the system software (for example, `8 Meg ver 2.01`).*

5   **Remove the disk or CD-ROM from the PC, and store it in a safe place.**

Updating the Printer Drivers

Windows 95/98 Printer Driver

»   **Note:** *If you want to update the Windows NT printer driver, refer to "Windows NT 4.0 Printer Driver" on page 5-14.*

1   **Insert the QMS *magicolor* 2 DeskLaser printer drivers disk or CD-ROM in the appropriate disk drive on your PC.**

2   **From the Windows 95/98 Start menu choose Settings.**

3   **From the Settings menu choose Printers.**

4   **If it's already installed, select the QMS *magicolor* 2 DeskLaser printer driver in the Printers window.**

5   From the File menu choose Delete.

Select Yes when you're asked if you're sure you want to delete the printer.

Select Yes if you're asked if you would like to delete extra files.

6   In the Printers window double-click the Add Printer icon.

The Add Printer Wizard opens.

7   Follow the instructions in the Add Printer Wizard.

8   When you're prompted, select Local Printer to identify how the printer is attached to your PC, and then choose Next.

This is the appropriate choice whether the printer is connected directly to your PC via the parallel port or to a network via the Ethernet port (in which case you'll replace this choice through the QMS Network Print Monitor).

9   When you're prompted to select a manufacturer and printer, choose Have Disk...

10   In the Install From Disk dialog box, choose Browse...

11   Select the appropriate language directory for the Windows 95/98 driver.

OEMSETUP.INF displays in the File Name list.

12   Choose OK to return to the Install from Disk dialog box.

13   Choose OK again.

14   In the displayed list of printers, select the QMS _magicolor_ 2 DeskLaser, and then choose Next.

15   When prompted, select LPT1 as the port to use with the printer, and then choose Next.

If the printer is connected to an Ethernet network, you'll replace LPT1 with QMS Port through the QMS Network Print Monitor.

16   Continue following the instructions in the Add Printer Wizard to complete the installation.

17   When the installation is complete, exit from the Printers window.

18   Remove the disk or CD-ROM from the PC, and store it in a safe place.

Windows NT 4.0 Printer Driver

» **Note:** *If you want to update the Windows 95/98 printer driver, refer to "Windows 95/98 Printer Driver" on page 5-12.*

1   **Insert the QMS *magicolor* 2 DeskLaser printer drivers disk or CD-ROM in the appropriate disk drive on your PC.**

2   **In the Windows NT Start menu choose Settings.**

3   **In the Settings menu choose Printers.**

4   **If it's already installed, select the QMS *magicolor* 2 DeskLaser printer driver in the Printers window.**

5   **From the File menu, choose Delete.**

Select Yes when you're asked if you're sure you want to delete the printer.

Select Yes if you're asked if you would like to delete extra files.

6   **In the Printers window double-click the Add Printer icon.**

The Add Printer Wizard opens.

7   **When prompted, choose My Computer to identify how the printer is attached to your workstation, and then choose Next.**

My Computer means Local Printer. This is the appropriate choice whether you are connecting the printer directly to your computer via the parallel port or to a network via the Ethernet port (in which case you'll replace LPT1 with QMS Port when you install the QMS Network Print Monitor).

8   **When prompted, select the appropriate port to use with the printer, and then choose Next.**

9   **When prompted to select a manufacturer and model of printer, choose Have Disk.**

10   **In the Install from Disk dialog box, choose Browse...**

11   **Select the appropriate language directory for the Windows NT driver.**

OEMSETUP.INF displays in the File Name list box.

12   **Choose OK to return to the Install From disk dialog box.**

13   **Choose OK again.**

14 **In the displayed list of printers, select QMS *magicolor* 2 DeskLaser, and then choose Next.**

15 **If you're replacing an existing Windows NT 4.0 printer driver perform this step; otherwise, go to step 16.**

    a   When prompted, choose Replace Existing Driver, and then choose Next.

    b   When prompted for a printer name, either accept the displayed name or type a new one, and then choose Next.

16 **If you're adding a new Windows NT 4.0 printer driver, perform this step; otherwise, go to step 17.**

    a   When prompted, choose not to replace the existing driver, and then choose Next.

        When you've finished the installation, a second QMS *magicolor* 2 DeskLaser icon, named "Copy 2," is displayed in the Printers window.

    b   When prompted for a printer name, either accept the displayed name or type a new one, and then choose Next.

17 **When prompted for sharing information, choose either Shared or Not Shared, and then choose Next.**

■ **If you chose Not Shared**, skip to step 18.

■ **If you chose Shared**, provide the sharing information.

    a   In the Share Name edit box, type the name of the printer.

        This is the name displayed when your PC is connected to the printer.

    b   **If you're sharing your printer with a Windows NT 4.0 workstation**, choose OK and go to step 18.

        If you're sharing your printer with a Windows 95/98 workstation, in the Alternate Drivers list box, select the Windows 95/98 operating system, and choose OK.

        If the operating system on your PC does not have the QMS *magicolor* 2 DeskLaser printer driver for Windows 95/98, you'll be prompted to install it: Insert the QMS *magicolor* 2 DeskLaser printer driver disk or CD-ROM and choose OK. The required files are copied to the appropriate directory.

18 **When asked if you would like to print a test page, choose either Yes or No, and then choose Finish.**

The Windows NT 4.0 printer driver installs, and then the Windows desktop appears.

19 **Remove the disk or CD-ROM from the PC, and store it in a safe place.**

❖

6

Maintenance

In This Chapter . . .

Introduction

This chapter describes how to handle and clean the QMS *magicolor* 2 DeskLaser.

Blurred or splotchy prints and paper jams can result from dusty printer parts. Regular cleaning takes only a few minutes and helps ensure print quality. Printer parts that require cleaning are the transfer unit, the paper discharger, and the outside surface of the printer.

Handling the Printer

Handle the printer with care to preserve its life. Abuse may cause damage. Keep the following guidelines in mind:

- Don't place anything on the top of the printer.

- Avoid spraying cleaning solution directly on the printer's surface; the spray could penetrate through the air vents of the printer and damage the internal circuits.

- Be careful when cleaning the inside or removing paper jams, as the fixing assembly and other internal parts become very hot. Leave the printer cover open before handling the inside of the printer.

- Don't close the covers abruptly or expose the printer to vibrations.

- Don't cover the printer immediately after using it. Turn it off, and wait until it cools down.

- Don't leave the printer open for any length of time, especially in well-lit places; light may damage the toner cartridge and OPC belt.

- Don't open the printer during printing and do not tap paper stacks on the printer.

- Don't tilt, lubricate, or disassemble the printer.

- Don't touch the electrical contacts, gears, or laser beam devices. Doing so may damage the printer and cause the print quality to deteriorate.

- Keep media in the output tray at minimum level. If the media stacks too high, your printer may experience media jams and excessive media curl.

■ If you have a duplex model, always make sure you have opened the duplexer's rear cover before opening the top of the printer. Forced opening of the top cover first may damage the unit.

■ Lift the printer from the bottom only, using the grips. Make sure two people are available to lift the printer when moving it.

WARNING! *Remember that the media feeders on the bottom of the printer stack are not attached to the printer. Make sure you lift the printer by the carrying grips on the bottom-most unit in the stack. If the top unit is lifted alone, the bottom units could fall off, causing bodily injury or damage to the printer. If you need to lift just the top unit, use the grips and make sure it detaches completely from the cassette below before moving it to the side.*

ACHTUNG! *Bitte beachten Sie, daß die Papierzuführungen unterhalb des Druckers nicht fest mit dem Drucker verbunden sind. Wenn Sie das gasamte Gerät hochheben wollen, greifen Sie deshalb in die Griffmulden der untersten Papierzuführung. Wenn Sie nur den Drucker hochheben, kann es sein, daß die Papierzuführung sich löst und herunterfällt. Dabei können Sie sich verletzen und der Drucker kann beschädigt werden. Deshalb versichern Sie sich, daß die Papierzuführung nicht mehr mit dem Drucker verbunden ist bevor Sie diesen Drucker an einen anderen Platz stellen. Benutzen Sie unbedingt die Griffmulden am Drucker, wenn Sie ihn transportieren wollen.*

■ Keep the following in mind when storing the printer for an extended period:

- Unplug the printer.

» **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

- Remove the toner cartridge from the printer and repack it in its aluminum bag or wrap it in a thick cloth to protect it from direct sunlight and any other bright light.

- See the "Environmental Requirements" section of appendix B, "Technical Specifications," for storage specifications.

Maintenance   **6-3**

Maintenance Schedule

The stated life expectancy of each consumable is based on printing under specific operating conditions, such as media type, number of color planes, page size, and page coverage (usually 5% coverage of letter/A4-size media).

The actual life expectancy will vary depending on these and other printing variables, including continuous or intermittent printing, ambient temperature, and humidity.

» **Note:** *A **plane** is a single pass of the OPC belt (one toner color). For example, a one-color print job makes one pass (one plane), and a two-color print job makes two passes (two planes). A single-sided (simplex) **page** (also called a **face**) usually consists of four passes of the OPC belt, since most color print jobs use all four toner colors. A 2-sided (duplex) page usually consists of eight passes of the OPC belt, since most color print jobs use all four toner colors.*

Consumable life is expressed in simplex pages (1 face). A duplex page (2 faces) is the equivalent of two simplex pages.

Cleaning Schedule

Every 20,000 single-sided pages, a thorough cleaning should be performed by the user.

This item needs cleaning...	After...	By...
Corona wire (also known as the OPC charge wire)	Every 20,000 pages or 12 months (whichever comes earlier.)	User See step 7 in "Cleaning the OPC Belt Cartridge" on page 6-16.
If you have the duplex model, the duplex unit paper guides	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Cleaning the Duplexer" on page 6-24.
If you have the duplex model, the duplex unit roller	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Cleaning the Duplexer" on page 6-24.
Laser lens	Only when you find vertical white or light-colored streaking in all primary colors on your printouts.	User See "Cleaning the Laser Lens" on page 6-21.

This item needs cleaning...	After...	By...
OPC belt cartridge	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Cleaning the OPC Belt Cartridge" on page 6-16.
Paper discharger	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Cleaning the Transfer Unit" on page 6-9.
Paper exit rollers (also known as paper guides)	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Cleaning the Paper Exit Rollers" on page 6-14.
Printer exterior	As needed	User See "Cleaning the Exterior of The Printer" on page 6-30.
Printer interior	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Guidelines for Cleaning Inside the Printer" on page 6-9.
Registration roller	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Cleaning the Transfer Unit" on page 6-9.
Transfer roller	Every 20,000 pages, or 12 months, whichever comes earlier.	User See "Cleaning the Transfer Unit" on page 6-9.

Preventive Maintenance Schedule

This item needs preventive maintenance...	After...	By...
Printer—20,000-page preventive maintenance	20,000 pages.	User See the standard "Cleaning Schedule" on page 6-4.
Printer—60,000-page preventive maintenance	60,000 pages.	QMS National Service or a QMS-authorized service provider
Printer—120,000-page preventive maintenance	`Replace 120K kit` displays in the message window (after 120,000 pages).	QMS National Service or a QMS-authorized service provider

Replacement Schedule

By the User

This item needs replacing...	After...	For More Information...
Belt cartridge (with charger unit)	50,000 planes or 12 months, whichever comes earlier.	See "Replacing the OPC Belt Cartridge" on page 6-35.
Cleaning roller	`Check fuser cleaning rol[l]er` or `Replace cleaning Roller` displays in the message window (after 12,000 pages at 5% coverage of each color).	See "Replacing the Fuser Oil Bottle and Cleaning Roller" on page 6-31.
Fuser cleaning roller	12,000 pages.	See "Replacing the Fuser Oil Bottle and Cleaning Roller" on page 6-31.
Fuser oil bottle	`Check fuser oil & cleaning rol[l]er` displays in the message window (after approximately 12,000 pages; however, fuser oil bottle life is media dependent—coarser paper requires more oil).	See "Replacing the Fuser Oil Bottle and Cleaning Roller" on page 6-31.
OPC belt cartridge	`Replace OPC` displays in the message window (maximum life—50,000 planes, usually occurs with continuous use; minimum life—20,000 planes, usually occurs with intermittent use although other factors also affect cartridge life).	See "Replacing the OPC Belt Cartridge" on page 6-35.
Ozone filter	60,000 planes or every 12 months, whichever comes earlier.	See "Replacing the Ozone Filter" on page 6-39.

Toner	10,000 pages—black; after 6,000 pages—yellow, magenta, cyan @ 5% coverage of each color.	See "Replacing a Toner Cartridge" on page 3-21.
Waste toner pack	`Check waste Toner` displays in the message window (after 12,000 pages— or 24,000 planes—at 5% coverage of each color).	See "Replacing the Waste Toner Pack" on page 6-40.

By QMS National Service

This item needs replacing...	After...	By...
Drum assembly	120,000 pages	QMS National Service or a QMS-authorized service provider
Fuser unit	`Replace fuser` displays in the message window (after 60,000 pages maximum at an equal mix of black and 4-color pages, all with 5% coverage of each color)	
Paper discharger	120,000 pages at 5% coverage of each toner color.	
Transfer roller	120,000 pages at 5% coverage of each toner color.	

Cleaning the Printer

To prevent any potential problems associated with paper dust accumulating inside the printer, you should clean both the inside and the outside of the printer on a regular basis.

☙ **WARNING!** *Turn off the printer, unplug the power cord, and disconnect all interface cables before cleaning.*

ACHTUNG! *Ziehen Sie den Netzstecker aus der Steckdose bevor Sie den Drucker reinigen.*

Guidelines for Cleaning Inside the Printer

■ Either clean the printer before use, or allow a few minutes after unplugging it to allow the fusing unit to cool down.

■ Turn off the printer, unplug the power cord, and disconnect all interface cables before cleaning inside the printer.

■ Read all caution and warning labels carefully, making sure to follow any instructions contained in them. These labels are located on the inside of the printer's covers and the interior of the printer body.

■ Use only dry, lint-free cotton cloths or swabs.

■ Make sure any parts removed during cleaning are replaced before you plug in the power cord, reconnect the interface cables, and turn on the printer.

» **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

Cleaning the Transfer Unit

» **Note:** *A dry cotton cloth and dry cotton swab are required for this procedure.*

These items in the transfer unit require cleaning:

■ Registration rollers

■ Transfer roller

■ Paper discharger

Maintenance **6-9**

1 **Turn off and unplug the printer.**

2 **If you have a duplex model, open the duplexer's rear cover.**

If not, skip to step 4.
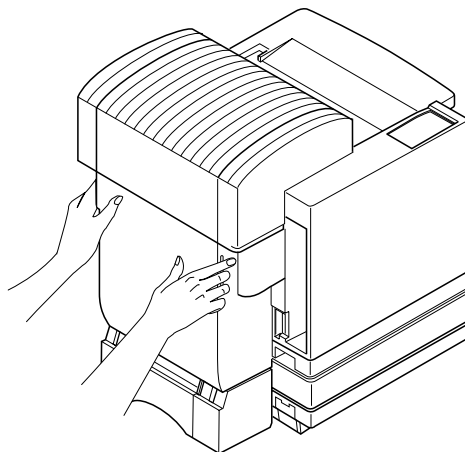
3 **Reach into the duplexer's rear cover to access the printer's rear cover.**
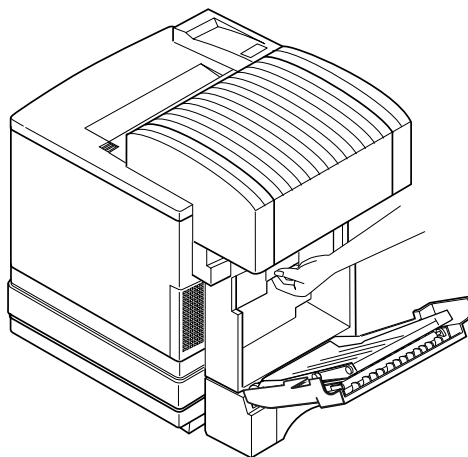
4   **Open the printer's rear cover.**

»   **Note:** *The illustrations for steps 4 through 8 show the printer without the duplexer. However, the instructions are the same for both models.*
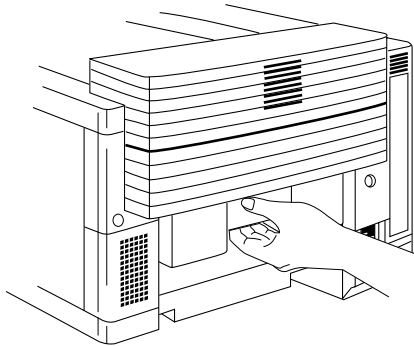
5   **Using a dry cotton cloth, clean any paper dust and toner buildup from the registration rollers.**

You can manually rotate the rollers while cleaning them by turning the white gear on the left end of the roller shaft.

White Gear

Registration
Rollers

Maintenance   **6-11**
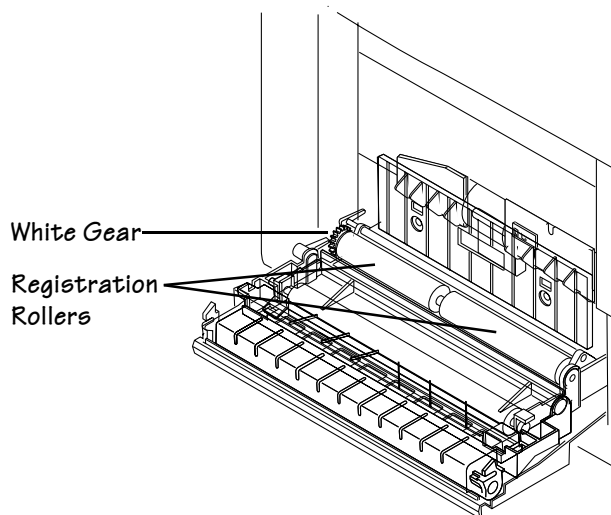
6   Clean the transfer roller.

a   Remove the transfer roller unit by lifting the lock lever at the right end of the transfer roller unit until the unit is freed, and then lifting the unit out.

b   *Because you cannot see when the unit is released, it's best to lift the unit and the lock lever at the same time.* Using a dry cotton cloth, clean any paper dust and toner buildup from the transfer roller.

»   **Note:** *Manually rotate the roller while cleaning it.*

c   Reinstall the transfer roller in the transfer unit.
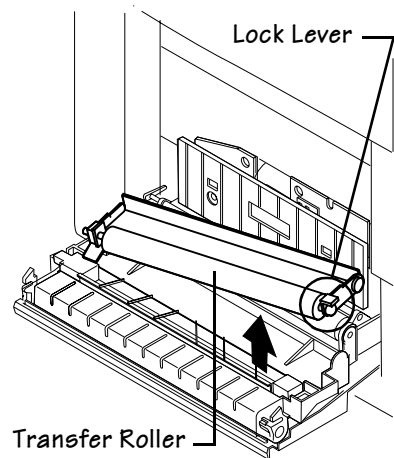
7   Clean the paper discharger.

a   Remove the paper discharger by pushing it to the right and then lifting it up and out of the transfer unit. (It comes out after the tabs on the charger have cleared their retainers.)

b   Using a dry cotton cloth, clean any paper dust and toner buildup from the outside of the paper discharger.

c   Using a dry cotton swab, clean any paper dust and toner buildup from the interior of the paper discharger.

d   Using a dry cotton swab, clean the paper discharger wire.
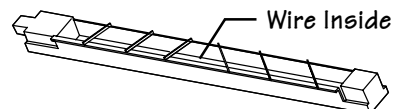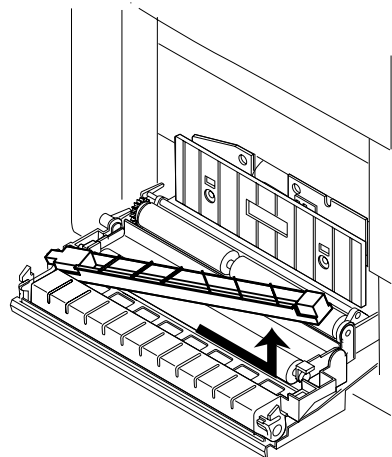
e   Reinstall the paper discharger in the transfer unit, and then push it down and to the left to lock it in place.

8   Clean any paper dust and toner buildup found on the transfer unit itself.
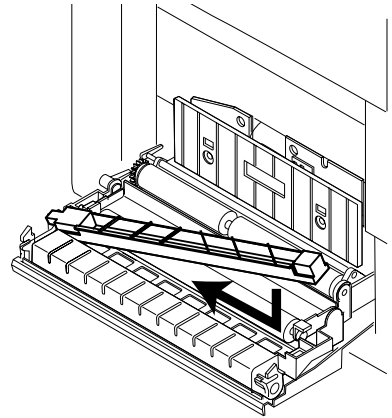
9   Close the printer's rear cover.

10 If you have a duplex model, close the duplexer's rear cover.

11 Plug in the printer, and turn it on.

»   **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

Maintenance   **6-13**

Cleaning the Paper Exit Rollers

» **Note:** *A dry cotton cloth is required for this procedure.*

1 **Turn off and unplug the printer.**

2 **If you have a duplex model, open the duplexer's rear cover.**

If not, skip to step 3.
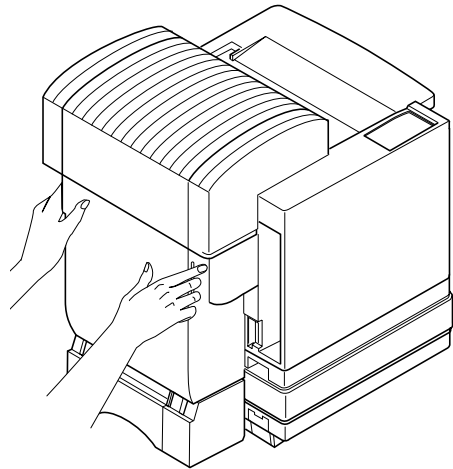
3 **Pull the latch to release the top cover, and then open the cover.**

◆ **Caution:** *If you have a duplex model, make sure you have opened the duplexer's rear cover first. Forced opening of the top cover first may damage the unit.*

» **Note:** *The illustrations for step 3 and step 4 show the printer without the duplexer. However, the instructions are the same for both models.*
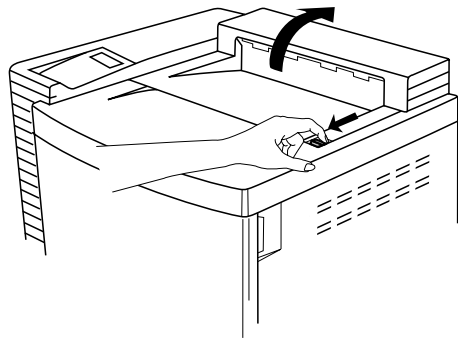
4   **Using a dry cotton cloth, clean the paper exit rollers.**

While manually rotating each paper exit roller, clean each roller.
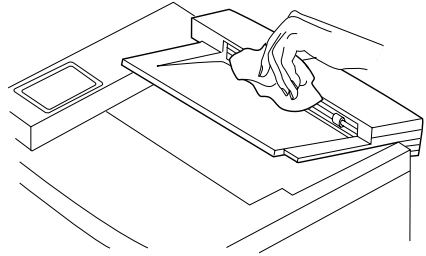
5   **Close the printer's top cover.**

6   **If you have a duplex model, close the duplexer's rear cover.**

7   **Plug in the printer, and turn it on.**

»   **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

Cleaning the OPC Belt Cartridge

◆ **Caution:** *The OPC belt is extremely sensitive to bright light and direct sunlight. Always leave it in its protective bag until you are ready to install it. Any exposure to light should be limited to less than two minutes, or permanent damage could result. If you suspect the belt is damaged due to exposure to light, put the belt in a dark place to recover. Depending on the amount of exposure, recovery may take up to two hours. Recovery time is dependent on the amount of exposure sustained. Recovery is not guaranteed.*

The OPC belt is also extremely sensitive to touch. Always handle the cartridge so you don't touch the surface of the belt. Any body oil left on the surface of the belt will prevent toner from adhering to the belt which results in poor image quality. Also, keep the cartridge away from anything that may scratch the surface of the belt. Any scratches will show in the image produced.

» **Note:** *A dry cotton cloth is required for this procedure.*

1 **Turn off and unplug the printer.**

2 **If you have a duplex model, open the duplexer's rear cover.**

If not, skip to step 3.
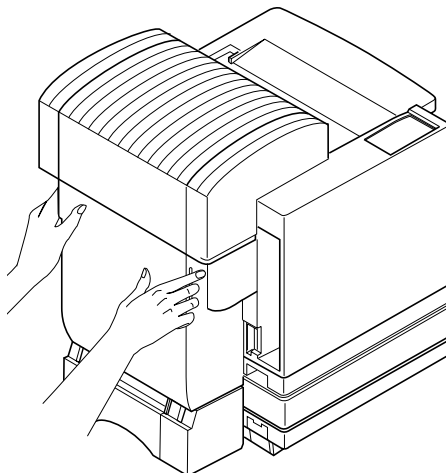
3 **Open the printer's front cover.**

Squeeze the latch near the upper-right corner of the cover.

◆ **Caution:** *This is necessary, as it pulls the toner cartridges forward slightly to make room for the OPC belt cartridge. You could damage the OPC belt if you don't do this.*

» **Note:** *The illustrations for steps 3 through 16 show the printer without the duplexer. However, the instructions are the same for both models.*

4 **Pull the latch to release the top cover, and then open the top cover.**

◆ **Caution:** *If you have a duplex model, make sure you have opened the duplexer's rear cover first. Forced opening of the top cover first may damage the unit.*
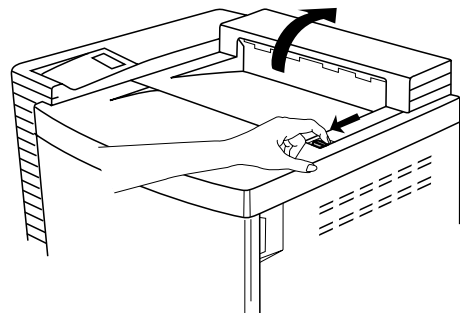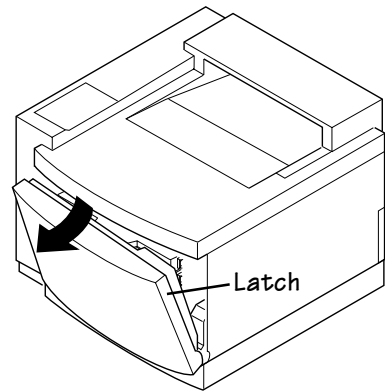
5 **Release the OPC belt cartridge lock levers (one on each side of the OPC belt cartridge opening).**

» **Note:** *The white powder lubricant on a OPC belt is normal; it won't affect quality.*

Maintenance 6-17
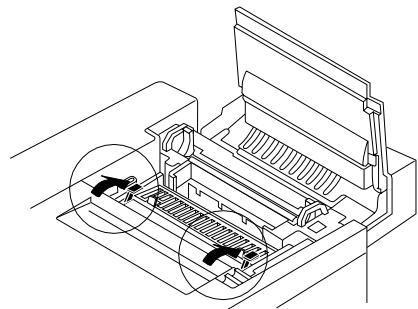
6 **Remove the OPC belt cartridge.**

◆ **Caution**: *Handle the cartridge carefully. The belt is very sensitive to hand oils and scratches, both of which reduce print quality.*
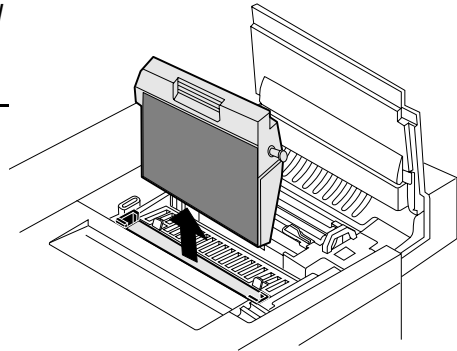
7 **Using a dry cotton cloth, clean any toner buildup from around the cleaning blade.**

◆ **Caution**: *Don't touch the edge of the cleaning blade or the OPC belt itself.*

Cleaning Blade

Don't touch here.
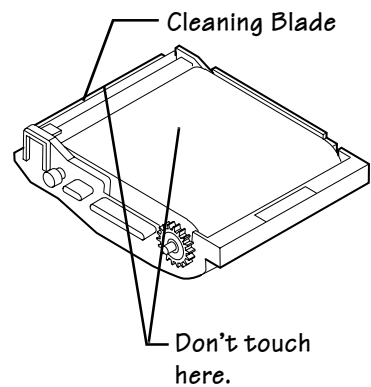
8 **Clean any paper dust and toner buildup found on the OPC cartridge.**

9   **Remove the corona wire cleaning brush from inside the front of the printer.**
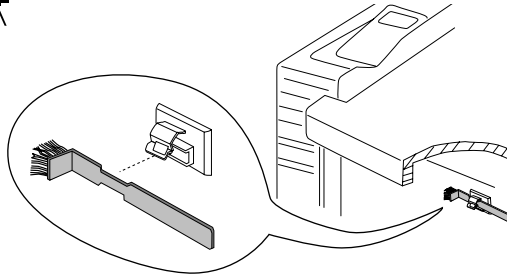
10   **Turn the OPC belt cartridge so that the handle is facing away from you.**

11   **Use the brush to clean the corona wire inside the end of the OPC belt cartridge.**

◆   **Caution:** *The corona wire is very delicate. Do not press hard on the wire.*
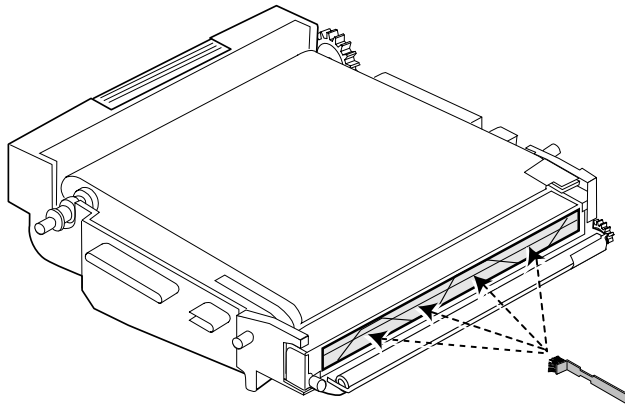
12   **Return the corona wire cleaning brush to its holder.**

13 Holding the cartridge above the printer, align the guide pins on the cartridge with the guide slots in the lock levers.

The white gear on the cartridge goes to the right, and the green surface of the cartridge faces you.
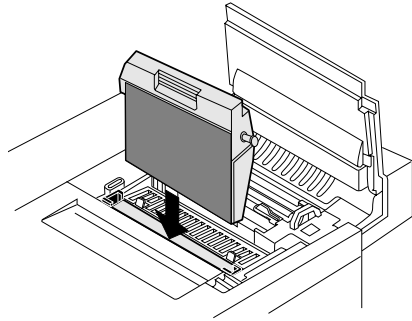
14 Gently guide the cartridge into the printer.

◆ **Caution:** *The cartridge should slide easily into the printer. Don't force it.*

15 Rotate the two lock levers to secure the OPC belt cartridge in the printer.

16 Close the printer's front and top covers.

17 If you have a duplex model, close the duplexer's rear cover.

18 Plug in the printer, and turn it on.

» **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*
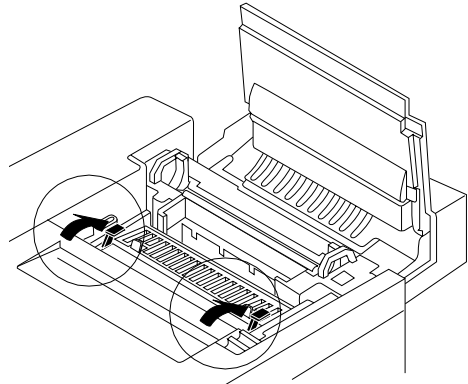
Cleaning the Laser Lens

It's necessary to clean the laser lens only when you find vertical white or light-color streaking in all primary colors on your printouts.

» **Note:** *A dry cotton cloth and a clean piece of paper are required for this procedure.*

1   **Turn off and unplug the printer.**

2   **If you have a duplex model, open the duplexer's rear cover.**

   If not, skip to step 3.

◆   **Caution:** *If you have a duplex model, make sure you have opened the duplexer's rear cover before opening the printer's top cover. Forced opening of the top cover first may damage the unit.*
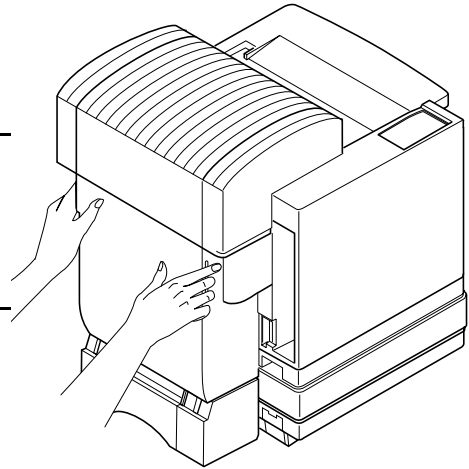
3   **Open the printer's front cover.**

   Squeeze the latch near the upper-right corner of the cover.

◆   **Caution:** *This is necessary, as it pulls the toner cartridges forward slightly to make room for the OPC belt cartridge. You could damage the OPC belt if you don't do this.*
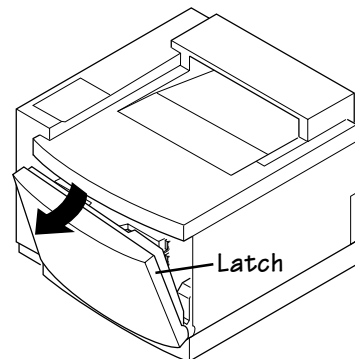
» **Note:** *The illustrations for steps 3 through 8 show the printer without the duplexer. However, the instructions are the same for both models.*

4   **Remove the four toner cartridges.**

5   **Open the printer's top cover.**

6   **Remove the OPC belt cartridge.**

◆   **Caution:** *The OPC belt is extremely sensitive to bright light and direct sunlight. Always leave it in its protective bag until you are ready to install it. Any exposure to light should be limited to less than two minutes, or permanent damage could result. If you suspect the belt is damaged due to exposure to light, put the belt in a dark place to recover. Depending on the amount of exposure, recovery may take up to two hours. Recovery time is dependent on the amount of exposure sustained. Recovery is not guaranteed.*

The OPC belt is also extremely sensitive to touch. Always handle the cartridge so you don't touch the surface of the belt. Any body oil left on the surface of the belt will prevent toner from adhering to the belt which results in poor image quality. Also, keep the cartridge away from anything that may scratch the surface of the belt. Any scratches will show in the image produced.

---

7   **Place the OPC belt cartridge on a clean surface with the black side down.**

8   **Place a clean piece of paper over the OPC belt to prevent damage from exposure to light.**

9   **Remove the laser lens.**

Carefully lift out at a 45° angle using the two tabs on top of the lens.

10 **Using a dry cotton cloth, wipe the lens.**

11 **Reinstall the laser lens.**

Slide the lens in at a 45° angle and snap it in place.

12 **Remove the clean piece of paper.**

13 **Replace the OPC belt cartridge into the printer.**
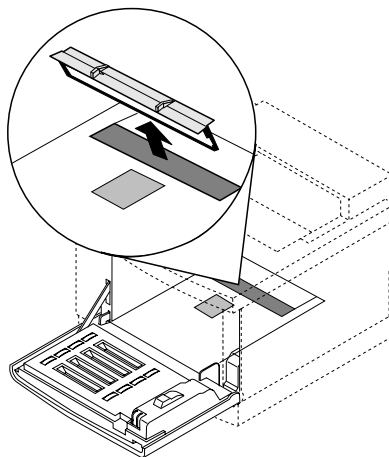
14 **Reinstall the OPC belt cartridge.**

15 **Rotate the two lock levers to secure the OPC belt cartridge in the printer.**

16 **Reinstall the four toner cartridges.**
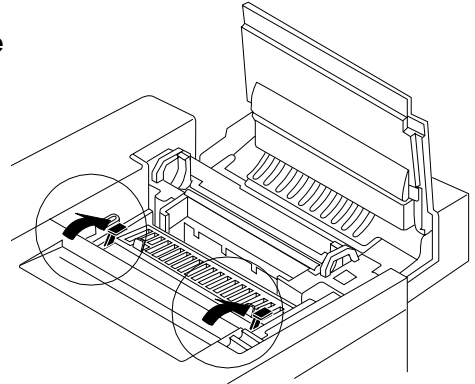
17 **Close the printer's front and top covers.**

18 **If you have a duplex model, close the duplexer's rear cover.**

19 **Plug in the printer, and turn it on.**

» **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

Cleaning the Duplexer

If you have a duplex model, you should clean the inside of the duplexer on a regular basis.

» **Note:** *A dry cotton cloth is required for this procedure.*

1   If you have a duplex model, follow steps 2 through 14.

If not, skip to "Cleaning the Paper Exit Rollers" on page 6-14.

2   Turn off and unplug the printer.

3   Open the duplexer's rear cover.

Do not open the printer's rear cover.
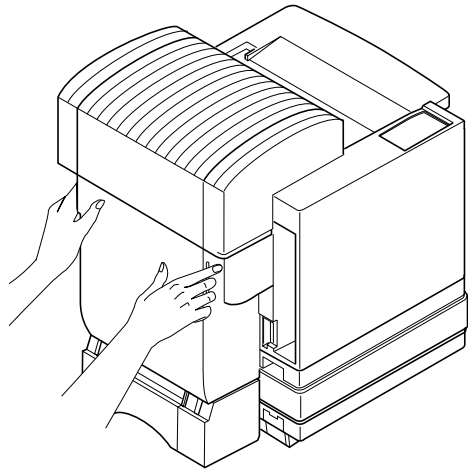
4 **Clean the duplexer with a dry cotton cloth.**
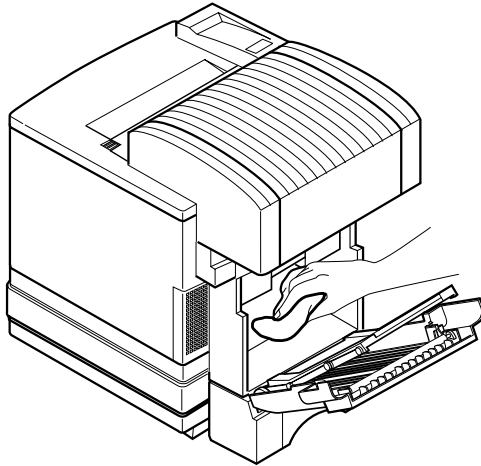
5 **Tilt the paper path toward the inside of the printer.**

◆ **Caution:** *Hold the paper path unit by its corners to avoid the unit catching your fingers between it and the cover.*

Maintenance **6-25**

6 **Clean the registration rollers with a dry cotton cloth.**
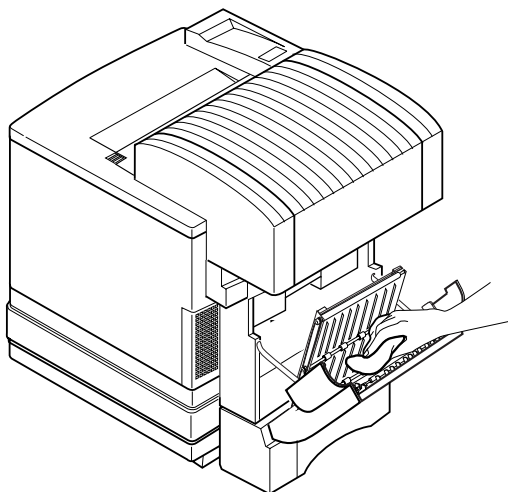
7 **Remove the duplexer's lower rear assembly.**
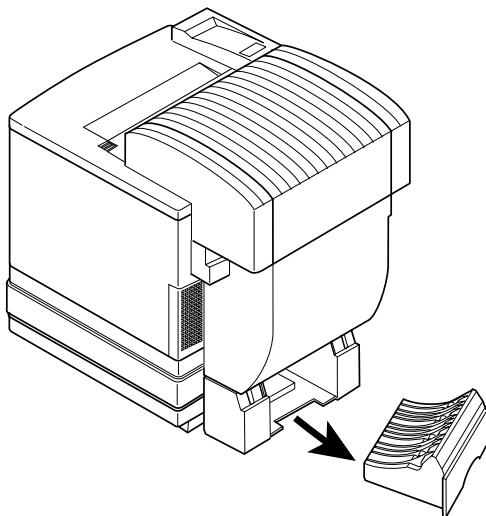
8 **Clean the registration rollers with a dry cotton cloth.**

9 Reach underneath the printer and clean with a dry cotton cloth.
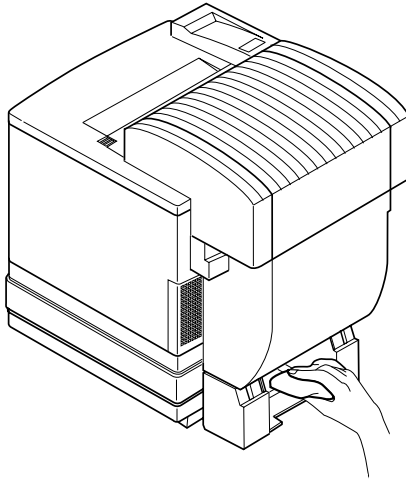
10 Reinsert the duplexer's lower rear assembly.
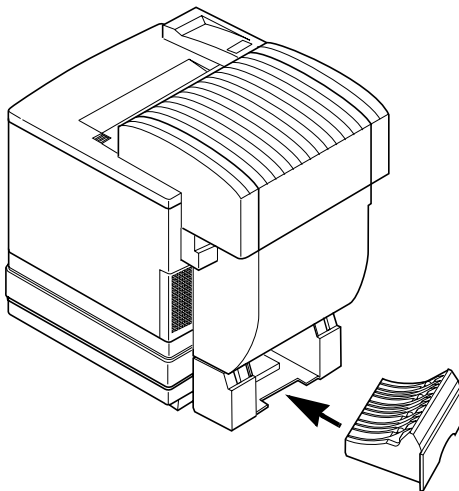
11 Open the duplexer's top cover.

» **Note:** *Use two hands to open the duplexer's top cover to avoid twisting its hinge.*
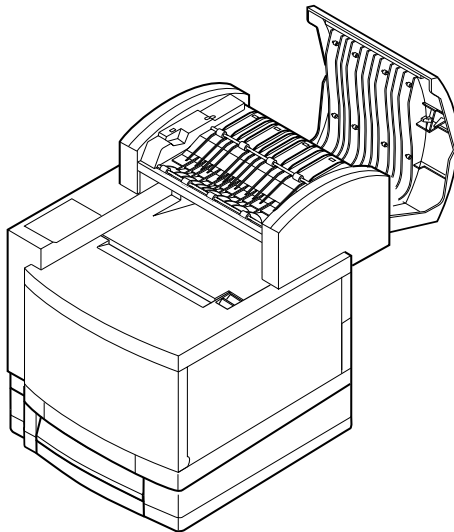
12 **Clean the registration rollers with a dry cotton cloth.**

While manually rotating each paper exit roller, clean each roller.

13 **Close the duplexer's top cover.**

» **Note:** *Even though this is the section about cleaning the duplexer, do not forget to clean the printer's paper exit rollers, too.*

14 Pull the latch to release the top cover, and then open the cover.

» **Note:** *The illustrations for steps 14 and 15 show the printer without the duplexer. However, the instructions are the same for both models.*
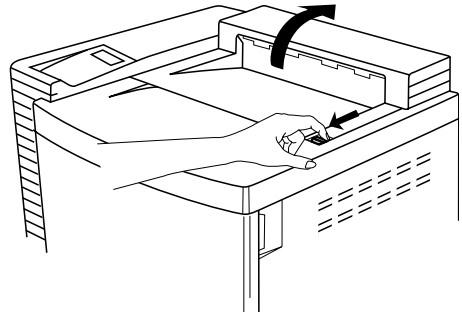
◆ **Caution:** *If you have a duplex model, make sure you have opened the duplexer's rear cover first. Forced opening of the top cover first may damage the unit.*

15 Using a dry cotton cloth, clean the paper exit rollers.

While manually rotating each paper exit roller, clean each roller.
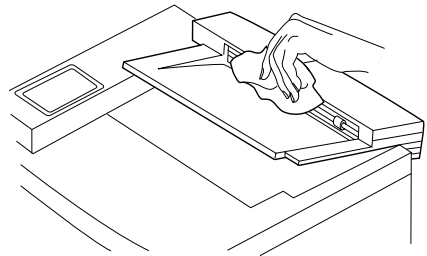
16 Clean the registration rollers with a dry cotton cloth.

17 Close the printer's top cover.

18 If you have a duplex model, close the duplexer's rear cover.

19 Plug the printer in and turn it on.

» **Note:** *In compliance with UL guidelines: The appliance inlet is considered to be the main disconnect device.*

Maintenance 6-29

Cleaning the Exterior of The Printer

> ☀ **WARNING!** *Turn off the printer, unplug the power cord, and disconnect all interface cables before cleaning. Do not spill water or detergent into the printer; otherwise the printer will be damaged and an electric shock may occur.*
>
> **ACHTUNG!** *Ziehen Sie den Netzstecker aus der Steckdose bevor Sie den Drucker reinigen. Verschütten Sie kein Wasser oder andere Flüssigkeiten auf dem Drucker, da das Gerät sonst beschädigt wird oder die Gefahr eines elektrischen Schlages besteht.*

To protect your printer and maintain its appearance, clean the exterior regularly. Use the following guidelines:

■ Use only a dry or slightly damp, lint-free, soft cloth moistened only with water or mild detergent.

■ Never use cleaning solutions that contain solvents, such as alcohol and benzene. Solvents may damage the printer's finish.

■ Always test any cleaning solution on a small area of your printer to check the solution's performance.

■ Never use sharp or rough implements, such as wire or plastic cleaning pads.

■ Never spray a cleaning solution directly on the printer as the cleaning solution will penetrate to the interior of the printer and cause damage.

Replacing the Fuser Oil Bottle and Cleaning Roller 🎥

◆ **Caution:** *The fuser unit is an integral part of the imaging process and is also expensive to replace. Fuser life will be shortened (or the fuser permanently damaged) if the oil bottle and cleaning roller are not changed when needed and installed properly. This type of damage is not covered under warranty or service contract.*

💣 **WARNING!** *The fuser unit can become extremely hot and cause severe burns. Make sure the unit is cool before handling it.*

ACHTUNG! *Die Fixiereinheit kann sehr heiß werden, so daß Verbrennungsgefahr besteht. Bitte lassen Sie die Fixiereinheit einige Zeit abkühlen, bevor Sie diese berühren.*

1   **Turn off and unplug the printer.**

2   **If you have a duplex model, open the duplexer's rear cover.**

    If not, skip to step 3.

◆   **Caution:** *If you have a duplex model, make sure you have opened the duplexer's rear cover first. Forced opening of the top cover first may damage the unit.*
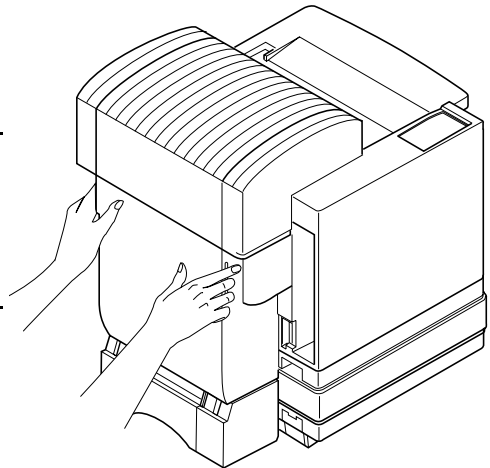
3 **Pull the latch to release the top
cover, and then open the top
cover.**

» **Note:** *The illustrations for step 3
through step 9 shows the printer
without the duplexer. However, the
instructions are the same for both
models.*
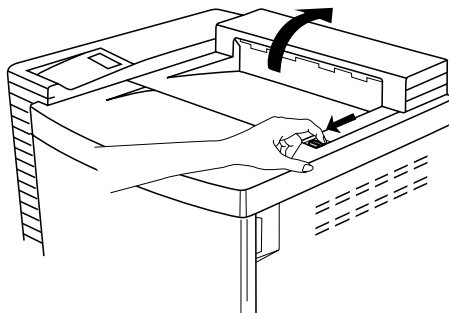
4 **Open the two cleaning roller lock
levers.**
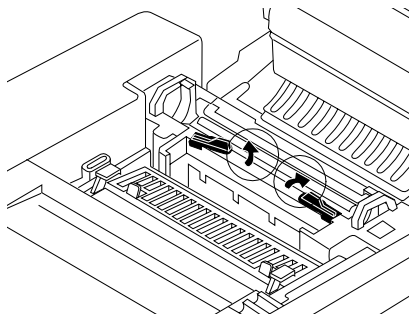
5 **Remove the old oil bottle.**

◆ **Caution:** *Hold a sheet of paper under
the oil bottle while removing it, so oil
doesn't drip into the printer.*
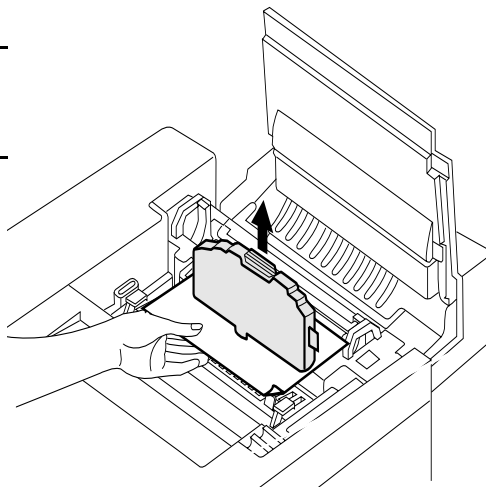
6 **Remove the old cleaning roller.**
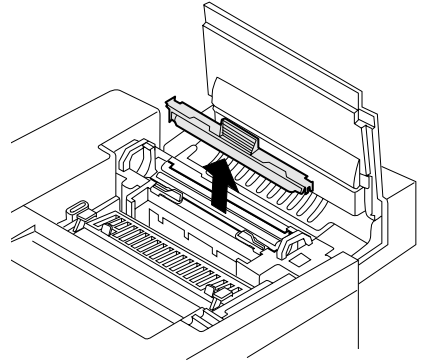
7 **Lower the new oil bottle into its slot.**

The tab on the side of the bottle must
be on the right.

Tab
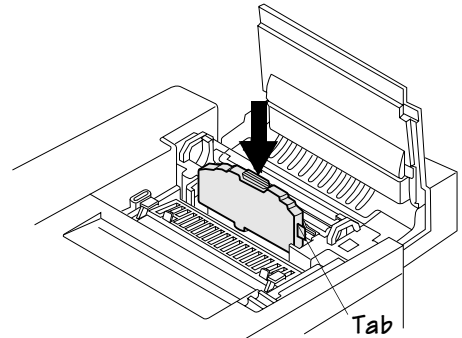
8 **Install the cleaning roller in its slot.**

The tab on the top of the cleaning roller
must be on the left.

Tab
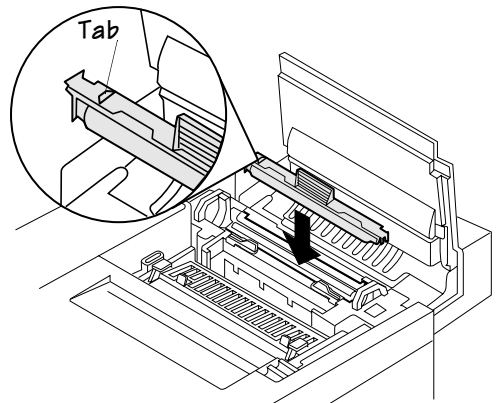
9 **Close the two lock levers.**

10 **Close the printer's top cover.**

11 **If you have a duplex model, close the
duplexer's rear cover.**

12 **Plug in the printer, and turn it on.**

» **Note:** *In compliance with UL guidelines,
"The appliance inlet is considered to be
the main disconnect device."*

**13** **Use the Service/Clear Care menu to
remove the `Replace cleaning
Roller` message.**

Replacing the OPC Belt Cartridge 🎥

◆ **Caution**: *The OPC belt is extremely sensitive to bright light and direct sunlight. Always leave it in its protective bag until you are ready to install it. Any exposure to light should be limited to less than two minutes, or permanent damage could result. If you suspect the belt is damaged due to exposure to light, put the belt in a dark place to recover. Depending on the amount of exposure, recovery may take up to two hours. Recovery time is dependent on the amount of exposure sustained. Recovery is not guaranteed.*

The OPC belt is also extremely sensitive to touch. Always handle the cartridge so you don't touch the surface of the belt. Any body oil left on the surface of the belt will prevent toner from adhering to the belt which results in poor image quality. Also, keep the cartridge away from anything that may scratch the surface of the belt. Any scratches will show in the image produced.

1   Turn off and unplug the printer.

2   If you have a duplex model, open the duplexer's rear cover.

If not, skip to step 3.

Maintenance   **6-35**
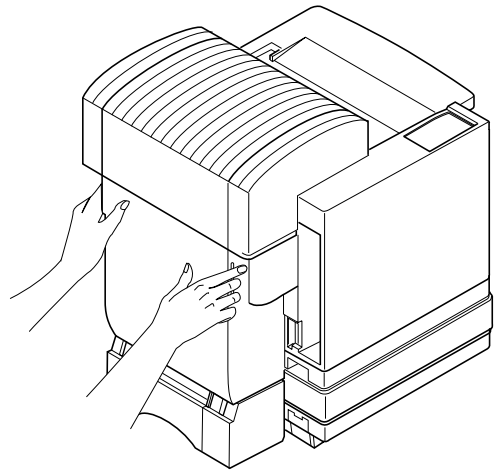
3 **Open the printer's front cover.**

Squeeze the latch near the upper-right corner of the cover.

◆ **Caution:** *This is necessary, as it pulls the toner cartridges forward slightly to make room for the OPC belt cartridge. You could damage the OPC belt if you don't do this.*

» **Note:** *The illustrations for steps 3 through 11 show the printer without the duplexer. However, the instructions are the same for both models.*

4 **Pull the latch to release the top cover, and then open the top cover.**

◆ **Caution:** *If you have a duplex model, make sure you have opened the duplexer's rear cover first. Forced opening of the top cover first may damage the unit.*
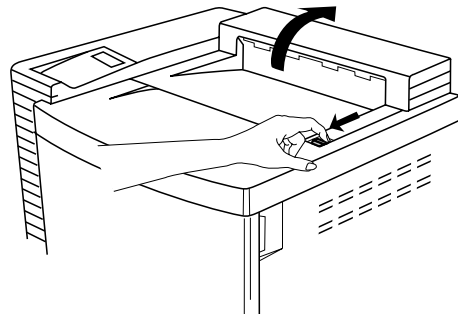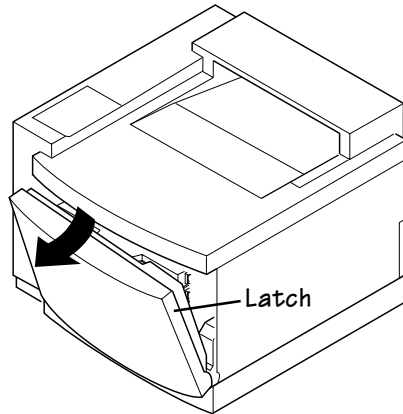
5 **Rotate up the two lock levers (one on each side of the OPC belt cartridge) to release the cartridge.**
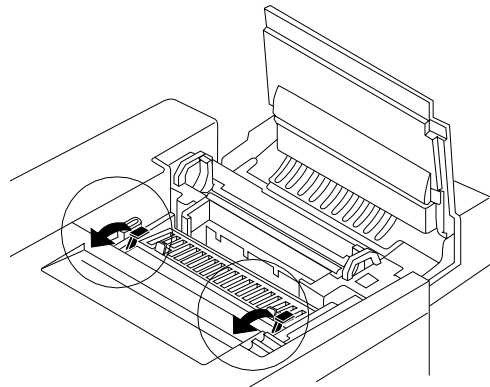
6 **Pull the cartridge straight up and out
of the printer, and then discard it.**
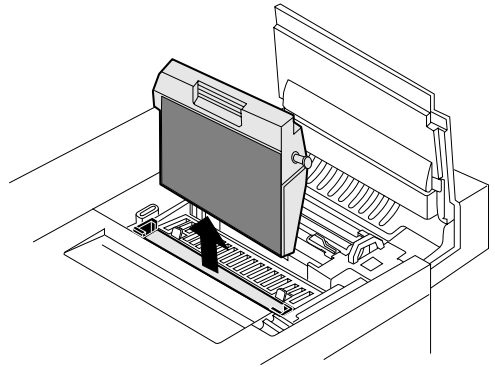
7 **Remove the protective sheet from
the new cartridge, and then pull out
the two tension-release pins (one on
each side of the cartridge).**

◆ **Caution**: *Don't touch the green
material on the cartridge. It scratches
easily.*

» **Note:** *The white powder lubricant on a
new OPC belt is normal; it won't affect
quality.*

8 **Holding the cartridge above the
printer, align the guide pins on the
cartridge with the guide slots in the
lock levers.**

The white gear on the cartridge goes to
the right.

9 **Gently guide the cartridge into the
printer.**

◆ **Caution:** *The cartridge should slide
easily into the printer. Don't force it.*

Maintenance 6-37
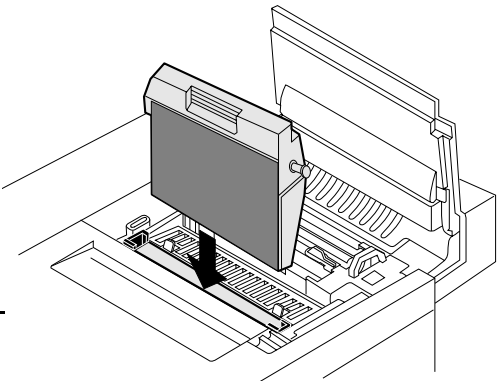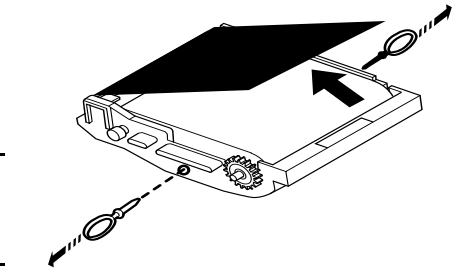
10 **Rotate the two lock levers to secure the OPC belt cartridge in the printer.**

11 **Close the printer's front and top covers.**

12 **If you have a duplex model, close the duplexer's rear cover.**

13 **Plug in the printer, and turn it on.**

» **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

14 **Use the Service/Clear Care menu to remove the** `Replace belt` **message.**
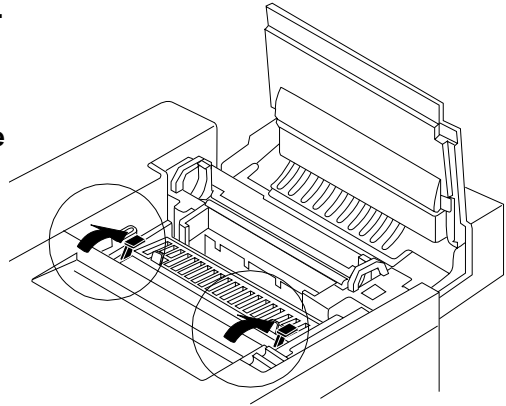
Replacing the Ozone Filter 🎥

The ozone filter reduces exhausted ozone gas.

1   Remove the ozone filter case on the left rear of the printer.

On the Duplex Model, use the plastic ridge on the right of its case to pry the ozone filter case away from the printer.

DeskLaser   **Duplex Model**

Ozone Filter Case

Ozone Filter

Ozone Filter Case   Plastic Ridge
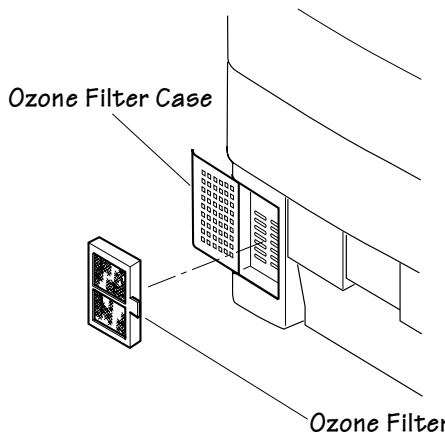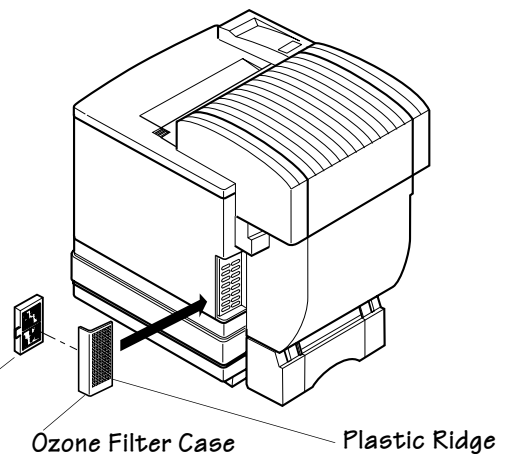
2   Remove the ozone filter from the case.

3   Install a new ozone filter in the case.

4   Reinstall the ozone filter case.

5   Discard the old ozone filter.

Maintenance   **6-39**

Replacing the Waste Toner Pack 🎥

The waste toner pack collects the waste toner from the printing process so you can conveniently dispose of it.

1   Open the printer's front cover.

»   **Note:** *This illustration shows the printer
       without the duplexer. However, the
       waste toner pack instructions are the
       same for both models.*

2   Remove the waste toner pack.
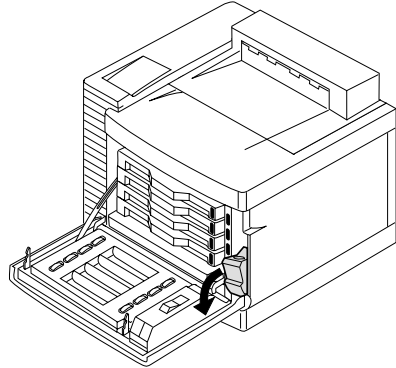
**3   Use the label on the side of the old
       waste toner pack to seal the open-
       ing, and then dispose of the pack in
       accordance with safety laws and
       regulations in your area.**

Seal this opening.
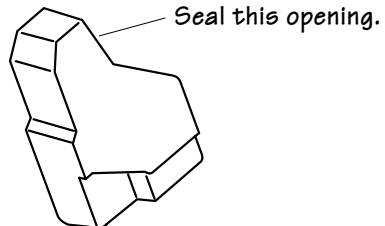
4   Insert the new waste toner pack.

5   Close the printer's front cover.

6   Check the status message in the message window.

If the message window displays `Check waste Toner`, use the Service/Clear
Care menu to remove the message.

❖

7

Media Jams

In This Chapter . . .

Introduction

This chapter explains how to prevent media jam and then provides detailed information on how to find and remove media jams.

Preventing Media Jams

There are several things you can do to reduce the occurrence of media jams.

- Use media that matches the printer specifications.

- Make sure the media is not folded, wrinkled, or excessively curled.

- Do not overfill the media cassette. The cassette has a fill-limit mark on the inside left side.

» **Note:** *Ensure that the media in the cassette is flat, especially on the leading edge.*

- If you have problems with double feeding, remove the media from the cassette and fan the sheets. They may be sticking together.

» **Note:** *Do not fan transparencies since this causes static.*

- Remove transparencies from the output tray immediately to avoid static buildup.

- Do not allow the output tray to overfill.

» **Note:** *The face-down output tray has a 250-sheet capacity. Jamming may occur if you allow media to accumulate more than 250 sheets at a time.*

- Store media in a dry location away from moisture and humidity.

- Make sure you've loaded the media printing-side up. Many manufacturers place an arrow on the end of the wrapper to indicate the printing side. If you can't determine which side of the media to print on, remove the media from the cassette, rotate the stack a half-turn, turn the stack over, and then place it back in the cassette.

- Ensure that you have the correct media type selected if you're printing on envelopes, glossy stock, labels, thick stock, transfer media, or transparencies.

- Ensure that the printer is on a hard, flat, level surface.

- Ensure that the cassette only contains one type of media at a time.

Understanding the Media Path

DeskLaser

Understanding the printer's media path will help you locate media jams. The media cassette is located at the bottom front of the printer. The media is picked from the cassette, passed under the transfer drum, passed through the fuser, and delivered via the paper exit unit to the media exit tray, which is the top of the printer. Access to the media path, in case of a media jam is through the printer's rear cover.

Exit Roller

Output Tray

Fuser Unit
Fuser
Rollers

K

Y

M

C

Transfer
Drum

Rear

Front

Pickup
Rollers

Media Cassette

Side View

Duplex Model

Understanding the printer's media path will help you locate media jams. The media cassette is located at the bottom front of the printer. The media is picked from the cassette (shown as the number 1 on the diagram), passed under the transfer drum, passed through the fuser, momentarily emerges from the paper exit (2), reenters the duplexer (3), cycles through the transfer drum and fuser again (4), and is delivered via the paper exit unit to the output tray, which is the top of the printer (5). Access to the media path, in case of a media jam is through the duplexer's and the printer's covers.
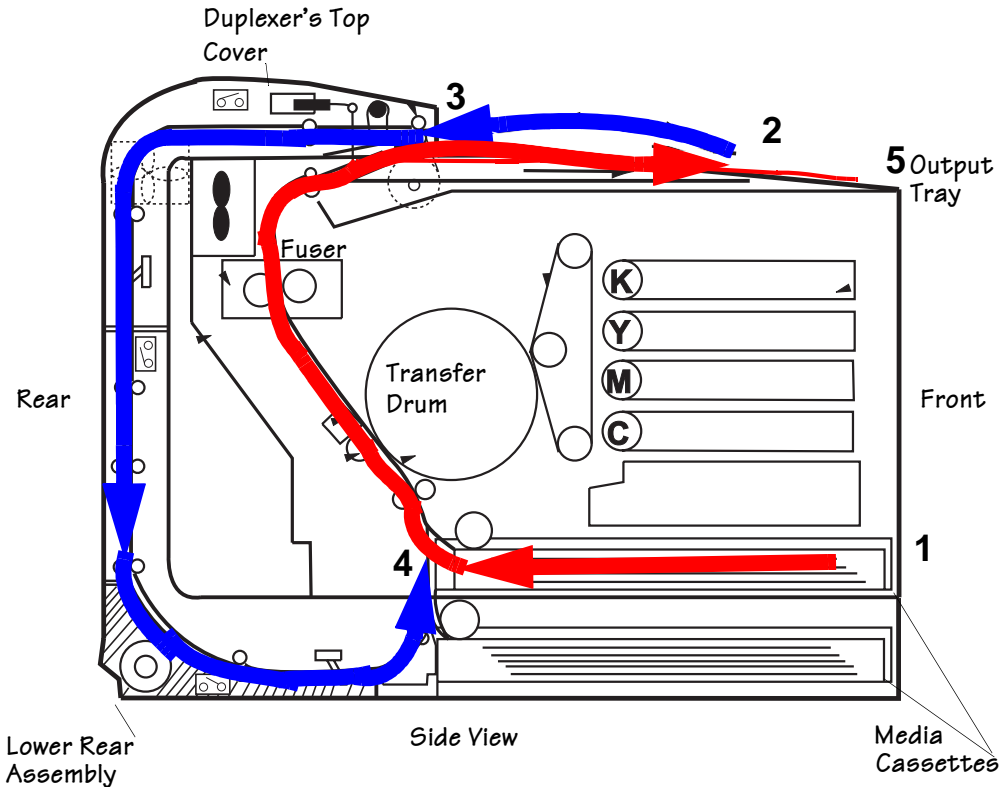
» **Note:** *Since several sheets are cycling through the printer/duplexer at the same time, it only appears as if the back side of a duplexed sheet emerges instantly from the duplexer. If you experience a media jam, be sure to check which sheets have printed.*

Understanding Media Jam Status Messages

When a jam occurs, the message window on the control panel displays one of several messages: `Misfeed Jam, Inner Jam, Drum Jam, Outer Jam` or `Lower Duplex Jam` or `Upper Duplex Jam`. Frequent jams in any area indicate that area should be checked, repaired, or cleaned. Repeated jams may also happen if you're using the wrong weight print media.

- **Misfeed jams** occur in the standard cassette or lower input feeder. A misfeed jam may be as simple as a sheet of media not being picked, or it may be that the media was picked but not fed properly. Access to this area is through the cassette slot.

- **Inner jams** occur in the transfer drum/transfer unit area. This type of jam means that the media did not make it to the paper exit area. Access to this area is through the printer's (and/or duplexer's) rear cover (and/or duplexer's lower rear assembly).

- **Drum jams** occur if the media winds around the transfer drum. Access to this area is through the printer's (and/or duplexer's) rear cover.

- **Outer jams** occur in the fuser/media exit area. Jams of this type usually means that media is stuck in the fuser/exit roller area. Access to this area is through the printer's (and/or duplexer's) top cover.

- **Duplex jams** occur in the duplexer. Access to this area is through the duplexer's top and rear covers, and lower rear assembly.

Removing Media Jams

- To avoid damage to rollers, always remove jammed media gently.

- Always try to remove jammed media without tearing it. Any pieces of media left in the printer, whether large or small, can obstruct the paper path and cause further jams.

If, after clearing the media jam, the jam message in the control panel window persists, open and close the printer's top cover. This should clear the jam message.

Media Jams **7-5**

Misfeed Jams 🎥

1 **Remove the media cassette(s).**

2 **Pull out the jammed media.**

3 **Ensure that the media is lying flat in the cassette(s) and that it doesn't exceed the media limit mark.**

4 **Slide the cassette(s) back into the printer.**

Inner 🎥 Jams, Drum Jams, and Outer Jams 🎥

☀ **WARNING!** *The fuser unit is hot! Do not remove a jam in this area until the fuser unit cools.*

ACHTUNG! *Die Fixiereinheit wird sehr heiß! Bitte achten Sie darauf, daß sie diese einige Zeit abkühlen lassen, bevor Sie einen Papierstau beseitigen*.

◆ **Caution:** *Media that hasn't fully passed through the fuser contains unfused toner that can dirty your hands, clothes, or any thing else it gets on. If you accidentally get toner on your hands, wash them in cool water. If you accidentally get toner on your clothes, lightly dust them off as much as possible. If some toner remains on your clothes, use cool, not hot water, to rinse the toner off, provided your clothing is washable.*

1 **If you have a duplex model, see "Duplexer Jams" on page 7-9.**

2 **Open the rear cover of the printer.**

» **Note:** *The illustrations for steps 2 through 12 show the printer without the duplexer. However, the instructions are the same for both models.*

3 **Remove the jammed media by pulling it toward you.**

4 **Close the printer's rear cover.**
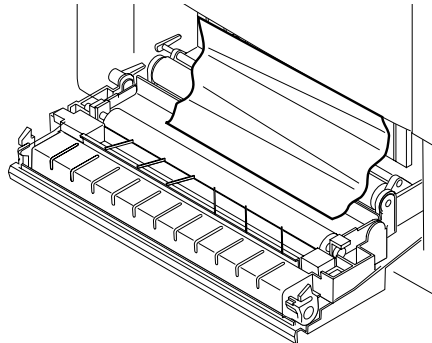
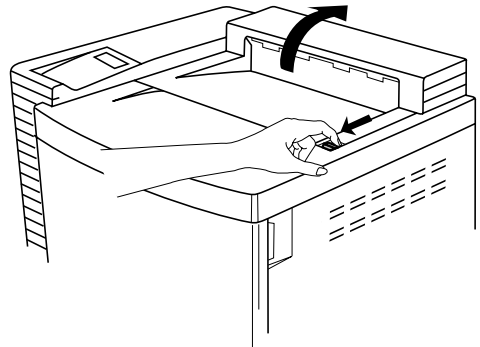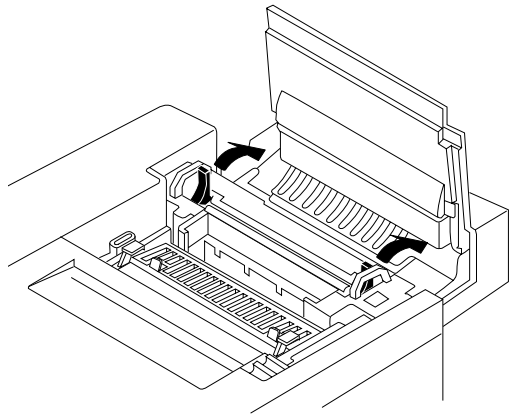**5** **If there still is a jam message,
open the printer's top cover.**

◆ **Caution:** *If you have a duplex model,
make sure you have opened the
duplexer's rear cover first. See
"Duplexer Jams" on page 7-9. Forced
opening of the top cover first may
damage the unit.*
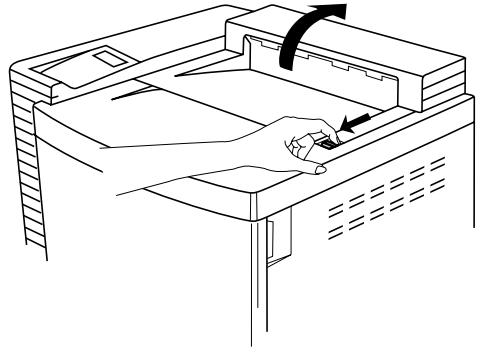
Pull the top latch to release the top
cover.

6 **Remove the jammed media by pulling it toward you.**

7 **If it didn't come out easily, open
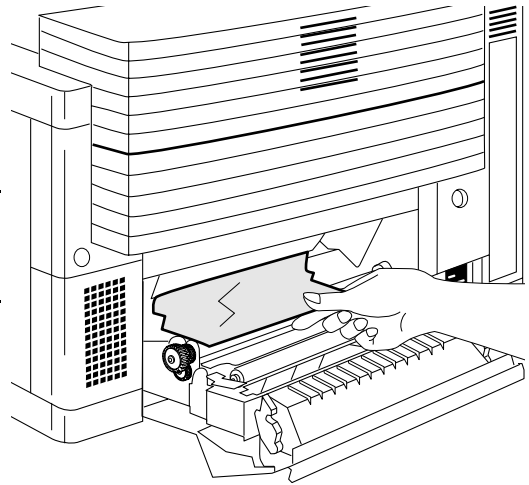the fuser roller pressure release
levers (one at each end of the
fuser).**
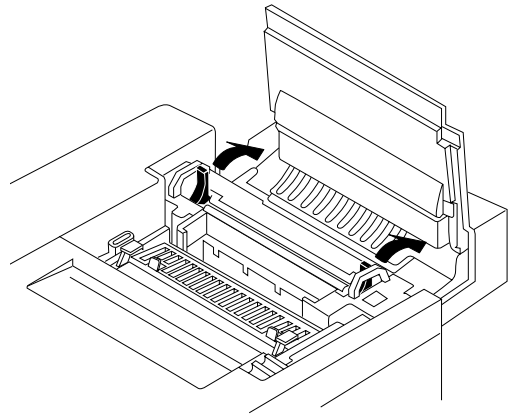
8 **Remove the jammed media by pulling it from the bottom of the fuser (through the printer's [and/or the duplexer's] rear cover), not from the top of the fuser.**

This prevents any unfused toner from dirtying the fuser rollers.

◆ **Caution:** *Be careful not to touch the transfer drum while removing jammed media.*
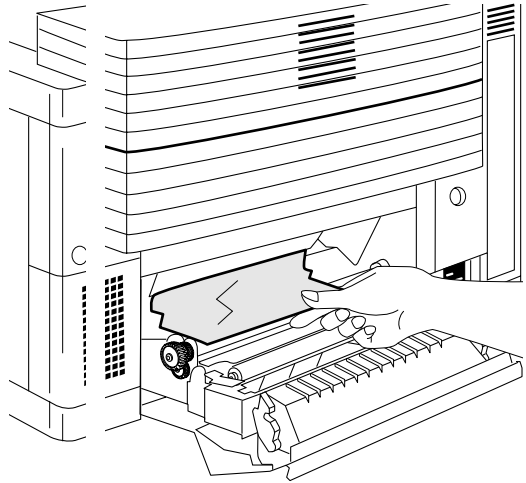
9 **Close the fuser roller pressure release levers (one at each end of the fuser).**

10 **Close the top cover of the printer.**

11 **Close the rear cover of the printer.**

12 **Slide the cassette(s) back into the printer.**

Duplexer Jams 🎥

1   **If you have a duplex model, open
    the duplexer's top cover.**

    If not, skip this section.

»   **Note:** *Use two hands to open the
    duplexer's top cover to avoid twisting
    its hinge.*

2   **Remove the jammed media by
    pulling it toward you.**

3   **Close the duplexer's top cover.**
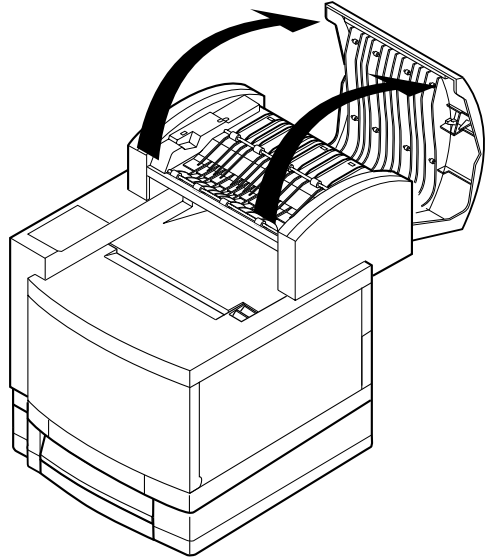
4   **If there still is a jam message,
    open the media cassette.**

5   **Remove the jammed media by
    pulling it toward you.**

6   **Close the media cassette.**
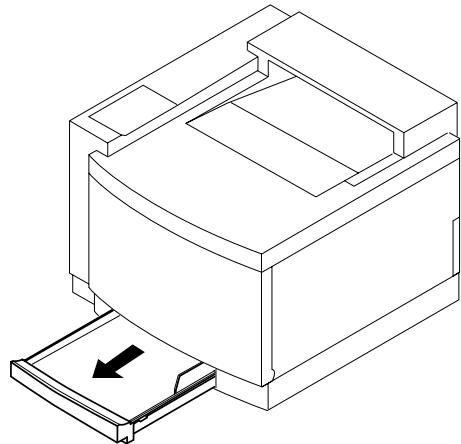
Media Jams   **7-9**

7   **If there still is a jam message, remove the duplexer's lower rear assembly.**

8   **Remove the jammed media by pulling it toward you.**

9   **Reinsert the duplexer's lower rear assembly.**
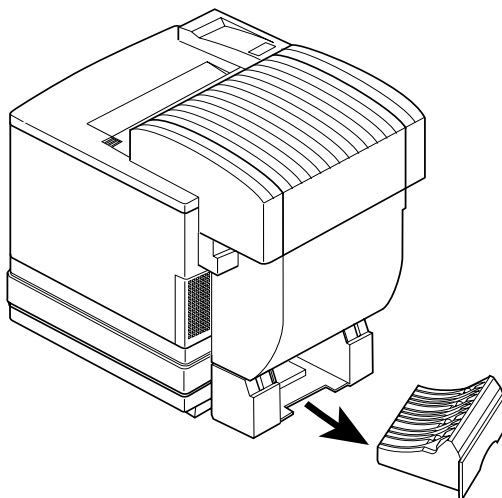
10 **If there still is a jam message, open the duplexer's rear cover.**
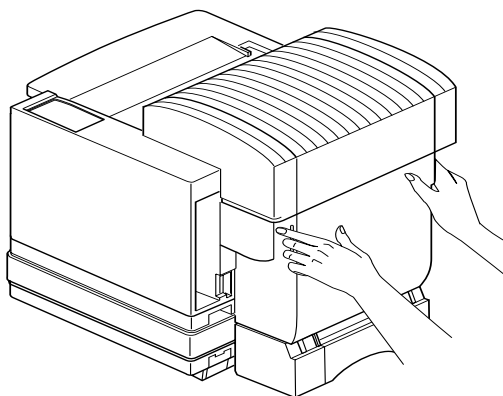
11   **Tilt the paper path.** 🎥

◆   **Caution:** *Hold the paper path unit by
     its corners to avoid the unit catching
     your fingers between it and the cover.*

12   **Remove the jammed media in the
     paper path by pulling it toward
     you.**

     If the media came out easily, close
     the duplexer's rear cover.

     If the media did not come out easily,
     keep the duplexer's rear cover open
     for now.
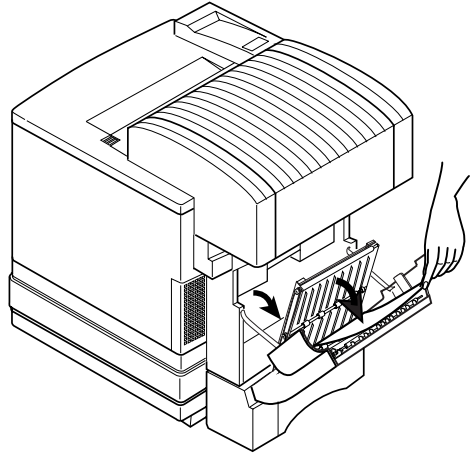
13   **If there still is a jam message,
     open the printer's top cover.**

◆   **Caution:** *If you have a duplex model,
     make sure you have opened the
     duplexer's rear cover first. Forced
     opening of the top cover first may
     damage the unit.*

     Pull the top latch to release the top
     cover.

»   **Note:** *The illustration for step 13
     shows the printer without the
     duplexer. However, the instructions
     are the same for both models.*

**14 Remove the jammed media by
    pulling it toward you.** 📹
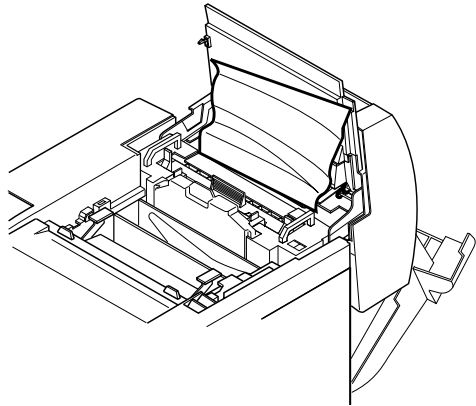
**15 If it didn't come out easily, open
    the fuser roller pressure release
    levers (one at each end of the
    fuser).** 📹

»   **Note:** *The illustrations for steps 15
     and 16 show the printer without the
     duplexer. However, the instructions
     are the same for both models.*

16 **Remove the jammed media by
pulling it from the bottom of the
fuser (through the printer's [and/or
the duplexer's] rear cover), not
from the top of the fuser.**

◆   **Caution:** *Be careful not to touch the
transfer drum while removing
jammed media.*

Removing the media from the bottom
prevents any unfused toner from
dirtying the fuser rollers.

17 **Close the fuser roller pressure release levers (one at each end of the fuser).**

18 **Close the printer's top cover.**

19 **Close the printer's rear cover.**

20 **If you have a duplex model, close the duplexer's rear cover.**

Other Jams

Remove jammed media from the output tray by gently pulling it toward you.

❖

Media Jams 7-13

8

Troubleshooting

In This Chapter . . .

Introduction

This chapter provides information to aid you in resolving printer problems: tables of common status messages, a problem checklist, and descriptions of common print quality problems with corresponding solutions. You'll also find out what information you'll need to have before placing a service call if one becomes necessary.

Status and Service Messages

Status and service messages are displayed in the control panel message window. They provide information about your printer and help you locate many problems. When the condition associated with a displayed message has changed, the message is cleared from the window.

Status Messages

» **Note:** *Status messages are not displayed while the printer is off line.*

This message...	indicates...	Do this...
`Asic error`	There is an application specific integrated circuit (ASIC) problem.	Call for service.
`Asic error 2`	There is an application specific integrated circuit (ASIC) problem.	Call for service.
`Back panel Misinstalled`	The rear cover over the transfer unit is not closed.	Close the rear cover.
`Bad entry`	You have made an illegal entry in the configuration menu.	Enter your information again.
`Belt cartridge Misinstalled`	The OPC belt cartridge is either incorrectly installed or missing.	Install the OPC belt cartridge correctly.
`Black toner Empty`	The black toner cartridge is empty.	Replace the black toner cartridge.
`Black toner Misinstalled`	The black toner cartridge is either incorrectly installed or missing.	Install the toner cartridge correctly.
`Canceling jobs`	All pages currently received by the printer are being cancelled.	No action needed.

This message...	indicates...	Do this...
`Check fuser Cleaning roller`	The cleaning roller is either misinstalled or missing, or it is empty and needs to be replaced.	Correctly install or replace the cleaning roller.
`Check fuser oil & cleaning roler`	The fuser oil bottle and cleaning roller are either misinstalled or missing, or they need to be replaced.	Correctly install or replace the fuser oil bottle and cleaning roller.
`Check waste Toner`	The waste toner pack is either misinstalled or missing, or it is full and needs to be replaced.	Correctly install or replace the waste toner pack.
`Cyan toner Empty`	The cyan toner cartridge is empty.	Replace the cyan toner cartridge.
`Cyan toner Misinstalled`	The cyan toner cartridge is either incorrectly installed or missing.	Install the toner cartridge correctly.
`Download error Press cancel`	An error has occurred in the system software download procedure.	Press the Cancel key on the printer control panel, and restart the download procedure. If this error appears again, call for service.
`Downloading Test page`	A test page is being printed.	No action needed.
`Dram test error`	There is a DRAM or controller board problem.	Call for service.
`Drum jam`	Media has jammed in the drum area.	Locate and clear the media jam.
`Duplex panel Misinstalled`	The duplexer's top cover is not closed.	Close the duplexer's top cover.
`Energy save mode On`	Energy Saver mode is currently in effect.	No action needed.

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This message...	indicates...	Do this...
`Ethernet error`	An Ethernet error has occurred: 101 Hardware address conflict 103 mem err 104 appinit 105 net err 106 net err 107 event err 108 event err 109 Ethernet address conflict 110 err 111 err 112 couldn't program physical 113 err 114 RARP err 115 couldn't program logical address 124 snetopen err 125 netxopn err 126 makeport full 241 shift err 242 fifo count error	Record the error number, if one is given, and then contact your system administrator or the QMS Customer Response Center.
`Erasing flash`	The flash ROM is erasing the old ROM when you are installing a new system.	No action needed.
`F# xxxxxxxx xxxx` `i960 fault`	There is a processor fault.	Call for service.
`Flash error`	There is a flash ROM problem.	Call for service.
`Front panel` `Misinstalled`	The front cover is not closed.	Close the front cover.
`Fuser c. roller` `Misinstalled`	The fuser cleaning roller is either incorrectly installed or missing.	Install the fuser cleaning roller correctly.
`Fusing unit` `Misinstalled`	The fuser is either incorrectly installed or missing.	Install the fuser correctly.
`HW err 0` `Press cancel`	The Ethernet hardware address is not set.	Use the Ethernet HW (Hardware) Address menu to set the hardware address.
`Idle`	No jobs are in progress.	No action needed.

This message...	indicates...	Do this...
`Inner jam`	Media has jammed.	Locate and remove the jam. Check the locations described in chapter 7, "Media Jams."
`IP err 0` `Press cancel`	The Internet address is incorrectly set.	Use the Internet Address menu to set it correctly.
`Key is not used`	The Media key has been accidentally pressed.	No action needed.
`Lower Cassette` `Misinstalled`	The lower input feeder cassette is not closed.	Close the lower input feeder cassette.
`Lower Duplex Jam`	Media has jammed leaving the lower duplex unit.	Locate and remove the jam.
`Magenta toner Empty`	The magenta toner cartridge is empty.	Replace the magenta toner cartridge.
`Magenta toner` `Misinstalled`	The magenta toner cartridge is either incorrectly installed or missing.	Install the toner cartridge correctly.
`Media mismatch`	The type of media (paper or transparency) in the cassette is different from that chosen in the printer driver.	Put the correct type of media in the cassette.
`x Meg` `Version x.x`	This indicates the total amount of memory installed in the printer and the kernel version. It displays during printer startup.	No action needed.
`Misfeed jam`	Media has jammed leaving the media cassette.	Locate and remove the media jam.
`Need more memory Paper` `mismatch`	More memory is needed to print the job, *and* the media in the cassette is different from that chosen in the printer driver. » **Note:** *The image will still print, but because there is insufficient memory, parts of the image will be clipped.*	Add more memory, put the correct media in the cassette, and then reprint the job.

This message...	indicates...	Do this...
`Need new kernel`	The kernel can't be located by the system software.	Download the kernel again.
`New kernel...`	The kernel is being downloaded during the system software downloading process.	No action needed.
`Output Bin Full`	Media has filled up the output bin.	Remove media from the output bin.
`Outer jam`	Media has jammed leaving the paper exit unit.	Locate and remove the jam.

`Paper out lower Tray`
 	
`Paper out upper Tray`
	The indicated media cassette is empty or the cassette is missing.
	
	» **Note:** *Because the system code is not updated until after the print job finishes, this message may at times seem incorrect. In other words, if you print a job from the lower cassette, then start printing a job from upper cassette but run out of media in the upper cassette before the job finishes, the message* `Paper out lower Tray` *displays.*
		Reload the cassette.

`Printing`	The printer is on line and printing.	No action needed.
`Printing need More memory`	The printer is on line and printing, but it needs more memory to print the file. It will print as much of the page as it can currently fit in memory. » **Note:** *Due to the lack of sufficient memory, parts of the image may be clipped off.*	Add more memory, and then reprint the job.

This message...	indicates...	Do this...
`Printing` `Paper mismatch`	The media size in the media cassette is different from that chosen in the printer driver. » **Note:** *The job will print on the installed media size. However, if the installed media size is smaller than that chosen in the printer driver, parts of the image may be clipped.*	Put the correct size media in the cassette, and then reprint the job.
`QMS magicolor 2` `Board test`	The printer is going through its initial testing during startup.	No action needed.
`Replace 120K kit`	The printer is ready for its 120,000 page preventive maintenance.	Call for service.
`Replace belt`	The OPC belt cartridge needs to be replaced. » **Note:** *Reset the OPC belt under Operator Control/ Consumables/Item Replaced/Belt.*	Replace the OPC belt cartridge.
`Replace black Toner`	The black toner cartridge is low.	Replace the black toner cartridge, or continue printing until `Black toner Empty` displays. » **Note:** *Reset black toner under Operator Control/ Consumables/Item Replaced/Black Toner.*

This message...	indicates...	Do this...
`Replace cleaning Roller`	The fuser cleaning roller needs to be replaced.	Replace the fuser cleaning roller.
		Also, this message occurs when the user replaces the fuser oil bottle and cleaning roller, but only resets the fuser oil on the control panel.
		» **Note:** *Reset the fuser cleaner under Operator Control/ Consumables/Item Replaced/Cleaning Roller.*
`Replace cyan Toner`	The cyan toner cartridge is low.	Replace the cyan toner cartridge, or continue printing until `Cyan toner Empty` displays.
		» **Note:** *Reset cyan toner under Operator Control/ Consumables/Item Replaced/Cyan Toner.*
`Replace fuser`	The fuser needs to be replaced.	Replace the fuser.
		» **Note:** *Reset the fuser under Operator Control/ Consumables/Item Replaced/Fuser.*

This message...	indicates...	Do this...
`Replace magenta Toner`	The magenta toner cartridge is low.	Replace the magenta toner cartridge, or continue printing until `Magenta toner Empty` displays. » **Note:** *Reset magenta toner under Operator Control/ Consumables/Item Replaced/Magenta Toner.*
`Replace oil and Pad`	The fuser oil is low.	Replace the fuser oil bottle and cleaning roller.
`Replace yellow Toner`	The yellow toner cartridge is low.	Replace the yellow toner cartridge, or continue printing until `Yellow toner Empty` displays. » **Note:** *Reset yellow toner under Operator Control/ Consumables/Item Replaced/Yellow Toner.*
`Selected`	You have selected a setting or option in the configuration menu.	No action needed.
`Service mode`	Service is being performed on the printer.	No additional action needed.
`Top panel Misinstalled`	The top cover is not closed.	Close the top cover.
`Upper Duplex Jam`	Media has jammed leaving the upper duplex unit.	Locate and remove the jam.
`Warming up`	The printer is warming up; the fuser is at a low temperature. Wait until the printer has warmed up before you print.	No action needed.

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This message...	indicates...	Do this...
`Writing flash`	The system is being written to flash ROM during software downloading process.	No action needed.
`Yellow toner Empty`	The yellow toner cartridge is empty.	Replace the yellow toner cartridge.
`Yellow toner Misinstalled`	The yellow toner cartridge is either incorrectly installed or missing.	Install the toner cartridge correctly.

Service Messages

This service message...	means...
```Call for service C3 NVRAM error```	An error has been detected with the item indicated in the service message. Correction of these errors is performed by qualified service personnel only. Contact your local vendor.
```Call for service C4 engine ctrl.```	
```Call for service C7 timing clock```	
```Call for service D1 YW clutch```	» **Note:** *A service message sometimes occurs as a result of an unusual combination of events, not because of an actual problem. When the printer stops and a service message displays in the message window, turn the printer off and then back on. This often clears the service message indicator, and printer operation resumes. Always try this before making a service call.*
```Call for service D2 MG clutch```	
```Call for service D3 CY clutch```	
```Call for service D4 BK clutch```	
```Call for service D5 YK solenoid```	
```Call for service D6 MC solenoid```	Service calls should be placed to the vendor from whom you purchased the printer. If you cannot get service from your vendor, see appendix A, "QMS Customer Support," for more information.
```Call for service E1 DE devlpr. motor```	
```Call for service E2 main motor```	
```Call for service E3 drum error```	
```Call for service E4 toner empty```	
```Call for service E5 roller solnd.```	

This service message...	means...
`Call for service` `E6 clean solnd.`	See the information on page 8-11.
`Call for service` `E7 clean clutch`	
`Call for service` `E8 fuser clutch`	
`Call for service` `E9 belt marker`	
`Call for service` `EL erase LED`	
`Call for service` `F0 cooling fan`	
`Call for service` `F2 ozone fan`	
`Call for service` `F4 fuser fan`	
`Call for service` `F5 charge HV`	
`Call for service` `H0 fuser therml.`	
`Call for service` `H2 fuser temp 2`	
`Call for service` `H3 fuser temp 3`	
`Call for service` `H4 fuser temp 4`	
`Call for service` `L1 beam detector`	
`Call for service` `L2 scanner motor`	

This service message...	means...
`Call for service` `LL laser power`	See the information on page 8-11.
`Call for service` `P1 Hardware err`	
`Call for service` `P2 Duplex NVRAM`	
`Call for service` `P4 Duplex motor`	
`Call for service` `P5 solenoid err`	
`Call for service` `P6 Duplex fan`	

Troubleshooting **8-13**

Print Monitor Status Messages

Spooler Status Information

One of the following messages displays via Print Manager in the printer status window when the Windows 95/98/NT Print Spooler is the originator of the status information:

This message...	indicates...	Do this...
Spooling	The print job is being spooled from an application either on a local or remote workstation. » **Note:** *Windows NT only—Remote Downlevel Document displays in the Document Name column of the status window when the client workstation, spooling jobs to an NT server, does not transmit complete job information. See your Microsoft Windows NT documentation for more information on this message.*	Nothing
Printing	The spooler is ready to activate the designated monitor and despool the submitted print job.	Nothing
Deleting	The spooler has finished submitting the print job to the designated print monitor and is deleting the spool file.	Nothing
Error	The spooler is reporting an error received from the monitor. ■ If the print job is spooled on a local workstation, then a dialog box prompting you to either delete or retry the job displays. ■ If the print job is spooled on a remote workstation, then the job is retried until it is either deleted or the printer becomes unavailable.	■ For print jobs spooled on a local workstation, click the appropriate dialog box button. ■ For print jobs spooled on a remote workstation, either wait until the error clears or delete the job.

Monitor Status Information

One of the following messages displays via Print Manager in the printer status window when the QMS Network Print Monitor is the originator of the status information:

This message...	indicates...	Do this...
Printer not responding	The QMS Network Print Monitor can't communicate with the printer. Either the printer is off, or the connection is broken. » **Note:** *If the job is in process, then it is terminated, removed from the queue, reported to the Network Spooler and, if you're using Windows NT, listed in the Application Event Log (if enabled).*	■ If the print job is spooled by a local workstation, then either turn on the printer or reconnect it to the network, and then click the Retry or Cancel button. ■ If the job is spooled by a remote workstation, then turn on the printer or reconnect it to the network.
Printer Busy	This message displays while the job is transferred to the printer. » **Note:** *Windows NT only—The flag next to this message indicates spooling status:* ■ *Green Flag—Printer spooling is enabled.* ■ *Red Flag—Printer spooling is disabled.*	None

Printer Status Information

This printer-dependent status information displays via Print Manager in the printer status window when the QMS Network Print Monitor is displaying a message from the printer. See "Status and Service Messages" on page 8-2 for a complete list and description of these messages.

» **Note:** *When you're printing remotely via the parallel interface, the range of error messages is much smaller than when you're printing via the Ethernet interface. For example, when the printer status window displays* Paper out x Tray, *the printer may actually be turned off. Status messages displayed for Ethernet connections are much more accurate.*

This message...	indicates...	Do this...
Control panel status messages, such as the following: Idle x toner empty Outer jam	The printer has encountered a problem.	Fix the printer problem and then do the following.
	If the print job is spooled on a local workstation, a dialog box prompts you either to delete or retry the job.	■ For print jobs spooled on a local workstation, click the appropriate dialog box button.
	If the print job is spooled on a remote workstation, the job is retried until it is either deleted or the printer becomes unavailable (for example, it is busy printing another job or it is taken off line). Remember that if the send request timeout expires, the print job will be terminated and cleared from the system.	■ For print jobs spooled on a remote workstation, either wait until the error clears or delete the job.

Troubleshooting Quick Check

If you've just installed your printer and are having problems, be sure you've correctly followed the procedures explained in the *QMS* magicolor *2 DeskLaser Setup Guide*. Then, check the following:

1   Is the printer status displayed in the control panel window?

If yes, go to question 2.

If not, check the following:

■   Is the printer turned on?

■   Is the power cord plugged into both the power outlet and the printer?

- Is the power outlet working?

- Does the line voltage from the power outlet match the printer's power require-ments? See appendix B, "Technical Specifications."

2   Is the printer receiving data from the computer?

Try printing a Microsoft test page:

a   From the Windows 95/98 or Windows NT Start menu choose Settings and then Printers.

b   Select the printer, and from the File menu choose Properties.

c   On the General tab choose the Print Test Page button.

If the Ready indicator starts blinking, the printer is receiving the data.

If not, check the following:

- Are the interface cables securely fastened?

- Is the printer on line? The Ready indicator should be lit.

- Is your application set up correctly for printing? Are the communication parameters the same as those on your host and printer?

- If you still can't identify the problem, contact your local vendor.

3   Does your application require any additional printer setup?

If you're experiencing printing problems not related to print quality, check the print-ing section of your application documentation to see if any additional printer setup steps are required.

Printing a Test Page

You can verify that the printer is able to print by using the Test Page menu:

1   Press the Online/Offline key to take the printer off line.

2   Press the Menu key until the Test Page menu displays.

3   Press the Select key to display the Print test page option.

4   Press the Select key again to display the message

```
Selected
```

and print the test page.

Performing a Board Test

You can test the printer components by using the Board Test menu.

◆   **Caution**: *Make sure the control panel message window reads* IDLE *before performing this procedure.*

1   Press the Online/Offline key to take the printer off line.

2   Press the Menu key until the Board Test menu displays.

3   Press the Select key to display the Perform test option.

4   Press the Select key again to display the message

```
Online, full test
```

and begin the test.

The following messages display in the message window *several* times:

```
Testing Flash
Testing Ethernet
Testing Asics
Testing DRAM
```

When the board test is finished, the message

```
Board OK
Select Cancel
```

displays in the message window.

5   Press the Cancel key to reboot the printer.

The message window displays

```
Booting
```

as the printer restarts and then returns to

```
Idle
```

Control Panel Problems

Data Indicator Continues to Blink

■   Wait until Windows has completed sending the print job. Even though the printer may have cancelled the job, until Windows has completed sending the job, the Data indicator continues to blink.

■   If you're printing via the parallel port, increase the timeouts. Refer to your Windows documentation for more information.

■   Test the printer:

1   In the application's Print dialog box select Print to File to print the document to a file.

2   When prompted, identify a filename and location for the "printed" file.

3   Access an MS-DOS prompt.

4   Change to the directory you identified in step 2.

5   Send the file to the printer by typing

```
copy /b filename lpt1↵
```

6   Report the problem to the QMS Customer Response Center. Refer to appendix A, "QMS Customer Support."

Jam Message Stays On

If a jam message stays on, open the printer and clear the jam (see chapter 7, "Media Jams"). If the message remains, try opening and closing the top of the printer again.

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Printing Message Stays On

If a `Printing` message stays on after a file is printed, you can continue to print files. However, to remove the message, try pressing the Online/Offline key to take the printer off line and then put it back on line again. If that doesn't remove the message, turn the printer off and then on again to remove the message.

Media/Paper Mismatch Message Stays On

If a `Paper mismatch` message stays on after a file is printed, you can continue to print files. However, to remove the message, try this:

■ Press the Cancel key.

■ Press the Online key to take the printer off line and then put it back on line again.

■ Turn the printer off and then on again.

Or, you can try this:

■ Remove the cassette.

■ Move the media guides back and forth a few times.

■ Refill and reinsert the cassette.

■ Does that work? If not, remove the cassette and media.

■ Move the back media guide while looking at the left-hand side of the cassette.

■ Does the size indicator move as you slide the back guide? If not, the cassette needs to be replaced.

Output Problems

» **Note:** *Because the QMS* magicolor *2 DeskLaser uses various Microsoft printer drivers and other resources, it works differently than a QMS Crown print system.*

In general, if you're having output problems, try the following:

■ Ensure that your application is Microsoft Windows certified.

■ Ensure that you're using the most current version of the application (such as Microsoft Office 97) since Microsoft has fixed a number of problems related to printing in these versions.

Pages are Scaled

■ Ensure that the same size media is selected in both the application (page setup) and the printer driver. If the media size selected in the application is larger than that selected in the printer driver (and installed in the printer), the image is scaled on the printed page.

Only Partial Pages Print

■ Check the imageable areas for the size media you're using (see chapter 3, "Printing"). Are you trying to print outside of the imageable area of the page? If so, change to a larger size media, or adjust the margin(s) through your application.

■ The charger unit or various roller and plates may be dirty. See chapter 6, "Maintenance," for instructions on how to clean these parts.

■ Check for a `Printing need More memory` error message in the message window. The job may have been too complex for the amount of memory currently installed in the printer. If so, add more memory.

See "Single In-line Memory Modules (SIMMs)" in chapter 5, "Printer Options," for a discussion of how the PC and printer use memory.

Blank Pages "Print"

If one or more blank pages "print" during a print job, try the following:

1 Check for media jams.

Check the inside of the printer for media in the laser beam path.

2 Ensure that the transfer unit is closed.

3 Ensure that the printer's covers are closed.

If you have a duplex model, ensure that the duplexer's covers are closed.

4 Ensure that the toner cartridges are not empty.

5   **Ensure that the orange protective cover has been removed from each toner cartridge.**

6   **If the toner cartridges are not empty and the protective cover has been removed, take the cartridges out, rock them gently from side to side five or six times, and then reinstall them.**

7   **If these solutions don't work, load new toner cartridges in the printer.**

Not All Pages Print

If the printer stops printing in the middle of your file, try the following:

1   **Check your interface cable.**

You could have the wrong kind of cable—check to see if you have the correct parallel or Ethernet interface cable.

2   **Make sure no one pressed the Cancel key while your job was printing.**

3   **Check the message window to see if the cassette you're using needs more media.**

4   **Verify that the printer driver spool setting is QMJOURNAL.**

If the spool setting is set to EMF (metafile) or RAW, use the following instructions to set it to QMJOURNAL.

»   **Note:** *EMF and RAW are defaults used by other vendors. The QMS magicolor 2 DeskLaser will work properly only with the QMJOURNAL format of sending data.*

a   From the Windows Start menu choose Settings.

b   From the Settings menu choose Printers.

c   In the Printers dialog box select the QMS *magicolor* 2 DeskLaser printer icon, and from the File menu choose Properties.

d   In the QMS *magicolor* 2 DeskLaser Properties dialog box, choose the Details tab (Windows 95/98) or the Scheduling tab (Windows NT 4.0).

e   Choose the Spool Settings... button.

f   In the Spool Settings dialog box change the Spool Data Format to QMJOURNAL or select Print Directly to the Printer.

g Choose Enable bidirectional support for this printer.

h Choose OK twice to return to the Printers dialog box, and then close the Printers dialog box.

Files Fail to Print

If files don't print at all, try the following:

1 Check the printer cables to make sure they're not loose or disconnected.

Loose or disconnected cables will cause a break in communication. Any job sent to the printer while it's recovering from a break in communication is flushed from the Windows print queue.

2 Check to verify that you're using the latest versions of the printer driver and printer code as well as your application.

■ To check the version number of the printer driver, in the QMS *magicolor* 2 DeskLaser Properties window (Start > Settings > Printers > File/Properties) choose the Paper tab and then the About... button. Contact your local vendor to determine if this is the latest version of the printer driver.

■ To check the version number of the printer code, turn your printer off (if necessary), and then turn it back on. During the startup process the message window displays x Meg ver $x.x$. Contact your local vendor to determine if this is the latest version of the printer code.

■ To check the version number of most Windows applications, from the Help menu choose About *Application*. Contact your application vendor to determine if you're using the latest version of the application.

3 Verify that the printer driver spool setting is QMJOURNAL.

If the spool setting is set to EMF or RAW, use the following instructions to set it to QMJOURNAL.

» **Note:** *EMF and RAW are defaults used by other vendors. The QMS magicolor 2 DeskLaser will work properly only with the QMJOURNAL format of sending data.*

a From the Windows Start menu choose Settings.

b From the Settings menu choose Printers.

c In the Printers dialog box select the QMS *magicolor* 2 DeskLaser printer icon, and from the File menu choose Properties.

d   In the QMS *magicolor* 2 DeskLaser Properties dialog box, choose the Details tab (Windows 95/98) or the Scheduling tab (Windows NT 4.0).

e   Choose the Spool Settings... button.

f   In the Spool Settings dialog box change the Spool Data Format to QMJOURNAL or select Print Directly to the Printer.

g   Choose Enable bidirectional support for this printer.

h   Choose OK twice to return to the Printers dialog box, and then close the Printers dialog box.

4   Change the spooling time.

If changing the printer driver spool setting to QMJOURNAL doesn't work, try the following:

In the Spool Print Jobs So Program Finishes Printing Faster section of the dialog box, choose the radio button for Start Printing After Last Page Is Spooled rather than Start Printing After First Page Is Spooled.

5   Add more memory to the printer.

See "Single In-line Memory Modules (SIMMs)" in chapter 5, "Printer Options," for a discussion of how the PC and printer use memory and for information on installing SIMMs.

6   Reboot your printer.

Fonts Don't Print Correctly

If you're not using TrueType fonts, change to TrueType fonts.

Frequent Media Jams

1   Check that the media does not exceed the media limit mark.

Make sure that the stack does not exceed the paper limit mark on the media cassette.

2   Check that the paper stack is correctly aligned.

Make sure that the stack is correctly aligned in the media cassette.

3   Check that the correct paper type is used.

See appendix B, "Technical Specifications," for media specifications.

4   Check the printer for residual jammed media.

5   Remove any jammed media remaining inside the printer by checking the locations described in chapter 7, "Media Jams."

6   Remove the media and load fresh media from an unopened package.

OPC Belt Cartridge Problems

◆   **Caution:** *The OPC belt is extremely sensitive to bright light and direct sunlight. Always leave it in its protective bag until you are ready to install it. Any exposure to light should be limited to less than two minutes or permanent damage could result. If you suspect the belt is damaged due to exposure to light, put the belt in a dark place to recover. Depending on the amount of exposure, recovery may take up to two hours. Recovery time is dependent on the amount of exposure sustained, and recovery is not guaranteed.*

If you experience the following print quality problems, they may be pointing to the OPC belt cartridge.

■   Lightly stained background

■   Edge of the image is missing

■   Partially uneven optical density image periodically

■   White or black vertical lines

■   Banding lines and uneven color density

■   White or black spots

■   Misregistration of color occurring between overlapped colors

Try the following:

1   Perform routine user cleaning on your OPC belt cartridge.

See "Cleaning the OPC Belt Cartridge" on page 6-16.

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2 **Print a test page.**

If you still have the problem, try steps 3 through 5 below.

3 **Reinstall the OPC belt cartridge.**

Print a test page after each step.

4 **Replace the toner cartridges.**

5 **Replace the OPC belt cartridge.**

See "Print Quality Problems" on page 8-28 for a further discussion of print quality problems and possible solutions.

If you still can't identify the problem, contact your local vendor.

Duplexer Problems

◆ **Caution:** *Although the QMS* magicolor *2 DeskLaser was designed for occasional printing on a wide range of media types, it is not intended to print exclusively on a single media type except plain paper. Continuous printing on media other than plain paper (such as envelopes, glossy stock, labels, thick stock, transfer media, or transparencies) may adversely affect print quality or reduce engine life.*

*After 200 1-sided pages (or 100 2-sided pages) of a **continuous** print run of plain paper, the* magicolor *2 DeskLaser automatically pauses for 3 minutes to cool down the engine. This occurs for monochrome or color printing. After this initial cooldown pause, the printer automatically resumes its printing. From that point forward while doing continuous printing, the 3-minute cooldown pause occurs every 50 pages until the continuous printing stops. After an extended idle period, this 50-page interval automatically resets to 200 pages. This process is provided to maintain the rated duty cycle of the printer and to ensure reliable printer operation with optimum output quality.*

In general, if you're having output problems with your duplexer, try the following:

1 **Ensure that you are using correct media.**

Do not duplex envelopes, labels, or transparencies.

2   **Ensure that you did not mix media types in your media cassette.**

3   **If you are using media that is heavier than 24 lbs (90 g/m²), ensure that you have selected the Thick Stock mode.**

Ensure that your media does not exceed 43 lbs (160 g/m²).

4   **Ensure that your document has more than one page.**

5   **Go into the printer's control panel and ensure that duplex is an available option.**

6   **In the printer driver (Administration, Paper tab, Duplex Option), choose Flip on Long Edge (as in a loose-leaf notebook) or Flip on Short Edge (as on a clipboard).**

7   **Remove media that is still jammed.**

◆   **Caution:** *Always open the duplexer's rear cover before opening the printer's or duplexer's top cover. Forced opening of the top cover first may damage the unit.*

Check for media stuck in the paper guides in the duplexer's top cover, rear cover, and lower rear assembly.

8   **If you removed jammed media from near the OPC belt, reset the OPC belt's locking levers.**

9   **Ensure that all of the covers are closed.**

◆   **Caution:** *Always open the duplexer's rear cover before opening the printer's or duplexer's top cover. Forced opening of the top cover first may damage the unit.*

Open and then close the covers to confirm that they are securely closed.

10 **Ensure that the duplexer's lower rear assembly is firmly seated in the printer.**

11 **If you turned the printer off, ensure that you have turned the printer on again and waited for it to warm up.**

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Print Quality Problems

This section discusses several types of print quality problems and possible solutions. Try the solutions in the order listed. If none solves the problem, call your local vendor for service. See "Placing a Service Call" on page 8-35.

General Print Quality Problems

1   **Check that you are using the approved media.**

    Refer to chapter 3, "Printing," for recommended media types.

2   **Check that there is enough toner in the printer whether or not the `Replace x toner` message is displayed.**

    Toner can settle in the cartridges. To redistribute the toner, remove each toner cartridge, and gently rock it from side to side. Then reinsert the cartridges and try printing again.

3   **Replace the toner cartridge(s).**

4   **Before you place a service call, ensure all the required user cleaning has been conducted.**

5   **Place a service call to your local vendor.**

Blurred or Lightly Stained Background
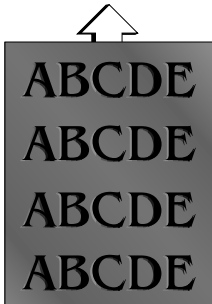
One or more toner cartridges may be defective.

■ **Check the toner cartridges, and install new ones, if necessary.**

■ **Reinstall the OPC belt cartridge. If necessary, replace the OPC belt cartridge.**

Colored Bands, Ribbing

ABCDE
ABCDE
ABCDE
ABCDE
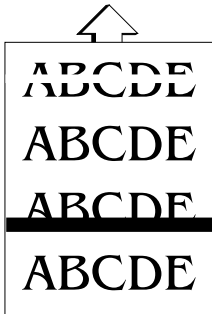
- Check that the printer is on a hard, level surface.
- Reinstall the OPC belt cartridge. If necessary, replace the OPC belt cartridge.

One or more toner cartridges may be defective.

- Check the toner cartridges, and install new ones, if necessary.

If a wide horizontal white line appears,

- Ensure that the transfer unit was closed.
- Replace the transfer roller.

Insufficient Gloss or Fusing

ABCDE
ABCDE
ABCDE
ABCDE
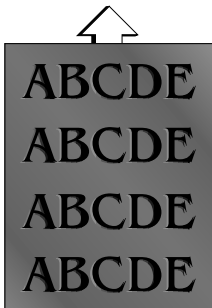
If there is insufficient gloss of the printed image,

- Check the fuser oil condition.

If there is insufficient fusing and the image comes off when the printed image is rubbed,

- Check your media type—envelopes, glossy stock, labels, transfer media, and thick stock have to be set in the thick stock mode.

Irregular Print, Mottled Image

AECDE

ABC CE

AFCDE

AʙCDE
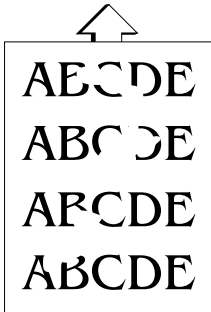
The paper being used may have absorbed moisture (perhaps due to high humidity or having water spilled on the paper supply). Toner does not adhere well to paper where it has become wet.

- Replace the paper in the cassette with dry paper.
- Confirm the proper installation of the transfer roller. If necessary, replace the transfer roller.

Missing Image at Edge
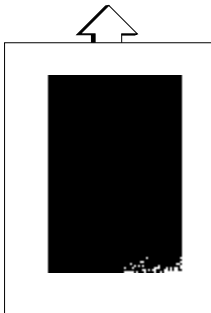
If the edge of an image is missing or optical density declines

- Check the toner cartridge in question, and install new one, if necessary.
- Check the OPC belt cartridges, and install new one, if necessary.

Mixed Color Image, Color Misregistration
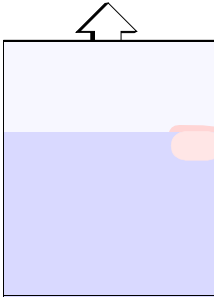
If mixing of colors occurs in the printed image:

■ **Ensure that the printer's front cover is closed.**

■ **Remove the toner cartridges and gently rock them five or six times to redistribute the toner. Then, reinstall the cartridges.**

■ **One or more toner cartridges may be defective. Check the toner cartridges, and install new ones, if necessary.**

If misregistration of color occurs between overlapped colors:

■ **Ensure that the printer's front cover is closed.**

Spotting

If spots appear on the printed image:

■ **Check the surface of the OPC belt, clean up the foreign particle, and replace the OPC belt if necessary.**

Troubleshooting   **8-31**

Too Dark

ABCDE
ABCDE
ABCDE
ABCDE
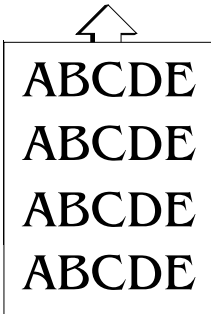
■ **Install new toner cartridges.**

Too Light

ABCDE
ABCDE
ABCDE
ABCDE
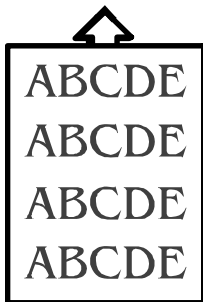
■ **Remove the toner cartridges and gently rock them horizontally five or six times to redistribute the toner. Then, reinstall the cartridges.**

■ **One or more toner cartridges may be defective. Check the toner cartridges, and install new ones, if necessary.**

■ **Check your media type—envelopes, glossy stock, labels, transfer media, and thick stock have to be set in the thick stock mode.**

Toner Smudges, Residual Images
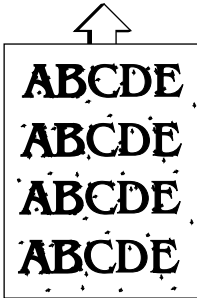
If the toner smudges are on only the front of the page:

- Remove the toner cartridges and gently rock them five or six times to redistribute the toner. Then, reinstall the cartridges.

- One or more toner cartridges may be defective. Check the toner cartridges, and install new ones, if necessary.

If toner smudges are on the back of the page:

- Replace the cleaning roller.

- If that doesn't work, replace the transfer roller.

- If that doesn't work, replace the fusing unit.

If toner smudges are on the front *and* back of the page:

- Open the printer once and close it again to clean the image transfer roller.

If the image of the previous page comes out lightly,

- Clean the cleaning roller and reinstall it.

Uneven Print Density
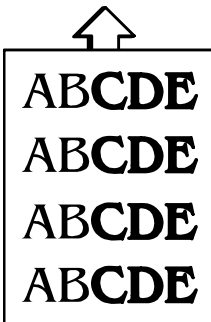
- Remove the toner cartridges and gently rock them five or six times to redistribute the toner. Then, reinstall the cartridges.

- Install new toner cartridges.

- Reinstall the OPC belt cartridge. If necessary, replace the OPC belt cartridge.

Troubleshooting   **8-33**

Vertical Streaking

ABCDE
ABCDE
ABCDE
ABCDE
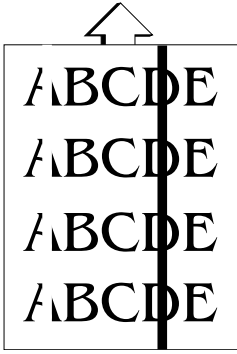
- The laser lens may be dirty. Clean the lens as described in chapter 6, "Maintenance."

- The corona wire inside the OPC belt cartridge might be dirty. Clean the corona wire as described in chapter 6, "Maintenance."

- One or more toner cartridges may be defective. Check the toner cartridges, and install new ones, if necessary.

- Clean the developer roller.

- Reinstall the OPC belt cartridge. If necessary, replace the OPC belt cartridge.

If a wide vertical white band appears:

- Check the transfer drum surface. If necessary, clean the oil off the surface.

- Ensure that the transfer unit is closed.

Placing a Service Call

■ **If you have a problem you can't resolve**, contact your local vendor. Your local vendor is best equipped to immediately handle any problem you may encounter.

■ **If you have technical questions your vendor is unable to answer**, call or fax your questions to the QMS Customer Response Center. (See appendix A, "QMS Customer Support," for contact information).

■ **If you've determined your printer needs to be examined by an authorized service technician**, contact an authorized service provider for work inside the US or one of the QMS international offices for work outside of the US. (National and international contacts are listed in appendix A, "QMS Customer Support.")

Before calling, be sure you have the answers to these questions handy to help our technicians serve you more quickly:

1 **What is your printer model and serial number?**

2 **What operating system do you have and what version?**

3 **What application(s) are you using?**

4 **What is the QMS *magicolor* 2 DeskLaser printer driver version?**

   Choose the About button on the printer driver's Paper tab.

❖

Troubleshooting   **8-35**

9

Repacking the Printer

In This Chapter . . .

Introduction

If you need to relocate or ship your printer after it's been installed, you must follow the procedures in this chapter to prevent damage to the printer and to keep your warranty valid.

◆ **Caution:** *QMS strongly recommends that the printer be repackaged by a trained QMS-Authorized Service Provider. QMS cannot be held responsible for damage to your printer during shipment that results from the improper packaging of your printer. You **must** use the instructions given in this section before repacking the printer in its original shipping carton with the original packing materials.*

If you need replacement packaging for the DeskLaser, in the US call QMS at 1 (334) 633-4300 extension 2530 and request catalog number 2600439-200. If you need replacement packaging for the duplex model, request catalog number 2600439-201.

*If you need to return the printer for service, in the US call QMS Customer Service at 1 (334) 633-4300 extension 1072 for an RMA (Return Merchandise Authorization) number **before** shipping the printer. In other countries, refer to appendix A, "QMS Customer Support," in any QMS printer manual.*

What's Involved?

Repacking your printer for shipment involves the following steps. Each is described in more detail in the following sections.

1 **Remove the cables and media cassette(s).**

2 **Remove the toner cartridges.**

3 **Remove the OPC belt cartridge.**

4 **Prepare the fuser unit for shipment:**

5 **Change the waste toner pack.**

6 **Remove the lower input feeder (if one is attached to a DeskLaser without the duplexer).**

7 **Pack the printer for shipment.**

Remove Cables and Cassette(s)

> » **Note:** *If you're returning the printer for service, you don't need to return the power cable, interface cables, or media cassette(s).*

1 Turn off the printer.

2 Remove the power cable and all interface cables.

> » **Note:** *In compliance with UL guidelines, "The appliance inlet is considered to be the main disconnect device."*

3 Remove the media cassette(s) from the printer.

Remove the Toner Cartridges

1 Open the printer's front cover.

2 Remove the four toner cartridges, attach the protective shields over their magnetic rollers, and repackage them in their original packaging.

Remove the OPC Belt Cartridge

> ◆ **Caution:** *The OPC belt is extremely sensitive to bright light and direct sunlight. Limit exposure to less than two minutes or permanent damage could result. While the printer is being moved, store the cartridge in its original shipping bag. If you don't have this bag, carefully wrap it in a piece of dark, heavy cloth, and place it where it will not get scratched or damaged. If exposure exceeds two minutes, put the cartridge in a dark place to recover before using it again. Depending on exposure, recovery may take up to two hours. Recovery time is dependent on the amount of exposure sustained, and recovery is not guaranteed.*
>
> *Also, handle the OPC belt cartridge carefully. The belt is extremely sensitive to body oils, moisture, solvents, corrosives, dust, and scratches, all of which will reduce print quality.*

Repacking the Printer   **9-3**

Remove the OPC Belt
Cartridge

1   **If you have a duplex model, open the duplexer's rear cover.**

    If not, skip to step 2.

2   **If it's not already open, open the printer's front cover.**

3   **Open the printer's top cover.**

4   **Rotate up the lock levers at each end of the OPC belt cartridge slot, and lift the cartridge out of the printer.**

»   **Note:** *The illustrations in this step show the printer without the duplexer. However, the instructions for the OPC belt cartridge are the same for both models.*
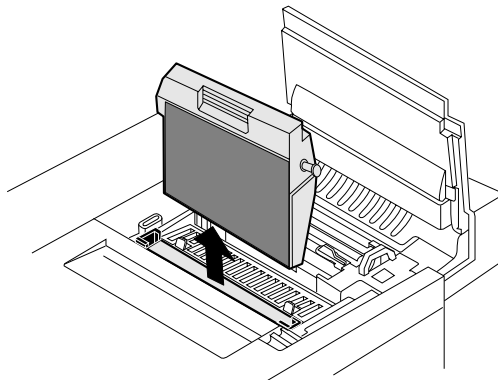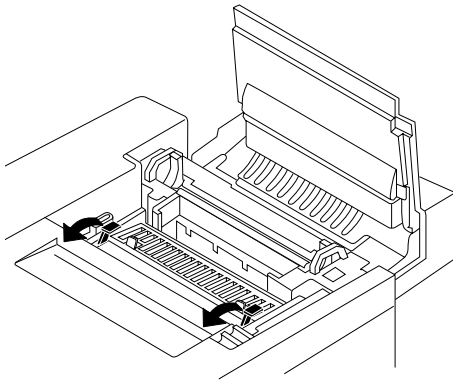
**5   Replace the protective sheet around the OPC belt cartridge and the tension
    release pin on each side.**

Insert the pin until you feel some resistance, move it forward (toward the silver
corona unit), and then slide it in the rest of the way. The tension-release pins pro-
tect the belt and its cleaning blade by relieving tension during movement.
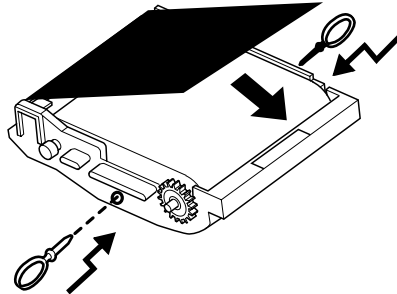
6   Repack the OPC belt cartridge in its original shipping bag.

If you don't have this bag, carefully wrap the cartridge in a piece of dark, heavy
cloth. Store the cartridge where it will not get scratched or damaged.

7   Rotate down the lock levers at each end of the OPC belt cartridge slot.

Prepare the Fuser Unit

 WARNING! *The fuser unit can become extremely hot and cause severe burns. Make
sure the unit is cool before handling it.*

ACHTUNG! *Die Fixiereinheit kann sehr heiß werden, so daß Verbrennungsgefahr
besteht. Bitte lassen Sie die Fixiereinheit einige Zeit abkühlen, bevor Sie diese
berühren.*

1   If you have a duplex model, ensure that the duplexer's rear cover is open.

If not, skip to step 2.

2   With the printer's front and top covers open, at the top of the fuser rotate the two lock levers to release the oil bottle.

»   **Note:** *The illustrations in steps 2 through 8 show the printer without the duplexer. However, the instructions for the fusing unit are the same for both models.*
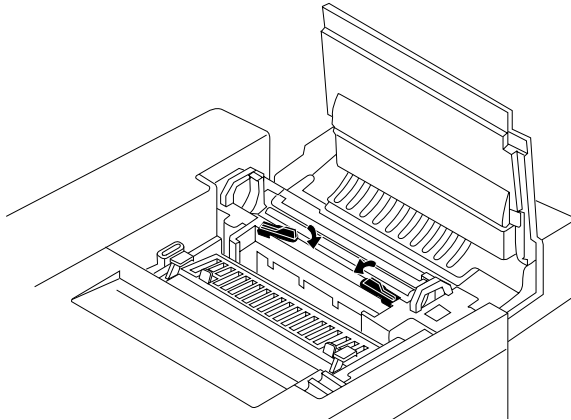
3   Remove the oil bottle.

◆   **Caution:** *Hold a sheet of paper under the oil bottle as you remove it, so no oil drips into the printer.*
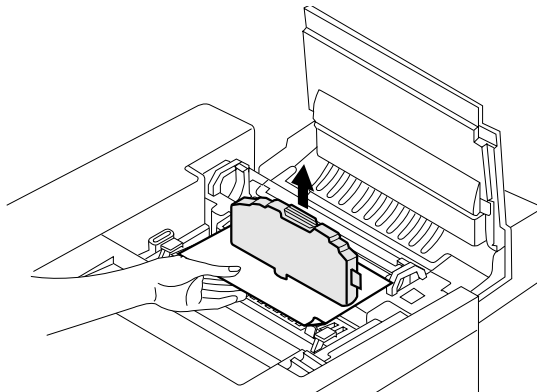
4   **Place the oil bottle in an oil-proof container, such as a plastic bag, until you're ready to reinstall it.**

5   **Use a fuser oil remover syringe to remove any excess oil from the fuser.**

Dispose of the oil following local safety laws and regulations.
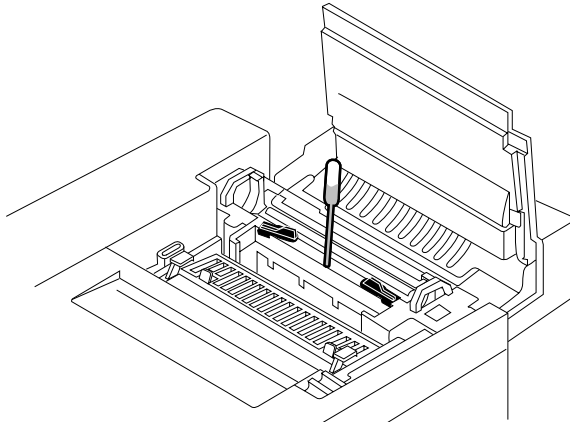
6   **Stuff several clean, wadded paper towels into the space normally occupied by the oil bottle to absorb any residual oil during shipment.**

»   **Note:** *Don't force the paper towels in, but make sure there are enough to fill the space.*
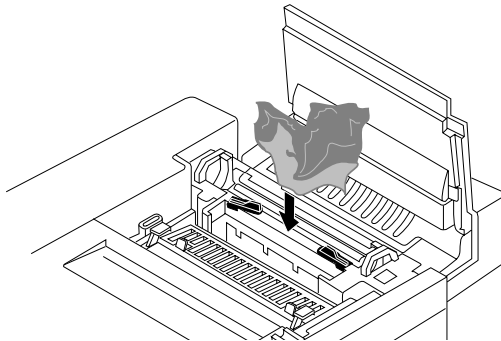
7   **Close the lock levers to secure the cleaning roller.**

Repacking the Printer   **9-7**

8   Install the fuser roller shipping restraints.

These restraints protect the fuser rollers from damage during a move by re-moving the pressure between the two rollers. They must be removed again before printing.

a   Open the pressure-release levers (one at each end of the fuser) to separate the two rollers in the fuser.
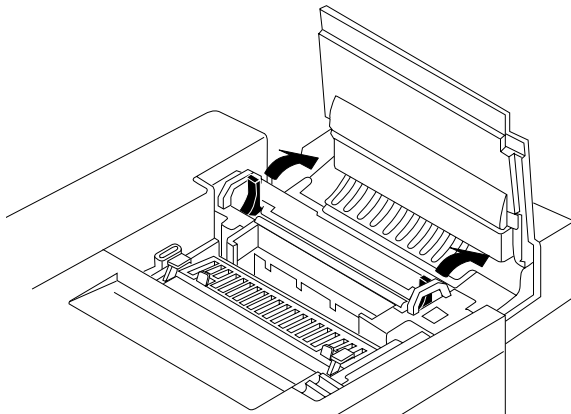
b   Insert the fuser roller shipping restraints between the fuser rollers (one at each end of the fuser).

◆   **Caution:** *Be sure to insert the shipping restraints at the **ends** of the rollers, not in the middle. Inserting them in the middle will damage the rollers.*
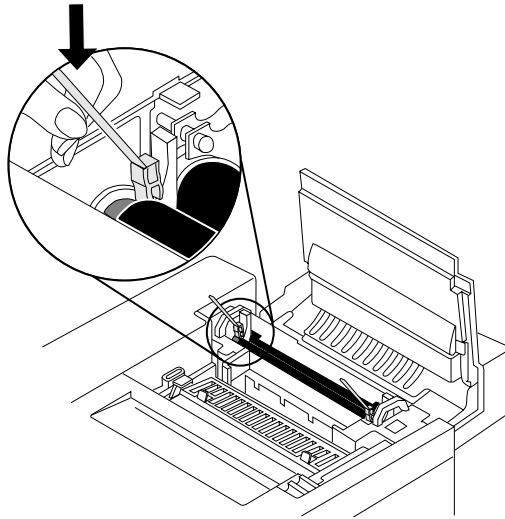
c   Close the pressure-release levers (one at each end of the fuser).

When correctly positioned, the fuser roller shipping restraints fit snugly between the rollers.

9   Close the printer's top cover.

10   If you have a duplex model, close the duplexer's rear cover.

Change the Waste Toner Pack

1   With the printer's front cover open, remove the waste toner pack from the printer.

»   **Note:** *This illustration shows the printer without the duplexer. However, the instructions are the same for both models.*
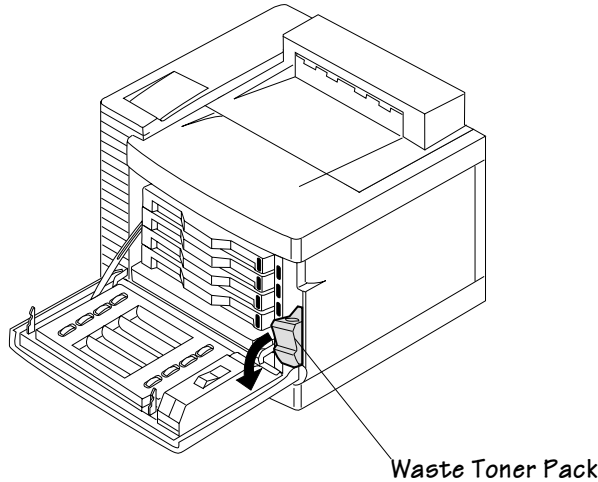
Waste Toner Pack

2   Use the label on the side of the old waste toner pack to seal the opening, and then dispose of the pack in accordance with safety laws and regulations in your area.

Seal this opening.
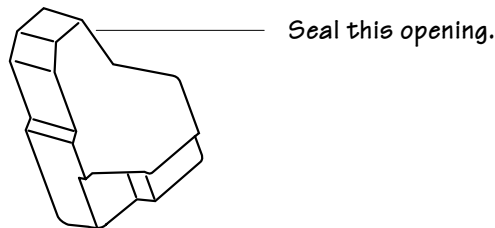
3   Install a new waste toner pack.

This ensures that no waste toner is shaken into the printer during shipment.

4   Close the printer's front cover.

Remove the Lower Input Feeder

» **Note:** *If you have a duplex model, the lower input feeder should not be removed. Skip to "Repack the Printer" on page 9-14.*

If you don't have a lower input feeder installed, skip to "Repack the Printer" on page 9-14.

1 **Remove the plastic side covers from the sides of the input feeder.**

» **Note:** *The illustrations for steps 1 through 5 show the printer without the duplexer.*

Do not use these instructions for the duplex model, since the lower input feeder will remain installed.
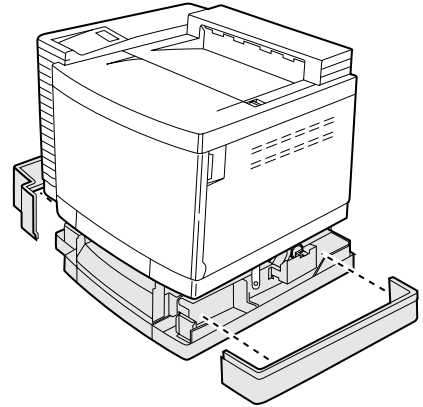
2 **Locate the cable at the left rear of the optional feeder that connects it to the printer, and then unplug it.**

3 **Switch the lower input feeder cover plate and the printer cover plate back to their original position.**

Repacking the Printer 9-11
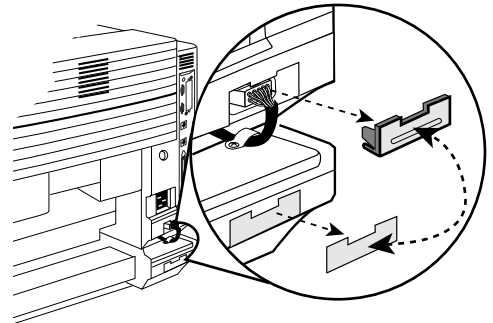
4 **Unscrew the thumbscrews that attach the two brackets (one on each side of the printer) to the lower input feeder.**

Printer   Side View
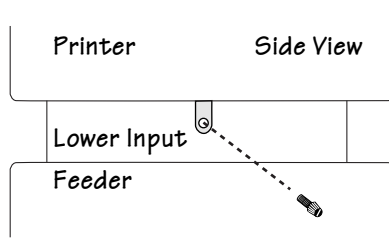
Lower Input

Feeder

5 **Remove the two metal brackets from underneath the sides of the printer.**

Angle the bracket out, and then, slide it out of the hole underneath the printer.

6 **Unplug the printer.**

Printer

Lower Input   Bracket

Feeder

Right-Front
View
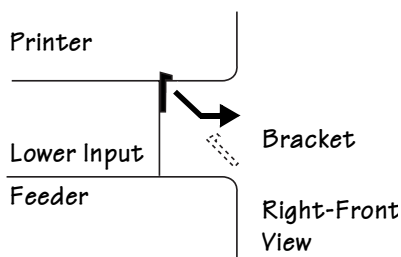
7 **With the help of another person, pick up the printer by its four corners, lift it
from the lower input feeder, and place the printer on a table.**

🔥 **WARNING!** *Your printer weighs approximately 66 lbs (30 kg) without
consumables. Your duplex model printer weighs approximately 93 lbs (42 kg)
without consumables. Be sure to have help when lifting and moving it.*

ACHTUNG! *Das Gewicht dieses Druckers beträgt ohne Verbrauchsmaterial ca.
30 kg. Das Gewicht dieses Druckers und Duplexer beträgt ohne
Verbrauchsmaterial ca. 42 kg. Bitte versuchen Sie niemals, den Drucker alleine
anzuheben oder zu transportieren.*

DeskLaser
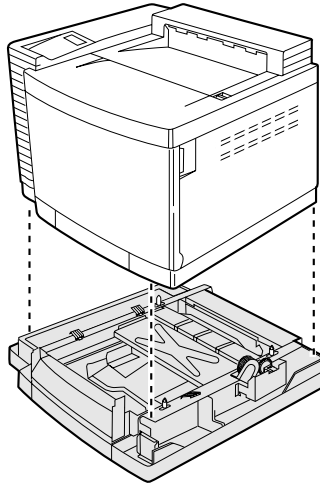
8 **Repack the input feeder in its original shipping carton for storage or
shipment. See page 9-15.**

» **Note:** *If you're returning the DeskLaser for service, you don't need to return the
optional lower input feeder. If you're returning the duplex model for service, leave
the lower input feeder attached.*

Repack the Printer

1 **Ensure that the fuser and fuser cleaner roller are in the printer.**

2 **With another person's help, put the printer into the plastic bag, and place the printer into the base tray of the shipping carton.**

3 **If you have a duplex model, pack it for shipment as shown in the illustration.**

It not, skip to step 4.

Duplex Model
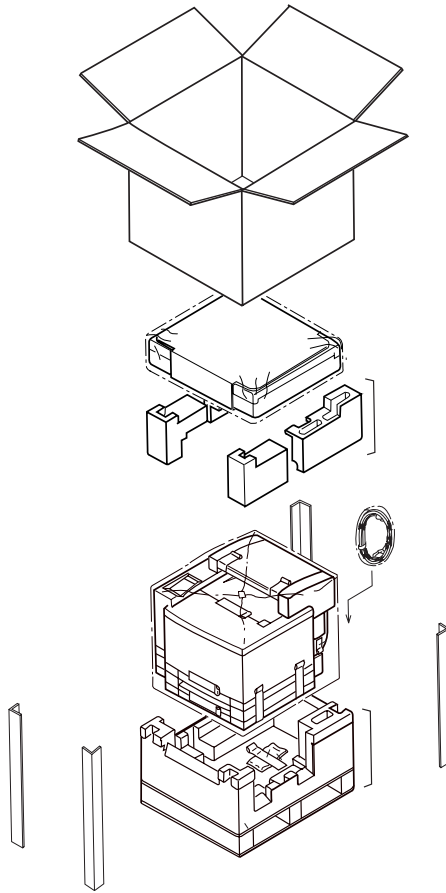
4   Pack the DeskLaser for shipment as shown in the illustration.

DeskLaser
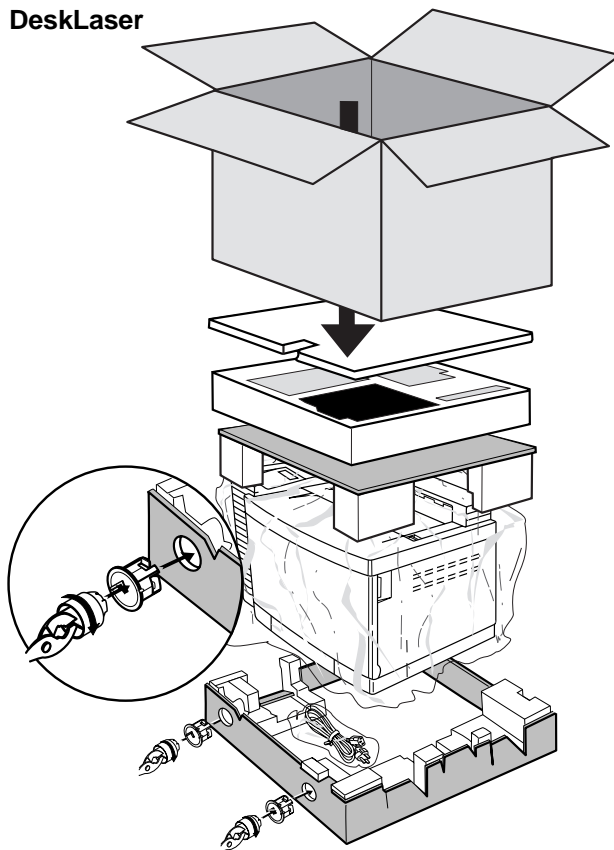
Repacking the Printer   **9-15**

5   **If you're also shipping the power cord and any manuals with the printer, place them in the package.**

»   **Note:** *Don't ship these items if you're returning the printer for service.*

6   **Attach the shipping carton to its base tray with the four joints provided.**

7   **Ensure that the top of the carton is securely taped.**

8   **Put the shipping straps around the carton.**

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A

QMS Customer Support

In This Appendix . . .

- ■ "Sources of Support" on page A-2
- ■ "QMS World-wide Offices" on page A-4

Sources of Support

Several sources of help and information are available, depending on the type of help you need.

Your QMS Vendor

Your local vendor (the one from whom you bought the printer) may be best equipped to help you. Your vendor has specially trained service technicians available to answer questions, and the equipment to analyze your printer problems.

Your Application Vendor

Often, "printing" problems have more to do with the application being used than with the printer. In this case, the application manufacturer is the best source of help.

Internet

Corporate Web Page

You can view the QMS home page at http://www.qms.com. The QMS server provides access to technical reports, new product announcements, a trade show schedule, and other general information about QMS. The QMS ftp resource is ftp.qms.com.

magicolor 2 DeskLaser Answer Base

The QMS Answer Base is a free interactive online technical support system for the QMS *magicolor* 2 DeskLaser. It answers common questions and provides diagnostic advice. To access the Answer Base, go to http://www.qms.com, select Support, and then select Answer Base.

The Answer Base helps you locate the information you need by asking you questions. In fact, it can provide results even when you don't quite know what to ask for or how to find it. Use the Answer Base before contacting technical support—you will likely find the answer to your question. However, if the answer is not available, you will be provided with specific QMS contact information to help solve your problem.

FAQs

You can access current FAQs (Frequently Asked Questions) about your print system at http://www.qms.com/support/support_set.htm.

QMS Customer Response Center (CRC)

You can contact the QMS Customer Response Center (CRC) in four different ways:

- **Telephone**—You can call the CRC toll-free at (877) 778-2687 (US) Monday–Friday, 7:00 am–6:00 pm, Central Time.

» **Note:** *If you call for assistance, have the following information ready so our technicians can help you more quickly:*

  - ☑ Your phone number, fax number, Email address, and shipping address
  - ☑ A description of the problem
  - ☑ The printer model and serial number
  - ☑ The type of host computer you're using
  - ☑ The type and version of operating system you're using
  - ☑ The interface you're using, and, if serial, the protocol (for example, XON/XOFF)
  - ☑ The application and version you're using
  - ☑ The emulation of the file you're trying to print (listed on both the status and startup pages)
  - ☑ Your printer firmware version (displayed on the control panel LCD while the printer initializes after being powered up and listed on the status/startup pages)
  - ☑ A status page, if you can print one

- **Email**—You can Email questions to the CRC through support@qms.com.

- **Fax**—You can fax questions to the CRC at (334) 633-3716 (US). Provide the same information as listed above, and indicate whether you would like a faxed or a phoned reply.

- **Internet**—If you have access to the World Wide Web, you can access the CRC through the QMS home page at http://www.qms.com/support/support_set.htm. You can access FAQs (Frequently Asked Questions) at http://www.qms.com/support/support_set.htm.

QMS World-wide Offices

QMS United States and Latin America

General Contact

Telephone	1 (334) 633-4300
Fax	1 (334) 633-4866
Email	info@qms.com
Internet	http://www.qms.com

Information on QMS products, supplies, and accessories, and on the authorized QMS remarketer or service provider nearest you

1 (800) 523-2696

Customer Response Center (CRC)
Technical Assistance

Telephone	1 (877) 778-2687 (toll-free)	7:00 am–6:00 pm Central Time
Email	support@qms.com	
Fax	1 (334) 633-3716	
Internet	http://www.qms.com	

Latin America

Fax	1 (334) 639-3347

National Service

Service Information, Installation, and Maintenance Pricing

1 (800) 858-1597

1 (800) 762-8894 (Custom Service Contracts Only)

On-Site Service and Depot Repair Information

1 (877) 778-2687   7:00 am–6:00 pm Central Time

Spare Parts Ordering and Information

1 (334) 633-4300 extension 2530 8:00 am–5:00 pm Central Time

Email	service@qms.com

QMS Canada

General Contact

Telephone	1 (905) 206-0848
Fax	1 (905) 206-0903
Supplies and Accessories	1 (800) 268-0343 extension 223

National Service
On-Site Service and Depot Repair Information

1 (800) 268-4969   8:30 am–5:00 pm Eastern Time

Spare Parts Ordering and Information

1 (905) 206-9234 extension 238 8:30 am–5:00 pm Eastern Time

QMS in Japan

General Contact

Telephone	(+81)-3 3779-9600
Fax	(+81)-3 3779-9650
Internet	http://www.qmsj.co.jp

QMS EMEA

QMS Australia	Anitech
	Sydney Business & Tech. Centre
	52/2 Railway Parade
	2141 Lidcombe NSW
	Australia
	Telephone (+61) 2–9901 3235
	Fax (+61) 2–9901 3273
	Internet http://www.qmsaus.com.au
QMS Benelux Belgium, Netherlands, and all unlisted countries	Planetenbaan 60 'Corner Plaza'
	3606 AK Maarssen
	The Netherlands
	Telephone (+31) 346–551333
	Fax (+31) 346–550170
	Internet http://www.qms.nl
QMS France	Vélizy Plus
	1 Bis, Rue du Petit Clamart
	78142 Vélizy Cedex
	France
	Telephone (+33) 1–410 79 393
	Fax (+33) 1–408 30 110
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QMS Customer Support   **A-5**

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B

Technical Specifications

In This Chapter . . .

Engine and Controller Specifications

» **Note:** *A **plane** is a single pass of the OPC belt (one toner color). For example, a one-color, single-sided (simplex) print job makes one pass (one plane), and a two-color print job makes two passes (two planes). A single-sided color **page** (also called a **face**) consists of four passes (or planes) of the OPC belt, since most color print jobs use all four toner colors. A two-sided (also known as duplex or two-faced) color page may consist of up to eight passes of the OPC belt, since most color print jobs use all four toner colors.*

Consumable life is expressed in simplex pages (1 face). A duplex page (2 faces) is equivalent to two simplex pages.

Engine

Engine	DeskLaser and Duplex Model	
Single-sided duty cycle*	**Monochrome**	**4-Color**
Pages/month**	20,000	5,000
Pages/day**	1,000	250

*This is the maximum duty cycle. The maximum duty cycle is 3 times the standard duty cycle. Any increase in the standard cycle is associated with a corresponding decrease in years of engine life.

**At 5% coverage.

Print Speed (Printer in Copy Mode)

Page size	Media	Simplex pages per minute		Duplex pages per minute*	
		Monochrome	**Color**	**Monochrome**	**Color**
Legal	Paper	8	4	3.2	2
Letter/A4		16	4	8	2
	Label	3	2	N/A	N/A
	Thick Stock	3	2	1.3	1.9
	Transparency	8	2	N/A	N/A

*Duplex model only. A duplex page consists of two faces (front and back).

General

Printer type	Desktop, non-impact, 4-color printer
Print method	**Scanner:** Semiconductor laser with rotating mirror
	Recorder: Black writing electrophotographic
	Process: Cyan, magenta, yellow, and black dry toner image transfer to print media
	Fuser: Heated rollers
Resolution	**Standard:** 600x600 dpi
Toner	**Type:** Microfine, dry, single component
	Packaging: User-replaceable cartridges
	» **Note:** *Keyed toner cartridges are available from your local vendor. See appendix A, "QMS Customer Support," for a list of locations and telephone numbers.*
Warmup time	**Maximum:** 210 seconds
	Typical: 180 seconds from power on, assuming normal temperature and humidity
Input sources	**Simplex Standard:** 250-sheet cassette
	Simplex Optional: 250-sheet lower input feeder
	Duplex Standard: 500-sheet input capacity (comes standard with lower input feeder)
Output	250-sheet output bin on top of printer

Consumables

The stated life expectancy of each consumable is based on printing under specific operating conditions, such as media type, number of color planes, page size, and page coverage (usually 5% coverage of letter/A4-size media). The actual life expectancy will vary depending on these and other printing variables, including continuous or intermittent printing, ambient temperature, and humidity. The starter toner kit contains half the capacity of replacement toner cartridges.

» **Note:** *Consumables for the QMS magicolor 2 Print System are available from your local vendor. See appendix A, "QMS Customer Support," for a list of locations and telephone numbers.*

Toner cartridges	Black	10,000 pages per cartridge @ 5% coverage
	Yellow	6,000 pages per cartridge @ 5% coverage
	Magenta	6,000 pages per cartridge @ 5% coverage
	Cyan	6,000 pages per cartridge @ 5% coverage
	» **Note:** *The QMS* magicolor *2 DeskLaser Print System accepts only QMS toner cartridges.* *The toner cartridges in many laser printers are sensitive to bright light because they contain a light-sensitive print drum. The toner cartridges in your QMS* magicolor *2 DeskLaser do not contain a print drum and, therefore, are not sensitive to light.*	
OPC belt cartridge	Maximum life—50,000 planes, usually occurs with continuous use; minimum life—20,000 planes, usually occurs with intermittent use although other factors also affect cartridge life.	
Fuser cleaning roller	12,000 pages at 5% coverage of each color	
Fuser oil bottle	12,000 pages at 5% coverage of each color	
Waste toner pack	12,000 pages at 5% coverage of each color	

Controller

CPU	Intel i960SA RISC operating at 16 MHz
Fonts	Windows 95 TrueType Windows 97 TrueType Windows NT TrueType
Interfaces	**Parallel**—Centronics / IEEE 1284 bidirectional **Ethernet**—TCP/IP, ftp, and telnet
Memory CHECK	Flash EPROM (system code) 8 MB RAM standard on DeskLaser, 32 MB RAM standard on the duplex model, upgradable to 64 MB through 2 SIMM connectors.

Optional memory	32 MB RAM SIMMs
	» **Note:** *See FAQ 7191 for a list of approved SIMMs, their manufacturers and part numbers, and the QMS products on which they can be used. You can access QMS FAQs through the Internet at http://www.qms.com/support/support_set.htm.*
System software	Softloadable; stored in Flash ROM

Electrical

Voltage and Power

Voltage and frequency	**US:** 110/120 volts ±10% at 60 Hz ±2 Hz **Japan:** 100 volts ±10% at 50/60 Hz ±2 Hz **International:** 220/240 volts ±10% at 50 Hz ±2 Hz		
Phase	Single		
Power consumption	Mode	Average	Maximum
	Operation **Standby** **Power save (engine only)**	450 watts 150 watts 25 watts	1000 watts 1000 watts
Certification	Energy Star compliant		

Current

Voltage	Mode	Average	Maximum
100 volts	**Operation** **Standby** **Energy saver mode (engine only)**	4.5 amperes 1.5 amperes 0.25 amperes	10 amperes 10 amperes
110/120 volts	**Operation** **Standby** **Energy saver mode (engine only)**	3.8 amperes 1.3 amperes 0.2 amperes	8.3 amperes 8.3 amperes
220/240 volts	**Operation** **Standby** **Energy saver mode (engine only)**	2 amperes 0.7 amperes 0.1 amperes	4.5 amperes 4.5 amperes

Environmental

Noise level	**Printing:** Less than 55 dB (A)
	Standby: Less than 48 dB (A)
Relative humidity	**Operating:** 20-80% RH (noncondensing)
	Transportation/Storage: 10-80% RH (noncondensing)
Temperature range	**Operating:** 50-90.5° F (10-32.5° C)
	Transportation/Storage: 32-95° F (0-35° C)
Altitude	**Operating:** 0-8202 ft (0-2500 m)
Inclination	**Operating:** Less than or equal to 1.5° from level
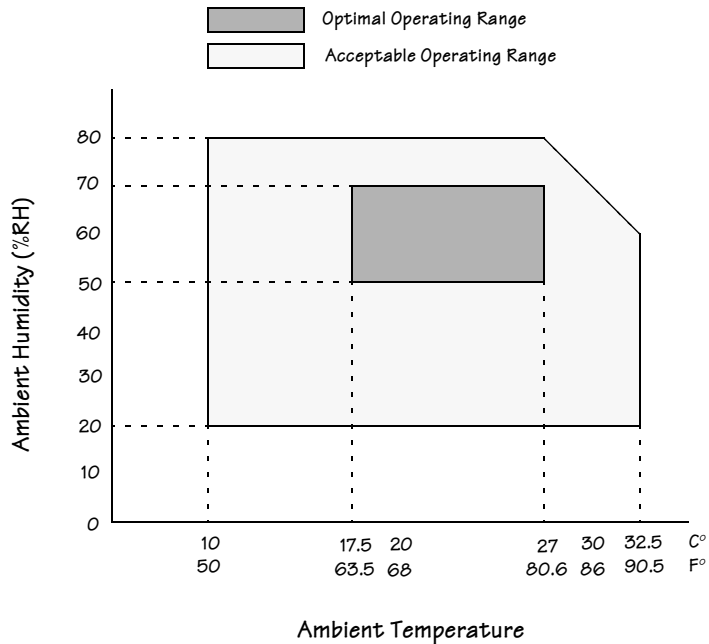
Physical

	DeskLaser	Duplex Model
Dimensions	**W:** 19.7 in., 500 mm **H:** 15.3 in., 388 mm **D:** 19.3 in., 490 mm	**W:** 19.7 in., 500 mm **H:** 21.4 in., 543 mm **D:** 22.4 in., 570 mm
Weight (including consumables)	**Shipping:** 90 lbs (41 kg) **Unpacked:** 79 lbs (36 kg)	**Shipping:** 106 lbs (xx kg) **Unpacked:** 110 lbs (50 kg)
Weight (excluding consumables)	**Unpacked:** 66 lbs (30 kg)	**Unpacked:** 93 lbs (42 kg)

Print Media

Delivery	**Output tray:** Face-down **Capacity:** 250 sheets of 20 lb (75 g/m^2) paper
Input sources	**Standard cassette feeder:** Letter/A4 or universal cassette **Lower input feeder:** Letter/A4 or universal cassette
Cassettes	**Standard cassette:** Letter/A4 **Optional cassette:** Universal—up to legal » **Note:** *Standard and universal cassettes are interchangeable between the standard and lower input feeder.*
Cassette capacity	**Loading height:** 1.02 in. (26 mm) **Paper:** About 250 sheets of 20 lb bond (75 g/m^2) paper **Envelope:** Up to 15, depending on the thickness of the envelopes **Glossy Stock:** Depends on the thickness of the media **Label:** Up to 50, depending on the thickness of the labels **Thick Stock:** Up to 50, depending on the thickness of the media **Transfer Media:** Up to 50, depending on the thickness of the media **Transparencies:** Up to 50, depending on the thickness of the media

Media sizes	(See the chart on page 3-14, "Media Sizes and Imageable Areas")
Media types, and printing modes (For complete information, refer to chapter 3, "Printing."	Type: Cut-sheet **Grain:** Long direction **Envelopes:** Thick Stock mode **Glossy Stock:** Thick Stock mode **Labels:** Thick Stock mode **Paper:** Standard office 16-24 lb bond (60-90 g/m^2), Standard mode » **Note:** *Do not print on perforated paper (including 3-hole-punched paper).* **Thick stock:** Up to 43 lb bond (163 g/m²)/60 lb cover/90 lb index (163 g/m^2), Thick Stock mode **Transfer media:** Thick Stock mode **Transparencies:** Transparency mode

PC Cable Pinouts

Centronics/IEEE 1284 Parallel

This table gives the pinouts for the printer end of the Centronics/IEEE 1284 parallel cable used to connect your printer to a computer.

Signal Pin No.	Signal Description	Direction
1	Strobe-	In
2	Data 1	InOut
3	Data 2	InOut
4	Data 3	InOut
5	Data 4	InOut
6	Data 5	InOut
7	Data 6	InOut
8	Data 7	InOut
9	Data 8	InOut
10	Acnlg-	Out
11	Busy+	Out
12	Pe+	Out
13	Select	Out
14	Autofeed	In
15	Reserved	-
16	Ground	-
17	Ground	-
18	Vcc Test	-
19-30	Ground	-
31	Iprime	In
32	Fault-	Out
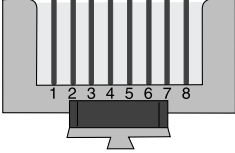
Signal Pin No.	Signal Description	Direction
33	Reserved	-
34	Reserved	-
35	Reserved	-
36	Selectin	In

Notes to the Table

■ **Direction** refers to the direction of signal flow as viewed from the printer.

■ **Return** denotes "twisted-pair return" and is to be connected at signal-ground level. When wiring the interface, be sure to use a twisted-pair cable for each signal and never fail to complete connection on the return side. To prevent noise effectively, these cables should be shielded and connected to the chassis of the system unit and printer, respectively.

■ All interface conditions are based on Transistor-Transistor Logic (TTL) level. Both the rise and fall times of each signal must be less than 0.2 microseconds.

■ Data transfer must be carried out by recognizing the ACKNLG or BUSY signal.

■ The cable must have an overall braided shield, Belden 8345 or equivalent.

■ Connectors must have shielded housings. The overall shield must be bonded to the shielded housings at both ends of the cable.

Ethernet

The following table provides the pinouts for the 10BaseT RJ45 Ethernet interface:

Pin	Name	Pinout View from Printer Interface
1	Transmit Data +	
2	Transmit Data -	
3	Receive Data +	
4	No Contact	
5	No Contact	
6	Receive Data -	
7	No Contact	
8	No Contact	

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Regulatory

EMI	**FCC (USA)** Title 47 CFR Ch. I, Part 15	Class B Digital Device
	Industry Canada (Canada) ICES-003 Issue 3	Class B Digital Device
	International (EU) EN 55022	Class B ITE
	VCCI (Japan) VCCI V-3/97.04	Class B ITE
CE Marking	**International (EU)** EN 55022 Class B ITE EN 60950 IEC 801-2 IEC 801-3	Emissions Product Safety ESD Radiated Susceptibility
cTick Mark	**ACA (Australia)** AS/NZS 4251 AS/NZS 3458	 Generic emissions standard ITE
Product Safety	**UL (USA)** **cUL (Canada)** **International (EU)**	CAN/CSA C22.2 No. 950-M90 EN 60950:1992 UL 1950, third edition
Energy Saver	**Energy Star (USA)**	EPA Energy Star Compliant
Laser Safety	**CDRH (USA)** **International (EU)**	Title 21 CFR Ch. I., Subchapter J IEC 825 and/or EN 60825

Warranty Considerations

Various factors can affect a printer's warranty. Two important ones are consumables and electrostatic discharge. Read your printer warranty carefully, and then store it in a safe place.

» **Note:** *Don't return any merchandise to the manufacturer without calling for a return merchandise authorization (RMA) number. See appendix A, "QMS Customer Support," for the QMS Customer Response Center (CRC) telephone number where you can obtain an RMA number.*

Consumables and Your Warranty

The use of non-QMS consumables and/or accessories alone does not affect either your warranty or any maintenance contract you may have purchased. However, if QMS printer failure or damage is found to be directly attributable to the use of non-QMS consumables and/or accessories, QMS will not repair the printer free of charge. In this case, standard time and material charges will be applied to service your printer for that particular failure or damage. QMS recommends that you use only QMS consumables and accessories to support your printer. For information on ordeing QMS consumables and accessories in the US, call 1 (800) 523-2696. In all other countries, check for the QMS office closest to you.

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Electrostatic Discharge and Your Warranty

It's very important to protect the printer controller board and other printer circuit boards from electrostatic damage.

◆ *If an antistatic wrist strap is provided* in your printer option kit, attach one end of it to your wrist and the other end to any convenient electrical ground. The bare metal chassis of equipment, such as on the back of a computer, is suitable if it is plugged in but *turned off. Never attach the wrist strap to any piece of equipment with an electrical current present.* Turn off all power switches first. Plastic, rubber, wood, painted metal surfaces, and telephones are not acceptable grounding points. The printer isn't an acceptable grounding point either because it must be unplugged before you perform this task.

If you don't have an antistatic wrist strap, discharge your body's static electric charge by touching a grounded surface before you handle any printer boards or components and before removing the controller board cover. If you must walk around before completing your task, discharge your body's static electric charge again before touching the printer controller board.

Incidental and consequential damages caused by not discharging electrostatic buildup can affect your printer warranty.

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C

TCP/IP Concepts

In This Appendix . . .

- "Terminology" on page C-2
- "Subnetting" on page C-4
- "Internet Routing" on page C-5

Introduction

This chapter first provides defines and discusses several TCP/IP concepts, including subnetting and subnet masks, internet routing and gateways, and Class A, B, and C, Internet addresses.

Terminology

Ethernet

Ethernet is a linear local area network developed by Xerox in 1976. Presently an industry standard, Ethernet operates on a bus topology and uses CSMA/CD (Carrier Sense Multiple Access with Collision Detection) to regulate traffic. Each device, or node, is connected by either thin or thick coaxial cable or twisted-pair wiring. Based on the IEEE 802.3 standard, Ethernet operates at 10 megabits (10 million bits) or 100 megabits (100 million bits) per second.

Ethernet Address

An Ethernet address is a unique address assigned to each device on an Ethernet network. If necessary, use the Eth. HW Address configuration menu to set your printer's Ethernet address.

Gateway

A computer or other device that attaches to two or more dissimilar networks and passes data from one to another is known as a gateway. Data is routed from gateway to gateway until it can be delivered to its final destination directly across one physical network. Each gateway has two addresses—one for each network that it connects.

Internet

The Internet is one or more networks connected by intelligent nodes, each of which is referred to as an Internet routers (IR).

Internet Address

An Internet address is a 32-bit address assigned to hosts connected to a TCP/IP network. It consists of a network part and a host part. While this address is expressed to the network in binary form, it is usually written in decimal form. For example, the binary Internet address

    10000000 00001010 00000010 00011110

is written as follows in decimal form:

    128.10.2.30

Use the Internet Address configuration to set your printer's Internet address.

IP (Internet Protocol)

Internet Protocol, the Internet standard protocol, defines the Internet datagram as the unit of information passed across the Internet and provides the basis for connection-less, best-effort packet delivery service. The Internet protocol suite is often referred to as TCP/IP because IP is one of the two most fundamental protocols.

Router

A device that examines data addresses, determines the most efficient pathway to the destination, and routes the data accordingly. Each router has two addresses—one for each network that it connects.

Use the Router 1 and Router 2 configuration menus to set the Internet address for one or two routers.

Subnet

A subnet is one physical network segment within an Internet.

Subnet Address

A subnet address is the division of the Internet address's local part into a physical network part and a host part in order for the site to use a single Internet address for multiple physical networks or subnets. This division of the host part has no effect on the Internet address when it goes outside of the site. The process of using subnet addresses is known as subnet addressing, subnet routing, or subnetting.

TCP/IP

Transmission Control Protocol/Internet Protocol, a suite of communication protocols, allows networked computers to share files and system resources, such as hard disks and printers.

Subnetting

One of the ways a single network address can span multiple physical networks is through subnetting, which divides the host part of an Internet address into a physical network part and a host part. In other words, it creates a hierarchical address, which identifies a subnet within an internet and then a host within a subnet.

The main advantage of subnetting is that it accommodates large growth since a given gateway does not need to know as much detail about distant destinations as it does about local ones.

Subnet Masks

» **Note:** *If the subnet mask remains set to the default (000.000.000.000) in the Subnet Mask configuration menu, gateways are automatic sensed. If you identify a subnet mask, this automatic sensing is disabled.*

If a subnet address is used to identify a host, you must also designate a corresponding 32-bit subnet mask. Like Internet and subnet addresses, the subnet mask is written in binary form for the network. Bits are set to 1 if the network treats the corresponding bit in the Internet address as part of the network address, and to 0 if it treats the bit as part of the host identifier. For example, the binary subnet mask

11111111 11111111 11111111 00000000

specifies that the first three groups of eight digits in the Internet address identify the network and subnet and that the fourth group identifies the host on that subnet. However, these numbers are more commonly written in decimal form. For example, the binary subnet mask above would be written in decimal form as

255.255.255.0

Internet Routing

Once the Internet address, subnet addresses, and subnet masks are in place, information can be sent, or routed, to any destination in the Internet. Both hosts and gateways participate in the routing process.

If information is sent between two devices on a single physical network, or subnet, no gateways are involved. The sending device encapsulates the datagram in a physical frame, binds the destination internet address to a physical hardware address, and sends the resulting frame directly to the destination.

If the information is sent between two devices on two different physical networks, however, the internet gateways form a cooperative, interconnected structure. Datagrams pass from gateway to gateway until they reach a gateway that can deliver them directly to a device on that physical network.

Class A, B, and C Internet Addresses

TCP/IP defines a means for the network administrator to configure the network that best suits the network environment at a site. One method is to define the 32-bit TCP/IP network address in terms of the number of networks and the number of hosts at the site. The network address is partitioned into a network part and a host part.

There are 3 common partitions—Class A, Class B, and Class C. The classification is done by the highest order bits. For example, a 0 in the highest order bit of the 32-bit address indicates that the address is Class A. Thus, the next 7 bits constitute the network address, and the last 24 bits form the host address. The high order bits also constitute the network mask for the Class A address.

The following table identifies the differences between Class A, B, and C addresses.

Class	Uses	Highest Order Bits (Binary)	Network Address Size	Host AddressSize	Network Mask (Hex)
A	Sites with few networks and many hosts	0	7 bits	24 bits	0xFF000000

B	Sites with some networks and some hosts	10	14 bits	16 bits	0xFFFF0000
C	Sites with many networks and few hosts	110	21 bits	8 bits	0xFFFFFF00

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D

Notices

In This Chapter . . .

- "Manual Notice" on page D-2
- "FCC Compliance Statement" on page D-2
- "Canadian Users Notice" on page D-3
- "Laser Safety" on page D-3
- "International Notices" on page D-4
- "Colophon" on page D-4

Manual Notice

QMS, Inc. reserves the right to make changes to this manual and to the equipment described herein without notice. Considerable effort has been made to ensure that this manual is free of inaccuracies and omissions. **However, QMS, Inc. makes no warranty of any kind including, but not limited to, any implied warranties of merchantability and fitness for a particular purpose with regard to this manual**. QMS, Inc. assumes no responsibility for, or liability for, errors contained in this manual or for incidental, special, or consequential damages arising out of the furnishing of this manual, or the use of this manual in operating the equipment, or in connection with the performance of the equipment when so operated.

FCC Compliance Statement

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 the dealer or an experienced radio/TV technician for help.

» **Note:** *A shielded cable is required to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules.*

◆ **Caution**: *Any modifications or changes to this product not expressly approved in writing by the manufacturer responsible for compliance to Federal Regulations could void the user's authority to operate this product within the Laws and Regulations of the Federal Communications Commission.*

Canadian Users Notice

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

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

Laser Safety

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

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

D-3

International Notices

Power Cord

The following power cord requirements are in effect for the 220v QMS *magicolor* 2 DeskLaser Print System.

Minimum 0.75 mm^2

Minimum   H05 VV - F

- The male plug is certified in the country in which the equipment is to be installed, and the female plug is an IEC 320 connector.

Colophon

This manual was written and formatted in FrameMaker. The illustrations were created in Adobe Illustrator. Typefaces chosen are Benguiat, Courier, Tekton, and Helvetica.

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