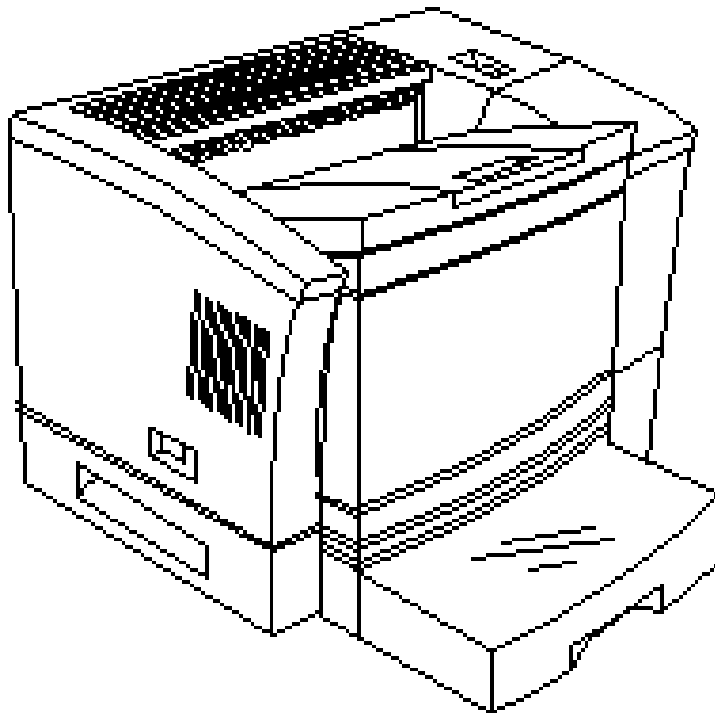

QMS[®] 2060 WX Print System User's Guide



1800457-001

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1


Introduction

In This Chapter . . .

- “About the Documentation” on page 1-2
 - “About This Manual” on page 1-2
 - “Typographic Conventions” on page 1-4
-

About the Documentation

You received the following documentation with your QMS 2060 WX Print System:

	QMS 2060 WX Print System Getting Started	This manual contains detailed, illustrated instructions to guide you as you unpack and set up your printer, connect it to a PC via the parallel or Ethernet interface, and install the Windows 95 or Windows NT printer drivers.
	QMS 2060 WX Print System User's Guide	You're looking at this document right now. The following section, "About this Manual," later in this chapter, 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 Printing	Explains how to configure the printer drivers, share the printer, use the QMS Network Print Monitor, refill the media cassette, print on different types of media, prevent media jams, and cancel a print job.
3 Control Panel	Introduces the parts of the control panel and discusses how to use the keys and the configuration menu.

4 Printer Options	Explains how to remove and replace the printer controller board, how to install available options, and how to update system software and printer drivers.
5 Maintenance	Describes how to handle and clean your printer as well as how to replace a toner cartridge.
6 Repacking the Printer	Provides printer repacking instructions.
7 Troubleshooting	Interprets printer and QMS Network Print Monitor status messages, explains how to remove a media jam, discusses various output problems, and describes how to install the printer driver manually.
A QMS Customer Support	Provides product sales and support telephone numbers and describes how to communicate with QMS through the QMS Bulletin Board, CompuServe, Internet.
B Technical Specifications	Provides print engine, controller, environmental, print media, consumable, and cabling specifications.
C TCPIP Concepts	Defines TCP/IP terminology and then discusses subnetting and Internet routing.

Index

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
<i>Mixed-Case</i> <i>Italic</i> 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 bold	PostScript operators and DOS commands
<i>lowercase italic</i>	Variable information in text
UPPERCASE	File and utility names
↵	Press the Enter key (PC) or Return key (Macintosh)
^	Press and hold down the Ctrl key (PC)

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

s **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.



2

Printing

In This Chapter . . .

- Configuring the Windows 95 printer driver on page 2-2
- Configuring the Windows NT 4.0 printer driver on page 2-12
- Sharing a printer on page 2-36
- Using the QMS Network Print Monitor on page 2-40
- Refilling the media cassette on page 2-45
- Printing on different types of media page 2-57
- Imageable area, page margin, and print media specifications on page 2-64
- Preventing media jams on page 2-67
- Cancelling print jobs page 2-68

Introduction

This chapter provides all of the information you need to print documents on your QMS 2060 WX Print System.

Configuring the Windows 95 Printer Driver

This section explains how to configure the QMS 2060 WX Print System Windows 95 printer driver. Windows on-line 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 2-12 for complete information.*

Setting the Printer Driver Defaults

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

1 Open the printer driver.

- a From the Windows 95 Start menu choose Settings.
- b Choose Printers.

2 In the Printers window, select the QMS 2060 WX printer driver.

3 From the File menu choose Properties.

The following tabs appear:

- **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 your Windows documentation.

- **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 2-4.
 - **Graphics**—Allows you to provide information how the text and images in your job will be printed. See “Configuring Graphics Options” on page 2-10.
- 4 **Make your selections, and then choose OK to save your changes and return to the Printers window.**
 - 5 **Close the Printers window.**

Configuring the Printer Driver for the Current Print Job

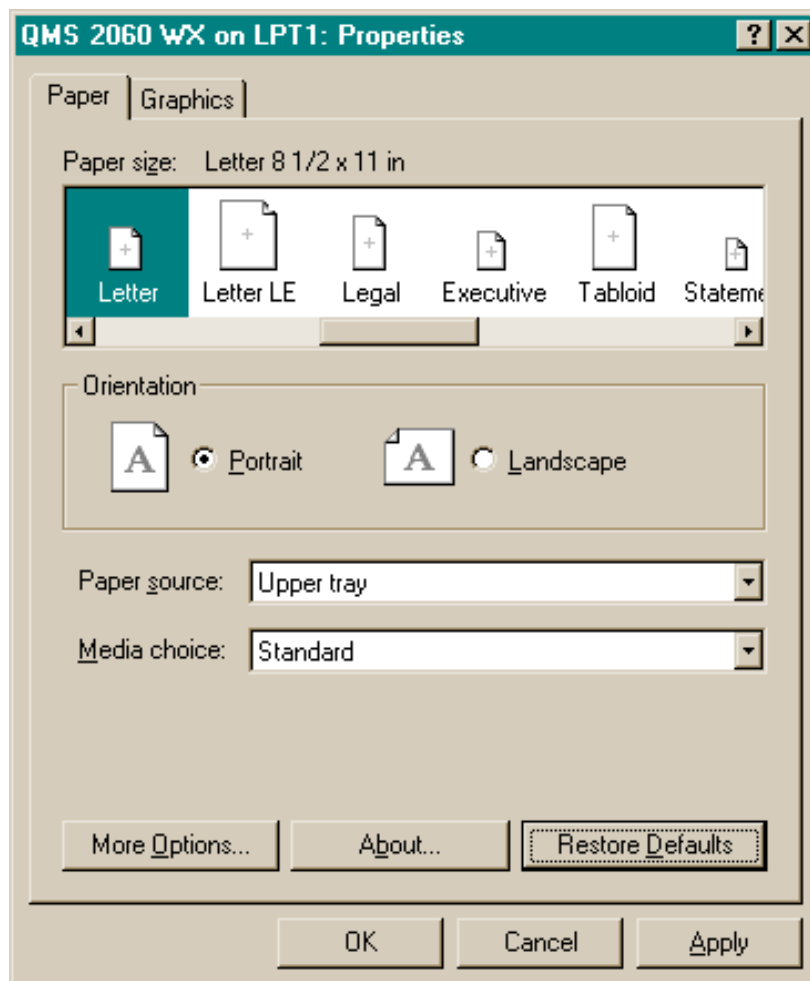
- » **Note:** *Any changes you make here apply only to the current document. These changes override any default settings you made through the Printers window.*
- 1 **From the application’s File menu choose Print (or, in some cases, Print Setup or Page Setup).**
 - 2 **In the Print, Print Setup, or Page Setup dialog box, select the QMS 2060 WX printer driver.**
 - 3 **Choose the Properties button.**

Two tabs appear:

 - **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 2-4.
 - **Graphics**—Allows you to provide information on how the text and images in your job will be printed. See “Configuring Graphics Options” on page 2-10.
- » **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 Paper Options

The Paper tab allows you to provide information about the type and location of the media you want to print on. Each option and button is explained in detail in this section.



Paper Size

s **Caution:** LEF refers to “long-edge feed.” All other page sizes are fed into the printer short-edge first. If you’re using LEF media, choose the page orientation in your application **before** you choose the media size. This ensures proper printed output (and the proper icon in applications such as Microsoft Word that display media icons in the Page Setup dialog box). Choosing the page size first will yield unexpected results.

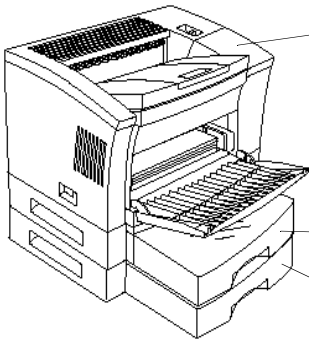
Purpose	Sets the media size.		
Choices	Size	Inches	Millimeters
	12x19	12.00 x 19.50	304.8 x 495.3
	A3	11.69 x 16.53	297.0 x 420.0
	A4	8.27 x 11.69	210.0 x 297.0
	A4 LEF	11.69 x 8.27	297.0 x 210.0
	A5	5.85 x 8.27	148.5 x 210.0
	B4 (JIS)	10.12 x 14.33	257.0 x 364.0
	B5 (JIS)	7.17 x 10.12	182.0 x 257.0
	C5	6.38 x 9.02	162.0 x 229.0
	Envelope	6.93 x 9.76	176.0 x 248.0
	Envelope #10	4.125 x 9.50	104.8 x 241.3
	Envelope C5	6.38 x 9.02	162.0 x 229.0
	Envelope DL	4.33 x 8.66	110.0 x 220.0
	Executive	7.25 x 10.50	185.0 x 267.0
	Legal	8.50 x 14.00	215.9 x 355.6
	Letter	8.50 x 11.00	215.9 x 279.4
	Letter LEF	11.0 x 8.50	279.4 x 215.9
	Monarch	3.875 x 7.50	98.4 x 190.5
	Postcard	3.94 x 5.83	100.0 x 148.0
	Statement	5.50 x 8.50	139.7 x 215.9
Tabloid	11.00 x 17.00	279.4 x 431.8	
Universal	13.00 x 19.00	330.2 x 482.6	
Default	Letter		
Notes	If a media size other than that chosen in the driver is installed in the cassette, an error message displays, but the job still prints on the currently installed media size.		

Orientation

- s **Caution:** *If you're using LEF media (see "Paper Size" on page 2-4), choose the page orientation in your application **before** you choose the media size. This ensures proper printed output (and the proper icon in applications such as Microsoft Word that display media icons in the Page Setup dialog box). Choosing the page size first will yield unexpected results.*

Purpose	Sets the orientation (printing direction) of the print media.
Choices	Portrait —Printing along the short edge of the page Landscape —Printing along the long edge of the page
Default	Portrait
Notes	Portrait Letter/A4 LEF is the same as landscape Letter/A4, and Landscape Letter/A4 LEF is the same as portrait Letter/A4.

Paper Source

Purpose	Sets the input source (cassette/tray) from which print media is pulled into the printer
Choices	 <p>Printer Default—The tray or cassette chosen through the Tray Select Key on the printer control panel</p> <p>Manual Feed—The multi-purpose tray</p> <p>Upper Tray—The standard media cassette</p> <p>Lower Tray—The optional lower media cassette</p>
Default	Upper Tray

Media Choice

Purpose	Sets the type of media to be printed
Choices	Standard —Normal weight paper, envelopes, and labels Thick Stock —24–43 lb (90–163 g/m ²) stock Transparency —Overhead transparency film
Default	Standard

Copies

Purpose	Sets the number of copies to be printed.
Choices	1-999
Default	1
Notes	This scroll box is available only when you're setting the printer driver defaults. If you're configuring the printer for the current print job, set the number of copies in the Print dialog box.

About... Button

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

Restore Defaults Button

The Restore Defaults button allows you to reset all of the selections on the Paper tab to their default settings.

Apply and OK Buttons

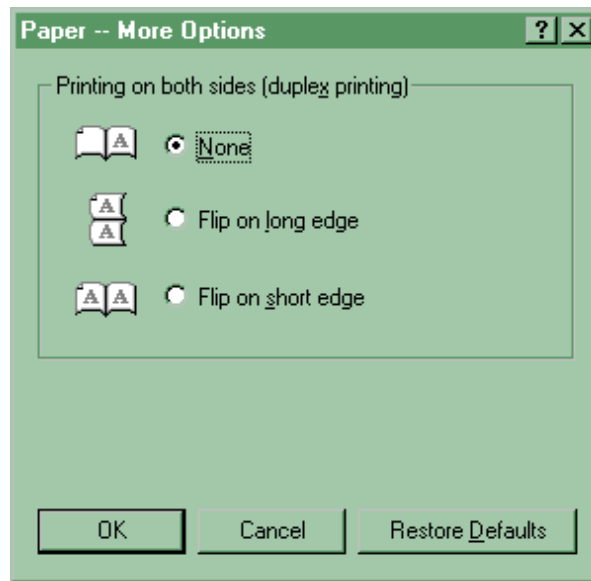
The Apply button allows you to save your changes and continue working in the Properties window, while the OK button allows you to save your changes and exit from the Properties window.

Cancel Button

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

Configuring More Paper Options

Use the More Options... button on the Paper tab to display the Paper—More Options window.



Printing on Both Sides (Duplex Printing)

Purpose	Select between simplex (single-sided) and duplex (double-sided) printing.
Choices	<p>None—Simplex printing</p> <p>Flip on Long Edge—Duplex printing with the pages flipped along the long edge</p> <p>Flip on Short Edge—Duplex printing with the pages flipped along the short edge</p>
Default	None
Notes	Because the printer normally expects short-edge-feed media, these options are reversed for long-edge-feed (LEF) media. In other words, choose Flip on Long Edge if you want to duplex and flip the pages on the short edge, or choose Flip on Short Edge if you want to duplex and flip the pages on the long edge.

Restore Defaults Button

The Restore Defaults button allows you to reset all of the selections on the Paper tab to their default settings.

OK Button

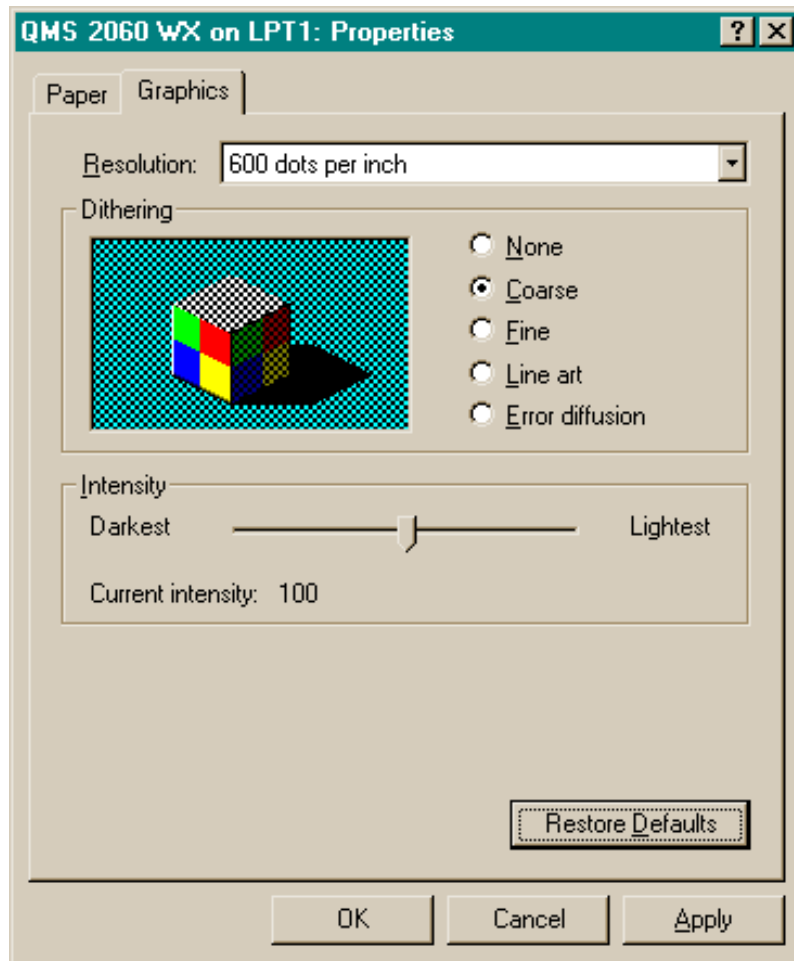
The OK button allows you to save your changes and exit from the Paper—More Options window.

Cancel Button

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

Configuring Graphics Options

The Graphics tab allows you to provide information on how the text and images in your job will be printed. Each option and button is explained in detail in this section.



Resolution

Resolution is the measurement of the dots per inch (dpi) at which your documents are printed. Your printer is capable of printing at 300 and 600 dpi.

For print jobs in which print speed is more important than print quality, you might want to select 300 dpi. But for print jobs requiring the best quality your printer can provide, set the printer resolution to 600 dpi. Printing at 600 dpi is a good choice for documents with photographs or other images that contain great detail, such as graphics with multiple levels of shading, or for documents requiring the sharpest possible text and line art.

Purpose	Sets the printing resolution.
Choices	300 dots per inch —For printing documents at 300x300 dpi 600 dots per inch —For printing documents at 600x600 dpi
Default	600 dots per inch

Dithering

Dithering, a technique for placing dots, allows the printer to create halftones, in which areas of print *appear* to contain many different values and densities and thus simulate a full range of grays.

Purpose	Sets the dither pattern.
Choices	None —No dithering Fine —For printing at resolutions less than 300 dpi (not recommended for this printer) Coarse —For printing text and most graphics at 300 or 600 dpi Error Diffusion —For printing photographs or pictures that don't have sharp, well-defined edges at 300 or 600 dpi Line Art —For printing monochrome graphics with clearly defined lines
Default	Coarse

Configuring the
Windows NT 4.0
Printer Driver

Intensity

Intensity specifies how light or dark to print the graphics in your document.

Purpose	Sets the degree of lightness/darkness at which graphics are printed.
Range	0 (darkest)–200 (lightest)
Default	100

Restore Defaults Button

The Restore Defaults button allows you to reset all of the selections on the Paper tab to their default settings.

Apply and OK Buttons

The Apply button allows you to save your changes and continue working in the Properties window, while the OK button allows you to save your changes and exit from the Properties window.

Cancel Button

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

Configuring the Windows NT 4.0 Printer Driver

This section explains how to configure the QMS 2060 WX Print System Windows NT 4.0 printer driver, and it describes all of the available options. Context-sensitive Windows on-line help is also available while you're configuring the printer driver. Just choose the ? button in the driver dialog box, and then select any driver option for more information.

- » **Note:** *If you're using Windows 95, refer to "Configuring the Windows 95 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.

Setting Printer Properties

- 1 From the Windows NT Start menu choose Settings.**
- 2 From the Settings menu choose Printers.**
- 3 In the Printers window, select the QMS 2060 WX printer icon.**
- 4 From the File menu choose Properties.**

Six tabs appear in the QMS 2060 WX Properties window: General, Ports, Scheduling, Sharing, Security, and Device Settings.

For information on all the tabs except Device Settings, refer to your Windows NT 4.0 documentation. For information on the Device Settings tab, see "Configuring Device Settings" on page 2-15.

- 5 Make your option selections, and then choose OK.**

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

Setting Default Document Properties

- » **Note:** *Changes you make here apply to all documents. However, any changes you make through the Document Properties window or through your application override these settings.*

- 1 Open the printer driver.**
 - a From the Windows NT Start menu choose Settings.
 - b From the Settings menu choose Printers.
- 2 In the Printers window, select the QMS 2060 WX printer icon.**

3 From the File menu choose Properties.

Two tabs appear in the QMS 2060 WX Default Document Properties window:

- **Page Setup**—Allows you to provide information about paper size, paper source, copy count, and orientation. See “Configuring Page Setup Options” on page 2-22.
- **Advanced**—Allows you to provide information about the page setup options as well as about resolution, media, and metafile spooling. See “Configuring Advanced Options” on page 2-26.

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

Setting 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 2060 WX.

3 Choose the Properties button.

Two tabs appear in the QMS 2060 WX Document Properties window:

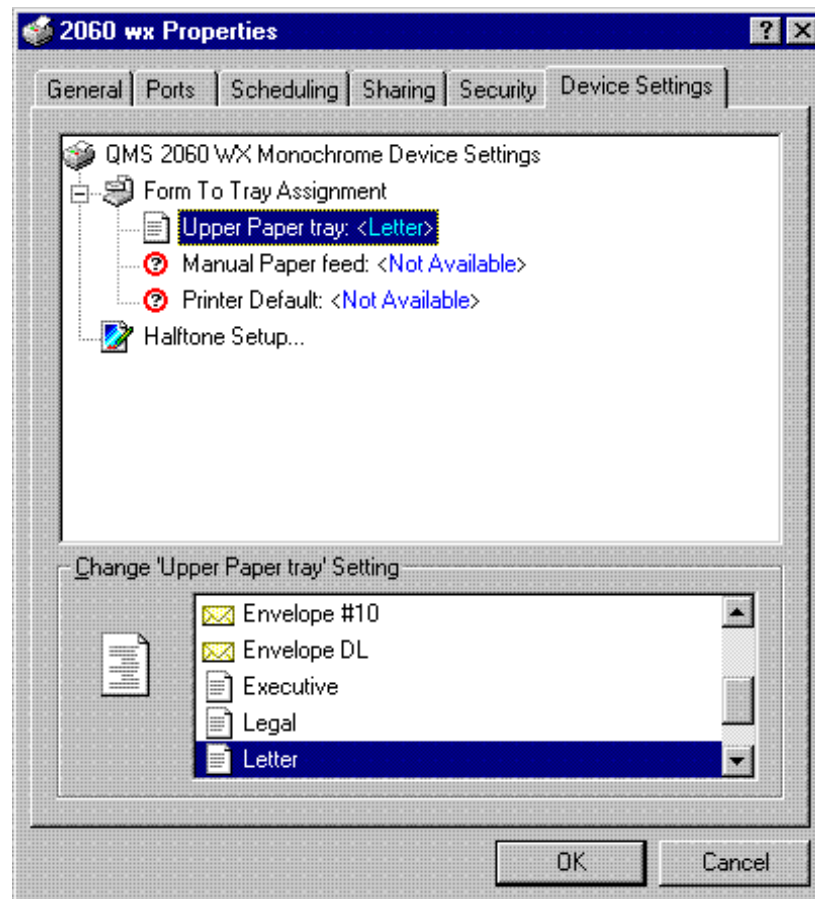
- **Page Setup**—Allows you to provide information about paper size, paper source, copy count, and orientation. See “Configuring Page Setup Options” on page 2-22.
- **Advanced**—Allows you to provide information about the page setup options as well as about resolution, halftone color adjustment, media, and metafile spooling. See “Configuring Advanced Options” on page 2-26.

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

Configuring Device Settings

Device Settings is the sixth tab in the QMS 2060 WX Properties dialog box. The QMS 2060 WX Device Settings tree has two branches:

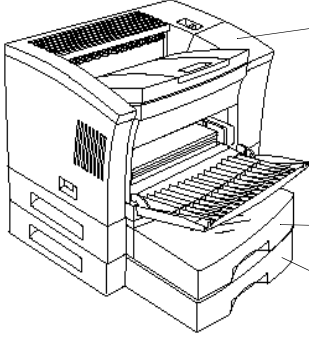
- **Form To Tray Assignment**—Upper Paper tray, Manual Paper feed, and Printer Default.
- **Halftone Setup**—No subbranches. Selecting Halftone Setup... displays a button that in turn displays the Device Color / Halftone Properties dialog box.



Configuring the
Windows NT 4.0
Printer Driver

Form To Tray Assignment

s **Caution:** *If you're using LEF media (see "Paper Size" on page 2-4), choose the page orientation in your application **before** you choose the media size. This ensures proper printed output (and the proper icon in applications such as Microsoft Word that display media icons in the Page Setup dialog box). Choosing the page size first will yield unexpected results.*

Purpose	Assigns a specific form (media size) to a tray.
Choices	 <p>Printer Default—The tray or cassette chosen through the Tray Select Key on the printer control panel</p> <p>Manual Feed—The multi-purpose tray</p> <p>Upper Tray—The standard media cassette</p> <p>Lower Tray—The optional lower media cassette</p> <p>See the "Notes" section at the bottom of this table for a list of the choices for each of these trays.</p>
Default	No defaults

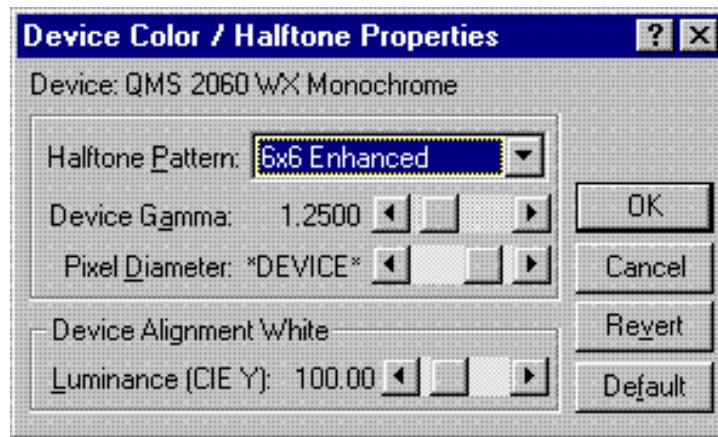
Configuring the
Windows NT 4.0
Printer Driver

Notes	<p>Select an option (subbranch) to display the choices for that option. The choices appear in a lower window. Then select a form (media size) for the selected option. The selected form (media size) will appear in the upper window beside the name of the option.</p> <p>If the subbranches aren't displayed, click the + sign before the branch name to display them.</p> <p>The media size choices for the Lower Paper Tray, Manual Paper Feed, Printer Default, and Upper Tray are listed in the following table.</p> <table border="1"> <thead> <tr> <th>Size</th> <th>Inches</th> <th>Millimeters</th> </tr> </thead> <tbody> <tr> <td>12x19</td> <td>12.00 x 19.50</td> <td>304.8 x 495.3</td> </tr> <tr> <td>A3</td> <td>11.69 x 16.53</td> <td>297.0 x 420.0</td> </tr> <tr> <td>A4</td> <td>8.27 x 11.69</td> <td>210.0 x 297.0</td> </tr> <tr> <td>A4 LEF</td> <td>11.69 x 8.27</td> <td>297.0 x 210.0</td> </tr> <tr> <td>A5</td> <td>5.85 x 8.27</td> <td>148.5 x 210.0</td> </tr> <tr> <td>B4 (JIS)</td> <td>10.12 x 14.33</td> <td>257.0 x 364.0</td> </tr> <tr> <td>B5 (JIS)</td> <td>7.17 x 10.12</td> <td>182.0 x 257.0</td> </tr> <tr> <th>Size</th> <th>Inches</th> <th>Millimeters</th> </tr> <tr> <td>C5</td> <td>6.38 x 9.02</td> <td>162.0 x 229.0</td> </tr> <tr> <td>Envelope</td> <td>6.93 x 9.76</td> <td>176.0 x 248.0</td> </tr> <tr> <td>Envelope #10</td> <td>4.125 x 9.50</td> <td>104.8 x 241.3</td> </tr> <tr> <td>Envelope C5</td> <td>6.38 x 9.02</td> <td>162.0 x 229.0</td> </tr> <tr> <td>Envelope DL</td> <td>4.33 x 8.66</td> <td>110.0 x 220.0</td> </tr> <tr> <td>Executive</td> <td>7.25 x 10.50</td> <td>185.0 x 267.0</td> </tr> <tr> <td>Legal</td> <td>8.50 x 14.00</td> <td>215.9 x 355.6</td> </tr> <tr> <td>Letter</td> <td>8.50 x 11.00</td> <td>215.9 x 279.4</td> </tr> <tr> <td>Letter LEF</td> <td>11.0 x 8.50</td> <td>279.4 x 215.9</td> </tr> <tr> <td>Monarch</td> <td>3.875 x 7.50</td> <td>98.4 x 190.5</td> </tr> <tr> <td>Postcard</td> <td>3.94 x 5.83</td> <td>100.0 x 148.0</td> </tr> <tr> <td>Statement</td> <td>5.50 x 8.50</td> <td>139.7 x 215.9</td> </tr> <tr> <td>Tabloid</td> <td>11.00 x 17.00</td> <td>279.4 x 431.8</td> </tr> <tr> <td>Universal</td> <td>13.00 x 19.00</td> <td>330.2 x 482.6</td> </tr> </tbody> </table>	Size	Inches	Millimeters	12x19	12.00 x 19.50	304.8 x 495.3	A3	11.69 x 16.53	297.0 x 420.0	A4	8.27 x 11.69	210.0 x 297.0	A4 LEF	11.69 x 8.27	297.0 x 210.0	A5	5.85 x 8.27	148.5 x 210.0	B4 (JIS)	10.12 x 14.33	257.0 x 364.0	B5 (JIS)	7.17 x 10.12	182.0 x 257.0	Size	Inches	Millimeters	C5	6.38 x 9.02	162.0 x 229.0	Envelope	6.93 x 9.76	176.0 x 248.0	Envelope #10	4.125 x 9.50	104.8 x 241.3	Envelope C5	6.38 x 9.02	162.0 x 229.0	Envelope DL	4.33 x 8.66	110.0 x 220.0	Executive	7.25 x 10.50	185.0 x 267.0	Legal	8.50 x 14.00	215.9 x 355.6	Letter	8.50 x 11.00	215.9 x 279.4	Letter LEF	11.0 x 8.50	279.4 x 215.9	Monarch	3.875 x 7.50	98.4 x 190.5	Postcard	3.94 x 5.83	100.0 x 148.0	Statement	5.50 x 8.50	139.7 x 215.9	Tabloid	11.00 x 17.00	279.4 x 431.8	Universal	13.00 x 19.00	330.2 x 482.6
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Configuring the
Windows NT 4.0
Printer Driver

Halftone Setup

Selecting the Halftone Setup branch of the Device Settings tab displays a Halftone Setup... button at the bottom of the dialog box. Choose this button to display the Device Color / Halftone Properties dialog box.



QMS has carefully set the default values of the parameters in the Device Color / Halftone Properties dialog box to provide optimum performance with the QMS 2060 WX. Unless you're an expert at handling these parameters, QMS recommends that you use the Halftone Color Adjustment dialog box on page 2-32 to make adjustments. If, through the use of the Device Color / Halftone Properties dialog box, you reach an impasse in your adjustments, use the Default button to return the parameters to their default values.

Halftone Pattern

Purpose	Specifies the cell size for the pattern.
Choices	2x2, 2x2 Enhanced, 4x4, 4x4 Enhanced, 6x6, 6x6 Enhanced, 8x8, 8x8 Enhanced, 10x10, 10x10 Enhanced, 12x12, 12x12 Enhanced, 14x14, 14x14 Enhanced, 16x16, 16x16 Enhanced
Default	6x6 Enhanced
Notes	<p>Halftone pattern is defined by the size of the cells used in the pattern. Cells are measured in pixels.</p> <p>A 4x4 cell contains 16 pixels. Larger cells print a more coarsely grained picture; however, larger cells allow a greater range of grays or colors to be printed.</p> <p>Enhanced cell patterns are optimized to produce greater resolution. If your graphic prints with an unwanted pattern of lines or an unwanted moiré pattern, try printing it again, using the same cell size but without enhancement.</p>

Device Gamma

Purpose	Sets the gamma correction value of the printer.
Range	0.2500-6.5000
Default	1.2500
Notes	Often in scanned images grayscale may be too light or too dark to show details clearly. Using gamma correction on a grayscale image is similar to using a graphic equalizer on a home stereo; the range of gray levels can be adjusted for the best possible image. This sharpens the overall midrange contrast while blacks (shadows) and white (highlights) keep their original values.

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Pixel Diameter

Purpose	Adjusts the print density.
Range	576.9%–33.3% Relative-percentage mode—You adjust the pixel diameter based on final printing resolution. For example, 200.00% specifies that the pixel diameter is 200% larger than the printing resolution. DEVICE The halftone driver uses a pixel size based on the print resolution. 1/52"–1/900" Inch mode—You adjust the pixel diameter based on the real pixel size. For example, 1/100 equals 0.01".
Default	DEVICE
Notes	The mode value or name appears to the left of the scroll bar and changes as you scroll.

Device Alignment White/Luminance (CIE Y)

Purpose	Adjusts device white points using the CIE color system
Range	25.00-400.00
Default	100.00
Notes	The CIE (International Commission on Illumination) color system defines color in terms of luminance, hue, and saturation. The range (25.00 to 400.00) scales the entire device-output color darker or brighter by stretching device colors over a smaller or larger range.

Default Button

The Default button allows you to reset all of the selections in the Device Color / Halftone Properties window to their default settings.

Revert Button

The Revert button allows you to reset all of the selections in the Device Color / Halftone Properties window to the values in use when the window was opened.

OK Button

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

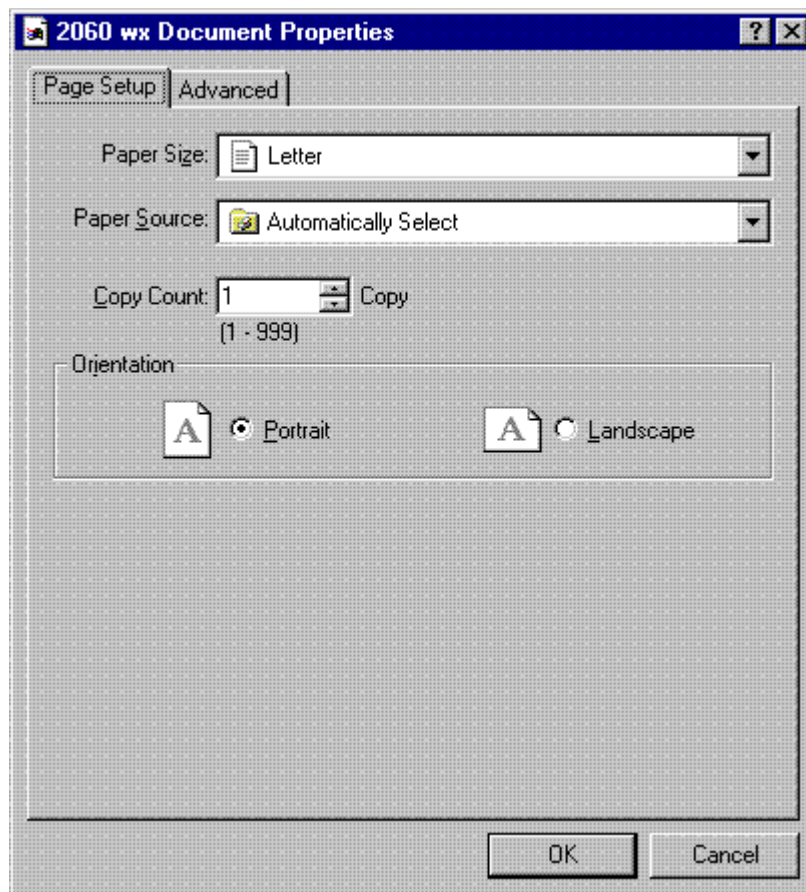
Cancel Button

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

Configuring Page Setup Options

The Page Setup tab allows you to provide information about the paper size, paper source, copy count, and orientation of the media you want to print on. Each option and button is explained in this section.

- » **Note:** *The Page Setup and Advanced tabs display in both the QMS 2060 WX Default Document Properties and the QMS 2060 WX Document Properties dialog boxes. Since the tabs are the same in both dialog boxes, only the Document Properties dialog box is shown here.*



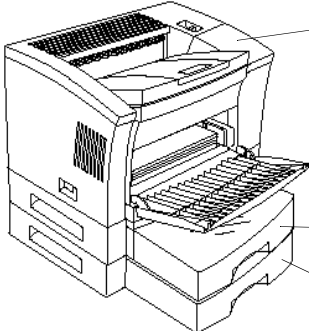
Paper Size

s **Caution:** *LEF refers to “long-edge feed.” All other page sizes are fed into the printer short-edge first. If you’re using LEF media, choose the page orientation in your application **before** you choose the media size. This ensures proper printed output (and the proper icon in applications such as Microsoft Word that display media icons in the Page Setup dialog box). Choosing the page size first will yield unexpected results.*

Purpose	Sets the media size.		
Choices	Size	Inches	Millimeters
	12x19	12.00 x 19.50	304.8 x 495.3
	A3	11.69 x 16.53	297.0 x 420.0
	A4	8.27 x 11.69	210.0 x 297.0
	A4 LEF	11.69 x 8.27	297.0 x 210.0
	A5	5.85 x 8.27	148.5 x 210.0
	B4 (JIS)	10.12 x 14.33	257.0 x 364.0
	B5 (JIS)	7.17 x 10.12	182.0 x 257.0
	C5	6.38 x 9.02	162.0 x 229.0
	Envelope	6.93 x 9.76	176.0 x 248.0
	Envelope #10	4.125 x 9.50	104.8 x 241.3
	Envelope C5	6.38 x 9.02	162.0 x 229.0
	Envelope DL	4.33 x 8.66	110.0 x 220.0
	Executive	7.25 x 10.50	185.0 x 267.0
	Legal	8.50 x 14.00	215.9 x 355.6
	Letter	8.50 x 11.00	215.9 x 279.4
	Letter LEF	11.0 x 8.50	279.4 x 215.9
	Monarch	3.875 x 7.50	98.43 x 190.5
	Postcard	3.94 x 5.83	100.0 x 148.0
	Statement	5.50 x 8.50	139.7 x 215.9
	Tabloid	11.00 x 17.00	279.4 x 431.8
	Universal	13.00 x 19.00	330.2 x 482.6
Default	Letter		
Notes	If a media size other than that chosen in the driver is installed in the cassette, an error message displays, but the job still prints on the currently installed media size.		

Configuring the
Windows NT 4.0
Printer Driver

Paper Source

Purpose	Sets the input source (cassette/tray/bin) from which print media is pulled into the printer.
Choices	 <p>Printer Default—The tray or cassette chosen through the Tray Select Key on the printer control panel</p> <p>Manual Feed—The multi-purpose tray</p> <p>Upper Tray—The standard media cassette</p> <p>Lower Tray—The optional lower media cassette</p> <p>Automatically Select—Any cassette or tray that contains the requested media size</p>
Default	Automatically Select

Copy Count

Purpose	Sets the number of copies to be printed.
Choices	1-999
Default	1 Copy

Orientation

- s **Caution:** *If you're using LEF media, choose the page orientation in your application **before** you choose the media size. This ensures proper printed output (and the proper icon in applications such as Microsoft Word that display media icons in the Page Setup dialog box). Choosing the page size first will yield unexpected results.*

Purpose	Sets the orientation (printing direction) of the print media.
Choices	Portrait —Printing along the short edge of the page Landscape —Printing along the long edge of the page
Default	Portrait
Notes	Portrait Letter/A4 LEF is the same as landscape Letter/A4, and Landscape Letter/A4 LEF is the same as portrait Letter/A4.

Media Choice

Purpose	Sets the type of media to be printed
Choices	Standard —Normal weight paper, envelopes, and labels Thick Stock —24–43 lb (90–163 g/m ²) stock Transparency —Overhead transparency film
Default	Standard

OK Button

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

Cancel Button

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

Configuring Advanced Options

The Advanced tab allows you to provide information about resolution, media, and metafile spooling in addition to the page setup options discussed in “Configuring Page Setup Options” on page 2-22.

On the Advanced tab, the options are listed in tree form on three branches:

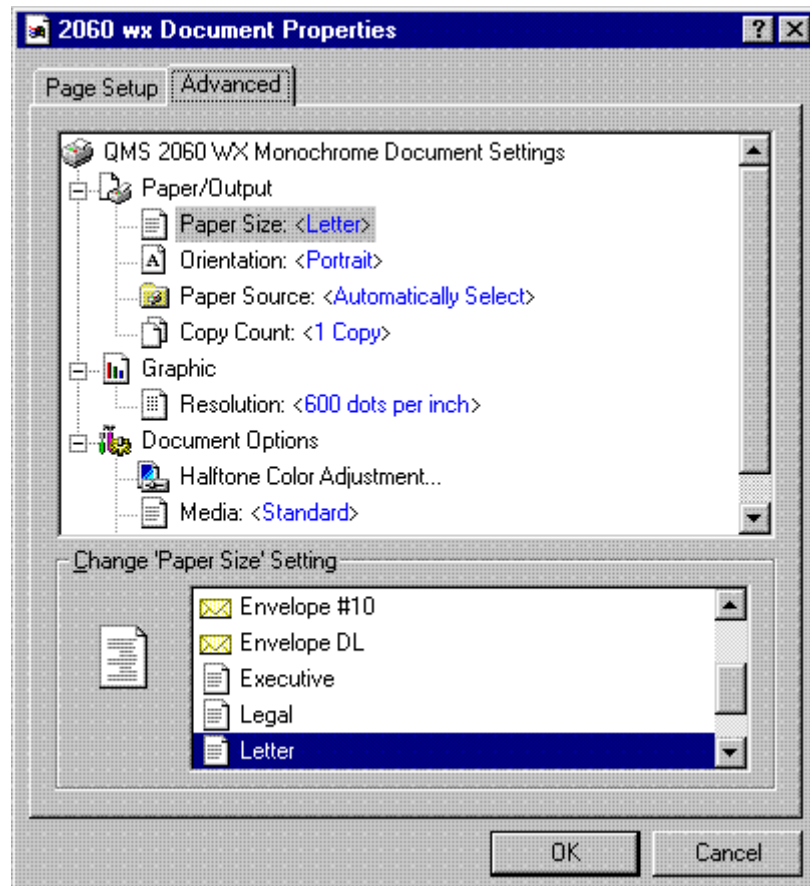
- **Paper/Output branch**—Paper Size, Orientation, Paper Source, and Copy Count
- **Graphic branch**—Resolution
- **Document Options branch**—Media and Metafile Spooling

Beside each option is a word or phrase in angle brackets. This is the option setting. For example, Beside Paper Size is displayed <Letter>: Paper size is the option and <Letter> is the option setting.

To change an option setting, select an option. Under that option is displayed a list of selections. Just select a setting to display it inside the angle brackets beside the option.

Configuring the
Windows NT 4.0
Printer Driver

- » **Note:** *The Page Setup and Advanced tabs display in both the QMS 2060 WX Default Document Properties and the QMS 2060 WX Document Properties dialog boxes. Since the tabs are the same in both dialog boxes, only the Document Properties dialog box is shown here.*



Configuring the
Windows NT 4.0
Printer Driver

Paper Size

- s **Caution:** *LEF refers to “long-edge feed.” All other page sizes are fed into the printer short-edge first. If you’re using LEF media, choose the page orientation in your application **before** you choose the media size. This ensures proper printed output (and the proper icon in applications such as Microsoft Word that display media icons in the Page Setup dialog box). Choosing the page size first will yield unexpected results.*

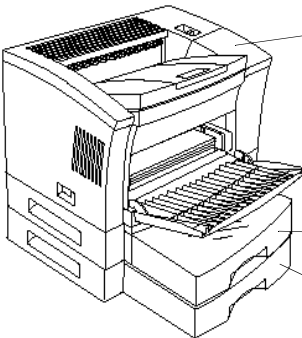
Branch	Paper/Output		
Purpose	Sets the media size.		
Choices	Size	Inches	Millimeters
	12x19	12.00 x 19.50	304.8 x 495.3
	A3	11.69 x 16.53	297.0 x 420.0
	A4	8.27 x 11.69	210.0 x 297.0
	A4 LEF	11.69 x 8.27	297.0 x 210.0
	A5	5.85 x 8.27	148.5 x 210.0
	B4 (JIS)	10.12 x 14.33	257.0 x 364.0
	C5	6.38 x 9.02	162.0 x 229.0
	Envelope	6.93 x 9.76	176.0 x 248.0
	Envelope #10	4.125 x 9.50	104.8 x 241.3
	Envelope C5	6.38 x 9.02	162.0 x 229.0
	Envelope DL	4.33 x 8.66	110.0 x 220.0
	Executive	7.25 x 10.50	185.0 x 267.0
	Legal	8.50 x 14.00	215.9 x 355.6
	Letter	8.50 x 11.00	215.9 x 279.4
	Letter LEF	11.0 x 8.50	279.4 x 215.9
	Monarch	3.875 x 7.50	98.43 x 190.5
	Postcard	3.94 x 5.83	100.0 x 148.0
	Statement	5.50 x 8.50	139.7 x 215.9
	Tabloid	11.00 x 17.00	279.4 x 431.8
	Universal	13.00 x 19.00	330.2 x 482.6
Default	Letter		
Notes	If a media size other than that chosen in the driver is installed in the cassette, an error message displays, but the job still prints on the currently installed media size.		

Orientation

- s **Caution:** *LEF refers to “long-edge feed.” All other page sizes are fed into the printer short-edge first. If you’re using LEF media, choose the page orientation in your application **before** you choose the media size. This ensures proper printed output (and the proper icon in applications such as Microsoft Word that display media icons in the Page Setup dialog box). Choosing the page size first will yield unexpected results.*

Branch	Paper/Output
Purpose	Sets the orientation (printing direction) of the print media.
Choices	Portrait —Printing along the short edge of the page Landscape —Printing along the long edge of the page
Default	Portrait
Notes	Portrait Letter LEF/A4 LEF is the same as landscape Letter/A4. Landscape Letter LEF/A4 LEF is the same as portrait Letter/A4.

Paper Source

Branch	Paper/Output
Purpose	Sets the input source (cassette/tray/bin) from which print media is pulled into the printer
Choices	 <p>Printer Default—The tray or cassette chosen through the Tray Select Key on the printer control panel</p> <p>Manual Feed—The multi-purpose tray</p> <p>Upper Tray—The standard media cassette</p> <p>Lower Tray—The optional lower media cassette</p>
Default	Automatically Select

Configuring the
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Copy Count

Branch	Paper/Output
Purpose	Sets the number of copies to be printed.
Choices	1-99
Default	1 Copy
Notes	This scroll box is available only when you're setting the printer driver defaults. If you're configuring the printer for the current print job, set the number of copies in the Print dialog box.

Resolution

Branch	Graphic
Purpose	Sets the printing resolution.
Choices	600 dots per inch —For printing documents at 600x600 dpi
Default	600 dots per inch

Media

Branch	Document Options
Purpose	Sets the type of media to be printed
Choices	Standard —Normal weight paper, envelopes, and labels Thick Stock —24–43 lb (90–163 g/m ²) stock Transparency —Overhead transparency film
Default	Standard

Metafile Spooling

Branch	Document Options
Purpose	Sets the format in which printing information is stored while a print job is waiting.
Choices	Off —Turns off metafile spooling On —Turns on metafile spooling
Default	On
Notes	Generally, Metafile Spooling On (EMF format) frees up your program because it is smaller and doesn't depend on what kind of printing device you have. Metafile Spooling Off (RAW format) is specific to the printer, so extra time may be required to convert the printing information, and your application won't be available to work on other tasks. If you have a printing problem with Metafile Spooling On, try Off.

Halftone Color Adjustment

See "Configuring Halftone Adjustments" on page 2-32.

OK Button

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

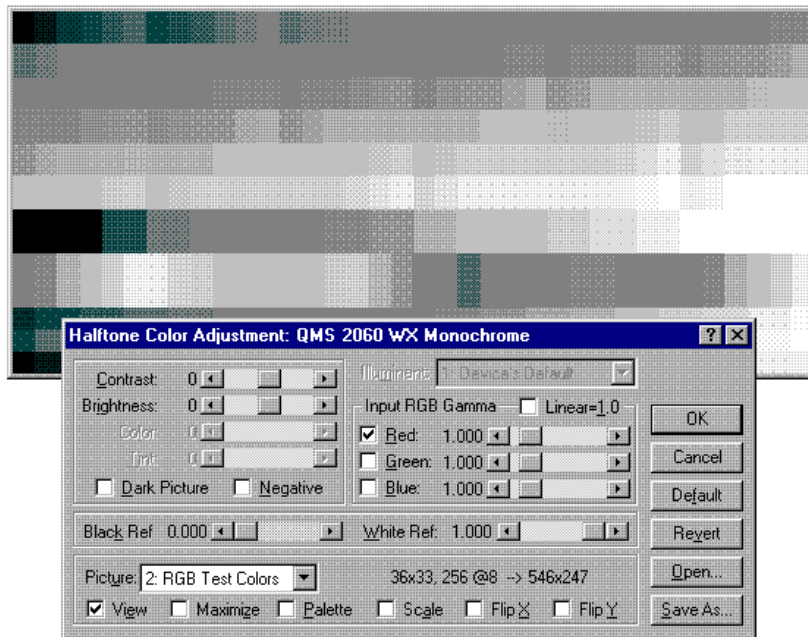
Cancel Button

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

Configuring the
Windows NT 4.0
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Configuring Halftone Adjustments

Halftone Color Adjustment is located under the Document Options branch. When Halftone Color Adjustment is selected, the Halftone Color Adjustment window displays. Each option and button on this window is explained in detail in this section.



Contrast

Purpose	Sets the difference between dark and bright areas in your picture.
Range	-100 (darkest) to +100 (brightest)
Default	0

Brightness

Purpose	Sets the intensity of the light in your picture.
Range	-100 (darkest) to +100 (lightest)
Default	0

Color

This option is grayed out to indicate that it is not available on monochrome printers.

Tint

This option is grayed out to indicate that it is not available on monochrome printers.

Dark Picture

Purpose	Adjusts images that are too dark.
Choices	Unchecked —Does not adjust image Checked —Lightens the colors in the image
Default	Unchecked
Notes	Adjusting for overexposure can restore details lost due to a lack of contrast.

Negative

Purpose	Sets image to positive or negative.
Choices	Unchecked —Does not adjust the image Checked —Inverts the colors in the image—white to black and black to white
Default	Unchecked

Black Ref. and White Ref.

Black Ref. and White Ref. work together.

Purpose	Sets the range between the darkest and lightest reference points in the image.
Range	Black Ref. —0.000 (less black) to 0.400 (more black) White Ref. —0.600 (more white) to 1.000 (less white)
Default	Black Ref. —0.000 White Ref. —1.000
Notes	Increasing the value of the black reference point and decreasing the value of the white reference point increases the contrast but narrows the range of midtones.

Illuminant

This option is grayed out to indicate that it is not available on monochrome printers.

Input RGB Gamma

The Red, Green, and Blue input gamma corrections work either independently or together.

Purpose	Corrects for unbalanced brightness of the input image by adjusting input gamma.
Choices	Selected (checked) or unselected (unchecked)
Defaults	Unselected
Range	0.250 (less brightness) to 6.500 (more brightness)
Default	1.000
Notes	Red, Green, and Blue check boxes —If the check boxes are all left unselected, the Red, Green, and Blue scroll bars will adjust independently. If any two check boxes are selected, the corresponding scroll bars adjust together. If all three check boxes are selected, all three scroll bars adjust together. Linear=1.0 check box —Selecting this check box disables the Red, Green, and Blue scroll boxes and sets each input RGB gamma correction to 1.000 (brightness equal to input value).

Picture

Purpose	Selects a predefined test picture.
Choices	1: Reference Colors 6x4,24@8—>546x247 2: RGB Test Colors 36x33,256@8—>546x247 3: NTSC Color Bar 28x21,16@4—>546x247
Default	RGB Test Colors
Notes	Available only if the View Picture Check Box is selected. The numbers to the right of the test picture identify the original size (in pixels), number of colors, type of color, and current display size of the graphic that is being used as a test picture.

Picture Check Boxes

Purpose	Set various attributes of the test picture.
Choices	View —When selected (checked), displays a test picture Maximize —When checked, maximizes the test picture to full screen. Click the right mouse button to hide/unhide the Halftone Color Adjustment dialog box Palette —When checked, displays a color palette based on the colors in the test picture Scale —When checked, adjusts the graphic height and width to match the proportions of the original graphic. When unchecked, the graphic fills its window Flip X —Reverses the graphic along its horizontal axis Flip Y —Reverses the graphic along its vertical axis
Default	No defaults
Notes	The five options at the bottom of the list are available only when the View Picture Check Box is selected.

OK Button

The OK button allows you to save your changes and exit from the Halftone Color Adjustment tab.

Printer Sharing

Cancel Button

The Cancel button allows you to cancel your changes and exit from the Halftone Color Adjustment tab.

Default Button

The Default button allows you to reset all of the selections on the Halftone Color Adjustment tab to their default settings.

Revert Button

The Revert button allows you to reset all of the selections on the Halftone Color Adjustment tab to the values in use when the tab was opened.

Open... Button

The Open... button allows you to open a graphic file so that you can see how your changes affect color. A standard Windows NT File Open dialog with a Select a Test Picture prompt will display.

Save As... Button

The Save As... button saves the graphic file you have opened. Saving the file saves the changes you have made to size, orientation, and color for the graphic.

Printer Sharing

To use the information in this section, your printer must be connected to an Ethernet network

Windows 95

- » **Note:** *This section explains how to configure the QMS 2060 WX printer driver in Windows 95 for sharing. If you're using Windows NT 4.0, refer to "Windows NT 4.0" on page 2-38.*

Before you can let other people print to your printer, you have to set it up as a shared printer. Use the following instructions.

- 1 From the Windows 95 Start menu choose Settings.**
 - 2 From the Settings menu choose Printers.**
 - 3 In the Printers window, select QMS 2060 WX 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 Start menu choose Settings.*
 - b From the Settings menu choose Control Panel.*
 - c Open the Network folder.*
 - 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, choose the Shared As: radio button.**
 - 6 In the Share Name box type a name for the printer.**

You'll use this name and the PC's name to identify the printer.
 - 7 In the Comment box type a location or other description.**

This is optional, but it will help others locate and identify your printer.
 - 8 If you want to limit the use of your printer to only a certain group of people, in the Password box type a password.**
 - 9 Choose the OK button.**

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

Windows NT 4.0

- » **Note:** *This section explains how to configure the QMS 2060 WX printer driver in Windows NT 4.0 for sharing. If you're using Windows 95, refer to "Windows 95" on page 2-36. Printer sharing can be used only with attached PCs that are running either Windows 95 or Windows NT 4.0.*

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

- 1 From the Windows NT Start menu choose Settings. Then choose Printers.**
- 2 In the Printers window, select the QMS 2060 WX 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.**
- 6 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.
- 7 If you're sharing your printer with a Windows NT 4.0 workstation, choose OK to complete the procedure.**

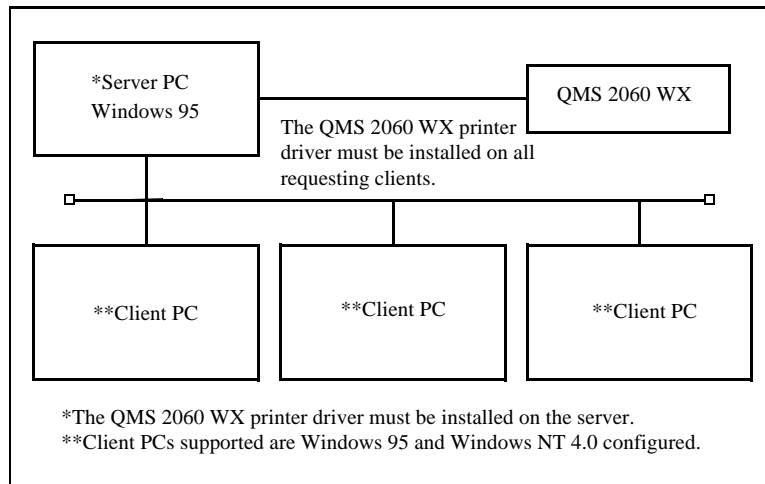
If you're sharing your printer with a Windows 95 workstation, perform this step.

- a In the Alternate Drivers list box, select the Windows 95 operating system and choose OK.
- b If the operating system on your PC does not have the QMS 2060 WX printer driver for Windows 95, you will be prompted to install it. Insert the QMS 2060 WX printer driver disk for Windows 95 and choose OK.

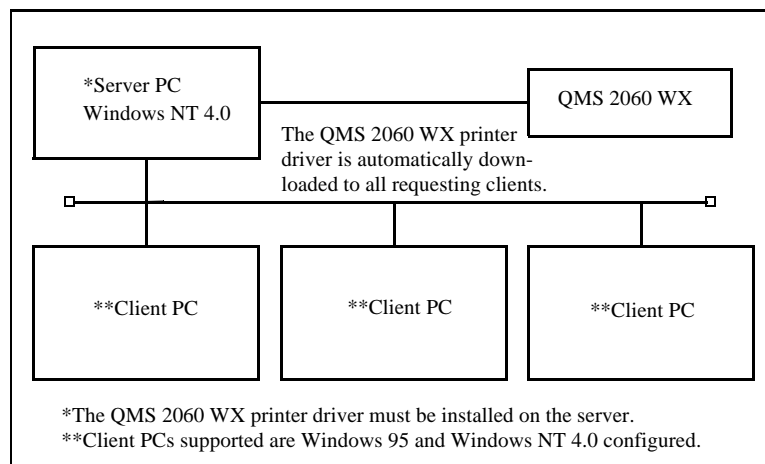
The required files are copied to the appropriate directory.

Printer Sharing

- » **Note:** *When connected to a Windows 95 server, the QMS 2060 WX printer driver must be installed on the server and on every client PC.*



When connected to a Windows NT 4.0 server, the QMS 2060 WX printer driver is automatically downloaded to any requesting client PC that is running Windows 95 or Windows NT 4.0.



Sharing Someone Else's Printer

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

- 1 Browse through the Network Neighborhood until you find the printer icon.**
- 2 Use the right mouse button to select the printer icon.**
- 3 From the shortcut menu that displays choose Install to add the printer driver to your PC.**
- 4 Follow the instructions on the screen.**
- 5 Print to this printer just as if it were connected directly to your PC.**

Using a Network Print Monitor

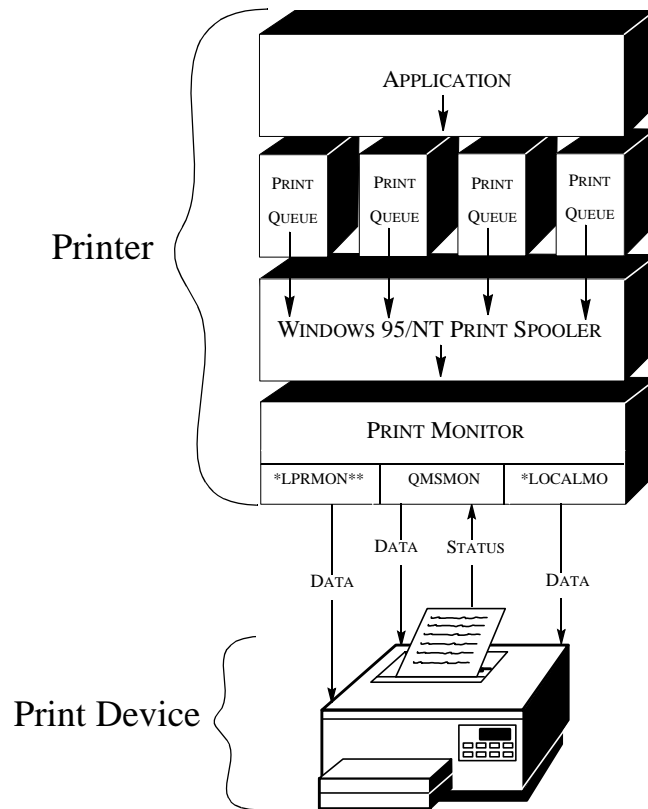
The QMS Network Print Monitors for Windows 95 and Windows NT 4.0 control the printing environment for both local and remote print jobs submitted through shared resources.

The manual on each software disk contains complete information on using a Print Monitor. Refer to the README.TXT file on the disk for instructions on printing the manual.

About the QMS Network Print Monitor

The QMS Network Print Monitors (QMSMON) for Windows 95 and Windows NT 4.0 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. The Print Spooler "monitors" or "despoolers" are configured to service print jobs in a particular queue.

About the QMS Network Print Monitor



- * See your Microsoft Windows documentation for details on the LPRMON and LOCALMON print monitors.
- **LPRMON is present only on Windows NT systems.

Components

The QMS Network Print Monitor has three main components:

■ Status Component

This component obtains information from the printer, such as print job “go/nogo” and error or warning conditions. Status

About the QMS
Network Print
Monitor

information displays in Print Manager through the print queue status dialog box. Status information comes from either the Windows 95 Print Spooler, the QMS Network Print Monitor, or the printer, depending on where the job is in the printing process. See chapter 3, "Troubleshooting," and chapter 2, the "Using the Print Monitor" section, 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 Crown print device. When a job is sent to a print device by the QMS Network Print Monitor, it utilizes all allocated Windows 95 operating system resources to transport the job. If a connection is broken while a job is being transported, the monitor discards the remaining data and gives control back to the Print Monitor Print Spooler. Any other pending jobs remain in the queue until the print device problem is corrected.

■ **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 95 system registry.

Using the Network Print Monitor

Before you can use the QMS Network Print Monitor, you must have completed the following steps:

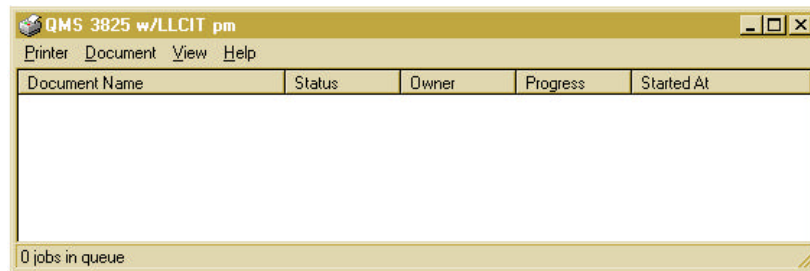
- Installed the QMS Network Print Monitor
- Added a QMS Port for the print device
- Configured the port settings, if necessary

Windows 95

Use the following procedure to obtain status information on a print job:

- 1 From the Start menu choose Settings.**
- 2 From the Settings menu choose Printers.**
- 3 Double-click the icon of 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 menus and field names:

Menu or Field Name	Explanation
Printer	Allows you to select Pause Printing, Purge Print Jobs, Set as Default or Printers Properties.
Document	Gives you the option of Pausing or Cancelling an existing print job.
View	Allows you to view the status bar.
Help	Provides access to Help topics and Help about Windows 95.
Document Name	Displays the document's title (it may also be the filename).

About the QMS
Network Print
Monitor

Menu or Field Name	Explanation
Status	Displays 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).
Owner	Identifies the document owner.
Progress	Shows the progress of the print job by the size of the file still to print.
Started at	Displays the time and date the file was sent to print.

See chapter 7, "Troubleshooting," for more information on the status messages that display.

Windows NT 4.0

Use the following procedure to obtain status information on a print job:

- 1 From the Start menu choose Settings.
- 2 From the Settings menu choose Printers.
- 3 Double-click the icon of printer icon.

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

Status	Document Name	Owner	Printed at	Pages	Size	Priority
Spooling	Microsoft Word - NTADMIN	menkerj	8:06 AM	4	134,013	1

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: <i>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.</i>
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 7, "Troubleshooting," for more information on the status messages that display.

Refilling the Media Cassette

The QMS 2060 WX Print System comes standard with a 250-sheet universal cassette. However, optional 250-sheet (letter/A4 or universal) and 500-sheet (letter/A4 only) cassettes are also available.

Loading media in any cassette involves the following steps:

- Prepare the paper
- Load the cassette

Preparing the Paper

- » **Note:** *Ensure that the media size matches the cassette size (for example, letter/A4 media must be loaded only when the universal cassette is set to letter/A4 size or when a letter/A4 cassette is used). Since the media cassette sends a media size signal to the printer controller, using a wrong size media will cause your image to be positioned incorrectly on the page or clipped.*

1 Unwrap the paper, and pull the stack out

- » **Note:** *Paper is packed in reams of 500 sheets. Do not unpack the paper above the printer as this might cause particles to fall into the printer components. Note the arrows on the wrapper. They show which side of the paper should be on the top when it's loaded in the cassette.*

2 With one hand at each end of the stack, lift and hold it in a curved position, without gripping.

3 Grip each end of the stack firmly.

4 Straighten the stack, and then roll the fanned sheets from side to side to get air through the sheets and prevent static buildup.

5 Remove the top and bottom sheets

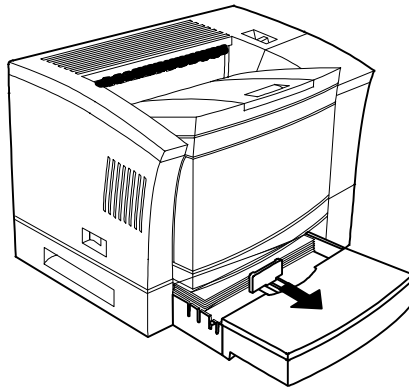
The top and bottom sheets sometimes have residual glue buildup that could cause the printer to jam.

Loading the Paper

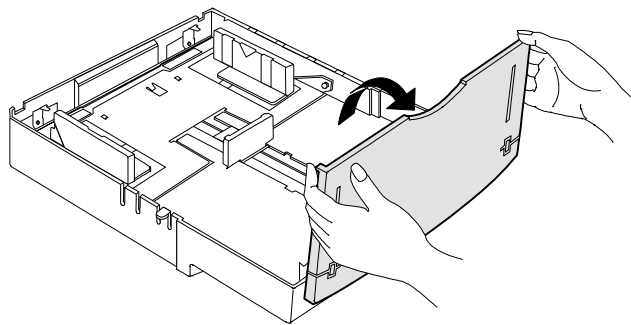
250-sheet Universal Cassette

» **Note:** *Reload the media cassette only when it's empty.*

1 Pull out and remove the cassette.



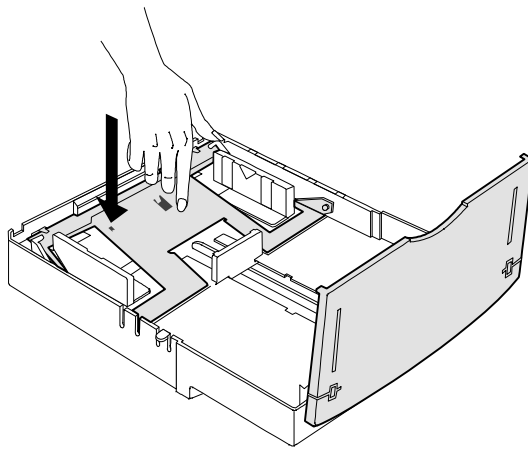
2 Open the paper cover.



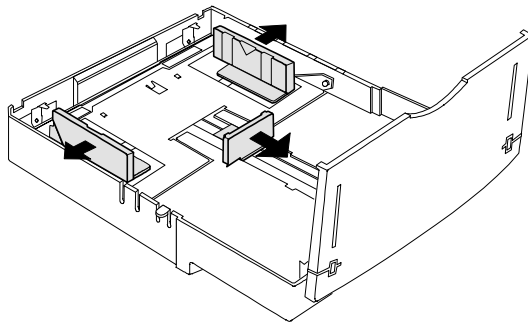
Refilling the Media Cassette

3 Position the cassette.

The cassette has a spring in the bottom that provides some resistance when print media is placed on it. Lay the cassette flat on a hard surface and, using your left hand, push down on the plate in the cassette until it locks.



4 Adjust the paper guides to fit the paper size.



5 Load the media face up in the cassette.

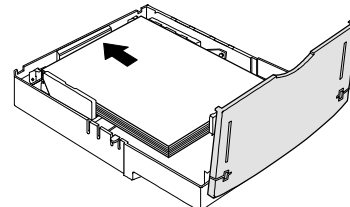
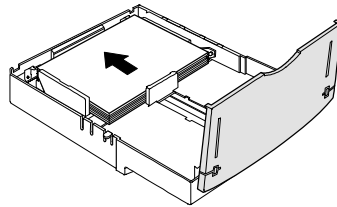
» **Note:** To optimise print speed for letter/A4 size media, you must load the media for long-edge feed (LEF) and select Letter LEF or A4 LEF as the media size in the printer driver. See the sections on configuring the printer driver at the beginning of this chapter for more information.

Long-edge Feed

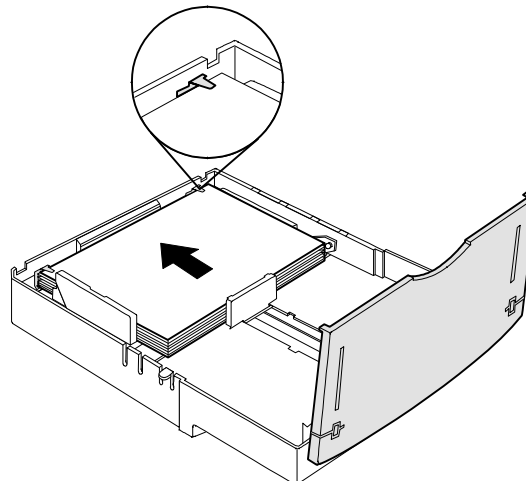
■ Media sizes—A4 LEF, Letter LEF

Short-edge Feed

■ Media sizes—A3, A4, A5, B4, B5, Executive, Legal, Letter, Tabloid



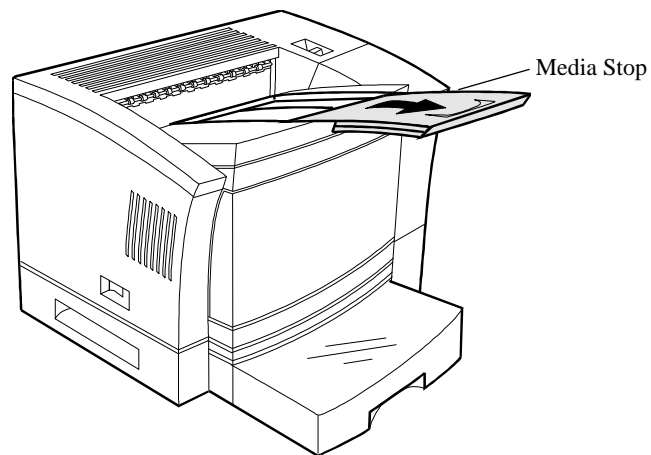
6 Ensure that the media stack lies flat, does not exceed the top limit mark, and is positioned under the retaining clips.



Refilling the Media Cassette

7 Adjust the media stop to fit the media size.

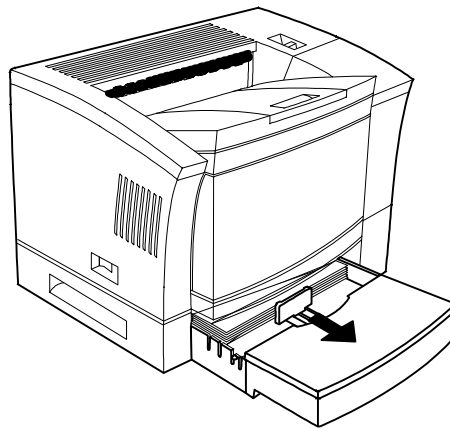
Your output is delivered print-side down to the output tray at the top of the printer. The media stop keeps the sheets positioned correctly.



500-sheet Cassette

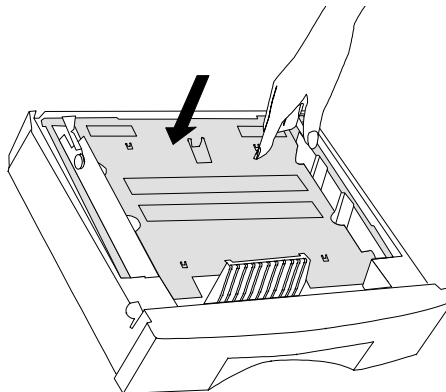
» **Note:** *Reload the media cassette only when it's empty.*

1 Pull out and remove the cassette.



2 Position the cassette.

The cassette has a spring in the bottom that provides some resistance when print media is placed on it. Lay the cassette flat on a hard surface and, using your left hand, push down on the plate in the cassette until it locks.

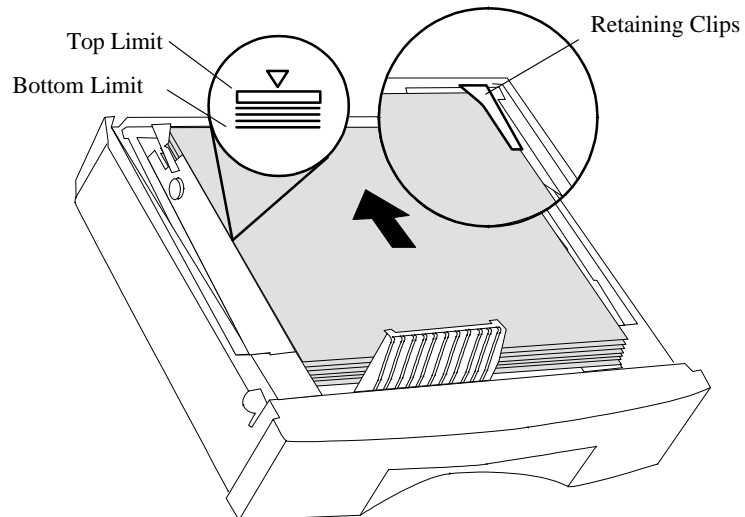


Refilling the Media
Cassette

- 3 Load media in the 500-sheet cassette in increments so that 500 sheets fit in the cassette and the media stack is properly leveled out.**

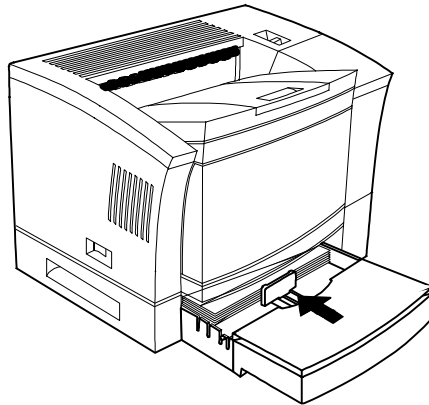
Load the media so the front end of the stack comes against the front of the cassette in three steps as follows:

- a Up to the bottom limit mark.
- b Halfway to the top limit mark.
- c Up to the top limit mark.

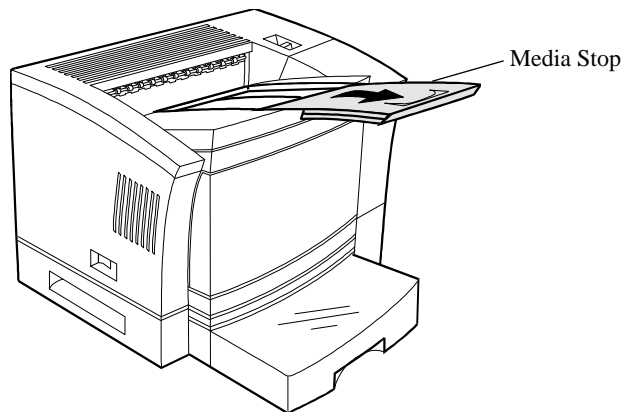


- 4 Ensure that the media stack lies flat and does not exceed the top limit mark.**

- 5 Slide the cassette back into the upper cassette feeder until it's firmly seated.



- 6 Pull out the media stop and slide it to the correct media size.



- » **Note:** When printing different-sized media in the face-down tray, set the print tray to the largest paper size. If the print tray is set to a smaller paper size, large-size paper will curl, block the opening (when delivered to the output tray) and cause a media jam.

Refilling the Media Cassette

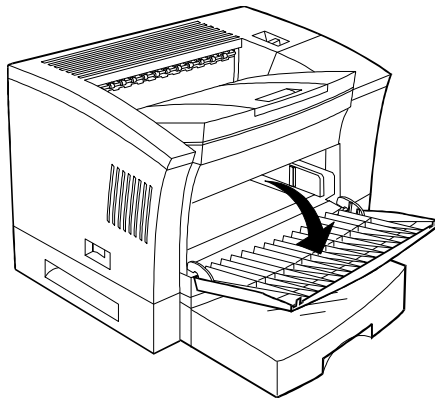
Multipurpose Tray

Use the multipurpose tray to print on paper, letterhead, envelopes, labels, thick media, card stock, odd-sized paper (such as super B), recycled paper, and transparencies. The multipurpose tray is also especially useful if you want to print on a single sheet of letterhead or colored media without changing the media in the media cassettes.

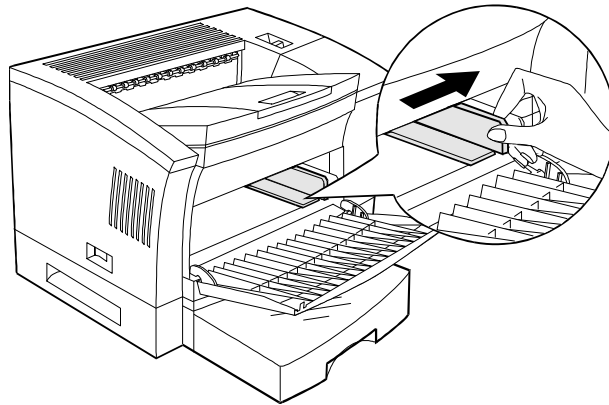
- » **Note:** For instructions on loading envelopes into the multipurpose tray, see “Envelopes” on page 2-60.

This section explains how to load print media in the multipurpose tray. For tips on how to get the best possible printing results, see “Printing on Different Types of Media” on page 2-57.

- » **Note:** A `Printing paper mismatch error` can be caused if the media in the multipurpose tray is not the media size selected for the multipurpose tray (inputbin 1). If the printer supports the media size you want, insert the correct size media in the multipurpose tray.
 - 1 Use your application’s print setup feature to select the multipurpose (manual-feed) tray and the media type you plan to use (paper or transparency).
 - 2 Use your application’s print setup feature to select any other printing options you want.
 - 3 Open the multipurpose tray.



- 4 **Adjust the media guides on the multipurpose tray to match the width of the media you are using.**



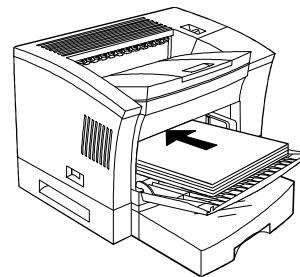
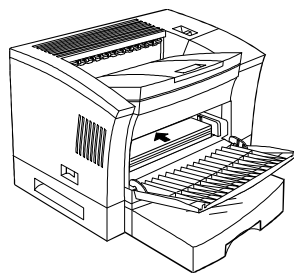
- 5 **Align the media, and insert it print side up between the media guides, sliding it as far as it will go in the printer.**
- » **Note:** *To optimise print speed on letter/A4 size media, you must load the media for long-edge feed (LEF) and select Letter LEF or A4 LEF as the media size in the printer driver. See the sections on configuring the printer driver at the beginning of this chapter for more information.*

Long-edge First

■ Media sizes—A4 LEF, Letter LEF

Short-edge First

■ Media sizes—All other supported sizes



Refilling the Media
Cassette

6 Check to make sure that the media doesn't exceed the limit mark and that it fits firmly between the media guides.

The multipurpose tray holds about 150 sheets of 16 to 42 lb (20 to 157 g/m²) paper (plain or recycled), 5 transparencies, 10 envelopes, 10 labels, or 10 sheets of letterhead or thick paper.

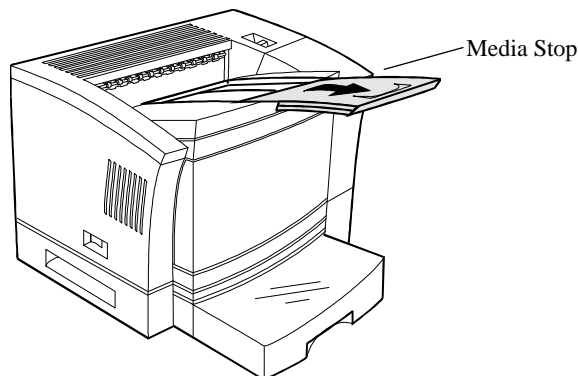
7 Check the media guides to make sure that they touch the sides of the print media.

8 For smaller-size media, close the multipurpose tray cover.

For large size media, leave the tray cover open.

» **Note:** *Do not load additional media until all the sheets in the multipurpose tray have been fed through the printer.*

9 Adjust the media stop for proper media delivery.



Printing on Different Types of Media

Transparencies

Your printer supports label printing from the multipurpose tray (up to 5 sheets).

Special Considerations

- Use transparencies that can withstand the fusing temperature (200°C/392° F). We recommend QMS (p/n 1710118-002) A4 transparencies.
- Insert the transparencies short-edge first, printing side up with the top of the page on the left side of the tray. The correct print side is usually marked on the transparency package.
- Load up to 5 transparencies at a time in the multipurpose tray. Loading a larger number of transparencies at a time may cause static buildup.
- Keep the paper path clean. Transparencies are especially sensitive to a dirty paper path. If there are shadows on either the top or the bottom of the sheets, refer to chapter 5, "Maintenance," for instructions on how to clean the printer.
- Remove each transparency from the output tray before the next sheet is printed to prevent jams or misfeeds.

Printing

1 Format the transparencies in your application.

2 Load the transparencies.

See "Multipurpose Tray" on page 2-54 and "Special Considerations," above, for information on loading transparencies.

» **Note:** *You may want to try printing the formatted information on a plain sheet of paper first to check placement.*

3 Use the Windows printer driver to select transparency printing and any other printing options you want.

4 Send the print job.

Labels

Your printer supports label printing from the multipurpose tray (up to 10 sheets). Adhesive label stock has pressure-sensitive (peel and stick) adhesive backing. A label consists of a face sheet, the adhesive, and the carrier sheet.

Special Considerations

- Use label stock with pressure-sensitive (peel-and-stick) adhesive backing. Avoid using label stock with exposed adhesive; it may stick to the toner cartridge or the fixing roller, causing labels to peel off and printer jams to occur.
- The label printing 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 (200°C/392° F).
- The face sheet printing surface must adhere to the plain paper specifications listed in appendix B, "Technical Specifications." We recommend Avery 5160, letter or A4 size.
- Label data should be formatted within your application. Try printing your data on a plain sheet of media first to check placement. This reduces the number of label sheets you use.
- Before printing labels, disable the duplexer if it's installed and check the manual feed guides to make sure they're not too tight and buckling the labels.
- Load the labels long edge first, face up, and with the top of the page toward the rear of the printer.

Printing

1 Format the labels in your application.

2 Load the labels in the printer.

See “Multipurpose Tray” on page 2-54 and “Special Considerations,” above, for information on loading labels.

» **Note:** *You may want to try printing the formatted information on a plain sheet of paper first to check placement.*

3 Use the Windows printer driver to select standard printing and any other printing options you want.

4 Send the print job.

Letterhead and Other Preprinted Media

You can print letterhead and other preprinted media from the multipurpose tray as well as from a standard or optional cassette.

Special Considerations

- Letterhead and preprinted paper must adhere to the paper specifications listed in appendix B, “Technical Specifications.”
- Adjust the multipurpose tray media guides to fit the letterhead or memo size.
- Insert the letterhead or memo short-edge first, face up with the top of the page facing into the printer.

Printing

1 Format the text in your application.

2 Load the media.

See “Multipurpose Tray” on page 2-54 and “Special Considerations,” above, for information on loading letterhead and other preprinted media.

» **Note:** *You may want to try printing the formatted information on a plain sheet of paper first to check placement.*

3 Use the Windows printer driver to select standard printing and any other printing options you want.

4 Send the print job.

Envelopes

Your printer supports envelope printing from the multipurpose tray (up to 10 envelopes).

Special Considerations

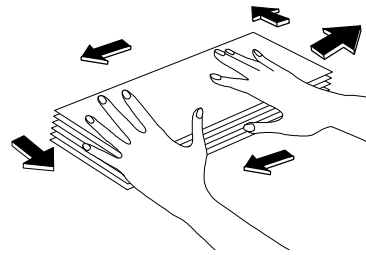
- Before printing envelopes
 - Disable the duplexer if it's installed.
 - Remember that you can print only on the address side of the envelope.
 - Make sure that the media guides are set to the height of the envelope (media jams or misfeeds may occur if they are too loose or too tight).
- We recommend that you use common office envelopes with diagonal joints, ordinary gummed flaps, and sharp folds and edges. The following sizes are supported:
 - Commercial 10
 - International DL
 - Monarch
 - International C5
- Don't use
 - Envelopes with flaps that are the full width of the envelope if the flap is glued to something other than the mating surface.
 - Envelopes with transparent windows or peel-off strips.
 - Envelopes with fasteners or clasps.
 - Envelopes with edges that aren't square and envelopes that are wrinkled, torn, or curled.

Printing on Different Types of Media

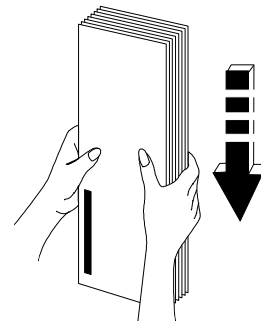
- Envelopes made of any material that melts, vaporizes, off-sets, discolors, or emits dangerous fumes at high temperatures (190° C/ 374° F).
- Use landscape orientation to create the envelope text in your application. Leave a 0.16" (4.06 mm) margin around the edges of the envelope.
- Load the envelopes short edge first. Use envelopes with the flap toward the rear of the printer when loaded.
- Print on the front side only.
- Try to print only in one-layer parts of the envelope. Some parts of the envelope consist of three layers of paper—the front, back, and flap. Print in these layered regions may be lost or faded.

Printing

- 1 **Format the text in your application.**
- 2 **Place the envelopes on a flat surface and flatten them by pressing down the corners in the direction shown.**



- 3 **Flex the envelope stack (including the edges) to remove any stiffness.**
- 4 **Correct any dog-eared corners, then tap the envelopes on a flat surface to align.**

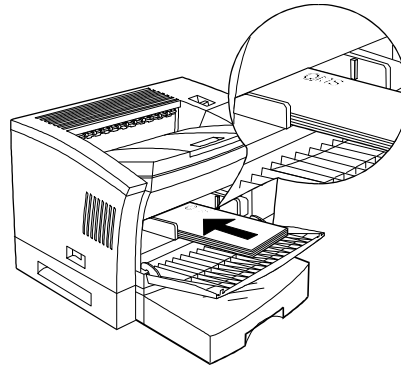


Printing on
Different Types of
Media

- 5 **Open the multipurpose tray.**
- 6 **Adjust the media guides to the correct width.**

Make sure the guides aren't too tight, so the envelopes don't buckle.

- 7 **Slide the envelope stack into the printer as far as it will go, with the print side facing up and the flap on your right.**



- 8 **Use the Windows printer driver to select Standard printing and any other printing options you want.**
- 9 **Send the print job.**
- 10 **Open each flap immediately after the envelope passes through the printer, before the seal cools.**

» **Note:** *Because the envelopes pass through heated rollers, the gummed area on the flaps may seal. After opening them and allowing them to cool, you may then reseal them in the usual manner. Using envelopes with emulsion-based glue avoids this problem.*

Postcards and Thick Stock

Your printer supports printing postcards and thick stock only from the multipurpose tray (up to 10 sheets).

Special Considerations

- Use only 24 to 42 lb (90 to 157 g/m²) postcards and thick stock.
- Adjust the multipurpose tray guides to fit the media size.
- Load the postcards or thick stock short edge first with the printing surface up.

Printing

- 1 Format the text in your application.**
- 2 Load the postcards or thick stock, following the same procedure as for loading envelopes on page 2-61.**
- » **Note:** *You may want to try printing the formatted information on a plain sheet of paper first to check placement.*
- 3 Use the Windows printer driver to select Thick Stock printing and any other printing options you want.**
- 4 Send the print job.**

Odd-size Paper

Odd-size paper is printed from the multipurpose tray.

Special Considerations

- Use only 16 to 42 lb (20 to 157 g/m²) paper recommended for laser printers.
- Do not use perforated paper (including 3-hole-punched paper).

Printing

- 1 Format the text in your application.**
- 2 Load the media.**
See “Multipurpose Tray” on page 2-54 for information.
- 3 Use the Windows printer driver to select standard printing and any other printing options you want.**
- 4 Send the print job.**

More About Print Media

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:** *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 media 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.*

About Imageable Areas and Page Margins

The imageable area of each media size is smaller than the size of the media. The imageable area is subject to hardware limits (physical page size and margins required by the print engine). As you set page margins in your application, remember they must be equal to or less than the imageable area specified for the page size you're using.

Print Media Sizes and Imageable Areas

The following table lists the size, imageable area, feed edge (the edge of the media drawn into the printer first), and input sources of all supported media sizes.

More About Print
Media

Media	Media Size		Imageable Area		Feed Edge	Input Source
	Inches	Millimeters	Inches	Millimeters		
12x19	12.00x19.50	304.8x495.3	12.00x19.50	304.80x495.30	S	M
A3	11.69x16.53	297.0x420.0	11.69x16.53	297.00x420.00	S	M U
A4	8.27x11.69	210.0x297.0	8.27x11.69	210.00x297.00	S	U
A4 LEF	11.69x8.27	297.0x210.0	11.69x8.27	296.93x210.06	L	M U L
A5	5.85x8.27	148.5x210.0	5.52x7.95	140.21x201.93	S	M U
B4	10.12x14.33	257.0x364.0	9.80x14.01	248.92x355.85	S	M U
B5	7.17x10.12	182.0x257.0	7.84x9.80	173.74x248.92	S	M U
C5	6.38x9.02	162.0x229.0	6.06x8.69	153.92x220.73	S	M
Envelope	6.93x9.76	176.0x248.0	6.61x9.44	167.87x239.85	S	M
Envelope #10	4.125x9.50	104.8x241.3	3.81x9.18	96.65x233.17	S	M
Envelope C5	6.38x9.02	162.0x229.0	6.06x8.69	153.92x220.73	S	M
Envelope DL	4.33x8.66	110.0x220.0	4.01x8.34	101.85x211.84	S	M
Executive	7.25x10.50	184.2x266.7	6.93x10.18	176.02x258.57	S	M U
Legal	8.50x14.00	215.9x355.6	8.18x13.68	207.77x347.47	S	M U
Letter	8.50x11.00	214.9x279.4	8.18x10.68	207.77x271.27	S	M U L
Letter LEF	11.00x8.50	279.4x214.9	10.68x8.18	271.27x207.77	L	U
Monarch	3.875x7.50	98.4x190.5	3.56x7.18	90.42x182.37	S	M
Postcard	3.94x5.83	100.0x148.0	3.62x5.50	91.95x139.70	S	M
Statement	5.50x8.50	139.7x215.9	5.18x8.18	131.57x207.77	S	M
Tabloid	11.00x17.00	279.4x431.8	11.00x17.00	279.40x431.80	S	M U
Universal	13.00x19.00	330.2x482.6	13.00x19.00	330.20x482.60	S	M
Input Source	L=Letter/A4 cassette, M=Multipurpose tray, U=Universal cassette					
Feed Edge	L= Long, S= Short					

Working Within Imageable Areas and Margins

If the text/image in your document gets cut off (doesn't print to the expected margins), it may be due to an imageable area constraint. The imageable areas for print media on your QMS 2060 WX Print System are not centered vertically on the page and may vary ¹/₁₆"

More About Print Media

(1.6 mm). To compensate for imageable area constraints, use a larger page size, adjust margins, or scale through your application.

Print Media Types, Weights, and Recommended Brands

Media Type	Weight		Brand
	lbs	g/m ²	
Paper	16–24	60–90	Plain —Xerox 4024 Laser —Hammermill Laser Print
Thick Stock	17–42	64–157	N/A
Transparencies	36.7–38.8	138 to 146	QMS p/n 1710118-002
Labels	41.5–45.2	156–170	Avery 5260
Envelopes	24	90	N/A

Print Media Storage

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

Preventing Media Jams

Some printer problems are caused by improper handling of media or use of the wrong media and consumables. There are several things you can do to reduce the occurrence of media jams.

- Use paper, envelopes, labels, postcards, transparencies that match the printer specifications. (See the “Consumable Supplies” section of appendix B, “Technical Specifications,” for more complete information.)
 - Make sure the media is not folded or wrinkled.
 - Do not overfill the multipurpose tray or the cassette.
 - The multipurpose tray holds about 150 sheets of 16 to 42 lb (20 to 157 g/m²) paper, 5 transparencies, 10 envelopes, 10 sheets of letterhead or thick paper, or 10 labels.
 - The 250-sheet cassette holds up to 250 sheets of paper.
 - The 500-sheet cassette holds up to 500 sheets of paper.
 - If you have problems with double feeding, remove the media from the cassette or input bin and fan the edges. The sheets may be sticking together.
- » **Note:** *Do not fan transparencies since this causes static.*
- Print media must be stored away from moisture and humidity. The recommended relative humidity is 15%-85% with no condensation.
 - Many manufacturers place an arrow on the end of the wrapper indicating the side of the media to use for printing. If you cannot 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.
 - If none of the above relieves media jamming, notify your vendor.

Cancelling a Print Job

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

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

- » **Note:** *Since all pages of a multi-page 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 PC.*



3

Control Panel

In This Chapter . . .

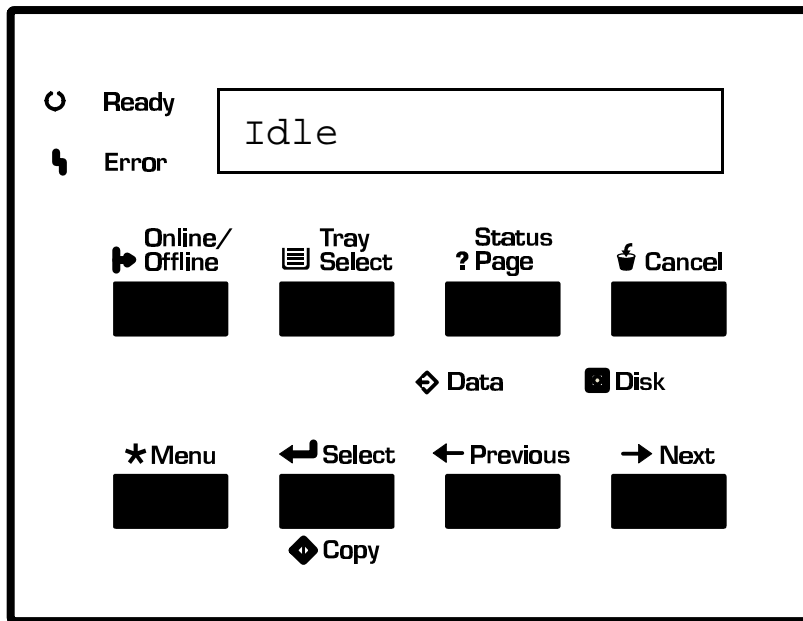
- Message window on page 3-3
 - Control panel indicators on page 3-4
 - Function keys on page 3-5
 - Printer configuration on page 3-6
-

Introduction

The control panel, located on the front of the printer, has two functions:

- It alerts you to the printer's current status, including any error needing your attention
- It allows you to configure several printer features

The control panel consists of a message window, six LED indicators, and nine keys. Each of these is discussed in the following sections.



About the Control Panel

The Message Window

The message window provides two functions:

- It displays status and error information. See chapter 7, “Troubleshooting,” for an annotated list of status and error messages.
- It displays configuration options. Configuration is discussed later in this chapter.

Message Display

Messages are displayed in three ways in the message window:





- **Continuous display** — A short status message such as `Idle` displays continuously until the status changes.
- **Scrolling display** — A longer status message, such as `Paper out upper tray`, scrolls marquee-style so that you can read the whole message whenever you happen to look at the printer. In all tables throughout this manual, messages that scroll are shown in shaded boxes.

Message Language

Messages and configuration options can be displayed in 6 languages. See “Setting the Message Window Language” on page 3-9 for more information.







The Control Panel Indicators


Four LED indicators provide printer status information.

 Ready	<p>On—The printer is on line and ready to accept new print jobs. Press the Online/Offline key once to take the printer off line (the indicator goes out).</p> <p>Off—The communication port is closed, so no new data is accepted. The printer continues printing until it has finished all jobs in process. 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/Offline key once to put the printer back on line and ready to accept new print jobs (the indicator goes back on).</p> <p>Blinking—The printer is sleeping (in Energy Saver mode) or warming up, or an engine error has occurred. Check the message window.</p>
 Data	<p>Blinking—The printer is receiving data from the PC.</p>
 Disk	<p>On—An optional printer hard disk is being accessed.</p> <p>Blinking—System software is being downloaded to FLASH.</p>
 Error	<p>On—An error message is displayed in the message window.</p>

The Function Keys

The printer control panel has eight function keys.

 Cancel	<p>If the printer is on line (the Ready LED is lighted), press the Cancel key to cancel the page currently printing. To cancel the entire print job, use the printer driver.</p> <p>If the printer is off line (the Ready indicator is not lighted) and you're in the configuration menu, press the Cancel key to exit from the configuration menu without saving any selections.</p>
 Menu	Press this key to enter the printer's configuration menu.
 Next	Press the Next key to move to the following configuration option.
 Online/ Offline	Press this key to take the printer off line to use the configuration menu or to put the printer on line and available for printing.
 Previous	Press the Previous key to move to the previous configuration option.
 Select	Press this key to save enter configuration menus and to save configuration option settings. (The "Copy" portion of the key isn't used. It's available if you upgrade your printer to a QMS 2060 BX, GX, or EX Print System. Contact your QMS vendor for specifications and purchase information.)
Status ? Page	Press this key to find out the number of page faces that have been printed. (A page face is one side of a sheet of media. Therefore, a simplex page has one printed face while a duplex page has two printed faces.) The message window reads <code>Page count # xxx</code> .

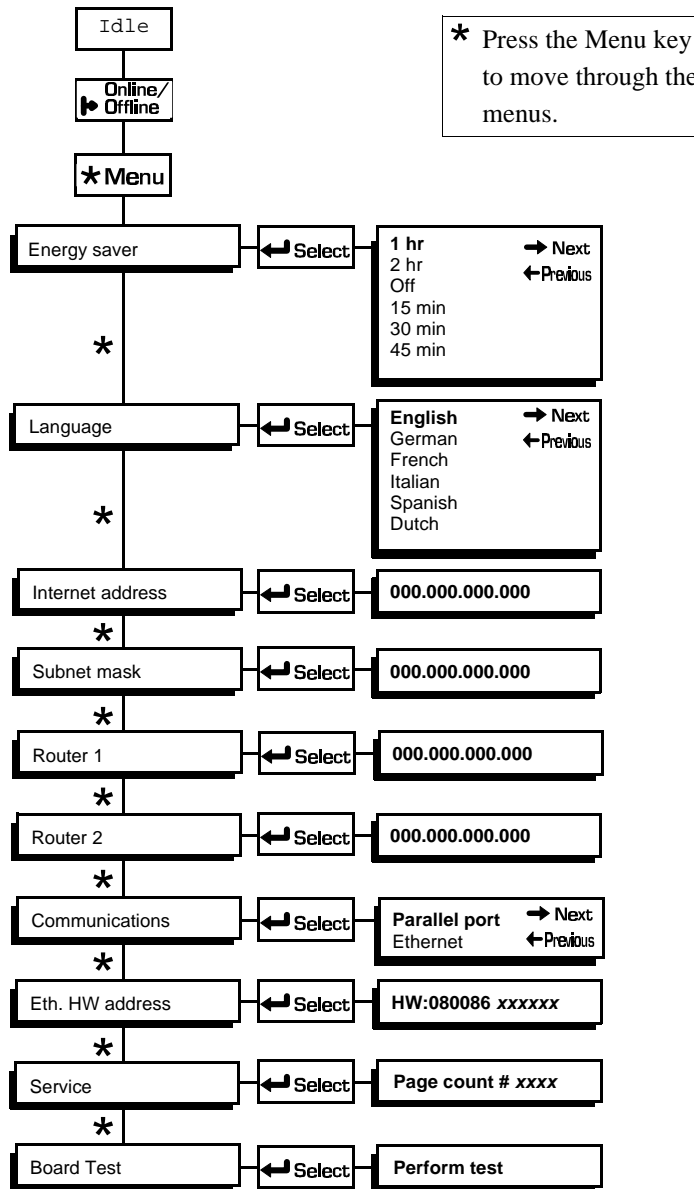
 Tray Select	Press this key to select a media input source. Choices are upper tray, manual feed (the multipurpose tray), and lower tray (the optional feeder).
--	---

Printer Configuration

You can configure the printer in the following ways:

- **Through the Windows 95 or Windows NT printer driver—** Most of the configuration is done in this way. See chapter 2, “Printing.”
- **Through the printer control panel—** Several options are available. The rest of this section explains how to use the configuration menu.

The Configuration Menu



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/Offline key to take the printer off line (the Ready 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 1, Router 2, Communications, and Eth. HW address (Ethernet Hardware address). (Service and Board Test have different functions. They are explained in chapter 7, "Troubleshooting.")
Select	Save an option.
Next	Advance to the next option within a menu.
Previous	Return to the previous option within a menu.

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
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 None 15 min
Select	Select and save 15 min.	Selected* Energy saver
Online/Offline	Exit from the menu and ready the printer to accept new print jobs.	Idle

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

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 Energy Conservation

The QMS 2060 WX Print System 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 with 70 seconds.

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

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	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 1 and Router 2 menus allow you to set the Internet address of one or two routers. The addresses are in the format *xxx.xxx.xxx.xxx*.

Menu	Router 1 Router 2
Choices	Each <i>xxx.xxx.xxx.xxx</i> triplet can have a value of 001–254.
Default	000.000.000.000
Notes	<ul style="list-style-type: none"> ■ If gateways are not used with your network, the router 1 and router 2 addresses should remain 000.000.000.000. (Check with your network administrator.) ■ Once you save your changes to this menu, the printer automatically reboots. ■ Each address must consist only of numbers and periods. Selecting a letter or another symbol results in an error message. ■ Any <i>xxx</i> value between 1 and 9 must begin with 00 (for example, 1 is entered as 001, and 9 is entered as 009). ■ Any <i>xxx</i> value between 10 and 99 must begin with 0 (for example, 10 is entered as 010, and 99 is entered as 099).

Setting the Communications Port

The Communications menu allows you to select a communications interface port.

Menu	Communications
Choices	Parallel port, Ethernet
Default	Parallel port
Notes	Once you save your changes to this menu, the printer automatically reboots.

Setting the Ethernet Hardware Address

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

Menu	Eth. HW address
Choices	See your network administrator
Default	The printer's serial number in the form HW:xxxxxx xxxxxx
Notes	<ul style="list-style-type: none"> ■ Once you save your changes to this menu, the printer automatically reboots. ■ Ethernet addresses begin with "0200." These numbers are not displayed in the message window, and they may not be changed. For example, if the Eth. HW address is set to HW:080086 1150C2, the physical Ethernet address of the printer is actually 02000800861150C2.

Using the Service Menu

The Service menu allows you to identify the number of page faces that have been printed. (A page face is one side of a sheet of media. Therefore, a simplex page has one printed face while a duplex page has two printed faces.) For complete information, see "Accessing Page Count" in chapter 7, "Troubleshooting."

Printer Configuration

Using the Board Test Menu

The Board Test menu allows you to test the printer. For complete information, see “Performing a Board Test” in chapter 7, “Troubleshooting.”



4

Printer Options

In This Chapter . . .

- Available options and accessories on page 4-2
 - Duplexer on page 4-3
 - Additional media cassettes on page 4-8
 - Optional feeder on page 4-9
 - Single In-line memory modules (SIMMs) on page 4-12
 - Updating system software on page 4-19
 - Updating the printer driver on page 4-20
-

Introduction

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

2060 BX, GX, EX Upgrade	Workgroup printer with Centronics/IEEE 1284 bidirectional parallel and QMS CrownNet Ethernet ((EtherTalk, LAN Manager/LAN Server, NetWare, TCP/IP) interfaces as well as an optional interface (supporting a DECnet, LocalTalk, CrownNet Token-Ring, serial, or a second CrownNet Ethernet interface) and a SCSI interface (supporting up to 3 external hard disks or up to 2 external hard disks and an optional CrownCopy scanner). Contact your QMS vendor for specifications.
Duplexer	Unit providing two-sided printing on executive to 11x17/A3 paper sizes.
Media Cassettes and Optional Feeder	250-sheet universal media cassette (supports up to 11x17/A3 media). 500-sheet letter/A4 cassette. Optional feeder with a choice of a 500-sheet letter/A4 cassette or a second 250-sheet universal media cassette.
Memory	4, 8, and 16 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/www/faq/ or through Q-FAX (see appendix A, "QMS Customer Support," to find out how to access Q-FAX documents).

Duplexer

The optional duplexer allows you to print automatically on both sides of any size media up to and including tabloid (11.0"x17.0"/279.4x431.8 mm).

- » **Note:** *Due to the curved path of the duplexer, **only** 17–24 lb (64–90 g/m²) paper should be used. Envelopes, transparencies, and labels can't be used when duplexing.*

Memory Requirements

Your QMS 2060 WX Print System standard comes with 8 MB of memory. This allows you to simplex print on all media sizes and duplex print on A5 and Statement media sizes. Duplex printing on other media sizes, however, requires more memory. The following table lists the total system memory requirements for simplex and duplex printing on each media size.

Media Size	Minimum RAM (in MB)	
	Simplex	Duplex
12x19	8	N/A
A3	8	24
A4/A4 LEF	8	12
A5	8	8
B4 (JIS)	8	20
B5 (JIS)	8	12
C5	8	N/A
Envelope #10	8	N/A
Envelope C5	8	N/A
Envelope DL	8	N/A
Executive	8	12
Legal	8	16
Letter/Letter LEF	8	12
Monarch	8	N/A

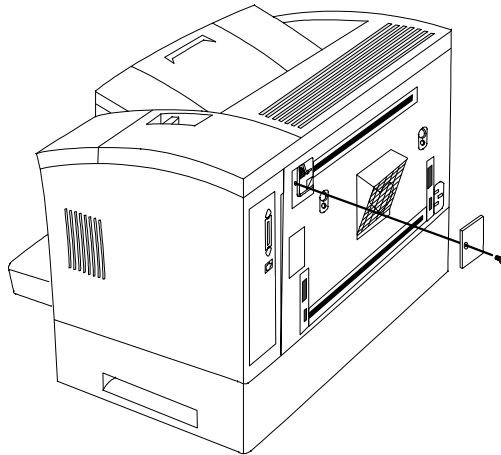
Duplexer

Media Size	Minimum RAM (in MB)	
	Simplex	Duplex
Postcard	8	N/A
Statement	8	8
Tabloid	8	24
Universal	8	N/A

- » **Note:** For information on installing SIMMs, refer to “Single In-Line Memory Modules (SIMMs)” on page 4-12.

Installing the Duplexer

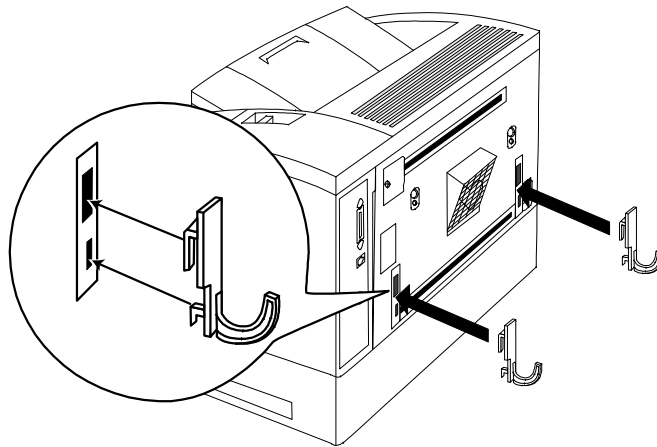
- 1 Remove the duplexer from its box, and then remove all the packing materials.
- 2 Turn off the printer, and remove the power cord and all interface cable(s).
- 3 Remove the panel for the duplex drive section on the back of the printer.



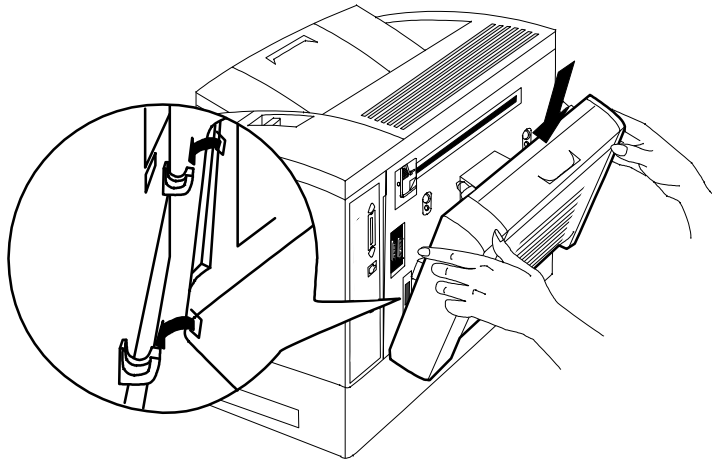
Duplexer

- 4 **Attach the two duplex brackets (J-hooks, included with the duplexer) to the back of the printer in the holes provided.**

» **Note:** *Press down until you hear a click.*

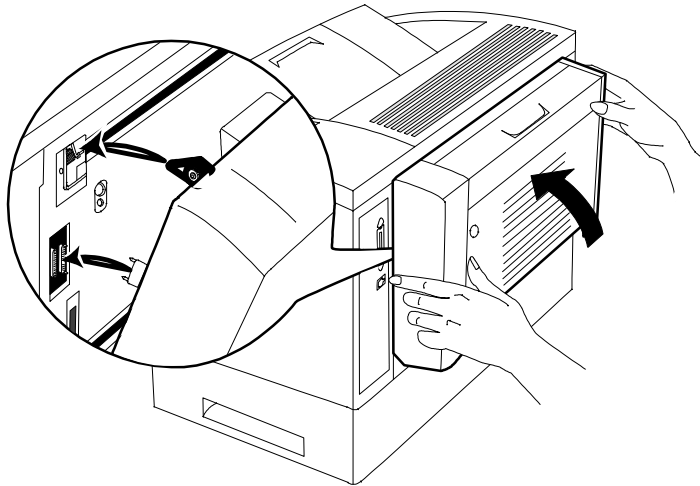


- 5 **Hook the duplexer onto the brackets.**

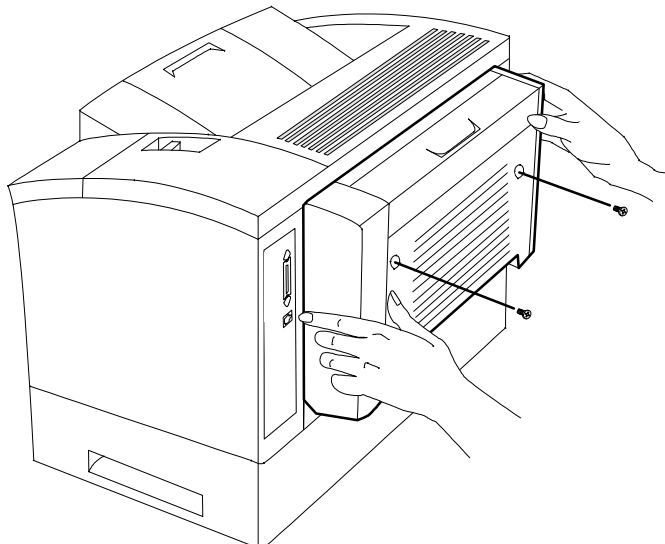


Duplexer

- 6 Position the duplexer in place over the panel and the bracket.**



- 7 Secure the duplexer in place with the two screws.**



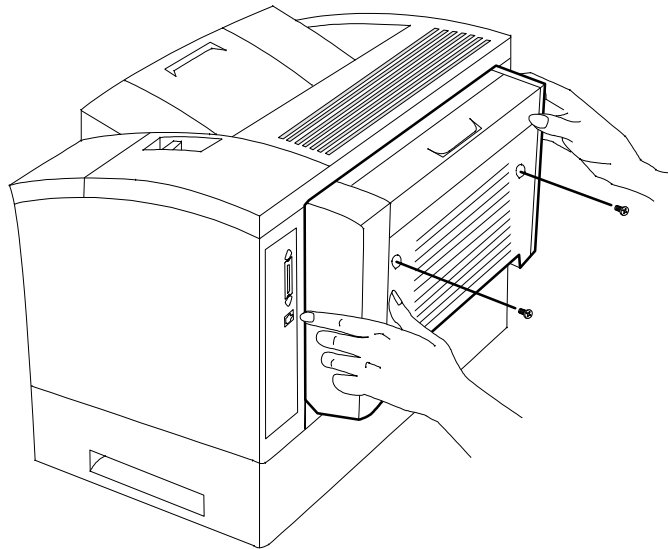
Duplexer

- 8 **Reconnect the interface cables, plug in the power cord, and turn on the printer.**
- 9 **Check the message window to make sure the printer is ready to print.**
- 10 **Configure the printer for duplex printing through the printer driver.**

See chapter 2, "Printing," for details.

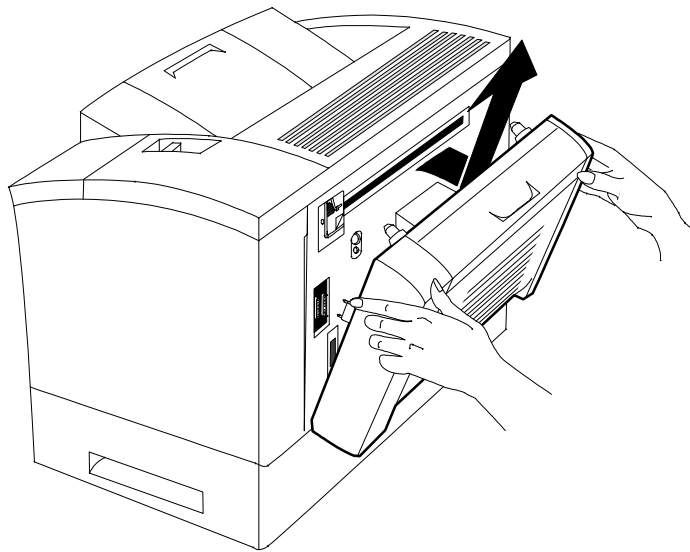
Removing the Duplexer

- 1 **Turn off the printer.**
- 2 **Remove the two screws.**



Additional Media Cassettes

- 3 Pull the duplexer back to a 45° angle, and lift it up and away from the printer.**



Additional Media Cassettes

The standard printer configuration provides a multipurpose tray and a 250-sheet cassette, for a total capacity of 400 sheets. Additional media cassettes provide two main benefits:

- 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 feeder).

Optional Feeder

The printer and standard feeder are stacked on top of the optional feeder, so no additional space is necessary. It comes with either a 500-sheet letter/A4 cassette or a second 250-sheet universal media cassette. The optional feeder provides two benefits:

- It increases your printer's media-feed capacity to a total of 900 or 1150 sheets, depending on whether you install an optional 250-sheet or 500-sheet cassette.
- It allows you to load different sizes or colors of media and easily change between them by switching cassettes.

Unpacking the Optional Feeder

- 1 Remove the feeder from its shipping carton, and place it on a flat surface.**
- 2 Remove any tape and packing material from the feeder.**
- 3 Save the carton and packing material in case you ever have to move or relocate the feeder.**

Installing the Optional Feeder

- 1 **Turn the printer off, and then disconnect the power cord and all interface cable(s).**



WARNING! Remember that the feeders (standard and optional) 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 feeder in the stack. If the printer is lifted alone, the bottom feeders could fall off, causing bodily injury or damage to the printer. If you need to lift just the printer, use the grips on it and make sure it detaches completely from the feeder 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 gesamte 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.

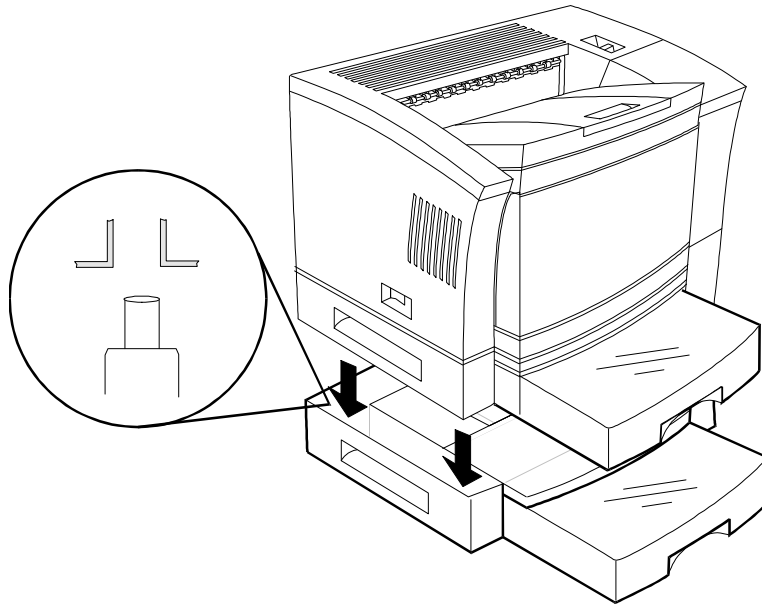
- 2 **Place the optional feeder in the appropriate location.**



WARNING! The printer is heavy, so two people should lift it.

ACHTUNG! Enternen Sie den Netzstecker und lassen Sie die Heizung abkühlen, bevor Sie den Drucker reinigen.

- 3 Using the carrying grips located on the sides of the standard feeder, set the printer and standard feeder on the optional feeder, using the coupling pins as guides.



- » **Note:** Align the printer over the pins on the optional feeder, and set the printer down on the optional feeder so that the three positioning posts on the optional feeder fit into the holes on the printer's bottom. Ensure that the printer and the optional feeder are securely seated.
- 4 Reconnect the interface cables, plug in the power cord, and turn the printer back on.

If you experience problems, check the order of the paper feeders in the stack, making sure that the optional paper feeder's connector is correctly aligned with the pins on top of the standard paper feeder.
 - 5 Load the optional cassette, using the directions in "Refilling the Media Cassette" on page 2-45.
- » **Note:** In the printer driver this cassette is called the lower tray.

Single In-Line
Memory Modules
(SIMMs)

Single In-Line Memory Modules (SIMMs)

Single in-line memory modules (or SIMMs) are compact circuit boards with surface-mount memory chips. The QMS 2060 WX Print System comes standard with 8 MB of RAM. However, the two SIMM connectors on the controller board support up to 32 MB.

- » **Note:** *The 32 MB configuration requires two 16 MB SIMMs. A single 32 MB SIMM will not work correctly.*

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/www/faq/> or through Q-FAX (see appendix A, "QMS Customer Support," to find out how to access Q-FAX documents).

You may need additional memory (SIMMs) for the following:

- To duplex print on some media sizes. (See "Memory Requirements" on page 4-3 for more information.)
- To print complex graphics or complex PostScript documents
- For increased collation performance
- For increased spooling performance

Installing a SIMM

-
- ⚠ **WARNING!** *This option—which requires access to the controller board—should be performed only by a qualified QMS service technician. Turn off the printer and unplug the power cord before taking the cover off the printer.*

ACHTUNG! *Arbeiten am QMS Controller sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Bitte schalten*

Single In-Line
Memory Modules
(SIMMs)

Sie den Drucker aus und ziehen Sie den Netzstecker heraus bevor Sie die Druckerabdeckung öffnen.

s **Caution:** *This hardware change automatically restores defaults.*

It's very important to protect the controller board from electrostatic damage while performing this task.

If an anti-static 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.

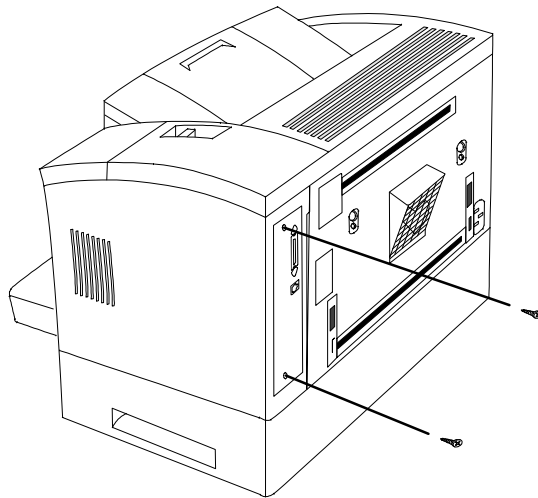
If you don't have an anti-static wrist strap, discharge your body's static electric charge by touching a grounded surface before you handle any printer boards or components and before removing the controller board cover. Redischarge your body each time after walking around and before touching the controller board again. Handle the controller board carefully, and try to handle it by the edges only.

Required Tool: Phillips screwdriver.

- 1 Turn off the printer, and then disconnect the power cord and interface cable(s) from the printer.**

Single In-Line
Memory Modules
(SIMMs)

- 2 Loosen the two screws, one on each end of the metal mounting bracket cover on the rear of the printer.**



- 3 Remove the controller board.**

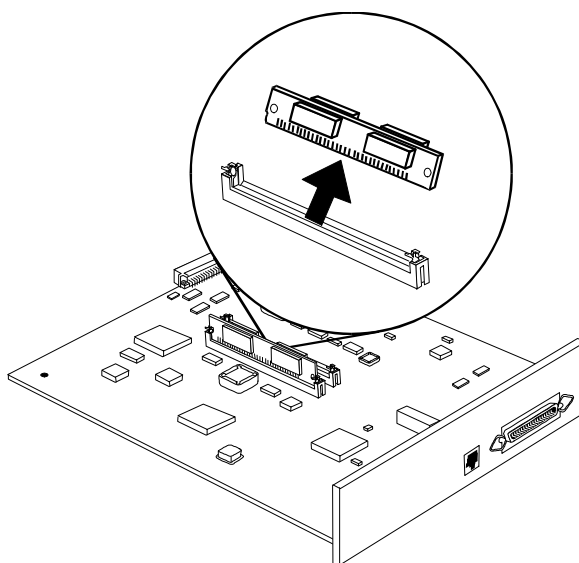
Using both hands, grab the two screws (on the metal mounting bracket cover), slide the controller board out of the printer, and set-it aside on a flat surface.
- 4 Position the controller board on a flat surface, so the controller board lies flat and the bracket is facing you.**
- 5 If necessary, remove an existing SIMM.**
 - Release the SIMM.

Pull the latches on each side of the SIMM connector outward using both thumbs.

Single In-Line
Memory Modules
(SIMMs)

- b Remove the SIMM.

Tilt the SIMM backwards to a 45° angle away from the SIMM connector, and then lift it out.



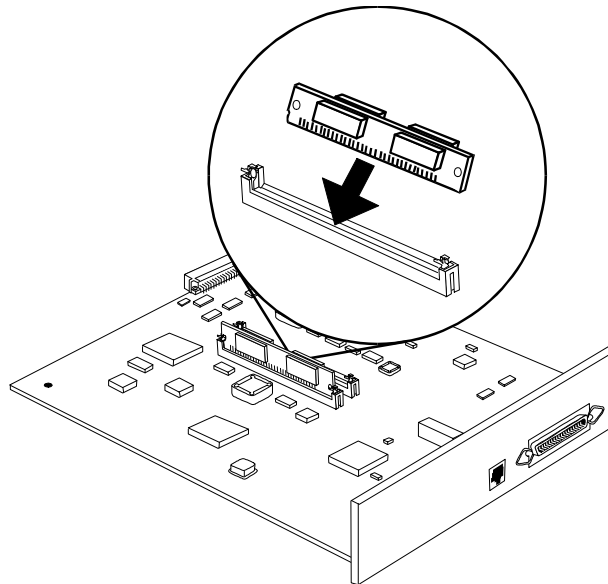
- 6 Remove the new SIMM from the anti-static bag.**

Single In-Line
Memory Modules
(SIMMs)

7 Insert the new SIMM into the SIMM connector.

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

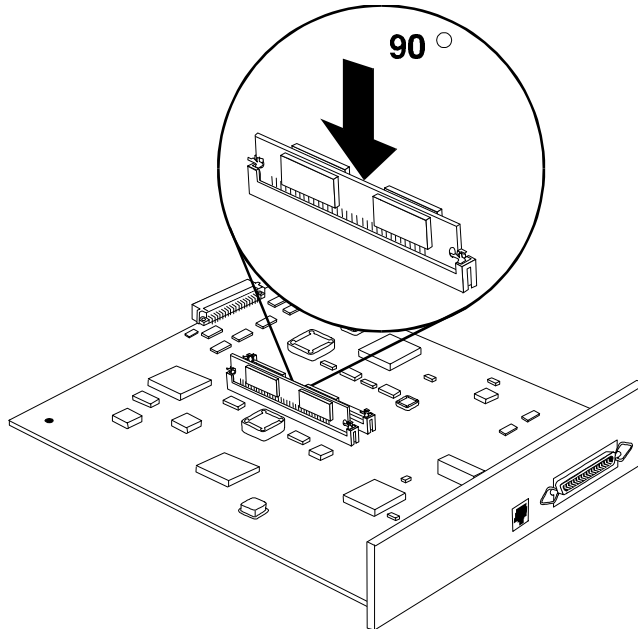
- » **Note:** *You can insert a SIMM in either SIMM connector as long as DRAM0, and the SIMM connector before the one you're installing, is occupied.*



Single In-Line
Memory Modules
(SIMMs)

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

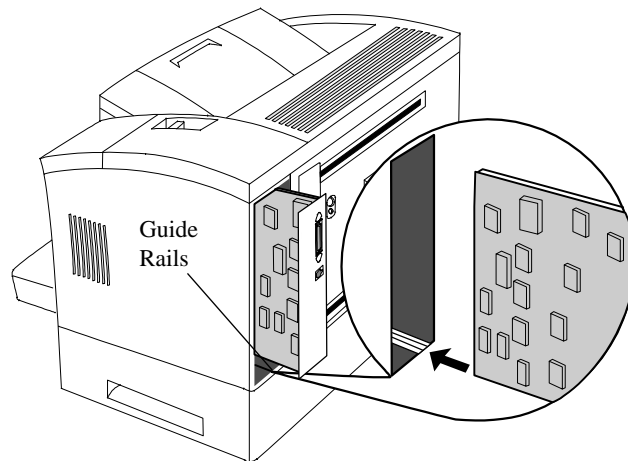
When seated, the SIMM stands upright, firmly in place. If you cannot snap the SIMM into place, do not force it. Reposition it, making sure that the bottom of the SIMM is seated completely in the connector.



- 9 Repeat steps 6-8 for each additional SIMM being installing.**

Single In-Line
Memory Modules
(SIMMs)

- 10 Lift the controller board and position it on the guide rails inside the printer.**



- 11 Slide the controller board in until it's firmly seated in the printer.**

- 12 Tighten the two screws you loosened earlier.**

Push in each screw and then tighten.

- 13 Reconnect the interface cable(s) and the power cord, and then turn on the printer.**

The amount of memory installed and the system software version are displayed in the control panel message window as the printer starts up.

Updating System Software

The system software in your printer is stored in flash memory. This allows you to update the system software 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 and Windows NT 4.0 systems.

- 1 If necessary, connect the printer to the PC's parallel port.**
- 2 Turn on the PC and the printer.**
- 3 Insert the QMS 2060 WX system software disk in the PC's 3.5" disk drive.**
- 4 From the Windows 95 or Windows NT Start menu choose Run...**
- 5 With the printer on line and Idle, in the Run dialog box type the appropriate command:**

■ **Windows 95** `x:\updt_lpy↵`

■ **Windows NT 4.0** `x:\firmware\updt_lpy↵`

Replace *x* with the letter of the disk drive in which you inserted the system software disk, and replace *y* with the number of the parallel port on your PC to which you connected the printer cable (for example, `a:\updt_lp1↵` or `a:\firmware\updt_lp1↵`).

The downloading process takes about 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`).*

Updating the Printer Drivers

Windows 95 Printer Driver

- » **Note:** *If you want to update the Windows NT printer driver, refer to “Windows NT 4.0 Printer Driver” on page 4-22.*

- 1 From the Windows 95 Start menu choose Settings.**
- 2 From the Settings menu choose Printers.**
- 3 If it’s installed, select the QMS 2060 WX printer driver in the Printers window.**
- 4 From the File menu choose Delete.**

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

- 5 Shut down your PC in the usual way.**
- 6 If you’re using a parallel connection, continue with the next section, “Parallel Connections.”**

If you’re using an Ethernet network connection, skip to “Ethernet Connections” on page 4-21.

Parallel Connections

Windows 95 and the parallel port on the QMS 2060 WX both support Plug and Play technology, which lets your PC and its attached devices work together automatically. The correct printer driver is automatically selected for you when you perform the following procedure. However, if you ever want to install (or reinstall) the printer driver manually, use the instructions in “Ethernet Connections” on page 4-21.

- 1 Turn on the printer.**

The printer goes through an initialization warm-up and self-testing that lasts less than 2 minutes. When the warm-up is complete, `Idle` displays in the message window.

- 2 Turn on the PC.**

- 3 A message window informs you `New Hardware Found`, and then you're prompted to insert the printer driver disk.**
- 4 Insert the QMS 2060 printer drivers disk or CD-ROM (shipped with your printer) in the appropriate disk drive on your PC, and choose OK to continue.**
- 5 Follow the instructions on the screen to install the printer driver.**

When the installation is complete, the Windows 95 desktop appears.

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

Ethernet Connections

Because Ethernet connections don't support Plug and Play technology, you must install the printer driver manually as follows.

- 1 From the Windows 95 Start menu choose Settings.**
- 2 From the Settings menu choose Printers.**
- 3 Insert the QMS 2060 WX printer drivers disk or CD-ROM (shipped with your printer) in the appropriate disk drive on your PC.**
- 4 Double-click on Add Printer.**
- 5 Follow the instructions in the Add Printer Wizard.**
- 6 When you're prompted to select a manufacturer and printer, choose Have Disk...**
- 7 In the Install From Disk window, choose Browse...**
- 8 Select the disk drive in which you inserted the disk or CD-ROM in the previous step, and then select the appropriate language directory (for example, English).**
QMSWX.INF displays in the File Name list.
- 9 Choose OK to return to the Install from Disk window.**
- 10 Choose OK again.**

Updating the Printer Drivers

- 11 In the displayed list of printers, select the printer driver you want to install (QMS 2060 WX), and then choose Next.**
- 12 Continue following the instructions in the Add Printer Wizard to complete the installation.**
- 13 When the installation is complete, exit from the Printers window.**
- 14 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 printer driver, refer to "Windows 95 Printer Driver" on page 4-20.*
- 1 From the Windows NT 4.0 Start menu choose Settings.**
 - 2 From the Settings menu choose Printers.**
 - 3 Select the QMS 2060 WX printer driver in the Printers window.**
 - 4 From the File menu, choose Delete.**

Select Yes when you're asked if you're sure you want to delete the printer.
 - 5 Insert the QMS 2060 WX printer driver disk into the PC's 3.5" disk drive.**
 - 6 In the Windows NT Start menu choose Settings.**
 - 7 In the Settings menu, choose Printers.**
 - 8 In the Printers window double-click the Add Printer icon.**

The Add Printer Wizard opens.
 - 9 When prompted, choose either My Computer or Network Printer to identify how the printer is attached to your workstation, and then choose Next.**

My Computer means Local Printer. In other words, the printer is connected directly to your computer rather to a network.

If you choose Network Printer, you are prompted to provide a network path or queue name.

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

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

12 In the Install from Disk dialog box, type

drive:

(where *drive* is the letter of the disk drive in which you inserted the QMS 2060 WX printer driver disk in step 5), and choose OK.

QMS 2060 WX printer displays in the list box.

13 Select the QMS 2060 WX printer, and then choose Next.

14 If you're replacing an existing Windows NT 4.0 printer driver, perform this step; otherwise, skip to step 10.

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.

» **Note:** *If you're updating a currently installed QMS 2060 WX on a Windows NT 4.0 station, always choose to replace the existing driver. Otherwise, when you've finished the installation, a second QMS 2060 WX icon, named "copy 2," is displayed in the Printers window.*

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

■ **If you chose Not Shared**, skip to step 16.

■ **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.

Updating the Printer
Drivers

- b **If you're sharing your printer with a Windows NT 4.0 workstation**, choose OK and go to step 16.

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

If the operating system on your PC does not have the QMS 2060 WX printer driver for Windows 95, you'll be prompted to install it: Insert the QMS 2060 WX printer driver disk and choose OK.

The required files are copied to the appropriate directory.

- » **Note:** *When the QMS 2060 WX is connected to a Windows 95 server, the printer driver must be installed on the server and on every client PC. (Refer to the QMS 2060 WX Print System Setup Guide for more information.)*

- 16 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.



5

Maintenance

In This Chapter . . .

- Handling the printer on page 5-2
 - About toner cartridges on page 5-4
 - Replacing toner cartridges on page 5-6
 - Cleaning the printer on page 5-10
-

Introduction

This chapter describes how to handle and clean the printer as well as how to replace a toner cartridge.

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 paper pick-up rollers 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.
- Don't place anything on the multipurpose tray except the media being used for printing.
- 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.
- Don't open the printer during printing and do not tap paper stacks on the printer.
- Don't tilt, lubricate, or disassemble the printer.

Handling 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.
- 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 gesamte 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.
 - 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.

About 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 a minimum of 10,000 letter/A4-size simplex pages at normal (5%) page coverage.

When the cartridge toner supply runs low, the printer message `Toner Low` displays in the message window. Usually, parts of the page print lighter. It is your option whether or not to continue printing when the engine senses it is out of toner.

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. If the `TONER LOW` message remains in the message window, you must replace the toner cartridge.

Ordering Toner Cartridges

Choosing the right consumables for your QMS 2060 WX Print System will not only increase its reliability and performance, but also minimize 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.

Handling Toner Cartridges

The cartridge contains the toner and laser-sensitive drum needed to operate the laser printer.

- The cartridge has a wide opening for the laser beam guided via the reflecting mirror. Be careful not to drop any foreign objects, such as clips or pins into the cartridge, when handling and installing the cartridge.
- The drum is extremely sensitive and may deteriorate if exposed to bright light; do not open or touch the drum protective shutter.

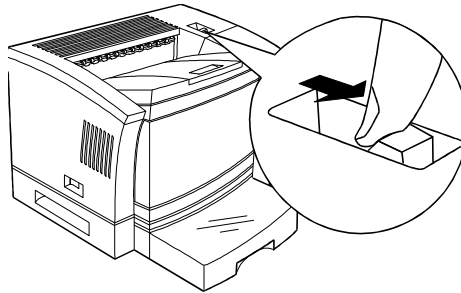
Storing Toner Cartridges

Keep the following guidelines in mind when storing toner cartridges:

- Toner cartridges are sensitive to bright light.
 - Keep them in their protective bags until you're ready to install them.
 - Don't store them in direct sunlight or room light (more than 1500 lux).
- Store toner cartridges horizontally in a cool, dry location. 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 them on their ends upside down; the toner inside the cartridges may become caked or unequally distributed.
- Store toner cartridges away from salty air environments and corrosive gases such as aerosols.
- Keep toner cartridges away from monitors, disk drives, and floppy disks. The magnets in the cartridges can damage stored data.

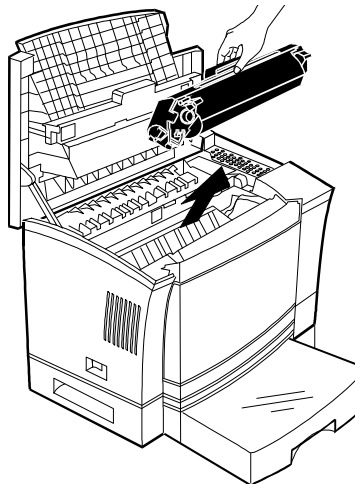
Replacing a Toner Cartridge

- 1 Press the upper unit lock release button, and open the top cover.**



- 2 Remove the empty toner cartridge.**

While grasping the grip area of the empty toner cartridge, remove the cartridge by pulling up it and then toward you.



- 3 Dispose of the old toner cartridge.**
 - » **Note:** *Put the old toner cartridge in a trash receptacle. Do not dispose of it by burning.*
- 4 Remove any residual toner powder from inside the printer.**

See "Cleaning the Inside of the Printer" on page 5-12.

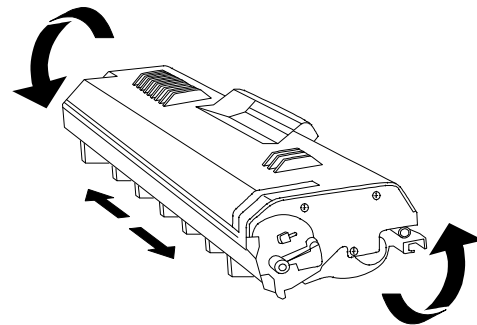
5 Lift the toner cartridge out of its shipping carton, open the aluminum protective bag, and remove the cartridge.

Caution: *The toner cartridge is sensitive to bright light. Do not remove the cartridge from the printer until you're ready to return it to its protective bag. Store the cartridge in an environment that is not subject to extreme heat or humidity, salty air, or corrosive gases, such as aerosols. Keep the toner cartridge away from your computer. The magnets in the cartridge can damage data, particularly on your floppy disks.*

After taking the toner cartridge from its protective bag, do not open the cover or touch the OPC drum of the toner cartridge because it may deteriorate the drum and reduce print quality.

6 Distribute the toner in the cartridge.

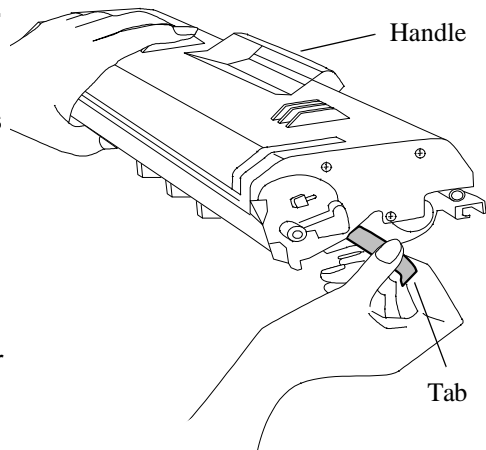
Hold the cartridge with both hands, and gently rock it from side-to-side five or six times to distribute the toner.



About Toner
Cartridges

7 Remove the tape seal.

- a Position the cartridge so the center handle faces away from you.
- b Holding the cartridge in place with your left hand, use your right hand to grasp the tab on the side of the toner cartridge.
- c Pull the plastic strip straight out.

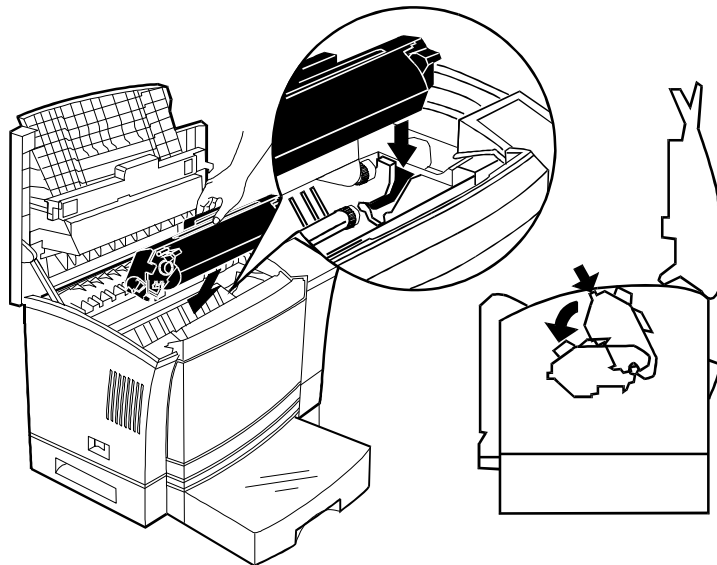


If the strip breaks, grasp the clear part of the tape seal and pull it straight out.

- d Discard the strip and the tape seal.

8 Slide the toner cartridge in the printer.

- a Holding the handle of the toner cartridge with your right hand, so the arrow on the toner cartridge is facing away from you, angle the cartridge down into the printer.
- b Place the cartridge on the rails inside the upper unit of the printer, and gently slide it straight down until it is firmly seated.




9 Close the printer's top cover.

Cleaning the Printer

Fine particles of dust from the paper may accumulate inside the printer. This could affect the printer's performance. So the printer should be cleaned on a regular basis to prevent potential malfunctions. You need to clean only the following areas:

- The outside of the printer
- The inside of the printer

Cleaning Guidelines


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

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

In addition to unplugging the printer, follow these guidelines when cleaning the printer:

- Clean the printer before use or allow a few minutes after unplugging it so that the fusing unit can cool down.
- Don't leave moisture inside the printer. Allow all parts to dry thoroughly before closing the printer cover.
- Use a soft, lint-free cloth.

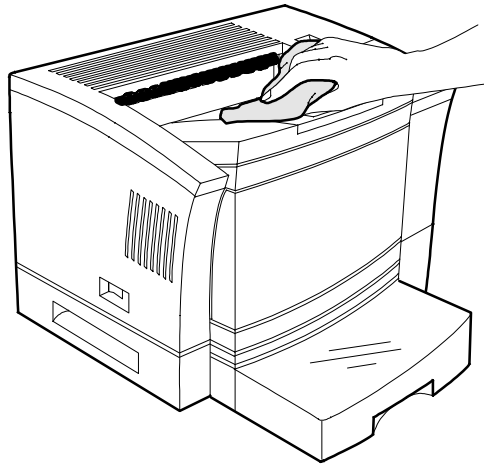
Cleaning the Outside of the Printer

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

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

Cleaning the Printer

To protect and maintain the appearance of your printer, wipe the cover and external parts with a soft cloth moistened with water or mild detergent.



WARNING! Do not spill water or detergent into the printer; otherwise the printer will be damaged and an electric shock may occur.

ACHTUNG! Verschütten Sie kein Wasser oder andere Flüssigkeiten auf dem Drucker, da das Gerät sonst beschädigt wird oder die Gefahr eines elektrischen Schlages besteht.

s **Caution:** Avoid using solvents, such as alcohol and benzene, or sprays as they may damage the finish.

Cleaning the Inside of the Printer

● **WARNING!** *Unplug the printer's power cord before cleaning the printer and ensure that the fusing unit has cooled down.*

ACHTUNG! *Entferne Sie den Netzstecker und lassen Sie die Heizung abkühlen, bevor Sie den Drucker reinigen.*

To maintain clear, crisp print quality, clean the paper pick-up rollers beneath the toner cartridge and in the media cassettes and the window glass of the print head unit:

- Every time the toner cartridge is changed.
- Whenever print quality becomes unsatisfactory.

Procedure

1 Remove the toner cartridge.

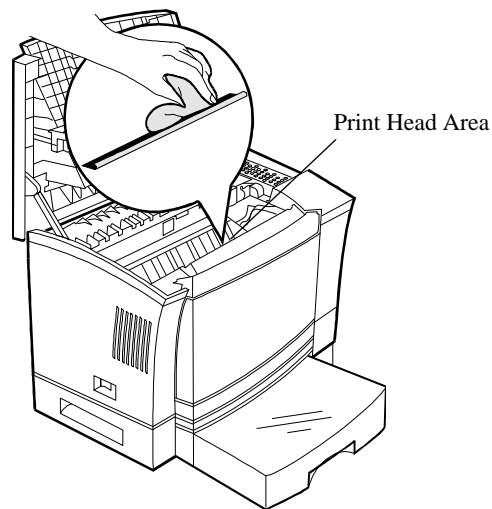
This procedure is described "Replacing a Toner Cartridge" on page 5-6.

- » **Note:** *If you plan to reinstall the toner cartridge, put it back in its aluminum bag or in a desk drawer, or cover it with a thick cloth while cleaning the interior of the printer. The toner cartridge can be damaged by exposure to light.*

Cleaning the Printer

2 Clean the window glass of the print head using a soft cloth.

- » **Note:** *You can see the window glass if you face the printer from its rear. If the glass is especially dirty, use a cloth dampened with ethyl alcohol.*



3 Replace the toner cartridge.

Using the Maintenance Kit

In order to keep your printer in optimum printing condition, we recommend that you contact your local QMS Service provider or QMS Supplier after every 120,000 page faces printed to order a maintenance kit. (A page face is one side of a sheet of media. Therefore, a simplex page has one printed face while a duplex page has two printed faces.)

The maintenance kit contains the following items:

- Fuser assembly
- Transfer roller
- Paper roller

An authorized QMS service technician will install these items.



6

Repacking the Printer

In This Chapter . . .

- Repacking the printer for relocation or shipment on page 6-2

Introduction

If you need to relocate or ship your QMS 2060 WX Print System after it has been installed, you must follow the procedures in this chapter to prevent damage to the printer and to keep your warranty valid.

-
- s **Caution:** *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 box with the original packing materials.*

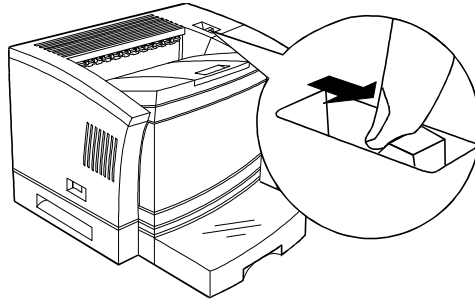
*If you need replacement packaging, in the US call QMS National Service at 1 (334) 633-4300 x 2530. If you need to return the printer for service, in the US call QMS Customer Service at 1 (334) 633-1072 for an RMA (Return Merchandise Authorization) number **before** shipping the printer. In other countries, refer to appendix A, "QMS Customer Support."*

Remove Cables and Cassette(s)

- 1 Turn off the printer.
 - 2 Remove the power cable and all interface cables.
 - 3 Remove the paper cassette(s) from the printer.
 - 4 Remove the paper from the cassette(s).
 - 5 Repack the cassettes in their original shipping boxes for shipping or storage.
- » **Note:** *If you're returning the printer for service, you don't need to return the power cable, interface cables, or cassettes. The starter kit box is a great place to store this equipment as well as the other equipment you remove from the printer in the following sections.*

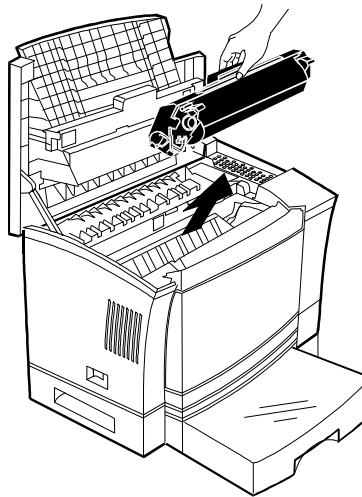
Remove the Toner Cartridge

- 1 Press the upper unit lock release button, and open the top cover.**



- 2 Remove the toner cartridge.**

While grasping the handle of the empty toner cartridge, remove the cartridge by pulling up it and then towards you.



Repack the Printer

3 Repack the toner cartridge to its original protective aluminum bag and shipping carton.

- » **Note:** *The toner cartridge is sensitive to bright light. Do not remove the cartridge from the printer until you're ready to return it to its protective bag. Store the cartridge in an environment that is not subject to extreme heat or humidity, salty air, or corrosive gases, such as aerosols. Keep the toner cartridge away from your computer. The magnets in the cartridge can damage data, particularly on your floppy disks.*

If you're disposing of the toner cartridge, put it in a trash receptacle. Don't dispose of it by burning.

4 Close the printer's top cover.

Repack the Printer

-
- **WARNING!** *The printer weighs about 53 lbs (24 kg). Don't lift it by yourself.*

ACHTUNG! *Der Drucker wiegt ca 23 kg; bitte versuchen Sie niemals, das Gerät alleine anzuheben oder zu tragen.*

1 If you have an optional feeder, remove it from the printer. Otherwise, skip to step 2.

2 Put the printer back in its original protective plastic bag.

3 Get someone to help you with this step: Lift the printer back into its original shipping carton.

- » **Note:** *If you're returning the printer for service, you don't need to return the toner, paper cassette(s), sheet feeder, power cable, or interface cables.*



7

Troubleshooting

In This Chapter . . .

- Status messages on page 7-2
 - Miscellaneous problems on page 7-11
 - Testing the printer board on page 7-13
 - Accessing the page count on page 7-14
 - Media jams on page 7-15
 - Control panel problems on page 7-24
 - Output problems on page 7-24
 - Print quality problems on page 7-26
 - Printer driver manual installation on page 7-32
 - Placing a service call on page 7-33
-

Introduction

This chapter provides information to aid you in resolving printer problems you may encounter, or at least guide you to the proper sources for help. You'll find in this chapter tables of common status messages, a problem checklist, and actions you should take when a specific problem occurs. There are step-by-step instructions for removing media jams from key locations along the media path, as well as descriptions of common print quality problems with corresponding solutions. You'll also find what information you'll need to have before placing a service call if one becomes necessary.

Printer Status Messages

Status messages in the control panel message window provide information about the printer and help you locate many problems. When the condition associated with a displayed message has changed, the message is cleared from the window.

- » **Note:** *Status messages are not displayed while the printer is off line.*

The following table lists the status messages that may appear in the message window. Shaded table cells indicate that the message scrolls.

- » **Note:** *An "error" message sometimes occurs as a result of an unusual combination of events, not because of an actual problem. When the printer stops and an error message displays in the message window, turn the printer off, wait 5 minutes, then turn it back on. This often clears the error message indicator and printer operation resumes. Always try this before making a service call.*

Printer Status
Messages

This message...	indicates...
» Note: <i>Shaded table cells indicate that the message scrolls.</i>	
Asic error	There is an application specific integrated circuit (ASIC) problem. Call for service.
Bad entry	You have made an illegal entry in the configuration menu.
Booting	The printer is starting up.
Canceling jobs	The Cancel key has been pressed, and all pages currently received by the printer are being cancelled.
Controller error	There is a controller problem. Call for service.
Cover open	The top cover on the printer is open.
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.
DRAM test error	There is a DRAM or controller board problem. Call for service.
Duplex cover open	You are trying to duplex print, but the cover on the duplexer is open.
Duplex error	There is a duplexer problem. Call for service.
Duplex jam	Media has jammed in the duplexer. Remove the jam (see *"Clearing a Duplexer Media Jam" on page 7-23).
Energy save mode on	Energy Saver mode is currently in effect.
Erasing flash	The old system software is being erased from flash memory.

Printer Status
Messages

This message...	indicates...
» Note: <i>Shaded table cells indicate that the message scrolls.</i>	
Ethernet error xx	An Ethernet error has occurred. Record the error number and contact your system administrator or the QMS Response Center. 101 Hardware address conflict 103 mem err 104 appinit 105 net err 106 net err 107 event err 108 event err 109 hardware 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
Ethernet port	The printer has identified an Ethernet port connection during startup.
F# xxxxxxxx xxx i960 fault	There is a processor fault. Call for service (see "Placing a Service Call" on page 7-33).
Flash error	There is a flash ROM problem. Call for service (see "Placing a Service Call" on page 7-33).
HW err 0 cancel	The Ethernet hardware address is not set. Use the Eth. HW address menu to set it (see chapter 3, "Control Panel").

Printer Status
Messages

This message...	indicates...
» Note: <i>Shaded table cells indicate that the message scrolls.</i>	
Idle	No jobs are in progress.
Inner jam	Media has jammed. Remove the jam (see "Media Jams" on page 7-15).
IP err 0 cancel	The Internet address is incorrectly set. use the Internet address menu to set it correctly (see chapter 3, "Control Panel").
x Meg ver x.x	This indicates the amount of memory installed in the printer and the system software version. It displays immediately after QMS 2060 WX test during printer startup.
Misfeed jam	Media has jammed leaving the media cassette. Remove the jam (see "Media Jams" on page 7-15).
Need more memory Paper mismatch	More memory is needed to print the job, <i>and</i> the media in the default media cassette is different from that chosen in the printer driver. » Note: Due to the lack of sufficient memory, parts of the image may be clipped off.
Need new kernel	The kernel is damaged. Download the system software again (see "Updating System Software" in chapter 4, "Printer Options").
New kernel...	The kernel is being downloaded during the system software downloading process.
Outer jam	Media has jammed leaving the paper exit unit. Remove the jam (see "Media Jams" on page 7-15).

Printer Status
Messages

This message...	indicates...
» Note: <i>Shaded table cells indicate that the message scrolls.</i>	
Paper out lower tray Paper out manual feed Paper out upper tray	The indicated media cassette is empty; reload the cassette. (See chapter 2, "Printing," for information on refilling cassettes.)
Parallel port	The printer has identified a parallel port connection during startup.
Print job active	The PC is sending a job to the printer.
Printing	The printer is on line and printing.
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.
Printing paper mismatch	The media size in the default media cassette is different from that chosen in the printer driver. The job will print on the installed media size. » Note: Due to the lack of the requested media size, parts of the image may be clipped off.
QMS 2060 WX test	The printer is going through its initial testing during startup.
Selected	You have selected a setting or option in the configuration menu.

Printer Status
Messages

This message...	indicates...
» Note: <i>Shaded table cells indicate that the message scrolls.</i>	
Toner empty	The toner cartridge is empty. (See chapter 5, "Maintenance," for information on replacing the toner cartridge.)
Toner low	The toner cartridge is low. (See chapter 5, "Maintenance," for information on replacing the toner cartridge.)
Warming up	The printer is warming up; the fuser is at a low temperature. Wait until the printer has warmed up before you print.
Writing flash	The new system software is being written to flash memory.

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/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: <i>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.</i>	Nothing
Printing	The spooler is ready to activate the designated monitor and despool the submitted print job.	
Deleting	The spooler has finished submitting the print job to the designated print monitor and is deleting the spool file.	

Print Monitor Status
Messages

This message...	indicates...	Do this...
Error	<p>The spooler is reporting an error received from the monitor.</p> <ul style="list-style-type: none">■ 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.	<ul style="list-style-type: none">■ 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	<p>The QMS Network Print Monitor can't communicate with the printer. Either the printer is off, or the connection is broken.</p> <p>» Note: <i>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).</i></p>	<ul style="list-style-type: none"> ■ 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	<p>This message displays while the job is transferred to the printer.</p> <p>» Note: <i>Windows NT only—The flag next to this message indicates spooling status:</i></p> <ul style="list-style-type: none"> ■ Green Flag—<i>Printer spooling is enabled.</i> ■ Red Flag—<i>Printer spooling is disabled.</i> 	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 “Printer Status Messages” on page 7-2 for a complete list and description of these messages.

This message...	indicates...	Do this...
Control panel status messages, such as the following: IDLE TONER OUT ADJUST UPPER BIN PAPER JAM	The printer has encountered a problem. <ul style="list-style-type: none"> ■ If the print job is spooled on a local workstation, a dialog box prompts you either to delete or retry the job displays. ■ 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). <p>» Note: <i>Remember that if the send request timeout expires, the print job will be terminated and cleared from the system.</i></p>	Fix the printer problem and then do the following: <ul style="list-style-type: none"> ■ 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.

Troubleshooting Quick Check

If you've just installed your printer and are having problems, be sure you have correctly followed the procedures explained in the *QMS 2060 WX Print System Setup Guide*.

Troubleshooting
Quick Check

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 requirements? 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 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 QMS vendor.

3 Does your application require any additional printer setup?

If you're experiencing printing problems not related to print quality, check the printing section of your application documentation to see if any additional printer setup steps are required.

Performing a Board Test

You can test the printer by using the Board Test menu.

-
- s **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 10 times to access the Board Test menu.**
- 3 **Press the Select key to display the Perform test option.**
- 4 **Press the Select key to display the message**

Online, full test

and begin the test.

The printer displays the following messages *several* times:

Testing DRAM
Testing Flash
Testing Ethernet
Testing Asics

- » **Note:** *These messages are displayed several times. The board test is not finished until the Board tested OK message displays.*

When the board test is finished, the message

Board tested OK

displays and then the message

Booting

displays as the printer restarts and returns to

Idle

Accessing Page Count

You can identify the number of page faces that have been printed in two ways.

- » **Note:** *A page face is one side of a sheet of media. Therefore, a simplex page has one printed face while a duplex page has two printed faces.*

■ Status Page Key

- a Press the Online/Offline key to take the printer off line.
- b Press the Status Page key on the control panel.

The message

Page count # xxx

scrolls in the control panel message window.

- c Press the Online/Offline key to return the message window to Idle.
- d Press the Online/Offline key again to put the printer back on line.

■ Configuration Menu

- a Press the Online/Offline key to take the printer off line.
- b Press the Menu key nine times to access the Service menu.
- c Press the Select key.

The message

Page count # xxx

scrolls in the control panel message window.

- d Press the Online/Offline key to return the message window to Idle and put the printer back on line.

Media Jams

When a jam occurs, the message window on the control panel displays one of the following messages: *Inner jam*, *Misfeed jam*, or *Outer jam*. This section contains procedures for clearing each type of jam.

Locating Print Media Jams

When print media jams occur, a message displays in the message window. Frequent jams in any area indicate that area should be checked, repaired, or cleaned. Frequent jams may also happen if you are using the wrong weight print media. (See the "Print Media" section of appendix B, "Technical Specifications," for print media specifications.)

Print media jams can occur in one or more of the following areas:

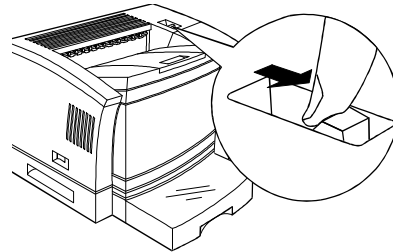
- Inside the upper unit
 - Standard or optional cassette unit
 - Multipurpose tray
 - Output tray
- » **Note:** *After clearing a jam, always open and close the top cover once before printing. Printing will not resume until you do this.*

Clearing a Media Jam Inside the Printer

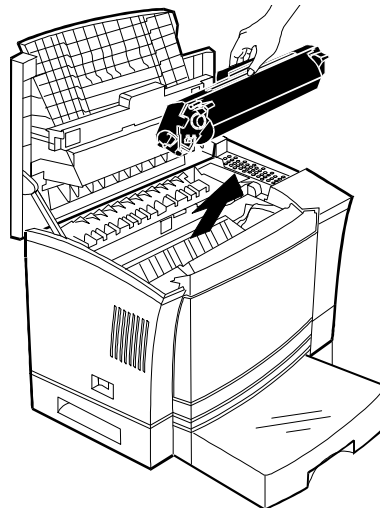
⚠ WARNING! *The fixing assembly and print delivery guide become extremely hot when the printer is used. Personal injury could result if you touch those areas.*

ACHTUNG! *Die Fixiereinheit und die Papierführung werden sehr heiß, wenn der Drucker in Betrieb ist; bei Berührung dieser Partien besteht Verletzungsgefahr!*

- 1 Open the upper unit.



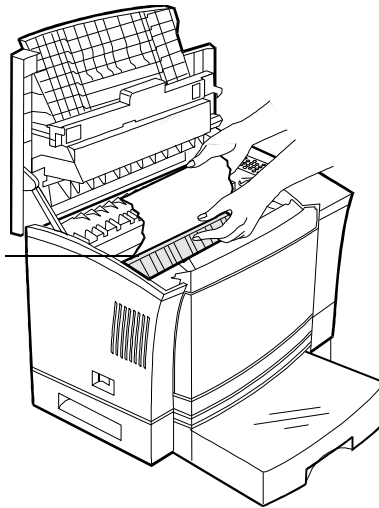
- 2 Remove the toner cartridge.



Media Jams

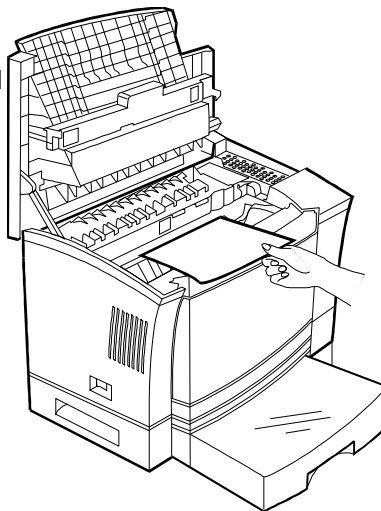
- 3 If the edge of the media hasn't been fed in the fusing unit, open the front transport guide and pull the jammed media upward and then out.

Front Transport Guide



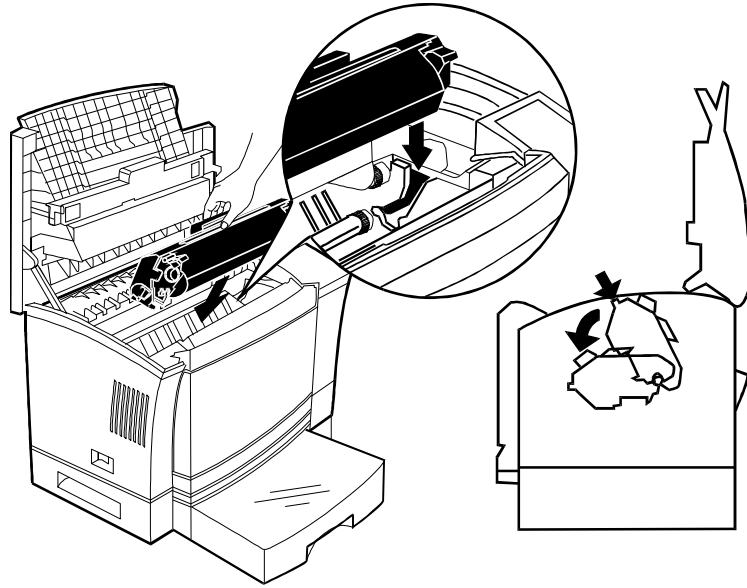
- 4 If the edge of the media has been fed into the fusing unit, pull the jammed paper forward and out.

» **Note:** Toner may get on your hands because the image transferred to the media is not fixed. Also, pull the paper forward and out, not down and out.



Media Jams

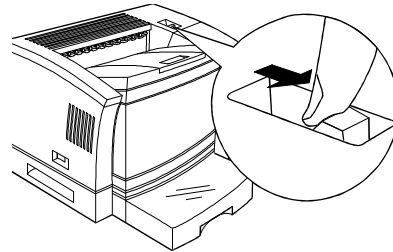
5 Reinstall the toner cartridge.



6 Close the upper unit.

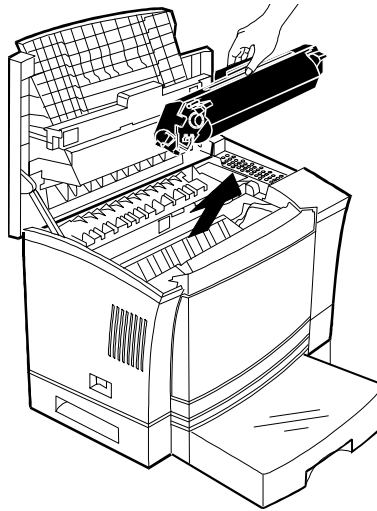
Clearing Cassette Area Jams

1 Open the upper unit.

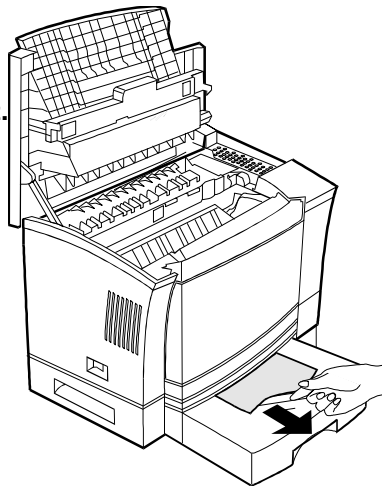


Media Jams

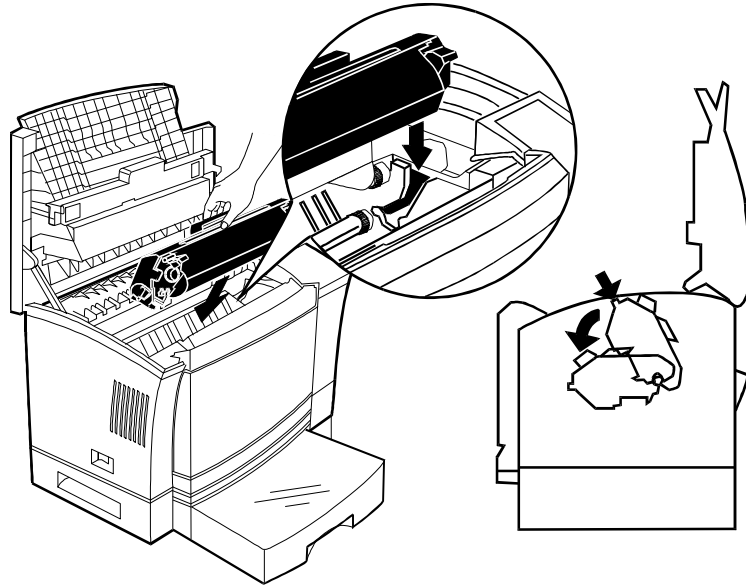
- 2 Remove the toner cartridge.



- 3 Determine which media cassette is currently being used, and remove it.
- 4 Check the cassette pick-up roller area, and remove any jammed print media that remains outside the main unit.



5 Reinstall the toner cartridge.

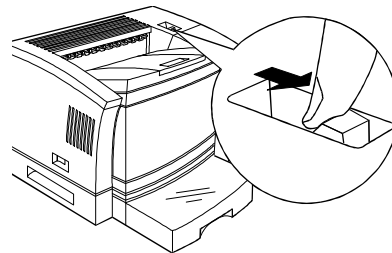


6 Close the upper unit, and reinstall the media cassette.

Clearing Multipurpose Tray Area Jams

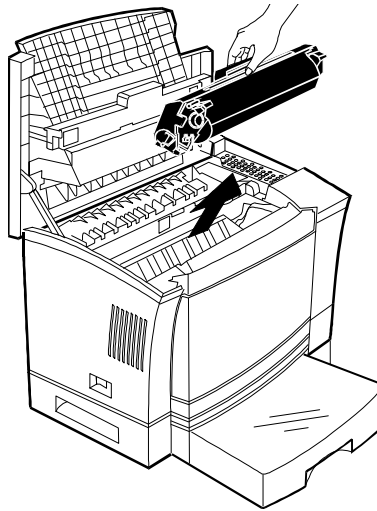
» **Note:** *Leaving print media in the multipurpose tray can cause the print media position to shift during removal of the jam. This may result in a media feed failure and another jam when printing is restarted.*

1 Open the upper unit.

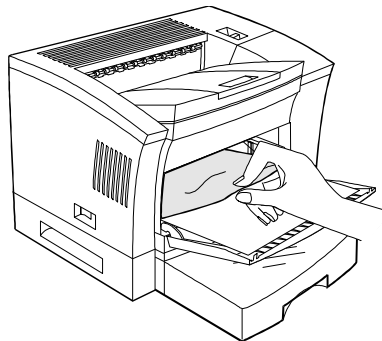


Media Jams

- 2 Remove the toner cartridge.

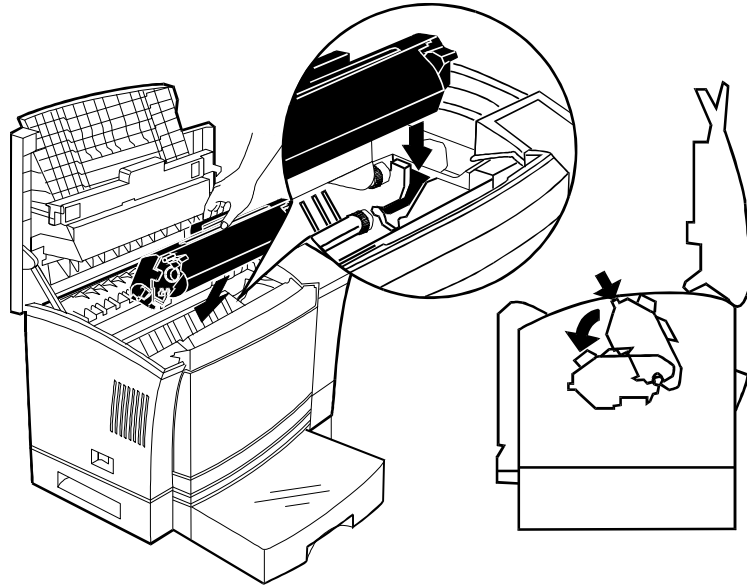


- 3 Open the multipurpose tray, and pull out the jammed media.



Media Jams

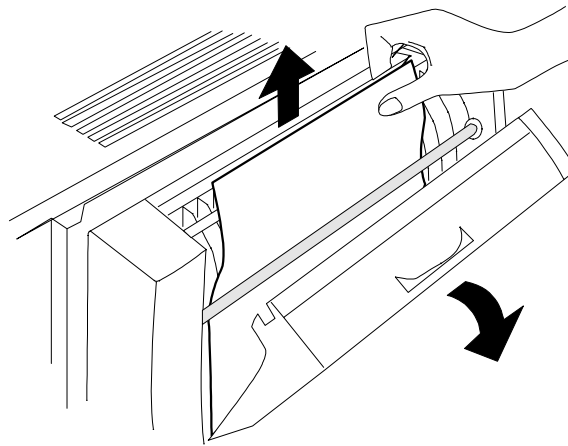
4 Reinstall the toner cartridge.



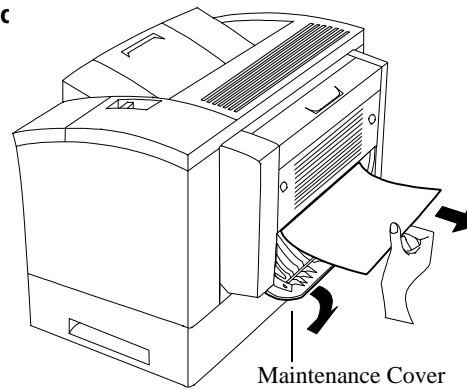
5 Close the upper unit.

Clearing a Duplexer Media Jam

- 1 **Open the duplex cover and pull out the jammed paper.**



- 2 **Open the maintenance cover and remove the jammed paper.**



- 3 **Close the maintenance cover and the duplexer.**

Control Panel Problems

Data Indicator Stays Lit

You may be downloading too many additional typefaces, which can overload the printer's memory, causing the printer to hang. Make sure you have enough printer memory.

Jam Message Stays On

If a jam message stays on, open the printer and clear the jam. If the message is still there, try opening and closing the top of the printer again. See the preceding section on clearing media jams for more information.

Output Problems

Only Partial Pages Print

- Check the imageable areas for the size media you're using (see chapter 2, "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 5, "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. You have three options:
 - Change to Coarse dither in the printer driver
 - Print at 300 dpi
 - Add more memory

Blank Pages

If a blank start-up page ejects or blank pages come out during a printing job, try the following:

1 Check the toner cartridge.

The image does not print if the cartridge is empty.

2 Be sure you have broken the tab on the side of the toner cartridge and removed the tape seal.

3 If the toner cartridge is not empty, the sealing tape has been removed, and blank pages are ejecting, take the cartridge out, roll it from side to side, and reinstall the cartridge in the printer.

4 If these solutions do not work, contact your QMS vendor to purchase another toner cartridge.

Not All Pages Print

If the printer stops printing in the middle of your file, try the following:

1 Check your cable.

You could have the wrong kind of 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 are using needs more media.

4 If you're printing via a parallel connection, make sure that the mode statement in your AUTOEXEC.BAT file ends in a "p" so that print jobs are sent until the printer accepts them:

```
mode lpt1:,,p
```

Fonts Don't Print Correctly

Make sure you're using TrueType fonts. If not, 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 or in the multipurpose tray.

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 in "Media Jams" on page 7-15.

Printer Will Not Duplex

- If the error message `Duplexer absent` appears in the message window, make sure you have the optional duplexer correctly installed. See the chapter 4, "Printer Options," for information on installing the duplexer.
- If the printer continues printing simplex, you may need additional memory allocated to the frame buffer. See chapter 4, "Printer Options," for additional information on memory required for duplexing.

Print Quality Problems

The following list includes several image defects with possible solutions. Try the solutions in the sequence given. If the solutions listed don't solve the problem, place a service call to your QMS vendor. See "Placing a Service Call" on page 7-33.

General

Print quality problems are those related to the appearance of the pages you print. Print quality problems include white lines on the page, uneven blacks, and other print distortions.

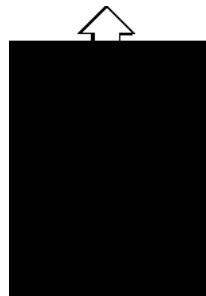
If you have problems with the quality of your printed pages, try the following:

- If the **TONER OUT** message is on and the printer continues to print, try distributing the toner to improve print quality. If the print quality does not improve, replace the toner cartridge.
- Remove the toner cartridge and rock it several times from side to side. The toner can settle, and this procedure redistributes the toner. Reinsert the cartridge and try printing again.
- Place a service call to your QMS vendor.

Specific

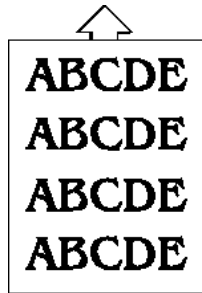
Listed below are several print quality problems with possible solutions. Try the solutions in the sequence given. If the solutions listed do not solve the problem, place a service call to your QMS vendor.

Black Image (Entire Page)



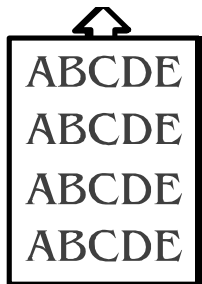
- The toner cartridge may be defective.
Remove it and install a new toner cartridge, if needed.
- Your printer may need a service check.
Contact your QMS vendor.

Printout Too Dark



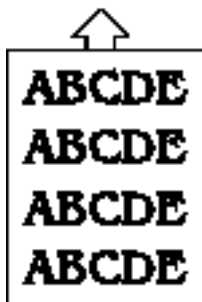
- The toner cartridge may be defective.
Install a new toner cartridge, if necessary.

Printout Too Light



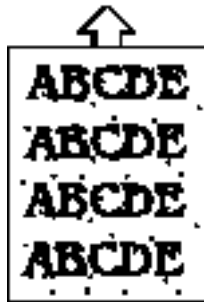
- The toner may need to be redistributed.
Remove the toner cartridge and rock it as you would when installing a new cartridge. This redistributes toner inside the cartridge. Then reinstall the cartridge.
- The toner cartridge may be defective.
Install a new toner cartridge.

Offset (Double) Image



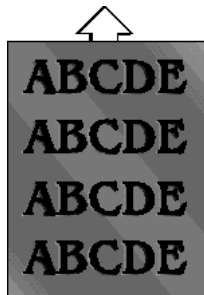
- The photoconductive drum inside the toner cartridge may be dirty.
Open the printer once, and close it again to clean the drum.

Toner Smudges



- If the toner smudges are only on the front of the page, do the following:
 - 1 Distribute the toner.
 - 2 Make sure the toner cartridge is not defective.
 - 3 If steps 1 and 2 above do not solve the problem, install a new toner cartridge.
- If toner smudges are both on the front and the back of the page, the image transfer roller may be dirty.
 - 1 Open the printer once and close it again to clean the roller.

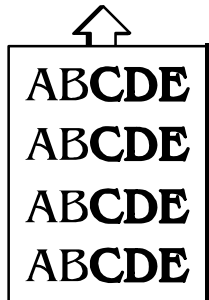
Blurred Background



- The toner cartridge may be defective.
Install a new toner cartridge, if needed.

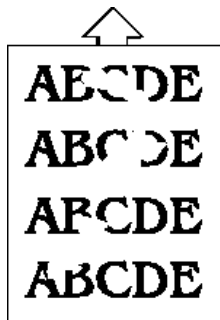
Print Quality
Problems

Uneven Print Density



- Redistribute the toner.
 - 1 Remove the toner cartridge, rock it as you do before installing a new cartridge, and then reinstall it.
 - 2 If step 1 doesn't solve the problem, install a new toner cartridge.

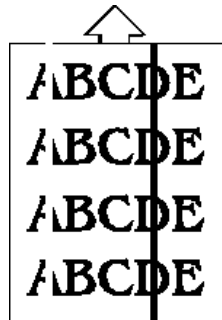
Irregular Print



- 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 at the positions where it has become wet.

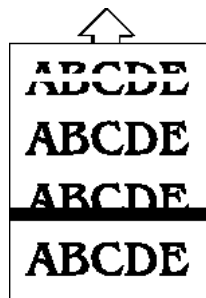
Replace the paper in the tray or cassette with dry paper, and retest for irregular print.

White (or Black) Stripes



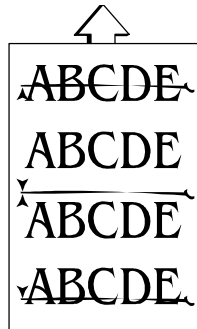
- The window glass of the Print Head may be dirty.
Clean the glass as described in chapter 4, "Printer Care."
- The toner cartridge may be defective.
Install a new toner cartridge, if needed.

White (or Black) Bands



- The toner cartridge may be defective.
Install a new toner cartridge, if needed.

Repeated Flaws



- The photoconductive drum inside the toner cartridge may be dirty.
Open the printer once and close it again to clean the drum.
- The photoconductive drum inside the toner cartridge may have a scratch on it.
Install a new toner cartridge and test the print again.
- The toner cartridge may have been exposed to too much light from external sources.
Install a new toner cartridge, and test the print again.

Uninstalling the QMS Network Print Monitor for Windows 95

Use this procedure to uninstall the Print Monitor for Windows 95:

- 1 From the Start menu, choose Settings.**
- 2 From the Settings menu, choose Control Panel.**
- 3 In the Control Panel dialog box, choose Add/Remove Programs.**
- 4 On the Install/Uninstall tab select QMS Print Monitor.**
- 5 Choose Add/Remove.**
- 6 In the Welcome window, choose OK.**

7 If a DeleteQMSMonitor window appears, continue with step 8.

The Print Monitor is in use and cannot be deleted until it is no longer in use. If this window doesn't appear, you have successfully uninstalled the Print Monitor.

8 Go to the Start menu and choose Settings.

9 From the Settings menu, choose Printers.

10 In the Printers dialog box, double-click on the printer that has the Print Monitor installed.

11 In the QMS Print Monitor window, from the Printer menu choose Properties.

12 In the QMS Properties window, choose the Details tab, scroll down in the Print to the following port: listing and select a port not associated with the QMS Print Monitor.

13 Choose Apply and then choose OK.

14 Repeat steps 1 through 6 to complete the uninstallation of the Print Monitor.

» **Note:** *All files that are associated with the Print Monitor installation and all QMS ports which were associated with the Print Monitor are removed.*

Placing a Service Call

- **If you have a problem you can't resolve**, contact your QMS vendor. Your QMS vendor is best equipped to immediately handle any problem you may encounter.

Placing a Service Call

- **If you've determined your printer needs to be examined by a QMS service technician**, contact the QMS international office or Service provider. (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 2060 WX Print System printer driver version (choose the About button on the driver's Paper tab)?**



A

QMS Customer Support

In This Appendix . . .

- Sources of customer support on page A-2
 - QMS world-wide offices on page A-3
-

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.

CompuServe

Through CompuServe, you ask general (non-technical) questions, share information with other users, and access printing information and programs. When you use CompuServe, type `go qmsprint` to go directly to the forum where QMS is located. The QMS library section contains application notes, printer drivers, utilities, technical information, and announcement files.

Internet

The QMS server provides access to technical reports, new product announcements, a trade show schedule, and other general information about QMS.

If you have access to the World Wide Web, you can view the QMS home page at <http://www.qms.nl/>. The QMS ftp resource is <ftp.qms.com>.

QMS World-wide Offices

QMS United States and Latin America

General Contact

1 (334) 633-4300

Fax 1 (334) 633-4866

Email info@qms.com

Customer Response Center (CRC)

Technical Assistance

1 (334) 633-4500

7:00 am–6:00 pm Central Time

Bulletin Board Service

1 (334) 633-3632

Latin America Fax

1 (334) 639-3347

National Service

Service Information, Installation, and Maintenance Pricing

1 (800) 762-8894

On-Site Service and Depot Repair Information

1 (800) 858-1597

7:00 am–7:00 pm Central Time

Spare Parts Ordering and Information

1 (334) 633-4300 x2530

8:00 am–5:00 pm Central Time

QMS Canada

General Contact

1 (514) 333-5940

Fax 1 (514) 333-5949

Supplies and Accessories

1 (800) 268-0343 x223

National Service

On-Site Service and Depot Repair Information

1 (800) 268-4969

8:30 am–7:00 pm Eastern Time

Spare Parts Ordering and Information

1 (905) 206-9234 x238

8:30 am–5:00 pm Eastern Time

Bulletin Board Service

1 (905) 206-0084

QMS in Japan

General Contact

(+81)- 3 3779-9600

Fax (+81)-3 3779-9650

QMS World-wide
Offices

QMS in Latin America

General Contact

Cra 43 DD#8-42
Officina 201
Medellin, Columbia
(+57) (4) 312 13 70
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QMS EMEA

QMS Australia	30, Atchison Street St. Leonards NSW 2065 Australia (+61) 2-9901 3235 Fax (+61) 2-9901 3273
QMS Benelux Belgium, Netherlands, and all unlisted countries	Planetenbaan 60 'Corner Plaza' 3606 AK Maarssen The Netherlands (+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 (+33) 1-410 79 393 Fax (+33) 1-408 30 110
QMS GMBH Germany and Austria	Willstätterstrasse 10 40549 Düsseldorf Germany (+49) 211-596 1333 Fax (+49) 211-596 1397
QMS Italy	Via della Repubblica 56 43100 Parma Italy (+39) 52-1231 998 Fax (+39) 52-1232 902

QMS World-wide
Offices

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QMS South Africa	Saskay House Unit 24 Sunninghill Business Park Peltier Road, Sunninghill, Johannesburg Republic of South Africa (+27) 11-807 6957 Fax (+27) 11-807 6960
QMS UK United Kingdom and Ireland	Old Bridge House, The Hythe Staines, Middlesex TW18 3JF United Kingdom (+44) 1784-442255 Fax (+44) 1784-461641



QMS World-wide
Offices

B

Technical Specifications

In This Appendix . . .

- Print engine specifications on page B-2
 - Controller specifications on page B-3
 - Environmental requirements on page B-3
 - Print media on page B-4
 - Cable pinouts on page B-6
 - Printer options on page B-8
 - Consumables on page B-9
 - Regulatory information on page B-10
 - Warranty information on page B-12
-

Print Engine
Specifications

Print Engine Specifications

Dimensions	Width	21.46"/545 mm (W)
	Depth	15.08"/383 mm (D)
	Height	15.87"/403 mm (H)
	» Note: <i>These dimensions exclude the multipurpose tray, universal cassette, and duplexer.</i>	
Duty Cycle	50,000 images per month maximum	
Electrical Requirements	Power Consumption	
	Energy Saver Mode	19 W
	Operation	820 W maximum
	Standby	100 W
	Power Requirements	
	100/120 V, 50/60 Hz (± 3 Hz), about 90-130 VAC	
	220/240 V, 50 Hz (± 3 Hz), about 200-260 VAC	
	Energy Star compliant	
Engine	Minolta SP-A310	
Noise Level	Idle	Maximum 38 dB (A)
	Printing	Maximum 53 dB (A)
Print Method	Laser beam scanning and dry electrophotographic printing; fixing by heated rollers	
Print Speed	Letter/A4 media (600 dpi)	
	Up to 20 simplex pages per minute long-edge feed	
	Up to 12 duplex pages per minute long-edge feed	
	11x17/A3 media (600 dpi)	
	Up to 11 simplex pages per minute	
	» Note: <i>Actual print speed depends on the paper orientation and the host application.</i>	
Resolution	300x300 dpi 600x600 dpi	
Toner	Microfine toner designed especially for high-resolution printers; dry, single component in user-replaceable cartridge	

Controller
Specifications

Toner Cartridge Life	A minimum of 10,000 simplex letter/A4-size pages at normal (5%) page coverage	
Type	Desktop, non-impact printer	
Warm-Up Time	70 seconds or less, assuming normal temperature and humidity	
Weight	Main unit	53 lbs/24kg
	Toner cartridge	4 lbs/1.9 kg

Controller Specifications

Fonts	Windows 95 TrueType fonts
Interfaces	Centronics/IEEE 1284 bidirectional parallel Ethernet (TCP/IP, ftp, and telnet)
Memory	FLASH EPROM (system code) 8 MB RAM standard, upgradable to 32 MB (through two SIMM connectors). » Note: <i>The 32 MB configuration requires two 16 MB SIMMs. A single 32 MB SIMM will not work.</i>
System Software	Softloadable via the parallel port
Type	i1960SA processor operating at 20 MHz

Environmental Requirements

Relative Humidity	Printing	15–85% RH (non-condensing)
	Transportation/Storage	10–95% RH (non-condensing)
Temperature Range	Printing	50–90° F (0–35° C)
	Transportation/Storage	32–95° F (0–35° C)
Altitude	0'–8202.5' (0–2500 m)	

Print Media

Input Sources and Capacities	Cassettes	
	Paper	About 250 or 500 sheets of 20 lb (75 g/m ²) paper, depending on tray used
	Multipurpose tray	
	Envelopes	About 10
	Labels	About 10 sheets
	Letterhead	About 10 sheets
	Memo paper	About 10 sheets
	Paper	About 150 sheets of 20 lb (75 g/m ²) paper
	Postcards	About 50
	Transparencies	About 5 sheets
Loading	Automatic from paper cassette or multipurpose tray Manual from multipurpose tray	
Output Location and Capacity	Face-down output tray Up to 500 sheets of 20 lb (75 g/m ²) paper	
Sizes	(See "Print Media Sizes" on page B-5)	
Types	Cut-sheet paper, envelopes, labels, postcards, and transparencies. See "Consumables" on page B-9, for recommended media. » Note: <i>Print on perforated paper (including 3-hole-punched paper) from the multipurpose tray, not a cassette.</i>	
Weights (Paper)	Cassette	16–24 lb (60–90 g/m ²)
	Duplexer	17–24 lb (64–90 g/m ²)
	Multipurpose tray	17–42 lb (64–157 g/m ²)

Print Media Selection

Input Source	Card Stock	Envelopes	Labels	Paper—Bond, Letter	Paper—Plain, Recycled	Paper—Thick	Transparencies
Cassettes	N	N	N	N	R	N	N
Multipurpose Tray	R	R	R	R	R	R	R

R = Recommended
 N = Not Recommended or Guaranteed

Print Media Sizes

Media	Media Size		Imageable Area		Feed Edge	Input Source
	Inches	Millimeters	Inches	Millimeters		
12x19	12.00x19.50	304.8x495.3	12.00x19.50	304.80x495.30	S	M
A3	11.69x16.53	297.0x420.0	11.69x16.53	297.00x420.00	S	M U
A4	8.27x11.69	210.0x297.0	8.27x11.69	210.00x297.00	S	U
A4 LEF	11.69x8.27	297.0x210.0	11.69x8.27	296.93x210.06	L	M U L
A5	5.85x8.27	148.5x210.0	5.52x7.95	140.21x201.93	S	M U
B4	10.12x14.33	257.0x364.0	9.80x14.01	248.92x355.85	S	M U
B5	7.17x10.12	182.0x257.0	7.84x9.80	173.74x248.92	S	M U
C5	6.38x9.02	162.0x229.0	6.06x8.69	153.92x220.73	S	M
Envelope	6.93x9.76	176.0x248.0	6.61x9.44	167.87x239.85	S	M
Envelope #10	4.125x9.50	104.8x241.3	3.81x9.18	96.65x233.17	S	M
Envelope C5	6.38x9.02	162.0x229.0	6.06x8.69	153.92x220.73	S	M
Envelope DL	4.33x8.66	110.0x220.0	4.01x8.34	101.85x211.84	S	M
Executive	7.25x10.50	184.2x266.7	6.93x10.18	176.02x258.57	S	M U
Legal	8.50x14.00	215.9x355.6	8.18x13.68	207.77x347.47	S	M U
Letter	8.50x11.00	214.9x279.4	8.18x10.68	207.77x271.27	S	M U L
Letter LEF	11.00x8.50	279.4x214.9	10.68x8.18	271.27x207.77	L	U
Monarch	3.875x7.50	98.4x190.5	3.56x7.18	90.42x182.37	S	M

Cable Pinouts

Media	Media Size		Imageable Area		Feed Edge	Input Source
	Inches	Millimeters	Inches	Millimeters		
Postcard	3.94x5.83	100.0x148.0	3.62x5.50	91.95x139.70	S	M
Statement	5.50x8.50	139.7x215.9	5.18x8.18	131.57x207.77	S	M
Tabloid	11.00x17.00	279.4x431.8	11.00x17.00	279.40x431.80	S	M U
Universal	13.00x19.00	330.2x482.6	13.00x19.00	330.20x482.60	S	M

Input Source L=Letter/A4 cassette, M=Multipurpose tray, U=Universal cassette
Feed Edge L= Long, S= Short

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	-

Cable Pinouts

Signal Pin No.	Signal Description	Direction
18	Vcc Test	-
19-30	Ground	-
31	Iprime	In
32	Fault-	Out
33	Reserved	-
34	Reserved	-
35	Reserved	-
36	Selectin	In

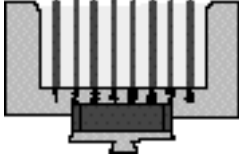
Notes to the Table

- **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.

Printer Options

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	

Printer Options

2060 BX, GX, EX Upgrade	<p>Workgroup printer with</p> <ul style="list-style-type: none"> ■ Centronics/IEEE 1284 bidirectional parallel interface ■ QMS CrownNet Ethernet ((EtherTalk, LAN Manager/ Lan Server, NetWare, TCP/IP) interface ■ Optional interface (supporting a DECnet, LocalTalk, CrownNet Token-Ring, serial, or another CrownNet Ethernet interface) ■ SCSI interface (supporting up to 2 external hard disks and 1 optional CrownCopy scanner, or up to 3 external hard disks). <p>Contact your QMS vendor for specifications.</p>
Duplexer	Unit providing two-sided printing on executive to 11x17/A3 paper sizes.
Media Cassettes and Optional Feeder	<p>250-sheet universal media cassette (supports up to 11x17/A3 media).</p> <p>Optional feeder with a choice of a 500-sheet letter/A4 cassette or a second 250-sheet universal media cassette.</p>

Consumables

Memory	<p>4 , 8, and 16 MB DRAM SIMMs</p> <p>» Note: 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/www/faq/ or through Q-FAX (see appendix A, "QMS Customer Support," to find out how to access Q-FAX documents).</p>
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Consumables

Media— Recommended Brands <i>See "Print Media Sizes" on page B-5, for media size information.</i>	Paper	<p>Plain—Xerox 4024</p> <p>Laser—Hammermill Laser Print</p>
	Envelopes	<p>Common office envelopes with diagonal joints and ordinary gummed flaps. They must not contain any fasteners, clasps, or peel-off strips for sealing.</p> <p>The material must not melt, vaporize, offset, discolor, or emit dangerous fumes at high temperatures (190° C/ 374° F).</p>
	Labels	<p>Avery 5160</p> <p>Adhesive label stock should have pressure-sensitive (peel-and-stick) adhesive backing. Use only label sizes letter or A4.</p>
	Transparencies	<p>QMS Laser Printer Transparencies (p/n 1710118-002)</p> <p>Use only transparency sizes letter or A4.</p>
Toner Cartridge	<p>Keyed toner cartridges are available from your QMS vendor. See appendix A, "QMS Customer Support, for a list of locations and telephone numbers.</p>	

Regulatory

CE Marking	International (EU) EN 55022:1987 (Class BITE) EN 60950:1992 IEC 801-2 IEC 801-3 IEC 801-4	Emissions Safety ESD Radiated susceptibility Fast transients
Electromagnetic Compatibility (EMC)	International (EU) IEC 801-2 IEC 801-3 IEC 801-4	ESD Radiated susceptibility
Electromagnetic Emissions (EMI)	DOC (Canada) Canadian CRC c1374 EU (International) EN 55022:1987 FCC (USA) Title 47 CFR Ch. 1, Part 15 VCCI (Japan) VCCI V-3Class 1 ITE	Class A digital device Class B ITE Class A digital device Class 1 ITE
Energy Star (USA)	Energy Star compliant	
Product Safety	EU (International) cUL (Canada) UL (USA)	EN 60950:1992 UL 1950, second edition
Product Laser Safety	CDRH (USA) EU (International)	Title 21 CFR Ch. I, Subchapter J IEC 825

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

Regulatory

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- » **Note:** *A shielded cable is required to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules.*

Canadian Users Notice

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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

-
- s **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.*
-

- ⚡ **WARNING!** *To prevent electrical shock, do not remove any covers from your printer unless you are experienced in working with circuit boards and are following instructions for procedures described in QMS documentation.*

ACHTUNG! *Um elektrische Kurzschlüsse zu vermeiden, entfernen Sie keine Gehäuseteile von Ihrem Drucker, wenn Sie keine Erfahrungen im Umgang mit elektrischen Bauteilen haben. Befolgen Sie die in der QMS Dokumentation beschriebenen Hinweise.*

Warranty Considerations

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.

Power Cord

The following power cord requirements are in effect for the 220V QMS 2060 WX Print System.

Minimum	0.75 mm ²
Minimum	H05 VV - F

- » **Note:** *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.*

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

Warranty Considerations

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. To order QMS consumables and accessories in the US, call (800) 777-7782. In all other countries, check appendix A, "QMS Customer Support," for the QMS office closest to you.

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 anti-static 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 anti-static 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.



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) per second.

Ethernet Address

An Ethernet address is a unique address assigned to each device on an Ethernet network. Use the Eth. HW Address configuration menu to set your printer's Ethernet address.

Gateway

A computer 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 an Internet part and a local 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 connectionless, 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 computer that attaches to two or more similar networks and passes data from one to another is known as a router. To accomplish this, it 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. Routers are often referred to as gateways.

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 within an Internet.

Subnetting

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 communication protocol, 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.

Internet Routing

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 Address Size	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	0xFFFFF000



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