

Optra Color 45

User's Guide



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Table of Contents

Introduction	xi
--------------------	----

Trademarks	xiii
------------------	------

Getting Started

Setting Up Your Printer	1
--------------------------------------	----------

Unpacking Your Printer	1
Installing the Input Tray and Output Bin Unit	3
Loading the Input Tray	7
Attaching the Parallel Cable	12
Plugging the Printer In	14
Installing the Print Cartridges	15
Aligning the Print Cartridges	19
Installing the Operator Panel Overlay	21
Printing the Menu Settings Page	24
Installing the Printer Drivers and Utilities	25

Using the Printer Utilities	27
--	-----------

Setup Utility	27
Installing Printer Utilities	27
Printer Drivers	30
Bidirectional Communication	32
MarkVision	32
MarkVision Windows	34
MarkVision Support in Various Environments	34
MarkVision Online Help	42
Toolkit	43
Network Printer Utility	44

Getting Updated Drivers and Utilities	44
Online Services	44
Automated FAX System	45

Using Your Printer

Using the Operator Panel and Menus 49

Using the Operator Panel	50
Printer Indicator Light	50
Operator Panel Buttons	51
Printer Messages	53
Operator Panel Menus	54
Printing the Menu Settings Page	55
Changing Printer Settings	56
Disabling the Operator Panel Menus	57
Overview of Printer Menus	58
Supplies Menu	59
Color Menu	60
Paper Menu	61
Finishing Menu	68
Tests Menu	73
Job Menu	77
Setup Menu	78
PCL Emul Menu	85
PostScript Menu	90
Parallel Menu	91
Serial Menu	95
Network Menu	99
Infrared Menu	101
LocalTalk Menu	104

Using Print Materials 107

- Print Materials 108
 - Print Material Characteristics 109
 - Paper Guidelines 111
 - Envelope Guidelines 113
 - Label Guidelines 114
 - Card Stock Guidelines 115
 - Transparency Guidelines 115
- Paper Handling Specifications 116
 - Paper Source 117
 - Output Bin 118
 - Paper Size 119
 - Envelope Size 120
- Paper Loading 121
 - Loading the Input Tray 121
 - Loading Paper in the Manual Feed Slot 126
 - Loading Envelopes in the Input Tray 131
 - Loading Envelopes in the Manual Feed Slot 135
 - Printing on Large-size Paper 139
 - Printing on Letterhead 141
 - Tray Linking 141
- Tips for Avoiding Paper Jams 142

Caring for Your Printer

Understanding Printer Messages 145

- Status Messages 145
 - Line 1 Messages 146
 - Line 2 Messages 152
- Attendance Messages 153

Solving Printer Problems 163

Display Problems	164
Printing Problems	165
Print Quality Problems	168
Option Problems	170
Network Printing Problems	173
Other Problems and Questions	173

Clearing Jams 175

Possible Paper Jam Areas	175
200 Paper Jam	176
Accessing Paper Jam Areas	176
Input Tray	177
Manual Feed Slot	179
Output Bin	180

Maintaining Your Printer 183

Replacing Print Cartridges	184
Removing Print Cartridges	184
Installing Print Cartridges	186
Aligning the Print Cartridges	190
Cleaning Your Printer	193
Cleaning the Printheads	193
Wiping the Printheads	195
Cleaning the Print Cartridge Carrier Contacts	198
Storing Print Cartridges	201
Disposing of Used Print Cartridges	201

Ordering Supplies	202
Print Cartridges	202
Print Cartridge Storage Unit	202
Parallel Cable	203
Serial Cable	203
Coated Paper	203
Glossy Paper	204
Transparencies	204
Photo Paper	204
Labels	205
Iron-on Transfers for T-shirts	205
Greeting Cards	205

Installing Options

Memory and Option Cards	209
Printer Memory	210
Accessing the Printer System Board under the Input Tray	210
Installing a Printer Memory Option	213
Removing the Printer Memory Option	216
Closing the Printer System Board under the Input Tray	218
Flash Memory	219
Accessing the Printer System Board on the Back of the Printer	219
Installing a Flash Memory Option	222
Removing a Flash Memory Option	226
Closing the Printer System Board on the Back of the Printer	228

Option Cards	230
Hard Disk Option Card	230
INA (Internal Network Adapter) Option Card	233
Tri-Port Interface Option Card	234
Parallel 1284-C Adapter Option Card	235
Accessing the Printer System Board on the Right Side of the Printer	236
Installing an Option Card	237
Removing an Option Card	241
Closing the Printer System Board on the Right Side of the Printer	243

Infrared Adapter 245

 Connecting the Cable and Using the Infrared Adapter .. 245

Verifying the Installation of Options 249

 Printing the Menu Settings Page
 249 |

Appendix

Understanding Fonts 253

Typefaces and Fonts	253
Weight and Style	253
Pitch and Point Size	255
Symbol Sets	256
Bitmapped and Scalable Fonts	257
Resident Fonts	258
Printing a Font Sample List	263

Reference

Notices	267
Safety	273
Warranty	283
Glossary	287
Index	299

Table of Contents

Introduction

This *User's Guide* contains information about the Optra Color 45 inkjet printer. This information includes printer menus and settings, printer messages, paper handling features, and print material specifications. Keep this book in a handy place and use it as a reference when you have a question about printer function or if you encounter a printing problem.

The *User's Guide* is divided into the following sections:

Getting Started

This section begins with detailed steps for setting up your printer.

Using Your Printer

This section helps you understand printer functions and explains the operation of your printer.

Caring for Your Printer

This section explains how to solve printer problems, clear paper jams, and replace supplies.

Installing Options

This section provides step-by-step instructions to install options available for your printer.

If you need information about the optional tray 2, refer to the documentation that comes with the tray 2 option or contact Lexmark.

Appendix

This section provides information on fonts.

Reference

This section contains notices, safety information, the warranty, the glossary, and the index.

If you need more technical information about printer languages and commands, interface specification, or managing printer memory, contact Lexmark for technical information.

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Getting Started



Setting Up Your Printer

Chapter 1

Complete the following sections in this chapter to set up your Optra™ Color 45 inkjet printer.

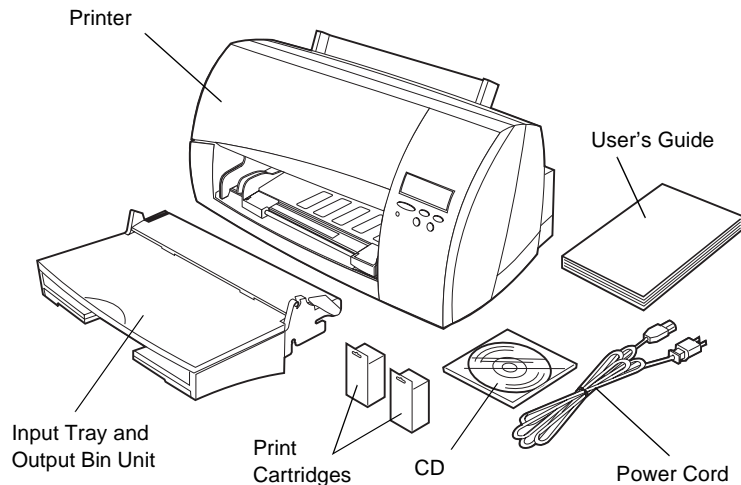
Unpacking Your Printer

- 1 Remove the printer and all items from the packaging carton.

Note: Save the carton and packing materials in case you need to repack the printer for service or storage.

- 2 Make sure you have the items shown.

If any items are missing or damaged, contact the place where you bought the printer.



3 Place the printer on a flat, sturdy surface in a well-ventilated area.

Allow at least 50 mm (2 in.) of clearance on all sides of the printer. Leave enough space in front of and above the printer to allow for easy paper access.

Use the following information to help determine where to place your printer.

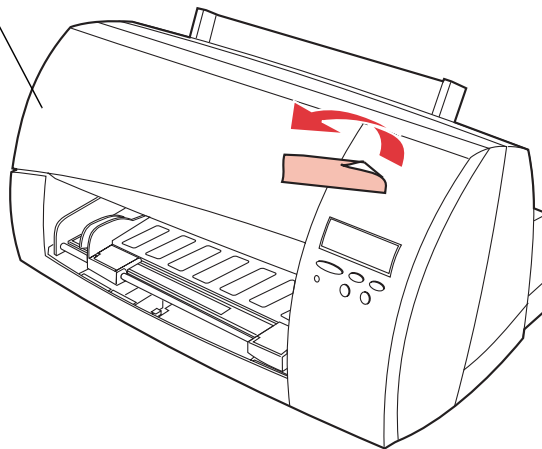
Characteristic	Dimension
Depth	277 mm (10.9 in.)
Height	247 mm (9.7 in.)
Weight	9.1 kg (20 lb)
Width	563 mm (22.2 in.)

Do not place the printer:

- In direct sunlight
- Near heat sources or air conditioners
- In dusty or dirty environments

4 Remove the tape from the printer top cover.

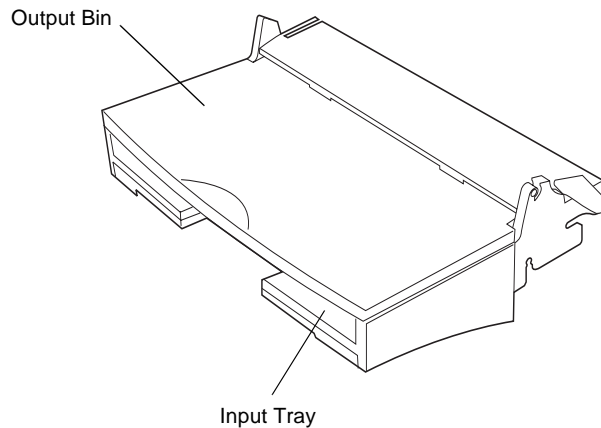
Printer Top Cover



Installing the Input Tray and Output Bin Unit

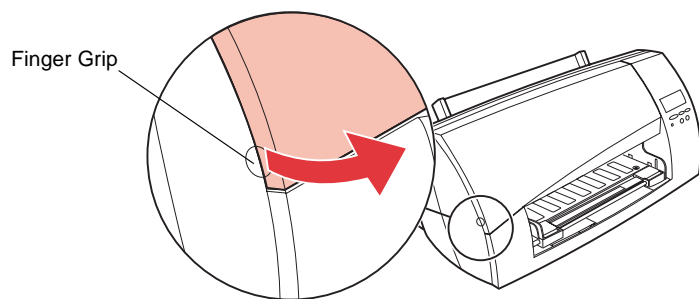
The input tray and output bin are combined as one unit. The input tray is located on the bottom of the unit, and the output bin is located on the top.

The output bin is also a cover for the input tray. The input tray and output bin unit installs in the front of the printer underneath the printer top cover.

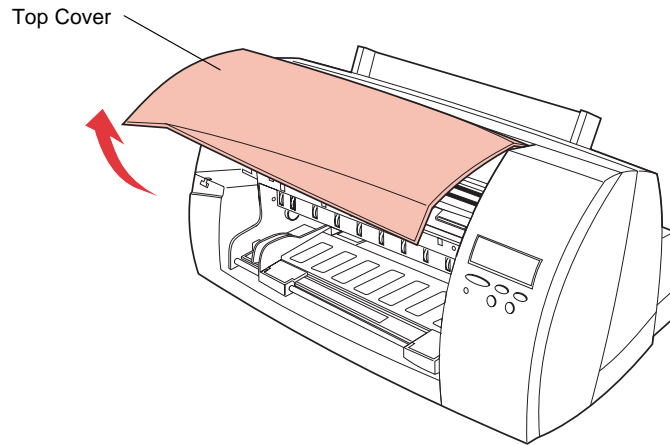


To install the input tray and output bin unit:

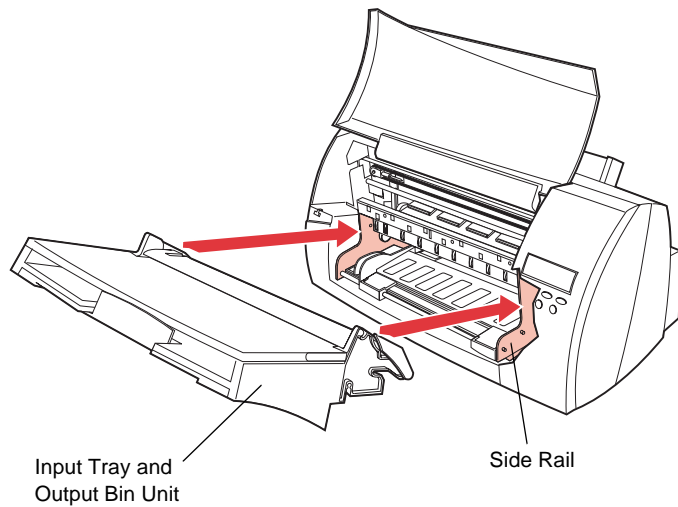
- 1** Locate the finger grip on the left side of the printer.



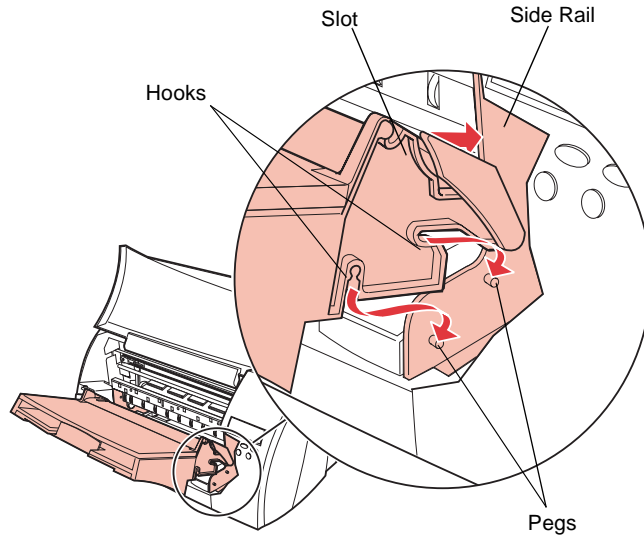
- 2** Pull up on the finger grip to lift the printer top cover.



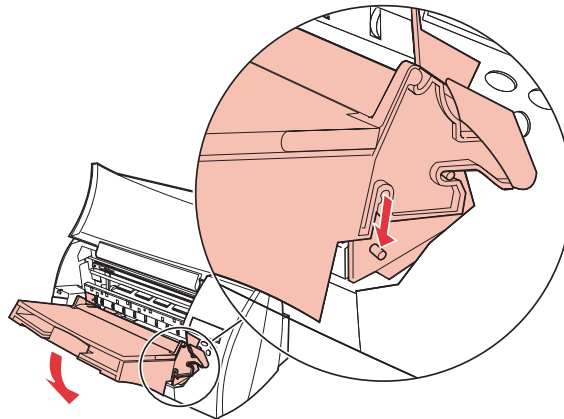
- 3** Align the unit at a 45° angle with the metal side rails inside the front of the printer.



- 4** Slide the slots on either side of the top of the unit into the metal side rails. The hooks located underneath the slots fit over the corresponding pegs on the metal side rail.

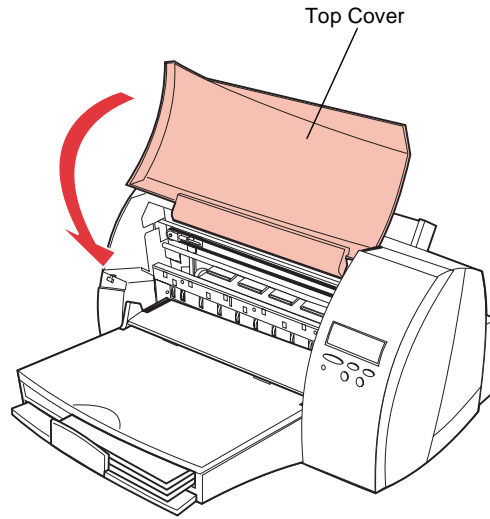


- 5** Press down firmly on the end of the unit until it snaps into place.



When the unit is properly installed, it remains stationary in the slot.

6 Close the printer top cover.



Loading the Input Tray

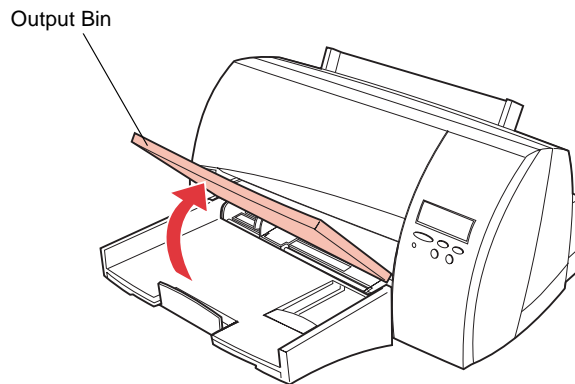
Your printer has one standard input tray that can hold up to 150 sheets of 20 lb letter-size paper. For information on other paper sizes that you can use with your printer, see “Using Print Materials” on page 107.

For information on loading envelopes and other print materials, see “Using Print Materials” on page 107.

Note: The input tray is designated as **Tray 1** on the operator panel display.

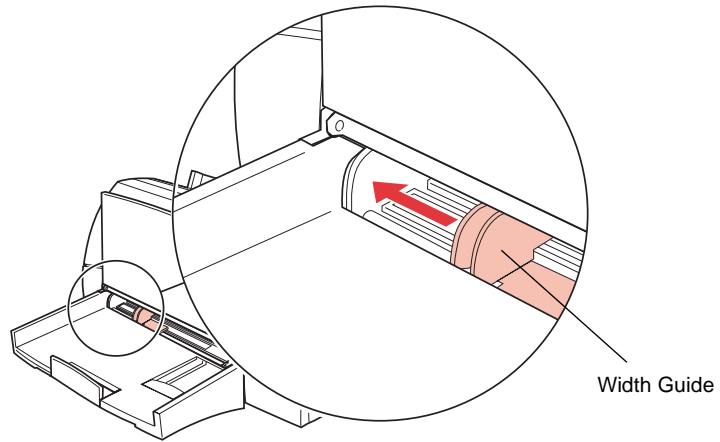
To load paper:

- 1** Lift the output bin.

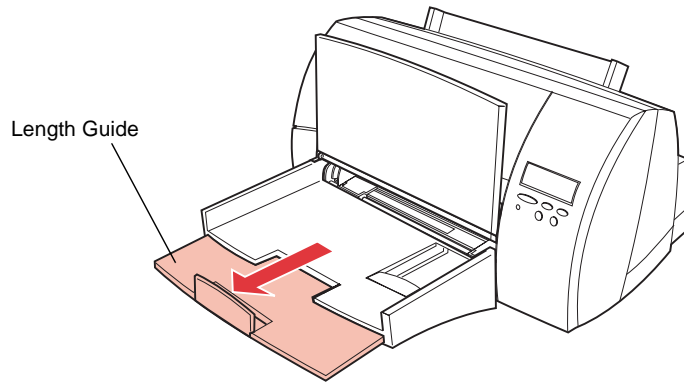


Getting Started

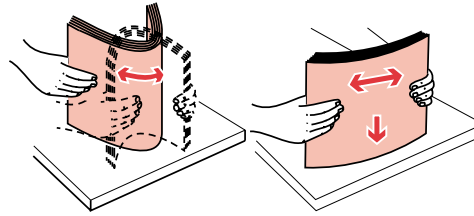
- 2** Squeeze the width guide lever and slide it to the far left side of the tray.



- 3** Slide the length guide out toward you.



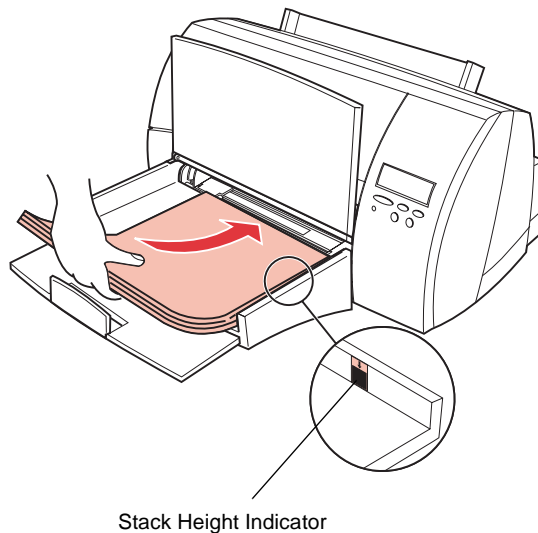
- 4** Flex the sheets back and forth to loosen them, then fan them. Do not fold or crease the paper. Straighten the edges on a level surface.



Note: For this setup, load letter-size paper.

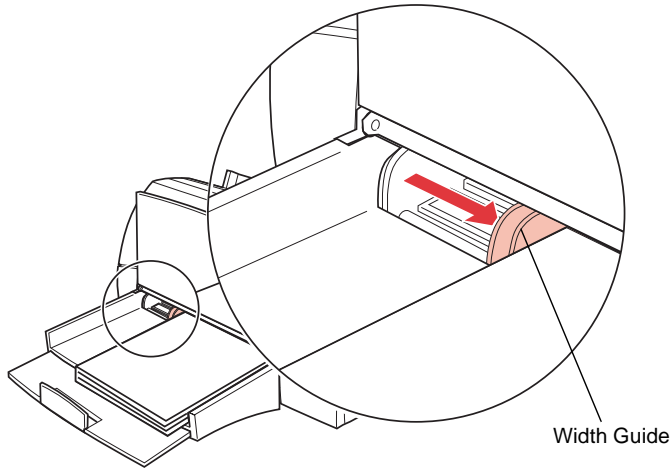
- 5** Place the paper against the right side of the input tray with the recommended print side face down and the top edge going in first toward the back of the input tray as shown.

For information on how to load letterhead, see “Printing on Letterhead” on page 141.



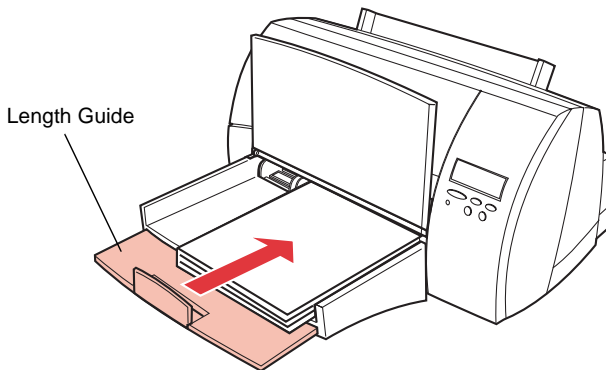
Note: Do not exceed the maximum stack height indicated by the arrow on the right side of the input bin.

- 6** Squeeze the width guide lever and slide it to the right until it touches the edge of the paper.



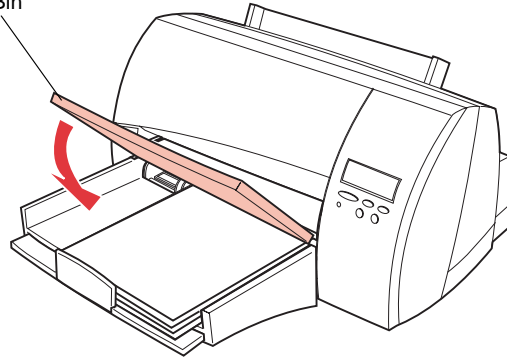
Note: This example shows how to adjust for letter-size paper (LTR). The paper size indicators, printed on the top surface of the bin, are paper size abbreviations used for placement of the length and width guides.

- 7** Slide the length guide up until it touches the bottom edge of the paper.



8 Lower the output bin.

Output Bin

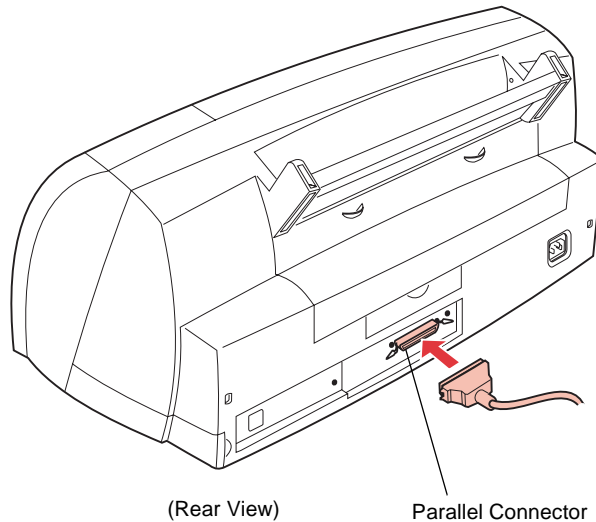


Attaching the Parallel Cable

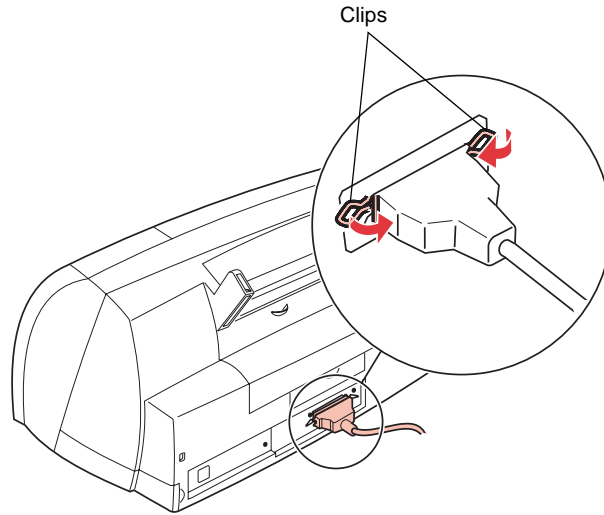
To print from your computer, you need to connect your printer to your computer with a parallel interface cable.

Your printer requires an IEEE 1284-compliant parallel cable that supports bidirectional communication. We recommend Lexmark part number 1329605 (10 ft) or 1427498 (20 ft). If you use something other than an IEEE-compliant cable, you may not be able to access all of your printer functions.

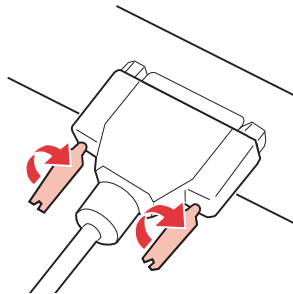
- 1** Align and plug the cable into the parallel connector as shown.



- 2** Push the clips at each end of the connector down into the notches on the plug as shown. The clips snap when pushed into the notches.



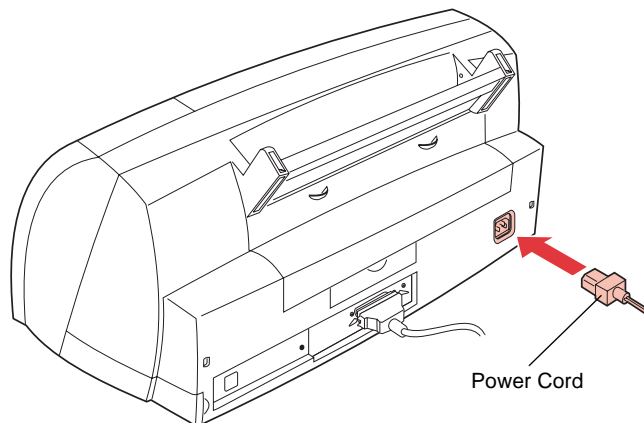
- 3** Connect the other end of the parallel cable to the back of your computer. Tighten the screws on the parallel cable to the computer.



- 4** Check the parallel cable connections to make sure they are completely secured.

Plugging the Printer In

- 1 Plug the printer power cord into the connector at the back of the printer.



- 2 Plug the other end of the printer power cord into a properly grounded electrical outlet.

You hear some movement inside the printer when you first plug it in. The printer indicator light turns on and the printer enters the **Ready** state. See “Printer Indicator Light” on page 50 for more information.

If an error message is displayed, see “Understanding Printer Messages” on page 145 for more information.

Installing the Print Cartridges

When you unpack the printer, the print cartridge carrier is hidden on the right side of the printer behind the operator panel. The print cartridge carrier slides horizontally across a track inside the printer. It must move into the installation position on the far left side of the printer before you can install the print cartridges.

WARNING: Do not pull the print cartridge carrier by hand. Manually moving the print cartridge carrier may damage the printer.

The following section steps you through the process of moving the print cartridge carrier into the proper position and installing print cartridges.

To install the print cartridges:

- 1** Complete the following steps to move the print cartridge carrier into the installation position.
 - a** Press **Menu>** or **<Menu** to enter the menus.
 - b** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
 - c** Press **Select**.
 - d** Press **Menu>** until **Change Cartridge** appears on the second line of the display.
 - e** Press **Select**.

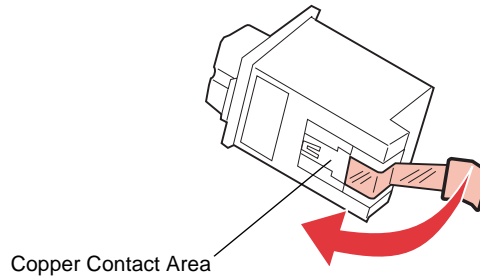
The print cartridge carrier moves to the far left side of the printer and **Change Print Cartridges** appears on the display. You are now ready to install print cartridges.

- 2** Lift the printer top cover.

You receive two print cartridges, one black and one color:

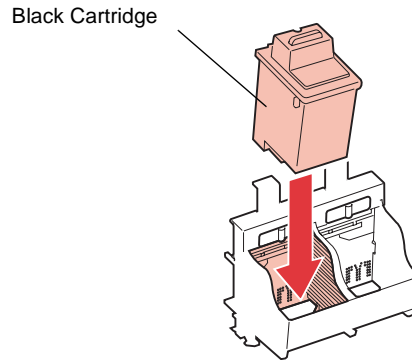
Cartridge Type	Cartridge Carrier Slot	Maximum Print Speed/ pages per minute (ppm)
Black	Left	8
Color	Right	4

- 3** Remove the sticker and the transparent tape covering the copper contact area on one of the cartridges.

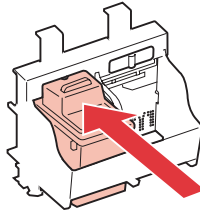


WARNING: Do not touch the copper contact area.

- 4** Insert the cartridge.

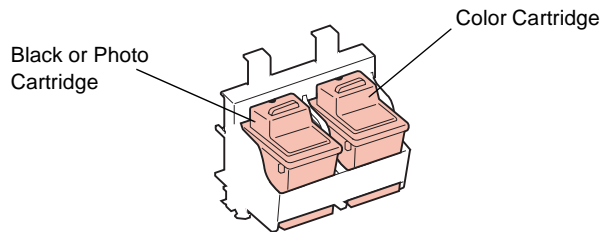


- 5** Push back on the cartridge until it *snaps* securely into place.



- 6** Repeat steps 3 through 5 for the second cartridge.

When you finish, the print cartridge carrier should look like the following illustration.



- 7** Close the printer top cover.

Note: Do not print with the top cover open.

- 8** Press **Select**.

9 **LEFT CART TYPE** appears on the first line of the operator panel display and **Not Changed** appears on the second.

- If a black cartridge is installed, press **Menu>** until **Black Cartridge** appears on the second line of the display. Press **Select** to choose **Black Cartridge**.
- If a photo cartridge is installed, press **Menu>** until **Photo Cartridge** appears on the second line of the display. Press **Select** to choose **Photo Cartridge**.

New Standard appears on the second line of the operator panel display.

10 Press **Menu>** until **New Hi Capacity** appears on the second line of the display.

11 Press **Select** to choose **New Hi Capacity**.

The **Saved** message displays, then **RIGHT CART TYPE** appears on the first line of the operator panel display and **Not Changed** appears on the second.

12 Press **Menu>** until **Color Cartridge** appears on the second line of the display.

13 Press **Select** to choose **Color Cartridge**.

New Standard appears on the second line of the operator panel display.

14 Press **Menu>** until **New Hi Capacity** appears on the second line of the display.

15 Press **Select** to choose **New Hi Capacity**.

The **Saved** message displays, then the message **Printing Alignment Page** appears on the operator panel display. The printer automatically prints an alignment test page.

16 Continue with “Aligning the Print Cartridges” on page 19.

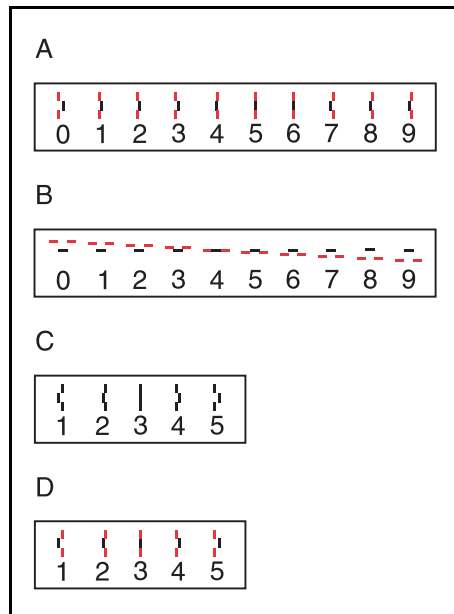
For more information about installing or replacing print cartridges, see “Replacing Print Cartridges” on page 184.

Aligning the Print Cartridges

When you finish installing the print cartridges, the message **Printing Alignment Page** appears on the operator panel display and the printer automatically prints a test page of alignment patterns. If you need to print an alignment test page, see “Printing the Test Page for Verifying Alignment” on page 192.

The following illustrations are examples of the alignment test patterns. Each pattern has a letter above it (A, B, C, and D). These letters represent the Horizontal Alignment, Vertical Alignment, Bidirectional Black Alignment, and Bidirectional Color Alignment, respectively.

The number or appearance of your alignment patterns may vary from those shown.



Once the cartridge alignment test page has printed, the operator panel display looks like this:



Test A Alignment
=15*

The current alignment value appears on the second line. To change the alignment value:

- 1** From the Test A alignment group on the test page, locate the number under the alignment pattern that *comes closest* to forming a perfectly straight line.

For example, in sample group A on page 19, number 5 comes closest to forming a straight line.

- 2** Press and release **>Menu** or **<Menu** to display the correct alignment value based on the printed test page.
- 3** Press **Select** to choose the correct alignment value.

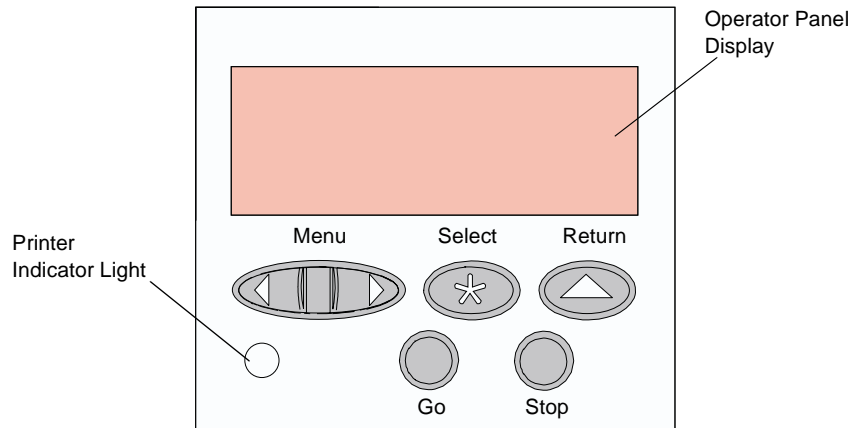
The next Test Alignment screen appears on the display.

- 4** Repeat steps 1 through 3 to select the alignment values for Tests B, C, and D.

Once you press **Select** for the correct value for Test D Alignment, the printer returns to the **Ready** state.

Installing the Operator Panel Overlay

If English is not your preferred language, complete the following steps to customize the operator panel and the display language to meet your requirements.



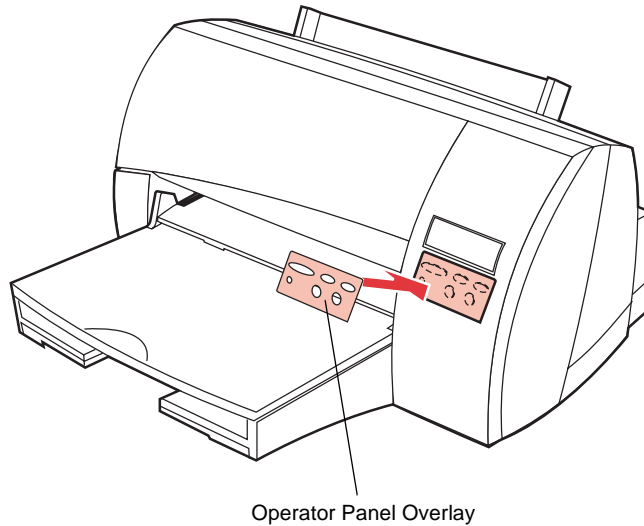
1 Locate the operator panel overlay.

If this *User's Guide* is printed in a language other than English, an overlay for the printer operator panel is included with the printer. The overlay has translated names for the operator panel buttons.

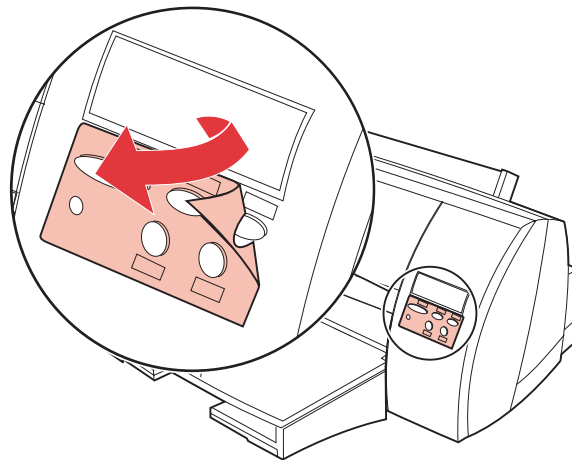
2 Peel the protective backing off the overlay.

- 3** Align the holes in the overlay with the buttons on the operator panel and press it into place.

Rub the overlay firmly to make sure that it adheres securely to the operator panel.



- 4** Peel the protective covering away from the overlay.



5 Complete the following steps to change the language of the menus and messages that appear on the printer display:

- a** Press the **Menu>** or **<Menu** button to enter the menus.
- b** Continue to press and release **Menu>** or **<Menu** until you see **SETUP MENU** on the second line of the operator panel display.
- c** Press the **Select** button.

Note: The **Select** button acts upon the information displayed on the second line of the operator panel display.

- d** Press **<Menu** until **Display Language** appears on the second line of the display.
- e** Press **Select**.
- f** Press **Menu>** until the language you prefer appears on the second line of the display.
- g** Press **Select**.

The printer resets and displays text in the requested language.

Printing the Menu Settings Page

The menu settings page shows current settings for the menus and a list of installed options. You can use this page to verify that all the printer options are properly installed and the printer settings are set to what you want.

To print a menu settings page:

- 1** Make sure the printer is plugged in and the **Ready** status message appears on the display.

See “Using the Operator Panel” on page 50 to identify the display and operator panel buttons if you need help.

- 2** Press **Menu>** or **<Menu** to enter the menus.
- 3** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
- 4** Press **Select**.

TESTS MENU appears on the first line and **Print Menus** is on the second line.

- 5** Press **Select** to select **Print Menus**.

The message **Printing Menu Settings** appears and remains on the operator panel display until the page prints. The printer returns to the **Ready** state after the menu settings page prints.

If an error message appears, see “Understanding Printer Messages” on page 145.

See “Using the Operator Panel and Menus” on page 49 for more information about using the printer operator panel and changing settings from the menus.

Installing the Printer Drivers and Utilities

- 1** Locate the compact disc (CD) that was shipped with your printer.

Note: If you do not have access to a CD-ROM drive, you can transfer the information on the CD to diskettes. Locate a computer with a CD-ROM drive, start the CD utility, and then follow the instructions on the screen to create diskettes.

- 2** Follow the instructions in the booklet included with the CD to start the printer setup utility appropriate for your operating system.

The setup utility installs printer drivers and utilities that let you manage Lexmark printers attached to your network. See “Using the Printer Utilities” on page 27 for details about the printer drivers and the network management tools available with MarkVision™ and the other printer utilities.

- 3** If necessary, use standard network software to identify the printer to the LAN and to complete any other setup that may be needed.

Consult your network software documentation for more information. Also, see “Using the Printer Utilities” on page 27 for more information.

Using the Printer Utilities

Chapter 2

Setup Utility

The compact disc (CD) shipped with your printer contains setup utilities for Windows 3.1x, Windows 95, Windows NT 4.0, Macintosh, OS/2, and DOS environments. The setup utility lets you quickly install printer drivers as well as the MarkVision printer utility.

Note: See the documentation that comes with the CD for installation instructions.

Help is available from each screen of the utility. Highlight the item you want to know more about, then press F1. Press ESC to exit the online Help.

Installing Printer Utilities

The setup utility installs printer utilities that help you manage your printer or your network of printers. The utilities it installs depend on your operating system. If you're using Windows 3.1, Windows 95, Windows NT 4.0, Macintosh, or OS/2 Warp, you can install the MarkVision utility. If you're using other versions of OS/2 or if you're using DOS, you can install the printer Toolkit.

Note: MarkVision for UNIX Networks and Intranet Servers and MarkVision for Sun™ Systems and Sun Intranet Servers are available on a separate CD and may be purchased separately.

For details about the utilities, refer to the pages indicated in the following table:

Utility	See page...
MarkVision	32
Toolkit	43
Network Printer Utility	44

MarkVision for a Certain Network

The following table defines which workstation operating systems can support MarkVision in various network environments. Depending on your network configuration, all of the utilities necessary to install MarkVision on your workstations are included on the CD. See page 44 for more information about the Network Printer Utility.

MarkVision Network Support

Network Operating System	Workstation Operating System					
	Windows 95	Windows NT 4.0	Windows 3.1x	OS/2 Warp ²	UNIX /AIX	Mac
Novell NetWare 3.x, 4.x	Yes ⁴	Yes	Yes	No	No	No
Windows NT Server 3.51	Yes ¹	Yes	Yes ¹	No	No	No
Windows NT Server 4.x ⁵	Yes	Yes	Yes	No	No	No
Windows 95 (Peer-to-Peer)	Yes	No	No	No	No	No
OS/2 LAN Server and OS/2 Warp ² Server	Yes ³	Yes	Yes ³	Yes	No	No
TCP/IP ⁶	Yes	Yes	Yes	Yes	Yes	No
AppleTalk	No	No	No	No	No	Yes
<p>1 To set up the Windows NT server to support clients using Windows operating systems, select "Server Utilities" from the Install window when running the Network Printer Utility.</p> <p>2 Requires a bidirectional print spooler. Request the latest FixPak from IBM.</p> <p>3 To set up the OS/2 server to support clients using Windows operating systems, select "Server and Workstation Utilities" from the Install window when running the Network Printer Utility.</p> <p>4 Requires a 32-bit Requester from Novell.</p> <p>5 To set up the Windows NT server, use the MarkVision installation procedures from the CD for network support. Select "MarkVision Server Agent" and install it.</p> <p>6 Server/Network operating system independent.</p>						

Note: You may install MarkVision for Windows NT Intranet Servers on a computer running Windows NT with a supported web server. MarkVision for Windows NT Intranet Servers lets you run a MarkVision client from any operating system using a supported web browser, such as Netscape Navigator or Microsoft Internet Explorer.

Printer Drivers

Printer drivers for the following operating systems and applications are included on the CD:

- Windows 3.1
- Windows for Workgroups 3.11
- Windows 95
- Windows NT 4.0
- Macintosh
- OS/2 Warp
- OS/2 2.1 or later
- WIN-OS/2 for OS/2 2.1 or later
- DOS applications:
 - WordPerfect 5.1, 6.0
 - Lotus 1-2-3 2.x, 3.x

Note: All drivers are also available electronically from online services. See page 44 for more information.

If you select the “Server” installation method when you run the Windows setup utilities, the MarkVision utility for Windows environments that is installed on your system can help ensure that all network users have the latest printer drivers. When launched, MarkVision compares the drivers on the local workstation to those stored on the network. If the workstation drivers are not as current as those available on the network, you can have MarkVision automatically update the workstation drivers.

Getting Other Printer Drivers

Additional printer drivers may have been developed since this book was printed. If the driver you need for your operating system or your DOS application is not included on the CD, it may be available from Lexmark or from the software developer. Lexmark maintains several resources for obtaining current drivers. See “Getting Updated Drivers and Utilities” on page 44.

If the drivers you need are not available with your software application, contact the software company or a representative at your point of purchase. You can find a list of major software publishers and their technical support phone numbers in the Information menu of the DOS Setup Utility and Toolkit or the Install MarkVision and Drivers selection in OS/2. If you install MarkVision for 3.1, a separate Lexmark Support icon is included in the MarkVision Printer Utility group on the Windows desktop. If you are using MarkVision for Windows 95, the phone numbers are included in the online Help.

If you cannot locate a driver for your DOS application, you can use one of the drivers listed in the following table. When you use these alternate printer drivers, your printer supports only those functions provided by the driver and may not support the total functions possible with your printer.

Alternate printer drivers

Printer language	Printer (in preferred order)
PCL 5 emulation	HP 500C
PostScript Level 2 emulation	Lexmark Optra SC 1275 Lexmark Optra S Lexmark Optra C Lexmark Optra plus Lexmark Optra HP LaserJet 5Si

Bidirectional Communication

Your printer is capable of intelligent communication with your computer and the network. Not only can it receive information from software applications, but it can also send back messages about the work it's doing and what it needs to complete the task.

This intelligent bidirectional communication standard, Network Printing Alliance Protocol (NPAP) 1.0, is part of the printer design. The utilities and drivers that are shipped with the printer take advantage of this advanced communication capability.

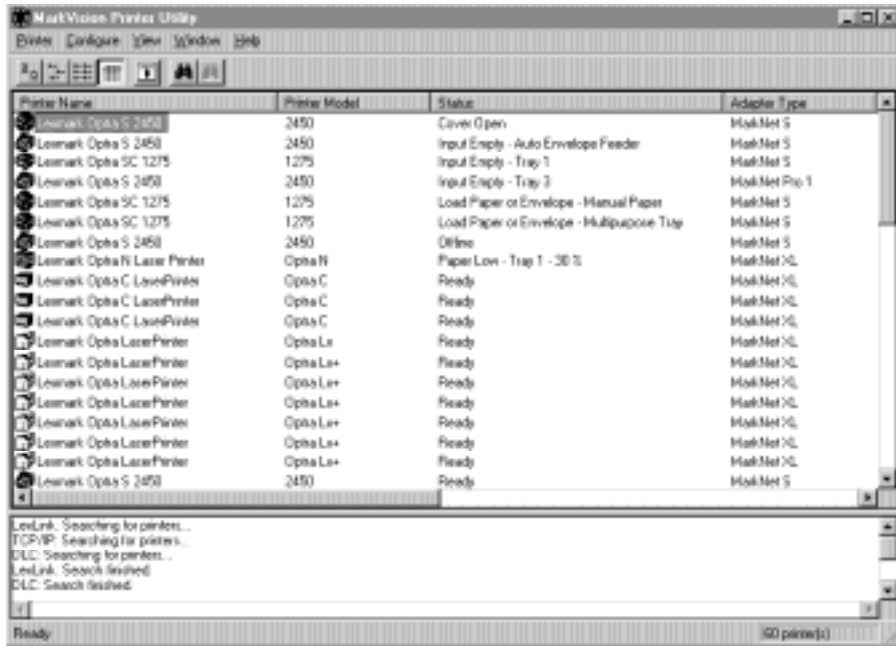
MarkVision

The MarkVision graphical user interface provides ongoing status for Lexmark printers connected locally or attached directly to the network by way of an optional network adapter. The status reported includes all messages appearing on the operator panel display if you are administrating the remote operator panel, as well as information about options installed on the printer and printer default settings. Workgroup administrators or key operators can monitor only those printers they are responsible for by using a helpful list of print queues that can be listed through MarkVision.

When minimized on your screen, the MarkVision icon flashes to let you know there is a problem with a printer. You can maximize the window to see a graphic of the printer and detailed information about the problem.

MarkVision can save you a lot of time setting up a network of Lexmark printers. The Quick Setup function lets you create a printer configuration file at your workstation, save the printer settings in the file, and then send the settings to other printers on the network.

By using the MarkVision job statistics utility, you can also keep track of network printer activity. MarkVision helps you collect printer usage statistics and create charge-back reports, including information about total jobs printed, total pages, and average print time. MarkVision can also provide information about jobs currently in the print buffer.



MarkVision Windows

The appearance of the MarkVision window on your computer display varies, depending on your operating system and your network and printer configuration.

MarkVision Support in Various Environments

Refer to the following MarkVision support table to determine the features available in the MarkVision utility installed on your workstation operating system. Summaries of each of the features follow. Scroll through the online Help included with MarkVision for more information about its various features.

MarkVision utilities for Windows 95, Windows 3.1x, Windows NT 4.0, Macintosh, and OS/2 Warp were shipped with your printer. You can purchase MarkVision for UNIX Networks from Lexmark. Contact a representative at the place where you bought the printer for more information.

Lexmark is continually updating printer utilities to provide you optimum printer control. To get information about the newest versions of MarkVision, which may include new features or enhanced functions, use the Lexmark resources listed under “Getting Updated Drivers and Utilities” on page 44.

Feature Support

Feature	Windows 95 and NT 4.0	Windows 3.1	OS/2 Warp	UNIX	Mac
Printer configuration: control and visual status	Yes	Yes	Yes	Yes	Yes
Remote operator panel	Yes	Yes	Yes	Yes	Yes
Status and alerts	Yes	Yes	Yes	Yes	Yes
Auto driver update	Yes	Yes ¹	No	No	No
Toolkit	Yes ³	Yes	Yes ³	Yes	Yes ³
Basic resource management	Yes	Yes	Yes	Yes	Yes
Enhanced resource management	Yes	Yes	Yes	Yes	Yes
Hard disk partitioning ⁴	Yes	Yes	Yes	Yes	No
Printer inventory	Yes	Yes	Yes	Yes	Yes
Job statistics	Yes	Yes	Yes	Yes	Yes
Job queue management	Yes	Yes ¹	Yes ²	Yes	No
Print buffer management	Yes	Yes	Yes	No	Yes
Drag-and-drop printing through MarkVision	No	Yes ⁵	No	No	No
Dynamic Data Exchange (DDE)	No	Yes	No	No	No
Printer Access Security	Yes	Yes ⁵	Yes	Yes	No
Dial up support (TCP/IP)	Yes	Yes	No	Yes	No
Media Type Control	Yes	Yes	Yes	No	No
Printer Password Access Security Control	Yes	Yes	Yes	No	No
Uninstaller for MarkVision	Yes	Yes	Yes	Yes	Yes
Management Information Format (MIF) File Creation from Printer Inventory	Yes	No	Yes	No	No
<p>1 Not supported for TCP/IP networks.</p> <p>2 Support for this feature provided by the operating system.</p> <p>3 Toolkit functions are available, although they are not identified by the "Toolkit" name.</p> <p>4 If supported by the printer</p> <p>5 Limited function</p>					

Feature Support

Feature	Windows 95 and NT 4.0	Windows 3.1	OS/2 Warp	UNIX	Mac
Property Tag Support	Yes	Yes ⁵	Yes	Yes	No
Printer Inventory Summary Page	Yes	No	Yes	Yes	No
Menus	Yes	No	Yes	No	No

1 Not supported for TCP/IP networks.
2 Support for this feature provided by the operating system.
3 Toolkit functions are available, although they are not identified by the "Toolkit" name.
4 If supported by the printer
5 Limited function

Printer Configuration

The MarkVision Quick Setup features let you configure multiple printers simultaneously. Simply set up one printer, save the settings into a file, and send that file to all the other printers you want to update through MarkVision.

Remote Operator Panel

The MarkVision remote operator panel provides an exact replica of the selected printer operator panel. The menus and messages appear just as they do on the printer display. You can then use the operator panel buttons to step through the menus and change printer settings. In addition, for Windows 95 and OS/2, a full-menu display of the operator panel is available. It allows a window-like graphical user interface.

Status and Alerts

You can determine the current status for each printer and see a graphic of the options installed on each printer. With this information, you can then easily identify the printer best suited for a particular print job.

Unlike other network printer management software, the MarkVision alert-driven architecture lets you actively monitor the status of multiple printers on a real-time basis without polling. If an error occurs on a printer attached to your network, MarkVision immediately provides a visual and audible alert without excess network traffic.

Auto Driver Update

If you select the “Server” installation method when you run the Windows 3.1, Windows 95, or Windows NT 4.0 setup utility, MarkVision for Windows can compare the drivers on a local workstation to those stored on the network. If the workstation drivers are not as current as those available on the network, you can have MarkVision automatically update the workstation drivers.

Toolkit

MarkVision for Windows 3.1 groups several resource management tools in the printer Toolkit. Use the Toolkit to download fonts, overlays, and forms to the printers, as well as manage the resources once they are stored in flash memory or hard disk.

MarkVision for Windows 95, MarkVision for OS/2 Warp, MarkVision for Macintosh, and MarkVision for UNIX Networks offer the same tools, although they are not grouped in a “Toolkit” form.

Basic Resource Management

MarkVision provides a directory of all the fonts, overlays, and forms stored in flash memory or hard disk. The directory also lists the amount of available memory for each storage device. You can then use MarkVision to delete, move, or copy files from one storage device to another on the same printer.

Enhanced Resource Management

Use MarkVision to copy or move files stored on flash memory or hard disk from one printer to another. MarkVision also lets you recover or defragment space on flash memory after deleting files. In addition, you can use MarkVision to password protect resources on the storage devices.

Hard Disk Partitioning

Use MarkVision to designate a percentage of the optional hard disk memory for job buffering to hard disk. You can then enable or disable job buffering for parallel interface.

Printer Inventory

MarkVision can collect information about the printers on your network and print a report listing the printer models, serial numbers, code versions, and installed options. The report can be saved in two ways: comma delimited format or a MIF format.

MIF File Creation from Printer Inventory

Data is stored in MarkVision in three ways: a print list, a comma delimited format, or a MIF format. MIF and comma delimited are the newest ways to store data.

Printer MIF lets you gather detailed information about each printer on the network. For each printer you select, you create one .mif file.

The .mif files can be imported to use in various Network Management Tools for creating reports, such as asset management. The .mif file format is based on the standard layout approved by the Desktop Management Task Force (DMTF).

Printer Inventory Summary Page

MarkVision collects information about the printers on your network which includes the printer models, serial numbers, code versions, and installed options. MarkVision lets you print a one page summary report listing of all the items associated with a printer for all the printers on a network.

Job Statistics

MarkVision can collect data about network printer activity, including user names, job duration, printer capabilities used, number of pages printed, and problems encountered.

Job Queue Management

Network administrators using MarkVision for Windows 3.1, Windows 95, and Windows NT 4.0 can view, release, reorder, and cancel print jobs in server queues.

Print Buffer Management

Network administrators using MarkVision for Windows 3.1, Windows 95, Windows NT 4.0, MarkVision for OS/2 Warp, or MarkVision for Macintosh can also view and cancel print jobs already stored in the print buffer.

Drag-and-drop Printing

Users of MarkVision for Windows 3.1 can simply drag and drop files they want to print onto the minimized MarkVision icon. MarkVision automatically starts the application associated with the file.

Dynamic Data Exchange (DDE)

Software developers writing DDE-enabled Windows applications can use DDE as a means of accessing printer information from MarkVision for Windows 3.1x. For example, Lexmark offers an application that transmits printer status alerts through a wireless messaging service to network administrators away from their workstations.

Security

MarkVision has access to the logon authority granted each LAN user within the network operating system. MarkVision honors this logon authority when granting access to MarkVision functions.

Dial Up Support (TCP/IP)

MarkVision for TCP/IP and MarkVision for UNIX Networks lets you use SLIP or PPP protocols to view and control network printers from a remote site.

Media Type Control

MarkVision lets you manipulate media type names to allow for personalized naming of media types. This is a separate function from the operator panel Custom Type x name that allows for a user-defined name.

Printer Password Access Security Control

MarkVision provides access to two new passwords in the printer. The passwords help in network environments without built-in security, such as TCP/IP. The network administrator assigns a password to the printer to restrict users from printing or from having MarkVision access. This new security function does not override existing security functions on the network if they exist.

Uninstaller for MarkVision

This function lets you remove MarkVision from your personal computer if you need to do so.

Property Tag Support

MarkVision lets your company define valuable information about the printer, such as, a unique name, the name of the person using the printer, the printer location in a building, and so on. This information is specified in the Property Tag field and the information is stored in non-volatile random access memory (NVRAM). The information is accessible when you request a Printer Inventory through MarkVision.

Menus (A New Remote Operator Panel)

MarkVision lets you view the menus and the menu items in a different way from the printer operator panel. It brings up dialog boxes for different menus. For instance, you may view all the menu items for the Paper Menu on one screen. Click to select the menu item you want. This selection method lets you set values for menu items faster than using the printer operator panel.

This feature is only available in Windows 95, Windows NT 4.0, and OS/2.

MarkVision Online Help

Context-sensitive online Help is available from all MarkVision screens.

MarkVision for Windows 95 includes step-by-step procedures for many MarkVision functions. To view these procedures, select **Help** from the MarkVision **Printer Window** menu bar and click **Help Topics**.

MarkVision for OS/2 Warp and MarkVision for Macintosh also offer task-oriented information. The online Help in MarkVision for Macintosh includes full-color illustrations.

Toolkit

If you're using DOS or OS/2 2.x, install the Toolkit when you run the setup utility.

If you're using Windows 3.1, the Toolkit is included as part of the MarkVision utility. In MarkVision for Windows 95 and Windows NT 4.0, Toolkit functions are grouped under the Resource Management tab. MarkVision for OS/2 Warp, MarkVision for Macintosh, and MarkVision for UNIX Networks also offer the Toolkit functions, although they do not identify them as part of a "Toolkit" utility.

There are some features of the DOS Toolkit that are not available in the MarkVision utilities. If these features are useful in managing your printers, you may want to install the DOS Toolkit on your system.

The DOS Toolkit and OS/2 Toolkit let you:

- Format optional flash memory and hard disk
- Download PostScript emulation language programs and PCL 5 macros
- Download PostScript Type 1 format and PCL 5 format bitmapped and scalable fonts
- View, file, and send printer commands

The DOS Toolkit alone lets you:

- Download symbol sets
- Print the code point-to-character mapping for each available symbol set

For more details about the Toolkit functions, refer to the README file included with the utilities and to the online Help.

Network Printer Utility

For information on network adapters and the Network Printer Utility, refer to the network adapter documentation and to the CD online documentation.

Getting Updated Drivers and Utilities

There are a number of ways you can get information about the latest Lexmark drivers and utilities. If you live outside the U.S. or Canada, refer to the README files included with the DOS, Windows 3.1, and OS/2 printer utilities for a listing of technical support resources. MarkVision for Windows 95 and Windows NT 4.0 includes similar information in its online Help.

Online Services

If you have access to an online service, you can download printer drivers from Lexmark 24 hours a day, 7 days a week. The addresses are:

- Internet server: <ftp.lexmark.com>
(driver files are located at `/pub/driver`)
- World Wide Web (WWW): <http://www.lexmark.com>
- CompuServe: go lexmark

Automated FAX System

In the U.S. and Canada, you can get a list of available drivers by dialing the Lexmark Automated Fax System. The system is available 24 hours a day, 7 days a week.

To access the Automated Fax System from the U.S. or Canada, call (606) 232-2380 from a touchtone phone and follow the voice prompts. You can request information on how to use the system, request a catalog of documents available, or choose a specific document you want sent to you. The system prompts you for the phone number of the fax machine that will receive the information you requested.

Using Your Printer



Using the Operator Panel and Menus

Chapter 3

This chapter contains information about using the printer operator panel, changing printer settings, and understanding operator panel menus.

You can change printer settings from your software application or printer driver. Settings you change from the application or driver apply only to the job you are preparing to send to the printer.

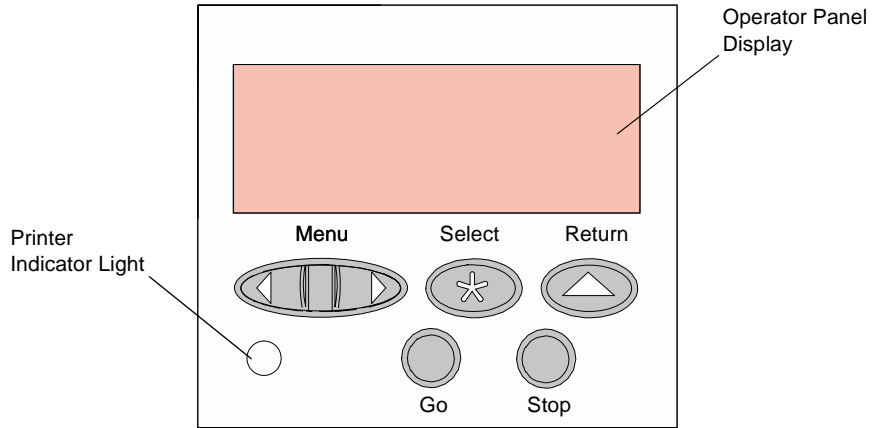
If there is a setting you cannot change from your application or printer driver, use the operator panel menu or the remote operator panel available from the MarkVision utility. See “Remote Operator Panel” on page 36 for more information. Changing a printer setting from the operator panel or from MarkVision makes that setting the user default.

Note: Changes made to printer settings from a software application override changes made from the operator panel.

If you are familiar with using an operator panel similar to this, you may want to skip to “Overview of Printer Menus” on page 58.

Using the Operator Panel

The operator panel, on the front right side of your printer, has a 2-line by 16-character liquid crystal display (LCD), five buttons, and one indicator light.



Printer Indicator Light

The printer indicator light gives information about the status of your printer.

Light State	Meaning
On solid	Powered On and in the Ready state
Blinking	Powered On and Busy
Off	Unplugged from the power source

Operator Panel Buttons

Use the five operator panel buttons to open a menu, scroll through a list of values, change printer settings, and respond to printer messages. The following table describes the functions of each button.

If this *User's Guide* is printed in a language other than English, an operator panel overlay with translated buttons and light names is included with your printer. See "Installing the Operator Panel Overlay" on page 21 for more information.

Note: Buttons act upon the information that displays on the second line of the operator panel.

Button	Function
Go	<p>Press the Go button to:</p> <ul style="list-style-type: none"> Return the printer to the Ready state if the printer is in an offline situation (Ready message does not appear on the display). Exit printer menus displayed on the operator panel. Clear operator panel error messages. <p>Note: If you've changed printer settings from the operator panel menus, press Go before you send a job to print. The printer must display Ready for jobs to print.</p>
Menu> and <Menu	<p>Each end of the button has a function. Press the Menu> or <Menu button:</p> <ul style="list-style-type: none"> At the Ready message, to take the printer <i>offline</i> (out of the Ready state) and enter the menus. At the Busy message, to take the printer to the JOB MENU. When the printer is offline: <ul style="list-style-type: none"> Press Menu> to go to the next item in the menus, or Press <Menu to go to the previous item in the menus. For menu items that have numerical values, such as Copies, press and hold Menu> to scroll forward, or <Menu to scroll backward. Release the button when the number you want displays.
Select	<p>Press the Select button to:</p> <ul style="list-style-type: none"> Select the menu item shown on the second line of the display. Depending on the type of menu, this action: <ul style="list-style-type: none"> Opens the menu and displays the first item in the menu. Opens the menu item and displays the default setting. Save the displayed menu item as the new default setting. The printer displays the Saved message and then returns to the menu item.

Using Your Printer

Button	Function
Return	Press the Return button to return to the previous menu level.
Stop	Press the Stop button: <ul style="list-style-type: none"><li data-bbox="419 309 1200 395">• At the Ready, Busy, or Waiting message to temporarily stop all activity and take the printer offline. The printer operator panel status message changes to Not Ready. Note: Press Go to return the printer to the Ready state.

Printer Messages

The operator panel displays three types of messages:

- *Status messages* provide information about the current state of the printer.
- *Attendance messages* indicate printer errors that you must resolve.
- *Service messages* indicate printer failures that may require servicing.

When the **Ready** status message displays, the printer is ready to receive a print job. While a job is printing, the **Busy** status message appears on the first line of the operator panel display. The following screen is an example of an operator panel message:



The image shows a rectangular display area with a black border. The text is arranged in two lines. The first line contains the word "Busy" on the left and "PCL" on the right. The second line contains the word "Supplies" on the left.

The printer status appears on the first line of the display. The second line displays messages that give more information about printer status. The **Busy** message identifies the printer language (PCL 5 emulation) used for the print job. The **Supplies** message tells you that one of the print cartridges is low.

Attendance messages help you solve printer problems. For example, if paper is jammed in the printer, the message **200 Paper Jam** appears on the display:



The image shows a rectangular display area with a black border. The text "200 Paper Jam" is centered on a single line.

This message tells you to open the printer top cover or to check the paper sources for jammed paper.

Service messages notify you of printer failures that may require a service call.

See “Understanding Printer Messages” on page 145 for a complete listing of all the printer messages.

Operator Panel Menus

A number of menus are available to make it easy for you to change printer settings. The diagram on page 58 shows the menus and all of the menu items available in each menu. The items in each menu and the values you can select are described in more detail in the tables beginning on page 59.

Some menus appear only if a specific option is installed in the printer. Other menu items may only be effective for a particular printer language. You can select these values at any time, but they only affect printer function when you use the specified printer language.

An asterisk (*) next to a value indicates the *factory default setting*. These settings are the original printer settings. (Factory defaults may vary for different countries.) See **Factory Defaults** on page 75 for more information.

When you select a new setting from the operator panel, the asterisk moves next to the selected setting to identify it as the current *user default setting*. These settings are active until new ones are stored or the factory defaults are restored. See “Changing Printer Settings” on page 56 for more information.

Note: Changes made from a software application or driver override the user default settings made from the printer operator panel.

Printing the Menu Settings Page

The menu settings page shows current settings for the menus and a list of installed options. You can use this page to verify that the printer options are properly installed and the printer settings are set to what you want.

Note: Before printing the menu settings page, make sure the Paper Type setting for the source is Plain Paper.

To print a menu settings page:

- 1** Make sure the printer is plugged in and the **Ready** status message appears on the display.

See “Using the Operator Panel” on page 50 to identify the display and operator panel buttons if you need help.

- 2** Press **Menu>** or **<Menu** to enter the menus.
- 3** Continue to press and release **Menu>** until you see **TESTS MENU**.
- 4** Press **Select**.

TESTS MENU appears on the first line and **Print Menus** is on the second line.

- 5** Press **Select** to select **Print Menus**.

The message **Printing Menu Settings** appears and remains on the operator panel display until the page prints. The printer returns to the **Ready** state after the menu settings page prints.

If an error message appears, see “Understanding Printer Messages” on page 145.

- 6** If you installed options, verify that they are listed on the menu settings page under “Installed Features.”

If an option you installed does not appear on the page, unplug the power cord and reinstall the option.

Changing Printer Settings

You can use the operator panel to change printer settings and customize your printer to meet your specific needs.

To select a new value as the default setting:

- 1** From the **Ready** state, press **Menu>** or **<Menu** to enter the menus.
- 2** Continue to press and release **Menu>** or **<Menu** until the menu you need appears on the second line of the display.

See “Overview of Printer Menus” on page 58 for a list of the menus and their menu items.

- 3** Press **Select**.

The menu opens and the first menu item in the menu appears on the second line of the display.

- 4** Press **Menu>** or **<Menu** until the menu item you need appears on the display.

- 5** Press **Select**.

An asterisk (*) appears beside the current user default setting for that menu item.

Some menu items have submenus. For example, if you select **PAPER MENU**, and then select the **PAPER TYPE** menu item, you must select another menu (such as **Tray 1 Type**) before the available values display.

A value can be:

- A phrase or word that describes a setting.
- A numerical value that you can increase or decrease.
- An On or Off setting.

- 6** Press **Menu>** or **<Menu** until the value you need appears on the second line of the display.
- 7** Press **Select**.

An asterisk (*) appears beside the value to indicate that it is now the user default setting. The display shows the new setting for one second and then clears. The **Saved** message displays, then the previous list of menu items appears on the operator panel display.
- 8** Press **Return** to go back to previous menus or menu items and set new default settings.
- 9** Press **Go** to return to **Ready** if this is the last printer setting you want to change.

User default settings remain in effect until you save new settings or restore the factory defaults.

Note: Changes made from a software application override the user default settings made from the printer operator panel.

Disabling the Operator Panel Menus

To disable the menus so that changes cannot be made to the printer default settings:

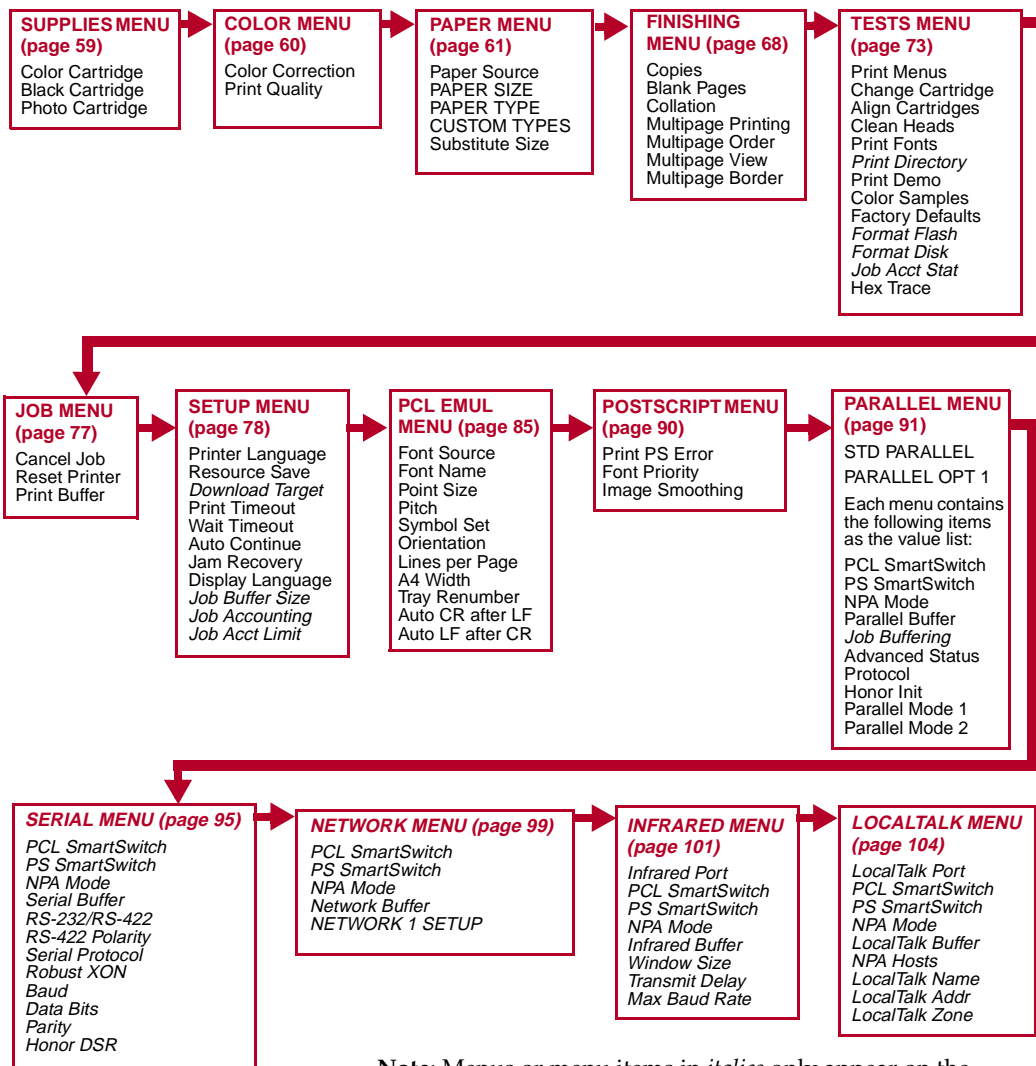
- 1** Unplug the printer.
- 2** While pressing **Go** and **Stop**, plug in the printer.
- 3** Release the buttons when **Performing Self Test** displays.

When the printer self test completes, the **Ready** status message appears.

If you press **Menu>** or **<Menu**, the **Menus Disabled** message displays.

To enable the menus, repeat the previous steps.

Overview of Printer Menus



Using the Operator Panel and Menus

Note: Menus or menu items in *italics* only appear on the operator panel display if an option is installed. For all menus:

- Press **Menu>** or **<Menu** to enter the menus and scroll through the options.
- Press **Select** to select a menu, menu item, or value.
- Press **Return** to back up to the previous menu level.
- Press **Go** to return to **Ready**.

Supplies Menu

The SUPPLIES MENU is accessible from the **Busy/Waiting** display message and the **Ready** state.

The **Supplies** message only appears on the printer operator panel when at least one of the supply items listed in the following table is low. When you select **SUPPLIES MENU**, only the supply items that are low appear on the display as menu items.

Supplies Menu Selections

Menu Item	Values
Color Cartridge	Low
Black Cartridge	Low
Photo Cartridge	Low

Color Menu

Use the COLOR MENU to define all printer settings relating to print color selection and quality.

Color Menu Selections

Menu Item	Values and Functions of the Menu Items
Color Correction	<p>RGB CYMK Black & White Display Vivid*</p> <p>The Color Correction setting lets you adjust your print colors to meet unique needs.</p> <p>Select RGB if you want to print in colors using combinations of red, green, and blue.</p> <p>Select CYMK if you want to print in colors using combinations of cyan, yellow, magenta, and black.</p> <p>Select Black & White if you want to print in black, white, and shades of gray.</p> <p>Select Display if you want to print in colors that simulate the colors on your computer screen.</p> <p>Select Vivid if you want to print in colors that are bright and well saturated.</p>
Print Quality	<p>Quick Print Normal* Presentation 1200 Image Q</p> <p>The Print Quality setting determines the number of passes the print cartridge makes while printing the page. The process of <i>shingling</i> is used for multi-pass modes. In these modes, the print quality usually improves, but the print speed declines.</p>
* Factory default	

Paper Menu

Use the PAPER MENU to define all settings relating to printer input, as well as the specific print materials you are using with your printer.

Paper Menu Selections

Menu Item	Values and Functions of the Menu Items
Paper Source	<p>Tray 1* Tray 2 Manual Paper Manual Env</p> <p>The Paper Source setting identifies the default paper source. Only installed paper sources display.</p> <p>Tray 2 is available only if the optional tray 2 is installed. Refer to the documentation that comes with the tray 2 option for more information.</p> <p>Use the Manual Paper selection when manually feeding a sheet of print material through the manual feed slot.</p> <p>Use the Manual Env selection when manually feeding an envelope through the manual feed slot.</p> <p>If you are using the same size and type of print material in tray 1 and the optional tray 2, the trays are automatically linked. When one paper source is empty, paper feeds from the other source. See “Tray Linking” on page 141 for more information.</p> <p>Note: For more information about Tray 1, see “Loading the Input Tray” on page 121.</p>
* Factory default	

Paper Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
PAPER SIZE	<ul style="list-style-type: none"> • Tray 1 Size <ul style="list-style-type: none"> - A4* (Country specific) - Letter* (Country specific) - Legal - Executive - B5 - A5 - A3 - 11x17 - Universal - 7 3/4 Envelope - 9 Envelope - 10 Envelope - DL Envelope - C5 Envelope - B5 Envelope - Other Envelope • Tray 2 Size <ul style="list-style-type: none"> - A4* (Country specific) - Letter* (Country specific) - Legal - Executive - B5 - A5 - Universal - 7 3/4 Envelope - 9 Envelope - 10 Envelope - DL Envelope - C5 Envelope - B5 Envelope - Other Envelope
* Factory default	

Paper Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
PAPER SIZE	<ul style="list-style-type: none"> • Manual Pap Size <ul style="list-style-type: none"> - A4* (Country specific) - Letter* (Country specific) - Legal - Executive - B5 - A5 - A3 - 11x17 - Universal • Manual Env Size <ul style="list-style-type: none"> - 7 3/4 Envelope - 9 Envelope - 10 Envelope - DL Envelope - C5 Envelope - B5 Envelope - Other Envelope <p>The PAPER SIZE setting identifies the default formatting size for each paper source. See the tables beginning on page 119 for a list of the dimensions for each paper and envelope size.</p> <p>It is important to select the correct paper size from the menu when using paper sources. The factory default is country specific.</p> <p>Use the Manual Pap Size selection when manually feeding a single sheet of print material through the manual feed slot.</p> <p>Use the Manual Env Size selection when manually feeding a single envelope through the manual feed slot.</p> <p>Universal size refers to any size that is not considered a standard size. Select Universal from the PAPER SIZE menu when you load print material that doesn't match any of the other available sizes. The printer automatically formats the page for the maximum possible page size. You can then set the actual page size from your software.</p> <p>Select Other Envelope from the PAPER SIZE menu when you load envelopes that do not match any of the other available sizes. The printer automatically formats for the maximum possible envelope size. You can then set the actual envelope size from your software.</p>
* Factory default	

Paper Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
PAPER TYPE	<ul style="list-style-type: none"> • Tray 1 Type <ul style="list-style-type: none"> - Plain Paper* - Coated Paper - Glossy Paper - Photo Paper - Greeting Card - Card Stock - Transparency - Labels - Iron On - Bond - Letterhead - Preprinted - Colored Paper - Custom Type 1 - Custom Type 2 - Custom Type 3 • Tray 2 Type <ul style="list-style-type: none"> - Plain Paper - Coated Paper - Glossy Paper - Photo Paper - Greeting Card - Card Stock - Transparency - Labels - Iron On - Bond - Letterhead - Preprinted - Colored Paper - Custom Type 1 - Custom Type 2* - Custom Type 3
* Factory default	

Paper Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
PAPER TYPE	<ul style="list-style-type: none"> • Manual Pap Type <ul style="list-style-type: none"> - Plain Paper* - Coated Paper - Glossy Paper - Photo Paper - Greeting Card - Card Stock - Transparency - Labels - Iron On - Bond - Letterhead - Preprinted - Colored Paper - Custom Type 1 - Custom Type 2 - Custom Type 3
* Factory default	

Paper Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
PAPER TYPE	<ul style="list-style-type: none"> • Manual Env Type <ul style="list-style-type: none"> - Envelope* - Custom Type 1 - Custom Type 2 - Custom Type 3 <p>The PAPER TYPE setting lets you specify the type of print material installed in each paper source. This setting is used by the printer in the following ways:</p> <ul style="list-style-type: none"> • Enables the printer to optimize print quality for the specified print material. • Enables you to select paper sources through your software application by selecting only a type and size. A source selection is unnecessary. • Enables the printer to automatically link paper sources. Any sources that contain the same type and size of print material are automatically linked by the printer. <p>Use the Manual Pap Type selection when manually feeding a single sheet of print material through the manual feed slot.</p> <p>Use the Manual Env Type selection when manually feeding a single envelope through the manual feed slot.</p> <p>Custom Type 1 - 3 refers to special types of print materials. You can change the names through a utility, such as MarkVision. For more information on setting the Custom Type names, see CUSTOM TYPES on page 67.</p> <p>If you are using different print material in the paper sources, each source with a different print material must have the PAPER TYPE set to a unique value to disable the automatic linking feature. For example, if you have plain paper, labels, and transparencies loaded in the printer, you need to set the paper type for each source. Otherwise, if paper source becomes empty, the printer selects print material from another source since the printer sees the trays as linked. This might cause a one-page letter to print on a sheet of labels or on a transparency.</p>
* Factory default	

Paper Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
CUSTOM TYPES	<p>Custom Type x (x represents a custom type from 1 to 3)</p> <ul style="list-style-type: none"> - Plain Paper* - Coated Paper - Glossy Paper - Card Stock - Transparency - Labels - Iron On <p>The CUSTOM TYPES setting identifies the kind of print material used for each of the Custom Types available in the PAPER TYPE menu item. This print material designation optimizes print quality settings when you select print material from a source when the type is set to Custom Type x. If a user-defined name is available, this name displays instead of Custom Type x, where x represents a number 1 through 3. The user-defined name is truncated to 14 characters.</p>
Substitute Size	<p>Off*</p> <p>Letter/A4</p> <p>11x17/A3</p> <p>All listed</p> <p>Select Letter/A4 to automatically print a letter or A4 job on any size paper in the printer, if the requested size is not currently installed.</p> <p>Select 11x17/A3 to automatically print an 11x17 or A3 job on any size paper in the printer, if the requested size is not currently installed.</p> <p>Select All listed to automatically print any page-size job on any size paper in the printer, if the requested size is not currently installed.</p> <p>Note: When a size substitution is performed, the page image is automatically clipped to fit on the substituted size, possibly resulting in data loss.</p>
* Factory default	

Finishing Menu

Use the FINISHING MENU to define all settings relating to printer output.

Finishing Menu Selections

Menu Item	Values and Functions of the Menu Items
Copies	<p>1 to 999 (1*)</p> <p>The Copies setting determines the number of copies printed for each page. The printer does not automatically collate the copies. For example, if you send three pages to print and set Copies to 2, the printer prints page 1, page 1, page 2, page 2, page 3, page 3.</p> <p>For information about how to use the Copies setting with the Collation setting set to On or set to Off, see Collation on page 69.</p>
Blank Pages	<p>Do Not Print*</p> <p>Print</p> <p>Select Print to include application-generated blank pages with your print job.</p> <p>Select Do Not Print if you do not want the printer to print any application-generated blank pages that appear in your document.</p>
* Factory default	

Finishing Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Collation	<p>Off* On</p> <p>When Collation is set to Off, the printer prints each page of a job the number of times as specified by the Copies setting. For example, if you send a three-page job to print and set Copies to 2, the printer prints page 1, page 1, page 2, page 2, page 3, page 3.</p> <p>When Collation is set to On, the printer prints each job again, the number of times as specified in the Copies setting. For example, if you send a three-page job to print and set Copies to 2, the printer prints page 1, page 2, page 3, page 1, page 2, page 3.</p> <p>Many applications collate documents by repeatedly sending the file to the printer. As a result, the printer must process each print job until the correct number of copies has printed. This requires additional time since the printer must process the same pages over again. By using Collation, the printer processes the file only once, saves this file in the printer memory, and prints the multiple copies. This saves processing time for the printer and for the application, and overall printing time may be reduced.</p> <p>For collation to work effectively, your software application must recognize this printer feature and not send the job to the printer multiple times. Your application must also let you specify the number of copies needed <i>or</i> let you use the printer default setting for Copies.</p> <p>Collation can be selected from the operator panel or from the printer driver. For best results, select <i>Collated</i> in the print driver and set the number of copies to one. In your application, select <i>Uncollated</i> (if the option is available) and then select the number of copies you want.</p> <p>If the job is complex or exceeds the memory capacity of your printer, you may receive a 37 Insufficient Collation Memory message. Press Go to clear the message. The printer collates the remaining pages in the memory. If you reset the printer, the printer stops printing the job.</p>
* Factory default	

Finishing Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Multipage Printing	Off* 2 Up 3 Up 4 Up 6 Up 9 Up 12 Up 16 Up Use the Multipage Printing (N-up) setting to print multiple page images on a single page. For example, 2-Up means two page images are printed on one page, 3-up means three page images are printed on one page, and so forth. The printer uses the Multipage Order , Multipage View and Multipage Border settings to determine the order and orientation of the page images and whether a border is printed around each page image. Note: Printer setting changes within a print job may affect the results you get when using Multipage Printing .
* Factory default	

Finishing Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items																																																
Multipage Order	<p>Horizontal* Vertical Rev Horizontal (Reverse) Rev Vertical (Reverse)</p> <p>The Multipage Order setting determines the positioning of multiple page images on pages printed using Multipage Printing. You may choose one of four different orders. The positioning of page images depends on whether they are sent to the printer as portrait or landscape images. The examples below show the result of using each Multipage Order setting on a 4-up print job:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Horizontal</p> <table style="margin: 0 auto;"> <thead> <tr> <th colspan="2">Portrait</th> <th colspan="2">Landscape</th> </tr> </thead> <tbody> <tr> <td>Page 1</td> <td>Page 2</td> <td>Page 2</td> <td>Page 4</td> </tr> <tr> <td>Page 3</td> <td>Page 4</td> <td>Page 1</td> <td>Page 3</td> </tr> </tbody> </table> </div> <div style="text-align: center;"> <p>Vertical</p> <table style="margin: 0 auto;"> <thead> <tr> <th colspan="2">Portrait</th> <th colspan="2">Landscape</th> </tr> </thead> <tbody> <tr> <td>Page 1</td> <td>Page 3</td> <td>Page 3</td> <td>Page 4</td> </tr> <tr> <td>Page 2</td> <td>Page 4</td> <td>Page 1</td> <td>Page 2</td> </tr> </tbody> </table> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <p>Reverse Horizontal</p> <table style="margin: 0 auto;"> <thead> <tr> <th colspan="2">Portrait</th> <th colspan="2">Landscape</th> </tr> </thead> <tbody> <tr> <td>Page 2</td> <td>Page 1</td> <td>Page 1</td> <td>Page 3</td> </tr> <tr> <td>Page 4</td> <td>Page 3</td> <td>Page 2</td> <td>Page 4</td> </tr> </tbody> </table> </div> <div style="text-align: center;"> <p>Reverse Vertical</p> <table style="margin: 0 auto;"> <thead> <tr> <th colspan="2">Portrait</th> <th colspan="2">Landscape</th> </tr> </thead> <tbody> <tr> <td>Page 3</td> <td>Page 1</td> <td>Page 1</td> <td>Page 2</td> </tr> <tr> <td>Page 4</td> <td>Page 2</td> <td>Page 3</td> <td>Page 4</td> </tr> </tbody> </table> </div> </div>	Portrait		Landscape		Page 1	Page 2	Page 2	Page 4	Page 3	Page 4	Page 1	Page 3	Portrait		Landscape		Page 1	Page 3	Page 3	Page 4	Page 2	Page 4	Page 1	Page 2	Portrait		Landscape		Page 2	Page 1	Page 1	Page 3	Page 4	Page 3	Page 2	Page 4	Portrait		Landscape		Page 3	Page 1	Page 1	Page 2	Page 4	Page 2	Page 3	Page 4
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Finishing Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Multipage View	<p>Auto* Long Edge Short Edge</p> <p>Use the Multipage View setting to select the orientation of the printed page with respect to the page images during Multipage Printing.</p> <p>The Auto setting allows the printer to choose between portrait and landscape positioning.</p> <p>The Long Edge setting positions the printed page for reading assuming the long edge is the top of the page.</p> <p>The Short Edge setting positions the printed page for reading assuming the short edge is the top of the page.</p> <p>Note: For PostScript emulation jobs, the Auto setting is always in Portrait orientation.</p>
Multipage Border	<p>None* Solid</p> <p>Use the Multipage Border setting to specify whether a border is printed around each page image during Multipage Printing.</p>
* Factory default	

Tests Menu

Use the TESTS MENU to print a variety of listings relating to available printer resources, printer settings, and print jobs. Additional menu items let you set up printer hardware and troubleshoot printer problems.

Tests Menu Selections

Menu Item	Values and Functions of the Menu Items
Print Menus	<p>Press Select to print the menu settings page.</p> <p>A list of the user default settings, the installed options, and the amount of printer memory available prints. This list also shows you the order of menu items.</p>
Change Cartridge	<p>LEFT CART TYPE (This menu item is automatic. Press Select to choose one of the following three sub-menus.)</p> <ul style="list-style-type: none"> - Not Changed - Black Cartridge <ul style="list-style-type: none"> • New Standard • Old Standard • New Hi Capacity • Old Hi Capacity - Photo Cartridge <ul style="list-style-type: none"> • New Standard • Old Standard • New Hi Capacity • Old Hi Capacity <p>RIGHT CART TYPE (This menu item is automatic. Press Select to choose one of the following two sub-menus.)</p> <ul style="list-style-type: none"> - Not Changed - Color Cartridge <ul style="list-style-type: none"> • New Standard • Old Standard • New Hi Capacity • Old Hi Capacity <p>Select Change Cartridge when you need to change a print cartridge or install a new one. You can select the type of cartridge you are installing. For more information, see “Installing the Print Cartridges” on page 15.</p>
* Factory default	

Tests Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Align Cartridges	Press Select to print the cartridge alignment test page. From the Align Cartridges menu, you can set the proper print cartridge alignment values. For more information, see “Aligning the Print Cartridges” on page 19.
Clean Heads	Yes No Select Yes to perform the cleaning cycle on the printheads and print a printheads test page. Cleaning Heads appears on the display. Select No to return to the previous TESTS MENU item. For more information, see “Cleaning the Printheads” on page 193.
Print Fonts	PCL Fonts PS 2 Fonts Press Select to print a font sample that shows all the fonts currently available in the selected printer language. For more information, see “Printing a Font Sample List” on page 263.
Print Directory	Press Select to print a list of all the resources stored in flash memory or hard disk option. The Print Directory menu item is available only if at least one of the options is installed and formatted.
Print Demo	Demo Page (resident demonstration page) List of other demo files on flash or disk. Select Print Demo to see a list of the demo files stored in your printer. Select Demo Page to print the standard demonstration page. Press Menu> to scroll through the list of other demo pages stored in your printer.
Color Samples	Print the Color Sample test pages to use as a reference to select colors for applications. All of the following default values appear on the test pages: <ul style="list-style-type: none"> • Print Quality (Normal) • Color Screen (Stochastic) • Color Correction (Vivid) • Resolution (600 dpi) RGB and CYMK percentages are printed on the pages for easy reference.
* Factory default	

Tests Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Factory Defaults	Restore Do Not Restore If you choose Restore : <ul style="list-style-type: none"> • All downloaded resources (fonts, macros, symbol sets) in printer memory (RAM) are deleted. (Resources residing in the flash memory option or on the hard disk option are unaffected.) • All menu settings are returned to the factory default values except: <ul style="list-style-type: none"> - Display Language (SETUP MENU) which is the operator panel display language - All settings in the PARALLEL MENU, SERIAL MENU, NETWORK MENU, INFRARED MENU, and LOCALTALK MENU.
Format Flash	Yes No Formatting the flash memory option deletes all resources (fonts, macros, symbol sets) stored in flash memory and prepares the flash memory card to receive new resources. The Format Flash menu item only displays if the installed flash memory option is not defective or Read/Write or Write protected. 51 Defective Flash may display when the printer is plugged in, or during flash format and write operations. See 51 Defective Flash on page 155 for more information. Warning: If you select Format Flash and then press Go , any data stored in flash memory is lost. <i>Do not turn off the printer when the flash is formatting.</i>
Format Disk	Yes No Formatting the hard disk option deletes all resources stored on the hard disk and prepares it to receive new resources. The Format Disk menu item only displays if the installed hard disk option is not defective or Read/Write or Write protected. 61 Defective Disk may display when the printer is plugged in, or during disk format and write operations. See 61 Defective Disk on page 157 for more information. Format Disk does not display if Job Buffer Size is set to 100%. Warning: If you select Format Disk and then press Go , any data stored on the hard disk option is lost. <i>Do not turn off the printer when the hard disk is formatting.</i>
* Factory default	

Tests Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Job Acct Stat	<p>Print Clear</p> <p>The Job Acct Stat menu item only displays if a hard disk option is installed in your printer and is <i>not</i> defective or Read/Write or Write protected.</p> <p>Select Print to print a list of statistics for a defined number of the most recent print jobs. (The number of jobs is determined by the value of the Job Acct Limit menu item in the SETUP MENU.) The statistics include whether the job printed with or without errors, the time required to print the job, the size (in bytes) of the job, the requested paper size and paper type, the total number of printed pages, and the number of copies requested.</p> <p>Select Clear to delete all accumulated job statistics from the hard disk option. Clearing Job Accounting Stat displays until the process completes. For more information, see Clearing Job Accounting Stat on page 146.</p>
Hex Trace	<p>Press Select to enter Hex Trace mode.</p> <p>Hex Trace helps isolate the source of a print job problem. With Hex Trace selected, all data sent to the printer is printed in hexadecimal and character representation. Control codes are not executed.</p> <p>To exit Hex Trace, reset or unplug the printer. To reset the printer, press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select.</p>
* Factory default	

Job Menu

JOB MENU is only available when the printer is busy processing or printing a job, when a printer message displays, or when the printer is in Hex Trace mode. Press Menu< or >Menu to open the JOB MENU.

Job Menu Selections

Menu Item	Values and Functions of the Menu Items
Cancel Job	Press Select to cancel the current print job. Cancel Job displays only when the printer is processing a print job.
Reset Printer	Press Select to reset the printer. When you select Reset Printer , the printer resets to the user default setting for each menu item. All downloaded resources (fonts, macros, symbol sets) in printer memory (RAM) are deleted. All data on the currently selected host interface is deleted from the interface link buffer. Note: Before selecting Reset Printer , exit the software application you are using.
Print Buffer	Press Select to print any data stored in the print buffer. Print Buffer is only available when you enter the JOB MENU while the Waiting message displays. The Waiting state occurs if an incomplete job is sent to the printer or if an ASCII job is being printed. Examples include sending a print screen command from your host computer or copying a DOS file.
* Factory default	

Setup Menu

Use the SETUP MENU to configure a variety of printer features.

Setup Menu Selections

Menu Item	Values and Functions of the Menu Items
Printer Language	PCL Emulation PS 2 Emulation* The printer language defines how the computer communicates with the printer. Your computer uses printer languages, such as PCL 5 emulation and PostScript Level 2 emulation, to send print data to the printer. Setting a printer language as the default does not prevent the software application from sending print jobs that use the other printer language.
Resource Save	Off* On The Resource Save setting determines what the printer does with downloaded resources if it receives a job that requires more memory than is available. If Resource Save is set to On , the printer retains all permanent downloaded resources, such as fonts and macros, for all printer languages during language changes and printer resets. If the printer runs out of memory, 38 Memory Full appears on the display. If Resource Save is set to Off , the printer retains permanent downloaded resources only until memory is needed. Then it deletes those resources stored for the inactive printer language.
* Factory default	

Setup Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Download Target	<p>RAM* Flash Disk</p> <p>The Download Target menu item specifies the storage location for downloaded resources, such as fonts and macros.</p> <p>Storing downloaded resources in flash memory or hard disk is permanent storage rather than the temporary storage that RAM provides. You can add resources to flash memory or to the hard disk until the option is full. Use your software application or the printer Toolkit to download resources to the printer.</p> <p>The Download Target menu item only displays if a formatted flash memory option or hard disk option is installed in the printer and is not defective or Read/Write or Write protected. 51 Defective Flash or 61 Defective Disk may display when the printer is plugged in, or during format and write operations. See 51 Defective Flash on page 155 or 61 Defective Disk on page 157 for more information.</p> <p>Disk does <i>not</i> display for Download Target if Job Buffer Size is set to 100%.</p> <p>If neither option is installed, Download Target does <i>not</i> display and all downloaded resources are automatically stored in printer memory (RAM).</p>
Print Timeout	<p>Disabled 1 to 255 (90*)</p> <p>The Print Timeout setting determines the time (in seconds) the printer waits before printing the last page of a print job that does not end with a command to print the page. The print timeout counter does not start until the Waiting message displays.</p> <p>When a print timeout occurs, the printer stores the page in the print buffer and prints the page.</p> <p>Select Disabled to turn Print Timeout off. When Print Timeout is disabled, the printer does not print the last page of a print job until one of the following occurs:</p> <ul style="list-style-type: none"> • The printer receives enough information to fill the page. • The printer receives a Form Feed command. • You select Print Buffer from the JOB MENU. See page 77 for more information.
* Factory default	

Setup Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Wait Timeout	Disabled 15 ... 65535 (40*) The Wait Timeout setting determines the amount of time (in seconds) the printer waits to receive additional bytes of data from the computer. When this timeout expires, the print job is canceled. Select Disabled to turn Wait Timeout off. Wait Timeout is only available when using PostScript Level 2 emulation. The setting has no effect on PCL 5 emulation print jobs.
* Factory default	

Setup Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Auto Continue	<p>Disabled*</p> <p>5 ... 255</p> <p>Set Auto Continue to a value between 5 and 255 seconds to have the printer continue printing after it detects one of the following errors:</p> <ul style="list-style-type: none"> 30 Black Ink Cart Missing 30 Color Ink Cart Missing 30 Photo Ink Cart Missing 35 Res Save Off Deficient Memory 37 Insufficient Collation Memory 38 Memory Full 51 Defective Flash 52 Flash Full 53 Unformatted Flash 54 Serial Option 1 Error 54 Parallel Error 56 Serial 1 Port Disabled 56 Parallel Port Disabled 61 Defective Disk 62 Disk Full 63 Unformatted Disk 88 Black Ink Low 88 Color Ink Low 88 Photo Ink Low Print Jobs on Disk? <p>If one of these errors occurs and Auto Continue is set to Disabled, the printer stops and waits for operator intervention. When Auto Continue is set to a numerical value, the printer waits for the specified length of time and then automatically resumes processing.</p> <p>This setting is also used as a timer. After an inactive period in the menus, the printer automatically exits the menus and returns to the Ready state.</p>
* Factory default	

Setup Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Jam Recovery	<p>On Off Auto*</p> <p>When Jam Recovery is set to Off, the printer does not reprint a page that has jammed.</p> <p>When Jam Recovery is set to On, the printer keeps the image for a printed page until the printer signals that the page has successfully exited the printer. The printer reprints all jammed pages.</p> <p>If Jam Recovery is set to Auto, the printer keeps the image and reprints the page unless the memory required to hold the page is needed for other printer tasks.</p>
Display Language (Default set by country)	<p>English French German Italian Spanish Danish Norwegian Dutch Swedish Portuguese Finnish</p> <p>The Display Language setting determines the language of the text that appears on the operator panel display.</p>
* Factory default	

Setup Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Job Buffer Size	<p>Disabled* 10 ... 100%</p> <p>If you have a hard disk option installed in your printer, you can allocate a portion of the available hard disk space for processing print jobs. The job is temporarily stored on the hard disk before being printed, usually freeing the host computer while the job prints.</p> <p>The Job Buffer Size menu item lets you select the amount of hard disk space allocated to job buffering for all ports that have job buffering set to On. You can choose any 1% increment between 10% and 100%. You must select a Job Buffering Size before you can set the Job Buffering menu item On in the Parallel Menu.</p> <p>The Job Buffer Size menu item only displays if the installed hard disk option is formatted and is not defective or Read/Write or Write protected. 61 Defective Disk may display when the printer is plugged in, or during disk format and write operations. See 61 Defective Disk on page 157 for more information.</p> <p>Warning: If you change the job buffer size, the printer formats the hard disk option, and all stored resources (such as fonts and macros) are deleted.</p>
* Factory default	

Setup Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Job Accounting	<p>Off*</p> <p>On</p> <p>If Job Accounting is set to On, the installed hard disk option stores statistical information about the most recent printer jobs. The statistics include whether the job printed with or without errors, the time required to print the job, the size (in bytes) of the job, the requested paper size and paper type, the total number of printed pages, and the number of copies requested.</p> <p>To print a listing of all the accumulated statistics, select Print from the Job Acct Stat menu item in the TESTS MENU.</p> <p>The Job Accounting menu item does <i>not</i> display if the installed hard disk option is defective or Read/Write or Write protected, or if the Job Buffer Size menu item is set to 100%.</p>
Job Acct Limit	<p>Disabled</p> <p>10 ... 1000 (1000*)</p> <p>If a hard disk option is installed in your printer, you can use the hard disk to store statistical information about a specified number of jobs. The value you select from the Job Acct Limit menu item determines the number of jobs for which statistics are stored. Once you reach the job limit, statistics for the oldest job are deleted as new statistics are stored, maintaining statistics for the specified number of jobs.</p> <p>If you select Disabled, the number of jobs for which statistics are stored is limited to the memory available on the hard disk.</p> <p>The Job Acct Limit menu item does <i>not</i> display if the installed hard disk option is defective or Read/Write or Write protected, or if the Job Buffer Size menu item is set to 100%.</p> <p>Note: When you change the Job Acct Limit value, all statistical information stored on the hard disk option is discarded.</p>
* Factory default	

PCL Emul Menu

Use the PCL EMUL MENU to change printer settings that only affect jobs printed using the PCL 5 emulation printer language.

PCL Emul Menu Selections

Menu Item	Values and Functions of the Menu Items
Font Source	Resident* Download Flash Disk All The Font Source setting determines which fonts appear in the Font Name menu. If a font source is not installed or does not contain any fonts, it is not listed as a value. Fonts are loaded and stored on the flash memory option. For more information, see “Understanding Fonts” on page 253.
Font Name	Font position and font name for all fonts in the selected font source (displays on both lines of the operator panel). (R0 Courier*) Always select the font source before you select a font name. After you select a font source, choose the specific font from the Font Name menu. The printer displays the font source abbreviation, font ID, and font name for each font. The font source abbreviation is R for resident, F for flash, K for disk, and D for download. To print a font sample list showing all the fonts available for PCL 5 emulation, see “Printing a Font Sample List” on page 263.
Point Size (Only displays for typographic fonts.)	1 to 1008 (in increments of 0.25) (12*) If you chose a scalable typographic font, you can select the point size for the font. Point Size refers to the height of the characters in the font. One point equals approximately 1/72 of an inch. You can select point sizes from 1 to 1008 in increments of 0.25 points.
* Factory Default	

PCL Emul Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Pitch (Only displays for fixed or monospaced fonts.)	0.08 to 100 (in increments of 0.01) (10*) If you chose a scalable monospaced font, you can select the font pitch. Pitch refers to the number of fixed-space characters in a horizontal inch of type. You can select a pitch from 0.08 to 100 characters per inch (cpi) in increments of 0.01 cpi. For non-scalable monospaced fonts, the pitch displays, but cannot be changed.
Symbol Set	List of Symbol Set IDs and Symbol Set names (displays on both lines of the operator panel). 10U PC-8* (Country specific) 12U PC-850* (Country specific) A symbol set is a set of alphabetic and numeric characters, punctuation, and special symbols used when printing with a selected font. Symbol sets support the different requirements for languages or specific applications, such as math symbols for scientific text. The printer displays only the symbol sets supported for the selected font name.
Orientation	Portrait* Landscape The Orientation setting determines how the printing is oriented on the page. Portrait means the printing is parallel to the short edge of the paper. <div data-bbox="786 1008 915 1177" style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> This is PORTRAIT orientation. This is PORTRAIT orientation. This is </div> Landscape means the printing is parallel to the long edge of the paper. <div data-bbox="772 1256 943 1378" style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> This is LANDSCAPE orientation. This is LANDSCAPE orientation. </div>
* Factory Default	

PCL Emul Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Lines per Page	1 ... 255 60* (Country specific) 64* (Country specific) Use the Lines per Page menu item to change the number of lines that print on each page. The setting can range from 1 to 255 lines per page. The printer sets the amount of space between each line (vertical line spacing) based on the Lines per Page , PAPER SIZE , and Orientation settings. Select the correct PAPER SIZE and Orientation before setting Lines per Page .
A4 Width	198 mm* 203 mm The A4 Width menu item lets you select the width of the logical page for A4 paper. When you select 198 mm , the width of the logical page is compatible with that of the Hewlett-Packard LaserJet 5 printer. When you select 203 mm , the width of the logical page is wide enough to print eighty 10-pitch characters.
* Factory Default	

PCL Emul Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Tray Renumber	<ul style="list-style-type: none"> • Assign Tray 1 <ul style="list-style-type: none"> - Off* - 0 ... 199 - None • Assign Tray 2 <ul style="list-style-type: none"> - Off* - 0 ... 199 - None • Assign Man Paper <ul style="list-style-type: none"> - Off* - 0 ... 199 - None • Assign Man Env <ul style="list-style-type: none"> - Off* - 0 ... 199 - None • View Factory Def Select View Factory Def to view the factory default values assigned to each source. • Restore Defaults <ul style="list-style-type: none"> - Yes - No Select Yes to return all tray assignment to factory default values. <p>The Tray Renumber menu item lets you configure your printer to work with printer drivers or applications that use different source assignments to request a given input source. For example, if the tray 2 option is installed and Tray Renumber is set to Tray 2, the paper sources are configured so the printer feeds print material from tray 2 first, and the input tray second. Select a numerical value between 0 and 199 to assign a custom value to a paper source.</p> <p>Select None if you want the paper source to ignore the Select Paper Feed command in PCL 5 emulation.</p> <p>Note: Assign Tray 2 only displays when the optional tray 2 is installed. Refer to the documentation that comes with the tray 2 option for more information.</p>
* Factory Default	

PCL Emul Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Auto CR after LF	Off* On The Auto CR after LF setting determines if the printer automatically performs a carriage return after a line feed control command.
Auto LF after CR	Off* On The Auto LF after CR setting determines if the printer automatically performs a line feed after a carriage return control command.
* Factory Default	

PostScript Menu

Use the POSTSCRIPT MENU to change settings that only affect jobs printed using the PostScript Level 2 emulation printer language.

PostScript Menu Selections

Menu Item	Values and Functions of the Menu Items
Print PS Error	Off* On Select On to print PostScript Level 2 emulation errors. If an error occurs, the job stops processing, the error message prints, and the printer flushes the job. If Print PS Error is set to Off and an error occurs, the job flushes without an indication of the error.
Font Priority	Resident* Flash/Disk The Font Priority menu item only displays if at least one of the following is installed in your printer: <ul style="list-style-type: none"> • A formatted, non-defective, non-Read/Write or Write protected hard disk option <i>and</i> Job Buffer Size is <i>not</i> set to 100%. • A formatted, non-defective, non-Read/Write or Write protected flash memory option. The Font Priority menu item lets you modify the device order used by the PostScript interpreter for locating fonts. Select Resident to have the interpreter search the printer internal ROM storage device <i>before</i> any external devices. Select Flash/Disk to have the interpreter search the flash memory option, <i>then</i> the hard disk option, and finally the printer internal ROM storage device.
Image Smoothing	Off* On Image Smoothing enhances the contrast and sharpness of bitmapped images and smooths color transitions. The setting may have no effect on images that are 300 dpi or higher. Select On when you are printing low resolution images, such as images downloaded from the World Wide Web at 72 dpi.
* Factory default	

Parallel Menu

Use the PARALLEL MENU to change settings affecting jobs sent to the printer through the parallel interface connection. The PARALLEL MENU item displays as a standard feature or as an option, and appears as one of the following:

- STD PARALLEL
- PARALLEL OPT 1

Parallel Option 1 displays if a parallel option card is installed on the printer system board. The following menu items set the configuration of the parallel interface connection:

Parallel Menu Selections

Menu Item	Values and Functions of the Menu Items
PCL SmartSwitch	<p>Off On*</p> <p>If PCL SmartSwitch is set to On, the printer examines the data on the parallel interface connection and selects PCL 5 emulation, if the data indicates that is the printer language.</p> <p>If both PCL SmartSwitch and PS SmartSwitch are set to Off, the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set Off, the printer uses the language that has its SmartSwitch setting set On as the default.</p>
PS SmartSwitch	<p>Off On*</p> <p>If PS SmartSwitch is set to On, the printer examines the data on the parallel interface connection and selects PostScript level 2 emulation, if the data indicates that is the printer language.</p> <p>If both PCL SmartSwitch and PS SmartSwitch are set to Off, the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set Off, the printer uses the language that has its SmartSwitch setting set On as the default.</p>
* Factory default	

Parallel Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
NPA Mode	<p>On Off Auto*</p> <p>NPA is a mode of bidirectional communication that follows the <i>Network Printing Alliance Protocol, A Printer/Host Control Specification Developed by the NPA</i>. NPA mode requires special processing of the print data.</p> <p>If NPA Mode is set to On, the data received must be in NPA format. If not, it is rejected as bad data. If NPA Mode is set to Off, the printer does not perform any NPA processing. If NPA Mode is set to Auto, the printer examines the data to determine the format and then processes it in either format.</p> <p>The NPA Mode setting under the PARALLEL MENU item only applies to the parallel interface connection.</p> <p>Note: Changing the NPA Mode setting automatically resets the printer.</p>
Parallel Buffer	<p>Disabled Auto* 3K to maximum size allowed</p> <p>You can configure the size of the parallel input port buffer to meet your system needs.</p> <p>The maximum size available for modification depends on the amount of memory in your printer, the size of the other link buffers, and if the Resource Save setting is set to On or Off. To maximize the range for the Parallel Buffer size, you can disable or reduce the size of the serial, network, Infrared, and LocalTalk buffers.</p> <p>Choose the Auto setting to let the printer calculate a buffer size proportional to the total amount of available printer memory. In most cases, Auto is the recommended setting.</p> <p>Note: Changing the Parallel Buffer setting automatically resets the printer.</p>
* Factory default	

Parallel Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Job Buffering	<p>Off* On</p> <p>Job Buffering lets you delay processing of a print job. The job is temporarily stored on a hard disk option before being printed, usually freeing the host computer while the job prints.</p> <p>The Job Buffering menu item only displays if the installed hard disk option is formatted and is not defective or Read/Write or Write protected. See Job Buffer Size on page 83 for more information. 61 Defective Disk may display when the printer is plugged in, or during disk format and write operations. See 61 Defective Disk on page 157 for more information.</p> <p>If Job Buffering is set to On, print jobs are buffered to the hard disk option. If Job Buffering is set to Off, print jobs are not buffered.</p> <p>Note: Changing the Job Buffering setting automatically resets the printer.</p>
Advanced Status	<p>Off On*</p> <p>If Advanced Status is set to On, bidirectional communication is enabled through the parallel interface.</p>
Protocol	<p>Standard Fastbytes*</p> <p>You can select Standard or Fastbytes protocol. Fastbytes is compatible with most existing parallel interface implementations. Use Standard only if you experience parallel interface problems.</p>
Honor Init	<p>Off* On</p> <p>The Honor Init setting determines whether the printer honors hardware initialization requests from the computer. The computer requests initialization by activating the INIT signal on the parallel interface. Many personal computers activate the INIT signal each time the computer is turned on and off.</p>
* Factory default	

Parallel Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Parallel Mode 1	<p>Off On*</p> <p>The Parallel Mode 1 setting controls the pull up resistors on the parallel port signals. It is useful for personal computers that have open collector outputs on the parallel port signals.</p> <p>Set Parallel Mode 1 to On to disable the resistors or Off to enable the resistors.</p>
Parallel Mode 2	<p>Off On*</p> <p>The Parallel Mode 2 setting determines if the parallel port data is sampled on the leading or trailing edge of strobe.</p> <p>If Parallel Mode 2 is set to On, the parallel port data is sampled on the leading edge of strobe.</p> <p>If Parallel Mode 2 is set to Off, the parallel port data is sampled on the trailing edge of strobe.</p>
* Factory default	

Serial Menu

Use the SERIAL MENU to change settings affecting jobs sent to the printer through the serial interface port.

Note: This menu is only available if the Tri-Port interface option card is installed in your printer.

Serial Menu Selections

Menu Item	Values and Functions of the Menu Items
PCL SmartSwitch	<p>Off On*</p> <p>If PCL SmartSwitch is set to On, the printer examines the data on the serial interface connection and selects PCL 5 emulation, if the data indicates that is the printer language.</p> <p>If both PCL SmartSwitch and PS SmartSwitch are set to Off, the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set to Off, the printer uses the language that has its SmartSwitch setting On as the default.</p>
PS SmartSwitch	<p>Off On*</p> <p>If PS SmartSwitch is set to On, the printer examines the data on the serial interface connection and selects PostScript Level 2 emulation, if the data indicates that is the printer language.</p> <p>If both PCL Smartswitch and PS Smartswitch are set to Off, the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set to Off, the printer uses the language that has its SmartSwitch setting set On as the default.</p>
* Factory default	

Serial Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
NPA Mode	<p>On Off Auto*</p> <p>NPA is a mode of bidirectional communication that follows the <i>Network Printing Alliance Protocol, A Printer/Host Control Specification Developed by the NPA</i>. NPA mode requires special processing of the print data.</p> <p>If NPA Mode is set to On, the data received must be in NPA format. If not, it is rejected as bad data. If NPA Mode is set to Off, the printer does not perform any NPA processing. If NPA Mode is set to Auto, the printer examines the data to determine the format and then processes it in either format.</p> <p>The NPA Mode setting in the SERIAL MENU only applies to the serial interface connection.</p> <p>Note: Changing the NPA Mode setting automatically resets the printer.</p>
Serial Buffer	<p>Disabled Auto* 3K to maximum size allowed</p> <p>You can configure the size of the input port buffer to meet the requirements of your system. If the limited size of the input buffer is preventing you from continuing work in your application each time you send a job to the printer, you may want to increase the buffer size.</p> <p>The maximum size available for modification depends on the amount of memory in your printer, the size of the other link buffers, and if the Resource Save setting is On or Off. To maximize the range for the Serial Buffer size, you can disable or reduce the size of the parallel, network, Infrared, and LocalTalk buffers.</p> <p>Choose Auto to let the printer calculate the buffer size proportional to the total amount of available printer memory. In most cases, Auto is the recommended setting.</p> <p>Note: Changing the Serial Buffer setting automatically resets the printer.</p>
RS-232/RS-422	<p>RS-232* RS-422</p> <p>Choose the serial communication configuration for your printer. Select RS-422, to automatically set Serial Protocol to XON/XOFF.</p>
* Factory default	

Serial Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
RS-422 Polarity	Normal* Reverse Select Normal or Reverse polarity. This setting is only available if the serial communication configuration is set to RS-422. Select SERIAL MENU , RS-232/RS-422 and RS-422 .
Serial Protocol	DTR* (hardware handshaking) DTR/DSR (hardware handshaking) XON/XOFF (software handshaking) XON/XOFF/DTR (combined handshaking) XONXOFF/DTRDSR (combined handshaking) The printer supports hardware handshaking, software handshaking, and combined hardware and software handshaking as indicated in the list of values for this menu item.
Robust XON	Off* On This printer setting only applies to the serial port if Serial Protocol is set to XON/XOFF. When Robust XON is set to On , the printer sends a continuous stream of XONs to the host computer to indicate that the serial port is ready to receive more data.
Baud	1200 2400 4800 9600* 19200 38400 57600 115200 This setting lets you select the rate at which data is being sent to or from your computer.
Data Bits	7 8* This printer setting lets you select the number of data bits that are sent in each transmission frame.
* Factory default	

Serial Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Parity	<p>Even Odd None* Ignore</p> <p>This setting lets you set the parity for serial input and output data frames.</p> <p>Even The port expects to receive data frames with an even number of logical 1's per byte. The port transmits XOFF and XON with even parity. If the port detects a parity error, the port sends an inverted question mark to the printer instead of the character sent by the host system.</p> <p>Odd The port expects to receive data frames with an odd number of logical 1's per byte. The printer transmits XOFF and XON with odd parity. If the printer detects a parity error, the port sends X'5F' to the printer instead of the character sent by the host system.</p> <p>None The port expects no parity bit when it receives data. The port transmits XON and XOFF without parity bits.</p> <p>Ignore The port expects a parity bit when the port receives a data frame. The port ignores the parity bit. The port uses even parity when it transmits XON and XOFF.</p>
Honor DSR (only available if configured for RS-232)	<p>Off* On</p> <p>The Honor DSR setting determines whether the printer uses the Data Set Ready (DSR) signal. DSR is one of the handshaking signals for most serial interface cables. If Honor DSR is set to Off, data received by the serial interface is seen as valid data. If Honor DSR is set to On, only data received while the DSR signal is in high condition is treated as valid data.</p> <p>The serial interface uses DSR to distinguish if data sent by the computer from data created by electrical noise in the serial cable. This electrical noise can cause receive errors and can cause stray characters to print.</p> <p>Set Honor DSR On to prevent any stray characters from printing.</p>
* Factory default	

Network Menu

Use the NETWORK MENU to change settings affecting jobs sent to the printer through the network port.

Note: This menu is only available if an optional network adapter is installed in your printer.

Network Menu Selections

Menu Item	Values and Functions of the Menu Items
PCL SmartSwitch	<p>Off On*</p> <p>If PCL SmartSwitch is set to On, the printer examines the data on the network interface connection and selects PCL 5 emulation, if the data indicates that is the printer language.</p> <p>If both PCL SmartSwitch and PS SmartSwitch are set to Off, the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set to Off, the printer uses the language that has its SmartSwitch setting On as the default.</p>
PS SmartSwitch	<p>Off On*</p> <p>If PS SmartSwitch is set to On, the printer examines the data on the network interface connection and selects PostScript Level 2 emulation, if the data indicates that is the printer language.</p> <p>If both PCL SmartSwitch and PS SmartSwitch are set to Off, the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set to Off, the printer uses the language that has its SmartSwitch setting On as the default.</p>
* Factory default	

Network Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
NPA Mode	<p>Off Auto*</p> <p>NPA is a mode of bidirectional communication that follows the <i>Network Printing Alliance Protocol, A Printer/Host Control Specification Developed by the NPA</i>. NPA mode requires special processing of the print data.</p> <p>If NPA Mode is set to Off, the printer does not perform any NPA processing. If NPA Mode is set to Auto, the printer examines the data to determine the format and then processes it in either format.</p> <p>The NPA Mode setting in the NETWORK MENU only applies to the network interface connection.</p> <p>Note: Changing the NPA Mode setting automatically resets the printer.</p>
Network Buffer	<p>Auto* 3K to maximum size allowed</p> <p>You can configure the size of the network buffer to meet the requirements of your system. If the limited size of the input buffer is preventing you from continuing work in your application each time you send a job to the printer, you may want to increase the buffer size.</p> <p>The maximum size available for modification depends on the amount of memory in your printer, the size of the other link buffers, and if the Resource Save setting is set to On or Off. To maximize the range for the Network Buffer size, you can disable or reduce the size of the parallel, serial, Infrared, and LocalTalk buffers.</p> <p>Choose Auto to let the printer calculate the buffer size proportional to the total amount of available printer memory. In most cases, Auto is the recommended setting.</p> <p>Note: Changing the Network Buffer setting automatically resets the printer.</p>
NETWORK 1 SETUP	<p>Values for this menu item are supplied by the network card. Open the menu to see the available values.</p> <p>For more information, refer to the documentation that comes with your network option.</p>
* Factory default	

Infrared Menu

Use the INFRARED MENU to change settings affecting jobs sent to the printer through the infrared interface port.

If **Infrared Port** menu item is set to **Disabled**, all of the other menu items in the INFRARED MENU are not available.

Note: The menu is only available if the Tri-Port interface option card is installed in your printer.

Infrared Menu Selections

Menu Item	Values and Functions of the Menu Items
Infrared Port	Disabled* IR Option 1 Select IR Option 1 to activate the infrared port on the Tri-Port interface option card. If you select Disabled , all of the other menu items in the INFRARED MENU are not available.
PCL SmartSwitch	Off On* If PCL SmartSwitch is set to On , the printer examines the data on the infrared interface connection and selects PCL 5 emulation, if the data indicates that is the printer language. If both PCL SmartSwitch and PS SmartSwitch are set to Off , the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set to Off , the printer uses the language that has its SmartSwitch setting On as the default.
PS SmartSwitch	Off On* If PS SmartSwitch is set to On , the printer examines the data on the infrared interface connection and selects PostScript Level 2 emulation, if the data indicates that is the printer language. If both PCL SmartSwitch and PS SmartSwitch are set to Off , the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set to Off , the printer uses the language that has its SmartSwitch setting On as the default.
* Factory default	

Infrared Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
NPA Mode	<p>Off Auto*</p> <p>NPA is a mode of bidirectional communication that follows the <i>Network Printing Alliance Protocol, A Printer/Host Control Specification Developed by the NPA</i>. NPA mode requires special processing of the print data.</p> <p>If NPA Mode is set to Off, the printer does not perform any NPA processing. If NPA Mode is set to Auto, the printer examines the data to determine the format and then processes it in either format.</p> <p>The NPA Mode setting in the INFRARED MENU only applies to the infrared interface connection.</p> <p>Note: Changing the NPA Mode setting automatically resets the printer.</p>
Infrared Buffer	<p>Disabled Auto* 5K to maximum size allowed</p> <p>You can configure the size of the Infrared Buffer to meet the requirements of your system. If the limited size of the input buffer is preventing you from continuing work in your application each time you send a job to the printer, you may want to increase the buffer size.</p> <p>The maximum size available for modification depends on the amount of memory in your printer, the size of the other link buffers, and if the Resource Save setting is set to On or Off. To maximize the range for the Infrared Buffer size, you can disable or reduce the size of the parallel, serial, network, and LocalTalk buffers.</p> <p>Choose Auto to let the printer calculate the buffer size proportional to the total amount of available printer memory. In most cases, Auto is the recommended setting.</p> <p>Note: Changing the Infrared Buffer setting automatically resets the printer.</p>
Window Size	<p>Auto* 1</p> <p>The Window Size setting specifies the maximum number of infrared frames the printer can receive before it must send an acknowledgment to the host computer.</p> <p>If Auto is selected, the printer automatically sets the window size during power on reset to maximize link performance.</p>
* Factory default	

Infrared Menu Selections (Continued)

Menu Item	Values and Functions of the Menu Items
Transmit Delay	Auto* None 1 ... 15 The Transmit Delay setting defines the amount of time the printer must wait before transmitting meaningful infrared data to the host computer, as well as the amount of time the printer requests the host computer to wait before it transmits infrared data. If Auto is selected, the printer automatically sets the Transmit Delay value when the printer is plugged in to maximize link performance. In most cases, Auto is the recommended setting. If you have trouble printing using the infrared port, selecting a high Transmit Delay setting, such as 15, may resolve the problem.
Max Baud Rate	2400 9600 19200 38400 57600 115200 576000 1152000* 4000000 The maximum baud rate possible for both the printer and the infrared adapter is automatically set when the printer is plugged in. However, if your printer is situated in a bright or highly reflective environment, you may experience intermittent communication problems. If you do, select a lower baud rate for the infrared connection.
* Factory default	

LocalTalk Menu

Use the LOCALTALK MENU to change settings affecting jobs sent to the printer through the LocalTalk port.

If **LocalTalk Port** is set to **Disabled**, all of the other menu items in the LOCALTALK MENU are not available.

Note: This menu is only available if the Tri-Port interface option card is installed in your printer.

LocalTalk Menu Selections

Menu Item	Values and Functions of the Menu Items
LocalTalk Port	Disabled* LTalk Option 1 Select LTalk Option 1 to activate the LocalTalk port on the Tri-Port interface option card. If you select Disabled , all of the other menu items in the LOCALTALK MENU are not available.
PCL SmartSwitch	Off On* If PCL SmartSwitch is set to On , the printer examines the data on the LocalTalk interface connection and selects PCL 5 emulation, if the data indicates that is the printer language. If both PCL SmartSwitch and PS SmartSwitch are set to Off , the printer uses the language specified in the Printer Language menu item of the SETUP MENU as the default. If only one SmartSwitch setting is set to Off , the printer uses the language that has its SmartSwitch setting On as the default.
PS SmartSwitch	Off On* If PS SmartSwitch is set to On , the printer examines the data on the LocalTalk interface connection and selects PostScript Level 2 emulation, if the data indicates that is the printer language. If both PCL SmartSwitch and PS SmartSwitch are set to Off , the printer uses the language specified in the Printer Language menu as the default. If only one SmartSwitch setting is set to Off , the printer uses the language that has its SmartSwitch setting On as the default.
* Factory default	

LocalTalk Menu Selections

Menu Item	Values and Functions of the Menu Items
NPA Mode	<p>Off Auto*</p> <p>NPA is a mode of bidirectional communication that follows the <i>Network Printing Alliance Protocol, A Printer/Host Control Specification Developed by the NPA</i>. NPA mode requires special processing of the print data.</p> <p>If NPA Mode is set to Off, the printer does not perform any NPA processing. If NPA Mode is set to Auto, the printer examines the data to determine the format and then processes it in either format.</p> <p>The NPA Mode setting in the LOCALTALK MENU only applies to the LocalTalk interface connection.</p> <p>Note: Changing the NPA Mode setting automatically resets the printer.</p>
LocalTalk Buffer	<p>Disabled Auto* 6K to maximum size allowed</p> <p>You can configure the size of the LocalTalk buffer to meet the requirements of your system. If the limited size of the input buffer is preventing you from continuing work in your application each time you send a job to the printer, you may want to increase the buffer size.</p> <p>The maximum size available for modification depends on the amount of memory in your printer, the size of the other link buffers, and if the Resource Save setting is On or Off. To maximize the range for the LocalTalk Buffer size, you can disable or reduce the size of the parallel, serial, network, and Infrared buffers.</p> <p>Choose Auto to let the printer calculate the buffer size proportional to the total amount of available printer memory. In most cases, Auto is the recommended setting.</p> <p>Note: Changing the LocalTalk Buffer setting automatically resets the printer.</p>
NPA Hosts	<p>1 2* 3 ... 10</p> <p>Use this setting to specify the maximum number of NPA hosts that can register for NPA printer alerts. When the number of hosts registered for NPA alerts exceeds the quantity specified by the NPA Hosts menu item, any additional hosts attempting to register for alerts are ignored.</p> <p>Note: Changing the NPA Hosts setting automatically resets the printer.</p>
* Factory default	

LocalTalk Menu Selections

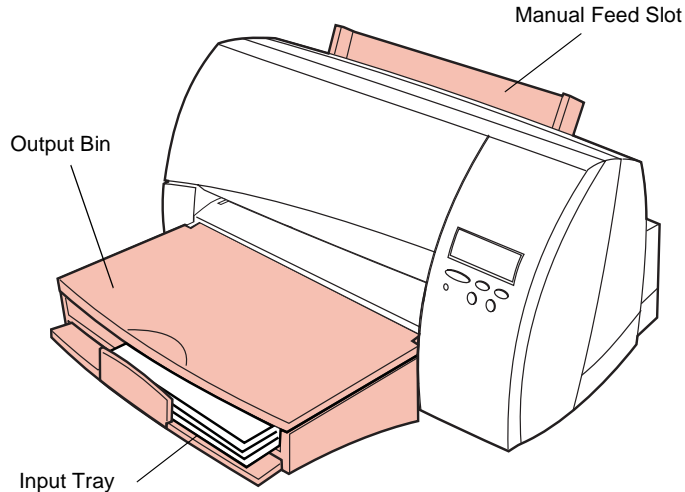
Menu Item	Values and Functions of the Menu Items
LocalTalk Name	Lexmark Optra Color 45 This setting identifies the printer model name stored in printer memory. It cannot be modified through the printer operator panel.
LocalTalk Addr	(LocalTalk Node Number) This setting identifies the LocalTalk Node number assigned to the printer. It cannot be modified through the printer operator panel.
LocalTalk Zone	(Zone name provided by LocalTalk network) This setting determines the LocalTalk Zone. It cannot be modified through the printer operator panel.
* Factory default	

Using Print Materials

Chapter 4

This chapter provides specifications and guidelines for each type of print material that can be used with your printer, as well as important information about the paper sources and the output bin.

Your printer has two standard paper sources, the input tray and the manual feed slot, and one output bin, providing high quality printing on a variety of print materials from different paper sources. Load the paper you use for the majority of your print jobs in the standard input tray. Reserve the manual feed slot for the occasional envelope, transparency, label, or odd-size sheet of paper you feed through the printer.



Note: You may purchase an optional tray 2 as a paper source. For more information, refer to the *Optra Color 45 Tray 2 User's Guide* that comes with the tray 2 option.

Print Materials

The print quality and feeding reliability you get with your printer can vary depending on which paper source you use and the type and size of print material that you load.

The following table lists the types of print materials you can use with your printer, and which paper sources can handle each type of print material.

Material	Weight for Paper Sources		
	Standard Input Tray	Optional Tray 2	Manual Feed Slot
Paper including: <ul style="list-style-type: none"> • card stock • bond papers • dual purpose papers • xerographic papers • recycled papers • coated papers 	70 to 199 g/m ² grain long (18 lb min. to 110 lb max. index) Optimal: 75 g/m ² grain long (20 lb bond) [Country specific] 80 g/m ² grain long (21 lb bond) [Country specific]	70 to 253 g/m ² grain long (18 lb min. to 140 lb max. index) Optimal: 75 g/m ² grain long (20 lb bond) [Country specific] 80 g/m ² grain long (21 lb bond) [Country specific]	60 to 253 g/m ² grain long (16 lb min. to 140 lb max. index) Optimal: 75 g/m ² grain long (20 lb bond) [Country specific] 80 g/m ² grain long (21 lb bond) [Country specific]
Transparencies	138 to 146 g/m ² (37 to 39 lb bond)	138 to 146 g/m ² (37 to 39 lb bond)	138 to 146 g/m ² (37 to 39 lb bond)
Labels	120 to 150 g/m ² (32 to 40 lb bond)	120 to 150 g/m ² (32 to 40 lb bond)	120 to 150 g/m ² (32 to 40 lb bond)
Envelopes	75 to 90 g/m ² grain long (20 to 24 lb bond)	75 to 90 g/m ² grain long (20 to 24 lb bond)	70 to 105 g/m ² (20 to 28 lb bond)

Note: Always print samples on the paper you are considering before buying large quantities.

For detailed information, refer to the *Card Stock & Labels Guide*, which is available from Lexmark.

Print Material Characteristics

Print material characteristics affect print quality and reliability. The following terms define different print material characteristics, and are recommended when choosing new paper stock for your printer.

Weight

The printer automatically feeds paper weights from 70 to 199 g/m² (18 to 110 lb bond). For best performance, use 75 g/m² (20 lb bond) grain long paper. See “Print Materials” on page 108 for more information about paper weights that you can use with your printer.

Curl

Curl is the tendency of paper to curve at its edges. Excessive curl can cause paper feeding problems. Storing paper unwrapped in humid conditions, even in the input tray, manual feed slot, or optional tray 2, can contribute to paper curling.

Smoothness

The degree of smoothness of paper directly affects print quality. If the paper is too rough, the ink may not adhere to the paper properly, resulting in poor print quality. If the paper is too smooth, it can cause paper feeding problems in the printer. Smoothness should be between 100 and 400 Sheffield points. Smoothness between 100 and 250 Sheffield points produces the best print quality.

Moisture Content

The amount of moisture in the paper affects both print quality and paper feeding reliability. To limit the exposure of paper to moisture changes, leave the paper in its original wrapper until you are ready to use it. See “Storing paper” on page 112 for more information.

Grain Direction

Grain refers to the alignment of the paper fibers in a sheet of paper. Grain is either *grain long*, running the length of the paper; or *grain short*, running the width of the paper.

Use grain long fibers for 60 to 176 g/m² (16 to 47 lb bond) paper.
Use grain short fibers for papers heavier than 176 g/m² (47 lb bond).

Fiber Content

Most high-quality xerographic paper is made from 100% chemically pulped wood. This content provides the paper with a high degree of stability that results in fewer paper feeding problems and better print quality.

Paper Guidelines

When choosing any papers, consider the weight, fiber content, and color of the paper. Check with the manufacturer or vendor to determine whether the paper you've chosen is acceptable for inkjet printers.

Note: Always print samples on the paper you are considering before buying large quantities.

To avoid paper jams or poor print quality:

- Always use new, undamaged paper.
- Do not use paper that you have cut or trimmed yourself.
- Do not mix paper sizes, weights, or types in the same paper source. Mixing print materials results in paper jams.

Recommended Papers

For the best print quality, use 75 g/m² (20 lb) xerographic paper. Use grain long paper for the best results. Coated papers are recommended for color printing and black graphics.

The following papers can be used with your printer:

- Bond papers
- Dual purpose papers
- Xerographic papers
- Recycled papers
- Coated papers (for color printing)

Preprinted Forms and Letterhead

Use the following guidelines when selecting preprinted forms and letterhead paper for the printer:

- Use grain long papers for best results.
- Use only forms and letterhead printed using an offset lithographic or engraved printing process.
- Choose papers that absorb ink, but do not bleed.
- Avoid papers with rough or heavily textured surfaces.

Unsatisfactory Papers

The following papers are not recommended for use with your printer:

- Some chemically treated papers used to make copies without carbon paper, also known as carbonless papers
- Multiple-sheet forms or documents
- Preprinted papers with chemicals that may contaminate the printer
- Rough-edged or curled papers
- Synthetic papers
- Thermal papers

Storing paper

Use the following guidelines for proper paper storage:

- For best results, store paper in an environment where the temperature is approximately 21°C (70°F) and the relative humidity is 40%.
- Store cartons of paper on a pallet or shelf, rather than directly on the floor.
- If you store individual packages of paper, make sure they rest on a flat surface so the edges do not buckle or curl.
- Do not place anything on top of the paper packages.

Envelope Guidelines

For best performance, use envelopes made from 75 g/m² (20 lb bond) paper. In general, the papers used in envelopes designed for use with xerographic printers and copiers give the best results.

Envelopes from 75 g/m² (20 lb bond) to 105 g/m² (28 lb bond) paper can be fed through the manual paper feeder. The following envelope types can be fed through the manual feed slot:

- Booklet envelopes
- Baronial envelopes
- Bankers flap envelopes
- Catalogue envelopes
- Drug envelopes

To minimize jams, do *not* use envelopes that:

- Have excessive curl or twist.
- Are stuck together.
- Are damaged in any way.
- Contain windows, holes, perforations, cutouts, or embossing.
- Use metal clasps, string ties, or metal folding bars.
- Have an interlocking design.
- Have postage stamps attached.
- Have nicked edges or bent corners.
- Have rough, cockle, or laid finishes.
- Have exposed flap adhesive when the flap is in the sealed or closed position.
- Have rough or heavily textured surfaces.

Label Guidelines

Labels automatically feed from the standard input tray or the optional tray 2. Some brands of labels may require manual feeding. Label size is limited to letter-size and A4-size. Acrylic-based labels are preferred.

When printing on labels:

- Do *not* use label sheets with a slick backing material.
- Do *not* print within 1 mm (0.040 in.) of the die cut.
- Use full label sheets. Partial sheets may cause labels to peel off during printing, resulting in a paper jam.
- Do *not* print within 1 mm (0.040 in.) of the edge of the label, of the perforations, or between die-cuts of the label.
- Do not use label sheets that have adhesive to the edge of the sheet. We recommend zone coating of the adhesive at least 1 mm (0.040 in.) away from edges. Adhesive material will contaminate your printer and could void your warranty.
- If zone coating of the adhesive is not possible, a 3 mm (0.125 in.) strip should be removed on the leading and driver edge, and a non-oozing adhesive should be used.
- If the labels are vinyl, remove a 3 mm (0.125 in.) strip from the leading edge to prevent labels from peeling inside the printer.
- Portrait orientation is preferred, especially when printing bar codes.
- If the printer is unplugged or loses power while printing labels, the labels should be removed manually before plugging the printer back in.

For detailed information on label printing, characteristics, and design, refer to the *Card Stock & Labels Guide*, which is available from Lexmark.

Note: When printing on labels, be sure to select **Labels** in the **PAPER TYPE** menu in the **PAPER MENU**.

Card Stock Guidelines

Card stock is single ply, and has a large array of properties, such as the orientation of paper fibers, moisture content, thickness, and texture, that can significantly affect the print quality. See page 108 for information on the preferred weight of print materials.

When printing on card stock:

- Do *not* use preprinted card stock. Preprinting introduces semi-liquid and volatile components in the printer.
- Do *not* use card stock that is perforated or creased. It may cause paper jams.

Notes:

- When printing on card stock, be sure to select **Card Stock** in the **PAPER TYPE** menu in the **PAPER MENU**.
- Index cards measuring 76.2 x 127 mm (3 x 5 in.) should be fed through the manual feed slot or optional tray 2.

For more information, refer to the *Card Stock & Labels Guide*, which is available from Lexmark.

Transparency Guidelines

Transparencies automatically feed from the standard input tray or the optional tray 2. Some brands of transparencies may require manual feeding. Print quality and durability depends on the transparency used. Transparency size is limited to letter-size and A4-size.

When printing on transparencies:

- Use only specially coated transparencies specifically designed for use in inkjet printers.
- Try a sample of any transparencies you are considering using with the printer before buying large quantities.
- Do not use transparencies with paper backing sheets.

- Drying time for ink on a transparency may be long, requiring special precaution when removing the page from the printer. Therefore, do not touch the printed surface and when printing multiple sheet jobs. If you have a problem with smearing, remove each sheet from the output bin before the next sheet enters.
- To prevent print quality problems, avoid getting fingerprints on the transparencies.
- Before loading transparencies, fan the stack to prevent sheets from sticking.

Note: When printing on transparencies, be sure to select **Transparency** in the **PAPER TYPE** menu in the **PAPER MENU**.

Paper Handling Specifications

The following table gives details about the print material you can load in each of the printer paper sources. See page 107 for an illustration that shows all the standard and optional paper sources. For more information about specific print materials that you can use, see “Print Materials” on page 108.

The table on page 118 gives information about the capacity of the output bin.

The tables beginning on page 119 list all the paper and envelope sizes your printer supports.

Notes:

- See “Loading the Input Tray” on page 121 for information on using the standard input tray.
- See “Loading Paper in the Manual Feed Slot” on page 126 for information on using the manual feed slot.
- See the *Optra Color 45 Tray 2 User’s Guide* for information on using the optional tray 2.

Paper Source

Source	Media	Width		Length		Capacity
		Min.	Max.	Min.	Max.	
Standard Input Tray	Paper ¹	148.5 mm (5.85 in.)	320 mm (12.6 in.)	210 mm (8.27 in.)	558.8 mm (22 in.) ²	150 Sheets
	Envelopes	98.5 mm (3.88 in.)	216 mm (8.5 in.)	190.5 mm (7.5 in.)	355.6 mm (14 in.)	10 Envelopes
	Transparencies	210 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	50 Transparencies
	Labels	210 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	50 Sheets
	Photo Paper	101.6 mm (4.0 in.)	216 mm (8.5 in.)	152.4 mm (6.0 in.)	297 mm (11.7 in.)	90 Sheets
	Greeting Card Paper	210 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	80 Sheets
	Card Stock	100 mm (3.94 in.)	216 mm (8.5 in.)	148 mm (5.83 in.)	297 mm (11.7 in.)	15 Cards
Optional Tray 2	Paper ¹	148.5 mm (5.85 in.)	216 mm (8.5 in.)	210 mm (8.27 in.)	355.6 mm (14 in.)	100 Sheets
	Envelopes	98.5 mm (3.88 in.)	216 mm (8.5 in.)	190.5 mm (7.5 in.)	355.6 mm (14 in.)	10 Envelopes
	Transparencies	98.5 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	25 Transparencies
	Labels	98.5 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	25 Sheets
	Photo Paper	101.6 mm (4.0 in.)	216 mm (8.5 in.)	152.4 mm (6.0 in.)	297 mm (11.7 in.)	90 Sheets
	Greeting Card Paper	98.5 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	80 Sheets
	Card Stock	101.6 mm (4.0 in.)	216 mm (8.5 in.)	152.4 mm (6.0 in.)	297 mm (11.7 in.)	10 Cards

¹ Paper includes: xerographic paper, bond paper, dual purpose paper, recycled paper, and coated paper. For more information on the weight of print materials, see page 108.

² 450 mm (17.72 in.) is the longest length of paper that fits in the standard input tray when the length guide is extended fully. You may feed longer length paper through the printer if you load it so the end drapes over the length guide.

Note: Feed 3.0 x 5.0 in. (76.2 x 127 mm) index cards through the manual feed slot.

Source	Media	Width		Length		Capacity
		Min.	Max.	Min.	Max.	
Manual Feed Slot	Paper ¹	148.5 mm (5.85 in.)	320 mm (12.6 in.)	210 mm (8.27 in.)	558.8 mm (22 in.)	1 Sheet
	Envelopes	98.5 mm (3.88 in.)	216 mm (8.5 in.)	190.5 mm (7.5 in.)	355.6 mm (14 in.)	1 Envelope
	Transparencies	210 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	1 Transparency
	Labels	210 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	1 Sheet
	Photo Paper	101.6 mm (4.0 in.)	216 mm (8.5 in.)	152.4 mm (6.0 in.)	297 mm (11.7 in.)	1 Sheet
	Greeting Card Paper	210 mm (8.3 in.)	216 mm (8.5 in.)	279 mm (11.0 in.)	297 mm (11.7 in.)	1 Card
	Card Stock	76.2 mm (3.0 in.)	216 mm (8.5 in.)	127 mm (5.0 in.)	297 mm (11.7 in.)	1 Card

¹ Paper includes: xerographic paper, bond paper, dual purpose paper, recycled paper, and coated paper. For more information on the weight of print materials, see page 108.
 Note: Feed 3.0 x 5.0 in. (76.2 x 127 mm) index cards through the manual feed slot.

Output Bin

The following table gives the different print material capacities of the output bin:

Media Type	Capacity
Paper ¹	50 Sheets
Envelopes	15 Envelopes
Labels	10 Sheets
Photo Paper	60 Sheets
Greeting Card Paper	55 Sheets
Card Stock	15 Cards

¹ Paper includes: xerographic paper, bond paper, dual purpose paper, recycled paper, and coated paper.

Paper Size

The following table lists the paper sizes that you can use with your printer. To change the size of print material that you are using, choose **PAPER SIZE** from the **Paper Menu**.

Note: If you use a paper size not listed, select the next larger size in the Paper Size Menu.

Paper Size Name	Dimensions
A3	297 x 420 mm (11.69 x 16.54 in.)
A4 ¹	210 x 297 mm (8.27 x 11.69 in.)
A5	148.5 x 210 mm (5.85 x 8.27 in.)
B5	182 x 257 mm (7.17 x 10.12 in.)
Executive	184.2 x 266.7 mm (7.25 x 10.5 in.)
Legal	215.9 x 355.6 mm (8.5 x 14 in.)
Letter ¹	215.9 x 279.4 mm (8.5 x 11 in.)
Universal ²	320 x 558.8 mm (12.6 x 22 in.)
11 x 17	279.4 x 431.8 mm (11 x 17 in.)
¹ These print materials can only be loaded in landscape orientation in the standard input tray. ² Select this value when you're using a non-standard size sheet of print material. The printer formats the page for the maximum size 320 x 558.8 mm (12.6 x 22 in.). Set the actual size from your software application.	

Envelope Size

The following table lists the envelope sizes that you can use with your printer. Envelopes can be fed either manually or automatically.

Envelope Size Name	Dimensions
7¼ Envelope	98.4 x 190.5 mm (3.875 x 7.5 in.)
9 Envelope	98.4 x 225.4 mm (3.875 x 8.9 in.)
10 Envelope	104.8 x 241.3 mm (4.12 x 9.5 in.)
B5 Envelope	176 x 250 mm (6.93 x 9.84 in.)
C5 Envelope	162 x 229 mm (6.38 x 9.01 in.)
DL Envelope	110 x 220 mm (4.33 x 8.66 in.)
Other Envelope ¹	215.9 x 355.6 mm (8.5 x 14 in.)
¹ Select this value when you are using a non-standard size envelope. The printer formats the page for the maximum size, 215.9 x 355.6 mm (8.5 x 14 in.). Set the actual size from your software application.	

Paper Loading

Proper paper loading helps prevent paper jams and helps make your printing trouble-free.

Do not remove the input tray or the optional tray 2 during a print job or while **Busy** displays on the operator panel. Doing so may cause a paper jam.

Before loading paper, you need to know the recommended print side of the paper you're using. This information is usually indicated on the paper package.

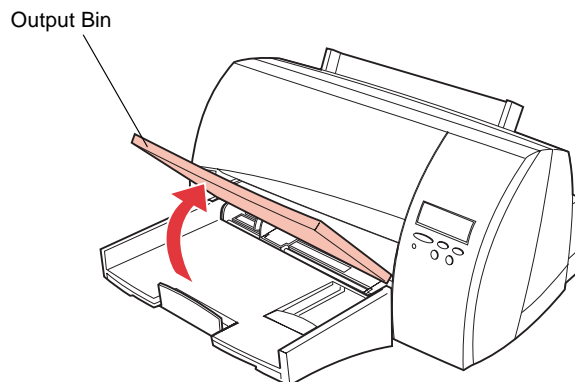
Loading the Input Tray

Your printer has one standard input tray that can hold up to 150 sheets of letter-size paper. For information on other paper sizes that you can use with your printer, see "Print Materials" on page 108.

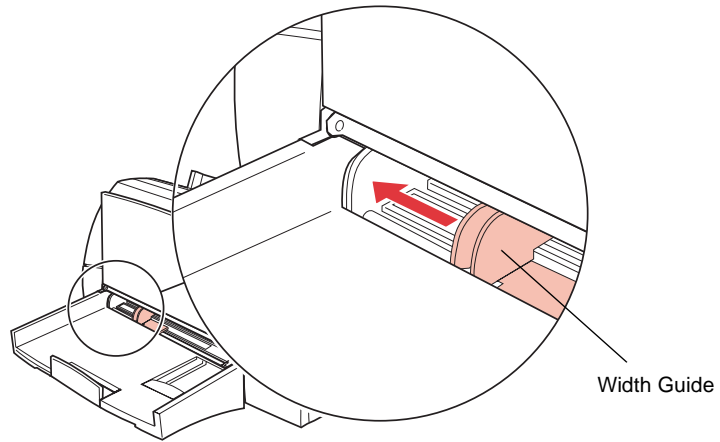
For information about printing on large paper, see "Printing on Large-size Paper" on page 139.

To load paper:

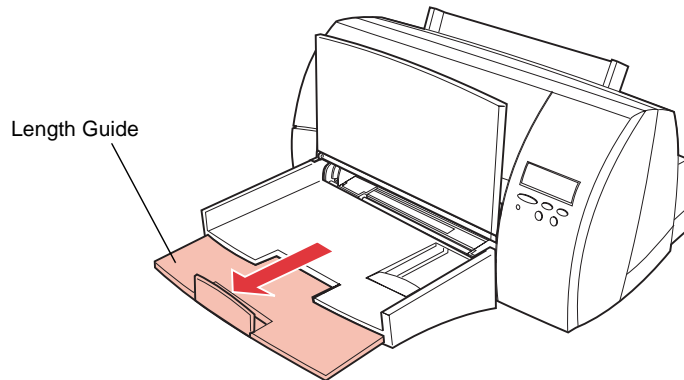
- 1** Lift the output bin.



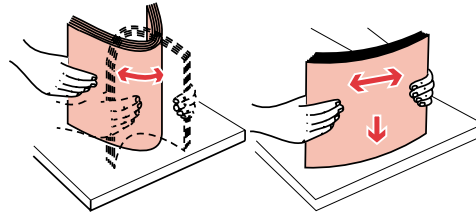
- 2** Squeeze the width guide lever and slide it to the far left side of the tray.



- 3** Slide the length guide out toward you.



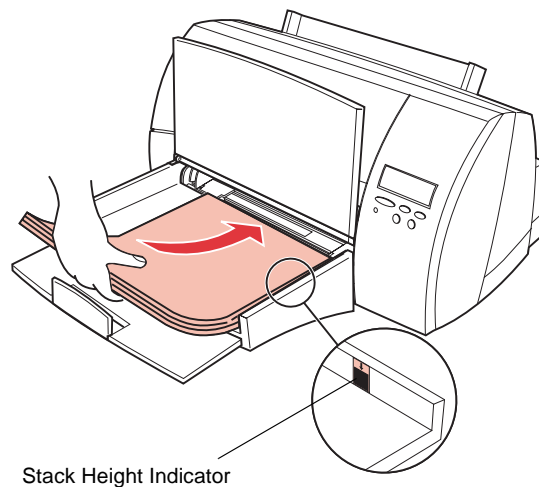
- 4** Flex the sheets back and forth to loosen them, then fan them. Do not fold or crease the paper. Straighten the edges on a level surface.



Note: For this setup, load letter-size paper.

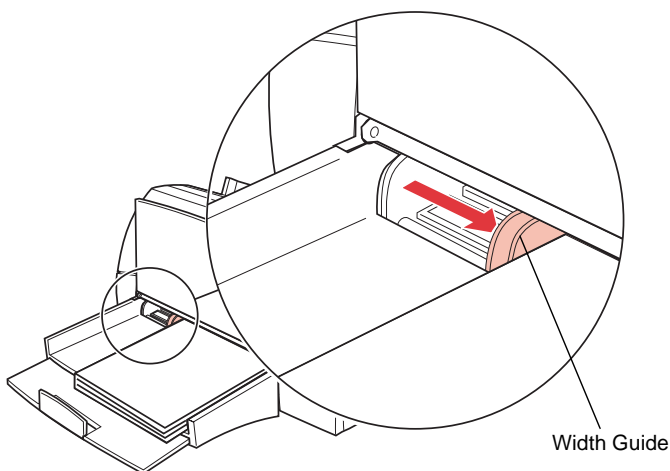
- 5** Place the print material against the right side of the input tray with the recommended print side face down and the top edge going in first toward the back of the input tray as shown.

For information on how to load letterhead, see “Printing on Letterhead” on page 141.



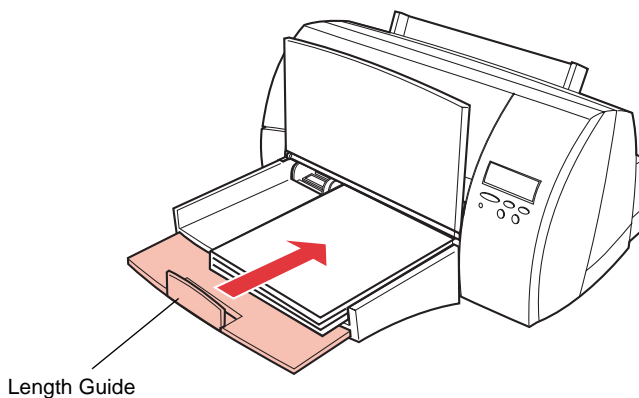
Note: Do not exceed the maximum stack height indicated by the arrow on the right side of the input bin.

- 6** Squeeze the width guide lever and slide it to the right until it touches the edge of the paper.

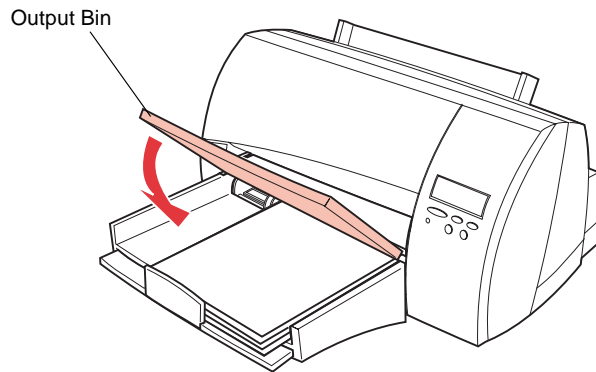


Note: This example shows how to adjust for letter-size paper (LTR). The paper size indicators, printed on the top surface of the bin, are paper size abbreviations used for placement of the length and width guides.

- 7** Slide the length guide up until it touches the bottom edge of the paper.



8 Lower the output bin.



Note: If you are loading oversize paper, you must extend the paper stop on the output bin. See “Printing on Large-size Paper” on page 139 for more information.

Loading Paper in the Manual Feed Slot

Your printer has one standard manual feed slot that lets you feed sheets of print material *manually one sheet at a time*. You can use the manual feed slot to print on a different type of print material without removing the paper in the paper tray, or to print on heavy weight print materials that will not feed through the standard input tray or the optional tray 2.

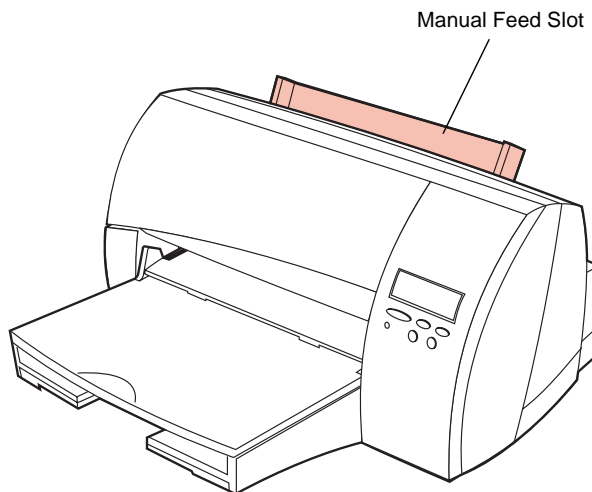
For information on the types of print materials that you can use with the manual feed slot, see “Print Materials” on page 108.

For information about printing on large paper, see “Printing on Large-size Paper” on page 139.

The printer automatically detects when print material is placed in the manual feed slot, and uses the manual feed slot as the paper source.

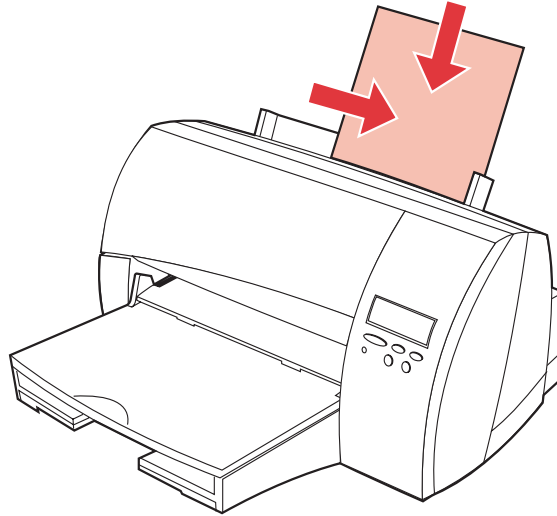
To use the manual feed slot:

- 1** Locate the manual feed slot on the back of the printer.



- 2** Place a single sheet of print material face up with the side of the print material aligned against the right side of the manual feed slot as shown.

For information about printing on letterhead, see page 141.



Note: Feed only one sheet of print material at a time. If you try to load more than one sheet, the printer may attempt to feed all of the print material through the paper path, causing a paper jam or damaging the printer.

- 3** Slide the sheet of print material as far as it will go into the manual feed slot.

If you do not insert the print material far enough into the manual feed slot, it may skew or not feed at all.

- 4** Send your job to print.

Note: Remove each transparency or sheet of glossy paper from the output bin before the next one is printed if you have a problem with the ink smearing.

If you are printing multiple jobs from the manual feed slot, you may want to change the **Paper Source** setting to **Manual Paper**.

See “Using the Operator Panel and Menus” on page 49 for more information about using the printer operator panel and changing settings from the menus.

To use the manual feed slot to print multiple jobs:

1 Change the **Paper Source** setting to **Manual Paper** by completing the following steps.

- a** Press **Menu>** or **<Menu** to enter the menus.
- b** Continue to press and release **Menu>** until you see **PAPER MENU**.
- c** Press **Select**.

PAPER MENU appears on the first line of the operator panel display and **Paper Source** is on the second.

- d** Press **Select** to select **Paper Source**.

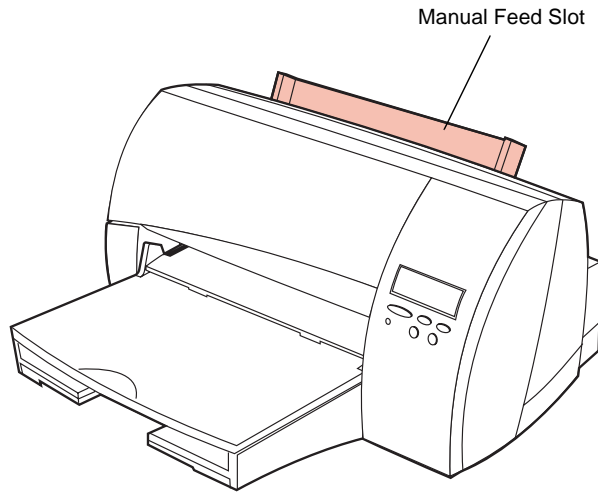
Paper Source appears on the first line of the operator panel display and **Tray 1*** is on the second.

- e** Press **Menu>** until **Manual Paper** appears on the second line of the operator panel display.
- f** Press **Select** to select **Manual Paper**.

2 Send your job to print.

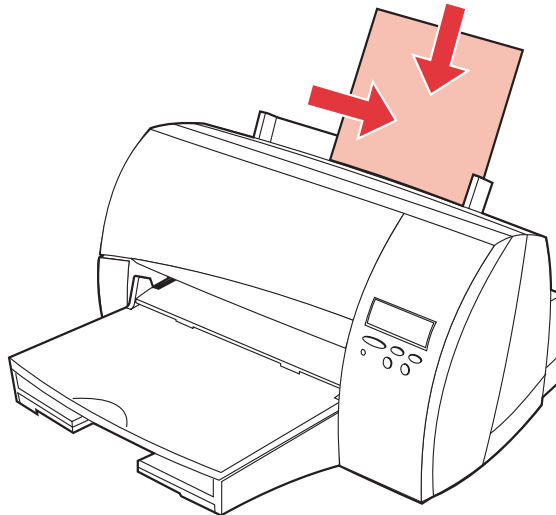
The message **Load Manual Plain Paper** appears and remains on the operator panel display until you load a sheet of print material in the manual feed slot.

- 3** Locate the manual feed slot on the back of the printer.



- 4** Place a single sheet of print material face up with the side of the print material aligned against the right side of the manual feed slot as shown.

For information about printing on letterhead, see page 141.



Note: Feed only one sheet of print material at a time. If you try to load more than one sheet, the printer may attempt to feed all of the print material through the paper path, causing a paper jam or damaging the printer.

5 Slide the sheet of print material as far as it will go into the manual feed slot.

If you do not insert the print material far enough into the manual feed slot, it may skew or not feed at all.

6 Press **Go**.

Notes:

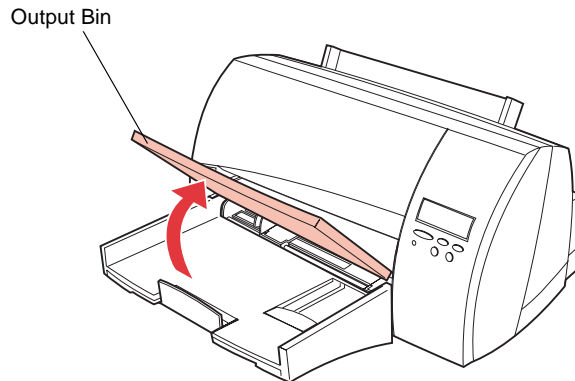
- Remember to change the **Paper Source** setting back to **Tray 1** when you are finished using the manual feed slot.
- Remove each transparency or sheet of glossy paper from the output bin before the next one is printed if you have a problem with the ink smearing.

Loading Envelopes in the Input Tray

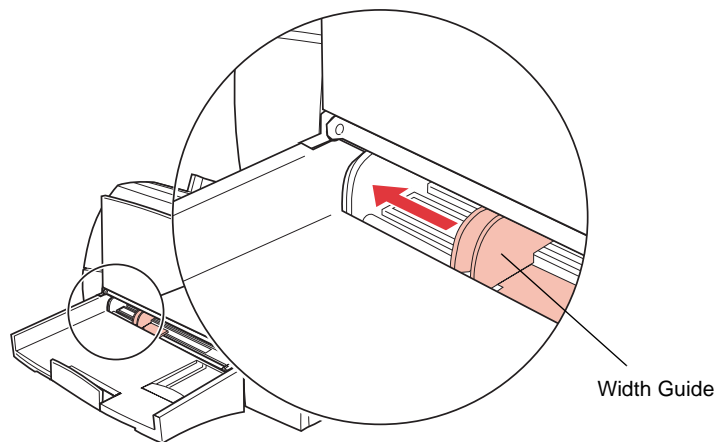
Your printer has one standard input tray that can hold up to 10 envelopes. For information on how to load envelopes in the manual feed slot, see “Loading Envelopes in the Manual Feed Slot” on page 135.

To load envelopes:

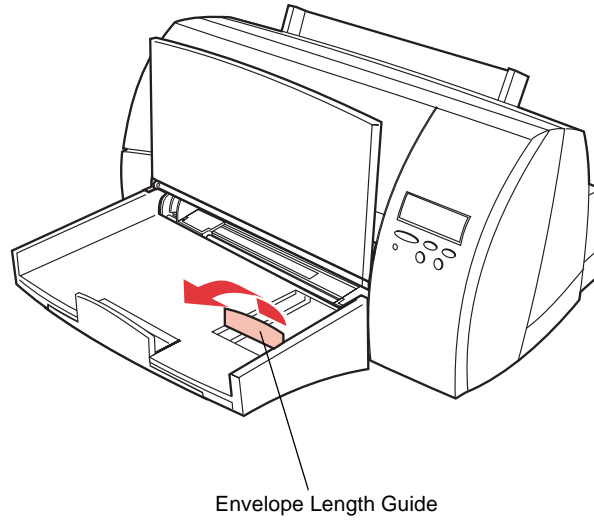
- 1** Lift the output bin.



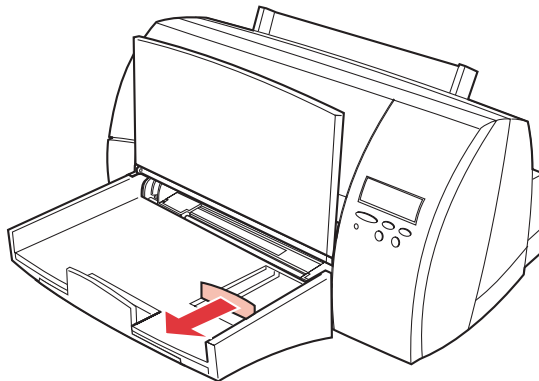
- 2** Squeeze the width guide lever and slide it to the far left side of the tray.



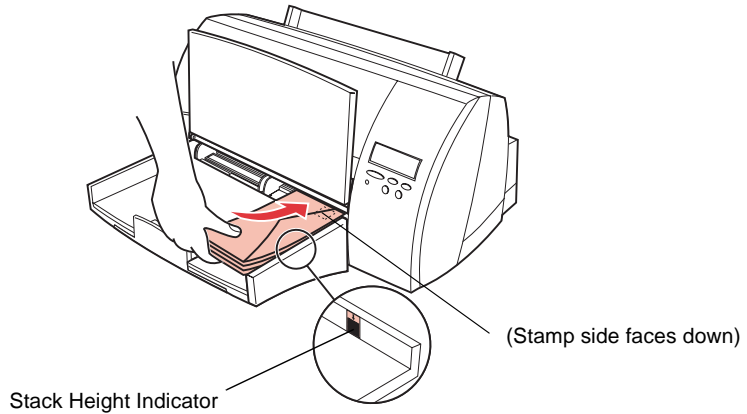
- 3** Remove all print material from the input tray.
- 4** Lift the envelope length guide.



- 5** Slide the envelope length guide toward you.

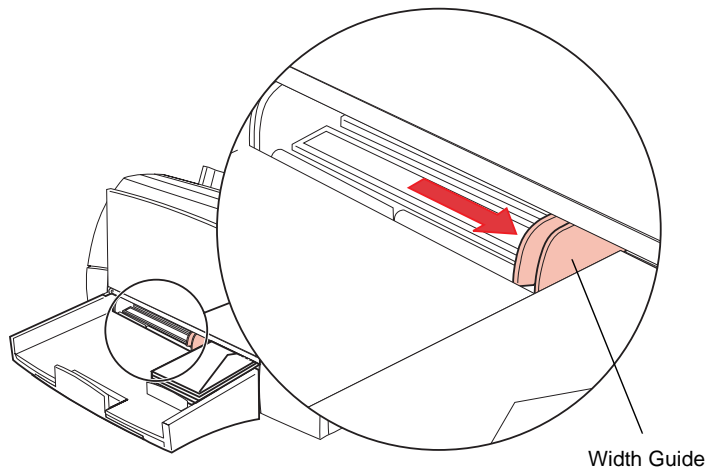


- 6** Place the envelopes against the right side of the input tray with the print side face down and the stamp edge going in first toward the back of the input tray as shown.

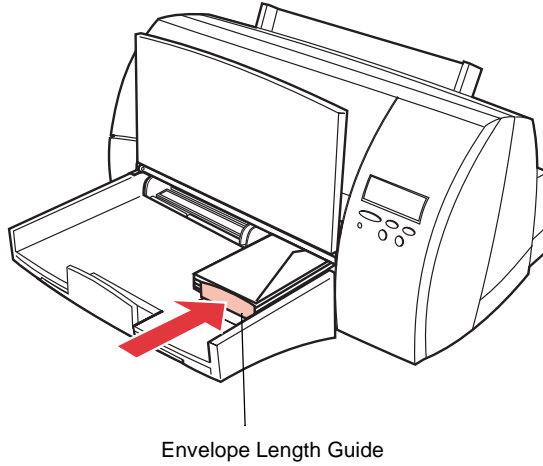


Notes:

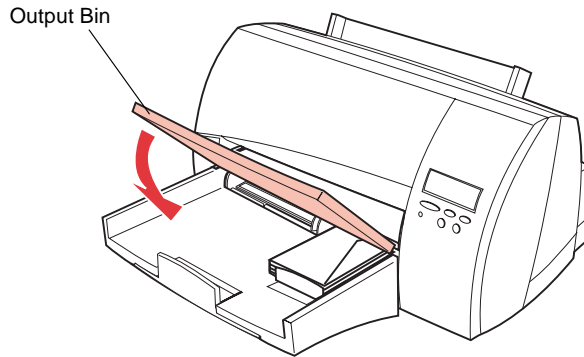
- Do not feed stamped envelopes into the printer. The stamp is shown for placement only.
 - Do not exceed the maximum stack height indicated by the arrow on the right side of the input bin.
- 7** Squeeze the width guide lever and slide it to the right until it touches the edge of the envelopes.



- 8 Slide the envelope length guide up until it touches the bottom edge of the envelopes.



- 9 Lower the output bin.



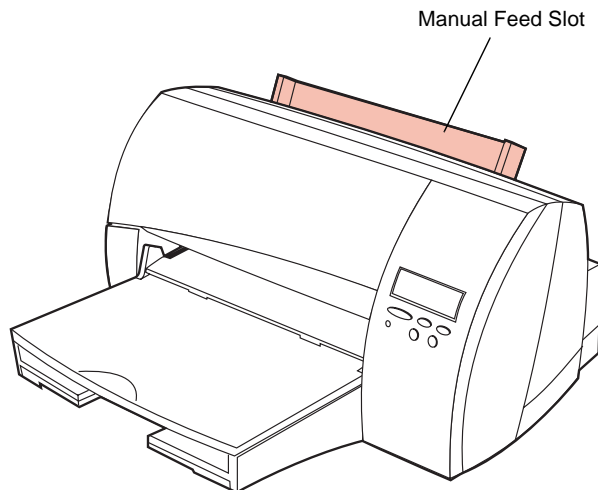
Loading Envelopes in the Manual Feed Slot

Your printer has one standard manual feed slot that lets you feed envelopes *manually one at a time*. You can use the manual feed slot to print on envelopes without removing the print material in the input tray or the optional tray 2.

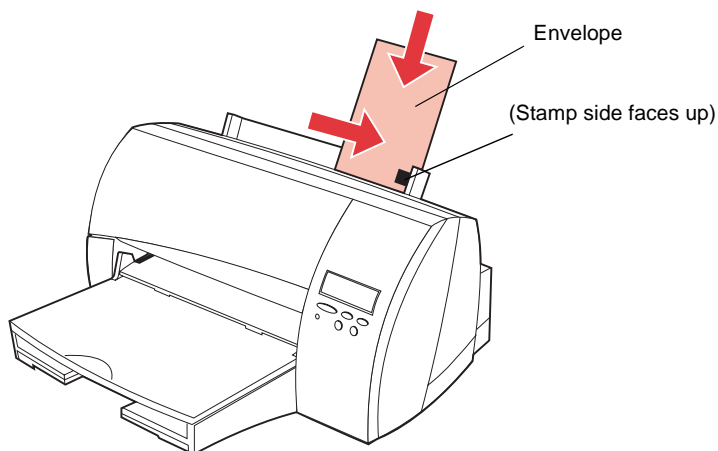
The printer automatically detects when an envelope is placed in the manual feed slot, and uses the manual feed slot as the paper source. If you are printing multiple jobs from the manual feed slot, change the **Paper Source** setting to **Manual Paper**. See “Using the Operator Panel and Menus” on page 49 for more information about using the printer operator panel and changing settings from the menus.

To use the manual feed slot:

- 1** Locate the manual feed slot on the back of the printer.



- 2** Place a single envelope face up with the long side aligned against the right side of the manual feed slot as shown.



Notes:

- Feed only one envelope at a time. If you try to load more than one envelope, the printer may attempt to feed all of the envelopes through the paper path, causing a paper jam or damaging the printer.
- Do not feed a stamped envelope into the printer. The stamp is shown for placement only.

- 3** Slide the envelope as far as it will go into the manual feed slot.

If you do not insert the envelope far enough into the manual feed slot, it may skew or not feed at all.

- 4** Send your job to print.

If you are printing multiple jobs from the manual feed slot, you may want to change the **Paper Source** setting to **Manual Env**.

See “Using the Operator Panel and Menus” on page 49 for more information about using the printer operator panel and changing settings from the menus.

To use the manual feed slot to print multiple jobs:

1 Change the **Paper Source** setting to **Manual Env** by completing the following steps.

- a** Press **Menu>** or **<Menu** to enter the menus.
- b** Continue to press and release **Menu>** until you see **PAPER MENU**.
- c** Press **Select**.

PAPER MENU appears on the first line of the operator panel display and **Paper Source** is on the second.

- d** Press **Select** to select **Paper Source**.

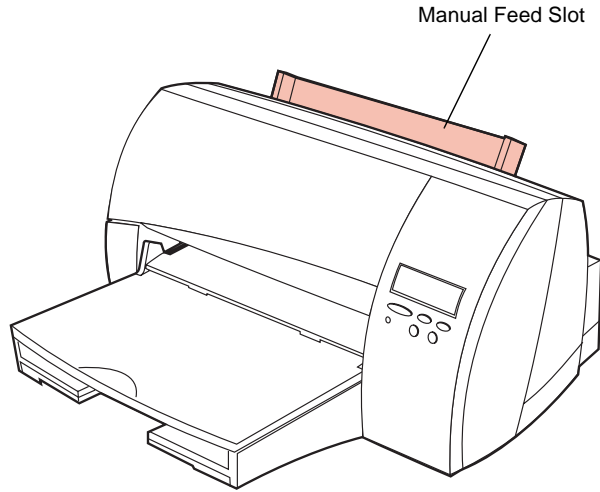
Paper Source appears on the first line of the operator panel display and **Tray 1*** is on the second.

- e** Press **Menu>** until **Manual Env** appears on the second line of the operator panel display.
- f** Press **Select** to select **Manual Env**.

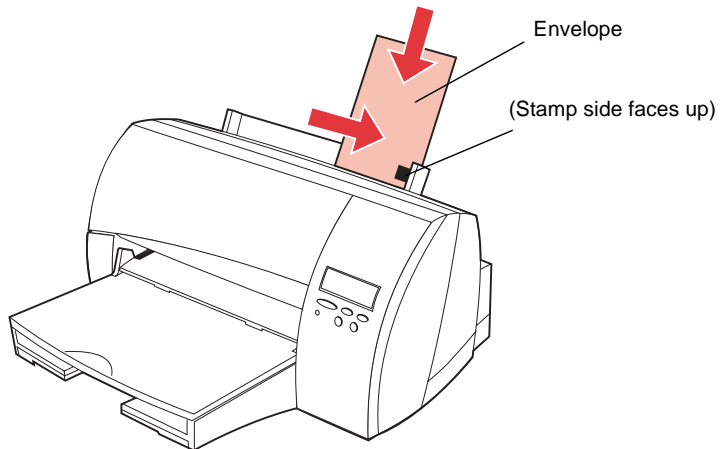
2 Send your job to print.

The message **Load Manual Plain Envelope** appears and remains on the operator panel display until you load an envelope in the manual feed slot.

- 3** Locate the manual feed slot on the back of the printer.



- 4** Place a single envelope face up with the long side aligned against the right side of the manual feed slot as shown.



Notes:

- Feed only one envelope at a time. If you try to load more than one envelope, the printer may attempt to feed all of the envelopes through the paper path, causing a paper jam or damaging the printer.
- Do not feed a stamped envelope into the printer. The stamp is shown for placement only.

5 Slide the envelope as far as it will go into the manual feed slot.

If you do not insert the envelope far enough into the manual feed slot, it may skew or not feed at all.

6 Press Go.

Note: Remember to change the **Paper Source** setting back to **Tray 1** when you finish using the manual feed slot.

Printing on Large-size Paper

Occasionally, you may need to print on print materials larger than letter-size or legal-size paper. To change the size of print material that you are using, choose **PAPER SIZE** from the **Paper Menu**. If you use a paper size not listed, select the next larger size in the Paper Size Menu.

See “Using the Operator Panel and Menus” on page 49 for more information about using the printer operator panel and changing settings from the menus.

For information on the types of print materials that you can use, see “Print Materials” on page 108.

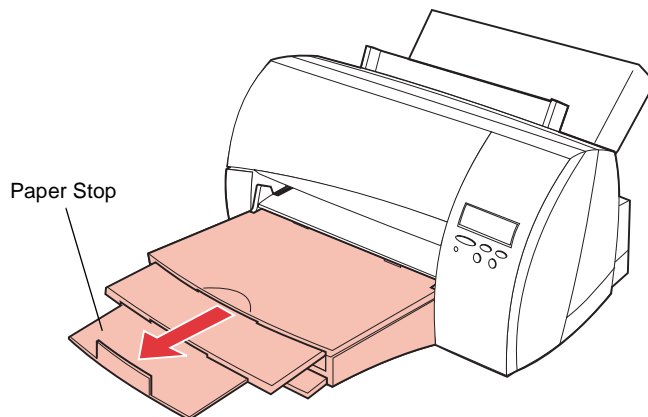
To print on large-size paper:

1 Place the print material in your printer.

You can load oversize paper in the input tray or the manual feed slot the same way as you load letter-size or legal-size print material.

- For information on how to load print material in the standard input tray, see “Loading the Input Tray” on page 121.
- For information on how to load print material in the manual feed slot, see “Loading Paper in the Manual Feed Slot” on page 126.
- For information on how to load print material in the optional tray 2, refer to the *Optra Color 45 Tray 2 User’s Guide*.

2 Fully extend the paper stop on the output bin.



Note: Make sure you fully extend the paper stop on the output bin. Otherwise, large-size paper may back up into the printer and cause a paper jam.

3 Send your job to print.

Printing on Letterhead

Preprinted letterhead must be acceptable for use with your printer. Check with the manufacturer or vendor to determine whether the letterhead you've chosen is acceptable for inkjet printers.

Page orientation is important when printing on letterhead. Refer to the following table for help when loading letterhead in the paper sources.

Paper Source	Place Print Side...	Place Leading Edge...
Standard Input Tray	Down	In First
Manual Feed Slot	Up	In First
Optional Tray 2	Up	In First

Tray Linking

Tray linking is a printer feature that is available if the optional tray 2 is installed. Tray linking enables the automatic linking feature for the paper sources, allowing you to print from one paper source should the other one become empty.

For example, if you have letter-size print material loaded in the standard input tray and the optional tray 2, and the input tray becomes empty, the printer selects print material from tray 2.

Note: If you load the same size print material in each paper source, make sure the print material is all the same type. If you use different print material in the paper sources, each source with a different print material must have the PAPER TYPE set to a unique value to disable the automatic linking feature. For example, if you did not make sure all paper sources have the same type when they are linked, you could send a report to print and if you have letterhead paper loaded into one paper source, you could print the report on letterhead paper.

Tips for Avoiding Paper Jams

By carefully selecting print materials and loading them properly, you should be able to avoid most paper jams. If jams do occur, follow the steps outlined in “Clearing Jams” starting on page 175. If jams occur frequently, make sure you are following these tips to avoid jams.

- Follow the procedures in “Paper Loading” on page 121 to load paper properly. Make sure the adjustable guides on the input tray are in the correct position.
- Do not overload the input tray or the optional tray 2. Make sure the paper is under the paper capacity mark on the inside of the input tray.
- When using the manual feed slot, feed only one sheet of print material at a time.
- Do not remove the input tray or the optional tray 2 while printer is printing.
- Flex, fan, and straighten the paper before loading it.
- Fan stacks of labels or transparencies before loading them. If jams do occur, try manually feeding the print material one sheet at a time.
- Do not load wrinkled, creased, damp, or highly curled paper.
- Do not mix paper types in the same paper source.
- Use only recommended print materials. See “Print Materials” on page 108.
- Make sure the recommended print side is face down for printing from the standard input tray.
- Make sure the recommended print side is face up for printing from the optional tray 2 or the manual feed slot.
- When printing on large-size paper, make sure the paper stop on the output bin is fully extended.
- Keep print materials stored in an acceptable environment. See “Moisture Content” on page 110.

Caring for Your Printer



Understanding Printer Messages

Chapter 5

This chapter describes the various messages that may appear on your printer operator panel display. Status messages give information about the current state of the printer. Attendance messages indicate printer errors that you must resolve. Service messages indicate printer failures that may require servicing.

Status Messages

The first line (line 1) on the display provides information on the current state or status of the printer, as shown in the table beginning on page 146. However in some cases, a message is long enough that it requires both lines to display the entire message. Usually, the second line (line 2) on the display provides additional information about printer status. See “Line 2 Messages” on page 152.

Line 1 Messages

Status Message	Meaning and Actions Allowed While Message Displays
Activating Menu Changes	<p>The printer is being reset to activate a printer setting change. No button actions are possible while this message displays.</p>
Busy	<p>The printer is busy receiving, processing, or printing data. The printer indicator light blinks while the printer is processing data.</p> <p>The display shows one of the following items on line 1 while the printer processes data:</p> <ul style="list-style-type: none"> • a PjL RDYMSG, if it is defined • a Network Printing Alliance (NPA) protocol job name if one is defined • the printer language <p>Note: If you use the PjL RDYMSG command, a customized message may display instead of Busy.</p> <ul style="list-style-type: none"> • Press Stop to take the printer out of the Busy state. The Not Ready message displays. No more data is processed, but the printer processes all paper currently in the printer paper path. Press Go to return to Busy. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
Clearing Job Accounting Stat	<p>The printer is deleting all job statistics stored on the hard disk option. No button actions are possible while this message displays.</p>
Files will be Lost. Go/Stop?	<p>This message displays when you change the Job Buffer Size setting on the operator panel. The printer must reformat the hard disk option. The message asks for confirmation to continue and erase all files on the hard disk option.</p> <p>Press Go to continue. The hard disk option formats and the specified job buffer partition is created. The message Format Disk displays while the hard disk formats.</p> <p>Press Stop to cancel this operation.</p>

Status Message	Meaning and Actions Allowed While Message Displays
Flushing Buffer	The printer is flushing corrupted print data and discarding the current print job. No button actions are possible while this message displays.
Formatting Disk	The hard disk is formatting. No button actions are possible while this message displays. Note: Do not unplug the printer while this message displays.
Formatting Flash DO NOT POWER OFF	The flash memory is formatting. No button actions are possible while this message displays. Note: Do not unplug the printer while this message displays.
Invalid Font Data	This message displays when there is incompatibility between the printer and the font data stored in the flash memory option. The printer takes you to the Flash Font Data Mode which lets you program new, compatible font data in the flash memory option. You can also download font data while this message displays. When this message appears, the Ready and Busy messages do not display until new font data is programmed. No button actions are possible while this message displays.
Invalid Network 1 Code	This message displays if the code in the Internal Network Adapter (INA) option card has not been programmed or if the code is not valid. You can download network code while this message displays. When this message appears, the Ready and Busy messages do not display until valid code is programmed into the INA option card. No button actions are possible while this message displays.
Menus Disabled	The printer menus are disabled. This message appears when Menu> or <Menu is pressed while the printer is in the Ready state. See “Disabling the Operator Panel Menus” on page 57 for more information. No button actions are possible while this message displays.
Network Card Busy	The network adapter card is being reset. The Network 1 Setup menu item in the NETWORK MENU is not available while this message displays. No button actions are possible while this message displays.

Status Message	Meaning and Actions Allowed While Message Displays
<p>Not Ready</p>	<p>The printer is in the Not Ready state, which means it is not ready to receive or process data.</p> <ul style="list-style-type: none"> • Press Go to take the printer out of the Not Ready state. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
<p>Performing Self Test</p>	<p>The printer is running the normal series of start-up tests after it is plugged in. When the tests complete, the printer returns to the Ready state.</p> <p>No button actions are possible while this message displays.</p>

Status Message	Meaning and Actions Allowed While Message Displays
Printing Directory List	The printer is processing or printing a directory of all files stored in the flash memory option or on the hard disk option.
Printing Font List	The printer is processing or printing a list of all available fonts for the selected printer language.
Printing Job Accounting Stat	The printer is processing or printing the Job Accounting Statistics.
Printing Menu Settings	The printer is processing or printing a list of the user default settings and the installed options.
Printing Alignment Page	The printer is processing or printing a print cartridge alignment test page to verify the printhead alignment. The message displays until the function completes and the page prints. <ul style="list-style-type: none"> • Press Stop to take the printer offline. The Not Ready message displays. No more data is processed, but all paper in the printer paper path prints. Press Go to return to the Ready state. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.
Prog System Code DO NOT POWER OFF	The printer is programming new system code in the code SIMM card. This message displays until the programming is successfully completed. Then the system performs a power-on reset. No button actions are possible while this message displays. Note: Do not unplug the printer while this message displays.

Status Message	Meaning and Actions Allowed While Message Displays
Program Flash DO NOT POWER OFF	<p>The printer is storing resources, fonts or macros, in the flash memory option. If information is written to the flash memory option and to the hard disk option at the same time, the Program Flash message displays.</p> <p>No button actions are possible while this message displays.</p> <p>Note: Do not unplug the printer while this message displays.</p>
Programming Disk DO NOT POWER OFF	<p>The printer is storing resources, fonts or macros, on the hard disk option. If information is written to the flash memory option and to the hard disk option at the same time, the Program Flash message displays.</p> <p>No button actions are possible while this message displays.</p> <p>Note: Do not unplug the printer while this message displays.</p>
Ready	<p>The printer is ready to receive and process data.</p> <ul style="list-style-type: none"> • Press Menu> or <Menu to take the printer out of the Ready state and enter the menus. • Press Stop to take the printer offline. The Not Ready message displays, and no data is processed. Press Go to return the printer to the Ready state. <p>Note: If you use the PJL RDYMSG command, a customized message may display instead of Ready.</p>
Ready Hex	<p>The printer is ready and the Hex Trace mode is active. Hex Trace isolates the source of a print job problem. When Hex Trace is selected, all data sent to the printer prints in hexadecimal and character representation. Control codes print, but do <i>not</i> execute.</p> <ul style="list-style-type: none"> • Unplug the printer to exit Hex Trace. • Press Stop to take the printer offline. The Not Ready message displays, and no data is processed. Press Go to return the printer to the Ready state. • Reset the printer. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
Resetting the Printer	<p>The printer is deleting any print jobs in process and restoring all printer settings to user defaults.</p> <p>No button actions are possible while this message displays.</p>
Restoring Factory Defaults	<p>The printer is restoring factory defaults. See page 75 for details about which printer settings are affected.</p> <p>No button actions are possible while this message displays.</p>

Status Message	Meaning and Actions Allowed While Message Displays
Waiting	<p>The printer has received a page of data to print, but is waiting for an End of Job or Form Feed command or for additional data. Waiting displays until the Print Timeout occurs or additional data is received. The printer language appears on line 1 to the right of the Waiting message.</p> <ul style="list-style-type: none"> • Press Go to print the contents of the buffer. • Press Stop to take the printer out of the Waiting state. The Not Ready message displays. Press Go to return to Waiting. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
Canceling Job	The printer is processing a request to cancel the current print job.

Line 2 Messages

The following table lists messages that appear on the second line of the operator panel display. Line 2 messages give information about printer status.

If none of the following conditions exist, line 2 of the operator panel display is blank.

Status Message	Meaning
Infrared 1	The optional infrared interface is the active communication link.
LocalTalk 1	The optional LocalTalk interface is the active communication link.
Network 1	The optional network interface is the active communication link.
Parallel	The standard parallel interface is the active communication link.
Parallel 1	The optional parallel interface is the active communication link.
Serial 1	The optional serial interface is the active communication link.
Supplies	The ink supply in a print cartridge is low. This message displays until the cartridge is replaced.

Attendance Messages

Attendance messages indicate printer errors that you must resolve before you can continue printing. The messages are listed in numerical order.

Note: For paper jam errors, the entire paper path must be cleared of paper. See “Clearing Jams” on page 175 for more information.

Attendance Message	Meaning and Required Action
<p>30 Color Print Cart Missing</p> <p>30 Black Print Cart Missing</p> <p>30 Photo Print Cart Missing</p>	<p>The color print cartridge is missing or not properly installed in the print cartridge carrier.</p> <p>The black print cartridge is missing or not properly installed in the print cartridge carrier.</p> <p>The photo print cartridge is missing or not properly installed in the print cartridge carrier.</p> <p>Open the printer top cover and install the missing print cartridge in the appropriate slot. Check the print cartridge to make sure that it is properly installed in the print cartridge carrier. See “Installing Print Cartridges” on page 186 for more information.</p> <p>If print cartridges are properly installed in the printer, press Go to clear the message and attempt to print the job. However, this may result in poor print quality if the job is formatted for a different print cartridge.</p>
<p>35 Res Save Off Deficient Memory</p>	<p>The printer lacks the memory needed to enable Resource Save. This message usually indicates that too much memory is allocated for one or more of the printer link buffers.</p> <p>To enable Resource Save after this message displays:</p> <ul style="list-style-type: none"> • Install additional memory, <i>or</i> • Set the link buffer for each interface to Auto, and exit the menus to activate the link buffer changes. When Ready displays, enable Resource Save from the SETUP MENU. <p>To disable Resource Save and continue printing, press Go.</p>

Attendance Message	Meaning and Required Action
<p>37 Insufficient Collation Memory</p>	<p>The printer memory used to store pages is too full to collate the rest of the print job.</p> <ul style="list-style-type: none"> • Press Go to clear the message, print the portion of the job already in memory, and begin collating the rest of the job. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
<p>38 Memory Full</p>	<p>The printer is processing the job, but the memory used to store pages is full.</p> <ul style="list-style-type: none"> • Press Go to clear the message and continue printing the job. However, some data may not print or may not print correctly. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p> <p>After resetting the printer, reduce the complexity of the print job and send it to print again. To simplify the print job:</p> <ul style="list-style-type: none"> • Reduce the amount of text or graphics on a page. • Reduce the print resolution. • Delete unnecessary downloaded fonts or macros. <p>Install additional printer memory to avoid future Memory Full errors.</p>

Attendance Message	Meaning and Required Action
51 Defective Flash	<p>The printer detects a defective flash memory card. This message appears when you plug the printer in, or during format and write to flash operations.</p> <p>Press Go to clear the message and continue printing. You must install a different flash memory option before you can perform any flash memory operations.</p>
52 Flash Full	<p>There is not enough space in the flash memory option to store the data that was sent.</p> <ul style="list-style-type: none"> • Press Go to clear the message and continue processing. Downloaded fonts and macros not previously stored in flash memory are deleted. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
53 Unformatted Flash	<p>The printer detects an unformatted flash memory option. This message appears when you plug the printer in.</p> <p>You must format the flash memory option before you can perform any flash memory operations. To format the flash memory option, select Format Flash from the TESTS MENU.</p> <p>Press Go to clear the message and continue printing. If the error message remains, the flash memory option may be defective and need replacing.</p>

Attendance Message	Meaning and Required Action
<p>54 Serial Option 1 Error</p>	<p>The printer detects a serial interface error (framing, parity, or overrun). This usually indicates the serial port has not been set up correctly. When the serial error displays, the reporting of other serial errors is suppressed until interface parameters are changed or the printer is unplugged.</p> <p>Make sure the serial interface parameters (protocol, baud, parity, and data bits) are set up correctly, and you are using the correct serial cable.</p> <ul style="list-style-type: none"> • Press Go to clear the message and continue printing the job. The print job may not print correctly. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
<p>54 Parallel Error</p>	<p>The printer detects a protocol error on the parallel host interface. When the parallel error displays, the reporting of other interface errors is suppressed until interface parameters are changed or the printer is unplugged.</p> <p>Make sure the parallel interface parameters are set up correctly. Check the cable connection between the printer and the computer, and make sure the cable is not defective.</p> <ul style="list-style-type: none"> • Press Go to clear the message and continue printing the job. The print job may not print correctly. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>

Attendance Message	Meaning and Required Action
56 Serial 1 Port Port Disabled	<p>Data is sent to the printer across the serial port, but the serial port is disabled. When the serial error displays, the reporting of other serial errors is suppressed until the menus are entered, or the printer is reset.</p> <ul style="list-style-type: none"> • Make sure the Serial Buffer menu item in the SERIAL MENU is <i>not</i> set to Disabled. • Press Go to clear the message and continue printing. The printer discards any data received through the serial port. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
56 Parallel Port Disabled	<p>Data is sent to the printer across the parallel port, but the parallel port is disabled. When the error displays, the reporting of other errors is suppressed until the menus are entered, or the printer is reset.</p> <ul style="list-style-type: none"> • Make sure the Parallel Buffer menu item in the PARALLEL MENU is <i>not</i> set to Disabled. • Press Go to clear the message and continue printing. The printer discards any data received through the parallel port. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
61 Defective Disk	<p>The printer detects a defective hard disk option. This message appears when you plug the printer in, or during hard disk format or write operations.</p> <p>Press Go to clear the message and continue printing. You must install a different hard disk option before you can perform any hard disk operations.</p>

Attendance Message	Meaning and Required Action
<p>62 Disk Full</p>	<p>There is not enough space in the hard disk option to store the data that was sent.</p> <ul style="list-style-type: none"> • Press Go to clear the message and continue processing. Any information not previously stored in the hard disk option is deleted. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
<p>63 Unformatted Disk</p>	<p>The printer detects an unformatted hard disk option. This message appears when you plug the printer in.</p> <p>You must format the hard disk option before you can perform any hard disk operations. To format the hard disk option, select Format Disk from the TESTS MENU.</p> <p>Press Go to clear the message and continue printing. If the error message remains, the hard disk option may be defective and need replacing. Hard disk operations are not allowed until the defective disk is replaced and the new one is formatted.</p>
<p>70 - 79 messages</p>	<p>Reserved for messages relating to the internal network adapter (INA) option card.</p> <p>For more information, refer to the online documentation that comes with your printer. Also, see the documentation that comes with the INA option card.</p>
<p>88 Color Print Cartridge Low 88 Black Print Cartridge Low 88 Photo Print Cartridge Low</p>	<p>The color ink supply is low.</p> <p>The black ink supply is low.</p> <p>The photo ink supply is low.</p> <ul style="list-style-type: none"> • Press Go to clear the message and continue printing. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>

Attendance Message	Meaning and Required Action
200 Paper Jam	<p>The printer detects a paper jam. Open the top cover and remove the jammed print material. See “200 Paper Jam” on page 176 for more information.</p> <p>Press Go to clear the message and continue printing. The printer prints a new copy of the page that jammed if Jam Recovery is set to On or Auto; however, the Auto setting does not guarantee the page will print.</p>
900—979 Service messages	<p>These service messages indicate printer failures that may require service.</p> <p>When a service message occurs, the printer immediately stops printing. Unplug the printer, wait for about 10 seconds, and then plug the printer back in.</p> <p>If the service message recurs, call for service and report the message number and description of the problem.</p>

Attendance Message	Meaning and Required Action
<p>Change <tray> <type><size></p>	<p>The printer requests a different print material than what is loaded in the tray or set in the Paper Size or Paper Type menus.</p> <p>Line 1 displays the paper source <tray>, which is one of the following items:</p> <ul style="list-style-type: none"> • Tray 1 • Tray 2 <p>Note: Tray 2 only displays if the optional tray 2 is installed.</p> <p>Line 2 displays one of the following items:</p> <ul style="list-style-type: none"> • A user-defined name, for custom type 1 through 3. The name is truncated to 16 characters. Use the MarkVision utility to create custom type names. See "Using the Printer Utilities" on page 27 for more information. • <type><size>: The requested type <type> is a type other than a custom type. The type name is truncated to 16 characters. The requested size <size> of paper or envelope displays. The size name is truncated to 16 characters. <p>When this message displays you can:</p> <ul style="list-style-type: none"> • Load the requested size and type in the source. The printer automatically clears the message and continues printing the job. • Press Select to clear the message and continue printing on the print material installed in the input tray or the optional tray 2. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>

Attendance Message	Meaning and Required Action
<p>Load <tray> <type><size></p>	<p>The printer is trying to feed print material from a source it detects is empty.</p> <p>Line 1 displays the paper source <tray>, which is one of the following items:</p> <ul style="list-style-type: none"> • Tray 1 • Tray 2 <p>Note: Tray 2 only displays if the optional tray 2 is installed.</p> <p>Line 2 displays one of the following items:</p> <ul style="list-style-type: none"> • A user-defined name, for custom type 1 through 3. The name is truncated to 16 characters. Use the MarkVision utility to create custom type names. See "Using the Printer Utilities" on page 27 for more information. • <type><size>: The requested type <type> is a type other than a custom type. The type name is truncated to 16 characters. The requested size <size> of paper or envelope displays. The size name is truncated to 16 characters. <p>When this message displays you can:</p> <ul style="list-style-type: none"> • Load the requested size and type in the source. The printer automatically clears the message and continues printing the job. • Press Select to clear the message and continue printing on the print material installed in the paper source. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>

Attendance Message	Meaning and Required Action
<p>Load Manual <Custom Type Name> <size> <type><size></p>	<p>The printer requests print material to be manually fed from the manual feed slot.</p> <p>Line 2 displays one of the following items:</p> <p><Custom Type Name>: A user-defined name, for custom type 1 through 3. The name is truncated to 16 characters. Use the MarkVision utility to create custom type names. See “Using the Printer Utilities” on page 27 for more information.</p> <p><size>: If the requested type matches the type currently in the tray and the custom type name has not been defined by you, only the paper or envelope size displays. The name is truncated to 16 characters.</p> <p><type><size>: The requested type <type> is a type other than a custom type. The type name is truncated to 16 characters. The requested size <size> of paper or envelope displays. The size name is truncated to 16 characters.</p> <p>When this message displays you can:</p> <ul style="list-style-type: none"> • Load the requested size or type of print material in the manual feed slot. The printer automatically clears the message and continues printing the job. • Press Go if the correct size and type print material is loaded in the manual feed slot. • Press Select to clear the message and print on the print material installed in the standard input tray or the optional tray 2. • Cancel the current print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Cancel Job appears on the second line of the operator panel display. Press Select. • Reset the printer and cancel the print job. Press Menu> or <Menu. The Job Menu displays. Press Menu> or <Menu until Reset Printer appears on the second line of the operator panel display. Press Select. <p>Note: Resetting the printer deletes all current data from the print buffer. See Reset Printer on page 77 for more information.</p>
<p>Print Jobs on Disk ?</p>	<p>This message displays when Print Job Buffering is enabled and the printer is unplugged while print jobs are spooled to the hard disk option. When the printer is plugged back in, it asks for confirmation to print the waiting jobs.</p> <ul style="list-style-type: none"> • Press Go to print the jobs. • Press Return or Stop to delete all spooled jobs from the hard disk option without printing them.

Solving Printer Problems

Chapter 6

Sometimes printer problems are very simple to solve. When you have a problem, first make sure that:

- The power cord is plugged into the printer and a properly grounded electrical outlet.
- The electrical outlet is not turned off by any switch or breaker.
- Other electrical equipment plugged into the outlet is working.
- All options are installed properly.
- You unplug the printer, wait for about 10 seconds, and then plug the printer back in. This often fixes the problem.

The tables in this chapter define printing problems that may occur and what you can do to resolve them. If the suggested corrective action doesn't fix the problem, call your service representative.

Turn to the appropriate table for help with your printing problem:

Problem with...	See Page...
Display	164
Print Quality	168
Printing	165
Network	173
Option	170
Other Problems and Questions	173

Display Problems

Problem	Action
<p>Menus Disabled status message appears on the display.</p>	<p>The operator panel menus are disabled. To enable the menus:</p> <ul style="list-style-type: none"> • Unplug the printer. • Press and hold Go and Stop, and then plug the printer back in. • Release the buttons when Performing Self Test displays.
<p>Display shows only diamonds or is blank.</p>	<p>Unplug the printer, wait about 10 seconds, and plug the print back in. The Performing Self Test message appears on the operator panel display. When the test is completed, the Ready message displays.</p> <p>If the messages do not display, unplug the printer and call for Lexmark Technical Support.</p>
<p>Menu settings changed from the operator panel have no effect.</p>	<p>Settings in the software application, the printer driver, or the printer utilities are overriding the settings in the operator panel.</p> <ul style="list-style-type: none"> • Change the menu settings from the printer driver, the printer utilities, or the software application instead of the operator panel. • Disable the settings in the printer driver, the printer utilities, or the software application.

Printing Problems

Problem	Action
Job did not print or incorrect characters printed.	Make sure the Ready status message appears on the operator panel display before you send a job to print. Press Go to return the printer to the Ready status message.
	Make sure there is print material loaded in the printer. Press Go to return the printer to the Ready status message.
	Verify that the printer is using the correct printer language.
	<ul style="list-style-type: none"> • Verify that the correct printer driver is being used. • Check the cable connection. Make sure you are using the correct cable. Use IEEE 1284-compliant parallel cable. We recommend Lexmark part number 1329605 (10 ft) or 1427498 (20 ft). If you use RS-232 Serial, verify that a null modem cable is used. • If the printer is connected through a switch box, try a direct connection. • Verify that the correct paper size is selected through the operator panel, in the printer driver, or in the software application setting. • Make sure PCL SmartSwitch and PS SmartSwitch are set to On. • If a print spooler is used, verify that the spooler is not stalled. • If you print across a network or on a Macintosh, see “Network Printing Problems” on page 173.
	<p>Check the printer interface from the SETUP MENU. Determine which host interface you are using. Print a menus settings page to verify that the current interface settings are correct. See “Printing the Menu Settings Page” on page 55 for more information.</p> <p>If you are using serial interface:</p> <ul style="list-style-type: none"> • Make sure Honor DSR is set to Off. • Check the protocol, baud, parity, and data bit settings. The settings on the printer and on the host computer should match.

Problem	Action
<p>Print material misfeeds or multiple feeds occur.</p>	<ul style="list-style-type: none"> • Make sure the paper you are using meets the specifications for your printer. See “Paper Handling Specifications” on page 116 for more information. • Flex paper or other print material before loading it in the input tray or the optional tray 2. • Make sure the print material is loaded correctly. • Make sure the paper width and length guides on the input tray are adjusted correctly. • Do not overfill the paper sources. • Do not force paper down into the manual feed slot when you load it; otherwise, the paper may skew or buckle. • Remove any curled paper from the input tray or optional tray 2. • If there is a recommended print side for the paper, load the paper as described in “Print Materials” on page 108. • Load less paper in the paper sources. • Turn the paper over or around and try printing again to see if feeding improves. • Do not mix paper types. • Do not mix reams of paper. • Remove the top and bottom sheets of a ream before loading the print material. • Load a paper source only when it is empty.
<p>You get unexpected page breaks.</p>	<p>Check the Print Timeout setting in the SETUP MENU. Increase the setting. See Print Timeout on page 79 for more information.</p>
<p>Job prints from the wrong paper source or on the wrong paper.</p>	<p>Check the PAPER TYPE setting in the PAPER MENU on the printer operator panel and in the printer driver. See PAPER TYPE on page 64 for more information.</p>
<p>Static builds up on transparencies or transparencies jam.</p>	<p>Use high quality transparencies specifically recommended for inkjet printers.</p>

Problem	Action
Menu settings changed from the operator panel have no effect.	<p>Settings in the software application, the printer driver, or the printer utilities are overriding the settings in the operator panel.</p> <ul style="list-style-type: none"> • Change the menu settings from the printer driver, the printer utilities, or the software application instead of the operator panel. • Disable the settings in the printer driver, the printer utilities, or the software application.
Job does not print in color.	<ul style="list-style-type: none"> • The printer driver or software application may be set to print in black and white mode. Change the Color Correction setting in the Color Menu. See Color Correction on page 60 for more information. • Check to make sure a color or photo print cartridge is installed.
Job does not print in the correct colors.	<p>Adjust the colors through the software application, the printer driver, or MarkVision. Change the Color Correction setting in the Color Menu. See Color Correction on page 60 for more information.</p>
Job prints in a different color than the color set in the printer driver.	<p>Software settings override printer driver settings. Adjust the color in the software settings by changing the Color Correction setting in the Color Menu. See Color Correction on page 60 for more information.</p>
Printer prints, but no characters appear.	<ul style="list-style-type: none"> • Make sure the tape is removed from the printhead. See “Installing Print Cartridges” on page 186 for more information. • Check the print cartridges to be sure they are correctly installed. See “Installing Print Cartridges” on page 186 for more information. • Check to see if the print cartridge ink is low or empty. See “Maintaining Your Printer” on page 183 for more information. • Made sure print material is loaded in the printer.

Print Quality Problems

Problem	Action
Print is too light.	<ul style="list-style-type: none"> • If you are printing on an uneven print surface, change the PAPER TYPE setting in the PAPER MENU. See PAPER TYPE on page 64 for more information. • Verify that the correct print material is being used. • Make sure the Print Quality setting in the COLOR MENU is set to Normal. See Print Quality on page 60 for more information. • Add more printer memory.
Entire page is white.	<ul style="list-style-type: none"> • Make sure the tape is removed from the printhead. See “Installing Print Cartridges” on page 186 for more information. • Check the print cartridges to be sure they are correctly installed. See “Installing Print Cartridges” on page 186 for more information. • Check to see if the print cartridge ink is low or empty. See “Maintaining Your Printer” on page 183 for more information.
Characters have jagged or uneven edges.	<ul style="list-style-type: none"> • Change the Print Quality setting in the COLOR MENU to Presentation. See Print Quality on page 60 for more information. • If you are using downloaded fonts, verify that the fonts are supported by the printer, the host computer, and the software application. • Make sure the print cartridges are properly aligned. See “Printing the Test Page for Verifying Alignment” on page 192 for more information.
The job prints, but the left and top margins are incorrect.	<ul style="list-style-type: none"> • Make sure the PAPER SIZE setting is set correctly in the PAPER MENU. See PAPER SIZE on page 62 for more information. • Make sure the margins are set correctly in the software application you are using.

Problem	Action
Print is smeared on the page.	<ul style="list-style-type: none"> • This problem is more prevalent when using the photo cartridge. Try using coated paper or a different type of print material. • Alter the amount of ink used through the Quick Print value in the Print Quality menu item in the COLOR MENU. See Print Quality on page 60 for more information. • Make sure you remove each transparency or sheet of glossy paper as it exits the printer.
Printed colors are different from the colors that appear on the computer screen.	<p>Computer screen colors vary based upon screen resolution and display types. They are not an accurate representation of printed colors.</p> <p>Print a Color Sample test page to use as a reference to select colors. See Color Samples on page 74 for more information.</p>
Black text is not sharp.	<p>Make sure a black print cartridge is installed and not a photo print cartridge.</p>
Characters print with white lines.	<ul style="list-style-type: none"> • A print cartridge may be out of ink or low on ink. If one of the Ink=Low messages appear, install a new print cartridge. See "Print Cartridges" on page 202 for more information. • Remove and reinstall one of the print cartridges. See "Replacing Print Cartridges" on page 184 for more information. • If you are printing on transparencies or glossy paper, try changing the fill pattern in your application software.
Solid black areas on transparencies or glossy paper contain white streaks.	<p>Try using a different fill pattern in your application software.</p>

Option Problems

Problem	Action
<p>Option does not operate correctly after it is installed or it quits working.</p>	<p>Unplug the printer, wait for about 10 seconds, and plug the printer back in. If this does not fix the problem, unplug the printer and check the connection between the option and printer.</p> <p>Note: Print the menu settings page and check to see if the option is listed in the Installed Options list. If the option is not listed, reinstall it. See “Verifying the Installation of Options” on page 249 for more information.</p> <p>Make sure the option is selected in the software application you are using. For Macintosh users, make sure the printer is set up in CHOOSER.</p>
	<p>Optional Tray 2: Make sure tray 2 is correctly installed on the back of the printer. Refer to the documentation that comes with the tray 2 option for more information.</p>

Problem	Action
<p>Option does not operate correctly after it is installed.</p>	<p>Flash Memory Option: Check to make sure the flash memory option is securely connected to the printer system board. See “Flash Memory” on page 219 for more information.</p>
	<p>Printer Memory Option: Check to make sure the printer memory option is securely connected to the printer system board. See “Printer Memory” on page 210 for more information</p>
	<p>Hard Disk Option: Check to make sure the hard disk option is securely connected to the printer system board. See “Hard Disk Option Card” on page 230 for more information.</p>
	<p>INA Option: Check to make sure the INA option card is securely connected to the printer system board. See “INA (Internal Network Adapter) Option Card” on page 233 for more information.</p> <ul style="list-style-type: none"> • The connection to the network is made through the network cable. Check that you have the correct cable, that it is securely connected, and that the network software is correctly set up. See the documentation that comes with your network option for more information. • Print the menu settings page and check to see if the option is listed in the Installed Options list. If the option is not listed, reinstall it. See “Verifying the Installation of Options” on page 249 for more information. • Make sure the option is selected in the software application you are using.

Problem	Action
<p>Option does not operate correctly after it is installed.</p>	<p>Tri-Port Option: Check to make sure the Tri-Port Interface option card is securely connected to the printer system board. See “Tri-Port Interface Option Card” on page 234 for more information.</p> <p>For Macintosh users:</p> <ul style="list-style-type: none"> • Make sure the host computer is set to LocalTalk. • If you are using a phone wire connection, a terminator plug must be used.
	<p>Infrared Adapter: If infrared communication stops or does not occur, check the following:</p> <ul style="list-style-type: none"> • Communication distance: The distance between the two infrared ports should be 3 meters (10 ft.) or less. If communication does not occur between ports, move the ports closer together. • Make sure both ports are stable. Make sure the computer is on a level surface. • Make sure the angle of communication between the two infrared ports is within 15 degrees of either side of an imaginary line drawn between the two infrared ports. • Make sure there is no bright light, such as direct sunshine, interfering with communication. • Make sure no objects are placed between the two infrared ports.

Network Printing Problems

Problem	Action
Job did not print or incorrect characters printed.	<p>If you are using a Lexmark INA or external network adapter (ENA), verify that it is set up properly and the network cable is connected.</p> <p>Note: Refer to the documentation that comes with your network adapter for more information.</p> <p>For Novell users:</p> <ul style="list-style-type: none"> • Make sure the netware.driv file is dated October 24, 1994 or later. • Make sure the NT (no tabs) flag is included in the capture statement. <p>For Macintosh users:</p> <ul style="list-style-type: none"> • The printer may need an optional network card to allow Macintosh connection. • Verify that the printer is set up correctly in CHOOSE. <p>For Windows users:</p> <ul style="list-style-type: none"> • Turn Direct to Port Off in the PostScript driver. • Verify that Enable Tabs is not selected under the port settings.

Other Problems and Questions

Problem	Action
How do I get updated printer drivers or utilities?	See "Printer Drivers" on page 30 and "Getting Updated Drivers and Utilities" on page 44.
How do I attach a serial cable to the printer?	Your printer requires an optional adapter to allow serial attachment. The Tri-Port Interface option card supports serial RS-232C/RS-422A. See "Tri-Port Interface Option Card" on page 234 for more information.

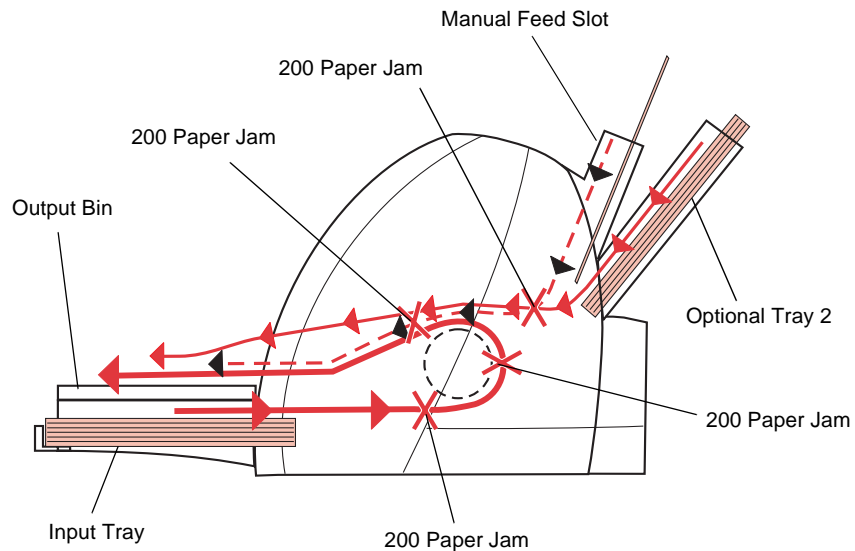
Clearing Jams

Chapter 7

By carefully selecting print materials and loading them properly, you should be able to avoid most paper jams. If paper jams do occur, follow the steps outlined in this chapter. If paper jams occur frequently, make sure you see “Tips for Avoiding Paper Jams” on page 142.

Possible Paper Jam Areas

The following illustration shows the path the paper travels through the printer. The path varies depending on the paper source. The jam areas are indicated by the Xs in the illustration.



200 Paper Jam

The 200 Paper Jam attendance message occurs when paper or any other print material is jammed in any of the paper sources, in the output bin, or in the area under the print cartridge carrier.

First determine where the paper is jammed in your printer, then follow the steps beginning in “Accessing Paper Jam Areas” to remove the jammed paper. If you need help locating the paper jam area, see “Possible Paper Jam Areas” on page 175.

Note: To resolve the paper jam attendance message, you must clear all paper from the paper path.

Accessing Paper Jam Areas

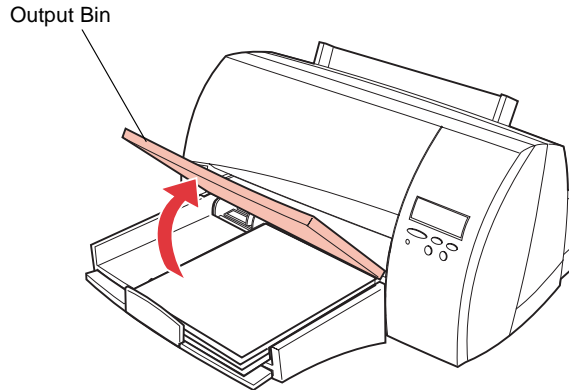
You can access paper jams from the input tray, the manual feed slot, or the output bin. The sections beginning on page 177 give information about how to clear paper jams in each of these locations.

Note: To remove a paper jam from the optional tray 2, refer to the *Optra Color 45 Tray 2 User's Guide*.

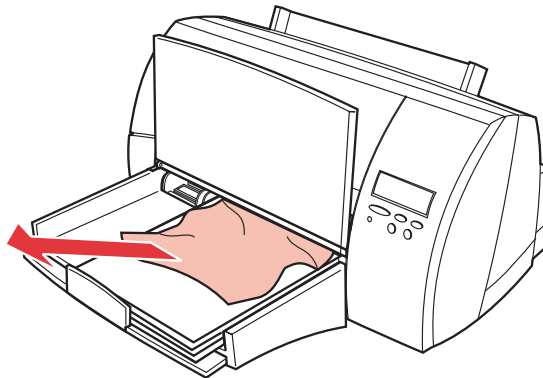
Input Tray

Follow the steps below to clear a paper jam from the input tray:

- 1** Lift the output bin.

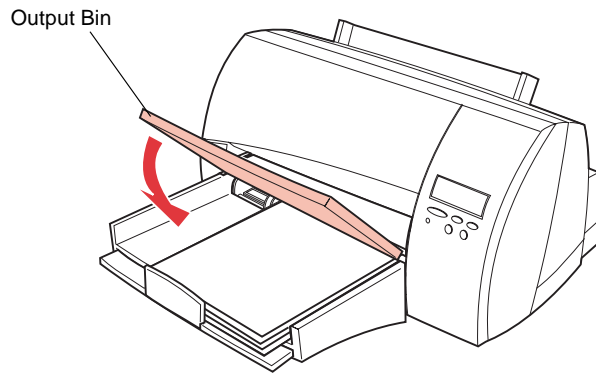


- 2** Locate the jammed paper inside the input tray.
- 3** Pull the paper up and toward you to remove it.



Note: If you cannot get a firm grasp on the jammed paper, it may be easier to remove it from the output bin. See “Output Bin” on page 180 for more information.

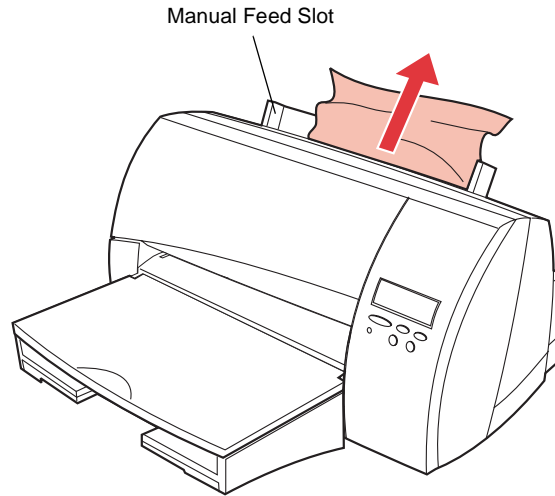
4 Lower the output bin.



Manual Feed Slot

Follow the steps below to clear a paper jam from the manual feed slot:

- 1** Locate the jammed paper in the manual feed slot.
- 2** Pull the paper straight up to remove it.



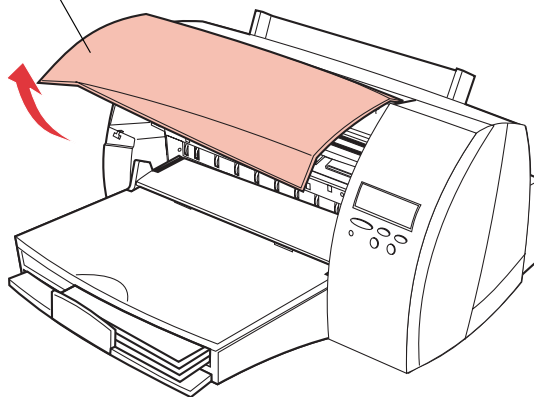
Note: If you cannot get a firm grasp on the jammed paper, it may be easier to remove it from the output bin. See “Output Bin” on page 180 for more information.

Output Bin

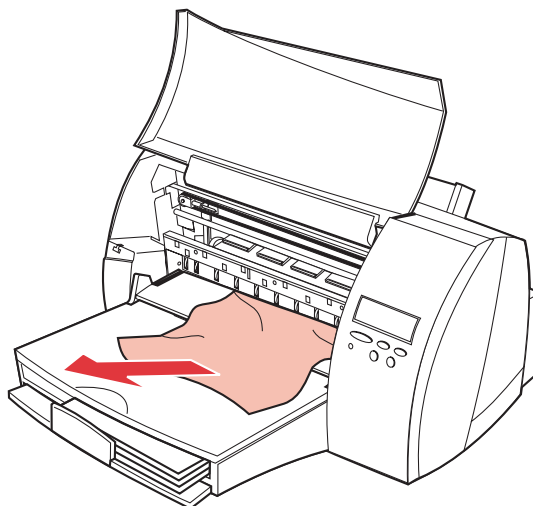
Follow the steps below to clear a paper jam from the output bin:

- 1** Use the finger grip on the left side of the printer to lift the top cover.

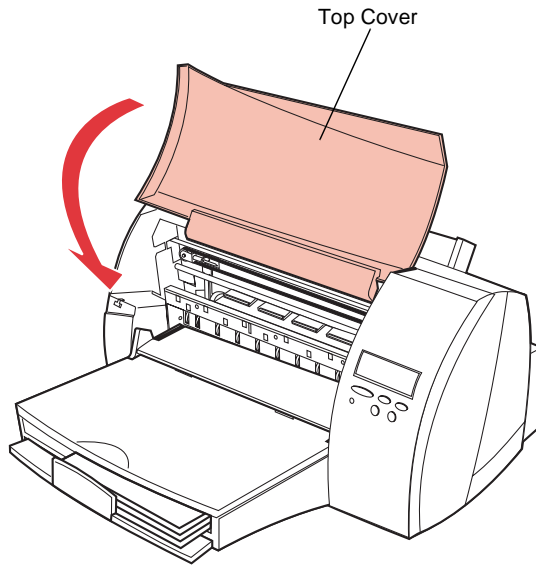
Top Cover



- 2** Locate the jammed paper in the output bin.
- 3** Pull the paper up and toward you to remove it.



4 Close the printer top cover.



Maintaining Your Printer

Chapter 8

Periodically, you will need to replace print cartridges and clean your printer in order to maintain optimum print capabilities.

This chapter provides information about changing print cartridges, cleaning your printer, and ordering supplies. Refer to the following table for the appropriate section to see for more information.

If You Want to...	See Page...
Align the Print Cartridges	190
Clean the Printer	193
Dispose of Used Print Cartridges	201
Order Supplies	184
Replace Print Cartridges	184
Store Print Cartridges	201

Replacing Print Cartridges

The following sections step you through the process of replacing the print cartridges.

WARNING: Always load two print cartridges in the print cartridge carrier. Printing without both print cartridges installed may damage the printer.

Removing Print Cartridges

The print cartridge carrier is hidden on the right side of the printer behind the operator panel. The print cartridge carrier slides horizontally across a track inside the printer. It must move into the installation position on the far left side of the printer before you can install the print cartridges.

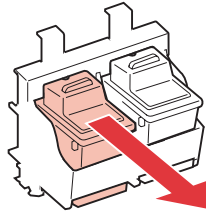
WARNING: Do not pull the print cartridge carrier by hand. Manually moving the print cartridge carrier may damage the printer.

To remove the print cartridges:

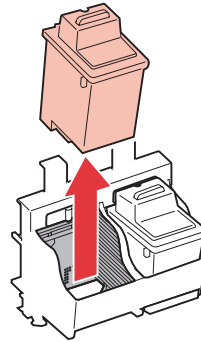
- 1** Complete the following steps to move the print cartridge carrier into the installation position.
 - a** Press **Menu>** or **<Menu** to enter the menus.
 - b** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
 - c** Press **Select**.
 - d** Press **Menu>** until **Change Cartridge** appears on the second line of the display.
 - e** Press **Select**.

The print cartridge carrier moves to the far left side of the printer and **Change Print Cartridges** appears on the display. You are now ready to remove a print cartridge.

- 2** Lift the printer top cover.
- 3** Pull forward on the print cartridge until it releases from the print cartridge carrier.



- 4** Pull up on the print cartridge to remove it.



- 5** If you are replacing both print cartridges, repeat steps 3 through 4 for the second cartridge.

When you finish, the print cartridge carrier is empty and ready for new print cartridges.

- 6** Dispose of any completely used print cartridges. Store any print cartridges that you may want to use in the future.

Store partially used print cartridges in the print cartridge storage unit. See “Storing Print Cartridges” on page 201 for more information.

- 7** Continue with “Installing Print Cartridges” on page 186.

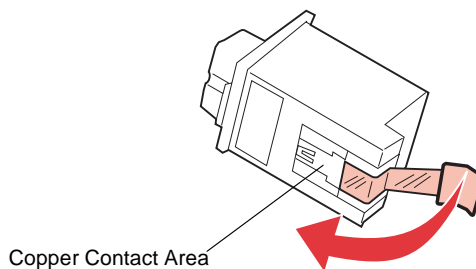
Installing Print Cartridges

You can install the following print cartridges in your printer:

Cartridge Type	Cartridge Carrier Slot
Black	Left
Color	Right
Photo	Left

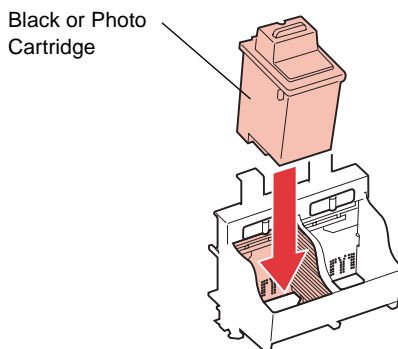
To install the print cartridges:

- 1** Remove the sticker and the transparent tape covering the copper contact area on one of the cartridges.

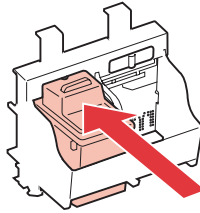


WARNING: Do not touch the copper contact area.

- 2** Insert the cartridge.

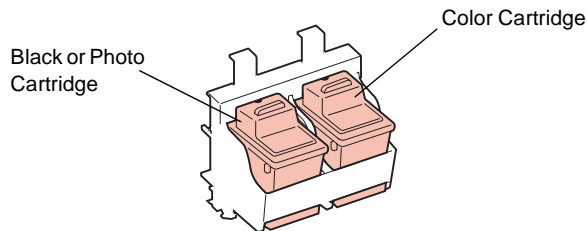


- 3** Push back on the cartridge until it *snaps* securely into place.



- 4** Repeat steps 1 through 3 for the second cartridge.

When you finish, the print cartridge carrier should look like the following illustration.



- 5** Close the printer top cover.
- 6** Press **Select**.
- 7** **LEFT CART TYPE** appears on the first line of the operator panel display and **Not Changed** is on the second.
- If you did not change the print cartridge in the left side of the print cartridge carrier, press **Select** to choose **Not Changed**.
 - If a black cartridge is installed, press **Menu>** until **Black Cartridge** appears on the second line of the display. Press **Select** to choose **Black Cartridge**.
 - If a photo cartridge is installed, press **Menu>** until **Photo Cartridge** appears on the second line of the display. Press **Select** to choose **Photo Cartridge**.

- 8** If you selected **Not Changed**, go to step 10, otherwise continue with step 9.
- 9** **New Standard** appears on the second line of the operator panel display.
 - If you installed a new standard yield print cartridge, press **Select** to choose **New Standard**.
 - If you installed a previously used standard yield print cartridge, press **Menu>** until **Old Standard** appears on the second line of the display. Press **Select** to choose **Old Standard**.
 - If you installed a new high yield print cartridge, press **Menu>** until **New Hi Capacity** appears on the second line of the display. Press **Select** to choose **New Hi Capacity**.
 - If you installed a previously used high yield print cartridge, press **Menu>** until **Old Hi Capacity** appears on the second line of the display. Press **Select** to choose **Old Hi Capacity**.

If you need more information about print cartridge types, see “Print Cartridges” on page 202.

- 10** **RIGHT CART TYPE** appears on the first line of the operator panel display and **Not Changed** is on the second.
 - If you did not change the print cartridge in the right side of the print cartridge carrier, press **Select** to choose **Not Changed**.
 - If a color cartridge is installed, press **Menu>** until **Color Cartridge** appears on the second line of the display. Press **Select** to choose **Color Cartridge**.
- 11** If you selected **Not Changed**, go to step 13, otherwise continue with step 12.

12 **New Standard** appears on the second line of the operator panel display.

- If you installed a new standard yield print cartridge, press **Select** to choose **New Standard**.
- If you installed a previously used standard yield print cartridge, press **Menu>** until **Old Standard** appears on the second line of the display. Press **Select** to choose **Old Standard**.
- If you installed a new high yield print cartridge, press **Menu>** until **New Hi Capacity** appears on the second line of the display. Press **Select** to choose **New Hi Capacity**.
- If you installed a previously used high yield print cartridge, press **Menu>** until **Old Hi Capacity** appears on the second line of the display. Press **Select** to choose **Old Hi Capacity**.

If you need more information about print cartridge types, see “Print Cartridges” on page 202.

13 Continue with “Aligning the Print Cartridges” on page 190.

Pressing the **Return** button without installing any cartridges will return the printer to the **Ready** state without changing the alignment settings.

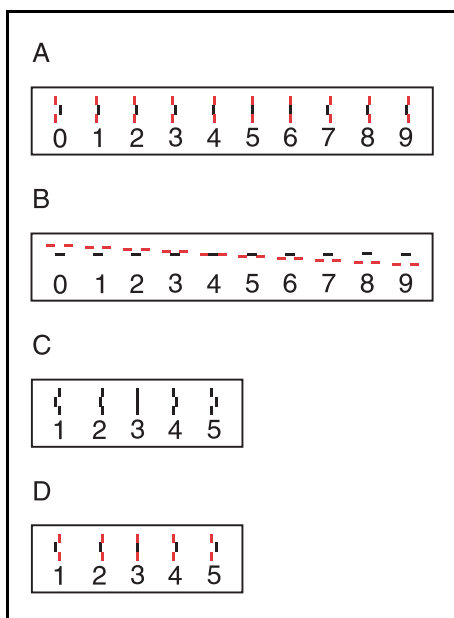
Note: If you install a partially used print cartridge, the low ink levels and ink percentages will not be accurate.

Aligning the Print Cartridges

When you finish replacing the print cartridges, the message **Printing Alignment Page** appears on the operator panel display and the printer automatically prints a test page of alignment patterns. If you need to print an alignment test page, see “Printing the Test Page for Verifying Alignment” on page 192.

The following illustrations are examples of the alignment test patterns. Each pattern has a letter above it (A, B, C, and D). These letters represent the Horizontal Alignment, Vertical Alignment, Bidirectional Black Alignment, and Bidirectional Color Alignment, respectively.

The number or appearance of your alignment patterns may vary from those shown.



Once the print cartridge alignment test page has printed, the operator panel display looks like this:

Test A Alignment
=15*

The current alignment value appears on the second line. To change the alignment value:

- 1** From the Test A alignment group on the test page, locate the number under the alignment pattern that *comes closest* to forming a perfectly straight line.

For example, in sample group A on page 190, number 5 comes closest to forming a straight line.

- 2** Press and release **Menu>** or **<Menu** to display the correct alignment value based on the printed test page.
- 3** Press **Select** to choose the correct alignment value.

The next Test Alignment screen appears on the display.

- 4** Repeat steps 1 through 3 to select the alignment values for Tests B, C, and D.

Once you press **Select** for the correct value for Test D Alignment, the printer returns to the **Ready** state.

Printing the Test Page for Verifying Alignment

For optimal printing, you should align the print cartridges. If you replace print cartridges, your printer automatically prints a test page to verify printhead alignment. If you need to print an alignment test page, complete the following steps:

- 1** Press **Menu>** or **<Menu** to enter the menus.
- 2** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
- 3** Press **Select**.
- 4** Press **Menu>** until **Align Cartridges** appears on the second line of the display.
- 5** Press **Select**.

Printing Alignment Page appears on the display and the cartridge alignment test page prints.

- 6** From the **Test A** alignment group on the test page, locate the number under the alignment pattern that *comes closest* to forming a perfectly straight line.

For example, in sample group A on page 190, number 5 comes closest to forming a straight line.

- 7** Press and release **Menu>** or **<Menu** to display the correct alignment value based on the printed test page.
- 8** Press **Select** to choose the correct alignment value.

The next Test Alignment screen appears on the display.

- 9** Repeat steps 6 through 8 to select the alignment values for Tests B, C, and D.

Once you press **Select** for the correct value for Test D Alignment, the printer returns to the **Ready** state.

Cleaning Your Printer

Routine maintenance should be done at regular intervals to maintain top performance and avoid print quality problems and paper feed problems. The following sections step you through the process of cleaning the print cartridge printheads.

Cleaning the Printheads

Run the printhead test to clean the printheads. A test line prints so you can see if the cleaning process was successful. Use the printheads test:

- When you suspect the printheads are clogged.
- When characters are not printing completely.

To run the printhead test:

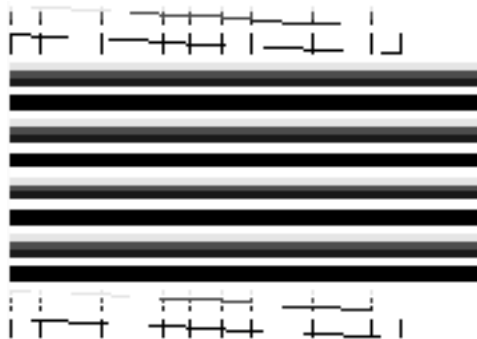
- 1** Make sure the paper is loaded in the standard input tray and the **Ready** status message appears on the operator panel display.

If an error message appears, see “Understanding Printer Messages” on page 145.

- 2** Press **Menu>** or **<Menu** to enter the menus.
- 3** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
- 4** Press **Select**.
- 5** Press **Menu>** until **Clean Heads** appears on the second line of the operator panel display.
- 6** Press **Select**.

Cleaning Heads appears on the operator panel display and the cleaning printheads test page prints.

The following illustration is an example of how the printhead test page appears when all of the printheads are functioning correctly.



Note: The printer returns to the **Ready** state after the cleaning printheads test page prints.

- 7** Examine the test page and look for breaks in the diagonal lines. A broken line indicates clogged printheads.
- 8** If you find broken diagonal lines on the test page, repeat steps 2 through 6 and perform the cleaning printheads test two more times.
- 9** If the print quality is not satisfactory, continue with step 10.
- 10** Remove and reinstall the print cartridges.
If you need help, see “Replacing Print Cartridges” on page 184.
- 11** Repeat steps 2 through 6 and perform the cleaning printheads test again.
- 12** If the cleaning printheads test page still contains broken lines, continue with “Wiping the Printheads” on page 195.

Wiping the Printheads

Wipe the printheads *only* if you have run the cleaning printheads test to clean the printheads and the print quality is not satisfactory.

Wiping the printheads removes dried ink from the printheads.

To wipe the printheads:

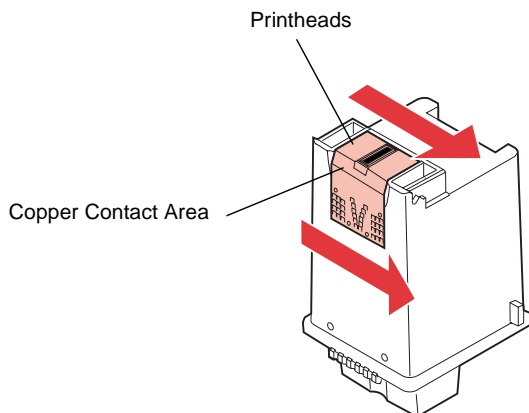
- 1** Move the print cartridge carrier into the installation position.
 - a** Press **Menu>** or **<Menu** to enter the menus.
 - b** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
 - c** Press **Select**.
 - d** Press **Menu>** until **Change Cartridge** appears on the second line of the display.
 - e** Press **Select**.

The print cartridge carrier moves to the far left side of the printer and **Change Print Cartridges** appears on the display. You are now ready to remove the print cartridges and wipe the printheads.

- 2** Open the printer top cover.
- 3** Remove the print cartridges from the printer.

If you need help, see “Removing Print Cartridges” on page 184.

- 4 Use a clean, damp cloth to gently wipe the entire copper contact area and the printheads as shown.



To dissolve dried ink, hold the damp cloth against the printheads for about three seconds. Gently blot and wipe dry.

Note: When cleaning the color print cartridge, wipe the printheads in one direction so the colors do not mix.

- 5 Allow the copper contact area to dry.
- 6 Repeat step 4 and step 5 for the other print cartridge.
- 7 Reinstall the print cartridges.

If you need help, see “Installing Print Cartridges” on page 186.

- 8 Close the printer top cover.

- 9 Press **Return** to move the print cartridge carrier back into the print position without resetting the ink level counter.

To print an alignment test page and reset the ink level counter, see “Aligning the Print Cartridges” on page 190.

- 10 Repeat the cleaning printheads test.

- a Press **Menu>** or **<Menu** to enter the menus.
- b Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
- c Press **Select**.
- d Press **Menu>** until **Clean Heads** appears on the second line of the operator panel display.
- e Press **Select**.

The message **Cleaning Heads** appears and remains on the operator panel display until the cleaning printheads test page prints. The printer returns to the **Ready** state after the page prints.

- 11 If the cleaning printheads test page still contains broken lines, continue with “Cleaning the Print Cartridge Carrier Contacts” on page 198.

Cleaning the Print Cartridge Carrier Contacts

Clean the print cartridge carrier contacts *only* if you have run the cleaning printheads test, wiped the printheads, and print quality is not satisfactory.

To clean the print cartridge carrier contacts:

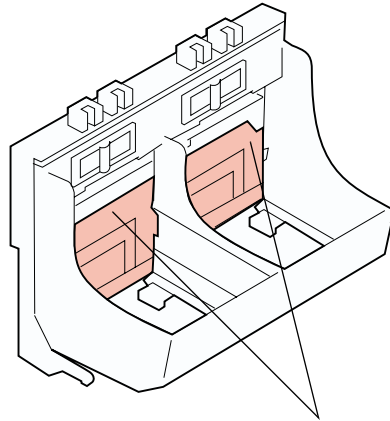
- 1** Move the print cartridge carrier into the installation position.
 - a** Press **Menu>** or **<Menu** to enter the menus.
 - b** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
 - c** Press **Select**.
 - d** Press **Menu>** until **Change Cartridge** appears on the second line of the display.
 - e** Press **Select**.

The print cartridge carrier moves to the far left side of the printer and **Change Print Cartridges** appears on the display. You are now ready to remove the print cartridges and clean the print cartridge carrier contacts.

- 2** Open the printer top cover.
- 3** Remove the print cartridges from the printer.

If you need help, see “Removing Print Cartridges” on page 184.

- 4** Use a clean, dry cloth to clean the cartridge carrier contacts inside the print cartridge carrier.



Cartridge Carrier Contacts

- 5** Reinstall the print cartridges.
If you need help, see “Installing Print Cartridges” on page 186.
- 6** Close the printer top cover.
- 7** Press **Return** to move the print cartridge carrier back into the print position without resetting the ink level counter.
To print an alignment test page and reset the ink level counter, see “Aligning the Print Cartridges” on page 190.

8 Repeat the cleaning printheads test.

- a Press **Menu>** or **<Menu** to enter the menus.
- b Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
- c Press **Select**.
- d Press **Menu>** until **Clean Heads** appears on the second line of the operator panel display.
- e Press **Select**.

The message **Cleaning Heads** appears and remains on the operator panel display until the cleaning printheads test page prints. The printer returns to the **Ready** state after the page prints.

If the print quality is not improved after this cleaning process, replace the print cartridges you are currently using with new ones. For more information, see “Replacing Print Cartridges” on page 184.

If the print quality still does not improve, your printer may require service. Contact Lexmark or the place where you bought your printer for more information.

Storing Print Cartridges

Store a new print cartridge in the original packaging until you are ready to install it.

Store a partially used print cartridge in the print cartridge storage unit. The print cartridge storage unit keeps your print cartridges fresh until you are ready to use them again. See “Print Cartridge Storage Unit” on page 202 for information about ordering a print cartridge storage unit.

Do not store the print cartridge in:

- Temperatures greater than 43° C (110° F)
- An environment with extreme changes in humidity or temperature
- Direct sunlight
- Dusty places
- A car for a long time
- An environment where corrosive gasses are present
- An environment with salty air

Disposing of Used Print Cartridges

Do not shake used print cartridges. The remaining ink can spill. Put used print cartridges in a leak-proof bag before discarding them.

WARNING: Do *not* refill empty print cartridges. Refilling empty print cartridges invalidates the printer warranty. Incompatible inks may damage the printhead or the printer. For best results, use Lexmark supplies with the printer.

Ordering Supplies

If you're in the U.S. or Canada, call 1-800-438-2468 for information about Lexmark Authorized Supplies Dealers in your area. In other countries, contact the place where you bought your printer.

Print Cartridges

We recommend you order a new print cartridge when the printer first displays any of the following messages:

Message	Description
88 Color Print Cartridge Low	The color print cartridge ink is low.
88 Black Print Cartridge Low	The black print cartridge ink is low.
88 Photo Print Cartridge Low	The photo print cartridge ink is low.

You need to have a new print cartridge available when the current one no longer prints satisfactorily. There are five recommended print cartridges specifically designed for your printer:

Cartridge Type	Print Cartridge Part Number
Black (Standard Yield)	12A1970
Black (High Yield)	12A1975
Color (Standard Yield)	12A1980
Color (High Yield)	12A1985
Photo (Standard Yield)	12A1990

Print Cartridge Storage Unit

To order a print cartridge storage unit from Lexmark, use part number 17B0099.

Parallel Cable

To order an IEEE 1284-compatible parallel cable from Lexmark, use the following part numbers:

Size	Part Number
10 ft	1329605
20 ft	1427498

Serial Cable

To order a 50-ft serial cable from Lexmark, use part number 1038693.

Coated Paper

For the best color and black and white printing results, use a high resolution premium inkjet paper. To order coated paper from Lexmark, use the following part numbers:

Size	Number of Sheets	Part Number
Letter	100	1402780
A4	100	1402781

Glossy Paper

To order inkjet glossy paper from Lexmark, use the following part numbers:

Size	Number of Sheets	Part Number
Letter	50	1402750
Letter	10	1402795
A4	50	1372361
A4	10	1402796

Transparencies

To order inkjet transparencies from Lexmark, use the following part numbers:

Size	Number of Sheets	Part Number
Letter	20	1402797
A4	20	1402798

Photo Paper

To order inkjet photo paper from Lexmark, use the following part numbers:

Size	Number of Sheets	Part Number
Letter	20	1372481
A4	20	1372208
4 x 6 in. (Country specific)	20	12A0074
10 x 15 cm (Country specific)	20	12A0099

Labels

To order inkjet labels from Lexmark, use the following part numbers:

Size	Number of Sheets	Part Number
Letter (30 - 1 x 2-5/8 in. labels per sheet)	20	70X7250
Letter (10 - 2 x 4 in. labels per sheet)	20	70X7251
A4 (21 - 63.5 x 38.1 mm labels per sheet)	20	70X7252
A4 (8 - 99.1 x 67.7 mm labels per sheet)	20	70X7253

Iron-on Transfers for T-shirts

To order inkjet iron-on transfers from Lexmark, use the following part numbers:

Size	Number of Transfers	Part Number
Letter	10	1372480
A4	10	1402519

Greeting Cards

Each greeting card comes with an envelope. To order greeting cards from Lexmark, use the following part numbers:

Size	Number of Cards	Part Number
Letter	20	1372482
A4	20	70X7254

Installing Options



Memory and Option Cards

Chapter 9

You can customize your printer memory capacity and connectivity. This chapter provides instructions for installing and removing each option. To install each option, you must first access the printer system board. This can be done from three different locations, under the input tray and output bin unit, the back of the printer, and the right side of the printer.

Turn to the appropriate section for instructions on installing the option.

Installing Options

Option	Location of System Board	Go to page...
Printer memory	Under the input tray	210
Flash memory	On the back of the printer	219
Hard disk option card	On the right side of the printer	230
INA (Internal Network Adapter) option card	On the right side of the printer	233
Tri-Port interface option card	On the right side of the printer	234

Note: You need a small Phillips screwdriver to complete the installation of some options.

Printer Memory

The printer memory option increases the printer dynamic random access memory (DRAM). Additional printer memory allows the printer to print complex jobs and operate more efficiently.

Your printer was shipped with 8MB of standard printer memory. You can install one printer memory option in your printer. Printer memory upgrade options available are 4, 8, 16, or 32MB.

Note: Data stored in printer memory is lost when the printer is unplugged.

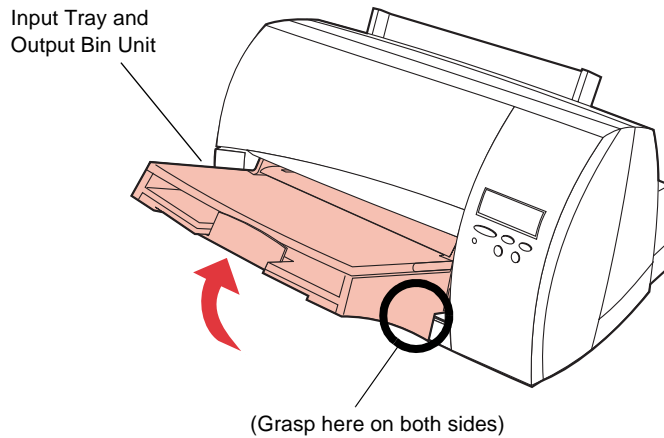
Accessing the Printer System Board under the Input Tray

Complete the following steps before you install a printer memory option:

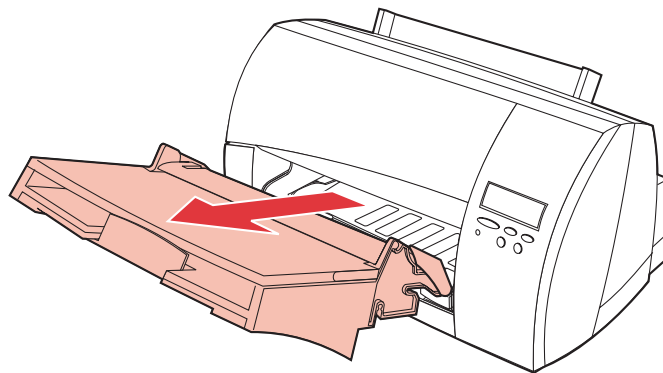
- 1** Unplug the printer power cord.
- 2** Disconnect all cables from the back of the printer.

3 Remove the input tray and output bin unit.

- a** Grasp underneath the unit, and pull up hard until it releases from the printer.

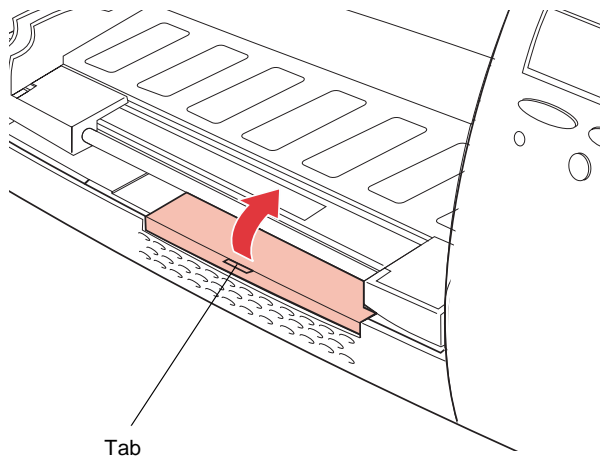


- b** Rotate the input tray and output bin unit up at a 45° angle until it releases from the printer.
- c** While holding the unit at this angle, pull it away from the printer.

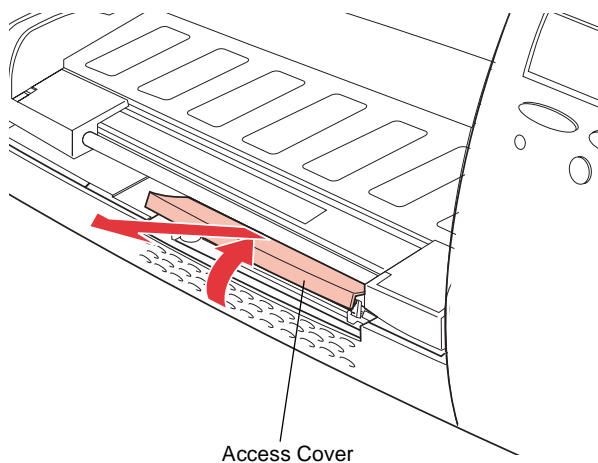


4 Remove the system board access cover.

- a** Locate the tab on the access cover and push it toward the printer.



- b** Grasp the tab and lift the access cover until it touches the metal bar.



- c** Pull the access cover straight out from the printer.

- 5** If you need to remove a memory option before you install a new one, see “Removing the Printer Memory Option” on page 216.
- 6** Continue with “Installing a Printer Memory Option” as follows.

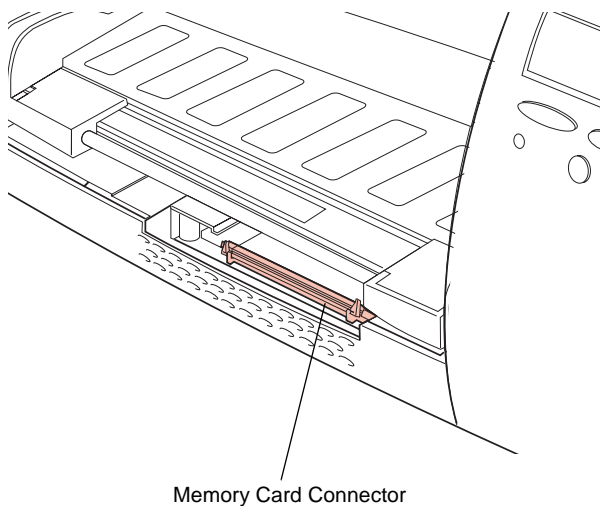
Installing a Printer Memory Option

Before you install a printer memory option, follow the steps under “Accessing the Printer System Board under the Input Tray” on page 210.

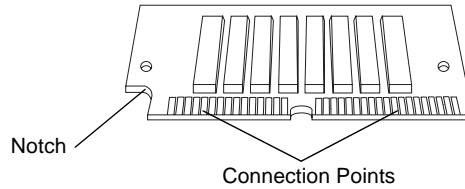
WARNING: The printer memory option is easily damaged by static electricity. Touch something metal before you touch the memory option.

To install a printer memory option:

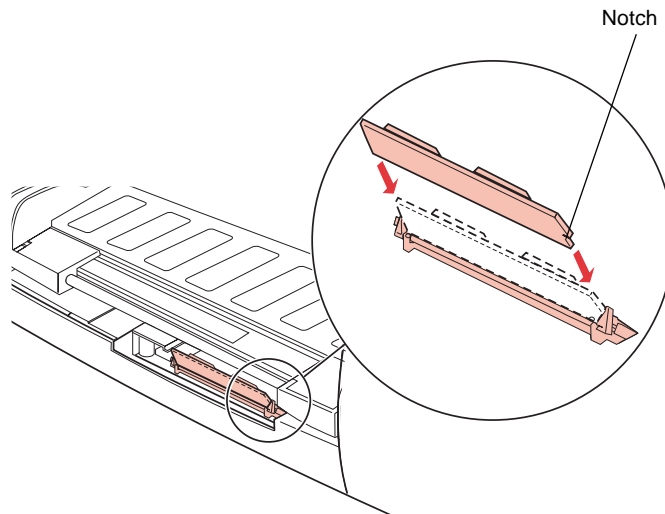
- 1** Locate the memory connector on the printer system board.



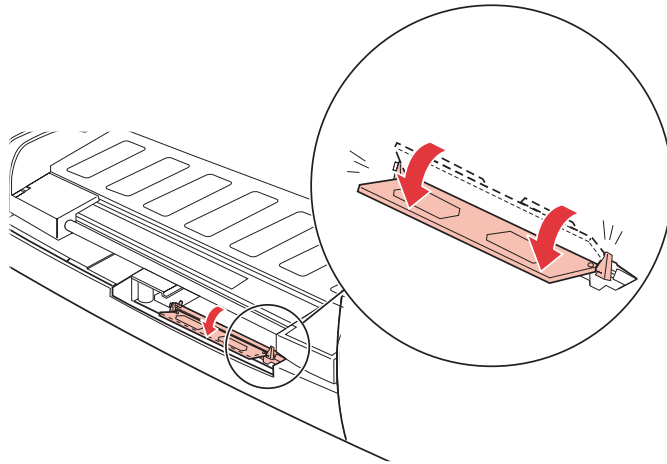
- 2** **Unpack the memory option.** Avoid touching the connection points along the edge. Save the packaging.



- 3** **Hold the memory option with the connection points pointing toward the connector and position the notch as shown.**

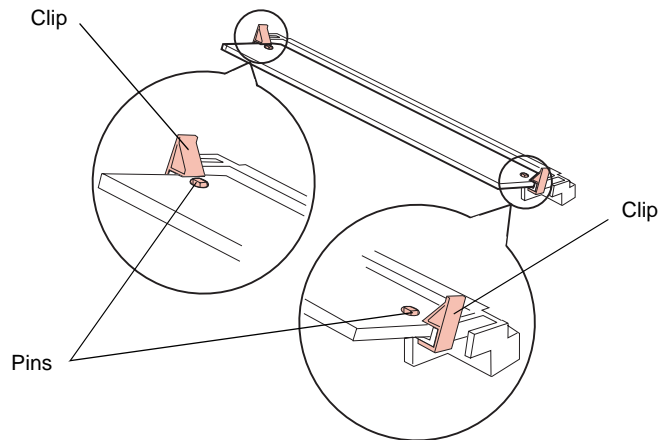


- 4** Insert the memory option all the way into the connector at a 45° angle, and rotate it *down* until it snaps into place.



Note: You hear the memory option *click* into place.

- 5** Make sure both metal clips on the connector are fastened, and the two pins on each end of the connector are pushed through the holes on the memory option.



- 6** Continue with “Closing the Printer System Board under the Input Tray” on page 218.

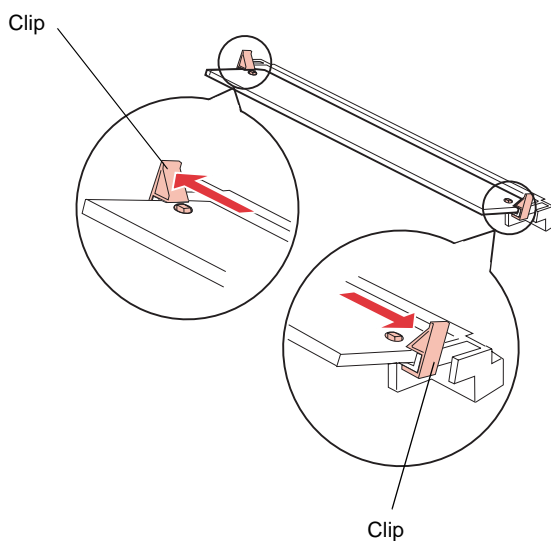
Removing the Printer Memory Option

Before you remove a printer memory option, follow the steps under “Accessing the Printer System Board under the Input Tray” on page 210.

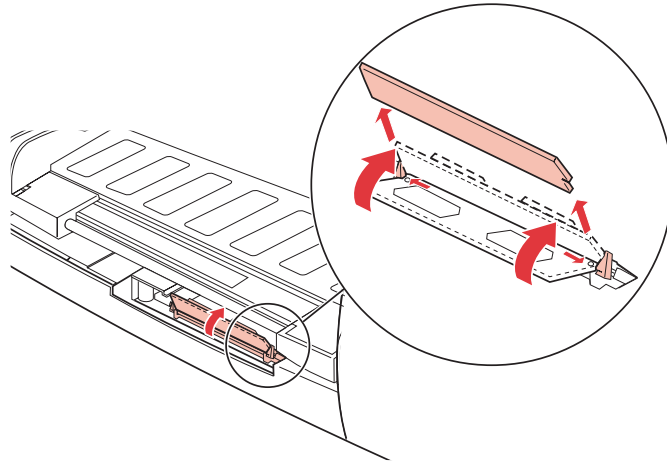
WARNING: The memory option is easily damaged by static electricity. Touch something metal before you touch the memory option.

Complete the following steps if you need to remove a printer memory option before you install a new one:

- 1** Push the metal clips at each end of the connector away from the memory option.



- 2** Rotate the memory option *up* to a 45° angle and gently pull it out of the connector as shown.

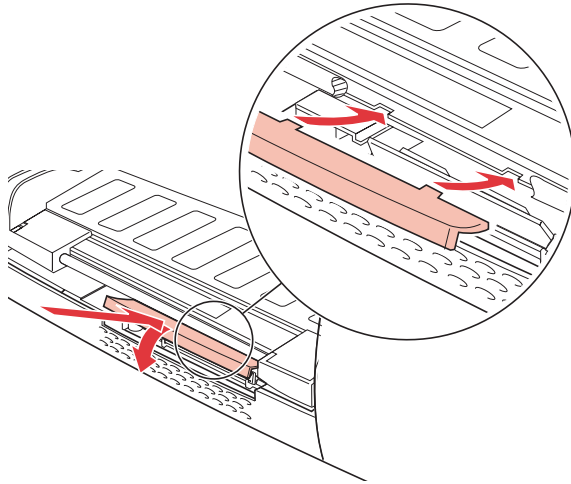


- 3** Place the printer memory option in its original packaging. If you did not save the packaging, wrap the memory option in paper and store it in a box.
- 4** If you need to install a new memory option, see “Installing a Printer Memory Option” on page 213.
- 5** Continue with “Closing the Printer System Board under the Input Tray” on page 218.

Closing the Printer System Board under the Input Tray

Complete the following steps after you have installed the printer memory option:

- 1** Reinstall the system board access cover.
 - a** While holding the cover at the angle shown, align the tabs on the back of the access cover with the slots located at the rear of the access opening.



- b** Push down on the top of the access cover until it snaps into place.
- 2** Reattach the input tray and output bin.

If you need help, see “Installing the Input Tray and Output Bin Unit” on page 3.

- 3** Reconnect all cables on the back of the printer.
- 4** Reconnect the power cord to the printer and a properly grounded electrical outlet.
- 5** Make sure the **Ready** message appears on the operator panel display.

If an error message appears, see “Understanding Printer Messages” on page 145.

Note: To verify that the memory card option is installed properly, see “Verifying the Installation of Options” on page 249.

Flash Memory

The flash memory option is useful for storing information such as downloaded fonts, macros, symbol sets, logos, and forms.

You can install one flash memory option in your printer. Flash memory options available are 1, 2, and 4MB.

Note: Data stored in flash memory is retained when the printer is unplugged.

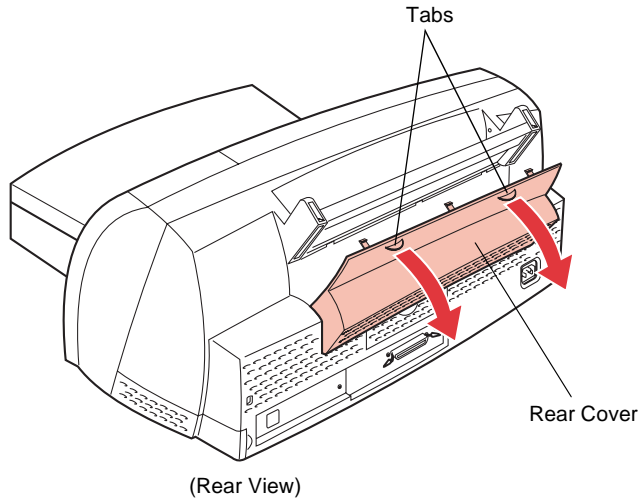
Accessing the Printer System Board on the Back of the Printer

Complete the following steps before you install a flash memory option:

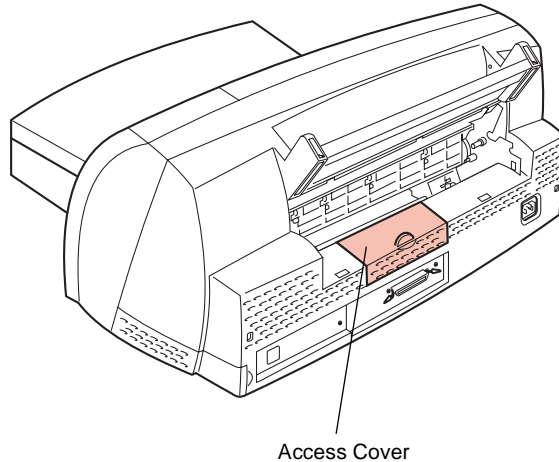
- 1** Turn the printer around so the back is facing you.
- 2** Unplug the printer power cord.
- 3** Disconnect all cables from the back of the printer.

4 Do one of the following:

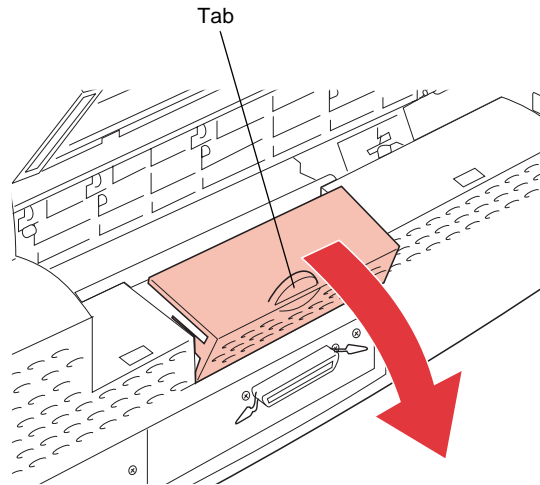
- Remove the optional tray 2, if one is installed. If you need help, refer to the documentation that comes with the tray 2 option.
- Remove the printer rear cover. Press down on the two tabs located at the top of the rear cover, and pull the cover away from the printer.



5 Locate the system board access cover.



- 6** Pull the tab on the access cover until the cover rotates toward you.



- 7** If you need to remove a flash memory option before you install a new one, see “Removing a Flash Memory Option” on page 226.
- 8** Continue with “Installing a Flash Memory Option” on page 222.

Installing a Flash Memory Option

Before you install a flash memory option, follow the steps under “Accessing the Printer System Board on the Back of the Printer” on page 219.

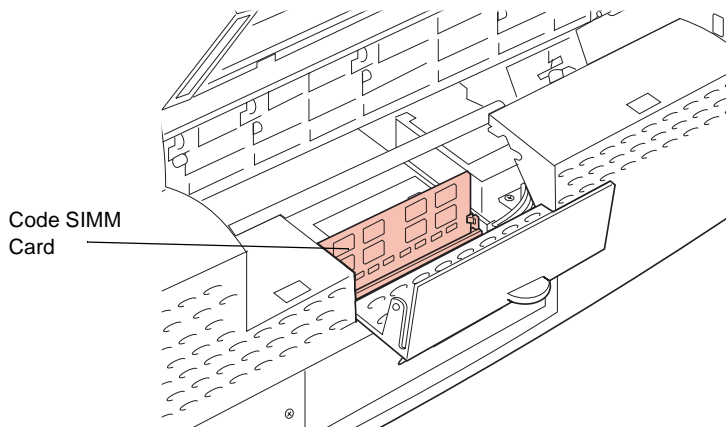
WARNING: The flash memory option is easily damaged by static electricity. Touch something metal before you touch the flash memory option.

To install a flash memory option:

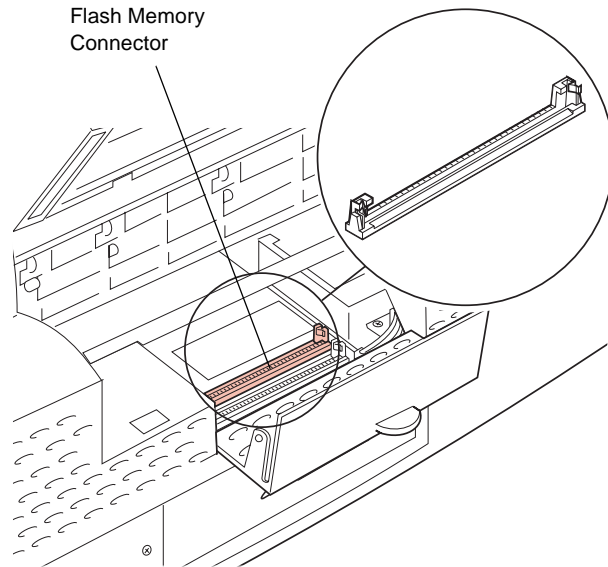
- 1** Locate and remove the code SIMM card from the printer system board.

You reinstall the code SIMM card after the flash memory option is installed.

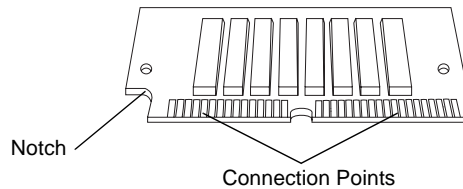
Note: The removal of the code SIMM card is exactly like the removal of a flash memory option. If you need help, see steps 2 and 3 of “Removing a Flash Memory Option” on page 226.



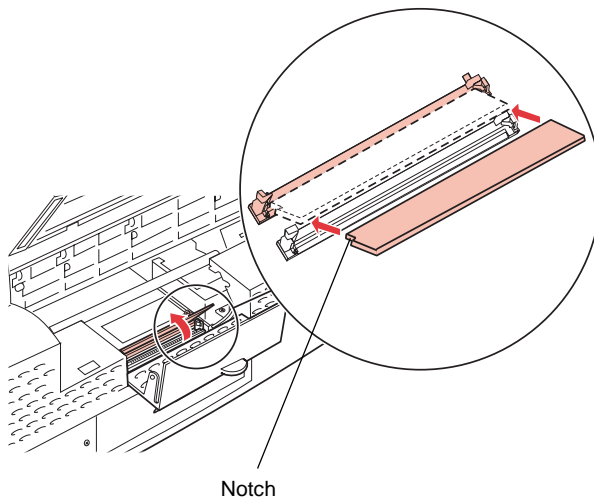
- 2** Locate the flash memory connector on the printer system board. It is the connector behind the code SIMM connector.



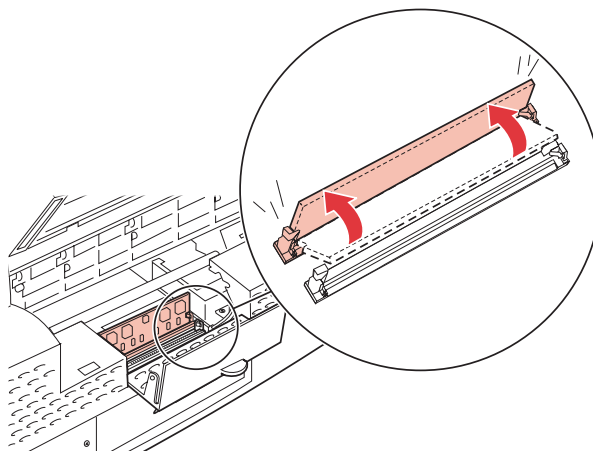
- 3** Unpack the new flash memory option. Avoid touching the connection points along the edge. Save the packaging.



- 4 Hold the flash memory option with the connection points pointing toward the connector and position the notch as shown.

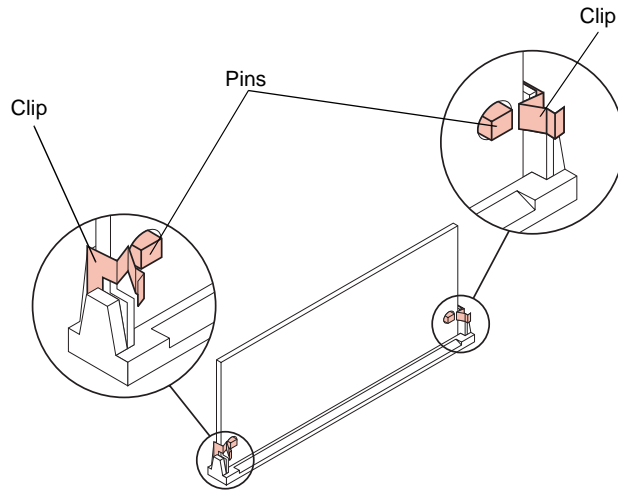


- 5 Insert the flash memory option all the way into the connector at a 45° angle, and rotate it *up* until it snaps into place.



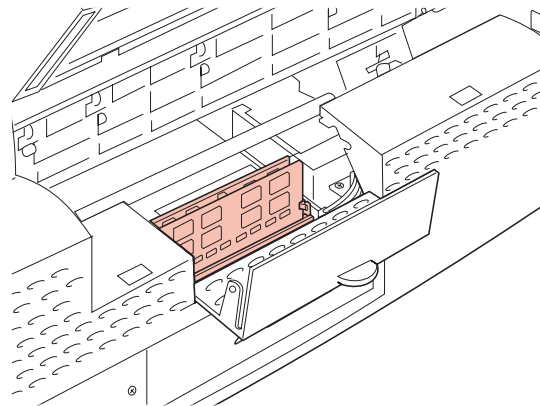
Note: You hear the flash memory option *click* into place.

- 6** Make sure both metal clips on the connector are fastened, and the two pins on each end of the connector are pushed through the holes on the flash memory option.



- 7** Replace the code SIMM card in the connector.

The code SIMM card installs exactly like the flash memory option. See steps 4 through 6 beginning on page 224 if you need help.



- 8** Continue with “Closing the Printer System Board on the Back of the Printer” on page 228.

Removing a Flash Memory Option

Before you remove a flash memory option, follow the steps under “Accessing the Printer System Board on the Back of the Printer” on page 219.

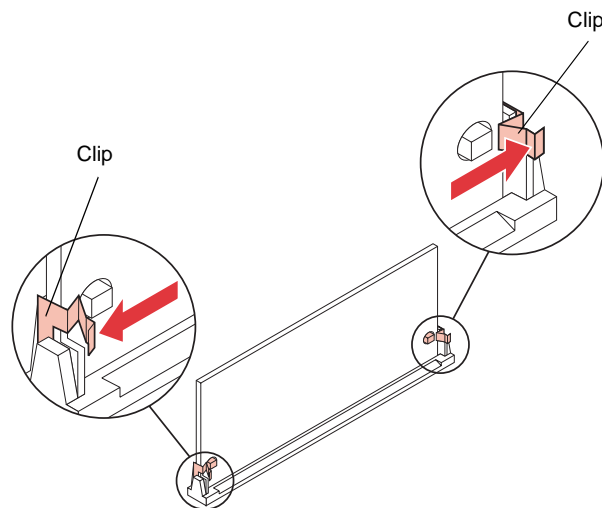
WARNING: The flash memory option is easily damaged by static electricity. Touch something metal before you touch the flash memory option.

Complete the following steps if you need to remove a flash memory option before you install a new one:

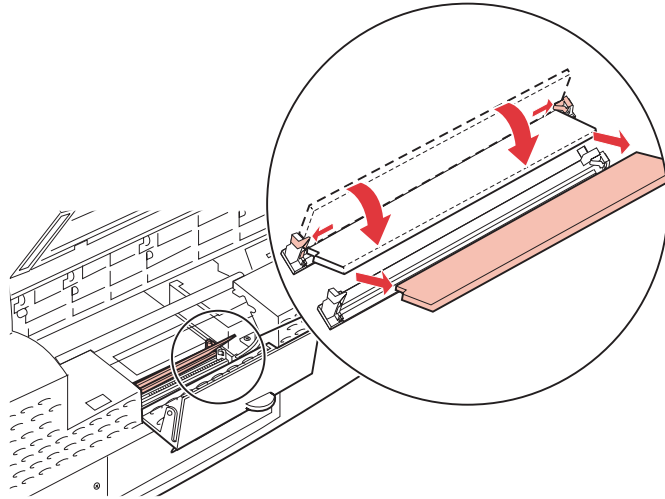
- 1** Locate and remove the code SIMM card from the printer system board.

Note: The removal of the code SIMM card is exactly like the removal of a flash memory option. Complete the following steps to remove a code SIMM card.

- 2** Push the metal clips at each end of the connector *away* from the flash memory option.



- 3** Rotate the flash memory option *down* to a 45° angle and gently pull it out of the connector as shown.

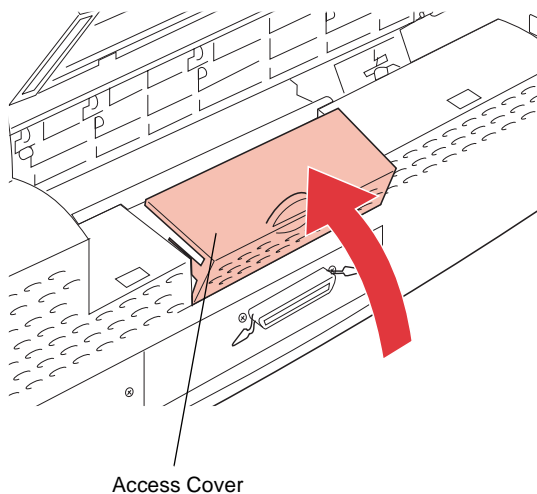


- 4** Place the flash memory option in its original packaging. If you did not save the packaging, wrap the flash memory option in paper and store it in a box.
- 5** If you need to install a new flash memory option, see “Installing a Flash Memory Option” on page 222.
- 6** Continue with “Closing the Printer System Board on the Back of the Printer” on page 228.

Closing the Printer System Board on the Back of the Printer

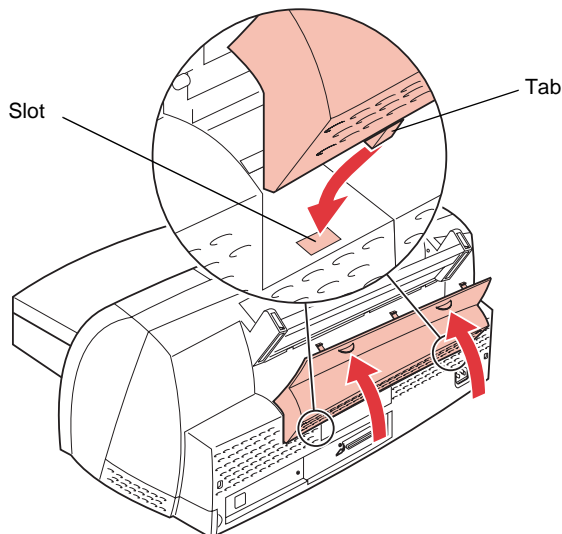
Complete the following steps after you have installed the flash memory option:

- 1 Push on the access cover until it snaps into place.



2 Do one of the following:

- Reattach the printer rear cover.
 - a** Insert the two tabs on the bottom of the cover into the slots on the back of the printer, as shown.



- b** Push the cover forward until it snaps firmly into place.
 - Reinstall the optional tray 2, if one was attached. If you need help, refer to the documentation that comes with the tray 2 option.
- 3** Reconnect all cables to the back of the printer.
- 4** Reconnect the power cord to the printer and a properly grounded electrical outlet.
- 5** Make sure the **Ready** message appears on the operator panel display.

If an error message appears, see “Understanding Printer Messages” on page 145.

Note: To verify that the flash memory option is installed properly, see “Verifying the Installation of Options” on page 249.

Option Cards

Four kinds of option cards are available for your printer:

- Hard disk option
- INA (Internal Network Adapter) option card
- Tri-Port interface option card
- Parallel 1284-C Adapter option card

Refer to the documentation that is included with each option card for detailed information about that specific card.

The installation instructions are the same for each type of option card. Therefore, they are grouped together. Installation instructions begin on page 236.

Note: Only one option card can be installed in your printer at a time.

Hard Disk Option Card

Like the flash memory option, the hard disk option is useful for storing information such as downloaded fonts, macros, and symbol sets.

Note: Data stored on the disk is kept in memory when the printer is unplugged.

You can also use the hard disk option to store incoming print jobs in a buffer until they print. Since hard disk memory provides permanent storage, job buffering to the hard disk prevents the loss of print job data if the printer loses power. It may also free your application faster for other work. Job buffering is only available for jobs transmitted across the standard parallel interface.

You can purchase:

- An adapter card with the hard disk already installed.
- A hard disk adapter card for installing a hard disk.

Complete the following instructions to attach the hard disk to the adapter card. If your disk is already attached to a card, skip to “Accessing the Printer System Board on the Right Side of the Printer” on page 236.

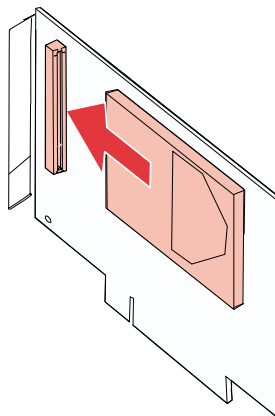
Attaching a Hard Disk to the Adapter Card

You can use the adapter card with any hard disk meeting the following criteria:

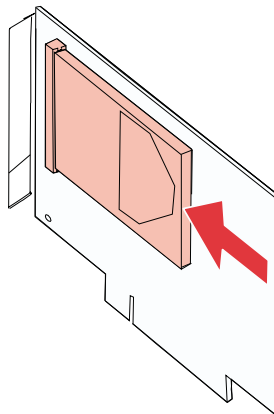
- 2.5-inch platter
- ATA-2 (IDE) interface
- Maximum thickness of 15 mm (.59 in.)

To attach the hard disk to the adapter card:

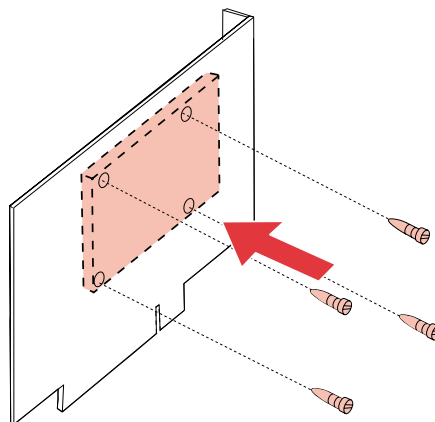
- 1** Align the connector pins on the end of the hard disk with the connector on the back of the adapter card.



- 2** Push the hard disk securely into the connector.



- 3** Turn the adapter card over and insert the four screws. Securely tighten each screw.



Installing the Hard Disk Option Card

To install, complete the following two sections in order:

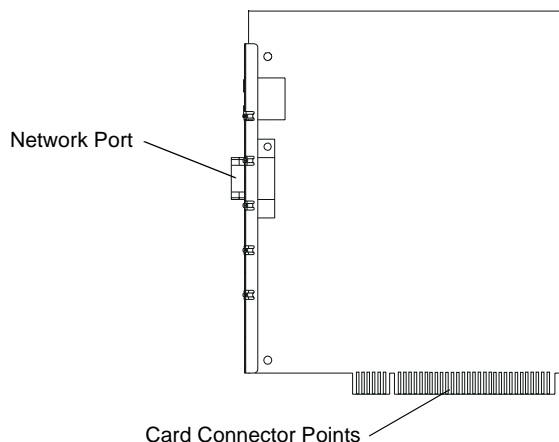
- “Accessing the Printer System Board on the Right Side of the Printer” on page 236
- “Installing an Option Card” on page 237

INA (Internal Network Adapter) Option Card

The INA option cards let you connect the printer to a local area network (LAN). You can install one INA option card in your printer. There are three MarkNet™ S INA cards available to support the following topologies:

- Ethernet 10BaseT and 10Base2
- Ethernet 10/100BaseTX
- Token-Ring (connects the printer to a Token-Ring network via DB9 or RJ45)

INA option cards have a similar size and shape. Make sure the network port on the card corresponds to your network cable requirements. Refer to the documentation that came with the network adapter for more information.



Installing the INA Option Card

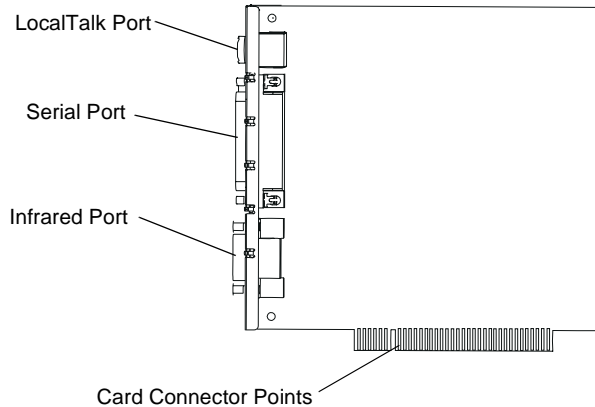
To install, complete the following two sections in order:

- “Accessing the Printer System Board on the Right Side of the Printer” on page 236
- “Installing an Option Card” on page 237

Tri-Port Interface Option Card

The Tri-Port interface option card lets you connect your printer to:

- A LocalTalk network.
- Serial interface (Serial RS-232C or Serial RS-422A).
- An infrared adapter.



For information about the LocalTalk network, see “LocalTalk Menu” on page 104.

A serial interface adapter converts the printer parallel port into a serial port. For more information about serial interface, see “Serial Menu” on page 95.

An infrared adapter receives an infrared beam that allows you to print remotely to an IrDA-compatible computer. For more information, see “Infrared Adapter” on page 245.

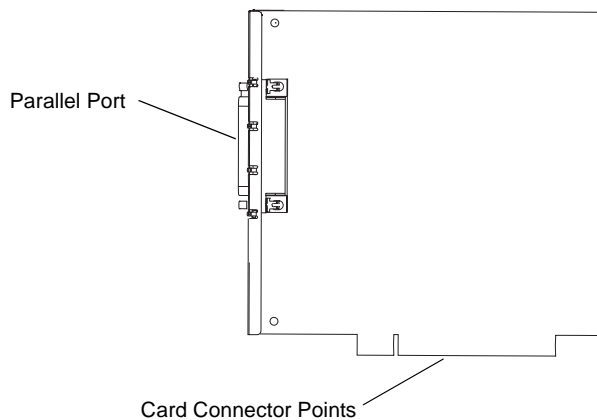
Installing the Tri-Port Interface Option Card

To install, complete the following two sections in order:

- “Accessing the Printer System Board on the Right Side of the Printer” on page 236
- “Installing an Option Card” on page 237

Parallel 1284-C Adapter Option Card

The Parallel 1284-C Adapter option card lets you connect your printer to a parallel interface. Use a 1284 A-C cable to connect to your computer. We recommend a Lexmark 3-meter (9.84 ft) cable, part number 43H5171.



Installing the Parallel 1284-C Adapter Option Card

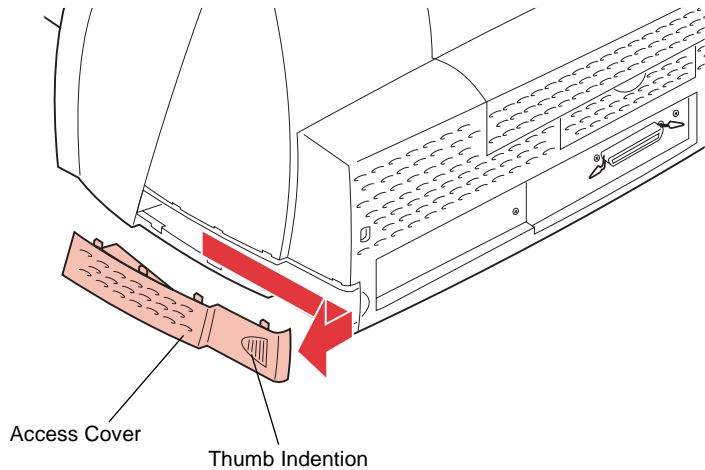
To install, complete the following two sections in order:

- "Accessing the Printer System Board on the Right Side of the Printer" on page 236
- "Installing an Option Card" on page 237

Accessing the Printer System Board on the Right Side of the Printer

Complete the following steps before you install an option card:

- 1** Unplug the printer power cord.
- 2** Disconnect all cables from the back of the printer.
- 3** Push on the thumb indentation, located on the right side of the system board access cover, and slide the cover to the right until it releases.



- 4** Pull the cover away from the printer.
- 5** If you need to remove an option card before you install a new one, see “Removing an Option Card” on page 241.
- 6** Continue with “Installing an Option Card” on page 237.

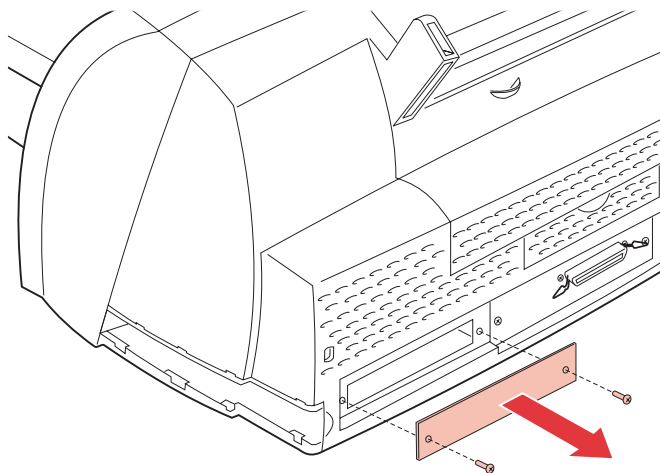
Installing an Option Card

Before installing an option card, follow the steps under “Accessing the Printer System Board on the Right Side of the Printer” on page 236.

WARNING: The option card is easily damaged by static electricity. Touch something metal before you touch the card.

Complete the following steps to install a hard disk option card, INA option card, Tri-Port interface option card, or parallel option card:

- 1** Remove the two screws from the metal plate covering the opening for the cable connector. Save the screws.

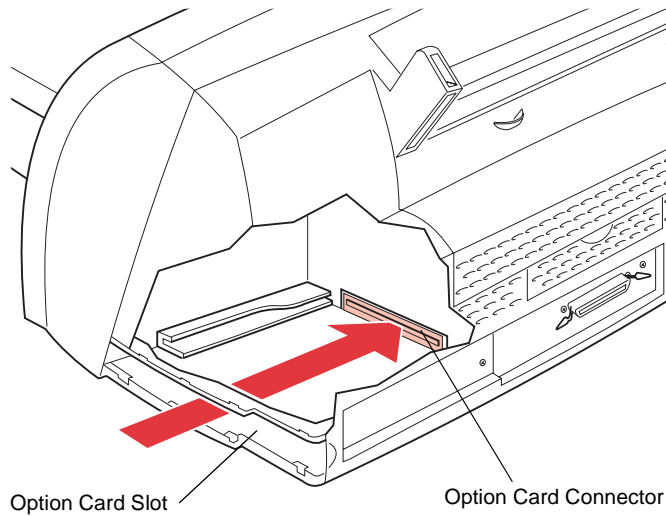


- 2** Remove and discard the plate.
- 3** Unpack the option card. Save the packing materials.

Note: To complete the following installation instructions, you should be at eye level with the printer option card slot.

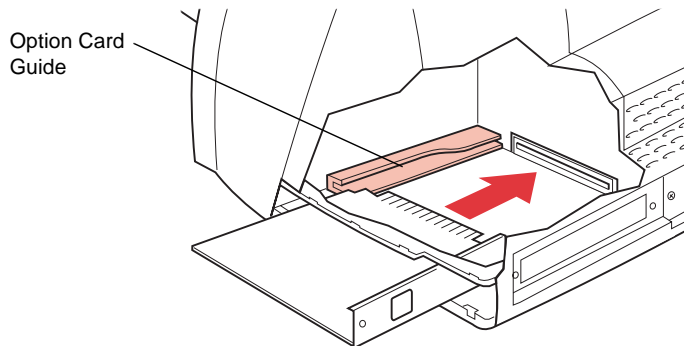
4 Locate the option card connector on the printer system board.

The connector is located inside the printer. You can access it through the option card slot.

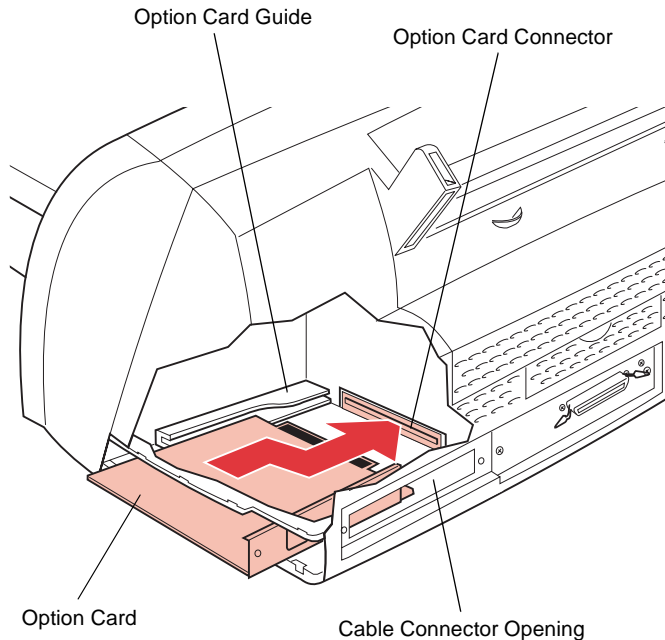


(Cut away view to show inside of the printer)

5 Locate the option card guide inside the option card slot on the left side of the slot.



- 6 Align the left side of the option card with the track inside the option card guide.



Note: Make sure the connectors on the right side of the option card clear the cable connector opening.

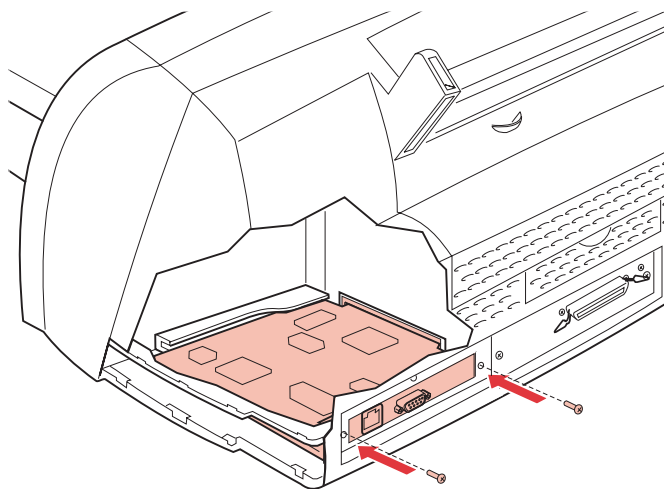
- 7 Push the card straight into the printer.

The option card automatically shifts toward the right as you push it in, lining the right side of the option card up with the cable connector opening.

The connector on the option card fits firmly into the option card connector.

Note: The cable connectors on the side of the hard disk option card, INA option card, Tri-Port interface option card, or parallel option card must fit through the cable connector opening on the back of the printer.

- 8** Insert the two screws saved from the metal plate (or the extra screws shipped with the option card) into the holes on either side of the cable connector opening on the back of the printer.



- 9** Gently tighten the screws to secure the card to the system board.
- 10** Continue with “Closing the Printer System Board on the Right Side of the Printer” on page 243.

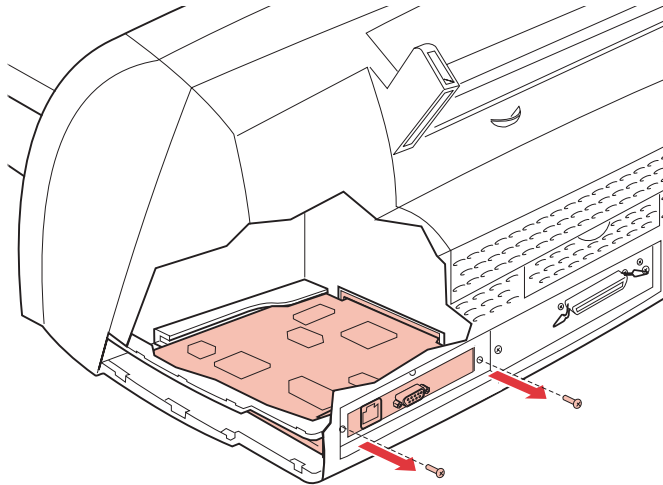
Removing an Option Card

Before you remove an option card, follow the steps under “Accessing the Printer System Board on the Right Side of the Printer” on page 236.

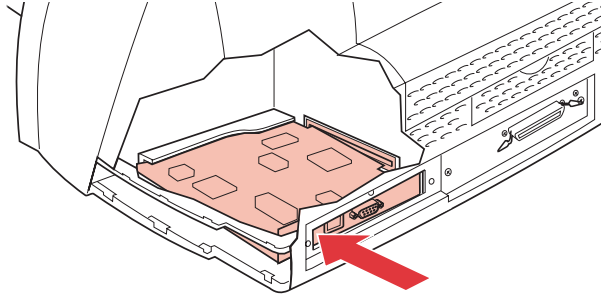
WARNING: The option card is easily damaged by static electricity. Touch something metal before you touch the card.

Complete the following steps to remove an option card:

- 1** Remove the two screws on either side of the cable connector opening on the back of the printer.

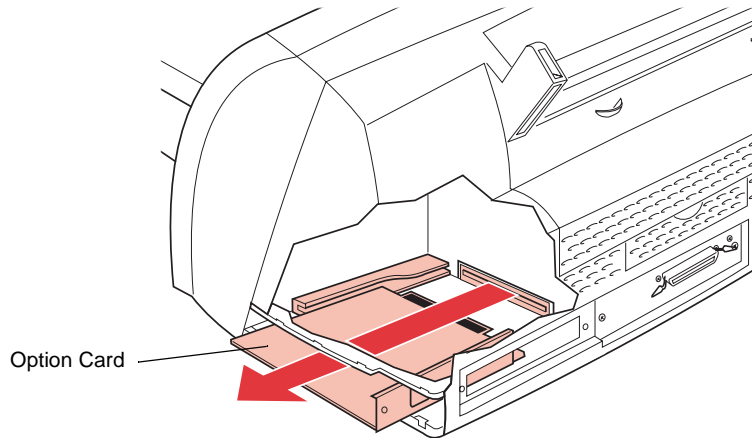


- 2** Push in on the right side of the option card, on the metal shield from the back of the printer, to release it from the option card connector.



Note: You hear the option card *snap* as it releases from the option card connector.

- 3** Gently pull the option card out of the connector.

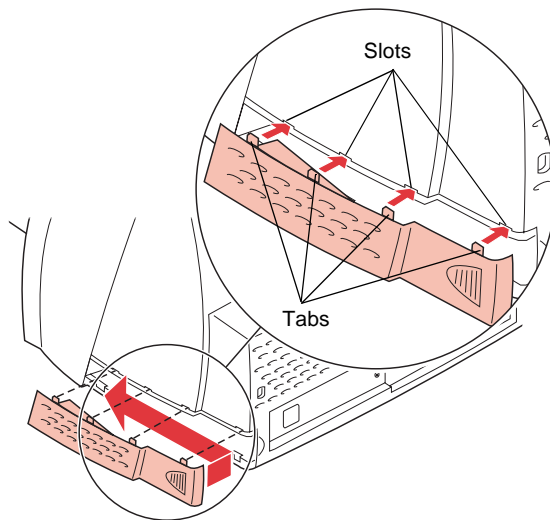


- 4** Place the option card in its original packaging.
If you did not save the packaging, wrap the option card in paper and store it in a box.
- 5** If you need to install an option card, see “Installing an Option Card” on page 237.
- 6** Continue with “Closing the Printer System Board on the Right Side of the Printer” on page 243.

Closing the Printer System Board on the Right Side of the Printer

Complete the following steps after you install an option card:

- 1** Insert the four tabs on the top of the system board access cover into the slots on the printer as shown.



- 2** Slide the system board access cover to the left until it snaps into place.
- 3** Reconnect all cables to the back of the printer.
- 4** Reconnect the power cord to the printer and a properly grounded electrical outlet.
- 5** Make sure the **Ready** message appears on the operator panel display.

If an error message appears, see “Understanding Printer Messages” on page 145.

Note: To verify that the option card is installed properly, see “Verifying the Installation of Options” on page 249.

Infrared Adapter

Chapter 10

You can use an infrared adapter to print remotely to an IrDA-compatible computer equipped with an infrared port.

The Tri-Port interface option card, which includes an infrared port, lets you connect the infrared adapter to your printer. For more information, see “Tri-Port Interface Option Card” on page 234. If you need to install the Tri-Port interface option card, see “Installing an Option Card” on page 237.

After you have installed the Tri-Port interface option card, use the following steps to connect the infrared adapter to your printer.

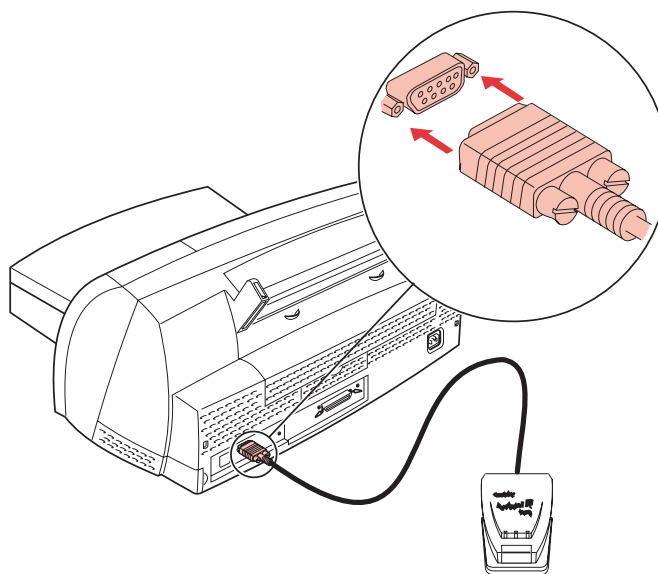
Connecting the Cable and Using the Infrared Adapter

To connect the infrared adapter to your printer:

- 1** Make sure the printer power cord is unplugged.
- 2** Locate the infrared port on the back of your printer.

The infrared port is attached to the Tri-Port interface option card installed in your printer.

- 3 Plug the adapter cable into the infrared port.**



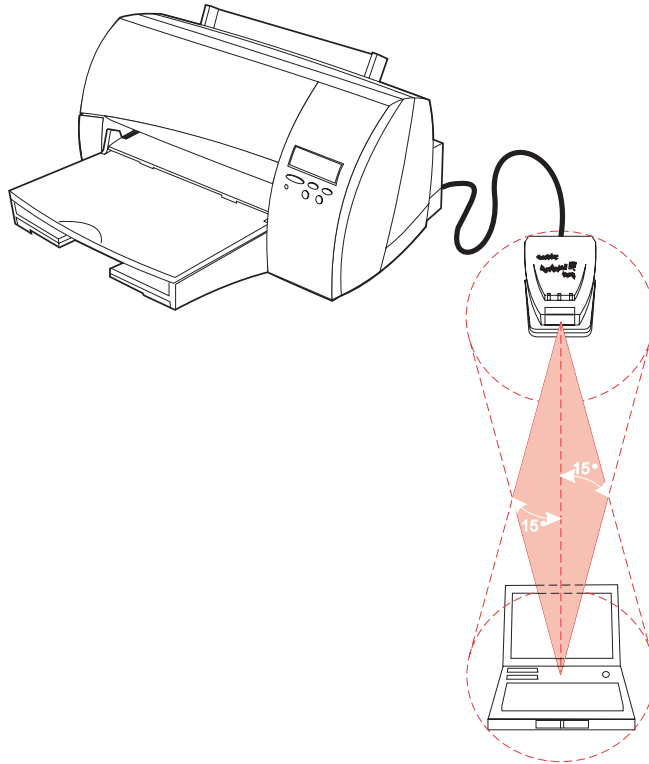
- 4 Reconnect the power cord to the printer and a properly grounded electrical outlet.**

If any light on the infrared adapter comes on when the printer is plugged in, the adapter is connected to the port correctly.

- 5 Aim the computer infrared port at the infrared port on the front of the Tri-Port interface option card.**

Refer to the documentation that came with your computer for information about your computer infrared port.

- 6** Draw an imaginary line between the two infrared ports. Aim the infrared port on your computer within 15 degrees of either side of this line as shown.



- 7** Send a job to print.

If the job does not print correctly, see **Infrared Adapter** on page 172.

Verifying the Installation of Options

Chapter 11

You can verify that printer options are properly installed by printing a menu settings page. The menu settings page shows current settings for the menus and a list of all installed options.

A menu settings page lists:

- All the printer settings contained in the operator panel menus and their default values.
- All installed features and options, such as, an optional tray 2, internal network adapter (INA), flash memory, and hard disk.
- Other printer settings.

Printing the Menu Settings Page

Note: Before printing the menu settings page, make sure the Paper Type setting for the paper source is **Plain Paper**.

To print a menu settings page:

- 1** Make sure the printer is plugged in and the **Ready** status message appears on the display.
See “Using the Operator Panel” on page 50 to identify the display and operator panel buttons if you need help.
- 2** Press **Menu>** or **<Menu** to enter the menus.
- 3** Continue to press and release **Menu>** until you see **TESTS MENU**.

4 Press **Select**.

TESTS MENU appears on the first line of the operator panel display and **Print Menus** is on the second line.

5 Press **Select** to select **Print Menus**.

The message **Printing Menu Settings** appears and remains on the operator panel display until the page prints. The printer returns to the **Ready** state after the menu settings page prints.

6 Check to see if the option you installed is listed.

All installed options are listed on the menu settings page under **Installed Features**.

If an option you installed does not appear on the page, it is not installed securely in place or aligned properly. Unplug the power cord, reinstall the option, and print the menu settings page again.

If an error message appears, see “Understanding Printer Messages” on page 145.

Appendix



Understanding Fonts

Appendix

This appendix contains basic information about fonts, their characteristics, and the specific fonts available in PCL 5 emulation, and PostScript Level 2 emulation.

Typefaces and Fonts

A *font* is a set of characters and symbols created with a distinct design. The distinct design is called a *typeface*. The typefaces you select add personality to a document. Well chosen typefaces make a document easier to read.

The printer has numerous resident fonts in PCL 5 emulation and PostScript Level 2 emulation. See “Resident Fonts” on page 258 for a listing of all resident fonts.

Weight and Style

Typefaces are often available in different weights and styles. These variations modify the original typeface so you can, for example, emphasize important words in text or highlight book titles. The different weights and styles are designed to complement the original typeface.

Weight refers to the thickness of the lines that form the characters. Thicker lines result in darker characters. Some words commonly used to describe the weight of a typeface are bold, medium, light, black, and heavy.

Style refers to other typeface modifications, such as tilt or character width. Italic and oblique are styles where the characters are tilted. Narrow, condensed, and extended are three common styles that modify the character widths.

Some fonts combine several weight and style modifications; for example Helvetica Narrow Bold Italic. A group of several weight and style variations of a single typeface is called a *typeface family*. Most typeface families have four variations: regular, italic, bold, and bold italic. Some families have more variations, as the following illustration for the Helvetica typeface family shows:

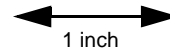
Helvetica	ABCDEFGHIJKLMNOPQRSTUVWXYZ
<i>Helvetica Italic</i>	<i>ABCDEFGHIJKLMNOPQRSTUVWXYZ</i>
Helvetica-Bold	ABCDEFGHIJKLMNOPQRSTUVWXYZ
<i>Helvetica-BoldItalic</i>	<i>ABCDEFGHIJKLMNOPQRSTUVWXYZ</i>
Helvetica-Narrow	ABCDEFGHIJKLMNOPQRSTUVWXYZ
<i>Helvetica-Narrow Italic</i>	<i>ABCDEFGHIJKLMNOPQRSTUVWXYZ</i>
Helvetica-Narrow Bold	ABCDEFGHIJKLMNOPQRSTUVWXYZ
<i>Helvetica-Narrow-BoldItalic</i>	<i>ABCDEFGHIJKLMNOPQRSTUVWXYZ</i>

Pitch and Point Size

The size of a font is specified as either a pitch or point size, depending on whether the font is fixed space or proportional.

In *fixed space* fonts, each character has the same width. *Pitch* is used to specify the size of fixed space fonts. It is a measure of the number of characters that will print in one horizontal inch of type. For example, all 10-pitch fonts print 10 characters per inch (cpi) and all 12-pitch fonts print 12 cpi:

Courier	10 Pitch	1234567890
Courier-Bold	10 Pitch	1234567890
Courier	12 Pitch	123456789012
Courier-Bold	12 Pitch	123456789012



In *proportional* (or *typographic*) fonts, every character can have a different width. Since proportional fonts have characters with different widths, the font size is specified in point size, not pitch. *Point size* refers to the height of the characters in the font. A *point* is defined as 1/72 inch. The characters in a font printed at 24 point will be twice as large as the characters in the same font printed at 12 point. The following illustration shows samples of a font printed in different point sizes:

48 point 36 point

24 point 18 point 12 point 10 point

The point size of a font is defined as the distance from the top of the tallest character in the font to the bottom of the lowest character in the font. Due to the definition of point size, different fonts printed at the same point size may appear quite different in size. This is because there are other font parameters that affect how the font looks. However, the point size of a font is an excellent specification of the relative size of a font. The following examples illustrate two very different proportional fonts at 18 point:

ITC Avant Garde abcdefghABCDEFGHIH

ITC Zapf Chancery abcdefghABCDEFGHIH

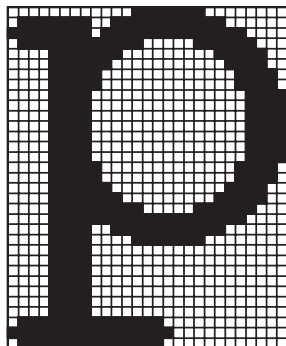
Symbol Sets

A *symbol set* is the collection of alphabetic and numeric characters, punctuation, and special characters available in the font you select. Symbol sets support the requirements for different languages or specific applications, such as math symbols used for scientific text.

In PCL 5 emulation, a symbol set also defines which character will print for each key on the keyboard (or more specifically, for each *code point*). Some applications require different characters at some code points. To support multiple applications and languages, your printer has 78 symbol sets in PCL 5 emulation.

Bitmapped and Scalable Fonts

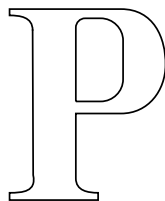
The printer uses both bitmapped and scalable fonts. Bitmapped fonts are stored in printer memory as predefined patterns of bits that represent a typeface at a specific size, style and resolution. An example of a character from a bitmapped font is shown below:



Bitmapped fonts are available in different type styles and point sizes as downloadable fonts. Contact the place where you purchased your printer for more information about downloadable fonts.

Scalable fonts (also called *outline* fonts) are stored as computer programs that define the outlines of the characters in the font. Each time you print characters from a scalable font, the printer creates a bitmap of the characters at the point size you choose, shown as follows, and saves it temporarily in printer memory. These

temporary bitmapped fonts are deleted when you turn off or reset the printer. Scalable fonts provide the flexibility of printing in many different point sizes.



P P P P

Your printer uses different scalable font formats for downloading fonts to the printer. PCL 5 emulation uses *Intellifont*, *Type 1*, and *TrueType* scalable fonts. PostScript Level 2 emulation uses *Type 1* and *TrueType* scalable fonts. There are thousands of different scalable fonts available in these different font formats from numerous font suppliers.

If you plan to use many downloadable bitmapped or scalable fonts or if you plan to use many different sizes of scalable fonts, you may need to purchase additional memory for your printer. See “Printer Memory” on page 210 for more information.

Resident Fonts

Your printer comes equipped with resident fonts stored permanently in printer memory. Most fonts are available in PCL 5 emulation and PostScript Level 2 emulation. Some of the most popular typefaces, like Courier and Times New Roman, are available for all printer languages. To print a list of fonts, select **TESTS MENU**, **Print Fonts**, and then either: **PCL Fonts** or **PS 2 Fonts** from the printer operator panel.

Scalable Fonts

You can select the following resident scalable fonts from the printer operator panel or from your software application.

The following fonts are available for all printer models in the following printer languages: PCL 5 emulation and PostScript Level 2 emulation. See “Printing a Font Sample List” on page 263 for more information.

Albertus Medium	Garamond Kursiv
Albertus Extra Bold	Garamond Halbfett
Antique Olive	Garamond Kursiv Halbfett
Antique Olive Italic	Helvetica
Antique Olive Bold	Helvetica Italic
Arial	Helvetica Bold
Arial Italic	Helvetica Bold Italic
Arial Bold	Helvetica Narrow
Arial Bold Italic	Helvetica Narrow Italic
Century Schoolbook Roman	Helvetica Narrow Bold
Century Schoolbook Italic	Helvetica Narrow Bold Italic
Century Schoolbook Bold	Helvetica Light
Century Schoolbook Bold Italic	Helvetica Light Oblique
CG Omega	Helvetica Black
CG Omega Italic	Helvetica Black Oblique
CG Omega Bold	ITC Avant Garde Book
CG Omega Bold Italic	ITC Avant Garde Book Oblique
CG Times	ITC Avant Garde Demi
CG Times Italic	ITC Avant Garde Demi Oblique
CG Times Bold	ITC Bookman Light
CG Times Bold Italic	ITC Bookman Light Italic
Clarendon Condensed Bold	ITC Bookman Demi
Coronet	ITC Bookman Demi Italic
Courier	ITC Zapf Chancery Medium Italic
Courier Italic	ITC Zapf Dingbats

Courier Bold	Letter Gothic
Courier Bold Italic	Letter Gothic Italic
Garamond Antiqua	Letter Gothic Bold
Marigold	Univers Medium
Palatino Roman	Univers Medium Italic
Palatino Italic	Univers Bold
Palatino Bold	Univers Bold Italic
Palatino Bold Italic	Univers Condensed Medium
Symbol	Univers Condensed Medium Italic
Times New Roman	Univers Condensed Bold
Times New Roman Italic	Univers Condensed Bold Italic
Times New Roman Bold	Wingdings
Times New Roman Bold Italic	

Bitmapped Fonts

Font Name	PCL 5 Emulation	PostScript Level 2 Emulation
Line Printer 16	All	None
POSTNET Barcode	All	None

Symbol Sets for PCL Emulation

ABICOMP International	ISO 8859/5 Latin/Cyrillic
ABICOMP Brazil/Portugal	ISO 8859/7 Latin/Greek
DeskTop	ISO 8859-9 Latin 5
Greek-8	ISO 8859-10 Latin 6
HP German	Legal
HP Spanish	PS Text
ISO-2 IRV	Roman-8
ISO-4 UK	Math-8
ISO-6 ASCII	MC Text
ISO-10 Swedish/Finnish	Microsoft Publishing
ISO-11 Swedish	PC-8 Bulgarian
ISO-14 JIS ASCII	PC-8 Code Page 437
ISO-15 Italian	PC-8 Danish/Norwegian
ISO-16 Portuguese	PC-8 Greek
ISO-17 Spanish	PC-8 Greek Alternate Code Page 437
ISO-21 German	PC-8 PC NOVA
ISO-25 French	PC-8 Polish Mazovia
ISO-57 Chinese	PC-775 Code Page 775
ISO-60 Norwegian	PC-850 Multilingual
ISO-61 Norwegian v2	PC-851 Latin /Greek Code Page 851
ISO-69 French	PC-852 Latin 2
ISO-84 Portuguese	PC-853 Turkish/Latin 3
ISO-85 Spanish	PC-855 Cyrillic Code Page 855
ISO 8859-1 Latin 1	PC-857 Turkish Code Page 857
ISO 8859-2 Latin 2	PC-860 Portugal Code Page 860
PC-861 Cyrillic Code Page 861	Turkish-8

PC-863 Canadian French Code Page 863	USSR-GOST
PC-865 Nortic Code Page 865	Ventura International
PC-869 Latin/Greek Code Page 869	Ventura Math
PC-911 Katakana	Ventura US
PC-1004 OS/2 Code Page 1004	Ventura Zapf Dingbats
PC Cyrillic	Windows 3.0 Latin 1
PC-Turkish	Windows 3.1 Baltic
PC-Ukrainian	Windows 3.1 Latin 1
Pi Font	Windows 3.1 Latin 2
POSTNET Barcode	Windows 3.1 Latin 5
PS ITC Zapf Dingbats	Windows Latin/Cyrillic
PS Math	Windows Latin/Greek
Symbol	Wingdings

Note: Not all fonts support all of the symbol sets. Use your printer operator panel to find which symbol sets are supported by each font.

Downloadable Fonts

You can download scalable fonts in PostScript Level 2 emulation and either scalable or bitmapped fonts in PCL 5 emulation. Fonts can be downloaded to printer memory or to a Flash Memory Option or Hard Disk Option. Fonts downloaded to flash memory or hard disk remain in memory even after the printer language changes, the printer resets, or the printer is turned off.

The MarkVision utility includes a remote management function that lets you manipulate the font files you've downloaded to flash memory or hard disk.

Printing a Font Sample List

The font sample list contains print samples and other information about all of the fonts currently available to the printer language.

Note: Before printing the font sample list, make sure letter-size, legal-size, or A4-size paper is loaded in the paper source.

To print a list of the fonts currently available:

- 1** Make sure the printer is plugged in and the **Ready** status message appears on the operator panel display.

See “Using the Operator Panel and Menus” on page 49 to identify the display and operator panel buttons if you need help.

- 2** Press **Menu>** or **<Menu** to enter the menus.
- 3** Continue to press and release **Menu>** or **<Menu** until you see **TESTS MENU**.
- 4** Press **Select**.
- 5** Press **Menu>** until **Print Fonts** appears on the first line of the display.
- 6** Press **Select**.
- 7** Press **Menu>** or **<Menu** until either **PCL Fonts** or **PS 2 Fonts** appears on the second line of the display.
 - Select **PCL Fonts** to print a listing of the fonts available to the PCL 5 emulator.
 - Select **PS 2 Fonts** to print a listing of the fonts available to the PostScript emulator. This choice only displays when the PostScript printer language is available in the printer.
- 8** Press **Select**.

The message **Printing Font List** appears and remains on the operator panel display until the page prints. The printer returns to the **Ready** state after the font sample list prints.

Reference



Notices

Electronic Emission Notices

Without a Network Card Installed

Federal Communications Commission (FCC) Compliance Information Statement

The Optra Color 45 has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The FCC Class B limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

Note: To assure compliance with FCC regulations on electromagnetic interference for a Class B computing device, use a properly shielded and grounded cable such as Lexmark part number 1329605. Use of a substitute cable not

Reference

properly shielded and grounded may result in a violation of FCC regulations.

Any questions regarding this compliance information statement should be directed to:

Director of Lab Operations
Lexmark International, Inc.
740 New Circle Road NW
Lexington, KY 40550
(606) 232-3000

Industry Canada Compliance Statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Japanese VCCI Notice

(Without a Network Card Installed)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス B 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

European Community (EC) Directives Conformity

This product is in conformity with the protection requirements of EC Council directives 89/336/EEC and 73/23/EEC on the approximation and harmonization of the laws of the Member States relating to electromagnetic compatibility and safety of electrical equipment designed for use within certain voltage limits.

A declaration of conformity with the requirements of the Directive has been signed by the Director of Manufacturing and Technical Support, Lexmark International, S.A., Boigny, France.

This product satisfies the Class B limits of EN 55022 and safety requirements of EN 60950.

With a Network Card Installed

Federal Communications Commission (FCC) Compliance Information Statement

The Optra Color 45 has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The FCC Class A 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 instruction manual, 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.

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

To assure compliance with FCC regulations on electromagnetic interference for a Class A computing device, use a properly shielded and grounded cable such as Lexmark part number 1329605. Use of a substitute cable not properly shielded and grounded may result in a violation of FCC regulations.

Industry Canada Compliance Statement

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Japanese VCCI Notice (With a Network Card Installed)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

European Community (EC) Directives Conformity

This product is in conformity with the protection requirements of EC Council directives 89/336/EEC and 73/23/EEC on the approximation and harmonization of the laws of the Member States relating to electromagnetic compatibility and safety of electrical equipment designed for use within certain voltage limits.

A declaration of conformity with the requirements of the Directive has been signed by the Director of Manufacturing and Technical Support, Lexmark International, S.A., Boigny, France.

This product satisfies the Class A limits of EN 55022 and safety requirements of EN 60950.

Warning

When a network card is installed, this is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take adequate measures.

The United Kingdom Telecommunications Act 1984

This apparatus is approved under the approval number NS/G/1234/J/100003 for the indirect connections to the public telecommunications systems in the United Kingdom.

German Acoustics Statement

The following measurements were made in accordance with ISO 7779 and reported in conformance with ISO 9296.

1-Meter Average Sound Pressure, dBA		
	Quick Print Quality (300 dots per inch [dpi])	Normal Quality (600 dpi)
Printing	52 dBA	50 dBA
Idling	The printer is silent while idling.	

Energy Star




The EPA ENERGY STAR Computers program is a partnership effort with computer manufacturers to promote the introduction of energy-efficient products and to reduce air pollution caused by power generation.

Companies participating in this program introduce personal computers, printers, monitors, or fax machines that power down when they are not being used. This feature will cut the energy used by up to 50 percent. Lexmark is proud to be a participant in this program.


As an Energy Star Partner, Lexmark International, Inc. has determined that this product meets the Energy Star guidelines for energy efficiency.

Safety

Safety Information


- If your product is NOT marked with this symbol , it MUST be connected to an electrical outlet that is properly grounded.
- The power cord must be connected to an electrical outlet that is near the product and easily accessible.
- Refer service or repairs, other than those described in the operating instructions, to a professional service person.
- This product is designed, tested and approved to meet strict global safety standards with the use of specific Lexmark components. The safety features of some parts may not always be obvious. Lexmark is not responsible for the use of other replacement parts.

Consignes de sécurité


- Si le symbole  n'apparaît PAS sur votre produit, ce dernier DOIT être branché sur une prise de courant mise à la terre.
- Le câble d'alimentation doit être connecté à une prise de courant placée près du produit et facilement accessible.
- L'entretien et les réparations autres que ceux décrits dans les instructions d'emploi doivent être effectués par le personnel de maintenance qualifié.

- Ce produit a été conçu, testé et approuvé pour respecter les normes strictes de sécurité globale lors de l'utilisation de composants Lexmark spécifiques. Les caractéristiques de sécurité de certains éléments ne sont pas toujours évidentes. Lexmark ne peut être tenu responsable de l'utilisation d'autres pièces de rechange.

Norme di sicurezza


- Se il prodotto NON è contrassegnato con questo simbolo  DEVE essere collegato lo stesso ad una presa elettrica con messa a terra.
- Il cavo di alimentazione deve essere collegato ad una presa elettrica posta nelle vicinanze del prodotto e facilmente raggiungibile.
- Per la manutenzione o le riparazioni, escluse quelle descritte nelle istruzioni operative, consultare il personale di assistenza autorizzato.
- Il prodotto è stato progettato, testato e approvato in conformità a severi standard di sicurezza e per l'utilizzo con componenti Lexmark specifici. Le caratteristiche di sicurezza di alcune parti non sempre sono di immediata comprensione. Lexmark non è responsabile per l'utilizzo di parti di ricambio di altri produttori.

Sicherheitshinweise


- Falls der Drucker nicht mit diesem Symbol  markiert ist, muß er an eine ordnungsgemäß geerdete Steckdose angeschlossen werden.
- Das Netzkabel muß an eine Steckdose angeschlossen werden, die sich in der Nähe des Geräts befindet und leicht zugänglich ist.
- Wartungsarbeiten und Reparaturen, mit Ausnahme der in der Betriebsanleitung näher beschriebenen, sollten Fachleuten überlassen werden.

- Dieses Produkt und die zugehörigen Komponenten wurden entworfen und getestet, um beim Einsatz die weltweit gültigen Sicherheitsanforderungen zu erfüllen. Die sicherheitsrelevanten Funktionen der Bauteile und Optionen sind nicht immer offensichtlich. Sofern Teile eingesetzt werden, die nicht von Lexmark sind, wird von Lexmark keinerlei Verantwortung oder Haftung für dieses Produkt übernommen.

Pautas de Seguridad


- Si su producto NO tiene este símbolo, , es IMPRESCINDIBLE conectarlo a una toma de corriente eléctrica con toma de tierra correcta.
- El cable de alimentación deberá conectarse a una toma de corriente situada cerca del producto y de fácil acceso.
- Cualquier servicio o reparación deberá realizarse por parte del personal cualificado, a menos que se trate de las averías descritas en las instrucciones de utilización.
- Este producto se ha diseñado, verificado y aprobado para cumplir los más estrictos estándares de seguridad global usando los componentes específicos de Lexmark. Puede que las características de seguridad de algunas piezas no sean siempre evidentes. Lexmark no se hace responsable del uso de otras piezas de recambio.

Veiligheidsvoorschriften


- Zorg ervoor dat uw produkt is aangesloten op een geaard stopcontact als het produkt NIET is gemarkeerd met het symbool .
- Het netsnoer moet worden aangesloten op een gemakkelijk bereikbaar stopcontact in de buurt van het produkt.

- Neem contact op met een professionele onderhoudstechnicus voor onderhoud en reparaties die niet in de bij het produkt geleverde instructies beschreven worden.
- Dit product is ontworpen, getest en goedgekeurd om te voldoen aan strenge internationale veiligheidsvoorschriften. De veiligheidsvoorzieningen van bepaalde onderdelen zullen niet altijd duidelijk zichtbaar zijn. Lexmark is niet verantwoordelijk voor het gebruik van andere vervangende onderdelen.

Sikkerhedsoplysninger


- Hvis dit produkt IKKE er markeret med dette symbol  , SKAL det sluttes til en stikkontakt med jordforbindelse.
- Ledningen skal sluttes til en stikkontakt, der er tæt på produktet og som er let tilgængelig.
- Service og reparationer, som ikke er beskrevet i brugsanvisningen, skal udføres af en kvalificeret tekniker.
- Dette produkt er udviklet, testet og godkendt i overensstemmelse med Lexmarks verdensomspændende standarder for sikkerhed. Delenes sikkerhedsfunktioner kan være skjulte. Lexmark påtager sig intet ansvar for brugen af uoriginale reservedele.

Sikkerhetsinformasjon


- Hvis produktet ditt ikke er merket med dette symbolet,  , må det bare kobles til en stikkontakt som er jordet.
- Ledningen må være koblet til en stikkontakt nær produktet. Stikkontakten må være lett tilgjengelig.
- La bare kvalifisert personale ta seg av service og reparasjon som ikke er direkte beskrevet i bruksanvisningen.

- Dette produktet er utviklet, testet og godkjent i overensstemmelse med strenge verdensomspennende sikkerhetsstandarder for bestemte Lexmark-deler. Delenes sikkerhetsfunksjoner kan være skjulte. Lexmark er ikke ansvarlig for bruk av uoriginale reservedeler.

Säkerhetsanvisningar


- Om produkten INTE är märkt med denna symbol  MÅSTE den anslutas till ett jordat vägguttag.
- Nätkabeln måste anslutas till ett lättåtkomligt vägguttag i närheten av maskinen.
- Låt endast utbildad servicepersonal utföra sådan service och sådana reparationer som inte beskrivs i handledningen.
- Denna produkt är utformad, testad och godkänd för att uppfylla internationella säkerhetsbestämmelser när den används tillsammans med andra Lexmark-produkter. Säkerhetsegenskaperna för vissa delar är inte helt uppenbara. Lexmark frånsäger sig ansvaret om delar av ett annat fabrikat används.

Informació de Seguretat


- Si el vostre producte NO està marcat amb el símbol  , S'HAURÀ de connectar a una presa elèctrica de terra.
- El cable de potència s'haurà de connectar a una presa de corrent propera al producte i fàcilment accessible.
- Si heu de fer una reparació que no figuri entre les descrites a les instruccions de funcionament, confieu-la a un professional.
- Aquest producte està dissenyat, comprovat i aprovat per tal d'acomplir les estrictes normes de seguretat globals amb la utililització de components específics de Lexmark. Les característiques de seguretat

d'algunes peces pot ser que no sempre siguin òbvies. Lexmark no es responsabilitza de l'us d'altres peces de recanvi.


Turvaohjeet

- Jos tuotteessa ei ole tätä tunnusta,  , sen saa kytkeä vain maadoitettuun pistorasiaan.
- Tuotteen verkkojohto on kytkettävä sitä lähellä olevaan pistorasiaan. Varmista, että kulku pistorasian luo on esteetön.
- Muut kuin käyttöohjeissa mainitut huolto- tai korjaustoimet on jätettävä huoltoedustajalle.
- Tämä tuote on testattu ja hyväksytty. Se täyttää korkeat maailmanlaajuiset turvallisuusvaatimukset, kun siinä käytetään tiettyjä Lexmarkin valmistusosia. Joidenkin osien turvallisuusominaisuudet eivät aina ole itsestään selviä. Lexmark ei vastaa muiden kuin alkuperäisten osien käytöstä.


Informações de Segurança

- Se o produto NÃO estiver marcado com este símbolo,  , é necessário ligá-lo a uma tomada com ligação à terra.
- O cabo deve ser ligado a uma tomada localizada perto do produto e facilmente acessível.
- Para todos os serviços ou reparações não referidos nas instruções de operação, deve contactar um técnico dos serviços de assistência.
- Este produto foi concebido, testado e aprovado para satisfazer os padrões globais de segurança na utilização de componentes específicos da Lexmark. As funções de segurança de alguns dos componentes podem não ser sempre óbvias. A Lexmark não é responsável pela utilização de outros componentes de substituição.


Informações de Segurança

- Se o produto NÃO estiver marcado com este símbolo,  , ele DEVE SER conectado a uma tomada elétrica com ligação à terra.
- O cabo de alimentação deve ser conectado a uma tomada elétrica localizada perto do produto e de fácil acesso.
- Para todos os serviços ou reparações não descritos nas instruções de operação, entre em contato com um técnico dos serviços de assistência.
- Este produto está projetado, testado e aprovado para satisfazer os padrões globais de segurança para uso de componentes específicos da Lexmark. Os recursos de segurança de alguns componentes podem não ser sempre óbvios. A Lexmark não é responsável pelo uso de outros componentes de substituição.

Информация по технике безопасности

- Если приобретенное Вами изделие НЕ имеет маркировки , то его НЕОБХОДИМО подключать к надежно заземленной розетке.
- Кабель питания следует подключать к легкодоступной электрической розетке, расположенной вблизи от места установки изделия.
- Операции по обслуживанию и ремонту, за исключением описанных в настоящем Руководстве, должны выполняться специально обученным персоналом.
- Данное изделие спроектировано, испытано и прошло аттестацию на соответствии жестким глобальным стандартам безопасности в расчете на использование определенных частей производства фирмы Lexmark. Влияние отдельных деталей на безопасность не всегда очевидно. Фирма Lexmark не несет ответственности за использование запасных частей, отличных от рекомендованных.

Przepisy bezpieczeństwa


Jeżeli produkt NIE jest oznaczony symbolem , może być podłączony TYLKO do prawidłowo uziemionego gniazda elektrycznego.

Kabel zasilający musi być podłączony do łatwo dostępnego gniazda elektrycznego, znajdującego się w pobliżu urządzenia.


Wszelkie naprawy i czynności serwisowe, oprócz opisanych w instrukcji obsługi, powinny być wykonywane przez autoryzowany serwis.

Produkt został zaprojektowany z wykorzystaniem określonych podzespołów firmy Lexmark i zatwierdzony jako spełniający światowe standardy bezpieczeństwa. Pozostałe podzespoły mogą nie spełniać tych warunków. Firma Lexmark nie ponosi odpowiedzialności za skutki używania innych części zamiennych.


Güvenlik Bilgisi

- Ürünüzde  simgesi YOKSA, ürün doğru biçimde topraklanmış bir elektrik prizine TAKILMALIDIR.
- Güç kablosu, ürünün yakınında ve kolay ulaşılabilir bir elektrik prizine takılmalıdır.
- İşletim yönergelerinde açıklananlar dışında servis veya onarım için yetkili servis personeline başvurun.
- Bu ürün, özel Lexmark bileşenlerinin kullanımı konusundaki genel güvenlik standartlarına uyacak biçimde tasarlanmış, denenmiş ve onaylanmıştır. Bazı parçaların güvenlik özellikleri her zaman kesin olmaz. Lexmark, başka yedek parçaların kullanımından sorumluluk taşımaz.


安全のためのご案内

- ご使用の製品にこの  記号がついていない場合は、正しく接地（アース）してある電源コンセントに接続する必要があります。
- 電源コンセントは、接続の邪魔となるような物がない近くの電源コンセントに接続してください。
- 整備・修理が必要な場合、使用説明書にその旨の記載がある場合を除いて、専門の技術者にご連絡ください。
- 当製品は、特定の Lexmark 部品に関するきびしい包括的安全基準に適合するように、設計、試験され、承認されています。部品には、安全機能が必ずしも明白でないものもあります。Lexmark は、他の交換部品の使用は保証できません。

安全资讯

- 如果您的产品没有  符号，所接的电源插座一定要有适当的接地处理。
- 电线接续的插座与产品的距离不可太远，并且要合乎使用方便的原则。
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Warranty

Statement of Limited Warranty

Lexmark International, Inc., Lexington, KY

This warranty applies to the United States and Canada. For customers outside the U.S. and Canada, refer to the printed country-specific warranty information that came with your printer.

Lexmark Optra Color 45

This Statement of Limited Warranty applies to this machine if it was originally purchased for your use, and not for resale, from Lexmark or a Lexmark authorized dealer, referred to in this statement as Remarketer. This machine is subject to these terms only if located in the country of the seller from whom the machine was purchased.

Warranty

Lexmark warrants that this machine:

- Is manufactured from new parts, or new and serviceable used parts which perform like new parts,
- Is free from defects in material and workmanship,
- Conforms to Lexmark's Official Published Specifications, and
- Is in good working order.

If this machine does not function as warranted during the warranty period, it will be repaired or replaced without charge. Contact a Remarketer or Lexmark for specific guidance on obtaining service.

The warranty period is 12 months and starts on the date of original purchase as shown on the purchase receipt.

If this machine is a feature or accessory, this statement applies only when that feature or accessory is used with the machine for which it was designed. To obtain warranty service, you may be required to present the feature or accessory with such machine.

If you transfer this machine to another user, warranty service under the terms of this statement is available to that user for the remainder of the warranty period. You should transfer proof of original purchase and this statement to that user.

Warranty Service

To obtain warranty service you may be required to present proof of original purchase. Warranty service will be provided at a Remarketer or a Lexmark designated location. You may be required to deliver your machine to the Remarketer or Lexmark, or ship it prepaid and suitably packaged to a Lexmark designated location.

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When warranty service involves the exchange of a machine or part, the item replaced becomes the property of the Remarketer or Lexmark. The replacement may be a new or repaired item. The replacement item assumes the remaining warranty period of the original machine.

Replacement is not available to you if the machine you present for exchange is defaced, altered, in need of a repair not included in warranty service, or damaged beyond repair. Also, such machine must be free of any legal obligation or restrictions that prevent its exchange.

Before you present this machine for warranty service, remove all programs, data, and removable storage media.

Extent of Warranty

We do not warrant uninterrupted or error-free operation of a machine.

Warranty service does not include repair of failures caused by misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, failure caused by service of the machine by those other than Lexmark, or failure caused by a product, including supplies, for which we are not responsible.

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Limitation of Liability

Your sole remedy under this Statement of Limited Warranty is set forth in this section. For any claim concerning performance or non-performance of Lexmark or a Remarketer for this machine under this Statement of Limited Warranty, you may recover actual damages up to the limit set forth in the following paragraph.

Lexmark's liability for actual damages from any cause whatsoever will be limited to the greater of 1) \$5,000 or 2) the amount you paid for the machine which caused the damages. This limitation of liability will not apply to claims by you for bodily injury or damage to real property or tangible personal property for which Lexmark is legally liable. In no event will Lexmark be liable to you for any damages caused by your failure to fulfill your responsibilities under this Statement of Limited Warranty. In no event will Lexmark be liable for any lost profits, lost savings, incidental damage, or other economic consequential damages. This is true even if you

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Additional Rights

Some states or countries do not allow limitations on how long an implied warranty lasts, or do not allow the exclusion or limitation of incidental or consequential damages. If such laws apply, the limitations or exclusions contained in this statement may not apply to you.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Glossary

A

A3

Paper measuring 297 mm x 420 mm.

A4

Paper measuring 210 mm x 297 mm.

A5

Paper measuring 148 x 210 mm.

additive color

Color produced by mixing (or adding different combinations of the primary colors red, green, and blue (RGB).

Color computer screens produce additive color.

all points addressable (APA)

In computer graphics, the ability to address and display or not display each picture element (pel) on a display surface.

APA

See *all points addressable*.

application

See *software application*.

automated fax system

Lexmark's quick turnaround system for providing customers product information, technical tips, and printer driver information. The automated attendant walks the customer through the steps necessary to receive information by fax.

automatic interface

A printer function that determines the active interface: LocalTalk, parallel, serial or network.

B

B5

- (1) Envelope measuring 176 x 250 mm.
- (2) Paper measuring 182 x 257 mm.

baud

The rate at which data is being sent to or received from the computer through the serial interface, in bits per second (bps).

Reference

bidirectional communication

Two-way communication between your printer and a computer, using Network Printing Alliance Protocol (NPAP 1.0 standard).

bitmapped font

Typefaces set in specific sizes and styles. Bitmapped fonts are mapped out bit-by-bit.

bits per second (bps)

A measurement of the speed of data being transferred through a serial interface.

bps

See *bits per second*.

buffer

A portion of memory used to temporarily store data.

Busy

A state in which the printer is processing data or printing pages.

C

C5

Envelope measuring 162 x 229 mm.

card stock

Heavy, single-ply paper frequently used for reports or book covers.

Centronics parallel interface

A standard for connecting printers and other peripheral devices to a computer. It defines the plug, socket, and electrical signals that are used for controlling the transmission of data.

CMYK

Abbreviation for the subtractive primary colors cyan, yellow, and magenta (CYM), and composite black (K).

composite black

The result of combining a mixture of each of the subtractive primary colors cyan, yellow, and magenta (CYM). Also called *process black*.

configuration

(1) The arrangement of a computer system, printer, or network. (2) The devices and programs that make up a system, subsystem, or network.

curl

The curvature at the edge of a sheet of paper.

custom

Paper size value to select for all paper that is not a standard size; defaults to 297 x 449 mm. Set the actual size of the page from your software application.

D**Data Set Ready (DSR)**

A “handshaking” signal contained in a serial interface indicating the device is ready to exchange information.

data stream

Print data and control information flowing from the host system (computer) to the printer from beginning to end without interruption.

Data Terminal Ready (DTR)

A “handshaking” signal in a serial interface indicating the device is ready to exchange information.

default

An attribute, value, or setting that is assumed when none is explicitly specified.

display

The area of the operator panel consisting of a liquid crystal display that shows printer menus and messages.

DL

Envelope measuring 110 x 220 mm.

download

To transfer information, such as fonts, from a diskette or other device to your computer or printer for temporary or permanent storage.

dpi

Dots per inch. See *resolution*.

DRAM

See *dynamic random access memory*.

driver

See *printer driver*.

DSR

See *Data Set Ready*.

DTR

See *Data Terminal Ready*.

dynamic random access memory (DRAM)

Memory that allows rapid storing and retrieving of data. DRAM contents are erased when electrical power is turned off.

E**emulation**

The imitation by a printer of another printer processing language or functions; for example, PCL 5 emulation imitates the printer language used with Hewlett-Packard printers.

ENA

See *External Network Adapter*.

error message

A message that appears on the operator panel display describing a printer problem. The printer requires operator intervention before it can continue processing.

Ethernet

A network that utilizes carrier sense multiple access with collision detection (CSMA/CD). For example:

- 10BaseT Ethernet network uses telephone twisted-pair.
- 10Base2 Ethernet network uses RG-58 coax cable (also referred to as Cheapnet or Thicknet).

executive paper

Paper measuring 7.25 x 10.5 in.

external network adapter

A LAN connector that attaches externally to the printer and allows you to connect various printers from the manufacturers to your network, thereby freeing dedicated PC print servers for use as LAN workstations.

F

factory default

Printer setting defined when the printer is manufactured.

Fastbytes protocol

A parallel printer protocol that enables the printer to receive information at faster transmission rates than normal.

fixed-pitch font

A font that prints each character in a *fixed* amount of horizontal space, regardless of the width of the character. These fonts are identified by the number of characters that print in 1 inch of horizontal line space, such as 10 pitch or 12 pitch.

flash memory

Optional memory that provides non-volatile storage for downloaded fonts, symbol sets, or macros.

font

A family or set of characters that have common visual characteristics, such as size, weight, and style; for example, Courier 10 Italic.

G

grain

The alignment of the paper fibers in a sheet of paper. For example, in grain long paper, the fibers run the length of the page.

g/m²

Grams per square meter. Metric measurement for paper weight.

H**handshaking**

The exchange of predetermined signals when a connection is established.

hex trace

A diagnostic printer mode that lets you print the uninterpreted printer data stream so you can see a hexadecimal and character representation of a print job.

Honor INIT

A printer setting that allows the printer to be reset by an initialization signal sent over the parallel port from the computer.

I**INA**

See *Network Option*.

Installation Utilities

A group of printer utilities that help you set up and test the printer, install and configure printer drivers, and manage printer functions after setup.

Integrated Network Option

See *Network Option*.

interface

The connection between the computer and the printer.

internal network adapter (INA)

See *Network Option*.

K**KB**

Kilobyte; 1024 bytes.

L**LAN**

See *local area network*.

landscape orientation

Printed page orientation in which the width of the page is greater than the height.

LCD

See *Liquid crystal display*.

leading edge

The edge of the printer page that exits the printer first.

ledger

Paper measuring 11 x 17 in.

legal paper

Paper measuring 8.5 x 14 in.

Reference

letter paper

Paper measuring 8.5 x 11 in.

lines per page (lpp)

The number of lines of text that can be printed on one page.

link

The connection between the computer system or Local Area Network and the printer.

liquid crystal display (LCD)

The technology that displays menu selections and messages on the operator panel.

local area network (LAN)

A computer network located on a user's premises within a limited geographical area.

LPTx

A representation of one of the logical parallel ports (for example, LPT1) on a personal computer.

M

macro

A collection of commands grouped together and temporarily or permanently stored in printer memory.

MarkVision

A printer utility that works with the printer bidirectional communication capability to provide continuous printer status and to allow you to configure multiple printers from a single setup file.

MB

Megabyte; 1,048,576 bytes.

MBps

Megabytes per second.

menu

The choices for displaying, altering, or testing printer features and settings.

MIF

Management Information Format, which can be used to store data in MarkVision. The format is based on the standard layout approved by the Desktop Management Task Force.

monospaced font

A font in which the space for each character does not vary, regardless of the width of the character.

N

network

A group of computers, printers, and other hardware devices connected to each other so they can share information.

Network Option

The network card and network printer utility that connects your printer to a local area network.

Not Ready

A printer state in which the printer does not accept data from the host. This state is initiated either by operator intervention or a printer error.

ns

Nanosecond (one billionth of a second).

O**operator panel**

The buttons and liquid crystal display used to change printer settings and display printer status.

operator panel display

See *display*.

operator panel overlay

An adhesive label that has translated names in different languages for the operator panel display buttons.

output bin

The paper exit area on top of the standard input tray.

overlay

Background text or graphics intended to appear the same in each file where the overlay is applied.

oversize

Paper measuring 297 mm x 558 mm.

P**pages per minute (ppm)**

The number of typical pages of text that can be printed in one minute.

parallel interface

A bidirectional interface where data is exchanged between the computer and the printer.

pel

Picture element. The smallest addressable unit that can be effectively reproduced by the printer.

pitch

A unit of measure that designates the number of characters that can be printed in 1 horizontal inch. For example, a 10-pitch font prints 10 characters per inch (cpi).

point

A unit of measure that designates the height of a printed character (1 point = 1/72 in.).

Reference

point size

The height of the characters in a font.

portrait orientation

Printed page orientation in which the height of the page is greater than the width.

ppm

See *pages per minute*.

primary color

Colors that, when combined, produce white in an additive color system and black in a subtractive color system. Red, green, and blue (RGB) are the additive primaries. Cyan, yellow, and magenta (CYM) are the subtractive primaries.

print cartridge

The replaceable unit inside the printer that contains the ink supply.

print material

Any materials you print on, such as paper, envelopes, labels, card stock, and transparencies.

printer driver

A program that translates the language of a software application to the language of the printer so the two can communicate data.

process black

See *composite black*.

proportionally spaced font

A font that varies with the width of the character to allow uniform spacing around characters.

protocol

A set of rules governing the communication and the transfer of data between two or more devices in a communication system.

R

RAM

See *random access memory*.

random access memory (RAM)

Memory that allows rapid storing and retrieving of data. RAM contents are erased when electrical power is turned off.

Ready

State of the printer in which it can receive, process, and print data.

resolution

A measure of the sharpness of a printer image, expressed in the number of dots per inch (dpi).

RGB

Abbreviation for red, green, and blue (the additive primary colors).

S**scalable font**

A font whose characters are stored only as outlines so it is easy to change (or scale) the size of the characters (measured in points).

screen font

A font you download to your computer so it appears the same on the computer screen as it does on a printed page.

serial interface

A way of communicating between computer and printer by transmitting data one bit at a time.

server

A device that allows people using LAN workstations to share resources such as printers on a network.

service message

A printer message that indicates the printer needs service.

setting

Values you choose from printer menus or software applications that control the printer operation and the appearance of the printed page.

setup utility

A program provided with the printer to install printer drivers, test printer setup, and complete the setup of printer options.

SmartSwitch

A printer function that automatically switches the printer language to that of the job the software application is sending to the printer.

software application

Any program loaded on your computer used to perform a specific task, such as word processing or data compiling.

Standard protocol

A parallel printer protocol where the printer can receive information sent from the computer at a normal transmission rate.

status message

A printer message that gives information on the state of the printer.

subtractive color

Color produced by mixing primary colors to produce a pigment or dye that reflects one wavelength of light and absorbs (or subtracts) all others. Color printers use subtractive color. The subtractive primary colors are cyan, yellow, and magenta (CYM).

symbol set

A unique set of alphanumeric characters and symbols that the printer uses to print the requested font. Different symbol sets offer the diverse characters required for different languages or symbol-intense applications.

system board

The printer main circuit board.

T

timeout

A time interval allotted for certain operations to occur.

Token-Ring

A type of network communication that conforms to IEEE 802.5 standard. The name is derived from its physical ring configuration and the passing of a token from adapter to adapter.

Toolkit

A group of utilities shipped with the printer that help you perform routine printer functions, such as downloading fonts, installing screen fonts, sending printer commands, and so on.

tray linking

A means of increasing the capacity of the paper source by having the printer automatically switch between paper sources until they all are empty.

TrueType fonts

Fonts used by Microsoft Windows that use a single font outline for both screen display and printing. You can scale TrueType fonts to any height, and they print exactly as they appear on the screen.

type size

A measurement in pitch or points of a graphic character in a font.

type style

The form or shape of the characters in a font.

typeface

The style that defines a group of characters and symbols.

typographic fonts

Fonts whose characters are spaced proportionally on the page according to character width.

U**user default**

Printer setting selected by a user that is different from the one defined during printer manufacturing (the factory default).

V**value**

The available settings for a specific menu item.

W**watermark**

See *overlay*.

weight

The thickness of the typeface line or the thickness of the paper.

Index

Numerics

900–999 service messages 159

A

A4 Width, PCL Emul Menu 87

Advanced Status, Parallel Menu 93

Align Cartridges, Tests Menu 74

alignment test page 192

attendance messages 153

200 Paper Jam 159

30 Black Print Cart Missing 153

30 Color Print Cart Missing 153

30 Photo Print Cart Missing 153

35 Res Save Off Deficient Memory
153

37 Insufficient Collation Memory
154

38 Memory Full 154

51 Defective Flash 155

52 Flash Full 155

53 Unformatted Flash 155

54 Parallel Error 156

54 Serial Option 1 Error 156

56 Parallel Port Disabled 157

56 Serial 1 Port Disabled 157

61 Defective Disk 157

62 Disk Full 158

63 Unformatted Disk 158

attendance messages (continued)

70-79 reserved messages 158

88 Black Print Cartridge Low 158

88 Color Print Cartridge Low 158

88 Photo Print Cartridge Low 158

Change tray 160

Load Manual 162

Load tray 161

Print Jobs on Disk ? 162

Auto Continue, Setup Menu 81

Auto CR after LF

PCL Emul Menu 89

Auto LF after CR

PCL Emul Menu 89

automated fax system 45

automatic tray linking 61, 66

B

Baud, Serial Menu 97

bidirectional communication 27

bitmapped fonts, definition 257

Black Cartridge, Supplies Menu 59

Blank Pages, Finishing Menu 68

Busy, printer state 53, 146

buttons 51

C

cable
 parallel 12
 power 14
 Cancel Job, Job Menu 77
 card stock, guidelines 115
 cards, Parallel 1284-C Adapter option 235
 cards, Tri-Port interface option 234
 CD 27
 Change Cartridge, Tests Menu 73
 changing languages 21
 Clean Heads, Tests Menu 74
 coated paper, ordering 203
 Collation, Finishing Menu 69
 Color Cartridge, Supplies Menu 59
 Color Correction, Color Menu 60
 Color Menu 60
 Color Correction 60
 Print Quality 60
 Color Samples, Tests Menu 74
 Compuserve 44
 Copies, Finishing Menu 68
 Custom Types, Paper Menu 67

D

Data Bits, Serial Menu 97
 defaults
 factory 54
 user 54, 57
 dimensions, printer 2
 disabling menus 57
 disk, directory of contents 38

disk option 230
 Display Language, Setup Menu 82
 DOS
 printer drivers 30
 setup utility 27
 Toolkit 43
 Download Target, Setup Menu 79
 downloadable fonts 262
 downloading
 fonts 43
 macros 43
 PostScript emulation language programs 43
 symbol sets 43
 Dynamic Data Exchange (DDE) 40

E

enabling menus 57
 envelope guidelines 113
 envelope size, specifications 120
 envelopes
 loading 131, 135
 input tray 131
 manual feed slot 135
 types and weights 108
 exit, paper
 output bin 118

F

factory default settings 54
 Factory Defaults, Tests Menu 75
 Fastbytes Protocol 93
 Finishing Menu 68, 72
 Blank Pages 68

Finishing Menu (continued)
 Collation 69
 Copies 68
 Mulpage Border 72
 Mulpage Order 71
 Mulpage Printing 70
 Mulpage View 72

flash memory 219

flash memory card
 defragmenting space 38
 directory of contents 38
 downloading resources 37, 43
 formatting 43

Font Name, PCL Emul Menu 85

Font Priority, PostScript Menu 90

Font Source, PCL Emul Menu 85

fonts
 bitmapped 257
 description 253
 downloadable 262
 downloading 43
 list of available 85
 pitch 86, 255
 point size 85, 255
 printing sample list 263
 resident 258
 scalable 257
 source 85
 symbol sets 86
 weight and style 253

Format Disk, Tests Menu 75

Format Flash, Tests Menu 75

G

glossy paper, ordering 204

Go button 51

greeting cards, ordering 205

guidelines
 card stock 115
 envelope 113
 label 114
 paper 111
 letterhead 112
 preprinted forms 112
 recommended 111
 storing 112
 unsatisfactory 112

transparencies 115

H

hard disk
 downloading resources 37, 43
 formatting 43
 partitioning for job buffering 38

hard disk option
 attaching to adapter card 231
 installing 237

Hex Trace, Tests Menu 76

Honor DSR, Serial Menu 98

Honor Init, Parallel Menu 93

I

Image Smoothing, PostScript Menu 90

INA (Internal Network Adapter) option
 233

INA, installing 237

indicator light, description 50

infrared adapter 245

Infrared Buffer, Infrared Menu 102

Reference

Infrared Menu 101, 103
 Infrared Buffer 102
 Infrared Port 101
 Max Baud Rate 103
 NPA Mode 102
 PCL SmartSwitch 101
 PS SmartSwitch 101
 Transmit Delay 103
 Window Size 102
Infrared Port, Infrared Menu 101
ink cartridge
 See print cartridge
input tray 3, 117
 installing 3
 loading 7, 121
 envelopes 131
install
 printer drivers 25
 printer utilities 25
installing
 hard disk 237
 INA 237
 input tray and output bin 3
 network adapter 237
 network option 233, 234
 option card 237
 print cartridge 15, 186
 tri-port adapter 237
installing the printer memory option 213
Intellifont fonts
 TrueType fonts 258
internal network adapter 233
Internet 44
inventory, printer hardware 38
iron-on transfer paper, ordering 205

J

Jam Recovery, Setup Menu 82
jams, paper
 See paper jams
Japanese VCCI notice 268
Job Accounting, Setup Menu 84
Job Acct Limit, Setup Menu 84
Job Acct Stat, Tests Menu 76
Job Buffer Size, Setup Menu 83
Job Buffering 38
Job Buffering, Parallel Menu 93
Job Menu 77
 Cancel Job 77
 Print Buffer 77
 Reset Printer 77
job queue management 39
job statistics 33, 39

L

label guidelines 114
labels
 ordering 205
 printer maintenance 114
 types and weights 108
landscape orientation 86
language
 changing 21
 printer 78
 special characters 86, 256
letterhead 112
letterhead, printing 141
light, printer indicator 50
Lines per Page, PCL Emul Menu 87
linking, trays 61, 66, 141

- loading envelopes
 - input tray 131
 - manual feed slot 135
 - loading paper 7, 121
 - input tray 121
 - manual feed slot 126
 - loading the input tray 7
 - LocalTalk Address, LocalTalk Menu 106
 - LocalTalk Buffer, LocalTalk Menu 105
 - LocalTalk Menu 104, 106
 - LocalTalk Address 106
 - LocalTalk Buffer 105
 - LocalTalk Name 106
 - LocalTalk Port 104
 - LocalTalk Zone 106
 - NPA Hosts 105
 - NPA Mode 105
 - PCL SmartSwitch 104
 - PS SmartSwitch 104
 - LocalTalk Name, LocalTalk Menu 106
 - LocalTalk Port, LocalTalk Menu 104
 - LocalTalk Zone, LocalTalk Menu 106
 - Lotus 1-2-3, printer drivers 30
- M**
- Macintosh
 - installer application 27
 - MarkVision 34
 - printer drivers 30
 - macros, downloading 43
 - maintenance 183
 - manual feed slot 118
 - loading envelopes 135
 - loading paper 126
 - MarkVision 32
 - alerts 37
 - MarkVision (continued)
 - auto driver update 37
 - dial up support for TCP/IP 40
 - drag-and-drop printing 40
 - Dynamic Data Exchange (DDE) 40
 - hard disk partitioning 38
 - installing 27, 28
 - job queue management 39
 - job statistics 33, 39
 - media type control 41
 - menus 42
 - MIF file creation 39
 - network utility support 28
 - operating systems supported 34
 - print buffer management 40
 - printer configuration 36
 - printer inventory 38
 - printer inventory summary page 39
 - printer password access security control 41
 - printer status 37
 - property tag support 41
 - remote operator panel 36
 - resource management 38
 - security 40
 - Toolkit 37
 - Uninstaller 41
 - Max Baud Rate, Infrared Menu 103
 - media type control 41
 - memory option 210
 - installing 213
 - Menu button 51
 - menu setting page 24
 - menus 58
 - Color Menu 60
 - enabling/disabling 57
 - Finishing Menu 68, 72
 - Infrared Menu 101, 103
 - Job Menu 77

Reference

menus (continued)

- LocalTalk Menu 104, 106
- MarkVision 42
- Network Menu 99, 100
- Paper Menu 61, 67
- Parallel Menu 91, 94
- PCL Emul Menu 85, 89
- PostScript Menu 90
- Serial Menu 95, 98
- settings, printing 55, 249
- Setup Menu 78, 84
- Supplies Menu 59
- Tests Menu 73, 76
- using 54

messages

- attendance, *See* attendance messages
- description 53
- service, *See* service messages
- status, *See* status messages

MIF file creation 39

Multipage Border, Finishing Menu 72

Multipage Order, Finishing Menu 71

Multipage Printing, Finishing Menu 70

Multipage View, Finishing Menu 72

N

Network 1 Setup, Network Menu 100

network adapter, installing 237

Network Buffer, Network Menu 100

Network Menu 99, 100

- Network 1 Setup 100

- Network Buffer 100

- NPA Mode 100

- PCL SmartSwitch 99

- PS SmartSwitch 99

network option, installing 233, 234

Network Printer Utility 44

Network Printing Alliance Protocol 32

network printing, problems 173

NPA Hosts, LocalTalk Menu 105

NPA Mode, Infrared Menu 102

NPA Mode, LocalTalk Menu 105

NPA Mode, Network Menu 100

NPA Mode, Parallel Menu 92

NPA Mode, Serial Menu 96

O

obtaining information

- technical xii

- tray 2 xii

online services

- CompuServe 44

- Internet 44

- World Wide Web 44

operator panel 50

- buttons 51

- example of using 55

- Go button 51

- Menu button 51

- menus settings, printing 55, 249

- messages 53

- printer indicator light 50

- problems 164

- Return button 52

- Select button 51

- Stop button 52

- using to change printer settings 56

operator panel menus 58

operator panel overlay

- changing languages 21

- installing 21

option card, installing 237

- options
 - disk 230
 - flash memory 219
 - INA card 233
 - infrared adapter 245
 - Parallel 1284-C Adapter option card 235
 - printer memory 210
 - problem 170
 - Tri-Port interface option card 234
- orientation
 - PCL Emul Menu 86
- OS/2
 - printer drivers 30
 - setup utility 27
 - Toolkit 43
- OS/2 Warp
 - MarkVision 34
 - printer drivers 30
 - setup utility 27
- output bin 3, 118
- output bin, installing 3
- overlay 37, 38
- oversize paper, printing 139

P

- paper
 - clearing jams 175
 - exit
 - output bin 118
 - jams
 - recovery 82
 - letterhead 112
 - loading 7
 - input tray 121
 - manual feed slot 126

- paper (continued)
 - ordering
 - coated paper 203
 - glossy paper 204
 - greeting cards 205
 - iron-on transfer paper 205
 - labels 205
 - photo paper 204
 - transparencies 204
 - preprinted forms 112
 - printing on oversize paper 139
 - recommended 111
 - size 63
 - source 61
 - sources
 - input tray 117
 - manual feed slot 118
 - optional tray 2 117
 - specifications 116
 - types and weights 108
- paper guidelines 111
 - letterhead 112
 - preprinted forms 112
 - recommended papers 111
 - storing 112
 - unsatisfactory papers 112
- paper handling 7
 - oversize paper 139
- paper jams
 - clearing 175
 - tips for avoiding 142
- paper loading 121
- Paper Menu 61, 67
 - Custom Types 67
 - Paper Size 62
 - Paper Source 61
 - Paper Type 64, 65, 66
 - Substitute Size 67

Reference

- paper size
 - specifications 119
- Paper Size, Paper Menu 62
- paper source
 - Paper Menu 61
- paper sources
 - types of print materials 108
- paper status light 50
- Paper Type, Paper Menu 64, 65, 66
- Parallel 1284-C Adapter option card 235
- Parallel Buffer, Parallel Menu 92
- parallel, cable 203
- parallel interface cable
 - attaching 12
 - ordering 203
- Parallel Menu 91, 94
 - Advanced Status 93
 - Honor Init 93
 - Job Buffering 93
 - NPA Mode 92
 - Parallel Buffer 92
 - Parallel Mode 1 94
 - Parallel Mode 2 94
 - PCL SmartSwitch 91
 - Protocol 93
 - PS SmartSwitch 91
- Parallel Mode 1, Parallel Menu 94
- Parallel Mode 2, Parallel Menu 94
- Parity, Serial Menu 98
- PCL Emul Menu 85, 89
 - A4 Width 87
 - Auto CR after LF 89
 - Auto LF after CR 89
 - Font Name 85
 - Font Source 85
 - Lines per Page 87
 - Orientation 86
 - Pitch 86
- PCL Emul Menu (continued)
 - Point Size 85
 - Symbol Set 86
 - Tray Renumber 88
- PCL SmartSwitch
 - Infrared Menu 101
 - LocalTalk Menu 104
 - Network Menu 99
 - Parallel Menu 91
 - Serial Menu 95
- Photo Cartridge, Supplies Menu 59
- photo paper, ordering 204
- Pitch, PCL Emul Menu 86
- Point Size, PCL Emul Menu 85
- portrait orientation 86
- PostScript emulation language programs
 - downloading 43
- PostScript Menu 90
 - Font Priority 90
 - Image Smoothing 90
 - Print PS Error 90
- power cable, attaching 14
- preprinted forms 112
- Print Buffer, Job Menu 77
- print buffer management 40
- print cartridge
 - disposal 201
 - installing 15, 186
 - ordering 202
 - printing the test page 192
 - removing 184
 - replacing 184
 - storing 201
 - types 16, 186
 - verify alignment 19, 190
- print cartridge storage unit
 - ordering 202
- Print Demo, Tests Menu 74

- Print Directory, Tests Menu 74
- Print Fonts, Tests Menu 74
- print material specifications
 - characteristics
 - curl 109
 - fiber content 110
 - grain direction 110
 - moisture content 110
 - smoothness 109
 - weight 109
- print materials 108
 - characteristics 109
 - paper sources 108
 - using 107
- Print Menus
 - printing a menus setting page 55, 249
- Print Menus, Tests Menu 73
- Print PS Error, PostScript Menu 90
- print quality
 - problems 168
- Print Quality, Color Menu 60
- Print Timeout, Setup Menu 79
- printer
 - Busy 53, 146
 - commands 43
 - configuration files 32
 - dimensions 2
 - drivers 30
 - inventory 38
 - language 78
 - maintenance 183
 - memory option, installing 213
 - menus, overview 58
 - messages 145
 - operator panel 50
 - problems 163
 - setting up 1
- printer (continued)
 - settings, changing 56
 - status 32, 37
 - supplies 202
 - unpacking 1
 - utilities 27
- printer drivers
 - auto update in MarkVision 37
 - getting the latest versions 44
 - install 25
 - installing 30
- printer indicator light 50
- printer inventory summary page 39
- Printer Language, Setup Menu 78
- printer password access security control 41
- printer problems, solving 163
- printer utilities
 - getting the latest versions 44
 - install 25
 - installing 27
 - MarkVision 32
 - Network Printer Utility 44
 - Setup Utility 27
 - Toolkit 43
- printing
 - letterhead 141
 - oversize paper 139
 - problems 165
- printing a menus setting page 249
- problems
 - network printing 173
 - operator panel 164
 - options 170
 - other 173
 - print quality 168
 - printing 165
 - solving printer problems 163

Reference

property tag support 41

protocol

Fastbytes 93

serial 97

Standard 93

Protocol, Parallel Menu 93

PS SmartSwitch

Infrared Menu 101

LocalTalk Menu 104

Network Menu 99

Parallel Menu 91

Serial Menu 95

R

recommended papers 111

remote operator panel 49

MarkVision 36

removing print cartridges 184

Reset Printer, Job Menu 77

resident fonts 258

resource management 38

Resource Save, Setup Menu 78

Return button 52

Robust XON, Serial Menu 97

RS-232/RS-422, Serial Menu 96

RS-422 Polarity, Serial Menu 97

S

Safety Information 273

scalable fonts

definition 257

resident 258

table 259

security, MarkVision 40

Select button 51

Serial Buffer, Serial Menu 96

Serial Menu 95, 98

Baud 97

Data Bits 97

Honor DSR 98

NPA Mode 96

Parity 98

PCL SmartSwitch 95

PS SmartSwitch 95

Robust XON 97

RS-232/RS-422 96

RS-422 Polarity 97

Serial Buffer 96

Serial Protocol 97

Serial Protocol, Serial Menu 97

serial transmission speeds 97

service messages

900–999 159

Setup Menu 78, 84

Auto Continue 81

Display Language 82

Download Target 79

Jam Recovery 82

Job Accounting 84

Job Acct Limit 84

Job Buffer Size 83

Print Timeout 79

Printer Language 78

Resource Save 78

Wait Timeout 80

setup utilities 27

SmartSwitch

See also PS SmartSwitch or PCL

SmartSwitch

solving printer problems 163

specifications

envelope size 120

- specifications (continued)
 - paper size 119
 - Standard Protocol 93
 - status messages 145
 - Activating Menu Changes 146
 - Busy 146
 - Canceling Job 151
 - Clearing Job Accounting Stat 146
 - Files will be Lost. Go/Stop? 146
 - Flushing Buffer 147
 - Formatting Disk 147
 - Formatting Flash 147
 - Hex Trace Ready 150
 - Infrared 1 152
 - Invalid Font Data 147
 - Invalid Network 1 Code 147
 - line 1 messages 146
 - line 2 messages 152
 - LocalTalk 1 152
 - Menus Disabled 147
 - Network 1 152
 - Network Card Busy 147
 - Not Ready 148
 - Parallel 152
 - Parallel 1 152
 - Performing Self Test 148
 - Printing Alignment Page 149
 - Printing Directory List 149
 - Printing Font List 149
 - Printing Job Accounting Stat 149
 - Printing Menu Settings 149
 - Prog System Code 149
 - Program Flash 150
 - Programming Disk 150
 - Ready 150
 - Resetting the Printer 150
 - Restoring Factory Defaults 150
 - Serial 1 152
 - Supplies 152
 - Waiting 151
 - status, printer
 - MarkVision 32
 - Stop button 52
 - storing paper 112
 - Substitute Size, Paper Menu 67
 - supplies
 - ordering 202
 - coated paper 203
 - glossy paper 204
 - greeting cards 205
 - iron-on transfer paper 205
 - labels 205
 - parallel interface cable 203
 - photo paper 204
 - print cartridge storage unit 202
 - print cartridges 202
 - transparencies 204
 - print cartridge
 - disposal 201
 - installing 186
 - removing 184
 - replacing 184
 - storing 201
 - Supplies Menu 59
 - Black Cartridge 59
 - Color Cartridge 59
 - Photo Cartridge 59
 - Symbol Set, PCL Emul Menu 86
 - symbol sets
 - definition 256
 - downloading 43
- T**
- TCP/IP
 - dial up support 40
 - technical information, obtaining xii

Reference

test page

- menu settings 24
- verify alignment 192

Tests Menu 73, 76

- Align Cartridges 74
- Change Cartridge 73
- Clean Heads 74
- Color Samples 74
- Factory Defaults 75
- Format Disk 75
- Format Flash 75
- Hex Trace 76
- Job Acct Stat 76
- Print Demo 74
- Print Directory 74
- Print Fonts 74
- Print Menus 73

timeout

- print 79
- wait 80

Toolkit 37, 43

transfer paper, ordering 205

Transmit Delay, Infrared Menu 103

transparencies

- guidelines 115
- ordering 204
- types and weights 108

tray 2 117

tray 2 information, obtaining xii

tray linking 61, 66, 141

Tray Renumber

- PCL Emul Menu 88

Tri-Port interface option card 234

- installing 237

troubleshooting 163

typeface, description 253

U

uninstall MarkVision 41

United Kingdom Telecommunications

- Act 1984 271

UNIX

- MarkVision 34

unpacking, printer 1

unsatisfactory papers 112

user default settings 54, 57

utilities, *See* printer utilities

V

verifying options 249

W

Wait Timeout, Setup Menu 80

watermark

- See* overlay

Window Size, Infrared Menu 102

Windows 3.1

- MarkVision 34
- printer drivers 30
- setup utility 27

Windows 95

- MarkVision 34
- printer drivers 30
- setup utility 27

Windows for Workgroups 3.11

- printer drivers 30

Windows NT

- MarkVision 34
- printer drivers 30
- setup utility 27

WordPerfect
 printer drivers 30
World Wide Web 44

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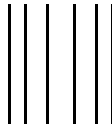
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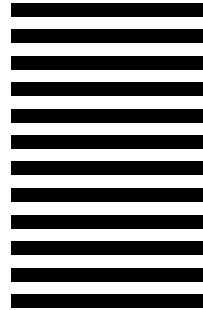
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