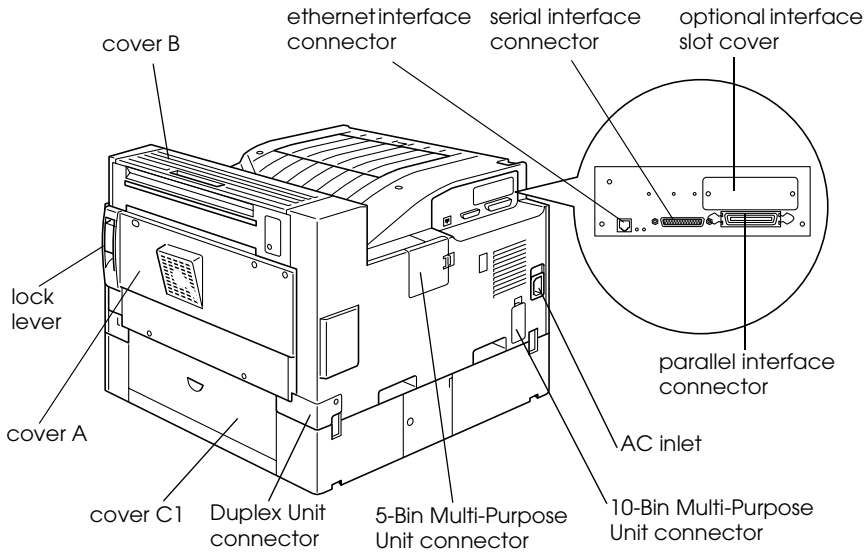
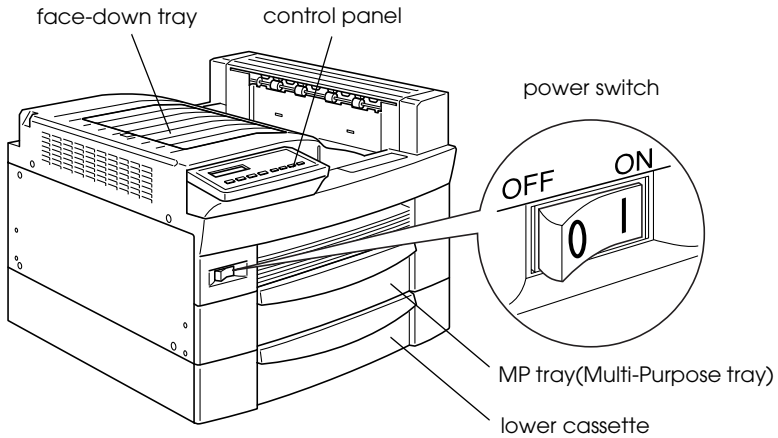


Printer Parts



EPSON®

Laser Printer

EPL-N2750

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, mechanical, photocopying, recording, or otherwise, without the prior written permission of SEIKO EPSON CORPORATION. No patent liability is assumed with respect to the use of the information contained herein. Neither is any liability assumed for damages resulting from the use of the information contained herein.

Neither SEIKO EPSON CORPORATION nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by purchaser or third parties as a result of: accident, misuse, or abuse of this product or unauthorized modifications, repairs, or alterations to this product, or (excluding the U.S.) failure to strictly comply with SEIKO EPSON CORPORATION's operating and maintenance instructions.

SEIKO EPSON CORPORATION shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original Epson Products or Epson Approved Products by SEIKO EPSON CORPORATION.

EPSON and EPSON ESC/P are registered trademarks and EPSON ESC/P 2 is a trademark of SEIKO EPSON CORPORATION.

Speedo, Fontware, FaceLift, Swiss, and Dutch are trademarks of Bitstream Inc.

CG Times and CG Omega are registered trademarks of Miles, Inc.

Univers is a registered trademark of Linotype AG and/or its subsidiaries.

Antique Olive is a trademark of Fonderie Olive.

Albertus is a trademark of Monotype Corporation plc.

Coronet is a trademark of Ludlow Industries (UK) Ltd.

Arial and Times New Roman are registered trademarks of Monotype Corporation plc.

HP and HP LaserJet are registered trademarks of Hewlett-Packard Company.

Adobe and PostScript are trademarks of Adobe Systems Incorporated, which may be registered in certain jurisdictions.

The PCL6-compatible interpreter is a customized version of IPS-PRINT SIX © developed by Xionics Document Technologies, Inc., a subsidiary of Oak Technology, Inc.

***General Notice:** Other product names used herein are for identification purposes only and may be trademarks of their respective owners. EPSON disclaims any and all rights in those marks.*

Copyright © 2000 by SEIKO EPSON CORPORATION, Nagano, Japan.



Printed on Recycled Paper.

Reference Guide

Contents

Getting Started

About This Guide	1
Warnings, Cautions, and Notes.	2
About Your Printer	3
Features	3
Options.	4

Chapter 1 Controlling the printer

Controlling the Printer	1-2
Printer driver.	1-2
Control panel.	1-2

Chapter 2 Printing with the EPL-N2750

Available Paper	2-2
Basic Printing Operations.	2-3
Loading paper into the MP tray	2-4
Loading paper into the lower cassette.	2-8
Selecting the paper size	2-12
Special Printing Operations	2-13
Printing on custom size paper	2-13
Printing one sheet at a time.	2-13
Optimizing Print Quality	2-14
Resolution Improvement Technology (RITech).	2-15
Enhanced MicroGray	2-15
Adjusting print density	2-16

Chapter 3 Functions of the Control Panel

Control Panel Operation.	3-2
----------------------------------	-----

LCD panel	3-2
Indicator lights	3-3
Buttons	3-4
Using the OneTouch Modes	3-6
OneTouch mode 1	3-7
OneTouch mode 2	3-8
Using SelectType	3-9
When to use SelectType	3-9
How to make the settings	3-9
SelectType menu table	3-10
SelectType Settings	3-12
Test Menu	3-12
Emulation Menu	3-13
Printing Menu	3-13
Tray Menu	3-17
Config Menu	3-20
Setup Menu	3-24
Parallel Menu	3-26
Serial Menu	3-27
Network Menu	3-30
AUX Menu	3-32
LJ4 Menu	3-34
GL2 Menu	3-36
PS3 Menu	3-39
ESCP2 Menu	3-40
FX Menu	3-43
I239X Menu	3-45

Chapter 4 Using Options

Printer Options	4-2
500-Sheet Lower Cassette Unit	4-4
Installing the 500-Sheet Lower Cassette Unit	4-4
Using the 500-Sheet Lower Cassette Unit	4-9
Large Capacity Paper Unit	4-10
Installing the Large Capacity Paper Unit	4-10
Using the Large Capacity Paper Unit	4-16
Duplex Unit	4-18

Installing the Duplex Unit	4-18
Removing the Duplex Unit	4-25
Using the Duplex Unit	4-26
5-Bin Multi-Purpose Unit	4-27
Installing the 5-Bin Multi-Purpose Unit	4-27
Removing the 5-Bin Multi-Purpose Unit	4-33
Using the 5-Bin Multi-Purpose Unit	4-33
10-Bin Multi-Purpose Unit	4-36
Installing the 10-Bin Multi-Purpose Unit	4-36
Removing the 10-Bin Multi-Purpose Unit	4-42
Using the 10-Bin Multi-Purpose Unit	4-43
Hard Disk Drive	4-44
Installing the Hard Disk Drive	4-44
Removing the Hard Disk Drive	4-50
Reformatting the Hard Disk Drive	4-55
Memory Modules	4-55
Installing a memory module	4-56
Removing a memory module	4-61
Adobe PostScript 3 ROM Module	4-66
Installing the ROM module	4-66
Removing the ROM module	4-71
Optional Interfaces	4-74
Installing an interface card	4-75
Removing an interface card	4-77

Chapter 5 Maintenance and Transportation

Replacing the Imaging Cartridge	5-2
Cleaning the Printer	5-6
Cleaning the inside of the printer	5-6
Cleaning the printer case	5-8
Transporting the Printer	5-8

Chapter 6 Troubleshooting

Introduction	6-2
Printer Problems	6-2

Preventing paper feed and paper jam problems	6-2
Clearing paper jams	6-3
Solving printer operation problems	6-12
Solving print quality problems	6-14
Solving printer option problems	6-18
Status and Error Messages	6-18
Hex Dump Mode	6-29
Resetting the Printer	6-29
Reformatting the Hard Disk Drive	6-30
Where to Get Help	6-31

Appendix A Technical Specifications

Paper Specifications	A-2
Printer	A-4
General	A-4
Environmental	A-5
Safety approvals	A-5
Mechanical	A-6
Electrical	A-7
Interface	A-7
Parallel interface	A-7
Ethernet interface	A-14
Options and Consumables	A-15
500-Sheet Lower Cassette Unit	A-15
Large Capacity Paper Unit	A-16
Duplex Unit	A-17
5-Bin Multi-Purpose Unit	A-18
10-Bin Multi-Purpose Unit	A-19
Memory Module	A-19
Imaging cartridge	A-20

Appendix B Symbol Sets

Introduction to Symbol Sets	B-2
In LJ4 Emulation/EPSON GL2 Mode	B-3
International character sets for ISO	B-24

In ESC/P2 or FX Modes	B-26
International character sets	B-33
Characters available with the ESC (^ command)	B-34
In I239X Emulation Mode.	B-34
In EPSON GL/2 Mode	B-34

Appendix C Command Summary

Introduction	C-2
LaserJet 4000 (PCL5e)(LJ4) Emulation Commands	C-3
GL/2 context commands	C-10
ESC/P 2 and FX Commands	C-13
ESC/P 2 mode	C-13
FX mode	C-17
PJL Commands	C-22
I239X Emulation Commands	C-23
Page format	C-24
Text	C-25
Auxiliary functions	C-28
AGM mode	C-28

Appendix D Working with Fonts

Printer and Screen Fonts	D-2
Available Fonts	D-2
Adding Fonts	D-7
Selecting Fonts	D-8
Downloading Fonts	D-8
EPSON BarCode Fonts	D-9
System requirements	D-10
Installing EPSON BarCode Fonts	D-11
Printing with EPSON BarCode Fonts	D-12
EPSON BarCode Font specifications	D-16

Glossary

Getting Started

The EPSON EPL-N2750 printer combines high performance and reliability with a wide range of features.

To get started with your laser printer, please:

- ❑ Read the laser printer precautions and important safety instructions in the *Setup Guide*.
- ❑ Use your *Setup Guide* to set up and test your new printer.
- ❑ Have your network administrator refer to the *Administrator's Guide* to make network settings. See also the included instructions on installing printer software.
- ❑ Refer to the *Quick Reference Guide* for help on understanding printer messages, clearing paper jams, and replacing the imaging cartridge. Keep the *Quick Reference Guide* in the included storage box, which you can attach directly to the printer.
- ❑ Refer to this *Reference Guide* for detailed information about your printer.

About This Guide

This guide contains the following information:

Chapter 1, "Controlling the printer," explains how you can control the printer using the printer driver and the control panel.

Chapter 2, "Printing with the EPL-N2750," provides you with information on printing operations. Also consult this chapter when you need information on the types of media that you can use with this printer.

Chapter 3, “Functions of the Control Panel,” provides you with detailed information on the workings of the control panel. Read this chapter if you cannot modify a printer setting from your software. Also refer to this chapter for information on printer emulation modes.

Chapter 4, “Using Options,” gives step-by-step instructions for installing and using printer options.

Chapter 5, “Maintenance and Transportation,” provides you with instructions on how to replace the imaging cartridge, and how to clean and transport your printer.

Chapter 6, “Troubleshooting,” gives helpful information for what to do if you encounter a printing problem.

Appendix A, “Technical Specifications,” contains technical information about your printer and its options.

Appendix B, “Symbol Sets,” lists the symbol sets available in each emulation mode with tables of the characters for each set.

Appendix C, “Command Summary,” lists the commands that can be embedded in print jobs to control the printer. This appendix is intended for advanced users only.

Appendix D, “Working with Fonts,” describes the steps you need to follow to add more fonts. It also lists the available fonts with samples.

Warnings, Cautions, and Notes

W *Warnings must be followed carefully to avoid bodily injury.*

C *Cautions must be observed to avoid damage to your equipment.*

Notes contain important information and useful tips about the operation of your printer.

About Your Printer

Your printer is the latest in EPSON's advanced line of network laser printers. It emulates the Hewlett-Packard® LaserJet 4000™ (LJ4) printer, allowing you to print using the wide variety of software programs that support HP LaserJet printers.

The printer's 600-dpi (dots per inch) resolution is enhanced by EPSON's Resolution Improvement Technology (RITech), which smooths the jagged edges of diagonal lines in both text and graphics. This gives your documents a clean, crisp look that contributes to a professional appearance.

In addition, EPSON's Enhanced MicroGray technology provides you with better halftoning when printing graphics.

This printer is intended to be used in network environments. Network administrators should refer to the included *Administrator's Guide* when setting up the printer for use on a network. After the printer is set up on the network, install the printer software on your computer as instructed by your administrator.

The printer supports ECP mode in Microsoft® Windows® 98/95 and Windows 2000. ECP mode is useful for high-speed data transfer and bidirectional communication with your computer.

Features

The printer comes with a full set of features that contributes to ease of use and consistent, high-quality output. The main features are described below.

High-quality printing

Your printer provides 600-dpi printing at a speed of up to 27 pages per minute. You'll appreciate the professional print quality produced by your printer and its quick processing speed.

Wide variety of fonts

The printer comes with a full selection of scalable TrueType® fonts, LaserJet-compatible scalable fonts, and one bitmap font in LJ4 emulation mode.

Toner Save mode

You can reduce the amount of toner used when printing rough drafts by using the Toner Save mode.

Options

The following options are available for use with the EPL-N2750.

Duplex Unit

The Duplex Unit (C81318*) allows you to print on both sides of the paper.

The Duplex Unit can handle the following paper and envelope sizes:

A3, A4, A5, B4, B5, IB5, Ledger, Legal, Government Legal, Letter, Government Letter, Executive, H-Letter

To use this option, see "Duplex Unit" on page 4-18.

Hard Disk Drive

The hard disk drive (C82377*) expands your printer's capacity by allowing you to collate large print jobs, download PS3 fonts (when the optional Adobe PostScript 3 ROM module is installed), and increase the receive buffer when using the printer over a network.

Memory

You can add memory modules (DIMMs) to expand the printer's standard 16 MB memory up to a maximum of 256 MB. See "Memory Modules" on page 4-55 for details.

Interfaces

In addition to your printer's built-in bidirectional parallel interface, serial interface, and Ethernet interface, you can install one of a variety of optional interfaces. See "Optional Interfaces" on page 4-74 for details.

ROM module

The optional Adobe® PostScript® 3™ Kit (C83241*) ROM module generates crisp PostScript output. See "Adobe PostScript 3 ROM Module" on page 4-66 for details.

Optional paper sources

The optional paper sources listed below are available to increase paper-feeding capacity and to print on both sides of paper.

Note:

The asterisk () is a substitute for the last digit of the product number, which varies by country.*

500-Sheet Lower Cassette Unit

You can load up to 500 sheets of plain paper in the 500-Sheet Lower Cassette Unit (C81319*). This unit can handle the following paper sizes:

A4, Letter, Government Letter, A3, Legal, Ledger, B4

You can install up to two optional 500-Sheet Lower Cassette Units, or one 500-Sheet Lower Cassette Unit plus the optional Large Capacity Paper Unit. To use this option, see “500-Sheet Lower Cassette Unit” on page 4-4.

Large Capacity Paper Unit

The Large Capacity Paper Unit (C81322*) allows you to load up to 2,500 sheets of A4 and Letter size paper. To use this option, see “Large Capacity Paper Unit” on page 4-10.

Optional output trays

The multiple-bin units listed below can be used as sorters, mail boxes, or large-capacity stackers. When you use these units, you cannot use the standard face-down tray.

5-Bin Multi-Purpose Unit

The 5-Bin Multi-Purpose Unit (C81320*) accommodates up to 500 printed sheets in total. To use this option, see “5-Bin Multi-Purpose Unit” on page 4-27.

10-Bin Multi-Purpose Unit

The 10-Bin Multi-Purpose Unit (C81321*) accommodates up to 2,000 printed sheets in total. To use this unit, you need to purchase a 500-Sheet Lower Cassette Unit and a Large Capacity Paper Unit. To use this option, see “10-Bin Multi-Purpose Unit” on page 4-36.

Controlling the printer

Controlling the Printer1-2
 Printer driver.....1-2
 Control panel.....1-2

Controlling the Printer

You can control the operation of your printer from your computer by using the printer driver software packaged with your printer, or from the printer's control panel by using the OneTouch modes and SelecType menus. You should use your printer driver to make printer settings whenever you can, since settings made in the printer driver override similar settings you make from the control panel.

Printer driver

Use the printer driver to make every day printer settings easily and conveniently. You can access the printer driver through an application's Print command, or from Windows by choosing the Printers folder or program group. Be aware that settings you make in your application software override printer driver settings. See the printer driver's online help for more information.

Install the printer software in your computer as instructed by your network administrator. An *Administrator's Guide* is included in this printer package to guide your network administrator when setting up the printer for use on a network.

Control panel

Use the control panel's OneTouch modes or SelecType menus to make printer settings when you cannot make them in your application software or printer driver.

The OneTouch modes are the easiest way to make several basic settings from the printer's control panel. See "Using the OneTouch Modes" on page 3-6 for more information.

The SelecType menus have more detailed options than the OneTouch modes, but it may take a few extra steps to make those settings. See "Using SelecType" on page 3-9 for more information.

Chapter 2

Printing with the EPL-N2750

Available Paper	2-2
Basic Printing Operations	2-3
Loading paper into the MP tray	2-4
Loading paper into the lower cassette	2-8
Selecting the paper size	2-12
Special Printing Operations	2-13
Printing on custom size paper	2-13
Printing one sheet at a time	2-13
Optimizing Print Quality	2-14
Resolution Improvement Technology (RITech)	2-15
Enhanced MicroGray	2-15
Adjusting print density	2-16

Available Paper

You can use many kinds of media with this printer, including labels, envelopes, and overhead projector transparencies. The type of paper you use in your printer can affect the quality of your printed output. The smoother the paper, the smoother and sharper your printing looks.

For best results, store paper in its original wrapper. Your printout can be marred by moisture absorbed in the paper. Do not store paper in a humid or damp environment.

Note:

Since the quality of any particular brand or type of paper may be changed by the manufacturer at any time, EPSON cannot guarantee the quality of any type of paper. Always test samples of paper stock before purchasing large quantities or printing large jobs.

Labels

Use only labels designed for laser printers or plain-paper copiers. Use the MP tray to print on this medium.

To prevent the adhesive from coming into contact with printer parts, always use labels that completely cover the backing sheet so that no gaps occur between the individual labels.

Test the label sheet for leaking adhesive by pressing a sheet of paper on top of a sheet of labels. If the paper sticks to the label sheet when you lift it off, do not use the labels.

Envelopes

Use the MP tray to print on envelopes. The supported envelope sizes are as follows:

Monarch (3 7/8 × 7 1/2 inches)
Commercial 10 (4 1/8 × 9 1/2 inches)
DL (110 × 220 mm)
C5 (162 × 229 mm)
C6 (114 × 162 mm)
International B5 (176 × 250 mm)

Printing quality on envelopes may be irregular because different parts of an envelope have different thicknesses. If the printing is too light, adjust the print density using the printer driver or the printer's control panel.

Note:

Because thickness and surface characteristics are especially important when printing on envelopes, test a sample for print quality and proper feeding before you buy a large number of envelopes.

Colored paper

You can use colored paper as long as it meets the weight limits shown under the specifications for paper. Do not, however, use coated paper (paper to which a clear or colored coating has been added).

Transparencies

You can use overhead projector transparencies and adhesive drafting film if they are made for use with plain-paper copiers or laser printers. Use the MP tray to load these materials.

Basic Printing Operations

This section tells you how to print on standard paper sizes using the standard paper sources and output tray.

For information on using optional paper sources and output trays, see Chapter 4, “Using Options.” To print on a custom paper size or to print out one page at a time, see “Special Printing Operations” on page 2-13.

Loading paper into the MP tray

The MP tray can accommodate various types and sizes of paper and envelopes. The MP tray handles 250 sheets of plain paper, allowing you to load a total of 750 sheets when used in combination with the lower cassette.

You can load the following paper sizes. The loading orientation differs depending on the paper size, as explained below:

Loading Orientation	Paper Size
Vertical	A4, A5, Executive, Letter, B5, G-Letter, HLT
Horizontal	A3, Ledger, Legal, B4, F4, G-Legal, Monarch, Commercial 10, DL, C5, C6, International B5

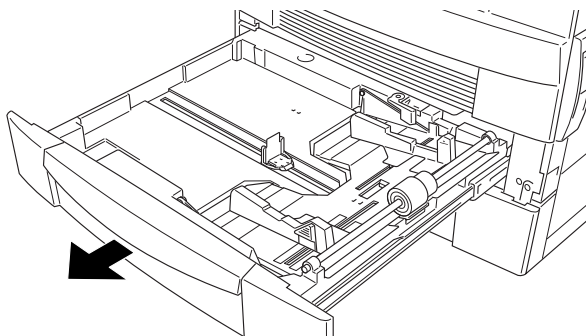
See “Paper Specifications” on page A-2 for actual measurements.

Note:

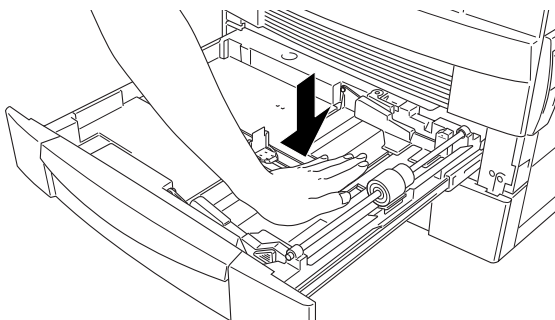
When you load Executive, G-letter, HLT, Ledger, B4, G-Legal, and other custom paper sizes, select the paper size in the printer driver, then set the paper size for the MP tray using the SelectType Tray Menu. For instructions, see “Tray Menu” on page 3-17.

Follow these steps to load paper into the MP tray:

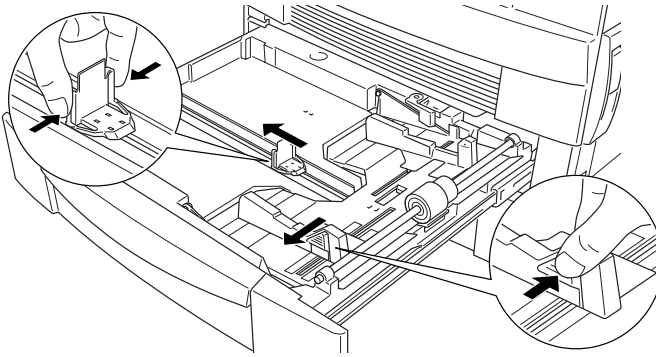
1. Pull out the paper cassette.



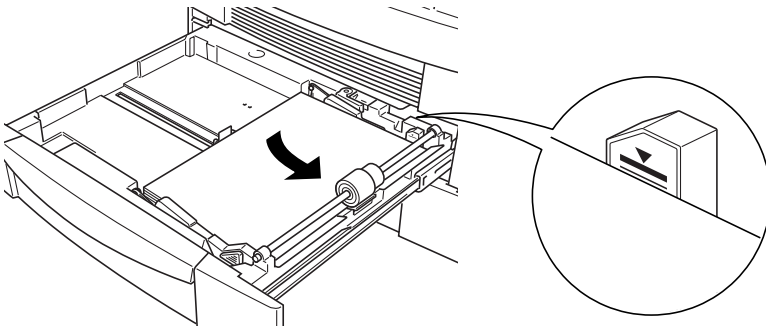
2. Push down the inner tray until it clicks onto the bottom of the cassette.



3. While pressing the vertical and horizontal paper guides, pull them up and slide them outward to accommodate the size of your paper.



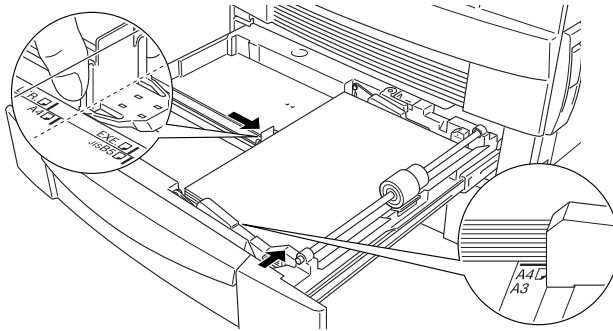
4. Fan a stack of paper and tap it on a flat surface to even the edges, then insert the paper into the cassette with the printable surface facing up.



Note:

- ❑ Be sure not to load paper exceeding the maximum paper mark.
- ❑ If your printouts are curled or do not stack properly when using plain paper, try turning the stack over and reloading it.

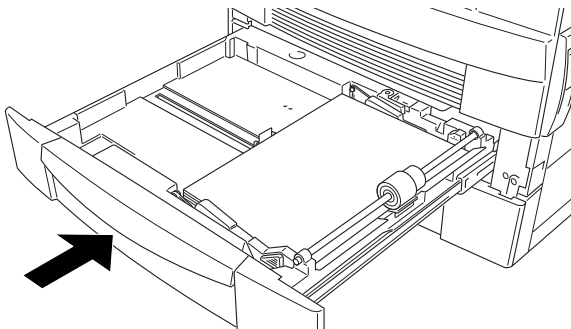
5. Adjust the vertical and horizontal paper guides to fit your paper size.



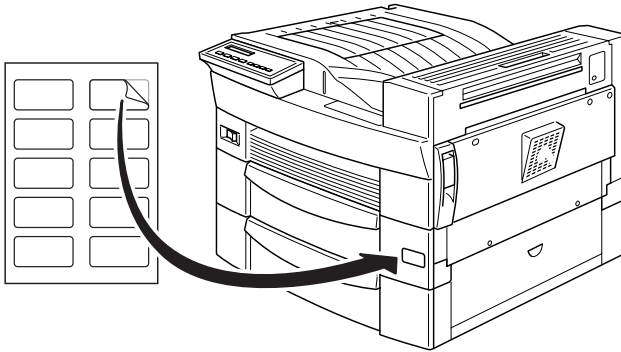
Note:

Make sure to adjust the paper guides to the paper size you load; otherwise, the printer will not print properly.

6. Push the paper cassette back into the printer.



7. Peel the appropriate paper size label from the label sheet included with your printer and attach it to the outside of the MP tray.



Loading paper into the lower cassette

The lower cassette can accommodate a variety of paper sizes. This cassette handles 500 sheets of plain paper, allowing you to load a total of 750 sheets when used in combination with the MP tray.

You can load the following paper sizes. The loading orientation differs depending on the paper size, as explained below:

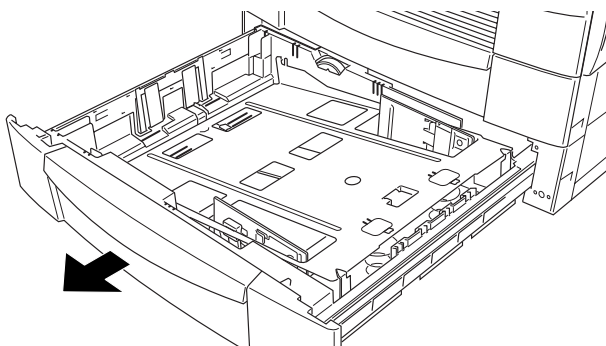
Loading Orientation	Paper Size
Vertical	A4, Letter, Government Letter
Horizontal	A3, Ledger, Legal, B4

See “Paper Specifications” on page A-2 for actual measurements.

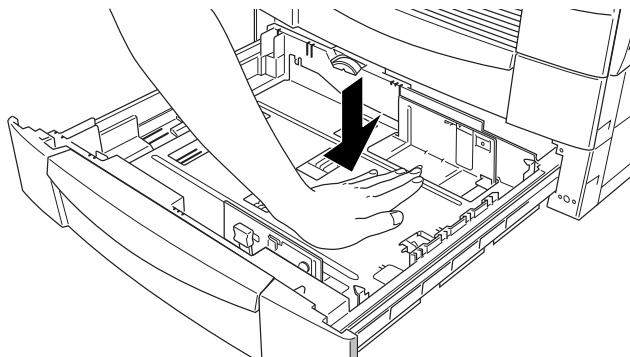
The paper loading procedure is the same for the standard lower cassette and the optional 500-Sheet Lower Cassette Unit.

Follow these steps to load paper into the standard lower cassette, or into an optional 500-Sheet Lower Cassette Unit:

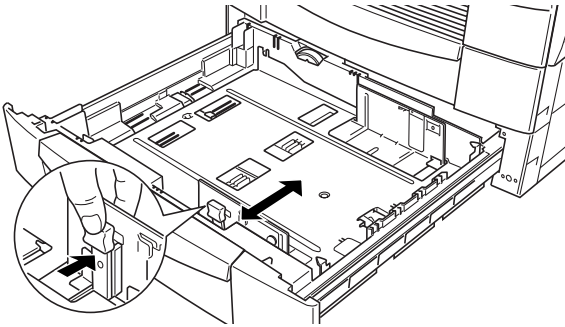
1. Pull out the paper cassette.



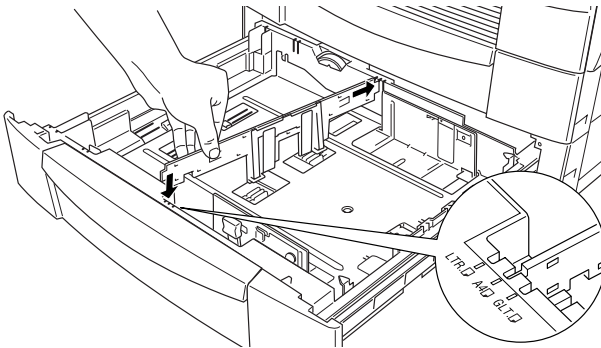
2. Push down the inner tray until it clicks onto the bottom of the cassette.



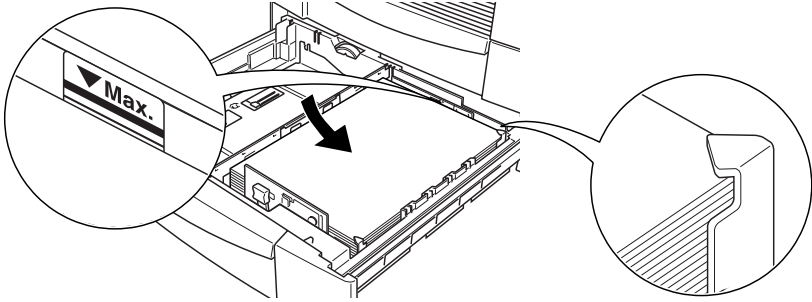
3. While pressing the vertical paper guide, pull it up and slide it outward to accommodate the size of paper you are loading.



4. Insert the horizontal paper guide into the slot for the paper size you want to load.

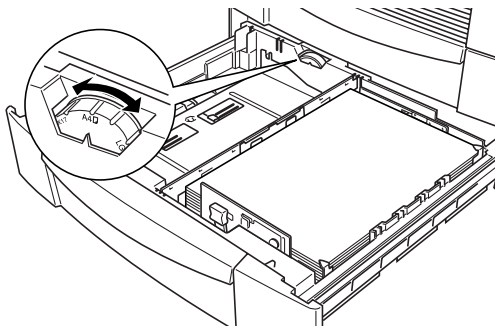


5. Fan a stack of paper and tap it on a flat surface to even the edges. Insert the paper into the cassette printable side up, aligning the corners of the paper with the metal retaining clips inside the cassette.

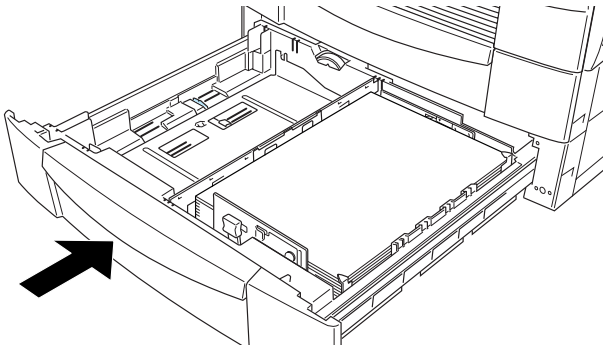


Note:

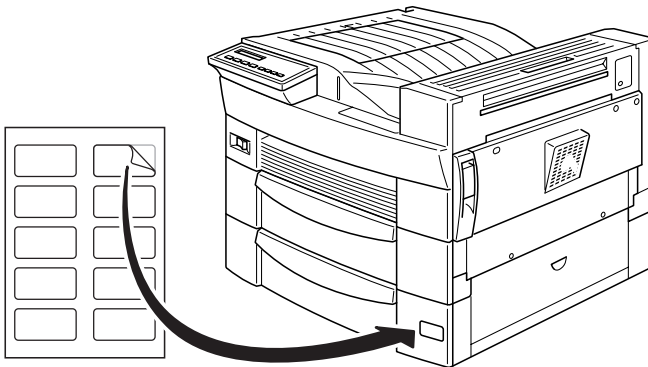
- Be sure not to load paper exceeding the maximum paper mark.
 - If your printouts are curled or do not stack properly when using plain paper, try turning the stack over and reloading it.
 - Make sure to adjust the paper guides to the paper size you load; otherwise, the printer will not print properly.
6. Set the paper size with the paper-size dial.



7. Push the paper cassette back into the printer.



8. Peel the appropriate paper size label from the label sheet included with your printer and attach it to the outside of the cassette.



Selecting the paper size

By default, the printer driver is set for A4 size paper. If you load paper of a different size, change the paper size setting on the printer driver's Basic Settings tab. For more information on using the printer driver, see the driver's online help.

You can also change this setting from the printer's control panel using OneTouch mode 1. For details, see "OneTouch mode 1" on page 3-7.

Special Printing Operations

This section explains how to print on custom size paper or to print out one page at a time.

Printing on custom size paper

You can use the MP tray to load non-standard paper sizes ranging from 86 × 140 mm (3.4 × 5.5 in.) to 297 × 432 mm (11.7 × 17 in.).

Before printing on custom size paper, you need to specify the paper size in the printer driver's Basic Settings tab. Select *User Defined Size*, then choose a *Unit* size and type the *Paper Width* and *Paper Height* settings for your custom paper. Click *OK* to save your custom paper size.

To make this setting from the printer's control panel, access OneTouch mode 1 and set the page size to *CTM* (custom). For details, see "OneTouch mode 1" on page 3-7.

Note:

After making custom paper size settings in the printer driver or SelectType menus, set the paper size for the MP tray using the SelectType Tray Menu. For instructions, see "Tray Menu" on page 3-17.

Printing one sheet at a time

This mode is helpful when you want to check the print quality after each page is printed.

Follow these steps to print in the manual feed mode:

1. Access the printer driver.

Note:

If you have not installed the printer driver, install it as instructed by your administrator. The “Administrator’s Guide” is included in this printer package for your administrator.

2. In the Basic Settings tab, select the Manual Feed check box.
3. In the Paper Size drop-down list, scroll through the list of paper sizes and click the size that matches the paper you will load in the printer.
4. Insert a sheet or stack of the correct size paper into the desired paper source. Adjust the paper guides to match the paper size you are loading.
5. Send a print job from your application. The LCD panel shows Manual Feed and the selected page size and tray.
6. Press the On Line button on the control panel to print. The sheet of paper is fed and printed.
7. Press On Line again to print the next page, if necessary. Repeat this step for every page to be printed.

Optimizing Print Quality

Your printer provides you with a number of ways to print your documents to achieve the highest possible quality. The two features discussed here are EPSON’s Resolution Improvement Technology (RITech) and Enhanced MicroGray (Enh. MG). You can also improve the print quality by adjusting the print density.

Resolution Improvement Technology (RITech)

Resolution Improvement Technology (RITech) is EPSON's original printer technology that improves the appearance of printed lines, text and graphics.

Your printer comes with RITech turned on, since this setting produces the best quality text and graphics for nearly all purposes. However, if you are printing a lot of gray shading or screen patterns, turn RITech off by clearing the RITech check box in the More Settings dialog box accessed through the Basic Settings tab of the printer driver.

If you are printing from an application or operating system that does not support your printer driver, you can also change this setting from the printer's display panel using OneTouch mode 2. For details, see "OneTouch mode 2" on page 3-8.

Enhanced MicroGray

Enhanced MicroGray (Enh. MG) is EPSON's new printer technology created especially for high quality output of photos and other detailed images.

Enh. MG off



Enh. MG on



To use the Enhanced MicroGray function, select the Enh. MG radio button in the More Settings dialog box accessed through the Basic Settings tab of the printer driver.

Adjusting print density

Changing the print density affects all text and graphics; avoid making unnecessary changes. When making changes, check the new settings by printing several pages with various kinds of text and graphics.

If your printouts are too light or too dark, change the Density setting in the printer driver.

If you are printing from an application or operating system that does not support your printer driver, you can change this setting from the printer's LCD panel by using SelecType. For details, see "SelecType Settings" on page 3-12.

Note:

Increasing the print density increases toner consumption. If you select darker printing, you may need to replace the imaging cartridge more often.

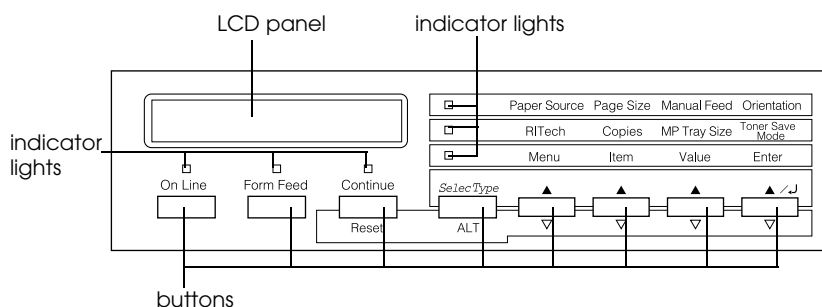
Chapter 3

Functions of the Control Panel

Control Panel Operation.....	3-2
LCD panel	3-2
Indicator lights	3-3
Buttons	3-4
Using the OneTouch Modes.....	3-6
OneTouch mode 1.....	3-7
OneTouch mode 2.....	3-8
Using SelecType.....	3-9
When to use SelecType	3-9
How to make the settings	3-9
SelecType menu table.....	3-10
SelecType Settings.....	3-12
Test Menu	3-12
Emulation Menu	3-13
Printing Menu	3-13
Tray Menu	3-17
Config Menu	3-20
Setup Menu	3-24
Parallel Menu	3-26
Serial Menu	3-27
Network Menu	3-30
AUX Menu.....	3-32
LJ4 Menu	3-34
GL2 Menu	3-36
PS3 Menu.....	3-39
ESCP2 Menu	3-40
FX Menu.....	3-43
I239X Menu	3-45

Control Panel Operation

The control panel is made up of three elements: a liquid crystal display (LCD) panel, indicator lights, and buttons. The LCD panel and indicator lights tell you the current status of the printer, and you can use the printer buttons to select settings and functions. However, settings made in application software and the printer driver usually override settings made in the control panel.



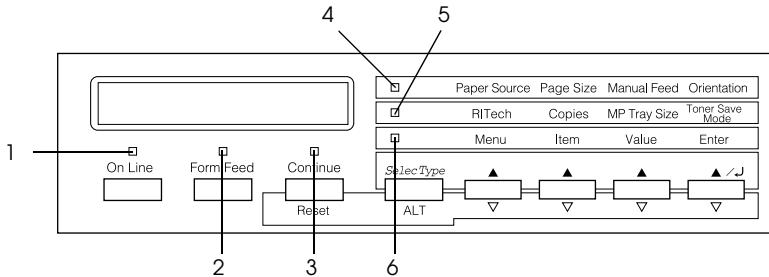
LCD panel

The LCD panel shows the following:

- ❑ Status messages, such as *Warming UP*, indicating the printer's current status.
- ❑ Error messages, such as *Paper Out*, identifying maintenance procedures you must perform or error conditions you need to correct.
- ❑ SelectType menus, such as *Emulation Menu*, allowing you to control printer modes, font selection, paper handling, and many other printer functions.

Indicator lights

This section describes the various indicator lights on the control panel.

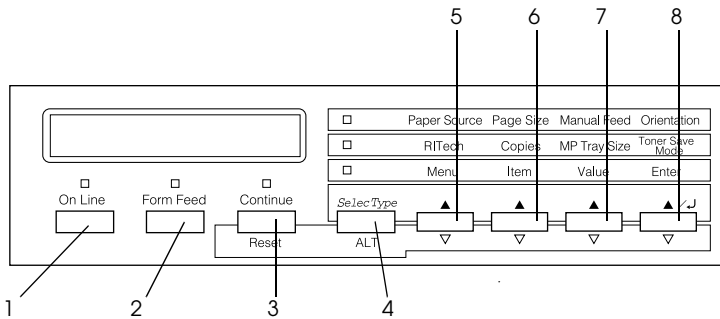


- 1 On Line** On when the printer is online, indicating that the printer can receive and print data. When the printer is offline, this light is off. The light flashes as the system switches between online and offline status.
- 2 Data** On when data is received and stored in the printer buffer (printer memory reserved for receiving data), but not yet printed. Flashing indicates that the printer is processing data. When no data remains in the printer buffer, this light turns off.
- 3 Continue** Flashes when an error is detected or a maintenance procedure must be performed. Check the LCD panel for error or maintenance messages when this light is flashing.

- 4 OneTouch mode 1 On when the printer is in OneTouch mode 1. For details, see “Using the OneTouch Modes” on page 3-6.
- 5 OneTouch mode 2 On when the printer is in OneTouch mode 2. For details, see “Using the OneTouch Modes” on page 3-6.
- 6 SelectType On when the printer is in the SelectType mode. For more information on the SelectType mode, see “Using SelectType” on page 3-9.

Buttons

This section explains how to use the control panel buttons.



- 1 On Line Switches the printer between online and offline status.

- 2 Form Feed Pressing this button when the printer is offline and data remains in the printer's memory (Data light is on) prints out the data and clears the buffer.
- 3 Continue/
Reset Pressing this button enables the printer to resume printing after certain maintenance-required conditions or errors have been cleared. If the Continue light is flashing, read the status or error message on the LCD panel and correct the problem as described in "Status and Error Messages" on page 6-18. If used in combination with the ALT button, the printer is reset.
- 4 SelecType/
ALT Selects a OneTouch mode or SelecType mode. Press this button once to enter OneTouch mode 1. Press this button again to enter OneTouch mode 2. Press this button once more to enter the SelecType mode. Pressing this button while in the SelecType mode returns the printer to online status.
- 5 Menu Selects the corresponding OneTouch mode setting listed above this button if in OneTouch mode 1 or 2, or selects the SelecType menu if in the SelecType mode. Press this button when the printer is online to enter the SelecType mode.

- | | | |
|----------------------------|-------------------------|---|
| 6 | Item | Selects the corresponding OneTouch mode setting listed above this button if in OneTouch mode 1 or 2, or selects the function available within the current menu after entering the SelecType mode. |
| 7 | Value | Selects the corresponding OneTouch mode option listed above this button if in OneTouch mode 1 or 2, or selects the value available for the current item, after entering the SelecType mode menu. |
| 8 | Enter
(Status Sheet) | Selects the corresponding OneTouch mode option listed above this button if in OneTouch mode 1 or 2, or activates the setting currently shown on the LCD panel when in SelecType mode. Press this button two times when the printer is online to print a status sheet. |
| ALT + Menu, Item, or Value | | Returns the shown parameter or setting in each group to its previous value. |

Using the OneTouch Modes

The OneTouch modes allow you to make the most common printer settings from the control panel when printing from an application or operating system that does not support your printer driver. Be sure to use the printer driver to make these settings whenever you can, since settings made in the software always override OneTouch mode settings.

To make OneTouch mode settings, access one of the modes as described below and press the button located under the setting you want to change to cycle forward through the available options. You can also cycle backward through available options by holding down ALT and pressing the button under the setting you want to change.

OneTouch mode 1

To enter OneTouch mode 1, press the SelectType button (repeatedly if necessary) until the light next to Paper Source comes on. The current OneTouch mode 1 settings for Paper Source, Page Size, Manual Feed, and Orientation are shown on the LCD panel in this order.



Paper Source

Specifies whether paper feeds into the printer from the MP tray or from a standard or optional lower cassette. If you select *Auto*, the paper source containing the paper that matches the Page Size setting will be used.

Page Size

Specifies the image size.

Manual Feed

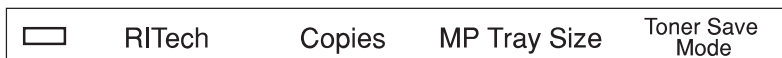
Turns the manual feed mode on or off. For details on the manual feed mode, see “Printing one sheet at a time” on page 2-13.

Orientation

Specifies whether the page is printed in portrait or landscape orientation.

OneTouch mode 2

To enter OneTouch mode 2, press the SelectType button (repeatedly if necessary) until the indicator light next to RITech comes on. The current OneTouch mode 2 settings for RITech, Copies, MP Tray Size, and Toner Save Mode are shown on the LCD panel in this order.



RITech

Turns the RITech setting on or off. RITech produces smoother and crisper lines, text, and graphics.

Copies

Specifies the number of copies to be printed, up to 999.

MP Tray Size

Allows you to specify the paper size for the MP tray.

Toner Save Mode

Turns the Toner Save mode on or off. When turned on, the printer saves toner by substituting a gray shade for the black inside of characters. The characters are outlined in full black on the right and lower edges.

Using SelectType

When to use SelectType

In general, use SelectType only for settings you cannot make in your application software or printer driver, including the following:

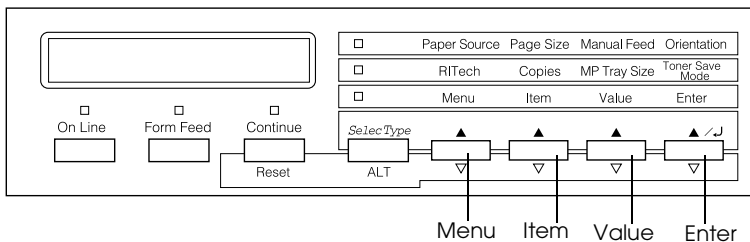
- ❑ Changing the emulation modes and selecting the IES (Intelligent Emulation Switching) mode
- ❑ Specifying a channel and configuring the interface
- ❑ Choosing the size of the memory buffer used to receive data

Keep in mind the following when using SelectType settings:

- ❑ A number of SelectType settings can be made directly using the OneTouch modes
- ❑ Print a status sheet to see the current SelectType settings

How to make the settings

Use the buttons on the printer's control panel to enter SelectType mode. SelectType settings appear on the LCD panel.



Note:

You can directly access certain menu items using the OneTouch modes. For more information, see "Using the OneTouch Modes" on page 3-6.

1. Press the **SelectType** button several times until the light above **SelectType** comes on.
2. Press the **Menu** button to enter the **SelectType** mode.
3. Use the **Menu**, **Item**, and **Value** buttons to display settings, like this:

To display menus, press **Menu**.

To display items in a menu, press **Item**.

To display values for an item, press **Value**.

An asterisk (*) appears beside the currently activated value.

Press **ALT** in combination with each button to display menus, items, or values in reverse order.

See "SelectType menu table" on page 3-10 for a list of **SelectType** menus and items.

4. To activate a new setting, press **Enter**. An asterisk (*) appears beside the setting.
5. To exit **SelectType** mode, press **On Line** or **SelectType**.

See "SelectType Settings" on page 3-12 for a detailed description of **SelectType** settings.

SelectType menu table

The following table shows the order in which **SelectType** menus and menu items appear on the LCD panel.

Press the Menu button to display the next menu. Press the Alt and Menu buttons to display the previous menu.

Menu	Items
Test Menu	Status Sheet, Network Status Sheet, AUX Status Sheet*, PS3 Status Sheet*, PS3 Font Sample*, LJ4 Font Sample, ESCP2 Font Sample, FX Font Sample, I239X Font Sample
Emulation Menu	Parallel, Serial, Network, AUX**
Printing Menu	Paper Source, Page Size, Wide A4, Orientation, Out Bin, Copies, Manual Feed, Resolution, Skip Blank Page, Auto Eject Page, Duplex*, Binding*, Start Page*, Offset Stacking*
Tray Menu	MP Mode, MP Tray Size, LC1 Size, LC2 Size*, LC3 Size*, MP Type, LC 1 Type, LC2 Type*, LC3 Type*
Config Menu	RItech, Toner Save, Density, Top Offset, Left Offset, T Offset B*, L Offset B*, Size Ignore, Auto Cont, Page Protect, Image Optimum, Paper Type
Setup Menu	Time Out, Standby, Lang, Toner, Toner Out, Multibin*, Total Pages, SelectType Init
Parallel Menu	Parallel I/F, Speed, Bi-D, Buffer Size
Serial Menu	Serial I/F, Word Length, Baud Rate, Parity, Stop Bit, DTR, DSR, Xon/Xoff, Buffer Size
Network Menu	Network I/F, Network Config, Get IPAddress, IP Byte 1, IP Byte 2, IP Byte 3, IP Byte 4, SM Byte 1, SM Byte 2, SM Byte 3, SM Byte 4, GW Byte 1, GW Byte 2, GW Byte 3, GW Byte 4, Buffer Size
AUX Menu**	AUX I/F, AUX Config, Get IPAddress, IP Byte 1, IP Byte 2, IP Byte 3, IP Byte 4, SM Byte 1, SM Byte 2, SM Byte 3, SM Byte 4, GW Byte 1, GW Byte 2, GW Byte 3, GW Byte 4, Netware, AppleTalk, NetBEUI, AUX Init, Buffer Size
LJ4 Menu	Font Source, Font Number, Pitch, Height, SymSet, Form, Source SymSet, Dest SymSet, CR Function, LF Function, Tray Assign
GL2 Menu	GL Mode, Scale, Origin, Pen, End, Join, Pen0, Pen1, Pen2 to Pen6

Menu	Items
PS3 Menu*	Error Sheet
ESCP2 Menu	Font, Pitch, Condensed, T.Margin, Text, CG Table, Country, Auto CR, Auto LF, Bit Image, ZeroChar
FX Menu	Font, Pitch, Condensed, T.Margin, Text, CG Table, Country, Auto CR, Auto LF, Bit Image, ZeroChar
I239X Menu	Font, Pitch, Code Page, T.Margin, Text, Auto CR, Auto LF, Alt. Graphics, Bit Image, ZeroChar, CharacterSet

* These items appear only when the corresponding options are installed.

** Available only when an optional level 3 interface card is installed.

SelectType Settings

Read this section for a complete description of the settings available on the SelectType menus.

Test Menu

From this menu you can print status and sample sheets showing the printer's current settings, available fonts, and a brief summary of features.

Press Item to select a status sheet or font sample, then press Enter to print. There are no settings to select by pressing Value.

Status Sheet, Network Status Sheet, AUX Status Sheet, PS3 Status Sheet***

Prints a sheet describing the current printer status. Use this item to check whether your printer is working correctly.

*PS3 Font Sample***, *LJ4 Font Sample*, *ESCP2 Font Sample*, *FX Font Sample*, *I239X Font Sample*

Prints a sample of the fonts available for your selected printer emulation.

* Available only when an optional interface card is installed.

** Available only when the optional Adobe PostScript3 ROM module is installed.

Emulation Menu

Use this menu to select the printer emulation mode. You can specify different emulations for each interface; in other words, for each computer you connect the printer to. Since each emulation mode has its own specific options, make settings in the LJ4, ESCP2, FX, GL2, or I239X menus, as necessary. The options you can set are the same for every interface.

Item	Values (default in bold)
Parallel	Auto , LJ4, ESCP2, FX, I239X, PS3*, GL2
Serial	Auto , LJ4, ESCP2, FX, I239X, PS3*, GL2
Network	Auto , LJ4, ESCP2, FX, I239X, PS3*, GL2
AUX**	Auto , LJ4, ESCP2, FX, I239X, PS3*, GL2

* Available only when the optional Adobe PostScript3 ROM module is installed.

** Available only when an optional interface card is installed.

Printing Menu

This menu allows you to make standard print settings, such as paper source and page size, even when printing from an application or operating system that does not support your printer driver. Be sure to use the printer driver to make these settings whenever you can, since settings made in the application software always override SelecType settings.

Most of the items in the Printing menu can be accessed directly through the OneTouch modes. These items are listed on your printer's control panel beside the OneTouch mode indicator lights. For more information, see "Using the OneTouch Modes" on page 3-6.

Item	Values (default in bold)
Paper Source	Auto , MP, LC1, LC2*, LC3*
Page Size	A4 , A3, A5, B4, B5, LT, B, HLT, LGL, GLT, GLG, EXE, F4, MON, C10, DL, C5, C6, IB5, CTM
Wide A4	Off , On
Orientation	Port , Land
Out Bin	Face-Down , Stacker*, Mailbox1*, Mailbox2*, Mailbox 3 to Mailbox10*, Sorter*
Copies	1 to 999
Manual Feed	Off , On
Resolution	600 , 300
Skip Blank Page**	Off , On
Auto Eject Page	Off , On
Duplex*	Off , On
Binding*	Long Edge , Short Edge
Start Page*	Front , Back
Offset Stacking	Off , On

* These items appear only when the corresponding options are installed.

** Valid for the PCL5e, ESC/P2, FX and I239X emulation modes only.

Paper Source

Specifies whether paper feeds into the printer from the MP tray, the lower cassette, or from an optional paper source.

If you select **Auto**, paper feeds from the paper source containing paper that matches your Page Size setting.

Note:

You can also make this setting directly from OneTouch mode 1.

Page Size

Specifies the paper size.

Note:

You can also make this setting directly from OneTouch mode 1.

Wide A4

Enables you to print 80 columns on A4 size paper in portrait orientation when you print from a DOS application. Selecting this setting changes the right and left margins from 4 mm to 3.4 mm.

Orientation

Specifies whether the page is printed in portrait or landscape orientation. For example, this page is printed in portrait orientation.

Note:

You can also make this setting directly from OneTouch mode 1.

Out Bin

Specifies the output destination if you have installed the 5-Bin or 10-Bin Multi-Purpose Unit.

Copies

Designates the number of copies to be printed, from 1 through 999.

Note:

You can also make this setting directly from OneTouch mode 2.

Manual Feed

Allows you to select manual feed mode for all the paper sources. For details on manual feed mode, see “Printing one sheet at a time” on page 2-13.

Note:

You can also make this setting directly from OneTouch mode 1.

Resolution

Switches the resolution between 300 and 600 dpi.

Skip Blank Page

Enables you skip blank pages when printing. This setting is not available when you print in GL2, PCL6, or PS3 mode.

Auto Eject Page

Sets whether or not to output paper when the time-out limit is reached according to the Time Out setting in the Setup Menu. The default is off, or paper is not printed when the time-out limit is reached.

Duplex

Turns duplex printing on or off. This item is available only when the optional Duplex Unit is installed.

Binding

Sets the binding direction of the printout. This item is available only when the optional Duplex Unit is installed.

Start Page

Specifies whether printing starts from the front side or back side of the page. This item is available only when the optional Duplex Unit is installed.

Offset Stacking

Offset stacking allows you to separate each set of printed copies when printing to Bin 1 of the optional 5-Bin Multi-Purpose Unit. When this setting is on, the first and second set of printed copies are ejected to slightly different locations on Bin 1. This process is repeated, resulting in each set of printed copies being offset from the next set.

This setting is available only when the 5-Bin Multi-Purpose Unit is installed. When this mode is selected, you cannot use Bin 2 to Bin 5.

Tray Menu

This menu allows you to specify the size and type of paper loaded in the MP tray. Accessing this menu also lets you check the size of the paper currently loaded in the lower cassettes.

The paper type settings in this menu can also be made from your printer driver. The settings you make in your printer driver override these SelecType settings, so use your printer driver whenever you can.

Item	Values (default in bold)
MP Mode	Normal , Last
MP Tray Size	Auto , A4, A3, A5, B4, B5, LT, B, HLT, LGL, GLT, GLG, EXE, F4, MON, C10, DL, C5, C6, IB5
LC1 Size	A4, A3, B4, LT, B, LGL, GLT
LC2 Size*	500-Sheet Lower Cassette Unit: A4, A3, B4, LT, B, LGL, GLT Large Capacity Paper Unit: A4, LT
LC3 Size*	500-Sheet Lower Cassette Unit: A4, A3, B4, LT, B, LGL, GLT Large Capacity Paper Unit: A4, LT
MP Type	Plain , Preprinted, Letterhead, Recycled, Color, Trnsprncy, Labels
LC1 Type	Plain , Preprinted, Letterhead, Recycled, Color
LC2 Type*	Plain , Preprinted, Letterhead, Recycled, Color
LC3 Type*	Plain , Preprinted, Letterhead, Recycled, Color

* These appear only when the corresponding options are installed.

MP Mode

When **Normal** is selected, the MP tray has the highest priority as the paper source. If you select **Last**, the MP tray has the lowest priority.

MP Tray Size

When *Auto* is selected, the size of the paper loaded in the MP tray is detected automatically for most common paper sizes. However, if you are using an uncommon paper size, *Check Paper Size* may appear on the LCD panel. In this case, select your paper size from this menu.

Note:

You can also make the MP Tray Size setting directly from OneTouch mode 2. For details, see "Using the OneTouch Modes" on page 3-6.

LC1 Size, LC2 Size, LC3 Size

Displays the paper size loaded in the standard and optional lower cassettes. You cannot change the paper size from this menu.

MP Type

Lets you set the paper type loaded in the MP tray.

LC1 Type, LC2 Type, LC3 Type

Lets you select the paper type loaded in the standard and optional lower cassettes.

Config Menu

This menu allows you to control certain printer settings, such as RITech, Toner Save, and the print density.

Item	Values (default in bold)
RITech	On , Off
Toner Save	Off , On
Density	1, 2, 3 , 4, 5
Top Offset	-150.0 ... 0.0 ... 150.0 mm in 0.5 mm increments
Left Offset	-150.0 ... 0.0 ... 150.0 mm in 0.5 mm increments
T Offset B*	-150.0 ... 0.0 ... 150.0 mm in 0.5 mm increments
L Offset B*	-150.0 ... 0.0 ... 150.0 mm in 0.5 mm increments
Size Ignore	Off , On
Auto Cont	Off , On
Page Protect	Auto , On
Image Optimum	Auto , Off, On
Paper Type	Normal , Thick W, Thick N, Trnspnc, Letterhead

* These appear only when the optional Duplex Unit is installed.

RITech

When the RITech setting is on, you can produce smoother and crisper lines, text, and graphics.

Note:

You can also make the RITech setting directly from OneTouch mode 2. For details, see “Using the OneTouch Modes” on page 3-6.

Toner Save

When you select **On**, the printer saves toner by substituting a gray shade for the black inside of characters. The characters are outlined in full black on the right and lower edges.

Note:

You can also make the Toner Save setting directly from OneTouch mode 2.

Density

You can adjust the print density to make your printout lighter (1) or darker (5).

Note:

Increasing the print density increases toner consumption. If you select darker print, you may need to replace the imaging cartridge more often.

Top Offset

Make fine adjustments to the vertical position of the printing on the page.



Caution:

Be sure that the printed image does not extend beyond the edge of the paper. Otherwise, you may damage the printer.

Left Offset

Makes fine adjustments to the horizontal position of the printing on the page. This is useful for fine adjustments when you are using the manual feed mode.



Caution:

Be sure that the printed image does not extend beyond the edge of the paper. Otherwise, you may damage the printer.

T Offset B

Adjusts the vertical printing position on the back side of the paper when printing on both sides. Use this if the printout on the back side is not where you expected. This item is available only when the optional Duplex Unit is installed.

L Offset B

Adjusts the horizontal printing position on the back side of the paper when printing on both sides. Use this if the printout on the back side is not where you expected. This item is available only when the optional Duplex Unit is installed.

Size Ignore

If you want to ignore a paper size error, select *On*. When you turn this item on, the printer keeps printing even if the image size exceeds the printable area for the specified size of paper. This may cause smudges because of toner that is not transferred onto the paper properly. When this item is off, the printer stops printing if a paper size error occurs.

Auto Cont

When you turn this setting on, the printer automatically continues printing after a certain period of time when one of the following errors occurs: *Paper Set*, *Print Overrun*, or *Mem Overflow*. When this option is off, you must press the *Continue* button to resume printing.

Page Protect

Allocates additional printer memory for printing data, as opposed to receiving it. You may need to use Page Protect if you are printing a very complex page. If a `Print Overrun` error occurs, change the setting to `On` and reprint your data. This reduces the amount of memory reserved for receiving data so your computer may take longer to send the print job, but it will allow you to print complex jobs. Page Protect usually works best if set to `Auto`. You will need to increase your printer's memory if memory errors continue to occur.

Note:

Changing the Page Protect setting reconfigures the printer's memory which causes any downloaded fonts to be erased.

Image Optimum

When this mode is on, the quality of graphics is reduced. It reduces the amount of graphics data when the data reaches the memory limit, allowing complex documents to be printed.

Paper Type

Use this setting when you print on thick paper. Select `Thick W` when the width of your thick paper is more than 201.5 mm, and select `Thick N` when the width of the thick paper is less than 201.5 mm.

Setup Menu

This menu allows you to customize various printer modes, select an LCD panel language, check the total number of pages printed to date, and check the toner counter.

Item	Values (default in bold)
Time Out	0, 5 ... 60 ... 300 in increments of 1
Standby	Enable , Disable
Lang	English , Français, Deutsch, ITALIANO, ESPAÑOL, SVENSKA, Dansk, Nederl., SUOMI, Português
Toner	E****F
Toner Out	Stop , Continue
Multibin*	Mailbox , Stacker, Sorter, Multisort
Total Pages	0 to 99999999
SelectType Init	-

* This appears only when the corresponding option is installed.

Time Out

Sets the length of time the printer waits when it is online and no new data is received. When this time is up, the printer searches for new print data on other channels.

Standby

Saves power by reducing the power to the fixing heater if the printer receives no data for 60 minutes. In this mode, the printer begins warming up as soon as you send a print job and is ready to print in about 60 seconds at the rated voltage.

Lang

Specifies the language displayed on the LCD panel and that printed on the status sheet.

Toner

Displays the amount of toner left in the imaging cartridge as shown below:

E**** F	(100-75%)
E*** F	(75-50%)
E** F	(50-25%)
E* F	(25-0%)
E F	(0%)

Toner Out

Printing automatically stops when the Toner Out error message appears. You can continue to print by pressing the Continue button for every page that you want to print. However, this procedure can be circumvented by setting Toner Out to Continue.

When set to Continue, the printer continues to print and does not display the Toner Out error message on the LCD panel although the imaging cartridge is out of toner. It is recommended that you set to Stop when you cannot check the printouts on the spot.

Multibin

Selects the mode setting for the optional 5-Bin or 10-Bin Multi-Purpose Units. If you want to change the settings for a multibin unit, always consult your printer's administrator and inform all other users to avoid confusion. Changing these settings often is not recommended.

Note:

- To make the new settings effective, press the Continue and SelectType buttons simultaneously until Reset All appears on the LCD panel. Alternatively, turn off the printer, then after 5 seconds, turn it back on.
- Resetting the printer erases all print jobs. Make sure the On Line light is not flashing when you reset the printer.

Total Pages

Displays the total number of sheets printed to date.

SelectType Init

Erases all the SelectType settings you have changed, and resets them to their factory default settings. However, interface settings and counters are not initialized.

Parallel Menu

These settings control communication between the printer and the computer when using the parallel interface.

Item	Values (default in bold)
Parallel I/F	On , Off
Speed	Fast , Normal
Bi-D	Nibble , ECP, Off
Buffer Size	Normal , Maximum, Minimum

Parallel I/F

Allows you to activate or deactivate the parallel interface.

Speed

Specifies the pulse width of the ACKNLG signal when receiving data in the Compatibility or Nibble mode. When this option is set to **Fast**, the pulse width is about 1 μ s. When this option is set to **Normal**, the pulse width is about 10 μ s.

Bi-D

Allows you to specify the bidirectional communication mode. When you select **Off**, bidirectional communication is disabled.

Buffer Size

Determines the amount of memory to be used for receiving data and printing data. If set to **Maximum**, more memory is allocated for receiving data. If set to **Minimum**, more memory is allocated for printing data.

Serial Menu

These settings control communication between the printer and the computer when using the serial interface.

Item	Values (default in bold)
Serial I/F	On , Off
Word Length	8 , 7
Baud Rate	9600 , 19200, 38400, 57600, 76800, 115200, 300, 600, 1200, 2400, 4800
Parity	None , Even, Odd
Stop Bit	1 , 2
DTR	On , Off
DSR	Off , On
Xon/Xoff	On , Off, Robust
Buffer Size	Normal, Maximum, Minimum

Serial I/F

Allows you to activate or deactivate the serial interface.

Word Length

You can select an 8-bit or 7-bit word length. See your computer manual and software documentation for the proper setting.

Baud Rate

Use this option to set the data transfer rate (baud) for the serial interface. The baud rate is measured in bits per second (bps). See your computer manual and software documentation for the proper setting.

Parity

When this option is set to `None`, parity checking is disabled. The parity bit, if used, provides a basic form of error detection. See your computer manual and software documentation for the proper setting.

Stop Bit

Use this option to set the number of stop bits for each character of information sent to the printer. Stop bits signal the end of a character.

DTR

Use DTR (Data Terminal Ready) to turn the printer's DTR communications protocol on or off. You can use DTR protocol in combination with the `Xon/Xoff` option setting.

DSR

When DSR (Data Set Ready) is set to `Off`, the signal level is permanently set high, allowing the printer to send data to the computer. For most communications purposes, this option should be set to `Off` (signal level high). When DSR is set to `On`, data is sent to the computer only when the signal level is high.

Xon/Xoff

Use this option to set the `Xon/Xoff` communications protocol. You can use `Xon/Xoff` protocol in combination with the DTR option setting. If set to `Robust`, the printer sends an `Xon` signal every second while the printer is waiting to receive data.

Buffer Size

Determines the amount of memory to be used for receiving data and printing data. If set to *Maximum*, more memory is allocated for receiving data. If set to *Minimum*, more memory is allocated for printing data.

Network Menu

These items are for making network settings. Have your network administrator make these settings while referring to the *Administrator's Guide*.

Item	Values (default in bold)
Network I/F	On , Off
Network Config	No , Yes
Get IPAddress*	Panel, AUTO** , PING
IP Byte 1*	0 ... 192 ... 255
IP Byte 2*	0 ... 168 ... 255
IP Byte 3*	0 ... 192 ... 255
IP Byte 4*	0 ... 168 ... 255
SM Byte 1*	0 to 255
SM Byte 2*	0 to 255
SM Byte 3*	0 to 255
SM Byte 4*	0 to 255
GW Byte 1*	0 to 255
GW Byte 2*	0 to 255
GW Byte 3*	0 to 255
GW Byte 4*	0 to 255
Buffer Size*	Normal , Maximum, Minimum

* Available only when Network Config is set to Yes.

** When Get IPAddress is set to Auto, all items between and including IP Byte 1 and GW Byte 4 are not available. Their default values will be used.

Note:

- ❑ *To make the new settings effective, press the Continue and SelectType buttons simultaneously until Reset All appears on the LCD panel. Alternatively, turn off the printer, then after 5 seconds, turn it back on.*

- ❑ *Resetting the printer erases all print jobs. Make sure the On Line light is not flashing when you reset the printer.*

AUX Menu

This menu allows you to control the optional interface settings.

Item	Values (default in bold)
AUX I/F	On , Off
AUX Config*	No , Yes
Get IPAddress**	Panel, Auto, PING
IP Byte 1**	0 to 255
IP Byte 2**	0 to 255
IP Byte 3**	0 to 255
IP Byte 4**	0 to 255
SM Byte 1**	0 to 255
SM Byte 2**	0 to 255
SM Byte 3**	0 to 255
SM Byte 4**	0 to 255
GW Byte 1**	0 to 255
GW Byte 2**	0 to 255
GW Byte 3**	0 to 255
GW Byte 4**	0 to 255
NetWare**	On, Off
AppleTalk**	On, Off
NetBEUI**	On, Off
AUX Init**	-
Buffer Size	Normal , Maximum, Minimum

* Available only when an optional level 3 interface card is installed.

** Available only when AUX Config is set to Yes.

AUX I/F

Allows you to activate or deactivate the AUX interface when an optional interface card is installed.

Buffer Size

Determines the amount of memory to be used for receiving data and printing data. If set to **Maximum**, more memory is allocated for receiving data. If set to **Minimum**, more memory is allocated for printing data.

Note:

- To make the new settings effective, press the **Continue** and **SelectType** buttons simultaneously until **Reset All** appears on the LCD panel. Alternatively, turn off the printer, then after 5 seconds, turn it back on.*
- Resetting the printer erases all print jobs. Make sure the **On Line** light is not flashing when you reset the printer.*

LJ4 Menu

These settings control the fonts and symbol sets when in the LJ4 mode.

Item	Values (default in bold)
Font Source	Resident , Download, DIMM A*, DIMM B*
Font Number	0 to 65535 (depending on your settings)
Pitch	0.44 ... 10.00 ... 99.99 cpi in 0.0-cpi increments
Height	4.00 ... 12.00 ... 999.75 pt in 0.25-pt increments
SymSet	IBM-US , Roman-8, Roman 9, ECM94-1, 8859-2 ISO, 8859-9 ISO, 8859-10ISO, 8859-15ISO, PcBit775, IBM-DN, PcMultiling, PcE.Europe, PcTk437, PcEur858, Pc1004, WiAnsi, WiE.Europe, WiTurkish, WiBALT, DeskTop, PsText, VeInternati, VeUS, MsPublishin, Math-8, PsMath, VeMath, PiFont, Legal, UK, ANSI ASCII, Swedis2, Italian, Spanish, German, Norweg1, French2, Windows, McText, Pclcelandic, Pclt774, PcTurk1, PcPortugues, PcEt850, PcTurk2, PcCanFrench, PcS1437, PcNordic, 8859-3 ISO, 8859-4 ISO, WiBaltic, WiEstonian, WiLatvian, Mazowia, CodeMJK, BpBRASCII, BpAbicomp, PcGk437, PcGk851, PcGk869, 8859-7 ISO, WiGreek, Europe3, PcCy855, PcCy866, Pclt866, PcUkr866, 8859-5 ISO, WiCyrillic, Bulgarian, PcUkr866, Hebrew7, 8859-8 ISO, Hebrew8, PcHe862, Arabic8, PcAr864, 8859-6 ISO, OCR A, OCR B*
Form	5 ... 60/64 ** ... 128 lines
Source SymSet	0 ... 277 ... 3199
Dest SymSet	0 ... 277 ... 3199
CR Function	CR , CR + LF
LF Function	LF , CR + LF
Tray Assign	4, 4K , 5S

* Available only when the corresponding optional font ROM module is installed.

** Depending on whether Letter (60) or A4 (64) paper has been selected.

Note:

If you normally use the HP LaserJet 4 printer driver when printing, you should change settings using this driver whenever you can. Printer driver settings always override the LJ4 menu options.

FontSource

Sets the default font source.

Font Number

Sets the default font number for the default font source. The available number depends on the settings you made.

Pitch

Specifies the default font pitch if the font is scalable and of fixed-pitch. You can select from 0.44 to 99.99 cpi (characters per inch), in 0.01-cpi increments. This item may not appear depending on the `Font Source` or `Font Number` settings.

Height

Specifies the default font height if the font is scalable and proportional. You can select from 4.00 to 999.75 points, in 0.25-point increments. This item may not appear depending on the `Font Source` or `Font Number` settings.

SymSet

Selects the default symbol set. If the font you selected in `Font Source` and `Font Number` is not available in the new `SymSet` setting, the `Font Source` and the `Font Number` values are automatically replaced with their default values.

Form

Selects the number of lines for the selected paper size and orientation. This also causes a line spacing (VMI) change, and the new VMI value is stored in the printer. This means that later changes in the Page Size or the Orientation settings cause changes in the Form value, based on the stored VMI.

Source SymSet, Dest SymSet

Available only in certain locations where printers are sold with a special ROM module installed to handle specific languages.

Tray Assign

Changes the assignment for the paper source select command. When 4 is selected, the commands are set as compatible with the HP LaserJet 4. When 4K is selected, the commands are set as compatible with the HP LaserJet 4000, 5000, and 8000. When 5S is selected, the commands are set as compatible with the HP LaserJet 5Si.

GL2 Menu

This menu lets you set the printer to emulate a plotter, allowing you to use software which requires a plotter for output. The LJ4GL2 mode is similar to the GL/2 mode supported in HP LaserJet 4 mode. The GLlike mode emulates some of the HP-GL plotter commands and includes all the commands found in HP's GL/2 mode, as well as two additional commands.

Item	Values (default in bold)
GL Mode	LJ4GL2 , GLlike
Scale	Off , A0, A1, A2, A3
Origin	Corner , Center
Pen	Pen0 , Pen1, Pen2, Pen3, Pen4, Pen5, Pen6

Item	Values (default in bold)
End	Buff , Square, Triangular, Round
Join	Mitered , Miteredbeveled, Triangular, Round, Beveled, None
Pen 0 through 6	0.05 ... 0.35 ... 5.00 mm in 0.05 increments

Before you start printing in the GL/2 mode

You may need to change the following print options in your application software, depending on your output needs. Check these settings to make sure they match the data you are trying to print.

Print Options	Settings
Paper size	Printer's paper size setting
Driver (plotter selection)	HP-GL/2 or HP-GL
Pen configuration	Pen thickness
Plot origin	Center or Corner
Orientation	GLlike offers landscape only LJ4GL2 offers landscape and portrait

If you need to configure the printer settings, first switch the emulation mode, then change the settings using the printer driver, or SelecType.

Note:

Settings or data saved in the printer RAM (such as downloaded fonts) may be erased when you change the emulation mode.

GL Mode

Specifies whether the printer uses a direct emulation of the GL/2 plotter language, or the HP LaserJet 4 emulation of GL/2.

Scale

Specifies whether the output from the software is scaled. The scale factor is based on the output paper size of the application software.

Origin

Specifies whether the logical origin of the “plotter” is from the corner or the center of the paper.

Pen

Allows you to choose a pen which you can then set the thickness for in the Pen 0 through Pen 6 menu item. The LJ4GL2 mode supports two pens (0 and 1), while the GLlike mode supports seven pens (0 through 6).

End

Specifies the way in which lines end.

Join

Specifies the way in which lines are joined.

Pens 0 through 6

Allows you to set the thickness of the “pens” used to make the printout. Pen 0 and Pen 1 are available in the LJ4GL2 mode, and Pen 0 through Pen 6 are available in the GLlike mode.

PS3 Menu

This menu is available only when the optional Adobe PostScript3 ROM module is installed. For installation instructions, see “Adobe PostScript 3 ROM Module” on page 4-66. See also your Adobe PostScript3 Kit documentation.

Item	Values (default in bold)
Error Sheet	Off , On

Error Sheet

When you select **On**, the printer prints out an error sheet.

ESCP2 Menu

This menu allows you to make settings which affect the printer when it is in the ESCP2 emulation mode.

Item	Values (default in bold)
Font	Courier , Prestige, Roman, Sans Serif, Roman T, Orator S, Sans H, Script, OCR A, OCR B
Pitch	10 , 12, 15 cpi, Prop.
Condensed	Off , On
T. Margin	0.40 ... 0.50 ... 1.50 inch in 0.05 inch increments
Text	1... 62/66* ... 99 lines
CGTable	PcUSA , Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, Pclcelandic, PcE.Europe, BpBRASCI, BpAbicomp, Roman-8, PcEur858, ISO Latin1, 8859-15 ISO, PcS1437, PcTurkish1, 8859-9 ISO, Mazowia, CodeMJK, PcGk437, PcGk851, PcGk869, 8859-7 ISO, PcCy855, PcCy866, PcUkr866, Bulgarian, Hebrew7, Hebrew8, PcHe862, PcAr864
Country	USA , France, Germany, UK, Denmark, Sweden, Italy, Spain1, Japan, Norway, Denmark2, Spain2, Latin Americ, Korea, Legal
Auto CR	On , Off
Auto LF	Off , On
Bit Image	Dark , Light, BarCode
ZeroChar	0 , (or the zero character with a slash)

* Depending on whether Letter (62) or A4 (66) paper has been selected

Font

Selects the font.

Pitch

Selects the pitch (the horizontal spacing) of the font in fixed pitch, measured in cpi (characters per inch), or you can choose proportional spacing.

Condensed

Turns condensed printing on or off.

T. Margin

Sets the distance from the top of the page to the baseline of the first printable line. The distance is measured in inches. The smaller the value, the closer the printable line is to the top.

Text

Sets the page length in lines. For this option, a line is assumed to be 1 pica (1/6 inch). If you change the *Orientation*, *Page Size*, or *T. Margin* settings, the page length setting automatically returns to the default setting for each paper size.

CG Table

Use the character generator (CG) table option to select the graphics character table or the italics table. The graphics table contains graphic characters for printing lines, corners, shaded areas, international characters, Greek characters, and mathematical symbols. If you select *Italic*, the upper half of the character table is defined as italic characters.

Country

Use this option to select one of the fifteen international symbol sets. See "International character sets" on page B-33 for samples of the characters in each country's symbol set.

Auto CR

Specifies whether the printer performs a carriage-return/line-feed (CR-LF) operation whenever the printer position goes beyond the right margin. If this setting is off, the printer does not print any characters beyond the right margin and does not perform any line wrapping until it receives a carriage-return character. This function is handled automatically by most application software.

Auto LF

If you set this option to `Off`, the printer does not send an automatic line-feed (LF) command with each carriage-return (CR). If this is set to `On`, a line-feed command is sent with each carriage-return. Set to `On` if your text lines overlap.

Bit Image

The printer is able to emulate the graphics densities set with the printer commands. If you select `Dark`, the bit image density is high, and if you select `Light`, the bit image density is low.

If you select `BarCode`, the printer converts bit images to bar codes by automatically filling in any vertical gaps between dots. This produces unbroken vertical lines that can be read by a bar code reader. This mode will reduce the size of the image being printed, and may also cause some distortion when printing bit image graphics.

ZeroChar

Specifies whether the printer prints a slashed or unslashed zero.

FX Menu

This menu allows you to make settings which affect the printer when it is in the FX emulation mode.

Item	Values (default in bold)
Font	Courier , Prestige, Roman, Sans Serif, Script, Orator S, OCR A, OCR B
Pitch	10 , 12, 15 cpi, Prop.
Condensed	Off , On
T. Margin	0.40 ... 0.50 ... 1.50 inch in 0.05 inch increments
Text	1... 62/66* ... 99 lines
CGTable	PcUSA , Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, Pclcelandic, PcE.Europe, BpBRASCII, BpAbicomp, Roman-8, PcEur858, ISO Latin1, 8859-15 ISO
Country	USA , France, Germany, UK, Denmark, Sweden, Italy, Spain1, Japan, Norway, Denmark2, Spain2, Latin Americ
Auto CR	On , Off
Auto LF	Off , On
Bit Image	Dark , Light, BarCode
ZeroChar	0 , (or the zero character with a slash)

* Depending on whether Letter (62) or A4 (66) paper has been selected

Font

Selects the font.

Pitch

Selects the pitch (the horizontal spacing) of the font in fixed pitch, measured in cpi (characters per inch), or you can choose proportional spacing.

Condensed

Turns condensed printing on or off.

T. Margin

Sets the distance from the top of the page to the baseline of the first printable line. The distance is measured in inches. The smaller the value, the closer the printable line is to the top.

Text

Sets the page length in lines. For this option, a line is assumed to be 1 pica (1/6 inch). If you change the *Orientation*, *Page Size*, or *T. Margin* settings, the page length setting automatically returns to the default setting for each paper size.

CG Table

Use the character generator (CG) table option to select the graphics character table or the italics table. The graphics table contains graphic characters for printing lines, corners, shaded areas, international characters, Greek characters, and mathematical symbols. If you select *Italic*, the upper half of the character table is defined as italic characters.

Country

Use this option to select one of the fifteen international symbol sets. See "International character sets" on page B-33 for samples of the characters in each country's symbol set.

Auto CR

Specifies whether the printer performs a carriage-return/line-feed (CR-LF) operation whenever the printer position goes beyond the right margin. If this setting is off, the printer does not print any characters beyond the right margin and does not perform any line wrapping until it receives a carriage-return character. This function is handled automatically by most application software.

Auto LF

If you set this option to `Off`, the printer does not send an automatic line-feed (LF) command with each carriage-return (CR). If this is set to `On`, a line-feed command is sent with each carriage-return. Set to `On` if your text lines overlap.

Bit Image

The printer is able to emulate the graphics densities set with the printer commands. If you select `Dark`, the bit image density is high, and if you select `Light`, the bit image density is low.

If you select `BarCode`, the printer converts bit images to bar codes by automatically filling in any vertical gaps between dots. This produces unbroken vertical lines that can be read by a bar code reader. This mode will reduce the size of the image being printed, and may also cause some distortion when printing bit image graphics.

ZeroChar

Selects whether the printer prints a slashed or unslashed zero.

I239X Menu

The I239X mode emulates IBM 2390/2391 Plus commands.

These settings are available only when the printer is in the I239X mode.

Item	Values (default in bold)
Font	Courier , Prestige, Gothic, Orator, Script, Presentor, Sans Serif
Pitch	10 , 12, 15, 17, 20, 24 cpi, Prop.
Code Page	437 , 850, 858, 860, 863, 865
T. Margin	0.30 ... 0.40 ... 1.50 inch in 0.05-inch increments
Text	1 ... 63/67* ... 99 lines
Auto CR	Off , On
Auto LF	Off , On
Alt. Graphics	Off , On
Bit Image	Dark , Light
ZeroChar	0 , (or the zero character with a slash)
CharacterSet	1, 2

* Depends on whether Letter (63) or A4 (67) paper has been selected.

Font

Selects the font.

Pitch

Selects the pitch (the horizontal spacing) of the font in fixed pitch, measured in cpi (characters per inch), or you can choose proportional spacing.

Code Page

Selects the character tables. Character tables contain the characters and symbols used by different languages. The printer prints text based on the selected character table.

T. Margin

Sets the distance from the top of the page to the baseline of the first printable line. The distance is measured in inches. The smaller the value, the closer the printable line is to the top.

Text

Sets the page length in lines. For this option, a line is assumed to be 1 pica (1/6 inch). If you change the *Orientation*, *Page Size*, or *T. Margin* settings, the page length setting automatically returns to the default setting for each paper size.

Auto CR

Specifies whether the printer performs a carriage-return/line-feed (CR-LF) operation whenever the printer position goes beyond the right margin. If this setting is off, the printer does not print any characters beyond the right margin and does not perform any line wrapping until it receives a carriage-return character. This function is handled automatically by most application software.

Auto LF

If you set this option to *Off*, the printer does not send an automatic line-feed (LF) command with each carriage-return (CR). If this is set to *On*, a line-feed command is sent with each carriage-return. Set to *On* if your text lines overlap.

Alt. Graphics

Turns the Alternate Graphics option on or off.

Bit Image

The printer is able to emulate the graphics densities set with the printer commands. If you select *Dark*, the bit image density is high, and if you select *Light*, the bit image density is low.

If you select `BarCode`, the printer converts bit images to bar codes by automatically filling in any vertical gaps between dots. This produces unbroken vertical lines that can be read by a bar code reader. This mode will reduce the size of the image being printed, and may also cause some distortion when printing bit image graphics.

ZeroChar

Selects whether the printer prints a slashed or unslashed zero.

Character Set

Selects character table 1 or 2.

Chapter 4

Using Options

Printer Options	4-2
500-Sheet Lower Cassette Unit	4-4
Installing the 500-Sheet Lower Cassette Unit	4-4
Using the 500-Sheet Lower Cassette Unit	4-9
Large Capacity Paper Unit	4-10
Installing the Large Capacity Paper Unit	4-10
Using the Large Capacity Paper Unit	4-16
Duplex Unit	4-18
Installing the Duplex Unit	4-18
Removing the Duplex Unit	4-25
Using the Duplex Unit	4-26
5-Bin Multi-Purpose Unit	4-27
Installing the 5-Bin Multi-Purpose Unit	4-27
Removing the 5-Bin Multi-Purpose Unit	4-33
Using the 5-Bin Multi-Purpose Unit	4-33
10-Bin Multi-Purpose Unit	4-36
Installing the 10-Bin Multi-Purpose Unit	4-36
Removing the 10-Bin Multi-Purpose Unit	4-42
Using the 10-Bin Multi-Purpose Unit	4-43
Hard Disk Drive	4-44
Installing the Hard Disk Drive	4-44
Removing the Hard Disk Drive	4-50
Reformatting the Hard Disk Drive	4-55
Memory Modules	4-55
Installing a memory module	4-56
Removing a memory module	4-61
Adobe PostScript 3 ROM Module	4-66
Installing the ROM module	4-66
Removing the ROM module	4-71

Printer Options

You can add to your printer's capabilities by installing any of the following options:

Note:

The asterisk () is a substitute for the last digit of the product number, which varies by country.*

- ❑ The 500-Sheet Lower Cassette Unit (C81319*) fits directly beneath the printer and can hold 500 sheets of plain paper in the following sizes:

A3, A4, Ledger, Legal, B4, Letter, Government Letter

- ❑ The Large Capacity Paper Unit (C81322*) fits directly beneath the printer and can hold 2,500 sheets of plain paper in the following sizes:

A4, Letter

- ❑ The Duplex Unit (C81318*) allows you to print on both sides of a sheet of plain paper, one sheet at a time. The Duplex Unit accommodates the following paper and envelope sizes:

A3, A4, A5, B4, B5, IB5, Ledger, Legal, G-Legal, Letter, G-Letter, Executive, H-Letter

- ❑ The 5-Bin Multi-Purpose Unit (C81320*) can be used as a mailbox, a sorter, a multiple sorter, or a large capacity stacker. Output capacity is 500 printed sheets of plain paper in the following sizes:

A3, A4, A5, Ledger, Legal, GLG, Letter, HLT, GLT, Executive, F4

Output capacity is 20 printed sheets for labels, transparencies, letterhead, thick paper, and envelopes. These media can only be output to Bin 1. The following envelope sizes are supported:

Monarch, Commercial 10, DL, C5, C6, IB5

- ❑ The 10-Bin Multi-Purpose Unit (C81321*) can be used as a mailbox, a sorter, a multiple sorter, or a large capacity stacker. Output capacity is 2,000 printed sheets of plain paper in the following sizes:

A3, A4, A5, Ledger, Legal, GLG, Letter, HLT, GLT, Executive, F4

Output capacity is 20 printed sheets for labels, transparencies, letterhead, thick paper, and envelopes. These media can only be output to Bin 1. The following envelope sizes are supported:

Monarch, Commercial 10, DL, C5, C6, IB5

- ❑ The Hard Disk Drive (C82377*) allows you to print complex and large print jobs at high speed.
- ❑ Memory modules expand your printer's memory.
- ❑ The Adobe PostScript3 Kit (C83241*) ROM module generates crisp PostScript output.
- ❑ A variety of interface cards provide additional links between your printer and computers or networks.

Before installing an option, read the sheet packed with the option as well as the installation instructions in this chapter.

Note:

Remember to keep any covers and screws you remove when installing options. You may need them again when you remove the options.

500-Sheet Lower Cassette Unit

Installing the 500-Sheet Lower Cassette Unit

It is best to install the optional 500-Sheet Lower Cassette Unit when first setting up the printer. You can install up to two optional 500-Sheet Lower Cassette Units, or one optional 500-Sheet Lower Cassette Unit plus the optional Large Capacity Paper Unit.

Please note that you will need the assistance of at least two other people to lift up the printer when installing this option.

Follow these steps to install the 500-Sheet Lower Cassette Unit:

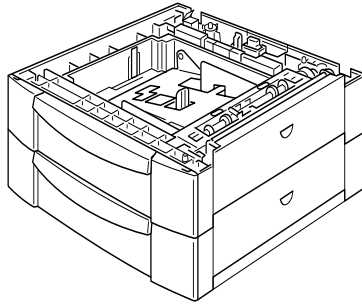
1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Unpack the 500-Sheet Lower Cassette Unit and remove all protective materials.

Note:

Keep all packing materials for future use.

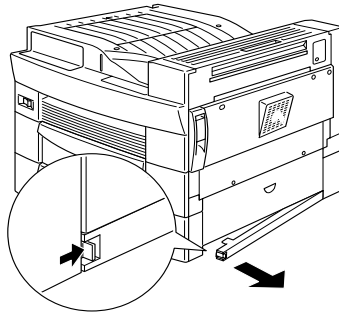
5. Place the unit near the printer.

If you plan to install two 500-Sheet Lower Cassette Units, stack the cassettes with the front of each cassette facing the same direction.

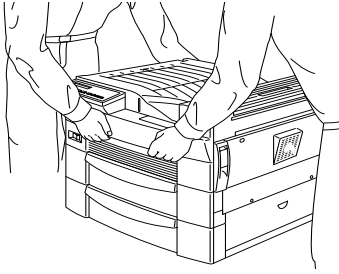


If you plan to install the Large Capacity Paper Unit at the same time, refer to the instructions under "Installing the Large Capacity Paper Unit" on page 4-10 to complete the installation of both units.

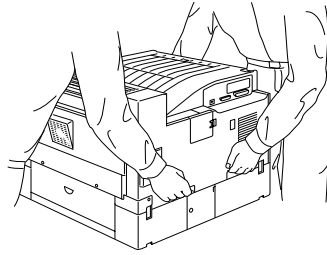
6. Remove the side cover from the bottom of the printer.



7. With the assistance of two or more people, grasp the printer at the positions indicated below and lift it carefully.



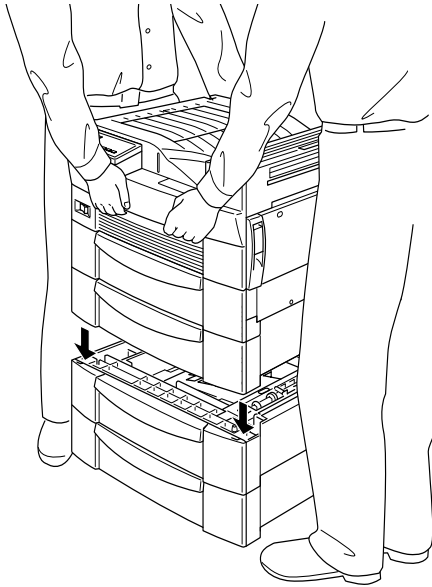
front



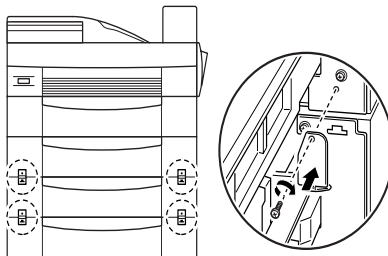
rear

C **Caution:** *The printer weighs about 30 kg (66.1 lb); always lift it with two or more people.*

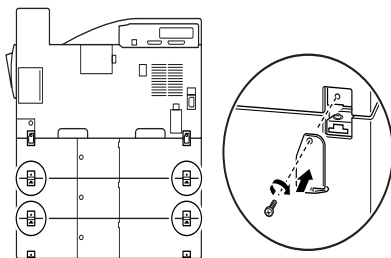
- Align each of the printer's corners with those of the cassette unit, then lower the printer until it rests securely on the unit.



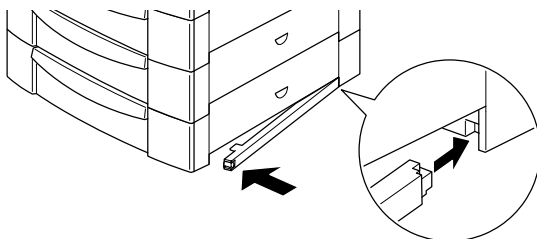
- Make sure all corners of the printer fit firmly onto the unit.
- Pull out the paper cassette and fasten the 500-Sheet Lower Cassette Unit using the fittings and screws provided.



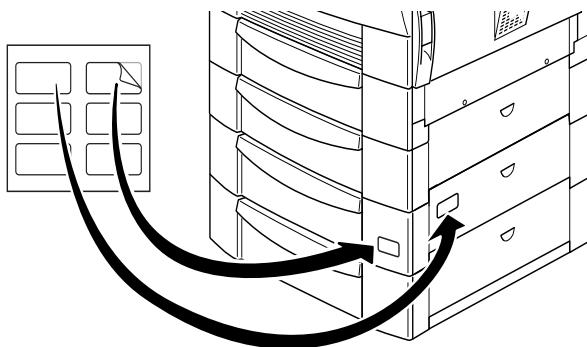
11. On the back of the printer, fasten the unit using the fittings and screws provided.



12. Pull the paper cassette out and remove the protective materials.
13. Attach the side cover to the bottom of the cassette unit as shown below.



14. Peel the appropriate cover and cassette numbering labels from the label sheet included with the 500-Sheet Lower Cassette Unit, and attach them to the unit as shown below.



15. Reconnect all interface cables.
16. Plug the power cord into an electrical outlet.
17. Turn on the printer.

Using the 500-Sheet Lower Cassette Unit

Each 500-Sheet Lower Cassette Unit can store 500 sheets of plain paper.

You can load the following paper sizes. The loading orientation differs depending on the paper size, as explained below:

Loading Orientation	Paper Size
Vertical	A4, Letter, Government Letter
Horizontal	A3, Ledger, Legal, B4

See "Paper Specifications" on page A-2 for actual measurements.

The paper loading method for the 500-Sheet Lower Cassette Unit is the same as that for the standard lower cassette that comes with your printer. See “Loading paper into the lower cassette” on page 2-8 for loading instructions.

Large Capacity Paper Unit

Installing the Large Capacity Paper Unit

It is best to install the optional Large Capacity Paper Unit when first setting up the printer. Please note that you will need the assistance of at least two other people to lift up the printer when installing this option.

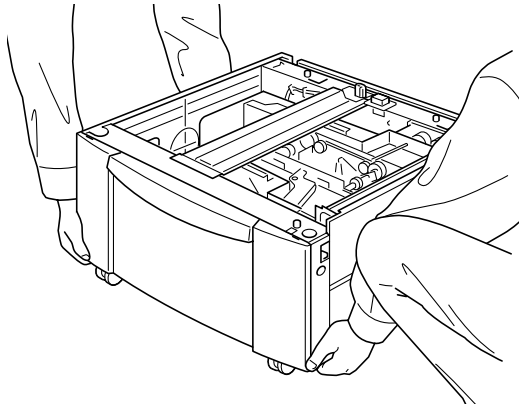
Follow these steps to install the optional Large Capacity Paper Unit:

1. Turn off the printer.
2. Unplug the printer’s power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Unpack the Large Capacity Paper Unit and remove all protective materials.

Note:

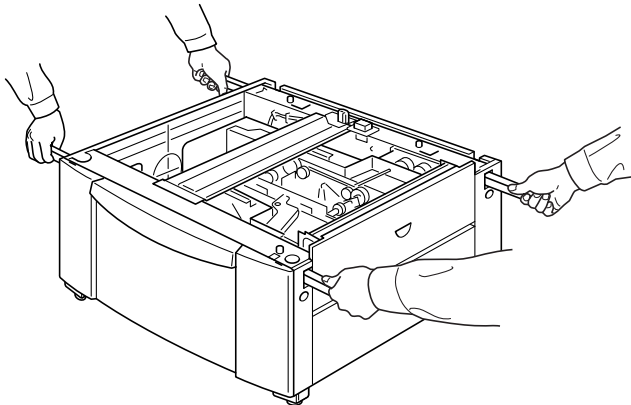
Keep all packing materials for future use.

5. With the assistance of two or more people, place the unit near the printer.

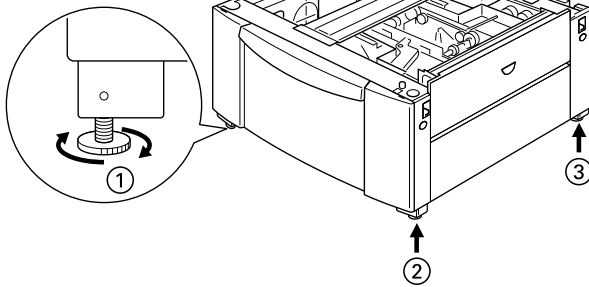


Note:

The unit has four handles that you can use to lift it with. Pull the handles out from the locations shown below when you need to use them.



6. You will find three casters at the bottom of the Large Capacity Paper Unit. Lock the casters by pushing their levers down.

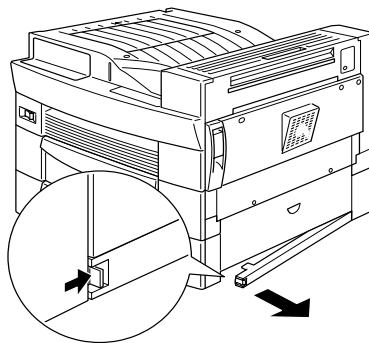


7. If you are also installing an optional 500-Sheet Lower Cassette Unit, stack it on top of the Large Capacity Paper Unit. For instructions on how to prepare the Lower Cassette Unit for installation, see “Installing the 500-Sheet Lower Cassette Unit” on page 4-4.

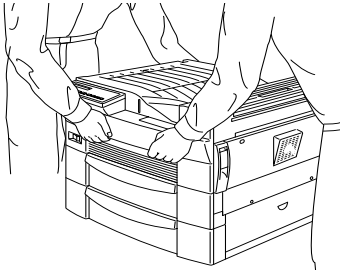
Note:

All subsequent illustrations show both an optional 500-Sheet Lower Cassette Unit and an optional Large Capacity Paper Unit.

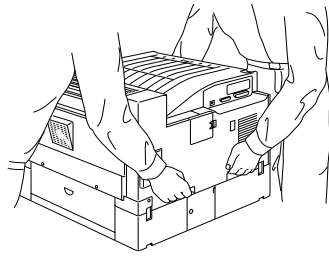
8. Remove the side cover from the bottom of the printer.



9. With the assistance of two or more people, grasp the printer at the positions indicated below and lift it carefully.



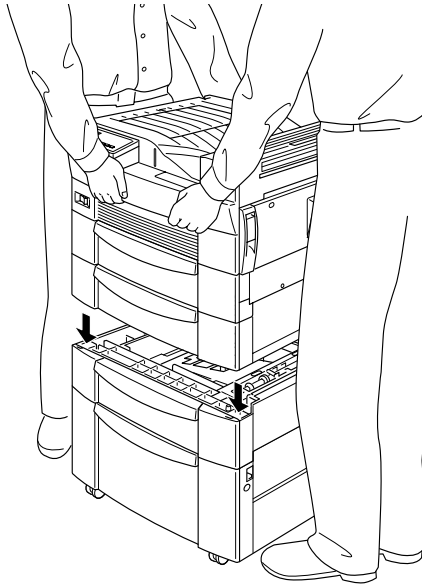
front



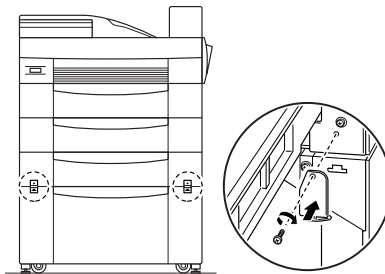
rear

C **Caution:** *The printer weighs about 30 kg (66.1 lb); always lift it with two or more people.*

- Align each of the printer's corners with those of the unit, then lower the printer until it rests securely on the unit.



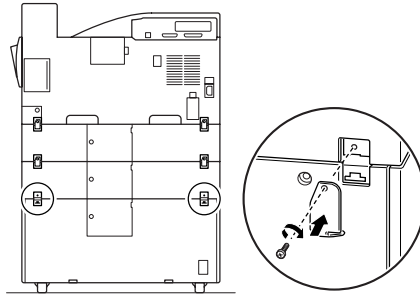
- Make sure all corners of the printer fit firmly onto the unit. Then pull out the paper cassette and fasten the unit using the fittings and screws provided.



Note:

Also fasten the 500-Sheet Lower Cassette Unit with the fittings and screws provided if you're installing both options at the same time.

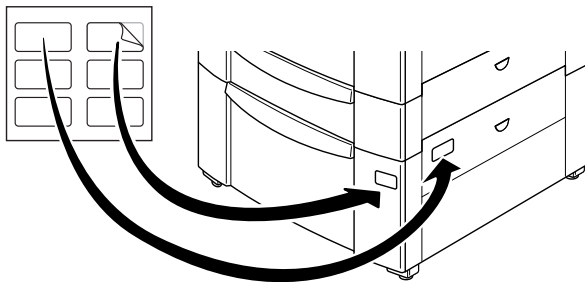
12. On the back of the printer, fasten the unit using the fittings and screws provided.



Note:

Also fasten the 500-Sheet Lower Cassette Unit with the fittings and screws provided if you're installing both options at the same time.

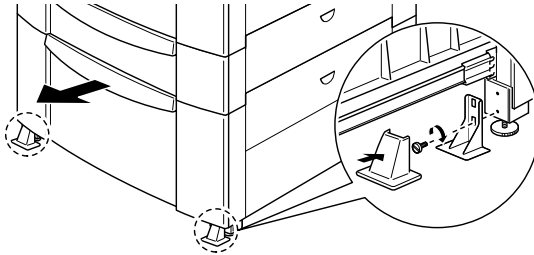
13. Pull the paper cassette out of the unit and remove the protective materials.
14. Peel the appropriate cover and cassette numbering labels from the label sheet included with the Large Capacity Paper Unit and attach it to the unit.



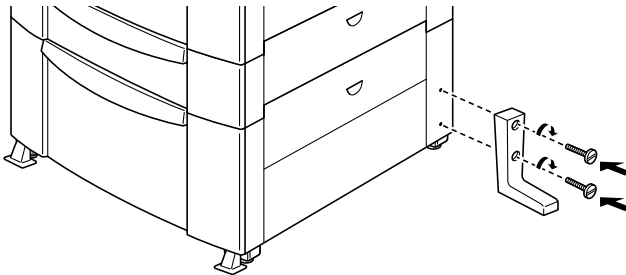
Note:

Do the same for the optional 500-Sheet Lower Cassette Unit if you are installing it at the same time.

15. Pull out the cassette and attach the printer supports and printer support covers to the front of the printer, then attach the printer supports to the back of the printer.



16. Attach the included L-shaped printer support to the side of the unit as shown below.



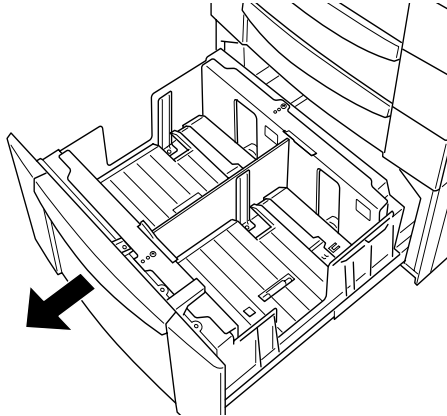
17. Reconnect all interface cables.
18. Plug the power cord into an electrical outlet.
19. Turn on the printer.

Using the Large Capacity Paper Unit

This unit can hold 2,500 sheets of plain paper and is useful for feeding paper you use often and in large amounts.

Follow these steps to load paper into the Large Capacity Paper Unit:

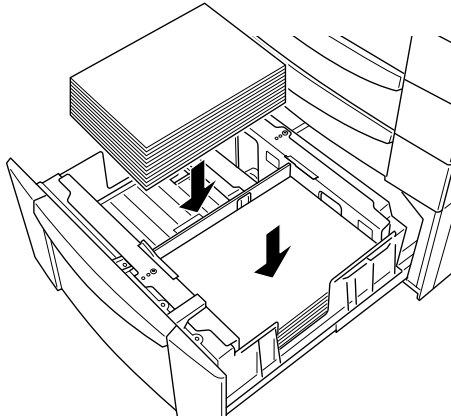
1. Pull out the paper cassette.



2. Fan a stack of paper and tap it on a flat surface to even the edges. Insert the paper into the cassette, making sure the amount of paper does not exceed the maximum paper mark inside the cassette.

Note:

If your printouts are curled or do not stack properly when using plain paper, try turning the stack over and reloading it.



3. Push the paper cassette back into the unit.

Duplex Unit

Installing the Duplex Unit

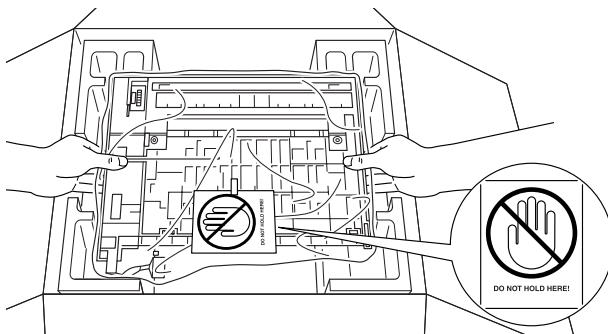
Follow these steps to install the optional Duplex Unit:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Unpack the Duplex Unit and remove all protective materials.

C

Caution:

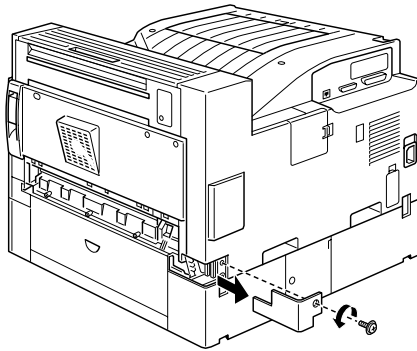
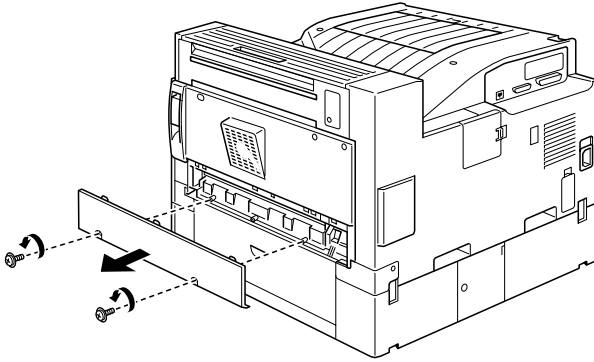
When removing the Duplex Unit from the box, do not grasp the area indicated by the warning label shown below. Otherwise, you may damage the unit.



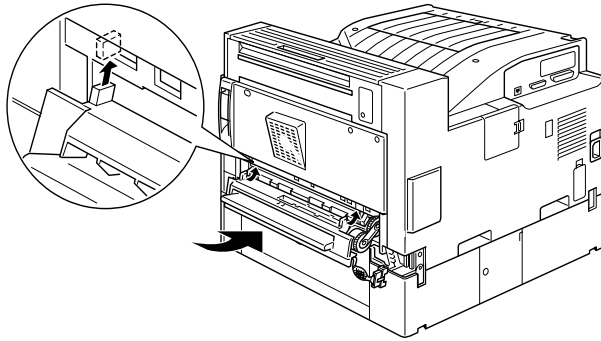
Note:

Keep all packing materials for future use.

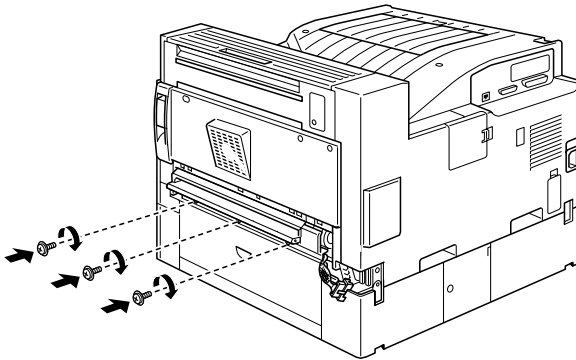
5. Remove the cover and connector cover on the side of the printer.



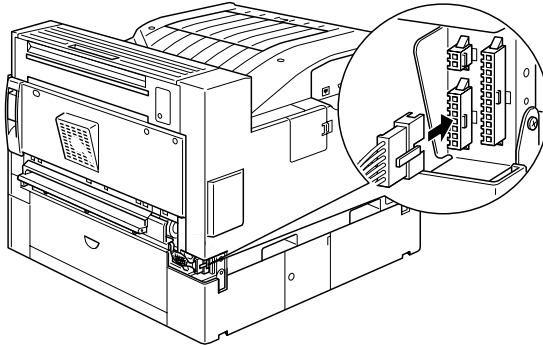
6. Insert the paper transfer unit as shown below.



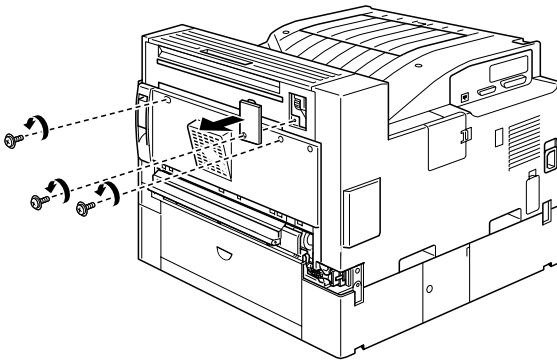
7. Fasten the paper transfer unit with the included screws.



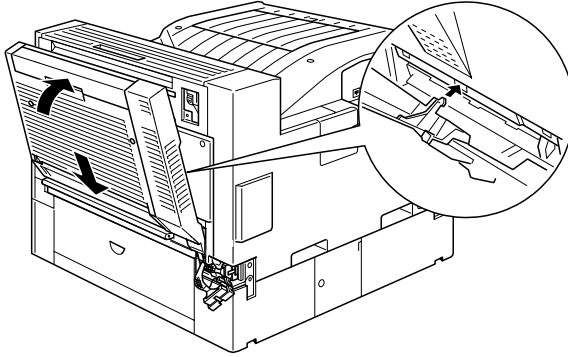
8. Connect the cable on the right side of the paper transfer unit to the connector on the printer.



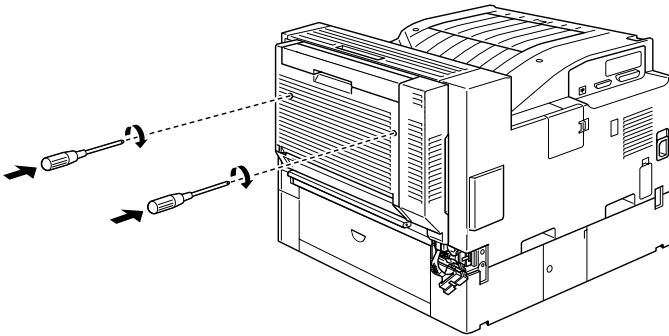
9. Remove the covers shown below.



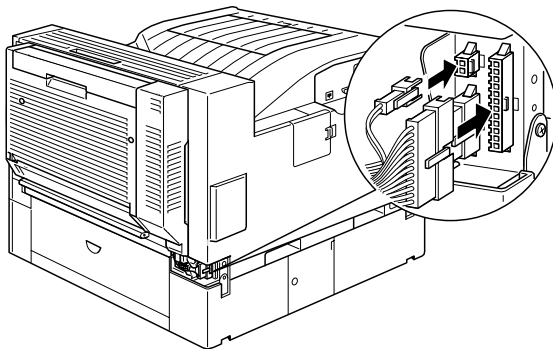
10. Hold the Duplex Unit at an angle and insert the two tabs at the base of the unit into the slots (marked with arrows) on the printer. Push to attach the upper portion of the unit onto the printer.



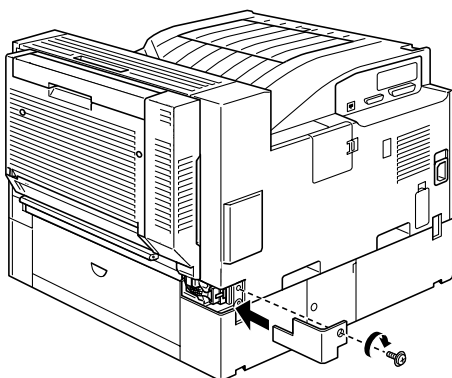
11. Fasten the screws as shown below. (The screws are already inside the Duplex Unit.)



12. Remove the protective cover from the cable attached to the Duplex Unit, then plug the ends of the cable into the appropriate connectors at the side of the printer.



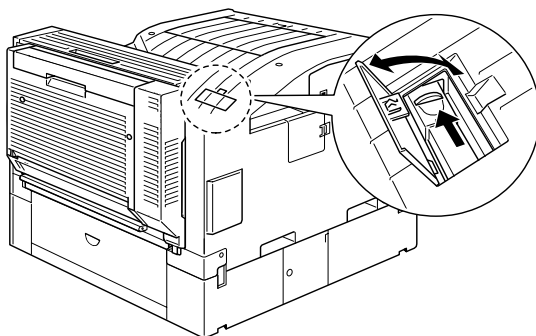
13. Replace the connector cover and fasten the screw.



14. After you install the Duplex Unit, slide the tether tension lever to the position shown below.

Note:

Be sure you close the cover of the Duplex Unit before you adjust the tether.



15. Reconnect all interface cables.
16. Plug the power cord into an electrical outlet.
17. Turn on the printer.

To confirm that the Duplex Unit is installed correctly, print a status sheet by pushing the **Enter** button on the control panel twice while the printer is online. If the unit is not listed on the status sheet, make sure the cables connecting the Duplex Unit to the printer are connected securely.

Removing the Duplex Unit

Follow these steps to remove the Duplex Unit:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.

4. Open the connector cover and unplug the ends of the Duplex Unit cable from their connectors.
5. Loosen the screws on the Duplex Unit, then remove the unit by pulling the upper portion of the unit away from the printer then lifting the unit up and off the printer.
6. Remove the paper transfer unit.
7. Replace the covers on the printer, and fasten the screws.
8. Plug the power cord into an electrical outlet.
9. Turn on the printer.

Using the Duplex Unit

The Duplex Unit enables you to print on both sides of plain paper and supports the following paper sizes:

A3, A4, A5, B4, B5, Ledger, Legal, G-Legal, Letter, G-Letter, Executive, H-Letter

To use the Duplex Unit, select the Duplex Print Unit check box in the printer driver. This check box is accessed by clicking the Settings button in the Optional Settings tab of the printer driver.

When using the Duplex Unit, paper feeds automatically from the MP tray, the lower cassette, or any installed optional cassettes. After both sides of the paper have been printed on, the Duplex Unit outputs the paper onto the face-down tray or into an optional multibin unit, if installed.

5-Bin Multi-Purpose Unit

Installing the 5-Bin Multi-Purpose Unit

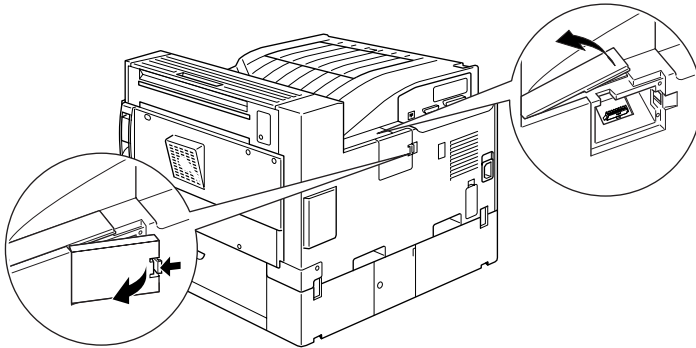
Follow these steps to install the optional 5-Bin Multi-Purpose Unit:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Unpack the 5-Bin Multi-Purpose Unit and remove all protective materials.

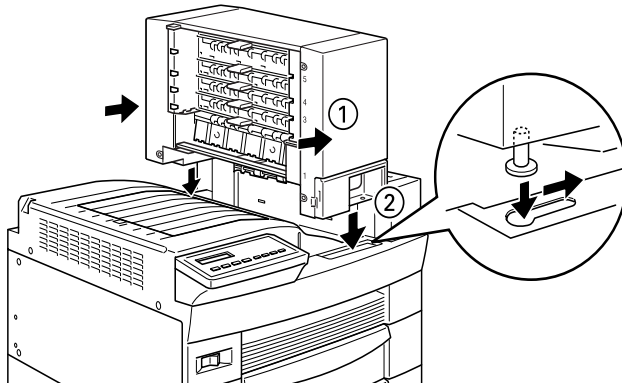
Note:

Keep all packing materials for future use.

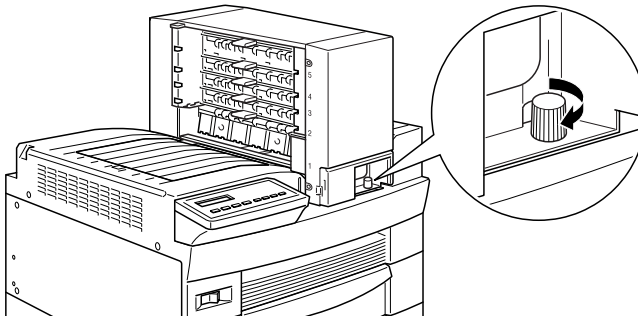
5. Remove the printer covers, as shown below.



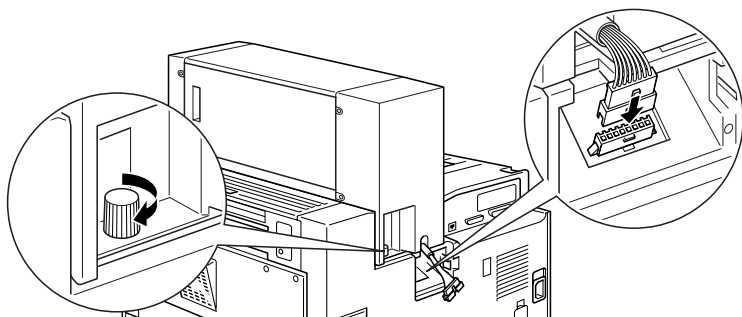
6. Place the unit on top of the printer, taking care not to drop the unit.



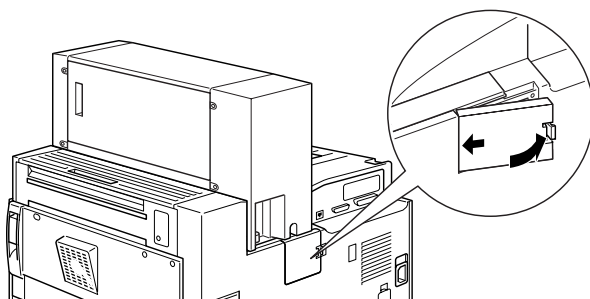
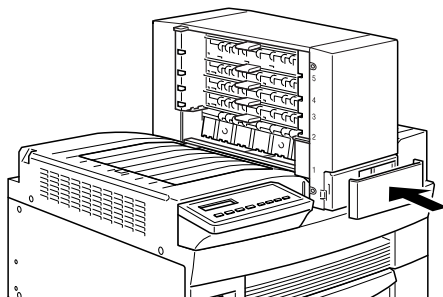
7. Fasten the screw on the front of the unit.



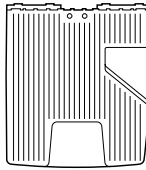
8. Fasten the screw on the back of the unit, then attach the cable to the connector on the back of the printer.



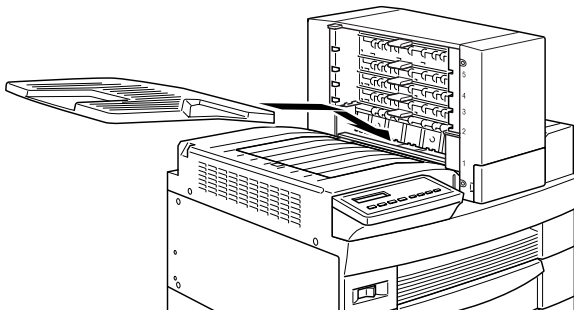
9. Attach the covers as shown below.



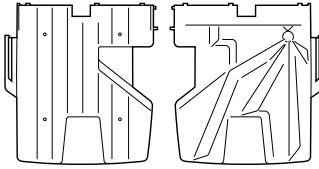
10. Insert the tray shown below into Bin 1. (The tray has the number 1 printed on the top right corner). Note that this tray differs in shape from the trays for the other bins.



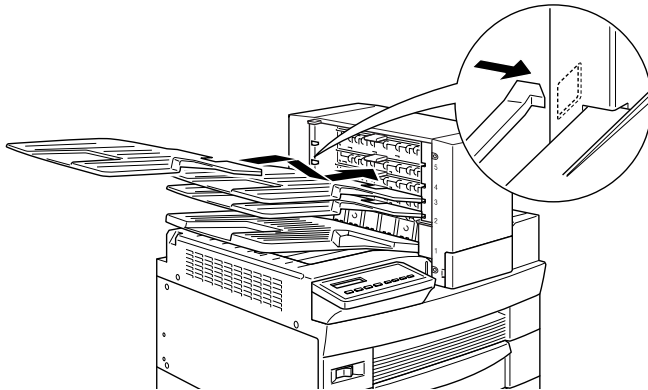
top



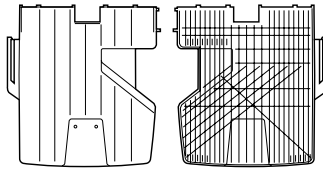
11. Insert the trays shown below into Bins 2 to 4, starting from the bottom. (These trays are numbered from 2 to 4). Note that these trays differ in shape from the trays for Bins 1 and 5.



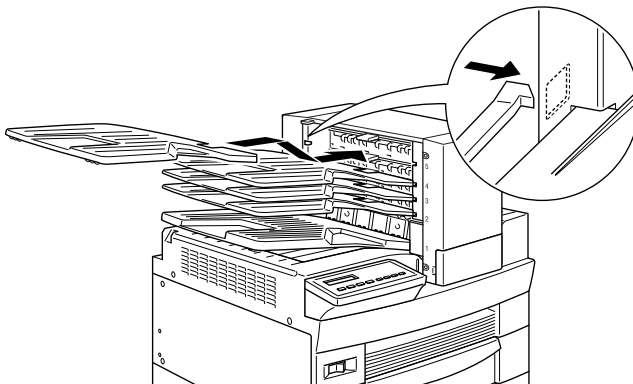
top / bottom



12. Insert the tray shown below into Bin 5. (The tray has the number 5 printed on the top right corner). Note that the this tray differs in shape from the trays for the other bins.



top / bottom



13. Open the back cover of the unit and remove all protective materials.
14. Reconnect all interface cables.
15. Plug the power cord into an electrical outlet.
16. Turn on the printer.

To confirm that this option is installed correctly, print a status sheet by pushing the Enter button on the control panel twice while the printer is online. If Multibin does not appear on the status sheet, make sure the cables connecting the unit to the printer are connected securely.

Removing the 5-Bin Multi-Purpose Unit

Follow these steps to remove the 5-Bin Multi-Purpose Unit:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove the trays from the unit.
4. Remove the connector cover, and unplug the unit cable.
5. Remove the screw cover on the front side of the printer, then remove the screws from the front and back of the unit and lift the unit off the printer carefully.
6. Replace the covers on the printer.
7. Plug the power cord into an electrical outlet.
8. Turn on the printer.

Using the 5-Bin Multi-Purpose Unit

The 5-Bin Multi-Purpose Unit (C81320*) can be used as a mailbox, a sorter, a multiple sorter, or a large capacity stacker. You can also use the unit for offset stacking in Bin 1.

To set the output mode, access your printer driver's Optional Settings tab and click the Settings button. Select 5-Bin Multi-Purpose Unit from the Optional Output Trays list, then select the mode you want to use from the Multibin Mode Settings list. To use the Offset Stacking feature, select Bin 1 from the Bin No. list and select the Offset Stacking check box. See the printer driver's online help for more information.

If you are printing from an application or operating system that does not support your printer driver, you can also select these output modes from the printer's control panel using the SelecType menus. For details, see "SelecType Settings" on page 3-12.

The 5-Bin Multi-Purpose Unit has a total capacity of 500 sheets. Bin 1 holds 250 sheets, Bins 2 through 4 hold 50 sheets each, and Bin 5 holds 100 sheets.

Note:

- When this unit is installed, you cannot use the standard face-down tray.*
- Changing the output mode too frequently could cause confusion and should be avoided.*
- Before changing the output mode, always consult your printer's administrator and inform all other users of the changes.*

Using the mailbox feature

The mailbox mode allows each bin to be assigned to an individual or department.

When in the mailbox mode, if Bin 1 (the first bin from the bottom) is assigned to you, you always need to select Bin 1 as your output tray in the printer driver when sending a job to this printer.

Make sure all users know who is assigned to which bin.

Using the sorter feature

You can use the 5-Bin Multi-Purpose Unit as a sorter, like those on copiers. In this mode, you can print a total of five copies for each print job, one copy in each bin. If your printer has at least 64 MB of memory installed, you can print more than five copies at a time by using the multiple sorter feature explained below.

Using the multiple sorter feature

If your printer has at least 64 MB of memory, you can use the multiple sorter feature to print out multiple copies of a print job into each bin. This allows you to print more than five copies of a print job at a time, up to 500 sheets.

Note:

If your printer does not have at least 64 MB of memory, printing in this mode will produce only one copy of your document. In this case, please use the sorter feature, or add more memory to your printer.

Using the large capacity stacker feature

When in Stacker mode, this unit functions as a large-capacity output tray, allowing you print out a total of 500 sheets at a time.

Using the offset stacking feature

The offset stacking mode allows you to separate print jobs, or multiple copies of your document, by alternating their positions in Bin 1.

Note:

You cannot use Bin 2 to Bin 5 when in the offset stacking mode.

10-Bin Multi-Purpose Unit

Installing the 10-Bin Multi-Purpose Unit

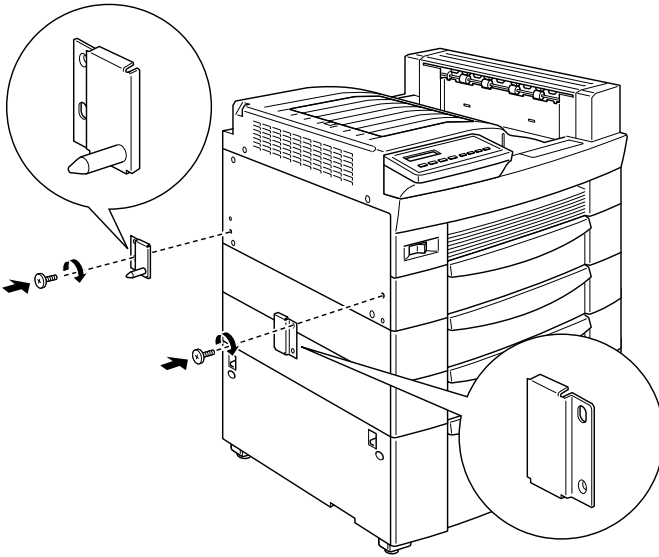
Follow these steps to install the optional 10-Bin Multi-Purpose Unit:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Unpack the unit by opening the carton from the top and removing the contents.

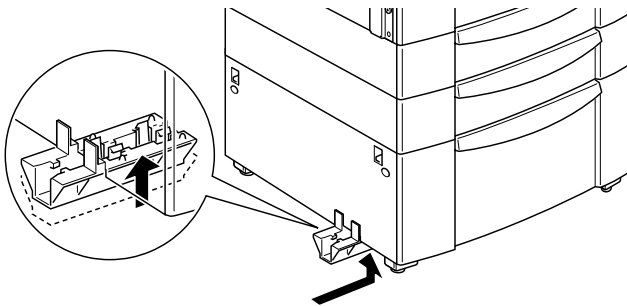
Note:

The 10-Bin Multi-Purpose Unit itself is heavy, so you will need the assistance of at least one person to lift the inner box containing the unit out of the carton, and to remove the unit from the inner box.

5. Attach the two metal plates to the left side of the printer with the included fittings and screws, as shown below.

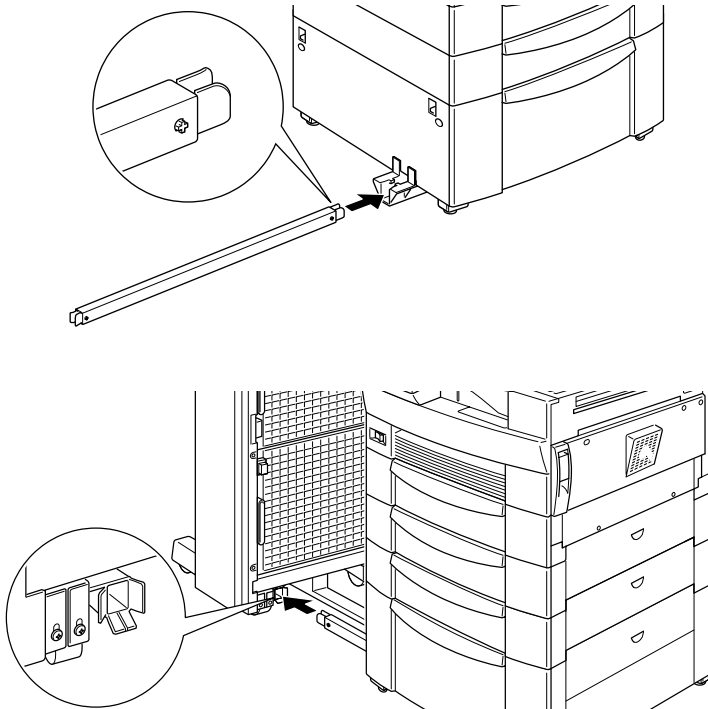


6. Attach the lower support clamp to the bottom of the printer as shown. Press up on the clamp until it clicks into place.



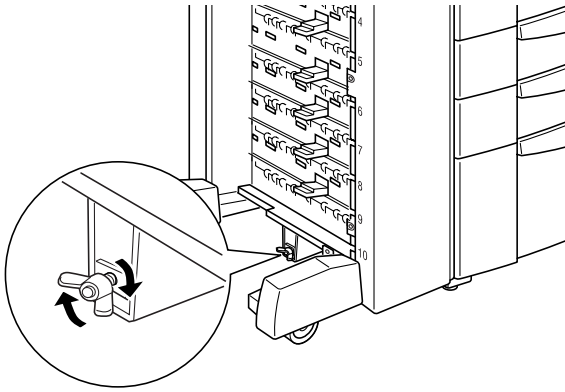
7. Open the cover on the back side of the 10-Bin Multi-Purpose Unit and remove the protective materials inside.

8. Insert one end of the lower support bar into the lower support clamp on the printer and the other end into the lower support clamp on the 10-Bin Multi-Purpose Unit.

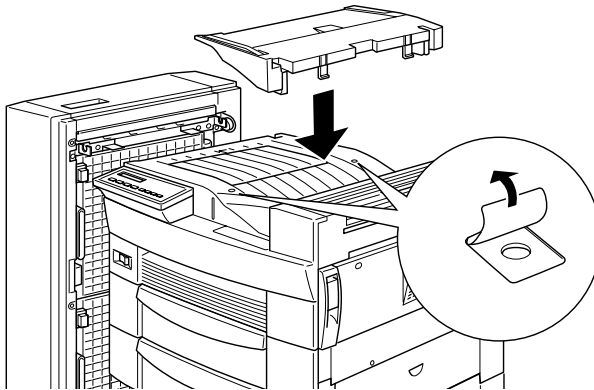


Then roll the 10-Bin Multi-Purpose Unit toward the printer until the magnets on the unit make contact with the metal plates.

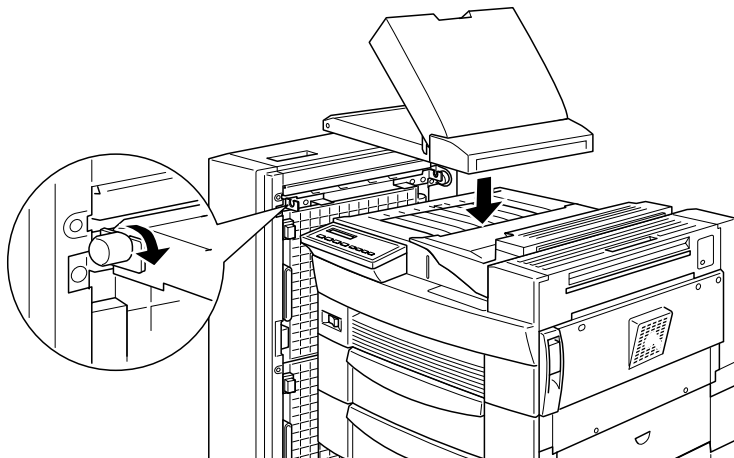
9. Tighten the screw at the bottom of the unit to secure the lower support bar.



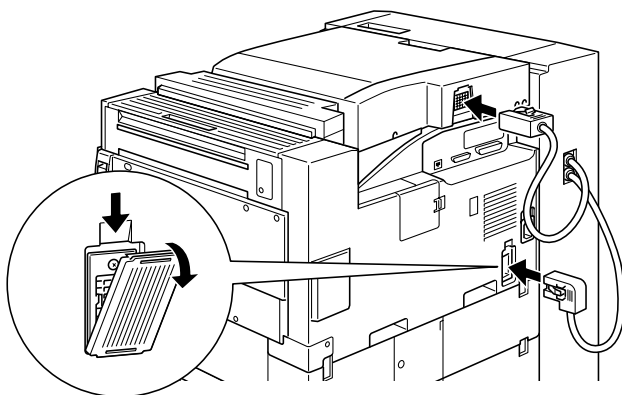
10. Remove the stickers from the holes on the face-down tray, then attach the lower paper guide as shown below.



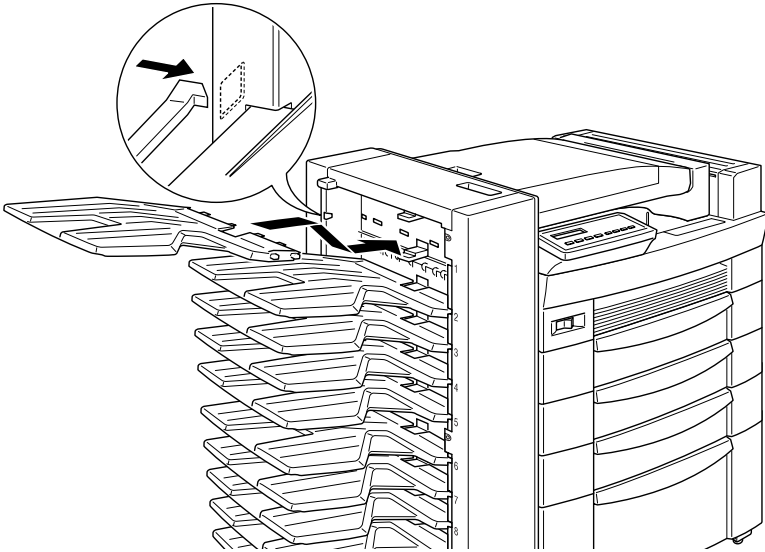
11. Open the upper paper guide cover, then insert the front of the upper paper guide into the opening on the lower paper guide and lower the guide onto the hooks on the 10-Bin Multi-Purpose Unit. Tighten the screws on both sides of the paper guide, then close the upper paper guide cover.



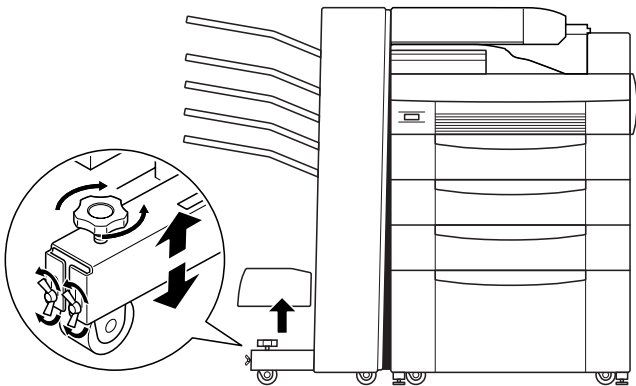
12. Attach the cables from the 10-Bin Multi-Purpose Unit to the printer and the paper guide as shown below.



13. Insert the output trays into the unit, starting from the bottom. All the trays are of the same shape.



14. If you need to adjust the height of the unit, remove the cover on the front wheel first, then turn the front screws to the left. Turn the top screw to adjust the height of the unit, then turn the front screws to the right to secure the top screw. Replace the front wheel cover.



15. Reconnect all interface cables.
16. Plug the power cord into an electrical outlet.
17. Turn on the printer.

To confirm that the unit is installed correctly, print a status sheet by pushing the Enter button on the control panel twice while the printer is online. If Multibin does not appear on the status sheet, make sure the cables connecting the 10-Bin Multi-Purpose Unit to the printer are connected securely.

Removing the 10-Bin Multi-Purpose Unit

Follow these steps to remove the 10-Bin Multi-Purpose Unit:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all the trays from the unit.
4. Detach the cable from the printer and the paper guide.
5. Remove the paper guide from both the 10-Bin Multi-Purpose Unit and the printer.
6. Roll the unit away from the printer until the lower support bar separates from the lower support clamp at the bottom of the printer, then remove the lower support bar.
7. Remove the lower support clamp and metal plates from the printer.
8. Plug the power cord into an electrical outlet.
9. Turn on the printer.

Using the 10-Bin Multi-Purpose Unit

The 10-Bin Multi-Purpose Unit (C81321*) can be used as a mailbox, a sorter, a multiple sorter, or a large capacity stacker. To set the output mode, access your printer driver's Optional Settings tab and click the Settings button. Select 10-Bin Multi-Purpose Unit from the Optional Output Trays list, then select the mode you want to use from the Multibin Mode Settings list. See the printer driver's online help for more information.

If you are printing from an application or operating system that does not support your printer driver, you can also select these output modes from the printer's control panel using the SelecType menus. For details, see "SelecType Settings" on page 3-12.

This option has a total capacity of 2,000 sheets. Each bin can hold 200 sheets.

Note:

- When this unit is installed, you cannot use the standard face-down tray.*
- Changing the output mode too frequently could cause confusion and should be avoided.*
- Before changing the output mode, always consult your printer's administrator and inform all other users of the changes.*

Using the mailbox feature

The mailbox mode allows each bin to be assigned to an individual or department.

When in the mailbox mode, if Bin 1 (the first bin from the top) is assigned to you, you always need to select Bin 1 as your output tray in the printer driver when sending a job to this printer.

Make sure all users know who is assigned to which bin.

Using the sorter feature

You can use the 10-Bin Multi-Purpose Unit as a sorter, like those on copiers. In this mode, you can print a total of ten copies for each print job, one copy in each bin. If your printer has at least 64 MB of memory installed, you can print more than ten copies at a time by using the multiple sorter feature explained below.

Using the multiple sorter feature

If your printer has at least 64 MB of memory, you can use the multiple sorter feature to print out multiple copies of a print job into each bin. This allows you to print more than ten copies of a print job at a time, up to 2,000 sheets.

Note:

If your printer does not have at least 64 MB of memory, printing in this mode will produce only one copy of your document. In this case, please use the sorter feature, or add more memory to your printer.

Using the large capacity stacker feature

When in Stacker mode, this unit functions as a large-capacity output tray, allowing you print out a total of 2,000 sheets at a time.

Hard Disk Drive

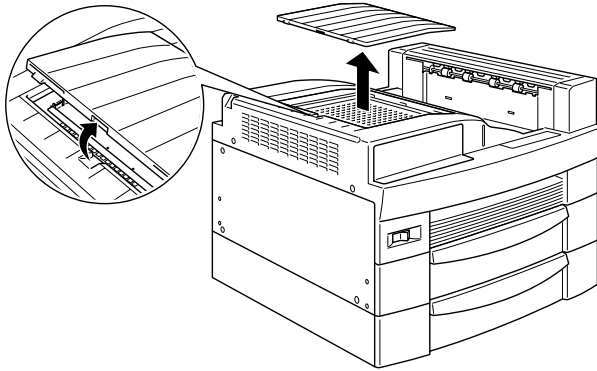
Installing the Hard Disk Drive

Follow these steps to install the optional Hard Disk Drive:

1. Turn off the printer.

W **Warning:**
To avoid electrical shock, do not attempt to install a Hard Disk Drive unless the printer is turned off.

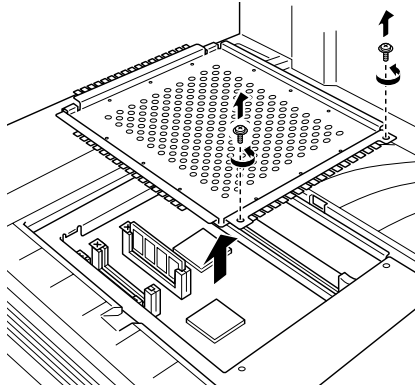
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Remove the 5-Bin or 10-Bin Multi-Purpose Unit if it is installed. For instructions, see "Removing the 5-Bin Multi-Purpose Unit" on page 4-33 or "Removing the 10-Bin Multi-Purpose Unit" on page 4-42.
5. Open the top cover of the face-down tray.



6. Loosen the two retaining screws and remove the plate.

Note:

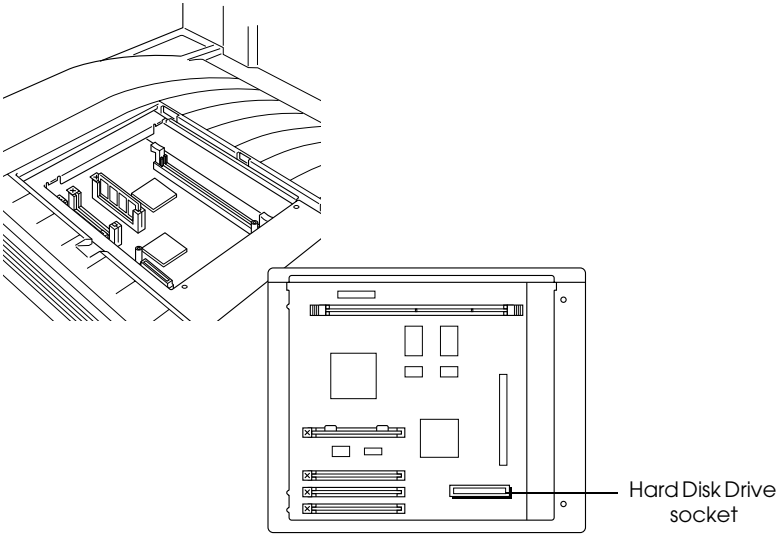
To avoid losing the retaining screws, do not remove them completely from the plate.



Warning:

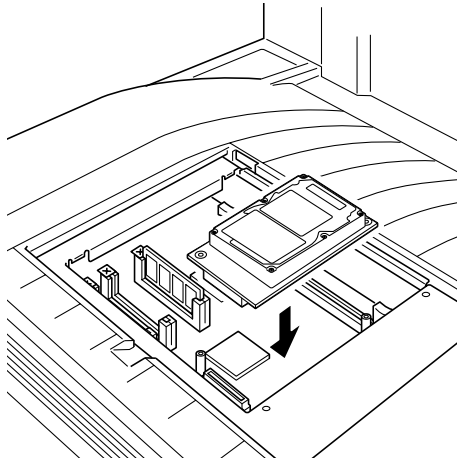
W Avoid touching electrical components that are exposed after you remove the plate. They may be very hot if the printer has been in use.

7. Identify the Hard Disk Drive socket. Its relative location is as shown below.

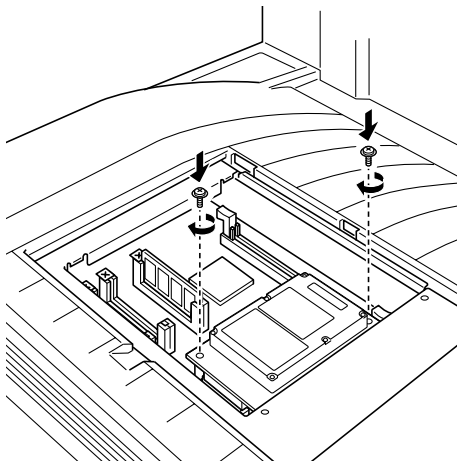


8. Unpack the Hard Disk Drive.
9. Hold the Hard Disk Drive such that its electrical connector is on the same side as the socket on the circuit board.

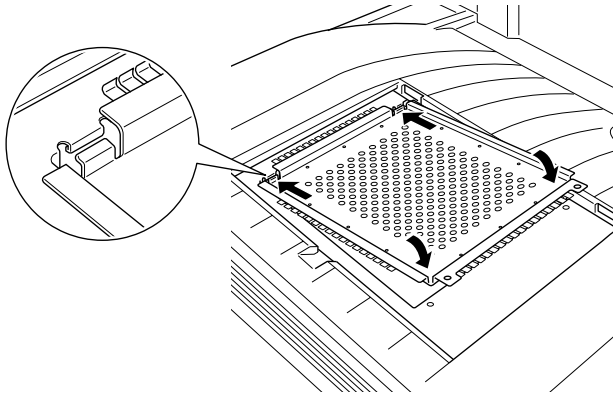
10. Lower and attach the drive onto the circuit board, making sure the connector is securely fastened into the socket.



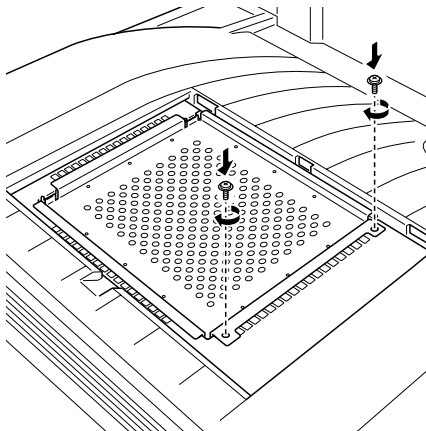
11. Fasten the two screws provided in the positions illustrated below.



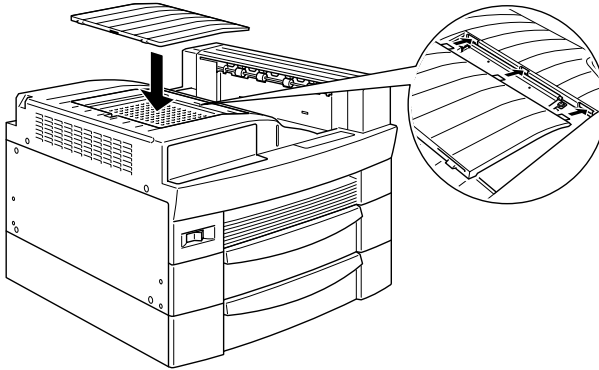
12. Return the plate to its original position. Place the two outside tabs of the plate under the edge of the opening with the inside tabs on top of the edge.



13. Push the plate down into place. Then fasten the two retaining screws that you loosened earlier.



14. Gently replace the top cover until it clicks shut.



To confirm that the Hard Disk Drive is installed correctly, print a status sheet. If the drive is not listed on the status sheet, try reinstalling the drive. Make sure that the electronic connector on the Hard Disk Drive is securely connected to the socket on the circuit board.

Removing the Hard Disk Drive

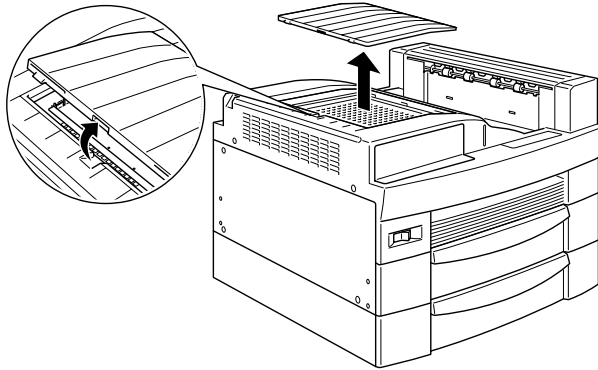
Follow these steps to remove the Hard Disk Drive:

1. Turn off the printer.

W *Warning:* To avoid electrical shock, do not attempt to remove a Hard Disk Drive unless the printer is turned off.

2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.

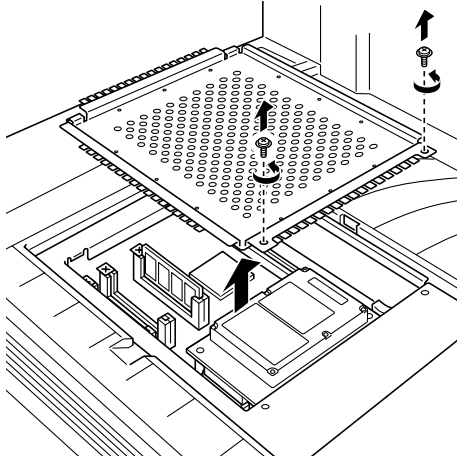
4. Remove the 5-Bin or 10-Bin Multi-Purpose Unit if it is installed. For instructions, see “Removing the 5-Bin Multi-Purpose Unit” on page 4-33 or “Removing the 10-Bin Multi-Purpose Unit” on page 4-42.
5. Open the top cover of the face-down tray.



6. Loosen the two retaining screws and remove the plate.

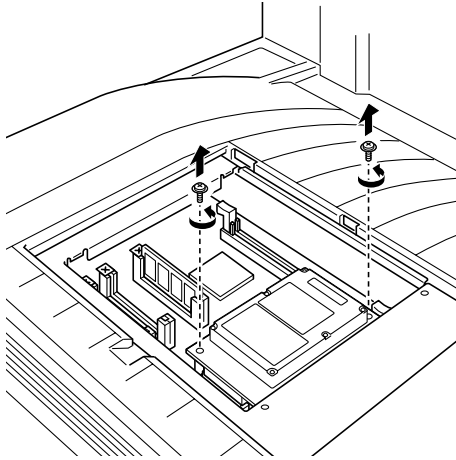
Note:

To avoid losing the retaining screws, do not remove them completely from the plate.

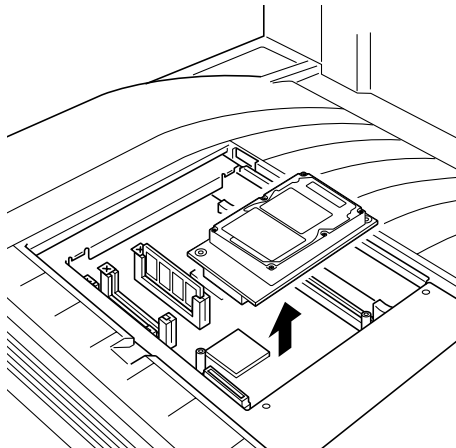


Warning:
Avoid touching electrical components that are exposed after you remove the plate. They may be very hot if the printer has been in use.

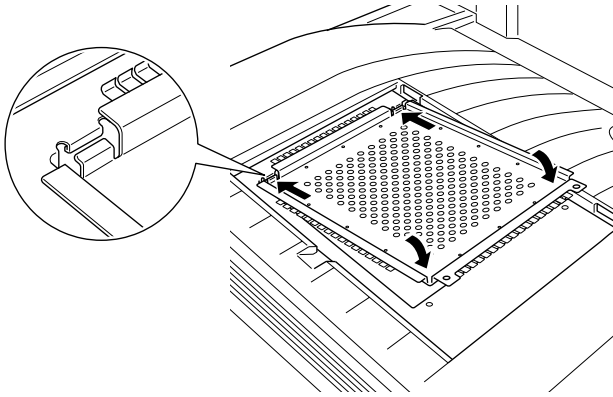
7. Remove the two screws that secure the Hard Disk Drive onto the circuit board, as shown below.



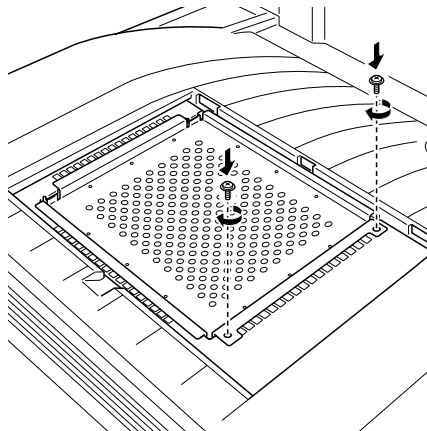
8. Grasp both sides of the Hard Disk Drive and gently pull it out.



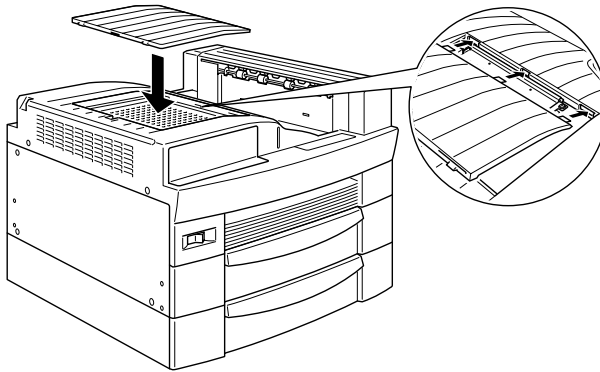
- Return the plate to its original position. Place the two outside tabs of the plate under the edge of the opening with the inside tabs on top of the edge.



- Push the plate down into place. Then fasten the two retaining screws that you loosened earlier.



11. Gently replace the top cover until it clicks shut.



12. Reconnect all interface cables.

13. Plug the power cord into an electrical outlet.

14. Turn on the printer.

Reformatting the Hard Disk Drive

For instructions on how you can reformat the Hard Disk Drive, see "To reformat the Hard Disk Drive, follow the instructions below." on page 6-30.

Memory Modules

The printer comes with 16 MB of memory. By installing an optional Dual In-line Memory Module (DIMM), you can increase printer memory up to a maximum of 256 MB. You may want to add memory if you are having difficulty printing complex, graphics-intensive pages using one of the optional multibin units with the duplex feature, or if you regularly use numerous downloaded fonts.

You can purchase DIMMs from various vendors. Be sure the DIMM you purchase meets the following requirements:

- ❑ Synchronous Dynamic RAM Dual In-line Memory Module (SDRAM DIMM)
- ❑ 64 bit, 168-pin type, with SPD
- ❑ Capacity of 16, 32, 64, 128, or 256 MB
- ❑ Access speed of 66.66 MHz or higher (15 ns or less)
- ❑ Less than 40 mm in height

Installing a memory module

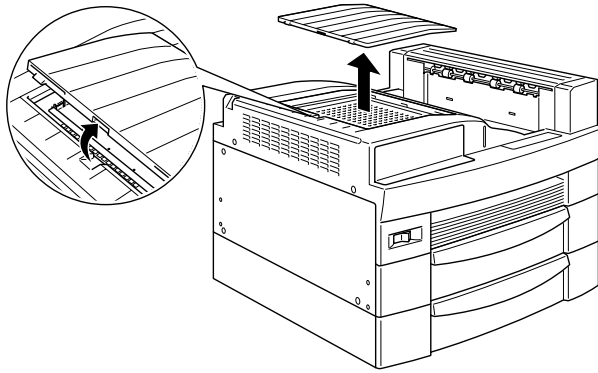
Follow these steps to install an optional memory module:

1. Turn off the printer.

W *Warning:*
To avoid electrical shock, do not attempt to install a DIMM unless the printer is turned off.

2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Remove the 5-Bin or 10-Bin Multi-Purpose Unit if it is installed. For instructions, see "Removing the 5-Bin Multi-Purpose Unit" on page 4-33 or "Removing the 10-Bin Multi-Purpose Unit" on page 4-42.

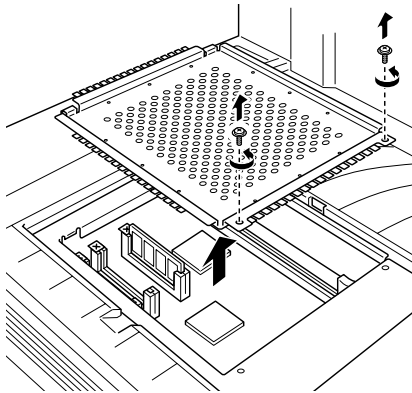
5. Open the top cover of the face-down tray.



6. Loosen the two retaining screws and remove the plate.

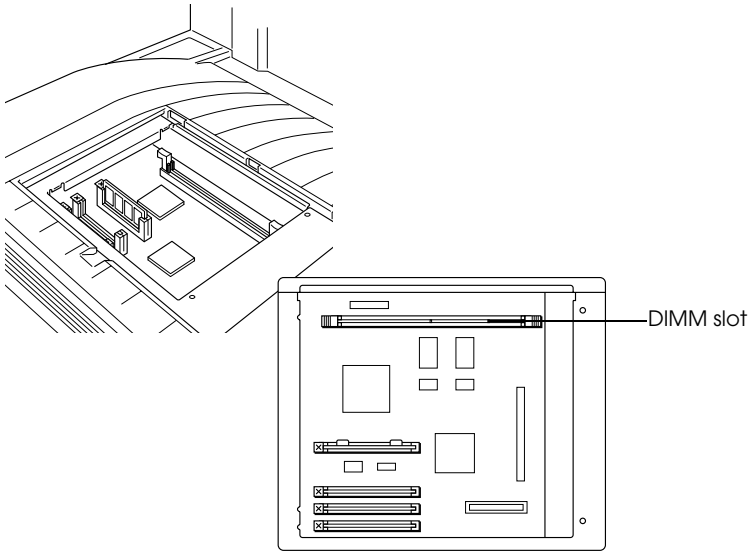
Note:

To avoid losing the retaining screws, do not remove them completely from the plate.

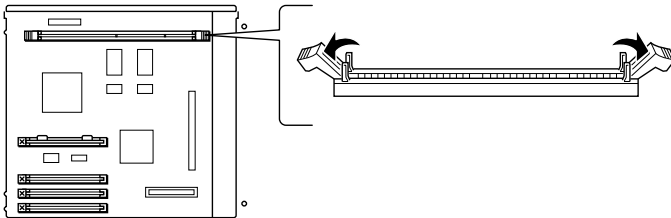


W **Warning:** *Avoid touching electrical components that are exposed after you remove the plate. They may be very hot if the printer has been in use.*

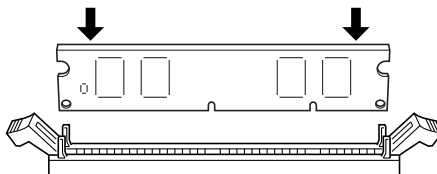
7. Identify the DIMM slot. Its relative location is as shown below.



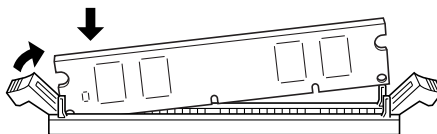
8. Push the clips on each side of the DIMM slot outward.



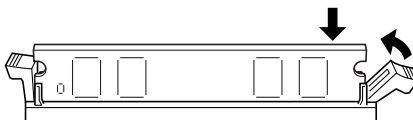
9. Hold the memory module above the DIMM slot in the following orientation, then insert it into the slot. Do not apply too much force.



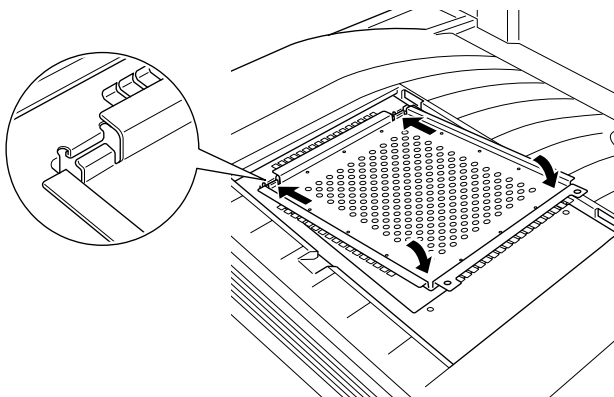
10. Push one end of the DIMM into the slot until the clip comes up.



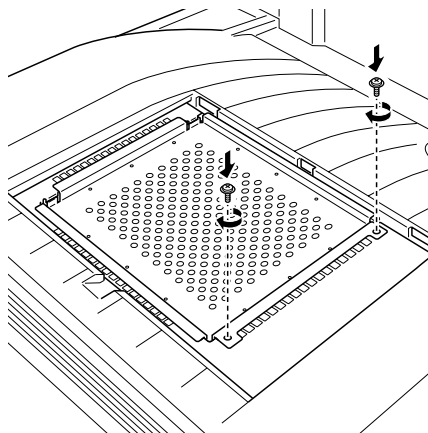
11. With your other hand, push down the other end of the DIMM into the slot until the clip comes up to retain the memory module securely.



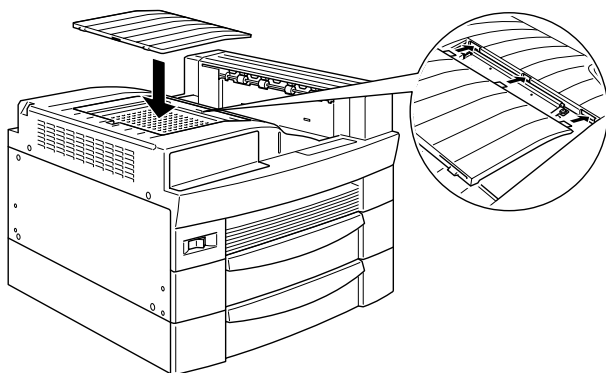
12. Return the plate to its original position. Place the two outside tabs of the plate under the edge of the opening with the inside tabs on top of the edge.



13. Push the plate down into place. Then fasten the two retaining screws that you loosened earlier.



14. Gently replace the top cover until it clicks shut.



To confirm that the memory module is installed correctly, print a status sheet. If the total amount of memory listed does not include the size of the optional memory module, try reinstalling the module. Make sure that the module is securely attached to the DIMM slot.

Removing a memory module

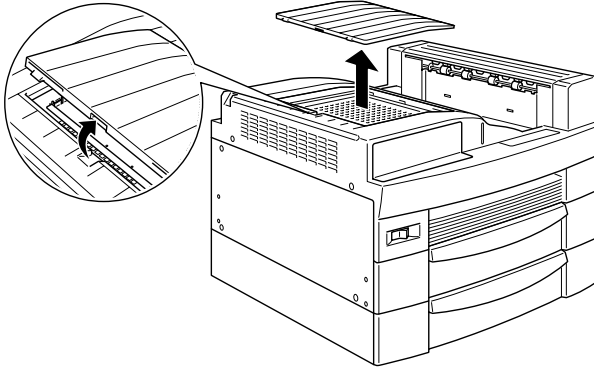
Follow these steps to remove a memory module:

1. Turn off the printer.

W **Warning:**
To avoid electrical shock, do not attempt to remove a DIMM unless the printer is turned off.

2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.

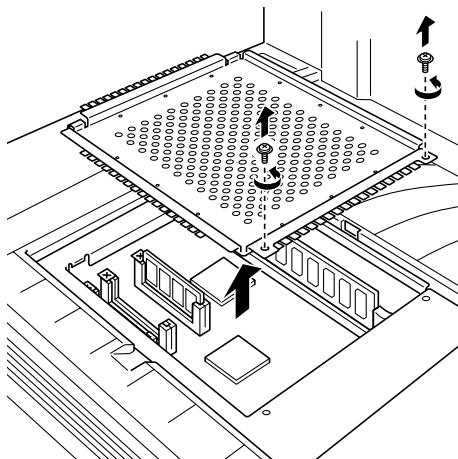
4. Remove the 5-Bin or 10-Bin Multi-Purpose Unit if it is installed. For instructions, see “Removing the 5-Bin Multi-Purpose Unit” on page 4-33 or “Removing the 10-Bin Multi-Purpose Unit” on page 4-42.
5. Open the top cover of the face-down tray.



6. Loosen the two retaining screws and remove the plate.

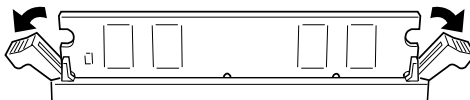
Note:

To avoid losing the retaining screws, do not remove them completely from the plate.

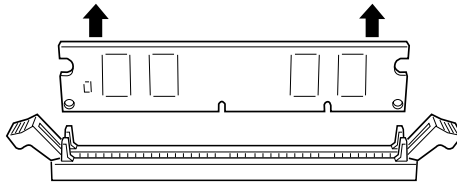


W Warning: Avoid touching electrical components that are exposed after you remove the plate. They may be very hot if the printer has been in use.

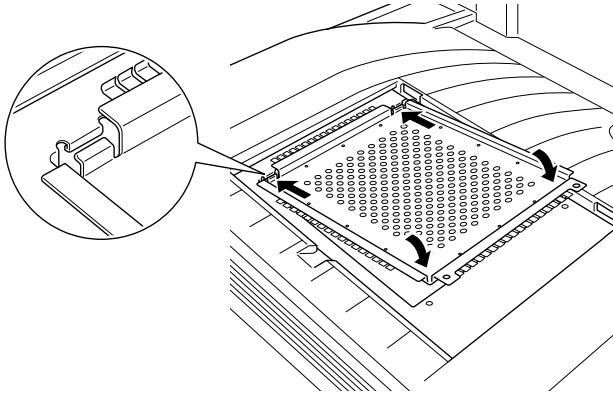
7. Push the clips on each side of the DIMM slot outward to release the memory module.



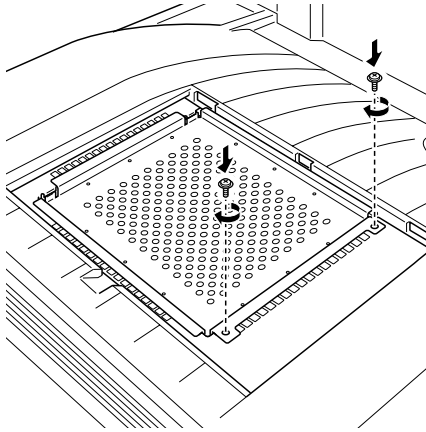
8. Grasp both sides of the memory module and pull the module out.



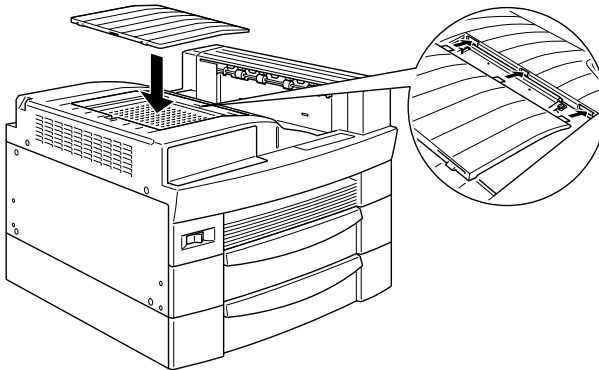
9. Return the plate to its original position. Place the two outside tabs of the plate under the edge of the opening with the inside tabs on top of the edge.



10. Push the plate down into place. Then fasten the two retaining screws that you loosened earlier.



11. Gently replace the top cover until it clicks shut.



12. Reconnect all interface cables.
13. Plug the power cord into an electrical outlet.
14. Turn on the printer.

Adobe PostScript 3 ROM Module

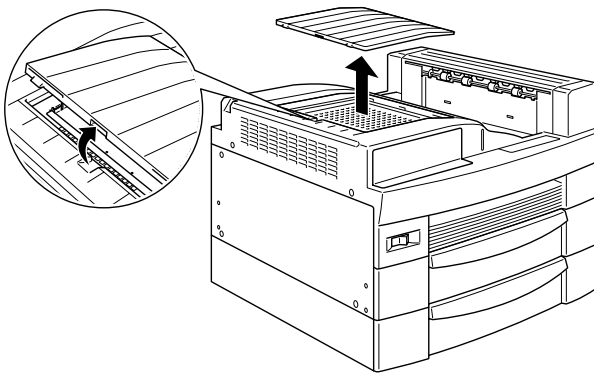
Installing the ROM module

Follow these instructions to install the optional Adobe PostScript 3 ROM module:

1. Turn off the printer.

W *Warning:*
To avoid electrical shock, do not attempt to install a ROM module unless the printer is turned off.

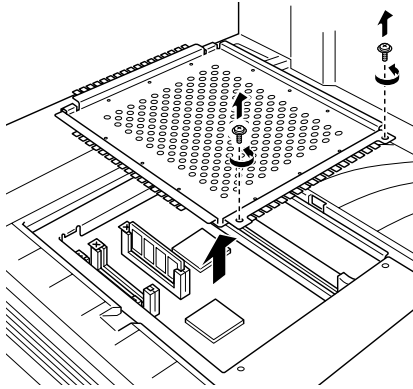
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Remove the 5-Bin or 10-Bin Multi-Purpose Unit if it is installed. For instructions, see "Removing the 5-Bin Multi-Purpose Unit" on page 4-33 or "Removing the 10-Bin Multi-Purpose Unit" on page 4-42.
5. Open the top cover of the face-down tray.



6. Loosen the two retaining screws and remove the plate.

Note:

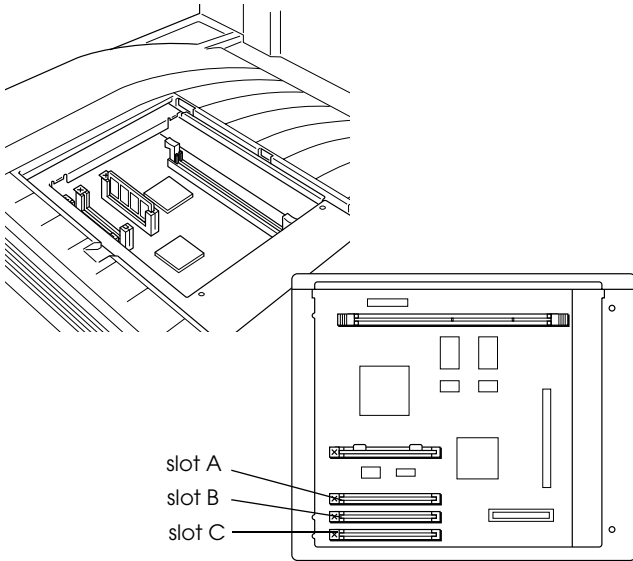
To avoid losing the retaining screws, do not remove them completely from the plate.



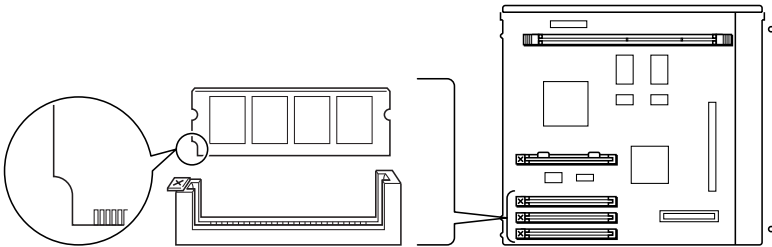
W Warning:

Avoid touching electrical components that are exposed after you remove the plate. They may be very hot if the printer has been in use.

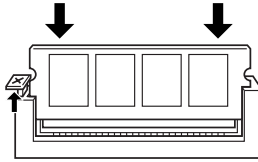
7. Identify the slots for ROM modules. Their relative locations are as shown below.



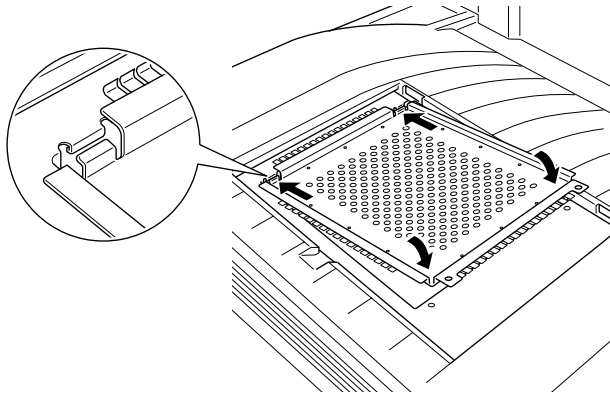
8. Hold the ROM module in the following orientation, then insert the ROM module into slot A.



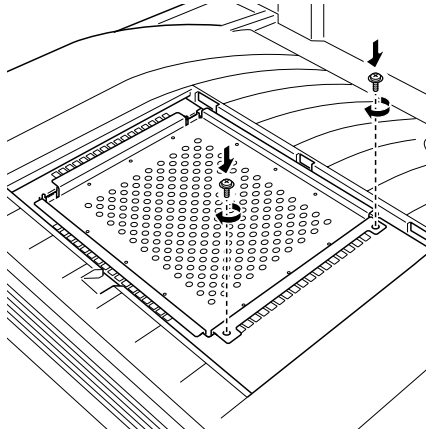
9. Push the ROM module into the slot evenly until the button comes up.



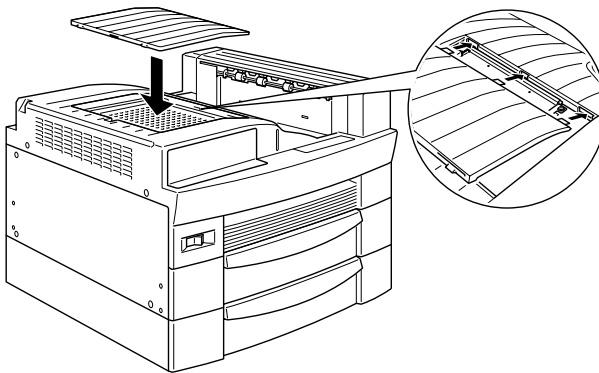
10. Return the plate to its original position. Place the two outside tabs of the plate under the edge of the opening with the inside tabs on top of the edge.



11. Push the plate down into place. Then fasten the two retaining screws that you loosened earlier.



12. Gently replace the top cover until it clicks shut.



To confirm that the Adobe PostScript 3 ROM module is installed correctly, print a status sheet. If PS3 is not listed as an installed emulation on the status sheet, try reinstalling the module making sure that it is securely fastened to the ROM slot.

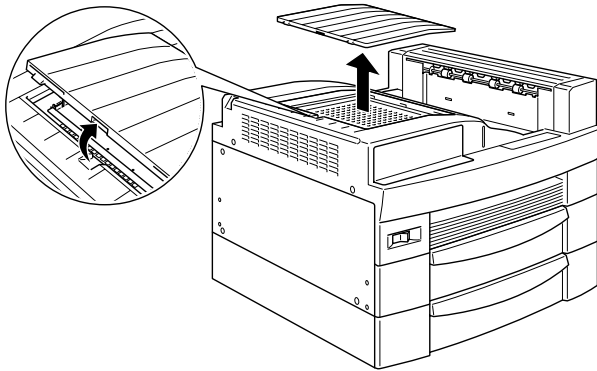
Removing the ROM module

Follow these steps to remove the Adobe PostScript 3 ROM module:

1. Turn off the printer.

W *Warning:*
To avoid electrical shock, do not attempt to remove a ROM module unless the printer is turned off.

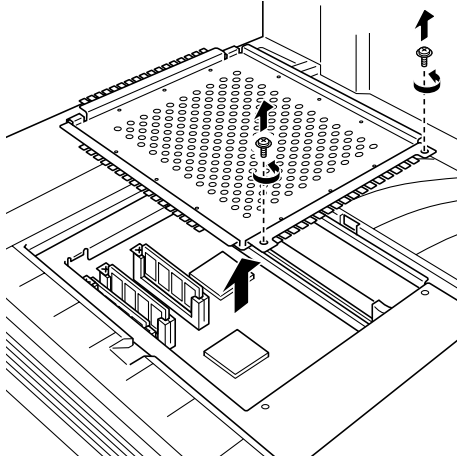
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Remove the 5-Bin or 10-Bin Multi-Purpose Unit if it is installed. For instructions, see "Removing the 5-Bin Multi-Purpose Unit" on page 4-33 or "Removing the 10-Bin Multi-Purpose Unit" on page 4-42.
5. Open the top cover of the face-down tray.



6. Loosen the two retaining screws and remove the plate.

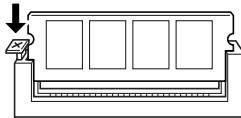
Note:

To avoid losing the retaining screws, do not remove them completely from the plate.



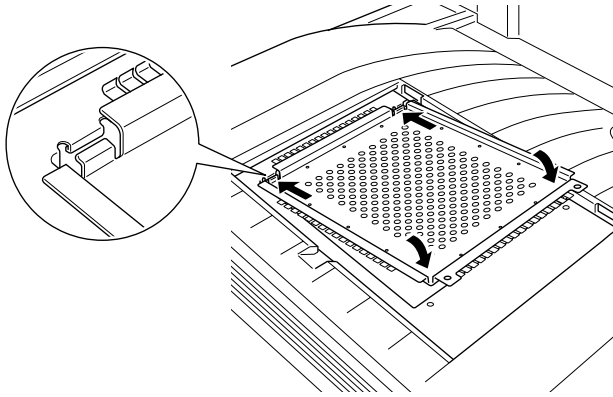
W Warning: Avoid touching electrical components that are exposed after you remove the plate. They may be very hot if the printer has been in use.

7. Push down the button on the side of the ROM slot until the module comes up.

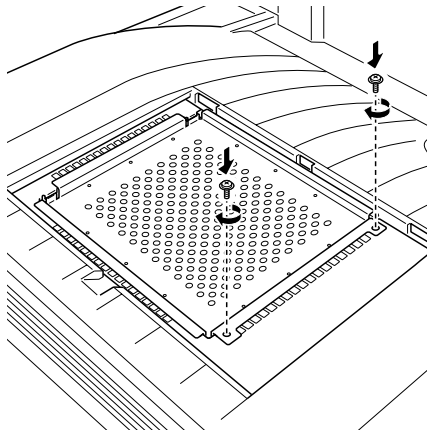


8. Pull the ROM module up and out of the slot.

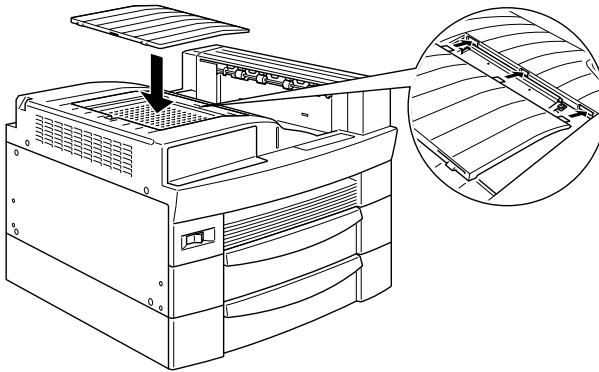
- Return the plate to its original position. Place the two outside tabs of the plate under the edge of the opening with the inside tabs on top of the edge.



- Push the plate down into place. Then fasten the two retaining screws that you loosened earlier.



11. Gently replace the top cover until it clicks shut.



12. Reconnect all interface cables.

13. Plug the power cord into an electrical outlet.

14. Turn on the printer.

Optional Interfaces

This section describes how to install the optional interface cards listed below:

- To add a direct connection to an Ethernet system, use an optional Ethernet Card (C82362*/C82363*).
- To add a serial or parallel interface to your printer, use one of the following:
 - 32KB Serial Interface Card (C82307*)
 - 32KB Parallel Interface Card (C82310*)
- To add a direct connection to an IBM mini or mainframe system, use one of the following:

Coax Interface Card (C82314*)
Twinax Interface Card (C82315*)

The coaxial and twinaxial connectors each contain a parallel interface. Since the printer's built-in parallel interface remains active, this gives you two parallel interfaces and a coaxial or twinaxial interface. Print jobs can be sent to any connection, and the printer automatically switches between the active ports.

The twinaxial interface is compatible with the following IBM systems: AS-400, System 36, 5251 (model 12), System 34, System 38, and 5294. When equipped with the EPSON twinaxial interface, the printer can be used in place of the following IBM system printers: 4210, 5224 (models 1 and 2), 5256 (models 1, 2, and 3), 3218 (non IPDS), 4214 (model 2), 5225 (models 1, 2, 3, and 4), and 5219 D01 and D02.

The coaxial interface allows the printer to be connected to the following IBM control units and mainframe systems: 3174, 3276, 4274, and 3270.

- ❑ To add a direct connection to your GPIB network, use the GPIB Interface Card (C82313*).

Installing an interface card

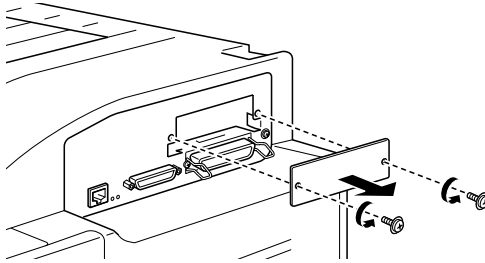
Follow these steps to install an optional interface card:

1. Turn off the printer.

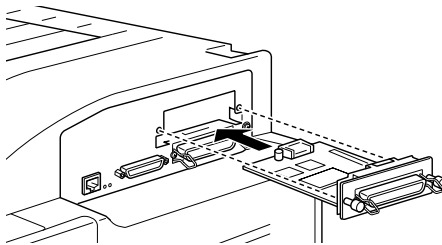
W *Warning:*
To avoid electrical shock, do not attempt to install an interface card unless the printer is turned off.

2. Unplug the printer's power cord from the electrical outlet.
3. Face the back of the printer.

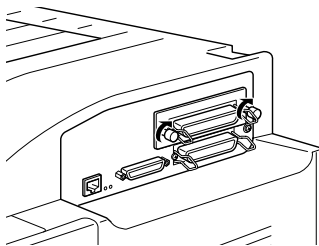
4. Remove all interface cables from the interface connectors.
5. Remove the two screws that secure the interface slot cover and remove the cover.



6. With the component side of the optional interface card facing up, slide the interface card into the grooves of the interface slot as shown below. Push the card firmly to lock it into place.



7. Secure the interface card by fastening the two retaining screws.



8. Reconnect all interface cables.
9. Plug the power cord into an electrical outlet.
10. Turn on the printer.

To confirm that the interface card is installed correctly, print a status sheet. If the interface is not listed on the status sheet, try reinstalling the card making sure the card is securely fastened to the socket on the printer.

Removing an interface card

Follow these steps to remove an interface card:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Face the back of the printer.
4. Remove all interface cables from the interface connectors.
5. Remove the two retaining screws that fasten the interface card to the printer.
6. Pull the interface card out.
7. Replace the original interface slot cover and secure it with the two retaining screws.
8. Reconnect all interface cables.
9. Plug the power cord into an electrical outlet.
10. Turn on the printer.

Chapter 5

Maintenance and Transportation

Replacing the Imaging Cartridge	5-2
Cleaning the Printer	5-6
Cleaning the inside of the printer.	5-6
Cleaning the printer case	5-8
Transporting the Printer	5-8

Replacing the Imaging Cartridge

The imaging cartridge prints up to 15,000 pages depending upon the complexity of your print jobs.

If your printed images become faint, enter the SelecType Setup Menu and use the **Toner** function to find out approximately how much toner remains in the imaging cartridge. For instructions, see “Setup Menu” on page 3-24.

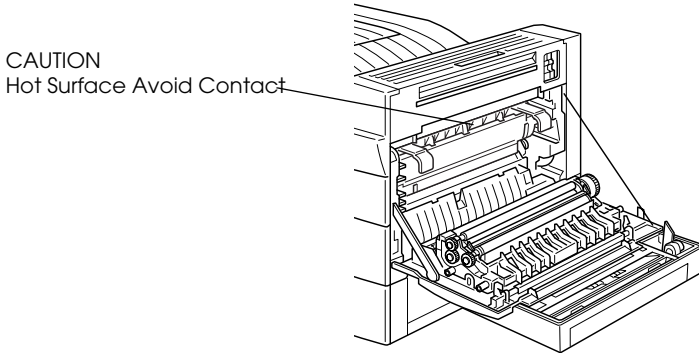
Once the toner level is displayed on the LCD panel, simply count the asterisks between the **E** (empty) and the **F** (full). Each asterisk represents about 25% of the total toner capacity. If you see only one asterisk on the LCD panel, prepare a replacement imaging cartridge.

Replace the cartridge with the S051068 imaging cartridge even if the cartridge you remove has a different part number. The S051068 cartridge is specially designed for your high-quality 600-dpi printer.

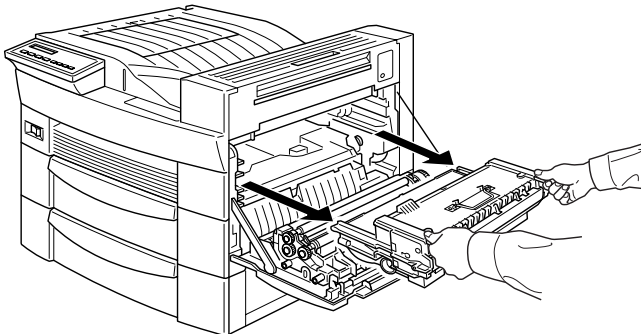
Follow these steps to replace the imaging cartridge:

1. Make sure the printer is turned on.
2. Open the printer cover A.

W **Warning:**
Do not touch the hot areas indicated by the caution labels inside the printer cover.



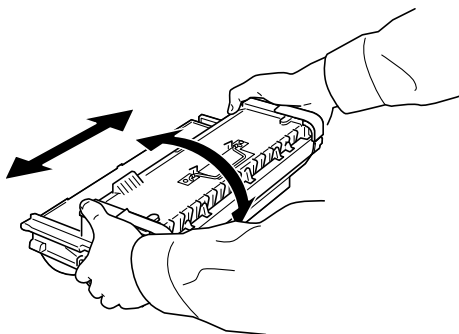
3. Remove the imaging cartridge by pulling the handles on the front of the cartridge toward you.



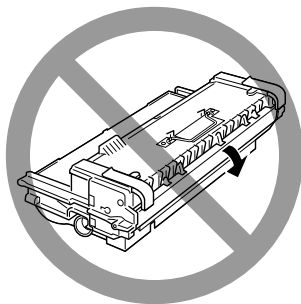
4. Dispose of the used imaging cartridge as a nonburnable item.

W **Warning:** Do not dispose of used imaging cartridges in fire, as they can explode and cause injury. Dispose of them according to local regulations.

5. While holding the new imaging cartridge horizontally, gently shake it a few times to distribute the toner evenly.

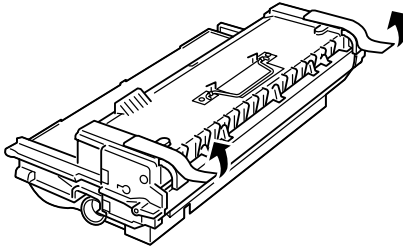


- C** **Caution:**
- ❑ Do not turn the imaging cartridge upside down.
 - ❑ Do not expose the imaging cartridge to room light any longer than necessary. Overexposing the cartridge may cause abnormally dark or light areas to appear on the printed page and reduce the life of the cartridge.

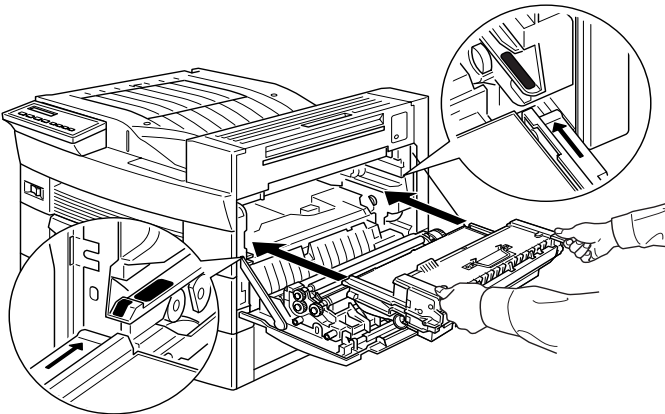


6. To release the spring-loaded carrying handles on the sides of the new cartridge, hold down each handle with your hand and remove the tape, then take your hand away slowly.

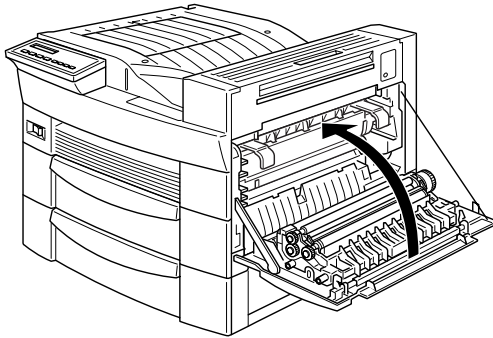
W *Warning:* When you remove the tape, the handle may spring up quickly enough to hurt your fingers. To avoid this, hold the handle firmly while peeling off the tape.



7. Pick up the imaging cartridge by the carrying handles and insert the cartridge all the way into the printer.



8. Close cover A by pushing it up and into the printer.



C *Caution:* Never transport the printer with the imaging cartridge installed.

Cleaning the Printer

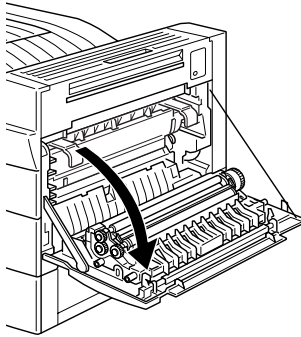
The printer needs only minimal cleaning. If you notice a decline in print quality, clean the inside of the printer as described below. You should also clean the outside of the printer every few months. These procedures are described later in this section.

Cleaning the inside of the printer

Follow these steps to clean the inside of the printer:

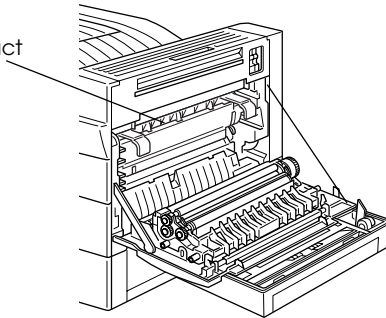
1. Make sure the printer is turned off.

2. Gently open cover A.



W **Warning:** Opening the printer exposes the fuser, which is marked by a caution label. If the printer has been in use, the fuser may be hot. Do not touch it. Let the printer cool before you clean the inside.

CAUTION
Hot Surface Avoid Contact



3. Wipe the inside with a soft, clean cloth.
4. Remove the imaging cartridge from the printer.
5. Carefully remove any dirt with a soft cloth.
6. Reinstall the imaging cartridge.

7. Close cover A.

Cleaning the printer case

If the printer's outer case is dirty or dusty, turn off the printer and clean it with a soft, clean cloth dampened with a mild detergent.

C ***Caution:***
Never use alcohol or thinner to clean the printer cover; these chemicals can damage the imaging cartridge, its components, and the case. Be careful not to get water on the printer mechanism or any electronic components.

Transporting the Printer

If you need to transport your printer, carefully repack it using the original box and packing materials.

Follow these steps to repack the printer:

1. Turn off the printer.
2. Open cover A and remove the imaging cartridge.
3. Unplug the power cord from the electrical outlet.
4. Disconnect all interface cables from the printer.
5. Remove all installed options. For instructions, see Chapter 4, "Using Options."
6. Attach the protective materials to the printer, then repack the printer in its original box.

C ***Caution:***
Do not expose the imaging cartridge to light any longer than necessary.

Chapter 6

Troubleshooting

Introduction	6-2
Printer Problems	6-2
Preventing paper feed and paper jam problems	6-2
Clearing paper jams	6-3
Solving printer operation problems	6-12
Solving print quality problems	6-14
Solving printer option problems	6-18
Status and Error Messages	6-18
Hex Dump Mode	6-29
Resetting the Printer	6-29
Reformatting the Hard Disk Drive	6-30
Where to Get Help	6-31

Introduction

This chapter provides the information necessary for you to keep the printer in optimum condition. This chapter tells you how to:

- ❑ Solve problems you may encounter
- ❑ Understand status and error messages
- ❑ Use the Hex Dump Mode to analyze communication errors

Also included is a complete description of the status, error, and warning messages shown on the printer's LCD panel.

Printer Problems

Preventing paper feed and paper jam problems

To prevent frequent paper feed or paper jam problems, use this checklist of corrective measures:

- ❑ Use a high quality paper that is not too thin or too rough.
- ❑ Fan the stack of paper and tap its edges to align it before loading.
- ❑ Be sure that you do not load too much paper into the paper cassettes.
- ❑ Be sure to adjust the paper guides so that paper can slide in and out freely.
- ❑ Never let more than 500 sheets accumulate in the output tray (face-down tray) on top of the printer.

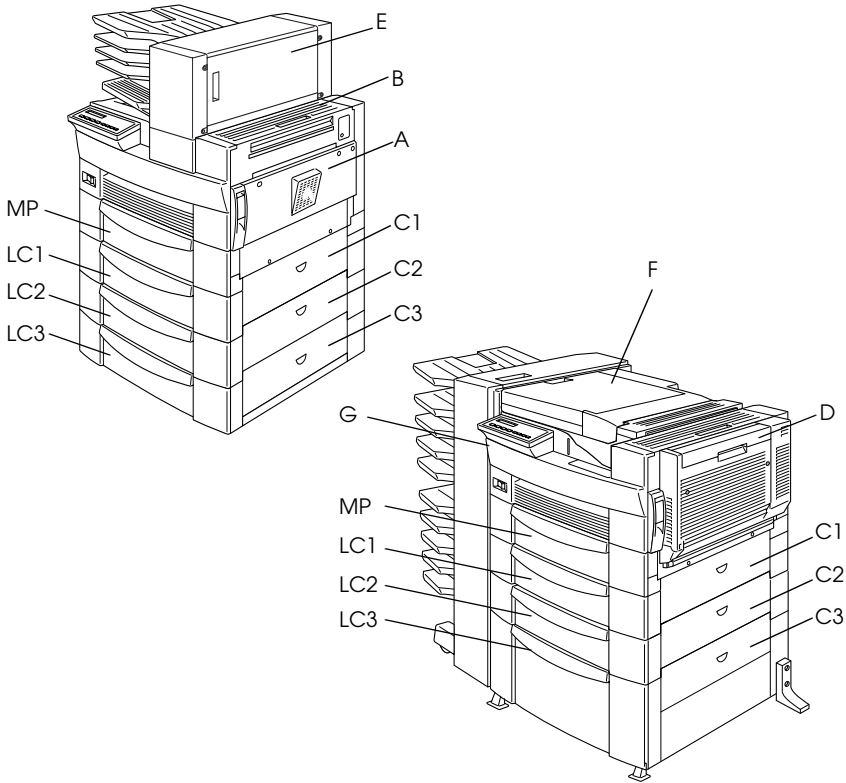
- ❑ Try turning over the stack of paper in the tray. Most paper packages indicate the top side of the paper with an arrow at the side of the package.

Clearing paper jams

When a paper jam occurs, a `Jam xxx xxx xxx xxx` message appears on the LCD panel. `xxx` indicates areas where jams may be occurring, such as `LC1` (standard lower cassette) or `A` (cover A). See the relevant sections for instructions on clearing paper jams.

Note:

- ❑ *Check for jams at all paper sources or paths indicated on the LCD panel. The printer cannot resume printing until all the jams are cleared.*
- ❑ *The LCD panel displays up to four paper sources or paths at the same time. Other areas where jams may be occurring will be shown on the LCD panel after you have checked all indicated jams.*



Jan LC2, Jan LC3

These messages indicate that paper has jammed in one of the optional lower cassettes. The standard lower cassette, located directly beneath the MP tray, is always numbered LC1, and any optional 500-Sheet Lower Cassette Units and the Large Capacity Paper Unit are numbered LC2, LC3, and so on from top to bottom.

Follow these steps to clear paper jammed in the optional lower cassettes:

1. Pull out the cassette indicated on the LCD panel.
2. Carefully remove any paper you find jammed inside the cassette or printer.

3. Remove the stack of paper from the cassette. Even its edges by tapping the paper on a flat surface. Then reinsert the stack into the cassette, making sure the paper is evenly aligned and rests below the maximum paper mark.

Make sure you are using the correct paper size and that your paper meets the specifications for this printer.

4. Push in the cassette.
5. Clear other paper jams that are indicated on the LCD panel, until all error messages disappear.

When the paper jam is cleared completely, the jammed page's print data is automatically reprinted.

Jam A, Jam B

This message indicates that there may be a paper jam inside cover A or cover B on the right side of the printer.

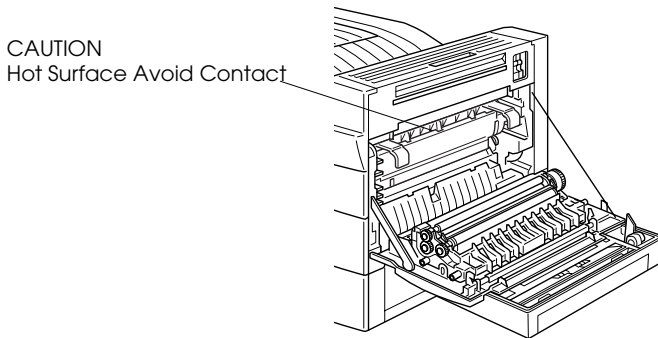
Follow these steps to clear paper jammed inside cover A or B:

1. Gently open cover A.

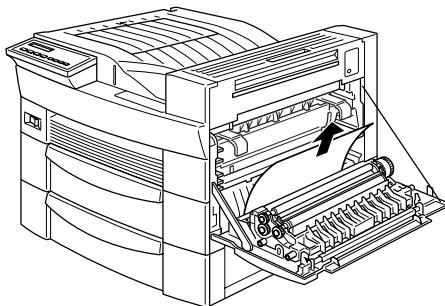
Note:

Because the toner on the paper inside the printer may not have been fixed on the page, toner may come off on your hands when you remove the paper. If you spill toner on your clothing, rinse it off with cold water. Using hot water may leave a permanent stain.

W *Warning:*
When opening the printer, do not touch the hot areas indicated by caution labels inside cover A.

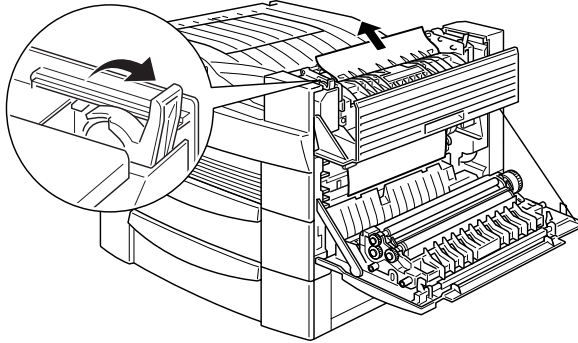


2. Remove any paper you find jammed inside the printer.



3. If you do not see any paper inside cover A, open cover B.

4. Remove the paper inside cover B. If the paper is difficult to remove, use the gear lever inside cover B as shown below. Push the lever up and down to feed the jammed paper back out through cover B.



5. Close covers B and A.

When the paper jam is cleared completely, the jammed page's print data is automatically reprinted.

Jan C1, Jan C2, Jan C3

This message indicates that there may be a paper jammed inside cover C1, C2, or C3 on the right side of the lower cassettes.

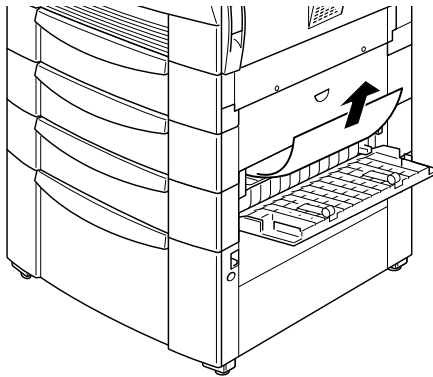
Follow these steps to clear paper jammed inside the right covers of the lower cassettes:

1. Open the cover indicated on the LCD panel. The names of the cassettes are indicated on each cassette.

Note:

Because the toner on the paper inside the printer may not have been fixed on the page, toner may come off on your hands when you remove the paper. If you spill toner on your clothing, rinse it off with cold water. Using hot water may leave a permanent stain.

2. Remove the paper inside the cover.



Note:

If the paper jam is in the Large Capacity Paper Unit, you may find it easier to remove the jammed paper if you open both the cover and the cassette.

When the paper jam is cleared completely, the jammed page's print data is automatically reprinted.

Jan D

This message indicates that there may be a paper jam inside the cover of the Duplex Unit, which is also known as cover D.

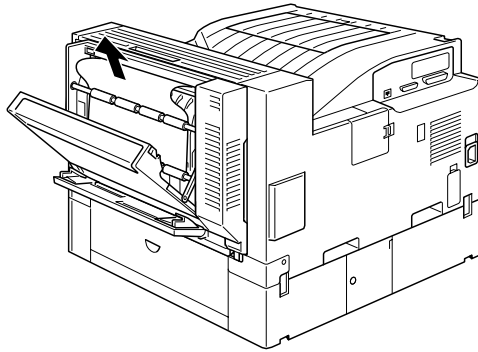
Follow these steps to clear paper jammed inside the cover of the Duplex Unit:

1. Open cover D.

Note:

Because the toner on the paper inside the printer may not have been fixed on the page, toner may come off on your hands when you remove the paper. If you spill toner on your clothing, rinse it off with cold water. Using hot water may leave a permanent stain.

2. Remove the paper inside the cover.



When the paper jam is cleared completely and the cover closed, the jammed page's print data is automatically reprinted.

Jam E

This message indicates that there may be a paper jam inside cover E on the back of the 5-Bin Multi-Purpose Unit.

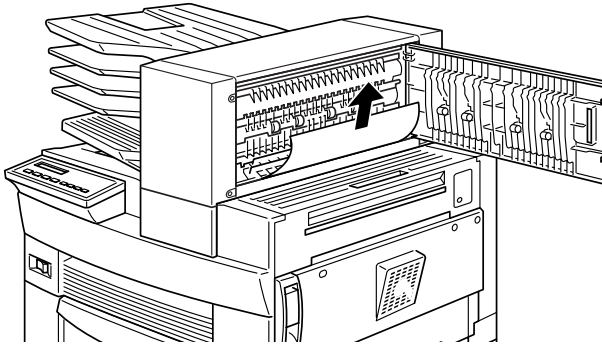
Follow these steps to clear paper jammed inside the cover of the 5-Bin Multi-Purpose Unit:

1. Open cover E.

Note:

Because the toner on the paper inside the printer may not have been fixed on the page, toner may come off on your hands when you remove the paper. If you spill toner on your clothing, rinse it off with cold water. Using hot water may leave a permanent stain.

2. Remove the paper inside the cover.



When the paper jam is cleared completely and the cover closed, the jammed page's print data is automatically reprinted.

Jan F

This message indicates that there may be a paper jam inside cover F on the paper guide of the 10-Bin Multi-Purpose Unit.

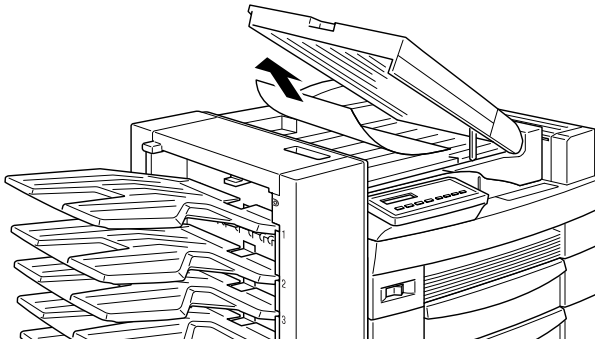
Follow these steps to clear paper jammed inside the 10-Bin Multi-Purpose Unit's paper guide:

1. Open cover F.

Note:

Because the toner on the paper inside the printer may not have been fixed on the page, toner may come off on your hands when you remove the paper. If you spill toner on your clothing, rinse it off with cold water. Using hot water may leave a permanent stain.

2. Remove the paper inside the cover.



When the paper jam is cleared completely and the cover closed, the jammed page's print data is automatically reprinted.

Jam G

This message indicates that there may be a paper jam inside the upper or lower portion of cover G on the back of the 10-Bin Multi-Purpose Unit.

Follow these steps to clear paper jammed at the back of the 10-Bin Multi-Purpose Unit:

1. Move the 10-Bin Multi-Purpose Unit away from the printer.
2. Open cover G on the back of the 10-Bin Multi-Purpose Unit.

Note:

Because the toner on the paper inside the printer may not have been fixed on the page, toner may come off on your hands when you remove the paper. If you spill toner on your clothing, rinse it off with cold water. Using hot water may leave a permanent stain.

3. Remove the paper inside the cover.

4. Close cover G and reattach the 10-Bin Multi-Purpose Unit to the printer.

When the paper jam is cleared completely, the jammed page's print data is automatically reprinted.

Solving printer operation problems

If one of the following problems has occurred in the operation of your printer, try the solutions listed for the problem.

Nothing appears on the LCD panel when you turn the printer on

Turn off the printer and check the power cord connections between the printer and the electrical outlet; then turn the printer back on.

If the electrical outlet is controlled by an outside source such as a wall switch, make sure the switch is turned on or plug another electrical device into the outlet to check whether the outlet is operating properly.

The On Line light is on but nothing prints

Your computer may not be properly connected to the printer. Refer to the connecting instructions in the *Setup Guide*.

The interface cable may not be securely plugged in. Check both ends of the cable between the printer and the computer.

Make sure that your interface cable meets the specifications for the printer and computer.

If you are using the parallel interface, set the **Speed** setting in the **SelectType Parallel Menu** to match the value that the computer requires.

Make sure that your software is properly set up for your printer.

The imaging cartridge may be empty. Replace it as described in “Replacing the Imaging Cartridge” on page 5-2.

Make sure your options are installed properly.

The printer doesn't print and the On Line light is off

Press the On Line button once to put the printer on line. The On Line light comes on.

A font selected with software commands won't print

The selected font may not be installed in your printer. Be sure you have installed the correct font.

Some or all of the output is garbled

Make sure that both ends of the interface cable are plugged in securely.

Make sure you use a double-shielded, twisted-pair parallel interface cable no longer than 1.8 meters (six feet) in length.

The Image Optimum setting may be set to Auto or On. If it is, certain unexpected fonts may be printed to increase the printing speed. Turn the Image Optimum setting off in the SelecType Config Menu.

The emulation setting for that port may not be correct. Specify the correct emulation mode on the SelecType Emulation Menu.

If the printer still does not print correctly, contact your dealer or a qualified service representative.

The position of the printout is not correct

Make sure that you are using the correct page length and margin settings in your application program.

Set the paper guides to fit the paper size you are loading.

Graphics don't print correctly

Make sure that your application software is set for the printer emulation you are using. For example, if you are using the LJ4 emulation, be sure that your graphics software is set for a LaserJet 4 printer.

Graphics require large amounts of memory, so you may need to increase your printer's memory. See "Memory Modules" on page 4-55 for information on adding memory modules.

SelectType does not function as expected

Settings made in the printer driver override SelectType settings. Use your printer driver to make settings whenever possible. See "When to use SelectType" on page 3-9 for more information.

Your settings may have been changed by your application software. Perform a factory reset (initialize) with the `SelectType Init.` function in the SelectType Setup Menu. For more information, see "Setup Menu" on page 3-24.

You may not have reset the printer after making settings. Press the ALT and Continue buttons at the same time to reset the printer and activate the new settings.

Solving print quality problems

If one of the following problems has occurred in your printout, try the solutions listed for the problem.

Dark or dirty background

Darken the Density setting in the Expanded Settings dialog box accessed through the Optional Settings tab of the printer driver. You can also change this setting from the printer's control panel using SelectType. For details, see "Config Menu" on page 3-20.

Clean the paper path inside the printer with a clean, soft, lint-free cloth.

Clean internal printer components by printing several pages with only one character per page.

There may be a problem with the imaging cartridge. Remove the cartridge, shake it from side to side, and then reinstall it. If this does not solve the problem, replace the imaging cartridge as described in “Replacing the Imaging Cartridge” on page 5-2.

Horizontal black or white bands appear in your printout, or the printer prints a blank page

Install a new imaging cartridge as described in “Replacing the Imaging Cartridge” on page 5-2.

Uneven darkness

Take out the imaging cartridge, shake it from side to side, and reinstall it.

Your paper may be moist or damp. Printing is sensitive to moisture absorbed by the paper. Do not store your paper in a humid or damp environment.

Install a new imaging cartridge as described in “Replacing the Imaging Cartridge” on page 5-2. Then print several pages to check the print quality.

Toner smudges

Remove the imaging cartridge, shake it from side to side to distribute the toner, and wipe the bottom of it with a clean, dry cloth.

Clean the paper path inside the printer using a clean, soft, lint-free cloth.

Clean internal printer components by printing several pages with only one character per page.

If the problem remains, replace the imaging cartridge as described in “Replacing the Imaging Cartridge” on page 5-2.

Missing areas on printed image

Your paper may be moist or damp. Printing is sensitive to moisture absorbed by the paper. The higher the moisture content in the paper, the lighter the printed output. Do not store your paper in a humid or damp environment.

You may not be using the correct type of paper for your printer. If the surface of your paper is too rough, printed characters appear distorted or broken. Smooth, high-quality copier paper is recommended for best results. See “Paper Specifications” on page A-2 for information on choosing paper.

Completely blank pages

Check the Toner function in the SelecType Setup Menu. If the Toner message indicates that the amount of toner is low (E* F), replace the imaging cartridge as described in “Replacing the Imaging Cartridge” on page 5-2.

Check that the imaging cartridge is installed as described in “Replacing the Imaging Cartridge” on page 5-2.

The problem may be with your application software or interface cable. Print out a status sheet by pushing the Enter button on the control panel twice while the printer is online. If the status sheet is also blank, the problem may be with the printer. Turn off the printer and contact your dealer or a qualified service representative.

Printed image is light or faint

Darken the Density setting in the printer driver. You can also change this setting from the printer's control panel using SelecType. For details, see "Config Menu" on page 3-20.

Your paper may be moist or damp. Printing is sensitive to moisture absorbed by the paper. The higher the moisture content in the paper, the lighter the printed output. Do not store your paper in a humid or damp environment.

Take out the imaging cartridge, shake it from side to side to distribute the toner, and then reinstall it. If the problem persists, replace the imaging cartridge as described in "Replacing the Imaging Cartridge" on page 5-2.

The Toner Save mode may be on. Turn off the Toner Save mode by using the control panel's OneTouch mode 2 or SelecType Config Menu.

Image is too dark

Darken the Density setting in the Expanded Settings dialog box accessed through the Optional Settings tab of the printer driver. You can also change this setting from the printer's control panel using SelecType. For details, see "Config Menu" on page 3-20.

If the problem persists, replace the imaging cartridge as described in "Replacing the Imaging Cartridge" on page 5-2.

Non-printed side of the page is dirty

Toner may have spilled onto the paper feed path. Remove the imaging cartridge and then clean the paper path using a soft, lint-free cloth. See "Replacing the Imaging Cartridge" on page 5-2 for more information.

W **Warning:** When opening the printer, do not touch the hot areas indicated on the caution labels inside cover A.

Solving printer option problems

Paper does not feed from the optional 500-Sheet Lower Cassette Unit or Large Capacity Paper Unit

Make sure you have selected the proper paper cassette in your printer driver.

There may be no paper in the optional paper cassette. If so, load paper into the cassette.

Make sure that the optional cassette unit is properly installed as described in Chapter 4, "Using Options."

Make sure you have not tried to load a cassette with too many sheets of paper. The 500-Sheet Lower Cassette Unit can hold a maximum of 500 sheets and the Large Capacity Paper Unit can hold 2,500 sheets of 75g/m² (20 lb) paper.

Even with additional memory installed, complex pages don't print and a Mem Overflow message still appears

The Page Protect setting in the printer driver or SelecType may need to be changed.

You may not have enough memory installed. Printing at 300 dpi may solve the problem.

When printing in Multiple Sorter mode, only one copy is printed

Your printer needs at least 64 MB of installed memory to print in the Multiple Sorter mode. Install the required memory, or print using the Sorter mode instead.

Status and Error Messages

This section contains an alphabetical list of status, error, and warning messages that appear on the LCD panel.

Can't Print Duplex

In your printer driver, select the Duplex Print Unit check box in the Optional Settings dialog box, then select the Duplex check box in the Layout tab. Press the Continue button on the control panel to clear the message. If this doesn't solve the problem, one of the conditions below has occurred and needs to be fixed.

- Paper Size is incorrectly set to CTM, MON, C10, DL, C5 or C6; set this option to a supported paper size.
- Paper Type is set to something other than Normal; set this to Normal.
- The Duplex Unit is not installed properly; reinstall the Duplex Unit.

To clear the error message, (1) press Continue or (2) reset the printer by pressing the ALT and Reset buttons at the same time.

Check Duplex-P Size

This message appears when the paper you loaded differs from the paper size selected in the printer driver's Basic Settings tab or SelectType. Load the correct paper size, or change the paper size setting, then open the Duplex Unit cover and remove any jammed paper. Close the cover of the Duplex Unit, and the printer resumes printing.

Check Paper Size

The Paper Size setting in the printer driver's Basic Settings tab, or in SelectType, is different from the size of paper loaded in the printer. Make sure the correct size of paper is loaded in the printer; then press the Continue button to clear the message.

Check Paper Type

The Paper Type setting in the printer driver's Basic Settings tab, or in SelecType, is different from the type of paper loaded in the printer. Make sure the correct type of paper is loaded in the printer; then press the Continue button to clear the message.

Collate was disabled

The printer does not have sufficient memory to collate print jobs. Only one set of copies will be printed. Reduce the contents of your print jobs or add more memory to the printer.

Press the Continue button to clear the message.

Cover A Open

Cover A, on the right side of the MP tray, is open. Pull up the latch on cover A, then close the cover firmly.

W *Warning:*
Do not touch the hot areas indicated on the caution labels inside cover A.

If you still cannot close the cover, the imaging cartridge may not be installed correctly. Reinstall the imaging cartridge as described in "Replacing the Imaging Cartridge" on page 5-2.

Cover C1, C2, C3 Open

The cover on the right side of the standard lower cassette, an optional 500-Sheet Lower Cassette Unit, or the Large Capacity Paper Unit is open. Pull the latch on the cover indicated by the message and then close the cover firmly. (The numbers indicate the order in which the cassettes are stacked from top to bottom).

Cover D Open

Cover D, on the back of the Duplex Unit, is open. Pull the latch on cover D and then close the cover firmly.

Cover E Open

Cover E, on the back of the 5-Bin Multi-Purpose Unit, is open. Pull the latch on cover E and then close the cover firmly.

Cover F Open

Cover F, on the paper guide of the 10-Bin Multi-Purpose Unit, is open. Pull the latch on cover F and then close the cover firmly.

Cover G Open

Cover G, on the back of the 10-Bin Multi-Purpose Unit, is open. Move the 10-Bin Multi-Purpose Unit away from the printer, then pull the latch on cover G and close the cover firmly.

Duplex Mem Overflow

There is not enough memory for duplex printing. The printer prints only on the top side and ejects the paper. To correct this error, follow the directions below.

If `Auto Cont` is set to `Off` in the `SelecType Config Menu`, (1) press the `Continue` button or (2) reset the printer by pressing the `ALT` and `Reset` buttons at the same time.

If `Auto Cont` is set to `On` in the `SelecType Config Menu`, the error is corrected automatically.

Face-down Full

The face-down tray is full of printed sheets. Remove the sheets from the face-down tray and press `Continue`.

Format Error ROM A

A ROM module which is not formatted is installed in slot A. If the ROM had been written to, it is possible that the writing was not completed. Also, the ROM's memory may no longer be accessible, in which case you should replace it.

To correct this error, (1) press the Continue button, or (2) turn off the printer, then remove the ROM module from slot A.

Format Error ROM B

A ROM module which is not formatted is installed in slot B. If the ROM had been written to, it is possible that the writing was not completed. Also, the ROM's memory may no longer be accessible, in which case you should replace it.

To correct this error, (1) press the Continue button, or (2) turn off the printer, then remove the ROM module from slot B.

Form Feed

When the printer is offline and data remains in the printer's memory, press the Form Feed button to print out the data and clear the buffer. After printing, Ready appears on the LCD panel.

HDD CHECK

The printer is checking the optional Hard Disk Drive.

Image Optimum

The printer cannot print at the requested quality level because of insufficient memory, and the printer reduces the quality automatically so that it can continue printing. Check to see if the printout is acceptable. If not, add more memory (for a permanent solution) or temporarily set the Print Quality setting to LOW in the printer driver.

Insert Imaging Crtg

The imaging cartridge is not correctly installed. See "Replacing the Imaging Cartridge" on page 5-2 to reinstall it.

Invalid AUX I/F Card

An interface card not supported by this printer is installed. Turn off the printer, then remove the card.

Invalid HDD

A hard disk drive that cannot be used with this printer is installed. Turn off the printer and remove the drive.

Invalid Option

An option not supported by this printer is installed, or a supported option is installed incorrectly. See “Printer Options” on page 4-2 to make sure you are using options made for this printer or to reinstall the options.

Invalid PS3

A PostScript 3 ROM module not supported by this printer is installed, or a supported module is installed incorrectly. See “Adobe PostScript 3 ROM Module” on page 4-66 to make sure you are using the correct PostScript3 module. If you are, try reinstalling the module.

Invalid ROM A

The ROM module in slot A is not supported by this printer, or a supported module is installed incorrectly. See “Adobe PostScript 3 ROM Module” on page 4-66 to make sure you are using a suitable ROM module for this printer. If you are, try reinstalling the module.

Invalid ROM B

The ROM module in slot B is not supported by this printer, or a supported module is installed incorrectly. If you are using a supported ROM module, try reinstalling it.

Jam xxx xxx xxx xxx

Paper is jammed in the tray, cassettes, covers, or other devices indicated by xxx. Remove the jammed paper. See “Clearing paper jams” on page 6-3 for help with clearing the jam. See “Preventing paper feed and paper jam problems” on page 6-2 for advice on preventing this problem.

Job Cancel

The print job sent to your printer is canceled.

Manual Feed xxx yyy

Manual feed mode is specified for the current print job. Make sure the indicated paper size (xxx) is loaded in the indicated paper source (yyy), then press the On Line button. The printer feeds paper according to the Paper Source setting.

If you do not want to print this job in the manual feed mode, press Continue.

For detailed information on the manual feed mode, see “Printing one sheet at a time” on page 2-13.

Mem Overflow

The printer has insufficient memory available for the current task. To correct this error, do one of the following: 1) press the Continue button, or 2) reset the printer by pressing the ALT and Reset buttons at the same time.

You can also clear this error by turning the printer off and back on again. However, it may be necessary to reduce the number or size of fonts, reduce the number or size of graphics, lower the resolution, or add more memory to the printer.

Menus Locked

SelecType, which is usually accessible from the printer's control panel, has been disabled. This setting can be cleared by using the EPSON WebAssist utility. Clear the Panel Lock setting in the Configuration-Printer-Print-Setup Menu.

Multibin <N> Full

The bin indicated by <N> (1 to 10) on an optional multibin unit is full. Remove the sheets from the bin and press Continue.

Multibin is Removed

The 10-Bin Multi-Purpose Unit is not installed properly, or is not firmly attached to the printer. Install the unit as instructed in "Installing the 10-Bin Multi-Purpose Unit" on page 4-36, then press Continue.

Need Memory

Your printer lacks the printer memory required to print your print job. Reduce the amount of images or text in the print job, or install an optional memory module. See "Memory Modules" on page 4-55.

Offline

The printer is not ready to print.

Outbin Select Error

The printer cannot feed paper to the output tray you selected, because of a paper size discrepancy. The printed sheet is fed to the Face-down Tray (or Bin 1) of the Multi-Purpose Unit.

Press the Continue button to clear this message. Select Face-down Tray (Bin 1) as the Output Tray setting in the printer driver. If you want to output to another tray instead of Bin 1, change the Paper Size setting of your document.

Paper Out xxx yyy

There is no paper in the specified paper source (xxx). Load paper of the indicated size (yyy) into the source. See “Basic Printing Operations” on page 2-3 for instructions on loading paper.

Paper Set xxx yyy

The paper loaded in the indicated tray (xxx) does not match the indicated paper size (yyy). Replace the paper with the correct size of paper and press Continue.

Print Overrun

The time required to process data exceeds the print engine speed because the volume of data is too great. Press CONTINUE to resume printing. If this message appears again, change the Page Protect setting in the SelecType Config Menu.

PS3 Hard Disk Full

The writing of PostScript 3 commands on the optional Hard Disk Drive is no longer possible as the amount of space allocated to PostScript 3 on the Hard Disk Drive is used up.

Ready

The printer is ready to receive data and print.

Remove Output Paper

This message appears when the Multibin Mode setting has been changed and paper remains in an optional multibin unit. Remove all the paper in the multibin unit.

Reset

The printer’s current interface has been reset and the buffer is cleared. However, other interfaces are still active and retain their settings and data.

Reset All

All printer settings have been reset to the user default configuration, or to the last settings that were saved.

Reset to Save

You have changed the SelecType setting but the new setting was not activated immediately after exiting SelecType. To activate the new setting, do one of the following: 1) exit SelecType by pressing Continue or On Line (the new setting is activated after the current print job is finished), or 2) reset the printer by pressing the ALT and Reset buttons at the same time.

ROM CHECK

The printer is checking the ROM.

RAM CHECK

The printer is checking the RAM.

Self Test

The printer is performing a quick internal check.

Service Re9 xxxx

A controller error or a print engine error has been detected. Write down the error number listed on the LCD panel (xxxx) and turn off the printer. Wait at least five seconds and then turn it back on. If the error message still appears, turn off the printer, unplug the power cord, and contact a qualified service representative.

Standby

The printer is in its low power state; however, it is still online if the On Line light is on.

Toner Low

The printer is almost out of toner. Prepare a new imaging cartridge to replace the current one.

Toner Out

You must replace the imaging cartridge. See “Replacing the Imaging Cartridge” on page 5-2.

Press Continue to print one more page.

Warning Up

The printer is warming up. When the printer is ready, this message will change to Ready.

Write Error ROM A

There is no ROM module installed in slot A, or the installed module cannot be written to. It is also possible that writing to the ROM in slot A began, but did not complete properly.

To correct this error, do one of the following: 1) turn off the printer and remove the ROM, then turn on the printer, or 2) reset the printer by pressing the ALT and Reset buttons at the same time.

Write Error ROM F

The program ROM cannot be written to. It is also possible that writing to the ROM was not completed.

To correct this error, do one of the following: 1) turn off the printer, then turn it on again, 2) press the Continue button, or 3) reset the printer by pressing the ALT and Reset buttons at the same time.

Writing ROM A

The printer is writing data onto the ROM module in slot A.

Writing ROM P

The printer is writing data onto the program ROM.

Hex Dump Mode

Hex Dump mode (also called data dump) is a special feature that makes it easy for experienced users to find the cause of communication problems between the printer and the computer. In the Hex Dump mode, the printer produces an exact printout of the codes it receives.

Follow these steps to print in the Hex Dump mode:

1. Make sure the paper is loaded and the printer is off.
2. Hold down the Form Feed button while you turn on the printer. Make sure you hold the button down until you see the message `HEX DUMP` on the LCD panel.
3. Run any program that causes the printer to print. Your printer prints out all the codes it receives in hexadecimal format.
4. To turn off the Hex Dump mode, turn off the printer or reset it by pressing and holding the ALT and Continue buttons at the same time. When `Reset All` appears on the LCD panel, release the buttons.

Resetting the Printer

There are two ways to reset (return to a fixed set of conditions) the printer.

Reset

Resetting the printer stops printing and clears the current print job received from the active interface. You may want to reset the printer when there is a problem with the print job itself and the printer cannot print successfully.

To reset the printer, hold down the ALT and Reset buttons until `Reset` appears on the LCD panel. Your printer is now reset and ready to receive a new print job.

Reset All

Reset the settings for all emulation modes and interfaces by holding down the ALT and Reset buttons until `Reset All` appears on the LCD panel. You can also reset all emulation modes and interfaces by turning the printer off and back on again.

Note:

Reset All clears all print jobs received from all interfaces; be careful not to disrupt someone else's print job.

Reformatting the Hard Disk Drive

To reformat the Hard Disk Drive, follow the instructions below.

1. Make sure the printer is off.
2. Hold down the `Value` button while you turn on the printer.
3. When you see the message `Support Mode` on the LCD panel, Select `HDD format` in the support menu.

Note:

- ❑ *After reformatting the Hard Disk Drive, the printer will automatically reboot.*

- ❑ *When you want to erase only the fonts installed from the optional Adobe PostScript 3 (PS3), follow steps one through three above. Select PS3 HDD Init when the optional Adobe PostScript 3 Kit is installed.*
- ❑ *Other fonts installed from PS3 will also be erased.*
- ❑ *When installing a Hard Disk Drive from a different printer, reformat it with this function.*

Where to Get Help

If the printer is not operating properly and you cannot solve your problem with the troubleshooting information in this guide and online help, contact EPSON customer support services for assistance.

We will be able to help you much more quickly if you are able to give the exact information indicated below:

- ❑ Serial number of your printer (The serial number label is on the back of the printer.)
- ❑ Printer model
- ❑ Brand and model of your computer
- ❑ Printer software version (Click ABOUT on the printer driver's Main menu.)
- ❑ Windows version (98, 95, 3.1, 2000, NT, etc.) you are using
- ❑ Version of software applications you normally use with your printer

Appendix A

Technical Specifications

Paper Specifications	A-2
Printer	A-4
General	A-4
Environmental	A-5
Safety approvals	A-5
Mechanical	A-6
Electrical	A-7
Interface	A-7
Parallel interface	A-7
Ethernet interface	A-14
Options and Consumables	A-15
500-Sheet Lower Cassette Unit	A-15
Large Capacity Paper Unit	A-16
Duplex Unit	A-17
5-Bin Multi-Purpose Unit	A-18
10-Bin Multi-Purpose Unit	A-19
Memory Module	A-19
Imaging cartridge	A-20

Paper Specifications

This section provides you with information on the types and sizes of media that you can use with this printer.

Note:

Since the quality of any particular brand or type of paper may be changed by the manufacturer at any time, EPSON cannot guarantee the quality of any type of paper. Always test samples of paper stock before purchasing large quantities or printing large jobs.

Paper types: Plain paper, recycled paper, labels, envelopes, transparencies, colored paper, card stock, letterhead

Note:

Use recycled paper under normal temperature and humidity conditions only. Poor quality paper may reduce print quality, cause paper jams and other problems.

Paper weight:

Plan paper: 60 to 90 g/m², 16 to 24 lb

Card stock: 90 to 190 g/m², 24 to 50 lb

Paper size:

- Paper: A3 (297 × 420 mm)
A4 (210 × 297 mm)
A5 (148 × 210 mm)
B5 (182 × 257 mm)
Letter (216 × 279 mm, 8.5 × 11 in.)
Half Letter (140 × 216 mm, 5.5 × 8.5 in.)
Legal (216 × 356 mm, 8.5 × 14 in.)
Executive (184 × 267 mm, 7.25 × 10.5 in.)
Government Legal (216 × 330 mm, 8.5 × 13 in.)
Ledger (279 × 432 mm, 11 × 17 in.)
Government Letter (203 × 267 mm, 8 × 10.5 in.)
F4 (210 × 330 mm, 8.3 × 13 in.)
Supported paper size range (86 × 140 mm to 297 × 432 mm, 3.4 × 5.5 in. to 11.7 × 17 in.)
- Envelopes: Monarch (98 × 191 mm, 3.9 × 7.5 in.)
Commercial 10 (105 × 241 mm, 4.1 × 9.5 in.)
DL (110 × 220 mm, 4.3 × 8.7 in.)
C5 (162 × 229 mm, 6.4 × 9 in.)
C6 (114 × 162 mm, 4.5 × 6.4 in.)
International B5 (176 × 250 mm, 7 × 9.8 in.)

C **Caution:**
Only load the paper sizes listed above.

Printable area 4-mm minimum margin on all sides
 (3.4-mm minimum left and right margin
 when you print with 80-column setting
 from DOS applications.)

Note:
The printable area varies according to the emulation mode.

Printer

General

Printing method:	Laser beam scanning and dry electrophotographic process
Resolution:	600 × 600 dpi, 300 × 300 dpi
Printing speed:	
MP tray:	Up to 26 pages per minute on A4 paper depending on the font, quantity of data, and paper source
Lower cassette:	Up to 27 pages per minute on A4 paper depending on the font, quantity of data, and paper source
First page printing time:	11.2 seconds minimum on A4 or Letter size paper
Warm-up time:	60 seconds maximum at rated voltage
Paper feed:	Automatic or manual feed
Paper feed alignment:	Center alignment for all paper sizes
Input paper supply: (75 g/m ² paper)	Up to 250 sheets in the MP tray and up to 500 sheets in the lower cassette
Paper type:	
MP tray:	Plain paper, such as copier paper and recycled paper, card stock, envelopes, labels, transparencies, thick paper, letterhead
Lower cassette:	Plain paper, such as copier paper and recycled paper
Paper output:	Face down

Paper output capacity: 500 sheets
(75 g/m² paper)

Internal emulation: HP LaserJet 4000 emulation (LJ4 mode)
HP LaserJet 5000 emulation (PCL6 mode)
HP-GL/2 emulation (GL2 mode)
ESC/P 24-pin printer emulation (ESC/P 2 mode)
ESC/P 9-pin printer emulation (FX mode)
IBM Proprinter emulation (I239X mode)

Optional emulation: Adobe PostScript 3

Resident fonts: 80 scalable fonts, and one bitmap font (in LJ4 mode and PCL6 mode)

RAM: 16 MB, expandable up to 256 MB

Environmental

Temperature: operation: 10 to 35°C (50 to 95°F)
storage: 0 to 35°C (32 to 95°F)

Humidity: operation: 15 to 85% RH
storage: 15 to 85% RH

Altitude: 2,500 meters (8,200 feet) maximum

Safety approvals

Safety standards:

U.S. model UL 1950
CSA C22.2 No.950

European model Directive 73/23/EEC
EN60950

EMC:

U.S. model	FCC part 15 subpart B class B
European model	Directive 89/336 /EEC EN 55022 (CISPR Pub. 22) class B EN 50082-1 IEC 60801-2 IEC 60801-3 IEC 60801-4 EN 61000-3-2 EN 61000-3-3
Australian model	AS/NZS 3548 class B

Mechanical

Dimensions and weight:

Height:	428 mm (16.9 inches)
Width:	535 mm (21.1 inches)
Depth:	559 mm (22 inches) in depth
Weight:	Approx. 30 kg (66.1 lb) without the imaging cartridge
Durability:	5 years or 600,000 sheets, whichever comes first

Electrical

	120 V model	230 V model
Voltage	108 V to 132 V	198 V to 264 V
Rated frequency	50 Hz to 60 Hz	
Rated current	11 A	6 A
Power consumption	Less than 1050 W	Less than 1050 W
Power consumption* in Standby mode	Less than 45 W	

* No option installed

Note:

Check the label on the back of the printer for the voltage of your printer.

Interface

Parallel interface

The parallel (IEEE 1284-I compliant) interface connector pin assignments are shown in the table below. The column heading "Direction" refers to the direction of signal flow as viewed from the printer.

Pin No.	Direction	IEEE 1284-B connector		
		Compatibility	Nibble	ECP
1	IN	nStorbe	HostClk	
2	IN/OUT	DATA1		
3	IN/OUT	DATA2		
4	IN/OUT	DATA3		
5	IN/OUT	DATA4		

Pin No.	Direction	IEEE 1284-B connector		
		Compatibility	Nibble	ECP
6	IN/OUT	DATA5		
7	IN/OUT	DATA6		
8	IN/OUT	DATA7		
9	IN/OUT	DATA8		
10	OUT	nACK	PtrClk	PeriphClk
11	OUT	Busy	PrtBusy	PeriphAck
12	OUT	PError	AckDataReq	nAckReverse
13	OUT	Select	Xflag	
14	IN	nAutoFd	HostBusy	HostAck
15	-	NC		
16	-	GND		
17	-	CG		
18	OUT	PeripheralLogic High		
19 - 30	-	GND		
31	IN	nInIt		nReverse Request
32	OUT	nFault	nDataAvail	nPeriphRequest
33	-	GND		
34	-	NC		
35	OUT	+5V		
36	IN	nSelectIn	IEEE1284 Active	

nstrobe/HostClk

- Compatibility mode: Latch pulse used to read in print data. When low, DATA is valid.
- Negotiation phase: Latch pulse used to read in extensibility request values.
- Nibble mode: Always high.
- ECP mode: Used to transfer data and addresses from the host to the printer with handshaking via PeriphAck (Busy).

DATA 1 to DATA 8 (bidirectional, but may always be an input if ECP or EPP mode is not supported)

- Compatibility mode: Forward channel data
- Negotiation phase: Extensibility request value
- Nibble mode: Not used
- ECP mode: Bidirectional data

nACK/PtrClk/PeriphClk

All modes:	DATA 8 is the MSB, DATA 1 is the LSB.
Compatibility mode:	Acknowledgment low pulse in order to indicate that data was transferred from the host.
Negotiation phase:	Low signal indicates IEEE 1284 is supported; set to high to indicate that the Xflag and “data available” flag are valid.
Reverse data transfer phase:	In nibble mode, a low signal indicates that the nibble data is valid.
Reverse idle phase:	When switched from low to high, generates an interrupt that notifies the host that there is data available.
ECP mode:	Used to transfer data from the printer to the host with handshaking via HostAck (nAutoFd).

Busy/PtrBusy/PeriphClk

Compatibility mode:	High signal indicates that the printer is not ready to receive data.
Negotiation phase:	Reflects the BUSY status of the forward channel.
Reverse data transfer phase:	In nibble mode, this signal serves as nibble data bit 3 and then 7.
Reverse idle phase:	Reflects the BUSY status of the forward channel.
ECP mode:	Used for forward direction flow control. In reverse direction, this signal is used as a ninth data bit that indicates whether the data signals indicate a command or data.

PError/AckDataReq/nAckReverse

- Compatibility mode: High signal indicates that a feed jam occurred in the paper supply section, or that there is no paper in the paper tray.
- Negotiation phase: High signal indicates whether or not IEEE 1284 is supported. This signal conforms with nDataAvail (nFault).
- Reverse data transfer phase: In nibble mode, this signal serves as nibble data bit 2 and then 6.
- Reverse final phase: High until the host requests a data transfer. This signal conforms with nDataAvail (nFault).
- ECP mode: Low signal authorizes nReverseRequest. The host looks at this signal in order to determine whether or not it has permission to drive the data signals.

Set/Xflag

- Compatibility mode: Always high.
- Negotiation phase: Xflag indicates the extensibility flag. Used to respond to the extensibility request value sent from the host.
- Reverse data transfer phase: In nibble mode, this signal serves as nibble data bit 1 and then 5.
- Reverse idle phase: Same as negotiation phase.
- ECP mode: Same as negotiation phase.

nAutoFd/HostBusy/HostAck

- Compatibility mode: Not used.
- Negotiation phase: In order to request 1284 mode, this signal is set low and IEEE 1284 Active (*nSelectIn*) is set high. This signal is set high when *PtrClk* (*nAck*) is set low.
- Reverse data transfer phase: In nibble mode, setting this signal low indicates to the printer that the host is ready to receive data. When this signal is subsequently set high, it indicates that the host received the data.
- Reverse idle phase: This signal is set high in response to a *PtrClk* (*nAck*) low pulse in order to return to reverse data phase. If this signal is set high at the same time that IEEE 1284 Active (*nSelectIn*) is set low, the IEEE 1284 idle phase is aborted and the interface returns to compatibility mode.
- ECP mode: Used for reverse direction flow control. Also used for handshaking via *PeriphClk* (*nAck*).

NC

Not used.

PeripheralLogicHigh

Pull up to + 5 V with 3.9 k Ω .

nInit/nReverseRequest

- Compatibility mode: When a low signal is detected, the printer is BUSY until the low signal is released.
- Negotiation phase: Always high.
- Reverse data transfer phase: Always high.
- ECP mode: Low when switching to reverse direction. The peripheral device has permission to drive the data signal only when this signal is low and 1284 Active is high.

nFault/DataAvail/nPeriphRequest

- Compatibility mode: Low signal indicates that an error occurred.
- Negotiation phase: This signal is set high in order to authorize 1284 compatibility. In nibble mode, after the host sets HostBusy (nAutoFd) high, this signal is set low in order to indicate that the transmission data is ready.
- Reverse data transfer phase: This signal is set low in order to indicate to a nibble mode host that the transmission data is ready. This signal serves as nibble data bit 0 and then 4.
- Reverse final phase: Indicates whether or not the data is valid.
- ECP mode: This signal is set low to request communications with the host. Valid in both forward and reverse direction.

nSelectIn/IEEE1284active

- Compatibility mode: Always low.
- Negotiation phase: This signal is set high at the same time that HostBusy is low in order to request 1284 mode.
- Reverse data transfer phase: This signal is set high to indicate that the bus direction is from the printer to the host. This signal is set low to terminate 1284 mode, setting the bus direction from the host to the printer.
- Reverse idle phase: Same as reverse data transfer phase.
- ECP mode: Always high. This signal is set low to terminate ECP mode and return to compatibility mode.

GND

Twisted pair return signal.

CG

Connected to the printer chassis. This signal and GND are connected.

+5V

Pull up to + 5 V with 1 k Ω .

Ethernet interface

You can use an IEEE 802.3 10BASE-T/100BASE-TX straight-through shield twisted pair modular cable via the RJ45 connector.

Options and Consumables

500-Sheet Lower Cassette Unit

Paper size:	A4, Letter, Government Letter, A3, Ledger, Legal, B4
Paper weight:	60 to 90 g/m ² (16 to 24 lb)
Paper feed:	Automatic feed delivery system
Cassette capacity:	Up to 500 sheets (75 g/m ² or 20 lb paper)
First print (with A4/Letter):	12 seconds
Continuous printing speed (with A4/Letter):	27 pages per minute
Paper types:	Plain paper, such as copier paper and recycled paper
Power supply:	DC 5V and 24V supplied by the printer
Dimensions and weight:	
Height:	127.5 mm (5 inches)
Width:	535 mm (21.1 inches)
Depth:	544 mm (21.4 inches)
Weight:	8 kg (17.6 lb)

Large Capacity Paper Unit

Paper size:	A4, Letter (depending on the country of purchase)
Paper weight:	60 to 90 g/m ² (16 to 24 lb)
Paper feed:	Automatic feed delivery system
Cassette capacity:	Up to 2,500 sheets (75 g/m ² or 20 lb paper)
First print (with A4/Letter):	12 seconds
Continuous printing speed (with A4/Letter):	27 pages per minute
Paper types:	Plain paper, such as copier paper and recycled paper
Power supply:	DC 5V and 24V supplied by the printer
Dimensions and weight:	
Height:	284 mm (11.2 inches)
Width:	535 mm (21.1 inches)
Depth:	545 mm (21.5 inches)
Weight:	17 kg (37.5 lb)

Duplex Unit

Paper size:	A3, A4, A5, B4, B5, IB5, Ledger, Legal, Letter, Government Legal, Government Letter, Executive, H-Letter
Paper weight:	60 to 90 g/m ² (16 to 24 lb)
Feeding speed:	20.1 seconds or less for the first A4 or Letter size sheet; 16.9 pages per minute for subsequent sheets (from MP tray to face-down tray)
Power supply:	DC 5V and 24V supplied by the printer
Dimensions and weight:	
Height:	255 mm (10 inches)
Width:	55 mm (2.2 inches)
Depth:	415 mm (16.3 inches)
Weight:	2 kg (4 lb)

5-Bin Multi-Purpose Unit

Paper size:

Width: 86 to 297 mm

Length: 140 to 432 mm

Paper type:

Plain paper, recycled paper
(card stock, envelopes, transparencies,
labels, thick paper for Bin 1 only)

Paper weight:

60 to 90 g/m² (16 to 24 lb)

Output capacity:

Bin1: 250 sheets

Bin 2, Bin 3, Bin 4: 50 sheets

Bin 5: 100 sheets

Total: 500 sheets

Power supply:

DC 5V and 24V supplied by the printer

Dimensions and weight:

Height: 356 mm (14 inches)

Width: 481 mm (18.9 inches)

Depth: 543 mm (21.4 inches)

Weight: 12.2 kg (26.9 lb)

Note:

Offset printing is available only for Bin 1.

10-Bin Multi-Purpose Unit

Paper size:	
Width:	86 to 297 mm
Length:	140 to 432 mm
Paper type:	Plain paper, recycled paper (card stock, envelopes, transparencies, labels, thick paper for only Bin 1)
Paper weight:	60 to 90 g/m ² (16 to 24 lb)
Output capacity:	
Bin 1 to Bin 10:	200 sheets
Total:	2,000 sheets
Power supply:	DC 5V and 24V supplied by the printer
Dimensions and weight:	
Height:	863 mm (34 inches)
Width:	480 mm (19 inches)
Depth:	512 mm (20.2 inches)
Weight:	29.5 kg (65 lb)

Memory Module

DRAM type:	Synchronous Dynamic RAM Dual In-line Memory Module (SDRAM DIMM)
Memory size:	16 MB, 32 MB, 64 MB, 128 MB, or 256 MB
Type:	168-pin type, 64 bit, with SPD
Access speed:	66.66 MHz or higher (15 ns or less)
Height:	Less than 40 mm

Imaging cartridge

Storage temperature:	0 to 35°C (32 to 95°F)
Storage humidity:	15 to 85% RH
Shelf life:	18 months after production
Life:	Up to 15,000 pages under the following conditions: Letter or A4 size paper, continuous printing, and 5% print ratio

The number of pages you can print with an imaging cartridge varies depending on the type of printing. If you print a few pages at a time or print dense text exceeding the 5% print ratio, your cartridge may print fewer pages.

Appendix B

Symbol Sets

Introduction to Symbol Sets	B-2
In LJ4 Emulation/EPSON GL2 Mode.	B-3
International character sets for ISO	B-25
In ESC/P2 or FX Modes	B-26
International character sets	B-33
Characters available with the ESC (^ command	B-34
In I239X Emulation Mode.	B-34
In EPSON GL/2 Mode	B-34

Introduction to Symbol Sets

Your printer can access a variety of symbol sets. Many of these symbol sets differ only in the international characters specific to each language.

Note:

Since most software handle fonts and symbols automatically, you would probably never need to adjust the printer's settings. However, if you are writing your own printer control programs, or if you are using older software that cannot control fonts, refer to the following sections for symbol set details.

When you are considering which font to use, you should also consider which symbol set to combine with the font. Available symbol sets vary depending on which emulation mode you use and which font you choose.

In LJ4 Emulation/EPSON GL2 Mode

The following table lists the symbol sets available in LJ4 emulation mode.

A table of the characters for each set is included later in this chapter.

Symbol set name	Symbolset ID for ESC (Available typefaces
IBM-US	10U	76 typefaces + Line Printer
Roman-8* (includes another 19 sets)	8U	76 typefaces + Line Printer
Roman Extension	0E	bitmap
Roman-9	4U	76 typefaces + Line Printer
ECM94-1	0N	76 typefaces + Line Printer
8859-2 ISO	2N	76 typefaces + Line Printer
8859-9 ISO	5N	76 typefaces + Line Printer
8859-10 ISO	6N	76 typefaces + Line Printer
8859-15 ISO	9N	76 typefaces + Line Printer
PcBlt775	26U	76 typefaces
IBM-DN	11U	76 typefaces + Line Printer
PcMultilingual	12U	76 typefaces + Line Printer
PcE.Europe	17U	76 typefaces
PcTk437	9T	76 typefaces
PcEur858	13U	76 typefaces + Line Printer
Pc1004	9J	76 typefaces
WiAnsi	19U	76 typefaces
WiE.Europe	9E	76 typefaces
WiTurkish	5T	76 typefaces
WiBALT	19L	76 typefaces
DeskTop	7J	76 typefaces
PsText	10J	76 typefaces
VeInternational	13J	76 typefaces
VeUS	14J	76 typefaces
MsPublishing	6J	76 typefaces
Math-8	8M	76 typefaces
PsMath	5M	76 typefaces
VeMath	6M	76 typefaces
PiFont	15U	76 typefaces
Legal	1U	76 typefaces + Line Printer
Windows	9U	76 typefaces
McText	12J	76 typefaces
Symbol	19M	Symbol Set SWA, Symbol Set SWM
Wingdings	579L	More WingBats SWM
OCR A	0O	OCR A

Symbol set name	Symbolset ID for ESC (Available typefaces
OCR B	1O	OCR B
OCR B Extension	3Q	OCR B
Code 39	0Y	Code 39 (2 types)
EAN/UPC	8Y	EAN/UPC (2 types)

* The other 19 sets are the following: ANSI ASCII, Norweg 1, French, HP German, Italian, JIS ASCII, Swedis 2, Norweg 2, UK, French 2, German, HP Spanish, Chinese, Spanish, IRV, Swedish, Portuguese, IBM Portuguese, and IBM Spanish. These are partial variations of the Roman-8 set.

The 76 typefaces refer to those shown below:

Courier SWC
Dutch 801 SWC
Zapf Humanist 601 SWC
Ribbon 131 SWC
Clarendon Condensed SWC
Swiss 742 SWC
Swiss 742 Condensed SWC
Incised 901 SWC
Original Garamond SWC
Audrey Two SWC
Flareserif 821 SWC
Swiss 721 SWM
Dutch 801 SWM
Swiss 721 SWA

Swiss 721 Narrow SWA
Zapf Calligraphic 801 SWA
ITC Avant Garde SWA
ITC Bookman SWA
Century Schoolbook SWA
Dutch 801 SWA
ITC Zapf Chancery SWA Italic
Letter Gothic SWC
Courier SWA

IBM-US (10U)

Roman-8 (8U)

Roman Extension (OE)

Roman-9 (4U)

ECM94-1 (0N)

8859-2 ISO (2N)

8859-9 ISO (5N)

8859-10 ISO (6N)

8859-15 ISO (9N)

PcBlf775 (26U)

IBM-DN (11U)

PcMultilingual (12U)

PcE.Europe (17U)

PcTk437 (9T)

PcEur858(13U)

Pc1004 (9J)

WiAnsi (19U)

WiE.Europe (9E)

WiTurkish (5T)

WiBALT (19L)

DeskTop (7J)

PsText (10J)

VeInternational (13J)

VeUS (14J)

MsPublishing (6J)

Math-8 (8M)

PsMath (5M)

VeMath (6M)

PiFont (15U)

Legal (1U)

Windows (9U)

McText (12J)

Symbol (19M)

Wingdings (579L)

OCR A (00)

OCR B (10)

OCR B Extension (3Q)

Code 39 (0Y)

EAN/UPC (8Y)

International character sets for ISO

To obtain the symbol sets listed below, substitute the characters in the ANSI ASCII sets with the characters in the table below.

ISO set	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
ANSI ASCII (0U)												
Norweg 1 (0D)												
French (0F)												
HP German (0G)												
Italian (0I)												
JIS ASCII (0K)												
Swedis 2 (0S)												
Norweg 2 (1D)												
UK (1E)												
French 2 (1F)												
German (1G)												
HP Spanish (1S)												
Chinese (2K)												
Spanish (2S)												
IRV (2U)												
Swedish (3S)												
Portuguese (4S)												
IBM Portuguese (5S)												
IBM Spanish (6S)												

In ESC/P2 or FX Modes

	Pc 437 (U.S./Standard Europe)	Pc 850(Multilingual), Pc 860(Portuguese), Pc 863(Canadian-French), Pc 865(Nordic), Roman-8, 8859-15 ISO	Pc 857(Turkish), Pc 861(Icelandic), Pc 852(East Europe), BRASCII, Abicomp, ISOLatin1	Pc858	OCR A
Courier SWC	available	available	available	available	not available
EPSON Prestige	available	available	not available	available	not available
EPSON Roman	available	available	not available	available	not available
EPSON Sans serif	available	available	not available	available	not available
Swiss 721 SWM*	available	available	available	available	not available
Letter Gothic SWC	available	available	available	available	not available
Dutch 801 SWM*	available	available	available	available	not available
EPSON Script	available	available	not available	available	not available
OCR A	not available	not available	not available	not available	available
OCR B	available	not available	not available	available	not available

* Available only in ESC/P 2 mode.

Note:

- Swiss 721 SWM is a typeface compatible with RomanT.*
- Letter Gothic SWC is a typeface compatible with OratorS.*
- Dutch 801 SWM is a typeface compatible with SansH.*

Pc 437 (U.S./Standard Europe)

Pc 850 (Multilingual)

Pc 860 (Portuguese)

Pc 863 (Canadian-French)

Pc 865 (Nordic)

Roman-8

8859-15 ISO

Pc 857 (Turkish)

Pc 861 (Icelandic)

Pc 852 (East Europe)

BRASCII

Abicomp

ISOLatin 1

Pc858

OCR A

No characters are available for hex code 15 in the italic character table.

International character sets

You can select one of the following international character sets using the Remote Control Panel utility or the ESC R command:

Country	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA												
France												
Germany												
UK												
Denmark												
Sweden												
Italy												
Spain												
Japan												
Norway												
Denmark II												
Spain II												
Latin America												
Korea*												
Legal*												

* Available for ESC/P 2 emulation only

Characters available with the ESC (^ command

To print the characters in the table below, use the ESC (^ command.

In I239X Emulation Mode

The available symbol sets in the I239X mode are Pc437, Pc850, Pc858, Pc860, Pc863 and Pc865. See “In ESC/P2 or FX Modes” on page B-26.

The available fonts are EPSON Sans Serif, Courier SWC, EPSON Prestige, EPSON Gothic, EPSON Presentor, EPSON Orator, and EPSON Script.

In EPSON GL/2 Mode

The available symbol sets in the EPSON GL/2 mode are the same as those in LaserJet 4000 emulation mode. See “In LJ4 Emulation/EPSON GL2 Mode” on page B-3.

Appendix C

Command Summary

Introduction	C-2
LaserJet 4000 (PCL5e)(LJ4) Emulation Commands	C-3
GL/2 context commands	C-10
ESC/P 2 and FX Commands	C-13
ESC/P 2 mode	C-13
FX mode	C-17
PJL Commands	C-22
I239X Emulation Commands	C-23
Page format	C-24
Text	C-25
Auxiliary functions	C-28
AGM mode	C-28

Introduction

Your printer has the ability to emulate the following printers depending on the printer emulation mode:

LJ-4	Hewlett-Packard LaserJet 4000 (PCL5e)
ESC/P2	EPSON LQ-570/1070, LQ-2170 (24-pin)
FX	EPSON FX-870/1170, FX-880, or LX-100 (9-pin)
GL/2	Hewlett-Packard GL/2 graphics language
I239X	IBM239X plus (24-pin)
PCL6	Hewlett-Packard LaserJet 5000 (PCL6)

In addition, the following printer control languages are supported:

PJL	Printer Job Language
EJL	EPSON Job Control Language

This appendix lists the printer commands for these modes. Most of the commands closely emulate the original printer or the control language; however, some have operational differences because the printers use different technologies.

For more information on selecting emulation modes, see “Emulation Menu” on page 3-13. For information on character sets supported in each emulation mode, see Appendix B, “Symbol Sets.”

LaserJet 4000 (PCL5e)(LJ4) Emulation Commands

This section lists the printer commands supported in the LJ4 emulation mode. For more information on printer commands, see Hewlett-Packard's LaserJet® 4000 reference manual.

Job control

Reset	ESC E
Number of copies	ESC &l#X
Universal exit language	ESC%#X
Long-edge (left) offset registration	ESC &l#U
Short-edge (top) offset registration	ESC &l#Z
Unit of measure	ESC &u#D
Simplex/Duplex print	ESC &l#S
Output (Media) bin selection	ESC &l#G

Page control

Paper (Media) source	ESC &l#H
Page size	ESC &l#A
Page length	ESC &l#P
Orientation	ESC &l#O
Print direction	ESC &a#P
Top margin	ESC &l#E
Text length	ESC &l#F
Left margin	ESC &a#L
Right margin	ESC &a#M
Clear horizontal margins	ESC 9
Perforation skip	ESC &l#L
Horizontal Motion Index (HMI)	ESC &k#H
Vertical Motion Index (VMI)	ESC &l#C

Line spacing	ESC &l#D
Alphanumeric ID (Media selection by type only)	ESC &n#W(operation) (string)

Cursor positioning

Vertical position	ESC &a#R ESC *p#Y ESC &a#V
Horizontal position	ESC &a#C ESC *p#X ESC &a#H
Half line feed	ESC =
Line termination	ESC &k#G
Push/pop position	ESC &f#S

Font selection

Primary symbol set	ESC (id
Secondary symbol set	ESC)id
Primary spacing	ESC (s#P
Secondary spacing	ESC)s#P
Primary pitch	ESC (s#H
Secondary pitch	ESC)s#H
Set pitch mode	ESC &k#S
Primary height	ESC (s#V
Secondary height	ESC)s#V
Primary style	ESC (s#S
Secondary style	ESC)s#S
Primary font stroke weight	ESC (s#B
Secondary font stroke weight	ESC)s#B
Primary typeface family	ESC (s#T
Secondary typeface family	ESC)s#T
Primary font default	ESC (3@

Secondary font default	ESC)3@
Enable underline	ESC &d#D
Disable underline	ESC &d@
Transparent print data	ESC &p#X(data)

Font management

Assign font ID	ESC *c#D
Font and character control	ESC *c#F
Set symbol set	ESC *c#R
Define symbol set	ESC (f#W(data)
Symbol set control	ESC *c#S
Select primary font with ID#	ESC (#X
Select secondary font with ID#	ESC)#X

Soft font creation

Font descriptor	ESC)s#W(data)
Download character	ESC (s#W(data)
Character code	ESC *c#E

Raster graphics

Raster resolution	ESC *t#R
Raster graphics presentation	ESC *r#F
Start raster graphics	ESC *r#A
Raster Y offset	ESC *b#Y
Set raster compression mode	ESC *b#M
Transfer raster data by row	ESC *b#W(data)
End raster graphics (version B)	ESC *rB
End raster graphics (version C)	ESC *rC
Raster height	ESC *r#T
Raster width	ESC *r#S

Print model

Select current pattern	ESC *v#T
Select source transparency mode	ESC *v#N
Select pattern transparency mode	ESC *v#O
Rectangle width (PCL unit)	ESC *c#A
Rectangle width (decipoints)	ESC *c#H
Rectangle height (PCL unit)	ESC *c#B
Rectangle height (decipoints)	ESC *c#V
Fill rectangular area	ESC *cP
Pattern ID	ESC *c#G
Define pattern	ESC *c#W(data)
User-defined pattern control	ESC *c#Q
Set pattern reference point	ESC *p#R

Macros

Macro ID	ESC &f#Y
Macro control	ESC &f#X

Status readback

Set status readback location type	ESC *s#T
Set status readback location unit	ESC *s#U
Inquire status readback entity	ESC *s#I
Flush all pages	ESC &r#F
Free memory space	ESC *s1M
Echo	ESC *s#X

Programming hints

End-of-line wrap	ESC &s#C
Enable display functions	ESC Y
Disable display functions	ESC Z

PCL vector graphics switching/set-up picture frame

Enter GL/2 mode	ESC %#B
GL/2 plot horizontal size	ESC*c#K
GL/2 plot vertical size	ESC*c#L
Set picture frame anchor point	ESC*c0T
Picture frame horizontal size	ESC*c#X
Picture frame vertical size	ESC*c#Y

GL/2 context commands

Dual context extensions

Enter PCL mode	ESC %#A
Reset	ESC E
Primary font	FI
Secondary font	FN
Scalable or bitmapped fonts	SB

Palette extensions

Transparency mode	TR
Screened vectors	SV
Number of pens	NP

Vector group

Arc absolute	AA
Arc relative	AR
Absolute arc three point	AT
Bezier absolute	BZ
Bezier relative	BR
Plot absolute	PA
Plot relative	PR
Pen down	PD
Pen up	PU
Relative arc three point	RT
Polyline encoded	PE

Polygon group

Circle	CI
Fill rectangle absolute	RA
Fill rectangle relative	RR
Edge rectangle absolute	EA
Edge rectangle relative	ER
Fill wedge	WG
Edge wedge	EW
Polygon mode	PM
Fill polygon	FP
Edge polygon	EP
Circle	CI

Character group

Select standard font	SS
Select alternate font	SA
Absolute direction	DI
Relative direction	DR
Absolute character size	SI
Relative character size	SR
Character slant	SL
Extra space	ES
Standard font definition	SD
Alternate font definition	AD
Character fill mode	CF
Label origin	LO
Label	LB
Define label terminator	DT
Character plot	CP
Transparent data	TD
Define variable text path	DV

Line and fill attribute group

Line type	LT
Line attribute	LA
Pen width	PW
Pen width unit selection	WU
Select pen	SP
Symbol mode	SM

Fill type	FT
Anchor corner	AC
Raster fill definition	RF
User defined line type	UL

Configuration and status group

Scale	SC
Input window	IW
Input P1 and P2	IP
Input relative P1 and P2	IR
Default values	DF
Initialize	IN
Rotate coordinate system	RO
Comment	CO

ESC/P 2 and FX Commands

This section lists the printer commands supported in the ESC/P 2 and FX emulation modes.

ESC/P 2 mode

General operation

Initialize printer	ESC @
Control paper loading/ejecting	ESC EM <i>n</i>

Paper feeding

Carriage return	CR
Form feed	FF
Line feed	LF
Select 1/8-inch line spacing	ESC 0
Select 1/6-inch line spacing	ESC 2
Set $n/180$ -inch line spacing	ESC 3 <i>n</i>
Set $n/360$ -inch line spacing	ESC + <i>n</i>

Page format

Set page format	ESC (c <i>nn</i>
Set page length in defined units	ESC (C <i>nn</i>
Set page length in lines	ESC C <i>n</i>
Set page length in inches	ESC C NUL
Set bottom margin for continuous paper	ESC N <i>n</i>
Cancel top/bottom margin for continuous paper	ESC O
Set left margin	ESC I <i>n</i>
Set right margin	ESC Q <i>n</i>

Print position motion

Set absolute horizontal print position	ESC \$ <i>n1 n2</i>
Set relative horizontal print position	ESC \ <i>n1 n2</i>
Set absolute vertical print position	ESC (<i>V nn</i>
Set relative vertical print position	ESC (<i>v nn</i>
Set horizontal tabs	ESC D <i>nn</i>
Tab horizontally	HT
Set vertical tabs	ESC B <i>nn</i>
Tab vertically	VT
Perform n/180 inch line feed	ESC J <i>n</i>
Reverse n/180 inch line feed	ESC j <i>n</i>

Font selection

Select typeface	ESC k <i>n</i>
Select font by pitch and point	ESC X <i>nn</i>
Select 10 cpi	ESC P
Select 12 cpi	ESC M
Select 15 cpi	ESC g
Select proportional mode on/off	ESC p 1/0
Select Letter Quality or draft	ESC x <i>n</i>
Select italic font	ESC 4
Cancel italic font	ESC 5
Select bold font	ESC E
Cancel bold font	ESC F
Set printing mode	ESC ! <i>n</i>
Set Horizontal Motion Index (HMI)	ESC c

Font enhancement

Select condensed printing	SI
Cancel condensed printing	DC2
Select double-width printing (one line)	SO
Turn double-width printing on/off	ESC W 1/0
Cancel double-width printing (one line)	DC4
Turn double-height printing on/off	ESC w 1/0
Select double-strike printing	ESC G
Cancel double-strike printing	ESC H
Select superscript/subscript printing	ESC Sn
Select condensed printing	ESC S I
Cancel superscript/subscript printing	ESC T
Select line/score	ESC (- nn
Turn underline on/off	ESC - 1/0
Select character style	ESC q n
Select double-width printing (one line)	ESC SO

Spacing

Set intercharacter space	ESC SP n
Define unit	ESC (U nn

Character handling

Assign character table	ESC (t
Select character table	ESC t n
Select an international character set	ESC R n
Define User-Defined character	ESC &

Copy ROM to RAM	ESC :
Select user-defined set	ESC % <i>n</i>
Set upper control codes	ESC 6
Cancel upper control codes	ESC 7
Print data as characters	ESC (^

Bit image

Select bit image printing	ESC *
Select graphic mode	ESC (G <i>nn</i>
Print raster graphics	ESC . c v hm

FX mode

The following section lists and describes all FX and LQ commands by topic.

Printer operation

Initialize printer	ESC @
Control paper loading/ejecting	ESC EM <i>n</i>

Data control

Carriage return	CR
-----------------	----

Vertical motion

Form feed	FF
Set page length in lines	ESC C <i>n</i>
Set page length in inches	ESC C NUL
Set skip over perforation	ESC N <i>n</i>
Cancel skip over perforation	ESC O
Line feed	LF
Select 1/8-inch line spacing	ESC 0
Select 7/72-inch line spacing	ESC 1
Select 1/6-inch line spacing	ESC 2
Select <i>n</i> /216-inch line spacing	ESC 3 <i>n</i>
Perform <i>n</i> /216-inch line spacing	ESC J
Tab vertically	VT
Set vertical tabs	ESC B <i>nn</i>

Note:

Your printer will not print characters beyond one page length (set with the ESC C or ESC C 0 commands), while an FX printer might print them.

Horizontal motion

Set absolute horizontal print position	ESC \$ <i>n1 n2</i>
Set relative horizontal print position	ESC \ <i>n1 n2</i>
Set left margin	ESC <i>n</i>
Set right margin	ESC Q <i>n</i>
Tab horizontally	HT
Set horizontal tabs	ESC D <i>nn</i>

Overall printing style

Select letter quality or draft	ESC x <i>n</i>
--------------------------------	----------------

Note:

The print quality and speed cannot be changed even if you send the ESC x command.

Select typeface family	ESC k <i>n</i>
Set printing mode	ESC ! <i>n</i>

Print size and character width

Select 10 cpi	ESC P
Select 12 cpi	ESC M
Select proportional mode on/off	ESC p 1/0
Select condensed printing	SI
Cancel condensed printing	DC2
Select double-width printing (one line)	SO
Cancel double-width printing (one line)	DC4
Turn double-width printing on/off	ESC W 1/0
Turn double-height printing on/off	ESC w 1/0

Font enhancement

Select bold font	ESC E
Cancel bold font	ESC F
Select double-strike printing	ESC G
Cancel double-strike printing	ESC H

Note:

The ESC G and ESC E commands produce identical effects; you cannot obtain darker print by combining the two.

Select superscript/subscript printing	ESC Sn
Cancel superscript/subscript printing	ESC T
Select italic font	ESC 4
Cancel italic font	ESC 5
Turn underline on/off	ESC - 1/0

Word processing

Set intercharacter space	ESC SP <i>n</i>
Select character tables	ESC † <i>n</i>
Assign character tables	ESC ‹ † <i>nn</i>
Select international character set	ESC R <i>n</i>
Set upper control codes	ESC 6
Cancel upper control codes	ESC 7

User-defined characters

Define user-defined characters	ESC &
--------------------------------	-------

Note:

The appearance of characters defined using ESC & may differ slightly from an actual FX printer.

Copy ROM to RAM	ESC :
Select user-defined set	ESC % <i>n</i>
Set upper control codes	ESC <i>n</i>

Bit image

Select bit image printing	ESC * m <i>n</i>
Select 9-dot bit image printing	ESC ^ m <i>n</i>

PJL Commands

This section lists the available commands for the printer job language mode (PJL). For more information on PJL, refer to the Printer Job Language Technical Reference Manual from Hewlett-Packard.

COMMENT	@PJL COMMENT (words) <CR> <LF>
DEFAULT	@PJL DEFAULT (LPARM: ***) variable = value <CR> <LF>
DINQUIRE	@PJL DINQUIRE (LPARM: ***) variable <CR> <LF>
ECHO	@PJL ECHO (Words) <CR> <LF>
ENTER	@PJL ENTER LANGUAGE = *** <CR> <LF>
EOJ	@PJL EOJ (NAME= ***) <CR> <LF>
INFO	@PJL INFO read only variable <CR> <LF>
INITIALIZE	@PJL INITIALIZE <CR> <LF>
INQUIRE	@PJL INQUIRE (LPARM: ***) variable <CR> <LF>
JOB	@PJL JOB (NAME = ***)(START = ***)(END = ***)<CR> <LF>
OPMSG	@PJL OPMSG DISPLAY = *** <CR> <LF>
RDYMSG	@PJL RDYMSG DISPLAY = *** <CR> <LF>
RESET	@PJL RESET <CR> <LF>

SET	@PJL SET (LPARM: ***) variable = value <CR> <LF>
STMSG	@PJL STMSG DISPLAY = *** <CR> <LF>
UEL	<ESC>%-12345X
USTATUS	@PJL USTATUS variable = value <CR> <LF>
USTATUSOFF	@PJL USTATUSOFF <CR> <LF>
PJL	@PJL <CR> <LF>

I239X Emulation Commands

This section lists the printer commands supported in the I239X emulation mode. For more information on these commands, see IBM's 2390/2391 reference manual.

Page format

Printable area

Set page length in lines	ESC C n
Set page length in inches	ESC C NUL n
Set skip perforation	ESC N n
Cancel skip perforation	ESC O
Set horizontal margins	ESC X

Line spacing

Set line space to 1/8 inch	ESC 0
Set line space to 7/72 inch	ESC 1
Activate line spacing for text	ESC 2
Set line spacing for graphics (n/180, n/216, or n/360 inch)	ESC 3 n
Set line spacing for text (n/72 inch)	ESC A n

Unit definition

Set vertical units (1/180, 1/216, or 1/360 inch)	ESC (\
--	---------

Tab

Set vertical tab stops	ESC B
Set default tab stops	ESC R
Set horizontal tab stops	ESC D

Paper feeding/print position motion

Carriage return	CR
Line feed	LF
Form feed	FF
Move paper vertically (n/180, n/216, or n/360 inch)	ESC J
Automatic line feed	ESC 5
Reverse line feed	ESC)
Back space	BS
Space	SP
Horizontal tab	HT
Vertical tab	VT
Move current print position (1/120 inch)	ESC d
Set top of form	ESC 4

Text

Font selection

Select 10 pitch font	DC2
Select 12 pitch font	ESC:
Start 17 cpi printing	SI
Start 17 cpi printing	ESC SI
Proportional spacing	ESC P
Begin subscript/superscript	ESC S
End subscript/superscript	ESC T
Select font and pitch	ESC(l
Select print or font	ESC I

Select character set 2	ESC 6
Select character set 1	ESC 7
Select page code	ESC(T
Print one character	ESC ^
Print character from A Code Page	ESC \
Select character quality	ESC(d

Font enhancement

Continuous overscore	ESC _
Continuous underline	ESC -
Score select	ESC (-
Select print type style	ESC (@
Begin double-width printing by line	SO
Begin double-width printing by line	ESC SO
End double-width printing by line	DC4
Double-width printing	ESC W
Begin emphasized (bold) print	ESC E
End emphasized (bold) print	ESC F
Begin double-strike print	ESC G
End double-strike print	ESC H

Bit image

Normal-density bit image graphics	ESC K
Double-density bit image graphics (half speed)	ESC L
Double-density bit image graphics (normal speed)	ESC Y
High-density bit image graphics	ESC Z
Graphic print mode	ESC (g

Bar code

Bar code set up	ESC (f
Bar code transfer	ESC (P-

Auxiliary functions

Initialize

Set initial conditions	ESC (K)
------------------------	---------

Data input control

Cancel 1 line	CAN
---------------	-----

Auxiliary function

Select paper tray	ESC (F)
-------------------	---------

AGM mode

Line spacing

Set line spacing for graphics (n/180, n/216, or n/360 inch)	ESC 3
Set line spacing for text (n/60 inch)	ESC A

Paper feeding/print position motion

Move paper vertically (n/180, n/216, or n/360 inch)	ESC J
Line feed	LF

Bit image

Normal-density bit image graphics	ESC K
Double-density bit image graphics (half speed)	ESC L

Double-density bit image graphics (normal speed)	ESC Y
High-density bit image graphics	ESC Z
Graphic print mode	ESC (g)
Select graphic mode	ESC *

Working with Fonts

Printer and Screen FontsD-2

Available FontsD-2

Adding FontsD-7

Selecting FontsD-8

Downloading FontsD-8

EPSON BarCode FontsD-9

 System requirementsD-10

 Installing EPSON BarCode FontsD-11

 Printing with EPSON BarCode FontsD-12

 EPSON BarCode Font specificationsD-16

Printer and Screen Fonts

Fonts are installed on both the printer and the computer. The printer fonts, which reside in printer memory, are used by the printer to print text. Screen fonts, which are stored in your computer, are used to display text on screen to represent the fonts that will be printed.

Two separate sets of fonts are needed because the monitor and the printer have different requirements for producing fonts. The monitor normally uses bitmap fonts that are specially designed for the screen's resolution. A bitmap is a dot-by-dot representation of an image or character. The printer, however, uses an outline font that is created from a mathematical formula that describes the outline of each character. Using outline fonts allows the printer to render any character in the requested size.



printer font



screen font

Note:

The distinction between printer and screen fonts is not as important when you are using TrueType® fonts, which are included with Windows. TrueType is an outline font format that can be used by both the printer and the screen.

Available Fonts

The following table lists the fonts that are installed on your printer. The names of all the fonts appear in your application software's font list if you are using the driver provided with the printer. If you are using a different driver, all of these fonts may not be available.

The fonts provided with the printer are shown below, according to the emulation mode.

LJ4/GL2 mode

Font name	Family	HP equivalent
Courier SWC	Medium, Bold, Italic, Bold Italic	Courier
Dutch 801 SWC	Medium, Bold, Italic, Bold Italic	CG Times
Zapf Humanist 601 SWC	Medium, Bold, Italic, Bold Italic	CG Omega
Ribbon 131 SWC	-	Coronet
Clarendon Condensed SWC	-	Clarendon Condensed
Swiss 742 SWC	Medium, Bold, Italic, Bold Italic	Univers
Swiss 742 Condensed SWC	Condensed, Condensed Bold, Condensed Italic, Condensed Bold Italic	Univers Condensed
Incised 901 SWC	Medium, Bold, Italic	Antique Olive
Original Garamond SWC	Medium, Bold, Italic, Bold Italic	Garamond
Audrey Two SWC	-	Marigold
Floreserif 821 SWC	Medium, Extra Bold	Albertus
Swiss 721 SWM	Medium, Bold, Italic, Bold Italic	Arial
Dutch 801 SWM	Medium, Bold, Italic, Bold Italic	Times New
Swiss 721 SWA	Medium, Bold, Italic, Bold Italic	Helvetica
Swiss 721 Narrow SWA	Medium, Bold, Italic, Bold Italic	Helvetica Narrow
Zapf Calligraphic 801 SWA	Medium, Bold, Italic, Bold Italic	Palatino Roman

Font name	Family	HP equivalent
ITC Avant Garde SWA	Medium, Bold, Italic, Bold Italic	ITC Avant Garde Gothic
ITC Bookman SWA	Medium, Bold, Italic, Bold Italic	ITC Bookman
Century Schoolbook SWA	Medium, Bold, Italic, Bold Italic	New Century Schoolbook
Dutch 801 SWA	Medium, Bold, Italic, Bold Italic	Times
ITC Zapf Chancery SWA Italic	-	ITC Zapf Chancery Medium Italic
Symbol Set SWM	-	Symbol
Symbol Set SWA	-	SymbolPS
More WingBats SWM	-	Wingdings
ITC Zapf Dingbats SWA	-	ITC Zapf Dingbats
Letter Gothic SWC	Medium, Bold, Italic	Letter Gothic
Courier SWA	Medium, Bold, Italic, Bold Italic	CourierPS
Line Printer	-	Line Printer
OCR A	-	-
OCR B	-	-
Code 39	9.37 pitch, 4.68 pitch	-
EAN/UPC	Bold, Medium	-

When selecting fonts in your application software, choose the font name listed in the HP equivalent column.

Note:

Depending on the print density, or on the quality or color of the paper, OCR A, OCR B, Code 39, FAN/UPC fonts may not be readable. Print a sample and make sure the fonts can be read before printing large quantities.

ESC/P 2 and FX modes

Font name	Family
Courier SWC	Medium, Bold
EPSON Prestige	-
EPSON Roman	-
EPSON Sans serif	-
Swiss 721 SWM*	Medium, Bold
Letter Gothic SWC	Medium, Bold
Dutch 801 SWM*	Medium, Bold
EPSON Script	-
OCR A	-
OCR B	-

* Available only in ESC/P 2 mode.

Note:

Depending on the print density, or on the quality or color of the paper, OCR A and OCR B fonts may not be readable. Print a sample and make sure the fonts can be read before printing large quantities.

I239X mode

Font name	Family
Courier SWC	Medium, Bold
EPSON Prestige	-
EPSON Gothic	-
EPSON Orator	-
EPSON Script	-
EPSON Presentor	-
EPSON Sans serif	-
OCR B	-

Note:

Depending on the print density, or on the quality or color of the paper, OCR B font may not be readable. Print a sample and make sure the font can be read before printing large quantities.

You can print font samples for viewing by using the SelectType Test menu. Follow these steps to print font samples:

1. Make sure that paper is loaded.
2. Press MENU while the printer is online.
3. Press Item until the font sample you want appears.
4. Press Enter, a Font Sample sheet is printed.

Adding Fonts

You can install more fonts into your Windows operating system. Most font packages include an installer for this purpose.

If you're running Windows, you can also install fonts from within the Fonts window. To access this window, open the Control Panel and double-click the Fonts icon. Once installed, the fonts are available in all your Windows applications.

Selecting Fonts

Whenever possible select fonts from the font list in your application. See your software documentation for instructions.

If you are sending unformatted text to the printer directly from DOS or if you are using a simple software package that does not include font selection, you can select fonts with `SelectType` when in the `LJ4`, `ESC/P 2`, `FX`, or `I239X` menu.

Downloading Fonts

Fonts that reside on your computer's hard disk can be downloaded, or transferred, to the printer so they can be printed. Downloaded fonts, also called soft fonts, remain in printer memory until you turn off the printer or otherwise reinitialize it. If you plan on downloading many fonts, make sure your printer has sufficient memory.

Most font packages make it easy to manage fonts by providing their own installer. The installer gives you the option of having the fonts automatically downloaded whenever you start your computer or having fonts downloaded only when you need to print a particular font.

EPSON BarCode Fonts

EPSON BarCode Fonts let you easily create and print many types of barcodes.

Normally, barcode creation is a laborious process requiring you to specify various command codes, such as Start bar, Stop bar and OCR-B, in addition to the barcode characters themselves.

However, EPSON BarCode Fonts are designed to add such codes automatically, allowing you to easily print barcodes that conform to a variety of barcode standards.

EPSON BarCode Fonts support the following types of barcodes:

Barcode Standard	EPSON BarCode	OCR-B	Check Digit	Comments
EAN	EPSON EAN-8	Yes	Yes	Creates EAN (abbreviated version) barcodes.
	EPSON EAN-13	Yes	Yes	Creates EAN (standard version) barcodes.
UPC-A	EPSON UPC-A	Yes	Yes	Creates UPC-A barcodes.
UPC-E	EPSON UPC-E	Yes	Yes	Creates UPC-E barcodes.
Code39	EPSON Code39	No	No	Printing of OCR-B and check digits can be specified with the font name.
	EPSON Code 39CD	No	Yes	
	EPSON Code39 CD Num	Yes	Yes	
	EPSON Code39 Num	Yes	No	

Barcode Standard	EPSON BarCode	OCR-B	Check Digit	Comments
Code128	EPSON Code128	No	Yes	Creates Code128 barcodes.
Interleaved 2 of 5 (ITF)	EPSON ITF	No	No	Printing of OCR-B and check digits can be specified with the font name.
	EPSON ITF CD	No	Yes	
	EPSON ITF CD Num	Yes	Yes	
	EPSON ITF Num	Yes	No	
Codabar	EPSON Codabar	No	No	Printing of OCR-B and check digits can be specified with the font name.
	EPSON Codabar CD	No	Yes	
	EPSON Codabar CD Num	Yes	Yes	
	EPSON Codabar Num	Yes	No	

System requirements

To use EPSON BarCode Fonts, your computer system should meet the following requirements.

Printer: EPSON EPL-5700/EPL-5700i/EPL-5700L/EPL-N1600/EPL-N4000/EPL-N4000+/EPL-C8000/EPL-C8200/EPL-N2700/ENL-N2050/EPL-N2750 or later products

Computer:	IBM PC series or IBM compatible with an i386SX or higher CPU
Operating system:	Microsoft Windows 98/95, Windows 2000/NT 4.0/3.5x
Hard disk:	15-30 KB free space (This differs depending on the font.)
Printer driver:	EPSON EPL-5700 Advanced, EPSON EPL-5700i Advanced, EPSON EPL-5700L Advanced, EPSON EPL-N1600 Advanced, EPSON EPL-N4000 Advanced, EPSON EPL-N4000+ Advanced, EPSON EPL-C8000 Advanced, EPSON EPL-C8200 Advanced, EPSON EPL-N2700 Advanced, EPSON EPL-N2050 Advanced, EPSON EPL-N2750 Advanced or later driver

Note:

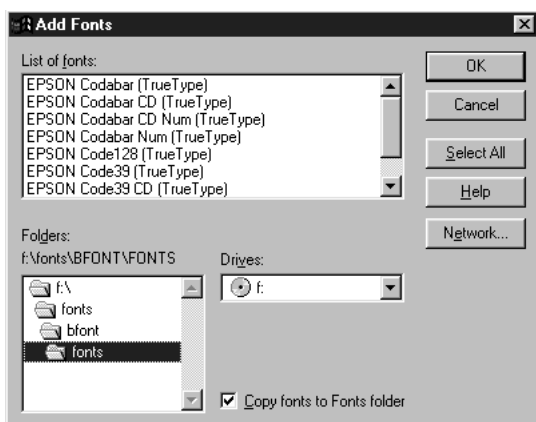
EPSON BarCode Fonts can only be used with EPSON printer drivers.

Installing EPSON BarCode Fonts

Follow these steps to install EPSON BarCode Fonts. The procedure described here is for installation in Windows NT 4.0; the procedure for other Windows operating systems is nearly the same.

1. Turn on the computer and start Windows.
2. Insert the CD-ROM or floppy disk containing the EPSON BarCode Fonts into the appropriate drive.
3. Click Start, point to Settings, then click Control Panel.
4. Double click Fonts.

5. From the File menu, select Install New Font.

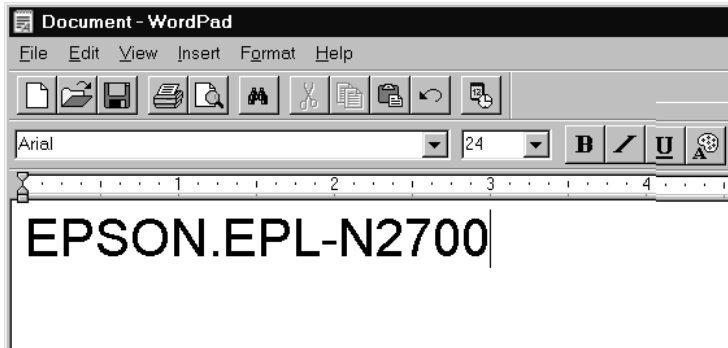


6. Select the appropriate CD-ROM or floppy drive, then select the BarCode Fonts folder from the Folders list.
7. In the List of fonts box, select the BarCode Font you want to install, or click the Select All button to install all EPSON BarCode Fonts.
8. Click OK. The selected EPSON BarCode Fonts are installed in the Windows Fonts folder.

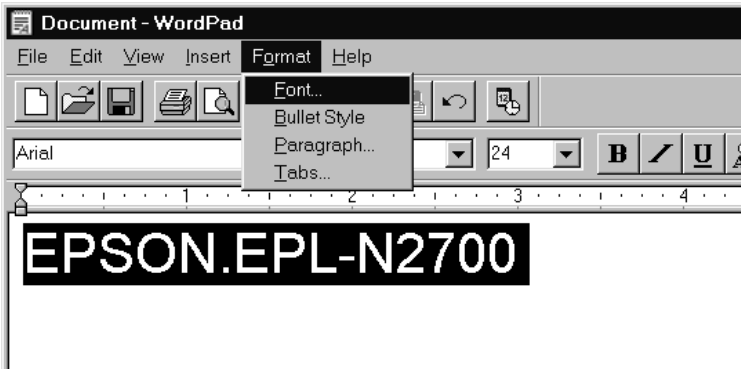
Printing with EPSON BarCode Fonts

Follow these steps to create and print barcodes using EPSON BarCode Fonts. The application featured in these instructions is Microsoft WordPad. The actual procedure may differ slightly when printing from other applications.

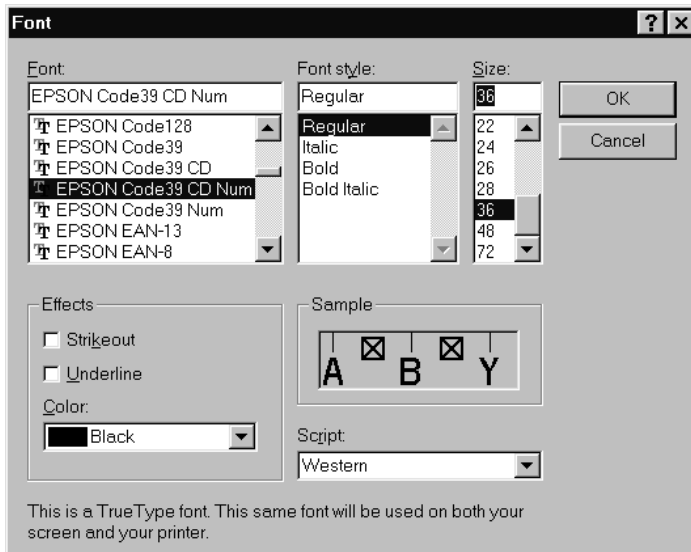
1. Open a document in your application and enter the characters you want to convert to a barcode.



2. Select the characters, then select Font from the Format menu.



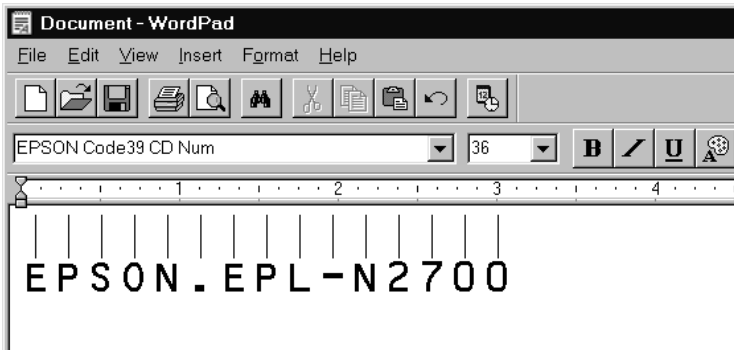
3. Select the EPSON BarCode Font you want to use, then set the font size and click OK.



Note:

In Windows NT 4.0/3.5x, you cannot use font sizes larger than 96 points when printing barcodes.

4. The characters you selected appear as barcodes similar to those shown below.



- Select Print from the File menu, then select your EPSON printer and click Properties. Make the following printer driver settings:

	Monochrome Printer Driver	Color Printer Driver
Color	(not available)	Black
Print Quality	600 dpi	600 dpi
Toner Save	Not selected	Not selected
Zoom Options	Not selected	Not selected
Graphic mode (in the Extended Settings dialog box accessed through the Optional Settings tab)	Standard	(not available)
Printing Mode (in the More Settings dialog box accessed through the Basic Settings tab)	(not available)	Standard

- Click OK to print the barcode.

Note:

If there is an error in the barcode character string, such as inappropriate data, the barcode will be printed as it appears on the screen, but it cannot be read by a barcode reader.

Notes on inputting and formatting barcodes

Please note the following when inputting and formatting barcode characters:

- Do not apply shading or special character formatting, such as bold, italic, or underline.
- Print barcodes in black and white only.
- When rotating characters, only specify rotation angles of 90°, 180° and 270°.

- ❑ Turn off all automatic character and word spacing settings in your application.
- ❑ Do not use features in your application which enlarge or reduce the size of characters in only the vertical or horizontal direction.
- ❑ Turn off your application's auto-correct features for spelling, grammar, spacing, etc.
- ❑ To more easily distinguish barcodes from other text in your document, set your application to show text symbols, such as paragraph marks, tabs, etc.
- ❑ Because special characters such as Start bar and Stop bar are added when an EPSON BarCode Font is selected, the resulting barcode may have more characters than were originally input.
- ❑ For best results, use only the font sizes recommended in "EPSON BarCode Font specifications" on page D-16 for the EPSON BarCode Font you are using. Barcodes in other sizes may not be readable with all barcode readers.

Note:

Depending on the print density, or on the quality or color of the paper, barcodes may not be readable with all barcode readers. Print a sample and make sure the barcode can be read before printing large quantities.

EPSON BarCode Font specifications

This section contains details on the character input specifications for each EPSON BarCode Font.

EPSON EAN-8

- ❑ EAN-8 is an eight-digit abbreviated version of the EAN barcode standard.

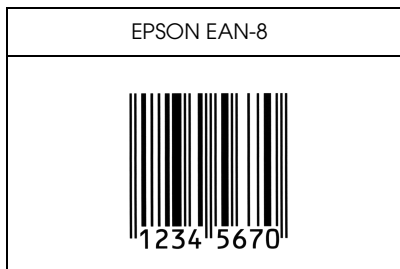
- Because the check digit is added automatically, only 7 characters can be input.

Character type	Numbers (0 to 9)
Number of characters	Up to 7 characters
Font size	52 pt to 130 pt (up to 96 pt in Windows NT). Recommended sizes are 52 pt, 65 pt (standard), 97.5 pt and 130 pt.

The following codes are inserted automatically and need not be input by hand:

- Left/right margin
- Left/right guard bar
- Center bar
- Check digit
- OCR-B

Print Sample



EPSON EAN-13

- EAN-13 is the standard 13-digit EAN barcode.

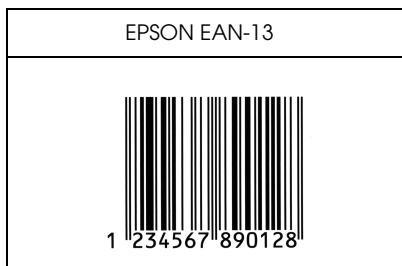
- Because the check digit is added automatically, only 12 characters can be input.

Character type	Numbers (0 to 9)
Number of characters	Up to 12 characters
Font size	60 pt to 150 pt (up to 96 pt in Windows NT). Recommended sizes are 60 pt, 75 pt (standard), 112.5 pt and 150 pt.

The following codes are inserted automatically and need not be input by hand:

- Left/right margin
- Left/right guard bar
- Center bar
- Check digit
- OCR-B

Print Sample



EPSON UPC-A

- UPC-A is the UPC-A standard barcode specified by the American Universal Product Code (UPC Symbol Specification Manual).

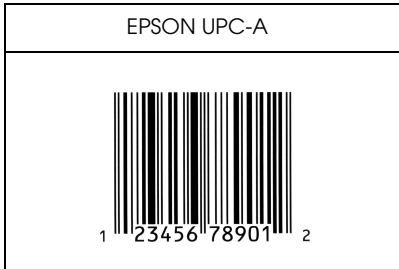
- Only regular UPC codes are supported. Supplementary codes are not supported.

Character type	Numbers (0 to 9)
Number of characters	Up to 11 characters
Font size	60 pt to 150 pt (up to 96 pt in Windows NT). Recommended sizes are 60 pt, 75 pt (standard), 112.5 pt and 150 pt.

The following codes are inserted automatically and need not be input by hand:

- Left/right margin
- Left/right guard bar
- Center bar
- Check digit
- OCR-B

Print Sample



EPSON UPC-E

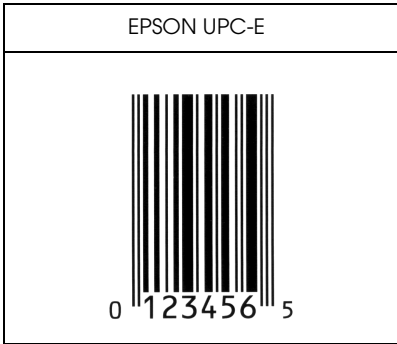
- UPC-E is the UPC-A zero-suppression (deletes extra zeros) barcode specified by the American Universal Product Code (UPC Symbol Specification Manual).

Character type	Numbers (0 to 9)
Number of characters	Up to 6 characters
Font size	60 pt to 150 pt (up to 96 pt in Windows NT). Recommended sizes are 60 pt, 75 pt (standard), 112.5 pt and 150 pt.

The following codes are inserted automatically and need not be input by hand:

- Left/right margin
- Left/right guard bar
- Check digit
- OCR-B
- The numeral "0"

Print Sample



EPSON Code39

- Four Code39 fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.
- The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Code39 standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.
- Spaces in Code39 barcodes should be input as “_” underbars.
- When printing two or more barcodes on one line, separate the barcodes with a tab, or select a font other than a BarCode Font and input the space. If a space is input while a Code39 font is selected, the barcode will not be correct.





Character type	Alphanumeric characters (A to Z, 0 to 9) Symbols (- . space \$ / + %)
Number of characters	No limit

Font size	<p>When OCR-B is not used: 26 pt or more (up to 96 pt in Windows NT). Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt.</p> <p>When OCR-B is used: 36 pt or more (up to 96 pt in Windows NT). Recommended sizes are 36 pt, 72 pt, 108 pt and 144 pt.</p>
-----------	--

The following codes are inserted automatically and need not be input by hand:

- Left/right quiet zone
- Check digit
- Start/Stop character

Print Sample

EPSON Code39	EPSON Code39 CD
	
EPSON Code39 Num	EPSON Code39 CD Num
 <p style="text-align: center;">1 2 3 4 5 6 7</p>	 <p style="text-align: center;">1 2 3 4 5 6 7 8</p>

EPSON Code128

- Code128 fonts support code sets A, B, and C. When the code set of a line of characters is changed in the middle of the line, a conversion code is automatically inserted.

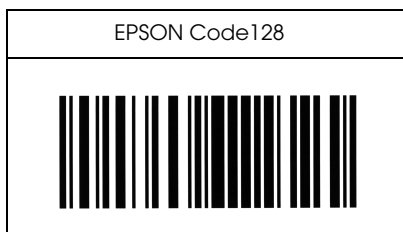
- ❑ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Code128 standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.
- ❑ Some application software automatically deletes the spaces at the end of lines or changes multiple spaces into tabs. Barcodes containing spaces may not be correctly printed from applications that automatically delete spaces from the ends of lines or change multiple spaces into tabs.
- ❑ When printing two or more barcodes on one line, separate the barcodes with a tab, or select a font other than a BarCode Font and input the space. If a space is input while Code128 is selected, the barcode will not be correct.

Character type	All ASCII characters (95 in total)
Number of characters	No limit
Font size	26 pt to 104 pt (up to 96 pt in Windows NT). Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt.

The following codes are inserted automatically and need not be input by hand:

- ❑ Left/right quiet zone
- ❑ Start/Stop character
- ❑ Check digit
- ❑ Change code set character

Print Sample



EPSON ITF

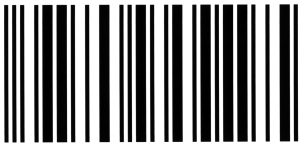

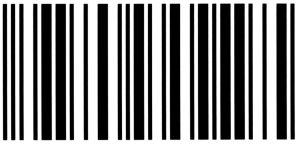
- ❑ The EPSON ITF fonts conform to the USS Interleaved 2-of-5 standard (American).
- ❑ Four EPSON ITF fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.
- ❑ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Interleaved 2-of-5 standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.
- ❑ Interleaved 2 of 5 treats every two characters as one set. When there are an odd number of characters, EPSON ITF fonts automatically add a zero to the beginning of the character string.

Character type	Numbers (0 to 9)
Number of characters	No limit
Font size	When OCR-B is not used: 26 pt or more (up to 96 pt in Windows NT). Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt. When OCR-B is used: 36 pt or more (up to 96 pt in Windows NT). Recommended sizes are 36 pt, 72 pt, 108 pt and 144 pt.

The following codes are inserted automatically and need not be input by hand:

- Left/right quiet zone
- Start/Stop character
- Check digit
- The numeral "0" (added to the beginning of character strings as needed)

Print Sample

EPSON ITF	EPSON ITF CD
	
EPSON ITF Num	EPSON ITF CD Num
 0 1 2 3 4 5 6 7	 1 2 3 4 5 6 7 0

EPSON Codabar

- Four Codabar fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.

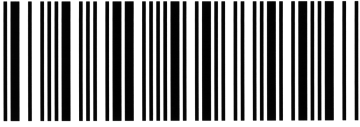
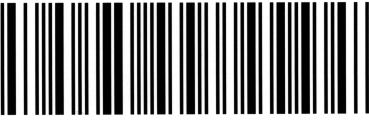


- ❑ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Codabar standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.
- ❑ When either a Start or a Stop character is input, Codabar fonts automatically insert the complimentary character.
- ❑ If neither a Start nor a Stop character is input, these characters are automatically input as the letter A.

Character type	Numbers (0 to 9) Symbols (- \$: / . +)
Number of characters	No limit
Font size	When OCR-B is not used: 26 pt or more (up to 96 pt in Windows NT). Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt. When OCR-B is used: 36 pt or more (up to 96 pt in Windows NT). Recommended sizes are 36 pt, 72 pt, 108 pt and 144 pt.

The following codes are inserted automatically and need not be input by hand:

- ❑ Left/right quiet zone
- ❑ Start/Stop character (when not input)
- ❑ Check digit

Print Sample

EPSON Codabar	EPSON Codabar CD
	
EPSON Codabar Num	EPSON Codabar CD Num
 A 1 2 3 4 5 6 7 A	 A 1 2 3 4 5 6 7 4 A

Glossary

ASCII

American Standard Code for Information Interchange. A standardized way of assigning codes to characters and control codes. The system is widely used by manufacturers of computers, printers, and software.

auto line feed

A printer feature in which each carriage return (CR) code is automatically accompanied by a line feed (LF) code.

bitmap font

The dot-by-dot representation of a font. Bitmap fonts are displayed on computer screens and printed by dot matrix printers. See *outline font*.

buffer

See *memory*.

character set

A collection of letters, numbers, and symbols used in a particular language.

cpi (characters per inch)

A measure of the size of fixed-width text characters.

default

A value or setting that takes effect when the printer is turned on, reset, or initialized.

dots per inch (dpi)

The number of dots per inch is a measure of printer resolution. The higher the number of dots, the higher the resolution.

download

To transfer information from the computer to the printer.

downloaded font

A font that is loaded into the printer's memory from an outside source, such as a computer. Also called soft font.

dpi

See *dots per inch*.

driver

The part of a software program that converts commands from the program into commands used by the printer. Also known as the printer driver.

drum

The part of the printer mechanism where the image is formed and transferred to the paper.

emulation

See *printer emulation*.

fixed-width font

A font whose characters are allotted the same amount of horizontal space, no matter the width of the character. Thus the uppercase *M* receives the same amount of space as the letter *l*.

font

A set of characters and symbols that share a common typographic design and style.

font family

The collection of all sizes and styles of a font.

halftone

A grayscale image that is composed of small dots. The dots can be close together to create black or more widely spaced to create gray or white areas in the image. Newspaper photographs are common examples of halftones.

imaging cartridge

The imaging cartridge contains a photosensitive print drum and a supply of toner.

initialization

The act of returning the printer to its defaults (fixed set of conditions).

interface

The connection between the printer and the computer. A parallel interface transmits data one character or code at a time, and a serial interface transmits data one bit at a time.

landscape

Printing that is oriented sideways on the page. This orientation gives you a page that is wider than it is high and is useful for printing spreadsheets.

memory

The part of the printer's electronic system that is used to store information. Some information is fixed and is used to control how the printer operates. Information that is sent to the printer from the computer (such as downloaded fonts) is stored in memory temporarily. See also *RAM* and *ROM*.

orientation

Refers to the direction in which characters are printed on a page. This direction is either portrait, where the length of the page is longer than its width, or landscape, where the width is longer than its length.

outline font

A font whose outline is described mathematically, allowing it to be rendered (printed or drawn) smoothly at any size.

PCL

The command language built into the Hewlett-Packard LaserJet series printers.

photoconductor unit

A component of the printer that contains a photosensitive print drum.

pitch

A measure of the number of *characters per inch* (cpi) for fixed-width fonts.

point size

The height of a particular font as measured from the top of the tallest character to the bottom of the lowest. A point is a typographic unit of measure equivalent to 1/72 of an inch.

portrait

Printing that is oriented upright on the page (as opposed to landscape, in which printing is oriented sideways on the page). This is the standard orientation for printing letters or documents.

printer driver

See *driver*.

printer emulation

A set of operating commands that determines how data sent from the computer is interpreted and acted upon. Printer emulations replicate existing printers, such as the HP LaserJet 4.

proportional font

A font whose characters have varying amounts of horizontal space depending on the width of the character. Thus the uppercase *M* takes up more horizontal space than the lowercase *l*.

RAM

Random Access Memory (RAM) is where temporary information is stored.

reset

A printer command that clears the printer's memory and erases the current print jobs.

resident font

A font that is stored permanently in the printer's memory.

resolution

A measure of the fineness and clarity of images produced by the printer or monitor. Printer resolution is measured in dots per inch. Monitor resolution is measured in pixels.

RItech

Resolution Improvement Technology. A feature that smooths the jagged edges of printed lines or shapes.

ROM

Read Only Memory (ROM) is where permanent information is stored.

sans serif font

A font lacking serifs. See also *serif*.

scalable font

See *outline font*.

SelectType

A feature of the printer that allows you to set printer values and control most of the printer's functions from the control panel.

serif

The small decorative strokes that come off the main lines of a character.

status sheet

A report that lists the printer settings and other printer information.

symbol set

A collection of symbols and special characters. Symbols are assigned to specific codes in a character table.

TrueType

An outline font format that was developed jointly by Apple® Computer and Microsoft Corporation. TrueType fonts are outline fonts that can be easily resized for screen display or for printing.