

EPSON®

Laser Printer

EPL-N2700

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Reference Guide

Declaration of Conformity

According to ISO/IEC Guide 22 and EN 45014

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Declares that the Product:

Product Name: Laser Printer
Model: L320A

Conforms to the following Directive(s) and Norm(s):

Directive 89/336/EEC:

EN 55022 Class B

EN 61000-3-2

EN 61000-3-3

EN 50082-1

IEC 801-2

IEC 801-3

IEC 801-4

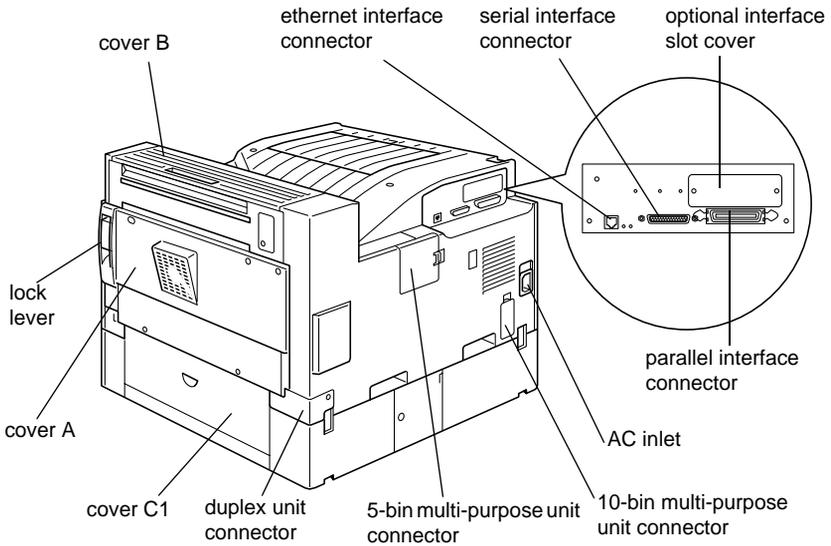
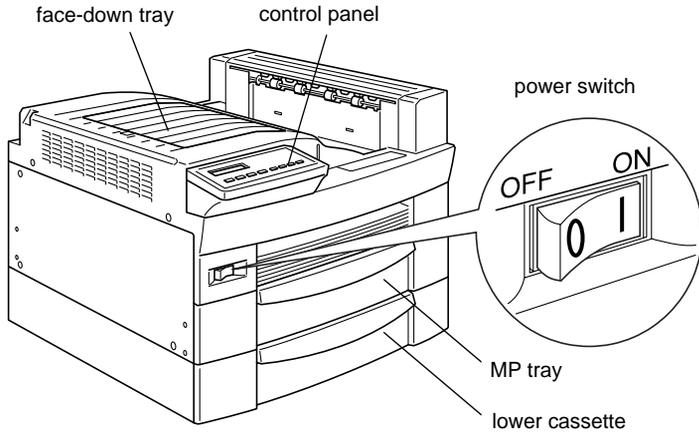
Directive 73/23/EEC:

EN 60950

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H. Horiuchi
President of EPSON EUROPE B.V.

Printer Parts



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Getting started

The EPSON EPL-N2700 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 *Hardware & Software Setup* guide.
- ❑ Use your *Hardware & Software 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.

See this *Reference Guide* for detailed information about your printer.

About This Guide

This guide contains the following information.

Chapter 1, “Controlling your printer,” explains the printer’s control panel, how to use the OneTouch Modes, and how to optimize the print quality.

Chapter 2, “Printing with the EPL-N2700,” contains information on main printing operation. Also consult this chapter when you need information about printing on special media.

Chapter 3, “Handling Options,” gives step-by-step instructions for installing and using printer options.

Chapter 4, “Handling the Imaging Cartridge,” tells you when and how to replace the imaging cartridge.

Chapter 5, “SelectType Settings,” describes the settings you can make using SelectType on the control panel. Read this chapter if you cannot modify a printer setting from your software.

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

Chapter 7, “Maintenance and Transportation,” provides instructions on how to clean and transport your printer.

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

About Your Printer

Your printer is the latest in EPSON’s advanced line of network laser printers. It emulates the Hewlett-Packard® LaserJet 4™(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 Enhance 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® 95 and Windows® 98. 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

Following options are available for use with the EPL-N2700.

Memory

You can add memory modules (DIMMs) to expand the printer's standard 16 MB memory up to 256 MB. See "Memory Modules" on page 3-41 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 3-50 for details.

ROM module

The optional Adobe® PostScript® 3™Kit (C83233*) ROM module generates crisp PostScript output. See "Adobe PostScript3 ROM Module" on page 3-48 for details.

Paper sources

A variety of optional paper sources are available to increase the paper loading capacity and to print on both sides of the paper.

500-Sheet Lower Cassette Unit

You can load up to 500 sheets in the 500-Sheet Lower Cassette Unit (C813191). The cassette can handle the following paper sizes:

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

You can install up to three Lower Cassettes, or one Lower Cassette plus the optional Large Capacity Paper Unit. To use this option, see “500-Sheet Lower Cassette Unit” on page 3-3.

Large Capacity Paper Unit

The Large Capacity Paper Unit (C813221) allows you to load up to 2500 sheets of A-4 size paper. To use this option, see “Large Capacity Paper Unit” on page 3-9.

Duplex Unit

The Duplex Unit (C813181) allows you to print on both sides of the paper.

The Duplex Unit can handle these paper sizes:

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

To use this option, see “Duplex Unit” on page 3-15.

Output trays

The following multiple-bin units 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 (C813201) accommodates up to 500 printed sheets in total. To use this option, see “5-Bin Multi-Purpose Unit” on page 3-23.

10-Bin Multi-Purpose Unit

The 10-Bin Multi-Purpose Unit (C813211) accommodates up to 2000 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 3-32.

Warnings, Cautions, and Notes



Warnings must be followed carefully to avoid bodily injury.



Cautions must be observed to avoid damage to your equipment.

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

Chapter 1

Controlling the Printer

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About Making Printer Settings

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

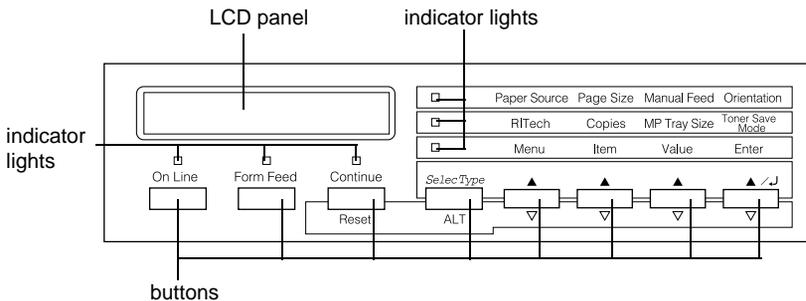
Use the control panel's OneTouch modes or SelecType menus to make printer settings when you cannot make a setting in your application software or printer driver.

The OneTouch modes are the easiest way to make several basic settings from the printer's control panel. See Chapter 1, "Using the OneTouch Modes" 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 Chapter 5, "SelecType Settings" for more information.

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 software applications and the printer driver usually override these settings.



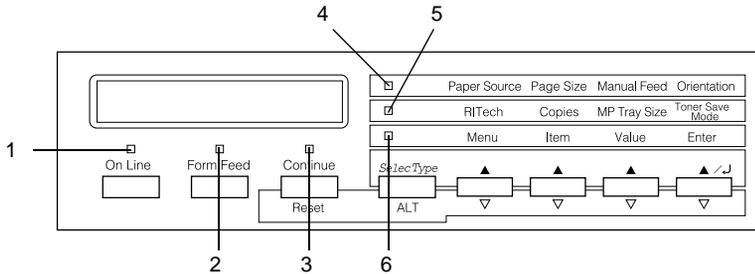
LCD panel

The LCD panel shows the following:

- Status messages, such as **Warning 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.
- **SelecType** menus, such as **Emulation**, allowing you to control printer modes, font selection, paper handling, and many other printer functions.

For information on problem-solving and routine maintenance, see "Printer Problems" on page 6-2 and Chapter 7, "Maintenance and Transportation". For more information on **SelecType**, see Chapter 5, "SelecType Settings".

Indicator lights



- 1 On Line

On when the printer is on line, indicating the printer can receive and print data. When the printer is off line, this light is off. The light flashes as the system switches between on-line and off-line status.
- 2 Form Feed

On when data is received and stored in the printer buffer (printer memory reserved for receiving data), but not yet printed. Flashing indicates the printer is processing data. When no data remains in the printer buffer, this light turns off.
- 3 Continue

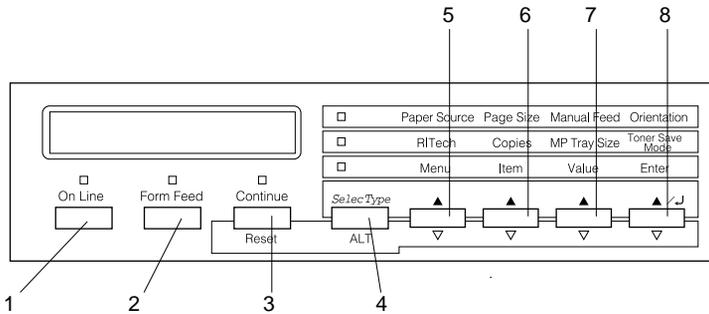
Flashes when an error is detected or a maintenance procedure must be performed. Check the LCD panel for error or maintenance messages when this light is flashing.
- 4 OneTouch mode 1

On when the printer is in OneTouch mode 1. For details, see “Using the OneTouch Modes” on page 1-7.

- 5 OneTouch mode 2 On when the printer is in OneTouch mode 2. For details, see “Using the OneTouch Modes” on page 1-7.
- 6 SelectType On when the printer is in SelectType mode. For more information on the SelectType mode, see Chapter 5, “SelectType Settings”.

Buttons

This section explains how to use the control panel buttons.



- 1 On Line Switches the printer between on-line and off-line status.
- 2 Form Feed When the printer is off line and data remains in the printer’s memory (Form Feed light is on), prints out the data and clears the buffer.

- | | | |
|---|---------------------|--|
| 3 | Continue
(Reset) | 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 6-19. 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 SelecType mode. Pressing this button while in SelecType mode returns the printer to on-line status. See Chapter 5, “SelecType Settings” for more information. |
| 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 SelecType mode. Press this button when the printer is on line to enter 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 SelectType 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 SelectType mode. Press this button two times when the printer is on line to print the status sheet. |
| | ALT + Menu, Item,
Value, or Enter | Advances the setting shown to the next value in each group. If used in combination with the ALT button in SelectType mode, it returns the shown parameter or setting 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 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 (SelecType) while pressing the button under the setting you want to change.

OneTouch mode 1

To enter OneTouch mode 1, press the SelecType 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 setting in the Page Size menu will be used.

Page Size

Specifies the image size.

Manual Feed

Turns Manual Feed on or off. For details on the Manual Feed mode, see “Printing one sheet at a time” on page 2-14.

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 characters. The characters are outlined in full black on the right and lower edges.

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 your printing 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.

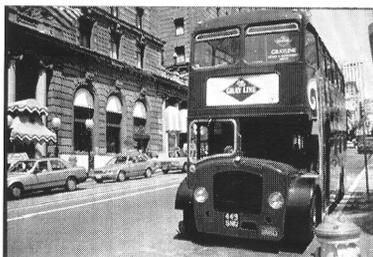
Your printer comes with RITech turned on, since this setting produces the best quality text and graphics for nearly all purposes. However, if you are printing a lot of gray shading or screen patterns, turn RITech off in the printer driver by clearing the RITech check box, located on the Panel menu.

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 control panel using OneTouch mode 2. For details, see "OneTouch mode 2" on page 1-9.

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 Enh. MG on the printer driver's Graphics menu.

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 on the printer driver's Panel menu.

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 control panel using SelecType. For details, see Chapter 5, "SelecType Settings".

Note:

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

Chapter 2

Printing with the EPL-N2700

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Available Paper Types

You can use many kinds of media 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 you use, 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 these materials.

To prevent the adhesive from coming in 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 available envelope sizes are as follows:

- Monarch (3 7/8 × 7 1/2 inches)
- Commercial 10 (4 1/8 × 9 1/2 inches)
- DL (110 mm × 220 mm)
- C5 (162 mm × 229 mm)
- International B5 (176 mm × 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 for 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 in the paper specifications. 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.

Daily 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 3, “Handling 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 in the MP Tray

The MP Tray can accommodate various types and sizes of paper and envelopes. The MP Tray handles 250 sheets, 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, HTL
Horizontal	A3, Ledger, Legal, B4, F4, G-Legal

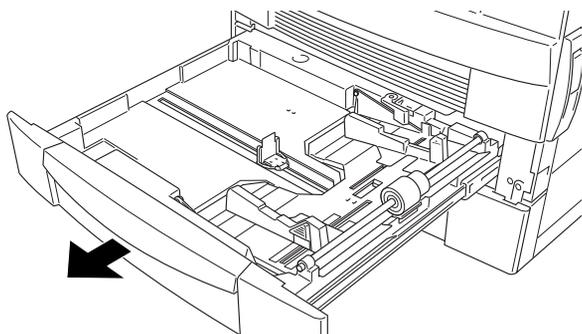
To confirm paper sizes, see “Paper Specifications” on page A-2.

Note:

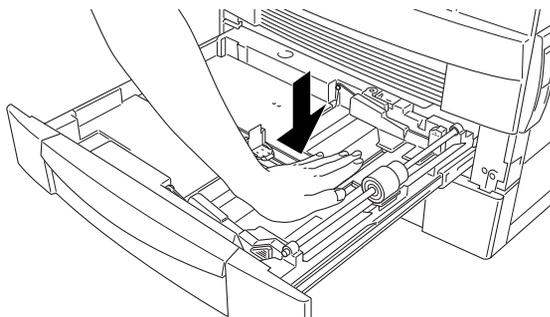
When you load Executive, G-letter, HTL, Ledger, B4, G-Legal, and other custom paper sizes, select the paper size in the printer driver, then set the paper size for the MP Tray using the SelecType Tray menu. For instructions, see “Tray Menu” on page 5-11.

To load paper in the MP Tray, follow the steps below.

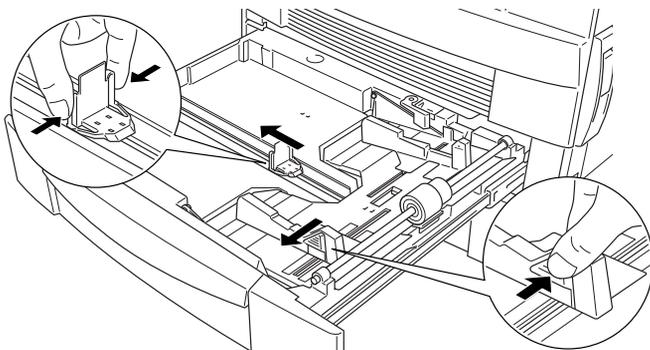
1. Pull out the paper cassette.



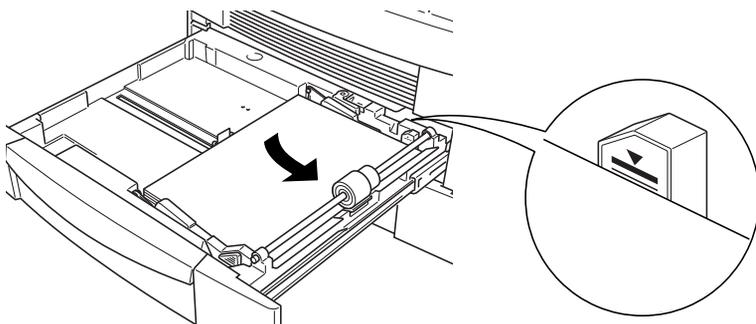
2. Push down the inner tray until it clicks to the bottom of the cassette.



3. While pulling up the vertical and horizontal paper guide, slide it outward to match the size of your paper.



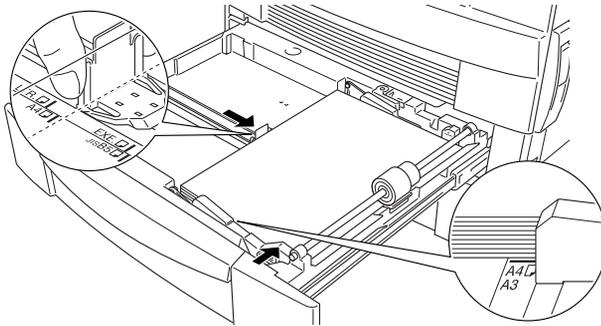
4. Fan a stack of paper and tap it on a flat surface to even the edges. Insert the paper into the cassette, aligning the corners of the paper with the arrow mark inside the cassette.



Note:

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

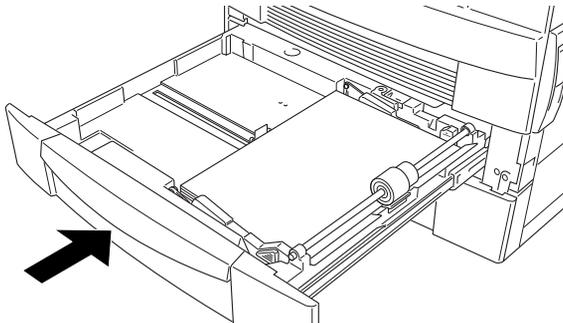
5. Adjust the vertical and horizontal paper guides to fit your paper size.



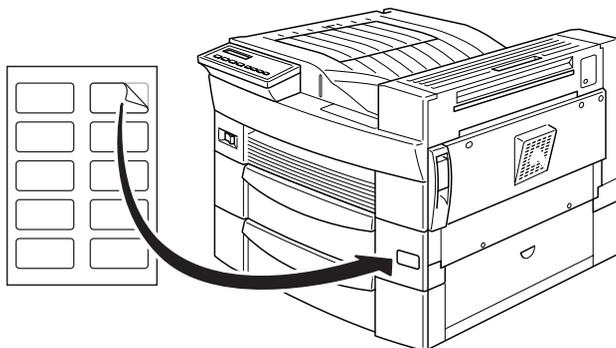
Caution:

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

6. Close the paper cassette.



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



Loading paper in the Lower Cassette

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

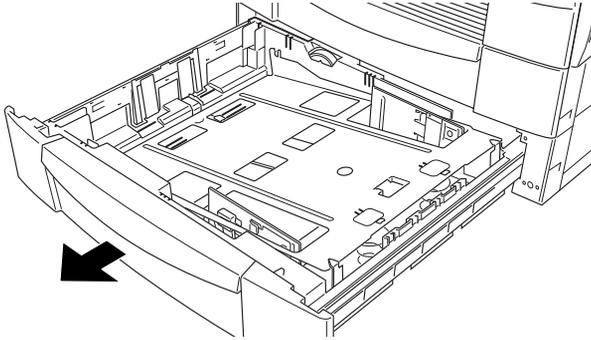
You can load the following paper sizes. The loading orientation differs depending on the paper size, as explained below:

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

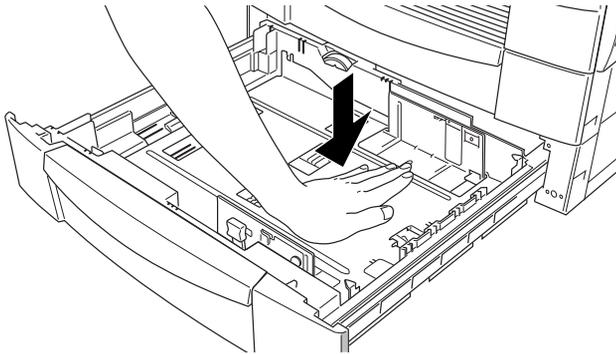
To confirm paper sizes, see "Paper Specifications" on page A-2.

To load paper in the Lower Cassette, or in an optional 500-Sheet Lower Cassette Unit, follow the steps below.

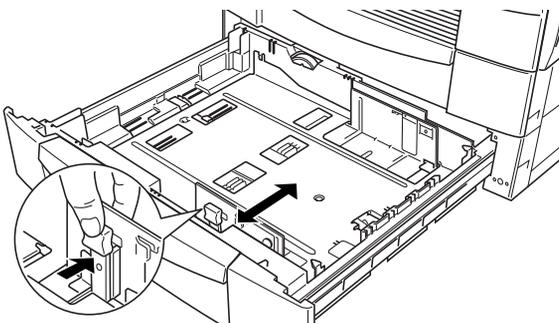
1. Pull the cassette all the way out.



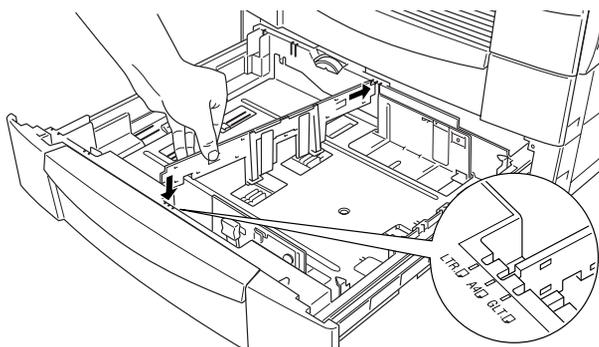
2. Push down the inner tray until it clicks to the bottom of the cassette.



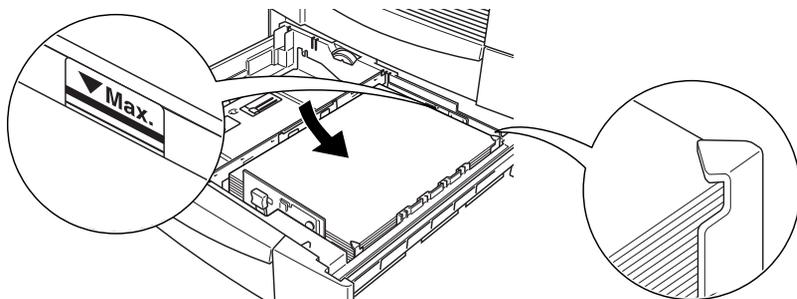
3. While pulling up the vertical paper guide, slide it to match the paper size.



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, aligning the corners of the paper with the arrow mark inside the cassette.



Note:

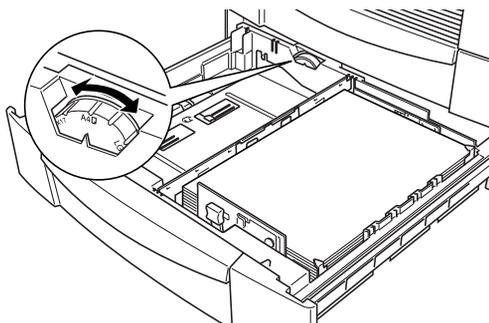
- ❑ *Be sure not to load paper higher than the arrow mark.*
- ❑ *If your printouts are curled or do not stack properly when using plain paper, try turning the stack over and reloading it.*



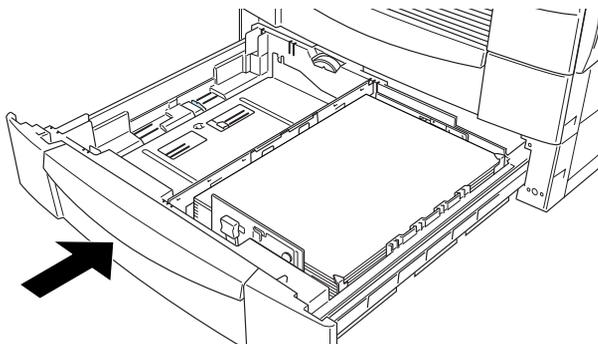
Caution:

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

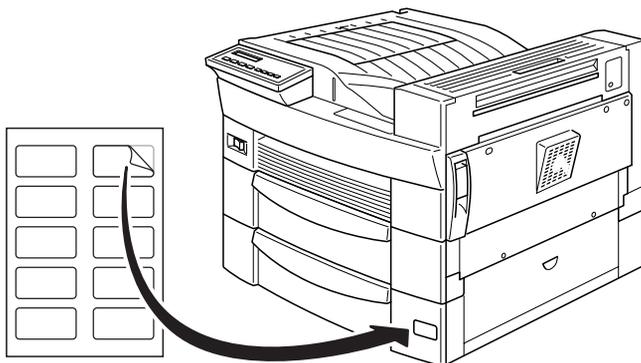
6. Set the paper size with the paper-size dial.



7. Close the paper cassette.



8. Peel the appropriate paper size label from the label sheet included with your printer and attach it to 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 menu. 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 1-8.

Special Printing Operations

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

Loading a custom paper size

You can use the MP Tray to load non-standard paper sizes ranging from 100 × 148 mm to 297.4 × 431.8 mm .

Before printing on a custom paper size, you need to specify the paper size on the printer driver's Basic Settings menu. Select User Defined Size from the Paper box, 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 1-8.

Note:

After making custom paper size settings in the printer driver or SelecType, set the paper size for the MP Tray using the SelecType Tray menu. For instructions, see "Tray Menu" on page 5-11.

Printing one sheet at a time

You can print one sheet at a time in the manual feed mode. This mode is helpful when you want to check the print quality after each page is printed.

To print in the manual feed mode, follow the steps below.

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. On the Basic Settings menu, select the Manual Feed check box.
3. In the Paper box, 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.
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.

Chapter 3

Handling Options

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Printer Options

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

- ❑ The 500-Sheet Lower Cassette Unit (C813191) 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 (C813221) fits directly beneath the printer and can hold 2500 sheets of A4 size plain paper.
- ❑ The Duplex Unit (C813181) 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 sizes:

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

- ❑ The 5-Bin Multi-Purpose Unit (C813201) 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, Monarch, Commercial 10, DL, C5

You can also print out transparencies and labels into Bin 1.

- ❑ The 10-Bin Multi-Purpose Unit (C813211) can be used as a mailbox, a sorter, a multiple sorter, or a large capacity stacker. Output capacity is 2000 printed sheets of plain paper in the following sizes:

A3, A4, A5, Ledger, Legal, GLG, Letter, HLT, GLT, Executive, F4, Monarch, Commercial 10, DL, C5

You can also print out transparencies and labels into Bin 1.

- ❑ A variety of optional interface cards provide additional links between your printer and computers or networks.
- ❑ Optional memory modules expand your printer's memory.
- ❑ The Adobe PostScript3 Kit (C832332) ROM module generates crisp PostScript output.

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

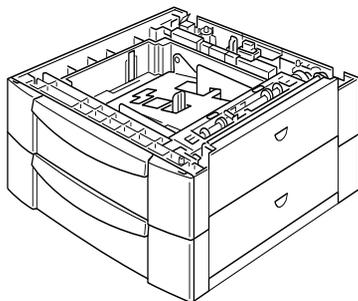
It is best to install the Lower Cassette Unit when first setting up the printer. You can install up to two Lower Cassettes, or one Lower Cassette plus the optional Large Capacity Paper Unit.

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 instructions to install the Lower Cassette Unit.

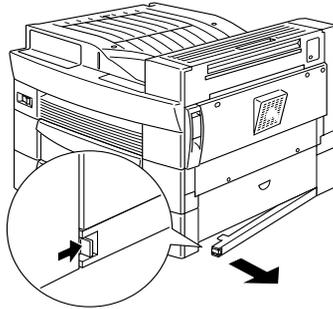
1. Open the shipping carton.
2. Remove the inserts and all other protective materials inside the box. Make sure the contents of the package match the items on the included documentation. Remove the packaging materials and any other items from the Lower Cassette Unit and store them for future use.
3. Lift the Lower Cassette out of the box and place it near the printer.

If you plan to use more than one Lower Cassette, stack the cassettes with the front of each cassette facing the same direction.

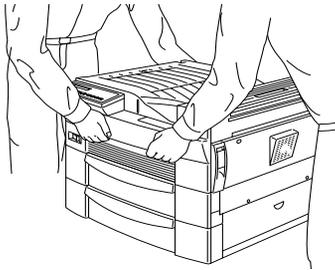


If you plan to install the Large Capacity Paper Unit at the same time, follow the instructions in “Installing the Large Capacity Paper Unit” on page 3-9 to complete the installation of both units.

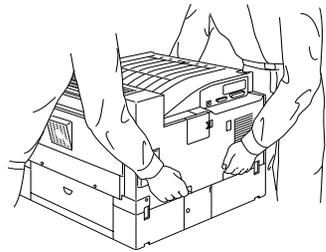
4. Remove the side cover from the bottom of the printer.



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



Front



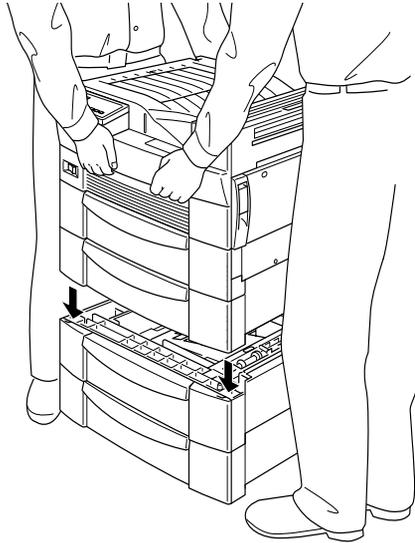
Rear



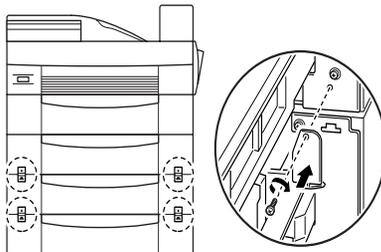
Caution:

The printer weighs about 30 kg; always lift it with two or more people.

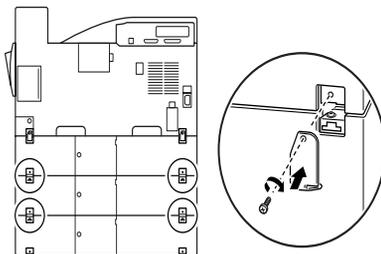
6. Align each of the printer's corners with those of the cassette unit, then lower the printer until it rests securely on the unit.



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

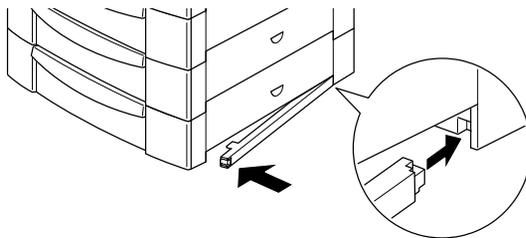


9. On the back of the printer, fasten the unit using the fittings and screws provided.

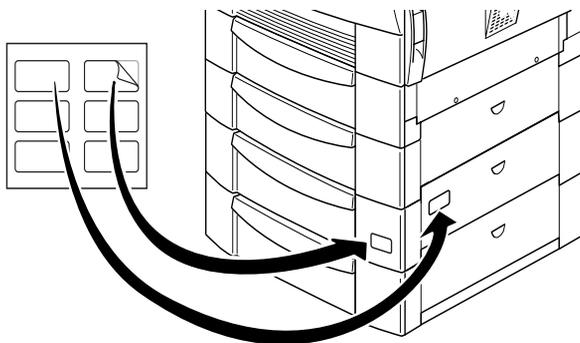


10. Pull the cassette out and remove the protective materials.

11. Attach the side cover to the bottom of the cassette unit as shown below.



12. Peel the appropriate cover and cassette numbering labels from the label sheet included with the cassette unit, and attach them to the unit as shown below.



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

To confirm paper sizes, see “Paper Specifications” on page A-2.

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

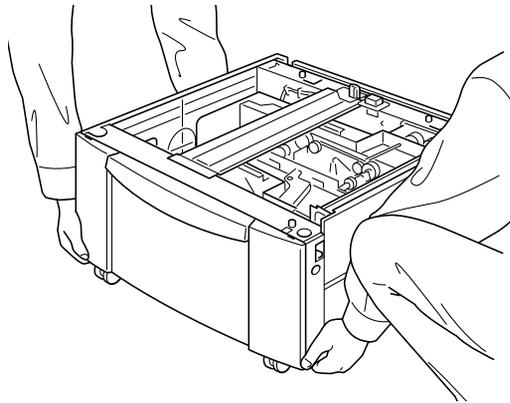
Large Capacity Paper Unit

Installing the Large Capacity Paper Unit

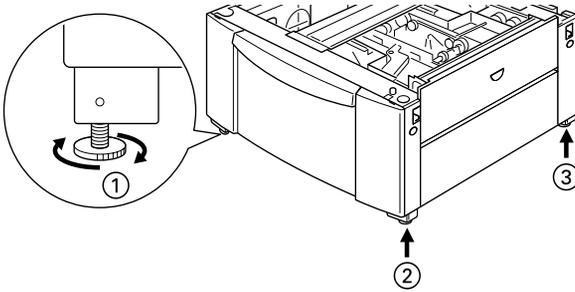
It is best to install the Large Capacity Paper Unit when first setting up the printer. Please note that you will need the assistance of at least two other people to lift up the printer when installing this option.

Follow these instructions to install the Large Capacity Paper Unit.

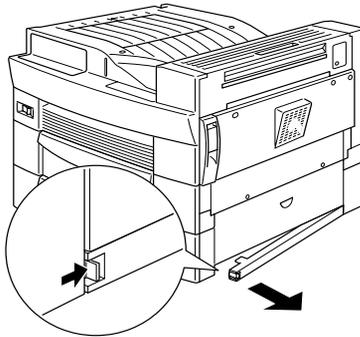
1. Open the shipping carton.
2. Remove the inserts and all other protective materials inside the box. Make sure the contents of the package match the items on the included documentation. Remove the packaging materials and any other items from the unit and store them for future use.
3. With the assistance of two or more people, lift the Large Capacity Paper Unit out of the box and place it near the printer.



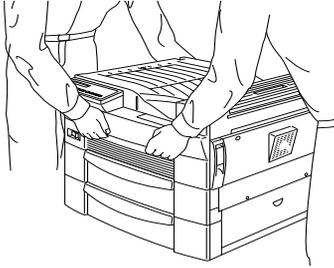
4. You will find three casters at the bottom of the Large Capacity Paper Unit. Lock the casters by pushing their levers down.



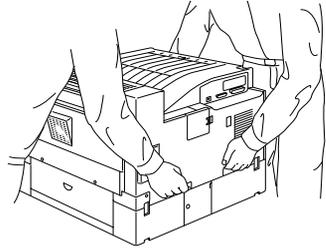
5. If you are also installing a 500-Sheet Lower Cassette Unit, stack it on top of the Large Capacity Paper Unit. For instructions on how to prepare the Lower Cassette Unit for installation, see “Installing the 500-Sheet Lower Cassette Unit” on page 3-3.
6. Remove the side cover from the bottom of the printer.



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



Front



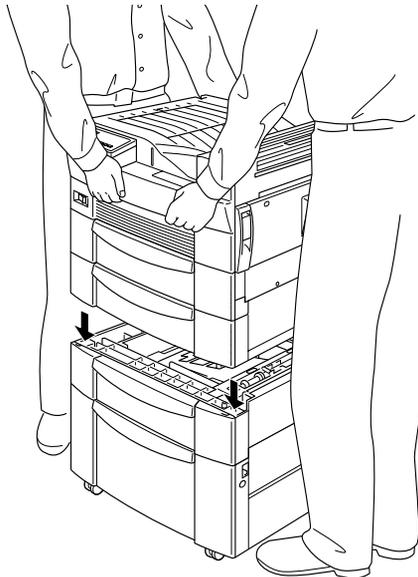
Rear



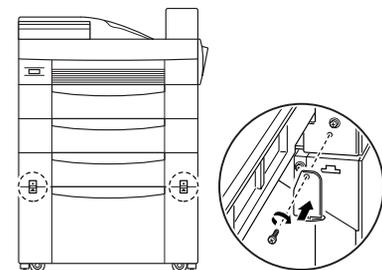
Caution:

The printer weighs about 30 kg; always lift it with two or more people.

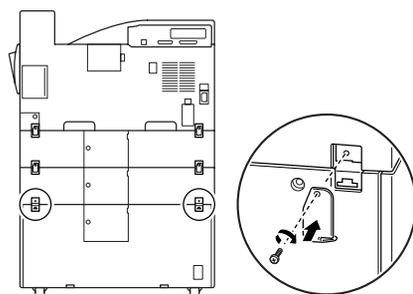
8. Align each of the printer's corners with those of the unit, then lower the printer until it rests securely on the unit.



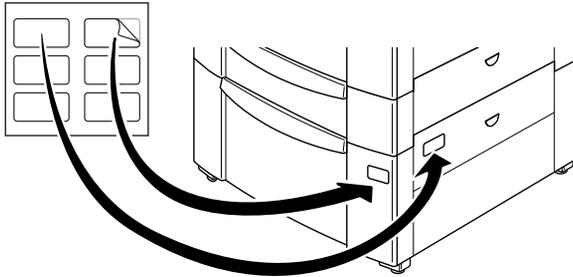
9. Make sure all corners of the printer fit firmly onto the unit. Then pull out the cassette and fasten the unit using the fittings and screws provided.



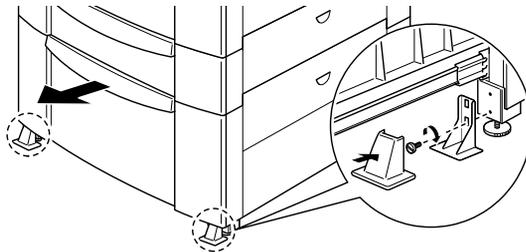
10. On the back of the printer, fasten the unit using the fittings and screws provided.



11. Pull the cassette out of the unit and remove the protective materials.
12. 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.



13. Pull out the cassette and attach the printer supports and printer support covers to the front of the printer as shown below. Then attach the printer supports to the back of the printer.

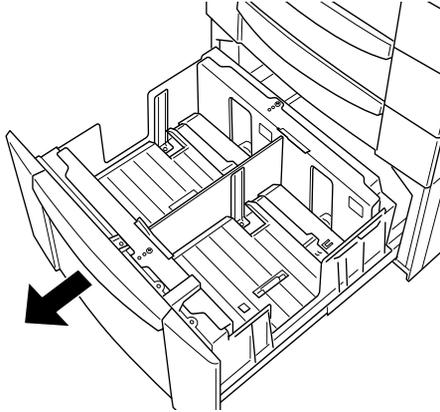


Using the Large Capacity Paper Unit

This unit can store 2500 sheets of plain paper and is useful for storing paper you use often and in large amounts.

To load paper in the Large Capacity Paper Unit, follow these steps:

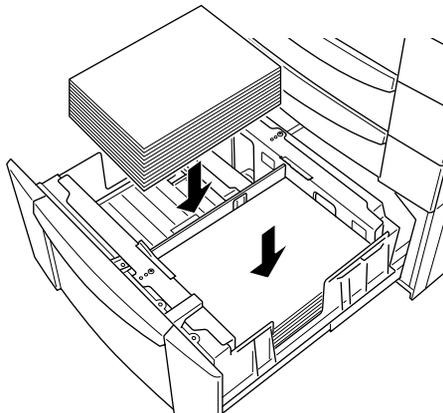
1. Pull out the paper cassette.



2. Fan a stack of paper and tap it on a flat surface to even the edges. Insert the paper into the tray, placing the corners of the paper on the arrow 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. Close the paper cassette.

Duplex Unit

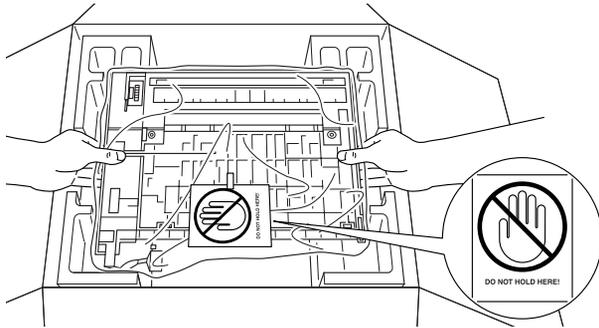
Installing the Duplex Unit

Before installing

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.

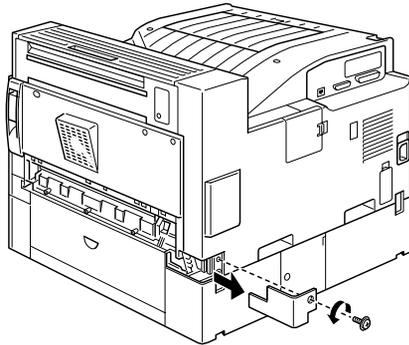
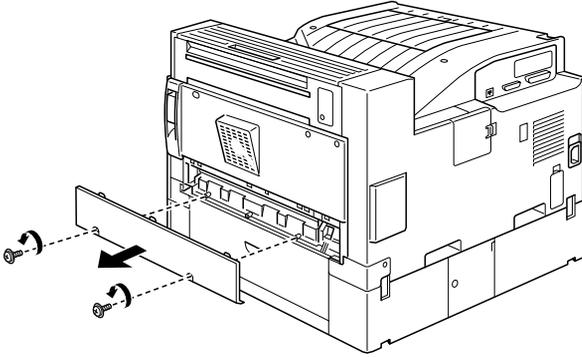
**Caution:**

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.

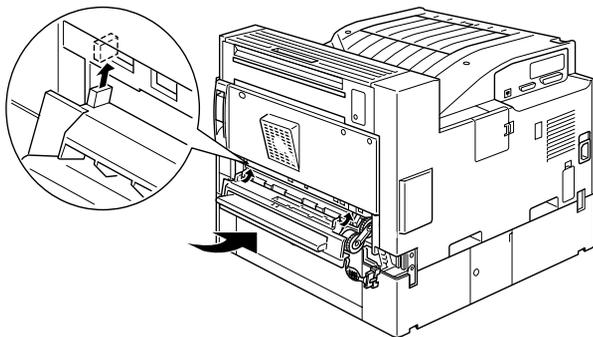


Installing

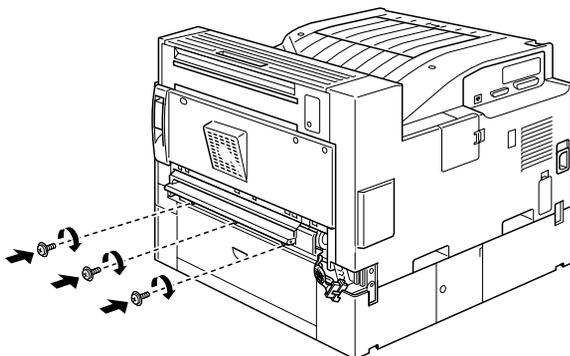
1. Remove the cover on the side of the printer.



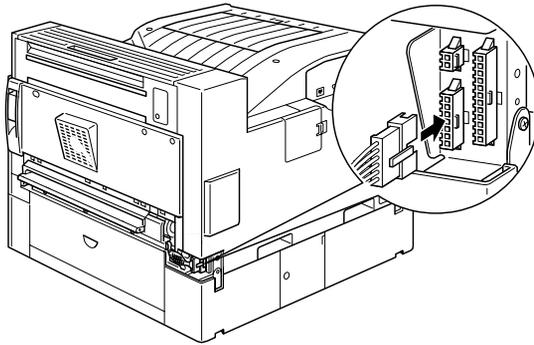
2. Insert the paper transfer unit as shown below.



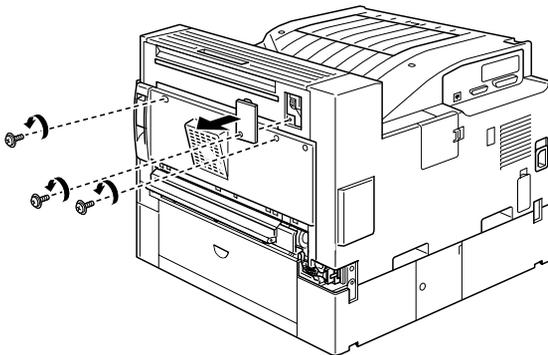
3. Fasten the paper transfer unit with the included screws.



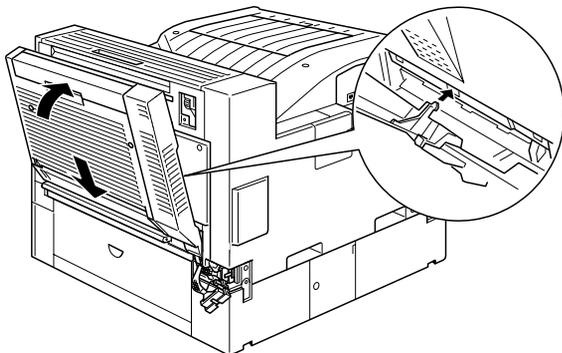
4. Connect the cable on the right side of the paper transfer unit.



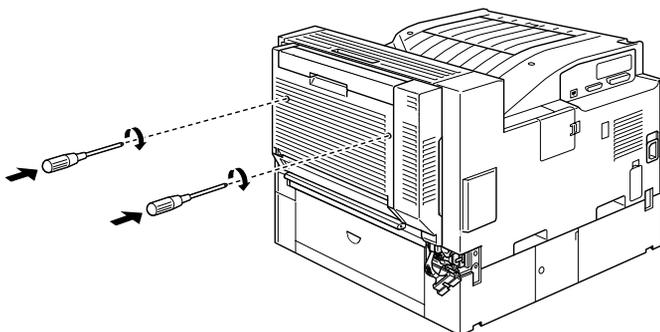
5. Remove the cover shown below.



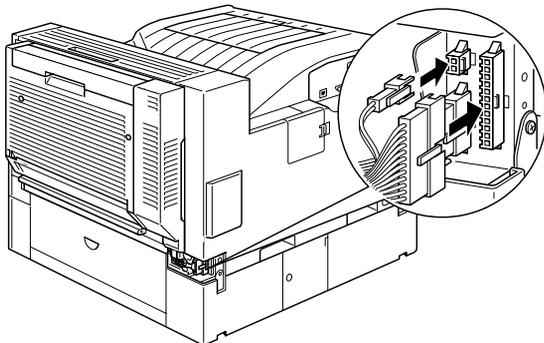
6. Hold the Duplex Unit at an angle and insert the two tabs at the base of the unit into the slots (marked with arrows) on the printer. Press the upper portion of the unit onto the back of the printer.



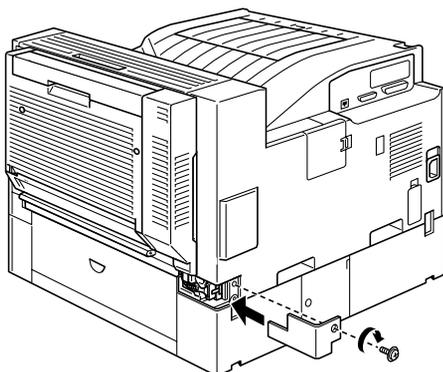
7. Fasten the screws as shown below. (The screws are already inside the Duplex Unit.)



8. 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.



9. Replace the connector cover and fasten the screw.

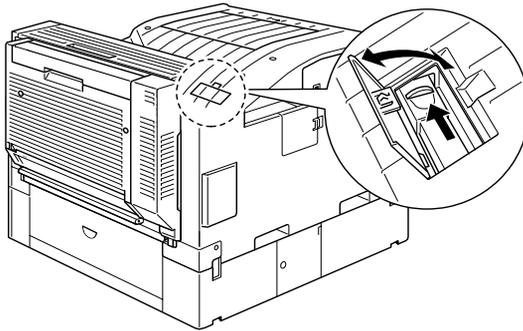


After installing

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

Note:

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



2. Reconnect any interface cables you removed.
3. Make sure the printer is turned off. Plug the power cord into an electrical outlet.
4. 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 on line. 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 instructions 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 Duplex Print Unit on the Option menu in your printer driver.

When using the Duplex Unit, paper feeds automatically from the MP Tray, Lower Cassette, or any installed optional cassettes. After both sides of the paper have been printed on, the Duplex Unit outputs the paper into the Face-down Tray or into an optional multibin unit, if installed.

5-Bin Multi-Purpose Unit

Installing the 5-Bin Multi-Purpose Unit

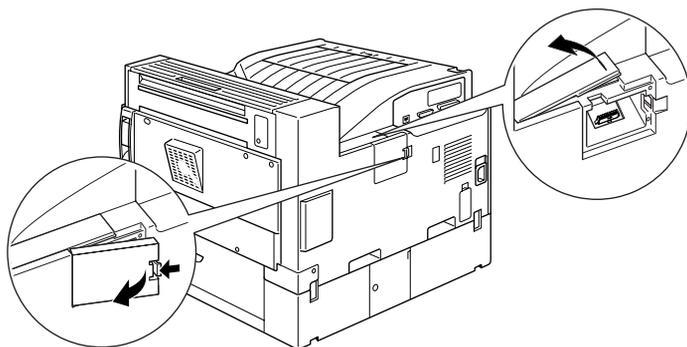
Follow the instructions in this section to install or remove this option.

Before installing

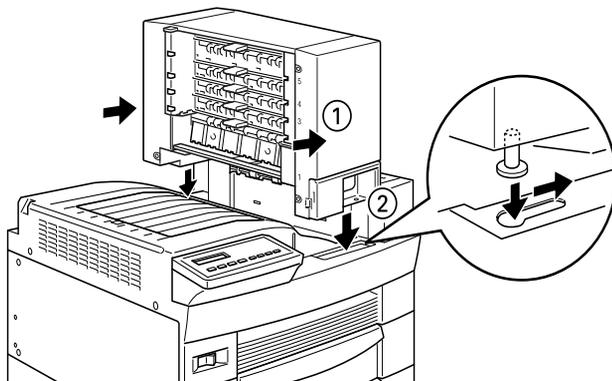
1. Turn off the printer.
2. Unplug the printer's power cord.
3. Remove all interface cables from the interface connectors.
4. Open the box from the top and remove the contents.

Installing the 5-Bin Unit

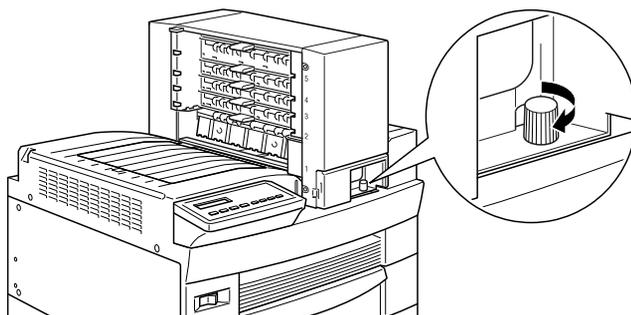
1. Remove the printer covers shown below.



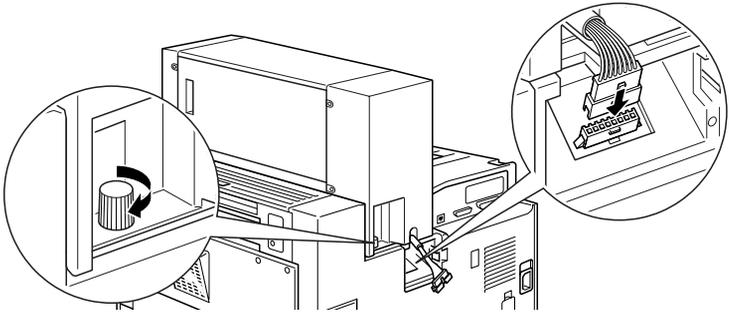
2. Lift the unit out of the box and place it on top of the printer as shown below. Be careful not to drop the unit.



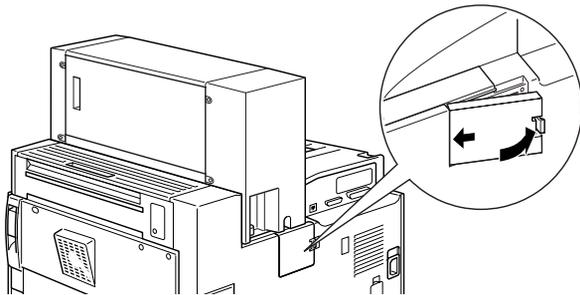
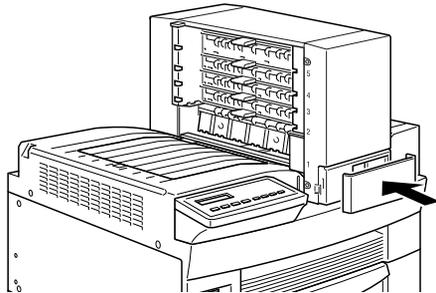
3. Attach the screw on the front of the unit.



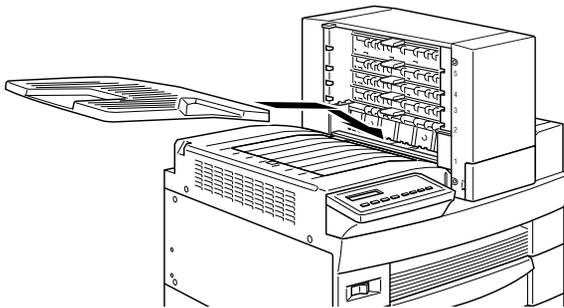
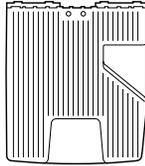
4. Attach the screw to the back of the unit, then attach the cable to the connector on the back of printer as shown below.



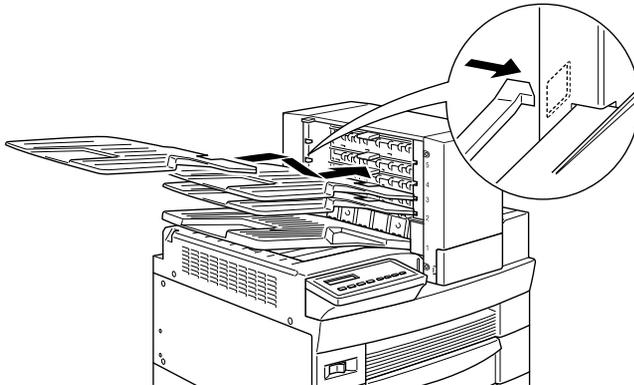
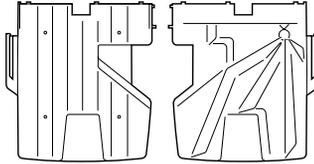
5. Replace the printer covers you removed in step 3.



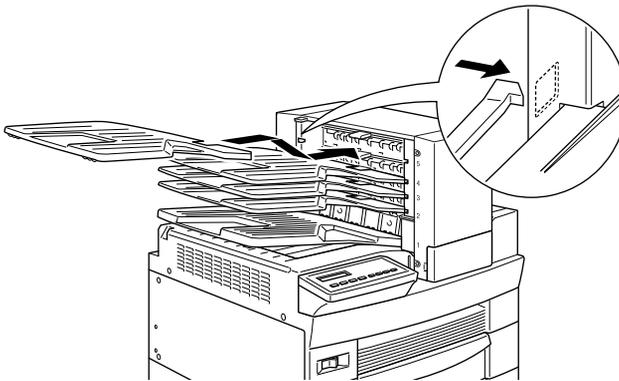
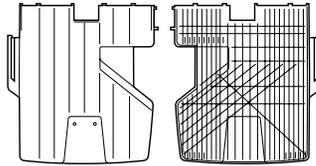
6. Insert the tray shown below into Bin 1. (The tray has the number 1 printed on the top right corner). Please note that this tray differs in shape from the trays for the other bins.



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



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



After installing

1. Open the back cover of the unit and remove all protective materials.
2. Reconnect any interface cables you removed.
3. Plug the power cord into an electrical outlet.
4. 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 on line. 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 the instructions below to remove this option.

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 printer power cord into an electrical outlet.
8. Turn on the printer.

Using the 5-Bin Multi-Purpose Unit

The 5-Bin Multi-Purpose Unit (C813201) 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 Option menu and select 5-Bin Multi-Purpose Unit from the Option Output Trays list, then click the Multibin Mode Settings button and select the mode you want to use. To use the Offset Stacking feature, select Face-down (Bin 1) from the Output Tray 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 5-6.

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 offset stacking mode.

10-Bin Multi-Purpose Unit

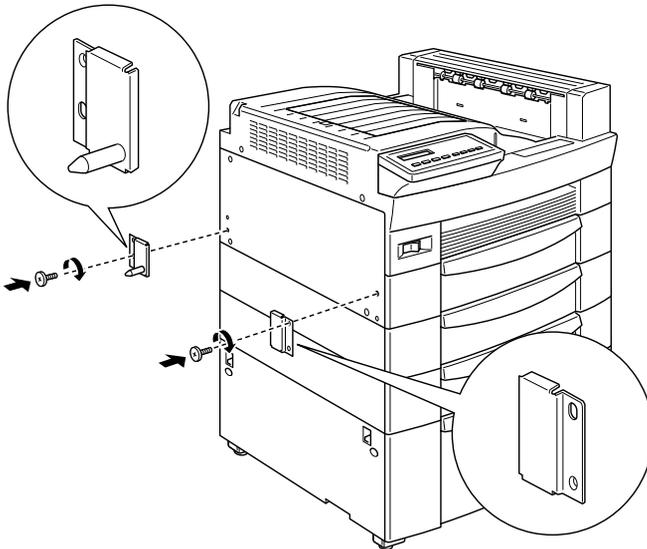
Installing the 10-Bin Multi-Purpose Unit

Before installing

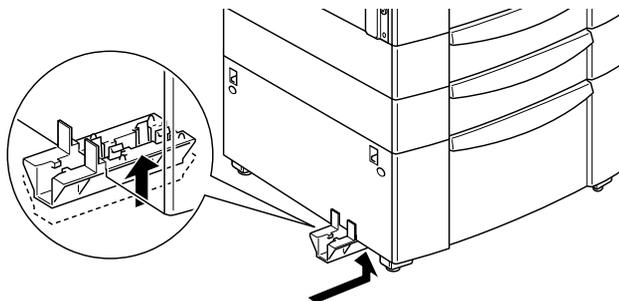
1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Remove all interface cables from the interface connectors.
4. Open the carton from the top and remove the contents. The 10-Bin Unit itself is heavy, so you will need the assistance of at least one person to lift the inner box containing the unit out of the carton, and to remove the unit from the inner box.

Installing the 10-Bin Unit

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

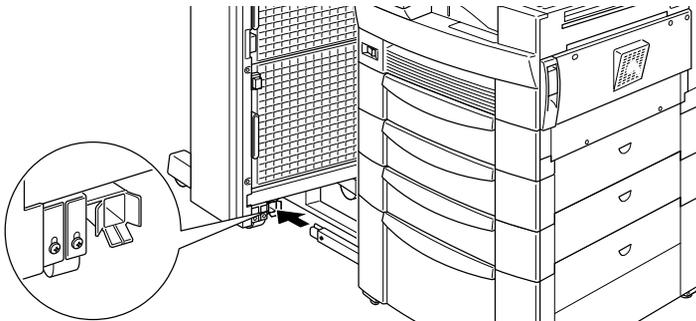
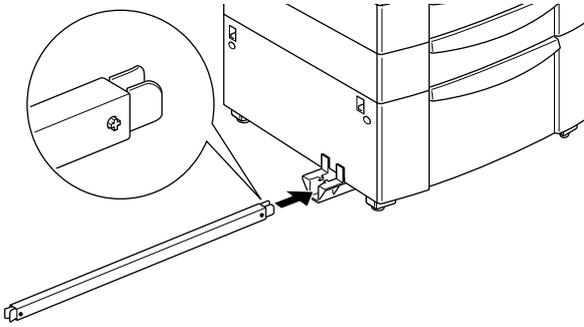


2. Attach the lower support clamp to the bottom of the printer as shown. Press up on the clamp until it clicks into place.



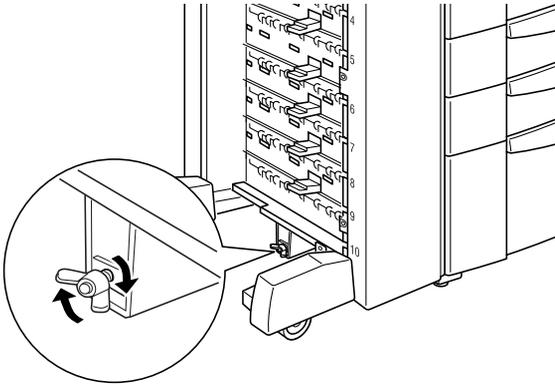
3. Open the cover on back side of the unit and remove the protective materials inside.

4. Insert one end of the lower support into the lower support clamp on the printer and the other end into the lower support clamp on the 10-Bin Unit.

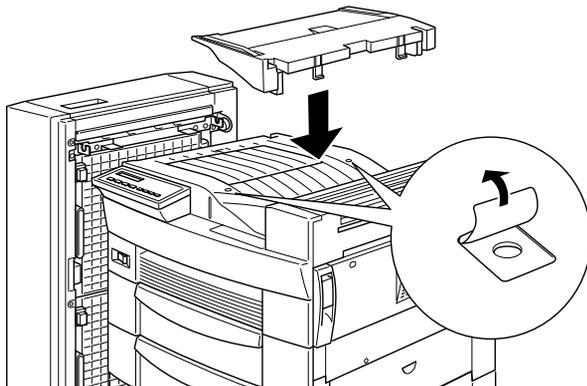


Then roll the 10-Bin Unit toward the printer until the magnets on the unit make contact with the metal plates.

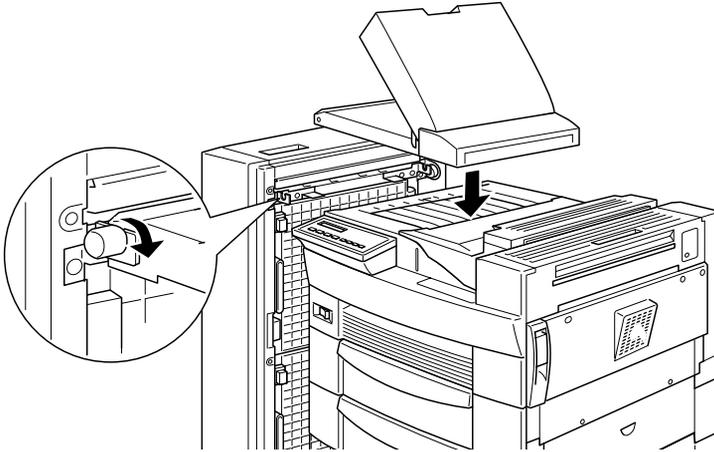
5. Tighten the screw at the bottom of the unit to secure the lower support.



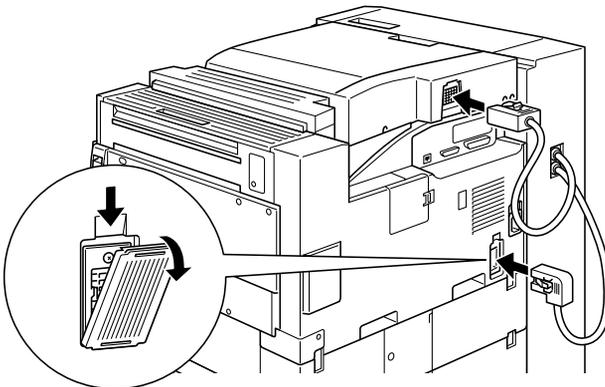
6. Remove the stickers from the holes on the Face-down Tray, then attach the lower paper guide as shown below.



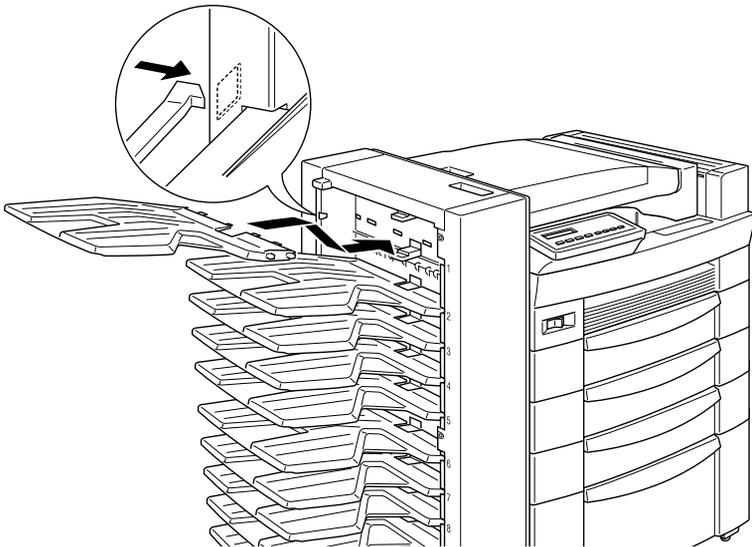
7. Open the upper paper guide cover, then insert the front of the upper paper guide into the opening on the lower paper guide and lower the guide onto the hooks on the 10-Bin Unit. Tighten the screws on both sides of the paper guide, then close the upper paper guide cover.



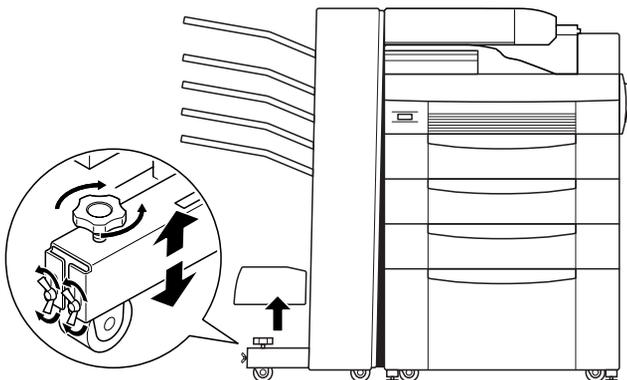
8. Attach the cables from the 10-Bin Unit to the printer and the paper guide as shown below.



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



10. 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. Then turn the top screw to adjust the height of the unit, and turn the front screws again to secure the top screw. Replace the cover.



After installing

1. Reconnect any interface cables you removed.
2. Plug the power cord into an electrical outlet.
3. 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 on line. If Multibin does not appear on the status sheet, make sure the cables connecting the 10-Bin Unit to the printer are connected securely.

Removing the 10-Bin Multi-Purpose Unit

Follow the instructions below to remove this option.

1. Turn off the printer. Then unplug the printer's power cord from the electrical outlet.
2. Remove all the trays from the unit.
3. Detach the cable from the printer and the paper guides.
4. Remove the paper guides from both the 10-Bin Unit and the printer.
5. Roll the unit away from the printer until the lower support separates from the lower support clamp at the bottom of the printer, then remove the lower support.
6. Remove the lower support clamp and metal plates from the printer.
7. Make sure the printer is turned off. Plug the power cord into an electrical outlet.
8. 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 Option menu and select 10-Bin Multi-Purpose Unit from the Option Output Trays list, then click the Multibin Mode Settings button and select the feature you want to use. 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 5-6.

This option has a total capacity of 2000 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 2000 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 2000 sheets at a time.

Memory Modules

Installing memory modules

By installing a Double In-line Memory Module (DIMM), you can increase printer memory up to 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 Double 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 length

Before installing

1. Turn off the printer.

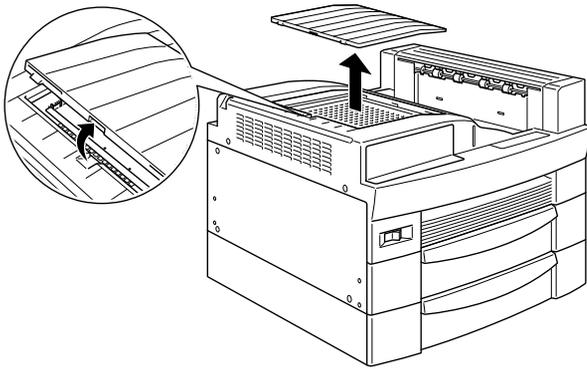


Warning:

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.

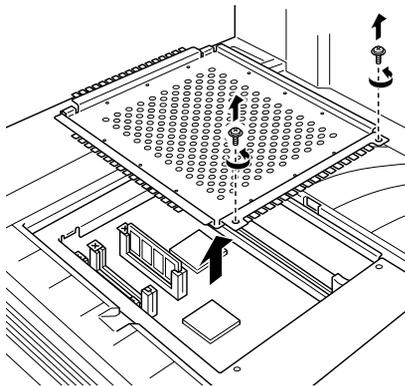
4. Remove the 5-Bin or 10-Bin Multi-Purpose Unit if it is installed. For instructions, see “Removing the 5-Bin Multi-Purpose Unit” on page 3-29 or “Removing the 10-Bin Multi-Purpose Unit” on page 3-38.
5. Open the top cover of the Face-down Tray.



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.



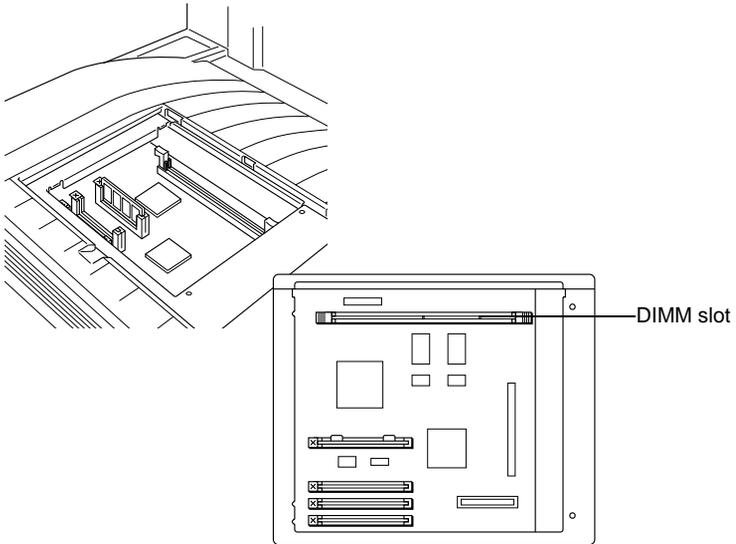


Warning:

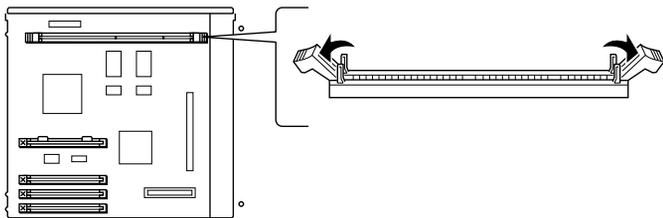
Avoid touching electrical components that are exposed after you remove the shield cover. They may be very hot if the printer has been in use.

Installing

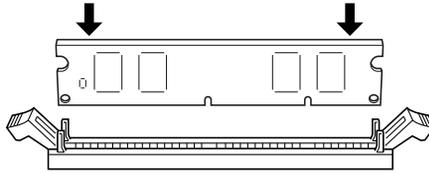
1. The DIMM slot is located as shown below.



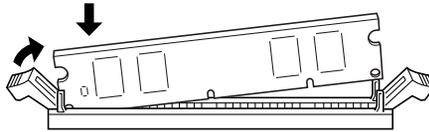
2. Pull the clips on each side of the DIMM slot outward.



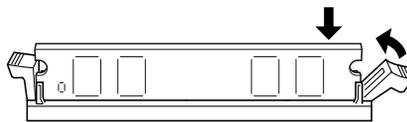
3. Hold the memory module above the DIMM slot with the following orientation, then push it down into the slot. Do not apply too much force.



4. Push the bottom right corner of the DIMM into the slot until the clip comes up.

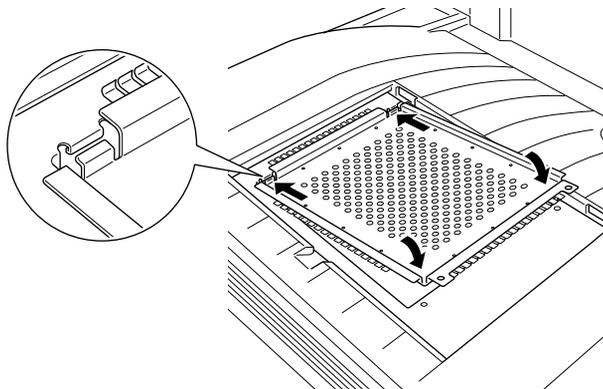


5. With your other hand, push the bottom left corner of the DIMM into the slot until the clip comes up to retain the memory module securely.

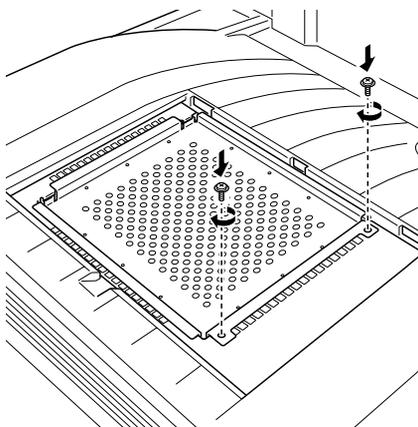


After installing

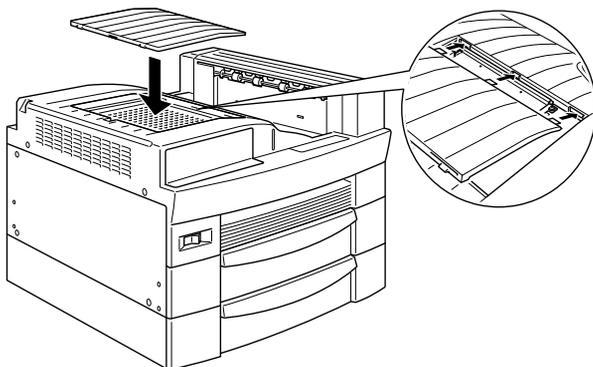
1. Return the plate to its original position. Place the two outside tabs of the plate under the edge of the opening with the inside tabs on top of the edge.



2. Push the plate down into place. Then attach the two screws that you loosened earlier.



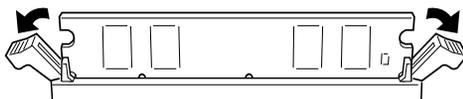
3. Gently replace the top cover until it clicks shut.



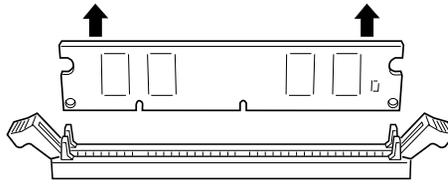
To confirm the memory module is installed correctly, print a status sheet.

Removing a memory module

1. Follow the steps in “Before installing” on page 3-41 to access the memory slot.
2. Pull the clips on each side of the DIMM slot outward to release the memory module.



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



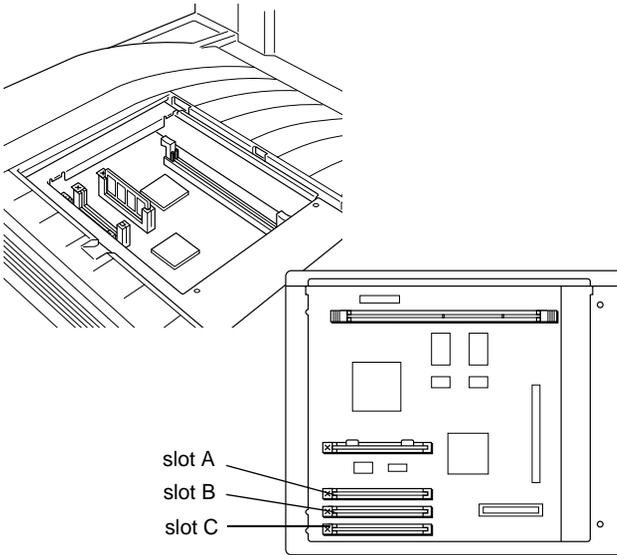
4. Follow steps 1 through 4 in “After installing” on page 3-45 to complete the procedure.

Adobe PostScript3 ROM Module

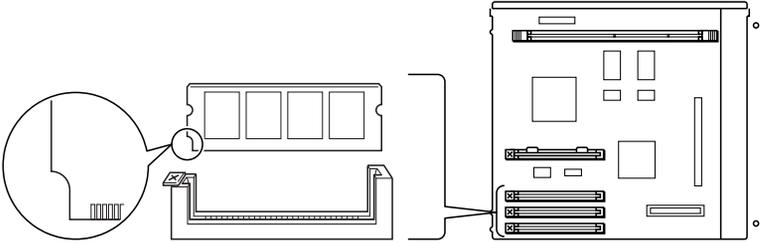
Follow the instructions below to install the Adobe PostScript3 (C832332) ROM module.

Installing the ROM module

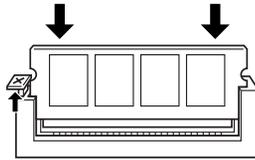
1. Follow steps 1 through 6 in “Before installing” on page 3-41.
2. Slots for ROM modules are located as shown below.



3. Hold the ROM module with the following orientation, then insert the ROM module into slot A.



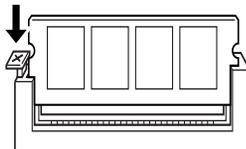
4. Push the ROM module into the slot evenly until the button comes up.



5. Follow steps 1 through 4 in “After installing” on page 3-45 to complete the procedure.

Removing the ROM module

1. Follow steps 1 through 6 in “Before installing” on page 3-41.
2. Locate the button on the side of the slot A ROM module housing. Push down the button until the module comes up.



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

4. Follow steps 1 through 4 in “After installing” on page 3-45 to complete the procedure.

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 (C823623/C823633).
- ❑ To add a serial or parallel interface to your printer, use one of the following:

32KB Serial Interface Card (C823081)

32KB Parallel Interface Card (C823102)

- ❑ To add a direct connection to an IBM mini or mainframe system, use one of the following:

Coax Interface Card [C82D45 (SCS)/C82D52 (PDS)]

Twinax Interface Card [C82D50P (SCS and IPDS)]

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

The twinax 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 twinax 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 coax 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 the steps below to install an optional interface card.

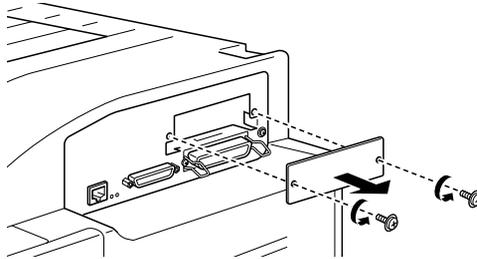
1. Turn off the printer.



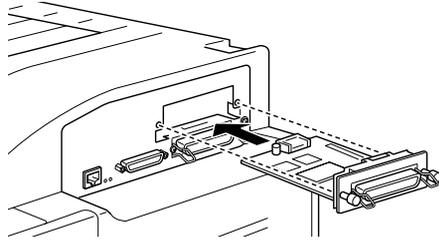
Warning:

To avoid electrical shock, do not attempt to install a card unless the printer is turned off.

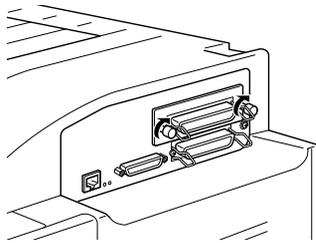
2. Unplug the printer's power cord from the electrical outlet.
3. Turn the printer so its back faces you.
4. Remove the two screws that secure the interface slot cover and remove the cover.



5. 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.



6. Secure the interface card by turning the two retaining screws.



To confirm that the interface is installed correctly, print a status sheet by pushing the Enter button on the control panel twice while the printer is on line.

Chapter 4

Handling the Imaging Cartridge

Replacing the Imaging Cartridge. 4-2

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 menus and use the Toner function to find out approximately how much toner remains in the imaging cartridge. For instructions, see Chapter 5, “SelecType Settings”.

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.

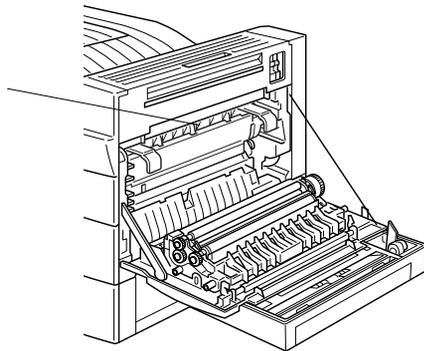
Replace the cartridge with the S051068 imaging cartridge even if the cartridge you remove has a different part number. The S051068 cartridge is specially designed for your high-quality 600-dpi printer.



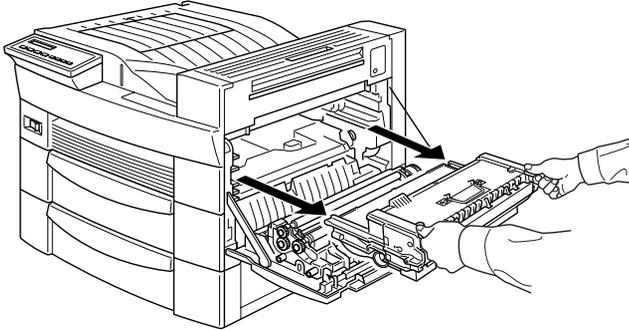
Warning:

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

CAUTION
Hot Surface Avoid Contact



1. Make sure the printer is turned on.
2. Gently open the printer cover and remove the imaging cartridge by pulling the handles on the front of the cartridge toward you.



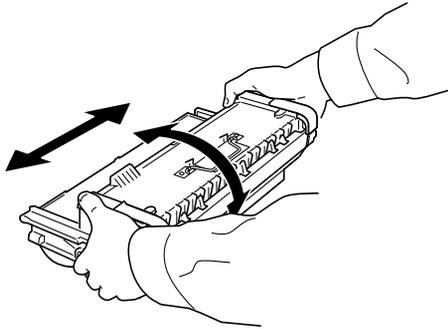
3. Dispose of the used imaging cartridge as a nonburnable item.



Warning:

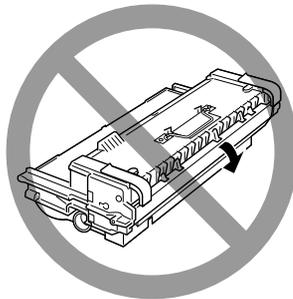
Do not dispose of used imaging cartridges in fire, as they can explode and cause injury. Dispose of them according to local regulations.

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



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.*

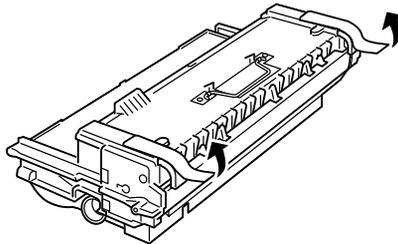


5. To release the spring-loaded carrying handles on the sides of the cartridge, hold down each handle with your hand and remove the tape, then take your hand away slowly.

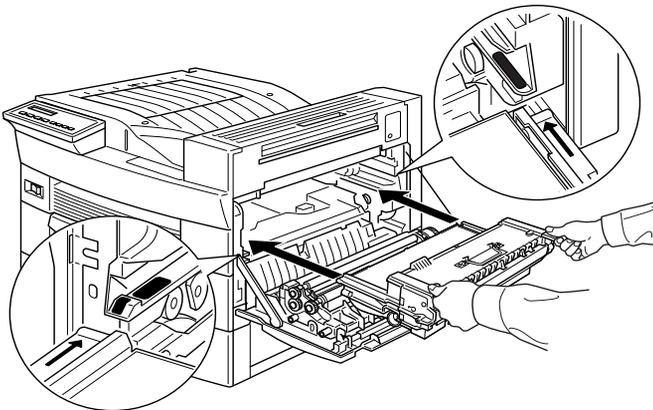


Warning:

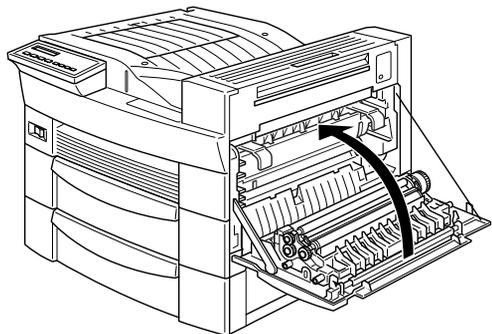
When you remove the tape, the handle may spring out quickly enough to hurt your fingers. To avoid this, hold the handle firmly while peeling off the tape.



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



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



Warning:

Do not touch the hot areas indicated on the caution labels inside cover A.



Caution:

Never transport the printer with the imaging cartridge installed.

Chapter 5

SelectType Settings

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Using SelecType

When to use SelecType

In general, use SelecType only for settings you cannot make in your 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 SelecType settings:

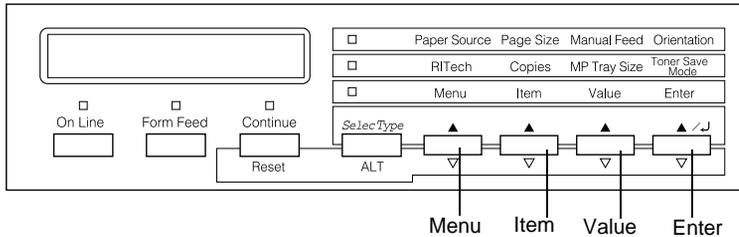
- ❑ A number of SelecType settings can be made directly using the OneTouch modes.
- ❑ To see the current SelecType settings, print a status sheet.

Note:

Several SelecType settings that cannot be made with your application software or printer driver can be made with the Remote Control Panel utility, depending on your PC's operating system. For more information, an Administrator's Guide is included on this CD to assist your network administrator.

How to make the settings

Use the buttons on the printer's control panel to enter SelecType mode. SelecType 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 1-7.

1. Press the SelecType button several times until the light above SelecType (ALT) comes on.
2. Press the Menu button to enter the SelecType 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 “SelecType menu table” on page 5-4 for a list of SelecType menus and items.

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

See “SelecType Settings” on page 5-6 for a detailed description of SelecType settings.

SelecType menu table

The following table shows the order in which SelecType 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, 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, Duplex*, Binding*, Start Page*, Offset Stacking*
Tray Menu	MP Mode, MP Tray Size, LC1 Size, LC2 Size*, LC3 Size*, MP Type, LC1 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	Interface, Time Out, Standby, Lang, Toner, Multibin*, Page Count, SelecType Init
Parallel Menu	Speed, Bi-D, Buffer Size
Serial Menu	Word Length, Baud Rate, Parity, Stop Bit, DTR, DSR, Xon/Xoff, Buffer Size

Menu	Items
Network Menu	Get IPAddress, IP Byte1, IP Byte2, IP Byte3, IP Byte4, SM Byte1, SM Byte2, SM Byte3, SM Byte4, GW Byte1, GW Byte2, GW Byte3, GW Byte4, Buffer Size
AUX Menu*	Buffer Size
LJ4 Menu	Font Source, Font Number, Pitch, Height, SymSet, Form, Source SymSet*, Dest SymSet*, CR Function, LF Function
GL2 Menu	GL Mode, Scale, Origin, Pen, End, Join, Pen0, Pen1, Pen2 to Pen6
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 option 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 sheet or font sample, then press Enter to print. There are no settings to select by pressing Value.

Status Sheet, Network Status Sheet, PS3 Status Sheet*

Prints a sheet describing the current printer features. 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 the Adobe PostScript3 option 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. 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 is 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 Adobe PostScript3 option 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 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 1-7.

Item	Values (default is 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
Duplex*	Off , On
Binding*	Long Edge , Short Edge
Start Page*	Front , Back
Offset Stacking	Off , On

* These appear only when the corresponding option is installed.

Paper Source

Specifies whether paper feeds into the printer from the MP Tray, the standard 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 2-14.

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, ESCP2, FX, or I239X mode.

Duplex

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

Binding

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

Start Page

Sets whether printing starts from the first or last page. This item is available only when the 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 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 you load 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 SelectType settings, so use your printer driver whenever you can.

Item	Values (default is 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, Bond, Recycled, Color, Transprnc, Labels
LC1 Type	Plain , Preprinted, Bond, Recycled, Color
LC2 Type*	Plain , Preprinted, Bond, Recycled, Color
LC3 Type*	Plain , Preprinted, Bond, Recycled, Color

* These appear only when the corresponding option is 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, *Invalid Size MP Tray* 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 1-7.

LC1 Size, LC2 Size, LC3 Size

Displays the paper size loaded in the standard and optional lower paper 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 paper cassettes.

Config Menu

This menu allows you to control certain printer settings, such as RITech, toner save, and print density.

Item	Values (default is 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 corresponding option is installed.

RITech

When you select On, the RITech setting is on and 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 1-7.

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 Toner Save settings 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 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 adjustment when you are using the manual feed mode.



Caution:

Be sure that the printed image does not extend beyond the edge of 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 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 Duplex Unit is installed.

Size Ignore

If you want to ignore a paper size error from the printer, 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 pages printed to date, and check the toner counter.

Item	Values (default is in bold)
Interface	Auto , Parallel, Serial, Network, AUX*
Time Out	0, 5 ... 60 ... 300 step 1
Standby	Enable , Disable
Lang	English , Français, Deutsch, ITALIANO, ESPAÑOL, SVENSKA, Dansk, Nederl., SUOMI, Português
Toner	E****F
Multibin*	Mailbox , Stacker, Sorter, Multisort
Page Count*	0 to 99999999
SelecType Init	-

* These appear only when the corresponding option is installed.

Interface

When you set to Auto, your printer can receive data automatically through all the interfaces available. When you select the name of the interface, you will receive data through your selected interface.

Time Out

Sets the length of time the printer waits when it is on line 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; it then warms up and is ready to print in about 60 seconds at rated voltage.

Lang

Specifies the language displayed on the LCD panel and 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%)

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:

- ❑ *After changing these settings, reboot the printer to make the new settings effective. To reboot the printer, press the Continue and SelecType buttons simultaneously. Alternatively, turn off the printer, then after 5 seconds, turn it back on.*

- ❑ *Rebooting the printer erases all print jobs. Make sure the On Line light is not blinking when you reboot the printer.*

Page Count

Displays the total number of sheets printed by this printer.

SelectType Init.

Erases all the SelectType settings you have changed, and resets them to the factory default settings.

Parallel Menu

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

Item	Values (default is in bold)
Speed	Fast , Normal
Bi-D	Nibble , ECP, Off
Buffer Size	Normal , Maximum, Minimum

Speed

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

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 a serial interface.

Item	Values (default is in bold)
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
Xon/Xoff	On , Off, Robust
Buffer Size	Normal, Maximum, Minimum

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.

Xon/Xoff

Use this option to set 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 is in bold)
Get IPAddress*	Panel , DHCP, 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
Buffer Size*	Normal , Maximum, Minimum

Note:

- After changing these settings, reset the printer to make the new settings effective. To reset the printer, press the Continue and SelecType buttons simultaneously. 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 blinking when you reboot the printer.*

AUX Menu

This menu allows you to control the optional interface settings.

Item	Values (default is in bold)
Buffer Size	Normal , Maximum, Minimum

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:

- After changing these settings, reset the printer to make the new settings effective. To reset the printer, press the Continue and SelecType buttons simultaneously. 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 blinking when you reboot the printer.*

LJ4 Menu

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

Item	Values (default is in bold)
Font Source	Resident , Download, ROM A, ROM B
Font Number	0 to 65535 (depending on your settings)
Pitch	0.44 ... 10.00 ... 99.99 cpi in 0.01cpi increments
Height	4.00 ... 12.00 ... 999.75 pt in 0.25 pt increments
SymSet	IBM-US , Roman-8, ECM94-1, 8859-2 ISO, 8859-9 ISO, IBM-DN, PcMultiling, PcE.Europe, PcTk437, WiAnsi, WiE.Europe, WiTurkish, DeskTop, PsText, VeInternati, VeUS, MsPublishin, Math-8, PsMath, VeMath, PiFont, Legal, UK, ANSI ASCII, Swedis2, Italian, Spanish, German, Norweg1, French2, Windows, (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, 8859-5 ISO, WiCyrillic, Bulgarian, PcUkr866, Hebrew7, 8859-8 ISO, Hebrew8, PcHe862, Arabic8, PcAr864, 8859-6 ISO, OCR A, OCR B)*
Form	5 ... 64 ... 128 lines
Source SymSet	0 ... 277 ... 3199
Dest SymSet	0 ... 277 ... 3199
CR Function	CR , CR + LF
LF Function	CR , CR + LF

()* The availability of these fonts varies depending on the country.

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 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 the default value, IBM-US.

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.

CR Function, LF Function

These functions are included for users of particular operating systems, such as Unix.

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 is in bold)
GL Mode	LJ4GL2 , GLlike
Scale	Off , A0, A1, A2, A3
Origin	Corner , Center
Pen	Pen0 , Pen1, Pen2, Pen3, Pen4, Pen5, Pen6
End	Butt , 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.



Caution:

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 software application.

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 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

These settings are available only when the optional Adobe PostScript3 ROM module is installed. For installation instructions, see “Adobe PostScript3 ROM Module” on page 3-48. See also your Adobe PostScript3 Kit documentation.

Item	Values (default is 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 ESCP2 emulation mode.

Item	Values (default is 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 * ... 111 lines
CGTable	PcUSA , Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, PcE.Europe, BpBRASCII, BpAbicomp, 8859-15 ISO, PcEur858, PcS1437, PcTurkish1, Pclcelandic, 8859-9 ISO, Mazowia, CodeMJK, PcGk437, PcGk851, PcGk869, 8859-7 ISO, PcCy855, PcCy866, Bulgarian, PcUkr866, Hebrew7, Hebrew8, PcAr864, PcHe862
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-27 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 software applications.

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 FX emulation mode.

Item	Values (default is 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* ... 111 lines
CGTable	PcUSA , Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, PcE.Europe, BpBRASCI, BpAbicomp, 8859-15 ISO, PcEur858
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-27 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 software applications.

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

I239X mode emulates IBM 2390/2391 Plus commands. For detailed information on most of the settings and parameters in the table below, refer to the previous section.

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

Item	Values (default is in bold)
Font	Courier , Prestige, Gothic, Orator, Script, Presentor, Sans Serif
Pitch	10 , 12, 15, 17, 20, 24 cpi, Prop.
Code Page	437 , 850, 860, 863, 865
T. Margin	0.30 ... 0.40 ... 1.50 inch in 0.05 inch increments
Text	1 ... 63/67* ... 111 lines
Auto CR	Off , On
Auto LF	Off , On
Alt. Graphic	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 software applications.

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. Graphic

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 6

Troubleshooting

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Introduction

This chapter provides 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 higher-quality paper—one that is not too thin or rough.
- ❑ Fan the stack of paper and then tap its edges to align it before you load it.
- ❑ Be sure that you do not load too much paper in the tray.
- ❑ Be sure to adjust the paper guides so that the paper can slide in and out freely.
- ❑ Never let more than 500 sheets accumulate in the output tray on top of the printer.
- ❑ Try turning over the stack of paper in the tray. Most packages of paper indicate the top side of the paper with an arrow at the side of the package.

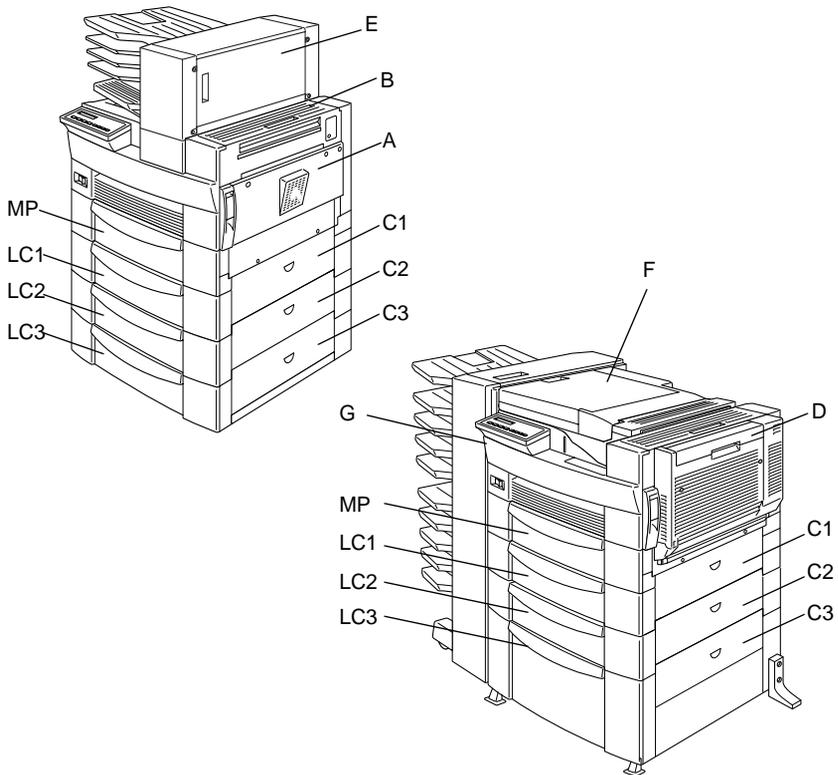
Clearing paper jams

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** (Lower Cassette 1) or **A** (cover A). See the messages in this section 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.



Jam LC2, Jam LC3

This message indicates that paper has jammed in one of the 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.

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. Close 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

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

1. Gently open cover A.



Caution:

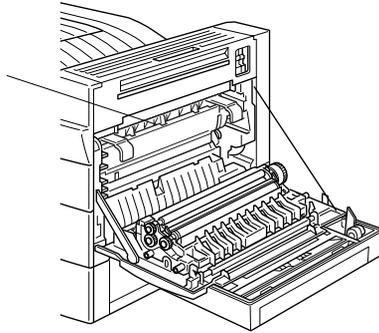
Because the toner on the paper inside the printer may not have been fixed on the page, toner may come off on your hands when you remove the paper. If you spill toner on your clothing, rinse it off with cold water. Using hot water may leave a permanent stain.



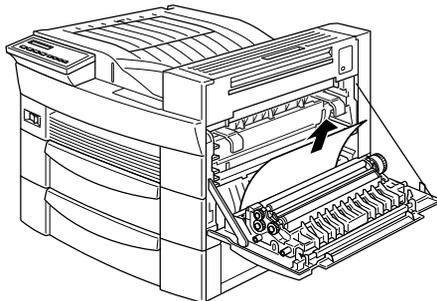
Warning:

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

CAUTION
Hot Surface Avoid Contact

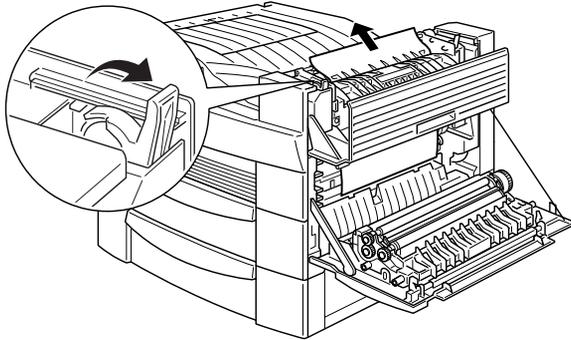


2. Remove any paper you find jammed inside the printer.



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 A shown below. Push the lever in and up repeatedly 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.

Jam C1, Jam C2, Jam C3

This message indicates that there may be a paper jam inside cover C1, C2, or C3 on the right side of the Lower Cassettes.

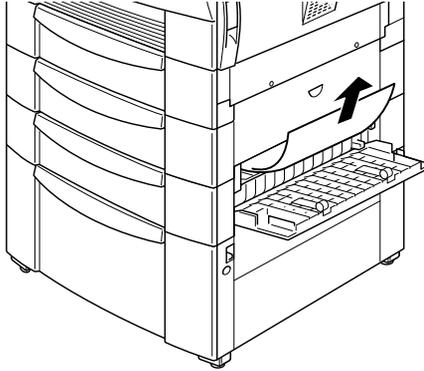
1. Open the cover indicated on the LCD panel. The names of the cassettes are indicated on each cassette.



Caution:

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.

Jam D

This message indicates that there may be a paper jam inside cover D on the Duplex Unit.

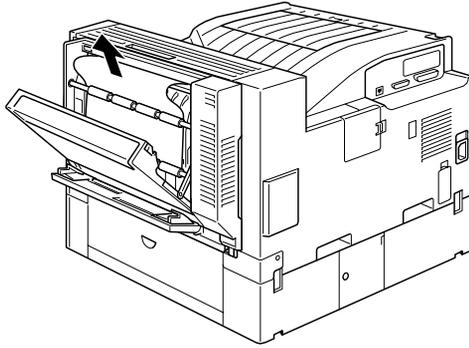
1. Open cover D.



Caution:

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, 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.

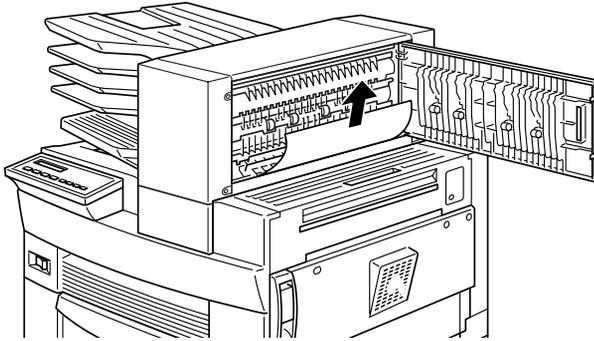
1. Open cover E.



Caution:

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, the jammed page's print data is automatically reprinted.

Jam 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.

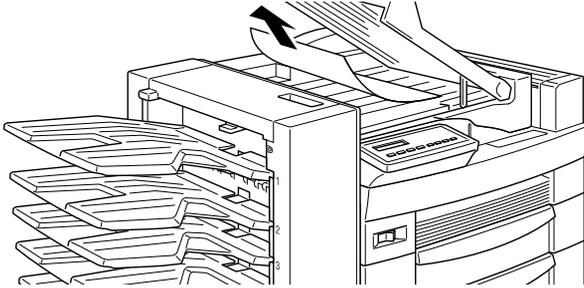
1. Open cover F.



Caution:

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, 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.

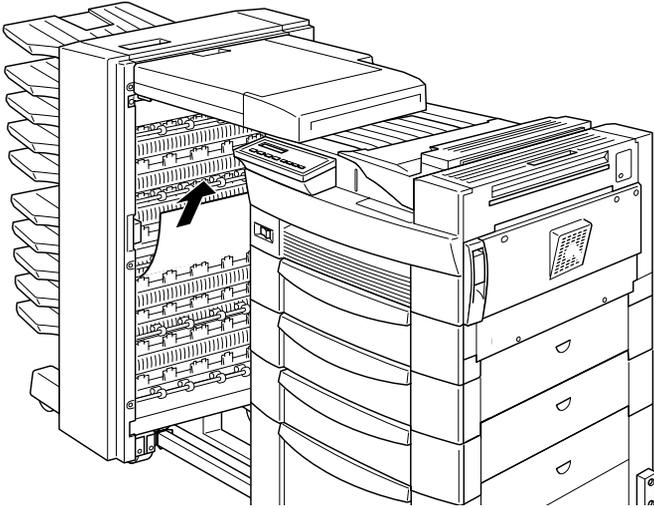
1. Move the 10-Bin Multi-Purpose Unit away from the printer.
2. Open cover G on the back of the 10-Bin Multi-Purpose Unit.



Caution:

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.

The LCD panel stays blank 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 your *Getting Ready!* 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 on the 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 4-2.

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. See Appendix D, "Working with Fonts" for more information.

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 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 printer driver or 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 person.

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 software program 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 3-41 for information on adding memory modules.

SelecType does not function as expected

Settings made in the printer driver override SelecType settings. Use your printer drive to make settings whenever possible. See "When to use SelecType" on page 5-2 for more information.

Your settings may have been changed by your software program. Perform a factory reset (initialize) with the `SelecType Init` function on the SelecType Setup Menu. For more information, see Chapter 5, "SelecType Settings".

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 enable 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 on the printer driver's Panel menu. (You can also change this setting from the printer's control panel using SelecType. For details, see Chapter 5, "SelecType Settings".)

Clean the paper path inside the printer with a clean, soft, and 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 4-2.

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 4-2.

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 4-2. 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, and 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 4-2.

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

If after checking the Toner option in the SelecType Setup Menu, 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 4-2.

Check that the imaging cartridge is installed as described in “Replacing the Imaging Cartridge” on page 4-2.

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

Printed image is light or faint

Darken the Density setting using the printer driver’s Panel menu or the SelecType Config Menu.

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 4-2.

The Toner Save mode may be on. Turn off the Toner Save mode by using the printer driver’s Panel menu, or by using the control panel’s OneTouch mode 2 or SelecType Config Menu.

Image is too dark

The Density setting may be incorrect. Change the Density setting on the printer driver’s Panel menu. (You can also change this setting from the printer’s control panel using SelecType. For details, see “SelecType Settings” on page 5-1.)

If the problem persists, replace the imaging cartridge as described in “Replacing the Imaging Cartridge” on page 4-2.

Non-printed side of the page is dirty

Toner may have spilled in 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 4-2 for more information.



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 an 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 cassette. If so, load paper in the cassette.

Make sure that the optional cassette unit is properly installed as described in Chapter 3, "Handling Options".

Make sure you have not tried to load a cassette with too many sheets of paper. The Lower Cassette Unit can hold a maximum of 500 sheets and the Large Capacity Paper Unit can hold 2500 sheets of 75g/m² 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's or SelecType may need to be changed.

You may not have enough memory installed. If you are printing at 600 dpi, 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 Duplex Print Unit on the Option menu, then select Duplex Print on the Layout menu. 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, or C5; 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 ALT and Reset at the same time.

Check Duplex-P Size

This message appears when the paper you loaded differs from the paper size selected on the printer driver's Basic Settings menu or SelecType. Load the correct paper size, or change the paper size setting, then open the Duplex Unit cover and remove the paper. The printer resumes printing.

Check Paper Size

The paper size setting on the printer driver's Basic Settings menu, or in SelecType, 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 on the printer driver's Basic Settings menu, 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 print jobs or add more memory in your 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.



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 4-2.

Cover C1, C2, C3 Open

The cover on the right side of the Lower Cassette, an optional 500-Sheet Lower Cassette Unit, or Large Capacity Paper Unit is open. Pull the latch on the cover indicated by the number 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 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 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 inserted 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 be no longer 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 from slot A.

Format Error ROM B

A ROM module which is not formatted is inserted 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 be no longer 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 from slot B.

Form Feed

When the printer is off line 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.

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 Device Resolution to Low (300 dpi) and Page Protect to Auto in the driver.

Insert Imaging Crtg

The imaging cartridge is not correctly installed. See "Replacing the Imaging Cartridge" on page 4-2 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 Option

An option not supported by this printer is installed, or a supported option is installed incorrectly. See “Printer Options” on page 3-2 to make sure you are using options made for this printer or to reinstall the options.

Invalid PS3

A PostScript3 ROM module not supported by this printer is installed, or a supported module is installed incorrectly. See “Adobe PostScript3 ROM Module” on page 3-48 to make sure you are using the correct PostScript3 module, or to reinstall 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 PostScript3 ROM Module” on page 3-48 to make sure you are using a suitable ROM for this printer or to reinstall the ROM.

Invalid ROM B

The ROM module in slot B is not supported by this printer, or a supported module is installed incorrectly. See “Adobe PostScript3 ROM Module” on page 3-48 to make sure you are using a suitable ROM for this printer or to reinstall the ROM.

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 On Line.

If you do not want to print this job in manual mode, press Continue. The printer feeds paper according to the Paper Source setting.

For detailed information on the Manual Feed mode, see “Printing one sheet at a time” on page 2-14.

Mem Overflow

The printer has insufficient memory available for the current task. To correct the error, press Continue. If the message remains, press Reset.

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 message can be cleared in the Remote Control Panel utility by clearing the Panel Lock check box on the Panel menu. To change this setting, consult your network administrator.

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 3-32, and 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 DIMM memory module. See “Memory Modules” on page 3-41.

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.

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 “Daily Printing Operations” on page 2-4 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.

Ready

The printer is ready to receive data and print.

Remove Output Paper

This messages 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 ALT and Reset 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 Req xyyy

A controller error or a print engine error has been detected. Write down the error number listed on the LCD panel (xyyy) 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 person.

Standby

The printer is in its low power state; however, it is still on line 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 4-2.

Press Continue to print one more page.

Warming Up

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

Write Error ROM A

The ROM is not installed in slot A, or cannot be written to. It is also possible that writing to the ROM in slot A was not completed.

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

Write Error ROM P

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 on the printer, 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 into the ROM in slot A.

Writing ROM P

The printer is writing data in the ROM in 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.

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

Reset the settings for the current emulation mode and interface by holding down ALT and Reset until `Reset` appears on the LCD panel. You can reset the printer anytime a printout is not being sent on the interface you are using.

Reset all

Reset the settings for all emulation modes and interfaces by holding down ALT and Reset 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.

Note:

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

Chapter 7

Maintenance and Transportation

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Cleaning the Printer

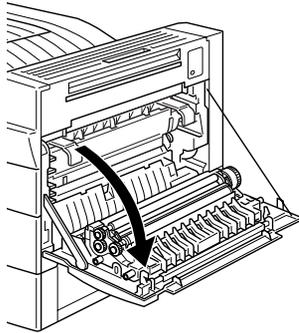
The printer needs only minimal cleaning. If you notice a decline in print quality, clean the inside of the printer as described below.

You should also clean the outside of the printer every few months. These procedures are described later in this section.

Cleaning inside the printer

Follow the steps below to clean the inside of the printer.

1. Make sure the printer is turned off.
2. Gently open cover A.

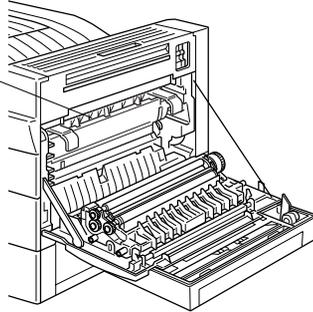




Warning:

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.



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 as follows.

1. Turn off the printer.
2. Open cover A and remove the imaging cartridge.
3. Unplug the power cord from the electrical outlet; then disconnect any interface cables from the printer.
4. Remove all installed options. See Chapter 3, “Handling Options”.
5. Attach the protective materials to the printer; then repack the printer in its original box.



Caution:

Do not expose the imaging cartridge to light any longer than necessary.

Appendix A

Technical Specifications

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Paper Specifications

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, letter head

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/m ²
Card stock	90 to 190 g/m ²

Paper size

Paper	A3 (297 mm × 420 mm) A4 (210 mm × 297 mm) A5 (148 mm × 210 mm) Ledger (11 × 17 inches) Letter (8.5 × 11 inches) Legal (8.5 × 14 inches) Government Letter (8.5 × 10.5 inches) Government Legal (8.5 × 13 inches) Executive (7.25 × 10.5 inches) F4 (210 mm × 330 mm) Custom (100 × 148 mm to 297.4 × 431.8 mm)
Envelopes	Monarch (3 7/8 × 7 1/2 inches) Commercial 10 (4 1/8 × 9 1/2 inches) DL (110 mm × 220 mm) C5 (162 mm × 229 mm) International B5 (176 mm × 250 mm)



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:

Printable area varies according to the emulation mode.

Printer

General

Printing method	Laser beam scanning and dry electrophotographic process
Resolution	600 × 600 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, letter head
Lower Cassette	Plain paper, such as copier paper and recycled paper
Paper output	Face down
Paper output capacity (75 g/m ² paper)	500 sheets on the Face-down Tray

Internal emulation	HP LaserJet4 emulation (LJ4 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	45 scalable fonts, and one bitmap font (in LJ4 mode)
RAM	16 MB, expandable up to 256 MB

Environmental

Temperature	operation: 10 to 35°C storage: 0 to 35°C
Humidity	operation: 15 to 85% RH storage: 15 to 85% RH
Altitude	2,500 meters maximum

Mechanical

Dimensions and weight	
Height	428 mm
Width	535 mm
Depth	559 mm in depth
Weight	Approx. 30 kg 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 afterwards 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 or not. Afterwards, 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. Afterwards, 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 1284active (nSelectIn) is set high. Afterwards, 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. Afterwards, 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 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
Paper feed	Automatic feed delivery system
Cassette capacity	Up to 500 sheets (75 g/m ² paper)
Feeding speed	11 seconds or less for the first A4 or Letter size sheet; 38 pages per minute for subsequent sheets
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
Width	535 mm
Depth	544 mm
Weight	7 kg

Large Capacity Paper Unit

Paper size	A4 or 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 2500 sheets (75 g/m ² or 20 lb paper)
Feeding speed	12 seconds or less for the first A4 sheet; 37 pages per minute for subsequent A4 sheets
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
Paper weight	60 to 90 g/m ²
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
Width	55 mm
Depth	415 mm
Weight	2 kg

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 only Bin 1)

Paper weight

60 to 90 g/m²

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
Width	481 mm
Depth	543 mm
Weight	12.2 kg

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
Output capacity	
Bin 1 to Bin 10	200 sheets
Total	2000
Power supply	DC 5V and 24V supplied by the printer
Dimensions and weight	
Height	863 mm
Width	480 mm
Depth	512 mm
Weight	29.5 kg

Imaging Cartridge

Storage temperature	0 to 35°C
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

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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:

Normally, your software handles fonts and symbols, so you probably never need to adjust the printer's settings. 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	Symbol set ID for ESC (	Available typefaces (see next page)
Roman-8* (includes another 19 sets)	8U	43 typefaces + bitmap**
Roman Extension	0E	bitmap
ECM94-1	0N	43 typefaces + bitmap
Legal	1U	43 typefaces + bitmap
8859-2 ISO	2N	43 typefaces + bitmap
PsMath	5M	35 typefaces
8859-9 ISO	5N	43 typefaces + bitmap
WiTurkish	5T	43 typefaces
MsPublishing	6J	35 typefaces
VeMath	6M	35 typefaces
DeskTop	7J	43 typefaces
Math-8	8M	35 typefaces
WiE.Europe	9E	43 typefaces
PcTk437	9T	43 typefaces
Windows	9U	43 typefaces
PsText	10J	43 typefaces
IBM-US	10U	43 typefaces + bitmap
IBM-DN	11U	43 typefaces + bitmap
McText	12J	43 typefaces
PcMultilingual	12U	43 typefaces + bitmap
VeInternational	13J	43 typefaces
VeUS	14J	43 typefaces
PiFont	15U	35 typefaces
PcE.Europe	17U	43 typefaces
Symbol	19M	Symbol Set SWA
WiAnsi	19U	43 typefaces
Wingdings	579L	More WingBats SWM
OCR A	0O	OCR A
OCR B	1O	OCR B
OCR B Extension	3Q	OCR B
Code 3-9	0Y	Code 3-9 (2 types)
EAN/UPC	8Y	EAN/UPC (2 types)

* The other 19 sets are the following: Norweg1, Italian, Swedish, ANSI ASCII, UK, French, German, Spanish, Norweg2, French2, HP German, JIS ASCII, HP Spanish, Chinese, IRV, Swedis2, Portuguese, IBM Portuguese, and IBM Spanish. These are partial variations of the Roman-8 set.

** "Bitmap" means the "Line Printer" typeface.

The 35 and 43 typefaces refer to those shown in the table below:

	Typefaces	
	35	43
Flareserif 821 SWC Incised 901 SWC Clarendon Condensed SWC Ribbon 131 SWC Original Garamond SWC Audrey Two SWC Zapf Humanist 601 SWC Swiss 742 Condensed SWC	available available available available available available available available	available available available available available available available available
Swiss 721 SWM Dutch 801 SWM	not available not available	available available
Courier SWC Letter Gothic SWC Dutch 801 SWC Swiss 742 SWC	available available available available	available available available available

Roman-8 (8U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	'	p				-	â	Å	Á	Þ
1		!	"	1	A	Q	a	q			À	Ý	ê	î	Ã	þ
2				2	B	R	b	r			Â	ÿ	ô	ø	ä	·
3			#	3	C	S	c	s			Ê	°	û	å	ð	μ
4			\$	4	D	T	d	t			È	ç	á	é	í	¼
5			%	5	E	U	e	u			Ë	ç	é	í	Í	¾
6			&	6	F	V	f	v			Ï	Ñ	ó	ø	ì	—
7			'	7	G	W	g	w			Ì	ñ	ú	æ	Ó	¼
8			(	8	H	X	h	x			í	ı	à	Ä	Ò	½
9			)	9	I	Y	i	y			î	ı	è	İ	Õ	°
A			*	:	J	Z	j	z			ı	ı	ò	Ö	õ	°
B			+	:	K	[	k	{			ı	ı	ò	Ü	š	«
C			,	<	L	\	l	|			ı	ı	à	É	ş	»
D			.	=	M	]	m	}			Û	ş	è	ı	Ú	»
E			.	>	N	^	n	~			Ü	ş	ö	ß	ÿ	±
F			/	?	O	_	o	☒			£	e	ü	Ô	ÿ	

Roman Extension (0E)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			–	À	Á	Â	Ã	Ä								
1		À	Á	Â	Ã	Ä	Å	Æ								
2			Ë	Ì	Í	Î	Ï	Ð								
3				Ñ	Ò	Ó	Ô	Õ								
4			È	É	Ê	Ë	Ì	Í								
5				Ń	Ō	Ŏ	Ȯ	ȯ								
6			Ī	Ĭ	Ĵ	Ķ	Ļ	Ņ								
7				ı	à	á	â	ã								
8			ˆ	˜	˘	˙	˚	¸								
9				˚	˛	˜	˘	˙								
A			˘	˙	˚	¸	˙	˚								
B			˙	˚	¸	˙	˚	¸								
C			˚	¸	˙	˚	¸	˙								
D			˙	˚	¸	˙	˚	¸								
E			˚	¸	˙	˚	¸	˙								
F			¸	˙	˚	¸	˙	˚								

ECM94-1 (0N)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			0	@	P	`	p					°	À	Ð	à	ð
1			!	1	A	Q	a	q			ı	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r			ç	²	Â	Ò	â	ò
3			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4			\$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
6			&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w			§	·	Ç	×	ç	÷
8			(	8	H	X	h	x			¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y			©	º	É	Ù	é	ù
A			*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{			«	»	Ë	Û	ë	Û
C			,	<	L	\	l	|			¬	¼	Ì	Ü	ì	ü
D			-	=	M	]	m	}			–	½	Í	Ý	í	ý
E			.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F			/	?	O	_	o	~			™	¿	Ï	ß	ï	ÿ

Legal (1U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	°	p								
1		!	1	A	Q	a	q									
2		"	2	B	R	b	r									
3		#	3	C	S	c	s									
4		\$	4	D	T	d	t									
5		%	5	E	U	e	u									
6		&	6	F	V	f	v									
7		'	7	G	W	g	w									
8		(	8	H	X	h	x									
9		)	9	I	Y	i	y									
A		*	:	J	Z	j	z									
B		+	;	K	[	k	§									
C		,	=	L	®	l	¶									
D		-	=	M	]	m	†									
E		.	€	N	©	n	™									
F		/	?	O	_	o	☒									

8859-2 ISO (2N)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	Ř	Ď	ř	ď
1		!	1	A	Q	a	q				À	ą	Á	Ń	á	ń
2		"	2	B	R	b	r				Ā	Ħ	Ă	Ń	â	ň
3		#	3	C	S	c	s				Ł	ł	Ä	Ó	ã	ó
4		\$	4	D	T	d	t				ł	ł	Ä	Ô	ä	ô
5		%	5	E	U	e	u				Ł	ł	Ć	Ö	é	ö
6		&	6	F	V	f	v				Š	ś	Č	Ő	í	ő
7		'	7	G	W	g	w				Š	ś	Č	×	ç	÷
8		(	8	H	X	h	x				Š	ś	Č	Ř	č	ř
9		)	9	I	Y	i	y				Š	ś	É	Ů	é	ů
A		*	:	J	Z	j	z				Š	ś	É	Ú	ę	ú
B		+	;	K	[	k	{				Š	ś	È	Ů	ę	ű
C		,	<	L	\	l	}				Ž	ž	È	Ů	ę	ű
D		-	=	M	]	m	}				Ž	ž	È	Ů	ę	ű
E		.	>	N	^	n	-				Ž	ž	È	Ů	ę	ű
F		/	?	O	_	o	☒				Ž	ž	È	Ů	ę	ű

PsMath (5M)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	≅	Π	—	π				°	∞	∠	◇	
1			!	1	A	Θ	α	θ			Υ	±	ℑ	∇	⟨	⟩
2			√	2	B	P	β	ρ			·	″	℔	®	®	ƒ
3			#	3	X	Σ	χ	σ			≤	≥	⊗	©	©	ƒ
4			∃	4	Δ	T	δ	τ			/	×	⊕	™	™	ƒ
5			%	5	E	Y	ε	ν			∞	α	⊗	√	Σ	ƒ
6			&	6	Φ	ς	φ	ω			f	∂	⊗	∩	∑	ƒ
7			∃	7	Γ	Ω	γ	ω			♣	•	∩	·	ƒ	ƒ
8			(	8	H	Ξ	η	ξ			♦	÷	∩	∩	ƒ	ƒ
9			)	9	I	Ψ	ι	ψ			♥	≠	∩	∩	ƒ	ƒ
A			*	:	∂	Z	φ	ζ			♠	≡	∩	∩	ƒ	ƒ
B			+	:	K	|	κ	λ			↕	≈	∩	∩	ƒ	ƒ
C			,	<	Λ	|	λ	λ			↑	∴	∩	∩	ƒ	ƒ
D			.	>	M	|	μ	ν			↑	—	∩	∩	ƒ	ƒ
E			-	=	N	|	ν	ν			↑	—	∩	∩	ƒ	ƒ
F			/	?	O	|	o	o			↓	↓	∩	∩	ƒ	ƒ

8859-9 ISO (5N)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ë	à	ğ
1			!	1	A	Q	a	q			ı	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r			ı	²	Â	Ò	â	ò
3			#	3	C	S	c	s			ı	³	Ã	Ó	ã	ó
4			\$	4	D	T	d	t			ı	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u			ı	µ	Å	Õ	å	õ
6			&	6	F	V	f	v			ı	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w			ı	§	Ç	×	ç	÷
8			(	8	H	X	h	x			ı	¨	È	Ø	è	ø
9			)	9	I	Y	i	y			ı	°	É	Ù	é	ù
A			*	:	J	Z	j	z			ı	ª	Ê	Ú	ê	ú
B			+	:	K	|	k	{			ı	«	Ë	Û	ë	û
C			,	<	L	|	l	|			ı	»	Ì	Ü	ì	ü
D			.	=	M	|	m	|			ı	¼	Í	ı	ı	ı
E			-	>	N	|	n	|			ı	½	Î	ı	ı	ı
F			/	?	O	|	o	o			ı	¾	Ï	ı	ı	ı

WiTurkish (5T)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ğ	à	ğ
1			!	1	A	Q	a	q				±	Á	Ñ	á	ñ
2			"	2	B	R	b	r	,	'		²	Â	Ò	â	ò
3			#	3	C	S	c	s	f	“	£	³	Ã	Ó	ã	ó
4			\$	4	D	T	d	t	”	”	¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u	…	•	¥	µ	Å	Õ	å	õ
6			&	6	F	V	f	v	†	–	¶	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w	‡	–	§	·	Ç	×	ç	÷
8			(	8	H	X	h	x	ˆ	–	¨	˙	È	Ø	è	ø
9			)	9	I	Y	i	y	‰	™	©	˚	É	Ù	é	ú
A			*	:	J	Z	j	z	‰	‰	ª	°	Ê	Ú	ê	ù
B			+	;	K	[	k	{	<		«	»	Ë	Û	ë	û
C			,	<	L	\	l	|	œ		¬	-	Ì	Ü	ì	ü
D			-	=	M	]	m	}			-	-	Í	İ	ı	
E			.	>	N	^	n	~			®	-	Î	İ	ş	
F			/	?	O	_	o	☒	Ÿ	Ÿ	–	ı	Ï	İ	ş	ÿ

MsPublishing (6J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0					²			‘				°				Ω
1			¹								’	•	˘	˙		
2			”		℞						”	●	˘	˙		
3			³		Š	%	š				^	●	˘	˙		
4			⁴		™						~	○	˘	˙		
5			⁵									○	˘	˙		
6			⁶									○	˘	˙		ı
7			⁷									○	˘	˙	ı	ı
8			⁸									■	˘	˙	ı	ı
9			⁹			Ÿ					fi	■	˘	˙	ı	ı
A			¹		Ž		ž				fi	□	˘	˙		
B			²								ff	□	˘	˙		
C			³				ℓ				ff	□	˘	˙		
D			⁴	”	–						ff	‰	˘	˙		
E			⁵	–	–	°		“		Pt	<	◆	˘	˙		
F			⁶	/	œ	=	œ			f	>	◇	˘	˙	˘	˙

Math-8 (8M)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	∴	Π	∴	π				—	⊕	Å	[]
1			√	1	A	P	α	ρ			↑	∇	⊙	⊥	[]
2			~	2	B	Σ	β	σ			→	∃	⊗	⊥	[]
3			°	3	Γ	T	γ	τ			↓	⊖	⊖	⊥	}	}
4			∞	4	Δ	Υ	δ	ν			←	⊥	⊗	⊗	}	}
5			÷	5	E	Φ	ε	φ			↕	U	∧	∫	[]
6			∝	6	Z	X	ξ	χ			⇒	∩	∨	∫	⊕]
7			.	7	H	Ψ	η	ψ			⇔	∩	∩	∫	⊕]
8			(	8	Θ	Ω	θ	ω			⇔	∩	∩	∫	⊕]
9			)	9	I	∇	ι	∂			↕	∩	∩	∫	⊕]
A			x	e	K	∂	κ	φ			↕	∩	∩	∫	⊕]
B			+	ε	Λ	ς	λ	ω			↕	∩	∩	∫	⊕]
C			,	<	M	≤	μ	≈			↕	∩	∩	∫	⊕]
D			-	=	N	≠	ν	≡			↕	∩	∩	∫	⊕]
E			.	>	E	≥	ξ	≠			↕	∩	∩	∫	⊕]
F			/	≈	O	—	o	☒			↕	∩	∩	∫	⊕]

WiE.Europe (9E)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	Á	Đ	í	đ
1			!	1	A	Q	a	q			´	±	Â	Ñ	á	ñ
2			"	2	B	R	b	r			˘	±	Ã	Ñ	â	ñ
3			#	3	C	S	c	s	,	“	Ł	ł	Ä	Ö	ã	ö
4			\$	4	D	T	d	t	„	”	ł	ł	Å	Ö	ä	ö
5			%	5	E	U	e	u	…	•	Å	μ	Ł	Ö	í	ó
6			&	6	F	V	f	v	†	—	ł	¶	Ć	Ö	ć	ö
7			'	7	G	W	g	w	‡	—	ł	¶	Ç	×	ç	÷
8			(	8	H	X	h	x	%	™	ł	¶	Ç	×	ç	÷
9			)	9	I	Y	i	y	%	™	ł	¶	Ç	×	ç	÷
A			*	:	J	Z	j	z	Š	š	Š	š	É	Û	é	ú
B			+	;	K	[	k	{	Š	š	Š	š	É	Û	é	ú
C			,	<	L	\	l	|	Š	š	Š	š	É	Û	é	ú
D			-	=	M	]	m	}	Š	š	Š	š	É	Û	é	ú
E			.	>	N	^	n	~	Š	š	Š	š	É	Û	é	ú
F			/	?	O	_	o	~	Š	š	Š	š	É	Û	é	ú

PcTk437 (9T)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		▶		0	@	P	`	p	Ç	È	á	⋮	⌈	⌋	α	≡
1	☉	◀	!	1	A	Q	a	q	ü	æ	í	⊗	⌈	⌋	β	±
2	☀	↕	!"	2	B	R	b	r	é	Æ	ó	⊗	⌈	⌋	Γ	∓
3	♥	!!	#	3	C	S	c	s	â	ô	ú	⊗	⌈	⌋	π	≤
4	♦	¶	\$	4	D	T	d	t	ä	ö	ñ	⊗	⌈	⌋	Σ	∫
5	♣	§	%	5	E	U	e	u	å	õ	ñ	⊗	⌈	⌋	σ	∫
6	♠	▬	&	6	F	V	f	v	ä	ù	Û	⊗	⌈	⌋	μ	∫
7	●	↕	'	7	G	W	g	w	ç	ù	Û	⊗	⌈	⌋	τ	≈
8	■	↑	(	8	H	X	h	x	ê	ï	Ö	⊗	⌈	⌋	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	ï	Ö	⊗	⌈	⌋	Θ	·
A	◼	→	*	:	J	Z	j	z	è	Û	Û	⊗	⌈	⌋	Ω	·
B	♂	↑	+	;	K	[	k	{	ì	¼	¼	⊗	⌈	⌋	δ	√
C	♀	⌈	,	<	L	\	l	|	í	¼	¼	⊗	⌈	⌋	∞	²
D	♁	↕	-	=	M	]	m	}	î	½	½	⊗	⌈	⌋	φ	ε
E	♂	↑	.	>	N	^	n	~	ï	¾	¾	⊗	⌈	⌋	ϕ	ε
F	♁	↓	/	?	O	_	o	⏏	ÿ	¾	¾	⊗	⌈	⌋	ϕ	ε

Windows (9U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ð	à	ð
1				1	A	Q	a	q				±	Á	Ñ	á	ñ
2			!	2	B	R	b	r				²	Â	Ò	â	ò
3			!"	3	C	S	c	s				³	Ã	Ó	ã	ó
4			#	4	D	T	d	t				´	Ä	Ô	ä	ô
5			\$	5	E	U	e	u				µ	Å	Õ	å	õ
6			%	6	F	V	f	v				¶	Æ	Ö	æ	ö
7			&	7	G	W	g	w				§	Ç	×	ç	÷
8			'	8	H	X	h	x				¨	È	Ø	è	ø
9			(	9	I	Y	i	y				©	É	Ù	é	ù
A			)	:	J	Z	j	z				ª	Ê	Ú	ê	ú
B			*	;	K	[	k	{				«	Ë	Û	ë	û
C			+	<	L	\	l	|				»	Ì	Ü	ì	ü
D			,	=	M	]	m	}				¼	Í	Ý	í	ý
E			-	>	N	^	n	~				½	Î	Ë	î	Ë
F			/	?	O	_	o	⏏				¾	Ï	Ë	ï	Ë

PsText (10J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			0	@	P	`	p							—		
1		!	1	A	Q	a	q	r			i	-	^		Æ	æ
2		"	2	B	R	b	r	s			e	+	~			
3		#	3	C	S	c	s	t			£	‡	·		°	
4		\$	4	D	T	d	t	u			/	•	·			ı
5		%	5	E	U	e	u	v			¥	¶	·			
6		&	6	F	V	f	v	w			ƒ	¶	·			
7		'	7	G	W	g	w	x			§	•	·			
8		(	8	H	X	h	x	y			¤	,	·		Ł	ł
9		)	9	I	Y	i	y	z			'	·	·		Ø	ø
A		*	:	J	Z	j	z				“	”	·		Œ	œ
B		+	:	K	[	k	{	}			«	»	·		°	ß
C		,	<	L	\	l	|	}			<	>	·			
D		-	=	M	]	m	|	}			>	<	·			
E		.	>	N	^	n	~				fi	‰	·			
F		/	?	O	_	o	~				fl	ı	·			

IBM-US (10U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			0	@	P	`	p	Ç	É	á	⋮	┌	┐	≡	α	≡
1	☺	◀	! 1	A	Q	a	q	Ç	ü	æ	⋮	┌	┐	≡	β	≡
2	●	↕	" 2	B	R	b	r	é	Æ	ó	⋮	┌	┐	≡	Γ	≡
3	♥	!!	# 3	C	S	c	s	â	ô	ú	┌	┌	┌	┌	π	≡
4	♦	¶	\$ 4	D	T	d	t	ä	ö	ñ	┌	┌	┌	┌	Σ	≡
5	♣	§	% 5	E	U	e	u	à	ò	Ñ	┌	┌	┌	┌	σ	≡
6	♠	┌	& 6	F	V	f	v	â	û	°	┌	┌	┌	┌	μ	≡
7	●	↕	' 7	G	W	g	w	ç	ù	°	┌	┌	┌	┌	τ	≡
8	◐	↑	(8	H	X	h	x	ê	ÿ	Ö	┌	┌	┌	┌	Φ	≡
9	◑	↓	) 9	I	Y	i	y	ë	ÿ	Û	┌	┌	┌	┌	Θ	≡
A	◒	→	* :	J	Z	j	z	è	ÿ	Ü	┌	┌	┌	┌	Ω	≡
B	♂	←	+ :	K	[	k	{	ë	ÿ	½	┌	┌	┌	┌	δ	≡
C	♀	┌	,	L	\	l	|	è	ÿ	¼	┌	┌	┌	┌	∞	≡
D	♪	↔	- =	M	]	m	}	è	ÿ	ı	┌	┌	┌	┌	φ	≡
E	♫	↑	. >	N	^	n	~	è	ÿ	ı	┌	┌	┌	┌	ε	≡
F	⚙	↓	/ ?	O	_	o	~	è	ÿ	ı	┌	┌	┌	┌	∅	≡

IBM-DN (11U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		▶		0	@	P	`	p	Ç	É	á	⊠	⌒	⌒	α	≡
1	☺	⬆		1	A	Q	a	q	ü	æ	í	⊠	⌒	⌒	β	±
2	♥	⬆	!"	2	B	R	b	r	é	œ	ó	⊠	⌒	⌒	Γ	≥
3	♣	⬆	#\$	3	C	S	c	s	â	ø	ú	⊠	⌒	⌒	π	≤
4	♦	⬆	%	4	D	T	d	t	ä	ö	ñ	⊠	⌒	⌒	σ	∫
5	♠	⬆	&	5	E	U	e	u	å	ô	õ	⊠	⌒	⌒	μ	∫
6	♣	⬆	'	6	F	V	f	v	ç	ù	ö	⊠	⌒	⌒	τ	∫
7	♠	⬆	(	7	G	W	g	w	ê	ÿ	Ö	⊠	⌒	⌒	ϕ	∫
8	■	⬆	)	8	H	X	h	x	ë	ÿ	Ö	⊠	⌒	⌒	Φ	∫
9	○	⬆	*	9	I	Y	i	y	è	ÿ	Ö	⊠	⌒	⌒	Θ	∫
A	⊠	⬆	:		J	Z	j	z	è	ÿ	Ö	⊠	⌒	⌒	Ω	∫
B	⊠	⬆	+		K	[	k	{	è	ÿ	Ö	⊠	⌒	⌒	δ	∫
C	♂	⬆	,		L	\	l	}	è	ÿ	Ö	⊠	⌒	⌒	∞	∫
D	♂	⬆	=		M	]	m	}	è	ÿ	Ö	⊠	⌒	⌒	φ	∫
E	♂	⬆	.		N	^	n	~	è	ÿ	Ö	⊠	⌒	⌒	ε	∫
F	⊠	⬆	/		O	_	o	◻	è	ÿ	Ö	⊠	⌒	⌒	∫	◻

McText (12J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p	Ä	ê	†	∞	¿	—	‡	◊
1				1	A	Q	a	q	Ä	ë	°	±	¿	—	·	◊
2			!"	2	B	R	b	r	Ä	ï	¢	≤	¿	—	·	◊
3			#\$	3	C	S	c	s	Ä	î	£	≥	¿	—	·	◊
4			%	4	D	T	d	t	Ä	ï	§	¥	¿	—	·	◊
5			&	5	E	U	e	u	Ä	ï	•	μ	¿	—	·	◊
6			'	6	F	V	f	v	Ä	ñ	¶	∂	¿	—	·	◊
7			(	7	G	W	g	w	Ä	ó	β	∑	¿	—	·	◊
8			)	8	H	X	h	x	Ä	ò	⊗	∏	¿	—	·	◊
9			*	9	I	Y	i	y	Ä	á	®	∏	¿	—	·	◊
A			:		J	Z	j	z	Ä	â	™	∏	¿	—	·	◊
B			+		K	[	k	{	Ä	ã	'	∏	¿	—	·	◊
C			,		L	\	l	}	Ä	ä	°	∏	¿	—	·	◊
D			=		M	]	m	}	Ä	å	°	∏	¿	—	·	◊
E			.		N	^	n	~	Ä	ú	∏	¿	—	·	◊	◊
F			/		O	_	o	◻	Ä	ü	∏	¿	—	·	◊	◊

PcMultilingual (12U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		▶		0	@	P	`	p	Ç	É	á	☐	⌌	ø	Ó	-
1	☺	◀	!	1	A	Q	a	q	ü	æ	í	☒	⌍	Ð	Ô	±
2	☹	↕	!"	2	B	R	b	r	é	Æ	ó	☓	⌎	Ê	Õ	=
3	♥	!!	#	3	C	S	c	s	â	ô	ú	⌏	⌐	Ë	Ö	¼
4	♦	§	\$	4	D	T	d	t	ä	ö	ñ	⌑	⌒	È	ø	¶
5	♣	§	%	5	E	U	e	u	å	ù	ª	⌒	⌓	Ì	Ô	÷
6	♠	↕	&	6	F	V	f	v	ç	û	º	⌓	⌔	Í	µ	+
7	●	↕	'	7	G	W	g	w	ç	ü	º	⌔	⌕	Î	þ	°
8	■	↑	(	8	H	X	h	x	ê	ÿ	®	⌕	⌖	Ï	Þ	´
9	○	↓	)	9	I	Y	i	y	ë	ÿ	®	⌖	⌗	Ù	Ú	ˆ
A	◐	→	*	:	J	Z	j	z	è	Û	™	⌗	⌘	Û	Û	˙
B	♀	←	+	;	K	[	k	{	ì	Ü	™	⌘	⌙	Ü	Ü	¸
C	♂	⌌	,	<	L	\	l	|	í	ø	¼	⌙	⌚	Ý	Ý	²
D	♂	↕	-	>	M	]	m	}	î	Ø	½	⌚	⌛	ÿ	ÿ	³
E	♫	↕	.	=	N	^	n	~	ï	×	¾	⌛	⌜	ÿ	ÿ	´
F	☼	▼	/	?	O	_	o	o	ÿ	×	¾	⌜	⌝	ÿ	ÿ	µ

VelInternational (13J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	'	p			„	%e	â	Å	Á	Æ
1			!	1	A	Q	a	q			„	“	ê	î	À	œ
2			!"	2	B	R	b	r			„	”	ô	ø	Á	¶
3			#	3	C	S	c	s			„	°	û	Æ	â	†
4			\$	4	D	T	d	t			„	°	á	å	—	‡
5			%	5	E	U	e	u			„	°	é	í	Í	—
6			&	6	F	V	f	v			„	°	ó	ø	Ì	—
7			'	7	G	W	g	w			„	°	ú	æ	Ò	°
8			(	8	H	X	h	x			„	°	à	Ä	Ó	°
9			)	9	I	Y	i	y			„	°	è	Ä	Ô	°
A			*	:	J	Z	j	z			„	°	ò	Ö	Õ	°
B			+	;	K	[	k	{		⌌	„	°	ù	Ü	Ö	°
C			,	<	L	\	l	|		⌍	„	°	ä	É	Š	°
D			-	=	M	]	m	}		⌎	„	°	ä	Ë	š	°
E			.	>	N	^	n	~		⌏	„	°	ë	Ï	Û	°
F			/	?	O	_	o	o		⌐	„	°	ö	ÿ	ÿ	°

VeUS (14J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	'	p			„	%c				
1		!	1	A	Q	a	q	r			“					
2		”	2	B	R	b	r	s			”					¶
3		#	3	C	S	c	s	t			°					‡
4		\$	4	D	T	d	t	u								‡
5		%	5	E	U	e	u	v								—
6		&	6	F	V	f	v	w								—
7		'	7	G	W	g	w	x								
8		(	8	H	X	h	x	y			©					
9		)	9	I	Y	i	y	z			®					
A		*	:	J	Z	j	z				™					
B		+	:	K	[	k	l	{		↑						
C		,	<	L	\	l	l	|		↑						
D		-	=	M	]	m	n	}		↑						•
E		.	>	N	>	n	o	~		↑			\$			
F		/	?	O	_	o				□			€			...

PiFont (15U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				-	::	∅	[]								
1				˘	△	∅	[]								
2			”	˘	∅	R	()								
3			”	˘	∑	∑	()								
4			”	↗			+	+								
5			”	↘			+	+								
6			”	↖	F		+	+								
7			”	↗	h		+	+								
8			<	△	h		+	+								
9			>	▽			+	+								
A			™	▽			+	+								
B			™	△			+	+								
C			©	△	ℒ		+	+								
D			©	∞	ℓ		+	+								
E			©	∞	ℓ		+	+								
F			¶	¶	>		+	+								

PcE.Europe (17U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		▶		0	@	P	`	p	Ç	É	á	⊞	⌒	d	Ó	-
1	☺	◀	!"	1	A	Q	a	q	ü	Í	í	⊞	⌒	ð	Ò	~
2	♥	↕	#!	2	B	R	b	r	é	í	ó	⊞	⌒	Ð	Ô	˘
3	♠	↕	#\$	3	C	S	c	s	â	î	ú	⊞	⌒	Ë	Õ	˘
4	♦	↕	%	4	D	T	d	t	ã	ï	û	⊞	⌒	Ë	Ö	˘
5	♣	↕	&	5	E	U	e	u	ä	ï	ü	⊞	⌒	Ë	Ö	˘
6	♠	↕	'	6	F	V	f	v	å	ï	ü	⊞	⌒	Ë	Ö	˘
7	●	↕	(	7	G	W	g	w	ç	š	ž	⊞	⌒	Ë	Ö	˘
8	■	↕	)	8	H	X	h	x	ț	š	ž	⊞	⌒	Ë	Ö	˘
9	○	↕	*	9	I	Y	i	y	ë	Ö	Ü	⊞	⌒	Ë	Ö	˘
A	◐	↕	+	A	J	Z	j	z	ö	Ü	Ť	⊞	⌒	Ë	Ö	˘
B	◑	↕	,	B	K	[	k	l	ő	Ť	Ť	⊞	⌒	Ë	Ö	˘
C	♂	↕	.	C	L	\	l	m	õ	Ť	Ť	⊞	⌒	Ë	Ö	˘
D	♂	↕	=	D	M	]	m	n	ö	Ť	Ť	⊞	⌒	Ë	Ö	˘
E	♂	↕	>	E	N	^	n	o	ő	Ť	Ť	⊞	⌒	Ë	Ö	˘
F	♂	↕	/	F	O	_	o		ö	Ť	Ť	⊞	⌒	Ë	Ö	˘

Symbol (19M)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			0	≡	Π	—	π	θ			Υ	°	×	∠	◊	
1			1	Λ	⊖	⊖	α	β			Υ	±	⊗	∠	◊	
2			2	B	P	⊖	ρ	σ			Υ	±	⊗	∠	◊	
3			3	X	Σ	χ	τ				Υ	±	⊗	∠	◊	
4			4	Δ	T	δ	τ				Υ	±	⊗	∠	◊	
5			5	E	Y	ε	υ				Υ	±	⊗	∠	◊	
6			6	Φ	ς	φ	ϖ				Υ	±	⊗	∠	◊	
7			7	Γ	Ω	γ	ω				Υ	±	⊗	∠	◊	
8			8	H	Ξ	η	ξ				Υ	±	⊗	∠	◊	
9			9	I	Ψ	ι	ψ				Υ	±	⊗	∠	◊	
A			*	:	⊖	φ	κ				Υ	±	⊗	∠	◊	
B			+	;	K	[	κ				Υ	±	⊗	∠	◊	
C			.	<	Λ	]	λ				Υ	±	⊗	∠	◊	
D			-	=	M	⊥	μ				Υ	±	⊗	∠	◊	
E			.	>	N	⊥	ν				Υ	±	⊗	∠	◊	
F			/	?	O	⊥	ο				Υ	±	⊗	∠	◊	

WiAnsi (19U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ð	à	ð
1		!	1	A	Q	a	q				±	Á	Ñ	á	ñ	
2		"	2	B	R	b	r				²	Â	Ò	â	ò	
3		#	3	C	S	c	s	,	f	,	³	Ã	Ó	ã	ó	
4		\$	4	D	T	d	t	.	...	“	¼	Ä	Ô	ä	ô
5		%	5	E	U	e	u	~	~	”	½	Å	Õ	å	õ	
6		&	6	F	V	f	v	†	†	—	¾	Æ	Ö	æ	ö	
7		'	7	G	W	g	w	‡	‡	—	⅞	Ç	×	ç	÷	
8		(	8	H	X	h	x	ˆ	ˆ	—	⅞	È	Ø	è	ø
9		)	9	I	Y	i	y	‰	‰	™	⅞	É	Ù	é	ù
A		*	:	J	Z	j	z	‰	‰	™	⅞	Ê	Ú	ê	ú	
B		+	:	K	[	k	{	‰	‰	™	⅞	Ë	Û	ë	û
C		,	<	L	\	l	|	‰	‰	™	⅞	Ì	Ü	ì	ü	
D		.	=	M	]	m	}	‰	‰	™	⅞	Í	Ý	í	ý
E		/	>	N	^	n	~	‰	‰	™	⅞	Î	Þ	î	þ	
F		/	?	O	_	o	~	‰	‰	™	⅞	Ï	ß	ï	ÿ	

Wingdings (579L)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0																
1																
2																
3																
4																
5																
6																
7																
8																
9																
A																
B																
C																
D																
E																
F																

OCR A (00)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	H	p								
1		!	1	A	Q	a	q									
2		"	2	B	R	b	r									
3		#	3	C	S	c	s									
4		\$	4	D	T	d	t									
5		%	5	E	U	e	u									
6		&	6	F	V	f	v									
7		'	7	G	W	g	w									
8		(	8	H	X	h	x									
9		)	9	I	Y	i	y									
A		*	:	J	Z	j	z									
B		+	;	K	[	k	{									
C		,	<	L	\	l	|									
D		-	=	M	]	m	}									
E		.	>	N	^	n	~									
F		/	?	O	_	o	■									

OCR B (10)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p						À		
1		!	1	A	Q	a	q							Ø		
2		"	2	B	R	b	r							Æ		
3		#	3	C	S	c	s							á		
4		\$	4	D	T	d	t							ä		
5		%	5	E	U	e	u							ø		
6		&	6	F	V	f	v				ñ			ø	æ	Ä
7		'	7	G	W	g	w				˘			ä	Ä	ij
8		(	8	H	X	h	x				˙			ü		
9		)	9	I	Y	i	y				˘			ö		
A		*	:	J	Z	j	z				˘			ü		
B		+	;	K	[	k	{				˘			ü		
C		,	<	L	\	l	|				˘					
D		-	=	M	]	m	}				˘					
E		.	>	N	^	n	~				˘					
F		/	?	O	_	o	■				˘			ß		

OCR B Extension (3Q)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0						Å										
1																
2						Ø										
3						Æ										
4						ß										
5																
6				Ñ		ø										
7						æ										
8		´				À										
9		˘			lJ		ij									
A		ˆ		α		ö										
B		˙		£		ü										
C		˚		¥												
D		˛		§												
E																
F							ß									

Code 3-9 (0Y)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				||||		||||										
1				||||	||||	||||										
2				||||	||||	||||										
3				||||	||||	||||										
4			||||	||||	||||	||||										
5			||||	||||	||||	||||										
6				||||	||||	||||										
7				||||	||||	||||										
8				||||	||||	||||										
9				||||	||||	||||										
A			||||		||||	||||										
B			||||		||||	||||										
C			||||		||||	||||										
D			||||		||||	||||										
E			||||		||||	||||										
F			||||		||||	||||										

EAN/UPC (8Y)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U				||												
1				||	||		||									
2				||	||		||									
3				||	||		||									
4				||	||		||									
5				||	||		||									
6				||	||		||									
7				||	||		||									
8			||	||		||	||									
9			||	||		||	||									
A			||	||		||	||									
B			||	||		||	||									
C			||	||		||	||									
D			||	||		||	||									
E			||	||		||	||									
F			||	||		||	||									

International Set 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)	#	\$	@	Æ	ø	Å	^	`	æ	ø	á	-
French (0F)	£	\$	à	°	ç	§	^	`	é	ù	è	..
HP German (0G)	£	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
Italian (0I)	£	\$	§	°	ç	é	^	ú	à	ò	è	ì
JIS ASCII (0K)	#	\$	@	[	¥	]	^	`	{	|	}	-
Swedis 2 (0S)	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	á	ü
Norweg 2 (1D)	§	\$	@	Æ	Ø	Å	^	`	æ	ø	á	|
UK (1E)	£	\$	@	[	\	\]	^	`	{	|	}	-
French 2 (1F)	£	\$	à	°	ç	§	^	µ	é	ù	è	..
German (1G)	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
HP Spanish (1S)	#	\$	@	í	Ñ	¿	°	`	{	ñ	}	~
Chinese (2K)	#	¥	@	[	\	\]	^	`	{	|	}	-
Spanish (2S)	£	\$	§	í	Ñ	¿	^	`	°	ñ	ç	~
IRV (2U)	#	¤	@	[	\	\]	^	`	{	|	}	-
Swedish (3S)	#	¤	@	Ä	Ö	Å	^	`	ä	ö	á	-
Portuguese (4S)	#	\$	§	Ã	Ç	Ó	^	`	ã	ç	õ	°
IBM Portuguese (5S)	#	\$	'	Ã	Ç	Ó	^	`	ã	ç	õ	~
IBM Spanish (6S)	#	\$.	í	Ñ	Ç	¿	`	ñ	ç	..	

In ESC/P 2 or FX Modes

	ISO 8859-15, PC 437, 850, 858. 860, 863, 865	857, 852, BRASCII, Abicamp	PC 437	OCR A
EPSON Roman	available	not available	not available	not available
Courier SWC	available	available	not available	not available
EPSON Sans serif	available	not available	not available	not available
EPSON Prestige	available	not available	not available	not available
EPSON Script	available	not available	not available	not available
Letter Gothic SWC	available	available	not available	not available
Swiss 721 SWM*	available	available	not available	not available
Dutch 801 SWM*	available	available	not available	not available
OCR B	not available	not available	available	not available
OCR A	not available	not available	not available	available

*Available only in ESC/P 2 mode.

PC437 (U.S./Standard Europe)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL			0	@	P	`	p	Ç	É	á	⋯	⌞	⌞	α	≡
1			!	1	A	Q	a	q	ü	æ	í	⋯	⌞	⌞	β	±
2		DC2	"	2	B	R	b	r	é	Æ	ó	⋯	⌞	⌞	Γ	∇
3			#	3	C	S	c	s	â	Ö	ú	⋯	⌞	⌞	Π	≤
4		DC4	\$	4	D	T	d	t	ä	ö	ñ	⋯	⌞	⌞	Σ	∩
5		§	%	5	E	U	e	u	å	ô	ñ	⋯	⌞	⌞	σ	∩
6			&	6	F	V	f	v	â	û	ã	⋯	⌞	⌞	μ	∩
7			'	7	G	W	g	w	ç	ù	Q	⋯	⌞	⌞	τ	∩
8			(	8	H	X	h	x	ê	ÿ	Ö	⋯	⌞	⌞	Φ	∩
9	HT	EM	)	9	I	Y	i	y	ë	ÿ	Ö	⋯	⌞	⌞	θ	∩
A	LF		*	:	J	Z	j	z	è	Û	Ϛ	⋯	⌞	⌞	Ω	∩
B	VT	ESC	+	;	K	[	k	{	ì	ü	Ϛ	⋯	⌞	⌞	δ	∩
C	FF		,	<	L	]	l	}	í	ü	Ϛ	⋯	⌞	⌞	ø	∩
D	CR		-	=	M	^	m	~	î	ü	Ϛ	⋯	⌞	⌞	ϕ	∩
E	SO		.	>	N	^	n	~	ï	ü	Ϛ	⋯	⌞	⌞	ø	∩
F	SI		/	?	O	_	o	~	Ä	ä	»	⋯	⌞	⌞	∩	■

PC850 (Multilingual)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	⋯	⌞	ð	Ó	±
1	ü	æ	í	⋯	⌞	ð	Ö	±
2	é	Æ	ó	⋯	⌞	É	Ö	±
3	â	ö	ú	⋯	⌞	É	Ö	±
4	ä	ö	ñ	⋯	⌞	É	Ö	±
5	å	ô	ñ	⋯	⌞	É	Ö	±
6	ç	ù	Q	⋯	⌞	É	Ö	±
7	ê	ÿ	Ö	⋯	⌞	É	Ö	±
8	ë	ÿ	Ö	⋯	⌞	É	Ö	±
A	è	Û	Ϛ	⋯	⌞	É	Ö	±
B	ì	ü	Ϛ	⋯	⌞	É	Ö	±
C	í	ü	Ϛ	⋯	⌞	É	Ö	±
D	î	ü	Ϛ	⋯	⌞	É	Ö	±
E	ï	ü	Ϛ	⋯	⌞	É	Ö	±
F	Ä	ä	»	⋯	⌞	É	Ö	±

PC860 (Portuguese)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	⋯	⌞	⌞	α	≡
1	ü	Æ	í	⋯	⌞	⌞	β	±
2	é	Æ	ó	⋯	⌞	⌞	Γ	∇
3	â	ö	ú	⋯	⌞	⌞	Π	≤
4	ä	ö	ñ	⋯	⌞	⌞	Σ	∩
5	å	ô	ñ	⋯	⌞	⌞	σ	∩
6	ç	ù	Q	⋯	⌞	⌞	μ	∩
7	ç	ù	Q	⋯	⌞	⌞	τ	∩
8	ç	ù	Q	⋯	⌞	⌞	Φ	∩
9	ç	ù	Q	⋯	⌞	⌞	θ	∩
A	è	Û	Ϛ	⋯	⌞	⌞	Ω	∩
B	è	Û	Ϛ	⋯	⌞	⌞	δ	∩
C	è	Û	Ϛ	⋯	⌞	⌞	ø	∩
D	è	Û	Ϛ	⋯	⌞	⌞	ϕ	∩
E	è	Û	Ϛ	⋯	⌞	⌞	∩	■
F	è	Û	Ϛ	⋯	⌞	⌞	∩	■

PC863 (Canadian-French)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	Á	⋯	⌒	⌒	α	≡
1	ü	È	Í	⋮	⌒	⌒	β	±
2	é	Æ	Ó	⋮	⌒	⌒	Γ	≡
3	â	Ô	Ú	⋮	⌒	⌒	Π	≡
4	À	È	·	⋮	⌒	⌒	Σ	⌒
5	à	Ì	·	⋮	⌒	⌒	μ	⌒
6	ç	Ù	·	⋮	⌒	⌒	τ	⌒
7	ê	Û	·	⋮	⌒	⌒	ϕ	⌒
8	è	Ü	·	⋮	⌒	⌒	θ	⌒
9	ë	Û	·	⋮	⌒	⌒	Ω	⌒
A	î	Ë	·	⋮	⌒	⌒	δ	⌒
B	ï	É	·	⋮	⌒	⌒	ε	⌒
C	—	Û	·	⋮	⌒	⌒	ø	⌒
D	—	Û	·	⋮	⌒	⌒	ø	⌒
E	—	Û	·	⋮	⌒	⌒	ø	⌒
F	—	Û	·	⋮	⌒	⌒	ø	⌒

PC865 (Norwegian)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	Á	⋯	⌒	⌒	α	≡
1	ü	æ	Í	⋮	⌒	⌒	β	±
2	é	Æ	Ó	⋮	⌒	⌒	Γ	≡
3	â	Ô	Ú	⋮	⌒	⌒	Π	≡
4	à	Ò	ñ	⋮	⌒	⌒	Σ	⌒
5	à	ò	Ñ	⋮	⌒	⌒	σ	⌒
6	à	û	ä	⋮	⌒	⌒	μ	⌒
7	ç	ù	ö	⋮	⌒	⌒	τ	⌒
8	ê	ÿ	Ö	⋮	⌒	⌒	ϕ	⌒
9	è	Û	·	⋮	⌒	⌒	θ	⌒
A	î	ø	·	⋮	⌒	⌒	Ω	⌒
B	ï	ø	·	⋮	⌒	⌒	δ	⌒
C	—	ø	·	⋮	⌒	⌒	ε	⌒
D	—	ø	·	⋮	⌒	⌒	ø	⌒
E	—	ø	·	⋮	⌒	⌒	ø	⌒
F	—	ø	·	⋮	⌒	⌒	ø	⌒

PC857 (PcTurk2)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	Á	⋯	⌒	Q	Ó	-
1	ü	æ	Í	⋮	⌒	a	Ö	±
2	é	Æ	Ó	⋮	⌒	a	Ö	±
3	â	Ô	Ú	⋮	⌒	a	Ö	±
4	à	Ò	ñ	⋮	⌒	ä	Ö	±
5	à	ò	Ñ	⋮	⌒	ä	Ö	±
6	à	û	ñ	⋮	⌒	ä	Ö	±
7	ç	ù	ğ	⋮	⌒	ä	Ö	±
8	ê	Û	·	⋮	⌒	ä	Ö	±
9	è	Ü	·	⋮	⌒	ä	Ö	±
A	î	Ë	·	⋮	⌒	ä	Ö	±
B	ï	É	·	⋮	⌒	ä	Ö	±
C	—	Û	·	⋮	⌒	ä	Ö	±
D	—	Û	·	⋮	⌒	ä	Ö	±
E	—	Û	·	⋮	⌒	ä	Ö	±
F	—	Û	·	⋮	⌒	ä	Ö	±

PC852 (East Europe)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	Á	⋯	⌒	đ	Ó	-
1	ü	í	Í	⋮	⌒	Đ	Ö	±
2	é	Í	Ó	⋮	⌒	Đ	Ö	±
3	â	ô	Ú	⋮	⌒	Đ	Ö	±
4	à	ò	ñ	⋮	⌒	đ	ñ	·
5	à	ò	ñ	⋮	⌒	đ	ñ	·
6	à	û	ä	⋮	⌒	đ	ñ	·
7	ç	ı	š	⋮	⌒	đ	ñ	·
8	ê	š	ž	⋮	⌒	đ	ñ	·
9	è	š	ž	⋮	⌒	đ	ñ	·
A	î	š	ž	⋮	⌒	đ	ñ	·
B	ï	š	ž	⋮	⌒	đ	ñ	·
C	—	š	ž	⋮	⌒	đ	ñ	·
D	—	š	ž	⋮	⌒	đ	ñ	·
E	—	š	ž	⋮	⌒	đ	ñ	·
F	—	š	ž	⋮	⌒	đ	ñ	·

BRASCI

Abicomp

CODE	8	9	A	B	C	D	E	F
0	NUL			°	À	Ð	à	ä
1				±	Á	Ñ	á	å
2		DC2	¡	²	Â	Ò	â	ö
3			¢	³	Ã	Ó	ã	ó
4		DC4	£	´	Ä	Ô	ä	ô
5			¥	µ	Å	Õ	å	õ
6			¦	¶	Æ	Ö	æ	ö
7			§	·	Ç	Ø	ç	ø
8			¨	¸	È	Ù	è	ù
9	HT	EM	©	¹	É	Ú	é	ú
A	LF		ª	º	Ê	Û	ê	û
B	VT	ESC	«	»	Ë	Ü	ë	ü
C	FF		¼	½	Ì	Ý	ì	ý
D	CR		¸	¹	Í	Þ	í	þ
E	SO		º	»	Î	ß	î	ÿ
F	SI		»	¼	Ï		ï	

CODE	8	9	A	B	C	D	E	F
0	NUL			Ò	ì	ò		
1			À	Ó	à	ó		
2		DC2	Á	Ô	á	ô		
3			Â	Õ	â	õ		
4		DC4	Ã	Ö	ã	ö		
5			Ä	Ø	ä	ø		
6			Å	Ù	å	ù		
7			Ç	Ú	ç	ú		
8			È	Û	è	û		
9	HT	EM	É	Ü	é	ü		
A	LF		Ê	Ý	ê	ý		
B	VT	ESC	Ë	Þ	ë	þ		
C	FF		Ì	ß	ì	ÿ		
D	CR		Í	·	í	·		
E	SO		Î	·	î	·		
F	SI		Ï	°	ï	±		DEL

PC858

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		▶		0	@	P	'	p	Ç	É	á	⋮	L	Ø	Ó	—
1	☉	◀	!	1	A	Q	a	q	Ü	Æ	í	⋮	⊥	Ð	Ö	±
2	☼	↕	!"	2	B	R	b	r	é	ø	ó	⋮	┌	É	Ò	¼
3	♥	!!	#	3	C	S	c	s	â	õ	ó	⋮	└	È	Ô	½
4	♦	!!	\$	4	D	T	d	t	ä	ö	ô	⋮	—	É	Õ	¾
5	♣	§	%	5	E	U	e	u	å	ø	ù	⋮	+	È	Ö	§
6	♠	±	&	6	F	V	f	v	ä	ö	ú	⋮	+	È	Ø	±
7	•	±	'	7	G	W	g	w	ç	ù	ÿ	⋮	+	È	Ù	±
8	■	↑	(	8	H	X	h	x	è	ÿ	ÿ	⋮	+	È	Ú	±
9	◻	↓	)	9	I	Y	i	y	è	ÿ	ÿ	⋮	+	È	Û	±
A	◼	→	*		J	Z	j	z	è	ÿ	ÿ	⋮	+	È	Ü	±
B	♀	←	+		K	[	k	l	è	ÿ	ÿ	⋮	+	È	Ý	±
C	♂	↔	<		L	\	l	m	è	ÿ	ÿ	⋮	+	È	Þ	±
D	♪	↔	=		M	]	m	n	è	ÿ	ÿ	⋮	+	È	ß	±
E	♫	▲	.		N	^	n	o	è	ÿ	ÿ	⋮	+	È		±
F	♬	▼	/		O	_	o		è	ÿ	ÿ	⋮	+	È		±

Italic

CODE	8	9	A	B	C	D	E	F
0		NUL		0	@	P	`	p
1			!	1	A	Q	a	q
2		DC2	"	2	B	R	b	r
3			#	3	C	S	c	s
4		DC4	\$	4	D	T	d	t
5			%	5	E	U	e	u
6			&	6	F	V	f	v
7			'	7	G	W	g	w
8			(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF		*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF		,	<	L	\	l	|
D	CR		-	=	M	]	m	}
E	SO		.	>	N	^	n	~
F	SI		/	?	O	_	o	

ISO 8859-15

CODE	8	9	A	B	C	D	E	F
0				°	À	Ð	à	ð
1			ı	±	Á	Ñ	á	ñ
2			ϕ	²	Â	Ò	â	ò
3			£	³	Ã	Ó	ã	ó
4			€	¼	Ä	Ô	ä	ô
5			¥	½	Å	Ö	å	ö
6			§	¾	Æ	Ø	æ	ø
7			§	·	Ç	×	ç	÷
8			š	ž	È	Ø	è	ø
9			©	'	É	Ù	é	ù
A			à	Ω	Ê	Ú	ê	ú
B			«	»	Ë	Û	ë	û
C			¬	œ	Ì	Ü	ì	ü
D			-	æ	Í	Ý	í	ý
E			•	ÿ	Î	Þ	î	þ
F			-	ı	Ï	ß	ï	ÿ

* 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 either SelectType or the ESC R command. For example, when you select “Italic France” in SelectType, the characters in the “France” row in the table below are used in the italic character table.

Country	ASCII code hex												
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E	
US	#	\$	@	[	\	\]	^	`	{	|	}	~
France	#	\$	à	°	ç	§	^	`	é	ù	è	~	
Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß	
UK	£	\$	@	[	\	\]	^	`	{	|	}	~
Denmark	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~	
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü	
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì	
Spain	Pt	\$	@	¡	Ñ	¿	^	`	„	ñ	}	~	
Japan	#	\$	@	[	¥	]	^	`	{	|	}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü	
DenmarkII	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü	
Spain II	#	\$	á	¡	Ñ	¿	é	í	ñ	ó	ú	~	
Latin America	#	\$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú	
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.

CODE	0	1	7
0			▶
1	☺	◀	
2	☹	↕	
3	♥	!!	
4	♦	¶	
5	♣		
6	♠	-	
7	•	↕	
8	■	↑	
9	○	↓	
A	□	→	
B	♂	←	
C	♀	└	
D	♪	↔	
E	♫	▲	
F	⊛	▼	△

In I239X Emulation Mode

Available symbol sets in I239X mode are PC437, PC850, PC860, PC863, and PC865.

See “In ESC/P 2 or FX Modes” on page B-22.

Available fonts are EPSON Sans Serif, Courier SWC, EPSON Prestige, EPSON Gothic, EPSON Presentor, EPSON Orator, and EPSON Script.

Appendix C

Command Summary

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Introduction

Your printer has the ability to emulate the following printers depending on the printer emulation mode:

LJ-4	Hewlett-Packard LaserJet 4 (PCL5e)
ESC/Pz2	EPSON LQ-570 (24-pin)
FX	EPSON FX-870/1170, or LX-100 (9-pin)
GL/2	Hewlett-Packard GL/2 graphics language

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 5-7. For information on character sets supported in each emulation mode, see Appendix B, “Symbol Sets”.

LaserJet 4 (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 4 reference manual.

Job control

Reset	ESC E
Number of copies	ESC &#X
Universal exit language	ESC%#X
Long-edge (left) offset registration	ESC &#U
Short-edge (right) offset registration	ESC &#Z
Unit of measure	ESC &u#D
Simplex/Duplex print	ESC &#S

Page control

Paper (Media) source	ESC &#H
Page size	ESC &#A
Paper Size Selection	ESC &q#G
Page length	ESC &#P
Output (Media) bin	ESC &#G
Orientation	ESC &#O
Print direction	ESC &a#P
Top margin	ESC &#E
Text length	ESC &#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)jd
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 resolutions	ESC *t#R
Raster graphics presentations	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

User-defined pattern management/creation

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

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 <i>n</i> /180-inch line spacing	ESC 3 <i>n</i>
Set <i>n</i> /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 0 <i>n</i>
Set bottom margin for continuous paper	ESC N <i>n</i>
Cancel top/bottom margin for continuous paper	ESC O
Set left margin	ESC l <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 (V <i>nn</i>
Set relative vertical print position	ESC (v <i>nn</i>
Set horizontal tabs	ESC D <i>nn</i>
Tab horizontally	HT
Set vertical tabs	ESC B <i>nn</i>
Tab vertically	VT
Advance paper <i>n</i> /180 inch	ESC J <i>n</i>
Reverse paper <i>n</i> /180 inch	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 10.5 point, 10 cpi	ESC P
Select 10.5 point, 12 cpi	ESC M
Select 10.5 point, 15 cpi	ESC g
Turn proportional mode on/off	ESC p 1/0
Select LQ 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
Master select	ESC ! <i>n</i>
Control code set/clear	ESC I 1/0
Select print pitch	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 printing	ESC S 0
Select subscript printing	ESC S 1

Cancel superscript/subscript printing	ESC T
Select line/score	ESC (- <i>nn</i>
Turn underline on/off	ESC - 1/0
Select character style	ESC q <i>n</i>

Spacing

Set intercharacter space	ESC SP <i>n</i>
Define unit	ESC (U <i>nn</i>

Character handling

Assign character table	ESC (t <i>nn</i>
Select character table	ESC t <i>n</i>
Select an international character set	ESC R <i>n</i>
Define download character	ESC & <i>nn</i>
Copy ROM to RAM	ESC : 0 <i>n</i> 0
Select user-defined set	ESC % <i>n</i>
Enable printing of upper control codes	ESC 6
Enable upper control codes	ESC 7
Print data as characters	ESC (^ <i>nn</i>

Bit image

Selection and printing of bit image	ESC * <i>nn</i>
Select graphic mode	ESC (G <i>nn</i>
Print raster graphics	ESC . c v hm

FX mode

Printer commands arranged by topic

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 0 <i>n</i>
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 <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>
Master select	ESC ! <i>n</i>

Print size and character width

Select 10 cpi	ESC P
Select 12 cpi	ESC M
Turn proportional mode on/off	ESC p 1/0
Select condensed mode	SI
Cancel condensed mode	DC2
Select double-width mode (one line)	SO
Cancel double-width mode (one line)	DC4
Turn double-width mode on/off	ESC W 1/0
Turn double-height printing on/off	ESC w 1/0

Font enhancement

Select emphasized mode	ESC E
Cancel emphasized mode	ESC F
Select double-strike mode	ESC G
Cancel double-strike mode	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 mode	ESC S 0/1
Cancel superscript/subscript mode	ESC T
Select italic mode	ESC 4
Cancel italic mode	ESC 5
Turn underline mode on/off	ESC - 1/0

Word processing

Set intercharacter space	ESC SP <i>n</i>
Select character tables	ESC t <i>n</i>
Assign character tables	ESC (t <i>nn</i>
Select international character set	ESC R <i>n</i>
Printable code area expansion	ESC 6
Enable upper control codes	ESC 7

User-defined characters

Define user-defined characters	ESC & <i>nn</i>
--------------------------------	-----------------

Note:

The appearance of characters defined using ESC & may differ slightly from an actual FX printer.

Copy ROM to RAM	ESC : 0 <i>n</i> 0
Select user-defined set	ESC % <i>n</i>
Printable code area expansion	ESC I <i>n</i>

Bit image

Select graphics mode	ESC * m <i>n</i>
Selection and printing of bit image	ESC ^ m <i>n</i>

PJL Commands

This section lists the available commands for 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[I
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
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Data input control

Cancel 1 line	CAN
---------------	-----

Auxiliary function

Select paper tray	ESC [F
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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

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Adding and Selecting Fonts

To select a font, use your application program.

Font problems are uncommon but the following may occur.

- ❑ The printer substitutes a font other than the one you selected with your software.
- ❑ The printed page does not exactly match what is on screen.

These kinds of problems usually occur if you use an emulation other than LJ4 or when you are trying to print fonts that are not installed in the printer. If you have font problems, read “Printer and Screen Fonts” below to find out how to fix them.

Adding more 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.

Downloading fonts

Most font packages make it easy to install 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.

If you’re running Windows, you can also install fonts from within the Fonts window. (To access this window, open the Control Panel and 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 software 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 SelecType when in the LJ4, ESCP2, FX, or I239X menu.

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 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.



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 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 in the following table.

LJ4/GL2 mode

Font name	Scalable font	HP equivalent
Dutch 801 SWC	Roman, Bold, Italic, Bold Italic	CG Times
Zapf Humanist 601 SWC	Demi, Bold, Demi Italic, Bold Italic	CG Omega

Font name	Bitmap font	HP equivalent
Line Printer	-	Line Printer
OCR A	-	-
OCR B	-	-
Code 3-9	-	-
EAN/UPC	Bold	-

When selecting fonts in your software program, choose the font name listed in the HP equivalent column.

ESC/P 2 and FX modes

Font name	Scalable font
EPSON Roman	-
EPSON Sans serif	-
Courier SWC	Medium, Bold
EPSON Prestige	-
EPSON Script	-
Swiss 721 SWM*	Roman, Bold
Dutch 801 SWM*	Roman, Bold
Letter Gothic SWC	Roman, Bold

* Available only in ESC/P 2 mode.

I239X mode

Font name	Scalable font
EPSON Sans serif	-
Courier SWC	Medium, Bold
EPSON Prestige	-
EPSON Gothic	-
EPSON Presentor	-
EPSON Orator	-
EPSON Script	-

Font name	Bitmap font
OCR B	-

To see the font samples, use the Test Menu in SelecType, as explained below.

1. Make sure that paper is loaded.
2. Press Menu while the printer is on line.
3. Press Item until the font sample you want appears.
4. Press Enter, a Font Sample sheet is printed.

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.

Barcode Standard	EPSON BarCode	OCR-B	Check Digit	Comments
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 Code39 CD	No	Yes	
	EPSON Code39CD Num	Yes	Yes	
	EPSON Code39 Num	Yes	No	
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-N1600/EPL-N4000/ EPL-C8000/EPL-N2700 or later products
Computer:	IBM PC series or IBM compatible with an i386SX or higher CPU
Operating system:	Microsoft Windows 95, 98, NT 3.5x, NT 4.0
Hard disk:	15-30 KB free space (This differs depending on the font.)
Printer driver:	EPSON EPL-5700 Advanced, EPSON EPL- N1600 Advanced, EPSON EPL-N4000 Advanced, EPSON EPL-C8000 Advanced, EPSON EPL-N2700 Advanced or later driver

Note:

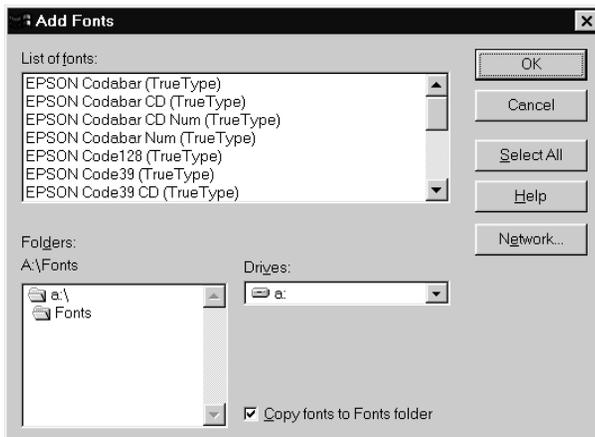
EPSON BarCode Fonts can only be used with EPSON printer drivers.

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 BarCode Fonts into the appropriate drive.
3. Click Start, point to Settings, then click Control Panel.
4. Double click Fonts.

- From the File menu, select Install New Font.



- Select the appropriate CD-ROM or floppy drive, then select the BarCode Fonts folder from the Folders list.
- 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.
- 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.

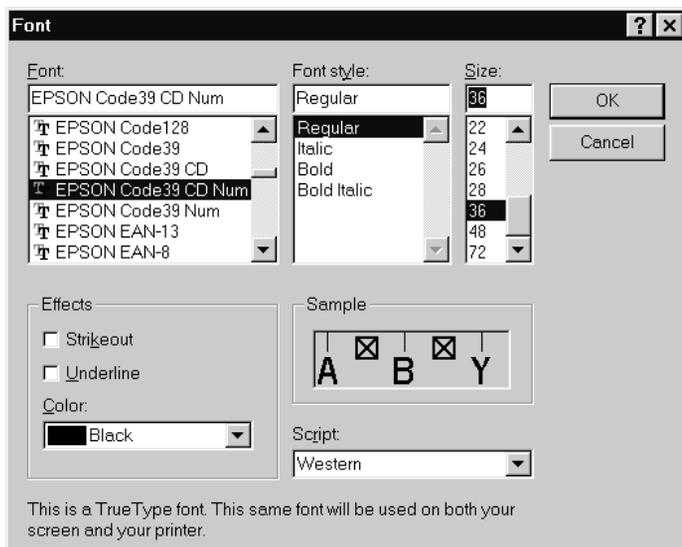
1. Open a document in your application and enter the characters you want to convert to a barcode.



2. Select the characters, then select Font from the Format menu.



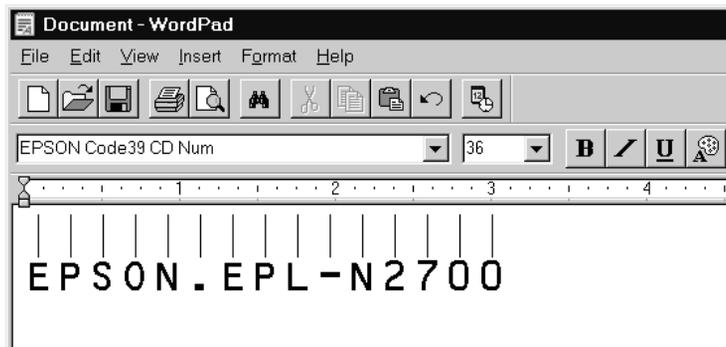
3. Select the EPSON BarCode Font you want to use, then set the font size and click OK.



Note:

In Windows NT 3.5x and NT 4.0, 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.



5. Select Print from the File menu, then select your EPSON printer and click Properties. Make the following printer driver settings.

	Monochrome printer	Color printer
Printing color	not available	Black
Resolution	600 dpi	600 dpi (high quality mode)
Toner save mode	Off	Off
Zoom option	Normal	Normal
Graphic mode (Option menu)	Standard	Standard

6. 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 "BarCode Font specifications" on page D-13 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.

BarCode Font specifications

This section contains details on the character input specifications for each EPSON BarCode Font.

EPSON EAN-8

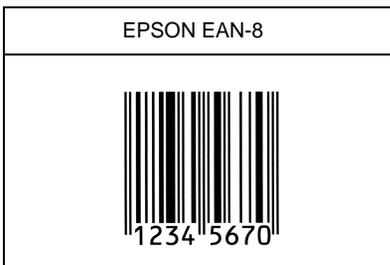
- EAN-8 is an eight-digit abbreviated version of the EAN barcode standard.
- Because the check digit is added automatically, only seven characters can be input.

Character type	Numbers (0-9)
Number of characters	Up to seven characters
Font size	52 pt - 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

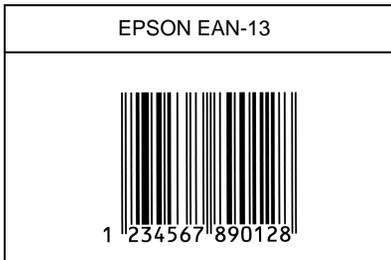
- EAN-13 is the standard 13-digit EAN barcode.
- Because the check digit is added automatically, only seven characters can be input.

Character type	Numbers (0-9)
Number of characters	Up to seven characters
Font size	60 pt - 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

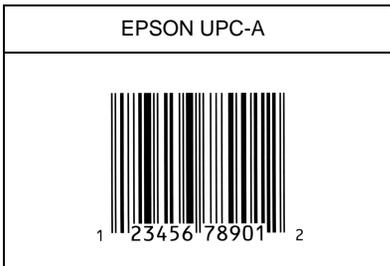
- UPC-A is the UPC-A standard barcode specified by the American Universal Product Code (UPC Symbol Specification Manual).
- Only regular UPC codes are supported. Supplementary codes are not supported.

Character type	Numbers (0-9)
Number of characters	Up to 11 characters
Font size	60 pt - 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

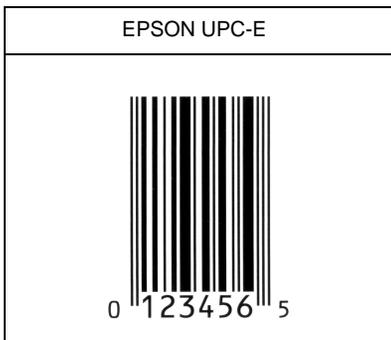
- ❑ UPC-E is the UPC-A zero-suppression (deletes extra zeros) barcode specified by the American Universal Product Code (UPC Symbol Specification Manual).

Character type	Numbers (0-9)
Number of characters	Up to six characters
Font size	60 pt - 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 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-Z, 0-9) Symbols (. space \$ / + %)
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: 26 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
- ❑ Check digit
- ❑ Start/Stop character

Print Sample

EPSON Code 39	EPSON Code 39 CD
	
EPSON Code 39 Num	EPSON Code 39 CD Num
 1 2 3 4 5 6 7	 1 2 3 4 5 6 7 S

EPSON Code128

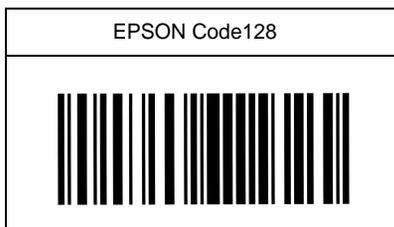
- ❑ Code128 fonts support code sets A, B, and C. When the code set of a line of characters is changed in the middle of the line, a conversion code is automatically inserted.
- ❑ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Code128 standard. For this reason, it is important to keep at least one space between the barcode and 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-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

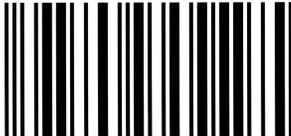
- ❑ The EPSON ITF fonts conform to the USS Interleaved 2-of-5 standard (American)
- ❑ Four EPSON ITF fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.
- ❑ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Interleaved 2-of-5 standard. For this reason, it is important to keep at least one space between the barcode and 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 (0-9)
Number of characters	No limit
Font size	When OCR-B is not used: 36 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: 26 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
- ❑ Zero added to beginning of character string 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

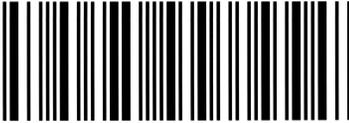
- ❑ Four Codabar fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.
- ❑ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Codabar standard. For this reason, it is important to keep at least one space between the barcode and 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 a letter “A”.

Character type	Numbers (0-9) 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 code (CR) 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 on 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, like this page, or landscape with the text printed on a page turned sideways.

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.

RI Tech

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.

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