EPSON® Action Laser™ II

User's Guide

EPSON® Action Laser II

User's Guide

Important Safety Instructions

1. Read all of these instructions and save them for later reference.

2. Follow all warnings and instructions marked on the product.

3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

4. Do not use this product near water.

5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

6. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.

7. This product should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

8. This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

9. Do not locate this product where the cord will be walked on.

10. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.

12. Except as specifically explained in the User's Manual, do not attempt to service this product yourself. Opening or removing those covers that are marked "Do Not Remove" may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to service personnel.

13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    A. When the power cord or plug is damaged or frayed.

    B. If liquid has been spilled into the product.

    C. If the product has been exposed to rain or water.

    D. If the product does not operate normally when the operating instructions are followed.. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by 'a qualified technician to restore the product to normal operation.

    E. If the product has been dropped or the cabinet has been damaged.

    F. If the product exhibits a distinct change in performance, indicating a need for service.

Safety Information

Laser Safety

This printer is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the printer does not produce hazardous laser radiation.

Since radiation emitted inside the printer is completely confined within protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.

CDRH Regulations

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2,1976. These regulations apply to laser products manufactured from August 1,1976. Compliance is mandatory for products marketed in the United States. The label shown below indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.
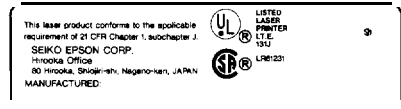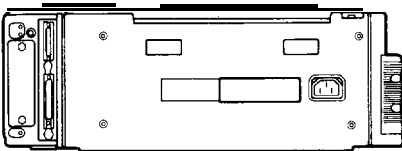
Operator Safety

This Laser Page Printer is considered a CDRH Class I laser device, safe for personal use.

The printer contains a 5 milliwatt, 760-810 nanometer wavelength, GaAlAs laser diode.

Direct (or indirect reflected) eye contact with the laser beam may cause serious eye damage; however, safety precautions and interlock mechanisms have been designed to prevent any possible laser beam exposure to the operator.

> ⚠ CAUTION: Use of controls or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Ozone Emission

During printer operation, a small amount of ozone is released. This amount is nct large enough to affect human beings adversely.

However, it is best to make sure the room where you are using the printer has adequate circulation, especially if you are printing a high volume of materials or using the printer continuously over a long period of time.

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Introduction

Your high-performance Epson® laser printer combines reliability and a wide range of features to give you high-quality printing that is both fast and quiet.

The printer uses a semiconductor laser with the electrophotographic technology used in photocopiers. The imaging system is driven by a powerful processor that allows the printer to compose an entire page in internal memory before printing. The printer provides you with many features not found on other types of printers, such as the ability to mix text and graphics and to print with a range of fonts normally associated with typeset material.

Features

In addition to the high-quality printing and ease of use you expect from an Epson printer, these features make using your new laser printer even easier:

❏ High-quality 300 dots-per-inch (DPI) printing at up to six pages per minute.

❏ HP LaserJet IIP™ emulation that gives you easy access to the great variety of software written for Hewlett-Packard® printers.

❏ A font cartridge slot for adding optional fonts to enhance the appearance of your documents.

❏ Two Epson ESC/P® emulation modes for compatibility with the range of software written for Epson 9-pin and 24-pin printers.

❏ Lower operating cost, because the consumable imaging component is divided into the photoconductor unit and the toner cartridge. You need only replace each when necessary, not both as a combined unit.

❏ Two built-in interfaces: A Centronics® parallel interface and an RS-232C serial interface. The RS-232C interface allows you to receive data at a baud rate of up to 19200 bps.

❏ 0.5 megabytes (MB) of RAM built-in, expandable up to 5.5MB, for graphics printing and multiple interface operation.

❏ The ability to connect two computers at the same time (or three when an optional interface is installed).

Options

Many printer options are available for your printer. For detailed information on installing and using these options, see Appendix A.

Paper cassette (legal)

If you use legal-size paper, you can purchase this optional cassette from your dealer. The cassette allows you to feed up to 100 sheets of legal paper into the printer.
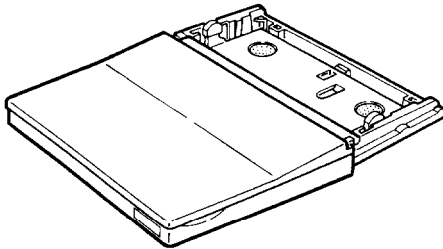
Multi-media feeder (C812141)

The optional multi-media feeder allows you to feed various-sized papers into your printer. This tray feeds up to 150 sheets of plain paper or 15 envelopes.
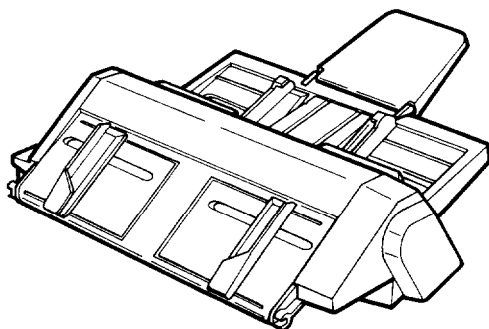
Epson optional interfaces

If you would like to use this printer with three computers or to connect two serial or parallel interfaces at the same time, install one of these interfaces:

   32 Kbyte serial interface (C823071)

   32 Kbyte parallel interface (C823101)
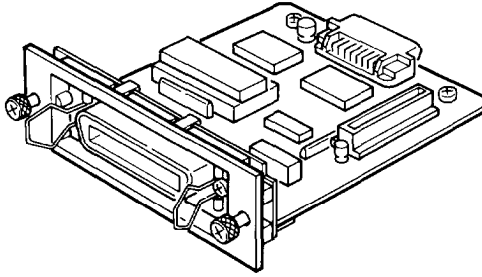
Memory board (C8226Ol)

You can increase your printer's memory using the memory board and memory chips. You can expand the memory to a total of 5.5MB, enough to print complex graphics. See Appendix A for information on expanding your printer's memory.
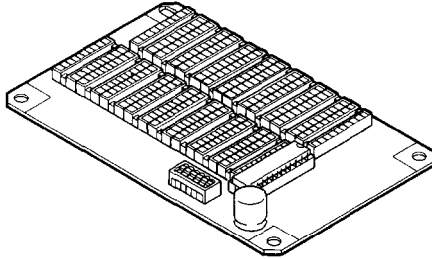
Epson GL identity card (C826021)

The Epson GL identity card allows your printer to emulate an HP
7475A/7440A plotter.
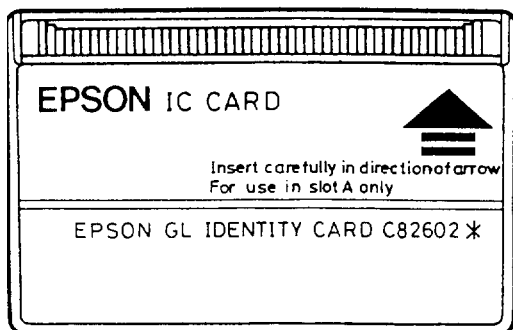
Laser printer precautions

This printer uses laser technology. The following list of precautions applies whenever you open the printer cover. Even if you are familiar with other types of printers, be sure to follow these precautions carefully to ensure safe, efficient operation.

❑ Do not touch the fuser, which is marked by a CAUTION: HOT SURFACE label. If the printer has been in operation, the fuser is very hot.

❑ Protect the light-sensitive photoconductor unit from exposure to light. Never expose it to sunlight, and expose it to room light for no longer than necessary. Overexposing the unit may cause abnormally dark or light areas to appear on the printed page and thereby reduce the service life of the photoconductor unit.

   If you must expose the unit either by taking it out of the printer or by leaving the printer cover open, cover the unit with a soft cloth or sheet of paper.

❑ Be very careful with the photoconductor unit. When you remove it from the printer, always set it on a clean, smooth surface. Also, move it only with the green handles, since oils from your skin can permanently damage parts of it and may affect print quality.

❑ Avoid pressing on the top of the toner cartridge.

❑ Never try to force the printer's components into place. Although the printer is designed to be sturdy, rough handling can damage it.

Finding your way around

This manual provides fully illustrated, step-by-step instructions on setting up and operating your printer.

Chapter 1 contains information on unpacking and setting up the printer. Be sure to read and follow these instructions first.

Chapters 2 and 3 contain information on using the control panel, testing and connecting the printer, and using your printer with application software. Chapter 4 includes a detailed description of SelecType, the control panel feature that allows you to customize your printer's interface and communication settings, font selection, and other print enhancements.

For a detailed discussion of paper handling, see Chapter 5. Make sure you read this chapter before purchasing paper.

Chapter 6 gives you information on maintaining and transporting your printer.

If the printer does not operate properly or the printed results are not what you expect, see Chapter 7 for troubleshooting tips.

Other chapters and appendixes contain information on technical specifications, printer options, printer modes, using font cartridges, and available symbol sets and character samples. The back of this manual includes a glossary of printer terms and an index.

At the back of this manual is a Quick Reference card showing all SelecType options and submenus. Use the SelecType menu maps found on this card as guides whenever you enter SelecType.

On the back cover foldout are illustrations identifying the different parts of your printer. You can refer to these as you set it up.

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.

Tips for the first-time laser printer user

To get you off to a good start with your Epson laser printer, we offer a few tips you may find helpful:

❑ **Remember to wait for the full page to be composed before it prints and feeds out.**

The printer takes about 45 seconds to warm up when you first turn it on and up to 20 seconds thereafter to print a page of text. When the FEED light on your printer control panel is flashing, data is being received from the computer. When the PRINTING message appears, your job begins printing.

❑ **Have an extra toner cartridge on hand before you reach 5000 copies.**

Unlike a dot matrix printer, which allows you to print even with a worn-out ribbon, you cannot continue to print without replacing an empty toner cartridge. A TONER LOW message lets you know that you must replace the toner cartridge after printing up to 20 more pages. Then TONER OUT appears.

❏ **On rare occasions, a print job needs an extra push.**

For some print jobs (such as a print screen), the printer may not print even though the data has been sent to the printer's memory. If the FEED light is on, press ON LINE to take the printer off line and then press the FEED button to print.

❏ **Adjust your software's lines-per-page setting to 60.**

You may have used a lines-per-page setting of 66 with your dot matrix printer. For most application software, you will need to reduce the lines-per-page to 60 when printing with your laser printer.

❏ **You may have to add memory if you print highly complex graphics.**

Your printer's 0.5MB memory easily handles most print jobs. However, if the INSUFF MEMORY, ADD MEMORY, or PAGE BUFFER FULL appears, you may have to add memory using the optional memory board and memory chips. See Appendix A in this manual.

❏ **Take advantage of your printer's special features.**

Your printer allows you to produce typeset-quality images. Use this manual along with your computer software manuals to enhance your printed presentations. The more legible and pleasing your document, the more likely it will be read and well-received.

❏ **Rest assured that your laser printer is safe to use.**

Don't hesitate to open the printer to clear paper jams or to replace the toner cartridge or photoconductor unit. Simply follow the Laser printer precautions found earlier in this chapter.

Where to get help

Epson America provides local customer support and service through a nationwide network of authorized Epson dealers and Service Centers.

Epson also provides the following support services through the Epson Consumer Resource Center at (800) 922-8911:

❑ Assistance in locating your nearest Authorized Epson Reseller or Service Center

❑ Technical assistance with the installation, configuration, and operation of Epson products

❑ Epson technical information library fax service

❑ Product literature with technical specifications on our current and new products

❑ Sales of ribbons, supplies, parts, documentation, and accessories for your Epson product

❑ Customer Relations.

Chapter 1
Setting Up the Printer

Finding a Place for the Printer

Before unpacking the printer, you need to find a suitable place to use it. Follow these guidelines:

❏ Place the printer on a flat, stable surface.

❏ Place the printer close enough to the computer or workstation for its cable to reach.

❏ Use a grounded outlet that has three holes to match the plug on the printer's power cord. Do not use an adapter plug.

❏ When you use the printer's standard parallel interface, make sure you have a shielded twisted-pair parallel cable less than 3 m (10 ft) in length.

❏ Leave adequate room around the printer to allow easy printer operation and maintenance. The diagram below shows the amount of space recommended.
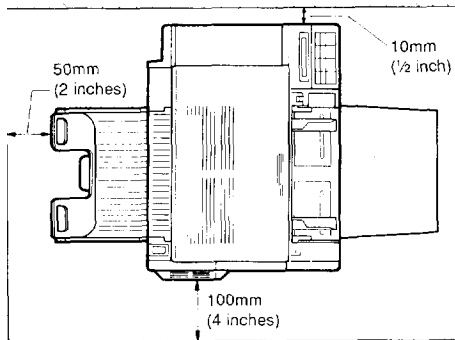
❏ To give you enough room to open the printer cover, allow 335 mm (13.5 inches) from the bottom of the printer to any shelf or surface directly above the printer, as shown on the next page.

335mm
(13.5 inches)
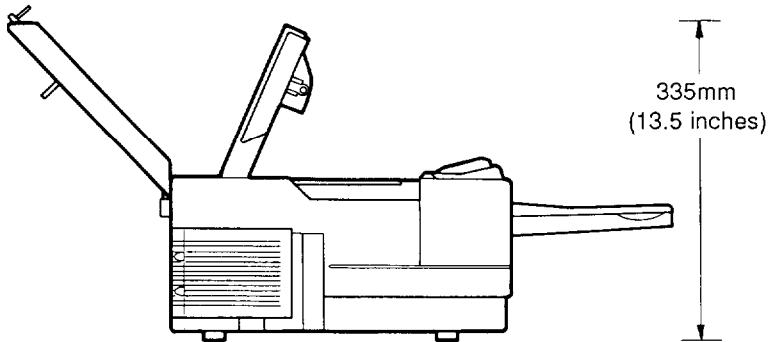
CAUTION: Avoid locations that are subject to direct sunlight, excessive heat, moisture, or dust.

❏ Avoid using electrical outlets that are controlled by wall switches or automatic timers. Accidental disruption of power can wipe out valuable information in your computer's and printer's memory.

❏ Avoid using outlets on the same circuit with large motors or other appliances that might affect the power supply.

❏ Keep the entire computer and printer system away from potential sources of interference, such as loudspeakers or the base units of cordless telephones.

Unpacking the Printer

The printer and the other components are in separate packaging inside the main carton.

1. Carefully unpack the main carton and make sure you have the accessories shown below.

Paper Cassette

User's Guide

Output Tray

Photoconductor
Unit

Toner Cartridge
Power Cord

Output Tray
(smaller part)
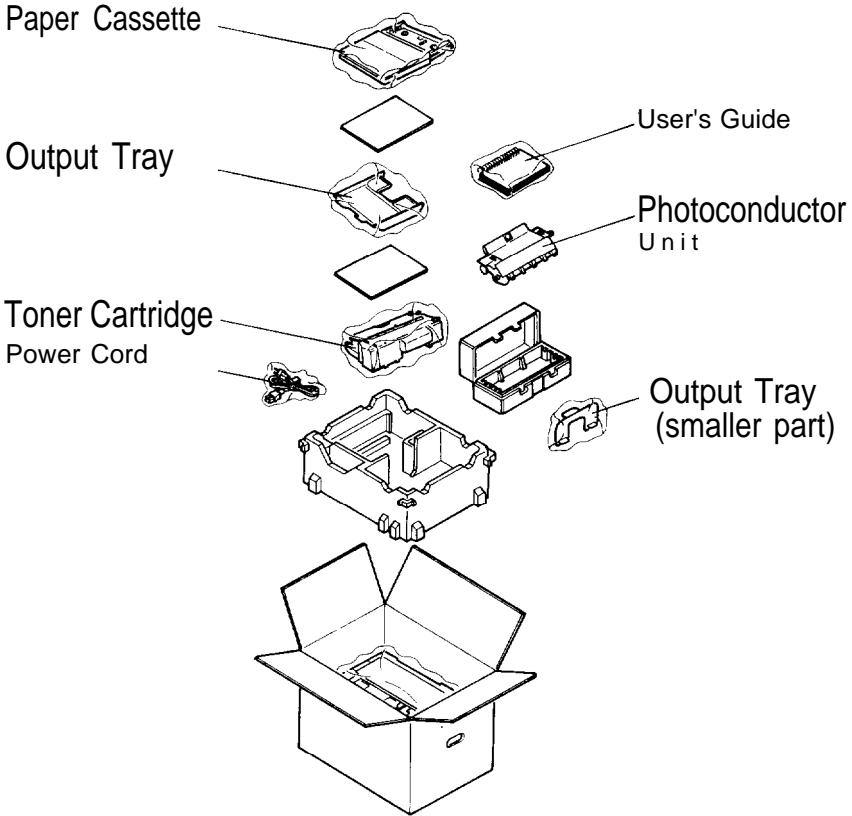
2. Carefully remove the printer from the large carton and set it on a flat, stable surface. Since the printer is heavy, you may need someone to help you lift it.
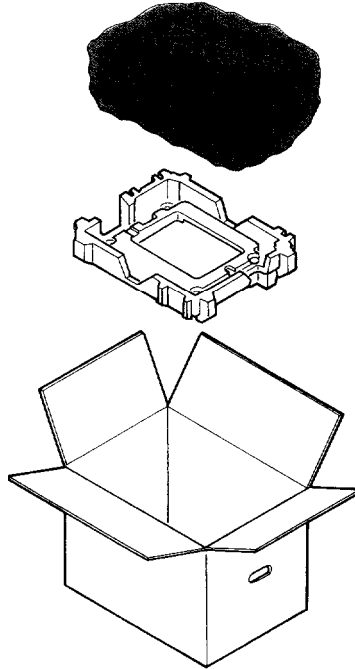
3. Remove the plastic protective bag from the printer. Then remove the plastic bags from the paper cassette, output tray, and power cord.

Note: Make sure that you save all packing materials. Repack the printer in these materials whenever you ship it. See Chapter 6 for details on transporting your printer.

Carrying the printer

When you move your printer to the location you selected, carry it by placing your hands underneath each side of it, as shown below:
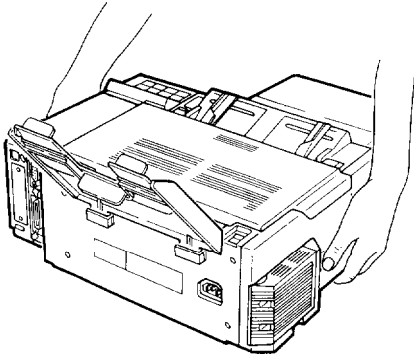
Note: The printer weighs about 13 kg (29lbs) and should be carried with care. You may need someone to help you lift it.

Assembling the Printer

Before you can use the printer, you need to install a few parts. Make sure your printer is in its operating location before you install these parts.

Note: The consumable parts for this printer are listed below. It is recommended you keep spares on hand for timely replacement. For more information about the life of these parts, see Consumable parts in Chapter 8.

Photoconductor unit   Lasts up to 30,000 pages

Toner cartridge   Lasts up to 5,000 pages, depending
                              upon the complexity of print jobs

Installing the Photoconductor unit

The first component you need to install is the photoconductor unit. Follow the guidelines below during installation; otherwise, print quality may decline.
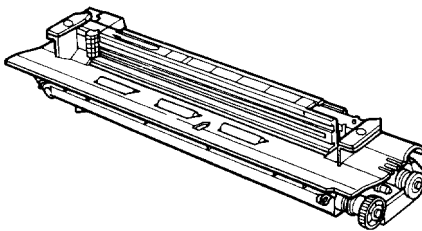
> (!) CAUTION:
>
> ❏ Never touch any part of the photoconductor unit except the green handles.
>
> ❏ Do not expose the photoconductor unit to light brighter than normal room light.
>
> ❏ Never install the toner cartridge before you install the photoconductor unit.

1. Push down on the latch on the top of the printer to open the printer cover.
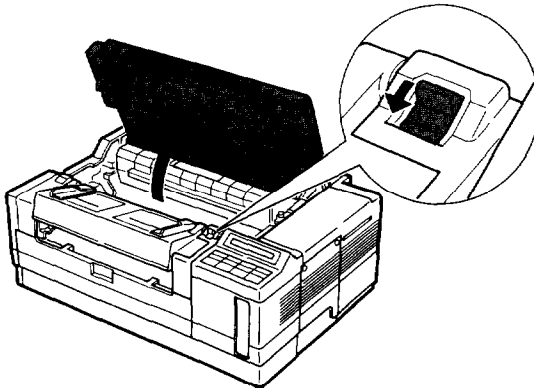
2. Remove the photoconductor unit from its packaging. Pull the red
   protective pieces from both sides of the unit, as shown below.
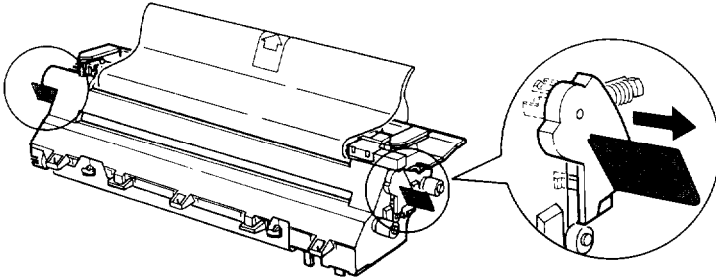
3. Hold the photoconductor unit by the green handles and insert it
   into the printer, as shown below.
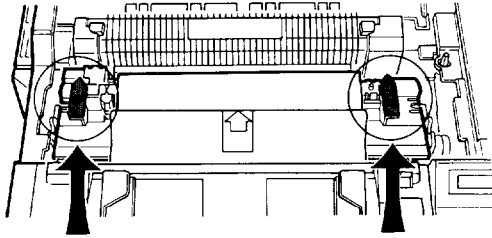
4. Pull out the protective black paper from the photoconductor
    unit.
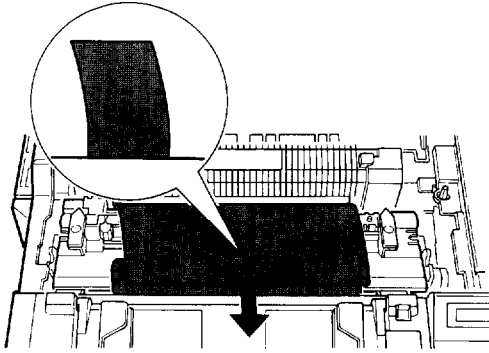
5. Gently press down on the top of the printer cover until the latch
    clicks shut.
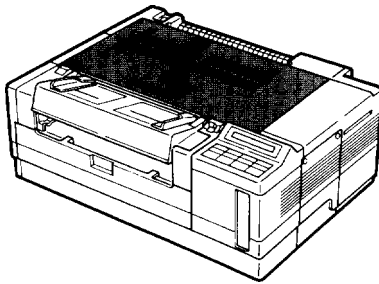
Note: You cannot close the printer cover if the photoconductor
unit is not installed correctly. If you cannot close the cover,
remove the unit and then re-install it correctly. Then close the
printer cover.

Installing the toner cartridge

After installing the photoconductor unit, you install the toner cartridge. The toner cartridge performs two jobs: providing the toner and developing the image.

Note:

❏ You cannot install the toner cartridge before you install the photoconductor unit.

❏ To ensure even toner distribution, always keep the toner cartridge in a horizontal position during handling.

---

1. Open the front cover.
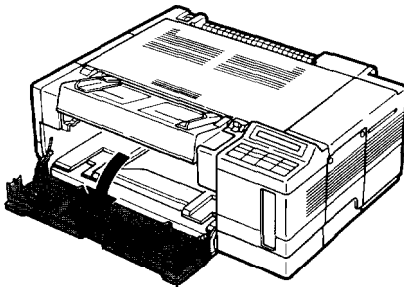
2. While holding the toner cartridge in a horizontal position, gently shake the cartridge from side to side a few times to distribute the toner evenly.

3. Remove all the packing tape from the toner cartridge. Then pull the seal tape out of the cartridge firmly in the direction of the arrow.
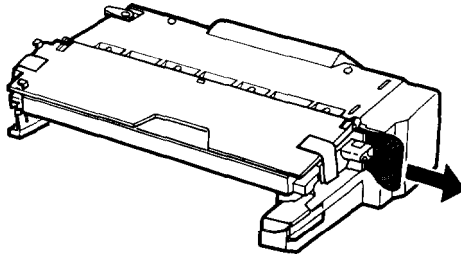
4. Lift the toner cartridge cover and push it all the way down until it snaps into place.
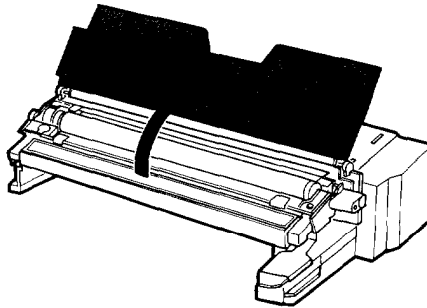
CAUTION:

❏ Never touch the roller under the toner cartridge cover; otherwise, print quality may decline.

❏ Make sure the toner cartridge cover is open before sliding the cartridge into the printer.

---

5. Insert the toner cartridge into the printer by sliding it gently into the opening until it locks in place.
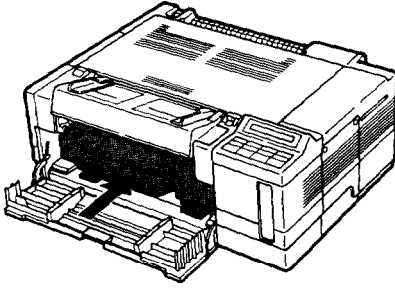
6. Close the front cover.
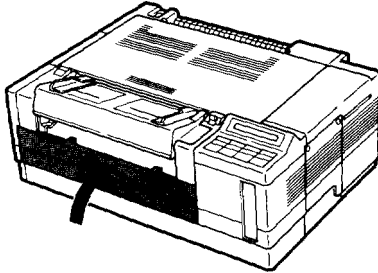
Installing the output tray

1. Attach the smaller part of the output tray by fitting the holes on its sides over the two pegs inside the cutout portion of the main tray as shown below.
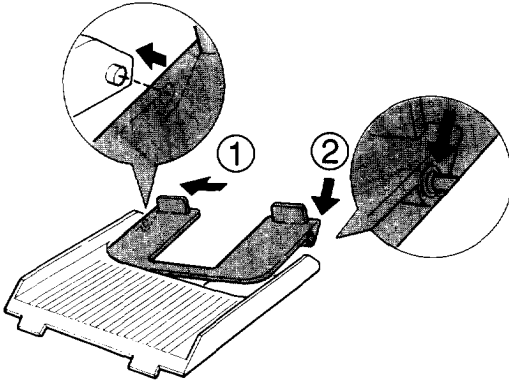
2. Then attach the assembled output tray by sliding the tray legs into the slots on the back of the printer.
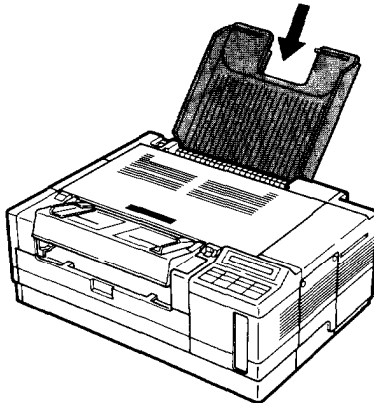
Loading and installing the paper cassette

1. Remove all the pieces of packing tape from the paper cassette.
   Then push down on the metal plate on the bottom of the cassette
   until it locks in place.
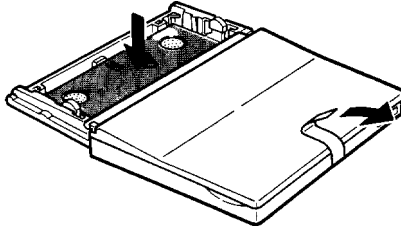
2. Open the paper cassette cover.
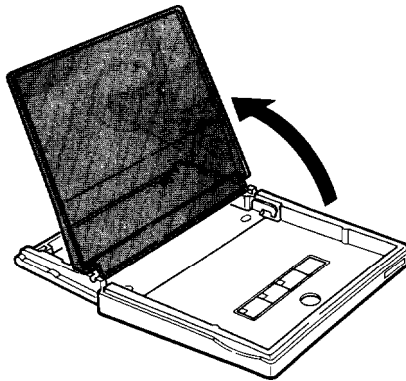
3. Take a stack of letter-size paper and fan it. (High-quality copier paper is recommended.) Tap the edges of the paper on a flat surface to even up the stack.
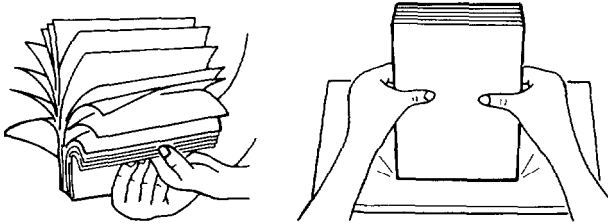
4. Load a stack of up to 100 sheets of paper into the cassette.
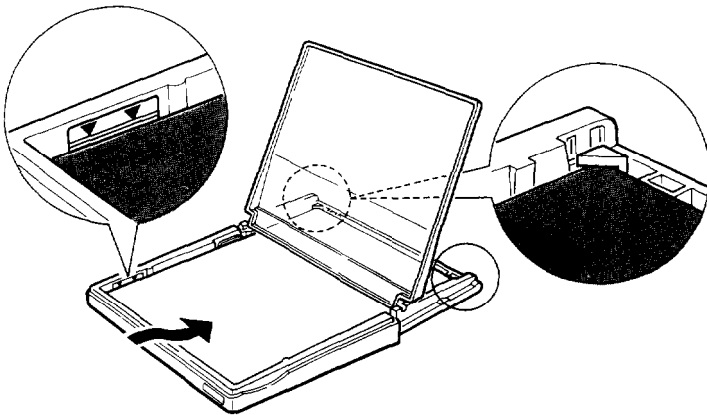
> ⚠ CAUTION:
>
> ❑ Make sure the bottom plate of the cassette is in the lowered position; otherwise, a paper jam may occur.
>
> ❑ Before loading paper, remove the paper cassette from the printer. Otherwise, you may break its cover.
>
> ❑ Do not load paper above the marks inside the cassette. You can load up to approximately 100 sheets of plain paper in the cassette.
>
> ❑ Make sure the corner brackets on the cassette cover the edges of the paper.

5. Close the paper cassette cover.

6. Insert the cassette along the slots on the inside of the printer until it locks in place.
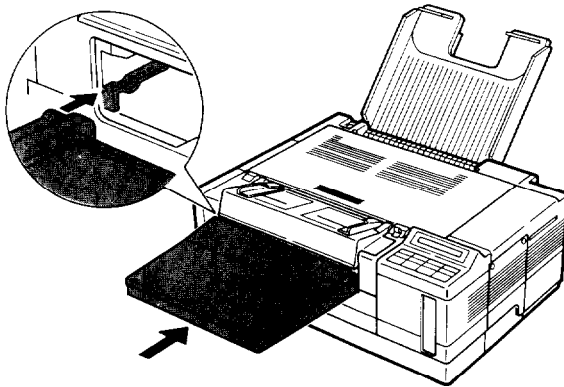
Note: The standard cassette holds letter-size paper. If you would like to use other paper sizes, please contact your Epson dealer. Optional paper-feeding accessories are available.

Attaching the power cord

1. Before attaching the power cord, make sure the power switch on the printer is turned off. It is off when the O on the switch is pressed down, as shown below.
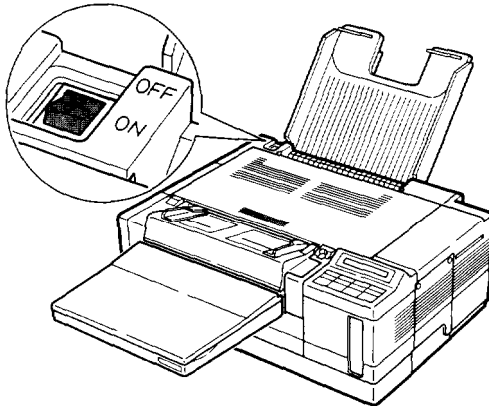
2. Make sure the rated voltage of the printer matches your outlet voltage by checking the label on the back of your printer.
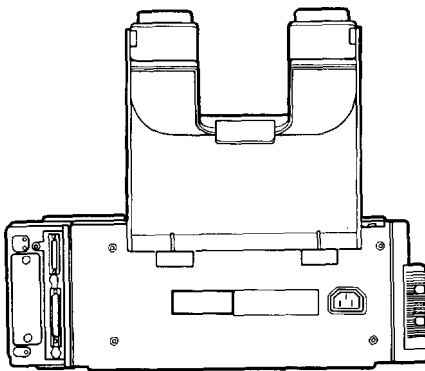
> WARNING: If the voltage of the printer and outlet do not match, do not plug in the power cord. Contact your dealer for assistance.

3. Insert the power cord into the socket at the back of the printer, as shown below. Then plug the other end of the cord into a properly grounded outlet.
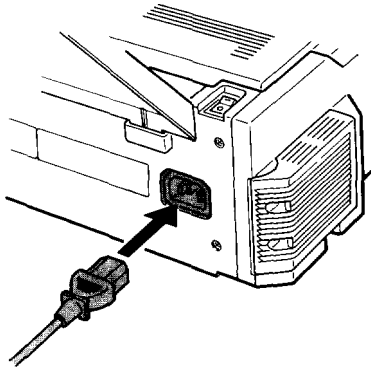
Chapter 2
Testing and Connecting Your Printer

2

The Control Panel

The printer control panel is made up of three elements: a liquid crystal display, indicator lights, and buttons. The indicator lights and display let you check the current status of the printer. You use the buttons to select printer settings and functions.

Display
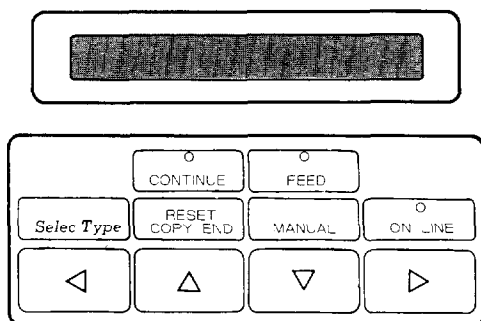
The display shows the printer's status and available options.

❏ Status messages, such as WARMING UP, indicate the printer's current status.

❏ Error messages, such as PAPER OUT, inform you of maintenance procedures that must be performed or of error conditions.

❏ SelecType options, such as MODE ASSIGN, allow you to control printer mode, font selection, paper handling, and many other printer functions.

For information on SelecType instructions and messages, see Chapter 4. For a complete list of status and error messages, see Chapter 7.

Indicator lights
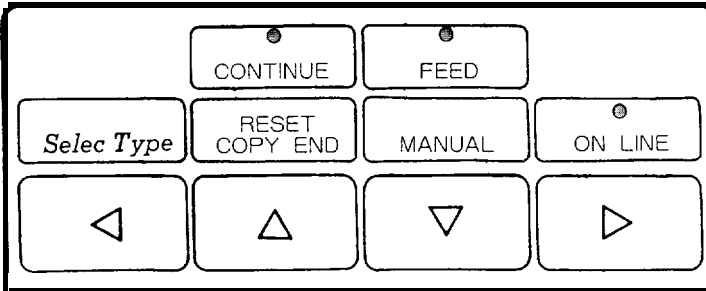
CONTINUE

Flashes when an error is detected or maintenance must be performed. At the same time, an error or maintenance message appears on the display.

FEED

On when data is received and stored in the printer but has not yet been printed. Rapid flashing indicates the printer is receiving data from the computer. If the light flashes slowly, the printer is receiving data through an interface other than the default interface in auto-sense mode.

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 and off line status.

Buttons
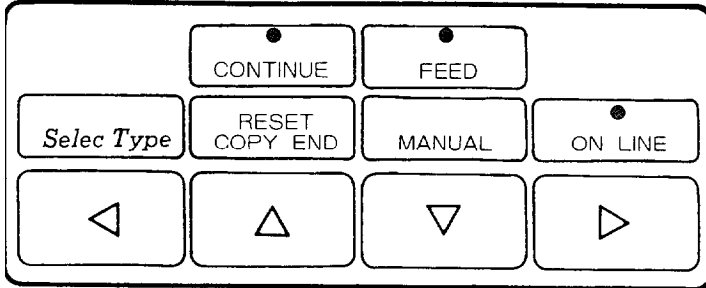
SelecType

Enters or exits SelecType mode. Press once to enter Level 1; keep holding it down to enter Level 2. For a complete description of the two SelecType levels and their various functions, see Chapter 4.

CONTINUE
RESET
COPY END

This button has several functions, so it has three names. This manual uses the name appropriate to the operation being described.

CONTINUE-Enables the printer to resume printing automatically after certain error or maintenance-required conditions. If the CONTINUE light is flashing, read the corresponding status or error message on the display and correct the problem as described in Chapter 7, which has a complete list of status and error messages.

RESET-Cancels some settings made with SelecType or software commands. When you hold down this button for several seconds, RESET appears on the display panel and all settings return to their previously-saved values. The printer finishes printing the page already in progress at the moment this button is pressed; however, all remaining data is discarded. If you press $\triangle$ or $\triangledown$, the printer returns to its previous status without printing data.

If you continue to hold down this button after RESET appears, INITIALIZE appears on the display and the printer settings return to the settings in effect at power on. See Chapter 4, SelecType.

COPY END-Cancels the remaining copies during multi-copy printing. This button is effective only when multiple-copy printing is selected and the printer is off line.

FEED
MANUAL

If the FEED light is lit, press ON LINE to take the printer off line. Then press FEED to print out data in the printer's memory. If you use more than one channel, you can print data received by each of those channels.

To select manual paper feeding, press this button when the FEED light is off or flashing slowly and the printer is on line.

ON LINE

Switches the printer between on line and off line status. This switch is disabled when the printer is in SelecType mode.

Testing the Printer

The printer has three built-in print tests: the status sheet and two test prints. These tests let you check the operation of your printer and obtain information on printer settings.

Before running a test, make sure you have removed all packing materials from the printer, as described in Chapter 1, and that you have installed all printer parts. You do not need to connect the printer to your computer to run these tests.

Turning on the printer

Turn on the power by pressing the power switch located on the top left comer of the printer. The printer is on when the vertical line (I) is pressed down. The control panel lights turn on briefly.
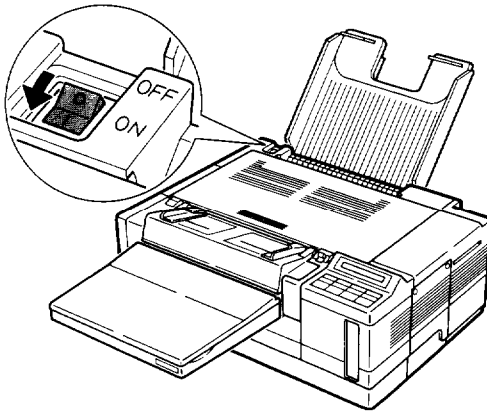
Note: If a FEED JAM message appears on the control panel, remove the paper cassette and any paper in the printer. Next, open and close the printer cover. Then replace the paper cassette.

The following messages appear as the printer performs internal tests and warms up.

```
ROM Check
```

```
RAM Check 0.5MB
```

```
W A R N I N G
```

```
READY : P LJ-2P
```

CAUTION:

❏ Do not open the printer cover while the printer is warming up or printing.

❏ After you turn off the printer, always wait at least five seconds before turning it back on.

❏ Never turn the printer off while it is printing or feeding paper. Otherwise **a** STARTUP error may occur.

It takes approximately 45 seconds for the printer to complete its power-on routine.

When the READY message appears, you can begin the test print operation. If the display remains blank, see Chapter 7 for troubleshooting information.

Selecting and printing a status sheet or test print

To select and print a status sheet or test print, you must enter SelecType. The printer has two SelecType levels; the status sheet feature is in SelecType Level 1 and the test-print feature is in Level 2. The level selected depends on the amount of time you hold down the *SelecType* button.

Note: For a complete description of SelecType levels and functions, including Level 2 test prints, see Chapter 4. You may also use the Quick Reference card located at the back of this manual.

Selecting and printing a status sheet

A status sheet lists the current printer settings.

1. Make sure that your printer is turned on.

2. Press the *SelecType* button until SelecType LEVEL1 appears.

Note:

❏ If you have used SelecType before, and if the printer is set up to use more than one channel, the following option appears on the display at step 2:

CANCEL : < S : ⸬ P: ⸗ O : >

❏ Press △ , ▽ , ▷or   to choose your channel. Then go on to step 3.

3. Press ▽ until STATUS SHEET appears on the display.

```
⬦STATUS SHEET            ⟩
```

4. Press **D** twice to print the status sheet. A sample printout is
   shown below.

```
                            STATUS SHEET                          EPSON
Printer Configuration

   Installed Memory : 3.OMbytes          Controller Version : 15.04
   CH Mode          : AUTO-SENSE         CH Time out         : 28
   Auto Continue    : OFF                Total Printed Count: 25
   Standby          : DISABLE

   CH  : P
   Mode             : LJ-2P              Version             : 17.04

 I/F : PARALLEL

 PARALLEL (CH P)
  SLCTIN    : OFF         AUTOFEED     : OFF        BUSY Delay(µs) : 0

 SERIAL (CH S) : RS232C
  Word Length(bit) : 8      Baudrate(bps) : 9600    Parity       : NONE
  Stop Bit         : 2      DTR           : ON      XON/XOFF     : ON
  DSR              : OFF    CTS           : OFF     ENQ/ACK      : OFF

 Receive Buffer    : 1kbytes

Mode Configuration
 Input  Tray  : AUTO      Font       : RD-0      Paper size  : LETTER
 Copies       : l         Orientation : PORT

Sub Configuration
 Form Length  : 60        Symbol  Set  : Roman-S

System Configuration
     Top Offset   : 0                     Left Offset    : 0
     Full  Print  : 0                     Memory Left    : 2949Kbytes
     Load  Macro  : 0                     Power On Macro : 0
```

Note: The status sheet prints the printer's current settings,
including any new macro settings. See Chapter 4 for information
on macro settings.

5. Press the *SelecType* button twice to exit SelecType.

If the status sheet does not print properly, see Chapter 7 for
troubleshooting information.

If the status sheet prints correctly, you can skip to Connecting the
Printer to Your Computer found later in this chapter.

Adjusting print density

If your status sheet is too light or too dark, use the print density
control knob inside the printer to make the printing darker or
lighter.

1. Push down the latch on the top of the printer to open the printer
    cover. Locate the small green knob on the inside right middle of
    the printer as shown below.
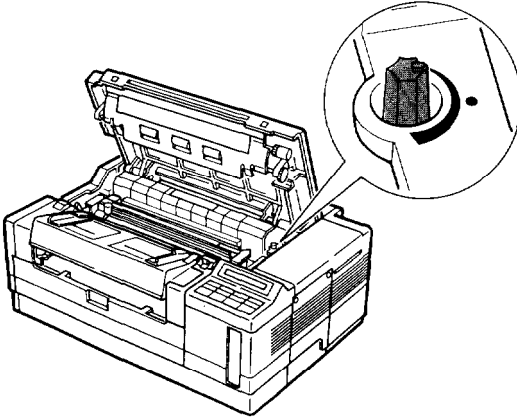
2. For darker print, turn the knob clockwise.

A ➞ A
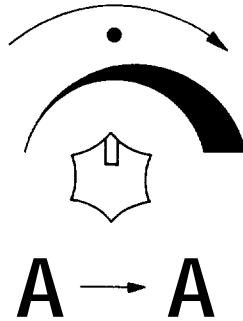
3. For lighter print, turn the knob counterclockwise.

A ➞ A
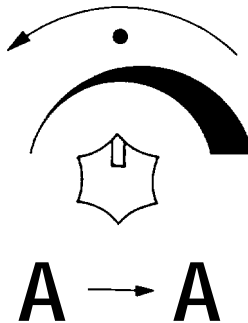
Note:

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

Cl When you replace the toner cartridge, turn the knob to the default position. The knob clicks when you reach the default position.

4. Close the printer cover.

5. Print a status sheet again to check the new print density setting.

Connecting the Printer to Your Computer

For the printer to receive and interpret information from your computer, both devices must be set up to communicate properly. You must choose the correct interface cable and communication settings.

> **Note:** After connecting the printer to your computer and before using your application software, be sure to complete Testing the computer-to-printer connection found at the end of this chapter.

Select from the following built-in and optional interfaces:

❏ Centronics-compatible parallel interface

❏ RS-232C serial interface

❏Optional Epson interfaces:

   32K serial interface (C823071)
   32K parallel interface (C823101)

Other optional interface boards may be available. Contact your Epson dealer for details.

serial interface

optional interface

parallel interface
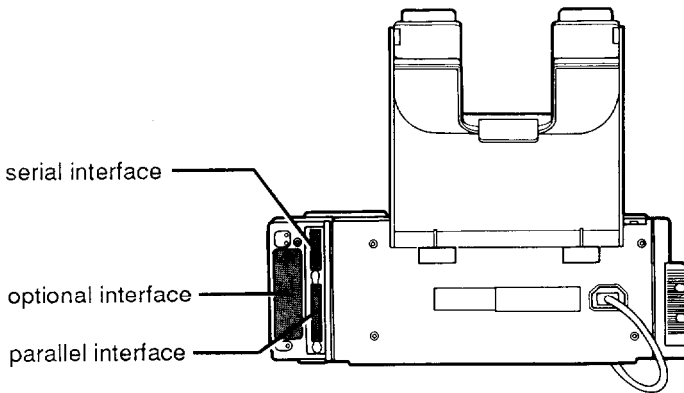
Connecting the printer to more than one computer

You can connect up to three computers to your printer at the same time; simply connect the interface cables to any of the built-in or optional interfaces.

Choosing an interface

To connect the printer to your computer, first determine whether you require a parallel or serial connection. If your computer provides both types of connection, use the parallel interface for the printer and leave the serial port of your computer free for devices such as modems. If you are in doubt about which type of connection to use, consult your dealer.

The printer is initially set up for parallel communication. If your computer has a parallel interface, you should be able to connect it to the printer with a properly shielded cable and not change any factory settings.

If, however, you find that you need a serial interface, you may need to use SelecType to change some of the printer's serial settings, such as baud rate or parity, to match the computer's settings. Chapter 4 provides instructions on setting up the serial interface to operate with your computer. For information on the optional interface board, see Appendix A.

Connecting the parallel interface

If you want to use the printer's standard parallel interface, make sure you have a shielded twisted-pair parallel cable less than 3 m (10 ft) in length.

1. Turn off both your printer and computer. Then unplug the power cords from the electrical outlets.

2. Plug the parallel cable connector securely into the parallel
    interface of the printer as shown below.
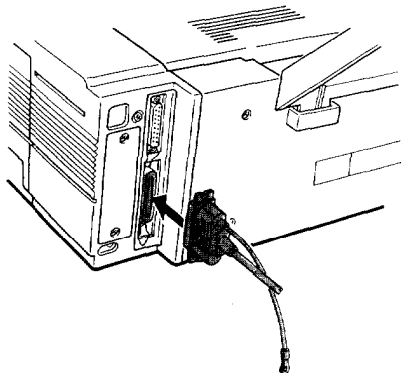
3. Squeeze the wire clips together until they lock in place on either
    side of the connector.
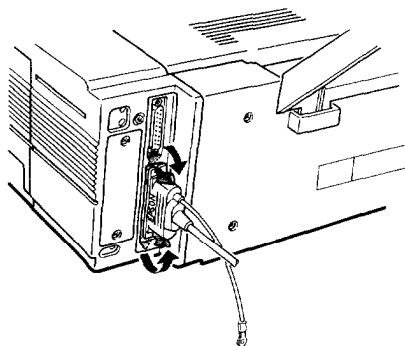
4. If your cable has a grounding wire, connect it to the printer's ground connector as shown.
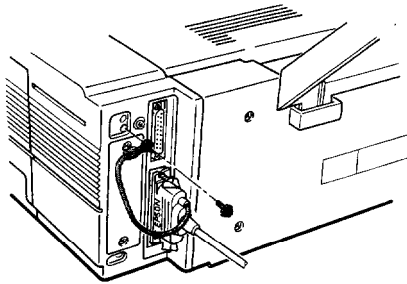
5. Plug the other end of the parallel cable into your computer and fasten the connector screws to the interface, if necessary. Some parallel cables have grounding wires at the computer end as well. If so, connect this wire to the ground screw on the computer.

Note: You can use the SelecType Level 2 I/F CONFIG option to change some of the parallel interface settings. However, you will probably never need to change these settings.

Now you can test the computer-to-printer connection as described below.

Testing the parallel connection

To make sure you properly connected your computer to your printer, follow these steps before you begin working with your application software:

1. Turn on your computer; then turn on your printer.

2. Bring up a DOS prompt on your computer screen such **as:**

   c:>

   If you do not have a C drive, A:> or B:> may appear.

3. Type DIR and press Enter. The screen shows a directory listing of the files in the designated drive.

4. Press the Print Screen button on your keyboard once.

5. Press RESET on your printer control panel. The printer prints what is on your screen, as shown below.

```
C:\EPL>dir

 Volume in drive C has no label
 Directory  of  C:\EPL

.               <DIR>       11-20-90     6:26p
..              <DIR>       11-20-90     6:26p
PRNTWIN3 BAT        166     11-20-90     2:09p
READWIN3 BAT        104     11-20-90     2:07p
READWIN2 BAT        104     11-20-90     2:52p
PRNTWIN2 BAT        166     11-20-90     2:53p
READOS2  BAT         33     11-20-90     4:59p
PRNTOS2  BAT         97     11-20-90     5:00p
WIN2C    TXT        372     11-20-90     4:46p
WIN3B    TXT        685     11-20-90     2:04p
WIN3C    TXT        642     11-20-90     4:49p
OS2      TXT        667     11-20-90     4:58p
WIN2A    TXT       1058     11-20-90     4:45p
WIN3A    TXT       1079     11-20-90     4:47p
WIN2B    TXT        530     11-20-90     2:56p
        15  File(s)    8093696  bytes  free

C:\EPL>
```

6. If nothing prints or the results are not what you expect, review the section on Connecting the Printer to Your Computer found earlier in this chapter. Make sure that you used the proper cable, that the cable is connected securely to both the computer and the printer, and that you selected the appropriate interface.

7. If you are still not able to print the computer screen, see Where to Get Help in the introduction of this manual.

Connecting the serial interface

If you want to use the printer's standard serial interface, make sure that you have a properly shielded cable and that it is the correct one for your printer.

1. Turn off both the printer and computer. Then unplug the power cords from the electrical outlets.

2. Plug the serial cable connector securely into the serial interface of the printer, as shown below.
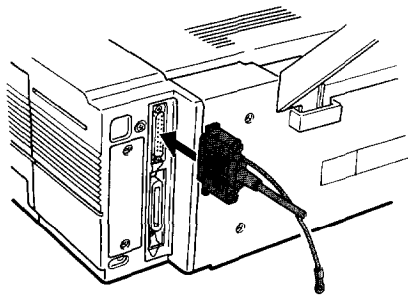
3. Use a screwdriver to fasten the screws of the connector, if required.
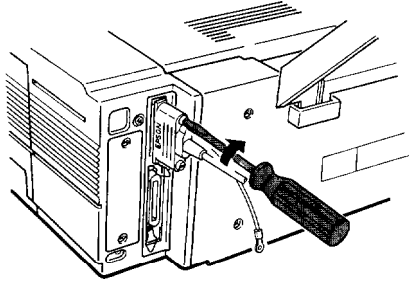
4. If your cable has a grounding wire, connect it to the printer's ground connector.
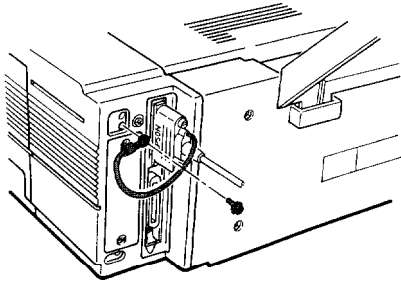
5. Plug the other end of the serial cable into your computer. (Fasten the connector screws to the interface, if required.)

You may need to change some interface settings, such as baud rate and parity, before your printer and computer can communicate properly. See Chapter 4 for instructions on setting up the serial interface to work with your computer.

Chapter 3

Using your Printer with Application Software

3

Using Printer Selection Menus

Once you've set up the printer, you can start using it with your application software program by choosing a printer name from the program's printer selection menu.

If your program has a printer selection menu, follow the instructions below about printer emulation (operating) modes to get the best performance from your printer.

Matching the printer mode to your application program

Your printer has three printer operating modes, also called emulations. They are:

HP LaserJet IIP emulation
Epson ESC/P LQ printer emulation
Epson ESC/P FX printer emulation

The printer is factory-set to HP LaserJet IIP mode, and this setting gives you the fullest range of features. For more information about printer modes, see Appendix D.

HP LaserJet III' emulation mode

When your printer is in HP LaserJet IIP (LJ-2P) mode, the factory setting, select one of the following drivers from your program's printer selection menu:

HP LaserJet IIP
HP LaserJet series II™
HP LaserJet Plus™
HP LaserJet 500™
HP LaserJet™

If none of the above printers is listed among your program's options, select any printer model that uses the HP Printer Command Language (PCL). Do not select PCL-5.

Epson LQ and FX emulation modes

If your software supports only Epson LQ or FX printers, select the appropriate emulation mode using SelecType. To choose LQ mode, follow the steps below. (To choose FX mode, at step 4, simply choose FX instead of LJ-2P or LQ.)

1. Press and hold down the *SelecType* button until SelecType LEVEL2 appears on the display.

2. Press ▽ until MODE ASSIGN appears.

```
‡ MODE ASSIGN          >
```

3. Press ▷ The following appears on the display.

```
‡CH P   LJ-2P          >
```

> Note: If you want to change the printer mode for the serial or optional interfaces, press ▽ until S or O appears.

4. Press ▷ . Then press ▽ until the mode you want to use appears. (The mode is LQ in this example.)

```
    CH P ‡LQ          >SET
```

5. Press ▷ to set the mode.

6. Press ◁ three times to exit SelecType.

> **Note:** The printer mode you have selected remains in effect
> only until you turn off the printer unless you store the current
> printer mode settings by performing the P-CONFIG SAVE
> function described in Saving the paper-size setting in
> Chapter 5.

7. Enter your program's printer selection menu and choose the first
    printer available from the list of printers below. (They are listed
    in order of preference.)

When your printer is in LQ mode, select one of the following from
your program's printer selection menu:

    LQ-2500
    LQ-1050/850
    LQ-510
    LQ-1000/800 (expanded ESC/P)
    LQ-500
    LQ-1500 (with version 2 ROM)
    LQ printer

In FX mode, choose one of the following:

    Fx-850/1050
    FX-1000/800 (286e/86e)
    FX-85
    FX-80

If none of the above printers is listed among your program's options,
choose the first available of the following: Epson printer, Standard
printer, Draft printer.

Printing a test file

After you set the printer mode and select the most appropriate printer from your program's printer selection menu as described above, create and print a test file using the fonts, symbols, features, and formats that you use most often. Printing the test file shows you how the printer works with your application program.

If the printing results are not what you expect, see Chapter 7, Troubleshooting, or consult your computer or software manual.

Chapter 4

SelecType

4

SelecType Overview

The SelecType function on the printer control panel allows you to print test pages, display memory size, select paper sizes, and change your printer's configuration without using DIP switches or software commands. However, use SelecType only when you are unable to use your application software to control settings required for your print job.

Note: New SelecType settings are in effect only until you turn off the printer unless you save them with the Level 1 SYSTEM CONFIG option or the Level 2 P-CONFIG SAVE option described later in this chapter.

SelecType is divided into two levels as shown below. A brief description of each main menu option follows. See SelecType Options later in this chapter for detailed descriptions of all SelecType options.

Level 1	Level 2
CH SELECT	TEST PRINT
INPUT	MODE ASSIGN
P-SIZE	I/F CONFIG
COPIES	RX-BUFFER SIZE
ORIENT	CH
FONT	CH TIMEOUT
STATUS SHEET	AUTO CONT
FONT SAMPLE	P-CONFIG SAVE
SUB CONFIG	FACTORY RESET
SYSTEM CONFIG	VERSION
	PAGE COUNTER
	STANDBY

Note: See the Quick Reference card at the back of this manual for a map of SelecType menus and options.

SelecType Level 1 functions

INPUT	Selects the standard cassette or the optional multi-media feeder or both.
P-SIZE	Specifies the size of paper.
COPIES	Selects the number of copies to be printed.
ORIENT	Orientation. Selects portrait (vertical) or landscape (horizontal) printing orientation.
FONT	Selects one of the available fonts.
STATUS SHEET	Prints a report listing the current printer settings.
FONT SAMPLE	Prints all font samples (bit-map and scalable fonts) in the printer.
SUB CONFIG	Subconfiguration. Depending on the printer mode, controls such features as symbol set and number of text lines.
SYSTEM CONFIG	System configuration. Saves Level 1 settings in macros for one or more printer modes, displays the amount of memory remaining, changes top and left offsets, and controls printing of complex pages.

SelecType Level 2 functions

TEST PRINT	Prints two test patterns.
MODE ASSIGN	Chooses one of the emulation modes: HP LaserJet III', Epson LQ, Epson FX, or (with the optional identity card installed) Epson GL.
I/F CONFIG	Configures the parallel and serial interfaces.
RX-BUFFER SIZE	Chooses the size of the receive buffer,
CH	Channel mode. Sets the interface channels to auto-sense or individual.
CH TIMEOUT	Channel time out. If no data is sent during the specified time period, the printer switches from one channel to the other.
AUTO CONT	Automatic continue. Permits the printer to continue printing instead of stopping under certain error conditions.
P-CONFIG SAVE	Printer configuration save. Saves all Level 2 settings.
FACTORY RESET	Returns all Level 1 and Level 2 settings to their factory settings.
VERSION	Displays the version numbers of the printer's controller and font.
PAGE COUNTER	Displays the total number of sheets printed by the printer and the number by the current photoconductor unit.
STANDBY	Conserves power by reducing power to the fixing heater when the printer is not used for 30 minutes.

Using SelecType

This section describes the control panel and explains how to use SelecType. If you would like to try a sample exercise, see Steps to using SelecType later in this section.

The Control Panel

The control panel contains the *SelecType* button (which also functions as the left arrow button, ◁)   three indicator lights, four arrow buttons, and the display.
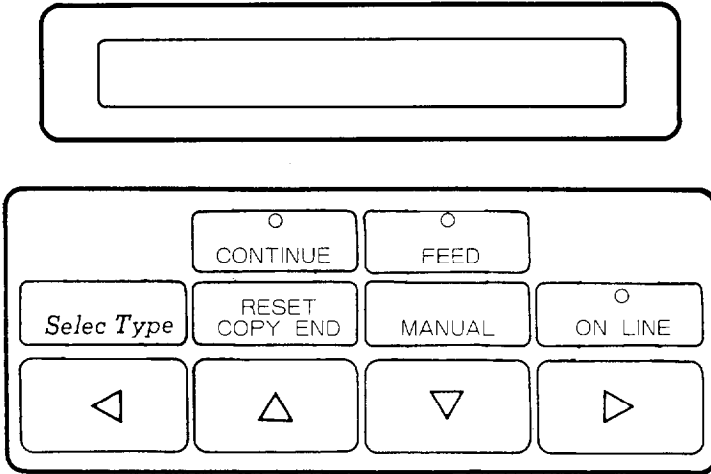
The Display

When you enter SelecType, menus and options appear on the display. The display shows SelecType main menus on the left side and options for each menu on the right side.

The display also uses the icons shown below:

⁙	This icon to the left of an option indicates that you can press either △ or ▽ to view other options in the menu.
⊹	This icon to the left of an option indicates that the option displayed is the current selection. You can use △ or ▽ to view other options.
⋱	This icon indicates that you can press ▷ to enter a submenu, select an option, set an option, or execute an action.

Buttons
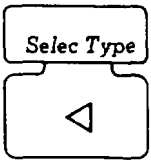
Selec Type ◁	Enters and exits SelecType mode. To enter Level 1 press the *SelecType* button until SelecType LEVEL1 appears on the display; to enter Level 2 hold the button down longer until SelecType LEVEL2 appears on the display.

Use the arrow buttons to move through menus and to select, display, set, or execute SelecType options.

▷	Enter a submenu, set an option, or select or execute an action.
◁	Return to the main menus or exit SelecType.
△ ▽	Display options in the same menu. You can view the options one at a time by pressing the buttons once or you can scroll through them quickly by holding down one of these arrows.

Steps to using SelecType

There are five basic steps to using SelecType:

1. Enter SelecType mode.

2. Move to the option you want.

3. Set, select, or execute the option.

4. Save the new setting, if necessary.

5. Exit SelecType mode.

You'll see how to complete each step on the following pages. This
section uses the SelecType Level 1 INPUT option to explain the steps
to using SelecType. You may want to try each step as you read it for
hands-on practice.

Enter SelecType mode

SelecType has two levels, Level 1 and Level 2. To enter Level 1 press
the *SelecType* button until SelecType LEVEL1 appears on the display;
to enter Level 2 hold the button down longer until SelecType
LEVEL2 appears.

Press *SelecType* until SelecType LEVEL1 appears on the display.
Then one of the Level 1 main menu options appears.

Move to the desired option

After the SelecType Level 1 or Level 2 display appears, you see one
of the main menu options. To look at the other options at this level,
use the ▽ and △ buttons.

Note: If you are using the INDIVIDUAL setting, you choose a
channel before this step.

Press ▽ until the INPUT option appears on the display, as shown
below.

```
╔══════════════════════════════╗
║ ⬥INPUT          STD       ⟩  ║
╚══════════════════════════════╝
```

The display shows one of the choices in the INPUT option to the
right. Most options have further levels, called submenus, or a list of
choices connected to the option. Some options, like the SUB CONFIG
option, may display only the main option until you enter the
submenu. And some options, like the VERSION option, simply
display information about your printer.

You use the ▷ button to enter the next level of an option.

Press ▷ enter the next level of the INPUT option.

```
╔══════════════════════════════╗
║ INPUT         ⬥STD ⟩SET     ║
╚══════════════════════════════╝
```

The icon to the left of STD indicates that STD is selected, and the
message SET appears to the right of the option.

In the INPUT option, you can display any of the choices listed below
by pressing   △or ▽..

STD
OPT
AUTO

OPT appears only when you have installed the optional multi-media
feeder.

Press △ or ▽   to move to AUTO. Your display should look like this:

```
╔══════════════════════════════╗
║ INPUT         ⬥AUTO⟩SET     ║
╚══════════════════════════════╝
```
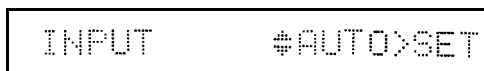
The icon to the left of AUTO indicates that the option is not selected and >SET indicates that you can set that option by pressing ▷.

> Note: Although the main menu options are the same for all operating modes (LQ, FX, and LJ-2P), some Level 1 submenu options are different in each mode. Submenu options for each mode are discussed later in this chapter.

Set, select, or execute the option

To set, select, or execute an option, you simply press D ▷

Press D to select AUTO. Then SET disappears from the display and the > icon moves to the right of the display indicating that the new option has been set:

```
⊕INPUT        AUTO        >
```

At the same time, the icon moves to the left of the main menu option, indicating that you are back in the main menu.

> Note: If you want to back out to the main menu at any time without changing a setting, press ◁ as many times as necessary.

Your new setting remains in effect until you change it again or turn off the printer.

Save the setting

If you want a setting to remain in effect even when you turn the printer off and on, you can use the SYSTEM CONFIG option to save Level 1 settings, and the P-CONFIG SAVE option to save Level 2 settings. The SYSTEM CONFIG option SAVE MACRO setting is described in Chapter 5, Changing the paper-size setting. The P-CONFIG SAVE option is described later in this chapter.

Exit SelecType mode

To exit SelecType mode from any option, press ◁ one or more times until the following display appears:

```
┌─────────────────────────────┐
│   READY:P  LJ-2P            │
└─────────────────────────────┘
```

SelecType Options

This section lists all the options available when you use SelecType. Most options are the same whether you're working in LJ-2P, LQ, or FX emulation mode. Some of the options in Level 1, however, have a different function for each mode. These options are listed later in this chapter. See the Quick Reference card at the back of this manual for a map of all SelecType menus and options.

Level 1 options

When you press the *SelecType* button to enter Level 1 first SelecType LEVEL1 appears on the display. Then one of the Level 1 main menu options listed below appears.

INPUT
P-SIZE
COPIES
ORIENT
FONT
STATUS SHEET
FONT SAMPLE
SUB CONFIG
SYSTEM CONFIG

Each of these options is described below. An asterisk (*) indicates the factory default setting for each option.

Note: If you have selected the INDIVIDUAL setting in Level 2, the display shows CH SELECT after the Level 1 display whenever you enter Level 1. After you select the channel, one of the main menu options listed above appears on the display.

INPUT STD

* STD
 OPT
 AUTO

This option selects whether paper feeds into the printer from the standard paper cassette or the optional multi-media feeder.

If you choose STD, the printer loads paper from the standard paper cassette.

If you choose OPT, the printer loads paper from the optional multi-media feeder. OPT appears as an option on the display only if the optional multi-media feeder is installed.

If you choose AUTO, the printer loads paper from the paper source containing the size of paper specified by the P-SIZE (paper size) option. If you choose AUTO and both the standard paper cassette and optional multi-media feeder contain the same size paper, you can print up to 250 sheets continuously.

If the paper in none of the sources matches the paper size set with P-SIZE option, the printer displays a paper size error.

P-SIZE   LETTER

  A4
  A5
  B5
*LETTER
  HALF LT   (Half Letter)
  LEGAL
  GLT   (Government Letter)
  GLG   (Government Legal)
  EXE   (Executive)
  F4
  MONARCH
  Cl0   (Commercial 10)
  DL
  C5

You can probably choose the paper size with your application
software, but if necessary, you can choose any of the paper sizes
shown above with the P-SIZE option. The factory setting is LETTER.

COPIES   1

1 to 99

You can use your software to print multiple copies of your
documents, but you can also use this option to print up to 99 copies
of your print job. The factory setting is 1. If you select a number
above one, the display keeps count of the number of copies
completed and the current setting. For example, if you set the
COPIES option to 10 and 5 copies are complete, the display shows
5/10.

ORIENT.   PORT

* PORT
 LAND

The orientation option selects the direction in which the characters are printed on a page. You can choose portrait (vertical) or landscape (horizontal) orientation.

FONT   RD-   0

Available options in the FONT submenu are different for each printer mode. See Choosing a Font later in this chapter for information on using this option.

STATUS SHEET

Use this option to print a status sheet that lists the current printer settings. When you reach this option, press **D** twice to print the status sheet. See Selecting and printing a status sheet in Chapter 2.

```
                            STATUS SHEET                      EPSON
   Printer Configuration

     Installed Memory : 3.OMbytes         Controller Version : 15.04
     CH Mode          : AUTO-SENSE        CH Time out         : 28
     Auto Continue    : OFF               Total Printed Count: 25
     Standby          : DISABLE

     CH  : P
     Mode             : LJ-2P             Version             : 17.04

   I/F : PARALLEL

   PARALLEL (CH P)
    SLCTIN    : OFF        AUTOFEED     : OFF      BUSY Delayµs) : 0

   SERIAL (CH S) : RS232C
    Word Length(bit) : 8     Baudrate(bps) : 9600     Parity      : NONE
    Stop Bit         : 2     DTR           : ON       XON/XOFF    : ON
    DSR              : OFF   CTS           : OFF      ENQ/ACK     : OFF
   Receive Buffer     : 1Kbytes

   Mode Configuration
    Input  Tray   : AUTO     Font        : RD-0      Paper Size  : LETTER
    Copies        : 1        Orientation : PORT

   Sub Configuration
    Form Length  : 60        Symbol Set : Roman-8

   System Configuration
        Top Offset   : 0                  Left offset    : 0
        Full  Print  : 0                  Memory Left    : 2949Kbytes
        Load  Macro  : 0                  Power On Macro : 0
```

FONT SAMPLE

Use this option to print out all bit-map and scalable fonts in the printer. When you reach this option, press **D** twice to print the font sample sheets.

SUB CONFIG.

The submenus for the subconfiguration option are different in each printer mode. See Using the SUB CONFIG Option later in this chapter for information on using this option.

SYSTEM CONFIG.

This option includes these eight submenus:

FULL PRINT
T-OFFSET
1-OFFSET
MEMORY LEFT
LOAD MACRO
SAVE MACRO
DELETE MACRO
POWERON MACRO

Each submenu is explained below.

FULL PRINT   0

0 to 62

The default setting of 0 is sufficient for most uses of the printer, but printing complex pages may require an increase in the setting. If the message SET FULL PRINT appears on the display, increase this setting. The setting (any number from 0 through 62) times 20 is the number of kilobytes (K) reserved in RAM for page composition. For example, a setting of 5 reserves 100K. The following table shows the maximum setting necessary for each size of paper. The setting may be lower than the maximum, but it will never need to be higher.

Paper Size	Setting
A4	51
A5	35
B5	43
LT	47
LG	62
HLT	36
EXE	45

Paper Size	Setting
GLG	57
GLT	45
F4	57
MONARCH	31
CI0	41
DL	37
C5	38

Since the amount of RAM you reserve with this option is not available for any other purpose, it is best to leave the setting at 0 until you see a SET FULL PRINT message. Then, increase the setting in small increments until the error does not occur.

If FULL PRINT is set to the maximum value, the SET FULL PRINT error does not occur. If an INSUFF MEMORY or PAGE BUFFER FULL message appears, you must install optional memory. See Appendix A for information on installing additional memory.

T-OFFSET   0

-64 to +63

You can use the T-OFFSET (top offset) option to make fine adjustments in the position of the printing on the page. The setting is in dots; each dot is   1/300th of an inch (0.0846 mm) so you can use this option to raise or lower the printing on the page up to approximately 1/5th of an inch (5 mm). The factory setting is 0.

L-OFFSET   0

-64 to +63

Use the L-OFFSET (left offset) option to make fine adjustments in the position of the printing on the page. The setting is in dots; each dot is 1/300th of an inch (0.0846 mm). With this option, you can move the printing on the page approximately 1/5th of an inch (5 mm) to the left (settings from -1 to -64) or to the right (settings from 1 to +63). The factory setting is 0.

MEMORY LEFT   K

This option displays the amount of memory (in kilobytes) available. You can use this information to see whether a newly-installed memory option is working correctly or to see how much memory you have available for fonts or complex graphics.

LOAD MACRO   0

0 to 4

Use this option to load one of the macros you've created using the SAVE MACRO option. The factory setting is 0. When you press   ▷, the following appears on the display:

```
┌─────────────────────────────────┐
│  LOAD  MACRO      ⫶0>SET        │
└─────────────────────────────────┘
```

Press △ or▽   to choose the number of the macro you want to use. Then press ▷   to load the selected macro. Whenever you select macro 0, all Level 1 settings return to their factory settings. Press◁ to exit this submenu without loading a macro.

SAVE MACRO   1

1to 4

This option lets you save your current Level 1 settings as a macro and recall them anytime. When you press ▷ , the display shows:

```
SAVE MACRO     ⇥I>EXE
```

Select a macro number for your setting by pressing   △ or   ▽. Then press ▷   to save the current SelecType Level 1 settings into the macro. Next use the POWERON MACRO option described later in this section to choose the same number as chosen in SAVE MACRO. Then the settings you have chosen are in effect each time you turn the printer on.

Press ◁ at any time to exit this submenu without saving a macro.

Avoid using the same macro number in different channels, especially if you connect the printer to more than one computer and if you use the same printer emulation mode for more than one channel. For example, changes in the Channel P macro 1 setting may affect the Channel S macro 1 setting.

DELETE MACRO   1

This option lets you delete any macros you create. When you
press > , the displays shows the following:

```
DELETE MACRO  ⊶I>EXE
```

Move to the number of the macro you want to delete by pressing △
or ▽. . Then press▷ to delete the macro. All the settings saved with
the specified macro are deleted.

Press ◁ to return to the main menu without deleting a macro.

POWERON MACRO   0

0 to 4

Use this option to specify the macro number you want to use as the
power-on default for each operating mode. Each time you turn the
printer on, the macro you set with this option is in effect. Select
macro 0 to use the factory default settings.

Level 2 options

When you press and hold down the *SelecType* button for a few
seconds (until the SelecType LEVEL2 message appears on the
display) to enter Level 2, one of the main menu options listed below
appears on the display:

TEST PRINT
MODE ASSIGN
I/F CONFIG
RX-BUFFER SIZE
CH
CH TIMEOUT
AUTO CONT
P-CONFIG SAVE
FACTORY RESET
VERSION
PAGE COUNTER
STANDBY

Each of these options is described below. An asterisk (*) indicates the
factory default setting, if there is one.

TEST PRINT

Print two different test patterns to check whether your printer is
working correctly. After TEST PRINT appears, press ▷ once to see
the following display:

```
┌─────────────────────────────┐
│  PATTERN    ♦I  >PRINT │
└─────────────────────────────┘
```

Press ▷ to print Pattern 1 (vertical lines) or press ▽ to display
Pattern 2 (horizontal lines); then press ▷ to print Pattern 2.

MODE ASSIGN

This option allows you to choose one of the three operating (or emulation) modes.

* LJ-2P
  LQ
  FX

The HP emulation mode offers the widest range of features, but you may also want to select the other modes to use software written specifically for other printers. You must change the MODE ASSIGN setting before you can operate your printer as an Epson LQ or FX printer.

Press ▷ . The following display appears:

```
┌──────────────────────────┐
│ ⬍CH  P   LJ-2P        >  │
└──────────────────────────┘
```

When you change the printer mode, you first select a channel, P (parallel), S (serial), or 0 (optional). Optional appears only if you have installed an optional interface. Press ▽ until the channel you want to choose appears; then press ▷.

```
┌──────────────────────────┐
│ CH  P  ⇢LJ-2P     >SET  │
└──────────────────────────┘
```

Press ▷to set the new mode. This mode remains in effect until you change the setting again or turn off the printer. If you want this setting to remain in effect even after you turn the printer off and back on, use the P-CONFIG SAVE option to save the setting as described later in this chapter.

I/F CONFIG

The interface configuration option allows you to change the settings for either of the built-in interfaces, the parallel or the serial. First press ▷ to move to the channel selection submenu.

```
┌─────────────────────────────┐
│ ♦CH  P  CONFIG.          〉 │
└─────────────────────────────┘
```

Press ▽ to change the channel, if necessary; then press ▷.

The PARALLEL option has these three submenus:

SLCTIN
AUTOFEED
BUSY DELAY

SLCTIN   OFF

  ON
* OFF

With SLCTIN set to off, the printer is continuously selected and device control codes DC1 and DC3 are ignored. In almost all cases, leave SLCTIN set to off. When SLCTIN is on, the SLCTIN signal goes HIGH at power-on and the control codes DC1 and DC3 are valid.

AUTOFEED   OFF

 ON
* OFF

When this option is set to off, the AUTOFEED signal on pin 14 is
ignored and the printer does not send an automatic line feed (LF)
command with each carriage return (CR). When AUTOFEED is set
to on, a line feed is added to each carriage return the printer receives.
If your text lines overprint each other, you may need to set
AUTOFEED to on.

BUSY   DELAY   0

 -5
*0
 +5
 MIN

This option sets the delay period from the $\overline{\text{ACKNLG}}$ to the BUSY
signal. Available settings are 0, -5, +5 microseconds, and MIN. For
most applications, leave this option set to the factory setting of 0
microseconds. When you select MIN, the $\overline{\text{ACKNLG}}$ signal is always
set to HIGH.

The serial channel has the following submenus:

WORD LENGTH
BAUDRATE
PARITY
STOP BIT
DTR
XON/XOFF
ENQ/ACK
DSR
CTS

If you are using the serial interface, see your computer manual for the proper settings. The printer settings must match the computer settings.

WORD LENGTH 8

  7
*8

You can select a word length for serial communications from two options: 8-bit word length or 7-bit word length. See your computer manual and software documentation for the proper setting. The factory setting is 8-bit.

BAUDRATE   9600

300   4800
600   * 9600
1200   19200
2400

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. The factory setting is 9600.

PARITY   NONE

*NONE
 ODD
 EVEN

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   2

 1
*2

This option sets the number of stop bits on each character of information sent to the printer. Stop bits signal the end of a character.

DTR   ON

*ON
 OFF

This option turns the printer ready communications protocol on or off. DTR protocol can be used in combination with the XON/XOFF option setting.

XON/XOFF   ON

*ON
 OFF

This option turns the XON/XOFF communications protocol on or
off. XON/XOFF protocol can be used in combination with the DTR
option setting.

ENQ/ACK   OFF

 ON
"OFF

This option is available in the Epson GL mode only.

DSR   OFF

 ON
*OFF

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

CTS   OFF

 ON
*OFF

When CTS (Clear To Send) is off, the signal level is permanently set
HIGH. The factory setting is off (signal level is HIGH). This setting
should be set to off for most communications purposes. When CTS is
on, data is sent to the computer only when CTS is HIGH.

RX-BUFFER   SIZE

1 to 99 (K)

The receive buffer size option allows you to change the size of the
printer's input buffer. By choosing an appropriate buffer size, you
can quickly transfer the contents of a file from the computer's
memory to the printer's memory. The printer then prints the
information from its own memory and frees up the computer for
other tasks. If you set the buffer size too high, you may get an error
message telling you to add memory. The factory setting is 1K.

CH   AUTO-SENSE

This option specifies how the printer's memory is allocated among
the channels. There are two basic settings: AUTO-SENSE and
INDIVIDUAL. With AUTO-SENSE the printer automatically detects
which interface channel (parallel, serial, or optional) is being used.
This is the default setting and is the best choice for most uses of the
printer. The INDIVIDUAL setting requires you to add memory to
the printer and allows you to allocate independent memory to each
channel. Choose INDIVIDUAL only if you regularly print raw data
such as DOS text or program lists.

If you want to change the setting, press   ▷ to enter the option, then
press △ or▽   to choose INDIVIDUAL or AUTO-SENSE.

```
♦CH AUTO-SENSE⁣⁣P>SET
```

If the channel shown is correct, press ▷ twice to save the setting. If
you need to change the channel, press ▷ to move to the channel
position, then press ▽or △ to select the channel (P, S, or 0) you
want. This setting determines which channel is the default, but if the
default channel is not in use, the printer uses any other channel that
is being used. Then press ▷ to set the channel.

After you set the channel, you see the following display:

```
CAN< SAVE&INIT  >EXE
```

Press ▷ to execute the save and initialize operation. Your setting is
now saved and also is in effect every time you turn the printer on.

If you choose INDIVIDUAL, you see this display:

CH♦INDIVIDUAL   >SET

⊘ CAUTION: Do not use the INDIVIDUAL setting unless
you have installed additional memory as described in
Appendix A. If you save this option before adding
memory, you could damage your printer.

Press ▷ to move to the following display:

0.5M─╫S:0 P:l 0:0>SET

The number on the left is the total number of megabytes (M)
available, and the number to the right of each channel is the
proportion of the memory allocated to that channel. Use the   ▽, △,
and ▷   buttons to change the proportion numbers (between 0 and 9).

Note: When you share the printer, each printer channel requires at
least 0.3K of RAM and the printer always needs some portion of
RAM for general operation. If you use one memory chip set to
increase the printer's memory to 1.0MB, your best settings would
be 3:4:3 or 4:3:3 or 3:3:4.

Then press ▷ to set the numbers and move to the following display:

CAN< SAVE&INIT   >EXE

Press ▷ to execute the save and initialize operation. Your settings are now saved and also are in effect every time you turn the printer on.

CH TIMEOUT 60

10 to 600 (in steps of 10)

This option sets the time for a channel timeout. If the printer is on line and no new data is sent for the number of seconds specified, and there is data in the other channel, the printer automatically switches from the current channel to the other. The factory setting is 60.

AUTO CONT.   OFF

ON
* OFF

When automatic continue is set to on, the printer automatically continues to print after a certain period of time when one of the following errors occurs: SET FULL PRINT, PAGE BUFFER FULL, PAPER SIZE ERROR, TRAY SET XXX, and INSUFF MEMORY. When this option is off, you must press the CONTINUE button to resume printing. In most cases, leave this option set to off.

P-CONFIG.   SAVE

This option (printer configuration save) is similar to the SAVE MACRO and POWERON MACRO options in Level 1. Use it to save settings you make in Level 2 so they take effect each time you turn on the printer.

Press ▷ ; the display shows the following:

```
P-CONFIG. SAVE >EXE
```

Press ▷   to initialize the printer or press ◁   to cancel and return to
the main menu without saving.

FACTORY RESET

FACTORY RESET returns all Level 1 and Level 2 settings to their
factory settings. When-you select the FACTORY RESET option, the
display shows the following:

```
FACTORY RESET >EXE
```

Press ▷   to execute the reset, or press ◁   to return to the main menu
without resetting the printer.

VERSION

This option displays the version number of the printer's controller
and font. Press $\triangleright$ to see the C-ROM version number, and then press
$\triangledown$ to see the FONT version number.

PAGE COUNTER ##

This option displays the number of sheets printed since the printer
was installed. Press $\triangleright$ to display the following:

```
PCU  COUNTER      x x x
```

This option displays the number of sheets printed for the current
photoconductor unit.

STANDBY   DISABLE

 ENABLE
* DISABLE

The standby mode is designed to save power by reducing the power
to the fixing heater whenever no panel buttons are pushed and no
data is sent to the printer for 30 minutes. In this mode the printer
begins warming up as soon as you press any button or send any
data, becoming ready to print within 45 seconds. The default is
DISABLE, which keeps the printer warmed up and ready to print at
all times.

Note: If the power is on and you do not use the printer for eight
hours, it automatically enters standby mode, even if the standby
mode is disabled.

Choosing a Font

The FONT option is different for each printer mode. This section describes the available submenus of the FONT option in each mode. You can use the level 1 FONT SAMPLE option as described earlier to print out a list of the available fonts.

> Note: You will almost always use your application software, **not** SelecType to select fonts.

HP emulation mode

When you are in the LJ-2P mode, the FONT option display shows:

FONT   RD-   0

Press ▷   to enter the FONT option.

```
FONT  ⊸RD-          0>SET
```

You first choose the font source. The three possible choices are listed below:

*RD   Resident font
 C   Font cartridge slot
 DL   Downloadable soft font

Only available options appear on the display. Option C is available only if you insert a cartridge in the cartridge slot. The DL option appears only when a font has been downloaded from your computer. See Appendix C for a description of the resident HP fonts.

After you choose the font source, you choose the font by number
based on the font source option selected above. Only fonts that
match the current orientation setting can be selected. If you change
the SYMSET or ORIENT settings, the available font numbers may
change. To save a selected font as the default font, use the SAVE
MACRO option in the Level 1 SYSTEM CONFIG menu.

LQ and FX emulation modes

When you use either the LQ or FX emulation mode, the FONT
option display shows:

FONT   Courier

* Courier
  Prestige
  DL

The factory setting is Courier. After selecting the desired font, you
can adjust the character spacing and size of the font with the PITCH
and CONDENSED settings in the SUB CONFIG option.

Note: Resident and optional fonts specifically designed for the HP
emulation mode cannot be used in the LQ or FX modes.

Using the SUB CONFIG Option

The subconfiguration option is different for each printer mode. The function and submenus of the SUB CONFIG option for each mode is described below.

Once you set new settings with the SUB CONFIG option, each setting remains in effect until you change it again or turn off the printer unless you use the Level 1 SYSTEM CONFIG option SAVE MACRO setting described earlier in this chapter.

HP emulation mode

When you are in LJ-2P emulation mode, the SUB CONFIG option includes two submenus:

SUB CONFIG.

FORM
SYMSET

Press ▷ to enter the SUB CONFIG option submenu.

FORM   64LINES

0 through 128
***

Use the FORM option to set the number of lines for the selected paper size and orientation. The setting you choose also changes the line spacing. This setting is affected by P-SIZE, ORIENT, and FONT settings. If 0 is selected, the line spacing changes to 1/6-inch.

If *** appears on the display, the number of lines you set is out of the possible range of 0 to 128.

SYMSET   Roman-8

Use the SYMSET option to choose from 26 resident HP symbol sets. (The HP LaserJet series IIP printer has 25 symbol sets.) In most cases, you will never need to change this setting.

* Roman-8		Chinese	(ISO57)
Norwegl	(ISO60)	Spanish	(ISOl7)
Roman E		IRV	(ISO2)
French	(ISO25)	Swedish	(ISOlO)
HP Germ		Portugu	(ISO16)
Italian	(ISO15)	IBM Por	(ISO84)
JIS ASC	(ISO14)	IRM Spa	(ISO85)
ECM94-1	(ISOl00)	IBM-US	
Swedis2	(IS01 1)	IBM-DN	
ANSI AS	(ISO6)	PcMuti	
Norweg2	(ISO61)		
UK	(ISO4)		
French2	(ISO69)		
German	(ISO21)		
HP Span			
Legal			

LQ and FX emulation modes

When you set up your printer to operate in LQ or FX mode, the SUB CONFIG option includes the fourteen submenus shown below:

SUB CONFIG.

PITCH	CGTABLE
CONDENSED	COUNTRY
L-MARGIN	J-REPRINT
R-MARGIN	AUTO CR
FORM TOP	ZERO CHAR.
TEXT	WIDE PAGE
SKIPBOTTOM	B-IMAGE

Press **D** to enter the SUB CONFIG option.

PITCH   10CPI

"10
 12
 15
 PROP.

You can select a character pitch of 10,12, or 15 characters per inch (cpi), or choose proportional spacing.

CONDENSED   OFF

* OFF
  ON

You can use this option to change the character spacing. Condensed printing is useful for spreadsheets and other applications where you need to fit the maximum amount of information on each line. The 15 cpi character pitch cannot be condensed.

L-MARGIN   0

0 to available

This option allows you to set the left margin position. Margin units are determined by the current pitch (characters per inch) and the condensed setting (on or off). If you select proportional, 10 cpi and condensed are used to determine margin units. If you change the setting of ORIENT, P-SIZE, or WIDE PAGE (when P-SIZE is set to A4 or F4) the left margin defaults to 0. The factory setting is 0.

R-MARGIN 80

1 to available

This option allows you to set the right margin. Margin units are determined by current pitch (characters per inch) and the condensed setting (on or off). If proportional is selected, 10 cpi and condensed are used to determine margin units. The factory setting is 80. If you change the setting of ORIENT, P-SIZE, or WIDE PAGE (when P-SIZE is set to A4 or F4) the right margin defaults to the settings in the following table:

Default right margin

Paper Size	Condensed	Portrait			Landscape		
		1Ocpi	12cpi	15cpi	1Ocpi	12cpi	15cpi
A4	**OFF**	**77**	**93**	**116**	**111**	**134**	**167**
	ON	**133**	**155**	**116**	**191**	**223**	**167**
A4(80 col)	**OFF**	**80**	**96**	**120**	**111**	**134**	**167**
	ON	**137**	**160**	**120**	**191**	**223**	**167**
A5	**OFF**	**53**	**63**	**79**	**77**	**93**	**116**
	ON	**91**	**106**	**79**	**133**	**155**	**116**
B5	OFF	66	8 0	100	9 6	115	144
	O N	114	133	100	164	192	144
Letter	OFF	8 0	9 6	120	105	126	157
	O N	137	160	120	180	210	157
Legal	OFF	80	9 6	120	135	162	202
	O N	137	160	120	231	270	202
Half Letter	OFF	5 0	6 0	7 5	80	96	120
	O N	85	100	75	137	167	120
Executive	**OFF**	**67**	**81**	**101**	**100**	**120**	**150**
	ON	**115**	**135**	**101**	**171**	**200**	**150**
G Legal	**OFF**	**80**	**96**	**120**	**125**	**150**	**187**
	ON	**137**	**160**	**120**	**214**	**150**	**187**
G Letter	OFF	75	9 0	112	100	120	150
	O N	128	150	112	171	200	150
F4	**OFF**	**77**	**93**	**116**	**124**	**149**	**187**
	ON	**133**	**155**	**116**	**214**	**249**	**187**
F4 (80 col)	**OFF**	**80**	**96**	**120**	**124**	**149**	**187**
	ON	**137**	**160**	**120**	**214**	**249**	**187**

FORM TOP   0.50

0.50-1.50 (inch)

This option specifies the distance from the top of the sheet to the
baseline of the first printable line. This is measured in 0.05-inch
increments. The factory setting is 0.50 inches.

TEXT   66LINES

1 to available

Use this option to set the page length. The unit of measure for this
option is 1⁄6th of an inch. If you change the ORIENT, P-SIZE, or
FORM TOP settings with SelecType, the form length setting
automatically returns to the default setting for each paper size. The
factory setting is 62 (line spacing 6 lines per inch).

SKIPBOTTOM   OFF

*OFF
 ON

When SKIPBOTTOM is set to on, the printer inserts the number of
line spaces specified by the ESC N (skip-over-perforation) command
between the last line printed on one page and the first printable line
on the next page. The total number of lines skipped equals the
FORM TOP setting plus the amount of skip-over-perforation set
with ESC N. Since most application programs insert their own top
and bottom margins, you should use this feature only if your
program does not provide them.

CGTABLE   PcUSA

* PcUSA
 PcMulti
 PcPort
 PcCanF
 PcNord
 DLoad
 ITALIC

The CGTABLE (character generator table) option allows you to select
the graphics character table, the italics character table, or the
download table. The graphics table contains graphics characters for
printing lines, corners, and shaded areas; international characters;
Greek characters; and mathematical symbols. Selecting the italics
table defines the upper half of the character table as italic characters.
The download table is not available when you are in FX emulation
mode.

COUNTRY   USA

*USA	Spain1
France	Japan
German	Norway
UK	Denmk2
Denmark	Spain2
Sweden	La tin A
Italy	

Use this option to select a symbol set from the list above. You can
select one of the thirteen international symbol sets. See Appendix C
for samples of the characters in each country's symbol set.

J-REPRINT ON

 OFF
*ON

Use this option to reprint after a paper jam. When it is set to on and a
page jams in the printer, the page is reprinted after the jam is
cleared. If this option is set to off, a jammed page does not reprint
automatically, but complex pages may print faster.

AUTOCR ON

 OFF
*ON

When AUTO CR (automatic carriage return) is on, the printer
performs a carriage-return line-feed (CR-LF) operation whenever the
print position exceeds the right margin. If it is off, characters
beyond the right margin are not printed, and a linewrap is not
performed until a CR is received. Most software programs take care
of this function.

ZERO   CHAR.   0

*0
 0

This option determines whether the printer prints a slashed zero (0)
or an open zero (0). This feature is useful for clearly distinguishing
between an uppercase letter O and a zero when printing documents
such as programming lists.

WIDE PAGE ON

 OFF
*ON

When this option is on, you can print up to 80 characters at 10 cpi across an A4 or F4-size page. When it is off, you can print up to 77 characters at 10 cpi. This setting is only valid when P-SIZE is set to A4 or F4. If you change the WIDE PAGE setting when sizes other than A4 or F4 are selected with the P-SIZE option, L-MARGIN automatically defaults to 0 and R-MARGIN and TEXT LINES return to the default settings for the currently-selected paper size.

B-IMAGE   DARK

* DARK
 LIGHT
 BCODE

With B-IMAGE set to DARK or LIGHT, your printer can correctly emulate the graphics densities set with the printer commands. When DARK is selected, the bit image density is high. When LIGHT is selected, the bit image density is low.

The BCODE setting converts bar codes to bit images by automatically filling in any vertical gaps between dots. This produces unbroken vertical lines that can then be read by a bar code reader.

> Note: This mode reduces the size of the image being printed and may cause some distortion when printing bit image graphics.

Chapter 5

Paper Handling

5

Choosing Paper

With this printer you can print on many sizes and types of paper. You can also use other types of media such as envelopes, labels, and overhead projector transparencies. This chapter describes the paper delivery choices and how to select and load paper.

The type of paper you use in your printer directly affects the quality of your printed output. The printed image is made up of many tiny dots of toner that are transferred to the paper. If the paper is rough, the edges of the letters become ragged because some of the dots fall into indentations on the paper. The smoother the paper you use, the better your printing looks.

You should use especially smooth paper for printing originals you plan to use to make reproductions. Because the reproduction process introduces its own raggedness to the edges of the letters, you want to start with the best original possible.

For best results, store your paper supply in its original wrapper. The printer is sensitive to moisture absorbed by the paper. Do not store paper in a humid or damp environment.

Below are some recommendations for selecting paper and other print media for the printer.

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

Standard office paper-You can use the printer's paper cassette to feed most types of 16 to 24-1b (60- to 90-g/m²) paper. This typically includes such paper as copier paper, cotton bond, and letterhead. If you feed paper manually one sheet at a time through the manual feed slot, you can use up to 42-1b (157-g/m²) paper.

For best results, use paper made especially for laser printers. Paper made for plain-paper copiers is also a good choice.

If you want to use less expensive paper, test it thoroughly before regular use. Paper should be of good quality and relatively smooth. Also keep in mind that if the paper is textured or too rough, the printed output may not be as clear.

Some letterheads use inks or dyes that may smear or come off when subjected to the high temperatures of the fuser. Try a few sheets before you print on letterhead or other special paper.

Be sure to load letterhead and forms face down in the paper cassette.

Special paper-You can use colored paper as long as it meets the weight limits given above for standard office paper. Do not, however, use coated paper (paper to which a clear or colored coating has been added).

Labels-Use only labels designed for laser printers or plain-paper copiers in your printer.

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

You should also test the label sheet for leaking adhesive by pressing a sheet of paper on top of the sheet of labels. If the paper sticks at all, do not use the labels.

Other materials-You can use overhead projector transparencies and adhesive drafting film if they are made for use with plain-paper copiers or laser printers.

Envelopes-**Load** envelopes face down **as** shown below. The printing quality on envelopes may be irregular because different parts of an envelope have different thicknesses. If printing is too light, turn the print density knob clockwise. Always return the print density knob to the center (default) position when you go back to printing on ordinary paper.
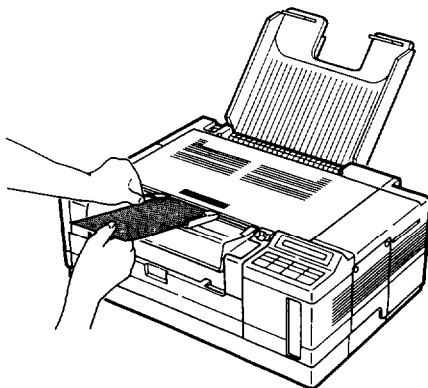
Paper-feed Method

The printer feeds letter-size paper automatically from the standard paper cassette and most types of media from the manual feed slot.

A multi-media feeder and a legal-size paper cassette are available options. For information on the multi-media feeder, see Appendix A.

The following table lists recommended paper-feed methods for different print media. (If you want to try other methods, be sure to test-print a few sheets before beginning regular use.)

Material	Feed
Regular Paper (60-90 g/m* 16-24 lb)	Auto, manual, or optional MMF (Multi-media feeder)
Heavy Paper (90-157 g/m² 24-42 lb)	Manual or optional MMF
Envelopes	Manual or optional MMF
Transparencies	Manual or optional MMF
Labels	Manual or optional MMF

Note:

❏ Paper feeding and print quality are usually best with regular paper.

❏ Paper feeding is possible, although print quality cannot be guaranteed, with other types of media.

❏ To print on letterhead paper, load the paper face down with the top of the paper entering the printer first.

❏ To automatically load various types of media into the printer, use the optional multi-media feeder. See Appendix A.

Special Setting for Thin Paper

If thin paper creases when you print, you can solve the problem by using the control panel to select the Special paper type setting.

To change the paper type setting to Special, first make sure the printer is on line. Then press the MANUAL button and hold it down for several seconds. SP appears on the display to show that the printer is in the Special mode.

To return to the normal setting, repeat the steps described above. (SP disappears from the display.)

To permanently save the paper type setting, first make sure the printer is on line. Then press ON LINE while pressing the MANUAL button.

Note:

❑ The paper type setting returns to the saved setting if the FEED light is off, no panel buttons are pushed, and no data is sent to the printer for ten minutes.

❑ The RESET function does not change the paper type setting.

❑ The FACTORY RESET function changes the paper type setting or paper path setting to normal.

❑ The paper type setting is not affected by the paper size setting. For example, even if you select the Cl0 envelope size, the paper type setting does not change.

❑ You cannot change the paper type setting when the FEED light is on.

Loading Paper in the Cassette

The standard paper cassette holds up to 100 sheets of paper.

1. Pull out the paper cassette.
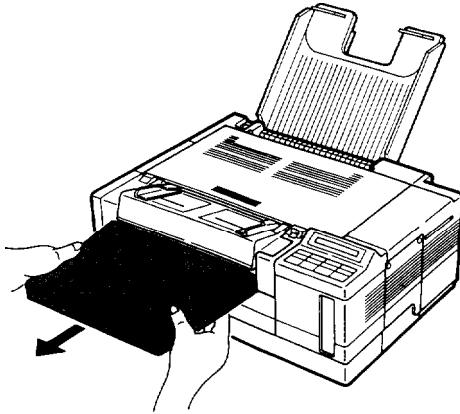
⚠ CAUTION: Do not open the paper cassette cover while the paper cassette is installed in the printer; this could break the cover.

2. Push down on the metal plate on the bottom of the cassette until it locks in place.
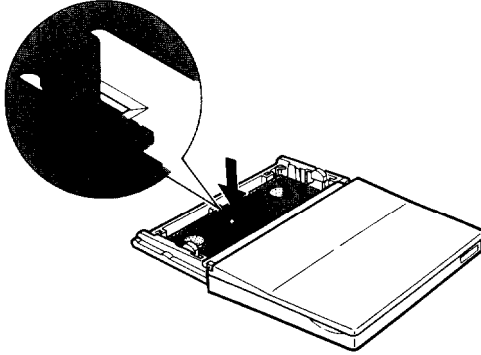
3. Open the paper cassette cover.
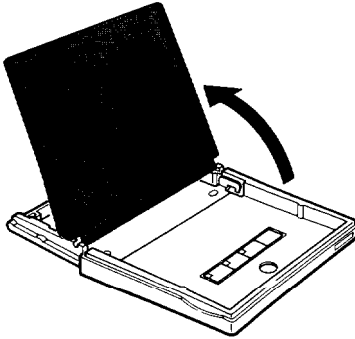
4. Take a stack of letter-size paper, fan it, and tap the edges on a flat surface to even up the stack, as shown.
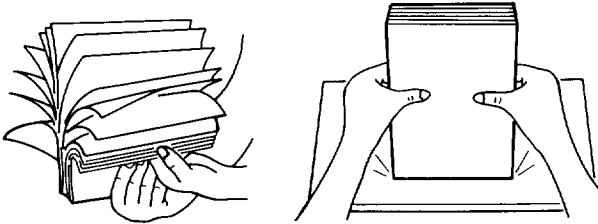
5. Insert the stack of paper face down into the paper cassette, making sure that the edges of the paper are covered by both comer brackets on the cassette. Also, make sure that the top of the stack is below the maximum height mark inside the paper cassette.

6. Close the paper cassette cover.

7. Insert the cassette along the slots on the inside of the printer until it locks in place.
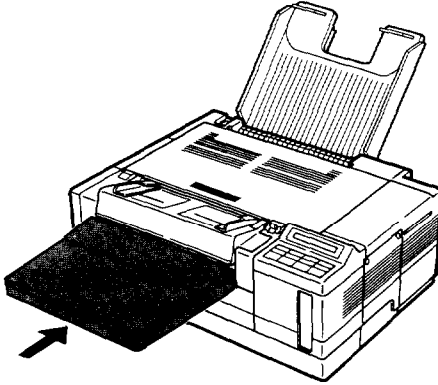
8. If you are using the optional legal-size paper cassette, raise the smaller part of the output tray as shown below.
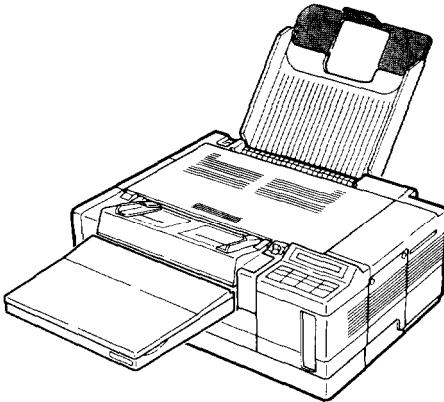
Choosing a Paper Size

The factory paper-size setting is set to letter. Whenever possible, use your application software settings to choose the paper size you require for your print job. If you cannot select the paper size with your application program, you can use the SelecType Level 1 P-SIZE option.

You need to choose the paper size (preferably with your software) if you use a paper other than letter size and:

❑ you use manual feeding

❑ you install the multi-media feeder

❑ you return to letter-size printing after using another paper size.

The table below lists all the paper sizes **on** the SelecType menu.

Paper:	Dimensions:
A4	210 x 297 mm
A5	148x210mm
B5	182 x 257 mm
LETTER	8.5 x 11 inches
HALF LT (Half letter)	5.5 x 8.5 inches
LEGAL	8.5 x 14 inches
GLT (Government letter)	8 x 10.5 inches
GLG (Government legal)	8.5 x 13 inches
EXE (Executive)	7.25 x 10.5 inches
F4	210 x 330 mm
Other	-
Envelopes:	**Dimensions:**
MONARCH	3 7/8x **7 1/2** inches
C10 (Commercial-10)	**4 1/8 x 9 1/2** inches
DL	110x220mm
C5	162x229 mm
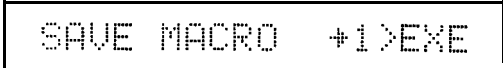
Changing the paper-size setting

1. Press the *SelecType* button until the message SelecType LEVEL1 appears.

2. Press △ or ▽ until P-SIZE appears.

3. Press ▷.

4. Press △ or▽ until the paper size you wish to print on appears.

5. Press ▷ to set the new paper size.

6. To exit SelecType, press the *SelecType* button.

Saving the new paper-size setting

The paper-size setting returns to the factory setting once the printer is turned off and then on again unless you use SelecType's Level 1 SAVE MACRO setting to save it.

1. Press the *SelecType* button to enter Level 1.

2. Press △ or▽ until SYSTEM CONFIG appears.

3. Press ▷ to enter the submenu.

4. Press △ or▽ until SAVE MACRO appears.

5. Press ▷ so that you can select the MACRO ID.

```
SAVE MACRO   +1>EXE
```

6. Press △ or ▽ until the macro number you wish to save appears. Use number 1 unless you have already used that number for a macro.

7. Press ▷.

8. Press ▽ until POWERON MACRO appears on the display.

9. Press ▷ to select POWERON MACRO.

```
POWERON MACRO→0>EXE
```

10. Press △ or ▽ until you see the macro number you want to take effect each time you turn on the printer. Be sure to use the same number you chose in step 6.

11. Press ▷ to execute the saving action.

12. Press the *SelecType* button to exit SelecType.

Loading Paper Manually

If you want to print on paper other than letter-size, or special paper or other media such as labels, envelopes, transparencies, or heavy paper (over 24 lb, or 90 g/m²), you can load the paper one sheet at a time through the manual feed slot. Hand-feeding is convenient when you want to print a small job on paper different from the type already loaded in the cassette.

> **Note:** You can also use the manual feed method when the multi-media feeder is installed.

The printer accommodates hand-fed paper ranging in size from **98 x 148 mm (3.86 x 5.83** inches) to 216 x 356 mm (8.5 x 14 inches).

To use manual feed, follow these steps:

1. If the FEED light is on, press ON LINE to take the printer off line. Then press FEED to finish printing the data for the currently-selected printer mode.

2. If you are using a paper size other than letter and you are unable to select a new paper size with your application software, use SelecType to choose the size of the paper for manual feeding, as described earlier in this chapter.

3. If the printer is off line, press ON LINE to set the printer on line.

4. Press FEE D(▽)   to change to manual feeding. When you select manual feeding the following display appears:

```
READY:P LJ-2P      M
```

5. Adjust the paper guides to match the size of paper you are using as shown below.
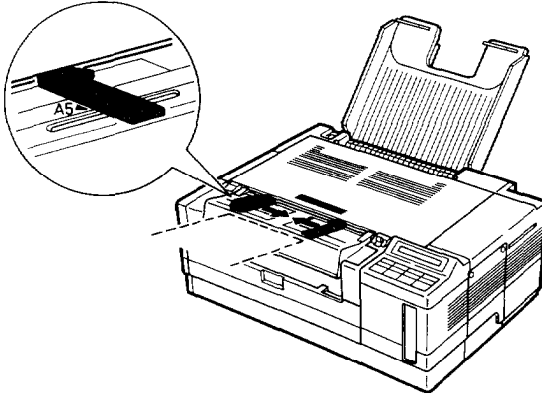
6. Insert a sheet of paper into the manual feed slot as far as it will go.
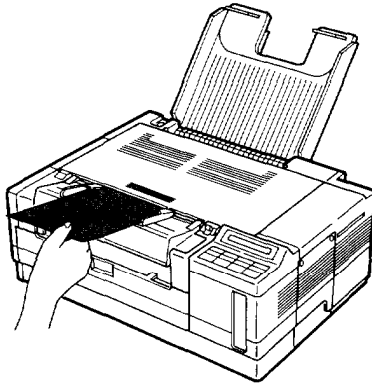
Note: When you hand-feed consecutive pages, insert the next
sheet after the following messages:

```
  SET A5        MANUAL
```
⇕
```
CANCEL MANUAL FEED: ↰
```
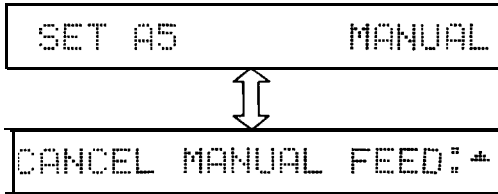
These two messages appear alternately. If you press △, the printer
stops manual feeding and feeds paper automatically from the
paper cassette or optional multi-media feeder, according to the
INPUT menu setting in SelecType Level 1.

7. To return to automatic feeding, press FEED again when the FEED
   light goes off. Also, the printer must be on line.

Note: Never turn the printer off when it is printing or feeding
paper. Otherwise, a STARTUP error may occur.

Chapter 6

Maintenance and Transportation

6

Replacing Consumable Parts

Your printer's consumable parts and their approximate usage are shown below:

Toner cartridge   Up to 5,000 pages depending upon the complexity of print jobs

Photoconductor unit   Up to 30,000 pages when using letter-size paper

Note: See Chapter 8, Consumable Parts for more details about conditions governing consumable part life.

The following are consumable part replacement messages:

TONER LOW   Little toner is left; you must replace the toner cartridge soon. When the TONER LOW message appears, you may print approximately twenty additional pages.

TONER OUT   No toner is left; replace the toner cartridge and the ozone filter and clean the transfer charger wire. When the TONER OUT message appears, you cannot print additional pages without replacing the toner cartridge.

CHANGE PCU   The photoconductor unit is worn out. Press the CONTINUE button to finish printing your document, turn off the power, and then replace the photoconductor unit.

If the CONTINUE light is also flashing when you see this message, replace the toner unit at the same time you replace the photoconductor unit.

Note: Because other factors such as the paper you print on affect the life of the photoconductor unit, you may occasionally have to replace the unit before you see the CHANGE PCU message. See *Troubleshooting,* Chapter 7.

Replacing the toner cartridge

Follow these instructions carefully when you see the TONER OUT message.

CAUTION:

❏ Do not remove or insert the toner cartridge if the photoconductor unit is not in place. Otherwise, you may damage the printer.

❏ When you must replace the toner cartridge and the photoconductor unit at the same time, make sure you remove the toner cartridge first. Next, replace the photoconductor unit; then replace the toner cartridge. Finally, install the ozone filter.

1. Turn off the printer.

2. Grasp the paper cassette tray with both hands and pull it out of the printer.
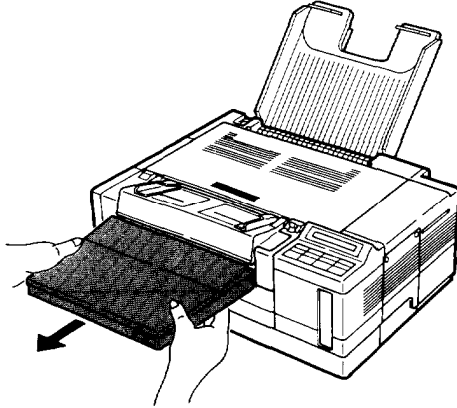
3. Open the front cover.
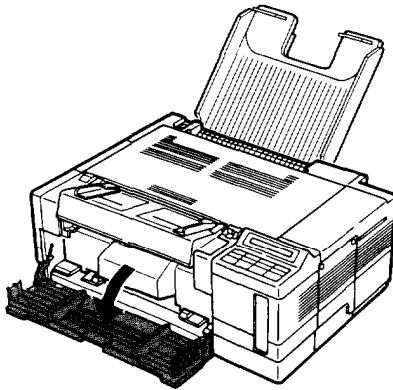
4. Remove the toner cartridge by pulling it straight out. Then close the toner cartridge cover.
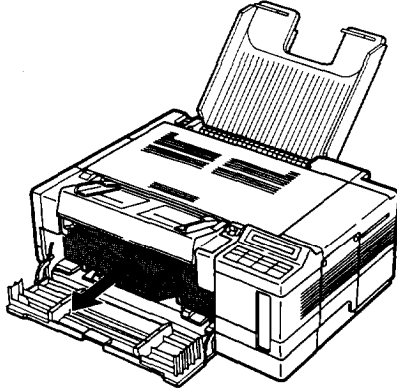
5. Dispose. of the toner cartridge as a unit with nonburnable items. Do not take the cartridge apart. Follow any local regulations that may apply to nonburnable waste.

6. While holding the new cartridge in a horizontal position, gently shake the cartridge from side to side a few times to distribute the toner evenly.

7. Remove all packing tape from the cartridge. Then pull the seal tape out of the toner cartridge in the direction of the arrow.
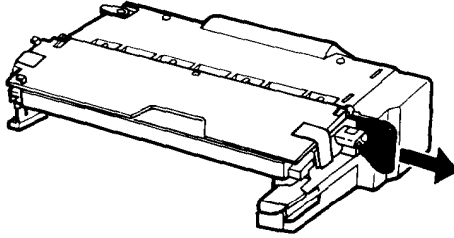
8. Lift back the toner cartridge cover as shown. Then press the cover all the way down until it snaps into place.
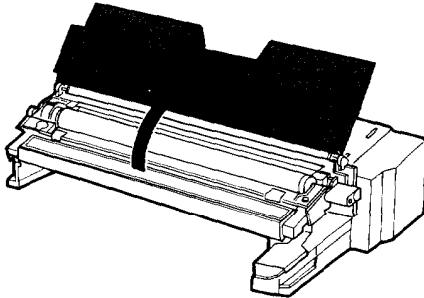
9. Insert the toner cartridge into the printer by sliding it gently into the opening until it locks in place.
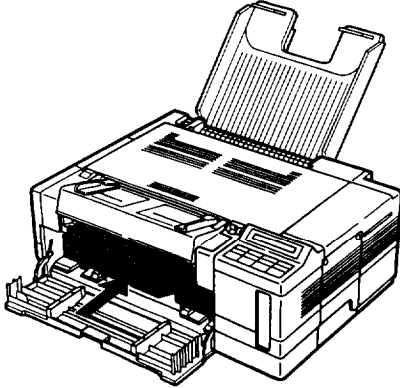
10. Close the front cover.
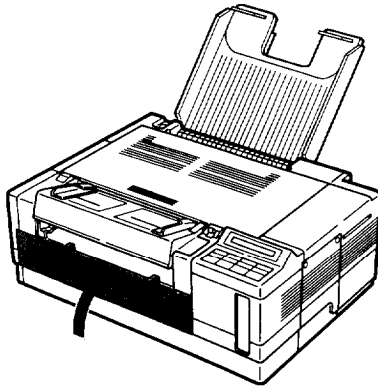
11. Insert the paper cassette.

Each time you replace the toner cartridge, you should replace the ozone filter and clean the transfer charger wire as described next.

Replacing the ozone filter

Ozone is generated inside the printer by the high voltages used during the printing process. Replace the ozone filter each time you replace the toner cartridge.

1. Make sure the printer is turned off.

2. Open the fan cover located on the left side of the printer.
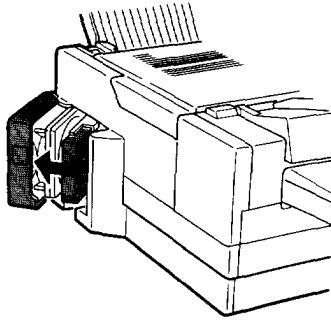
3. Pull the filter out of the printer.
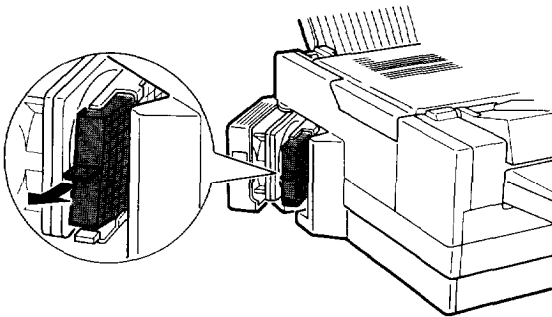
4. Install the new filter as shown below.
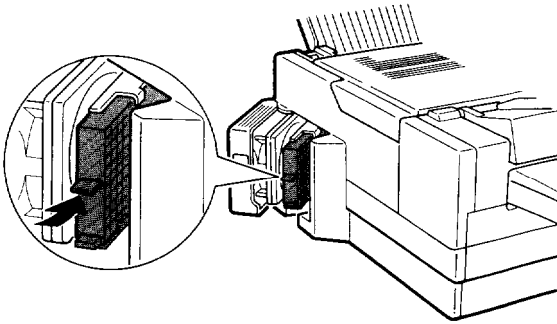
5. Close the fan cover.

Cleaning the transfer charger wire

Clean the transfer charger wire each time you replace the toner cartridge.

You should also clean the transfer charger wire if the print quality declines. See Chapter 7 for a discussion of the print quality problems that can be solved by cleaning the transfer charger wire.

1. Open the printer cover.

2. Locate the green transfer charger wire cleaner on the
    photoconductor unit and slide it to the right as far as it will go.
    Then move it back to its original position.
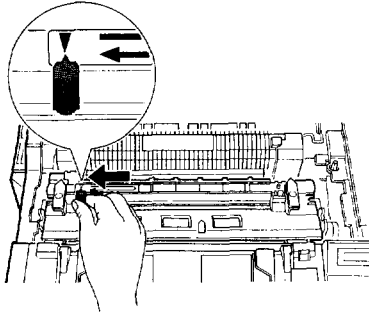
3. Close the printer cover.

Replacing the photoconductor unit

When you see CHANGE PCU on the display, it is time to replace the
photoconductor unit. To finish printing your current job, press
CONTINUE.

1. Make sure the printer is off.

2. Grasp the paper cassette tray with both hands and pull it out of the printer.
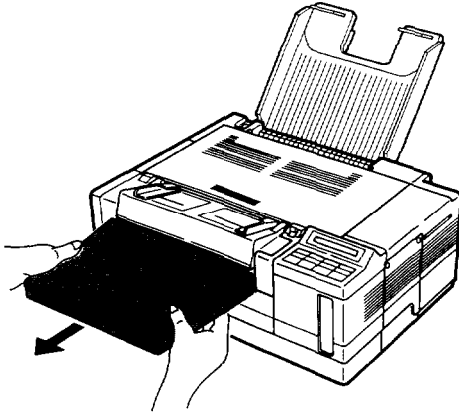
WARNING:

❑ Do not touch the fuser, which is marked with a CAUTION: HOT SURFACE label. The fuser is very hot during and directly following printer use.

❑ Always remove the toner cartridge before removing the photoconductor unit. Removing the photoconductor unit by force will damage the printer.

3. Open the front cover.
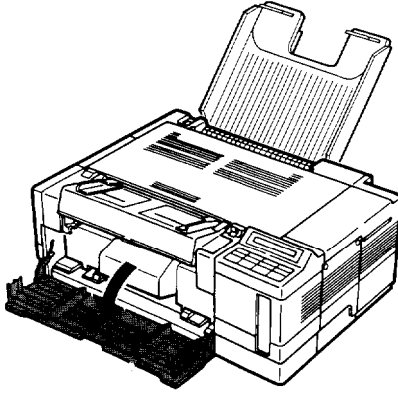
4. Pull out the toner cartridge.
5. Push down on the latch on the top of the printer to open the printer cover.
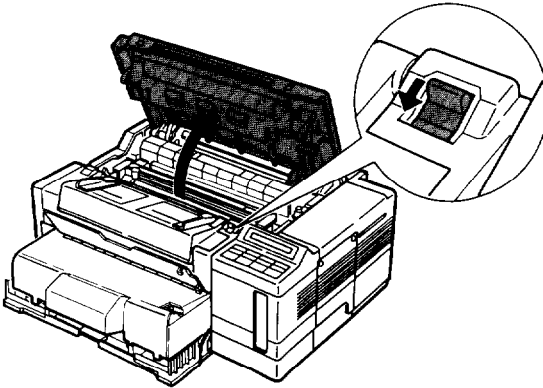
6. Remove the photoconductor unit by pulling up on the green handles on both sides of the photoconductor unit.
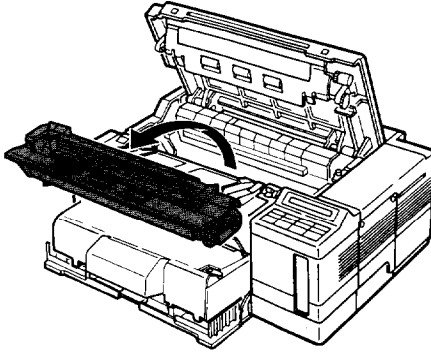
7. Dispose of the photoconductor unit by placing it with nonburnable items. Do not take the photoconductor unit apart. Follow all local regulations that may apply to nonburnable waste.

8. Remove the new photoconductor unit from its packaging. Save the packaging in case you ever need to transport the printer. Pull the red plastic pieces from both sides of the new unit.
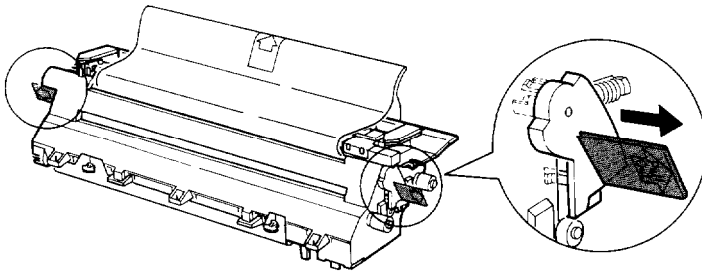
⚠️ CAUTION:

❑ Never touch any part of the photoconductor unit except the green handles.

❑ Do not expose the photoconductor unit to light brighter than normal room light.

---

9. Insert the photoconductor unit into the printer while holding the green handles.
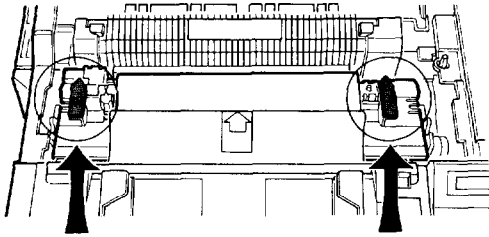
10. Remove the black protective paper from the photoconductor unit.

---
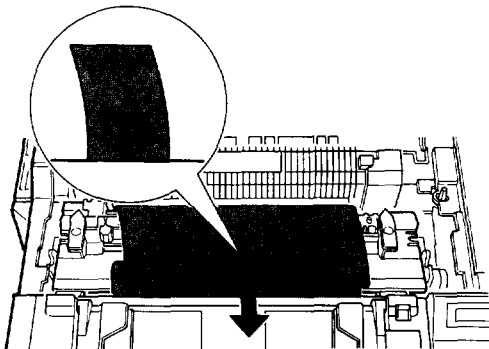
11. Press $\triangle$ and $\triangledown$ at the same time. Make sure COVER OPEN PCU 0 appears on the display.

12. Gently press down on the top of the printer cover until the latch clicks shut.

> Note: You cannot close the printer cover if you installed the photoconductor unit incorrectly. If you cannot close the cover, carefully remove and then re-install the photoconductor unit. Close the cover.

13. Re-insert the toner cartridge into the printer by sliding it gently into the opening until it locks in place.
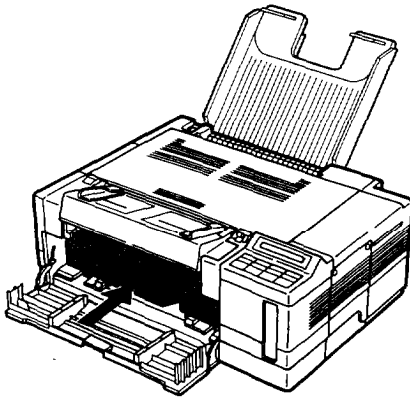
14. Close the front cover.
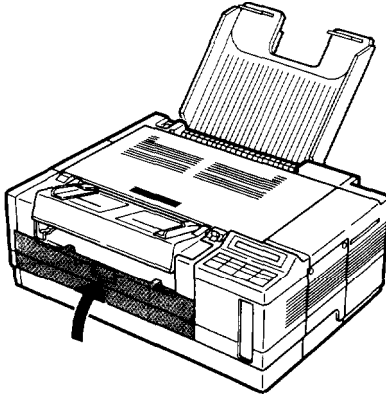
15. Insert the paper cassette.

Cleaning Your Printer

The printer needs only minimal cleaning. If printing problems occur (print is too light, white stripes appear, or nothing prints), see Chapter 7, Troubleshooting. This section describes cleaning the printer case.

Cleaning the printer case

If the printer's outer case is dirty or dusty, first turn off the printer; then clean it with a soft, clean cloth dampened with a mild detergent, as shown below.
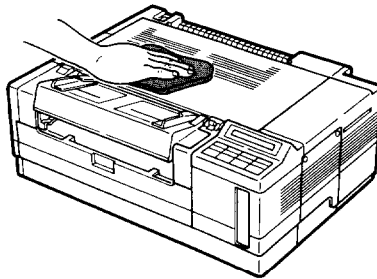
CAUTION:

❑ Never use alcohol or thinner to clean the printer case; these chemicals can damage the components as well as the case.

❑ Be careful not to get water on the printer mechanism or any electronic components.

Transporting Your Printer

If you need to move the printer a short distance, such as from one room to another, remove the paper cassette and make sure that you keep the printer level to avoid spilling toner.

If you plan to ship the printer some distance, repack the printer and its accessories in the original packing materials to avoid damaging them.

> CAUTION: Do not ship the printer with the toner cartridge or the photoconductor unit installed in the printer

Packing for transportation

To pack the printer, assemble all the original packing materials and some strong packing tape.

1. Be sure your printer and computer are turned off. Then, remove the power cord and the cable connecting your printer and computer.

2. If the optional multi-media feeder or a font cartridge is installed, remove and repack it.

3. Remove the output tray and the paper cassette. Then remove any paper in the paper cassette and repack the cassette in its original packing materials.

4. Open the front cover.
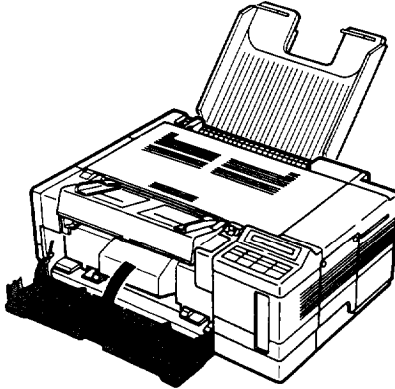
5. Pull out the toner cartridge.

6. Make sure the toner cartridge cover is closed. Then put the toner cartridge back in its original plastic bag.

7. Close the front cover.

8. Push down on the latch on the top of the printer to open the printer cover.
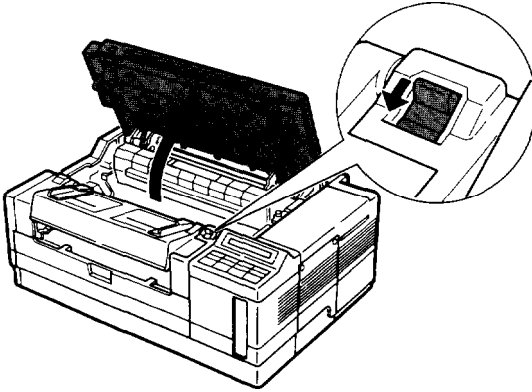
9. Remove the photoconductor unit by pulling up on the green handles located on both sides of the unit as shown below.
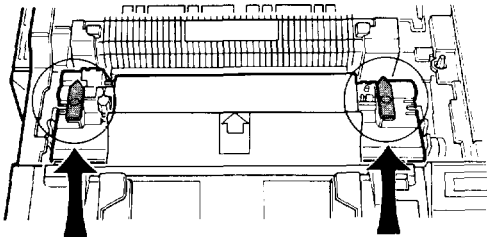
> (!) CAUTION:
>
> ❑ Never touch any part of the photoconductor unit except the green handles.
>
> ❑ Do not expose the photoconductor unit to light brighter than normal room light.

10. Put the photoconductor unit back in its original packaging.

11. Close the printer cover.

12. Place the toner cartridge in its original box, securing it so that it cannot move around inside the box, and seal the box with packing tape. When you transport the cartridge box, make sure you keep it level to avoid spilling toner.

13. Repack the printer, output tray, paper cassette, and accessory box as described in Chapter 1.

14. Seal the main carton with packing tape.

Unpacking the printer after transportation

1. Unpack the printer as described in Chapter 1. When you unpack the toner cartridge, carefully wipe off any toner that spilled during shipment by using a soft, clean cloth.

2. Assemble the printer as described in Chapter 1.

Chapter 7

Troubleshooting

7

Status and Error Messages

If an error occurs, your best source of information is the display on the control panel. The messages displayed there tell you what may be wrong and, in some cases, indicate the actions you should take to correct the problem. Status messages appear on the display during normal operation. They indicate the printer's current status.

This section contains an alphabetical list of status and error messages you may encounter while printing and includes steps you can take to correct any problems.

Note: In some cases, the red CONTINUE light flashes when an error is detected. This requires you to correct the problem and then press CONTINUE to clear the error. However, if the AUTO CONT option in SelecType is set to on, some errors may clear automatically even though the problem remains. In most instances, you should leave AUTO CONT set to off.

The messages

In this section of the manual, status messages are preceded by [S], error messages are preceded by [E] and warning messages are preceded by [W]. In some cases the message you see on your display also shows the printer mode.

[E] ADD MEMORY FOR CH-X
This indicates that there is not enough memory in Channel X. See Chapter 4 for instructions on changing the RX-BUFFER SIZE or adjusting the memory distribution in the INDIVIDUAL setting or see Appendix A for adding memory.

[E] CANCEL MANUAL FEED
This message indicates that there is no paper in the manual feed slot when you are using manual feed. See Chapter 5.

[E] CHANGE PCU
Replace the photoconductor unit as described in Chapter 6.

[S] CHAR CREATING
Characters are being created.

[S] COPY END
Multiple-copy printing is cancelled. (You pressed the COPY END button when the printer was off line.)

[E] COVER OPEN PCU XXXXXX
The printer cover or fan cover is open or the toner cartridge or photoconductor unit is not installed. The number following PCU shows the number of pages printed. To reset the PCU counter, press the $\triangle$ and ∇ buttons at the same time when this message appears.

[S] DATA
The printer has received data but is not yet printing, or the printer has received data and is off line. If the printer is off line, press FEED to print the data.

[E] FEED JAM
Paper is not feeding into the printer from the specified cassette or has jammed on its way into the printer. See the FEED JAM section in this chapter for information.

[S] FONT CREATING
A font is being created.

[E] ILLEGAL CARD
A card in the card slot or a cartridge in the cartridge slot cannot
be read. To correct this error, take the printer off line and then
press CONTINUE. If the error message remains, make sure the
printer is off line and remove the card or the cartridge.

[S] INITIALIZE
The printer is being initialized to the factory or optional settings.

[E] INSUFF MEMORY
The printer has insufficient memory available for the task you
have given it. To correct the error, press CONTINUE. If the message
remains, press RESET or perform INITIALIZE as described in
Chapter 4. This error can also be cleared by turning the printer
off and back on again. However, it may be necessary to simplify
the page you are trying to print or add more memory to the
printer. See Appendix A for information on adding memory.

[E] PAGE BUFFER FULL
Text or graphics data has filled the printer's buffer and an
incomplete page is ejected. Press CONTINUE to clear the error. You
may need to add more memory to the printer. See Appendix A
for information on adding memory.

[S] PAPER FEEDING
The printer is feeding paper.

[E] PAPER JAM
Paper is not being fed into the printer or paper is jammed inside
the paper path. See the PAPER JAM section later in this chapter.

[E] PAPER OUT
There is no paper in the standard paper cassette or the optional
multi-media feeder (if installed). Insert more paper into the
selected paper cassette or manually feed a sheet of a paper into
the printer. See Chapter 5 for more information on loading
paper.

[E] PAPER OUT [paper source] [paper size]
There is no paper in the paper source from which the printer expects to feed paper. The right column of the display prompts you to load the correct paper size into the paper source.

[E] PAPER SIZE ERROR
The paper size you selected with SelecType (or the default size if you have not selected a size) does not match the paper loaded in the selected paper source. Press CONTINUE to clear the error. Insert the correct paper or change the P-SIZE setting with your application software or with SelecType as described in Chapter 4.

[S] PRINTING
The printer has received data and is printing.

[S] PRINT STOP
The printer stops printing during a multi-copy print operation.

[S] RAM Check X.X MB
The printer is checking RAM (X.X = capacity).

[S] READY
The printer is ready to print.

[E] REINSERT CARD
If this message appears on the display, you may have removed an identity card or a font cartridge while the FEED light was still lit or while the printer was on line. To correct the error, make sure the printer is off line. Next, reinsert the card or cartridge and press CONTINUE.

E REMOVE CARD
You may have inserted an identity card or a font cartridge while the printer was on line or while the FEED light was on. To correct this error, take the printer off line, then remove the card or cartridge and press CONTINUE. Before reinserting the card or cartridge, make sure that all data in the buffer has been printed and that the printer is off line. If the FEED light is on, press FEED to print out the remaining data.

[E] RESELECT TRAY
The optional multi-media feeder is not installed and the INPUT
option is set to OPT or AUTO. Install the optional multi-media
feeder and then press CONTINUE. However, if you decide not to
use the optional multi-media feeder, simply press CONTINUE and
paper is automatically selected from the standard paper cassette.

[S] RESET
The printer has been reset to previous settings to the macro
number specified with the LOAD MACRO setting in the
SYSTEM CONFIG option of SelecType Level 1.

[S] ROM Check
The printer is checking ROM.

[E] SAVE MEMORY OVERFLOW
This message may appear when you are trying to save a macro
with the SYSTEM CONFIG option SAVE MACRO setting in
SelecType Level 1. The printer does not have enough memory to
save any additional macros. To correct this error, delete unused
macros using the DELETE MACRO setting, and then repeat
SAVE MACRO.

[E] SERVICE REQ. CXXX
[E] SERVICE REQ. E00XX
A controller or print engine error has been detected. Write down
the error number that appears in the right column of the display
and turn off the printer. Turn the printer back on after a few
seconds to see if the error message still appears. If it does, turn
off the printer, unplug the power cord from the electrical outlet,
and contact a qualified service person.

[E] SET [paper size] MANUAL
This message requires that you set the paper size for manual
feeding.

[E] STARTUP ERROR
Press ◁ to continue.

[E] SET FULL PRINT
   This message may appear when you are trying to print graphics
   or a mix of text and graphics. Press CONTINUE and then change
   the FULL PRINT setting in SelecType Level 1. See Chapter 4 for
   more information about this setting.

[S] STANDBY MODE
   If the standby mode is enabled, the printer enters this mode
   when it is not used for about thirty minutes. Even if the standby
   mode is disabled, the printer enters standby mode when it is not
   used for eight hours. When this message appears, press any
   control panel button or send data to the printer to warm it up.

[W] TONER LOW
   The printer is almost out of toner. When you see this message,
   you can still print up to 20 more pages. Then you must replace
   the toner cartridge.

[E] TONER OUT
   The toner cartridge must be replaced, as described in Chapter 6.

[E] TRAY SET XXX
   The paper-size setting does not match the paper loaded in the
   specified paper cassette. The right column of the display
   indicates the currently selected cassette and the expected paper
   size. You can either change the paper-size setting or load the
   correct paper size. After you correct the paper mismatch, press
   CONTINUE.

[S] WALT
   The printer is being reset after a startup error.

[S] WARMING UP
   The printer is warming up.

Troubleshooting Directory

Use the directory below to help you locate the printing problem you are experiencing; then work through the suggested solutions. If the exact problem is not listed, look for one of a similar type. Most printing problems can be corrected easily.

Decline in print quality

Options

Paper Jam Problems

This section gives you detailed information on correcting paper jams. Find the error message on your display and work through the steps below to correct the problem.

FEED JAM

The FEED JAM message indicates that paper is not feeding into the printer from the specified tray or has jammed on its way into the printer.

When a feed error occurs, the printer stops printing. When you see the FEED JAM message, follow these steps:

1. Remove the paper cassette from the printer. Carefully remove all the sheets from the paper cassette, including those that have been fed part of the way into the printer.
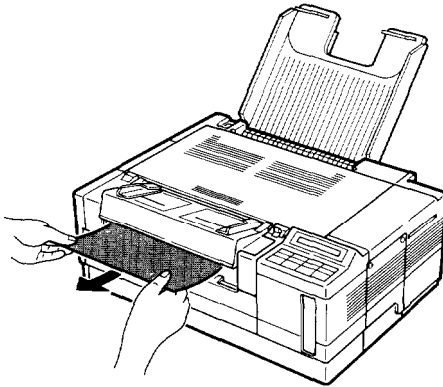
> ⚠ CAUTION: If the paper tears while you remove it, make sure you also remove any pieces remaining in the printer. To do this, open the printer cover, remove any paper pieces from the paper feed path, and close the printer cover.

2. Open and close the printer cover to reset the paper jam detector.

3. Tap the edges of the paper on a flat surface and reload it into the paper cassette. (Do not reload any curled or wrinkled sheets.)

4. Push the paper cassette back into the printer. Make sure the printer is on line; printing resumes automatically beginning with the jammed page.

If paper feeding problems continue, see Chapter 5 to make sure that you are using the correct paper for your printer.

If the procedure described above does not clear the error and you have installed the optional multi-media feeder, follow these steps:

1. Pull out the multi-media feeder.

2. Remove any folded or curled paper from the front opening as shown below.
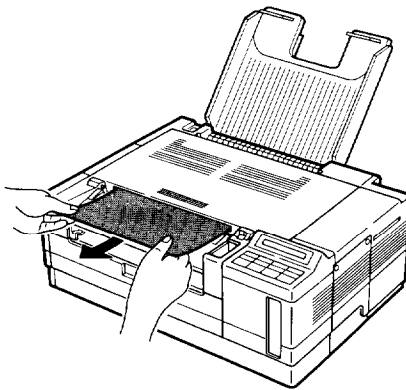
3. Make sure that the paper is evenly aligned in the multi-media feeder and that the paper rests below the multi-media feeder's maximum paper marks. Then replace the multi-media feeder.
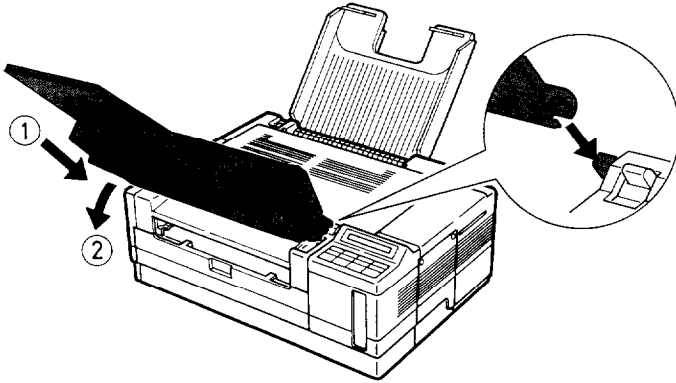
4. Make sure that you are using the correct paper size in the multi-media feeder. See the section on using the optional multi-media feeder in Appendix A for more information.

Note: Make sure you are using paper that meets the specifications for this printer. See Chapter 5 for the correct paper to use.

PAPER JAM

The message PAPER JAM indicates that there is a paper jam either in the paper input path or the paper eject area.

1. Open the printer cover.

WARNING: Opening the printer exposes the fuser, which is marked by a CAUTION: HOT SURFACE label. Be careful not to touch the fuser.

2. If the paper is caught just in front of the roller, gently pull the paper out as shown below.
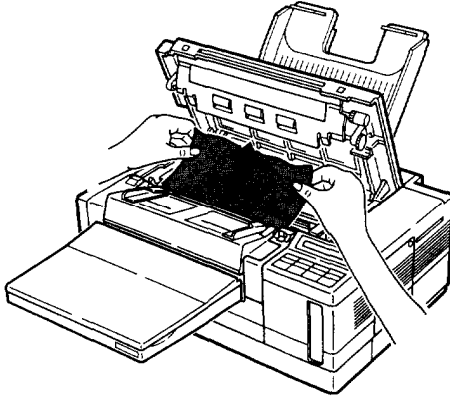
3. If the paper is caught under the roller, first turn the roller forward or backward to free the paper from the roller. Then pull the paper out from under the roller until the page is completely free of the roller. If the paper tears, make sure you remove any pieces remaining in the printer.

4. If the paper is caught at the fuser area, pull the paper out as shown below.
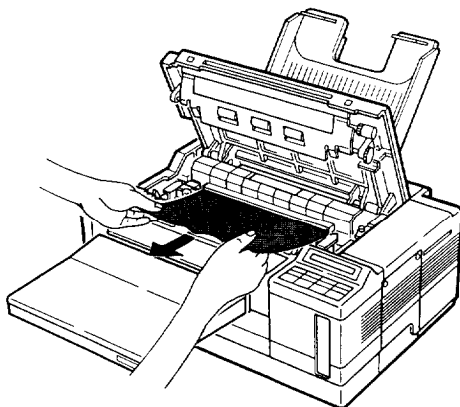
5. If the paper is caught under both the roller and the fuser, first pull the paper out from under the roller in the direction the paper feeds; then pull it in the opposite direction until it is completely free of the fuser.

Note:

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

❏ If toner spills inside the printer, do not use the printer until you remove all of the spilled toner. When you resume normal printing, the first few pages that pass through the printer may be slightly smeared with excess toner.

6. If the paper is caught at the paper ejection section, gently pull the paper to remove it.
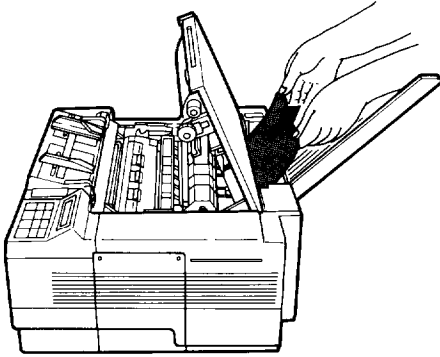
7. Close the printer. Resume printing when the printer warms up.

Power Supply

Power is not being supplied to the printer.

❑ *After turning on the printer, the display panel remains blank.*

The power cable may be disconnected or may not be completely plugged into the electrical outlet. Turn off the printer and check the power cable connections between the printer and the electrical outlet; then turn the printer back on.

The problem may be with the electrical outlet itself. If the outlet is controlled by an outside source such as a wall switch, make sure it is on.

If the printer still does not operate, the outlet may be faulty. Plug another electrical device into the outlet to check whether the outlet is operating properly.

Printing Problems

The printer does not print or stops printing.

❏ *The ON LINE light is on but nothing is printed.*

Your computer may not be properly connected to the printer. Perform the section on Testing the computer-to-printer connection in Chapter 2. If the test shows an improper connection, go on to the next three troubleshooting items below. If the test shows a proper connection, skip to the last item in this problem category.

The interface cable may not be plugged in securely. Check both ends of the cable between the printer and the computer. If you are using a parallel interface, secure the connector using the wire retaining clips.

You may not be using the correct interface cable. Make sure that your interface cable meets the specifications for the printer and computer.

You may not have selected the correct interface settings with SelecType. Select the appropriate interface (serial, parallel, or optional). If you are using a serial interface, also set the baud rate, protocol, stop bit, and related settings. See your computer manual for the correct settings and interface requirements.

The software may not be installed properly for your printer. Use the program's setup (or install) procedure to check the printer settings on your computer's display; then reset the values correctly. Make sure the SelecType operating mode (LJ-2P, FX, or LQ) matches your program's printer driver. See Chapter 3.

❏ *The ON LINE light is off.*

The printer is off line. Press ON LINE once to set the printer on line (the ON LINE light comes on).

❏ *The printer stops printing and the display reads PAPER OUT or TONER OUT.*

Replace the component specified. See Chapter 5 for paper loading instructions. See Chapter 6 for toner cartridge replacement instructions.

The printout is not what you expected.

❏ *The font you selected with software commands cannot be printed.*

The correct orientation (portrait or landscape) may not be selected. Make sure that the orientation (portrait or landscape) matches the selected font. The correct font is not selected if the font does not contain the selected orientation.

The font you selected with your software may not be available. Be sure you have installed the correct font cartridge.

❏ *Characters not belonging to the selected symbol set are being printed.*

The expected symbol set may not be available in the printer. Be sure you have installed the correct font cartridge.

The correct symbol set may not be selected. Specify the desired symbol set (containing international characters or symbols) with your software or with SelecType. Available symbol sets in SelecType vary depending on the printer mode selected. See Chapter 4 or Appendix C for more information.

❏ *All the text is printed on the* same *line.*

A line feed command is not being sent at the end of each line of text. If you are using the parallel interface, you may be able to correct this problem by setting the SelecType Level 2 AUTOFEED option to on. See Chapter 4.

❏ *Text is printed with an extra blank line in between printed lines.*

An extra line feed signal is probably being sent. If you are using the parallel interface, you may be able to correct this problem by setting the SelecType Level 2 AUTOFEED option. See Chapter 4.

❏ *Text is printed with an extra blank line even after you set AUTOFEED to off.*

Your interface cable may be sending the extra line feed command. Disable the AUTOFEED signal of your interface. See the interface specifications in Chapter 8.

❏ *Some or all of the output is garbled or printed as asterisks.*

The interface cable may not be plugged in completely. Make sure that both ends of the cable are plugged in securely.

The interface may not be configured correctly. If you are using a serial interface, make sure that both the computer and printer are set to use the same number of data bits per word and that they both use the same parity, baud rate, and number of stop bits.

You can also use the data dump mode to check the data being sent from the computer. See the section on data dumps later in this chapter.

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

The position of the printout is not what you expected.

❏ *The printed page length differs from the actual length of the paper.*

Check the page length setting in your application program and make sure that it is set correctly for the selected page length.

❏ *The right or left margin setting does not match the actual width of the paper.*

The margin settings of your software program may not be correct. Change the settings of your application program. If this does not correct the problem, you can change the right or left margin with SelecType. The procedure for changing margin settings varies depending on the selected printer mode. See Chapter 4.

❑ *Even after changing the page length or margin positions, you find that the printed position is not correct.*

You may need to set the printing position with the T-OFFSET or L-OFFSET settings in the SYSTEM CONFIG menu of SelecType Level 1. This feature allows you to adjust the position of the printable area on the page. See Chapter 4.

Problems With Graphics

Graphic images do not print.

❑ *After changing the printer mode, you are unable to print graphics.*

You may not have the correct printer driver installed. If you try to print with a software package set for another printer, nothing will be printed. Make sure that the driver matches the currently selected printer mode as described in Chapter 3.

❑ *You cannot print graphics using the serial interface.*

The WORD LENGTH setting in the I/F SERIAL option of SelecType Level 2 may not be set correctly. When printing graphics, make sure that you set an 8-bit data word and not a 7-bit data word.

❑ *When printing a mix of text and graphics, the page does not print* **or** *is only partially printed. The display may also show SET FULL PRINT.*

The full print buffer setting needs to be changed. To correct this error, change the FULL PRINT setting in the SYSTEM CONFIG option of SelecType Level 1 as described in Chapter 4.

Graphics cannot be printed and the display shows PAGE BUFFER FULL. The full print buffer or the receive buffer setting needs to be changed. To correct this error, change the FULL PRINT setting of the SYSTEM CONFIG option in SelecType Level 1 or the RX-BUFFER setting in SelecType Level 2 as described in Chapter 4.

Your printer may not have enough memory installed. You need to simplify the page or install additional memory. Press CONTINUE to clear the error. For information on adding memory, see Appendix A.

❑ *The message INSUFF MEMORY appears and graphics cannot be printed.*

The full print buffer or the receive buffer setting needs to be changed. To correct this error, change the FULL PRINT setting in the SYSTEM CONFIG option of SelecType Level 1 or the RX-BUFFER SIZE setting in SelecType Level 2 as described in Chapter 4.

The printer does not have sufficient memory available for the task you have given it. It may be necessary to simplify the page you are trying to print or add more memory to the printer. Press CONTINUE or RESET to clear the error. See Appendix A for information on adding memory.

SelecType Problems

SelecType does not function as expected.

❏ *Settings made with SelecType are ignored.*

You may not have saved your settings before turning off or
resetting the printer. Make sure you save your settings with the
SYSTEM CONFIG option SAVE MACRO setting in SelecType
Level 1 or with P-CONFIG SAVE in Level 2. Once you save
Level 1 settings in a macro, you also select a correct macro
number with POWERON MACRO, or SelecType settings return
to their previously-saved default settings after you turn off or
reset the printer.

You may have saved settings to the same macro number in two
or more channels. Never save settings to the same macro number
in different channels or the settings in one channel may affect the
settings in another channel.

The software may either be changing the defaults on the printer
or initializing the printer. This may require that you change the
initialization sequence sent by your software. See your software
manual for more information. You can probably make any
necessary setting with your software.

You may be trying to set certain combinations of settings with
SelecType that cannot be acted on by the printer. Usually,
SelecType does not allow you to make incompatible
combinations. However, certain combinations are not checked
for compatibility until after you exit SelecType and set the
printer on line. Others are not checked at all. See Chapter 4 for
more information about SelecType.

❑ *Desired SelecType settings are nut displayed.*

You may be trying to select a setting that is not available in the currently selected printer mode. Not all settings are available in all printer modes. For example, you cannot select OPT from the INPUT menu if you haven't installed the optional multi-media feeder.

You may have entered the wrong level of SelecType. Whenever you enter SelecType, you may find it useful to refer to Chapter 4 or the SelecType map on the Quick Reference card.

Paper Handling

Paper does not feed properly.

❏ *Paper does not feed at all.*

The correct paper cassette may not be selected. If you are using the optional multi-media feeder, make sure the INPUT menu is set to OPT or AUTO. When you select AUTO, the page-size setting in the P-SIZE menu determines whether paper feeds from the standard paper cassette or the multi-media feeder. (The size of the paper in the multi-media feeder is checked first.) See Chapter 4 to change the INPUT setting.

The ONLINE light is off.

The printer is off line. Press ONLINE to set the printer on line.

Paper feeds crookedly or jams.

❏ *Paper feeds crookedly in the printer.*

The paper guide of the manual feed guide or the optional multi-media feeder may not be set correctly. Adjust the position of the guides so that the paper can slide in and out freely. If the paper guides are too tight, they can cause the paper to bind; if they are too loose, the paper may feed crookedly into the printer. See Chapter 5.

❏ The paper stops feeding and the FEED JAM or PAPER JAM message appears on the display.

The paper has jammed in the printer. Correct the error following the instructions found earlier in this chapter.

❏ *Multiple pages feed into the printer.*

You may not have tapped the paper edges sufficiently to ensure smooth paper feeding. If the paper has jammed, remove it following the instructions on clearing a paper jam earlier in this chapter. Reinsert the paper and try printing again.

Poor quality paper can cause paper feeding errors of this type. Make sure your paper supply is not too thin or rough. See Chapter 5 for more information on the types of paper that can be fed automatically and the types that require manual feeding.

❏ *The paper feeds but then jams at the paper eject area.*

There may be too much paper in the output tray. Never let more than 50 sheets accumulate in the face-down output tray on top of the printer.

❏ *Printed pages* curl *too much and are not placed in the output tray properly.*

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.

You may not be using the correct type of paper for your printer. Smooth, high-quality copier paper is recommended for best results. See Chapter 5 for more on choosing paper.

Most paper has a natural "curl" that may be emphasized when the paper is run through a laser printer. One side of the paper tends to curl more than the other side. Turn the stack of paper over in your paper cassette and try printing again. As a rule, your ream of paper displays an arrow on one end to show the side of the paper that is best for printing. Make sure the "best" print side is fed face down into the printer.

❏ *Thin paper creases.*

Use the Special paper setting. See page 5-6 for instructions.

The printer prints a page and then stops.

❑ *The display reads PAPER SIZE ERROR and the CONTINUE light flashes.*

You may have selected the wrong paper size with your application software. Check the paper size setting in your software.

You may be trying to use a non-standard paper size (one that is not listed on the P-SIZE menu in SelecType Level 1). You may be able to feed this paper manually as described in Chapter 5. Be sure to use only paper sizes that are within the specified range listed in Chapter 8.

The paper size currently set with P-SIZE may not match your paper size. There are several ways of dealing with this error: if the FEED light is out, simply press CONTINUE to clear the error. Then press the *SelecType* button to enter SelecType Level 1. Make sure that the correct paper cassette is selected and that the paper size you wish to use matches the P-SIZE setting. If it does not, change the P-SIZE setting and save the new setting with the SYSTEM CONFIG option SAVE MACRO setting.

If the FEED light is on, indicating that data remains in the printer, you cannot change SelecType settings. However, you can still enter SelecType Level 1 and check the INPUT and P-SIZE settings. If you are using an incorrect paper size, simply replace it with the size indicated in P-SIZE and continue printing. If the SelecType settings are incorrect, you need to press RESET to clear the data in the printer. Next, enter SelecType Level 1 and change the paper-size setting to match the size of the paper you are using. Save the new setting with the SYSTEM CONFIG option SAVE MACRO setting and continue with your printing. For more information on using SelecType, see Chapter 4.

> ⚠️ CAUTION:
>
> ❑ When you press the RESET button, any data remaining in the printer is lost.
>
> ❑ If you continue to print using paper that is smaller than the size of paper set with your software, toner may accumulate inside the photoconductor unit and damage it. Make sure you set the P-SIZE setting to match the paper you are using. If the AUTO CONT option is on, the paper size error is detected but cleared automatically and printing continues. In most cases, leave AUTO CONT set to off.

Decline in Print Quality

If the print quality declines, read through the following section and try to match your problem with the descriptions below. The descriptions may not always match your problem exactly, so try to find one of a similar type.

> Note: If the print quality problem remains after you work through the suggestions in this section, make a list of the corrective steps you have taken and contact your dealer or a qualified service person for assistance.

The print quality is not what you expected.

> CAUTION: Make sure you install the photoconductor unit before installing the toner cartridge; otherwise you may damage the printer.

❏ *Printed pages have a* dark **or** *dirty background.*

   The print density may be set for darker print. Turn the print density knob counterclockwise for lighter print.

   The transfer charger wire may be dirty. Clean the wire as described in Chapter 6.

   There may be a problem with the toner cartridge or photoconductor unit. Replace the cartridge as described in Chapter 6. If that does not solve the problem, replace the photoconductor unit.

   If the print quality problem persists, contact a qualified service person.

❑ *Vertical black **or** white bands **or** lines* appear *on printed pages.*

The transfer charger wire may be dirty. Clean the wire as described in Chapter 6.

The lens of the toner cartridge may be dirty. Open the front cover, remove the toner cartridge, and place it on a clean, flat surface. Locate the clear lens that runs the length of the cartridge and is located beneath the lengthwise wire screen. Remove the tape on the side of the lens and slide the lens out of the cartridge. Wipe the lens with a soft clean dry lintfree cloth, moving left to right without stopping. Reinsert it in the cartridge until it clicks in place. Then reinsert the toner cartridge in the printer and close the front cover.

If the print quality problem persists, replace the photoconductor unit as described in Chapter 6.

❑ *Horizontal black **or** white bands appear on printed pages.*

The transfer charger wire may be dirty. Clean the wire as described in Chapter 6.

There may be a problem with the toner cartridge. Replace the cartridge as described in Chapter 6.

There may be a problem with the photoconductor unit. Replace the photoconductor unit as described in Chapter 6.

❑ *Periodic dirty marks appear in the printout.*

If the marks are approximately 10-20 mm (2/5 to 4/5 inch) in length, replace the toner cartridge as described in Chapter 6.

If the marks are approximately 60-180 mm (2% to 7 inches) in length, there may be a scratch on the photoconductor unit. Replace the photoconductor unit as described in Chapter 6.

❑ *Toner smudges across the printed pages.*

The bottom of the photoconductor unit may be dirty. Remove the photoconductor unit and wipe the bottom of it with a clean, dry cloth. Then reinstall it as described in Chapter 6.

There may be a problem with the toner cartridge. Replace the cartridge as described in Chapter 6.

❑ *The darkness* of *the printout is uneven.*

The transfer charger wire may be dirty. Clean the wire as described in Chapter 6.

If this does not correct the problem, replace the toner cartridge as described in Chapter 6.

❑ *Irregular areas of missing image appear on the printed page.*

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 Chapter 5 for information on choosing paper.

The transfer charger wire may be dirty. Clean the wire as described in Chapter 6.

❑ *Completely blank pages are output.*

If the TONER LOW message appears on the display, replace the toner cartridge as described in Chapter 6.

Check to be sure that the toner cartridge is properly installed as described in Chapter 1.

The problem may be with your software program or interface cable. Run a test print or print out a status sheet. If blank pages continue to print, the problem may be with the printer. Turn off the printer and contact your dealer or a qualified service person.

❑ *A black page is printed.*

Check to be sure that the toner cartridge is properly installed as described in Chapter 1.

The toner cartridge may need to be replaced. Replace the toner cartridge as described in Chapter 6.

❑ *The printed image is light* **or** *faint.*

The transfer charger wire may be dirty. Clean the wire as described in Chapter 6.

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.

If the TONER LOW message appears, replace the toner cartridge as described in Chapter 6.

The print density knob may not be set correctly. Raise the printer cover and turn the print density knob clockwise. See Chapter 2 for information on adjusting the print density knob.

If the problem persists, replace the photoconductor unit as described in Chapter 6.

❏ *The printed image is too dark.*

The print density knob may not be set correctly. Raise the printer cover and turn the print density knob counterclockwise. See Chapter 2 for information on adjusting the print density knob.

If the problem persists, replace the photoconductor unit as described in Chapter 6.

Options

Using optional font cartridges, the printer does not operate as expected.

❑ *The desired font cannot be selected.*

You may not have inserted the font cartridge correctly. Reinsert the cartridge as described in Appendix B.

The correct page orientation (portrait or landscape) may not be selected with SelecType. Only fonts containing the selected orientation are available. See Font Cartridges in Appendix B for more information.

Using the optional multi-media feeder, the printer does not operate properly.

❑ *Paper does not feed from the multi-media feeder.*

Be sure you have made the proper paper choice with your application software.

The INPUT menu in SelecType Level 1 may be set to STD. To use the multi-media feeder, the INPUT option in SelecType Level 1 must be set to OPT or AUTO. Change the setting as described in Chapter 4.

There may be no paper in the multi-media feeder. Load paper into the multi-media feeder.

You may have tried to load too many sheets of paper in the multi-media feeder. The tray can hold a maximum of 150 sheets of $75g/m^2$ (20 lb) paper.

❏ *Several sheets feed into the printer at one time and jam (the FEED JAM or PAPER JAM message appears on the display).*

You may not be fanning and tapping the stack of paper sufficiently. Remove the jammed paper following the instructions earlier in this chapter. Before reloading paper, be sure to tap the paper and even up the edges of the stack. Also, do not load paper that is creased or folded.

You may not be using the correct paper for your printer. Make sure your paper matches the specifications listed in Chapter 8. If the finish of the paper is too smooth or too rough, paper feeding may be difficult. Try feeding each sheet manually.

The thickness of the paper also affects paper feeding. Always test your paper before purchasing it in large quantities.

Using an optional interface, the printer does not operate as expected.

❏ *The printout is garbled or the printer does not print.*

Your computer may not be properly connected to the printer. Perform the section on Testing the computer-to-printer connection in Chapter 2. If the test shows an improper connection, go on to the next three troubleshooting items below. If the test shows a proper connection, skip to the last item in this problem category.

The interface may not be configured correctly. If you are using a serial interface, make sure that both the computer and printer are set to use the same number of data bits per word and that they both use the same parity, baud rate, and number of stop bits. See your computer manual for the correct settings.

You may also need to change the DIP switch settings of your interface board. Before changing these settings, however, make sure the printer is turned off.

The optional interface may not be installed correctly. Turn off the printer and unplug the interface cable and the power cable. Then check to see that the mating connector of the interface is correctly plugged into the main board. See The Optional Interface Board in Appendix A for more information.

You may be using the wrong interface cable. Check with your dealer to make sure you have the right cable. Also make sure that you are using a shielded cable.

After installing additional memory, the printer does not function as expected.

❏ *After you turn on the power, the RAM Check message does not display the expected amount of memory.*

The RAM chips or the memory board may not be installed correctly. Turn off the printer and check the installation. Make sure that the chips are installed in the correct sector of the memory board and that each chip is firmly seated in its socket. Also make sure that the notches on the chips are all pointing in the correct direction. See Appendix A for more information.

❏ *Complex pages still cannot be printed and the INSUFF MEMORY message appears on the display.*

FULL PRINT, RX-BUFFER, or CH option setting in SelecType may need to be changed. See Chapter 4 for more information.

You may not have installed enough memory. You can add up to 5.0MB of memory for a total of 5.5MB. If you have added all of the extra memory possible and the error message continues to appear, you may have to simplify the document you are trying to print.

Data Dump Mode

Data dump mode is a special feature that makes it easy for experienced users to find the cause of communication problems between the printer and computer. The data dump mode produces an exact printout of the codes reaching the printer.

1. Make sure that the printer is loaded with paper and turned off.

2. Hold down the *SelecType* button while you turn on the printer. Make sure you hold the button down until the message HEX DUMP appears on the display.

3. Run any program that causes the printer to print (either an application program or a program written in any programming language). Your printer prints out all of the codes sent to it in hexadecimal format as shown in the sample below.

```
0000    1B 52 10 1B 43 45 1B 6B 00 1B 70 00 1B 63 0C 1B    .R..CE.k..p..c..
0001    74 01 1B 32 54 72 6F 75 62 6C 65 20 73 68 6F 6F    t..2Troubleshoo
0002    74 69 6E 67 20 20 20 20 20 0D 0A 54 68 69 73 20    ting    ..This
0003    63 68 61 70 74 65 72 20 64 69 73 63 75 73 73 65    chapter discusse
0004    73 20 70 72 6F 62 6C 65 6D 73 20 79 6F 75 20 6D    s  problemsyou m
0005    61 79 20 65 6E 63 6F 75 6E 74 65 72 20 61 6E 64    ay encounter  and
0006    20 74 68 65 69 72 20 6C 69 68 65 6C 79 20 73 6F     their likely so
0007    6C 75 74 69 6F 6E 73 2E 20 0D 0A 0D 0A 49 66 20    lutions. . ..If
0008    61 6E 20 65 72 72 6F 72 20 6F 63 63 75 72 73 2C    an error occurs,
0009    20 79 6F 75 72 20 62 65 73 74 20 73 6F 75 72 63     your best sourc
000A    65 20 6F 66 20 69 6E 66 6F 72 6D 61 74 69 6F 6E    e of information
000B    20 0D 0A 69 73 20 74 68 65 20 64 69 73 70 6C 61     ..is the displa
000C    79 20 6F 6E 20 74 68 65 20 63 6F 6E 74 72 6F 6C    y on the control
000D    20 70 61 6E 65 6C 2E 20 0D 0A                      panel. . .
```

4. To turn off the data dump mode and stop printing, press ON LINE to set the printer off line. (If you press ON LINE while a page is being printed, the ON LINE light flashes until the page is ejected and the printer goes off line.) To exit the data dump mode, turn off the printer or hold down the RESET button until INITIALIZE appears on the display.

Look at the sample data dump printout shown in Step 3. By reading the characters printed in the text field on the right side of the data dump printout or the printout of hexadecimal codes, you can check what codes are being sent to the printer. In the text field, printable characters appear as their true ASCII characters. Non-printable codes, such as control codes, are represented by dots.

Technical Specifications

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Printer Specifications

Printing

Printing method:	Laser beam scanning and dry electrophotographic process
Resolution:	300 x 300 dpi
Printing speed:	Up to 6 pages per minute for letter-size (depending on the font and quantity of data)
First print:	Less than 20 seconds with letter (except when the STANDBY mode is on)
Warm-up time:	45 seconds or less at normal temperature
Internal ***modes:***	❑ HP LaserJet series II emulation ❑ ESC/P 24-pin printer emulation (LQ-2500) ❑ ESC/P 9-pin printer emulation (FX-850/1050)
IC card slot:	1 slot for identity cards
Cartridge *slot:*	1 slot for font cartridges
Resident fonts:	*HP LaserJet series IIP mode*

Courier 10 cpi	Upright/Italic	P/L
Courier 12 cpi	Upright/Italic	P/L
Courier 10 cpi Bold	Upright	P/L
Courier 12 cpi Bold	Upright	P/L
Line printer 16.66 cpi	Upright	**P / L**

P: Portrait, L: Landscape

The Italic, Bold, and Landscape effects are created internally.

FX and LQ modes

Courier 10 cpi   Upright/Italic* M/B P/L
Courier 12 cpi   Upright/Italic* M/B P/L
Line printer
  16.66 cpi   Upright   M/B* P/L
Prestige 12 cpi Upright   M/B* P/L*
Prestige 20 cpi Upright   M/B* P/L*

M: Medium, B: Bold, P: Portrait, L: Landscape

* The Italic, Bold, and Landscape effects are created internally.

External fonts: Optional fonts provided with font cartridges. Download fonts

Paper and paper delivery

Paper specifications

Types: Plain paper

Special papers:

❑ Labels

❑ Envelopes

❑ Transparencies

❑ Colored paper

❑ Card stock

Epson does not recommend or guarantee the use of any particular brand of paper. Because paper characteristics are subject to change by individual manufacturers, it is your responsibility to ensure the quality of paper used with the printer.

Paper weight:	Plain paper: 60-90 g/m², 16-24 lb
	Card stock: 90-157 g/m², 24-42 1b
Paper size:	Paper sizes using SelecType

Paper:

Type	Size
A4	210 x 297 mm
A5	148 x 210 mm
B5	182 x 257 mm
F4	210 x 330 mm
Letter	8.5 x 11 inches
Legal	8.5 x 14 inches
Half-Letter	5.5 x 8.5 inches
Executive	7.25 x 10.5 inches
Government Legal	8.5 x 13 inches
Government Letter	8.0 x 10.5 inches

Envelope:

Monarch	3 7/8 x 7 1/2 inches
Commercial-10	4 1/8 x 9 1/2 inches
DL	110 x 220 m m
C5	l62x229mm

Paper size range using software commands

Width 98-216 mm (3.86-8.5 inches)

Length 148-356 mm (5.83-14 inches)

Printable area:
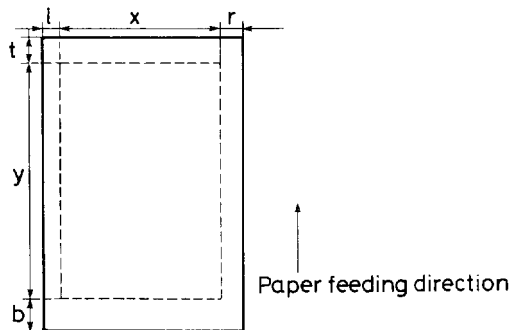
Special sizes:

Basically, the paper area within a ¼ inch
(6.4 mm) border is the printable area for any
paper size. Details for paper sizes using
SelecType are shown below.

HP LJ-2P mode

Paper size	x	y
A4	2380	3407
A5	1648	2380
B5	2050	2936
Letter	2450	3200
Legal	2450	4100
Half letter	1550	2450
Executive	2075	3050
G-Legal	2450	3800
G-Letter	2300	3050
F4	2380	3798
Commercial 10	1137	2750
Monarch	1062	2150
C5	1813	2604
DL	1199	2498

(Units = dots at 300 dpi;
I, r, t, b = 50 dots)

FX and LQ emulation modes

Paper size	l	x	r	t	y	b
A4	75	2330	75	75	3358	75
A4 (80 cols.)	50	2400	30	75	3358	75
A5	75	1598	75	75	2330	75
B5	75	2000	75	75	2886	75
Letter	75	2400	75	75	3150	75
Legal	75	2400	75	75	4050	75
Half letter	75	1500	75	75	2400	75
Executive	75	2025	75	75	3000	75
G-Legal	75	2400	75	75	3750	75
G-Letter	75	2250	75	75	3000	75
F4	75	2330	75	75	3748	75
F4 (80 cols.)	50	2400	30	75	3748	75
Commercial 10	75	1087	75	75	2700	75
Monarch	75	1012	75	75	2100	75
C5	75	1763	75	75	2554	75
DL	75	1149	75	75	2448	75

(Units = dots at 300 dpi)

Paper feed alignment and direction:
        Center alignment for all sizes

Paper feed: Automatic or manual feed

Input paper supply (75 glm² or 20 lb paper):
        100 sheets
        150 sheets (optional multi-media feeder)
        15 envelopes (optional multi-media feeder)

Paper eject: Face-down only

Paper eject capacity (75 glm² or 20 lb paper):
        50 sheets

Consumable products

Toner cartridge (S050002):

        Storage temperature: 0 to 30°C (32 to 80°F)
        For less than 20 days -20 to 43°C (4 to 109°F)

        Storage humidity: 20% to 80% RH
        For less than 20 days 5% to 95%

        Shelf life: 18 months after production

        Typical life is up to 5000 pages under the
        following conditions: Letter-size paper,
        continuous printing, and 5% print ratio.
        Examples of a 5% print ratio are shown on
        the next page. Atmospheric pressure: No less
        than 740 millibar (about the same as 2500 m
        or 8200 ft altitude).

        The number of pages you can print with a
        toner cartridge varies depending on the type
        of printing. If you print dense text exceeding
        the 5% print ratio, your cartridge may print
        fewer pages.

Photoconductor unit (S051005):

Storage temperature: 0 to 30°C (32 to 80°F)
For less than 20 days -20 to 43°C
(-4 to 109°F)

Storage humidity: 20% to 80% RH
For less than 20 days 5% to 95%

Shelf life: 18 months after production

Life:
Photoconductor unit life is up to 30,000 pages.
Atmospheric pressure: No less than 740
millibar (about the same as atmospheric
pressure at 2500 m or 8200 ft altitude).
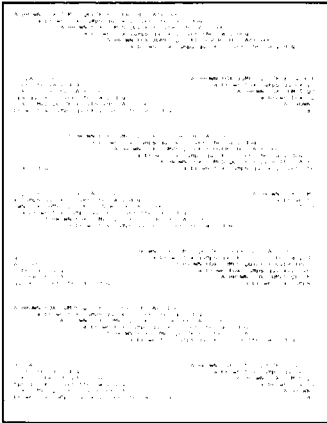
Example of a 5% print ratio
(reduced printout, Letter-size
paper).

Ozone filter (packaged with toner cartridge):
Replace at the same time as the toner
cartridge.

Mechanical

Dimensions and weight:

Height:	177 mm (7.0 inches)
	356 mm (14.0 inches)*
Width:	479 mm (18.9 inches)
	479 mm (18.9 inches)*
Depth:	362 mm (14.3 inches)
	700 mm (27.6 inches)*
Weight:	Approx. 13 kg (29 lb.)*

* Including paper cassette, photoconductor
unit, output tray, and toner cartridge.

Electrical

Rated Voltage: 120 VAC

Rated current: 7A

Rated frequency range:
50 Hz to 60 Hz

Power consumption:
Less than 600 W

Dielectric strength (between AC line and chassis):
Can withstand 1250 VAC rms for 1 minute.

Controller hardware

CPU: **68000** (CPU clock 14.1312 MHz)

RAM: Standard: 0.5 MB (expandable up to 5.5MB)

Environmental

Temperature: 0 to 30°C (32 to 80°F)

Humidity: **20%** to 80% RH

Print assured area
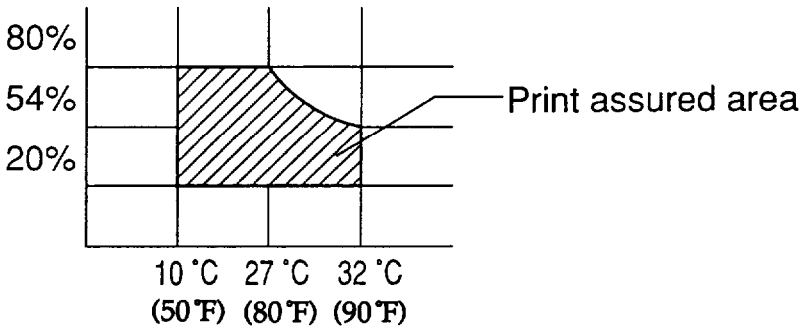
Atmospheric pressure:
                No less than 740 millibar (about the same as
                atmospheric pressure at a 2500 m or 8200 ft
                altitude)

Operating Angle: Should be kept level.

Interface Specifications

The printer has the following resident interfaces:

❑ Centronics parallel

❑ **RS-232C** serial

Parallel interface

Your printer is equipped with an 8-bit parallel interface.

Parallel interface pin assignments

The parallel interface connector pin assignments and a description of
the interface signals are shown in the table below.

Signal Pin	Return Pin	Signal	Direction	Description
1	19	STROBE	IN	The STROBE pulse to read data in. Pulse width must be more than 0.5 microseconds at the receiving terminal. This terminal is "High" usually; reading data starts when the terminal goes "Low."
2	20	DATA 1	IN	These signals represent
3	21	DATA 2	IN	parallel data bits 1 to 8,
4	22	DATA 3	IN	respectively. Each signal
5	23	DATA 4	IN	is at HIGH level when
6	24	DATA 5	IN	data is logical 1 and at
7	25	DATA 6	IN	LOW level when it is
8	26	DATA 7	IN	logical 0.
9	27	DATA 8	IN	

Signal Pin	Return Pin	Signal	Direction	Description
10	28	ACKNLG	OUT	About a 10-microsecond pulse. LOW indicates data has been received and that the printer is ready to accept more data. This signal is output as a pair with BUSY.
11	29	BUSY	OUT	A HIGH signal indicates that the printer cannot receive data. The signal goes HIGH in the following cases: ❑ During data entry (for each character) ❑ When off line ❑ During printer-error state
12	30	PE	OUT	A HIGH signal indicates the printer is out of paper.
13	—	SLCTOUT	OUT	Pulled up to 5 volts through 3.3 K ohm resistance.
14	—	AUTOFEED	IN	When LOW, the paper is automatically fed one line after printing. (The signal level can be fixed using SelecType.) Sampling is carried out when the power is on or the printer is initialized with the control panel button.
15	—	NC	—	

Signal Pin	Return Pin	Signal	Direction	Description
16	—	GND	—	Logic ground level.
17	—	CHASSIS GND	—	Printer's chassis ground, which is connected with the logic ground.
18	—	NC	—	Not used.
19-30	—	GND	—	Twisted-pair return signal ground level.
31	—	INIT	IN	When this signal goes LOW, the printer controller ignores the STROBE signal.
32	—	ERROR	OUT	This level becomes LOW when the printer is: ❑ out of paper ❑ in error state ❑ off line.
33	—	GND	—	Same as for Pins 19-30.
34	—	NC	—	Not used.
35	—	+5V	—	Pulled up to 5V through 3.3K ohm resistance.
36	—	SLCTIN	IN	The DC1/DC3 control codes are valid only when this signal is HIGH (SLCTIN set to OFF). This setting can be changed with SelecType. Sampling is carried out only when the power is on.

8-14 Technical Specifications

Note:

❑ All interface conditions are based on TTL level. Both the rise
   and fall of each signal must be less than 0.2 microseconds.

❑ Data transfer must be carried out by observing the $\overline{\text{ACKNLG}}$
   or BUSY signal. (Data transfer to this printer can be carried
   out only after the receipt of the $\overline{\text{ACKNLG}}$ signal or when the
   level of the BUSY signal is LOW. The relationship between
   BUSY and $\overline{\text{ACKNLG}}$ can be changed using SelecType. See
   Chapter 4.

❑ The column heading "Direction" refers to the direction of
   signal flow as viewed from the printer.

❑ "Return" denotes the twisted-pair return to be connected at
   signal ground level. For the interface wiring, be sure to use a
   twisted-pair cable for each signal and to complete the
   connection on the return side. These cables should be shielded
   and connected to the chassis of the host computer and the
   printer. .

Interface timing

The figure below shows the timing for the parallel interface.
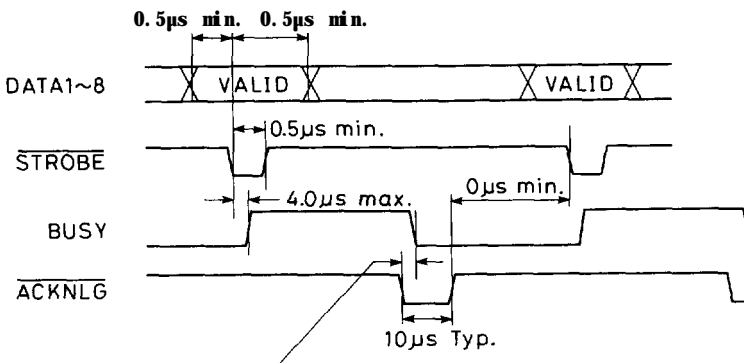
Varies depending on the Selec Type setting.
0μs typ, 5μs typ, 10μs typ, or ACKNLG
Signal is not changed.

Note that it is possible to change the timing between $\overline{\text{ACKNLG}}$ and BUSY.

Signal level: TTL compatible

Serial interface (RS-232C)

Data format

> Word length: 7 or 8 bits
> Parity: none, odd or even
> Stop bits: 1 or 2
> Printer ready protocol: enabled (DTR and XON/XOFF protocol set to ON.)
>
> The data format can be set using options and menu items in SelecType.

Baud rate	**300, 600, 1200, 2400, 4800, 9600, 19200** bits per second.
Signal level	RS-232C: Conforms to EIA
Connector	D-sub 25-pin connector

Serial interface pin assignments

The serial interface connector pin assignments and a description of
the interface signals are shown in the table below. The direction of
signals is given relative to the printer.

Signal Pin	Signal	Direction	Description
1	FG	—	This line is connected to the printer chassis.
2	TXD	**OUT**	Transmits data. This pin transmits serial data from the printer to the computer.
3	RXD	IN	Received data. This pin transmits serial data from the computer to the printer.
4	RTS	**OUT**	Request to send. This pin is held high by the printer.
5	CTS	IN	Clear to send. This pin indicates that the computer is ready to receive data from the printer. The printer will not proceed unless the signal is high. Can be set high with SelecType.
6	DSR	IN	Data set ready. This pin indicates that the computer is ready to receive data from the printer. Can be set high with SelecType.
7	SG	—	Signal ground. This pin provides a ground for all the signal lines.
20	**DTR**	**OUT**	Data terminal ready. This pin indicates whether or not the printer is ready to receive data. If the printer ready protocol is not selected, this pin is always high (i.e. the printer is ready to receive data). If printer ready protocol is selected, the printer can accept data when the pin level is high, and cannot accept data when the pin level is low. When the DTR signal goes low the host computer must stop sending data within 128 characters. Can be set high or low with SelecType.

Handshaking

The printer's serial interface can use DTR (Data Terminal Ready) signal levels and XON/XOFF communication protocols either separately or in combination

XON/XOFF protocol

When the vacant area for data in the input buffer drops to 128 bytes, the printer outputs an XOFF code, indicating that the printer cannot receive more data. Once the vacant area for data in the buffer recovers to 256 bytes, the printer outputs an XON code, indicating that the printer is again ready to receive data.

XON/XOFF protocol can be enabled using SelecType. The factory setting is "ENABLE."

DTR/DSR protocol

When the printer can receive the data, the printer sets the DTR signal level to high (SPACE). When the printer cannot receive data, the printer sets the DTR signal level to low (MARK). If the DTR menu in SelecType is set to off, the DTR signal is always treated as high (SPACE.) The printer sends the TXD (transmitted data) only when the DSR signal level is set to high (SPACE) except the DSR menu in SelecType is set to off. If the DSR menu in SelecType is set to off, the DSR signal is always treated as high (SPACE.)

DTR/DSR protocol can be enabled using SelecType. The factory settings are DTR "ON" and DSR "OFF."

Error handling

A * character is printed if a parity error, framing error, or over-run error is detected.

Initialization

There are five types of printer initialization (returning the printer to a fixed set of conditions).

All of the printer's parameters return to the default power-on settings:

❏ When the power is turned on.

❏ When the power is turned off and, after at least 5 seconds, turned on again.

❏ When the CONTINUE button on the printer is pressed until the display shows "INITIALIZE."

You clear the data received and return the current SelecType Level 1 settings to the saved settings:

❏ When the CONTINUE button is pressed and RESET appears on the printer display,* and your software sends the RESET command to the printer.*

You return the current SelecType Level 1 settings to the saved settings:

❏ When you perform the LOAD MACRO setting in the SelecType Level 1 SYSTEM CONFIG option.

You return the current SelecType (Level 1 and Level 2) settings to the saved settings:

❏ When you perform the FACTORY RESET option in SelecType Level 2.

* Some parameters may not be changed by this method. Refer to the individual printer mode descriptions in Appendix D.

The following tables list the default conditions that become valid
when the printer is initialized. The default conditions are different
for each printer mode.

Default settings in HP emulation mode

Item	Factory Reset	Reset
Paper input	AUTO	SelecType setting
Paper size	Letter	SelecType setting
Orientation	Portrait	SelecType setting
Copy count	1	SelecType setting
Page length	70 lines	Depends on the paper size and orientation settings VMI $^8/_{48}$ inch (6 lines per inch) *
Top margin	½ inch (150 dots)	½ inch (150 dots) when SelecType OFFSET is 0
Text lines	64 lines	SelecType setting Text length
Portrait	64 lines	SelecType setting
Left margin	logical page left margin	logical page left margin
Right margin	logical page right margin	logical page right margin
Line termination	CR=CR, LF=LF, FF=FF	CR=CR, LF-LF, FF=FF

Item	Factory Reset	Reset

Fonts (both primary and secondary)
  Symbol set
  Spacing
  Pitch
  Height
  Style
  Strokeweight
  Typeface
	
	Roman-8
	Fixed
	10cpi
	12 point
	Upright
	Medium
	Courier
		*
		*
		*
		*
		*
		*
		*

Underline	Off	Off
Font ID	0	0
Character code	0	0
Raster graphic resolution	75 dpi	75 dpi
Macro number	0	0
End of line wrap	Off	Off
Display function	Off	Off
Advanced graphics	H-size=0, V-size=0, ID=0	H-size=0, V-size=0, ID=0
Symbol set	Roman-8	SelecType setting

* Font numbers are saved in EEPROM, and font attributes are selected with the SelecType SYMSET option.

Default settings in LQ and FX emulation modes

Item	Factory Reset	Reset
Paper input	Auto	SelecType setting
Paper size	Letter	SelecType setting
Page length	62 lines	Depends on the paper size and orientation settings.
Top of form	0.5 inch	SelecType setting
Left margin	Left edge of the printable area.	SelecType setting or left edge of the printable area.
Right margin	80 columns (10 cpi)	Depends on the default right margin set with SelecType.
Horizontal tab settings	Every eight characters. (The character width is 10 cpi.)	Every eight characters. (The character width depends on the SelecType condensed print menu setting.)
Vertical tab settings	Every 1/6 inch	Every 1/6 inch
VFU channel	Channel 0	Channel 0
Character spacing	10cpi	Depends on the condensed print menu setting.
International character set	USA	SelecType setting
Typeface	Courier	SelecType setting
Proportional spacing	Fixed	SelecType setting
Character table (ESC t)	On (ESC t1)	SelecType setting
Condensed	off	SelecType setting
Skip bottom	Disable	SelecType setting

Item	Factory Reset	Reset
Underline, Superscript, Subscript, Double-width, Bold	off	**Off**
Italic	Upright	Upright
Intercharacter spacing	0	0
Justification	Off	Off
DC 1, DC 3	DC 1	DC 1
MSB	Enable	Enable

Option Specifications

Multi-media feeder

Electrical

Power supply: DC 24 V supplied by the printer

Insulation resistance:
     10 Mohm minimum

Dielectric strength (between AC line and chassis):
     Can withstand 1250 VAC rms for one minute.

Paper and paper delivery

Size: Paper Width: 98-216 mm (3.86-8.50 inches)
Paper Length: 148-356 mm (5.83-14.0 inches)

Weight: Plain paper:
60-157 g/m^2 (1642 lb) Manual feed
60-90 g/m^2 (16-24 lb) Auto feed
Envelope:
60-90 g/m^2 (16-24 lb)

Paper feed: *Automatic feed delivery system*

Tray capacity up to 150 sheets (75 g/m^2 or
20 lb-paper)
Tray capacity up to 15 envelopes
(60-90 g/m^2 or 16-24 lb paper)

Manual Feed

60-157 g/m^2 (16-42 lb) plain paper or
60-90 g/m^2 (16-24 lb) envelope

Feeding speed: Up to 6 pages per minute (letter-size paper).

Mechanical

Dimensions and weight:

Without the printer:

Height: 175 mm (6.9 inches)
Width: 326 mm (12.8 inches)
Depth: 384 mm (15.1 inches)

Appendix A

Options

A

The Multi-Media Feeder

The optional multi-media feeder handles automatic feeding of many types of paper. It holds up to 150 sheets of paper, and it can feed paper from 98 to 216 mm (3.86 to 8.50 inches) wide and from 148 to 356 mm (5.83 to 14.0 inches) long. You can load two different sizes of paper in your printer at once (one size in the multi-media feeder and the other in your standard paper cassette). You can also set SelecType Level 1 INPUT to AUTO and use both the multi-media feeder and the standard paper cassette for continuous printing of up to 250 sheets of the same size paper.

Installing the multi-media feeder

Note: If you purchased your printer and your multi-media feeder at the same time, set up your printer by following the instructions in Chapters 1 and 2 of this manual before you install the multi-media feeder. Be sure to run the test print as described in Chapter 2 to make sure the printer is working properly.

1. Remove the manual feed paper guide.
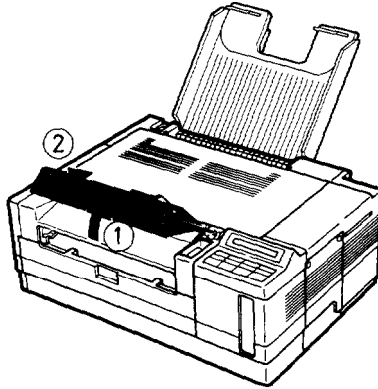
2. Attach the multi-media feeder as shown below. Then, mount the multi-media feeder safely on the printer.
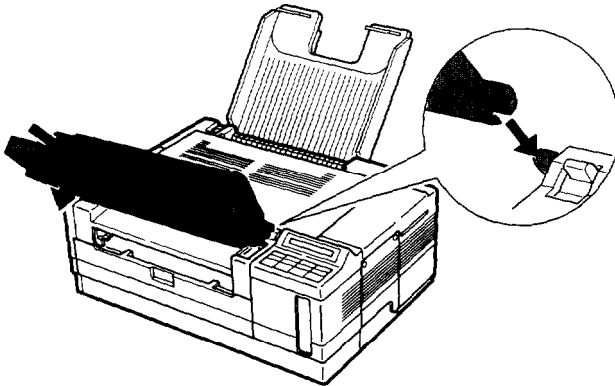
3. Move the paper guide on the multi-media feeder as shown below.
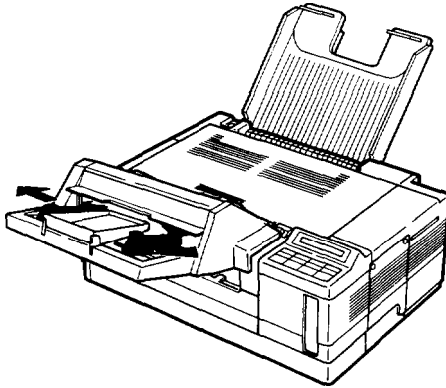
4. Open the lid of the multi-media feeder.
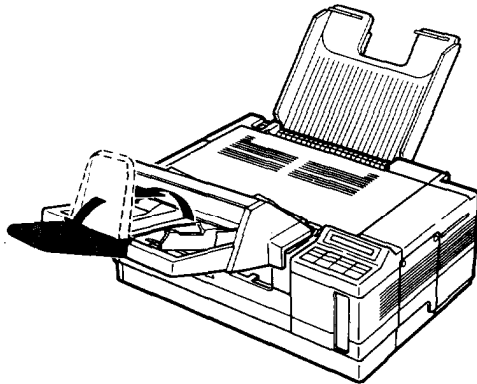
Loading paper

1. To load paper into the multi-media feeder, first raise up the paper cover.
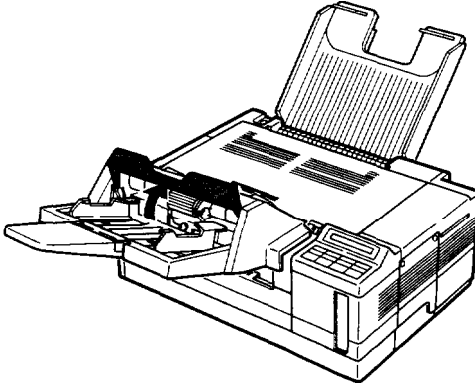
2. Adjust the paper guides to **match** the paper size you are using, as shown below.
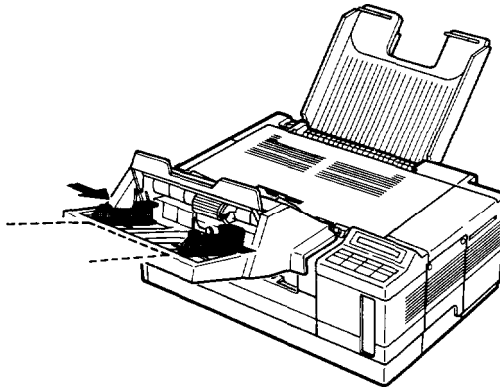
3. Take a stack of paper and fan it. Tap the edges of the paper on a flat surface to even up the stack.
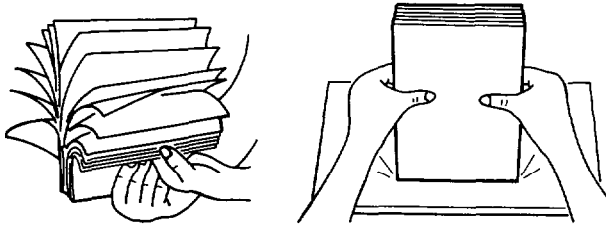
4. Insert a stack of paper into the multi-media feeder, making sure the top of stack does not exceed the maximum height of the paper guide, as shown below. Gently push the paper in as far as it will go.
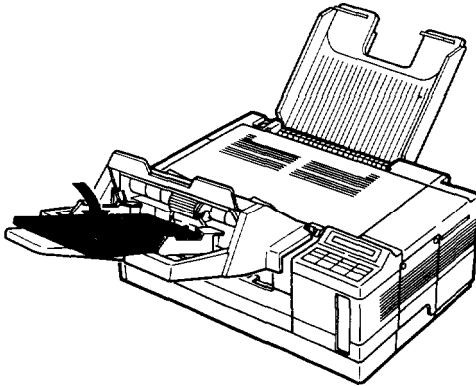
Note: You can load up to 15 envelopes in the multi-media feeder. Be sure to load them lengthwise and face-down.

5. Close the paper cover.
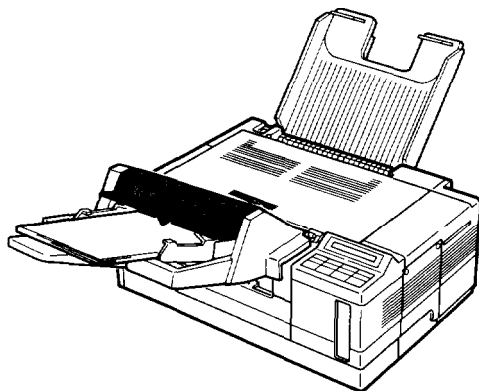
Operating the multi-media feeder

To feed paper from the multi-media feeder automatically, you need to change the paper source with your application software, or you can change the INPUT menu in SelecType Level 1. Also, you may need to change the paper size with your application software or with the P-SIZE menu in SelecType Level 1 to match the paper size in the multi-media feeder. See Chapter 5, Changing the paper size setting.

Selecting the feeding method

1. Press *SelecType* to enter SelecType Level 1.

2. Press ▽ or△   until the INPUT option appears on the display.

3. Press ▷ to change the feeding method.

```
INPUT        +STD >SET
```

4. Press △ or▽ to choose the feeding method. Two of the feeding methods can select the multi-media feeder.

```
INPUT        ≑AUTO>SET
```

```
INPUT        ≑OPT >SET
```

STD Standard   feeds from the paper cassette

OPT Option   feeds from multi-media feeder

AUTO Auto select   feeds from the paper stock for suitable
                   paper size

Note: AUTO feeding selects the multi-media feeder if both the paper sizes in both the standard cassette and multi-media feeder are the same.

5. Press ▷ to set the paper feeding method.
6. Press ◁ exit SelecType.

Note: The new paper setting is effective only temporarily in the current printer mode unless you use SelecType's Level 1 SAVE **MACRO** setting so the paper size you use most often is automatically selected whenever you turn on, reset, or initialize your printer. See Chapter 5, Saving the new paper-size setting.

Depending on your application software, you may need to select the multi-media feeder using your software, rather than with SelecType. See Chapter 3 for information on using the printer with application programs.

Status messages

The messages listed below may appear on the display while you are operating the printer with the multi-media feeder. See Chapter 7 for the steps to clear these messages.

PAPER SIZE ERROR
TRAY SET xxx
PAPER OUT
PAPER OUT xxx
RESELECT TRAY
FEED JAM
PAPER JAM

The Optional Interface Board

You can use one of the following optional interface boards for your printer. For information on other types of interface boards, contact your Epson dealer.

Available interface boards:

32 Kbyte serial interface (C823071)
32 Kbyte Parallel interface (C823101)

Installing the interface board

To install an optional interface board, you need a cross-head screwdriver. Set the DIP switches on the optional interface board according to the instructions in its accompanying manual before you install the board.

1. Turn off the printer. Then unplug the power cord and disconnect all interface cables from the rear of the printer.

> **WARNING:** Do not remove any screws other than the brass-colored screws specified below.

2. Use a cross-head screwdriver to remove the two brass-colored screws securing the shield plate; then lift off the plate as shown.
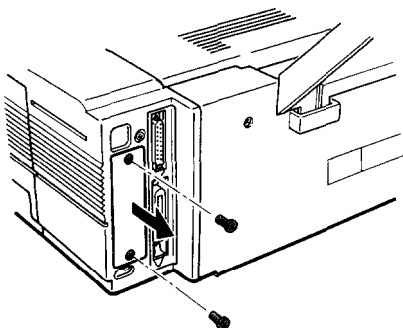
3. Insert the interface board by sliding it along the guides in the printer. Push firmly on the board until it locks in place.
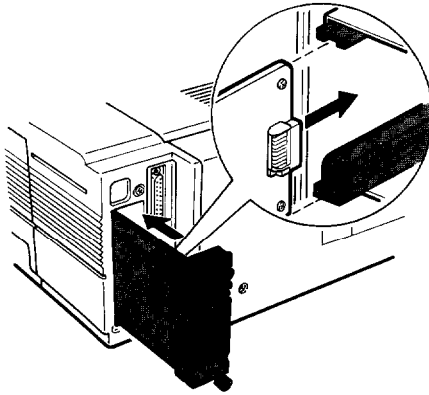
4. Hand-tighten the screws on the interface board until snug.
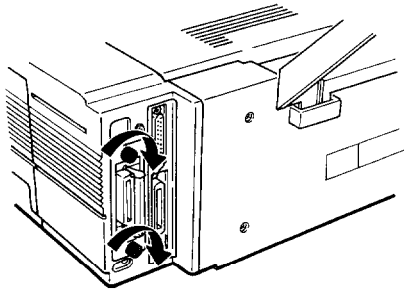
5. Turn the printer around. Then attach the proper interface cable to the computer and to the optional interface connector.

6. Make sure the printer is turned off. Then plug the power cord into the printer.

Before you use the interface board, you may need to change the
printer mode and the interface connection with SelecType, but if you
are using the SelecType default of AUTO-SENSE, you probably will
not need to change any SelecType settings. The optional interface
can be selected as Channel O. See Chapter 4 for information on using
SelecType to change printer modes for Channel O.

The Memory Expansion Board

You probably need to add memory if you have trouble printing complex or graphics-intensive pages, or if any of the following messages appear often: INSUFF MEMORY, PAGE BUFFER FULL, or ADD MEMORY. Using the INDIVIDUAL setting in the CH mode in SelecType also requires additional memory.

To add memory, you need the optional OK memory board and enough memory chip sets to equal the amount of memory that you want to add. There are two types of chips you can buy for the memory expansion board:

❑ 256Kbit x 4 80 ns DRAM 20-pin DIP (Four of these constitute a 0.5MB chip set.)

❑ 1Mbit x 4 80 ns DRAM 20-pin DIP (Four of these constitute a 2.0MB chip set.)

The printer's built-in memory is 0.5MB. By installing the RAM chips as described in this section you can increase the printer's memory up to 5.5MB.

Note:

❑ The optional Epson GL identity (ID) card requires a minimum of 1MB additional memory. If you use another ID card, consult its manual for memory requirements.

❑ Although the memory board can hold up to 8.0MB of RAM chips, the printer can access only 5.0MB of additional memory.

❑ Memory chips can be purchased from Epson Accessories.

First you install the RAM chips on the memory board. Then you install the memory board in the printer. If you have questions about this process, see your dealer or a qualified service person.

Installing RAM chips on the memory board

There are four sectors on the memory board, each with four chip sockets, as shown below.

There are three ways to install chip sets on this board.

❑ 0.5MB chip sets in blocks A, B, C, and D

❑ A 2.0MB chip set in block A, and 0.5MB chip sets in blocks B, C, and D

❑   2.0MB chip sets in blocks A and B, and 0.5MB chips sets in blocks C and D

After you have bought the chip sets and decided where to install them, follow the steps below:

1. Locate the DIP switches on the memory board and make sure that switches 1 and 2 are off, as shown below.
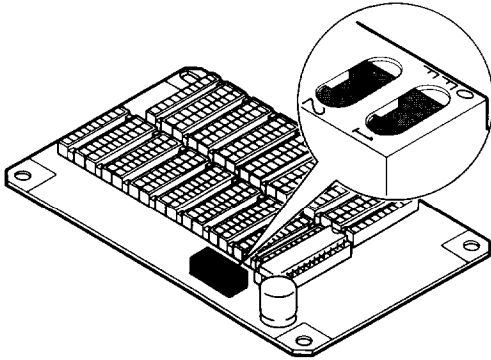
2. Set the remaining DIP switches on the memory board according to the following table:
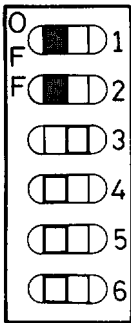
DIP Switch	Block	ON	OFF
1		Always off	
2		Always off	
3	A	2.0MB	0.5MB
4	B	2.0MB	0.5MB
5	C	2.0MB	0.5MB
6	D	2.0MB	0.5MB

3. Make sure that all the pins on each chip are straight. The pins
    should point inward at slightly less than a 90° angle as shown
    below.
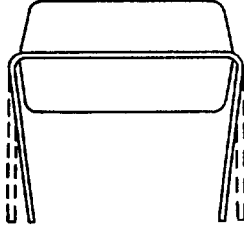
    If any of the pins are bent, straighten them by gently pushing
    them back into alignment with the other pins.

4. Align the pins with the holes in the socket. Be sure that the small
    notch on the end of the chip is facing in the direction shown
    below.
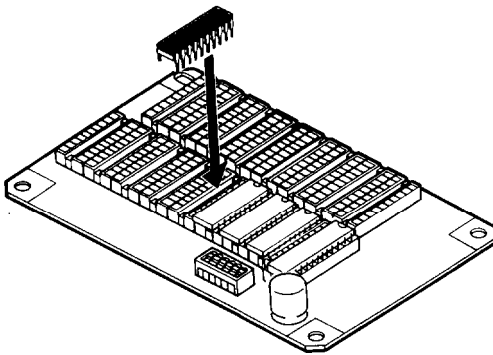
5. Gently press the chip halfway into the socket. If the chip goes in
    at an angle, remove it with a chip puller or a small flat-head
    screwdriver and reinsert the chip.

⊙ **CAUTION:** Be careful not to scratch the chip or the board when removing the chip.

6. With the chip properly inserted, push down firmly on both ends of the chip to make sure it is well-seated.
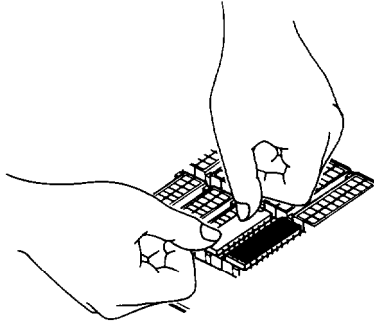
7. Repeat steps 3 through 6 for each of the three remaining chips.

Installing the board

To install the memory expansion board, you need a cross-head screwdriver.

✋ **WARNING:** Do not remove any screws other than the brass-colored screws specified in the following steps.

⊙ **CAUTION:** Do not attempt to install the memory board unless the printer is turned off and the power cord is unplugged. Also, try not to touch any contacts on the circuit board of the printer; many of the components can be destroyed by the static electricity in your body.

1. Unplug the power cable from the printer.

2. Disconnect all interface cables from the rear of printer.

3. Remove the two brass-colored retaining screws and the memory board cover located on the right side of the printer. Keep the screws and the cover in a safe place.
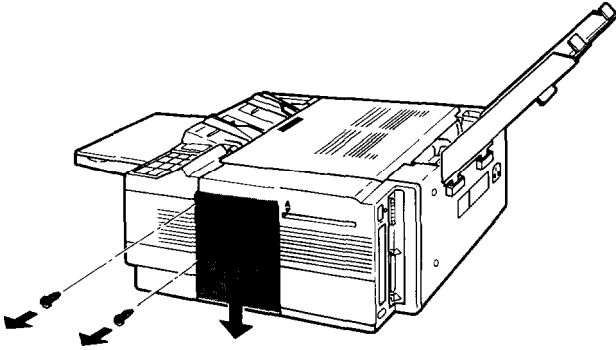
4. Insert the optional memory board (with memory chips installed) into the printer. Make sure the connectors fit together securely.
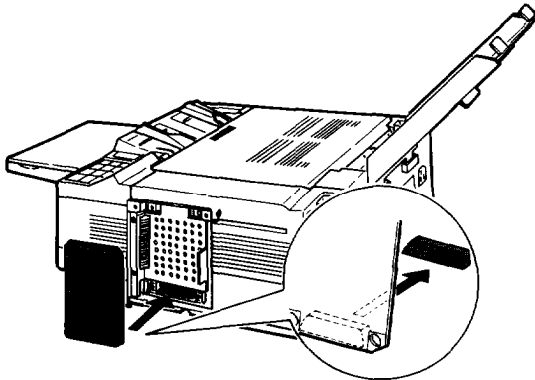
5. Secure the board using the four screws attached to the memory board.
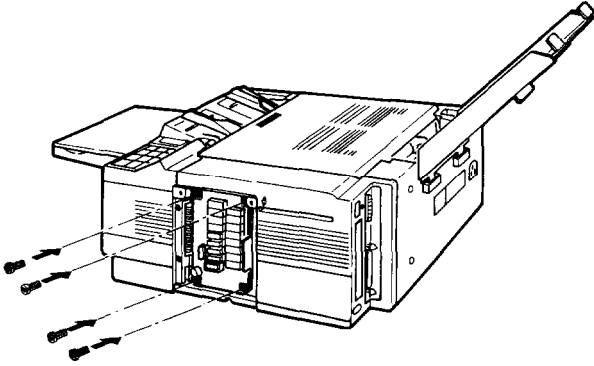
6. Replace the cover over the memory board as shown below and secure it with the two brass-colored retaining screws.
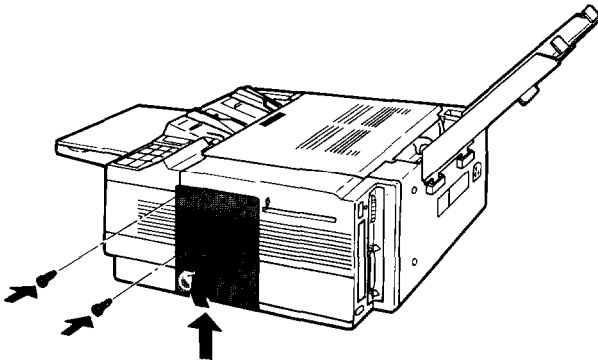
Checking the board

Complete the following steps to make sure that the memory expansion board is installed properly and is functioning correctly.

1. Turn on the printer power and watch the display for the following:

   ❑ All the indicator lights on the display light briefly.

   ❑ The message ROM Check appears.

   ❑ The message RAM Check x.x MB appears.

2. Make sure that the amount of RAM displayed by the RAM check status message matches the new total RAM memory, as shown below:

Chip Sets Installed	Total RAM
0.5MB chip sets in blocks A, B, C, and D	2.5 MB
A 2.0MB chip set in block A, and 0.5MB chip sets in blocks B, C, and D	4.0 MB
2.0MB chip sets in blocks A and B, and 0.5MB chip sets in blocks C and D	5.5 MB

If the correct amount of RAM does not appear, turn off the power and remove the board to check that the chip sets are in the correct block and that each chip is well-seated in its socket. If the RAM check message is still incorrect, contact your dealer or a qualified service person for assistance.

Optional Epson GL Identity Card

The Epson GL Identity card allows you to install the Epson GL
printer mode on your printer. The printer has one slot for identity
cards.

The optional Epson GL Identity card requires a minimum of 1MB
additional memory. To add memory, see page A-13.

Compatible cards

In addition to the Epson GL Identity card, other cards may be
available for use with your printer. Check with your dealer for a list
of the cards.

Caring for cards

When you use cards, follow these precautions:

❏ Do not drop, crush, or bend cards. The card's natural curvature
  does not affect its operation, so do not try to straighten a card by
  bending it.

❏ Avoid touching the small gold connectors (contacts) along the
  card's edge.

❏ If the card becomes dirty, clean the connectors by wiping the
  edge with a clean tissue. Do not use water, alcohol, or other
  solvents to clean the card.

❏ Keep cards in their slip cases and blue anti-static bags when you
  are not using them.

❏ Do not store cards in direct sunlight or near a source of heat.
  Cards can withstand temperatures ranging from -30°C to 65°C
  (-20°F to 150°F) and can tolerate up to 90% humidity.

❏ Be careful when you insert and remove a font card. You can
  damage it by attempting to insert it the wrong way or by using
  too much force.

Inserting a card

You can insert a card into the slot on the right side of the printer.

> **CAUTION:**
>
> ❑ Never insert or remove a card while the printer is on line, in SelecType mode, or while the printer is resetting (after you press RESET).
>
> ❑ Be careful when you insert or remove a card. You can damage the card by trying to insert it the wrong way or by using too much force.

1. Make sure that the printer is not in one of the following conditions:

   ❑ The FEED light is flashing fast. (The printer is receiving data through the currently-selected interface.)

   ❑ You are setting parameters using SelecType.

   ❑ The display shows the RESET message.

2. If the FEED light is on, make sure the printer is off line and press FEED to print any data remaining in the buffer.

3. Set the printer off line (make sure the ON LINE light is off) or turn off the power.

4. Hold the card so that the large EPSON logo faces up and the arrow is pointing toward the slot.
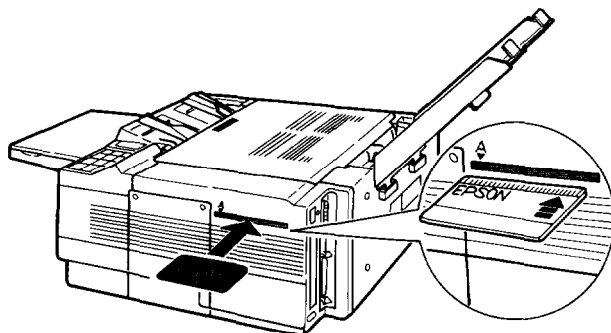
5. Gently slide the card into the slot as shown below.
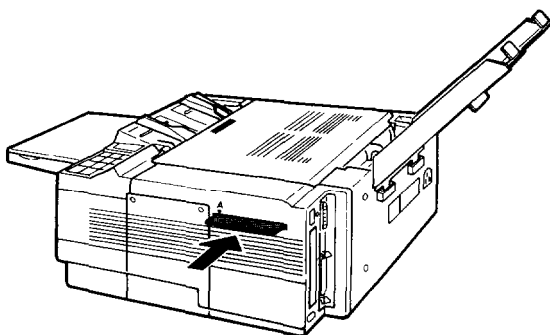
> ⚠ CAUTION: If the message REMOVE CARD appears on the
> display, you inserted the card when the printer was on line
> or when the printer's memory contained data. If you see
> this message, remove the card, press CONTINUE, then
> return to step 1.

6. If the power is on, press ON LINE to set the printer on line. If the
    power is off, turn on the printer.

Using the Epson GL identity card

To run the EPSON GL printer mode after inserting the identity card, follow these steps:

1. Press SelecType until SelecType LEVEL2 appears on the display.

2. Press ▽ until MODE ASSIGN appears.

3. Press ▷.

4. Press △ or▽ to select a channel for Epson GL mode.

5. Press ▷.

6. Press △ or▽ until EPSON GL appears.

7. Press ▷ to set the mode.

8. To exit SelecType, press the SelecType button.

> Note: Once you set an option, the setting remains in effect until you change it again or turn off the printer. If you want a setting to remain in effect even when you turn the printer off and on, use the P-CONFIG SAVE option in SelecType Level 2. See Chapter 4.

There are several restrictions on using the Epson GL identity card with this printer.

❑ Device control commands are ignored with optional interfaces even if the interface is serial. Use the printer's serial interface to enable the additional device control commands.

❑ The following restrictions apply when running the Epson GL mode using Channel S with the AUTO-SENSE setting.

The power-on default channel becomes Channel S.

Channel S cannot receive any data when another channel is running.

Channel S can be selected only when the FEED light is turned off.

Removing a card

> (!) **CAUTION:** Never remove a card while the printer is
> on line, in SelecType mode, or while the printer is
> resetting. If you remove a card while the printer is in one
> of these states, a REINSERT CARD message appears on
> the display. An error also occurs if you remove a card
> while the FEED light is on, even if the printer is off line. See
> the description of card error messages in Chapter 7 for
> more information.

1. Make sure that the printer is not in one of the following
   conditions:

   The FEED light is flashing fast (the printer is receiving data
   through the currently-selected interface). You are setting
   parameters using SelecType. The display shows the message
   RESET.

2. If the FEED light is on, take the printer off line and press FEED to
   print any data remaining in the buffer.

3. Set the printer off line (make sure the ON LINE light is off) or turn
   off the power.

4. Remove the card by grasping the card at the center and gently
   pulling it straight out of the slot.

Recovering from a card error

When the display shows one of the following messages, a card error
has occurred:

REINSERT CARD
ILLEGAL CARD #X
REMOVE CARD
MEMORY OVERFLOW
INSUFF MEMORY

A card error occurs if you insert or remove a card when the printer is
on line or when the printer's memory contains data. You cannot use
the card or print documents until you correct the card error.

For the steps required to clear each error message, see Status and
Error Messages in Chapter 7.

Appendix B

Font Cartridges

B

Available Font Cartridges

This printer can use any of the font cartridges listed below when the HP LaserJet IIP emulation mode is selected. By using font cartridges, you can select many different styles of type in addition to the resident fonts in your printer.

The manual for each font cartridge contains samples of the characters and symbol sets the font cartridge provides.

Note: Some of the fonts contained on these font cartridges are duplicated by the resident fonts in the printer. See Appendix C for sample fonts and character sets.

Supplier	Cartridge number	Cartridge
HP	92286A	Courier 1
	92286B	Tms Proportional
	92286C	International 1
	92286D	Prestige Elite
	92286E	Letter Gothic
	92286F	Tms Proportional 2
	92286G	Legal Elite
	92286H	Legal Courier
	92286J	Math Elite
	92286K	Math TmsRmn
	92286L	Courier P&L
	92286M	Prestige Elite P&L
	92286N	Letter Gothic P&L
	92286P	TmsRmn P&L
	92286Q	Memo 1
	92286R	Presentations 1
	92286T	Tax1
	92286U	Forms Portrait
	92286V	Forms Landscape
	92286W	Bar Code 3-of-9/OCR-A
	92286X	EAN/UPC/OCR-B
	92286Y	PC Courier 1
	92286Z	Microsoft®1 A
	92290S1	Courier Document 1
	92290S2	TmsRmn/Helv Report 1
	92286PC	ProCollection
	C2055A	#CO1 Great Start

Supplier	Cartridge number	Cartridge
HP (continued)	C2053A C2053A C2053A C2053A C2053A C2053A C2053A C2053A	#CO1 WordPerfect #CO2 Microsoft #CO3 Polished Worksheets. #CO4 Persuasive Presentations #CO5 Forms Etc. #CO6 Bar Codes & More #CO7 Text Equations #CO6 Global Text
Anacom		Alfajet MX-1 Maxi-One Cartridge Alfajet PC Maxi-Pro Cartridge
Peripherals		JetFont SuperSet JetFont 12/30 JetFont 4-in-1 JetFont SuperSet International
Everex		HardFont Cartridge B HardFont Cartridge F HardFont Cartridge T HardFont Cartridge Z HardFont Cartridge LGL HardFont Cartridge SST HardFont Cartridge BST HardFont Cartridge All-in-1 HardFont Cartridge A-TO-Z
IQ		Super Cartridge 1 Super Cartridge 2 Super Cartridge 2L Super Cartridge LC Super Cartridge 2WP
Pacific		25 Cartridges in One Original Version 25 Cartridges in One 172 Headlines in a Cartridge
UDP		DT1 - TMS RMN DTP-2 HELV 65-in-One
Intercon		PHONT+ PROIIP

> **Caution:** Use only the font cartridges listed above in your printer. Do not use other cartridges with this printer or you may damage your printer.

Using the Font Cartridges

Inserting a font cartridge

You insert a font cartridge into the slot on the front of the printer.

> **CAUTION:**
>
> ❑ Never insert or remove a cartridge while the printer is
> on line, in SelecType mode, or while the printer is
> resetting (after you press RESET).
>
> ❑ Be careful when you insert or remove a font cartridge.
> You can damage the cartridge by trying to insert it the
> wrong way or by using too much force.

1. Make sure that the printer is not in one of the following
   conditions:

   ❑ The FEED light is flashing fast (the printer is receiving data
   through the currently selected interface).

   ❑ You are setting parameters using SelecType.

   ❑ The display shows the RESET message.

2. If the FEED light is on, press ON LINE to take the printer off line;
   then press FEED to print any data remaining in the buffer.

3. Make sure the printer is off line (the ON LINE light is off) or turn
   off the printer.

4. Hold the cartridge so that the label on the cartridge faces left as shown below.
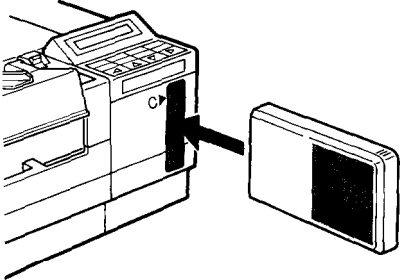
5. Press firmly until the cartridge locks into place.
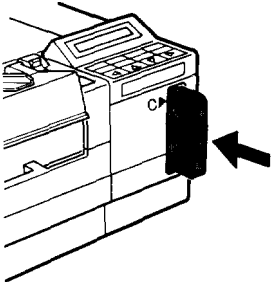
> ⚠ **CAUTION:** If the message REMOVE CARD appears on the
> display, you inserted the cartridge when the printer was
> on line or when the printer's memory contained data. If
> you see this message, remove the cartridge, press
> CONTINUE; then return to step 1.

6. If the power is on, press ON LINE to set the printer on line. If the
power is off, turn on the printer.

Now that you have inserted a font cartridge, you can select the fonts
you want to print using your application program or SelecType.

Selecting a font with your application program

When the printer is in HP emulation mode, you can use your
application program to select the fonts you want to use. First be sure
you selected HP LaserJet IIP or a similar printer from the program's
setup or installation menu. For more information on which printers
to choose when you set up your application program, see Using
Your Printer with Application Software in Chapter 3. After you set
up your application program, you can specify the fonts you want
using the commands available in the program.

If your program does not provide commands that allow you to select
the font you want, you can select fonts using SelecType menus or
printer command sequences. Most application programs, however,
allow you to select fonts, and you should not have to use SelecType
or printer commands to do so. To select a font using SelecType, see
Choosing a Font, Chapter 4. For information on printer commands,
see Appendix D. Also see your software manual for information on
how to use printer command sequences.

Removing a font cartridge

> **⚠ CAUTION:** Never remove a font cartridge while the
> printer is on line, in SelecType mode, or while the printer
> is resetting. If you remove a card while the printer is in one
> of these states, a REINSERT CARD message appears on
> the display. An error also occurs if you remove a cartridge
> while the FEED light is on, even if the printer is off line. See
> the description of card error messages in Chapter 7 for
> more information.

1. Make sure that the printer is not in one of the following
    conditions:

    ❑ The FEED light is flashing fast (the printer is receiving data
       through the currently selected interface).

    ❑ You are setting parameters using SelecType.

    ❑ The display shows the RESET message.

2. If the FEED light is on, press ON LINE to take the printer off line;
    then press FEED to print any data remaining in the buffer.

3. Make sure the printer is off line (the ON LINE light is off) or turn
    off the printer.

4. Grasp the edges of the cartridge and slowly pull it from the slot.
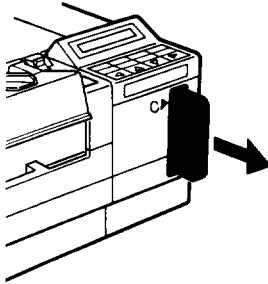
5. Turn on the printer or press ON LINE to set the printer on line.

Appendix C

Character Samples and Symbol Sets

C

Available Fonts and Symbol Sets

This appendix describes the printer's resident fonts and available symbol sets in HP LaserJet IIP and Epson LQ/FX emulation modes.

Resident fonts

The following table lists the resident bitmap fonts in the printer and the printer modes that support these fonts. Character samples of each font are included later in this appendix.

Resident fonts	Resident fonts supported	
	LJ-2P mode	LQ/FX modes
Courier 10 Medium Upright (P, L)	0	0
Courier 10 Medium Italic (P, L)	0	X
Courier 10 Bold Upright (P, L)	0	0
Courier 12 Medium Upright (P, L)	0	0
Courier 12 Medium Italic (P, L)	0	X
Courier 12 Bold Upright (P, L)	0	0
Line Printer 16.66 Medium Upright (P, L)	0	0
Prestige 12 Medium Upright (P)	X	0
Prestige 20 Medium Upright (P)	X	0

P: Portrait, L: Landscape, 0: Supported, X: Not supported

To select a resident font, you can use your application program, the SelecType FONT option described in Chapter 4, or printer commands.

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.

Not all symbol sets are available in all modes. The following table lists the symbol sets and the modes that can access those sets.

Representative symbol sets	Printer modes
Epson Graphics	LQ/FX
Epson Italic	LQ/FX
ISO ANSI ASCII	LJ-2P
HP German	LJ-2P
HP Spanish	LJ-2P
HP Legal	LJ-2P
HP Roman Extension	LJ-2P
ECMA94 Latin-1	LJ-2P
HP Roman-8	LJ-2P
HP IBM-US	LJ-2P
HP IBM-DN	LJ-2P
Pc Multilingual	LJ-2P, LQ/FX
Pc USA	LQ/FX
Pc Nordic	LQ/FX
Pc Portuguese	LQ/FX
Pc CanFrench	LQ/FX

This appendix provides character tables for the symbol sets available in each mode. The tables show both the characters and their hexadecimal values.

HP Emulation Mode

This section describes the resident fonts and symbol sets available in HP emulation mode.

Resident fonts

The printer offers a variety of resident fonts in HP emulation mode. The following table lists the resident fonts available in HP emulation mode and shows samples of text printed with them.

Font name	cpi	Orientation	Sample
Courier	10	P/L	ABCDEFGHIJabcdefghij012
Courier Bold	10	P/L	**ABCDEFGHIJabcdefghij012**
Courier Italic	10	P/L	*ABCDEFGHIJabcdefghij012*
Courier	12	P/L	ABCDEFGHIJabcdefghij0123!"#
Courier Bold	12	P/L	ABCDEFGHIJabcdefghij0123!"#
Courier Italic	12	P/L	*ABCDEFGHIJabcdefghij0123!"#*
Line Printer	16.66	P/L	ABCDEFGHIJabcdefghij0123!"#$%&'()*+,-

P: Portrait, L: Landscape

The font samples in the table show only portrait orientation; the character is the same in portrait or landscape orientation.

Symbol sets

The following symbol set tables show you the available characters in HP emulation mode and their hexadecimal values.

The ID number under the symbol set name provides the unique portion of the escape sequence needed to select that particular symbol set.

ISO ANSI ASCII Set (Symbol Set ID #OU)

	0	1	2	3	4	5	6	7
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	▓

Note: For the shaded areas, see the international character table
for that set.

International Set for ISO Sets

Name				<23>ₕ	<24>ₕ	<40>ₕ	<5B>ₕ	<5C>ₕ	<5D>ₕ	<5E>ₕ	<60>ₕ	<7B>ₕ	<7C>ₕ	<7D>ₕ	<7E>ₕ
ISO	6	ANSI ASCII	0U	#	$	@	[	\	]	^	`	{	|	}	~
ISO	2	IRV	2U	#	¤	@	[	\	]	^	`	{	|	}	‾
ISO	4	United Kingdom	1E	£	$	@	[	\	]	^	`	{	|	}	‾
ISO	10	Swedish	3S	#	¤	@	Ä	Ö	Å	^	`	ä	ö	å	‾
ISO	11	Swedish 2	0S	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
ISO	14	JIS ASCII	0K	#	$	@	[	¥	]	^	`	{	|	}	‾
ISO	15	Italian	0I	£	$	§	°	ç	é	^	ù	à	ò	è	ì
ISO	16	Portuguese	4S	#	$	§	Ã	Ç	Õ	^	`	ã	ç	õ	°
ISO	17	Spanish	2S	£	$	§	¡	Ñ	¿	^	`	°	ñ	ç	~
ISO	21	German	1G	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
ISO	25	French	0F	£	$	à	°	ç	§	^	`	é	ù	è	¨
ISO	57	Chinese	2K	#	¥	@	[	\	]	^	`	{	|	}	‾
ISO	60	Norwegian v1	0D	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	‾
ISO	61	Norwegian v2	1D	§	$	@	Æ	Ø	Å	^	`	æ	ø	å	|
ISO	69	French 2	1F	£	$	à	°	ç	§	^	µ	é	ù	è	¨
ISO	84	Portuguese IBM	5S	#	$	´	Ã	Ç	Õ	^	`	ã	ç	õ	~
ISO	85	Spanish IBM	6S	#	$	·	¡	Ñ	Ç	¿	`	´	ñ	ç	¨
		HP German	0G	£	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
		HP Spanish	1S	#	$	@	¡	Ñ	¿	°	`	{	ñ	}	~

HP Roman-8 Extension
(Symbol Set ID 0E)

	0	1	2	3	4	5	6	7
0				—	â	Å	Á	Þ
1			À	Ý	ê	î	Ã	þ
2			Â	ý	ô	Ø	ã	·
3			È	°	û	Æ	Ð	µ
4			Ê	Ç	á	å	ð	¶
5			Ë	ç	é	í	Í	¾
6			Î	Ñ	ó	ø	Ì	—
7			Ï	ñ	ú	æ	Ó	¼
8			´	¡	à	Ä	Ò	½
9			`	¿	è	ì	õ	ª
A			^	¤	ò	Ö	õ	º
B			¨	£	ù	Ü	Š	«
C			~	¥	ä	É	š	■
D			Ù	§	ë	ï	Ú	»
E			Û	ƒ	ö	ß	Ÿ	±
F			£	¢	ü	Ô	ÿ	

HP Legal Set
(Symbol Set ID #1U)

	0	1	2	3	4	5	6	7
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	▒

ISO 100 ECMA-94 Latin-1 (Symbol Set ID #0N)

	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			©	¹	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

HP Roman-8 Set (Symbol Set ID #8U)

	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	ý	ô	Ø	ã	·
3			#	3	C	S	c	s			È	°	û	Æ	Ð	µ
4			$	4	D	T	d	t			Ê	Ç	á	å	ð	¶
5			%	5	E	U	e	u			Ë	ç	é	í	Í	¾
6			&	6	F	V	f	v			Î	Ñ	ó	ø	Ì	–
7			'	7	G	W	g	w			Ï	ñ	ú	æ	Ó	¼
8			(	8	H	X	h	x			´	¡	à	Ä	Ò	½
9			)	9	I	Y	i	y			`	¿	è	ì	Õ	ª
A			*	:	J	Z	j	z			^	¤	ò	Ö	õ	º
B			+	;	K	[	k	{			¨	£	ù	Ü	Š	«
C			,	<	L	\	l	|			~	¥	ä	É	š	■
D			–	=	M	]	m	}			Ù	§	ë	ï	Ú	»
E			.	>	N	^	n	~			Û	ƒ	ö	ß	Ÿ	±
F			/	?	O	_	o	▓			£	¢	ü	Ô	ÿ	

HP IBM-US Set (Symbol Set ID #10U)

	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	▓	┴	╤	ß	±
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	å	û	ª	╢	╞	╓	µ	÷
7	•	↨	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
A	◎	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	♂	←	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▄	∞	n
D	♪	↔	−	=	M	]	m	}	ì	¥	¡	╜	=	▌	φ	²
E	♫	▲	.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	∈	■
F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	╧	▀	∩	

IBM-US (#10u)
IBM-DN (#11u)

Name	‹9B›H	‹9D›H	‹9E›H	‹9F›H	‹A6›H	‹A7›H	‹A9›H	‹AA›H	‹AB›H	‹AC›H	‹AE›H	‹AF›H
HP IBM US	¢	¥	Pt	ƒ	ª	º	⌐	¬	½	¼	«	»
HP IBM-US D /N	ø	Ø	Ŀ	ŀ	õ	Õ	ã	Ã	ℓ	’n	³	¤

Pc Multilingual (Symbol Set ID #12U)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		▶		0	@	P	`	p	Ç	É	á	▦	└	ð	Ó	─
1	☺	◀	!	1	A	Q	a	q	ü	æ	í	▓	┴	Ð	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▦	┬	Ê	Ô	=
3	♥	‼	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	Á	┼	ı	Õ	§
6	♠	▬	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
7	•	↕	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
A	◎	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
B	♂	←	+	;	K	[	k	{	ï	ø	½	╗	╦	█	Ù	¹
C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▄	ý	³
D	♪	↔	-	=	M	]	m	}	ì	Ø	¡	¢	=	¦	Ý	²
E	♫	▲	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	¤	■	´	

Note : <01>H to <14>H and <16>H to <1F>H cannot be printed in
ESCP emulation modes.

LQ and FX Emulation Modes

This section describes the resident fonts and symbol sets available in LQ and FX emulation modes.

Resident fonts

The printer offers a variety of resident fonts in LQ and FX emulation modes. The following table lists the resident fonts available in LQ and FX emulation modes and shows samples of text printed with them.

Font name	Style	cpi	Orientation	Sample
Courier 10	Medium/Bold 10		P/L	ABCDEFGHIJabc **ABCDEFGHIJabc**
Courier 12	Medium/Bold	12	P/L	**ABCDEFGHIJabcdef** ABCDEFGHIJabcdef
Line Printer 16.66*	Medium	16.66	P/L	ABCDEFGHIJabcdefghij01
Prestige 12*	Medium	12	P**	ABCDEFGHIJabcdef
Prestige20*	Medium	20	P**	ABCDEFGHIJabcdefghij0123!"

P: Portrait, L: Landscape

*   Using your application program, you can make the font bold.

**   Landscape orientation is created internally.

The font samples in the table show only portrait orientation; the character is the same in portrait or landscape orientation.

Note : See page C-11 for the Pc Multilingual character set.

Character sets

This section provides character tables for the character sets available in LQ and FX emulation modes. The tables show both the characters and their hexadecimal values.

Epson Italic Character Table

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

Note: You do not need to select the italic character table to print italics. You can print italics when out of the other character tables is selected.

Pc USA

	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		┴	╤	ß	±
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	å	û	ª	╢	╞	╓	μ	÷
7			'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
8			(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9			)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	θ	•
A			*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B			+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C			,	<	L	\	l	|	î	£	¼	╝	╠	▄	∞	ⁿ
D			-	=	M	]	m	}	ì	¥	¡	╜	=	▌	φ	²
E			.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	ε	∎
F			/	?	O	_	o		Å	ƒ	»	┐	╧	▀	∩	

The following tables show the characters that differ from Pc USA.

Pc Nordic

9B	9D	AF
ø	Ø	¤

Pc Portuguese

84	86	89	88	8C	8E	8F	91	92	94	96	98	99	9D	9F	A9
ã	Á	Ê	Í	Ô	Ã	Â	À	È	õ	Ú	Ì	Õ	Ù	Ó	Ò

Pc CanFrench

84	86	8D	8E	8F	91	92	94	95	98	99	9D	9E	A0	A1	A4	A5	A6	A7	A8	AD
Â	¶	_	À	§	È	Ê	Ë	Ï	¤	Ô	Ù	Û	¦	´	¨	¸	3	‾	Î	¾

International Characters for

Countory	<23>н	<24>н	<40>н	<5B>н	<5C>н	<5D>н	<5E>н	<60>н	<7B>н	<7C>н	<7D>н	<7E>н
U.S.A.	#	$	@	[	\	]	^	`	{	¦	}	~
France	#	$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.	£	$	@	[	\	]	^	`	{	¦	}	~
Denmark 1	#	$	@	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 1	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark 2	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain 2	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú

Converting Hexadecimal Numbers to Decimals

If you prefer to use decimal numbers instead of hexadecimal numbers, you can convert them with the chart below.

Just read down in the column for the first digit of the hexadecimal value and across in the row for the second digit. The decimal value that corresponds to your hexadecimal number is at the intersection of the column beginning with the hexadecimal number's first digit and the row beginning with the hexadecimal number's second digit.

For example, to find the decimal equivalent of the hexadecimal number 5A, find where column 5 intersects row A. There you will find the hexadecimal's equivalent, decimal 90.

Hex-to-decimal conversion chart

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

Appendix D

Printer Modes

D

Available Printer Modes

Your printer comes with the following resident printer modes:

❏ HP LaserJet IIP

❏ Epson LQ

❏ Epson FX

This appendix gives you information on how to operate your printer as an HP LaserJet series IIP, Epson LQ-2500, or Epson FX-800/1000 (FX-86e/286e) printer. It also describes the differences between modes and provides you with a list of the printer commands used in each mode.

To change the printer mode, enter the SelecType Level 2 MODE ASSIGN option. You can also set different printer modes for CH P, CH S and CH O. For more information about SelecType settings, see Chapter 4.

HP Emulation Mode

HP emulation allows you to use commercial software designed for the HP LaserJet IIP printer. This means you can connect your printer to a computer configured for an HP LaserJet IIP printer without having to modify computer software.

This section gives you information about using HP emulation. It describes the unique features of your printer's HP emulation as well as the differences between your printer's HP emulation and printing with the HP LaserJet itself. A list of printer commands is also provided.

Operating as an HP LaserJet IIP printer

Operating the printer in HP emulation mode differs slightly from operating a LaserJet IIP because the two printers use different technologies. The differences in printing are explained below.

	Epson laser	LaserJet IIP
Input paper supply	100 sheets 250 sheets (with option)	50 sheets 250 sheets (with option)
Output paper supply	Face-down: 50 sheets Face-up: Not available	50 sheets 20 sheets
Paper size	Letter Legal A4 Executive Half-Letter B5 A5 G-Letter G-Legal F4 Monarch 7-3/4 Commercial 10 DL C5	Letter Legal A4 Executive Monarch 7-314 #10 DL C5
Resident fonts	14	7
Maximum number of downloaded fonts	Depends upon size of memory	Depends upon size of memory
Maximum number of fonts per page	Depends upon size of memory	Depends upon size of memory
Page buffer mode	Built-in	Not available

Printable area

The size of the printable area for the LaserJet IIP and this printer is the same. The maximum number of characters that can be printed per line is also the same. However, the absolute print position may not be exactly the same as a printout from an HP LaserJet IIP printer.

In order to match your printing to the output produced on a LaserJet printer, you can use the T-OFFSET and L-OFFSET feature of the SelecType Level **1** SYSTEM CONFIG option to make fine adjustments to the print start position. However, because the offset feature can move the printing position to **a** point outside of the printable area, some of the data may not be printed.

Character clipping

If a character is partially outside the printable area, the HP LaserJet does not print any portion of the character. Your printer prints that portion of the character that falls within the printable area.

Paper handling

When using the printer in HP emulation mode, the paper size is not determined by the paper cassette as it is with an HP LaserJet printer. Use the P-SIZE option in SelecType Level 1 to set any of the fourteen paper sizes supported by the printer. For certain nonstandard sizes of paper, you may need to use the manual feed option described in Chapter 5.

HP emulation command summary

This section lists the printer commands supported by HP emulation mode. For more information on printer commands, see the Hewlett-Packard LaserJet IIP Technical Reference Manual.

All commands closely emulate the LaserJet IIP except for the following:

ESC &1#A can be used to select the following eight paper sizes:

A4
Letter
Legal
Executive
Monarch
Commercial 10
DL
C5

This command overrides the P-SIZE setting in SelecType. Other paper sizes cannot be specified with this command.

ESC &1#H command cannot be used to specify manual paper feeding. The values for # produce the effects in the following table. Whenever INPUT in SelecType is set to AUTO, this command is enabled for #2 or #3.

#	**Epson laser**	**LaserJet IIP**
0	Eject current page	Eject current page
1	Feed from standard paper cassette	Feed from standard tray
2	Manual feed	Manual feed
3	Manual feed	Envelope feed
4	Feed from optional multi-media feeder	Feed from optional cassette

ESC &l#P sets the page length and paper size. The paper sizes available with this command are same as those available with ESC &l#A.

Printer commands arranged by topic

The HP printer commands supported in HP LaserJet **IIP** emulation
are listed below.

Backspace	BS
Line feed	LF
Form feed	FF
Carriage return	CR
Shift out	SO
Shift in	SI
Escape	ESC
Horizontal tab	HT

Orientation:

Orientation	ESC &1#O

Font selection:

Symbol set	*Prima y*	Secondary
HP Math 7	ESC(0A	ESC)0A
HP Line Draw	ESC(0B	ESC(0B
IS0 60: Norwegian v1	ESC(0D	ESC)0D
IS0 61: Norwegian v2	ESC(1D	ESC)1D
HP Roman Extension	ESC(0E	ESC)0E
IS0 4: United Kingdom	ESC(1E	ESC)1E
IS0 25: French	ESC(0F	ESC)0F
IS0 69: French New	ESC(1F	ESC)1F
HP German	ESC(0G	ESC)0G
IS0 21: German	ESC(1G	ESC)1G
HP Greek8	ESC(8G	ESC)8G
HP Hebrew	ESC(0H	ESC)OH
HP Hebrew8	ESC(8H	ESC)8H
IS0 15: Italian	ESC(0I	ESC)0I
Pc Portuguese (CP860)	ESC(33I	ESC)33I
Pc Can French (CP863)	ESC(34I	ESC)34I
Pc Nordic (CP865)	ESC(35I	ESC)35I
Pc USA (CP437)	ESC(39I	ESC)39I

Symbol set	Primary	*Secondary*
IS0 14: JIS ASCII	ESC(0K	ESC)0K
HP Katakana	ESC(1K	ESC)1K
IS0 57: Chinese	ESC(2K	ESC)2K
HP Kana 8	ESC(8K	ESC)8K
HP Korean 8	ESC(9K	ESC)9K
HP Line Draw	ESC(0L	ESC)0L
HP Block Character	ESC(1L	ESC)1L
HP Math7	ESC(0M	ESC)0M
Technical	ESC(1M	ESC)1M
HP Math8	ESC(8M	ESC)8M
IS0 100: ECMA94 Latin-1	ESC(0N	ESC)0N
OCR-A	ESC(0O	ESC)0O
OCR-B	ESC(1O	ESC)1O
APL (Typewriter)	ESC(0P	ESC)0P
APL (Bit Paired)	ESC(1P	ESC)1P
HP Math-8a	ESC(0Q	ESC)0Q
HP Math-8b	ESC(1Q	ESC)1Q
HP Pi Font-a	ESC(2Q	ESC)2Q
OCR-B Extended	ESC(3Q	ESC)3Q
PC LINE	ESC(4Q	ESC)4Q
HP Cyrillic ASCII	ESC(0R	ESC)0R
HP Cyrillic	ESC(1R	ESC)1R
IS0 11: Swedish Names	ESC(0S	ESC)0S
HP Spanish	ESC(1S	ESC)1S
IS0 17: Spanish	ESC(2S	ESC)2S
IS0 10: Swedish	ESC(3S	ESC)3S
ISO 16: Portuguese	ESC(4S	ESC)4S
IS0 84: Portuguese IBM	ESC(5S	ESC)5S
IS0 85: Spanish IBM	ESC(6S	ESC)6S
HP Thai 8	ESC(0T	ESC)OT
HP Turkish 8	ESC(8T	ESC)8T
IS0 6: ANSI ASCII	ESC(0U	ESC)0U
HP Legal	ESC(1U	ESC)1U
ISO 2: IRV	ESC(2U	ESC)2U
HP HPL Language Set	ESC(5U	ESC)5U

Symbol set	**Primary**	*Secondary*
OEM-1	ESC(7U	ESC)7U
HP Roman-8	ESC(8U	ESC)8U
Windows	ESC(9U	ESC)9U
IBM-US	ESC(10U	ESC)10U
IBM-Denmark/Norway	ESC(11U	ESC)11U
Pc Multilingual (CP850)	ESC(12U	ESC)12U
HP Pi Font	ESC(15U	ESC)15U
HP Arabic (McKay's Version)	ESC(0V	ESC)0V
HP Arabic	ESC(8V	ESC)8V
Bar-Code 3 of 9	ESC(0Y	ESC)0Y
EAN/UPC	ESC(8Y	ESC)8Y
Spacing	ESC(s#P	ESC)s#P
Pitch (cpi)	ESC(s#H	ESC)s#H
Point size	ESC(s#V	ESC)s#V
Style	ESC(s#S	ESC)s#S
Stroke weight	ESC(s#B	ESC)s#B
Typeface	ESC(s#T	ESC)s#T

Page length, page size, top margin, text length:

Page length	ESC&1#P
Paper size	ESC&1#A
Top margin	ESC&1#E
Text length	ESC&1#F

Margins:

Clear side margins	ESC 9
Set left margin	ESC&a#L
Set right margin	ESC&a#M

Vertical line spacing:

Set vertical motion index	ESC&1#C
Set lines per inch	ESC&1#D

Half-line **feed:**

Half-line feed   ESC =

Raster graphics:

Raster graphics resolution   ESC*t#R
Start raster graphics   ESC*r#A
Transfer raster graphics   ESC*b#W[data]
End raster graphics   ESC*rB

Specialized printer control:

Printer reset   ESC E
Status sheet print   ESC z

Cursor positioning:

Horizontal (columns)   ESC&a#C
Vertical (lines)   ESC&a#R
Horizontal (decipoints)   ESC&a#H
Vertical (decipoints)   ESC&a#V
Horizontal (dots)   ESC*p#X
Vertical (dots)   ESC*p#Y

Underline:

Enable auto-underlining   ESC&d#D
Disable auto-underlining   ESC&d@

Display **functions, transparent** *print data:*

Enable display functions   ESC Y
Disable display functions mode   ESC Z
Transparent print data   ESC&p#X[data]

Peforation skip mode:

Perforation skip mode   ESC&l#L

Font selection:

Font pitch (alternate)   ESC&k#S

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Miscellaneous:

Horizontal motion index	ESC&k#H
Line termination	ESC&k#G
End of line wrap	ESC&s#C
Select number of copies	ESC&1#X
Paper input control	ESC&1#H

Font management:

Specify font ID	ESC*c#D
Specify character code	ESC*c#E
Font and character control	ESC*c#F
Download character	ESC(s#W [data]
Create font (font descriptor)	ESC)s#W [data]
Designate downloaded font	
(primary)	ESC(#X
(secondary)	ESC)#X
Font default (primary)	ESC(3@
(secondary)	ESC)3@

Macros:

Macro ID	ESC&f#Y
Macro control	ESC&f#X

Push/Pop position:

Push/Pop position	ESC&f#S

Advanced graphics:

Horizontal size (dots)	ESC*c#A
Vertical size (dots)	ESC*c#B
Horizontal size (decipoints)	ESC*c#H
Vertical size (decipoints)	ESC*c#V
Print graphics	ESC*c#P
Specify graphic pattern	ESC*c#G

LQ and FX Emulation Modes

Your printer has the ability to emulate an Epson LQ-2500 or FX-800/1000 (86e/286e) series printer. This means that you can connect your printer to a computer set up for an Epson LQ or FX printer and print without having to modify the software controlling your printer.

Besides allowing you to use software for an LQ or FX printer, you also gain the advantages of the quality text, sharper graphics, and faster printing provided by this printer.

Operating as an LQ or FX series printer

Before you can operate your printer as an FX or LQ printer, you need to change the printer mode using the MODE ASSIGN setting in SelecType Level 2. See Chapter 4.

Operating the printer in LQ or FX printer emulation mode offers options not available with most LQ or FX printers, including SelecType control over almost all printer features and laser quality output.

LQ and FX emulation mode command summary

The tables in this section show the control codes and escape sequences supported in LQ and FX emulation modes. Some LQ and FX printer codes are not available, either because the functions are not required (such as draft printing) or are not possible because of the different technologies used in these printers.

The following commands are either not available or are ignored in LQ or FX emulation mode:

ESC <   Unidirectional mode (one line)
ESC 8   Disable paper end detector
ESC 9   Enable paper end detector
ESC U   Select print direction
ESC s   Set/cancel half-speed printing
ESC r   Select color printing
ESC i   Incremental view

The following commands are available in FX mode but not in LQ mode:

ESC 1   7/72-inch line feed
ESC ^   Select 9-pin graphics mode
ESC I   Select character code table

The following commands are available in LQ mode but not in FX mode:

ESC j   n/180-inch reverse feed

The printer commands listed below function in a slightly different way when used in LQ or FX emulation mode. Also, many of the commands that control the print position use approximations because of the difference in print density from LQ/FX series printers.

ESC G/ESC E

These commands produce identical bolding effects on your printer. On an actual LQ series printer, these two commands create slightly different effects and can be combined to produce darker characters.

SI / ESC SI

These commands print 10 cpi characters in a 16.66 cpi font, and 12 cpi characters in a 20 cpi font. On an actual LQ/FX series printer, these commands condense the font.

ESC x

This command is normally used to select between draft and LQ quality with an LQ or FX series printer. However, this command has no effect on your printer's print quality since all characters are printed at 300 dpi (dots per inch) Letter Quality.

ESC w

This command produces double-height characters but differs between LQ and FX modes, as follows:

LQ mode-If you send the ESC w command when the print position is set at the first line of the logical page, LQ series printers print only the bottom half of the characters. Your printer prints the entire character.

FX mode-When combining ESC w and ESC W to produce double-width, double-height characters, FX series printers do not increase the stroke weight for vertical lines. Your printer in FX emulation does increase the vertical line weight. Also, when this command is sent with the print position set at the first line of the page, the FX changes the baseline position in order to print the entire character. For your printer, the baseline is not changed.

ESC &, **ESC K, ESC L, ESC Y, ESC Z, ESC *, and ESC ^**

This printer uses an image processing technique that emulates, as closely as possible, the image densities available on FX and LQ printers. Because of this process, the graphics commands listed above do not produce exactly the same output on the printer that they would on an Epson FX or LQ printer.

ESC C, ESC C0

When you send the ESC C or ESC CO command to change the page length on LQ or FX printers, you can print more than one page on the same sheet of paper. Because your printer processes data page-by-page, each page must be printed on a separate sheet of paper, so exact LQ or FX emulation cannot be provided. Problems will occur when the page length set with the ESC C or ESC CO command differs from the actual page length.

DEL

The printer handles the DEL command as a BS command. Print portion return is the same as for an FX or LQ printer, although your printer does not clear previous characters.

CAN

FX or LQ printers clear the data in their print buffer with this command; your printer prints the data.

ESC EM

Your printer supports 1,2, and R for *n.*

Printer commands arranged by topic

The following section lists and describes all FX and LQ commands by topic.

Printer operation:

Initialization
ESC @   Initialize printer
Selection
DC1   Select printer
DC3   Deselect printer

Data control:

CAN   Cancel line

MSB control
ESC =   Set MSB to 0
ESC >   Set MSB to 1
ESC #   Cancel MSB control

Vertical motion:

Form feeding
FF   Form feed
ESC C   Set page length in lines
ESC C0   Set page length in inches
ESC EM   Control cut sheet feeder
ESC N   Set skip over perforation
ESC O   Cancel skip over perforation

Line feeding
LF   Line feed
ESC 0   Select 1/8-inch line spacing
ESC 1   Select 7/72-inch line spacing (FX only)
ESC 2   Select 1/6-inch line spacing
ESC 3   Select *n/180-inch* line spacing (LQ)
                       Select n/216-inch line spacing (FX)
ESC A   Select *n/60-inch* line spacing (LQ)
                       Select n/72-inch line spacing (FX)
ESC J   Perform n/180-inch line feed (LQ)
                       Perform n/216-inch line feed (FX)
ESC j   Perform n/180-inch reverse feed (LQ)
                       Perform n/216-inch reverse feed (FX)

Vertical tabbing
VT   Tab vertically
ESC B   Set vertical tabs
ESC b   Set vertical tabs in channels
ESC /   Select vertical tab channel

Horizontal motion:

Margins
ESC 1	Set left margin
ESC Q	Set right margin

Horizontal tabbing
HT	Tab horizontally
ESC D	Set horizontal tabs

Print position:

CR	Carriage return
BS	Backspace
ESC \	Set relative position
ESC $	Set absolute print position

Overall printing style:

ESC x	Select letter quality or draft
ESC k	Select typestyle family
ESC !	Master select

Print size and character width:

ESC g	Select 15 cpi
ESC P	Select 10 cpi
ESC M	Select 12 cpi
ESC p	Turn proportional mode on/off
SI	Select condensed mode
ESC SI	Select condensed mode
DC2	Cancel condensed mode
s o	Select double-width mode (one line)
ESC SO	Select double-width mode (one line)
ESC W	Turn double-width mode on/off
DC4	Cancel double-width mode (one line)
ESC w	Turn double-height mode on/off

Print enhancement:

ESC E	Select emphasized mode
ESC F	Cancel emphasized mode
ESC G	Select double-strike mode
ESC H	Cancel double-strike mode
ESC S	Select superscript/subscript mode
ESC T	Cancel superscript/subscript mode
ESC -	Turn underline mode on/off

Word processing:

ESC a	Select justification
ESC SP	Set intercharacter space

Character tables:

ESC t	Select character table
ESC 4	Select italic mode
ESC 5	Cancel italic mode
ESC R	Select an international character set
ESC I	Printable code area expansion (FX mode only)

User-defined characters:

ESC &	Define user-defined characters
ESC :	Copy ROM to RAM
ESC %	Select user-defined set
ESC 6	Enable printable characters
ESC 7	Enable upper control code

Graphics:

ESC K	Select single-density graphics mode
ESC L	Select double-density graphics mode
ESC Y	Select high-speed double-density graphics mode
ESC Z	Select quadruple-density graphics mode
ESC *	Select graphics mode
ESC ?	Reassign graphics mode
ESC ^	Select 9-pin graphics mode (FX mode only)

Glossary

application program

Any software program designed to carry out a particular task. For example, word processing and graphics packages are application programs.

ASCII

American Standard Code for Information Interchange. A standardized way of assigning numerical codes to characters and control codes. The system is widely used by manufacturers of computers, printers, and software.

auto line feed

When this feature is enabled using SelecType, each carriage return code (CR) is automatically accompanied by a line feed (LF) code.

baud rate

A measure of the speed of data transmission. It is used when setting up the serial interface on the computer and printer.

bit

A binary digit (0 or 1), which is the smallest unit of information used by a printer or computer.

bitmap font

A font that has already been defined with specific attributes such as size and weight. See also *outline* font.

bold

A print enhancement that produces darker than normal characters and is typically used to add emphasis to a document. Bold is also offered as a font attribute.

buffer

See memory.

byte

A unit of information consisting of eight bits. A byte usually corresponds to one character or code.

character set

A collection of letters, numbers, and symbols.

character spacing

Refers to two methods for horizontal character placement-fixed-pitch and proportional spacing.

characters per inch (cpi)

A measure of the size of fixed-pitch text characters.

cpi

See characters per inch.

data dump mode

See hex dump mode.

default

A value or setting that takes effect when the equipment is turned on, reset, or initialized.

download font

A font that is loaded into the printer's memory from an outside source, such as **a** computer.

dpi

Dots per inch. This is a measure of print resolution.

driver

The part of an application program that converts commands from the program into commands used by the printer. Also known as the printer driver.

EEPROM

Electrically Erasable Programmable Read Only Memory. The portion of the printer's memory holding SelecType's default settings. It may be erased and reprogrammed, enabling you to change the default settings.

electrophotographic process

The printing method used by your printer. In this process, a low-power laser is used to expose selected portions of a revolving photosensitive belt. Toner is then attracted to the exposed areas of the belt to form a mirror image of the page to be printed. The toner adhering to the belt is then transferred to the surface of the paper where it is fused in place using a process combining heat and pressure.

engine

The part of the printer that includes the electrophotographic processing unit, engine controller, and paper transport mechanisms.

fixed pitch

Refers to the character spacing of a font in which the width is the same for all characters, as distinguished from proportional spacing. For fixed-pitch fonts, narrow characters such as lowercase i take up as much space as wider characters such as uppercase W.

hex dump mode

A printing mode that can be used to print out the exact codes reaching the printer. This mode can be used by experienced users as a troubleshooting tool.

identity cards

Optional cards that can be plugged into the card slot on the printer.

initialization

Returns the printer to its defaults (fixed set of conditions).

input buffer

A portion of RAM used as a temporary holding area for data received from the computer until it is printed. Also known as printer memory.

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.

italic

A typestyle in which the characters slant. *This sentence is italicized.*

landscape

Printing that is oriented sideways on the page. This orientation gives you a page that is wider than it is high.

line space

The distance between lines of text.

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 download fonts and graphics) is stored temporarily until it is printed out. See also *EEPROM, RAM,* and *ROM.*

nonvolatile memory

The portion of the printer's memory that is not lost when you turn off the printer. The ROM portion of nonvolatile memory is permanent. The EEPROM portion is permanent unless it is reprogrammed.

off line

When the printer is off line, it cannot communicate with the computer.

on line

When the printer is on line, it can communicate with the computer.

orientation

Refers to the direction in which characters are printed on a page. This direction is either portrait with the text printed across the width of the page, or landscape with the text printed across the length of the page.

outline font

A font defined by mathematical equations. Outline fonts allow certain attributes, such as size and orientation, to be changed.

parallel interface

See interface.

Parity

A method of checking the reliability of data transmission **between** the computer and printer.

pitch

A measure of character width. Characters can be fixed pitch, where the width is the same for all characters, or proportionally spaced, with varying widths. Pitch is a measure of the number of characters per inch (cpi) for fixed-pitch fonts.

point size

The height of a particular typeface 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 mode

A set of operating commands that determines how data **sent from** the computer is interpreted and acted upon. Printer modes can emulate existing printers. Your printer offers three printer modes: HP LaserJet III' (LJ-2P), LQ, and FX emulations.

proportional spacing

Printing in which character width varies from character to character. For example, a capital W receives much more space than a lowercase i. The result looks more like a typeset book than a typewritten draft.

RAM

Random Access Memory. The portion of the printer's memory used as an input buffer and for storing user-defined characters, downloaded fonts, and graphics images. Information stored in RAM is volatile and is lost when printer power is interrupted.

reset

To return a printer to its defaults, either by **a** command, interface signal, RESET button, or by turning the printer off and on.

ROM

Read Only Memory. The portion of the printer's memory that is permanent. Information stored in ROM is used to control how the printer operates. Resident fonts are also stored in ROM.

SelecType

A feature of the printer that allows you to set printer values and control most of the printer's functions from the control panel.

serial interface

See interface.

status sheet

A report that lists the settings and other printer information. You can print this report using the SelecType feature.

symbol set

A collection of symbols (letters, numbers, and special characters) used by a font. Symbols are assigned to specific codes in a character table.

test print

A method of checking the operation of the printer. When a test print is performed with the SelecType feature, the printer prints out one of the two test patterns (vertical or horizontal lines).

toner

A dry, powder-like substance composed of resin and pigment. Toner is used to form the image during the printing process.

transfer **charger wire**

A metal wire used to impart a static charge to the paper, causing toner particles on the photoconductor unit to transfer to the surface of the paper.

typeface

A set of characters all of a single design in which the characters share common features such as body shape. The typeface is given a name such as Courier.

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Quick Reference

SelecType Map

The following menu maps show the possible menus and options in
SelecType. Mode-specific options, those marked "refer to mode," are
listed under each printer mode later on this card. See Chapter 3 for a
description of each option.

Key
( ) - Only available with option

* - Only available when a font is downloaded

x - Interface channel P (parallel), S (serial), O (option)

SelecType Level 1 in LJ-2P mode

```
FONT ─────────┬─── RD - 0 to available
              ├─── (A) - 0 to available
              ├─── (C) - 0 to available
              └─── DL*


SUB CONFIG. ──┬── FORM ──────── 60LINES [0 to 128 or ***]
              │
              │
              └── SYMSET ──┬── Roman-8      IBM-US
                           │   IBM-DN       ECM94-1
                           │   IRV          French
                           │   UK           Chinese
                           │   ANSI AS      Norweg1
                           │   Swedish      Norweg 2
                           │   Swedis2      French2
                           │   JIS ASC      IBM Por
                           │   Italian      IBM Spa
                           │   Portugu      HP Germ
                           │   Spanish      HP Span
                           │   German       Roman E
                           └── Legal        PcMulti
```
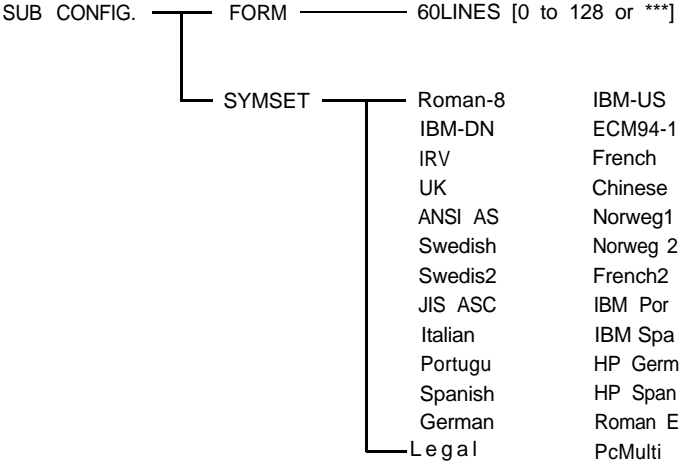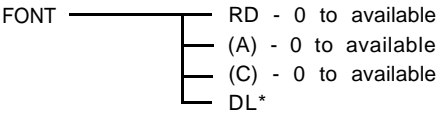
SelecType Level 1 in LQ and FX modes

FONT ───────────── Courier
                    Prestige
                    (OCR-B)
                    (OCR-A)
                    DL*

SUB CONFIG. ──────── PITCH ──────────── 10
                                        12
                                        15
                                        PROP.

                     CONDENSED ──────── ON/OFF
                     L-MARGIN ───────── 0 to available
                     R-MARGIN ───────── 1 to available
                     FORM TOP ───────── 0.50 TO 1.50
                     TEXT ───────────── 62LINES [1 to available]
                     SKIPBOTTOM ─────── ON/OFF
                     CGTABLE ────────── ITALIC   PcCanF
                                        PcUSA   PcNord
                                        PcMult   DLoad
                                        PcPort

                     COUNTRY ────────── USA   Spain1
                                        France   Japan
                                        German   Norway
                                        UK   Denmk2
                                        Denmak   Spain2
                                        Sweden   LatinA
                                        Italy

                     J-REPRINT ──────── ON/OFF
                     AUTO CR ────────── ON/OFF
                     ZERO CHAR. ─────── 0/O
                     WIDE PAGE ──────── ON/OFF
                     B-IMAGE ────────── DARK
                                        LIGHT
                                        BCODE

SelecType Level 1

CANCEL:< S:^ P:V 0: >

```
INPUT ─────────────┬─── STD
                   ├─── (OPT)
                   └─── AUTO

P-SIZE ────────────┬─── Letter
                   ├─── A 5        ┬─── EXE
                   ├─── B 5        ├─── F 4
                   ├─── LETTER     ├─── MONARCH
                   ├─── HALF LT    ├─── C 10
                   ├─── LEGAL      ├─── D L
                   ├─── GLT        ├─── C 5
                   └─── GLG        └─── [OTHER]

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ORIENT. ───────────┬─── PORT
                   └─── LAND

FONT ───────────────── Refer to mode

STATUS SHEET

FONT SAMPLE

SUB CONFIG. ───────── Refer to mode

SYSTEM CONFIG. ────┬── FULL PRINT ──────── 0 to 62
                   ├── T-OFFSET––64 to -1, 0, 1, to 63
                   ├── L-OFFSET   ––64 to -1, 0, 1, to 63
                   ├── MEMORY LEFT nnK [0 to available]
                   ├── LOAD MACRO ───── 0 to 4
                   ├── SAVE MACRO ───── 1 TO 4
                   ├── DELETE MACRO ─── 1 TO 4
                   └── POWERON MACRO ── 0 TO 4
```

SelecType Level 2

```
TEST PRINT ─────────── PATTERN 1
                └───── PATTERN 2

MODE ASSIGN ────── CH X mode ───────── LJ-2P
                                 ├──── L Q
                                 ├──── F X
                                 └──── (EPSON GL)

I/F CONFIG. ──────── CH X CONFIG. ────── [CH P] ─┬─ SLCTIN
                                           ├─ AUTOFEED
                                           └─ BUSY DELAY

                                  └── [CHS] ─┬─ WORD LENGTH
                                           ├─ BAUD RATE
                                           ├─ PARITY
                                           ├─ STOP BIT
                                           ├─ DTR
                                           ├─ XON/XOFF
                                           ├─ ENQ/ACK
                                           ├─ DSR
                                           └─ CTS

RX-BUFFER SIZE ─── 1 TO 99

C H ─────────────┬── CH AUTOSENSE
               └── CH INDIVIDUAL ─ nMS:t P:u O:v – t.i.v: 0 to 9

CH TIMEOUT ──────── 10 TO 50, 60, 70 to 600 [step 10]

AUTO CONT. ──────┬── O N
               └── OFF

P-CONFIG. SAVE

FACTORY RESET

VERSION ─────────┬── C-ROM
               └── FONT

PAGECOUNTER n ── PCU COUNTER n

STANDBY ─────────┬── ENABLE
               └── DISABLE
```
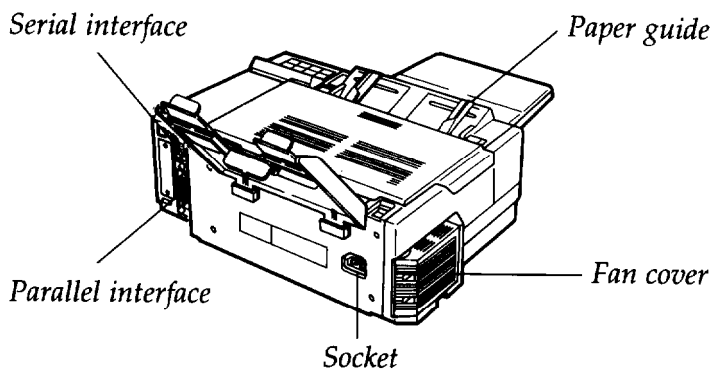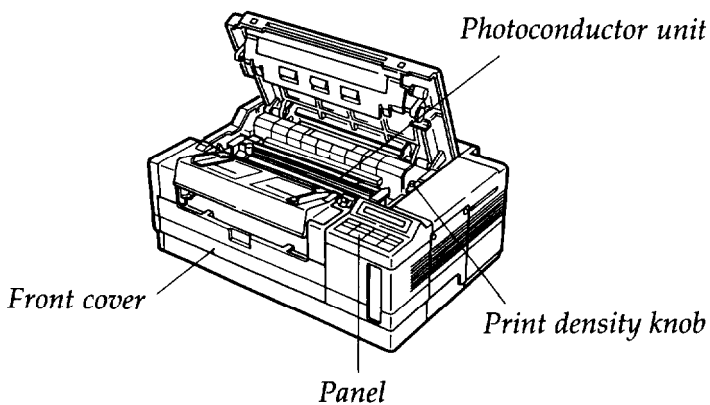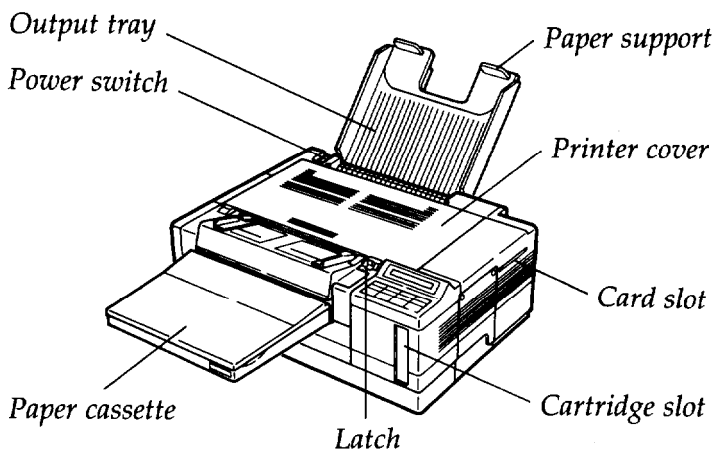
Output tray

Power switch

Paper support

Printer cover

Card slot

Cartridge slot

Paper cassette

Latch

Photoconductor unit

Front cover

Print density knob

Panel

Serial interface

Paper guide

Parallel interface

Fan cover

Socket

EPSON® Action Laser II

Epson America, Inc.

20770 Madrona Avenue, Torrance, CA 90503