User's Guide Update

Please update your User's Guide with the following information.

These page-length settings have been added to your printer: 5.5, 7, 17, 14, 8, 6, 4, 3.5, and 3 inches.

See "Default-Setting Mode" in Chapter 3 for the groups of available printer features. The page length feature has been deleted from Group 1 and now appears in a new group (Group 1 Extension). See the following table for a complete list of Group 1 Extension settings.

Group 1 Extension	Settings
Page length	11, 12, 8.5, 70/6(A4), 5.5, 7, 17, 14, 8, 6, 4, 3.5, and 3 inches

Changing Group 1 Extension default settings

1. Make sure the printer is turned off.

2. To enter the Group 1 Extension default-setting mode, turn on the printer while you hold down the FONT and PAPER FEED buttons. The printer beeps once.

3. Load single-sheet or continuous paper. The printer then automatically loads the paper and prints a quick reference.

Group	*Extension default settings*			
Feature	FONT light	COND. light	READY light	**Settings**
Page length	OFF	OFF	ON	11 inches (default setting)
			BLINK	12 inches
		ON	OFF	8.5 inches
			ON	70/6 inches
			BLINK	5.5 inches
		BLINK	OFF	7 inches
			ON	17 inches
			BLINK	14 inches
	ON	OFF	OFF	8 inches
			ON	6 inches
			BLINK	4 inches
		ON	OFF	3.5 inches
			ON	3 inches

4. Press the **FONT** button to select the page length. The **FONT, CONDENSED**, and **READY** lights turn on, off, or blink to show your selection.

   For example, if you select 8 inches, the **FONT** light is on and the **CONDENSED** and **READY lights** are off.

5. After you **have** made your selection, exit the Group 1 Extension default-setting mode by turning off the printer.

Note:
If you want to check the new default settings, enter the default-setting mode again and print the quick reference. After that, turn off the printer to exit the default-setting mode.

FCC Compliance Statement

For United States Users

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

·   Reorient or relocate the receiving antenna.

·   Increase the separation between the equipment and receiver.

·   Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

·   Consult the dealer or an experienced radio/TV technician for help.

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

For Canadian Users

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le present appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Important Safety Instructions

- Read all of these instructions before you set up your printer.

- Follow all warnings and instructions marked on the printer.

- Unplug the printer from the wall outlet before you clean it, and use a damp cloth for cleaning, not liquid or aerosol cleaners.

- Do not use your printer near water or spill any liquid on it.

- Do not place the printer on an unstable cart, stand, table or other surface that may allow the printer to fall.

- Do not block any slots or openings in the cabinet. These are provided for the ventilation necessary to ensure reliable operation and protection from overheating. Placing the printer on a bed, sofa, rug, or other similar surface may block the openings. Also, do not place the printer in a built-in installation unless proper ventilation is provided.

- Never place the printer near or over a radiator or heat register.

- Use the type of power source indicated on the label. If you are not sure of the type of power available, consult your dealer or local power company.

- This printer may be equipped with a plug having a third (grounding) pin, which fits only into a grounding-type outlet. This is a safety feature. If you are unable to insert the plug into the outlet, have an electrician replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

- Do not put your printer where the cord will be walked on.

- If you use an extension cord, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord's ampere rating. Also, make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

- Never push objects of any kind into your printer because they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock.

- Except as specifically explained in the user's manual, do not attempt to repair the printer yourself. This could expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to service personnel.

- Unplug the printer from the wall outlet and have it repaired by a qualified service person under the following conditions:

  When the power cord or plug is damaged or frayed

  If liquid has been spilled into it

  If it has been exposed to rain or water

  If it 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 printer to normal operation.

  If it has been dropped or the cabinet has been damaged

  If it exhibits a distinct change in performance, indicating a need for service.

Where United States Users Can 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.

For United Kingdom Users

Epson product guarantee

Under the law, goods sold must comply with their description and must be of merchantable quality and fit for their purpose or correspond with any sample.

This guarantee does not affect the seller's legal obligation or the rights of the consumer in the "consumer transactions" under any Statute, including Sections 12 to 15 of the Sales of Goods Act, 1979.

All Epson Products, other than OEM products, are fully guaranteed against faulty operation or performance for a period of ONE YEAR from date of purchase by the user of the product.

All claims under this guarantee MUST be supported by evidence of purchase, normally the bill of sale invoice, and it is the responsibility of the claimant to furnish such proof. Epson (UK) Limited does not issue or operate any form of guarantee registration card.

Claims are made by the user returning the product to the supplier from whom it was purchased or, if this is impractical, to any Epson supplier who also handles the same product. In the event of any difficulty, users are requested to contact the Service Co-ordinator Manager at Epson (UK) Limited.

Epson (UK) Limited, or Epson Appointed Distributors, will at their discretion repair or replace part or all of the product to provide, in their judgement, a satisfactory performance of the product consistent with its age and apparent usage.

This guarantee covers the cost of both the parts and labour required to correct any malfunction of the equipment, but specifically excludes: wear and tear, consumables, physical damage due to incorrect use or misuse and damage or faulty operation due to unauthorized and inexpert repair,

The guarantee is restricted to the performance of the product alone, and Epson (UK) Limited does not accept responsibility for any consequential loss or damage, nor claimed or implied performance, when the product is used in any combination with other equipment or program software.

Product guarantee may be invalidated as a result of excessive or inappropriate use, use in adverse environment or in conditions outside the specifications or if the product has been subjected to unapproved modifications.

The guarantee does not cover visits to the user's premises or the repair or commissioning of the product on site.

Use of options

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

Safety information

Warning: This appliance must be earthed. Refer to rating plate for voltage and check that the appliance voltage corresponds to the supply voltage.

Important: The wires in the mains lead fitted to this appliance are coloured in accordance with the following code:

Green and yellow - Earth

Blue - Neutral

Brown - Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The green and yellow wire must be connected to the terminal in the plug which is marked with the letter E or with the earth symbol ($\perp$) or coloured green or green and yellow.

The blue wire must be connected to the terminal in the plug marked with the letter N or coloured black.

The brown wire must be connected to the terminal in the plug marked with the letter L or coloured red.

If damage occurs to the plug, replace the cord set or consult a qualified electrician.

Replace fuses only with a fuse of the correct size and rating.

Tips for Printing on Single Sheets

There are a few things you should know about printing on single sheets as opposed to continuous paper. When you print on single sheets, you may notice that your printer prints the first page of your file correctly but then prints too low on the next page, or that it prints the last few lines from one page onto the next.

These differences in print position are easy to adjust; you can simply change some of the settings in your application program as described below to get the right results.

1. When you install an application program, you normally need to identify the printer you are using. Make sure you choose the correct printer. See Chapter 1 for the right printer to choose.

2. Many programs include an option to set the maximum lines per page. If your program has a lines-per-page setting and you are using standard 8.5 x 11-inch paper, set the lines per page to 61.

> Note: To find the right lines-per-page setting for paper that is not 8.5 x 11 inches, create a test document using your application program. Set your top and bottom margins to 0 and then create a file of numbered lines from 1 to 66. When you print your file, notice the last number printed on the first page. This is your maximum lines-per-page setting.

3. If your program doesn't have a lines-per-page setting, try decreasing the top margin or increasing the bottom margin, or both, until you get the results you want.

4. You can also try adjusting the form length setting. For a standard 8.5 x 11-inch page, try setting the form length at 10 inches.

5. Some programs also let you indicate whether you are using single sheets or continuous paper. Make sure you choose single sheets.

Contents

Introduction

Your new Epson® 9-pin dot matrix printer combines a compact design and high performance with a wide range of features.

Features

These features give your Epson printer outstanding value:

- Fast printing speed. Prints up to 380 characters per second.

- Easy paper handling. Provides four paper paths to suit your printing needs: top, rear, bottom, and front loading.

- Flexibility. You can load single sheets from the top paper slot without removing your continuous paper supply.

- Automatic paper loading. Loads single sheets and continuous paper automatically.

- Compatibility. Supports the Epson ESC/P® commands widely used in application programs written for other Epson FX printers.

- An IBM@ emulation mode. Provides compatibility with many application programs written for popular IBM@ printers.

- Font selection. You can choose two draft and two Near Letter Quality fonts (Epson Roman and Epson Sans Serif) directly from the control panel as well as normal or condensed printing.

- Default settings. You can customize the printer's default settings with the control panel buttons.

- Thickness adjustment. You can set a simple lever to print on a variety of paper types, including labels, envelopes, and multi-part forms.

Options

You may choose a cut-sheet feeder, an additional tractor unit, a roll paper holder, or a front sheet guide to enhance the use of your printer. For additional information on these options, see Chapter 4.

- **Single-Bin Cut-Sheet Feeder**
  (C80637* **for the standard-width carriage, C80639* for the wide carriage)**
  This economical cut-sheet feeder automatically feeds up to 50 sheets of paper into your printer without reloading. You can also manually load single sheets without removing the cut-sheet feeder.

- **High-Capacity Cut-Sheet Feeder**
  (C80638* for the standard-width carriage, C80640* for the wide carriage)
  This cut-sheet feeder automatically feeds up to 150 sheets of paper or 25 plain bond envelopes without reloading. You can also create a double-bin cut-sheet feeder by connecting this cut-sheet feeder to the single-bin model.

- **Additional Tractor Unit**
  (C80020* for the standard-width carriage, C80021* for the wide carriage)
  This option improves continuous-paper handling. It is especially useful with continuous multi-part forms. You can also use it to load two types of continuous paper in the printer at the same time.

- **Roll Paper Holder**
  (#8310)
  Available only for the standard-width carriage, the optional roll paper holder makes it possible to use the many types of 8.5-inch wide roll paper sold for telexes and similar machines.

- **Interface Card**

  Optional interface cards are available to supplement the printer's built-in parallel interface. Guidelines for choosing the right interface and instructions on installing the cards are given in Chapter 4.

- **Front Sheet Guide**
  (C814001 for the standard-width carriage, C814011 for the wide carriage)
  This front sheet guide allows you to load single sheets from the front paper slot. (This option may not be available in some countries.)

- **Front Paper Guide**
  (C814021 for the standard-width carriage, C814031 for the wide carriage)
  This front paper guide allows you to load single sheets from the front paper slot. (This option is available in North and South American countries only.)

The last figure in option part numbers, represented by an asterisk (*), varies by country. Contact your local Epson dealer for the part number in your country.

Finding Your Way Around

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

- Chapter 1 contains information on unpacking, setting up, testing, and connecting the printer. Be sure to read this chapter first.

- Chapters 2 and 3 include important information on paper handling and day-to-day operation of your printer.

- Chapter 6 contains troubleshooting information. If the printer does not operate properly or the printed results are not what you expect, see Chapter 6 for a list of problems and solutions.

- Other chapters contain information on installing options, general maintenance, specifications, and printer commands. There is also a glossary of printer terms and an index.

Warnings, Cautions, and Notes

WARNINGS must be followed 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.

Printer Parts

paper guide   *edge guides*

paper-release lever

printer cover

front cover

control panel

paper-fension unit

ribbon cartridge

tractor

paper-thickness lever

shield plate

knob

parallel interface

A\C inlet
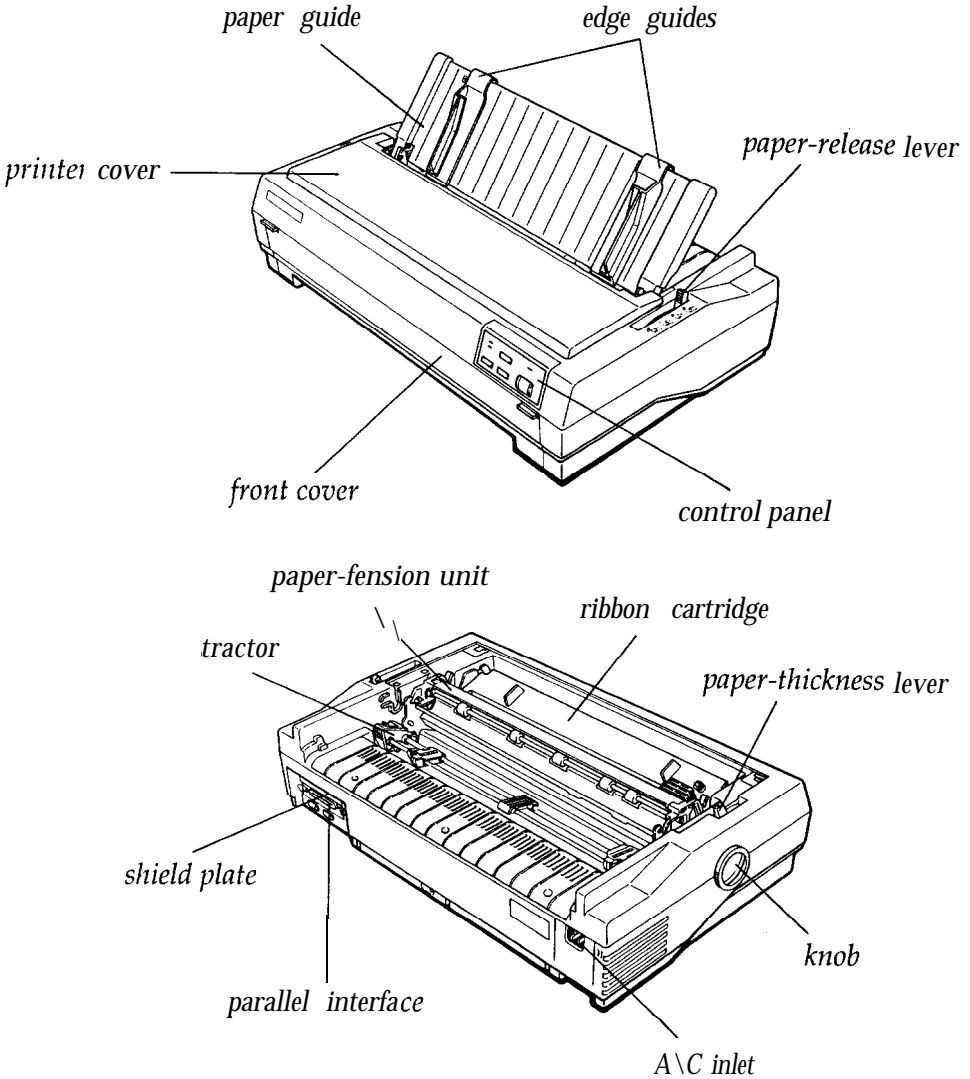
Note: In some countries, the power cord is attached.

Chapter 1
Setting Up the Printer

Unpacking the Printer

This chapter contains information on unpacking, setting up, testing, and connecting the printer. Read this chapter first.

Checking the parts

When you unpack the printer, make sure that you have all the parts shown below and that none is damaged.
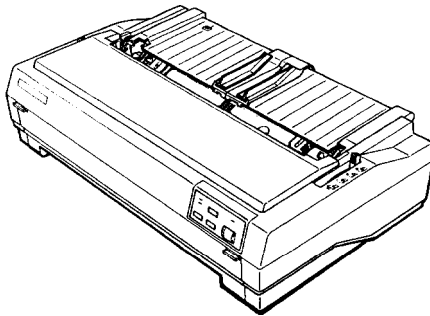
Printer
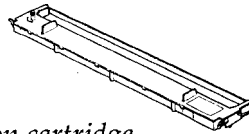
Power cord   *Ribbon cartridge*

Note: In some countries, the power cord is attached to the printer.

Store the packing materials in case you ever need to transport your printer.

> **!** **CAUTION:** It is not possible to change the voltage of the printer. If the label on the back of the printer does not show the correct voltage for your country, contact your dealer.

Removing the protective materials

To prevent damage during shipping, several pieces of protective material are packed with your printer. You must remove these before you put your printer together.

Follow the directions on the Notice Sheet inserted in your printer when removing the protective material.

> **Note:**
> - Make sure you remove all packing and protective materials from your printer before turning on the power.
>
> - Store all packing and protective materials in case you ever need to transport the printer.

Choosing a Place for the Printer

When selecting a place to set up your printer, keep the following in mind:

- Place the printer on a flat, stable surface.

- Place the printer close enough to the computer for the printer cable to reach.

- Leave adequate room around the printer for easy operation, maintenance, and proper ventilation.

> **CAUTION:** Avoid locations that are subject to direct sunlight, excessive heat, moisture, or dust.

- Use a grounded outlet; do not use an adapter plug.

- Place the printer where you can easily unplug the power cord.

- Avoid electrical outlets controlled by wall switches or automatic timers. Accidental disruption of power can erase information in the memory of your printer.

- Avoid outlets on the same circuit with large motors or other appliances that might cause fluctuations in line voltage.

- Keep the entire computer system away from potential causes of electromagnetic interference such as loudspeakers or the base units of cordless telephones.

Note: If you plan to use a printer stand, follow these guidelines:

- Use a stand that supports at least twice the weight of the printer.

  > 13.6 kg (30 Ibs) for the standard-width carriage
  > 18.4 kg (40 Ibs) for the wide carriage

- Never use a stand that tilts the printer at an angle of more than 15 degrees from horizontal. If you install a cut-sheet feeder, keep your printer absolutely level.

- Make sure you provide enough clearance below the stand and between its legs so that your continuous paper feeds smoothly.

- Position your printer's power cord and interface cable so that they do not interfere with paper feeding. If possible, secure the cables to the printer stand.

- Align the stack of paper so that the paper has a straight path into the printer.

Assembling the Printer

Installing the ribbon cartridge

1. Make sure the printer is not plugged into an electrical outlet.

2. Lift the printer cover by its back edge and then pull it straight up and off.
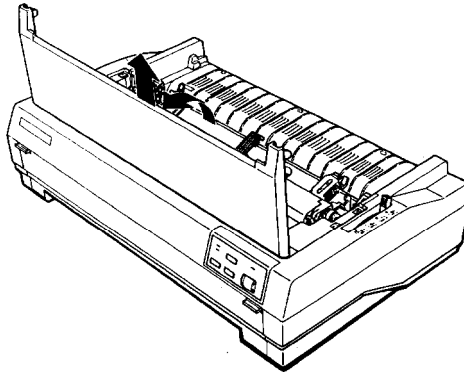
3. Grasp the tabs on each side of the paper-tension unit as shown below. Press up firmly with your thumbs to lift the front of the unit; then pull the paper-tension unit up and off the printer.
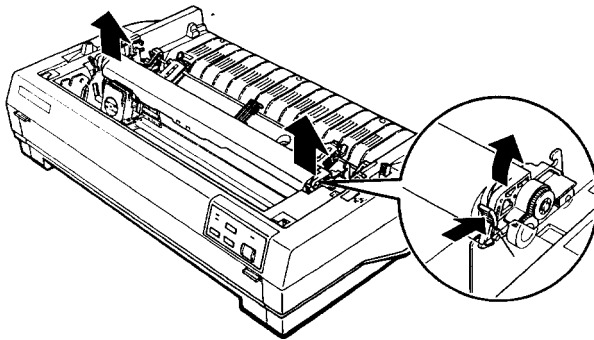
4. Slide the print head to the middle of the printer.

> **CAUTION:** Moving the print head while the printer is on might damage the printer. Also, if you just used the printer, the print head may be hot; let it cool for a few minutes before touching it.

5. Turn the ribbon-tightening knob in the direction of the arrow to remove any slack in the ribbon. Next, hold the ribbon cartridge by its handle (two handles for the wide carriage) and push it firmly down into position; then press on both ends of the cartridge to fit the plastic hooks into the slots.
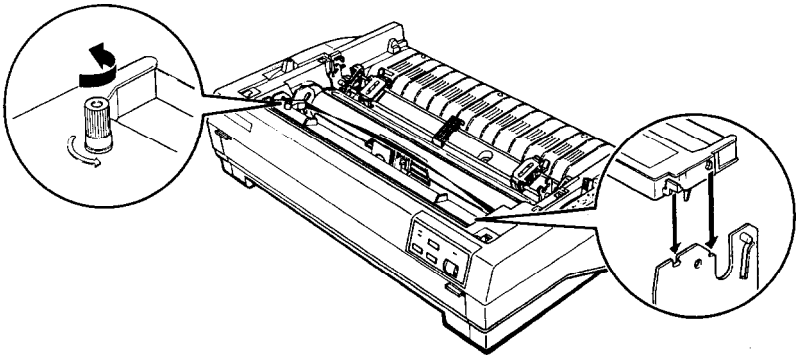
6. Use a pointed object, such as a ball point pen, to guide the ribbon between the print head and ribbon guide while you turn the ribbon-tightening knob to help feed the ribbon into place.
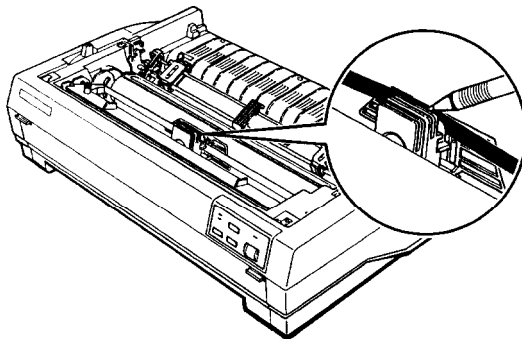
7. Slide the print head from side to side to make sure it moves smoothly. Also check that the ribbon is not twisted or creased.

8. Replace the paper-tension unit by placing it on the printer's mounting pegs and lowering it into place. Press down on both ends of the unit until you feel it click into place.
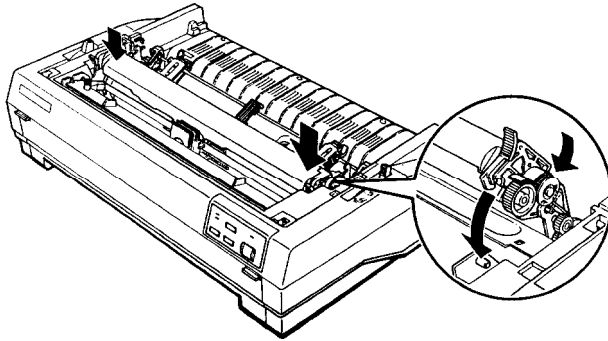
9. Replace the printer cover by first inserting the front tabs into the slots on the printer and then lowering it into place. Finally, push it down until it clicks.
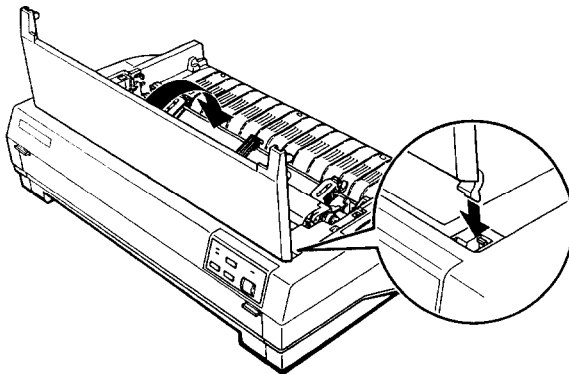
Attaching the paper guide

Your printer comes with a paper guide that allows you to load a single sheet from the top of the printer.

Place the notches on the paper guide straight down into the mounting slots on the printer. You can stand the paper guide in an upright position, or lift slightly and then lower it until it lies flat on the printer.
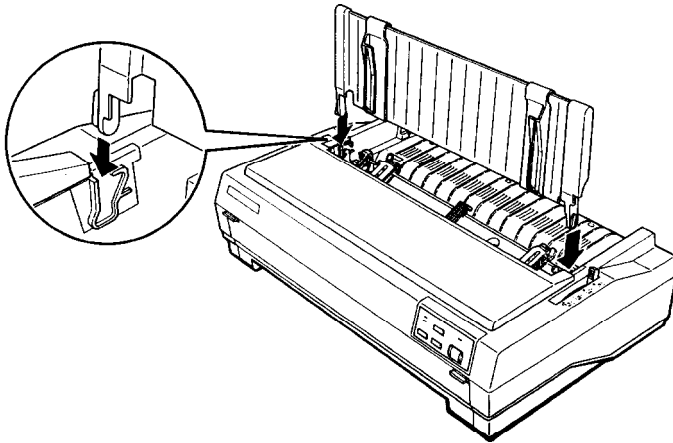
Testing the Printer

Before connecting your printer to a computer, use the built-in self test to see that the printer is working properly.

Plugging in the printer

1. Make sure the printer is turned off.

2. Check the label on the back of the printer to make sure the voltage required by the printer matches that of your electrical outlet.

> **CAUTION:** If the rated voltage and your outlet voltage do not match, contact your dealer for assistance. Do not plug in the power cord.

3. If the power cord is not attached to the printer, connect it to the AC inlet on the printer's rear panel.

4. Plug the power cord into a properly grounded electrical outlet.

Running the self test

You can run the self test with continuous paper or single sheets. Also, you can load paper for the test from the rear, front, top, or bottom. The following steps describe how to run the test using a single sheet of paper, loaded from the top. See Chapter 2 for full details on paper handling.

The printer prints the self test using the currently selected font.

1. Make sure that the printer is turned off. Move the paper-release lever to the single-sheet position.
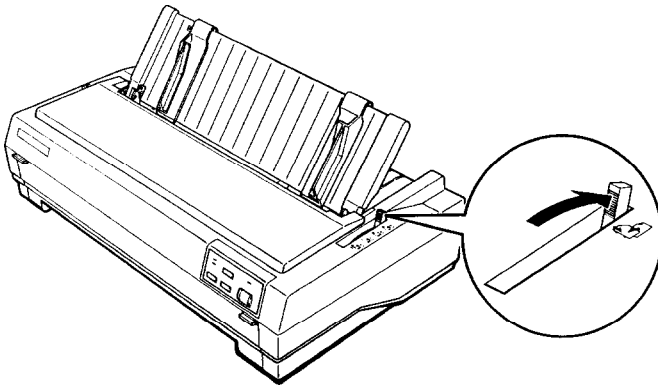
2. Hold down the **PAPER FEED** button while you turn on the printer. The printer beeps several times and the **READY** light blinks.

3. Move the left edge guide until it locks in place next to the arrow guide mark. Then adjust the right edge guide to match the width of your paper.
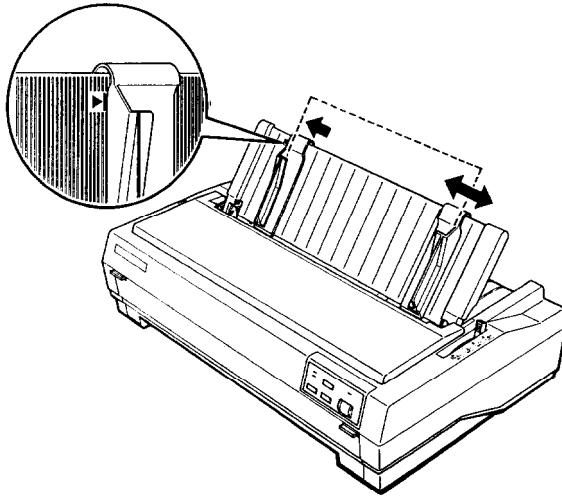
CAUTION: Use paper that is at least 210 mm (8.27 inches) wide for the standard-width carriage or 360 mm (14 inches) wide for the wide carriage; otherwise the print head prints directly onto the platen.

4. Insert a sheet of paper between the edge guides until it meets resistance. After about two seconds, the printer loads the paper automatically and starts the self test.
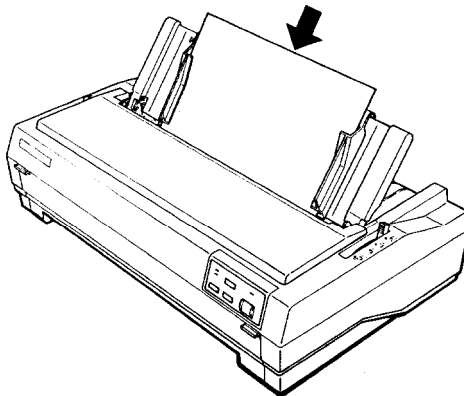
The printer prints the default settings, followed by font samples for each of the printer's available fonts.

5. The self test continues until the paper runs out or until you press the **PAUSE** button. When the printer beeps, you can load another sheet of paper to continue printing font samples. When you wish to stop the test temporarily, press the **PAUSE** button. To resume the test, press the **PAUSE** button again.

6. While holding down the **ALT** button, press the **EJECT** button to eject the paper. Then turn off the printer to end the self test.

Here is part of a typical self test.

```
- - -  CURRENT SETTING ---
Printer mode           EPSON ESC/P
Character spacing      10cpi
Skip-over-perforation  No skip
Shape of zero          0
Tear off               Valid
Auto line feed         Depends on I/F

        Turn on again to change settings above
        while [FONT] button is depressed.

Character table        U.S.A.
---------------------------------------------------
        Turn on again to change settings above
        while both [FONT] and [PAUSE] buttons are depressed.

Page length            11 inches

        Turn on again to change settings above
        while both [FONT] and [PAPERFEED] buttons are depressed.

Auto CR (IBM emulation)  Valid
Draft speed              High
Input buffer             Valid
---------------------------------------------------
        Turn on again to change settings above
        while both [PAUSE] and [PAPERFEED] buttons are depressed.
        Then press one of the buttons below within 10 seconds.
        [FONT]         Auto CR      : Valid(sounds twice)/Invalid(once)
        [PAPERFEED]    Draft speed  : High              /Normal
        [PAUSE]        Input buffer : Valid             /Invalid

 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghij
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijk
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijk]
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklm
```

Note: If the self test does not print properly, see Chapter 6.

Connecting the Printer to Your Computer

If the self test printed correctly, you are ready to connect your printer to the computer. Use a shielded twisted-pair parallel cable to connect your computer to your printer's built-in parallel interface.

Connect the parallel interface cable as described below:

1. Make sure both the printer and computer are turned off; then plug the cable connector securely into the printer. Squeeze the wire clips together until they lock in place on each side of the connector.
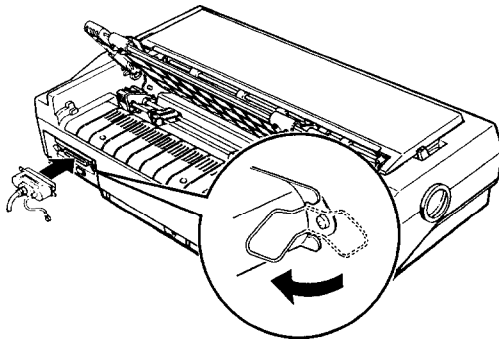
Note: If your cable has a ground wire, attach it to the ground connector beneath the interface connector.

2. Plug the other end of the cable into the computer. (If there is a ground wire at this end of the cable, attach it to the ground connector at the back of the computer.)

Configuring Your Software for the Printer

Most application programs allow you to specify the type of printer you use so that the program can take full advantage of the printer's features. Many of these programs provide an installation or setup section that presents a list of printers.

Choosing from a menu

To take full advantage of your printer's features, choose your printer when you set up your program. If your printer is not listed, choose from the following list (the printers are listed in the order of preference):

FX-870	FX-1170
FX-850	FX-1050
FX-800	FX-1000
EX-800	EX-1000
FX-85	FX-105
FX-80+	FX-lOO+
FX-80	FX-100

Epson printer
9-pin printer

If you plan to use the IBM printer emulation mode, choose IBM Proprinter (XL), IBM Graphics printer, or IBM printer, in that order of preference.

To use all the features of your printer, it is best to choose a program that lists one of the FX printers on its menu. If your program does not list one of these printers, contact the software manufacturer to see if an update is available.

Chapter 2

Paper Handling

2

Selecting a Paper Feeding Method

Your printer provides four paper paths so you can print on almost any type of paper:

- Choose the top paper guide to print on single sheets.

- Install the tractor unit in the appropriate location to load continuous paper from the front, rear, or bottom.

You can mount the tractor unit in three different positions to suit your particular needs: use it as a front push tractor, rear push tractor, or pull tractor.

Once you select a feeding method, you simply set the paper-release lever, load your paper, and print. You can even print on single sheets without removing your continuous paper supply. Also see Chapter 4 for information on using an optional additional tractor unit.

Setting the paper-release lever

You set the paper-release lever to select the active paper path in your printer. The printer automatically loads paper from the position you choose.
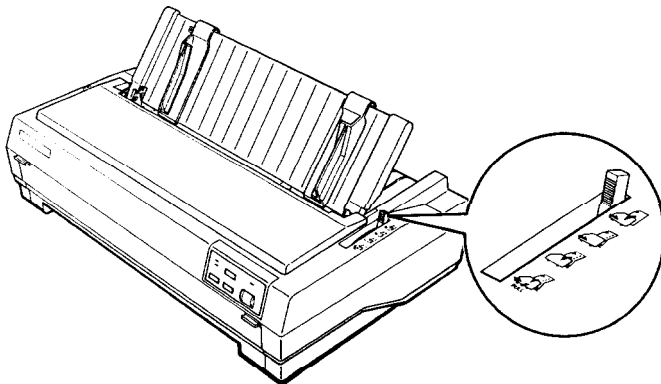
Single-sheet position
For all single sheets, whether loaded from the top or either of the optional cut-sheet feeders; also for loading single sheets from the front with the optional front sheet guide.

Front push-tractor position
For continuous paper with the tractor unit installed in the front.

Rear push-tractor position
For continuous paper with the tractor unit installed in the rear.

Pull-tractor position
For continuous paper with the tractor unit installed on the top. In this case, you can load paper from the front, rear, or bottom.

Using Single Sheets

Your printer accommodates single sheets up to a maximum width of 257 mm (10.1 inches) on the standard-width carriage and 420 mm (16.5 inches) on the wide carriage. You can load single sheets from the top of the printer. Also, you can load single sheets from the front with the optional front sheet guide. (This option may not be available in some countries.)

If the paper-tension unit has been removed, you need to replace it before you print on single sheets. See page 1-8 in Chapter 1.

Loading single sheets from the top

1. Place the paper-release lever in the single-sheet position. Make sure the paper guide is in the upright position.
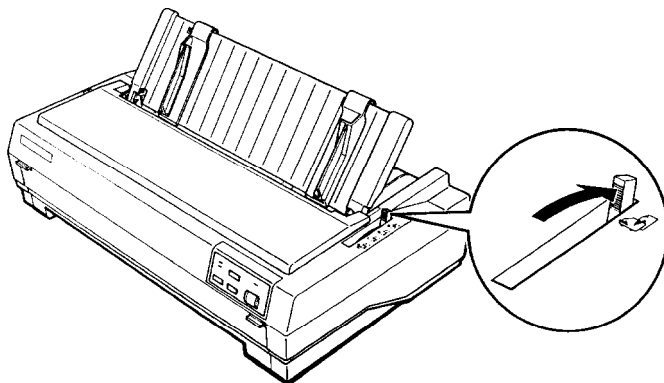
2. Turn on the printer. The **READY** light on the control panel comes on.

3. Move the left edge guide until it locks in place next to the arrow on the paper guide. Next adjust the right edge guide to match the width of your paper.
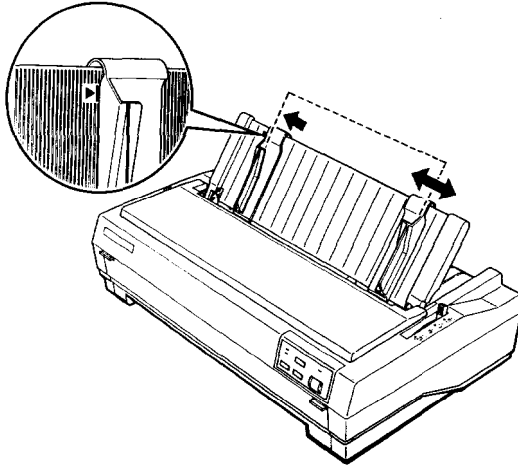
4. Slide a sheet of paper between the edge guides until it meets resistance. The printer loads the paper automatically and you are ready to print.
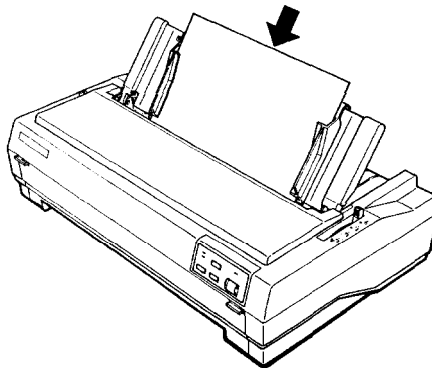
CAUTION: Always turn off the printer before you use the knob on its left side to clear paper jams. If the printer is on, you may damage it or lose the top-of-form position.

If the platen turns but the printer doesn't load the paper, completely remove the paper and reinsert it more firmly. To eject the paper, hold down the **ALT** button and press the **EJECT** button.

Using Continuous Paper
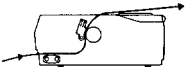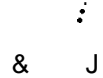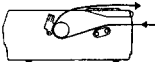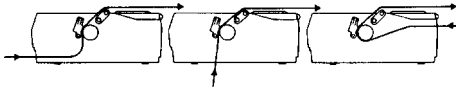
You can load continuous paper through the front, rear, or bottom paper slots, depending upon the position of the tractor unit and the placement of your paper supply.

Your printer can handle continuous paper up to 254 mm (10.0 inches) wide on the standard-width carriage and up to 406 mm (16.0 inches) wide on the wide carriage.

To print on continuous paper, you can install the tractor unit in one of the following positions: front, rear, or pull. Be sure you set the paper-release lever correctly before you print. See Setting the paper-release lever at the beginning of this chapter for a description of each position.

Tractor position and available paper paths

Below are the possible ways of feeding continuous paper. Always set the paper-release lever to the position indicated for the paper-feed method you want to use.

Tractor position	Paper-release lever position	Paper paths
Front push-tractor		
Rear push-tractor		
Pull-tractor	\nPULL	

> **Note:** Make sure you align your paper supply so paper can feed
> smoothly into the printer. If you want to feed paper through the
> bottom paper slot, use a printer stand that has a large enough
> opening for the paper to feed without obstruction.

Changing tractor positions

Before installing the tractor in a different position, remove it from its
current position by pressing the blue lock tabs while you lift it out.

Installing in the front push-tractor position

1. Make sure the printer is turned off.

2. Open the front cover. If the optional front sheet guide is
   installed, remove it by grasping the fins on both sides and
   pulling it straight out of the printer.

3. Push the tractor into the printer's mounting slot as shown below.
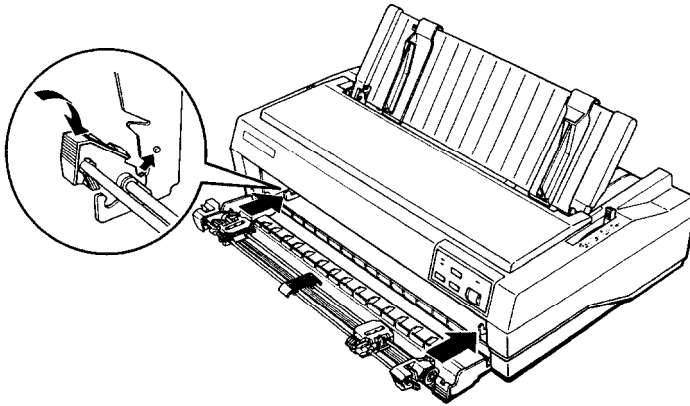
See page 2-10 for instructions on loading continuous paper with the
front push tractor.

To remove the tractor unit, press the tractor's lock tabs, tilt the unit
up, and lift it out of the printer.

Installing in the rear push-tractor position

1. Make sure the printer is turned off.

2. Lift the paper guide up and off the printer.

3. While pressing in the tractor's lock tabs, lower the tractor straight down into the printer's mounting slots. Press on both ends to make sure the tractor is firmly seated.
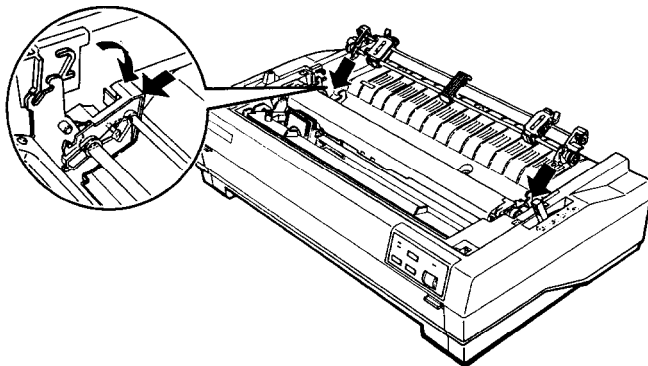
See page 2-13 for instructions on loading paper with the rear push tractor.

To remove the tractor unit, press the tractor's lock tabs, tilt the unit, and lift it off the printer.

Installing the pull tractor

You can also use the tractor unit as a pull tractor. To do this, remove the paper-tension unit and install the tractor unit in its place. Follow the steps below to install the pull tractor.

1. Make sure the power is turned off.

2. Lift the printer cover up and off the printer.

3. Using the tabs on the paper-tension unit, grasp both ends of the unit and lift it up and off the printer. Store the paper-tension unit in safe place.

4. An arrow on each side of the mounting slots shows you where to install the tractor. Lower it straight down into the slots as shown. Then push it back in the direction of the arrow in the illustration.
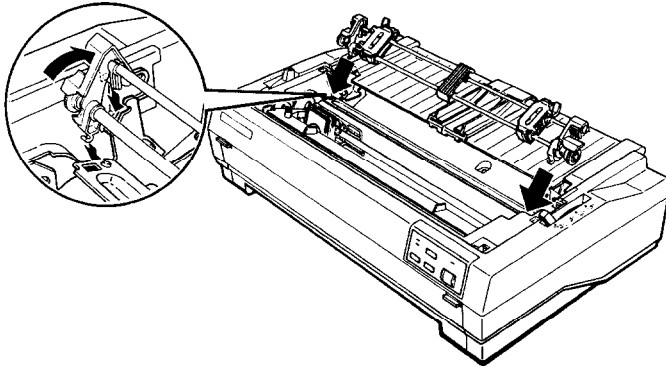
See page 2-16 for instructions on loading paper with the pull tractor.

To remove the tractor unit, press the tractor's lock tabs, tilt the unit toward you, and lift it off the printer. Then replace the paper-tension unit.

Loading paper with the front push tractor

1. Make sure the printer is turned off, and remove the front cover.
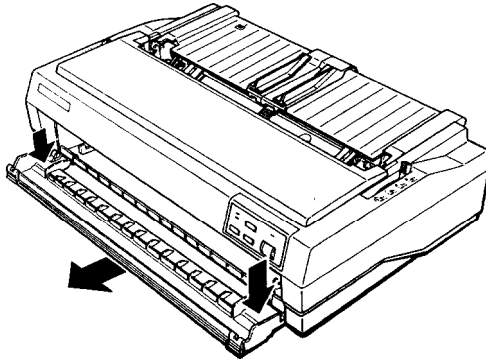
2. Make sure the tractor is in the front push-tractor position and the paper-release lever is in the front push-tractor position.
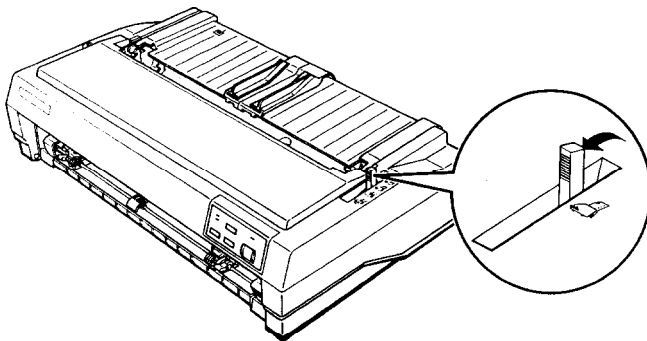
3. Release the sprocket units by pushing the sprocket locks backward.
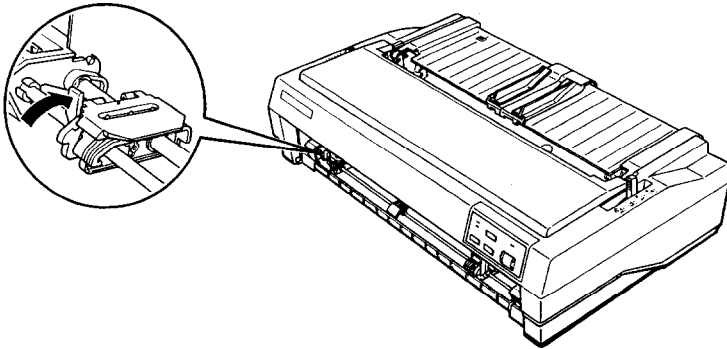
4. Slide the left sprocket unit approximately 12 mm (0.5 inch) from the far left position and pull the lever forward to lock it in place. Now slide the right sprocket unit to match the width of your paper, but do not lock it. Move the paper support so it is midway between the sprocket units.

12 mm (0.5 inch)
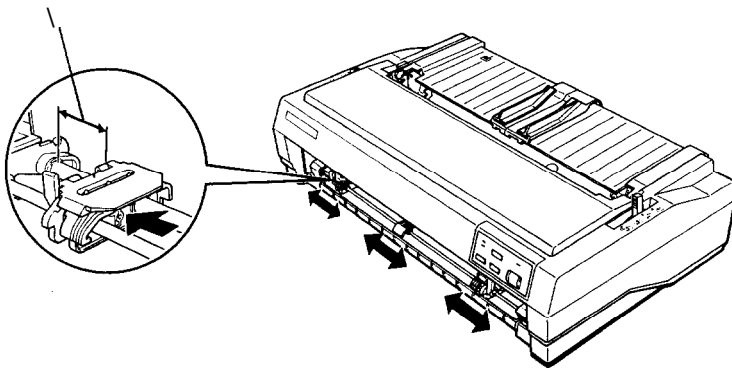
5. Make sure your paper has a clean, straight edge. Open both sprocket covers and fit the first four holes of the paper over the sprocket pins.
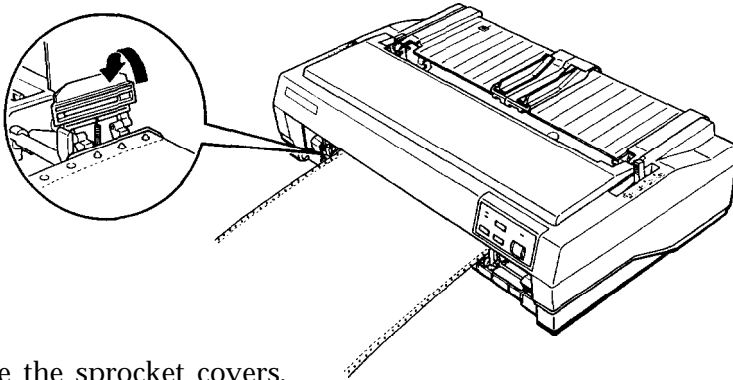
6. Close the sprocket covers.

7. Adjust the right sprocket to remove any slack in the paper. Lock the sprocket unit in place by pulling the sprocket lock forward.

8. Attach the front cover.

9. Turn on the printer. When the printer receives data, it automatically loads the paper before printing.

Removing paper from the front push tractor

1. To remove continuous paper, press the **TEAR OFF** button to feed the paper's perforation to the tear-off edge of the printer cover.

Note: If the page perforation does not meet the tear-off edge, you can adjust the tear-off position using the micro-feed feature. See Chapter 3.

2. Tear off the paper.

3. While holding down the **ALT** button, press the **EJECT** button to feed the continuous paper backward out of the printer and into the paper-park position.

Loading paper with the rear push tractor

1. Make sure the printer is turned off and the paper guide is removed.

2. Make sure the tractor is in the rear push-tractor position and the paper-release lever is also in the rear push-tractor position.
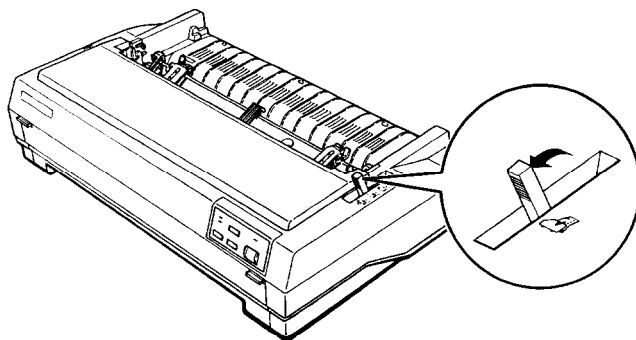
3. Release the sprocket units by pulling the sprocket locks forward.
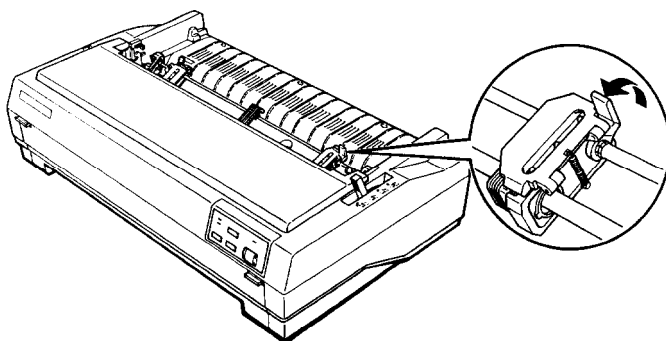
4. Slide the left sprocket approximately 12 mm (0.5 inch) from the far left position (Use the alignment marks on the printer case.) Push the lever back to lock it in place. Then slide the right sprocket unit to match the width of your printer, but do not lock it. Move the paper support so it is midway between the sprocket units.

12 mm (0.5 inch)
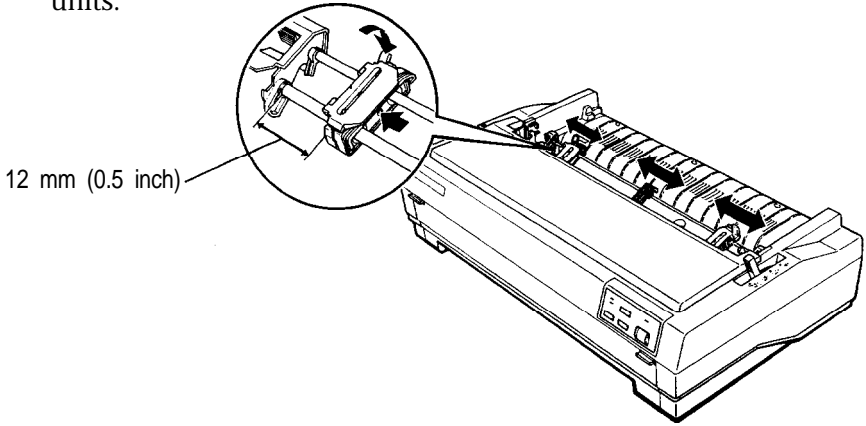
5. Make sure your paper has a clean, straight loading edge. Open the sprocket covers and fit the first four holes of the paper over the sprocket pins.
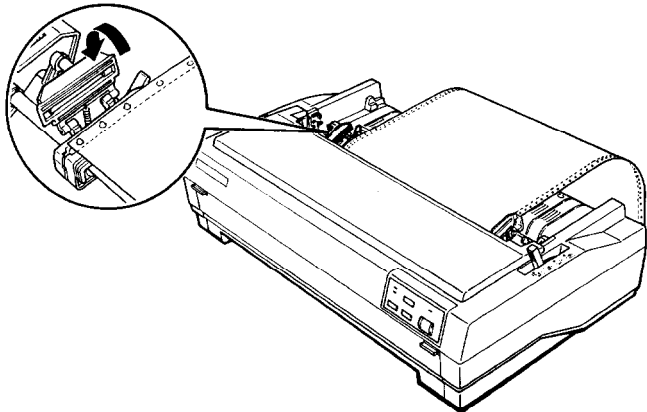
6. Close the sprocket covers.

7. Adjust the right sprocket to remove any slack in the paper; then lock it in place.

8. Attach the paper guide in its flat position over the printer. Slide the edge guides to the center.

9. Turn on the printer. When the printer receives data, it loads the paper automatically before printing.

Note: You can also advance the paper to the loading position by pressing the **PAPER FEED** button.

CAUTION: Always turn off the printer before you use the knob on its left side to clear paper jams. If the printer is on, you may damage it or lose the top-of-form position.

Removing paper from the rear push tractor

1. To remove continuous paper, press the **TEAR OFF** button to feed the paper's perforation to the tear-off edge of the printer cover.

Note: If the page perforation does not meet the tear-off edge, you can adjust the tear-off position using the micro-feed feature. See Chapter 3.

2. Tear off the paper.

3. While holding down the **ALT** button, press the **EJECT** button to feed the continuous paper backward out of the printer and into the paper-park position.

CAUTION: Make sure you tear off your printed document before holding down the **ALT** button and pressing the EJECT button. Reverse feeding several pages at a time may cause a paper jam.

Loading paper with the pull tractor

1. Make sure the printer is turned off. Remove the printer cover and paper guide.

2. Make sure the paper-release lever is set to the pull-tractor position.
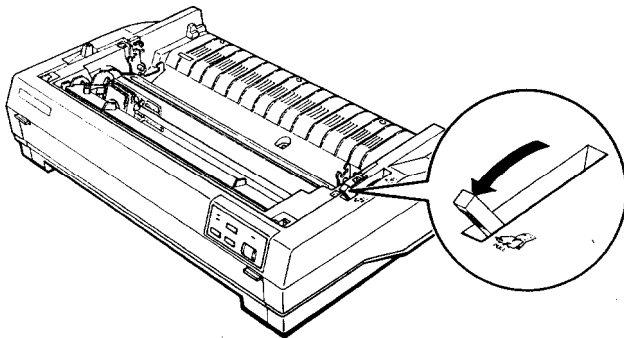
3. Make sure your paper has a clean, straight edge. Insert the paper into the desired paper slot until it emerges between the platen and the ribbon guide.

4. Attach the paper guide in the flat position. Then slide the edge guides to the center of the paper's width.

5. Install the pull tractor in the pull-tractor position.

6. Release the sprocket units by pulling the sprocket locks forward.
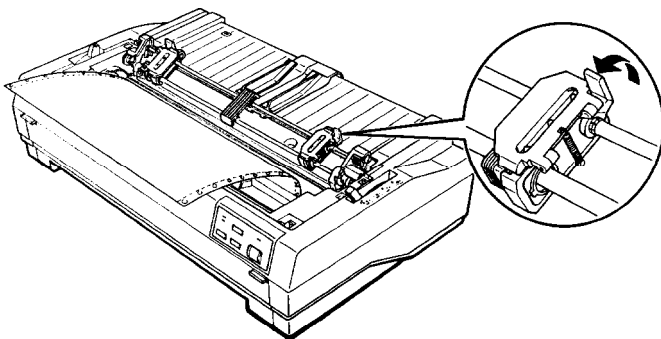
7. Slide the left sprocket unit approximately 12 mm (0.5 inch) from the far left position. Push the sprocket lock back to lock it in place. Then slide the right sprocket unit to match the width of your paper, but do not lock it. Move the paper support so it is midway between the sprocket units.

12 mm (0.5 inch)
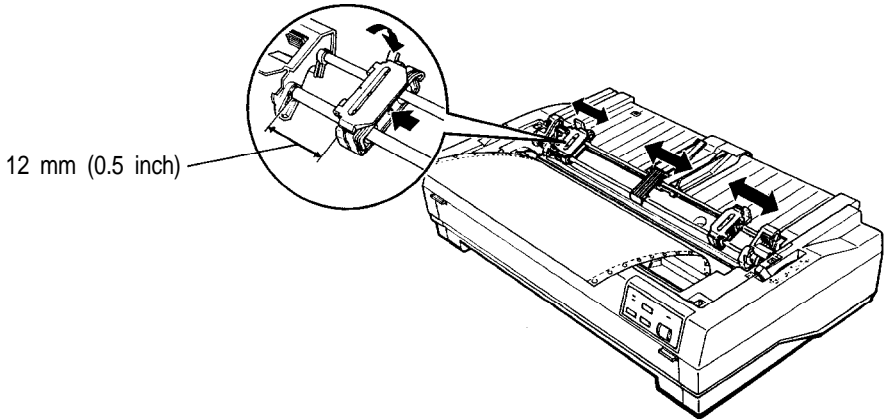
8. Pull the paper up until the perforation between the first and second pages is even with the top of the printer's ribbon.
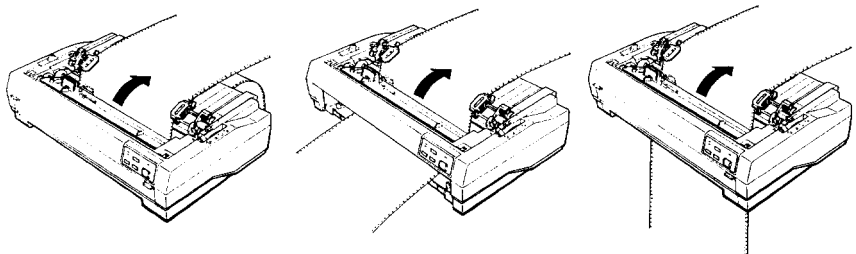
9. Open the sprocket covers and fit the first four holes of the paper over the sprocket pins.
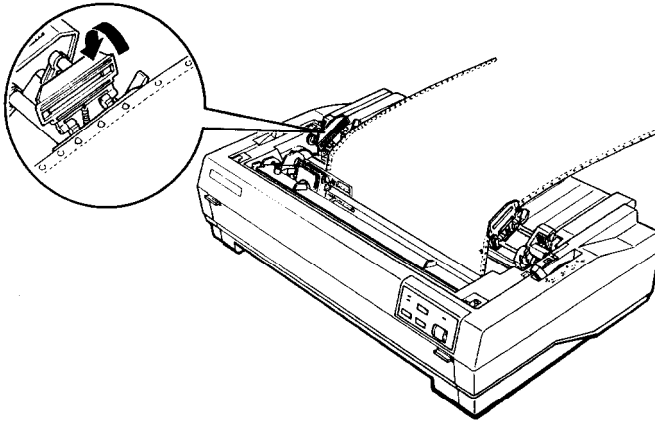
10. Close the sprocket covers.

11. Adjust the right sprocket unit to remove any slack in the paper. Lock it in place by pushing the sprocket lock backward.

12. Turn on the printer.

13. Make any adjustments to the loading position with the micro-feed feature, as described in Chapter 3.

14. Install the printer cover.

> **CAUTION:** Always turn off the printer before you use the knob on its left side to clear paper jams. If the printer is on, you may damage it or lose the top-of-form position.

Adjusting the top-of-form position

The printer feeds the paper to the top-of-form position when it loads the paper or performs a form feed. This position determines where the printing begins on the page.

You may need to adjust the top-of-form position when printing on ready-made forms. To do this, see Adjusting the loading position on page 3-15.

> **Note:** When you are using the pull tractor, do not use the **TEAR OFF** or **ALT+ EJECT** buttons.

Removing paper from the pull tractor

1. Tear off the paper entering the printer at the perforation.
2. Hold down the **PAPER FEED** button to feed the continuous paper forward and eject it.

Switching Between Continuous and Single Sheets

Even with continuous paper loaded in the printer, you can easily switch to single-sheet printing without removing the continuous paper from the tractor. You can use this feature whenever the tractor unit is installed in the front or the rear, or when using both the front and rear (with the optional tractor).

Switching to single sheets

To switch from continuous paper to single sheets, follow the steps below.

1. If a printed document is still in the printer, press the **TEAR OFF** button to feed the paper forward to the tear-off position. Tear off the document and press the **TEAR OFF** button again to feed the continuous paper backward to the loading position.

> CAUTION: Make sure you tear off your printed document before holding down the **ALT** button and pressing the EJECT button. Reverse feeding several pages at a time may cause a paper jam.

2. While holding down the **ALT** button, press the **EJECT** button to feed the continuous paper out of the printer and into the paper-park position. The paper is still attached to the tractor but no longer in the paper path.

> CAUTION: Never feed labels backward through the printer. Labels can easily come off the backing sheet and cause a jam.

3. Push the paper-release lever back to the single-sheet position.
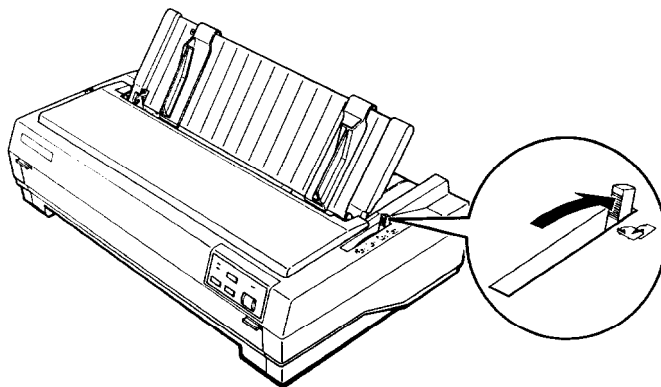
4. You can now load single sheets from the top as described in Using Single Sheets earlier in this chapter.

Switching to continuous paper

You can easily switch back to printing on continuous paper.

1. If a single sheet is still in the printer, hold down the **ALT** button and press the **EJECT** button to eject it.

2. Lift up slightly on the paper guide and then lower it until it lies flat on top of the printer. Slide the left and right edge guides together so that they meet at the middle.

3. Set the paper-release lever to either the front or rear push-tractor position, depending on which tractor position you are using.
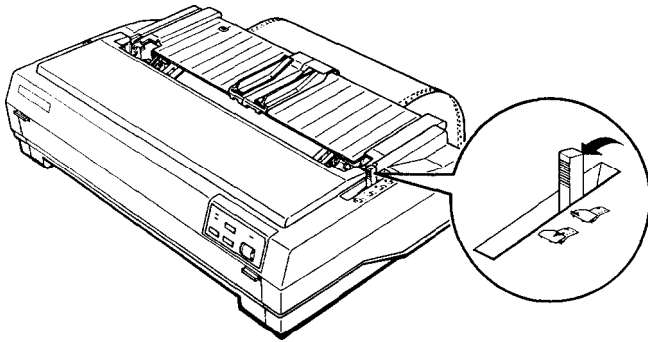
Your printer loads the continuous paper automatically.

Printing on Special Paper

In addition to printing on single sheets and continuous paper, your printer can also print on a wide variety of paper types, such as envelopes, labels, and multi-part forms. Before printing on special types of paper, you may need to change the paper-thickness setting.

> **!** **CAUTION:** When printing on labels or multi-part forms, make sure that your printing stays within the printable area of the page to prevent damage to the print head. For more information on the printable area, see Chapter 7. Always return the paper-thickness lever to position 0 when you return to printing on ordinary paper.

Setting the paper-thickness lever

To accommodate various thicknesses of paper, the printer is equipped with a paper-thickness lever you can set to seven positions. These positions are identified by the scale next to the lever.
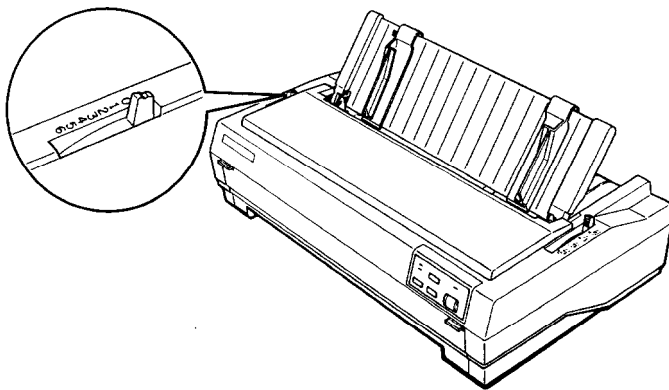
Use the following table to set the paper-thickness lever to match the thickness of your paper:

Paper type*	Lever position
Ordinary (Single sheets or continuous)	0
Thin paper	-1
Carbonless multi-part forms	
2 sheets (original + 1 copy)	1
3 sheets (original + 2 copy)	2
4 sheets (original + 3 copy)	3
Labels	2
Envelope	2 to 5

* See Chapter 7 for complete paper specifications.

Note: Print speed is reduced for paper-thickness lever settings of 2 and above.

Multi-part forms

You can use carbonless multi-part forms of up to four parts (including the original). Make sure you set the paper-thickness lever to the proper position based on the number of parts in your form.

Except for the paper-thickness setting, you load multi-part forms the same way as ordinary paper. For details, see the sections on loading continuous paper earlier in this chapter. Pay special attention to setting the top-of-form position.

CAUTION: Be sure the multi-part forms do not exceed 0.32 mm (0.0128 inches) in thickness.

Labels

When printing labels, use the type mounted on a continuous backing sheet with sprocket holes for use with a tractor. Do not try to print labels as single sheets because labels on a shiny backing sheet may not feed properly.

You can load labels from the front (push tractor or pull tractor) or bottom (pull tractor) paper slot; however, for best results, use the tractor in the pull-tractor position. You load labels the same way you load continuous paper, except you must set the paper-thickness lever to 2 before printing labels.

See Loading paper with the pull tractor earlier in this chapter for details.

CAUTION:
- Never feed labels backward with the **ALT + EJECT** or **TEAR OFF** buttons. Labels can easily peel off the backing and cause a jam.

- Because labels are sensitive to extreme temperature and humidity, always use them under normal operating conditions.

- Do not leave labels loaded in the printer between jobs; they curl around the platen and may jam when you resume printing.

- To remove labels from the paper path after you finish printing, tear off the labels at a point before the paper slot. Then use the **PAPER FEED** button to advance the remaining labels out of the printer.

Envelopes

You can load envelopes individually using the single-sheet loading feature from the top paper guide. If you want to load several envelopes at the same time, you can install the optional high-capacity cut-sheet feeder. See Chapter 4 for a description of loading envelopes with the cut-sheet feeder.

Before loading an envelope, set the paper-thickness lever to position 2 to 5, depending on the thickness of the envelope. To load an envelope, follow the steps described in Loading single sheets from the top earlier in this chapter.
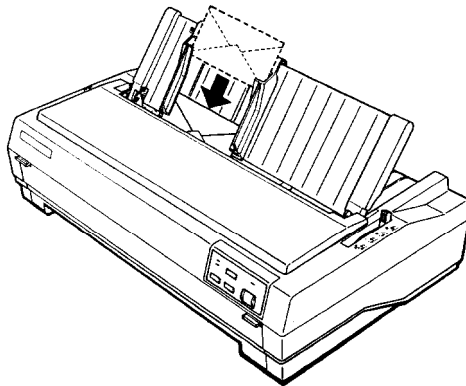
Note:

- Insert the envelope between the edge guides until it meets resistance.

- The print head must not print past the left or right edge of the envelope or other thick paper. Make sure your application program prints entirely within the printable area of the envelope you are using.

- Insert the top edge of the envelope into the printer.

- If you use No. 6 envelopes, make sure the left edge guide is aligned with the arrow on the paper guide.

Chapter 3

Using the Printer

3

Control Panel

The control panel has four buttons and three lights for simple
control of basic printer operations.
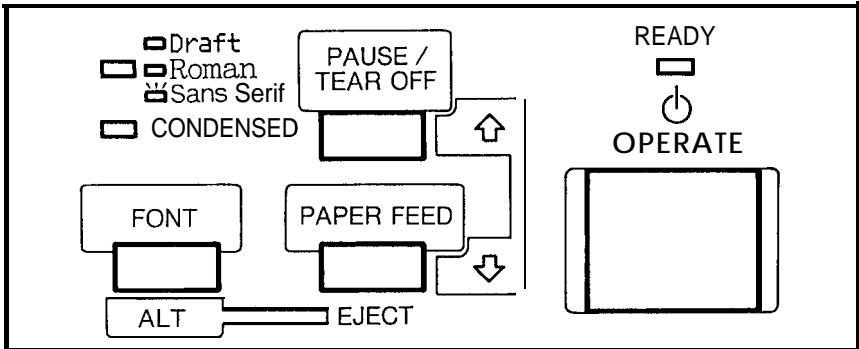
Lights

READY (green)
On when the **OPERATE** button is on and power is supplied. This light
blinks when the printer is paused, in tear-off mode, out of paper, or
the print head is overheated.

FONT (green)
Shows which font is selected. This light is off for draft, on for NLQ
Roman, and blinks for NLQ Sans Serif font.

CONDENSED (green)
On for condensed printing and off for normal printing.

Buttons

OPERATE

Turns the printer on or off. The printer is off when the button is out and on when the button is in.

PAUSE/TEAR OFF

Press this button to stop printing temporarily. Press it again to resume printing.

When you have finished printing on continuous paper, press this button once to advance paper to the tear-off position. Press it again to feed the paper backward to the loading position.

PAPER FEED

Press this button briefly to advance paper line by line. Hold it down to advance continuous paper to the next top-of-form (TOF) position.

When the printer is out of paper, press this button to load continuous paper from the paper-park position or a single sheet from the optional cut-sheet feeder.

FONT

Press this button to select a font (draft, Epson Roman, or Epson Sans Serif). This button also selects the normal or condensed mode for these fonts. See Character Fonts later in this chapter for details.

ALT

The **FONT** button also functions as the **ALT** button. Hold it down while pressing another button for the following functions:

*   Eject (Hold down **ALT** and press **PAPER FEED.**)

    If the paper-release lever is in the single-sheet position, paper is ejected. If the paper-release lever is in the front- or rear-tractor position, paper moves back to the paper-park position.

*   Entering the Micro-feed mode (Hold down **ALT** and press **PAUSE/TEAR OFF** when paper is already loaded in the printer.)

    Micro feed allows you to move the paper forward or backward in 2/216-inch increments to adjust the loading and tear-off positions. See Micro Feed later in this chapter for details.

*   Bin select (Hold down **ALT** and press **PAUSE/TEAR OFF** when the printer is out of paper.)

    When you use the optional double-bin cut-sheet feeder, you can select the bin before loading paper. For more information, see Cut-Sheet Feeders in Chapter 4.

Other control-panel features

Default-setting mode: See the next section for details.

Self test:	Hold down the **PAPER FEED** button while you turn on the printer to perform the self test. The self test lets you see that your printer is operating properly and provides a printout of the current default settings. See Testing the Printer in Chapter 1 for details.
Data dump:	Hold down the **PAUSE** button while you turn on the printer to enter the data dump mode. This mode allows advanced users to find the cause of communication problems between the printer and the computer. For instructions, see Data Dump Mode later in this chapter.

Default-Setting Mode

Default-setting listing

Your printer has internal settings that control such functions as emulation, character pitch, and page length. These settings are called default settings because they take effect each time you turn on the printer.

For most users, the factory settings are best, but you can change these settings if necessary.

This section lists the settings, describes them, and then tells how to change them. If you see something in the list that you need to change, notice which group (1, 2, 3, or 4) it is in and check the description for further information, then see the section on changing the settings for the group it is in.

Group 1 Features	Settings
Printer mode	EPSON ESC/P or IBM emulation
Character pitch	10cpi or 12cpi
Skip-over-perforation	No skip or skip 1 inch
Shape of Zero	Unslashed 0 or slashed 0
Tear off	Valid or invalid
Auto line feed	Depends on interface or valid
Group 2 Features	Settings
Character table	**ESC/P**: Italic U.S.A., Italic France, Italic Germany, Italic U.K., Italic Denmark, Italic Sweden, Italic Italy, Italic Spain, PC437, PC850, PC860, Pca63, Pca65, PC437 Greek*, PC851*, PC869*, PC852*, PC853*, PC857*, PC855*, PC866*, USSR GOST*, PC861*, BRASCII**, Abicomp** IBM: PC437 (table 1), PC437 (table 2), PC865 (table 1), PC865 (table 2)

* Available only in the European version.
** Available **only** in the North/South American version.

Group 3 Features	Settings
Page length	11, 12, 8.5, 70/6 (A4), 5.5, 7, 17, 14, 8, 6, 4, 3.5, and 3 inches

Group 4 Features	Settings
Input buffer	Valid or Invalid
Draft print speed	High or Normal
Auto carriage return	Valid or Invalid

Note:

- You can check the character tables available by printing the quick reference in the Group 2 default-setting mode.

- Most application programs control the printer features listed here. If you can use **your** application program to control the printer, you may never need to use the default-setting mode. In fact, you may find that your program settings override your printer default settings. See your software documentation for more information.

Default setting descriptions

Printer mode

When you select ESC/P, the printer operates in the Epson ESC/P mode. When you select IBM, the printer emulates an IBM printer.

Character pitch

You can set the character pitch to 10 cpi or 12 cpi.

Skip-over-perforation

When you turn on this feature, the printer provides a l-inch margin between the last line printed on one page and the first line printed on the next page. Because most application programs set their own top and bottom margins, you should use this feature only if your program does not provide them.

Shape of Zero

The zero character has a slash (0) when the setting is on, or no slash (0) when the setting is off. This allows you to easily distinguish between an uppercase "0" character and a zero.

Tear off

When you use continuous pap& with the front or rear push tractor, you can use the tear-off feature.

When the auto tear off is valid, the printer automatically performs the tear-off feature. The printer automatically feeds the paper perforation to the tear-off position at the edge of the printer cover after you complete a print job. You can then easily tear off the printed page. When the printer again receives data, it automatically feeds the paper backward to the top-of-form position and starts printing.

When the auto tear off is invalid, you must perform the tear-off function manually by pressing the **TEAR OFF** button. See Tear Off later in this chapter for details.

Auto line **feed**

When this feature is valid, each carriage return (CR) code is always accompanied by a line feed (LF) code. If your text lines overprint each other, set auto line feed to valid. If your text lines are mistakenly double spaced, set auto line feed to Depends on interface.

Character table

Character tables contain the characters and symbols used in different languages. Your printer includes a wide variety of character tables. You can check the character tables available with your printer by printing the quick reference in the Group 2 default-setting mode.

See the Appendix for specific characters in these character tables. You can also select character tables with software commands. See Chapter 8.

Page length

You can set the page length to 11, 12, 8.5, 70/6 (A4), 5.5, 7, 17, 14, 8, 6, 4, 3.5, or 3 inches.

Input buffer

The input buffer stores data sent from your computer. The input buffer can store up to 24 KB of data, so you can free your computer for other tasks in a shorter time while the printer prints. When the buffer is off, the buffer can store no data, so the computer must wait for the printer to print each character before sending the next.

Draft print speed

When you select high-speed draft, the printer can print up to 380 cps (characters per second) at 10 cpi in draft mode. If you select normal speed draft, you can print up to 285 cps at 10 cpi in draft mode.

Auto carriage return

When the auto carriage return is valid, each line feed (LF) code or ESC J (n/216-inch line feed) code is always accompanied by a carriage return (CR) code. The printer always moves the next print position to the left margin when it receives the LF or ESC J code. When this feature is invalid, you must send the CR code after the line feed code to move the print position to the left margin. This feature is available in IBM emulation mode only.

Changing Group 1 default settings

1. Make sure the printer is turned off.

2. Turn on the printer while you hold down the **FONT** button. This enters the Group 1 default setting mode. The printer beeps once.

3. Load single-sheet or continuous paper. The printer then automatically loads the paper and prints a quick reference.

Group 1 default settings

FONT light	COND. light	Feature	Settings	READY light
OFF	ON	Printer mode	Epson ESC/P	OFF
			IBM emulation	ON
OFF	BLINK	Character pitch	10 cpi	OFF
			12 cpi	ON
ON	BLINK	Skip-over-perforation	No skip	OFF
			Skip 1 inch	ON
BLINK	OFF	Shape of Zero	0	OFF
			0 (with slash)	ON
BLINK	ON	Tear off	Valid	OFF
			Invalid	ON
BLINK	BLINK	Auto line feed	Depends on interface	OFF
			Valid	ON

4. The **FONT** and **CONDENSED** lights show which feature you have selected to change by turning on, off, or blinking. Press the **FONT** button as many times as necessary until the **FONT** and **CONDENSED** lights match your selection.

   For example, if you want to change the character spacing, press the **FONT** button until the **FONT** light is off and the **CONDENSED** light is blinking.

5. Next, press the **PAUSE** button to change the setting. The **READY** light shows your selection.

   For example, if you want to change to 12 cpi, press the **PAUSE** button once to **turn** the **READY** light on.

6. If necessary, repeat this process for any other Group 1 features you want to change.

7. Exit the Group 1 default-setting mode at any time by turning off the printer. Any changes you have made remain in effect until you change them again.

Note: If you want to check the new default settings, enter the default-setting mode again and print the quick reference. After that, turn off the printer to exit the default-setting mode.

Changing Group 2 default settings

1. Make sure the printer is turned off.

2. Turn on the printer while you hold down the **FONT** and **PAUSE** buttons. This enters the Group 2 default-setting mode. The printer beeps once.

3. Load single-sheet or continuous paper. The printer then automatically loads the paper and prints a quick reference according to the emulation setting in Group 1.

ESC/P mode character table

FONT light	COND. light	READY light	ESC/P mode Character tables
OFF	OFF	ON	Italic U.S.A.
OFF	OFF	BLINK	Italic France
OFF	ON	OFF	Italic Germany
OFF	ON	ON	Italic U.K.
OFF	ON	BLINK	Italic Denmark
OFF	BLINK	OFF	Italic Sweden
OFF	BLINK	ON	Italic Italy
OFF	BLINK	BLINK	Italic Spain
ON	OFF	OFF	PC437 (USA, standard Europe)
ON	OFF	ON	PC850 (Multilingual)
ON	OFF	BLINK	PC860 (Portuguese)
ON	ON	OFF	PC863 (Canadian-French)
ON	ON	ON	PC865 (Norwegian)
ON	ON	BLINK	PC437 Greek* or BRASCII (Brazilian Portuguese)**
ON	BLINK	OFF	PC851 (Greek)* or Abicomp (Brazilian Portuguese)**
ON	BLINK	ON	PC869 (Greek)*
ON	BLINK	BLINK	PC852 (East Europe)*
BLINK	OFF	OFF	PC853 (Turkish)*
BLINK	OFF	ON	PC857 (Turkish)*
BLINK	OFF	BLINK	PC855 (Cyrillic)*
BLINK	ON	OFF	PC866 (Russian)*
BLINK	ON	ON	USSR GOST*
BLINK	ON	BLINK	PC861 (Icelandic)*

* Available only in the European version.
** Available only in the North/South American version.

IBM mode character table

FONT light	COND. light	READY light	IBM mode Character tables
OFF	OFF	ON	PC437 (table 1)
OFF	OFF	BLINK	PC437 (table 2)
OFF	ON	OFF	PC865 (table 1)
OFF	ON	ON	PC865 (table 2)

4. Press the Font button to select the character table. The **FONT, CONDENSED** and **READY** lights turn on, off, or blink to show your selection.

    For example, if you select PC437 (USA, standard Europe), the **FONT** light is on, the **CONDENSED** light is off, and the **READY** light is off.

5. After you have made your selection, exit the Group 2 default-setting mode by turning off the printer.

> **Note:** If you want to check the new default settings, enter the default-setting mode again and print the quick reference. After that, turn off the printer to exit the default-setting mode.

Changing Group 3 default settings

1. Make sure the printer is turned off.

2. To enter the Group 3 default-setting mode, turn on the printer while you hold down the **FONT** and **PAPER FEED** buttons. The printer beeps once.

3. Load single-sheet or continuous paper. The printer then automatically loads the paper and prints a quick reference.

Group 3 default settings

Feature	FONT light	COND. light	READY light	Settings
Page length	OFF	OFF	ON	11 inches (default setting)
			BLINK	12 inches
		ON	OFF	8.5 inches
			ON	70/6 inches
			BLINK	5.5 inches
		BLINK	OFF	7 inches
			ON	17 inches
			BLINK	14 inches
	ON	OFF	OFF	8 inches
			ON	6 inches
			BLINK	4 inches
		ON	OFF	3.5 inches
			ON	3 inches

4. Press the **FONT** button to select the page length. The **FONT, CONDENSED,** and **READY** lights turn on, off, or blink to show your selection.

   For example, if you select 8 inches, the **FONT** light is on and the **CONDENSED** and **READY** lights are off.

5. After you have made your selection, exit the Group 3 default-setting mode by turning off the printer.

Note: If you want to check the new default settings, enter the default-setting mode again and print the quick reference. After that, turn off the printer to exit the default-setting mode.

Changing Group 4 default settings

Group 4 default settings differ from 1 to 3. You determine the setting
by the number of beeps you hear instead of checking the panel
lights. Also, the printer does not print a list of Group 4 default
settings. To change Group 4 default settings follow the steps below.

1. Make sure the printer is turned off.

2. Hold down the **PAUSE** and **PAPER FEED** buttons while you turn
    on the printer. You then enter the Group 4 default-setting mode.

3. Press the **FONT, PAUSE,** or **PAPER FEED** button if you want to
    change the current setting. The printer beeps once or twice to
    indicate your setting.

Button	Feature	Settings	Beeps
PAUSE	Input buffer	Valid	Twice
		Invalid	Once
PAPER FEED	Draft print speed	High	Twice
		Normal	Once
FONT	Auto carriage return	Valid	Twice
		Invalid	Once

For example if you press the **PAUSE** button, the input buffer
becomes invalid and the printer beeps once.

Note:
- If you don't press any button within a few seconds after
  entering this mode, the printer beeps five times and
  automatically exits the Group 4 default-setting mode, leaving
  the settings unchanged.
- Once you change a feature's setting, you cannot change it
  again without first exiting and re-entering the Group 4
  default- setting mode.

---

4. After you make your changes, wait until the **READY** light comes
    on. This shows that the printer has automatically exited the
    setting mode and you can begin printing.

Micro-Feed

The micro-feed feature allows you to move the paper forward or backward in 2/216-inch increments. You use this feature to adjust the loading and tear-off positions, as well as the print position during a print job.

When you make adjustments to the loading or tear-off positions for continuous paper, the printer remembers the new setting even if you turn off the printer. The printer automatically advances the paper to the new position when the power is turned on again.

When you adjust the loading position for single-sheet paper, the printer remembers the new position only until you turn off the power. The loading position returns to the factory setting when the power is turned on again.

Adjusting the print position

Follow the steps below to adjust the print position during a print job:

1. Press the **PAUSE** button to stop printing.

2. While holding down the **ALT** button, press the **PAUSE** button to enter the micro-feed mode. The **FONT** and **CONDENSED** lights blink alternately.

3. Press the **PAUSE/TEAR OFF** button to feed the paper forward or press the **PAPER FEED** button to feed the paper backward, as indicated by the arrows beside the buttons.
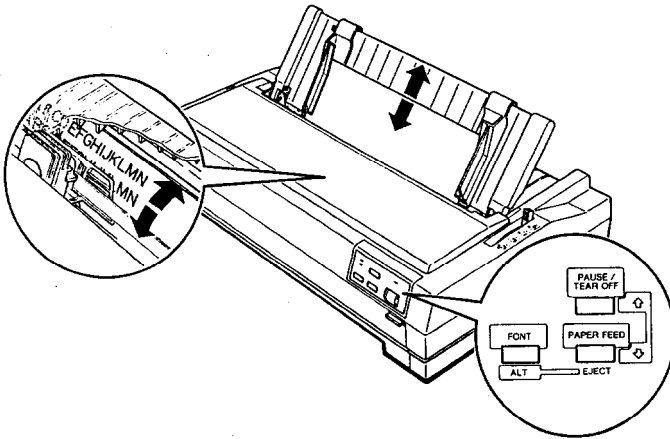
4. To leave the micro-feed mode, press the **ALT** button again. Then press the **PAUSE** button to continue printing.

Adjusting the loading position

The loading position is the position of the paper after it is automatically loaded by the printer. If your printing is too high or low on the page, you can change the loading position.

1. Make sure the printer is turned on.

2. Load either continuous or single-sheet paper. (Load continuous paper by pressing the **PAPER FEED** button.)

3. While holding down the **ALT** button, press the **PAUSE** button to enter the micro-feed mode. The **FONT** and **CONDENSED** lights blink alternately.

4. Press the **PAUSE/TEAR OFF** button to feed the paper forward or press the **PAPER FEED** button to feed the paper backward, as indicated by the arrows beside the buttons.

5. To leave the micro-feed mode, press the **ALT** button again or send data to the printer.

The printer remembers the new loading position and advances all subsequent pages to the new position.

Note:

- The printer has a minimum and maximum loading position. If you try to advance the loading position beyond these limits, the printer beeps and the paper stops moving.

- When the paper reaches the factory-set loading position, the printer beeps and paper feeding pauses briefly. Use the factory setting as a reference point when adjusting the loading position.

Tear Off

When you use continuous paper, the tear-off feature makes it easier to tear off the last printed sheet and saves the paper normally lost between documents. After you finish printing, this feature advances the paper to the tear-off edge of the printer so you can easily tear off the printed sheets. When you resume printing, the printer automatically feeds the paper back to the loading position.

You can use the tear-off feature in either of two ways:

* Turn on the tear-off mode in the default-setting mode.

. Press the **TEAR OFF** button on the control panel.

> CAUTION:
> * The tear-off feature can be used only when paper is mounted on the front or rear push-tractor.
>
> * Never use the tear-off feature with the pull tractor; the paper could come off the pull tractor and jam the printer.
>
> * Never use the tear-off feature with labels. When fed backward, labels may come off the backing and jam the printer.

Using the tear-off mode

When you select the tear-off mode in the default-setting mode, the printer automatically advances paper to the tear-off position whenever it receives a full page of data or a form feed command and then receives no more data.

First, select tear-off using the default-setting mode as described earlier in this chapter. Also make sure the page length for continuous paper is selected correctly in the default-setting mode. Be sure you turn the printer off to exit from the default-setting mode and turn it on again.

1. Print on continuous paper loaded on the front or rear push tractor (as described in Chapter 2). When you finish printing, the printer advances the final p&ted page's perforation to the tear-off position.

2. Tear off all printed pages.

> Note: If the perforation does not meet the tear-off edge, you can adjust the tear-off position using the micro-feed feature as described on page 3-15.

3. When you resume printing, the printer automatically feeds the paper back to the loading position and begins printing.

You can leave tear-off mode on even when you are using single sheets because tear-off mode is disabled when you move the paper-release lever to the single-sheet position.

When you are using the pull-tractor, you need to set the tear-off mode to invalid in the default setting mode.

Using the TEAR OFF button

You can use the **TEAR OFF** button to advance continuous paper to the tear-off position even if the tear-off mode is set to invalid in the default-setting mode. Just follow the steps below:

1. Make sure printing has finished.

2. Press the **TEAR OFF** button. The printer advances the paper's perforation to the tear-off edge and the **READY** light blinks.

3. Tear off all printed pages.

> Note: If the perforation does not meet the tear-off edge, you can adjust the tear-off position using the micro-feed feature as described in the next section.

4. When you resume printing, the printer automatically feeds the paper back to the loading position and begins printing. (You can also manually feed the paper back to the loading position by pressing the **TEAR OFF** button again.)

Adjusting the tear-off position

If the paper's perforation does not meet the tear-off edge, follow the steps below to adjust the tear-off position:

1. Make sure the paper is in the tear-off position and the **READY** light is blinking.

2. While holding down the **ALT** button, press the **PAUSE** button to enter the micro-feed feature. The **FONT** and **CONDENSED** lights blink alternately.

3. Press the **PAUSE/TEAR OFF** button to move the tear-off position down on the page, or press the **PAPER FEED** button to move the tear-off position up on the page. The printer remembers the new tear-off position even after you turn off the printer.

4. Tear off any printed pages.

5. When you begin printing, the printer automatically feeds the paper back to the loading position and begins printing.

Note:
- The printer has a minimum and maximum tear-off position. If you try to advance the loading position beyond the limits, the printer beeps and the paper stops moving.

- When the paper reaches the factory-set tear-off position, the printer beeps and paper feeding pauses briefly. Use the factory setting as a reference point when you adjust the tear-off position.

Character Fonts

Your printer has two draft fonts (normal and high-speed) and two Near Letter Quality (NLQ) fonts (Epson Roman and Epson Sans Serif). You can select these through application software and the control panel.

The draft fonts are ideal for preliminary work. Use the default-setting mode (explained earlier in this chapter) to choose between normal and high-speed draft.

Near Letter Quality takes a little longer to print but produces fully-formed characters suitable for most documentation requirements.

From the control panel you can select normal or condensed versions of all the fonts. Condensed characters are 60 percent as wide as normal characters.

Use the **FONT** button and the **FONT** and **CONDENSED** lights to select the font you want. Each time you press the **FONT** button, the selection changes and the **FONT** and **CONDENSED** lights come on (▬), go off (▭), or blink (`▬´) to indicate the current selection.

Font	FONT Light	CONDENSED Light
Draft	▭	▭
Draft Condensed	▭	▬
Roman	▬	▭
Roman Condensed	▬	▬
Sans Serif	`▬´	▭
Sans Serif Condensed	`▬´	▬

▬ on   ▭ off   `▬´ blinking

Note: The settings you select from the control panel remain in effect even after YOU turn off the printer.

Because some application programs control character fonts and because program commands often override panel settings, use your application program's print options instead of the control panel to select character fonts if possible. If the fonts you select with the panel are not the fonts that are printed, check your application program's user's manual for instructions on selecting character fonts.

Here are sample characters for each font.

Normal Draft

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
```

Normal Draft condensed

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{¦}
```

High-Speed Draft

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
```

Epson Roman

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
```

Epson Roman condensed

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{¦}
```

Epson San Serif

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
```

Epson San Serif condensed

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{¦}
```

Data Dump Mode

Data dump mode is a special feature that allows experienced users to find the cause of communication problems between the printer and application programs.

In data dump mode, the printer produces a printout of all the codes it receives. To use data dump mode, follow these steps:

1. Make sure the printer is turned off.

2. Hold down the **PAUSE** button while you turn on the printer.

3. Load the paper.

4. Next, run an application program or a program you have written in any programming language. Your printer prints all the codes it receives in hexadecimal format and text, as shown below.

```
Data Dump Mode
0000  1B 40 41 42 43 44 45 46 47 46 49 4A 48 4C 4D 4E    .@ABCDEFGHIJKLMN
0001  4F 50 51 52 53 54 55 56 67 56 59 5A 5B 5C 5D 5E    OPQRSTUVWXYZ[\]^
0002  5F 60 61 62 63 64 65 66 67 66 69 6A 6B 6C 6D 6E    _`abcdefghijklmn
0003  6F 70 71 72 73 74 75 76 77 76 79 7A 70 7C 7D 7E    opqrstuvwxyz{¦}~
```

5. To turn off data dump mode, press the **PAUSE** button to stop printing and then turn off the printer.

By reading the characters printed in the text field on the right side of the printout or the printout of hex codes, you can check which codes are being sent to the printer.

In the text field, characters appear as their true ASCII characters if they are printable. Nonprintable codes, such as control codes, are represented by dots.

Chapter 4
Using the Printer Options

4

Cut-Sheet Feeders

Two cut-sheet feeders are available for use with your printer:

Printer	Single-bin	High-capacity
Standard	C80637*	C80638*
Wide	C80639*	C80640*

*   Substitute for last digit, which varies by country.

The single-bin cut-sheet feeder holds up to 50 single sheets of paper. When this cut-sheet feeder is installed, you can still manually insert single sheets using the paper guide.

The high-capacity cut-sheet feeder holds up to 150 sheets of paper or up to 25 envelopes.

You can also connect both cut-sheet feeders and operate them as a double-bin cut-sheet feeder. See Assembling the double-bin cut-sheet feeder later in this chapter. This allows you to load two different types of paper automatically.

Follow the directions included with your cut-sheet feeder to assemble it; then install it as described in the next section.

Installing a cut-sheet feeder

Install your cut-sheet feeder (single-bin, high-capacity, or double-bin) by following the steps below.

1. Make sure the printer is turned off. Remove the paper guide and printer cover.

2. If the tractor unit is installed in the pull-tractor position, remove it and reinstall it in the front or rear-tractor position. Then install the paper-tension unit.

> Note: Keep the paper guide handy; if you install the single-bin unit, you need to reinstall the paper guide after you load paper. Also, you will need it if you ever remove the cut-sheet feeder.

3. Make sure the paper-release lever is in the single-sheet position.

4. Hold the cut-sheet feeder in both hands. Press down on the latch levers and fit the notches in the cut-sheet feeder over the mounting posts on the printer. Release the latch levers to lock the cut-sheet feeder in place.
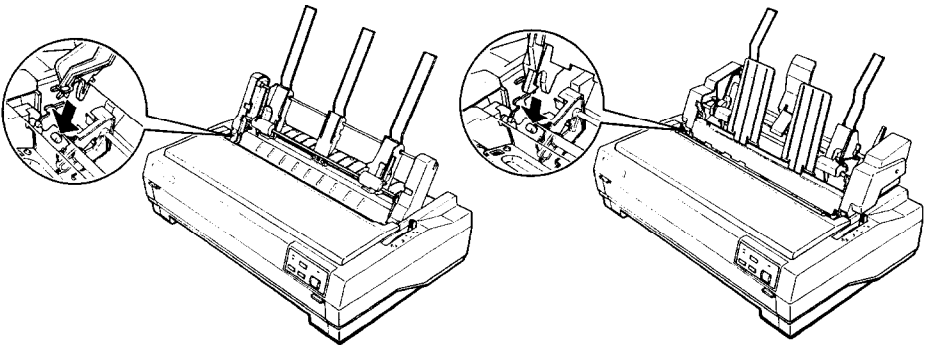
5. Replace the printer cover by first inserting the front tabs into the slots on the printer, then lowering it into place.

You are now ready to load paper with your cut-sheet feeder.

To remove a cut-sheet feeder, reverse the steps above.

Loading paper with the single-bin cut-sheet feeder

1. Make sure the paper guide is removed.

2. Slide the left paper guide so it is aligned with the triangle mark. Next, slide the right paper guide to roughly match the width of your paper. Slide the paper support midway between the paper guides.
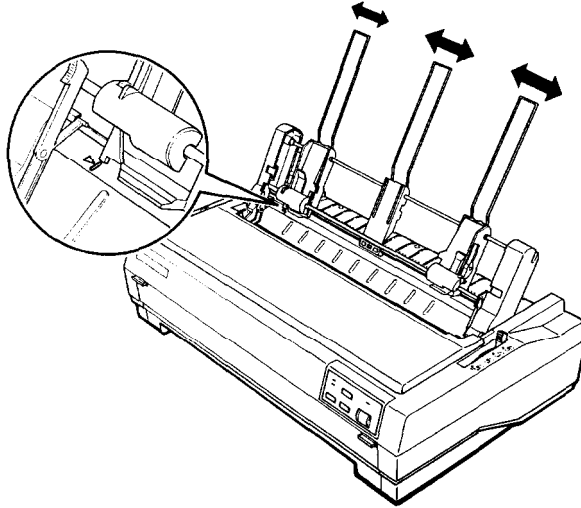
3. Pull the paper-set levers all the way forward until the paper guides retract and lock open.
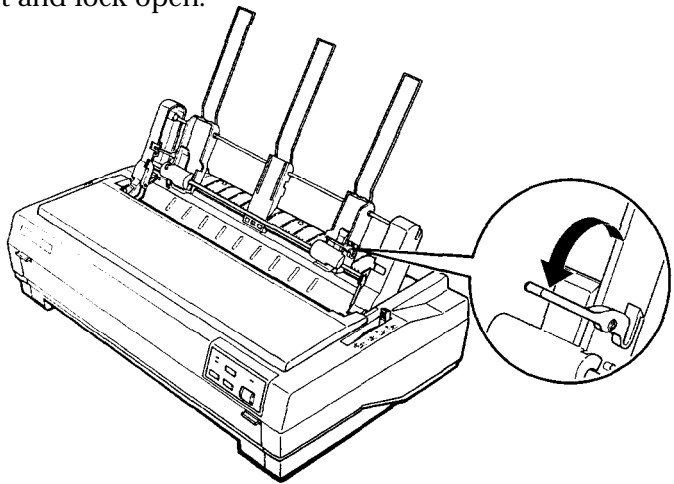
4. Take a stack of paper and fan it. Next, tap the side and bottom of the paper on a flat surface to even up the stack.

> **CAUTION:** Do not use envelopes, multi-part forms, carbon `paper,` or labels in the single-bin cut-sheet feeder.

5. Insert up to 50 sheets of paper along the left paper guide.

6. Adjust the position of the right paper guide so that it matches your paper's width. Make sure the position of the guide allows the paper to move up and down freely.

7. Push the paper-set levers back to clamp the paper against the guide rollers.

8. Attach the stacker-support wires to the edge guides of the paper guide. Then place the notches on the paper guide straight down over the mounting posts on the printer to reinstall it. Slide the edge guides to the middle of your paper.
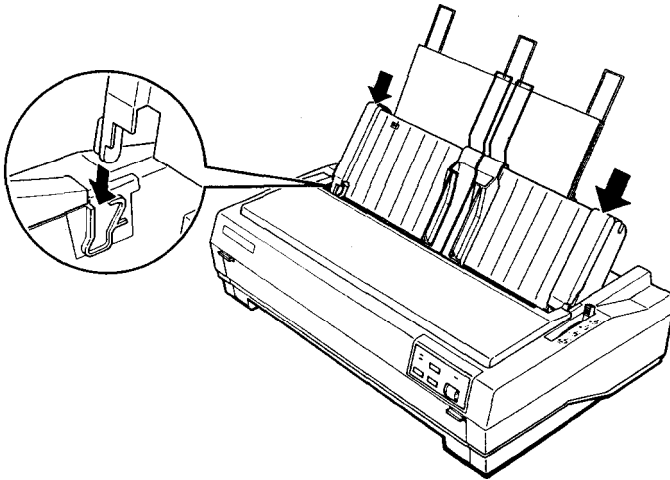
You can still insert single sheets using the paper guide or the optional front sheet guide. The cut-sheet feeder automatically loads paper when you send print data to the printer (as long as the **READY** light is lit). You can also load paper from the cut-sheet feeder by pressing the **PAPER FEED** button.

Loading paper or envelopes with the high-capacity cut-sheet feeder

1. Pull the lock levers forward on the left and right paper guides to release them.
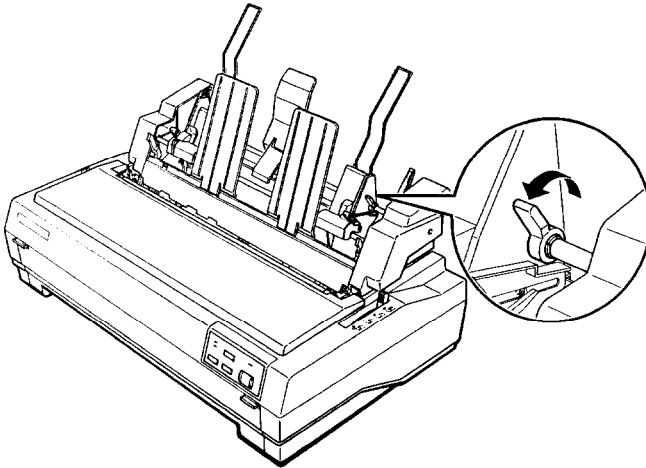
2. Slide the left paper guide until it is aligned with the triangle mark; then lock it in place by pushing back on its lock lever. Next, slide the right paper guide to roughly match the width of your paper. Slide the paper support to midway between the paper guides.
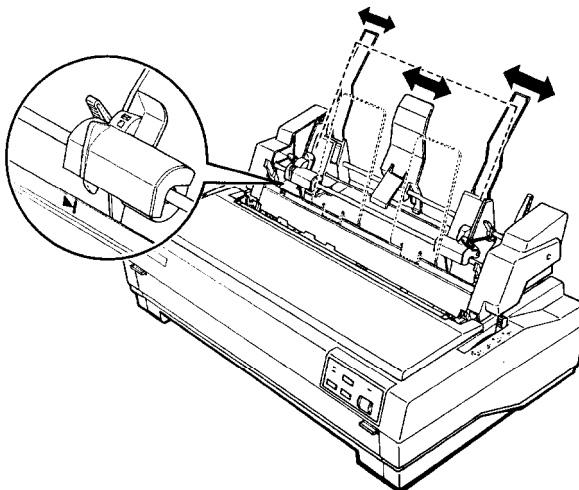
3. Pull the paper-set levers forward until the paper guides retract and lock open.
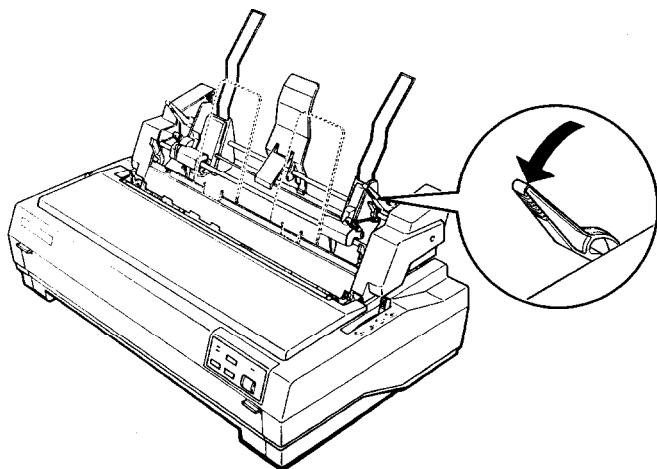
4. Take a stack of paper and fan it. Next, tap the side and bottom of the paper on a flat surface to even up the stack.

> **CAUTION:** Do not use multi-part forms, carbon paper, or labels in the cut-sheet feeder.

5. Insert up to 150 sheets of paper or 25 plain bond envelopes, or 30 airmail envelopes along the left paper guide.

6. Adjust the position of the right paper guide so that it matches your paper's width and lock it in place. Make sure the position of the guide allows the paper to move up and down freely.

7. If you are loading envelopes, push the envelope levers back.
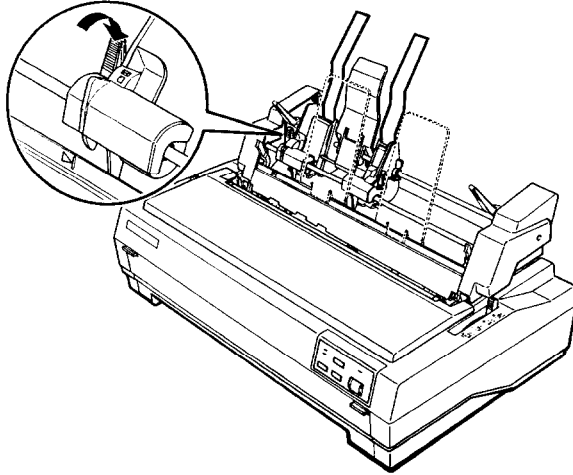
8. Push the paper-set levers back to clamp the paper or envelopes against the guide rollers.

Note: You can also insert single sheets using the front paper slot with the optional front sheet guide or the slot between the paper guide and stacker.

The cut-sheet feeder automatically loads paper when you send print data to the printer (as long as the **READY** light is lit). You can also load paper from the cut-sheet feeder by pressing the **PAPER FEED** button.

Assembling the double-bin cut-sheet feeder

You can attach the single-bin cut-sheet feeder to the high-capacity cut-sheet feeder to create a double-bin cut-sheet feeder. Follow these steps:

1. Remove the gear cover from the back of the high-capacity cut-sheet feeder and store it in a safe place.
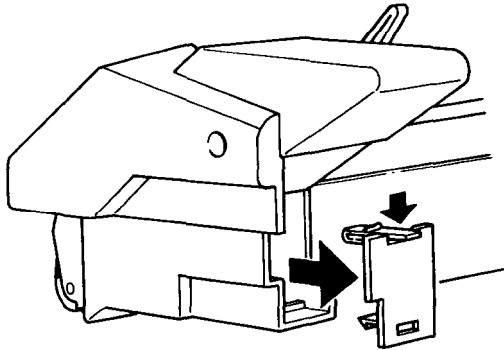
2. Hold the single-bin cut-sheet feeder in both hands. Fit the notches in the single-bin cut-sheet feeder over the mounting posts on the rear of the high-capacity cut-sheet feeder.
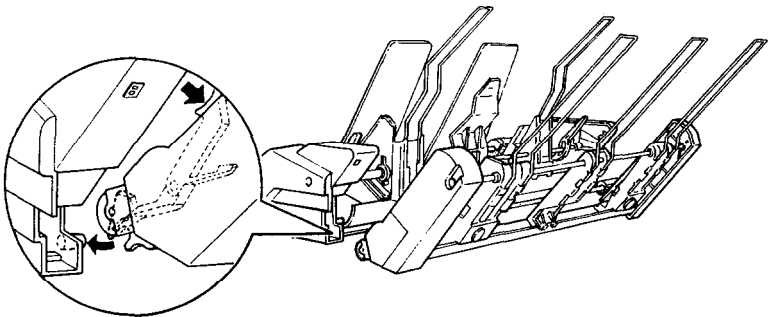
3. Press the two cut-sheet feeders together while pushing firmly on the tab locks. Make sure the two cut-sheet feeders are locked securely together.
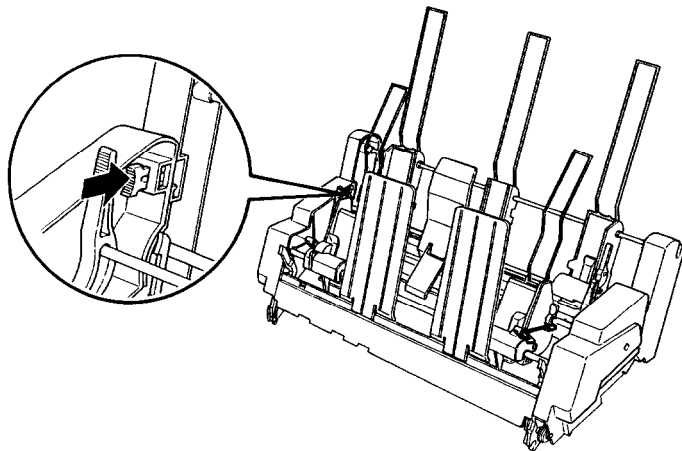
4. Install the assembled double-bin cut-sheet feeder on the printer. See Installing a cut-sheet feeder earlier in this chapter.

5. Load paper into each bin. See the sections on loading paper in this chapter.

You can now use either cut-sheet feeder to load paper.

Note: You can also insert single sheets using the front paper slot.

The high-capacity cut-sheet feeder becomes BIN 1 and the single-bin cut-sheet feeder becomes BIN 2. Select the bin number by holding down the **ALT** button and pressing the **PAUSE** button when the printer is out of paper. When you select BIN 1, the printer beeps once. When you select BIN 2, it beeps twice.

You can also specify the bin number by using your application software as described in your software user's manual or by using the software command described in Chapter 8.

Switching between continuous paper and the cut-sheet feeder

This printer allows you to switch easily between the cut-sheet feeder and the tractor-feeding system without removing either the feeder or the continuous-paper supply.

Switching to continuous paper

1. Make sure continuous paper is mounted on the tractor properly.

2. If a single sheet is in the paper path, hold down the **ALT** button and press the **EJECT** button to eject it.

3. Place the paper-release lever in the front or rear push-tractor position.
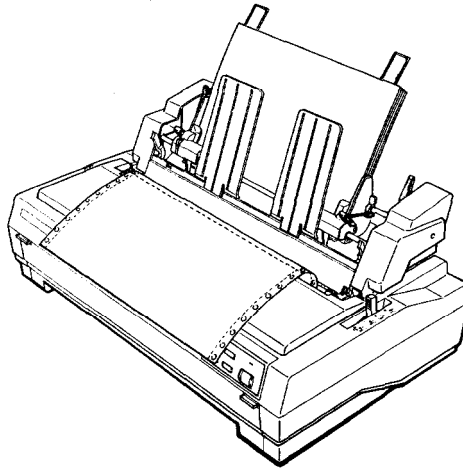
Note: When you want to print several pages of continuous paper, fold the first printed page forward at the perforation after the perforation emerges from below the printer cover. This helps the printer feed the printed pages properly and prevents paper jams.

Switching to the cut-sheet feeder

1. If any printed sheets remain in the printer, press the **TEAR OFF** button to advance the continuous paper to the tear-off position.

2. Tear off the printed pages.

3. While holding down the **ALT** button, press the **EJECT** button. The printer feeds the continuous paper backward to the paper-park position. The paper is still attached to the push tractor but is no longer in the paper path.

> **CAUTION:** Never feed labels backward. Labels can easily come off their backing and jam the printer. See the instructions below.

4. Place the paper-release lever in the single-sheet position.

If you are printing labels, follow these instructions to remove the label supply and switch to the cut-sheet feeder:

1. Tear off the fresh supply at a perforation below the push-tractor.

2. Hold down the **PAPER FEED** button to eject the remaining labels. The labels are no longer attached to the push-tractor.

3. Place the paper-release lever in the single-sheet position.
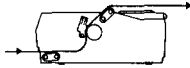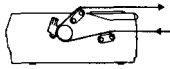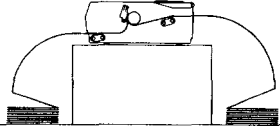
Additional Tractor Unit

You can improve the performance of continuous paper handling by using two tractor units at the same time. An additional tractor unit is available as an option. This is especially useful for continuous pre-printed forms, multi-part forms, and labels. Using two tractor units at once is also recommended for the highest quality graphics.

Also, if you install the tractor units in the front and rear push-tractor positions, you can load two types of continuous paper at the same time and switch between them by moving the paper-release lever.

Tractor positions and paper paths

Below are the various ways of feeding continuous paper with two tractor units.

Tractor positions	Position of the paper-release lever	Paper path
Pull + front push	Front push-tractor	
Pull + rear push	Rear push-tractor	
Front push + rear push	Front push-tractor or Rear push-tractor	

Using two tractor units in combination

1. Install one tractor in the front or rear-tractor position. See Chapter 2 for details.

2. Place the continuous paper on the sprocket units of the front or rear-push tractor unit. See Using continuous paper in Chapter 2.

3. Reinstall **the** paper guide.

4. Install the other tractor in the pull tractor position. See Chapter 2 for details.

5. Turn on the printer. Press the **PAPER FEED** button to load paper; then press **the PAPER FEED** button again to advance the paper.

> **CAUTION:** Always turn off the printer before you use the knob on its left side to clear paper jams. If the printer is on, you may damage it or lose the top-of-form position.

6. Release the sprocket lock levers of the pull tractor and adjust the sprocket units to match the width of the paper. Be sure the sprocket units on both tractors are aligned so the paper is not crooked.

7. Fit the holes of the paper over the tractor pins of the sprocket unit and adjust the sprocket units as necessary. See Using Continuous Paper in Chapter 2.

8. Close the sprocket covers.

9. If there is slack in the paper between the push and pull tractors, place the paper-release lever in the pull-tractor position and use the micro-feed feature to advance the paper until slack is removed. Then move the paper-release lever back to its original position.
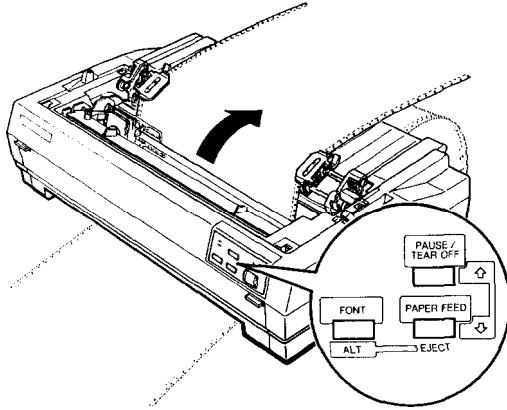
10. See that the paper is not crooked or wrinkled; then lock the sprocket units in place.

11. Reinstall the printer cover.

Roll Paper Holder

The optional roll paper holder (#8310) for the standard-width printer allows you to use 8.5-inch roll paper such as that used with telex machines. This provides an inexpensive alternative to continuous paper for applications requiring variable paper lengths.

Installing the roll paper holder

1. Make sure the printer is turned off.

2. Remove the paper guide and the tractor unit.
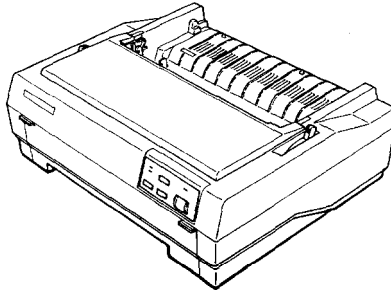
3. Fit the arc bearings into the stand as shown.
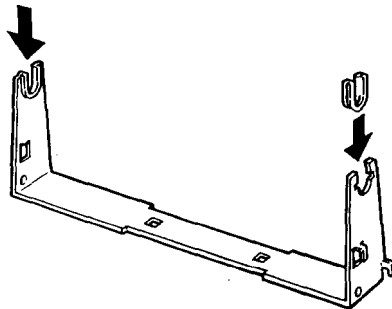
4. Place the base plate onto the stand and fasten the two together with the plastic spacing clips. Make sure you orient the stand and base plate as shown below.
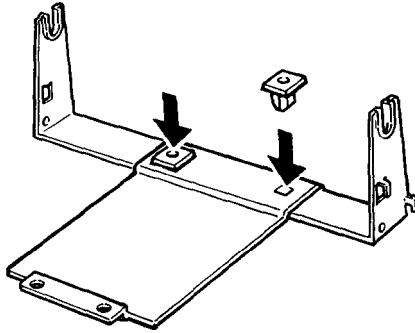
5. Hook the tension lever onto both ends of the stand as shown below. Then, while pulling upward on the tension lever, fit the wire ends of the tension lever into the holes in the stand.
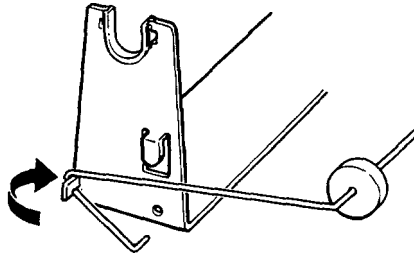
6. Position the roll paper holder underneath the printer as shown
    below. The positioning pegs on the bottom of the printer fit into
    the holes in the base plate.
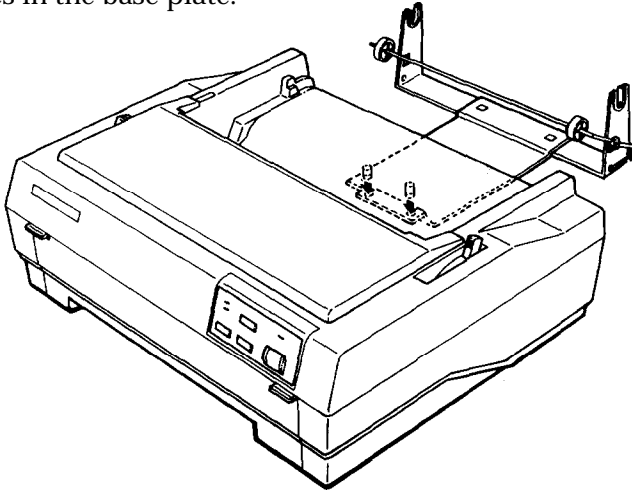
> **CAUTION:** During use, only the weight of the printer
> holds the roll paper holder in place. The positioning pegs
> serve to keep the holder from slipping out of position. If
> you pick up the printer, be careful to avoid dropping the
> roll paper holder.

Loading a roll of paper

After you have installed the roll paper holder, load a roll of paper as
follows:

1. Make sure the printer is turned off and the paper guide and the
    tractor unit are removed.

2. Set the paper-release lever to the single-sheet position.

3. Cut the leading edge of the roll paper straight across.
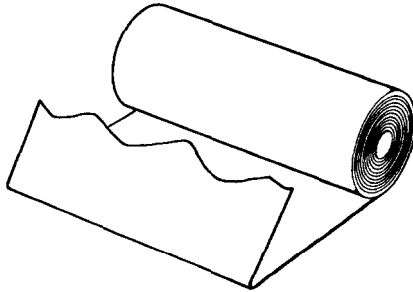
4. Insert the roll paper holder shaft into the center of the paper roll as shown.
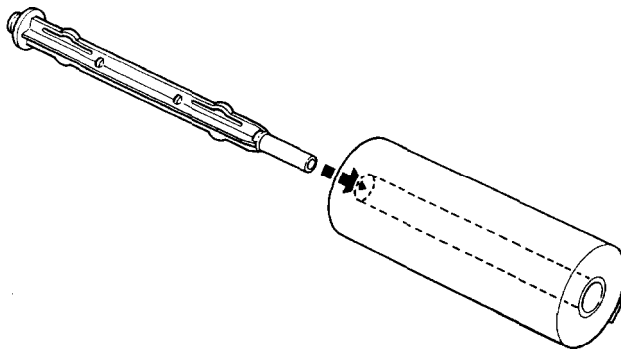
5. Set the shaft and paper roll onto the roll paper holder. Orient the roll so paper feeds off the bottom of the roll. Then turn on the printer.
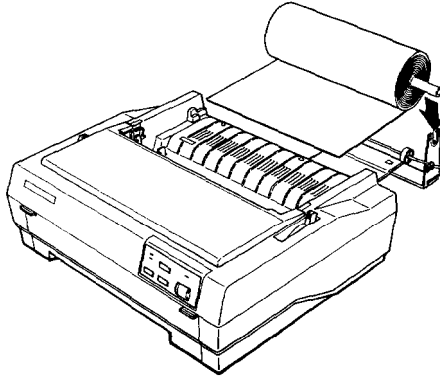
6. Bring the leading edge of the paper up over the paper path guide and insert it into the printer. The printer loads the paper automatically.
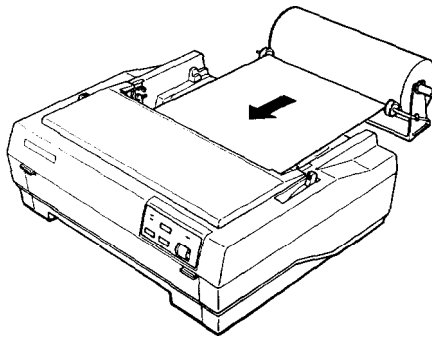
7. Install the paper guide as a separator.
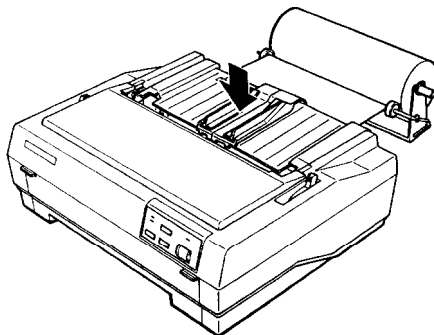
You are now ready to print. When you finish printing, press the
PAPER FEED button to advance the paper a suitable amount; then tear
off the paper against the tear-off edge of the printer cover.

Roll paper cannot be fed backward. When you want to unload roll
paper, cut the paper behind the point where it feeds into the printer;
then while holding down the **ALT** button, press the **EJECT** button to
eject the remaining paper.

Interface Cards

You can use optional interface cards to supplement your printer's built-in parallel interface.

The Epson interfaces below are compatible with your printer.

Model Number	Name
C823051/C823061	Serial interface card
C823071/C823081	32KB serial interface card
C823101/C823102	32KB parallel interface card
C823131/C823132	32KB IEEE-488 interface card

If you are unsure whether you need an optional interface or would like to know more about interfaces, contact your dealer.

Note: Some of these interfaces are not available in some countries.

Installing an interface card

1. Make sure the printer is turned off. Unplug the printer's power cord and disconnect the interface cable.
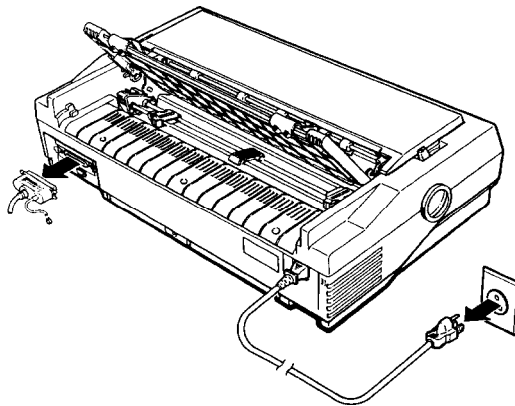
2. Remove the screws from the shield plate and remove it.
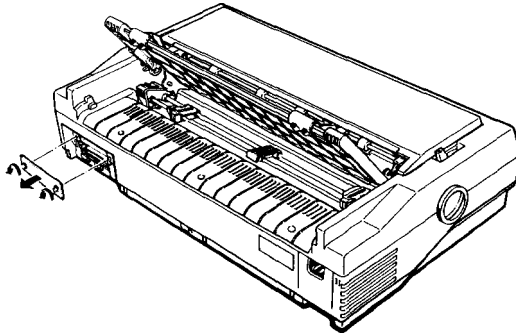
3. Insert the interface card into the slots on both sides of the interface compartment. Slide the card in firmly until the connector at the rear of the interface card fits into the printer's internal socket.

4. Secure the screws to complete installation.
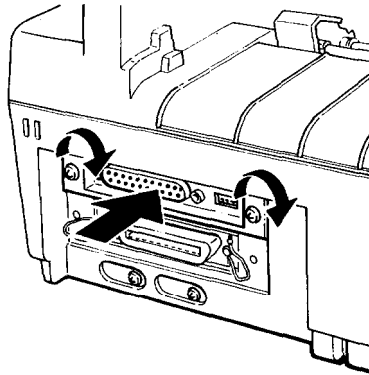
To remove the interface card, first unplug the power cord; then reverse the steps above.

The C823051/C823061 serial interface card

If you are using an optional interface, you may need to alter the communications protocol of the printer or computer so they **can** communicate properly. Use the information in your optional interface manual or your computer's manual to match the computer with the interface.

If you are using the C823051 /C823061 optional interface card, read through the sections below on baud-rate selection, handshake timing, and error handling.

For all other data transfer conventions, such as word structure or communications protocol, see the manual supplied with your C823051 /C823061 optional interface.

Baud rate selection

You **can** select one of the following baud rates: 75, 110, 134.5, 150, 200, 300, 600, 1,200, 1,800, 2,400, 4,800, 9,600 and 19,200 bps (bits per second). When you set the baud rate, see the baud rate selection table in the C823051 /C823061 interface manual.

Handshake timing

When the **vacant** area for data in the input buffer drops to 256 bytes, the printer outputs an X-OFF code or sets the DTR flag to "1" (MARK) indicating that it cannot receive data.

Once the vacant area for data in the buffer increases to 528 bytes, the printer outputs an X-ON code or sets the DTR flag to "0" (SPACE) indicating that it is again ready to receive data.

Error handling

When a parity error is detected, your printer prints an asterisk ("1. All other errors, including framing and overrun errors, are ignored.

Front Sheet Guide

The optional front sheet guide fits inside the front of the printer. It handles single sheets that are 148-257 mm (5.8-10.1 inches) wide for the standard-width printer or 148-364 mm (5.8-14.3 inches) wide for the wide-carriage printer from the front paper slot.

Installing the front sheet guide

Install the front sheet guide following the steps below:

1. Open the front cover; then remove the tractor unit, if installed.
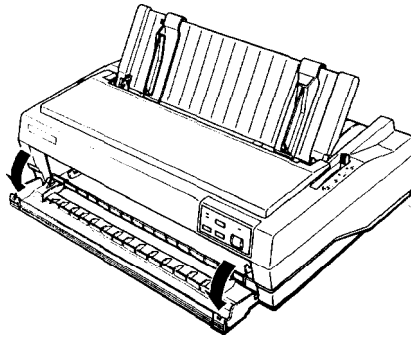
2. Fit the plastic mounts on the guide into the mounting notches on the printer, as shown below.
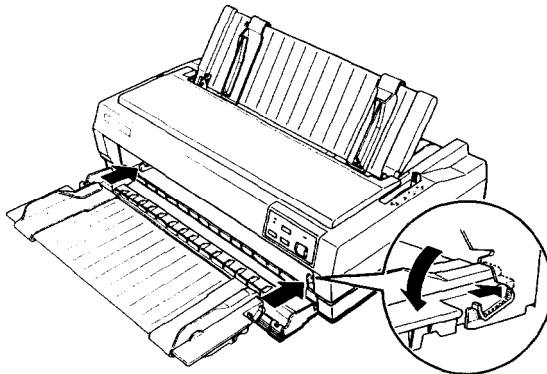
> **Note:** When the optional front sheet guide is installed in the printer, the tractor unit cannot be mounted in the front position and you cannot use the front push tractor.

Loading single sheets from the front

1. Place the paper-release lever in the single-sheet position.
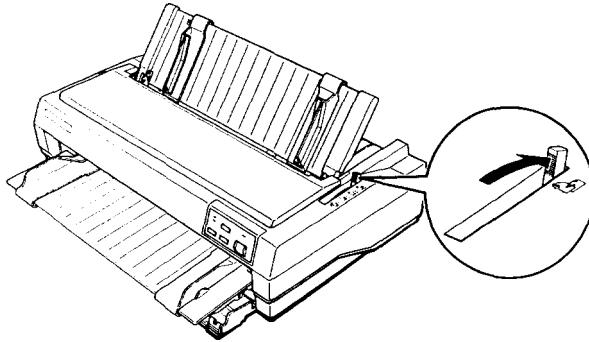
2. Turn on the printer. The **READY** light on the control panel comes on.

3. Move the left edge guide to the arrow mark on the front sheet guide. If you wish, you can slide the edge guide to the left in 1/10-inch increments to increase the left margin on your printout. Next, adjust the right edge guide to match the width of your paper.
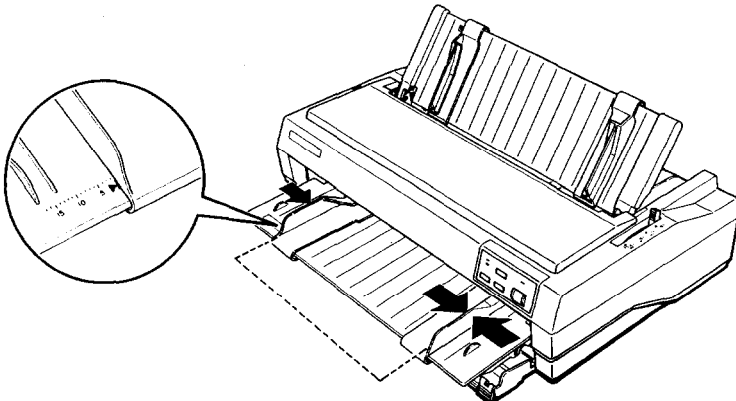
4. Insert the paper between the edge guides firmly until it meets resistance. The printer loads the paper automatically. You are now ready to print.
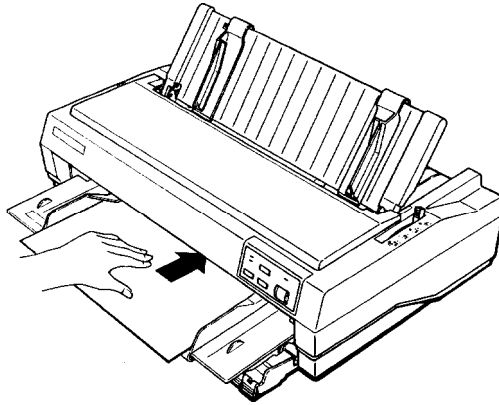
⃝! **CAUTION:** Always turn off the printer before you use the knob on its left side to clear paper jams. If the printer is on, you may damage it or lose the top-of-form position.

If the platen turns but the printer doesn't load the paper, completely remove the page and reinsert it more firmly.

To eject the paper, hold down the **ALT** button and press the **EJECT** button.

Note: The printer's paper guide serves as a built-in stacker and can hold up to 50 sheets of ejected paper.

Chapter 5
Maintenance and Transportation

5

Cleaning the Printer

To keep your printer operating at its best, you should clean it thoroughly several times a year.

1. Make sure the printer is turned off and unplug the printer's power cord. Then remove the paper guide, tractor unit, and the cut-sheet feeder, if one is installed.

2. Use a soft brush to carefully clear away all dust and dirt.

3. If the outer case or paper guide is dirty or dusty, clean it with a soft, clean cloth dampened with a mild detergent. Keep the printer cover in place to prevent water from getting inside the printer.

> **WARNING:** Be careful not to get water on the printer mechanism or electronic components.

> **CAUTION:**
> - Never use alcohol or thinner to clean the printer; these chemicals can damage the components as well as the case.
>
> - Do not use a hard or abrasive brush.
>
> - Do not spray the inside of the printer with lubricants; unsuitable oils can damage the mechanism. Contact your dealer or a qualified service person if you think lubrication is needed.

Replacing the Ribbon Cartridge

When your printing becomes too faint, you need to replace the ribbon cartridge.

Genuine Epson ribbons are designed and manufactured to work properly with your Epson printer. Their high quality ensures proper operation and long life of the print head and other printer parts. Using any other ribbon may damage your printer or shorten its life. The following Epson replacement ribbon cartridges are recommended:

Printer	Ribbon cartridge
Standard	#8750
Wide	**#8755**

To replace the ribbon cartridge, follow the steps described in Installing the ribbon cartridge in Chapter 1.

Transporting the Printer

If you need to transport your printer some distance, carefully repack it using the original box and packing materials, as described below.

1. Turn off the printer.

2. Unplug the power cord from the electrical outlet; then disconnect the interface cable from the printer.

3. Remove the optional pull tractor and the cut-sheet feeder, if installed.

4. Remove the ribbon cartridge.

5. If you have removed the tractor unit, replace it according to the instructions in Chapter 2.

6. Replace the printer, ribbon cartridge, paper guide, and power cord in the original packing materials and insert them in the original box.

Chapter 6

Troubleshooting

Problems and Solutions

This chapter presents solutions to possible printer problems. Locate your problem in the list below and then see the appropriate page for the solution.

Power supply

- Power is not being supplied. **See 6-3**

Printing

- The printer does not print. **See 6-4**

- The print is faint or uneven. **See 6-5**

- Dots are missing in the printed characters or graphics. **See 6-5**

- Printed characters are not what you expect. **See 6-5**

- The print position is not what you expect. **See 6-6**

Paper handling

- Single sheets do not feed properly. **See 6-8**

- Continuous paper does not feed properly. **See 6-9**

Options

- When you use the cut-sheet feeder, the paper does not feed properly. See 6-11

- When you use two tractor units in combination, continuous paper does not feed properly. See 6-12

- When you use an optional interface, the printer does not operate properly. See 6-12

Power Supply

Power is not being supplied.

- *The READY light does not come on.*

  Check that the power cord is plugged into the electrical outlet correctly.

  If the electrical outlet is controlled by a switch or automatic timer, use a different outlet.

  Plug another electrical device into the outlet to determine whether the outlet is operating properly.

- *The READY light comes on briefly and then goes off. The light stays off even when the power is switched on again.*

  Check that the printer's voltage rating matches the voltage of your electrical outlet. If the voltages do not match, unplug the printer and contact your dealer immediately. Do not reconnect the power cord to an electrical outlet.

If problems persist, contact your Epson dealer, or a qualified service person.

Printing

The printer does not print.

- *The READY light blinks.*

  Press the **PAUSE** button. If the **READY** light still does not stay on, disconnect the printer cable. If the light then continuously stays on, the problem is in the cable or the interface of the computer or printer.

- *The READY light is on but nothing is printed.*

  Check that your application software is installed properly for your printer. Check the software's printer settings.

  Check both ends of the interface cable between the printer and the computer. Make sure your interface cable meets both the printer and computer specifications. If you are using the standard parallel interface, be sure your cable is a shielded twisted-pair parallel cable.

- *The READY light blinks and the printer beeps.*

  The printer is out of paper. Load paper in the printer.

- *The printer sounds like it is printing, but nothing is printed.*

  The ribbon cartridge may not be installed properly. See the section on ribbon installation in Chapter 1.

  The ribbon may be worn out. Replace the ribbon cartridge.

  The paper thickness setting may be incorrect. See Chapter 2.

- *The printer makes a strange noise, beeps several times, and stops abruptly.*

  Turn off the printer and check for a paper jam, ribbon jam, or other problem; then try to print again. If the printer still does not print correctly, contact your dealer or a qualified service person.

- *The READY light blinks but the printer does not print or it stops printing abruptly.*

  The print head is overheated. Wait a few minutes; the printer resumes printing automatically when the print head cools.

The print is faint or uneven.

- *Parts of printed characters are missing at the bottom.*

  The ribbon cartridge may not be installed properly. See the section on ribbon installation in Chapter 1.

. *The printout is faint.*

  The ribbon may be worn out. Replace the ribbon cartridge.

  Check that the paper-thickness lever is set correctly for the paper you are using.

Dots are missing in the printed characters or graphics.

- *A line* of *dots is missing in* the *printout.*

  The print head is damaged. Stop printing and contact your dealer or a qualified service person to have the print head replaced.

- *Dots are missing in random positions.*

  There is either slack in the ribbon or the ribbon cartridge is loose. Reinstall the ribbon cartridge.

Printed characters are not what you expect.

- *The typestyle or characters selected with your software cannot be printed.*

  Check that the software is correctly installed for your printer.

- *The* font *selected by the control panel does not print.*

  Your software may be overriding your panel setting. Check the font setting in your application program.

- *The wrong characters are printed.*

  The wrong character table or the wrong international character set may be selected. Check the default settings. See page 3-5.

The print position is not what you expect.

- *Printing starts too high or too low on the page.*

  Adjust the top margin set by your application software. Use micro feed to adjust the print position.

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

  Set the automatic line feed on in the default-setting mode so that the printer automatically adds a line-feed code to each carriage return. Check the default settings. See page 3-5.

- *The text is printed with blank lines between the lines* of *text.*

  Two line-feed signals are being sent. Set automatic line feed off in the default-setting mode.

- *The page length does not match the length* of *your continuous paper.*

  Change the page-length setting in the default-setting mode. See page 3-5.

  Check the page length set by your application software and adjust it if necessary.

- *Regular gays occur in the printout.*

    1 inch skip-over-perforation may be on. Turn this function off in the default-setting mode.

- *Skip-over-perforation is set, but the perforation does not fall in the center of the skip.*

    Adjust the top-of-form position. See page 2-19.

    Make sure the default page length setting matches your required paper length. See page 3-5.

    If your application program is setting the top and bottom margins, set the skip-over-perforation off in the default-setting mode.

- *Printing starts too low on the page, or the bottom part ▫↗ one page is printed at the top of the next page.*

    Be sure to choose the correct printer from your application program's menu. See page 1-15 .

    Use your application software to reduce or eliminate the top margin and to reduce the page length.

    If possible, specify single-sheet paper with your application software.

If the printer still does not print correctly, try the self test described in Chapter 1. If the self test works properly, the printer is all right and the problem probably lies in the computer, the software, or the cable. If the self test does not work, contact your dealer or a qualified service person.

Paper Handling

The following section covers single-sheet and continuous-paper problems. For cut-sheet feeder problems, see the section on options, starting on page 6-11.

Single sheets do not feed properly.

- *When you insert single-sheet paper, the platen does not rotate and paper does not feed.*

    Check that the paper-release lever is pushed back to the single-sheet position.

    The paper may be too far to the right. Align the left edge guide with the arrow mark on the paper guide.

- *When you insert the paper, the platen rotates but paper does not feed.*

    Reinsert the paper more firmly.

- *Printing starts too low on the page, or the bottom part of one page is printed at the top of the next page.*

    Be sure to choose the correct printer from your application program's menu. See page 1-15.

    If possible, specify single-sheet paper with your application software.

    Use your application software to reduce or eliminate the top margin and reduce the page length.

    Reduce the lines-per-page setting in your software.

- *The paper feed is crooked or the paper jams.*

   Turn off the printer and put the paper-release lever in the pull-tractor position. Pull out the paper and check the following two items:

   - Make sure the paper size is within the specified range. See page 7-3.

   - Make sure the paper is aligned with the edge guides.

- *The paper does not* fully eject.

   Hold down the **PAPER FEED** button to eject paper, or press the **PAPER FEED** button while holding down the **ALT** button.

   The paper may be too long. Use only paper that is within the specified range.

Continuous paper does not feed properly.

- *When you send data, the platen does not turn and the push tractor does not feed the paper.*

   If the **READY** light is blinking, press the **PAUSE** button.

- *The paper does* not feed, although *the platen* rotates.

   Check that the paper-release lever is set to the correct position.

- *The paper feed is crooked or the paper jams.*

   Make sure the paper supply is not obstructed by a cable or some other object.

   Make sure that your paper supply is within 1 meter (3 feet) of the printer.

   The position of your paper supply may be preventing it from feeding straight.

See that the holes on the sides of the paper are aligned with each other. Also, make sure the sprocket units are locked and their covers are closed.

Check that the paper-thickness lever is set correctly for the paper you are using. See page 2-23.

Check that the paper thickness is within the specified range. See page 7-3.

- *The paper does not eject properly.*

The page is too long. Tear off the paper and remove it from the printer. Use only paper that is within the specified range.

Options

When you use the cut-sheet feeder, the paper does not feed properly.

- *When you send data, the platen rotates but paper does not feed.*

  Make sure the cut-sheet feeder is correctly installed on the printer.

  See that the paper-release lever is pushed back to the single-sheet position.

  Check for a paper jam near the print head.

  See if too many sheets are loaded in the cut-sheet feeder's bin.

  If there is only one sheet left in the bin, add more paper.

- *Two or more sheets feed at the same time.*

  If you have loaded too many sheets in the cut-sheet feeder's bin, remove some of the sheets.

  You may have forgotten to fan the stack of paper before loading it into the bin. Remove the paper and fan it.

- *The paper feed is crooked.*

  The paper may be old or creased. Use only new, clean sheets of paper.

  If there is too much paper in the stacker, remove some.

  Make sure your paper is the proper size and quality.

When you use two tractor units in combination, continuous paper does not feed properly.

• *The paper feed is crooked or paper jams.*

    Make sure that the sprocket units on both tractors are aligned.

When you use an optional interface, the printer does not operate properly.

• *The printer does not print or the printout is not what you expect.*

    You may be trying to use an interface or interface cable with the wrong specifications. Check the specifications to make sure you can use the interface with this printer.

    The computer and printer interface settings may not match. Make sure the settings on the computer and printer match.

Chapter 7
Technical Specifications

7

Printer Specifications

Printing

Printing method: 9-pin impact dot matrix

Printing speed:

Quality	Characters/inch	Characters/second/line
High-speed draft	10	380
Draft	10	285
	12	342
Near letter quality	10	57
	12	68

Printing direction: Bidirectional logic-seeking for text
                        Unidirectional for graphics

Line spacing: 1/6-inch, 1 / &inch, or programmable in
                        increments of 1/216-inch

Payer-feed speed: Friction: 69 ms/line at 1/6-inch line spacing

                        Tractor: 77 ms/line at 1/6-inch line spacing
                        Continuous feed: 3.7 inches per second

Buffer: 24KBorOKB
                        (Selectable in the default-setting mode)

Printable columns:

Character size	Maximum printed characters	
	Standard	Wide
10 cpi	80	136
12 cpi	96	163
17 cpi (10 cpi condensed)	137	233
20 cpi (12 cpi condensed)	160	272

Character fonts: Draft, Epson Roman, or Epson Sans Serif in normal or condensed mode. You can also select other font/pitch combinations using ESC/P commands. See the command summary in Chapter 8 for details.

Character tables (ESC/P Mode):
Europe: One italic and 15 graphic character tables
North/South America:
One italic and 7 graphic character tables
Other countries: One italic and 5 graphic character tables
13 international character sets

Character tables (IBM Emulation):
2 Character tables
1 Symbol set

Paper

Single sheets (toy insertion):

Width   148 to 257 mm (5.8 to 10.1 inches) for standard
148 to 420 mm (5.8 to 16.5 inches) for wide
Length   max. 364 mm (14.3 inches)
Thickness   0.065 to 0.14 mm (0.0025 to 0.0055 inches)
Weight   52.3 to 90 g/m^2 (14 to 24 lb)

- See page 7-17 for front insertion with the optional front sheet guide.

Single-sheet multi-part forms:

- Load single-sheet multi-part forms only into the front slot with the optional front sheet guide. See 7-17 for details.

- Use carbonless multi-part forms only.

Continuous paper:

Width	101 to 254 mm (4 to 10 inches) for standard 101 to 406 mm (4 to 16 inches) for wide
Copies	Four sheets (one original plus up to three copies)
Thickness	0.065 to 0.32 mm (0.0025 to 0.012 inch) for one sheet 0.12 to 0.32 mm (0.0047 to 0.012 inch) total
Weight	**52.3** to 82 g/m² (14 to 22 lb) for one sheet 40 to 58.2 g/m² (12 to 15 lb) per sheet in multi-part forms

- Use carbonless multi-part forms only.

Note : You can use recycled paper with this printer. If you notice an increase in ribbon consumption and paper jamming, use a higher grade of paper.

Labels:

Size	63.5 x 23.8 mm (2.5 x 0.93 inches)
	101 x 23.8 mm (4 x 0.93 inches)
	101 x 27 mm (4 x 1.06 inches)
Thickness	0.07 to 0.09 mm (0.0028 to 0.0031 inches) for backing sheet
	0.16 to 0.19 mm (0.0063 to 0.0075 inches) total

- Use continuous type labels only.
- Use labels only under normal temperature and humidity conditions.

Envelopes:

Size	No. 6 - 166 x 92 mm (6.5 x 3.6 inches)
	No. 10 - 240 x 104 mm (9.5 x 4.1 inches)
Thickness	0.16 to 0.52 mm (0.0063 to 0.0197 inches)
Weight	**45** to 90 g/m^2 (12 to 24 lb)

- Use envelopes only under normal temperature and humidity conditions.

Roll paper:

Size	216±3 mm (8.5f0.12 inches)
Thickness	0.07 to 0.09 mm (0.0028 to 0.0035 inches)
Weight	**52.3** to 82 g/m^2 (14 to 22 lb)

Printable area:

Single sheets
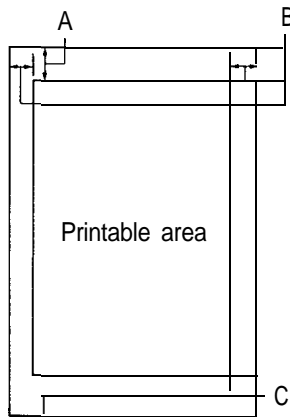
A   The minimum top margin is 8.5 mm (0.33 inches).
B   The minimum left and right margins are 3 mm (0.12 inches). However, the maximum printable width is 203 mm (8 inches) for the standard-width carriage or 345 mm (13.6 inches) for the wide carriage.
C   The minimum bottom margin is 13.5 mm (0.53 inches).

Continuous paper
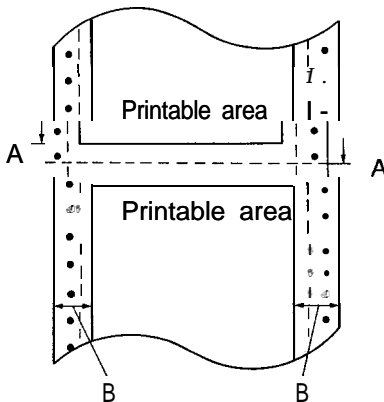
A   The minimum top and bottom margins (above and below the perforation) are 9 mm (0.35 inches).
B   The minimum left and right margins are 13 mm (0.51 inches). However, the maximum printable width is 203 mm (8 inches) for the standard-width carriage or 345 mm (13.6 inches) for the wide carriage.

7-6 Technical Specifications

Envelopes
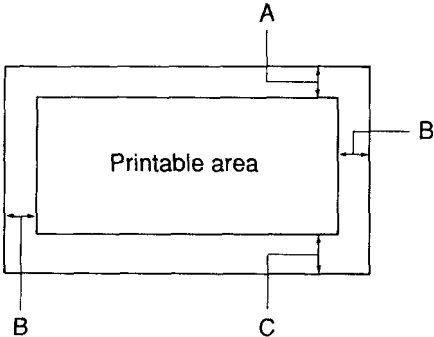
A   The minimum top margin is 8.5 mm (0.33 inches).
B   The minimum left and right margins are 3 mm (0.12 inches).
C   The minimum bottom margin is 13.5 mm (0.53 inches).

Roll paper
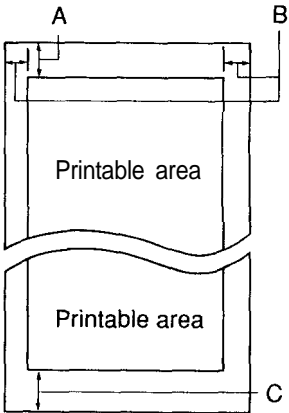
A   The minimum top margin is 8.5 mm (0.33 inches).
B   The minimum left and right margins are 3 mm (0.12 inches). However, the
     maximum printable width is 203 mm (8 inches) for the standard-width
     carriage.
C   The minimum bottom margin is 13.5 mm (0.53 inches).

Mechanical

Paper-feed methods: Friction (with or without optional cut-sheet feeder)
Push tractor (front or rear)
Pull tractor
Push-pull tractor (optional)

Ribbon: Fabric ribbon cartridge
Standard: #8750
Wide: #8755
Life expectancy at 14 dots/character:
3 million characters

MTBF: Standard: 4000 power-on hours
Wide: 6000 power-on hours

Print head life: 100 million characters/wire

Dimensions and weight:

	Standard	Wide
Height	154 mm (6.06 inches)	154 mm (6.06 inches)
Width	460 mm (18.11 inches)	635 mm (25.00 inches)
Depth	380 mm (14.96 inches)	380 mm (14.96 inches)
Weight	approx. 6.8 kg (14.96 lb)	approx. 9.2 kg (20.24 lb)

Electrical

120 V model:

Rated voltage:	AC 120 V
Input voltage range:	AC 103.5 to 132 V
Rated current:	1.8 A
Power consumption:	(during self-test printing in draft mode at 10 cpi)
	Standard: approx. 45 W
	Wide: approx. 45 W
Rated frequency range:	*50* to 60 Hz
Input frequency range:	*49.5* to 60.5 Hz
Dielectric strength (between AC line and chassis):	
	AC 1000V rms 1 minute or AC 1200V rms 1 second

220/240V model:

Rated voltage:	AC 220 to 240 V
Input voltage range:	AC 198 to 264 V
Rated current:	*0.9* A
Power consumption:	(during self-test printing in draft mode at 10 cpi)
	Standard: approx. 45 W
	Wide: approx. 45 W
Rated frequency range:	*50* to 60 Hz
Input frequency range:	*49.5* to 60.5 Hz
Dielectric strength (between AC line and chassis):	
	AC 1.5 kV (rms), 1 minute

Note: Check the label on the back of the printer for the voltage of your printer.

Environmental

Temperature: Operation: **5"** to 35°C (41" to 95°F)

                                Storage: **-30"** to 60°C (-22" to 140°F)

Humidity (without condensation):

                                Operation: 10% to 80% RH

                                Storage: **5%** to 85% RH

Safety Approvals

Safety **standards:**

    US model: UL1950 with D3

                                     CSA22.2 No. 220

    European model: EN 60950 (TÜV, DEMKO, NEMKO,
                                     SEMKO, SETI)

R.F.I

    US model: FCC part 15 subpart B class B

    European model: Vfg 243 (VDE 0878 part 3)
                                     EN 55022 class B

Interface Specifications

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

Specifications and pin assignments

The built-in parallel interface has the following characteristics:

Data format: S-bit parallel

Synchronization: $\overline{\text{STROBE}}$ pulse

Handshake thing: BUSY and $\overline{\text{ACKNLG}}$ signals

Signal level: TTL-compatible

Connector: 36-pin 57-30360 Amphenol connector or equivalent

The table below provides the connector pin assignments and describes their respective interface signals.

Signal Pin	Return Pin	Signal	Direction	Description
1	19	$\overline{\text{STROBE}}$	IN	$\overline{\text{STROBE}}$ pulse to read data. Pulse width must be more than 0.5 microseconds at the receiving terminal.
2 3 4 5 6 7 8 9	20 21 22 23 24 25 26 27	DATA 1 DATA 2 DATA3 DATA4 DATA5 DATA6 DATA 7 DATA8	IN IN IN IN IN IN IN IN	These signals represent information of the 1 st to 8th bits of parallel data, respectively. Each signal is at HIGH level when data is logical 1 and LOW when it is logical 0.
IO	28	$\overline{\text{ACKNLG}}$	OUT	About a 12-microsecond pulse. LOW indicates that data has been received and that the printer is ready to accept more data.

Single Pin	Return Pin	Signal	Direction	Description
11	29	BUSY	OUT	A HIGH signal indicates that the printer cannot receive data. The signal goes HIGH in the following cases: 1) During data entry 2) During input buffer full 3) During printer-error status
12	30	PE	OUT	A HIGH signal indicates that the printer is out of paper.
13	-	SLCT	OUT	Pulled up to 5V through 3.3 kΩ resistance
14	-	AUTO FEED XT	IN	When this signal is LOW, the paper is automatically fed 1 line after printing. (The signal level can be fixed to this by setting Auto Line Feed on in the default-setting mode.)
15	-	NC	-	Not used
16	-	GND	-	Logic ground level
17	-	CHASSIS GND	-	Printer's chassis ground, which is isolated from the logic ground
18	-	NC	-	Not used
19-30	-	GND	-	Twisted-pair return signal ground level
31	16	INIT	IN	When this level becomes LOW, the printer controller is reset to its power-up state and the print buffer is cleared. This level is normally HIGH; its pulse width must be more than 50 microseconds at the receiving terminal.
32	-	ERROR	OUT	This level becomes LOW when the printer is: 1) in a paper-out status 2) in an error status

Signal Pin	Return Pin	Signal	Direction	Description
33	-	GND	-	Same as for pins 19-30
34	-	NC	-	Not used
35	-		OUT	Pulled up to 5V through 3.3 kΩ resistance
36	-	SLCT IN	IN	The DC1/DC3 code is valid only when this signal is HIGH. This signal is factory-set to HIGH.

Note:

- 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.

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

- Data transfer must be carried out by observing the $\overline{\text{ACKNLG}}$ or BUSY signal. Data transfer to this printer can be carried out only after receipt of the $\overline{\text{ACKNLG}}$ signal or when the BUSY signal is LOW.

Interface timing

The figure below shows the timing for the parallel interface.
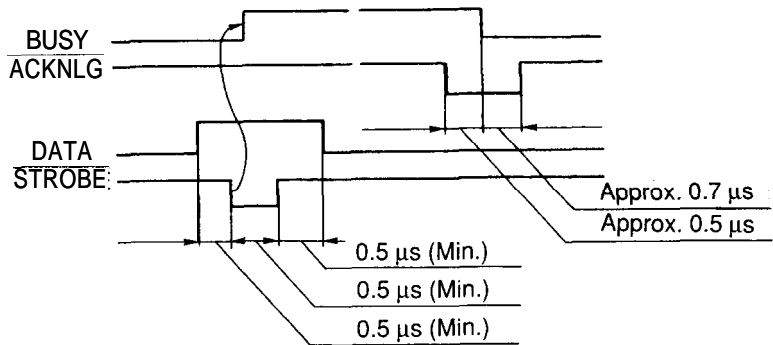
Option Specifications

Cut-sheet feeders

* The asterisk is a substitute for the last digit, which varies according to country.

Dimensions and weight:

	Option No.	Height	Width	Depth	Weight
Standard	C80637* Single-bin	390 mm (15.4 in.)	449 mm (17.7 in.)	446 mm (17.6 in.)	0.55 kg (1.22 lb)
	C80638* High capacity	380 mm (15.0 in.)	449 mm (17.7 in.)	435 mm (17.1 in.)	1.55 kg (3.42 lb)
Wide	C80639* Single-bin	390 mm (15.4 in.)	624 mm (24.6 in.)	446 mm (17.6 in.)	0.75 kg (1.65 lb)
	C80640* High capacity	380 mm (15.0 in.)	624 mm (24.6 in.)	435 mm (17.1 in.)	2.15 kg (4.74 lb)

Dimensions include the printer.

Bin capacity:

Single sheets: C80637* and C80639*
Up to 50 sheets of 82-g/m² (22-lb) paper
C80638* and C80640*
Up to 150 sheets of 82-g/m² (22-lb) paper

Envelopes: C80638* and C80640*
Up to 25 (plain and bond type)
Up to 30 (air mail)

MCBF: 100,000 cycles

Paper:

		Single sheets	Envelopes
Width	C80637*	182 to 216 mm (7.17 to 8.50 in.)	N/A
	C80639*	182 to 420 mm (7.17 to 16.54 in.)	N/A
	C80638*	182 to 216 mm (7.17 to 8.50 in.)	165 to 241 mm (6.54 to 9.49 in.)
	C80640*	182 to 420 mm (7.17 to 16.54 in.)	165 to 241 mm (6.54 to 9.49 in.)
Paper length		210 to 364 mm (8.27 to 14.33 in.)	92 to 104 mm (3.62 to 4.09 in.)
Thickness		0.07 to 0.12 mm (0.0028 to 0.0047 in.)	0.25 to 0.50 mm (0.0098 to 0.0197 in.)
Weight		64 to 91 g/m² (18 to 24 lb)	45 to 91 g/m² (12 to 24 lb)

Paper storage conditions:

Temperature:	18" to 22°C (64" to 72°F)
Humidity:	40% to 60% RH

Environmental Temperature:

Operation:	5" to 35°C (41" to 95°F)
Storage:	-30" to 60°C (-22" to 140°F)

Humidity (without condensation):

Operation:	15% to 80% RH
Storage:	5% to 85% RH

Note:
- 24-lb paper printing is available only at normal operating conditions.

- Cut-sheet feeder envelope printing is available only with the C80638* or C80640* cut-sheet feeders and only at normal operating conditions.

Front sheet guide

Dimensions and weight:

Printer	Option No.	Height	Width	Depth	Weight
Standard	C814001	48.5 mm	332 mm	177 mm	280 g
Wide	C814011	48.5 mm	507 mm	177 mm	450 g

Paper:

		Single sheets	Multi-part forms
Width	C814001	148 to 257 mm (5.8 to 10.1 inches)	
	C814011	148 to 364 mm (5.8 to 14.3 inches)	
Paper length		max. 364 mm (max. 14.3 inches)	
Thickness		0.065 to 0.14 mm (0.0025 to 0.0054 in.)	0.12 to 0.32 mm (0.0047 to 0.0125 in.)
Weight		64 to 90 g/m² (14 to 24 lb)	(40 to 58 g/m²) x 4 [(12 to 15 lb)] x 4

Printable area:

Single sheets: Same as single sheets from the top insertion.
(Multi-part forms)

Note: Front sheet guide is available only at the nomal operating conditions.

Initialization

There are two ways the printer can be initialized (returned to a fixed set of conditions):

Hardware initialization   When the power is turned on or when the printer receives an INIT signal from the parallel interface (pin 31 goes LOW).

Software initialization   When software sends the ESC @ (initialize the printer) command.

These two kinds of initialization have slightly different effects.

Software initialization does not initialize the printer mechanism or 'clear the user-defined character set. Also, software initialization does not clear the data buffer of all text.

Default settings

The table below shows the default conditions that take effect when the printer is initialized.

Item	Default condition
Top-of-form position	Current paper position
Left and right margins	Cancelled
Line spacing	1/6-inch line spacing
Vertical tab positions	Cleared
Horizontal tab positions	Every eight characters
VFU channel	Channel 0
Font selection	Reset to the current panel setting
User-defined characters	Hardware: cleared Software: deselected only
Character pitch	Depends on the control panel setting and the default setting mode.

Chapter 8
Command Summary

8

Using the Command Summary

The following sections list and describe all the commands available in the Epson ESC/P and the IBM emulation modes. They are sorted by topic in each mode.

If a command has parameters, they are explained. Parameters are indicated by lowercase letters, usually n. The examples below show how the parameters are indicated.

ESC @ is a command with no parameters.

ESC U 1 /0 is a command that uses 1 to turn the feature on and 0 to turn it off.

ESC $ n1 n2 is a command with two parameters.

ESC D nn is a command with a variable number of parameters.

Sending printer commands

Most actions your printer performs are handled by your software. Software commands instruct the printer to print in a particular typeface, feed the paper a certain amount after printing each line, start printing on a particular place on the page, and so on.

Some software programs let you send these commands yourself. This allows you to enhance your text in ways that may not normally be available through the software. For example, some word processing programs do not offer italics, but by inserting a command in your document, you can use italics anywhere you like. The commands your printer recognizes are listed in this command summary.

How you format commands depends on the software you are using. Some software programs accept only the decimal format, while others let you type in ASCII characters. (Some programs don't let you insert printer commands at all.) In addition, your software probably specifies certain punctuation you must use to enter the command. If your software allows you to send commands to the printer, the software manual should explain exactly what format and punctuation are required.

ESC/P Commands Arranged by Topic

Printer operation

ASCII	Dec.	Hex.	Description
ESC @	64	40	Initialize Printer
DC1	17	11	Select Printer
DC3	19	13	Deselect Printer
ESC s 1/0	115	73	Turn Half-Speed Mode On/Off
ESC <	60	3C	Select Unidirectional Mode (one line)
ESC U 1/0	85	55	Turn Unidirectional Mode On/Off
ESC 8	56	38	Disable Paper-Out Detection
ESC 9	57	39	Enable Paper-Out Detection
ESC EM n	25	19	Turn Cut-Sheet Feeder Mode On/Off n = "0": Off 　　"1": Select bin 1 　　"2": Select bin 2 　　"4": On 　　"R": Eject a sheet

 * For the ESC EM command, the variables are the characters;
   for example, use "1" (49 decimal or 31 hex), not decimal 1.

ASCII	Dec.	Hex.	Description
ESC =	61	3D	Set MSB to 0
ESC >	62	3E	Set MSB to 1
ESC #	35	23	Cancel MSB Control
BEL	7	07	Beeper

Data control

ASCII	Dec.	Hex.	Description
CR	13	OD	Carriage Return
CAN	24	18	Cancel Line
DEL	127	7F	Delete Character

Vertical motion

ASCII	Dec.	Hex.	Description
FF	12	oc	Form Feed
ESC Cn	67	43	Set Page Length in Lines n = number of lines (l-127)
ESC C 0 n	67	43	Set Page Length in Inches n = number of inches (l-22)
ESC N n	78	4E	Set Skip-Over Perforation n = number of lines (l-127)
ESC 0	79	4F	Cancel Skip Over Perforation
LF	10	0A	Line Feed
ESC 0	48	30	Select 1 /8-inch Line Spacing
ESC 1	49	31	Select 7/72-inch Line Spacing
ESC 2	50	32	Select 1/6-inch Line Spacing
ESC 3 n	51	33	Set n/216-inch Line Spacing n = O-255

ASCII	Dec.	Hex.	Description
ESC A n	65	41	Set n/72-inch Line Spacing n = O-85
ESC J n	74	4A	Perform n/216-inch Line Feed n = O-255
VT	11	0B	Tab Vertically
ESC B nn	66	42	Set Vertical Tabs Up to 16 tabs (1-255) in ascending order; last parameter should be 0. ESC B 0 clears all tab settings.
ESC b nn	98	62	Set Vertical Tabs in Channels ESC b c n1 n2...n16 Up to 16 tabs (1-255) in ascending order in channel c (0-7); last parameter should be 0. ESC b c 0 clear all tab settings in channel c.
ESC / c	47	2F	Select Vertical Tab Channel c = channel (0-7)

Horizontal motion

ASCII	Dec.	Hex.	Description
ESC l n	108	6C	Set Left Margin n = left margin column
ESC Q n	81	51	Set Right Margin n = right margin column
BS	8	08	Backspace

ASCII	Dec.	Hex.	Description
ESC $ nl n2	36	24	Set Absolute Horizontal Print Position $n = (n1 + n2 \times 256)/60$ inches n: Specifies print position as $n/60$ inches from the left margin.
ESC \ nl n2	92	5C	Set Relative Horizontal Print Position $n = (nl + n2 \times 256)/120$ inches n: Moves current print position by $n/120$ inches. If displacement is to the left, subtract it from 65536.
HT	9	09	Tab Horizontally
ESC D nn	68	44	Set Horizontal Tabs Up to 32 tabs (1-255) in ascending order; last parameter should be 0. ESC D 0 clears all tab settings.

Overall printing style

ASCII	Dec.	Hex.	Description
ESC x n	120	78	Select Near Letter Quality or Draft n = 0: Draft mode 1: Near Letter Quality (NLQ) mode
ESC k n	107	6B	Select Typestyle Family n = 0: Roman 1: Sans Serif

ASCII	Dec.	Hex.	Description
ESC ! n	33	21	Master Select To find the value of n, add together the numbers of the typestyles you want to combine from the list below: n= 0: 10 pitch 1: 12 pitch 2: proportional 4: condensed 8: emphasized 16: double-strike 32: double-width 64: italic 128: underline

Character pitch and size

ASCII	Dec.	Hex.	Description
ESC P	80	50	Select 10 cpi
ESC M	77	4D	Select 12 cpi
ESC p 1/O	112	70	Turn Proportional Mode On/Off
SI	15	OF	Select Condensed Mode
ESC SI	15	OF	Select Condensed Mode

ASCII	Dec.	Hex.	Description
DC2	18	12	Cancel Condensed Mode
s o	14	0E	Select Double-Width Mode (one line)
ESC SO	14	0E	Select Double-Width Mode (one line)
DC4	20	14	Cancel Double-Width Mode (one line)
ESC W l/O	87	57	Turn Double-Width Mode On/Off
ESC w l/O	119	77	Turn Double-Height Mode On/Off

Print enhancement

ASCII	Dec.	Hex.	Description
ESC E	69	45	Select Emphasized Mode
ESC F	70	46	Cancel Emphasized Mode
ESC G	71	47	Select Double-Strike Mode
ESC H	72	48	Cancel Double-Strike Mode
ESC SO	83	53	Select Superscript Mode
ESC Sl	83	53	Select Subscript Mode
ESC T	84	54	Cancel Superscript/Subscript Mode
ESC 4	52	34	Select Italic Mode
ESC 5	53	35	Cancel Italic Mode
ESC- l/O	45	2D	Turn Underline Mode On/Off

Word processing

ASCII		Dec.	Hex.	Description
ESC an		97	61	Select Justification n = 0: Left justification 1: Centering 2: Right justification 3: Full justification
ESC SP n		32	20	Set Intercharacter Space n = 1/120-inch spaces (0-127) added on right side of each character

Character tables

ASCII	Dec.	Hex.	Description
ESC tn	116	74	Select Character Table Select character table n assigned by ESC (t n= 0, 1, 48 or 49
ESC R n	82	52	Select an International Character Set n= 0: USA 7: Spain I 1: France 8: Japan 2: Germany 9: Norway 3: UK 10: Denmark II 4: Denmark I 11: Spain II 5: Sweden 12: Latin America 6: Italy
ESC 6	54	36	Enable Printable Characters Enables printing of codes 128 through 159 decimal as characters.
ESC 7	55	37	Enable Upper Control Codes Cancels ESC 6.

ASCII	Dec.	Hex.	Description
ESC (t nn	**40** 116	28 74	Assign Character Table

ESC (t 3 0 dl d2 d3 Assign character
table with d2 and d3 to registered table
set by ESC t according to dl

dl = 0: Assign to the table selected by
ESC t 0

dl = 1: Assign to the table selected by
ESC t 1

d2	d3	Character table
0	0	Italic
1	0	PC 437 (USA, standard Europe)
1	16	PC 437 Greek*
3	0	PC 850 (Multilingual)
4	**0**	**PC 851** (Greek)*
5	0	PC 853 (Turkish)*
6	0	PC 855 (Cyrillic)*
7	0	PC 860 (Portuguese)
8	0	PC 863 (Canada-French)
9	0	PC 865 (Norwegian)
10	0	PC 852 (East Europe)"
11	0	PC 857 (Turkish)"
14	0	PC 866 (Russian)*
15	0	PC 869 (Greek)*
16	0	USSR COST*
24	0	PC 861 (Icelandic)*
25	0	BRASCII (Brazilian Portuguese)**
26	0	Abicomp (Brazilian Portuguese)**

* These character tables are available only in Europe.

** These character tables are available only in North /South America.

User-defined characters

ASCII	Dec.	Hex.	Description
ESC & nn	**38**	**26**	Define User-Defined Characters ESC & 0 nl n2 al data nl = ASCII code of first character n2 = ASCII code of last character al = Attribute byte that specifies character width and pins to be used data: character data bytes
ESC: 0 n 0	**58**	**3A**	Copy ROM to RAM n = 0: Copy Roman 1: Copy Sans Serif
ESC % n	**37**	**25**	Select User-Defined Set n = 0: Normal set 1: User-defined set
ESC I n	**73**	**49**	Printable Code Area Expansion Codes 0 to 31 and 128 to 159 decimal n = 0: Non-printable codes 1: Printable codes for user defined characters

Graphics

ASCII	Dec.	Hex.	Description
ESC K nl n2	75	4B	Select Single-Density Graphics Mode ESC K nl n2 data n = n1 + n2 x 256 n: Total columns for graphics data = n bytes of graphics data

ASCII	Dec.	Hex.	Description
ESC L n1 **112 76**		**4C**	Select Double-Density Graphics Mode ESC L nl n2 data $n = nl + n2 \times 256$ n: Total columns for graphics data = n bytes of graphics data
ESC Y nl n2 89		59	Select High-Speed Double-Density Graphics Mode ESC L nl n2 data $n = n1 + n2 \times 256$ n: Total columns for graphics data = n bytes of graphics data
ESC Z nl n2 90		5A	Select Quadruple-Density Graphics Mode ESC Z nl n2 data $n = nl + n2 \times 256$ n: Total columns of graphics data = n bytes of graphics data
ESC *mn 42		2A	Select Graphics Mode ESC * m nl n2 data m = Graphics mode (see table blow) $n = nl + n2 \times 256$ n: Total columns of graphics data = n bytes of graphics data

Graphics mode	Alternate code	m	Horiz. density (dot/in)
Single-density	0	60	
Double-density	ESC L	1	120
High-speed double-density*	ESC Y	2	120
Quadruple-density*	ESC Z	3	240
CRT I	none	4	80
Plotter (1:1)	none	5	72
CRT II	none	6	90
Double-density plotter	none	7	144

*   Adjacent dots cannot be printed in these modes.

ASCII	Dec.	Hex.	Description
ESC ? sm	**63**	3F	Reassign Graphics Mode ESC ? sm Changes one graphics mode to another. s = K, L, Y or Z s: Graphics command (ESC K, ESC L, ESC Y or ESC Z) to be changed m = O-7 m: Graphics mode for reassignment. m is the same as the m in the ESC * command.
ESC ^ mn	**94**	5E	Select 9-pin Graphics Mode ESC ^ m nl n2 data m = 0: Single density 1: Double density n = n1 + n2 x 256 n: Total columns of graphics data = (n x 2) bytes of graphics data; 2 bytes/column

IBM Commands Arranged by Topic

Printer operation

ASCII	Dec.	Hex.	Description
DC1	17	11	Select Printer
ESC Q n	81	51	Deselect Printer n = 3: Deselect standard printer 22: Deselect wide printer
ESC U n	85	55	Turn Unidirectional Mode On/Off n = l: On 0: Off
BEL	7	07	Beeper

Data control

ASCII	Dec.	Hex.	Description
CR	13	OD	Carriage Return
CAN	24	18	Cancel Line

Vertical motion

ASCII	Dec.	Hex.	Description
FF	1 2	0 C	Form Feed
ESC C n	67	43	Set Page Length in Lines n = number of lines (1-127)
ESC C 0 n	67	43	Set Page Length in Inches n = number of inches (1-22)
ESC N n	78	4E	Set Skip-Over-Perforation n = number of lines (1-127)
ESC 0	79	4F	Cancel Skip-Over-Perforation
ESC 4	**52**	**34**	Set Top-of-Form
LF	10	0A	Line Feed

ASCII	Dec.	Hex.	Description
ESC 0	48	30	Select 1/&inch Line Spacing
ESC 1	49	31	Select 7/72-inch Line Spacing
ESC 2	50	32	Select ESC A Line Spacing
ESC 3 n	51	33	Set n/216-inch Line Spacing n = O-255
ESC A n	65	41	Set n/72-inch Line Spacing n = O-85
ESC J n	74	A	Perform n/216-inch Line Feed n = O-255
ESC 5 n	53	35	Set/Reset Automatic Line Feed n = 0: Reset 1: Set
VT	11	OB	Tab Vertically
ESC B nn	66	42	Set Vertical Tabs Up to 16 tabs (1-255) in ascending order; last parameter should be 0. ESC B 0 clears all tab settings.

Horizontal motion

ASCII	Dec.	Hex.	Description
ESC X nln2	88	58	Set Left and Right Margins nl = left margin column n2 = right margin column
BS	8	08	Backspace
HT	9	09	Tab Horizontally
ESC Dnn	68	44	Set Horizontal Tabs Up to 32 tabs (1 255) in ascending order; last parameter should be 0. ESC D 0 clears all tab settings.

ASCII	Dec.	Hex.	Description
ESC R	82	52	Reset All Tabs

Overall printing style

ASCII	Dec.	Hex.	Description
ESC I n	73	49	Select Font

n = 0: Normal quality 10 pitch font
1: Normal quality 12 pitch font
2: Near letter quality Sans serif font
3: Near letter quality Roman font
4: Normal quality 10 pitch user-defined font
5: Normal quality 12 pitch user-defined font
6: Near letter quality 10 pitch user-defined font
7: Near letter quality 10 pitch user-defined font
11: Near letter quality Roman italicized font

Character pitch and size

ASCII		Dec.	Hex.	Description
DC2		18	12	Select 10 pitch
ESC :		58	3A	Select 12 pitch
ESC	P 1/0	80	50	Turn Proportional Mode On/Off

n = 1: On
0: Off

ASCII	Dec.	Hex.	Description
SI	15	0F	Select Condensed Mode
ESC SI	15	0F	Select Condensed Mode
s o	14	0E	Select Double-Width Mode (one line)
ESC SO	14	0E	Select Double-Width Mode (one line)
DC4	20	14	Cancel Double-Width Mode (one line)
ESC W n	87	57	Turn Double-Width Mode On/Off n = 1: On 0: Off
ESC [@ nn	9164	5B 40	Select Double-Height, Double-Width Mode ESC [@ n1 n2 m1 m2 m3 m4 nl = 4 n2 = 0 m1 = 0 m2 = 0 m3 = Character height and line feed

m3	Character height	Line feed
0	Unchanged	Unchanged
1	Standard	Unchanged
2	Double-height	Unchanged
1 6	Unchanged	Single
1 7	Standard	Single
1 8	Double-height	Single
3 2	Unchanged	Double
3 3	Standard	Double
34	Double-height	Double

m4 = Character width
        0: Unchanged
        1: Standard
        2: Double-width

Print enhancement

ASCII	Dec.	Hex.	Description
ESC E	69	45	Select Emphasized Mode
ESC F	70	46	Cancel Emphasized Mode
ESC G	71	47	Select Double-Strike Mode
ESC H	72	48	Cancel Double-Strike Mode
ESC SO	83	53	Select Superscript Mode
ESC S 1	83	53	Select Subscript Mode
ESC T	84	54	Cancel Superscript/Subscript Mode
ESC-n	45	2D	Turn Underline Mode On/Off $n = 1$: On 0: Off
ESC _ n	95	5F	Turn Overscoring Mode On/Off $n = 1$: Starts automatic overscoring 0: Ends automatic overscoring

Character tables

ASCII	Dec.	Hex.	Description
ESC 6	54	36	Enable Printable Characters Enables printing of codes 128 through 159 decimal as characters.
ESC 7	55	37	Enable Upper Control Codes Cancels ESC 6.

ASCII		Dec.	Hex.	Description
ESC\n1	n2	92	5C	Print Characters from Symbol Set Enables printing of printable characters assigned to codes below 32 for the next (n2 x 256 + n1) characters received from the computer.
ESC ^		94	5E	Print One Character from Symbol Set Enables printing of any printable character assigned to codes below 32 for the next character.

User-defined characters

ASCII		Dec.	Hex.	Description
ESC =	nn	61	3D	Define User-Defined Characters ESC = nl n2 n3 n4 n5 n6 data nl and n2: Total number of characters to be defined x 13 + 2 = nl + n2 x 256 n3 = 20 n4 = ASCII code of first character n5 = Attribute byte n6 = Attribute byte data: Character data bytes

Graphics

ASCII		Dec.	Hex.	Description
ESC K n1 n2		75	4B	Select Single-Density Graphics Mode ESC K nl n2 data n = nl + n2 x 256 n: Total columns for graphics data = n bytes of graphics data

ASCII	Dec.	Hex.	Description
ESC L nl n2	76	4C	Select Double-Density Graphics Mode ESC L n1 n2 data n = n1 + n2 x 256 n: Total columns for graphics data = n bytes of graphics data
ESC Y n1 n2	**89**	**59**	Select High-Speed Double-Density Graphics Mode ESC L nl n2 data n = nl + n2 x 256 n: Total columns for graphics data = n bytes of graphics data
ESC Z nl n2	90	5A	Select Quadruple-Density Graphics Mode ESC Z nl n2 data n = n1 + n2 x 256 n: Total columns of graphics data = n bytes of graphics data

Appendix

Character Tables in the ESC/P Mode

This section lists the character tables available in the ESC/P mode.

You can select these character tables with the default-setting mode or by using a software command.

All tables except the italic character table are the same as PC437 table for hex codes 00 through 7F, so only the PC437 and italic tables are shown completely. The rest of the tables show only the characters for hex codes 80 through FF.

The tables with * after the table name are available in the European version only.

The tables with ** after the table name are available in the North/ South American version only.

PC437 (USA, Standard Europe)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL			0	@	P	`	p	Ç	É	á	░	└	⊥	α	≡
1		DC1	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	β	±
2		DC2	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
3		DC3	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
4		DC4	$	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	BEL		'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
8	BS	CAN	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9	HT	EM	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	θ	∙
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	VT	ESC	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C	FF		,	<	L	\	l	¦	î	£	¼	╝	╠	▄	∞	ⁿ
D	CR		−	=	M	]	m	}	ì	¥	¡	╜	═	▌	ø	²
E	SO		.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	∈	■
F	SI		/	?	O	_	o	DEL	Å	ƒ	»	┐	╧	▀	∩	

PC850 (Multilingual)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	░	└	ð	Ó	─
1	ü	æ	í	▒	┴	Ð	ß	±
2	é	Æ	ó	▓	┬	Ê	Ô	¾
3	â	ô	ú	│	├	Ë	Ò	¾
4	ä	ö	ñ	┤	─	È	õ	¶
5	à	ò	Ñ	Á	┼	ı	Õ	§
6	å	û	ª	Â	ã	í	µ	÷
7	ç	ù	º	À	Ã	Î	þ	¸
8	ê	ÿ	¿	©	╚	Ï	Þ	°
9	ë	Ö	®	╣	┘	⌐	Ú	¨
A	è	Ü	¬	║	╔	┌	Û	·
B	ï	ø	½	╗	┬	█	Ù	¹
C	î	£	¼	╝	╠	█	ý	³
D	ì	Ø	¡	¢	═	¦	Ý	²
E	Ä	×	«	¥	╬	Ì	¯	■
F	Å	ƒ	»	┐	¤	■	´	

PC860 (Portuguese)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	░	└	┴	α	≡
1	ü	À	í	▒	┴	┬	β	±
2	é	È	ó	▓	┬	┤	Γ	≥
3	â	ô	ú	│	├	┤	π	≤
4	ã	õ	ñ	┤	─	└	Σ	∫
5	à	ò	Ñ	┤	┼	┌	σ	∫
6	Á	Ú	ª	┤	├	┌	µ	÷
7	ç	ù	º	╕	├	┼	τ	≈
8	ê	Ì	¿	╕	└	┘	Φ	°
9	Ê	Õ	Ò	╣	┌	┘	θ	·
A	è	Ü	¬	║	┴	┌	Ω	·
B	í	¢	½	╗	┬	█	δ	√
C	Ô	£	¼	╝	├	█	∞	ⁿ
D	ì	Ù	¡	┘	═	█	φ	²
E	Ã	Pt	«	┘	┼	█	ϵ	■
F	Â	Ó	»	┐	┴	┐	∩	

PC863 (Canadian-French)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	|	░	└	┴	α	≡
1	ü	È	'	▒	┴	┬	β	±
2	é	Ê	ó	▓	┬	┤	Γ	≥
3	â	ô	ú	│	├	┤	π	≤
4	Â	Ë	¨	┤	─	└	Σ	∫
5	à	Ï	¸	┤	┼	┌	σ	∫
6	¶	û	³	╢	├	┌	µ	÷
7	ç	ù	─	╢	├	┼	τ	≈
8	ê	¤	Î	╢	└	┘	Φ	°
9	ë	Ô	⌐	╢	┌	┘	θ	·
A	è	Ü	¬	║	┴	┌	Ω	·
B	ï	¢	½	╗	┬	█	δ	√
C	î	£	¼	╝	├	█	∞	ⁿ
D	‗	Ù	¾	┘	═	█	φ	²
E	À	Û	«	┘	┼	█	ϵ	■
F	§	ƒ	»	┐	┴	┐	∩	

PC865 (Norwegian)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	░	└	┴	α	≡
1	ü	æ	í	▒	┴	┬	β	±
2	é	Æ	ó	▓	┬	┤	Γ	≥
3	â	ô	ú	│	├	┤	π	≤
4	ä	ö	ñ	┤	─	└	Σ	∫
5	à	ò	Ñ	┤	┼	┌	σ	∫
6	å	û	ª	╢	├	┌	µ	÷
7	ç	ù	º	╢	├	┼	τ	≈
8	ê	ÿ	¿	╢	└	┘	Φ	°
9	ë	Ö	⌐	╢	┌	┘	θ	·
A	è	Ü	¬	║	┴	┌	Ω	·
B	ï	ø	½	╗	┬	█	δ	√
C	î	£	¼	╝	├	█	∞	ⁿ
D	ì	Ø	¡	┘	═	█	φ	²
E	Ä	Pt	«	┘	┼	█	ϵ	■
F	Å	ƒ	¤	┐	┴	┐	∩	

PC437 Greek*

CODE	8	9	A	B	C	D	E	F
0	A	P	ι	▒	└	⊥	ω	Ω
1	B	Σ	κ	▒	┴	┬	ά	±
2	Γ	T	λ	▒	├	─	έ	≥
3	Δ	Y	μ	│	├	│	ή	≤
4	E	Φ	ν	┤	─	└	ϊ	⌠
5	Z	X	ξ	┤	┼	┌	ι	⌡
6	H	Ψ	ο	┤	┼	├	ό	÷
7	Θ	Ω	π	┐	┼	┼	ύ	≈
8	I	α	ρ	┐	┼	┼	ϋ	°
9	K	β	σ	┤	├	┘	ώ	£
A	Λ	γ	ς	┤	├	┌	Ά	¥
B	M	δ	τ	┐	┬	█	Έ	√
C	N	ε	υ	┘	├	█	Ή	ⁿ
D	Ξ	ζ	φ	┘	─	┌	Ί	²
E	O	η	χ	┘	┼	█	Ό	■
F	Π	θ	ψ	┐	┼	█	Ύ	

PC851 (Greek)"

CODE	8	9	A	B	C	D	E	F
0	Ç	Ί	ϊ	▒	└	Τ	ζ	
1	ü	.	ϋ	▒	┴	Y	η	±
2	é	Ό	ό	▒	┬	Φ	θ	υ
3	â	ô	ύ	│	├	X	ι	φ
4	ä	ö	Α	┤	─	Ψ	κ	χ
5	à	Ύ	Β	K	┼	Ω	λ	§
6	Ά	û	Γ	Λ	Π	α	μ	ψ
7	ç	ù	Δ	M	P	β	ν	΄
8	ê	Ω	E	N	┖	γ	ξ	°
9	ë	Ö	Z	┤	┘	┘	ο	¨
A	è	Ü	H	│	├	┌	π	ω
B	ï	ά	½	┐	┬	█	ρ	ϋ
C	î	£	Θ	┘	├	█	σ	ΰ
D	Έ	έ	I	Ξ	─	δ	ς	ώ
E	Ä	ή	«	O	┼	ε	τ	■
F	Ή	ί	»	┐	Σ	█	΄	

PC869 (Greek)*

CODE	8	9	A	B	C	D	E	F
0		Ί	ϊ	▒	└	Τ	ζ	-
1		Ϊ	ϋ	▒	┴	Y	η	±
2		Ό	ό	▒	┬	Φ	ϑ	υ
3			ύ	│	├	X	ι	φ
4			Α	┤	─	Ψ	κ	χ
5		Ύ	Β	K	┼	Ω	λ	§
6	Ά	Ψ	Γ	Λ	Π	α	μ	ψ
7		©	Δ	M	P	β	ν	΅
8	·	Ω	E	N	┖	γ	ξ	°
9	¬	²	Z	┤	├	┘	ο	¨
A	¦	³	H	│	├	┌	π	ω
B	‘	ά	½	┐	┬	█	ρ	ϋ
C	’	£	Θ	┘	├	█	σ	ΰ
D	Έ	έ	I	Ξ	─	δ	ς	ώ
E	─	ή	«	O	┼	ε	τ	■
F	Ή	ί	»	┐	Σ	█	΄	

PC852 (East Europe)*

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	đ	Ó	-
1	ü	Ĺ	í	▒	┴	Đ	ß	˝
2	é	ĺ	ó	▒	┬	Ď	Ô	ˇ
3	â	ô	ú	│	├	Ë	Ń	˘
4	ä	ö	Ą	┤	─	ď	ń	¨
5	ů	Ľ	ą	Á	┼	Ň	ň	§
6	ć	ľ	Ž	Â	Ă	Í	š	÷
7	ç	Ś	ž	Ě	ă	Î	š	¸
8	ł	ś	Ę	Ş	┖	ě	Ŕ	°
9	ë	Ö	ę	┤	├	┘	Ú	¨
A	Ő	Ü		│	├	┌	ŕ	·
B	ő	Ť	ź	┐	┬	█	Ű	ű
C	î	ť	Č	┘	├	█	ý	Ř
D	Ź	Ł	ş	Ż	─	Ţ	Ý	ř
E	Ä	×	«	ż	┼	Ů	ţ	■
F	Ć	č	»	┐	¤	█	΄	

PC853 (Turkish)*

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└		Ó	-
1	ü	ċ	í	▒	┴		ß	
2	é	Ċ	ó	▒	┬	Ê	Ô	ℓ
3	â	ô	ú	│	├	Ë	Ò	ṅ
4	ä	ö	ñ	┤	─	È	Ġ	˘
5	à	ò	Ñ	Á	┼	ı	ġ	§
6	ĉ	û	Ğ	Â	Ŝ	Í	µ	÷
7	ç	ù	ğ	À	ŝ	Î	Ĥ	¸
8	ê	ı	Ĥ	Ş	Ŀ	Ï	ĥ	°
9	ë	Ö	ħ	╣	╔	┘	Ú	¨
A	è	Ü		║	╩	┌	Û	·
B	ï	ĝ	½	╗	╦		Ù	³
C	î	£	ĵ	╝	╠	█	Ö	³
D	ì	Ĝ	ş	ż	═		ü	²
E	Ä	×	«	ż	╬	Ì		■
F	Ĉ	ĵ	»	┐	¤	■	´	

PC857 (Turkish)*

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	º	Ó	-
1	ü	æ	í	▒	┴	ª	ß	±
2	é	Æ	ó	▒	┬	Ê	Ô	
3	â	ô	ú	│	├	Ë	Ò	¾
4	ä	ö	ñ	┤	─	È	õ	¶
5	à	ò	Ñ	Á	┼		Õ	§
6	å	û	Ğ	Â	ã	Í	µ	÷
7	ç	ù	ğ	À	Ã	Î		¸
8	ê	ı	¿	©	Ŀ	Ï	×	°
9	ë	Ö	®	╣	╔	┘	Ú	¨
A	è	Ü	¬	║	╩	┌	Û	·
B	ï	ø	½	╗	╦	█	Ù	¹
C	î	£	¼	╝	╠	█	ì	³
D	ı	Ø	¡	¢		¦	ÿ	²
E	Ä	Ş	«	¥	╬	Ì		■
F	Å	ş	»	┐	¤	■	´	

PC855 (Cyrillic)*

CODE	8	9	A	B	C	D	E	F
0	ђ	љ	а	▒	└	л	Я	-
1	Ђ	Љ	А	▒	┴	Л	р	ы
2	ѓ	њ	б	▒	┬	м	Р	Ы
3	Ѓ	Њ	Б	│	├	М	с	з
4	ё	ћ	ц	┤	─	н	С	З
5	Ё	Ћ	Ц	х	┼	Н	т	ш
6	є	ќ	д	Х	к	о	Т	Ш
7	Є	Ќ	Д	и	К	О	у	э
8	ѕ	ў	е	И	Ŀ	п	У	Э
9	Ѕ	Ў	Е	╣	╔	┘	ж	щ
A	і	џ	ф	║	╩	┌	Ж	Щ
B	І	Џ	Ф	╗	╦	█	в	ч
C	ї	ю	г	╝	╠	█	В	Ч
D	Ї	Ю	Г	й	═	П	ь	
E	ј	ъ	«	Й	╬	Я	Ь	■
F	Ј	Ъ	»	┐	¤	■	№	

PC866 (Russian)"

CODE	8	9	A	B	C	D	E	F
0	А	Р	а	▒	└	┴	р	Ё
1	Б	С	б	▒	┴	┬	с	ё
2	В	Т	в	▒	┬	┬	т	Є
3	Г	У	г	│	├	┼	у	є
4	Д	Ф	д	┤	─	┕	ф	Ї
5	Е	Х	е	╡	┼	┌	х	ї
6	Ж	Ц	ж	╢	╞	┬	ц	ў
7	З	Ч	з	╖	╟	┼	ч	ў
8	И	Ш	и	╕	╚	┴	ш	°
9	Й	Щ	й	╣	╔	┘	щ	·
A	К	Ъ	к	║	╩	┌	ъ	·
B	Л	Ы	л	╗	╦	█	ы	√
C	М	Ь	м	╝	╠	█	ь	№
D	Н	Э	н	┘	═	█	э	¤
E	О	Ю	о	┘	╬	█	ю	■
F	П	Я	п	┐	┴	█	я	

USSR GOST*

CODE	8	Q	A	B	C	D	E	F
0				А	Р	а	р	Ё
1				Б	С	б	с	ё
2				В	Т	в	т	
3				Г	У	г	у	
4				Д	Ф	д	ф	
5				Е	Х	е	х	
6				Ж	Ц	ж	ц	→
7				З	Ч	э	ч	←
8				И	Ш	и	ш	↑
9				Й	Щ	й	щ	↓
A				К	Ъ	к	ъ	÷
B				Л	Ы	л	ы	±
C				М	Ь	м	ь	
D				Н	Э	н	э	
E				О	Ю	о	ю	■
F				П	Я	п	я	

PC861 (Icelandic)*

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á				α	≡
1	ü	æ	í				β	±
2	é	Æ	ó				Γ	≥
3	â	ô	ú				π	≤
4	ä	ö	Á				Σ	∫
5	à	þ	Í				σ	
6	å	û	Ó				µ	÷
7	ç	Ý	Ú				τ	≈
8	ê	ý	¿				Φ	°
9	ë	Ö	⌐				θ	•
A	è	Ü	¬				Ω	·
B	Ð	ø	½				δ	√
C	ð	£	¼				∞	ⁿ
D	Þ	Ø	¡				ø	²
E	Ä	₧	«				∈	■
F	Å	ƒ	»				∩	

BRASCII (Brazilian Portuguese)*"

CODE	8	9	A	B	C	D	E	F
0	NUL			°	À	Ð	à	ð
1		DC1	¡	±	Á	Ñ	á	ñ
2		DC2	¢	²	Â	Ò	â	ò
3		DC3	£	³	Ã	Ó	ã	ó
4		DC4	¤	'	Ä	Ô	ä	ô
5			¥	µ	Å	Õ	å	õ
6			¦	¶	Æ	Ö	æ	ö
7	BEL		§	·	Ç	Œ	ç	œ
8	BS	CAN	¨	,	È	Ø	è	ø
9	HT	EM	©	¹	É	Ù	é	ù
A	LF		ª	º	Ê	Ú	ê	ú
B	VT	ESC	«	»	Ë	Û	ë	û
C	FF		¬	¼	Ì	Ü	ì	ü
D	CR			½	Í	Ý	í	ý
E	SO		®	¾	Î	Þ	î	þ
F	SI		¯	¿	Ï	ß	ï	ÿ

Abicomp (Brazilian Portuguese)**

CODE	8	9	A	B	C	D	E	F
0	NUL			ò	¡	ò		
1		DC1	À	ó	à	ó		
2		DC2	Á	ô	á	ô		
3		DC3	Â	õ	â	õ		
4		DC4	Ã	ö	ã	ö		
5			Ä	Œ	ä	œ		
6			Ç	ò	ç	ù		
7	BEL		È	ú	è	ú		
8	BS	CAN	É	û	é	û		
9	HT	EM	Ê	Ü	ê	ü		
A	LF		Ë	¥	ë	ÿ		
B	VT	ESC	Ì	¨	ì	β		
C	FF		Í	£	í	ª		
D	CR		Î	·	î	º		
E	SO		Ï	§	ï	¿		
F	SI		Ñ	°	ñ	±		

Italic character table

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL			0	@	P	`	p	à	*§*		*0*	*@*	*P*	`	*p*
1		DC1	!	1	A	Q	a	q	è	*ß*	*!*	*1*	*A*	*Q*	*a*	*q*
2		DC2	"	*2*	**B**	**R**	**b**	r	ù	*I*	*"*	*2*	*B*	*R*	*b*	*r*
3		DC3	#	3	C	S	c	s	ò	*æ*	*#*	*3*	*C*	*S*	*c*	*s*
4		DC4	$	4	D	T	d	t	ì	*Ø*	*$*	*4*	*D*	*T*	*d*	*t*
5			%	5	E	U	e	u	•	*ø*	*§*	*5*	*E*	*U*	*e*	*u*
6			&	6	**F**	**V**	f	v	£	*¨*	*&*	*6*	*F*	*V*	*f*	*v*
7	BEL		'	7	G	W	g	w	¡	*Ä*	*'*	*7*	*G*	*W*	*g*	*w*
8	BS	CAN	(	8	H	X	h	x	¿	*Ö*	*(*	*8*	*H*	*X*	*h*	*x*
9	HT	EM	)	9	I	Y	i	y	*Ñ*	*Ü*	*)*	*9*	*I*	*Y*	*i*	*y*
A	LF		*	:	J	Z	j	z	*ñ*	*ä*	***	*:*	*J*	*Z*	*j*	*z*
B	VT	ESC	+	;	K	[	k	{	*¤*	*ö*	*+*	*;*	*K*	*[*	*k*	*{*
C	FF		,	<	L	\	1	¦	*ª*	*ü*	*,*	*<*	*L*	**	*1*	*¦*
D	CR		–	=	M	]	m	}	*Å*	*É*	*–*	*=*	*M*	*]*	*m*	*}*
E	SO		.	>	N	^	n	~	*â*	*é*	*.*	*>*	*N*	*^*	*n*	*~*
F	SI		/	?	*0*	_	o	DEL	*ç*	*¥*	*/*	*?*	*0*	_	*o*	*Ø*

International character sets

The table below shows the international character sets you can select with the default-setting mode and the ESC R software command. For example, when you select "Italic-France"in the default-setting mode, the characters in the"France" row on the table below are used in the italic character table.

The following eight international character sets can be selected with the default-setting mode and with the ESC R command.

Country	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0 U.S.A.	#	$	@	[	\	]	^	`	{	¦	}	~
1 France	#	$	à	°	ç	§	^	`	é	ù	è	¨
2 Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
3 U.K.	£	$	@	[	\	]	^	`	{	¦	}	~
4 Denmark	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
5 Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6 Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7 Spain	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~

The following five additional sets are available only with the ESC R software command.

Country	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
8 Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
9 Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10 Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11 Spain II	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
12 Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú

Character Tables in the IBM Emulation Mode

This section lists the character tables available in the IBM emulation mode. The IBM emulation mode can be selected with the default-setting mode.

These character tables can be selected with the default-setting mode, or by using the ESC 6 (table 2) or ESC 7 (table 1) software command.

The PC865 tables are the same as the PC437 tables for hex codes 00 through 7F, so only the PC437 tables are shown completely. The PC865 tables show only the characters of hex codes 80 through FF.

PC437 (table 1)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL			0	@	P	.	p	NUL		á	▓	L	ð	6	—
1		DC1	!	1	A	Q	a	q		DC1	í	▓	⊥	D	a	±
2		DC2	"	2	B	R	b	r		DC2	ó	▓	T	ê	ô	—
3			#	3	C	S	c	s			ú		⊢	L	π	≤
4		DC4	$	4	D	T	d	t		DC4	ñ	⊣	—	L	Σ	⌠
5			%	5	E	U	e	u			Ñ		+	r	σ	⌡
6			&	6	F	V	f	v			a	⊣			µ	÷
7	BEL		'	7	G	W	g	w	BEL		Q	⌐			τ	≈
8	BS	CAN	(	8	H	X	h	x	BS	CAN	¿	⌐			Φ	°
9	HT		)	9	I	Y	i	y	HT		r	⌐			Θ	·
A	LF		*	:	J	Z	j	z	LF		¬	⌐	⊥	r	Ω	·
B	VT	ESC	+	;	K	[	k	{	VT	ESC	½	⌐	T		δ	√
C	FF		,	<	L	\	l	!	FF		¼	⌐			∞	n
D	CR		—	=	M	]	m	}	CR		¡	⌐	—		ø	2
E	SO		.	>	N	^	n	~	SO		«	J	⊥		∈	■
F	SI		/	?	O	_	o		SI		»	⌐	⊥		∩	

PC437 (table 2)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL			0	@	P	`	p	Ç	É	á	░	└	╨	α	≡
1		DC1	!	1	A	Q	a	q	ü	æ	í	▒	┴	╥	β	±
2		DC2	"	2	B	R	b	r	é	Æ	ó	▓	┬	╙	Γ	≥
3	♥		#	3	C	S	c	s	â	ô	ú	│	├	╘	π	≤
4	♦	DC4	$	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	BEL		'	7	G	W	g	w	ç	ù	º	╖	╟	╪	τ	≈
8	BS	CAN	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	┘	Φ	°
9	HT		)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┌	Θ	∙
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	VT	ESC	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C	FF		,	<	L	\	l			î	£	¼	╝	╠	▄	∞	ⁿ
D	CR		–	=	M	]	m	}	ì	¥	¡	╜	═	▌	ø	²
E	SO		.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	∈	■
F	SI		/	?	O	_	o		Å	ƒ	»	┐	╧	▀	∩	

PC865 (table 1)

CODE	8	9	A	B	C	D	E	F
0	NUL		á	░	└	╨	ó	─
1		DC1	í	▒	┴	╤	ß	±
2		DC2	ó	▓	┬	╥	Ô	
3			ú	│	├	╙	π	≤
4		DC4	ñ	┤	─	╘	Σ	⌠
5			Ñ	╡	┼	╒	σ	⌡
6			ª	╢	╞	╓	µ	÷
7	BEL		º	╖	╟	╫	τ	≈
8	BS	CAN	¿	╕	╚	╪	Φ	°
9	HT		⌐	╣	╔	┘	Θ	∙
A	LF		¬	║	╩	┌	Ω	·
B	VT	ESC	½	╗	╦	█	δ	√
C	FF		¼	╝	╠	▄	∞	ⁿ
D	CR		¡	╜	═	▌	ø	²
E	SO		«	╛	╬	▐	∈	■
F	SI		¤	┐	╧	▀	∩	

PC865 (table 2)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	░	└	╨	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ä	ö	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	å	û	ª	╢	╞	╓	µ	÷
7	ç	ù	º	╖	╟	╫	τ	≈
8	ê	ÿ	¿	╕	╚	╪	Φ	°
9	ë	Ö	⌐	╣	╔	┘	Θ	∙
A	è	Ü	¬	║	╩	┌	Ω	·
B	ï	ø	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	ì	Ø	¡	╜	═	▌	ø	²
E	Ä	₧	«	╛	╬	▐	∈	■
F	Å	ƒ	¤	┐	╧	▀	∩	

Symbol set

Characters defined in the following symbol set can be printed using the ESC\(characters) or ESC * (one character) software command.

CODE	0	1	7
0		▶	
1	☺	◀	
2	☻	↕	
3	♥	‼	
4	♦	¶	
5'	♣	§	
6	♠	▬	
7	•	↨	
8	◘	↑	
9	○	↓	
A	◙	→	
B	♂	←	
C	♀	∟	
D	♪	↔	
E	♫	▲	
F	☼	▼	△

Glossary

The following definitions apply specifically to printers. If a word is italicized, see that topic for more information.

ASCII

American Standard Code for Information Interchange. A standardized coding system for assigning numerical codes to letters and symbols.

bidirectional printing

Printing in which the print head prints in both directions. This increases the speed of printing.

bit

A binary digit (0 or 11, which is the smallest unit of information used by a printer or computer.

buffer

The portion of the printer's memory used to store data before printing it.

byte

A unit of information consisting of eight bits.

characters per inch (cpi)

A measure of the size of text characters, sometimes referred to as pitch. The printer's default setting is 10 cpi.

character table

A collection of letters, numbers, and symbols that provides you with the characters used in a particular language.

condensed printing

Printing in which the width of each character is approximately 60% of the width of standard characters. Useful for fitting wide tables or spreadsheets onto a page.

continuous paper

Paper that has sprocket-feed holes on each side, is perforated between pages, and is supplied in a folded stack. Also called fanfold paper.

control code

Special codes used to control printer functions (such as a carriage return or line feed) instead of printing characters.

cpi

See characters per inch.

data dump

A troubleshooting feature that helps advanced users find the cause of communication problems between the printer and the computer. When the printer is in data dump mode, it prints each code it receives in hexadecimal notation and ASCII characters.

default

A value or setting that takes effect when the equipment is turned on, reset, or initialized.

dot matrix

A method of printing in which each letter or symbol is formed by a pattern (matrix) of individual dots.

double-height printing

Printing in which each character is twice as tall as normal.

double-width printing

Printing in which each character is twice as wide as normal.

draft printing

One of two print qualities available on your printer. Draft uses a minimum number of dots per character for high-speed printing. See also NLQ *printing.*

ESC/P

Abbreviation for Epson Standard Code for Printers. This system of commands gives you software control of your printer from your computer. It is standard for all Epson printers and supported by most application software for personal computers.

font

A font is a style of type designated by a family name.

form feed

A control code and control panel button that advances the paper to the next top-margin position.

initialization

Returns the printer to its defaults (fixed sets of conditions).

interface

The connection between the computer and the printer. 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.*

line feed

A control code and control panel button that advances the paper one line space.

NLQ printing

One of two print qualities available on your printer. Near letter quality provides better readability and appearance at a reduced print speed. See also *draft printing.*

paper-park position

The position in which the paper is backed out of the paper path, but is still attached to the push tractor.

parallel interface

See *interface.*

printable area

The area of a page on which the printer can print. It is smaller than the physical size of the page due to margins.

proportional printing

Printing in which the width of the character 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.

push tractor

An detachable device that automatically pushes continuous paper into the printer from the loading side.

RAM

Random Access Memory. The portion of the printer's memory used as a buffer and for storing user-defined characters. All data stored in RAM is lost when the printer is turned off.

reset

To return a printer to its defaults by sending a command, an INIT signal, or by turning the printer off and then back on.

self test

A method for checking the operation of the printer. When you run the self test, the printer prints the characters stored in its ROM.

software program

A program that helps you carry out a particular task, such as word processing or financial planning.

subscript

Printing in which each character is printed at about two-thirds the normal height in the lower part of the character space.

superscript

Printing in which each character is printed at about two-thirds the normal height in the upper part of the character space.

tear off

A paper feed operation that automatically feeds the perforation of continuous paper to the tear-off position and then feeds the paper back to the loading position.

tear-off position

The position to which the printer feeds the paper at the end of a print job. You can change the position by using the micro-feed feature.

top-of-form

The position on the paper that the printer recognizes as the first printable line. This is the default top-margin position.

unidirectional printing

Printing in which the print head prints in one direction only. Unidirectional printing is useful for printing graphics because it allows more precise vertical alignment than bidirectional printing.

user-defined characters

Characters that are defined and stored in the printer by the user. Also called download characters.

Index

Command descriptions are not indexed here. For information on a specific command, see Chapter 8.