



USER'S MANUAL

LC-4522

DOT MATRIX PRINTERS

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Chapter 1: Printer Setup

This chapter contains important information on setting up your printer. Be sure to read this chapter carefully before using the printer for the first time. In this chapter you will learn about:

- o Choosing a place for the printer
- o Unpacking and setting up the printer
- o Installing the platen knob
- o Installing the ribbon cassette
- o Loading paper
- o Connecting to your computer

Choosing a place for the printer

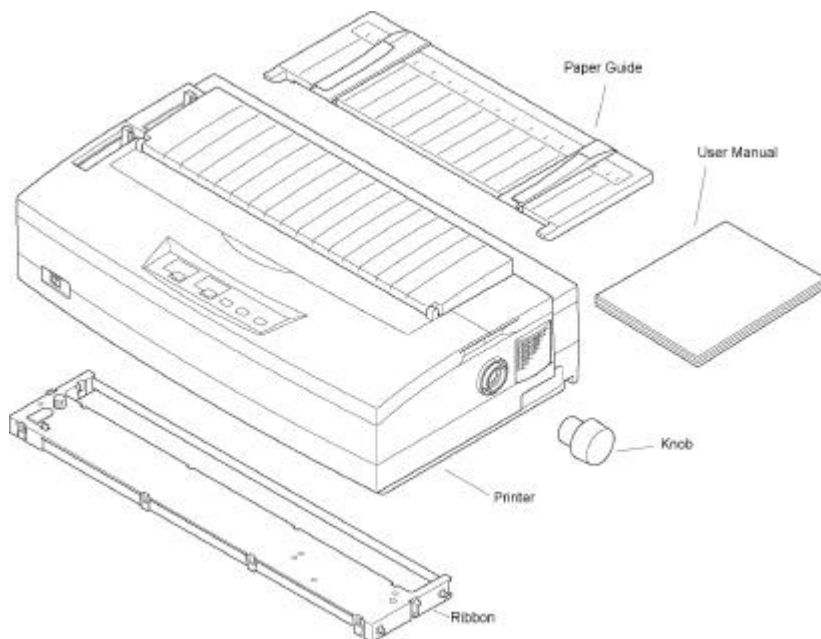
Before actually unpacking the printer, you should take a few minutes to think about where you plan to use it. Remember the following points when doing this.

- 3 Choose a firm, level surface where the printer will not be exposed to vibration.
- 3 The power outlet you plan to connect to for power should be nearby and unobstructed.
- 3 Make sure that the printer is close enough to your computer for you to connect the two with your printer cable.
- 3 Allow six inches (15 centimeters) of free space on either side of the printer.
 - If you are going to use fanfold paper, make sure that there is adequate space for paper behind the printer.
- 3 Make sure that the printer is not exposed to direct sunlight.
- 3 Make sure that the printer is well away from heaters.
- 3 Make sure that the surrounding area is clean, dry, and free of dust.
- 3 Make sure that the printer is connected to a reliable power outlet. It should not be on the same electric circuit as copiers, refrigerators, or other appliances that cause power spikes.
- 3 Use a power outlet that matches the power rating noted on the label affixed to the bottom of your printer.
- 3 Make sure that the room where you are using the printer is not too humid.

2 Printer Setup

Unpacking the printer

Check to make sure that the carton contains each of the items shown in the following illustration.



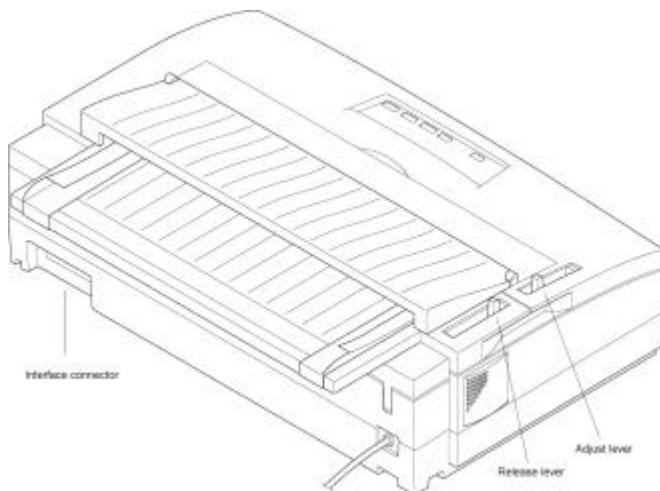
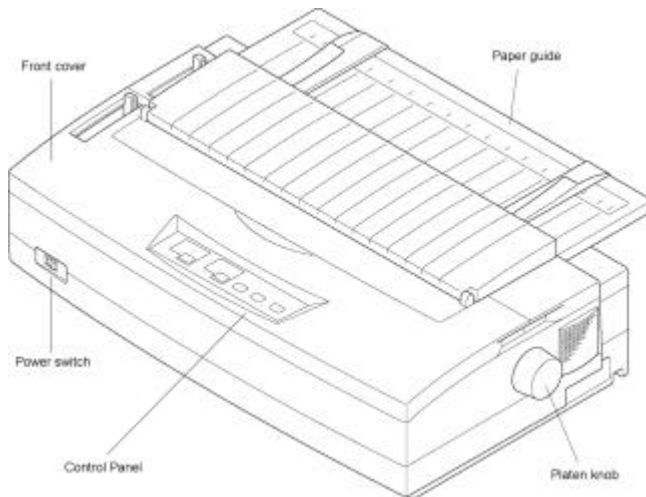
If anything is missing, contact the store where you bought the printer and ask them to supply the missing part. Note that it is a good idea to keep the original box and all the packing materials just in case you need to pack the printer up again and send it somewhere at a later date.

Important!

There are several versions of this printer designed for different voltages. It is not possible to change the voltage of a printer. If the voltage shown on the label on the bottom of your printer does not match the voltage for your area, contact your dealer immediately.

General guide

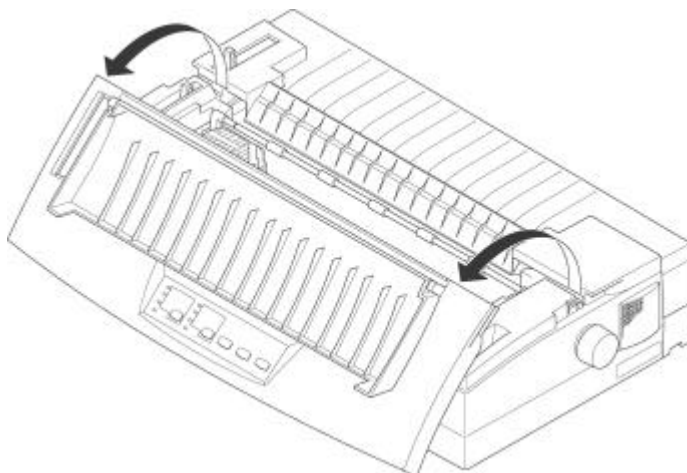
The following illustrations show the major components of your printer.



4 Printer Setup

Opening the front cover

- o Lift up on the front cover and swing it open until it stops.



- o To close the front cover, simply lower it back into place.

Caution!

The tear assist edge is rather sharp. Take care to avoid injuring your hands.

Note:

You can completely remove the front cover from the printer or you can stand it up. You should normally leave the front cover closed, because it protects against objects getting into the printer, and it cuts down on printer noise.

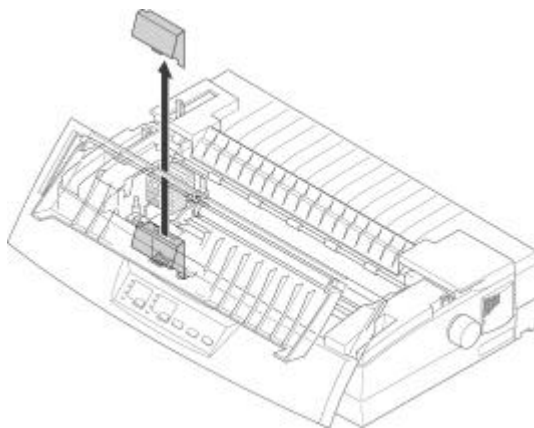
Removing the protective materials

Two small pieces of packing material are inserted into the printer to protect components during shipping. Be sure to remove them before using the printer.

- o Open the rear cover by pushing it back so that the cover swings back and down.

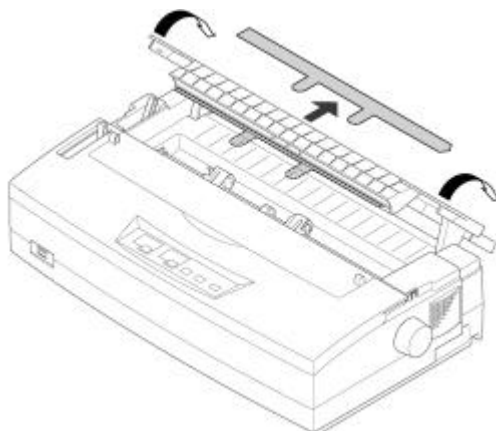
Removing the protective materials 5

- o Open the front cover.
- o Remove a pieces of packing material from inside the printer as shown in the illustration.



A piece of cardboard is inserted into the printer to protect components during shipping. Be sure to remove it before using the printer.

- o Open the rear cover.
- o Remove the cardboard from the inside of the rear cover as shown in the illustration.

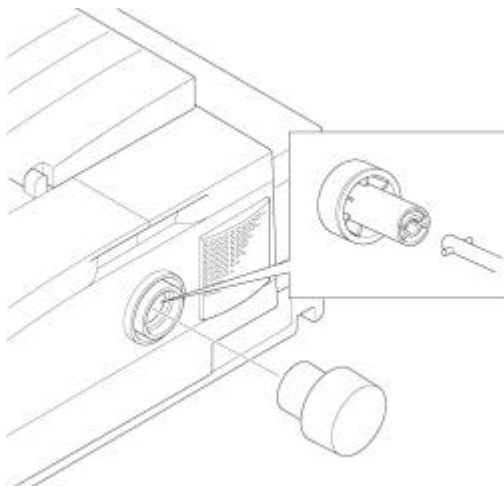


6 Printer Setup

Installing the platen knob

The platen knob is packed into a recess in the packaging material.

- o Install the knob on the shaft located inside the large hole on the left side of the printer. Make sure that the two splines of the platen shaft inside the printer fit into the slots inside the knob's spindle. Press the knob carefully but firmly into place as far as it will go.



Installing the ribbon cassette

- o Make sure the printer is unplugged from its power outlet.

Caution!

Never move the print head while the printer is turned on. Doing so can damage the printer. If you have just finished printing, let the print head cool for a few minutes before you touch it.

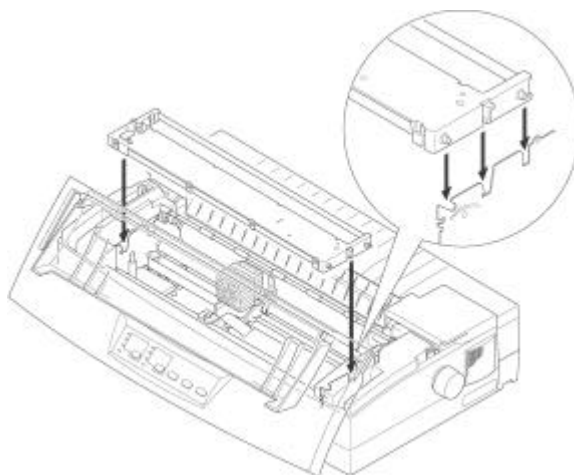
- o Remove the front cover of the printer.
- o Remove the ribbon cassette from its package.

Installing the ribbon cassette 7

- o Rotate the knob on the ribbon cassette clockwise to take up any slack in the ribbon.

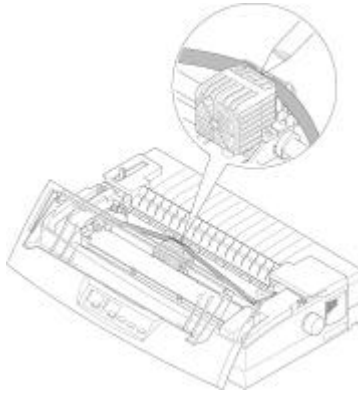


- o Carefully place the cassette onto the mechanism making sure that the spindle fits into the socket on the bottom of the cassette. Also make sure that the side tabs fit into the grooves on the sides of the frame.



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- o While guiding the ribbon between the print head and print head shield, press down the ribbon fabric by pen.



- o By hand, move the printer head left and right making sure that the ribbon fabric comes into correct position.
- o Replace the front cover of the printer.

Important!

Printing that is poor quality or too light is almost always due to a ribbon that is simply worn out or "used up." If you experience problems with print quality, check the condition of the ribbon. If the black part looks gray and well-worn, replace the ribbon with a new one.

Removing the ribbon cassette

Use the following procedure to remove the ribbon cassette from the printer when you want to replace it with a new one.

- o Make sure that the printer is unplugged from its power outlet.

Caution!

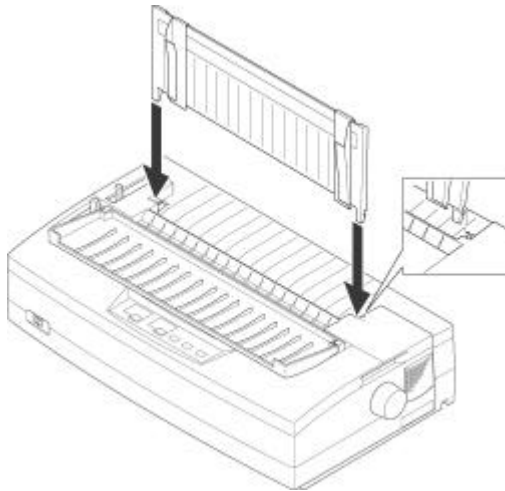
Never move the print head while the printer is turned on. Doing so can damage the printer. If you have just finished printing, let the print head cool for a few minutes before you touch it.

Installing the paper guide 9

- o Open the front cover of the printer.
- o By hand, move the cartridge holder to the left side where there is a cutout in the top guide to allow easy installation and removal of the ribbon cassette.
- o Using your thumb and forefinger to squeeze the two tabs on the ribbon cassette towards the center, carefully remove the cassette from the holder.
- o Use the procedure under “Installing the ribbon cassette” on page 6 to install a new cassette.

Installing the paper guide

- o Insert the two tabs on the rear cover of the printer into the holes in the bottom of the paper guide.

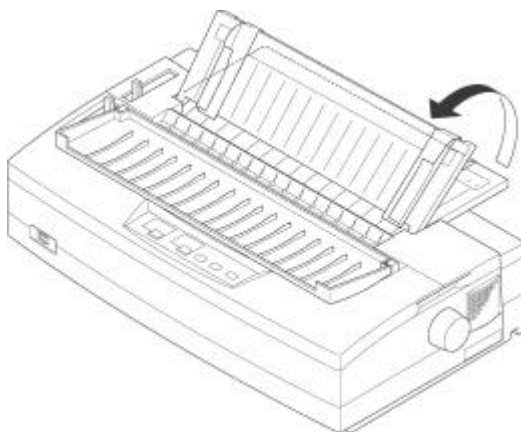


- o To remove the paper guide from the printer, simply pull the tabs out of the holes.

10 Printer Setup

Standing up the paper guide

- o You can move the paper guide so that it is at angle as shown in the illustrations below.



Connecting to a power outlet and turning power on and off 11

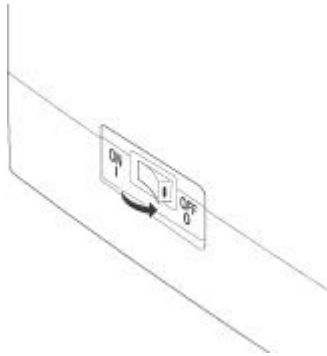
Connecting to a power outlet and turning power on and off

- o Plug the power cord of the printer into a standard power outlet whose voltage matches the power rating noted on the label affixed to the bottom of your printer.

Caution!

If the voltage marked on the bottom of your printer does not match the voltage from the outlet you are using, do not plug in the power cord. Contact your dealer for assistance.

- o Set the switch on the left of the printer to 1 (ON) to turn power on, and to 0 (OFF) to turn power off.



Caution!

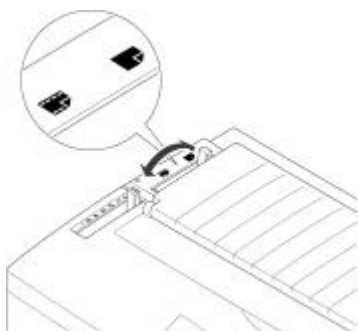
Whenever you turn off the power, wait for at least five seconds before turning it back on. Otherwise you may damage the printer. We also recommend that you unplug the printer from the power outlet whenever you do not plan to use it for long periods. Because of this, you should locate the printer so that the power outlet it is plugged into is nearby and easy to access.

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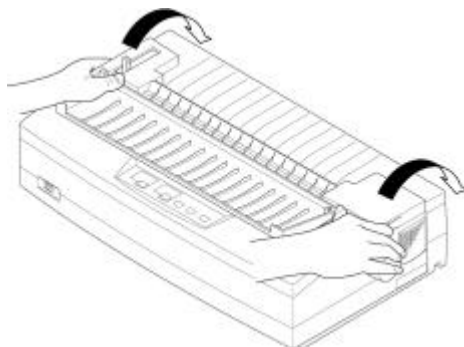
Loading fanfold paper

This section tells you how to load fanfold paper. Note that you can also use cut-sheet paper. For details on using other types of paper, see “Paper Handling” on page 41 of this manual.

- o Remove the paper guide from the printer.
- o Make sure printer power is turned off.
- o Set the release lever to the fanfold position.



- o Grasping the two back corners of the printer with the palms of your hands, press back on the two raised areas on the top of the rear cover until it opens.



- o Swing the rear cover back and down until it stops.

Loading fanfold paper 13

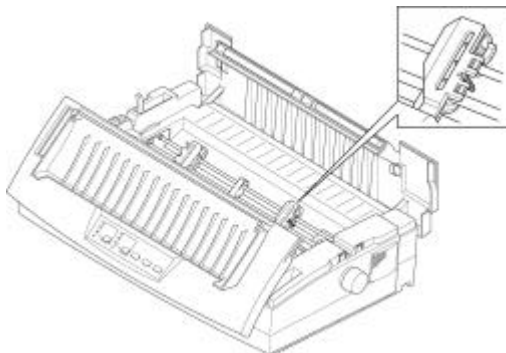
Note:

You can also completely remove the rear cover by simply pulling it away from the back of the printer after you open it.

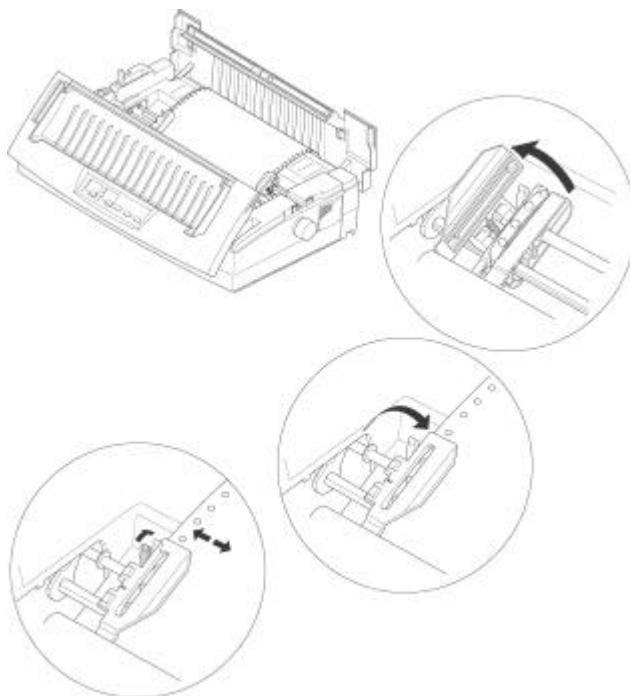
Caution!

The metal edge of the cover is rather sharp. Take care to avoid injuring your hands when handling it.

- o Pass the fanfold paper through the space between the printer case and the rear cover.
- o Unlock the two tractor covers by pulling their gray levers up, and slide them so they are aligned approximately with the holes on the sides of the paper. Also move the center paper support so that it is approximately halfway between the two tractors.
- o Open the covers of both tractors and insert the paper so the tractor pins fit.
- o Close the tractor covers. At this point you can make final adjustments to the paper position by releasing the gray levers and moving the tractors. The paper should lie flat with no buckling or bulging (tractors too close) or no stretching or elongation of the holes (tractors too far apart). After making these adjustments, be sure that you re-lock the tractors by pushing the gray levers back into their original positions.



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- o Close the rear cover and press down gently on it until it locks into place with a click.

Caution!

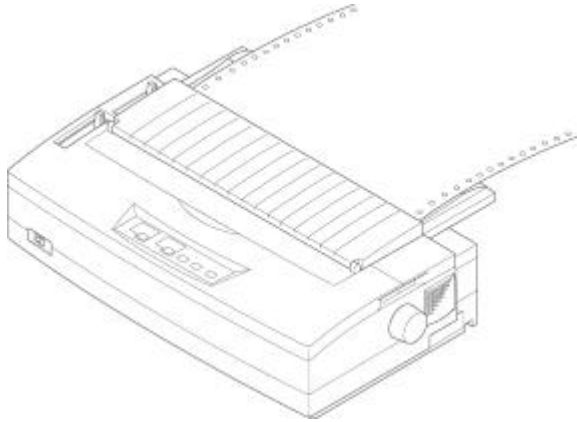
Since printing with an open rear cover may cause paper feeding problems, be sure to close the rear cover before printing.

Loading fanfold paper 15

- o Install the paper guide so that it is lay down as the illustration.

In this position, the paper guide keeps the printed paper separate from the unprinted paper.

Then slide the right and left paper guides apart so they do not interfere with the fanfold paper feeding.



- o Turn on the printer.

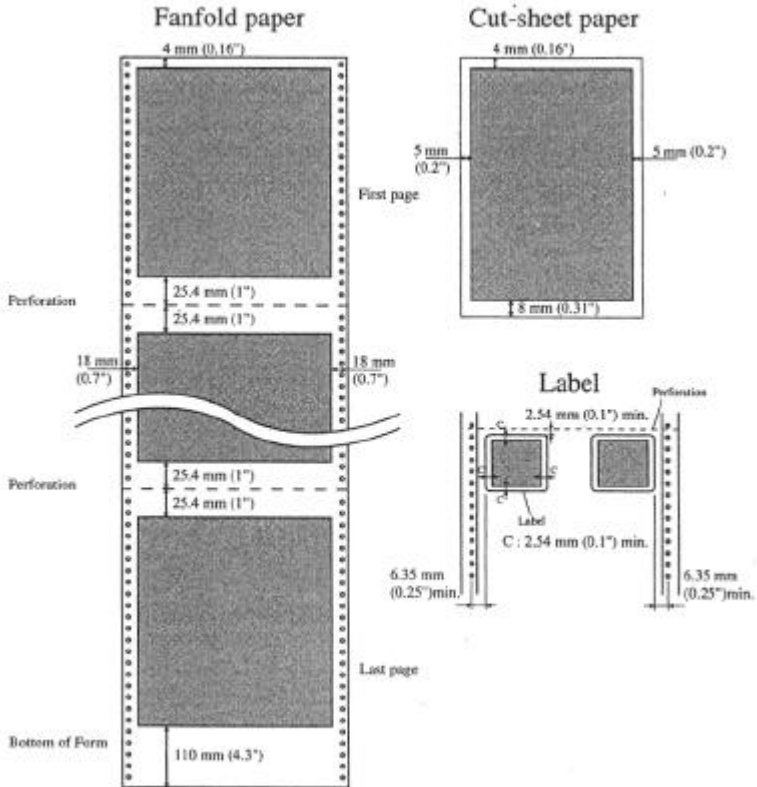
The printer will beep a number of times to indicate that paper is not loaded properly. Also, the control panel's **POWER** indicator flashes whenever paper is not loaded.

- o Press the **SET/EJECT/PARK** button to feed the paper to the starting position.

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Printing on fanfold paper

When printing on fanfold paper, take care not to print too close to the perforations that separate each sheet. The following shows the recommended print area for fanfold paper, cut-sheet paper and label paper.



Parking fanfold paper

It is not necessary to remove fanfold paper currently loaded in the printer in order to print on cut-sheet paper. Instead, simply use the following procedure to *park* the fanfold paper.

- o Tear off the paper at a perforation so there is no more than half a page sticking out of the front cover of the printer.

If necessary, you can press the control panel's **ON LINE** button to put the printer off-line, and then use the **LINE FEED** button to feed the paper until a perforation is just past the front cover.

- o Press the control panel's **ON LINE** button to put the printer off-line.
- o Press the control panel's **SET/EJECT/PARK** button. The printer automatically reverse feeds the fanfold paper until it is no longer in contact with the platen, which is indicated by the printer beeping a number of times. Also, the control panel's **POWER** indicator starts to flash because paper is not loaded.
- o Move the release lever to the cut-sheet position.
- o Change the paper guide to its upright position.

You can now load cut-sheet paper into the printer using the procedures under "Manual sheet feeding" on page 44.

Unparking fanfold paper

After you are finished printing on cut-sheet paper, use the following procedure to unpark fanfold paper and make it available for printing.

- o Remove all cut-sheet paper from the printer.
- o Move the paper guide so that it is at a lay down position: (Refer to page 10.)
- o Move the release lever to the fanfold position.
- o Press the **SET/EJECT/PARK** button to feed the paper to the starting position.

The printer automatically goes back on-line at this time.

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Using the tear-off function

The following procedure makes it easy to tear off fanfold paper.

- o Check to make sure that the printer is on-line.
- o Press the **FORM FEED** button to perform the long tear-off operation, or

press the **LINE FEED** button to perform the short tear-off operation.

The long tear-off operation causes the paper to be fed automatically so the tear assist edge of the printer cover is aligned with the paper's next perforation.

The short tear-off operation causes the paper to be fed automatically so the tear assist edge of the printer cover is located just below the last line printed on the paper.

- o Pull the paper against the tear assist edge to tear it off.

Connecting to your computer

The computer sends data to the printer through a cable. This printer does not come with a cable, so you must purchase one separately. You will probably want to use a standard parallel cable for connection, but note that you can also use an optional serial-to-parallel interface converter (SPC-8K).

Important!

The following instructions apply to the Centronics parallel cable that is used with an IBM-compatible personal computer. Note that they do not apply to all types of computers and cables. If you are unsure about what type of cable you should use to connect with your computer, consult your dealer.

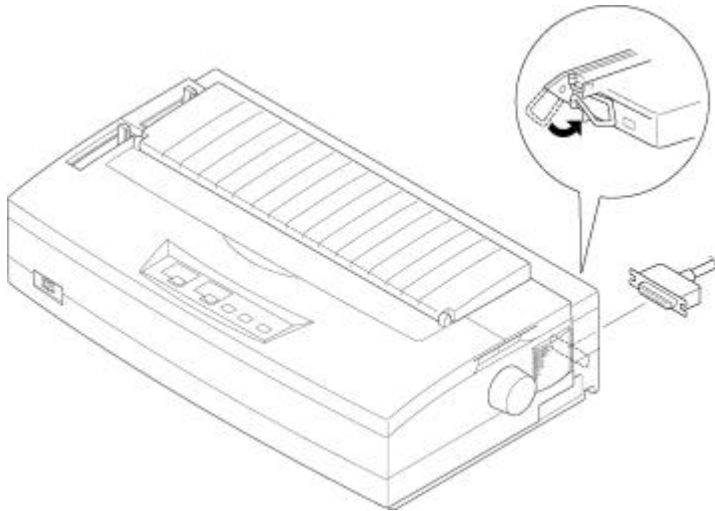
For an IBM-compatible personal computer:

- 3 Use a standard 36-pin Centronics parallel cable.
- 3 The parallel cable should be no longer than six feet (two meters). Longer cables can result in poor transfer of information.

Important!

Make sure that the printer and the computer are turned off before connecting them.

- o Plug one end of the parallel cable into the parallel port of your computer.
The parallel port should be labeled "Printer," "Parallel," "PRN," "LPT1," or something similar.
- o Plug the other end of the parallel cable into the socket on the side of the printer and secure it in place with the clips.



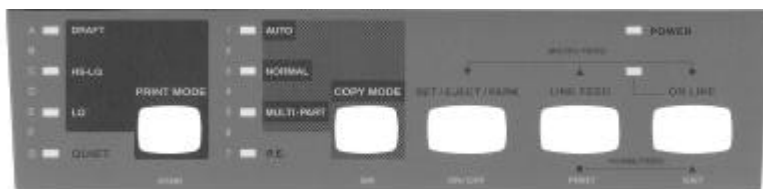
Note:

Consult your dealer for details on how to set up your computer when using the optional SPC-8K serial-to-parallel interface converter.

20 Control Panel Operations

Chapter 2: Control Panel Operations

The control panel gives you push-button control over the printer's operations. It includes indicator lights, which tell you the current status of the printer at a glance.



This chapter describes control panel functions that can be performed while the printer is turned on and either on-line or off-line. The buttons perform different functions in the EDS and Dot Adjustment Modes. Functions of control panel buttons in these modes are described in the relevant sections covering them.

Switching between on-line and off-line

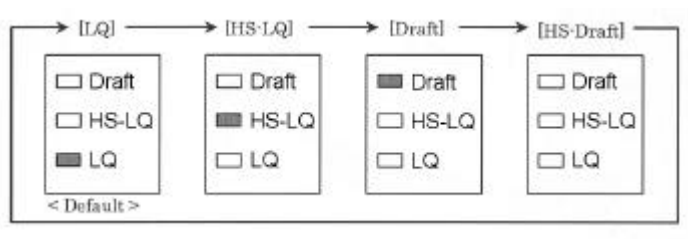
- o Press **ON LINE** to switch the printer between being on-line and off-line.
- o When the printer is on-line, the **ON LINE** indicator is lit and the printer can receive data from the computer. You should make sure that the printer is on-line whenever you are trying to print.
- o When the printer is in off-line, the **ON LINE** indicator goes out, which means that the printer cannot receive any data.
- o Note that you can also press **ON LINE** while a printing operation is in progress to stop the printing.

Important!

Make sure that the on-line/off-line setting of the printer is correct before performing a control panel operation.

Selecting a Print Quality

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o Press **PRINT MODE** to change the printing quality selection. An indicator lights to the left of the name of the quality that is currently selected.



Note:

The print quality setting you make with the above procedure can be changed if the software you are using overrides the setting on the control panel. You can prevent this by using the following procedure to put the printer into the Quality Lock Mode when you turn it on.

The Print Quality mode will function for the image printing, too.

Entering the Print Quality Lock Mode

When the printer is in the Print Quality Lock Mode, the print quality settings you make on the control panel are used even if your software tries to override the font. Use the following procedure to enter the Print Quality Lock Mode.

- o Turn off the printer.
 - o While holding down **PRINT MODE**, turn printer power on.
- The printer is now in the Quality Lock Mode.
- To exit the Print Quality Lock Mode, simply turn the printer off.

Important!

The Print Quality lock will also function if you are using Windows TrueType fonts.

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Entering the Multi-part Mode

When the printer is in the Multi-part Mode, the print head prints with greater impact. It should be noted, however, that printing in the Multi-part Mode also reduces the life of the print head. Because of this, you should use the Multi-part Mode only for printing on four or five-ply paper. Return to the normal mode for printing on one to three-ply paper.

Use the following procedure to enter the Multi-part Mode

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o Press **MULTI-PART** to change the printing force selection.

The following shows the meanings of the indicators that light on the control panel when you press **MULTI-PART**.

- o When you will select **Auto**, the printing force is controlled by the adjust-lever position.
- o When you will select **Normal**, the printing force is always normal mode and it's used the single-sheet or the multi-part form which is less than 1 original and 2 copies.
- o When you will select **Multi**, the printing force is always multi-part mode and it's used the multi-play form which is 1 original and 3 or 4 copies.

Line feed

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o Press **LINE FEED** once to feed paper one line. Holding down **LINE FEED** continually feeds paper, one line at a time, until you release the button.

Paper eject (cut-sheet paper)

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o Press **SET/EJECT/PARK** to eject the paper.
- o After the paper is ejected, the printer will beep and the **POWER** indicator will flash to indicate there is no paper in the printer.

Form feed (fanfold paper)

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o Holding down **LINE FEED** and press **ON LINE** then the printer will automatically feed the paper to the top of the next page.

Parking fanfold paper

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o Press the control panel's **SET/EJECT/PARK** button.
- o The printer automatically reverse feeds the fanfold paper until it is no longer in contact with the platen.

Micro feed

- Use the following operation to feed the paper in very small increments. This makes it possible to align the print head exactly where you want it.
- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
 - o While holding down **ON LINE**, press **LINE FEED** to feed the paper forward or **SET/EJECT/PARK** to feed the paper backward.

24 Control Panel Operations

Setting the top of form position

The current position of paper loaded in the printer is automatically set as the top of the page whenever you turn power on. You can also use the following procedure at any time to specify a different position as the top of the page.

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o Use the micro feed operations (see above) to move the paper so that the print head is located where you want the new top of form position to be.
- o While holding down **PRINT MODE**, press **SET/EJECT/PARK**

The printer will beep once to indicate that a new top of form position has been set.

Tear-off function (fanfold paper)

This procedure feeds fanfold paper to a position where it can be torn off easily.

- o Check to make sure that the printer is on-line.
- o Press the **SET/EJECT/PARK** button to perform the long tear-off operation, or press the **LINE FEED** button to perform the short tear-off operation.

The long tear-off operation causes the paper to be fed automatically so the tear assist edge of the printer cover is aligned with the paper's next perforation.

The short tear-off operation causes the paper to be fed automatically so the tear assist edge of the printer cover is located just below the last line printed on the paper.

- o Pull the paper against the tear assist edge to tear it off.
- o When you resume printing, the printer reverse feeds the paper to its former position.

Selecting the Quiet Print Mode

The Quiet Print Mode lets you print with less noise than that produced with normal printing. Use the following procedure to enter and exit the Quiet Print Mode.

Important!

Though the Quiet Print Mode prints more quietly, it also causes printing to take considerably longer than normal printing.

- o Make sure the printer is on-line (**ON LINE** indicator is lit).
- o Press **PRINT MODE**, to toggle between the Quiet Print Mode and normal printing.
The printer emits one short beeps when the Quiet Print Mode is selected, and two short beep when normal printing is selected.

Changing the auto load position

Normally the printer automatically feeds paper to a standard position (1/6-inch from the top of the paper). This is called the auto load position. You can use the following procedure to specify a different auto load position.

- o Make sure the printer is off-line (**ON LINE** indicator is not lit).
- o While holding down **ON LINE**, press **PRINT MODE** and then release the two buttons.
The printer will automatically eject the cut-sheet that is in the printer, or reverse feed fanfold paper until it is no longer in contact with the platen.
Also, all the font and pitch indicators on the control panel will light.
- o Press **MULTI-PART** to feed the paper to the starting position.
- o Feed the paper so the print head is located where you want the new auto load position to be.
Press **LINE FEED** to feed the paper forward and **SET/EJECT/PARK** to feed the paper backward. This is the micro feed operation.
- o After you have the paper at the position you want, hold down **ON LINE** and press **SET/EJECT/PARK** to make the current print head position the new auto load position. The printer will beep twice to indicate that the new auto load position is set.
- o To clear the new auto load position and return to the one that you set previously (using the above procedure), press **ON LINE**. To clear the currently set auto load position and return to the standard position (1/6-inch from the top of the paper), hold down **ON LINE** and press **MULTI-PART**.

26 Control Panel Operations

Note:

*The auto load position you set remains in effect until you turn the printer off. If you want to save the auto load position in memory, press **LINE FEED** instead of **SET/EJECT/PARK** while holding down **ON LINE** in the above step.*

Saving a macro

Normally, any settings you make on the control panel are cleared when you turn the printer off. Use the following procedure to save the current control panel settings so that they are used whenever you turn the printer on.

- o Make the control panel settings you want.
- o Use **ON LINE** to put the printer off-line (**ON LINE** indicator is not lit).
- o Hold down **PRINT MODE** and then **MULTI-PART**. Keep both buttons held down until the printer beeps twice.

This procedure saves the following settings.

- Current the print quality and the copy-capability settings
- Quiet Print Mode status

- o To clear saved control panel settings repeat the above procedure, but keep

PRINT MODE and **MULTI-PART** depressed after the printer beeps twice.]

Soon the printer will beep again three times to indicate that the saved control panel settings have been cleared.

Clearing the printer's buffer

When the printer receives data from a computer, it temporarily stores it in a memory called a buffer. If you stop a printing job partway through, there is the chance that some data will remain in the buffer. The following procedure clears the printer's buffer by deleting any data that might be there.

- o Execute the necessary command in the program you are using to stop the print job.

Important!

Be sure to stop the print job before taking the printer off line. Otherwise, the print job will resume from where you interrupted it when you put the printer back on-line.

- o Use **ON LINE** to take the printer off line (**ON LINE** indicator is not lit).
- o Hold down **PRINT MODE** and then **ON LINE**. Keep both buttons held down until the printer beeps once, which indicates that the buffer is cleared.

Initializing the printer

The following procedure initializes the printer to its power-on settings. If you have control panel settings stored in memory, this procedure sets up the printer using them.

- o Use **ON LINE** to take the printer off line (**ON LINE** indicator is not lit).
- o Hold down **PRINT MODE** and then **ON LINE**. Keep both buttons held down until the printer beeps once (indicating the printer buffer is cleared) and then beeps again three times, which indicates that the printer is reset.

Chapter 3: Using the EDS Mode

The letters “EDS” stand for “Electronic DIP Switches.” Just like the small DIP switches that are used by many computers, printers, and other devices, the EDS mode lets you configure the printer so that it matches your system and software needs. This chapter describes how to enter the printer’s EDS Mode and provides details about available settings and how to change them.

About EDS Mode settings

There are two EDS-1 and EDS-2 and each EDS Mode settings are grouped among seven “banks” (representing banks of switches) that are identified by the letters A through G. Each bank contains a number of “switches” numbered 1 through 7 that you can turn on and off to configure the printer.

Entering the EDS Mode

- o Make sure that paper is loaded in the printer.
- o Turn off the printer.
- o While holding down the control panel’s **ON LINE LINE FEED**, and

SET/EJECT/PARK buttons, turn the printer back on.

This causes the following message to be printed, which indicates the printer is in the EDS-1 Mode.

- o While holding down the control panel’s **PRINT MODE. MULTI-PART**, and

SET/EJECT/PARK buttons, turn the printer back on.

This causes the following message to be printed, which indicates the printer is in the EDS-2 Mode.

```
CURRENT EDS SETTINGS
EDS 1
Bank 1-A 1-B 1-C 1-D 1-E 1-F 1-G
Switch 1234567 1234567 1234567 1234567 1234567 1234567 1234567
ON *****
OFF *
```



```
CURRENT EDS SETTINGS
EDS 2
Bank 2-A 2-B 2-C 2-D 2-E 2-F 2-G
Switch 1234567 1234567 1234567 1234567 1234567 1234567 1234567
ON * ** * ** *
OFF * ** * **
```

Selecting a bank

- o While in the EDS Mode, use the control panel' s **BANK** button to select a bank. When the **BANK** indicator flashes it indicates the current bank selected.

Lit Indicator	Selected Bank
A	A
A+C	B
C	C
C+E	D
E	E
E+G	F
G	G

Selecting a switch

- o While in the EDS Mode, use the control panel' s **SWITCH** button to select a bank switch. When the **SW** indicator flashes it indicates the current switch selected.

Lit Indicator	Selected Switch
1	1
1+3	2
3	3
3+5	4
5	5
5+7	6
7	7

Changing a switch setting

- o After selecting a bank and switch, press the control panel' s **ON/OFF** button to turn the switch on and off. The current setting of the switch is indicated by the **ON LINE** indicator: the indicator is lit when the switch is on, and is not lit when the switch is off.

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Printing the current switch settings

- o In the EDS Mode, press the control panel's **PRINT** button to print out the current switch settings. Asterisks on the printout show whether a switch is turned on or off.

```
CURRENT EDS SETTINGS  
EDS 1  
Bank      1-A      1-B      1-C      1-D      1-E      1-F      1-G  
Switch    1234567 1234567 1234567 1234567 1234567 1234567 1234567  
ON        ***** ***** ***** ***** *** ** ***** *****  
OFF                *                               *
```



```
CURRENT EDS SETTINGS  
EDS 2  
Bank      2-A      2-B      2-C      2-D      2-E      2-F      2-G  
Switch    1234567 1234567 1234567 1234567 1234567 1234567 1234567  
ON        * *** * **** ***** ***** ***** ***** *****  
OFF       * **  * *
```

Exiting the EDS Mode

- o Press the control panels **EXIT** button to exit the EDS Mode.

EDS Mode Settings

The following details all of the settings you can program in the EDS Mode. You can print out a detailed overview of all the settings by performing a test of the printer.

(EDS-1) BANK A

Switch 1: Reserved

Switch 2: RAM Usage

Specifies whether RAM should be used as an input buffer (ON) or as a download buffer (OFF). Selecting input buffer (ON) tells the printer to use available RAM to store data it receives from the computer, which speeds up the printing. Selecting download buffer (OFF) tells the printer to use available RAM to store character patterns.

Switch 3: Graphics Direction

Selects uni-directional (OFF) or bi-directional (ON) printing for graphics. Bi-directional printing (ON) is faster, while uni-directional (OFF) printing generally provides better print quality in the graphics mode.

Switch 4: Auto CR with LF

Specifies whether auto CR with LF is enabled (ON) or disabled (OFF). When auto CR with LF is enabled (ON), the printer automatically performs a carriage return whenever it receives a line feed from the computer. When it is disabled (OFF), the computer must send both a line feed code and a carriage return code at the end of each line. Most applications do this automatically.

Switch 5: Auto LF with CR

Specifies whether auto LF with CR is enabled (OFF) or disabled (ON). When auto LF with CR is enabled (OFF), the printer automatically performs a line feed whenever it receives a carriage return from the computer. When it is

disabled (ON), the computer must send both a line feed code and a carriage return code at the end of each line. Most applications do this automatically.

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Note the following check points when trying to figure out which setting to use here:

3 If you find that your output is double-spaced when it should not be, turn this switch ON (Disabled).

3 If you find that lines are printing over each other, turn this switch OFF (Enabled).

Switch 6: Quiet mode

When the Quiet Mode is enabled (OFF), the printer prints with less noise than normal printing. Though the Quiet Mode prints more quietly, it also takes considerably longer than normal printing.

Switch 7: Not Used

BANK B

Switches 1,2: Print mode

Turn these switches on or off to select the print mode you want to use.

ON, ON	:LQ mode
ON, OFF	:HS-LQ mode
OFF,ON	:Draft mode
OFF,OFF	:HS-Draft mode

Switches 3, 4, 5: Print Pitch

Turn these switches on or off to form the pattern that matches the print pitch setting you want to make.

ON, ON, ON	:10cpi	OFF,ON, ON	:20cpi
ON, ON, OFF	:12cpi	OFF,ON, OFF	:Proportional
ON, OFF,ON	:15cpi	OFF,OFF,ON	:10cpi
ON, OFF,OFF	:17cpi	OFF,OFF,OFF	:10cpi

Switch 6: LQ Font Selection

Selects Roman (ON) or Sanserif(OFF) font to use for LQ printing.

Switch 7: Not Used

BANK C

Switches 1,2: Multi-Part Mode

Specifies whether the printer's Multi-Part Mode is enabled (ON, OFF) or disabled (OFF,ON). When the Multi-Part Mode is enabled, the impact of the print head is increased, but head life is decreased. Enable the Multi-Part Mode when printing on four to five-ply paper. Disable the Multi-Part Mode when printing on 1 to 3-ply paper.

Both switches turns on, Multi-Part Mode is selected by the adjust-lever position when the position is set to more than 4.

Switch 3: Auto Tear off (Long)

Specifies whether the printer's auto tear-off (long) feature (page 24) is enabled (OFF) or disabled (ON). Note that this setting controls the application software's tear-off function only. It does not affect the manual tear-off function that is performed using the control panel buttons.

The manual tear-off function is always enabled.

Switch 4: Skip over perforation (Tractor mode only)

Specifies whether the printer's skip over perforation feature is enabled (OFF) or disabled (ON). When skip over perforation is enable, printer makes 1-inch bottom margin automatically.

Switch 5: FF command selection (Friction mode only)

Turn off this switch, FF command performs as paper eject command.

Switch 6: Paper eject at Power ON (Friction mode only)

Turn off this switch, Printer performs a paper eject operation at power on.

Switch 7: Line Spacing

Selects 1/6-inch (ON) or 1/8 -inch (OFF) spacing between lines.

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BANK D

Switch 1: Character Table

Selects IBM-Graphic character table (ON) or Italic character table (OFF).

Switch 2: Character Set

When IBM-Graphics character table is selected, code area from 80H to 9FH are used as the control code (OFF).

Switch 3: Zero Style

Specifies whether a normal zero (ON) or a slashed zero (OFF) will be used.

Selecting Normal (ON) prints zeros without lines running through them, while

Slashed (OFF) prints zeros with a diagonal slash running through them.

Switches 4,5: Reserved

Switch 6: Print Width

Specifies the printing area whether 13.6 inch (ON) or 8 inch (OFF).

Switch 7: Not Used

BANK D

Switches 1,2,3,4,5,6,7: Reserved

**(EDS-2)
BANK A**

Switches 1,2,3,4: Page Length (Friction Mode)

Turn these switches on or off to form the pattern that matches the Page Length setting you want to use.

ON, ON, ON, ON	:3.0 inch	OFF,ON, ON, ON	:8.5 inch
ON, ON, ON, OFF	:3.5 inch	OFF,ON, ON, OFF	:10.5 inch
ON, ON, OFF,ON	:4.0 inch	OFF,ON, OFF,ON	:11.0 inch
ON, ON, OFF,OFF	:5.5 inch	OFF,ON, OFF,OFF	:11.7 inch (A4)
ON, OFF,ON, ON	:6.0 inch	OFF,OFF,ON, ON	:12.0 inch
ON, OFF,ON, OFF	:7.0 inch	OFF,OFF,ON, OFF	:14.0 inch
ON, OFF,OFF,ON	:7.25 inch	OFF,OFF,OFF,ON	:17.0 inch
ON, OFF,OFF,OFF	:8.0 inch	OFF,OFF,OFF,OFF	:11.7 inch (A4)

Switch 5: Top Margin

Selects 1/6-inch (ON) or 1-inch (OFF) spacing as the top margin when execute Paper auto-loading feature.

Switches 6,7: Not Used

BANK B

Switches 1,2,3,4: Page Length (Tractor Mode)

Turn these switches on or off to form the pattern that matches the Page Length setting you want to use.

ON, ON, ON, ON	:3.0 inch	OFF,ON, ON, ON	:8.5 inch
ON, ON, ON, OFF	:3.5 inch	OFF,ON, ON, OFF	:10.5 inch
ON, ON, OFF,ON	:4.0 inch	OFF,ON, OFF,ON	:11.0 inch
ON, ON, OFF,OFF	:5.5 inch	OFF,ON, OFF,OFF	:11.7 inch (A4)
ON, OFF,ON, ON	:6.0 inch	OFF,OFF,ON, ON	:12.0 inch
ON, OFF,ON, OFF	:7.0 inch	OFF,OFF,ON, OFF	:14.0 inch
ON, OFF,OFF,ON	:7.25 inch	OFF,OFF,OFF,ON	:17.0 inch

ON, OFF, OFF, OFF : 8.0 inch OFF, OFF, OFF, OFF : 11.0 inch

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Switch 5: Top Margin

Selects 1/6-inch (ON) or 1-inch (OFF) spacing as the top margin when execute Paper auto-loading feature.

Switches 6,7: Not Used

BANK C

Switch 1: CR Centering at top of page

Specifies whether the printer execute CR Centering at the top of page (ON) or not (OFF). When the printer execute CR Centering, the paper is fed smoothly.

Switch 2: CR Centering at seem line (Tractor mode only)

Specifies whether the printer execute CR Centering at seem line (OFF) or not (ON). The thick paper is fed smoothly at the perforation when select this feature.

Switch 3: CR Centering Position

Specifies whether the printer's CR centering is long (ON) or short (OFF). When the CR centering position is long (ON), the carriage moves to the center of the platen before the paper is inserted or ejected. When CR centering is short (OFF), the carriage moves to the left side of the platen.

In order to prevent paper feeding problems, set the CR centering position to short (OFF) when narrow (less than 6") paper is used and set it to long (ON) when wider (more than 6") paper is used.

Switch 4: Paper Out Detector

Specifies whether the printer's paper out detector is enabled (ON) or disabled (OFF). When the paper out detector is enabled (ON), the printer automatically stops printing whenever it senses there is no more paper. When it is disabled (OFF), the printer continues printing as long as there is data. Selecting disabled (OFF) makes it possible to print right up to the bottom of a page, but it also creates the danger of printing when there is no paper loaded in the printer, which can damage the print head and platen.

Switch 5: Buzzer

Specifies whether the beep command of buzzer is enabled (ON) or disabled.

Switch 6: Print direction command

Specifies whether the print direction command <ESC>"U"n is enabled (OFF) or disabled.

Switch 7: Not Used

BANK D

Switches 1, 2, 3, 4: International Character Set

Select the international character set you want to use. This setting determines the assignment of 16 character codes.

ON, ON, ON, ON	:USA	OFF,ON, ON, ON	:Japan
ON, ON, ON, OFF	:France	OFF,ON, ON, OFF	:Norway
ON, ON, OFF,ON	:Germany	OFF,ON, OFF,ON	:Denmark-2
ON, ON, OFF,OFF	:England	OFF,ON, OFF,OFF	:Spain-2
ON, OFF,ON, ON	:Denmark-1	OFF,OFF,ON, ON	:Latin America
ON, OFF,ON, OFF	:Sweden	OFF,OFF,ON, OFF	:Korea
ON, OFF,OFF,ON	:Italy	OFF,OFF,OFF,ON	:Ireland
ON, OFF,OFF,OFF	:Spain-1	OFF,OFF,OFF,OFF	:Legal

Switch 5: Strobe timing

Specifies whether the strobe timing of parallel interface is Normal (ON) or Special timing.

When printer is connected with Special terminal, it's necessary to change the timing to Special.

Switch 6: ACK timing

Specifies whether the strobe timing of parallel interface is Normal (ON) or Special timing.

When printer is connected with Special terminal, it's necessary to change the timing to Special.

Switch 7: Not Used

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BANK D

Switches 1, 2, 3, 4, 5: Code Page

If your EDS settings specify the graphics character table (EDS-2, Bank D, Switch 1 ON), use the Bank D switches to select the default character code page you want to use.

A code page is the set of symbols and characters that your printer can print.

Your printer converts ASCII hexadecimal data according to a code page to print symbols and characters. By supporting different code pages, the printer can print in a variety of different languages. The following table shows detailed information about code pages.

ON, ON, ON, ON, ON	:#437	U.S.A
ON, ON, ON, ON, OFF	:#737	Greek #737
ON, ON, ON, OFF, ON	:#772	Lithuanian #772
ON, ON, ON, OFF, OFF	:#774	Lithuanian #774
ON, ON, OFF, ON, ON	:#850	Multi-Lingual
ON, ON, OFF, ON, OFF	:#851	Greek #851
ON, ON, OFF, OFF, ON	:#852	Latin-2
ON, ON, OFF, OFF, OFF	:#858	Multi-Lingual with Euro
ON, OFF, ON, ON, ON	:#860	Portuguese
ON, OFF, ON, ON, OFF	:#861	Icelandic
ON, OFF, ON, OFF, ON	:#863	Canadian French
ON, OFF, ON, OFF, OFF	:#865	Nordic
ON, OFF, OFF, ON, ON	:#866	Russian
ON, OFF, OFF, ON, OFF	:#869	Greek #869
ON, OFF, OFF, OFF, ON	:#928	Greek #928
ON, OFF, OFF, OFF, OFF	:#1001	Arabic
OFF, ON, ON, ON, ON	:#2001	Lithuanian-KBL
OFF, ON, ON, ON, OFF	:#3001	Estonian-1
OFF, ON, ON, OFF, ON	:#3002	Estonian-2
OFF, ON, ON, OFF, OFF	:#3011	Latvian-1
OFF, ON, OFF, ON, ON	:#3012	Latvian-2
OFF, ON, OFF, ON, OFF	:#3021	Bulgarian

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OFF,ON, OFF,OFF,ON	:#3031	Hebrew
OFF,ON, OFF,OFF,OFF	:#3041	Maltese
OFF,OFF,ON, ON, ON	:#3840	IBM-Russian
OFF,OFF,ON, ON, OFF	:#3841	Gost
OFF,OFF,ON, OFF,ON	:#3843	Polish
OFF,OFF,ON, OFF,OFF	:#3844	CS2
OFF,OFF,OFF,ON, ON	:#3845	Hungarian
OFF,OFF,OFF,ON, OFF	:#3846	Turkish
OFF,OFF,OFF,OFF,ON	:#3847	Brazil-ABNT
OFF,OFF,OFF,OFF,OFF	:#3848	Brazil-ABICOMP

Switch 6: Saving Control Panel Status

When select the Auto Saving mode (OFF), the panel condition which are memorized Automatically.

Switch 7: Not Used

When select the Auto Saving mode (OFF), the panel condition which are memorized Automatically.

Chapter 4: Using the Printer with MS-DOS

This chapter contains information about how to use the printer with applications software running under MS-DOS. In this chapter, you will learn about:

- o How to set up for printing with MS-DOS

Setting up for printing with MS-DOS

To print from an application running under MS-DOS, you must first select the printer from within the application. Typically, the program will feature an **INSTALL** or **SETUP** command for selection of printers. Refer to the manual for the application you are using for details on how to select a printer for it.

- o Start up the application and use the correct procedure for that application to select a printer. The following is a list of printers that can be used. If your application lists more than one of these, select the printer that is nearest to the top of this list.

Star LC-4522

Star LC-4511/4521

Star LC24-300/NX-2480

Star LC24-30/NX-2450

Epson LQ-860/1060

Epson LQ-850/1050

- o To print, follow the instructions given in the manual of the application you are using. Typically, you would select the application's **PRINT** command, make any necessary changes in the window that appears (such as the number of copies to be printed), and then press the **Enter** key to start printing.

Chapter 5: Paper Handling

Your printer is designed to print on a variety of paper types. This chapter tells you everything you need to know about paper, and how to set the printer up for manual paper feed. In this chapter, you will learn about:

- o Selecting the best type of paper
- o Adjusting for paper thickness
- o Manual sheet feeding
- o Clearing paper jams

Selecting paper types

Use the following information when selecting paper.

Cut-Sheet Paper (Manual Feed)

Width: 7.0" to 16.54" / 178 to 420mm

Length: 5.5" to 14" / 140 to 356mm

Thickness: 0.00276" to 0.00472" / 0.07 to 0.12mm

Weight: 14 to 24 lbs / 52 to 90g/m² / 45 to 77 kg

Cut-Sheet Paper (with Optional Automatic Sheet Feeder)

Paper size: B5, A4, LT, B4, A3, Legal

Thickness: 0.00315" to 0.00472" / 0.08 to 0.12mm

Weight: 16 to 24 lbs / 60 to 90g/m² / 52 to 77 kg

Hopper: 50 sheets of 64g/m²

30 sheets of 80g/m²

Stacker: 10 sheets

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Fanfold Paper

Width (push feed): 4" to 16.5" / 101.6 to 419mm

Width (pull feed): 4" to 16.0" / 101.6 to 406mm

Thickness: 0.00276" to 0.00433" / 0.07 to 0.11mm (1-ply)

0.01378" / 0.35mm max. (total thickness of multi-ply, non-carbon)

Weight: 14 to 22 lbs / 52 to 82g/m² / 45 to 70 kg (one-ply)

11 to 14 lbs / 40 to 52g/m² / 34 to 45 kg (multi-ply)

Copies: Original + 1 or 2 (Normal Mode)

Original + 3 or 4 (Multi-Part Mode)

Multi-part Mode and an optional pull tractor are recommended when printing on 4 or 5-ply paper.

Labels

Backing sheet: 4.5" to 16.5" / 114 to 419mm

Thickness

Backing sheet: 0.00276" to 0.0035" / 0.07 to 0.09mm

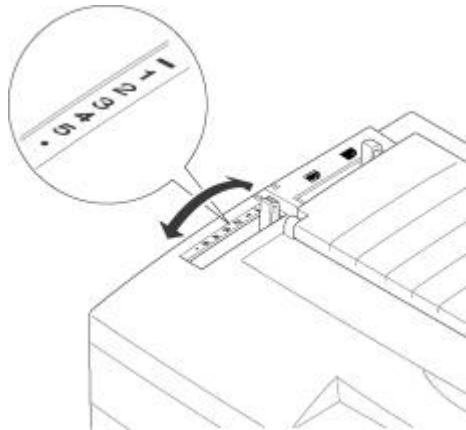
Total: 0.0075" / 0.19mm

- Use labels under normal temperature and humidity conditions only.

Adjusting for paper thickness

Paper comes in different weights, normally expressed as gsm (grams per square meter) or lbs (pounds). Some forms paper also have multiple pages that make them quite thick. Use the following procedure to change the gap between the print head and the platen and adjust for paper thickness.

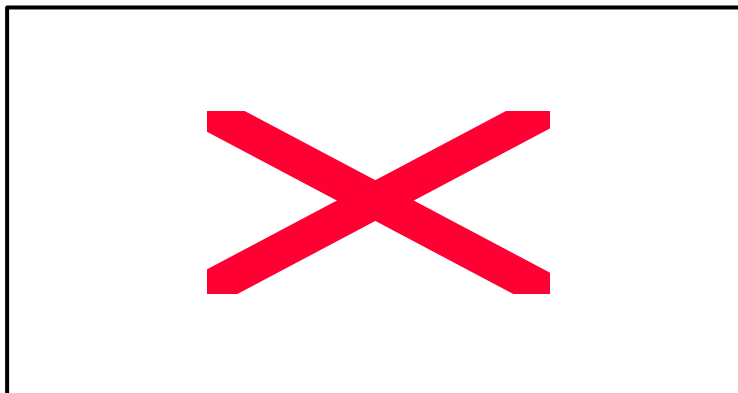
- o Move the adjustment lever to one of its five settings. Position 2 is most suitable for single-sheet paper.



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The following table provides a general guide for setting the adjustment lever.

Experiment with different settings until you find the one that gives you the print quality you want.



Important!

Continuous use of the wrong adjustment lever setting can drastically reduce print head life! The Multi-part Mode is only recommended when printing on 4 or 5-ply paper.

Automatic fanfold feeding

o See “Loading fanfold paper” on page 12 for details on using fanfold paper.

Manual sheet feeding

You can use the following procedure to manually feed single sheets of paper into the printer.

- o Make sure that there is no fanfold paper in the printer. If there is, use the procedure under “Parking fanfold paper” on page 17 to park the fanfold paper and prepare for manual sheet feeding.
- o Move the paper guide so that it is at a up-right position. (Refer to page 10.)
- o Set the release lever to the cut-sheet position.
- o Align the left paper guide with the scale mark that matches the size of the paper you are using.

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For any paper size other than A3 landscape (horizontal), align the paper guide with scale 0 (zero). For A3 landscape paper, align the paper guide with the s mark.

- o Adjust the right paper guide so there is enough space to insert the paper.



- o Insert a sheet of paper into the paper guide, with the side you want to print on facing the back of the printer. Gently push the paper down into the printer until you feel it stop.
- o Press the **SET/EJECT/PARK** button to feed the paper to the starting position.
- o If you want to move the paper to another position, use the micro feed function described under “Micro feed” on page 23.
- o Start the printing operation from your software application.

Clearing paper jams

Use the following procedure to clear paper jams from the printer.

- o Unplug the printer from its AC power outlet.
- o Open the front cover of the printer.
- o Carefully try to pull the jammed paper from the printer.
 - o If necessary, change the release lever position or rotate the platen knob to remove the paper.

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