XEROX 4045 LASER CP
MODEL 50
USER MANUAL

XEROX

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WARNING: This equipment generates and uses radio frequency energy, and if not installed in accordance with the manufacturer's instructions, may cause interference to radio and television communications.

This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. There is, however no guarantee that interference will not occur in a particular installation.

If equipment certified to meet the Class B limits does cause interference to radio or 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: (a) reorient the receiving antenna. (b) relocate the computer with respect to the receiver. (c) move the computer away from the receiver. (d) and/or plug the computer into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. In addition, an FCC booklet, *How to Identify and Resolve Radio-TV Interference Problems*, Stock No. 004-000-00345-4, is available from the U.S. Government Printing Office, Washington, D.C., 20402.

In equipment labeled Class B Compliant, a shielded and grounded I/O cable is necessary to achieve compliance with the FCC Rules regarding radio emissions from computers. Please consult your dealer or authorized sales representative for further details regarding such a cable.

CAUTION: Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous light exposure.

Laser safety

The Xerox Model 50 complies with appropriate safety standards.

With specific regard to laser, the equipment complies with laser product performance standards set by governmental agencies as a Class I laser product. It does not emit hazardous light; the beam is totally enclosed during all modes of customer operation and maintenance.

When performing various operator functions laser warning labels may be visible. These labels are for the service mode and are placed on or near panels or shields which require a tool for removal. **THESE PANELS ARE NOT TO BE REMOVED.**

CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous light exposure.

Operation—safety

Your Xerox equipment and supplies have been designed and tested to meet strict safety requirements. These include safety agency examination and approval, and compliance to established environmental standards. Attention to the following notes will ensure the continued safe operation of your equipment.

Always connect equipment to a properly grounded power source receptacle. If in doubt, have the receptacle checked by a qualified electrician.

> **WARNING:** Improper connection of the equipment grounding conductor can result in risk of electrical shock.

Always locate equipment on a solid support surface with adequate strength for the weight of the machine.

Always exercise care in moving or relocating the equipment.

Always use materials and supplies specifically designed for your Xerox equipment. Use of unsuitable materials may result in poor performance, and can possibly create a hazardous situation.

Never use a ground adapter plug to connect equipment to a power source receptacle that lacks a ground connection terminal.

Never attempt any maintenance function that is not specifically described in this User Manual.

Never remove any covers or guards that are fastened with screws. There are no operator serviceable areas within these covers.

Never override or "cheat" electrical or mechanical interlock devices.

Never use supplies or cleaning materials for other than their intended purposes. Keep all materials out of the reach of children.

Never operate the equipment if unusual noises or odors are noticed. Disconnect the power cord from the power source receptacle and call Xerox service to correct the problem.

If you need any additional safety information concerning the equipment or Xerox supplied materials, you may call the following toll-free number:

1-800-828-6571

Notice

This publication describes all the features supported by release level 3.0 of 4045 Laser CP firmware.

Specifications described in this publication are subject to change without notice. The customer's use of certain features which become available may be limited by the customer's hardware/software configuration. Customers should consult their Xerox sales representative for details.

Related publications

Title	Publication #
4045 Laser CP Model 50 Reference Manual	601E81160
4045 Document Creation Reference Card	610P50749
4045 Laser CP Installation Planning Guide	*600P87284*
274 Interface Controller User Guide	600P86478
275 Interface Controller User Guide	600P86732
276 Interface Controller User Guide	600P86734
280 Interface Sharing Device User Guide	600P87285

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Introduction

- *Quality*
- *Productivity*
- *Ease of use*

All of these are now yours with your new Xerox 4045 Laser CP Model 50!

The Laser CP gives your documents a high-quality, professional appearance by combining high resolution character formation with a wide variety of type styles, or "fonts" (up to 22 per page, and over 100 styles to choose from). Your documents print quietly at a speed of 10 pages per minute, using different paper sizes and types, such as transparencies and labels. And, because the Laser CP is compatible with the most popular software packages written to support the Diablo 630 printer and the Xerox 2700 printer, document creation is fast and easy. If you do not want to use these packages, the manual explains how you can create documents using simple escape sequences.

The Laser CP's compact size enables it to fit easily into your office, and when equipped with the optional copier feature, the Model 50 demonstrates true productivity by allowing you to make quick copies right at your workstation.

As you read through this manual, you will learn about these and many other features of the Laser CP which will make your job easier. The following section, *How to use your Model 50 manuals*, tells you where to look to find out exactly what you want to know.

How to use your Model 50 manuals

The Model 50 documentation is divided into two books. Book 1 contains basic operating instructions (*Operating the Model 50*) and instructions on how to create a variety of documents (*Creating documents*). Book 2 contains the reference material.

Each book is divided into tabbed sections. For example, *Operating the Model 50* is one section and *Creating documents* is another section. Within sections of the manual are chapters. For example, chapter 2 of the *Operating the Model 50* section is "Installing the Model 50," while chapter 2 of the *Creating documents* section is "Background information."

You should read the *Operating the Model 50* portion of this manual thoroughly before printing any documents. It tells you:

- How to set up your Model 50 printer
- How to configure your printer to suit your host and your applications
- How to print your documents
- How to use the copier option
- How to maintain your Model 50 printer
- How to solve problems encountered in setting up and running the Model 50 printer

The *Creating documents* portion of the *Model 50 User Manual* tells you how to prepare your document for printing. It tells you:

- How to set up your escape code
- How to load fonts (type styles), change fonts and delete fonts
- How to set margins
- How to center, justify, bold, and underline
- How to set horizontal and vertical tabs
- How to merge pages
- How to solve problems encountered with using the 2700 mode commands

The *Reference Manual* includes more technical information about the Model 50. It tells you:

- How to format graphic data
- How to format a character translation table
- How to configure your Model 50 to correspond to your host system
- How to set the configuration switches on the configuration cartridge
- How to troubleshoot printing problems using the data monitor
- How to correct density problems when a page is too complex to print
- How the Model 50 receives data, formats pages and prints them

One additional note before you begin—at the back of this manual is a Reader Comment Form. After you have completed the *4045 Laser CP Model 50 User Manual,* please fill out the Reader Comment Form to provide us with comments and any suggestions you may have to improve this manual.

Thank you.

1. Introduction

What this section contains

The *Operating the Model 50* section of this manual is divided into the following chapters:

1. Introduction. This chapter explains how to select a location for your Model 50, electrical requirements, and how to move the Model 50.

2. Installing the Model 50. This chapter explains how to install your new Model 50 and operate the optional copier.

3. Printing data from a host system. This chapter tells you how to connect the Model 50 to, and make it compatible with, your host system. This chapter also explains how to install, change, and select fonts (typestyles).

4. Maintenance and problem solving. This chapter explains how to care for your Model 50. It also tells you what to do when the Model 50 does not do what you expect.

5. Supplies and accessories. This chapter contains a list of supplies and accessories available and how to order. Instructions for ordering fonts and options available for your Model 50 are also included.

The following appendices contain more information about operating the Model 50:

Appendix A: Sample of the configuration and status sheets, and an explanation of their contents.

Appendix B: Configuration cartridge checklists for use with your Model 50.

Getting started

Before installing your new Xerox 4045 Laser CP Model 50, you need:

- Paper—Information about paper and how to order is included in chapter 5, *Supplies and accessories*.
- A Host Interface Cable—a cable with the proper connectors for connecting your host system to the Model 50. Chapter 3, *Printing data from a host system,* contains the specifications for a parallel interface cable.

Your Xerox sales representative can assist you in ordering paper and the correct interface cable.

- Additionally, you or someone in your organization should be knowledgeable about your host system.

Check to be sure the following items were delivered with your Model 50:

- 1 bottle dry imager
- Output tray
- Power cord
- Xerox 4045 Laser CP Model 50 Reference Manual
- Flip cards

Should any of these items be missing, please notify your Xerox sales representative or local Xerox office.

Selecting a location

The Model 50's compact size, quiet operation, and attractive styling enable it to be placed in almost any location. You need to consider space, electrical power and operating environment when selecting a location for your new printer.

Space requirements

Figure 2-1 is a top view of the Model 50, and gives the space requirements. The measurements are shown in both inches and centimeters. These are the minimum dimensions required for operating and maintaining the Model 50 and should be considered when selecting a location.

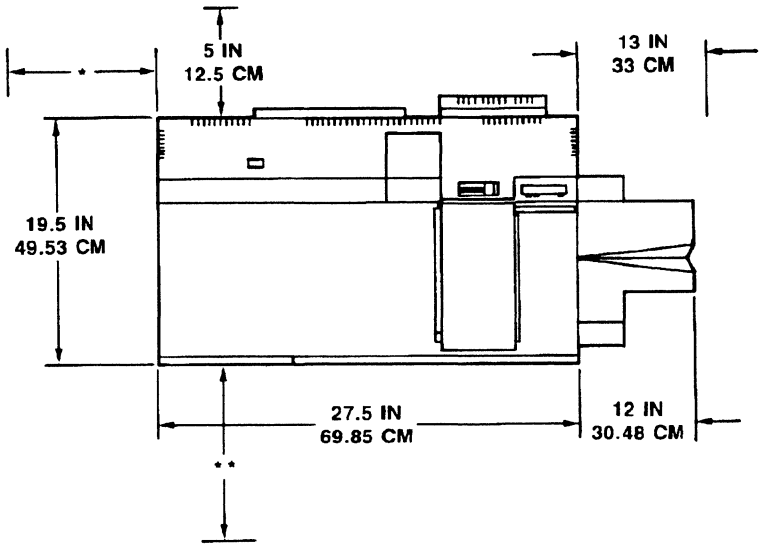


Figure 2-1 **Space requirements - top view**

* This dimension is 5 inches/12.7 cm when the Model 50 is stationary, or 3 inches/7.62 cm when the Model 50 is on a movable stand.

** This dimension should not be less than 24 inches/61 cm to the front of the table or movable stand.

Additionally, there must be a minimum of 40 inches/101.6 cm clearance from the table top to the nearest overhead obstruction. The table top must not be lower than 18 inches/45.72 cm or higher than 36 inches/91.44 cm. Also note, if you have ordered a page sequencer, you must add 12 inches/30.48 cm to the minimum/maximum table top height.

The Model 50 weighs approximately 140 pounds (63.5 kg). Therefore, you need to place it on a surface that can support that weight. Do not place the Model 50 on the floor or on an inappropriate surface, such as a filing cabinet.

Note: It is important that the surface on which the Model 50 is placed is level.

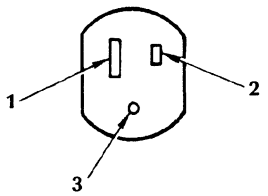
A printer stand specifically designed for the Model 50 is available from Xerox. See Chapter 5, *Supplies and accessories,* for details and ordering information.

Electrical requirements

Listed below are the Model 50's electrical requirements:

Voltage (frequency):		**USA/Canada (60 Hz)**	**International (50 Hz)**
	Minimum	103	198 216
	Nominal	120	220 240
	Maximum	127	242 264
Operating current/power:		15 Amps	2.2KVA

The following diagram illustrates the type of receptacle required for the Model 50's power cord in the U.S. and Canada.



1 Neutral
2 Live
3 Ground

Figure 2-2 **Receptacle**

Do not use extension cords with your Model 50. Although you may use three wire-to-two-wire adapter plugs, they must be installed by a qualified electrician and checked for proper grounding.

Should you have any questions regarding the electrical service available at your site, contact a qualified electrician.

Operating environment

The Model 50 operates best in the following environment:

Temperature: 15 to 32 degrees Centigrade (50 to 90 degrees Fahrenheit)

Humidity: 15% to 65% relative humidity

Moving the Model 50

Once you have selected a location that meets the Model 50's space, electrical, and environmental requirements, you are ready to place the Model 50 in its permanent location.

The Model 50 rests on four rubber supports that raise it slightly above the surface on which it sits. These supports are located near each of the corners. When moving the Model 50, always lift the Model 50 from underneath, as near to the four supports as possible.

WARNING: The Model 50 weighs approximately 140 lbs./63.5 kg. It is suggested you do not attempt to move it without help. Moving it will require at least two people.

2. Installing the Model 50

The Model 50 is easy to install. This chapter contains information you need to install your new Xerox 4045 Laser CP Model 50. Before you begin to set up your new printer, take a few minutes to familiarize yourself with its main components. Figure 2-3 is a front view of the Model 50.

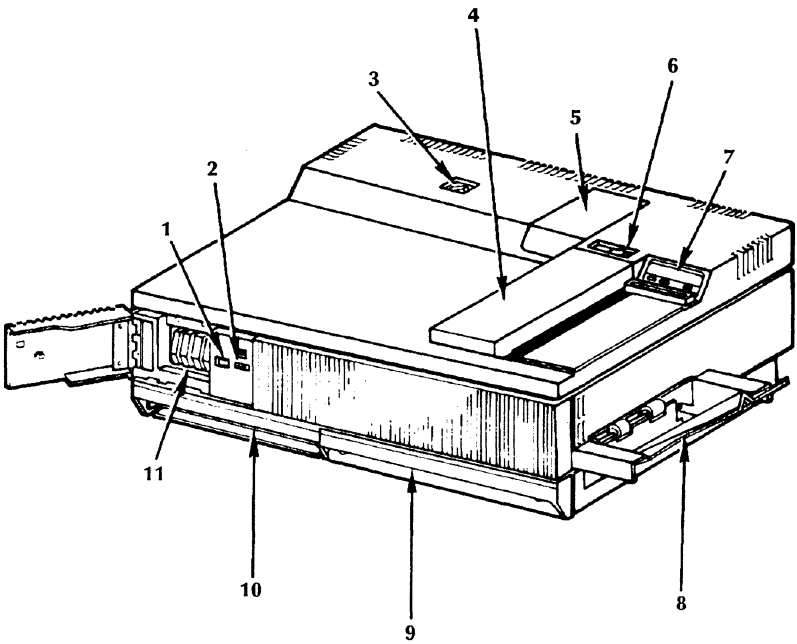


Figure 2-3 **Front view**

1. **Page/Copy Counter**—Counts the number of pages/copies produced.
2. **Serial Number**—Used when requesting Xerox Customer or Service Support.
3. **Power Switch**—Power On/Off switch.
4. **Copier Option**—If you have ordered the Model 50 with the optional copier, it can copy single pages, one copy at a time, in sizes up to 8.5" x 14".
5. **Dry Imager Hopper**—Dry Imager is added here.
6. **Copy Lighter/Darker Control** (with copier option, only)—Used to control the density of the copied image.

7. **Control Panel**—Contains a keypad and display window which indicates the status of the printer plus additional indicators and controls used in the operation of the Model 50.
8. **Output Tray**—Printed output is delivered here; holds up to 100 sheets of 8.5" x 11", 210mm x 297mm (A4), and 8.5" x 14" 20-pound (80 gsm—grams per square meter) bond paper.
9. **Paper Path Access Handle**—Used to open the printer cover.
10. **Paper Tray**—Holds up to 250 sheets of 8.5" x 11", 210mm x 297mm (A4), and 8.5" x 14" 20-pound (80 gsm) paper.
11. **Font Cartridge Compartment**—The configuration cartridge and up to four font cartridges are installed here.

The control panel

The control panel contains indicators, symbols, and pressure sensitive switches. The Model 50 illuminates symbols and indicators on the control panel to tell you the status of the printer. The switches are used in the operation of the Model 50.

The control panel also contains a two-digit LED (Light Emitting Diode) display that provides codes about the status of the printer. Chapter 4, *Maintenance and problem solving,* contains a listing of these codes and their meanings.

Figure 2-4 shows the control panel with all the indicators, symbols and switches. The indicators/symbols marked with an asterisk (*) are only visible when they are lit. That is, they only appear when the condition they represent occurs.

Indicators and symbols	Switches
READY*	Last Page
PLEASE WAIT*	Reset
Add Paper *	Off-line
Add Dry Imager *	
Clear Paper Path *	
Clear Page Sequencer *	
Last Page	
Off-Line	

Additionally, a chime can be set to alert you when the Model 50 requires attention or turned off for silent operation (discussed in Chapter 3, *Printing data from a host system*).

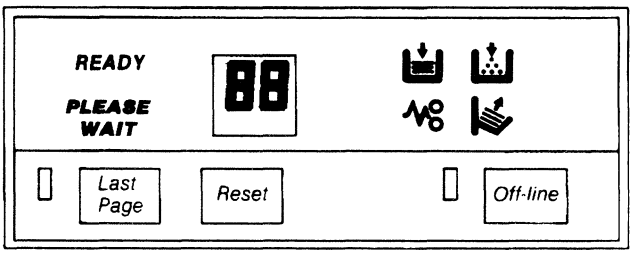


Figure 2-4 **Control panel**

* Only visible when the condition occurs.

Removing the tie-wrap

A tie-wrap secures the printer latch handle so your Model 50 is not damaged in shipment. This tie-wrap, located on the bottom right corner of the Model 50, must be removed before the Model 50 can be installed.

1. Cut the tie-wrap using standard office scissors.
2. Remove the tie-wrap by pulling it away from the printer.

3. Discard the tie-wrap.

Removing foam shipping material

Foam shipping material protects the Model 50's fuser assembly during shipment. This shipping material must be removed before continuing with your installation.

1. Open the printer cover (see Figure 2-8). The foam shipping material is visible on the right side of the printer.
2. Remove the foam from the printer and discard it.
3. Push down on the front corners of the printer cover to close.

Flip cards

Included with the delivery of your new Model 50 are flip cards. After reading this manual, the flip cards provide a handy, quick reference for the operation of the Model 50.

The flip cards are attached to a black plastic leading strip. When the cards are inserted into the flip card receptacle, they lock into place. To install the cards:

1. Hold the flip cards face up and insert the black plastic strip into the flip card receptacle (see Figure 2-5).

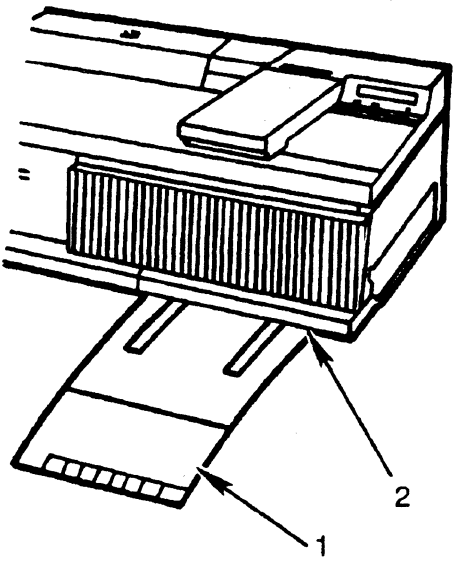


Figure 2-5 **Flip card receptacle**

2. Slide the cards all the way in toward the printer.
3. Pull out to confirm the cards are locked in place.

Connecting the Model 50 to a power source

To connect the Model 50 to a power source, follow the steps below:

1. Make sure the **Power** switch, located on the top left of the printer, is in the OFF position. Figure 2-6 shows the international symbols **O** for off and **I** for on.

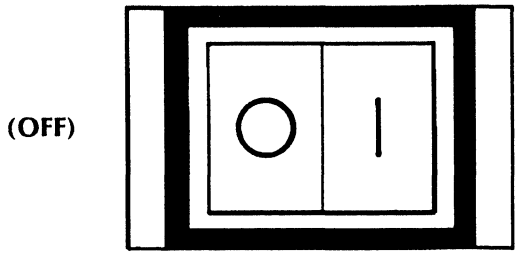


Figure 2-6 **Power switch**

2. Plug the female connector of the power cable into the A.C. power input connector located on the rear panel of the Model 50.

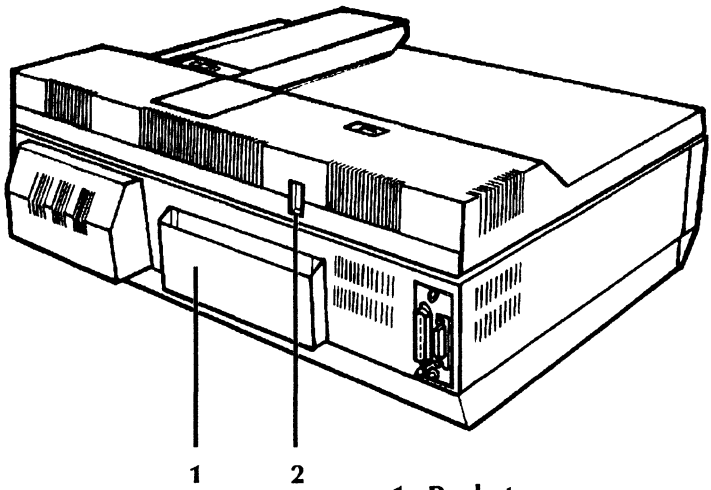


Figure 2-7 **A.C. power input connector**

3. Plug the male connector of the power cord into the electrical outlet.

Note: Please place the Machine Service log and collapsible box (95P3288) delivered with the Model 50 in the pocket on the back panel of the printer.

Installing the output tray

The output tray holds up to 100 sheets of 20-pound (80 gsm) bond paper. The output tray is attached to the outer right side of the Model 50.

To install the tray, you must first open the printer cover.

1. Open the printer cover by pulling the paper path access handle (located at the bottom right front of the Model 50) and lifting the entire cover.

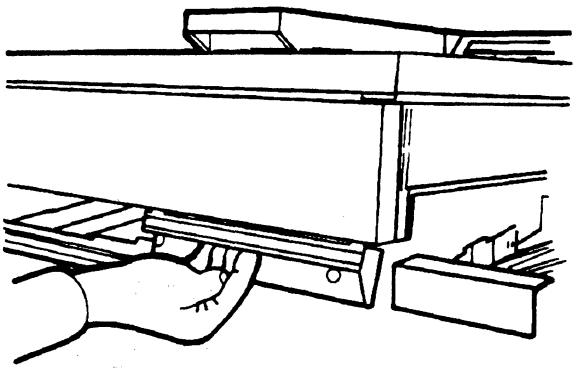


Figure 2-8 **Opening the printer**

2. Position the paper output tray pins in the slots (as shown in Figure 2-9) and tilt the tray up slightly.
3. Slide the tray in until it locks.

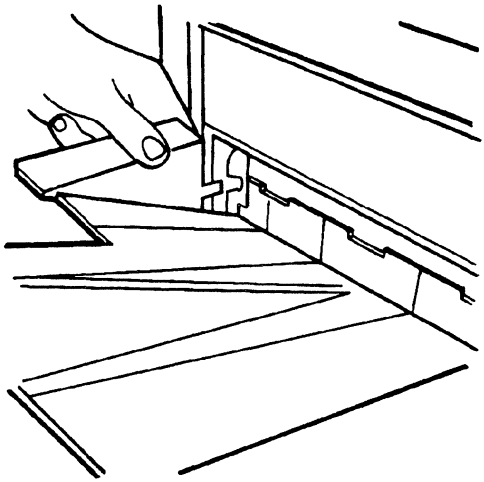


Figure 2-9 **Installing the rear & front pins**

4. Push down on the front corners of the printer cover to close.

Paper loading

Paper tray

The Model 50 prints on plain paper in weights of 16 to 24 pound (U.S./Canada), 60 to 90 gsm (international). It also prints on colored paper, predrilled paper, letterhead paper, preprinted forms, labels, xerographic envelopes, and transparencies. The paper tray, located on the bottom left front of the Model 50, holds up to 250 sheets of 20-pound bond/80 gsm paper.

A paper size guide in the paper tray adjusts to either of two positions to allow for 8.5" x 11" or 8.5" x 14" paper. Both positions are clearly marked on the paper size guide. An A4 Metric paper tray is also available which is designed for A4 paper (210mm x 297 mm).

Paper may be loaded or changed when the Model 50 is **not printing** or when the ADD PAPER symbol on the control panel is lit.

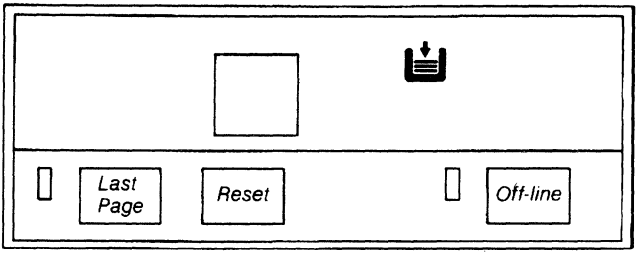


Figure 2-10 **Add paper symbol**

CAUTION: During installation of your Model 50, open the printer cover **before** removing the paper tray to load paper. This is only necessary during installation of your new printer. Once the Model 50 has printed the first page, it is not necessary to open the printer cover to remove and reinstall the paper tray.

Paper curl

All paper has a curl which is created in the manufacturing process. During the process, paper is stored on large rolls before being cut into sheets. After it is cut and packaged, it retains some of the curl from the rollers. Paper is packaged with the curl down.

When you load paper in the paper tray, the curl side must be **up**. Otherwise, misfeeds or jams can occur.

To determine direction of curl:

1. Check the end label on paper package. Sometimes an arrow is printed on the label, pointing in the opposite direction from the curl.

   Always place paper in paper tray so the arrow on its wrapper would point *down*. (Curl side will be up.)

or

If wrapper has no arrow:

1. Pick up about one quarter of paper stack and hold it by one of the short edges.

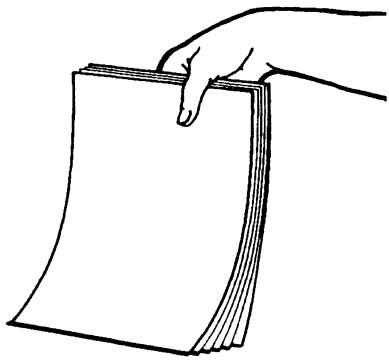


Figure 2-11 **Determining curl side**

2. Let paper hang with long edge parallel to your body.
3. Look at lower edge of paper. It will be curling slightly upward. This is the curl side of the paper.
4. Place paper you are holding back onto paper stack. (Be sure you put it back the same way it was facing when you picked it up.)

Loading paper

Follow the instructions below to load paper. See *Loading special papers* for instructions on loading labels, preprinted forms, letterhead, and transparencies.

1. Remove the paper tray by pulling it toward you with one hand, and place your other hand underneath the tray to support it.

   CAUTION: Never remove the paper tray while the Model 50 is printing.

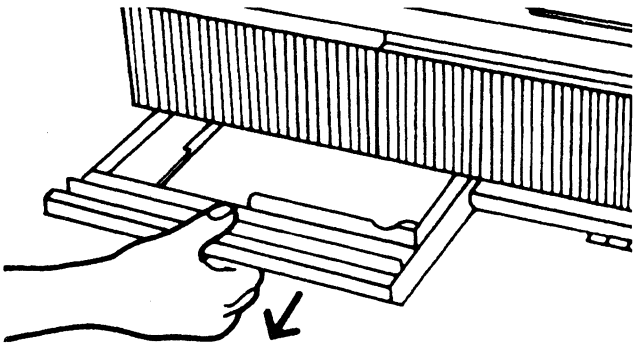


Figure 2-12 **Removing the paper tray**

2. Adjust the paper size guide in the paper tray to correspond to the paper size you are loading (8.5 by 11 inches or 8.5 by 14 inches).
3. Load the paper by first sliding it against the paper size guide.

   CAUTION: Do not load paper above the white line.

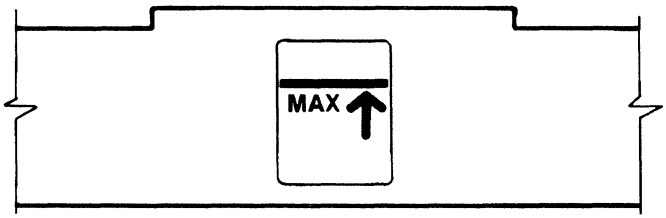


Figure 2-13 **White line**

4. Push the paper stack downward making sure that the paper is below the paper snubbers.

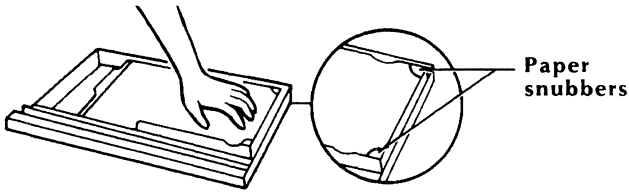


Figure 2-14 **Pushing paper below snubbers**

5. Place the filled tray into the printer. Push it gently into position.

Loading special papers

In addition to plain paper, the Model 50 prints on predrilled paper, letterhead paper, preprinted forms, labels, transparencies, and xerographic envelopes. Following are instructions for loading these special papers.

Predrilled paper

Place predrilled paper into the paper tray with the holes to the rear of the tray.

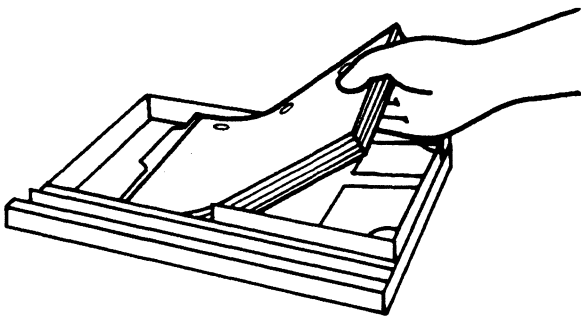


Figure 2-15 **Loading predrilled paper**

Labels

Place labels into the paper tray face up with the top of the labels to the right of the tray.

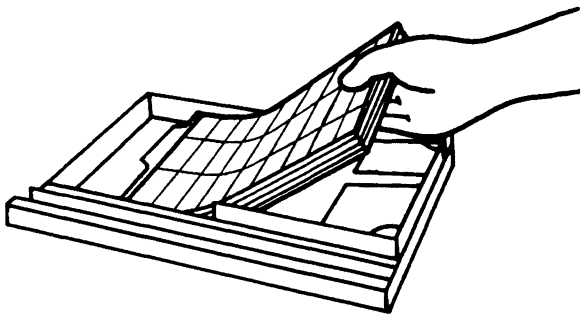


Figure 2-16 **Loading labels.**

Letterhead and preprinted paper

Place letterhead or preprinted paper into the tray face up with the top of the preprinted page to the right of the tray.

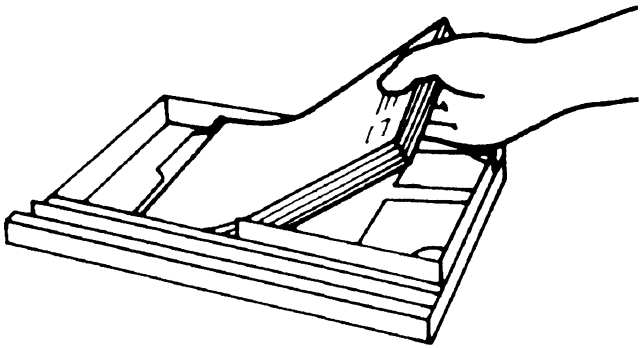


Figure 2-17 **Loading letterhead or preprinted paper**

Transparencies

Place transparencies into the tray with the white strip to rear of tray.

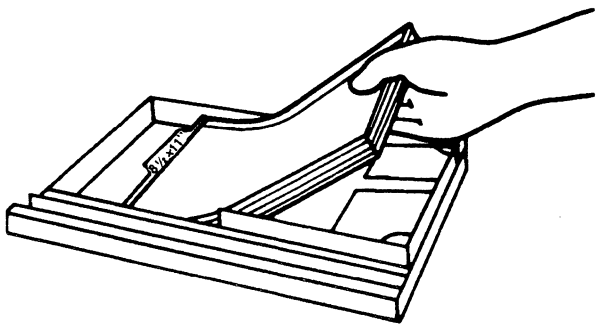


Figure 2-18 **Loading transparencies**

Envelopes

To print on xerographic envelopes, place the envelopes in the tray with the opening down and the

flap to the back of the tray. Envelope loading instructions are printed on the envelope tray.

Note: To print on envelopes, an envelope tray is necessary. Information on ordering the envelope tray and xerographic envelopes is contained in chapter 5 of this section.

Two-sided printing

The Model 50 is not designed for two-sided printing. Two-sided printing can contaminate the fuser area with toner, requiring Xerox service.

Dry imager (toner)

Dry imager, sometimes referred to as "toner" or "dry ink," is the black powder which forms the image on the printed page. The Model 50 is shipped with a quantity of dry imager in the dry imager housing.

During operation the Model 50 checks the amount of dry imager in the housing to make sure that there is enough to print a minimum of 250 pages.

When the dry imager level drops below a 250 page minimum, your Model 50 automatically stops printing and goes off-line (Off-line lamp lights) and the **ADD DRY IMAGER** symbol appears on the control panel (Figure 2-19). When the Model 50 is off-line (Off-line lamp lights), the Model 50 cannot receive data.

CAUTION: Never add dry imager **until** the ADD DRY IMAGER symbol appears on the control panel.

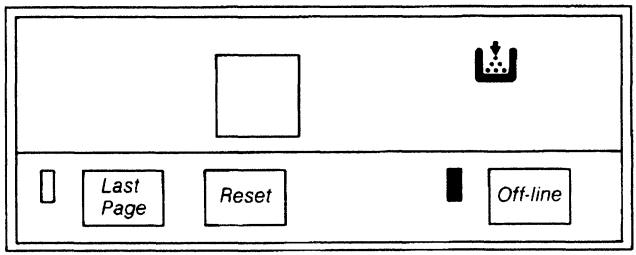


Figure 2-19 **Add dry imager symbol.**

Adding dry imager

Xerox developed 4045 Dry Imager (6R139) to perfectly match the Model 50's design. Using the Xerox supplies intended for your printer is your assurance of the trouble-free operation and excellent print quality that Xerox designed for you.

Use only dry imager which states on the bottle it is produced for use in a Xerox 4045.

When the ADD DRY IMAGER symbol appears on the control panel:

1. Follow the directions printed on the dry imager hopper cover on the Model 50 to add dry imager.
2. After dry imager is added, press the **Off-line** switch to place the printer on-line (the Off-line indicator turns off).

Powering the Model 50 on and off

Each time your Model 50 is powered on, it runs a series of diagnostic tests that check the printer. At the end of the test a configuration sheet is printed.

The configuration sheet not only provides you assurance the printer is functioning properly but can be used to check the print quality.

The following occurs when the Model 50 is powered on:

- All the indicators and the display lamps light briefly and then turn off except for the Off-line and PLEASE WAIT indicators. These indicators remain lit throughout the rest of the test cycle.
- The display then sequences through a series of letters and numbers (d9, d8, d7, d6, d5, P1, d3) which indicate diagnostic tests are being performed.
- At the end of these tests the display and PLEASE WAIT indicator turn off.
- A configuration sheet is delivered to the output tray. (The Off-line indicator remains lit while the Model 50 prints a configuration sheet.)

Note: When the Model 50 is powered off, all downloaded data such as fonts, formatting commands and graphic data is erased from memory.

Figure 2-20 is an example of a configuration sheet. The configuration sheet is further explained in appendix A.

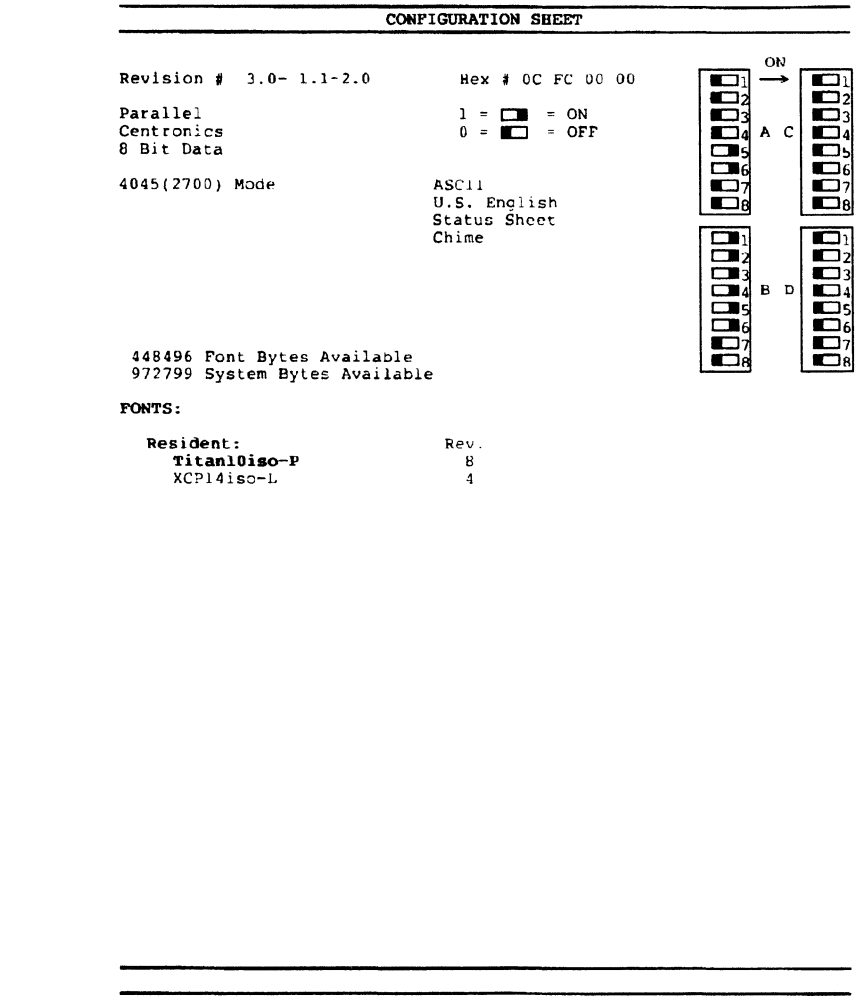


Figure 2-20 **Configuration sheet**

After the configuration sheet is printed, the Model 50 automatically goes on-line (Off-line indicator turns off). The READY lamp turns on to indicate the Model 50 is ready to receive data from the host system.

Note: Should the Model 50 fail to produce a configuration sheet within one minute:

1. Record the code appearing in the display on the control panel.
2. Read Chapter 4, *Maintenance and problem solving,* and follow the suggestions given to correct the problem.
3. If you cannot correct the problem, call for service. But before calling service, please do the following:
   - Power the Model 50 off, then on again.
   - Wait 60 seconds for the Model 50 to produce the configuration sheet.
   - If the Model 50 again fails to produce a configuration sheet, record the code and call Xerox Service. Instructions for placing a service call are in Chapter 4, *Maintenance and problem solving.*

Copier option

The copier option enables you to make copies of originals on the Model 50.

Copying an original

If your Model 50 is equipped with the copier option, it can copy single pages, one copy at a time, in sizes from 3 x 5 inches up to 8.5 x 14.0 inches.

Note: You may insert your original into the document feeder whenever the **READY** indicator is lit. If the **PLEASE WAIT** indicator is on, wait until the **READY** indicator turns on before inserting your original.

To copy a page

1. Place the original face down, against the green guide, and slide it to the left until it stops.

When the edge of the original enters the document feeder, its presence is detected. This starts the document feeder and the original is pulled to the left.

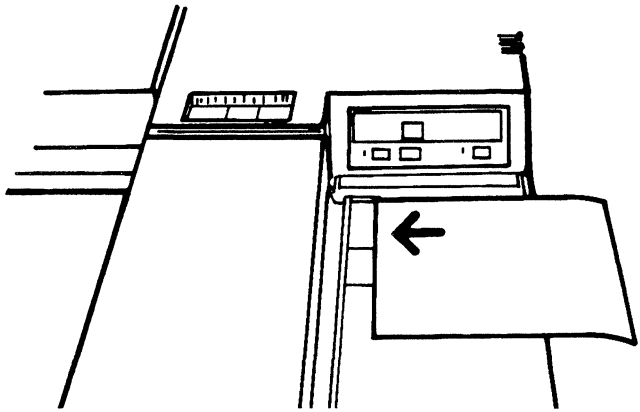


Figure 2-21 **Inserting an original**

2. When you feel the original being pulled, release it and let the document feeder guide it through.

   After copying is completed, the original is placed on the top of the printer to the left of the document feeder. The copy is delivered to the output tray.

3. For additional copies of the original repeat steps 1 and 2.

CAUTION: Do not perform two-sided printing. Two-sided printing can cause contamination of the fuser area with toner, requiring Xerox service.

Copy lighter/darker control

The contrast of the copies (lighter or darker) can be controlled with the copy lighter/darker control.

Adjust the contrast of the copy:

1. For lighter copies, slide the control to the left.
2. For darker copies, slide the control to the right.

Note: The copy lighter/darker control only affects copies made on the copier.

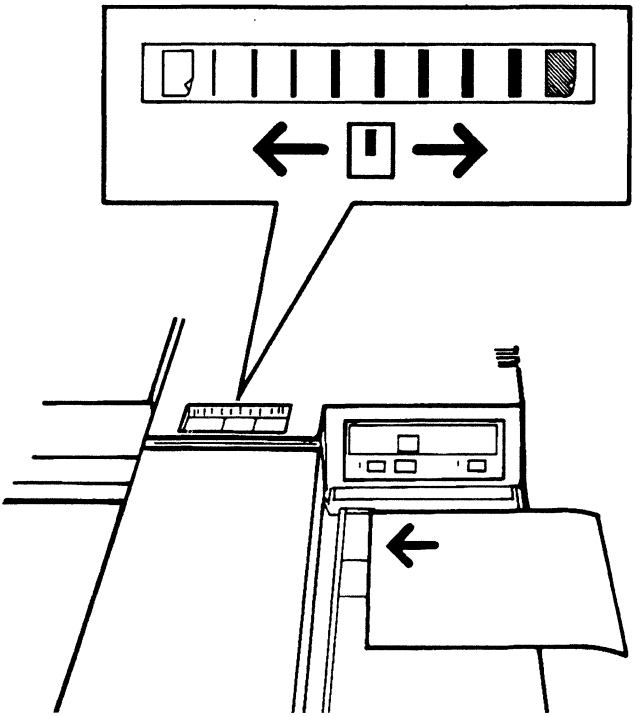


Figure 2-22 **Copy lighter/darker control**

3. Printing data from a host system

The Model 50 prints data received from a variety of host systems by changing the way it communicates to match the host. You can make the Model 50 compatible with your host system by:

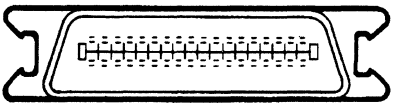
- Connecting the Model 50 to the host system with the proper interface cable.
- Setting switches on the configuration cartridge to match your host system's requirements.

This chapter discusses how to ensure compatibility between the Model 50 and your host system.

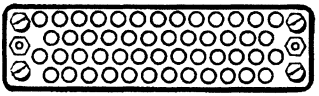
Information on fonts and installing font cartridges is also included in this chapter. For detailed information regarding fonts, please refer to section 3.

Connecting the Model 50 to the host system

Each host system has specific interface requirements. The Model 50 supports standard RS-232-C, Centronics 100, and Dataproducts 2260 interfaces. Based upon your host system requirements, the Model 50 is delivered with Centronics parallel and serial interface connectors, or a Dataproducts interface connector.



CENTRONICS



DATA PRODUCTS

RS-232

Figure 2-23 **Interface connectors**

Note: You must provide the cable that connects your Model 50 to the host system. If you have questions, contact the manufacturer of the host system.

Parallel interface cable

The following chart contains the specifications for the parallel interface cable.

Parallel interface cable specifications	
Type	Twisted pairs; overall foil or braid shield
Number of conductors	15 pair
Wire size	22 AWG stranded
Cable length	Length should not exceed 39.3 feet (10m) or as specified by the host (whichever is less).
Shield connector	To the connector conductive case at the Model 50; to the frame ground at the data source
Cable connection	Cable requires male connector to plug into Model 50
See the *Reference Manual* for information on pin assignments and signals.	

Serial interface cable

If you are connecting the Model 50 through a serial interface, you must supply the interface cable that connects the Model 50 to your host system. The serial interface is compatible with RS-232-C standards. Chapter 3 of the *Reference Manual* describes the connector and pin assignments for this cable, or you may order this cable from Xerox. Chapter 5, *Supplies and accessories,* contains a description of this cable and how to order.

Data set/modem and null modem

If you are connecting the Model 50 through an asynchronous serial interface and plan on using a data set/modem, it is suggested you use either a device with an Auto Answer (or equivalent) option or a null modem. A null modem is a modem eliminator in which all of the control signals are cross-wired so that the device on each side of the interface "thinks" that it is receiving its signals from a modem. Figure 2-24 illustrates this. Your Xerox sales representative can

assist you in ordering this equipment.

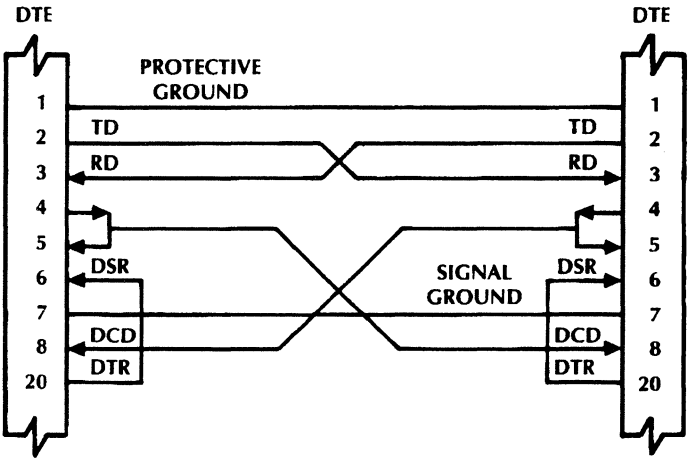


Figure 2-24 **Null modem control signals**

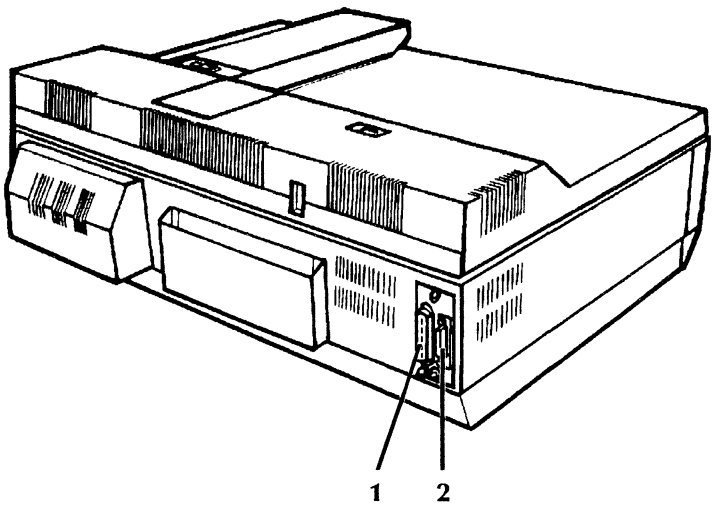
When using a data set, you also need a telephone line at the site where you place your Model 50.

Connecting the interface cable

To connect the host interface cable between the printer and your host system or a modem:

1. Connect one end of the interface cable to your host system or modem.
2. Connect the remaining end of the cable to the appropriate host interface cable connector on the rear of the Model 50.

Note: If your Model 50 has both parallel and serial interface cable connectors, only one connector may be used at one time.



1. **Parallel interface cable connector**
2. **Serial interface cable connector**

Figure 2-25 **Connecting the interface cable**

Should the cable not match the host interface cable connector on the Model 50, contact your Xerox sales representative or local Xerox office.

Configuration sheet

You determine the Model 50's configuration by setting switches on the configuration cartridge located in the font cartridge compartment. You can find out how your Model 50 is currently configured in either of two ways:

- Remove the configuration cartridge from the font cartridge compartment and look at the individual switch settings, or
- Cause the Model 50 to print a configuration sheet by performing a soft reset:

  1. Press and hold the **Reset** switch.
  2. While pressing the Reset switch, press the **Offline** switch.

A configuration sheet is printed and delivered to the output tray. The configuration sheet displays the individual switch settings.

CAUTION: Never print a configuration sheet when the Model 50 is printing data from the host system, as data will be lost. When transmission is interrupted, the data must be retransmitted.

Configuration cartridge

If the settings on the configuration sheet differ from your host system's requirements, the settings can easily be changed by resetting the switches on the configuration cartridge.

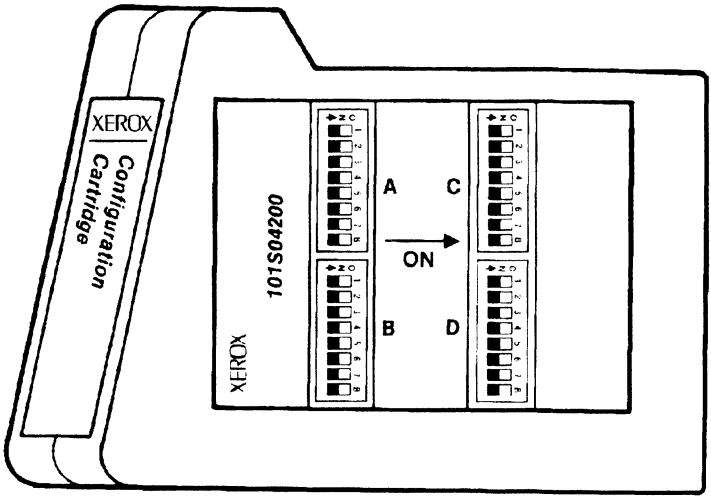


Figure 2-26 **Configuration cartridge**

The switches on the configuration cartridge enable you to change the settings so your Model 50 is compatible with your host system.

Note: Additional configuration cartridges may be ordered. See *Options* in Chapter 5, *Supplies and accessories,* for ordering instructions.

Configuration cartridge switch settings

The configuration cartridge contains four switchbanks, each with eight switches. These switches enable you to change the settings so your Model 50 is compatible with your host system.

Following is a detail of each switchbank and its individual switches.

Note: Following this detail is a chart containing suggested switch settings you may want to use initially until you become familiar with each switch function.

Individual switches are identified by the name of their switchbank, followed by a colon and the number of

the switch. For example, A:8 is the eighth switch on switchbank A.

The switches are set by flipping the switch to either the OFF (pushed to the left) or ON (pushed to the right) position. The OFF position represents a logical zero and the ON position represents a logical one.

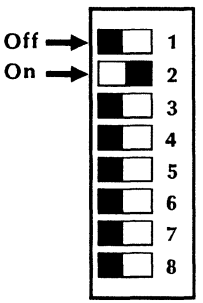


Figure 2-27 **Switchbank**

Configuration cartridge checklists are provided in appendix B for you to mark the settings you select before you set the switches.

Switchbank A Switchbank A enables you to select the following functions:

- whether parallel or serial interface is being used
- what will be the format of the line endings and command terminators
- whether the data is 7- or 8-bit
- how the data is encoded
- whether a customized code mapping cartridge is installed

Switch A:1 Parallel or serial interface

Tells the printer whether the interface is parallel or serial.

A:1	Off	Parallel interface is assumed
	On	Serial interface is assumed

Switch A:2 4045 (2700) or 630 mode

Tells the printer whether the printer mode is 4045 (2700) or 630 mode.

A:2	Off	4045 (2700) mode is assumed
	On	630 mode is assumed

Switches A:3—A:4 Line ending decisions

Determines the format of the line endings and command terminators the Model 50 is to expect.

A:3	A:4	
Off	Off	No line-ending decisions. The Model 50 expects a carrier return (CR) and line feed (LF) at the end of every print line and those commands requiring a line ending. Both codes must be included in the data sent from the host.
Off	On	Auto Carriage Return. The Model 50 expects only a LF for a line ending; it adds a CR to every LF it sees. Only the line feed code need be included in the data.
On	Off	Auto Line Feed. The Model 50 expects only a CR for a line ending; it adds a LF to every CR it sees. Only the CR code need be included in the data.
On	On	Auto Line Ending. This setting takes effect in the 630 mode only. When this setting is in effect, the Model 50 automatically moves words extending past the right margin to the next print line. Received line ending codes are still honored, that is, a subsequent line ending occurring in the middle of the line is not moved. **Note:** In the Auto Line Ending mode, at least one space character must be included in every string of 124 characters or a display code indicating buffer overflow appears.

Switch A:5 7-bit or 8-bit format

Tells the printer whether incoming data is in 7- or 8-bit format

A:5	Off	7-bit data is assumed
	On	8-bit data is assumed

Switch A:6—A:7 Data encoding

These switches tell the printer how incoming data is encoded.

A:6	A:7	
Off	Off	ISO 6937. All incoming character codes are mapped directly to the ISO 6937 assignment table.
Off	On	EBCDIC. All incoming character codes are mapped to their EBCDIC equivalent.
On	Off	ASCII. All incoming character codes are mapped to their ASCII equivalent.
On	On	IBM PC. Incoming character codes are mapped to IBM PC characters.

Note: If the 274 IC, 275 IC, or 276 IC will be used, switches A:6 and A:7 should be set according to the conversion selected in the 274 IC, 275 IC, or 276 IC. That is, the 274 IC can be set to convert EBCDIC to ASCII or pass through EBCDIC data.

Switch A:8 Custom translation cartridge

Tells the printer whether a customized mapping table installed in a cartridge will be used as the default mapping table.

A:8	Off	Indicates a custom cartridge table will not be used.
	On	Indicates a custom cartridge table will be used as the default table.

Switchbank B Switchbank B controls the following functions:

- which national character map to use
- whether or not to print status sheets
- whether a chime is to sound
- which font is to be the default font

Switches B:1—B:4 Language selection

Switch B:1 through Switch B:4 tell the printer which national character mapping is in effect as the default mapping, and the language in which to print the status and configuration sheets.

B:1	B:2	B:3	B:4	
On	On	On	On	U.S. English
On	On	On	Off	U.K. English
On	On	Off	On	French
On	On	Off	Off	Dutch
On	Off	On	On	Spanish
On	Off	On	Off	Italian
On	Off	Off	On	Danish
On	Off	Off	Off	Norwegian
Off	On	On	On	Finnish
Off	On	On	Off	German
Off	On	Off	On	Swedish
Off	On	Off	Off	Belgian
Off	Off	On	On	French Canadian
Off	Off	On	Off	Portuguese
Off	Off	Off	On	Latin American

Note: The mapping for each language is provided in appendix D.

If all switches are Off, U.S. English is used as the default mapping, but the message, "Language Error" is printed on the configuration sheet.

Switch B:5 Status sheet

Tells the printer whether status sheets are to be printed automatically to report job errors.

B:5	Off	Indicates status sheets are not to be printed unless specifically requested in the job command. A status sheet is printed, however, at start-up, if the Model 50 finds certain types of faults in the system. The fault is indicted by an error code on the status sheet.
	On	Indicates status sheets are to be printed at the end of a job when an error occurs.

Switch B:6 Chime

Tells the printer whether the chime is to sound when a BEL code (ASCII X'07', EBCDIC X'2F') is received, or to signal a fault condition (out of paper).

B:6	Off	Indicates the chime is never to sound.
	On	Indicates the chime is to sound in response to a BEL code or to signal a fault condition.

Switches B:7 and B:8 Default font

These switches determine which font is to be used as the default font (all user data is printed in the default font except status sheets or unless other fonts are requested by command.)

B:7	B:8	
Off	Off	Resident Portrait. This setting selects the resident portrait font. (Titan10iso-P for U.S./Canada machines and Titan12iso-P for international machines.)
Off	On	Resident Landscape. This setting selects the resident landscape font (XCP14iso-L for U.S./Canada machines and XCP12.5-L for international machines).
On	Off	Cartridge #1. This setting selects the first font in the font cartridge installed in the first font slot (second slot from left).
On	On	Cartridge #2. This setting selects the first font in the font cartridge installed in the second font slot (third slot from left).

Switchbank C Switchbank C controls various communications options and is used with the serial asynchronous interface only. The following options may be selected:

- The communications protocol, if any, to be employed:
  - XON/XOFF (DC1/DC3)
  - ETX/ACK
  - Printer ready (DTR)
- The baud rate

Switches C:1—C:3 Communications protocol

Athough any, all, or none, of the available communications protocols may be in effect, normally only one is selected.

C:1 XON/XOFF. Controls the use of the XON/XOFF protocol.

Off	Indicates XON/XOFF protocol is not used
On	Indicates XON/XOFF protocol is used

C:2 ETX/ACK. Controls the use of the ETX/ACK protocol

Off	Indicates ETX/ACK protocol is not used
On	Indicates ETX/ACK protocol is used

C:3 Printer Ready (DTR)

Off	Indicates Printer Ready protocol is not used
On	Indicates Printer Ready protocol is used

Switch C:4 - C:6 Baud rate

Controls the rate at which data is transmitted and received.

C:4	C:5	C:6	Baud rate
Off	Off	On	300 bits/second
Off	On	Off	600 bits/second
Off	On	On	1200 bits/second
On	Off	Off	2400 bits/second
On	Off	On	4800 bits/second
On	On	Off	9600 bits/second
On	On	On	19.2K bits/second

Switch C:7 This switch is unassigned and does not affect printer operation.

Switch C:8 Auto Disconnect (Serial) - Metered Data (Parallel)

The effect of this switch depends on the type of interface selected in switch A:1. When serial interface is selected, switch C:8 determines auto disconnect. When parallel interface is selected, switch C:8 determines metered data mode.

Note: When switch C:8 is enabled, either Auto Disconnect or Metered Data is reported on the configuration sheet. (see Switches D:2 and D:3 for additional applications of this switch in the Serial Async mode.)

Switch C:8 should be set to Off when the Model 50 is connected through an interface controller, communication module, or interface sharing device. Set switch C:8 to ON if connected to the parallel printer port of a personal computer.

Switch C:8 Auto Disconnect (Serial) In the auto disconnect mode, the interface is disconnected from the host under the following conditions:

- The communication line, after a period of activity, is inactive for more than 30 seconds.
- The modem connected to the printer negates a Data Set Ready (DSR) it previously affirmed.

C:8	Off	Indicates auto disconnect mode is not used.
	On	Indicates auto disconnect mode is used.

Switch C:8 Metered Data (Parallel) In the metered data mode with a personal computer, printer time-out messages do not appear on the screen; therefore, this mode should be used if the host requires an immediate report on the state of the printer. Metered data mode should not be used when the Model 50 is connected with a protocol converter such as the 274 IC.

C:8	Off	Indicates metered data is not used.
	On	Indicates metered data is used.

Switchbank D The switches on Switchbank D control a variety of options; their effect on printer operation depends on some of the choices made on the other switchbanks. Several switches on switchbank D have different meanings, depending on the interface or encoding employed.

Switch D:1 Centronics or Dataproducts (parallel) interface

This switch has an effect only when the parallel interface has been selected with switch A:1

D:1	Off	Indicates Centronics interface is used
	On	Indicates Dataproducts interface is used

Switches D:2—D:3 Parity (serial)—Inverted Data (parallel) The effect of these switches depends on whether parallel or serial interface has been selected with switch A:1.

Note: The parity selected is dependent upon how switch A:5 is set.

Switches D:2—D:3 (Serial Async) parity and parity type. When Serial has been selected with switch A:1, switches D:2 and D:3 work in combination to select the desired parity type.

D:2	D:3	Effect
Off	Off	7-bit/Mark Parity
Off	On	7-bit/Space Parity
On	Off	7-bit/Odd Parity
On	On	7-bit/Even Parity
Off	Off	8-bit/No Parity
Off	On	8-bit/No Parity
On	Off	8-bit/Odd Parity
On	On	8-bit/Even Parity

Note: Switch A:5 selects 7- or 8-bit data

Switch D:2 (Parallel) Inverted data polarity. When Parallel has been selected with Switch A:1, Switch D:2

determines whether host data polarity is inverted.

D:2	Off	Indicates host data polarity is not inverted.
	On	Indicates host data polarity is inverted.

Switch D:3 (Parallel) Vertical Formatting. When Parallel has been selected with Switch A:1, Switch D:3 determines whether Vertical Formatting is to be used.

D:3	Off	Indicates VFU emulation is not to be used.
	On	Indicates VFU emulation is to be used.

Switch D:4 Electronic spacing (630 mode) or EBCDIC environment (4045 (2700) mode)

The effect of this switch depends on whether 630 or 4045 (2700) printer mode has been selected by switch A:2. With the 630 mode, this switch controls whether character spacing shall be determined by switch setting and commands, or by the character widths of the fonts used for printing.

When the 4045 (2700) mode and EBCDIC encoding (switches A:6 and A:7) are selected, this switch tells the printer whether the environment is a DSC (Data Stream Compatible) type or SNA (System Network Architecture) type.

D:4	**Mode**	
Off	630	Character spacing is determined by switch setting and spacing commands.
	4045	EBCDIC environment is SNA.
On	630	Character spacing is determined by parameters stored in digitized fonts. Switches D:5 and D:6 have no effect.
	4045	EBCDIC environment is DSC.

Switch D:5—D:6 Character spacing (630) mode

Determines the default character spacing under the following conditions:

630 mode is selected (Switch A:2 is set to On), and Electronic spacing is not used (Switch D:4 is set to Off.

These switches have no effect if electronic spacing is set to On; the switch settings can be overridden by 630 spacing commands. However, the fonts used have no effect on character spacing when these switches are set.

D:5	D:6	
Off	Off	Proportional spacing is the default character spacing.
Off	On	10 characters per inch is the default spacing
On	Off	12 characters per inch is the default spacing
On	On	15 characters per inch is the default spacing

Switch D:7 Horizontal tabs (630) mode

This switch only has an effect when the 630 mode has been selected with Switch A:2. It determines whether default horizontal tab settings are used.

D:7	Off	Indicates default settings are always used.
	On	Indicates tabs are to be set by 630 HMI commands.

Switch D:8 Rotate downloaded fonts

Rotates downloaded fonts to change their orientation.

D:8	Off	No font rotation—printer uses a downloaded portrait font as a portrait font
	On	Font rotation—printer converts a downloaded portrait font to a landscape font, and a downloaded landscape font to a portrait font.

Note: Detailed information regarding fonts is contained in section 3.

Start-up default switch settings

For compatiblity with most systems, you can set the switches in the suggested positions outlined in the following tables. Eventually you will want to become familiar with each switch function to modify your Model 50 to best meet your own requirements. If your host/printer combination does not work as desired with these suggested settings, you need to determine your specific switch settings.

Table 2-1 **Parallel Centronics default switch settings**

Switchbank A		**Switchbank C**	
Switch A:1	Off	Switch C:1	Off
Switch A:2	Off	Switch C:2	Off
Switch A:3	Off	Switch C:3	Off
Switch A:4	Off	Switch C:4	Off
Switch A:5	Off	Switch C:5	Off
Switch A:6	On	Switch C:6	Off
Switch A:7	Off	Switch C:7	Off
Switch A:8	Off	Switch C:8	On*
Switchbank B		**Switchbank D**	
Switch B:1	On	Switch D:1	Off
Switch B:2	On	Switch D:2	Off
Switch B:3	On	Switch D:3	Off
Switch B:4	On	Switch D:4	Off
Switch B:5	On	Switch D:5	Off
Switch B:6	On	Switch D:6	Off
Switch B:7	Off	Switch D:7	Off
Switch B:8	Off	Switch D:8	On

The parallel Centronics default switch settings assume:

- 2700 printer mode
- 7-bit data
- ASCII encoding
- U.S. English character mapping
- Status sheet and chime enabled
- Font rotation

*Switch C:8 should be set to Off if you are connecting the Model 50 through an interface controller, communications module, or interface sharing device.

Table 2-2 **Parallel Dataproducts default switch settings**

Switchbank A		**Switchbank C**	
Switch A:1	Off	Switch C:1	Off
Switch A:2	Off	Switch C:2	Off
Switch A:3	Off	Switch C:3	Off
Switch A:4	Off	Switch C:4	Off
Switch A:5	Off	Switch C:5	Off
Switch A:6	On	Switch C:6	Off
Switch A:7	Off	Switch C:7	Off
Switch A:8	Off	Switch C:8	On*
Switchbank B		**Switchbank D**	
Switch B:1	On	Switch D:1	On
Switch B:2	On	Switch D:2	Off
Switch B:3	On	Switch D:3	Off
Switch B:4	On	Switch D:4	Off
Switch B:5	On	Switch D:5	Off
Switch B:6	On	Switch D:6	Off
Switch B:7	Off	Switch D:7	Off
Switch B:8	Off	Switch D:8	On

The parallel Dataproducts default switch settings assume:

- 2700 printer mode
- 7-bit data
- ASCII encoding
- U.S. English character mapping
- Status sheet and chime enabled
- Font rotation

*Switch C:8 should be set to Off if you are connecting the Model 50 through an interface controller, communications module, or interface sharing device.

Table 2-3 **Serial asynchronous default switch settings**

Switchbank A		**Switchbank C**	
Switch A:1	On	Switch C:1	On
Switch A:2	On	Switch C:2	Off
Switch A:3	Off	Switch C:3	Off
Switch A:4	Off	Switch C:4	On
Switch A:5	Off	Switch C:5	On
Switch A:6	On	Switch C:6	Off
Switch A:7	Off	Switch C:7	Off
Switch A:8	Off	Switch C:8	Off
Switchbank B		**Switchbank D**	
Switch B:1	On	Switch D:1	Off
Switch B:2	On	Switch D:2	On
Switch B:3	On	Switch D:3	On
Switch B:4	On	Switch D:4	Off
Switch B:5	On	Switch D:5	Off
Switch B:6	On	Switch D:6	On
Switch B:7	Off	Switch D:7	Off
Switch B:8	Off	Switch D:8	On

The serial asynchronous default switch settings assume:

- 630 printer mode
- 7-bit data
- ASCII encoding
- U.S. English character mapping
- Status sheet and chime enabled
- XON/XOFF protocol
- 9600 baud
- Even parity
- 10 characters-per-inch default spacing
- Font rotation

Removing the configuration cartridge

The configuration cartridge is located inside the font cartridge compartment. To remove the cartridge:

1. Press the **Off-line** switch to take the printer off-line. The Off-line indicator lights.
2. Wait until printing stops.
3. Open the font compartment door (on the left front panel of the Model 50).

As you can see in Figure 2-28, the configuration cartridge is located in the extreme left position of the compartment. It's position is marked by a gray block directly beneath the slot.

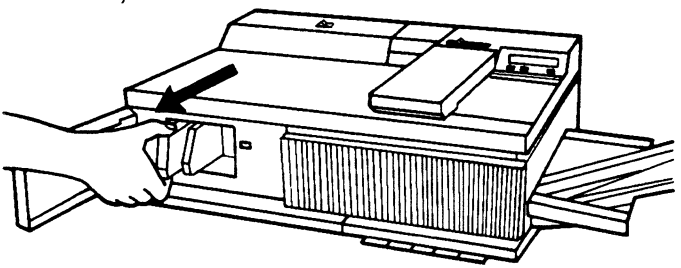


Figure 2-28 **Removing configuration cartridge**

The additional slots, marked with brown blocks, are for font cartridges.

4. To remove the cartridge, grasp and pull it toward you.
5. Set the configuration cartridge switches according to the Configuration cartridge checklist you completed.

Installing the configuration cartridge

Once the cartridge is set to match your host system's requirements, replace the configuration cartridge in the font compartment.

1. With the switches to the right, insert the cartridge into the slot on the left (marked by the gray block).

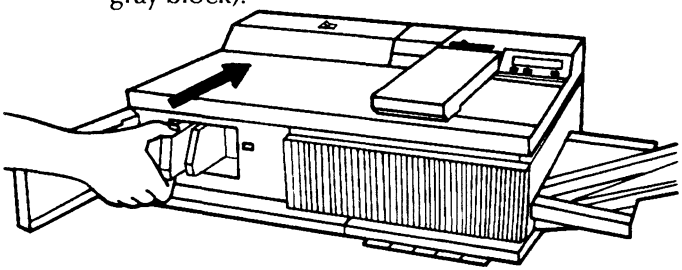


Figure 2-29 **Inserting configuration cartridge**

2. Push the cartridge gently until it stops.
3. Close the font compartment door.
4. Print a configuration sheet (press and hold **Reset** switch, press **Off-line** switch), This action tells the printer to reread the configuration cartridge for new settings and print a configuration sheet. Check switch settings against your host system's requirements.

Fonts

Data can be printed on the Model 50 in many typestyles and sizes called fonts. Each font is a set of instructions which enable the Model 50 to print a complete set of letters, numbers, and special symbols in one size, one typestyle, and one orientation (orientation is the direction characters are placed on the page).

During printing, the Model 50 can use fonts from four sources:

- Either of two resident fonts, permanently stored in the Model 50's memory.
- Fonts stored in cartridges in the font cartridge compartment
- Magnetic tape fonts and diskette tape fonts downloaded from the host system and stored in the Model 50's memory. (Refer to the *Creating documents* section of this manual for additional information.)

Resident fonts

Two permanent internal fonts (resident fonts) are stored in the Model 50 for U.S. and Canada:

XCP14iso-L (landscape orientation) font. This font adapts the standard line printer page of 132 character line by 66 lines, to 11 x 8.5" paper. This is equivalent to approximately 14 characters per inch and 8.57 lines per inch.

Titan 10iso-P (portrait orientation) font. The Titan 10 prints a standard 10 characters per inch, 66 lines per page to produce portrait pages.

The two resident fonts for the international Model 50 are:

XCP12.5iso-L (landscape orientation) font. This is the international version of the internal landscape fonts designed for A4 paper (11.69" x 8.28"). This font produces 12.5 characters per inch and 8 lines per inch or 132 characters line by 66 lines on A4 paper only.

Titan12iso-P (portrait orientation) font. This is the international version of the internal font designed for A4 paper. This font produces a standard 12 characters per inch and 6 lines per inch to produce 64 lines of 80 characters with default margins.

Examples of landscape and portrait orientation are shown below:

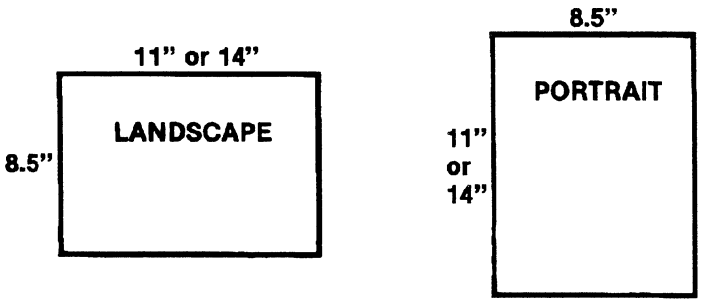


Figure 2-30 **Landscape and portrait orientations.**

Selecting a default font

Unless a particular font is specified by commands entered in the data stream or by switch settings on the configuration cartridge, the Model 50 prints using the default font. You can select one of the resident fonts or a cartridge font (the first font, as indicated on the label of the cartridge, inserted in font slots 1 or 2) as the default font. This enables you to use any available font in a font cartridge as the default font.

The default font is selected by setting switches **B:7 and B:8** of the configuration cartridge as outlined in *Configuration cartridge switch settings*.

Font cartridge

Numerous licensed fonts for the Model 50 are available in font cartridges from Xerox Typographic Marketing for the U.S. and Canada.

For international locations, please contact your Xerox sales representative or local Xerox office.

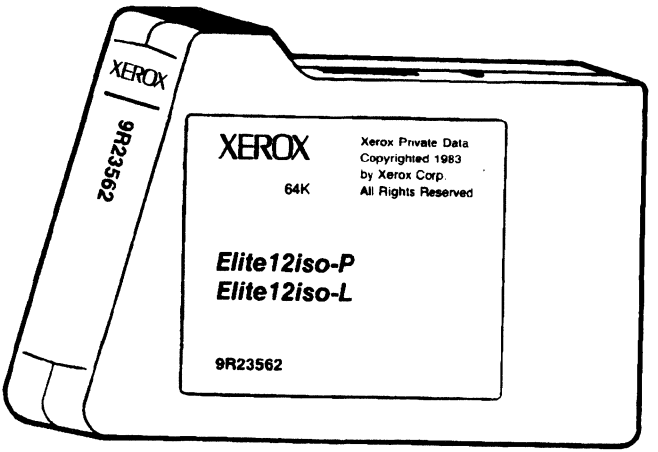


Figure 2-31 **Font cartridge**

In addition, Xerox Typographic Marketing can create custom typefaces, special characters for existing fonts, and digitized artwork, such as signatures and company logos. Special symbols, signatures, logos and other artwork are stored on font cartridges and are accessed just like font characters. Chapter 5, *Supplies and accessories,* contains instructions for ordering fonts.

Installing a font cartridge

If instructions from the host call for a font that has not been downloaded, or is not a resident font, it must be available in one of the Model 50's font cartridges. To install a font cartridge in one of the four slots:

Note: Font cartridges should **only** be installed when the Model 50 is not printing.

1. Press the **Off-line** switch to take the Model 50 off-line. The off-line indicator illuminates.
2. Wait until printing stops.
3. Open the font compartment door.

4. Insert the font cartridge into any available font slot, marked by a brown block on the label, in the compartment (there is a maximum of four slots for cartridges).

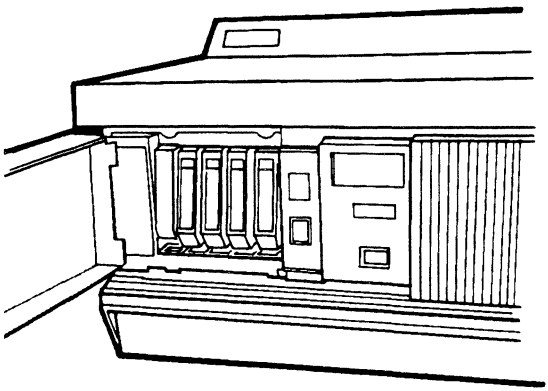


Figure 2-32 **Installing a font cartridge**

5. Close the font cartridge compartment door.
6. Perform a soft reset—while pressing the **Reset** switch, press the **Off-line** switch. A configuration sheet is printed and the Off-line indicator goes off.

Printing a document

By entering commands in the data stream at the host system, the Model 50 may be directed to alter the appearance of text being printed.

The format options such as margins, tabs, line spacing, font selection, etc., are defined at the host system when the print job is created. In the absence of such commands, the Model 50 selects default values, determined by configuration cartridge switch settings and the software in the Model 50, for each of these format options.

Note: The *Creating documents* section of this manual contains information on entering commands in the data to format documents.

Prepare the Model 50 for printing by placing the Model 50 on-line (press the **Off-line** switch, the off-line indicator turns off).

The Model 50 begins printing automatically as data is received from the host system.

Printing the last page

During printing the Model 50 stores data it receives until it has enough to print an entire page. The last page indicator lights 30 seconds after printing has stopped to alert you if there is data in the Model 50 that has not been printed.

1. Check your job to make sure that all the pages were printed correctly and that the last page was printed.
2. To print a page of data which did not print, press the **Last Page** switch.

It is a good idea to always press the **Last Page** switch after each job. If all data has been printed, nothing happens.

Note: Always press the **Last Page** switch whenever it is lit.

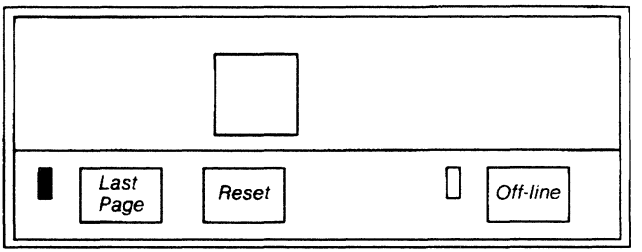
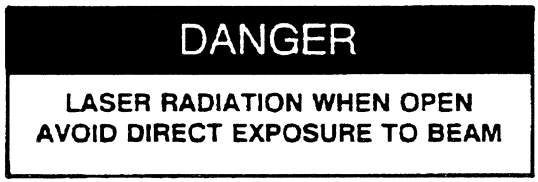


Figure 2-33 **Last page indicator**

4. Maintenance and problem solving

If you see this label when you are performing any maintenance operations, it warns you that opening the labeled cover could allow you to come into contact with laser radiation. Do not open this cover.



CAUTION: Use of controls or adjustments, or performance of procedures, other than specified herein, may result in hazardous radiation exposure.

This chapter gives you instructions on what to do if the Model 50 does not perform as expected. Included are:

- directions for cleaning the Model 50,
- clearing paper misfeeds,
- a list of codes that may appear on the control panel, why they appear and the action(s) you should take, and
- a problem solving checklist

This chapter is designed to help you solve problems. If a problem persists after you have tried the recommended action(s), telephone support is available by calling the Xerox Customer Support Center to help you resolve the problem. Instructions for calling the

Xerox Customer Support Center are included in this chapter.

Should you have a machine malfunction, instructions are also included in this chapter for placing a service call.

Routine cleaning

Before cleaning, the Model 50 should be powered off.

Check with other Model 50 users to be sure all jobs have printed before turning off the Model 50.

The Model 50 should always be kept clean and free of fingerprints, dust, or other surface dirt. The outside surfaces and the platen glass (copier option) should be cleaned regularly with a soft cloth which has been dampened either with water or a mild detergent solution.

CAUTION: Never pour or spray any liquid directly onto any part of the Model 50.

Cleaning the patch sensor

The Patch Sensor controls print density (how light or dark the print on your output is). The sensor must be kept clean in order for it to operate properly. The sensor is located under the printer cover and is cleaned using a dry cloth. Figure 2-34 shows the patch sensor.

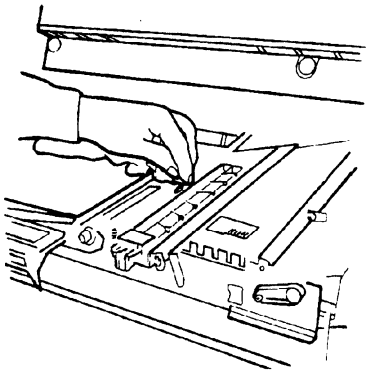


Figure 2-34 **Patch sensor**

Clearing paper misfeeds

The Model 50 was designed with a short, straight paper path to reduce the chance of a paper misfeed. If a misfeed does occur, printing or copying immediately stops, and the **Clear Paper Path** indicator lights. In addition, if you have the chime turned on (Configuration Cartridge Switch B:6), it sounds to alert you of a problem.

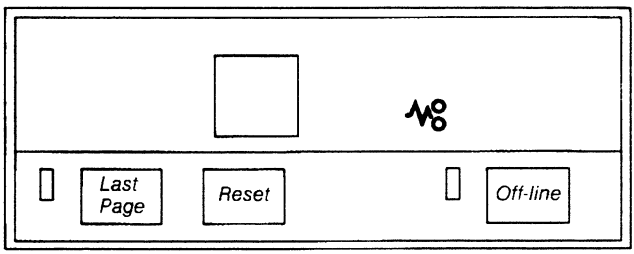


Figure 2-35 **Clear paper path indicator**

To clear the misfeed:

1. Pull the paper path access handle and lift up (as shown in Figure 2-36) to open the printer.

   The display on the control panel indicates an **E5**.

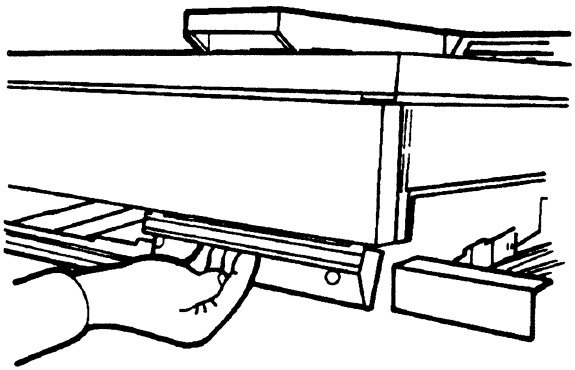


Figure 2-36 **Paper path access handle**

2. Remove any paper in the paper path by gently pulling it to the left to keep unused dry ink from contaminating the output rolls.

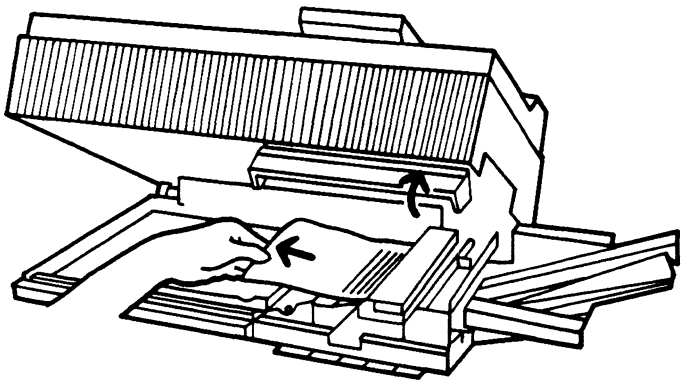


Figure 2-37 **Removing paper**

3. Push down on the front corners of the cover to close. The **E5** indicator disappears and the **READY** indicator lights.

If misfeeds begin occuring frequently, replace the paper in the tray with new, fresh paper.

Your printer can identify where in the paper path the problem is occurring by displaying a code on the control panel.

To display a code related to a misfeed:

1. Press the **Last Page** switch before clearing the paper path.
2. If misfeeds should occur frequently, record these codes, as they are helpful bits of information for the service representative.

Display codes

The control panel occasionally displays codes. These codes inform you of a condition that is occurring and/or one that requires action. The following list explains the codes and what you should do when they are displayed.

All display codes marked by an asterisk (*) apply only to misfeeds. To display these codes, press the **Last Page** switch before clearing the misfeed.

Codes:		
AA	**Reason:**	The Model 50 is in Data Monitor mode.
	Action:	To clear Data Monitor mode, press and hold the **Reset** switch. While holding the **Reset** switch, press the **Off-line** switch; or, turn printer off, then on again.
A1	**Reason:**	An original has misfed while being copied.
	Action:	Lift document feeder and remove original. Close document feeder and refeed the original.
A2	**Reason:**	An attempt was made to use the document feeder while the Model 50 is off-line.
	Action:	Press the **Off-line** switch to place the Model 50 on-line. The off-line indicator light goes off.

Codes:		
A3	**Reason:**	An attempt was made to use the copier while the envelope tray was installed.
	Action:	Replace the envelope tray with the paper tray.
C1	**Reason:**	Paper feed rollers not in the home position.
	Action:	Open printer to remove misfed sheet of paper. Close printer. Printing automatically resumes.
		Note: The next sheet may jam. If this occurs, open printer, remove jammed sheet, and close printer.
C3	**Reason:**	The paper tray is not seated properly.
	Action:	Push the paper tray in until it stops.
C4	**Reason:**	A sheet of paper has misfed or the paper tray is empty.
	Action:	Pull out the paper tray and check for misfed paper. Clear misfed paper. If tray is empty, add paper. Replace tray. Printing automatically resumes.
d3, d5, d6, d7, d8, d9	**Reason:**	The Model 50 failed power-on diagnostics.
	Action:	Power off, then on. If problem recurs, record code and call for service.
E1*, E2*, E3*, E4*	**Reason:**	A paper path misfeed has been detected.
	Action:	Lift the paper path access handle, open the Model 50 and clear the paper path.
E5	**Reason:**	The printer cover is open.
	Action:	Push down on the front corners of the printer cover to close.
(1-9)L	**Reason:**	The top cover is not properly closed.
	Action:	Push down on the top cover at the sides.

Codes:		
Ld	**Reason:**	Graphics are being downloaded.
	Action:	No action required.
LF	**Reason:**	Fonts are being downloaded from the host system.
	Action:	No action required.
L2, L3, L5	**Reason:**	Illuminator malfunctions.
	Action:	Power off, then on. If problem recurs, record code and call for service.
PE	**Reason:**	A parity error has been detected.
	Action:	Press the **Reset** switch.
P1	**Reason:**	The configuration cartridge is not inserted properly, not present, or inserted in a slot for a font cartridge.
	Action:	Open the font compartment door and check to be sure the cartridge is inserted correctly in the configuration cartridge slot. Power off, then power on.
P5, P6	**Reason:**	Host interface overrun error.
	Action:	Power off then on. If problem recurs, record code and call for service.
	Reason:	Switch settings could be incorrectly set. For example, switches C:1—C:3 may be set for XON/XOFF when they should be set for DTR.
	Action:	Check the switch settings. If problem is not resolved, call the Xerox Customer Support Center.

If the action(s) listed for a displayed code does not clear the code, and the code indicates a hardware problem, call your local service center. If you desire additional clarification about the displayed code, call the Customer Support Center.

Problem solving

On occasion your Model 50 will require your help in resolving a problem. The following information is intended to guide you in resolving problems that might occur.

Problem	Solution
Model 50 will not power on.	Check that the AC power cord is plugged into the wall outlet and rear of Model 50. Be sure that there is power at the outlet. If the Model 50 still does not turn on, call for service.
A configuration sheet is not delivered to the output tray when the Model 50 is powered on.	Check the control panel for indicators or codes. Clear the condition indicated on the control panel by following actions listed under *Display codes* on the preceding pages.
Transmitted data from the host system not printing at the Model 50.	Check the Model 50's configuration cartridge settings to be sure they are set correctly. Check the interface cable at the rear of the Model 50. Print a configuration sheet by holding the **Reset** switch while pressing the **Off-line** switch. If the configuration sheet prints, resend the data. If not, call for service.
Output from the printer is not formatted correctly.	• Be sure you have the correct driver invoked in your software (i.e., 2700, 4045, Diablo 630). • Place the Model 50 in the data monitor mode and print job again.

Problem	Solution
	The data monitor will show you all commands sent from the host with no interpretation from the Model 50. Data Monitor is described in section 3 of this manual. Should you have difficulty ending the dump, call the Customer Support Center.
Transmitted data is printing too light or too dark.	Call for service.
A display code cannot be cleared.	Follow the action for that code listed under *Display Codes*. If procedures fail, call for service.
The Model 50 suddenly stopped printing.	Check the control panel to see if a code is displayed. Refer to *Display codes* on the preceding pages and follow the suggested action(s) for that code. Press **Off-line** switch if last page indicator comes on. Press **Last Page** switch to eject buffer, check to see if job you are sending is too small to exit the buffer. If the font compartment door was opened while the Model 50 was printing, printing will stop. Press and hold the **Reset** switch and press the **Off-line** switch to reset the printer. If printing is still stopped, reset both the printer and host and send a "vanilla" ASCII file from the operating system, (i.e., outside of any software). This will determine whether the problem resides with the printer, host, or software.

Problem	Solution
If the Model 50 has never printed.	If you are connected to the host through a direct serial connection, check to be sure you have a Null Modem Cable attached. For details, see section 2 of this guide.
Misfeeds occur frequently.	Remove output from output tray. Make sure paper is loaded in the paper tray correctly. Replace paper in the paper tray with fresh paper. If misfeeds continue to occur, call for service.
Power failure while printing a job.	Retransmit job from the host system.
Model 50 making unusual noises or emitting odors.	Turn Model 50 off and call for service.
Copier option	
Copies too light or dark.	Adjust copy lighter/darker control. If copy quality is still not correct, call for service.

Placing service calls

Even the most reliable equipment may at times malfunction. The Model 50's modular design and built-in diagnostics make it simple to maintain and service. Should your Model 50 malfunction, use the following procedures when placing a service call.

Information you need

When the Model 50 is installed, your Xerox service representative will supply you with your local Xerox Customer Service Support Center phone number. Write this number and your machine serial number (embossed on the plate inside the font cartridge

compartment) in the spaces provided below so that you may refer to them when needed:

Customer Service Support Center Telephone Number: _____

Machine Serial Number: _____

Placing the service call

When you call the Customer Service Support Center to report a problem, the Xerox representative who answers the phone will ask you for your machine serial number, and then ask you to describe the problem.

The representative will attempt to help you correct the problem over the phone. If the problem cannot be resolved, the Xerox representative will then contact the service representative. The service representative will call you back to arrange a convenient time to come to your location to service the equipment.

When the service representative arrives at your location, providing the following information will help in diagnosing the problem:

1. Any display codes that were displayed.
2. The problem output in the order it was printed.

Xerox Customer Support Center

There may be times when you are unsure where the problem resides (Model 50, host system, hardware, etc.) or if a problem even exists.

Technical personnel are available at the Xerox Customer Support Center to provide you with answers to technical inquiries and/or direct you to available reference documentation to solve informational/application's problems.

Information you need

The key to effective utilization of the customer support center is correct identification of the problem. Before calling the center, it will be helpful to have the following information available:

1. Your machine serial number.
2. Note any display codes.
3. Be prepared to explain how the output is different from what is expected.
4. Try to determine whether the symptoms follow a consistent pattern or occur at random.
5. Note any special conditions which may have an effect on the system such as:
   - Is this a new application?
   - Have any changes been made on the host system (e.g., system software)?
   - Has any service been performed on your Model 50 recently?
   - Did the application print properly on the Model 50 prior to this problem?
6. Determine the severity of the problem. Use the following categories to determine how the problem impacts operation of the Model 50:

   Down: Indicates an inability to produce a critical job.

   Impaired: Indicates a degradation of performance exists but system operations can continue.

   Information only: Indicates there are no system problems, but a request for information is necessary.
7. Additionally, the following information will help expedite the call:
   - Copies of the configuration sheet and status sheet
   - Copy of the output with the problem
   - Copy of the job as it was input
   - Data monitor of the problem job

Calling the customer support center

Before calling the customer support center make sure you have read the *Problem solving* chapter of this guide and have tried the corrective action(s) listed. If the problem persists, gather the information about your problem and call the customer support center number. The center is open Monday through Friday between 7:00 a.m. and 4:00 p.m. Pacific Standard Time:

(213) 607-2151

Your call will be answered by a central call administrator, who will ask you for your equipment model:

4045 Model 50

You will also be asked for:

- Your name
- Your company name
- Your machine serial number

The administrator will ask you to provide a brief description of the reason for your call. The call administrator will assign a case number, and your call will be directed to a product specialist. Give this case number to the product specialist.

If the problem cannot be resolved on the phone, the product specialist may ask you to send in the information requested on the previous page. If you call again regarding this same problem, please refer to the case number assigned by the call administrator.

Meter reading and reporting

The Page/Copy Counter, located inside the font compartment doors, counts the number of prints and copies made. Within approximately three to four months following delivery of your new Model 50, if you have signed a Maintenance Agreement with Xerox, you will receive a meter card with instructions for filling it out and returning the card to Xerox.

5. Supplies and accessories

You need to order supplies such as paper, dry imager and developer for your Model 50. It is important that you always have an adequate supply on hand. This chapter outlines the supplies you need and how to order them.

Consumable supplies

Consumable supplies are those related to the operation of your Model 50. The amount needed depends on the number of pages you print.

Paper

Paper is a critical item; without the proper paper, you increase the probability of misfeeds.

The Model 50 can print on plain, white paper, colored paper, predrilled paper, letterhead paper, labels, xerographic envelopes, and transparencies. Maintain a supply of those you use frequently.

When purchasing paper you should consider:

- **Weight**—Use a good quality xerographic grade paper. For best results, use 20-pound bond (Substance 20) xerographic grade or Xerox 4024 Dual Purpose Paper.

  Lightest: 16 pound (Substance 16)—U.S./Canada
  60 gsm—International
  Heaviest: 24 pound (Substance 24)—U.S./Canada
  90 gsm—International

- **Sizes**—The Model 50 will accept 8.5 x 11 inch, 210mm x 297mm (A4), and 8.5 x 14 inch cut sheet paper.

- **Moisture Content**—Paper has a tendency to curl under the heat that is present inside xerographic equipment. Paper with low moisture content curls less. Paper with excessive moisture content has a tendency to misfeed.

- **Grain**—Paper is fed into the Model 50 with the 8.5 inch side as the leading edge. The grain should be parallel with the 11-inch side for reliable feeding and stacking. Purchase long-grain paper.

Xerox 4024 Dual Purpose Paper meets the requirements outlined above. Paper which meets the above requirements is also available from other vendors.

Your Model 50 paper tray holds 250 sheets of paper. 250 sheet ProtectorPaks are available from Xerox that are specifically designed to provide fresh paper at the correct moisture level to fill the tray without having to leave half a ream of paper exposed in an open room.

Dry imager

Dry Imager is the black powder which forms the image on the printed page. You need to order this item and be sure you always have an adequate supply on hand. The consumption rate is approximately one carton per 20,000 pages. Use only Dry Imager specified for use in the 4045. When you order 4045 Dry Imager from Xerox SupplyNet, specify "6R139, 4045 Dry Imager."

Developer

Developer is not "consumed," but rather has an "effective life" of approximately one carton per 44,000 pages. Developer is also an item required for the Model 50 you need to order and keep on hand. It is changed by the Xerox service representative. When you order 4045 developer from Xerox SupplyNet, specify "5R153, 4045 Developer."

Paper trays

The Model 50 is delivered with a standard paper tray that adjusts from 8.5 x 11 inches to 8.5 x 14 inches. Two additional trays are available: an A4 Metric paper tray designed for A4 paper (210mm x 297mm), and an envelope tray designed for feeding xerographic envelopes.

Interface cables

If you are connecting your Model 50 through a serial interface, the RS-232 serial cable can be ordered from Xerox. The cable is male to male with 25 pins at each end and is available in lengths of 15 feet, 25 feet, and 50 feet.

Page Sequencer

The Page Sequencer is an optional output tray that when installed takes the place of the output tray.

The Page Sequencer delivers the printed job with the first page of the job on top, or it can operate in a standard mode, delivering the pages with the first page of the job on the bottom. Installation and operating instructions are delivered with the unit. When you order the Page Sequencer from Xerox SupplyNet, specify "9R206, 4045 Page Sequencer."

Printer stand

A stand for your Model 50 is available from Xerox. This stand, designed for the 4045, provides ample

storage space for supplies, castors for easy movement in the office or work area, and is beautifully designed so it is welcome in the best places! When you order the stand from Xerox SupplyNet, specify "9R205, 4045 Cabinet Stand."

Supplies and accessories table

Table 2-4 lists the supplies and accessories that are available from Xerox for your Model 50. Use this table to help in determining your supplies and accessories needs.

Table 2-4 **Supplies and accessories**

Item	Description	Part number
Paper	Xerox paper quantities are 10 reams (5,000 sheets) to a carton unless otherwise noted below.	
8.5 x 11	4024 Dual Purpose Paper *	3R721
8.27 x 11.69	4024 Dual Purpose Paper	3R2594
8.5 x 14	4024 Dual Purpose Paper	3R727
8.5 x 11	4024 Dual Purpose Paper—3 hole	3R723
8.5 x 11	4024 Dual Purpose Paper—4 hole	3R1983
8.5 x 11	4024 Dual Purpose Paper—7 hole	3R1984
8.5 x 11	4024 Smooth	3R2675
8.5 x 14	4024 Smooth	3R2677
8.5 x 11	Dual Purpose Colors—Blue *	3R3052
8.5 x 11	Dual Purpose Colors—Blue, 3 hole	3R3068
8.5 x 14	Dual Purpose Colors—Blue	3R3084
8.5 x 11	Dual Purpose Colors—Green *	3R3056
8.5 x 11	Dual Purpose Colors—Green, 3 hole	3R3072
8.5 x 14	Dual Purpose Colors—Green	3R3088
8.5 x 11	Dual Purpose Colors—Pink *	3R3058
8.5 x 11	Dual Purpose Colors—Pink, 3 hole	3R3074
8.5 x 14	Dual Purpose Colors—Pink	3R3090
8.5 x 11	Dual Purpose Colors—Yellow *	3R3054
8.5 x 11	Dual Purpose Colors—Yellow, 3 hole	3R3070
8.5 x 14	Dual Purpose Colors—Yellow	3R3086
8.5 x 11	Dual Purpose Colors—Buff *	3R3060
8.5 x 11	Dual Purpose Colors—Buff, 3 hole	3R3076
8.5 x 14	Dual Purpose Colors—Buff	3R3092
8.5 x 11	Dual Purpose Colors—Goldenrod *	3R3062
8.5 x 11	Dual Purpose Colors—Goldenrod, 3 hole	3R3078
8.5 x 14	Dual Purpose Colors—Goldenrod	3R3094
8.5 x 11	Dual Purpose Colors—Ivory *	3R3064
8.5 x 11	Dual Purpose Colors—Ivory, 3 hole	3R3080
8.5 x 14	Dual Purpose Colors—Ivory	3R3096
8.5 x 11	Dual Purpose Colors—Gray *	3R3066
8.5 x 11	Dual Purpose Colors—Gray, 3 hole	3R3802
8.5 x 14	Dual Purpose Colors—Gray	3R3098
8.5 x 11**	Dual Purpose Colors—Rainbow Pack (3,500 sheets per carton)	3R3107

Table 2-4 **Supplies and accessories (continued)**

Item	Description	Part number
Transparencies	Xerox transparencies are packaged 100 to a box.	
8.5 x 11	Clear	3R2783
8.5 x 11	Red	3R2784
8.5 x 11	Blue	3R2785
8.5 x 11	Green	3R2786
8.5 x 11	Yellow	3R2787
8.5 x 11	Rainbow	3R2788
Dry Imager	Packaged 4 bottles per carton. (Consumption rate is approximately one carton per 20,000 pages.)	6R139
Developer	Packaged 1 bottle/carton. (Effective life is approximately one carton per 44,000 pages.)	5R153
Labels (Gummed)	All labels are on 8.5 x 11 sheets, 100 sheets to a box.	
	8.5 x 11 33 labels per sheet	3R2362
	8.5 x 11 24 labels per sheet	3R2363
	8.5 x 11 8 labels per sheet	3R2364
	8.5 x 11 custom form sheet	3R2365
Xerographic Envelopes	Unique 4.5 x 10 inch 20-pound (80 gsm) paper envelope designed for xerographic printers and copiers, packaged 1,000 to a box.	3R3116
Paper Trays	**Standard**—Adjusts from 8.5 x 11 to 8.5 x 14 (one delivered with each printer).	9R178
	A4 Metric—Designed for metric A4 paper (210 x 297 mm).	9R179
	Envelope—Designed for feeding xerographic envelopes.	9R181

* Available in 250 sheet ProtectorPaks

** Rainbow pack contains 750 sheets of 8.5 x 11 blue and yellow, 500 sheets each of green and pink, and 250 sheets each of buff, goldenrod, gray, and ivory.

Table 2-4 **Supplies and accessories (continued)**

Item	Description	Part number
Page Sequencer	Output tray. Delivers printed output with the first page of the job on top.	9R206
Printer Stand	Stand with castors and cabinet for supplies.	9R205
Cables	RS-232 serial cables, male to male, 25 pins at each end.	
	15 feet	9R80252
	25 feet	9R80254
	50 feet	9R80256

Ordering supplies

It is important that you check your supplies regularly and order before you run out. Plan on approximately five working days for delivery of Xerox supplies.

How to order

Supplies and accessories can be ordered from Xerox by calling this toll-free number during business hours, 8:30 a.m. to 5:00 p.m.:

1-800-822-2200 (U. S. only)

For international locations, please contact your local Xerox sales representative or local Xerox office.

1. The Xerox Supply Order Representative will first ask for your customer number. (Your sales representative can provide you with this number.)

   Xerox customer number: _____

2. You will also be asked for your equipment model: **4045 Model 50**

3. You then give your supply order to the supply representative. The order should include:

   — Part number
   — Item name
   — Quantity

4. If your company requires a purchase order for payment of an invoice, please provide the purchase order number to the representative at the time you place your order.

Paper storage

There is one final consideration—how paper should be stored. Below are some suggestions:

— Store paper in its own wrapper; do not leave it unwrapped or in a place where it can be damaged by dampness or heat.

— Store paper on a flat surface.

— Store paper in a closed cabinet.

— Always store in a cool, dry area.

— Do not store on the floor.

Note: To reduce the effects of moisture on paper in areas of high humidity, it is suggested any partially used reams of paper be stored in plastic bags.

Xerox Typographic Marketing

Xerox Typographic Marketing will send you the most current font specimen sheets containing available Model 50 licensed fonts. These font specimen sheets display the fonts and the order number for the orientation and type (cartridge, diskette, or tape) of each font. The forms you need for ordering fonts are also included.

To receive font information,call the appropriate toll-free Fontlines number and give your printer's product number: **4045 Model 50**

Business hours are 8 a.m. to 5 p.m. (Pacific Standard Time).

(800) 558-1444 (Nationwide)
(800) 558-5650 (California)
(213) 333-9707 or 333-9935 (Los Angeles area)

Or you may write to the following address to request font information and/or order fonts:

Xerox Corporation
Typographic Marketing A3-23
701 South Aviation Boulevard
El Segundo, California 90245

To inquire about font order status, font technical information and custom font specifications, please call the appropriate toll-free Fontlines number listed above.

For locations outside of the U.S., please contact your Xerox sales representative or local Xerox office.

Ordering fonts

After you have received the Model 50 font specimen sheets and selected the fonts you need, a Fontline representative can assist you in completing the necessary form(s) for ordering the fonts.

When ordering licensed fonts, plan up to ten working days for delivery.

The Fontlines can also assist you in ordering custom fonts. Plan up to four weeks for delivery of custom fonts.

Options

The following options are available to enhance the capability of your Model 50.

4045 Configuration Cartridge

If you use your Model 50 in more than one environment, you may wish to order additional configuration

cartridges. This will eliminate the need to reset switches on the configuration cartridge each time you need to change the interface.

To order additional configuration cartridges call Xerox Typographical Marketing. When you order additional configuration cartridges specify "9R88421, 4045 Configuration Cartridge."

Expanded memory

The Model 50 contains 512K of memory. This memory capacity can be expanded to 1MB or 1.5MB. Contact your Xerox sales representative for additional information.

3270/SNA Communication (274 IC)

The Xerox 274 Interface Controller (IC) is a protocol converter which enables the Model 50 to simulate the IBM 3287 Model 1 and 2 printers. Section 6, *Options,* contains additional information on the 274 IC. Contact your Xerox sales representative or local Xerox office to order.

System 34/36/38 Environments (275 IC)

The Xerox 275 Interface Controller (IC) enables the Model 50 to simulate IBM 5225 and 5256 printers and supports SCS (SNA character string) in an SNA/SDLC environment. Section 6, *Options,* contains additional information on the 275 IC. Contact your Xerox sales representative or local Xerox office to order.

IBM 8100 Loop Controller (276 IC)

The Xerox 276 Interface Controller (IC) is a protocol converter which enables the Model 50 to simulate IBM 3287 Model 11 and 12 printers. Section 6, *Options,* contains additional information on the 276 IC. Contact your Xerox sales representative or local Xerox office to order.

Multiple Host Sharing Device (280 ISD)

The 280 Interface Sharing Device (ISD) enables the Model 50 to support multiple hosts. Both a parallel and serial version of the 280 ISD is available depending upon your interface requirements. Section 6, *Options,* provides additional information on, and instructions for, installing the 280 ISD. Contact your Xerox sales representative or local Xerox office to order.

1. Introduction

This section of the *4045 CP Model 50 User Manual* explains how actual documents are created on the Xerox 4045 CP Model 50 printer. Commands used in the 4045 mode (Xerox 2700) are explained in detail and examples are given using the commands. At the end of this section is a problem-solving unit. Samples of bar charts, flowcharts, and other applications are located in the *Sample documents* section of the manual. The following appendices contain more information on creating documents:

Appendix C: Status sheet error codes

Appendix D: Conversion table for calculating margins and tab settings

Appendix E: Quick-reference chart of commands and what they do

Appendix F: Defaults for 4045 and 630 modes

Appendix G: Information on using Xerox 2700 files on 4045 Laser CP Model 50; miscellaneous information

Using the Model 50

The Model 50 has switch settings on the configuration cartridge that allow it to print information from a host system without receiving any instructions within the file. (For instance, the Model 50 functions as a standard computer line printer in this way.) Switch settings on the configuration cartridge must be set appropriately however. See *Operating the Model 50*

section of this manual for information on setting the switches on the configuration cartridge.

However, only one predetermined (default) font and none of the electronic printing features are available unless the Model 50 receives commands along with the data.

The 4045 commands allow the selection of type styles, margins, and use of all of the features of the printer.

630 mode and 4045 mode of operation

The Xerox 4045 Laser CP Model 50 can be used in one of two modes: Diablo 630 or 4045 (Xerox 2700). Which mode of operation is in use depends on how switch A:2 on the configuration cartridge is set. See *Configuration cartridge switch settings* in the *Operating the Model 50* section of this manual.

630 mode When the Model 50 is in the 630 mode, most software packages written for the Diablo 630 printer allow your personal computer to format your document using common word processing features like underlining, bolding, centering, margin settings, tabbing, line spacing, etc. In this case, the 630 commands are invisible to you, and you do not need to be concerned about them as they have been written into the software you are using. The documentation included with the software you have purchased tells you how to configure your ersonal computer so it is compatible with the Diablo 630 printer.

A complete list of the 630 commands and their escape sequences appears in the *Model 50 Reference Manual.* Instructions on how to use your 630-type printer can be found in the documentation of the software you have purchased. Section 15 of this manual lists the comparable 630 commands to the 4045 (2700) mode commands discussed. Also, the Model 50 (630 mode) exceptions are listed in that section.

4045 mode When the Model 50 is in the 4045 mode, it accepts Xerox 2700 II Electronic Printer commands. Commands placed in your document allow you to select type styles (fonts), set margins, draw lines, and perform many other formatting features. If you have used the Xerox 2700 electronic printer, the Model 50 commands are very familiar to you. The 4045 mode uses most of the 2700 commands plus some additional commands.

Software packages are also available to drive the Model 50 printer in the 4045 mode. Any software packages written for the Xerox 2700 II printer work on the Model 50 printer. If you are using such a software package, you need not be concerned about the 4045 commands as they have been written into your software program. The documentation with your software explains how to configure your computer to be compatible with the Model 50 printer in the 4045 mode.

Listing of commands

This section of the manual explains how to create 4045 (2700) mode commands that the printer recognizes and uses to format the pages of text it prints. The following is a list of the commands. The asterisk is used as an escape code. If you are familiar with the commands, the list saves you reading through detailed descriptions of each command, thereby giving you more time to play with your printer. If the commands are new to you, relax! All commands except the VFU are discussed in detail with examples later in this section. The VFU commands are discussed in the *Reference Manual*.

Font Load		*+F<LE>[1]
Font ID Assignment		*+n<Fontname><LE>
Font Change		*n (n=0-9)
Font Unload		*+U<LE>
Font Add Selected		*+A<LE>
Font Delete Selected		*+B<LE> <Fontname,Fontname,...><LE>
Print		*+P<LE>
Reset		*+X<LE>
Margins		*m<S,T,B,L,R><LE>
Top Margin		*zn<T><LE>
Bottom Margin		*zq<B><LE>
Left Margin		*zk<L><LE>
Right Margin		*zm<R><LE>
Justification	Start	*j
	Stop	*k
Underline	Start	*u
	Stop	*w
Line Spacing		*i<n>
Bolding	Start	*b
	Stop	*p
Centering		*q
Horizontal Tab Clear		*d
Horizontal Tab		*t<n_1,...n_{160}><LE>
Units—1/60 inch		*zg
Units—1/300 inch		*zf
Drawing Lines		
Landscape Orientation		
Drawing Lines—Horiz.		*y<X,Y,L,T><LE>
Drawing Lines—Vertical		*x<X,Y,L,T><LE>
Portrait Orientation		
Drawing Lines—Horiz.		*x<X,Y,L,T><LE>
Drawing Lines—Vertical		*y<X,Y,L,T><LE>
Absolute Text Placement		*a<X,Y><LE>
Relative Text Placement		*r<D><n><c>
Superscript	Start	*h
	Stop	*s
Subscript	Start	*l
	Stop	*s

[1]<LE> = line-ending characters, e.g. <CR> <LF>

Overstriking	Start	*zo<x>
	Stop	*zp
Merge Page Load		*+M<LE>
Merge Start		*ze
Merge Stop		*zd
Merge Page Unload		*+V<LE>
Language		*zl<c>
Character Table		*+T<LE>
Graphic Window		*gw<M>;<X,Y,A,B><LE>
Graphic data		
Repeat Window		*gr<M>;<X,Y><LE>
Vertical Tab Clear		*e
Vertical Tab Set		*v<n_1,...n_{125}><LE>
Data Monitor		*+D
VFU Stops Clear		*zw[2]
VFU Stops Set		*zv n v_1,...,v_7<LE>[2]
		n = channel 1-12
		v = ASCII character

[2]VFU instruction discussed in *Reference Manual.*

In the explanation of commands throughout this manual, special brackets < > enclose characters that are not typed at the keyboard exactly as shown (for instance, when the letter "n" is used to represent some number that you will fill in or when the letters "LE" are used to represent the carriage return key). **Do not type the special brackets into the ccommands.**

2. Background information

This document loosely classifies the commands given to the printer for a job into two types: the commands and the job commands.

Command format

A command controls formatting within the file or job.

Characteristics:

- Begins with User-Defined Key
- Uses line-end, if required
- If line-end is not required, more than one command can be placed on a line

Examples:

Font Change - Bolding	*2*b
Centering	*q
Bolding - Stop	*p
Margins	*m660,90,60,60,450<LE>

Job commands

A job command controls the overall handling of a file or job.

Characteristics:

- Begins with User-Defined Key
- Followed by plus sign

  *+

- Characters after plus sign vary

- Most end with line-ending
- Most allow requests for status sheet

Examples:

Font Load	*+F<LE>
Reset	*+X<LE>
Print	*+P<LE>

Carriage returns and line feeds

Hosts treat carriage returns and line feeds differently. The Table 3-1 lists the two ways CR and LF are most commonly handled and what action you need to take.

Table 3-1 **Carriage returns and line feeds**

Function keyed	Hosts transmits	Action
<CR> or <LF>	<CR><LF>	Separate line-feed not required.
<LF>	<LF> (no CR)	Define line-end sequence with switches A:3 and A:4 on configuration cartridge. (See *Operating the Model 50* for information on configuration cartridge switch settings.)

Some commands require a line end for completion. However, when a line end is not required, it should not be used, since the line end adds a physical line and returns printing to the left margin.

If a host system does not transmit carriage return and line feed <CR><LF> to the Model 50 when the return or new line key is touched, you must use the line-feed key after touching return or configure the Model 50 to interpret a carriage return as both.

Throughout this document, <LE> indicates line ending.

Configuration sheet

A configuration sheet is always printed at power-up. It lists the following:

- Software revision number
- Switch settings
- Resident and cartridge fonts, bytes, and revision number
- Memory, bytes, available

Status sheet

In order to receive a status sheet, you must request a status sheet by inserting a comma in your job command. The status sheet lists the following:

- Number of bytes of memory available
- Resident, cartridge and downloaded fonts in Model 50 printer
- Errors, by code, in your job

Status sheets are printed if there is an error in your job, if switch B:5 is in the ON position, and your job contains a start job command, end of job command, reset, or print command. These commands are explained in greater detail in the Print and Reset commands portion of this manual.

Table 3-2 outlines the instances when a configuration sheet and status sheet are printed and what causes them to be printed.

Table 3-2 **Configuration sheet and status sheet**

Type of sheet	When printed
Configuration sheet	Always at start up.
End-of-job status sheet	Only if comma is placed in job command. Sheet is printed at end of job (end of job must be defined by job delimiter such as Reset command).
Unsolicited status sheet	Always, if error in job, if switch B:5 is ON and job has start of job command and end of job command.

Page ends

The Model 50 printer does not print the last page out automatically. The last page can be printed by using a form feed (page end) character or by placing line ends from the last line of text to the bottom margin.

If a page is not filled to the bottom margin and does not contain a form feed, the Model 50 prints it automatically upon receiving one of the following commands:

Font Load
Print
Reset
Merge Page Load
Merge Page Unload

All of these commands are explained later.

The following pages describe the commands you give to use the printing features available on the Model 50 printer in the 4045 (2700) mode. A summary of these commands is given in appendix E of this manual.

3. Escape character and user-defined key

All 4045 mode commands begin with a special character that the printer recognizes as the signal. When the printer receives this special character, the Model 50 treats the data following the special character as a command.

The escape character (ESC) is always available for introducing a command. However, some host systems are unable to transmit an escape character to the printer.

A User-Defined Key, a substitute for the escape character, is provided for the many systems in which the escape character cannot be sent to the printer. The definition of a UDK (User-Defined Key) may occur anywhere in the job.

Once identified to the printer, the UDK is recognized as a signal for commands by the printer. The UDK is maintained from one job to another unless it is redefined or unless the Model 50 receives a Reset command which will be explained later.

To establish a UDK that signals the Model 50 of an upcoming command or instruction, use the following format:

=UDK=<c>

Character(s)	Description
=	The equal sign.
UDK	Uppercase abbreviation for User-Defined Key.
=	The equal sign.
<c>	The character you select as the UDK must come immediately after the second equal sign.

It is important to choose a character for the UDK not encountered during the creation of the text. Once a character is assigned as the UDK, it cannot be printed unless a new UDK is assigned.

The following characters may **NOT** be selected as the UDK character:

- Nonprinting characters, such as backspace and control keys
- Space characters
- The equal sign (=)
- Uppercase U
- Uppercase D
- Uppercase K

You can redefine the UDK key by issuing a new =UDK= statement. Any time you use the sequence =UDK=, the next character becomes the User-Defined Key.

Throughout the remainder of this document for the purposes of illustration, we assume that the asterisk character (*) has been defined as the UDK or escape character.

4. Fonts (2700 mode)

Font overview

The Model 50 printer is equipped in memory with two permanent internal fonts, type styles, one landscape line-printer font, XCP14iso-L, (XCP12.5-L for international machines) and one portrait font, Titan10iso-P, (Titan12iso-P for international machines) for use in printing.

Table 3-3 describes the difference between landscape and portrait pages.

Table 3-3 **Landscape and portrait pages**

Orientation	Description
Landscape	Top and bottom edges longer than left and right edges
Portrait	Shortest edges at top and bottom

The printer also accepts fonts stored on cartridges and fonts stored on tape or IBM-PC format floppy disc.

Fonts stored on tapes or disc must be downloaded or transmitted from the host to the Model 50 printer. The downloading process copies the fonts from the disc or tape into the font memory of the printer. While the downloading process is taking place, the code LF appears on the control panel.

Table 3-4 lists the three types of fonts, their names, and how they are referred to on the status sheet and configuration sheet.

Table 3-4 **Types of fonts**

Type	Name of font	How referred to on status sheet/ configuration sheet
Internal	XCP14iso-L Titan10iso-P XCP12.5-L (international) Titan12iso-P (international)	Resident
Cartridges	Depends on fonts in compartment	Cartridge
Tape or disc	Depends on fonts loaded into font memory	Downloaded

Resident, cartridge, and downloaded fonts

Fonts in the Model 50 are termed resident, cartridge, or downloaded based on the way they are stored in the printer. Resident and cartridge fonts need NOT be reloaded when the Model 50 is powered up; downloaded fonts must be reloaded whenever the printer is powered up.

Resident fonts are:

- Permanent, internal landscape and portrait fonts.

Cartridge fonts are:

- Fonts in font cartridges in the Model 50's font compartment.

Each font cartridge contains at least one font, logo, or signature. There are three sizes of font cartridges: 16K, 32K, and 64K bytes each. There are four receptacles on the Model 50 available for font cartridges.

Figure 3-1 shows a typical font cartridge for the Model 50 printer.

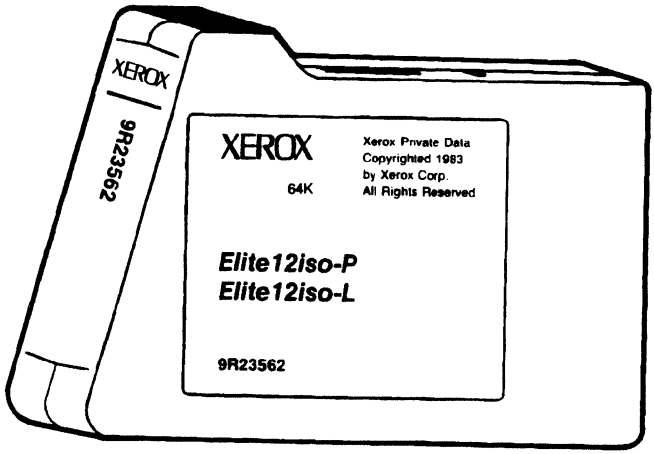


Figure 3-1 **Model 50 font cartridge**

Downloaded fonts are:

- Fonts loaded temporarily into the Model 50 printer.
- Fonts sent from host to Model 50 using Font Load or Font Add Selected commands
- Fonts removed from memory when power is off

The Model 50 stores a number of fonts depending on the font size and font memory available. All of the fonts stored in the font memory area are available for document printing. Memory space required by a font set depends on the point size, orientation, and number of characters in the font.

Downloaded fonts are loaded to the Model 50 using the Font Load or Font Add Selected commands explained later. Cartridge fonts are placed in the font compartment.

Default fonts

You choose a particular font as the default font by setting switches B:7 and B:8 on the configuration cartridge. The default font can be one of the following:

- Either internal fonts, resident landscape, or resident portrait
- First font in cartridge #1
- First font in cartridge #2

Font commands

The Xerox 4045 Laser CP Model 50 in the 4045 mode uses several font commands. Table 3-5 lists the font commands, the form they take, the application, and when they are used.

Table 3-5 **Font commands**

Name	Form	Application	When used
Font Load	*+F<LE>	Downloads fonts from host	1
Font ID Assignment	*+n<fontname><LE>	Sets up number for each font	2
Font Change	*<n> (n=0-9)	Calls out a font, by number, anywhere in text	2
Font Unload	*+U<LE>	Clears all downloaded fonts from memory	1
Font Add Selected	*+A<LE>	Loads additional downloaded fonts from host	1
Font Delete Selected	*+B<LE>	Specifies certain downloaded fonts for deletion	1
	1 = Acts as job boundary. 2 = Used within jobs.		

Font load

The Font Load command loads fonts from the host into the memory of the Model 50 printer. If your jobs use only cartridge fonts and the permanent internal fonts, you never need to use this command.

The Font Load command alerts the Model 50 that the information following the command is font data.

The formats for the Font Load command are:

*+F<LE>
*+F,<LE>
*+F,comment<LE>

Character(s)	Description
*	The User-Defined Key you created.
+	Plus sign.
F	Uppercase F. (F = Font load job)
,	Comma indicates that a job status sheet is to be printed. You may add a comment after the comma. If the comma is omitted before the comment line you have typed, the job status sheet is not printed. If your job contains errors and you have omitted the comma, a status sheet listing the errors is printed if, and only if • switch B:5 is on, and • start job command begins your job, and • end-of-job command ends your job
comment	This is an optional 132-character (maximum) comment line which is printed on this job status sheet.
<LE>	The Font Load command must be ended with a line end.

Characteristics:

- **Font Load command is used in a file separate from the font file and Reset or Print command file.**
- Status sheet may be requested with command. Sheet lists names of fonts loaded.
- May load fonts into memory in any order.
- Does not affect previously set margins, tabs, etc.
- Another Font Load overwrites fonts previously loaded and any graphics which are part of a constant page.

- Any escape character encountered while loading causes font loading to stop.
- Font Load command should have job end command file, like Reset (*+X), after the loaded font data.
- If you are using 2700 files and font XCP14-L is called out in a Font ID Assignment, the printer selects XCP14iso-L, the default landscape font, unless XCP14-L has been downloaded or is contained in a loaded font cartridge.
- If you are downloading fonts to the Model 50 using MS-DOS or PC-DOS, you can do so by creating a batch file.

Example: Shown below are the steps necessary in a typical Font Load sequence:

Create a file which contains the UDK code and the Font Load command. In the example, the file is called FRONT.

FRONT
=UDK=*
*+F<LE>

Create a file which contains the Reset command. In the example, the file is called BACK.

BACK
*+X<LE>

Send FRONT file:
FRONT

Send individual font files:
Kosmos10-P
Kosmos8-P

Send BACK file:
BACK

In the first file (called FRONT in this example) the UDK command establishes the asterisk as the escape code and the font load command tells the printer the data following is font data. The next files are the font files. In this example, Kosmos10-P and Kosmos8-P are the font files used. The last file (called BACK in this example) contains the Reset comand. From your host,

you send Front file, font files, and Back file to the Model 50 printer to download fonts.

Font download MS-DOS or PC-DOS

In order to download fonts to the Model 50 using MS-DOS or PC-DOS, it is necessary to create three files.

File 1 defines the UDK command and initiates the font download command to the printer.

File 2 copies the UDK command and font download command to the printer, copies the fonts to the printer and resets the printer out of Font Download mode.

File 3 defines the UDK command and initiates a reset of the printer out of the Font Download mode.

The easiest way to create these three files is using a copy con: command available under DOS. The following example creates the three files on disk C.

First, load DOS and insert the font diskette in drive B. At the A:> prompt on the screen, type the following:

```
copy con:c:start.doc        <LE>
=UDK=*                      <LE>
*+F,Font Load               <LE>
CTRL z (or F6)              <LE>
```

A file is now created which sets the printer for font load. The second file sends all the necessary commands and fonts to the printer. Type the following from the A:> prompt:

```
copy con:c:download.bat     <LE>
copy c:start.doc lpt1:      <LE>
copy b:*.fnt lpt1:          <LE>
copy c:stop.doc lpt1:       <LE>
CTRL z (or F6)              <LE>
```

A batch file is now created to load fonts to the printer. The last file resets the printer to the ready mode. Type the following from the A:> prompt:

```
copy con:c:stop.doc         <LE>
```

```
=UDK=*                    <LE>
*+X                       <LE>
CTRL z (or F6)            <LE>
```

All the necessary files are now created. At the A:> prompt, type the following:

```
c:download                <LE>
```

Characteristics:

- A status sheets, listing all the fonts loaded, prints when the font load is completed.
- CTRL z signifies the use of the CTRL key on the keyboard and the letter z. F6 signifies the use of the F6 key on the keyboard. This closes the file and writes the file to the disk.
- Additional fonts are added with the font add command.

Font ID assignment

The Font ID Assignment command sets up a numbered index for every font. All fonts in the numbered index must be resident fonts, cartridge fonts, or downloaded fonts.

*+<n><fontname><LE>

The table below explains each character in the Font ID Assignment command.

Character(s)	Description
*	The User-Defined Key you created.
+	Plus sign.
<n>	An ID number that is assigned to this font and used in the Font Change command to call out the font in the text of the document. This number must be in the range 0-9.

Character(s)	Description
<fontname>	The correct font name, taken exactly from either of the following: — The front label of the installed font cartridge. — The status sheet printed at the conclusion of a font job if requested by inserting a comma in the Font Load command.
<LE>	The Font ID Assignment command must end with a line end.

Characteristics:

- Font ID Assignment is used **within** job.
- Upper and lowercase letters of font name must be entered **exactly** as they appear on font label and status sheet.

  Font cartridges containing 64K bytes may hold up to nine fonts on a cartridge. The names of the fonts on 64K cartridges are listed under the *Fonts* tab in this manual.
- Ten fonts can be identified at one time. Numbers 0-9 are used.
- Fonts can be reassigned within a job.

  Example: In the first half of a report, you assign 3 to one typeface:

  *+3Classic12-L<LE>

  In the second half of the report, you replace Classic12-L with Classic14-L:

  *+3Classic14-L<LE>
- Reassignment of fonts allows you to use more than 10 fonts in document.
- Font ID Assignments extend across job boundaries unless Reset command is used or new Font ID Assignments are made.

Example: Below is an example of an index set up with Font ID Assignment command:

```
*+1Titan10l-L<LE>
*+2Titan10Bliso-L<LE>
*+3Titan12iso-L<LE>
*+4Titan12Biso-L<LE>
```

All of these fonts are landscape fonts as indicated by the "-L" in the name. The letters "iso" indicate the font is an international font, based on the 6937 character set of the International Standards Organization.

Font ID Assignments need not be made only at the beginning of a job. You can reassign or assign fonts not previously assigned but present on the printer as a resident, cartridge, or downloaded font, anyplace in your job.

Font change

Once ID numbers are assigned with the Font ID Assignment command, you can call out, or specify, each font by its ID number anywhere in the text. In this way, fonts can be changed within your document.

This capability of the Model 50 to vary the fonts in a document enables you to change type styles for headlines, italicized words, footnotes, etc.

The Font Change command is formatted as follows:

```
*<n>
```

The table below explains each character in the Font Change command.

Character(s)	Description
*	The User-Defined Key you created.
<n>	A number from 0 to 9, corresponding to the font ID you created with the Font ID Assignment command.

Characteristics:

- If Font Change is used before font is assigned (Font ID Assignment), the Font Change command is ignored. Error is reported on status sheet.

- Font Change is used within jobs.
- If Font Change is used within a page changing landscape to portrait or portrait to landscape, it causes a page to eject and a new page to be formatted.

Example: Assume that you used this Font ID Assignment:

*+4Titan12Biso-L<LE>

The Font Change command placed in the text to call out landscape, bold, Titan ISO 12-pitch for printing is:

*4

Font unload

The Font Unload command clears all downloaded fonts and graphics from memory and allows cleared memory to be used for graphics or the loading of other fonts. This command is used between jobs. Margin settings, tab settings, and other set parameters are not affected by this command.

The format for the Font Unload command is:

*+U<LE>

Character(s)	Description
*	The User-Defined Key you created.
+	Plus sign.
U	Uppercase U (for "Unload").
<LE>	The Unload Font command must end with the line end.

Font add selected

The Font Add Selected command permits you to download fonts without losing or overwriting any previously downloaded fonts. This command is used between jobs.

The format for the Font Add Selected command is:

*+A<LE>

Character(s)	Description
*	The User-Defined Key you created.
+	The plus sign.
A	Uppercase A. (Load Additional fonts.)
<LE>	The Font Add Selected command must end with a line end.

In the following example, three files have been created. The file called FRONT defines the UDK and includes the font add command. The second file, Fonts, contains the fonts. In this case, Classic12-L and Classic14-L. The file called BACK contains the Print command as an end of job delimiter.

Example: **FRONT** file contains:

```
=UDK=*
*+A<LE>
```

Fonts:

```
Classic12-L
Classic14-L
```

BACK file contains:

```
*+P<LE>
```

Font delete selected

The Font Delete Selected command allows you to specify certain fonts to be unloaded, clearing font and graphic memory. It is then possible to load additional fonts or graphics. This command is used between jobs.

The format for the Font Delete Selected command is:

```
*+B,<LE>
<fontname,fontname,fontname><LE>
```

Character(s)	Description
*	The User-Defined Key you created.
+	The plus sign.
B	Uppercase B. (Blot out selected fonts)
,	The comma requests a status sheet.
<LE>	The line end sequence must precede the font names.
<fontname, fontname, fontname>	The name of the fonts taken exactly from the status sheet.
<LE>	The Font Delete Selected command must end with a line end.

Example: *+B,<LE>
Titan10Bliso-L,Titan12iso-L,BoldPSiso-L<LE>
*+P<LE>

In this example, *+B,<LE>, states the Font Delete command and requests a status sheet. After the <LE>, each font to be deleted is written exactly as it appears on the status sheet. The fontnames are ended with a <LE>. A Print command or Reset command ends the Font Delete Selected. Another <LE> ends the command.

Logos and signatures

A Model 50 logo or signature is a special font containing only the elements of that logo or signature.

When you are using a logo or signature in a document, you assign it an index number with the Font ID command and call it out with a Font Change.

Characteristics:

- Logo and signature fonts do not contain any regular printable characters. You must always switch back to one of your regular fonts before printing any text.

- Placement of a logo can be done with the Absolute Placement command.
- The text for signature is supplied with the signature font from the Xerox Font Center. The text is usually A, AB, ABC or ABCD depending on the size of the signature. Also, some logo may require the text for signature to be entered on two lines as follows:

  AB<LE>
  CD<LE>

Example:

```
=UDK=*<LE>
*+1Titan10iso-P<LE>
*+2YourSig24-P<LE>
*1Text of document
*2*a250,900<LE>
ABCD*1<LE>
*+X<LE>
```

The signature, called "YourSig," is downloaded to the Model 50 printer. In this example, it receives a Font ID Assignment of 2. After the text of the document is entered, the signature is called out and positioned on the page with the Absolute Placement command. The text for signature (a letter or series of letters beginning with A) actually places the signature on the page. A*1 calls out font Titan 10iso Portrait. In this example, a Reset command ends the job.

Page orientation and font usage

The orientation of a page describes its direction. A page has a landscape orientation when its top and bottom edges are longer than the left and right edges. A page has a portrait orientation when the shortest edges are at the top and bottom.

Figure 3-2 illustrates landscape and portrait orientation.

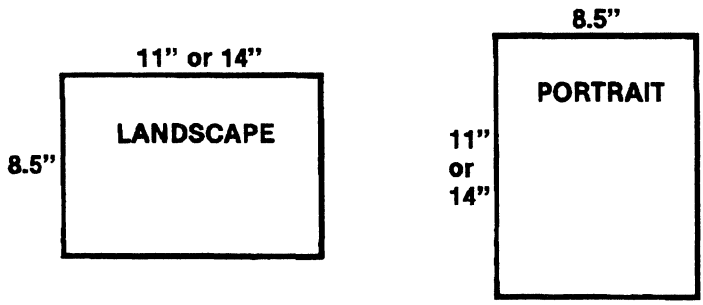


Figure 3-2 **Page orientation**

Characteristics of page orientation:

- First font on page determines page orientation.
- If font of different orientation is encountered, new page begins.
- Cannot mix portrait and landscape printing on same page.

Note: The only exception is with the Merge Page Load command. The Merge Page Load command allows you to merge a landscape page with a portrait page. Details about the Merge Page Load command are included in the command description.

5. Print and reset commands (2700 mode)

Order of commands

Jobs are usually easier to handle if they are separated by a Print command at the beginning of the job, and a Reset command or Print command at the end of the job. A typical job might include the following:

```
=UDK=*
*+P,This is December statement<LE>
*+1Kosmos14-P<LE>
*+2Kosmos10-P<LE>
*+3Kosmos8B-P<LE>
*2*m660,90,0,90,420<LE>
Text of the file
*+X<LE>
```

This job begins with the UDK command establishing the asterisk as the escape code. The Print command follows requesting a status sheet (with the comma) and adding a comment line. The next three lines identify the fonts, already available on the Model 50, using the Font ID Assignment. Font number 2, in this case Kosmos 10 Portrait, is called out. The margins are set with the next command, followed by the text of the file. At the end of a job, the Reset command cancels all the job parameters. In this example, the job parameters include the UDK, fonts, and margins. If you do not want your job parameters reset, use the Print command at the end of a job instead of the Reset command.

The Model 50 printer does not require that each job begin with a Print command nor end with a Reset command. Using these two commands as shown here helps you separate jobs.

Table 3-6 explains how the start of job and end of job commands are used.

Table 3-6 **Start of job and end of job commands**

Command	When used	Action
*+P<LE>	At beginning of job	Separates your job from last job printed.
*+P<LE>	At end of job	Separates your job from next job printed without resetting job parameters.
*+X<LE>	At end of job	Separates your job from next job printed and resets job parameters.

Print

The Print command is a job command. It tells the Model 50 a new job is begun or a job is ended. The Print command does not cancel the formatting instructions.

The format of the Print command is:

*+P<LE>
*+P,<LE>
*+P,comment<LE>

Print job examples	What these commands tell the Model 50 printer
*+P<LE>	(Print Job. Do not print a job status sheet.)
*+P,<LE>	(Print Job. Print a job status sheet with a blank comment line.)
*+P,Distribute to Accounting Dept.<LE>	(Print Job. Print the comment "Distribute to Accounting Dept." on the job status sheet.)

Character(s)	Description
*	The User-Defined Key you created.
+	Plus sign.
P	Uppercase P. (Print job.)
,	Comma indicates that a job status sheet is to be printed. If the comma is omitted, a status sheet is printed when errors have occurred if: • switch B:5 is on • start of job command begins job • end of job command ends job
comment	This is an optional 132-character (maximum) comment line you may type into the command which prints on the job status sheet.
<LE>	The Print command must end with a line end.

Reset

A Reset command is used to end the current job when you do not want to keep any of the job settings you created.

The Reset command ejects the page currently formatted. If you have requested a job status sheet, the Model 50 prints the job status sheet. Comments may be incorporated into the Reset command for printing on the job status sheet.

Table 3-7 lists what commands are affected when you use the Reset command.

Table 3-7 **Effects of using reset command**

Command	Effect on command if Reset used at end of job
Bolding	Set to off
Font ID Assignment	Set to default Must be assigned again
Margins	Set to default
Subscript	Set to off
Superscript	Set to off
Tabs	Cleared and set to default
UDK	Must be defined again
Underline	Set to off

The format of the Reset command is:

*+X<LE>

The description below explains each character in the Reset command.

Character(s)	Description
*	The User-Defined Key you created.
+	The plus sign.
X	Uppercase X. Exit this job, and clear job settings.
<LE>	The Reset command ends with a line end.

Example: =UDK=*
*+P,<LE>
Text of Document
*+X<LE>

If your Model 50 printer is being used by several people, it often becomes impossible for you to know what job settings are being used. To avoid having your document printed incorrectly, you can use a Reset command at the beginning of your job which sets all job parameters to the default settings. Then, you can set your own job parameters.

Example:
```
=UDK=*
*+X<LE>
=UDK=*
*1*m660,90,60,90,420<LE>
Text of Document
*+X<LE>
```

It is necessary to repeat the UDK command because the Reset command cancels the first UDK code you entered.

6. Margins (2700 mode)

Default margins

The Model 50 printer can print out text on a standard page without any special margin command, using the resident portrait font.

What the machine uses as its standard page size is determined by which paper tray is inserted in the Model 50.

Standard page sizes are:

8.5 x 11 inches (U.S. paper)
8.5 x 14 inches (U.S. paper)

210 x 297 mm (A4 paper—international)
215 x 330 mm (legal)
215 x 356 mm (legal)

The default margins are designed to center 66 132-character lines on a standard U.S. or A4 landscape page.

For best results, it is recommended that you set new margins whenever you are not using the resident fonts.

Table 3-8 lists the default margins on US paper, 8.5 x 11", for landscape and portrait orientation. Table 3-9 lists the default margins on A4 paper, 210 x 297 mm, for landscape and portrait orientation.

Table 3-8 **Default margins—US paper 8.5 x 11 inches/215 x 279 mm**

Orientation		Top	Bttm	Left	Right
Landscape	(inches)	0.40	0.40	0.66	0.66
	(mm)	10.20	10.20	16.80	16.80
Portrait	(inches)	0.66	0.66	0.40	0.40
	(mm)	16.80	16.80	10.20	10.20

Table 3-9 **Default margins—A4 paper 210 x 297 mm/8.27 x 11.69 inches**

Orientation		Top	Bttm	Left	Right
Landscape	(mm)	7.20	7.20	14.20	14.20
	(inches)	0.28	0.28	0.56	0.56
Portrait	(mm)	13.00	13.00	20.30	20.30
	(inches)	0.51	0.51	0.80	0.80

Margins

You can set or change margin values at any time using the Margins command. Since page orientation (landscape or portrait) is defined by the orientation of the font, specify the first font on the page before setting margins. This ensures that the page is in the correct orientation for the margins you set.

You can also set the top, bottom, left, or right margin independently of the other margins, after you have used the Margins command at least once. (See pages 3-38 and 3-39 for these commands.)

The Margins command is given in the following format:

*m<S,T,B,L,R><LE>

The capital letters in special brackets—S, T, B, L, and R—above represent numbers in units of 1/60 inch. For instance:

*m660,60,60,90,450<LE>

The following chart explains the Margins command in detail.

Character(s)	Description
*	The User-Defined Key you created.
m	The lowercase letter m (for "margins").
S	The "Size" of the paper. This is a number, in units of 1/60 inch (.42 mm), representing the distance between the top edge and the bottom edge of the paper currently loaded in the Model 50. For example, if this number is 660, it indicates that the size of paper is 11 inches.
,	A comma separates margin values.
T	The "Top" margin. This is a number in units of 1/60 inch (.42 mm). It represents the distance down from the top edge of the paper where the **top** of the characters in the first line of text is to start. If this number is 60, your top margin is one inch. If this number is 120, your top margin is two inches.
,	A comma separates margin values.
B	The "Bottom" margin. This number, given in units of 1/60 inch (.42 mm), defines the distance up from the bottom edge of the page where the **bottom** of the last line of text is to be printed. If this number is 60, your bottom margin is one inch.
,	A comma separates margin values.
L	The "Left" margin. The fourth number given in the Margin Set command represents, in units of 1/60 inch (.42 mm), the distance from the left edge of the page where the left side of the first character in each line is to be printed. As an example, if this number is 90, your left margin is set at an inch and a half.
,	A comma separates margin values.

Character(s)	Description
R	The "Right" margin. The final number in the command defines where the right side of the last character of each line is to end. This is measured from the left edge of the paper, not the right, and is given in units of 1/60 inch (.42 mm). If this number is 450, you have set a one-inch right margin (that is, a margin 7.5 inches from the left) for a page 8.5 inches wide.
<LE>	The Margins command must end with a line end.

Characteristics:

- Appendix D contains conversion table giving 10 and 12-pitch-character equivalents of 1/60 of an inch
- Lines too long to fit within margins are cut off
- Changing to larger font after margins are set may cause text to be cut off
- New margins setting needed when changing from landscape to portrait or vice versa
- If Margins command encountered in middle of page, only new left, right, and bottom margin settings used. New top margin appears on following page.
- Line feeds before a margin command are not honored unless there is printed text on at least one of those lines. Printing starts at the top margin as defined in the margin command.

Example #1: You have a portrait page on 8.5" x 11" paper. You need a 1" top and bottom margin, a 1.5" left margin and a 1" right margin.

*m660,60,60,90,450<LE>

The dotted lines in Figure 3-3 indicate where the margins are on the page.

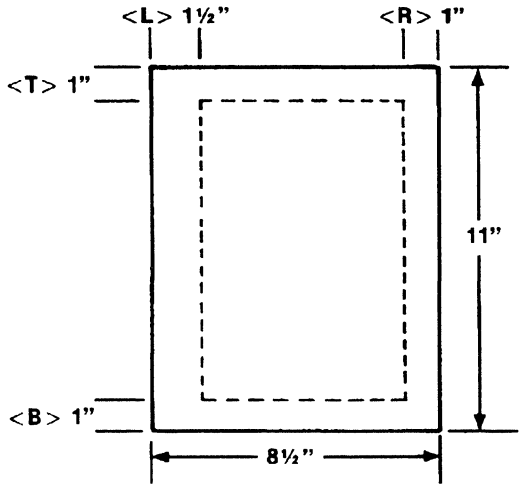


Figure 3-3 **Setting margins portrait**

Example #2: You have a landscape page in 10 pitch on 8.5 x 14" paper. You need a 9-line (1.5") top margin, a 6-line (1") bottom margin, a left margin of 10 characters (1.5") and a right margin at character 120 (2").

*m510,90,60,60,720<LE>

The dotted lines on Figure 3-4 indicate where the margins are on the page.

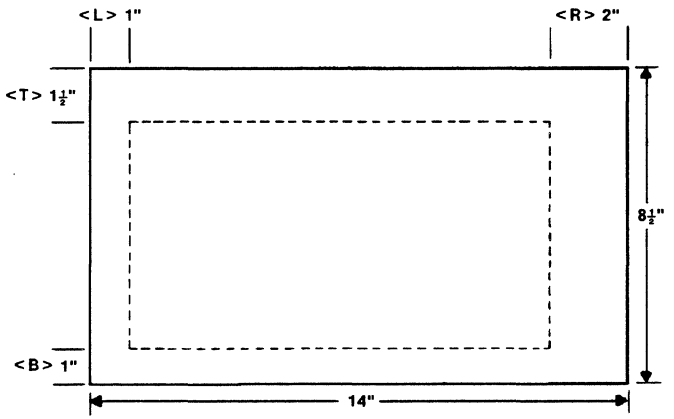


Figure 3-4 **Setting margins landscape**

Top margin

After using the Margins command at least once, you can set the top margin independently using the following command:

*zn<T><LE>

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
n	The lowercase letter n.
T	The "Top" margin. This is a number in units of 1/60 inch (.42 mm). It represents the distance down from the top edge of the paper where the **top** of the characters in the first line of text is to start.
<LE>	The Top Margin command must end with a line end.

Bottom margin

After using the Margins command at least once, you can set the bottom margin independently using the following command:

*zq<B><LE>

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
q	The lowercase letter q.
B	The "Bottom" margin. This is a number in units of 1/60 inch (.42 mm). It represents the distance up from the bottom edge of the page.
<LE>	The Bottom Margin command must end with a line end.

Left margin

After using the Margins command at least once, you can set the left margin independently using the following command:

*zk<L><LE>

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
k	The lowercase letter k.
L	The "Left" margin. This is a number in units of 1/60 inch (.42 mm). It represents the distance from the left edge of the page.
<LE>	The Left Margin command must end with a line end.

Right margin

You can set the right margin independently after using the Margins command at least once. The command is:

*zm<R><LE>

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
m	The lowercase letter m.
R	The "Right" margin. This is a number in units of 1/60 inch (.42 mm). It represents the distance over from the left edge of the page to the position where your **last** character is to end. If you want a one-inch right margin (for 8.5 in. paper), this number is 450.
<LE>	The Right Margin command must end with a line end.

Units—1/300th

The Model 50 allows you to set margins and tabs in 1/60- or 1/300-inch units. The default units are 1/60.

One-sixtieth of an inch is equal to .42 millimeters; 1/300 of an inch is equal to .085 millimeters.

The following command changes units of measurement for setting margins and tabs from 1/60 of an inch to 1/300 of an inch.

*zf

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
f	The lowercase letter f.

Units—1/60th

The following command returns the Model 50 from 1/300 of an inch to 1/60 of an inch:

*zg

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
g	The lowercase g.

The Reset command (* + X) also returns the Model 50 printer from 1/300 of an inch to units of 1/60 of an inch.

Example: In Example #1 (Margins command), on an 8.5 x 11" paper, you set a 1" top and bottom margin, a 1.5" left margin and a 1" right margin with the following margins command:

*m660,60,60,90,450<LE>

To set the same margins in 1/300 of an inch, you use the following Margins command:

*zf*m3300,300,300,450,2250<LE>

In the first Margins command, you multiply the number of inches by 60; in the second Margins command, you multiply the number of inches by 300.

7. Commonly used commands (2700 mode)

Justification

The Justification command spaces text evenly between left and right margins. The Model 50 begins justification when it receives a Justification Start, and ends justification upon receipt of a Justification Stop.

Characteristics:

- When justifying, the Model 50 does not make line-ending decisions. You must provide line-endings.
- If Justification Start comes in middle of line, justification begins there.
- To justify single line, enter Justification Start, input text, enter line end, then Justification Stop.
- Any number of lines may be justified between Justification Start and Justification Stop commands.
- Reset command (* + X) also ends justification.

The format of the Justification Start command is:

*j

The chart below explains these characters.

Character(s)	Description
*	The User-Defined Key you created.
j	The lowercase letter j (for "justify").

The format of the Justification Stop command is:

*k

Character(s)	Description
*	The User-Defined Key you created.
k	The lowercase letter k (kills justification).

Underline

The Underline command tells the Model 50 printer to underline all subsequent printable characters, tabs, and spaces until it detects a command to stop underlining.

Your command to begin or end underlining is included in the text along with the printable characters. The Underline Start command is given in the following format:

*u

Character(s)	Description
*	The User-Defined Key you created.
u	The lowercase letter u (for underline).

The Underline Stop command is:

*w

The table following defines the characters above.

Character(s)	Description
*	The User-Defined Key you created.
w	The lowercase letter w (withhold underlining).

Example: The following text uses the justification and underline commands:

Input:

=UDK=* *+P,
*1*m660,90,90,150,360<LE>
*jDeveloped by Xerox, *uthe world leader in electronic printing*w, the Model 50 provides a wide range of features. The Model 50 prints forms, charts, logos, and signatures.
*+X<LE>

Output:

Developed by Xerox, the world leader in electronic printing, the Model 50 provides a wide range of features. The Model 50 prints forms, charts, logos, and signatures.

Bolding

The Model 50 has the ability to make a character appear bold without using a bold font. To create the bold appearance, the Model 50 images the character twice. The second image is a distance of 1/150 of an inch from the first.

The command used to begin bolding is:

*b

These characters are explained in detail in the chart below.

Character(s)	Description
*	The User-Defined Key you created.
b	The lowercase letter b (for "bolding").

Once instructed to begin bolding, the Model 50 continues imaging each character twice until it receives a command to stop bolding.

Note: If pages containing bolding are not printing properly, it may be caused by too much bolding on one page. Try removing some of the bolding and printing your job again.

The command to stop bolding is:

*p

Character(s)	Description
*	The User-Defined Key you created.
p	The lowercase letter p ("prevents" further bolding of characters).

Example: The following is an example of how to use the bold command:

Input:

You can *bbold*p a word or
*bany number of words,
sentences or paragraphs*p.

Output:

You can **bold** a word or
any number of words,
sentences or paragraphs.

Centering

The Centering command allows you to center a line of text between the left and right margins.

The format to start centering is:

*q

Character(s)	Description
*	The User-Defined Key you created.
q	The lowercase letter q. (The line is "equidistant" from the left and right margins.)

Characteristics:

- You can put Centering command anywhere before line end.
- Each line to be centered must have Centering command.
- Centered line cannot also be justified.

Line spacing

The Model 50 has the capacity to change the spacing between lines. The format of this command is:

*i<n>

The chart following explains the characters in the command.

Character(s)	Description
*	The User-Defined Key you created.
i	The lowercase letter i for "interline spacing." This indicates that you want to change the spacing between lines of text.
<n>	This number may be any of the choices below: 0 = single spacing 1 = one-and-a-half-line spacing 2 = double spacing 3 = triple spacing 4 = one-half-line spacing

Characteristics:

- When Line Spacing command is given in middle of line, specified spacing begins with next line.
- Default line spacing is single spacing.
- Model 50 uses largest font in the line to determine spacing to avoid overstriking the previous line.
- If one half-line spacing is specified, the preceding line is overstruck.

Example: **Input:**

*i0The text in this example is single spaced. Many people use single spacing in their documents.

Output:

The text in this example is single spaced. Many people use single spacing in their documents.

Input:

*i2Now the text is double-spaced which leaves more room between each line. It is easier to read.

Output:

Now the text is double-spaced which

leaves more room between each line. It

is easier to read.

Superscripts/subscripts

You can create superscript and subscript characters in a line of text using the Superscript Start and Subscript Start commands. Superscripts and subscripts are useful as footnotes and in some scientific formulas.

Superscript start

The format of the Superscript Start command which raises the text higher than the current line is:

*h

The characters in the command are explained below.

Character(s)	Description
*	The User-Defined Key you created.
h	The lowercase letter h. Subsequent characters are "higher" than the current line of text.

Subscript start

You can create subscript characters which are lower than the current text using the Subscript Start command.

The format of the Subscript Start command is:

*l

The characters in the command are explained below.

Character(s)	Description
*	The User-Defined Key you created.
l	The lowercase letter l. Subsequent characters will be "lower" than the current line of text.

Superscript/subscript stop

The Superscript Stop and Subscript Stop command is:

*s

The characters in the command are explained following.

Character(s)	Description
*	The User-Defined Key you created.
s	The lowercase letter s. To "stop" superscripting and subscripting.

Characteristics:

- Superscript Start cannot be used to superscript a superscript.
- Subscript Start cannot be used to subscript a subscript.
- How high a character is raised or lowered depends on font in use. If you want larger or smaller rise, change fonts as shown in the example following.
- Superscripts and subscripts are terminated with carriage return <CR>, line feed <LF>, form feed <FF> or with a Superscript Stop command.
- Underlining text which contains superscripts and/or subscripts will underline normal text baseline, not raised or lowered baseline. To underline a superscript at its own level, place the Underline command after the superscript or subscript.

Example superscript: In this example, font 3 is changed to font 4 after starting the superscript. So, the Model 50 computes the spacing for the superscript letter "a" from font 3 rather than font 4.

```
*3"To thine own self be true."*h*4a*3*s<LE>
```

After the letter "a," a Font Change command (*3) returns the text to the original font. Then the Superscript Stop *s command ends the text.

The printed example looks similar to this:

To thine own self be true.^{a}

Example subscript: In this example, you enter the following text:

```
C*l2*sH*l5*sOH<LE>
```

which prints out

C_2H_5OH

Overstriking

The Overstrike command prints one character over another anywhere in the text. Overstrike can be used

to show what text is being deleted, for example, or what text is being changed.

You begin overstriking by giving the Overstrike Start command. The command to overstrike one character with another is:

*zo<x>

The chart below explains the Overstrike Start command in detail:

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
o	The lowercase letter o (for "overstrike").
<x>	The character to overstrike any following characters.

Most any character can be used to overstrike. The more common characters used are:

slash (/)
dash (-)
plus sign (+)

The Model 50 continues to overstrike characters and spaces until it receives an Overstrike Stop, Font change, or a Reset command. The format of the Overstrike Stop command is:

*zp

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
p	The lowercase letter p ("prevents" further overstriking).

Example: This example shows the date of April 1, 1984 overstruck with a plus sign (+).

The next board meeting will be held on <LE>
*20+April 1, 1984*zpMay 1, 1984.<LE>

The printed result is:

```
The next board meeting will be held on
Apr++++++1984May 1, 1984.
```

8. Sample document (2700 mode)

Now that this manual has discussed several commands, an example print job can be created using those commands in formatting the page. Figure 3-5 shows the document created using these commands.

```
*+P,
*+1Kosmos12-P
*+2Kosmos14-P
*2*m660,120,90,90,330
*qCOMPATIBLE INTERFACES

*1The *bXerox 4045 Model 50*p attaches to your
system using the most common methods to
support the majority of small business and
personal computers. Special consideration
has been given to ensure compatibility with
future systems, too.

The *bXerox 4045 Laser CP Model 50*p offers:
*d*t100,115
*b
• up to 22 fonts per page
• 10 pages per minute
• both Diablo 630 and Xerox 2700 modes*p

The Laser CP's compact size allows it to fit
easily into your office, and when equipped with the
*uoptional copier feature*w, the *bModel 50*p demon-
strates true productivity by allowing you to
make quick copies right at your workstation.
*+X
```

Command sequence	Description
=UDK=*	The first step is to define a User-Defined Key.
*+P,	Next, you want to tell the printer you are beginning a job. The comma requests a status sheet.
*+1Kosmos12-P *+2Kosmos14-P	Now assign, with the Font ID Assignment command, ID numbers to the fonts you want to use in the job. The fonts you list in the command must be present on the Model 50 as resident, cartridge or downloaded fonts. The names used here are listed exactly as they appear on the status sheet. The -P in the font name indicates the font is a portrait font.
*2	This Font ID Assignment calls out the second font, Kosmos14-P,to be used in printing the characters that come after it.
*m660,120,90,90,330<LE>	This command sets the margins: Size of Page = 660 (11 inches). Top Margin = 120 (2 inches). Bottom Margin = 90 (1.5 inch). Left Margin = 90 (1.5 inches). Right Margin = 330 (5.5 inches from the left edge; 3 inches from the right).
*q	This command centers the line of text following the command.
*1	The Font ID Assignment calls out the first font, Kosmos12-P, to be used to print the text that follows.

Command sequence	Description
*b...*p	This command bolds the text between *b and *p.
*d*t	Clears tabs and sets new tabs.
*u...*w	This command underlines text.
*+X	The Reset command returns all job parameters to the default.

COMPATIBLE INTERFACES

The **Xerox 4045 Model 50** attaches to your system using the most common methods to support the majority of small business and personal computers. Special consideration has been given to ensure compatibility with future systems, too.

The **Xerox 4045 Laser CP Model 50** offers:

- **up to 22 fonts per page**
- **10 pages per minute**
- **both Diablo 630 and Xerox 2700 modes**

The Laser CP's compact size allows it to fit easily into your office, and when equipped with optional copier feature, the **Model 50** demonstrates true productivity by allowing you to make quick copies right at your workstation.

Figure 3-5 **Sample document**

9. Horizontal tabs (2700 mode)

There are two types of tabs that you can set on the Model 50 illustrated in Figure 3-6.

- Horizontal tabs define the skips in spacing **across** the page, measuring from the left edge of the sheet of paper. (Horizontal tabs are used for creation of columns and for indenting paragraphs.)
- Vertical tabs define the skips in spacing **down** the page, measuring from the top edge of the sheet of paper. (Vertical tabs are used for setting skips in the spacing between lines of text to place the lines at specified positions down the page.)

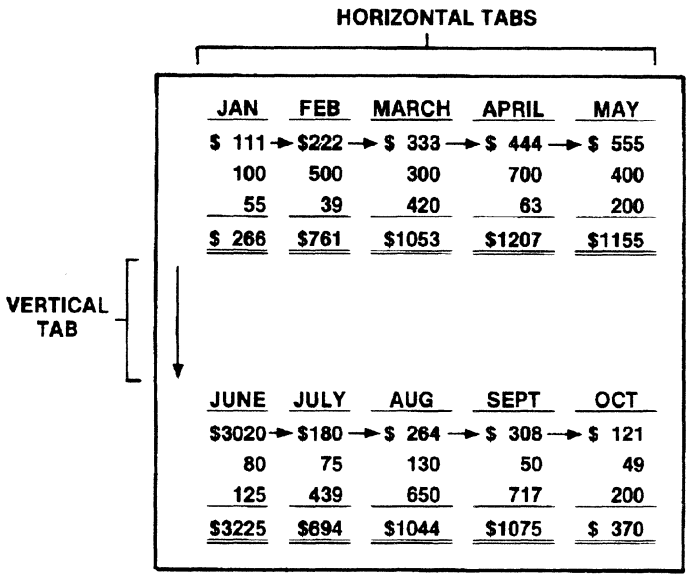


Figure 3-6 **Horizontal and vertical tabs**

Horizontal tab defaults

If no Horizontal Tab Set command is given before a job is run, the Model 50 has its own internal horizontal tab settings. These default tabs must be cleared before new horizontal tabs are set.

The default horizontal tab settings are every .44 inches beginning 1.1 inch from the left edge of the paper.

Figure 3-7 shows the first four default tab settings on a landscape and portrait page.

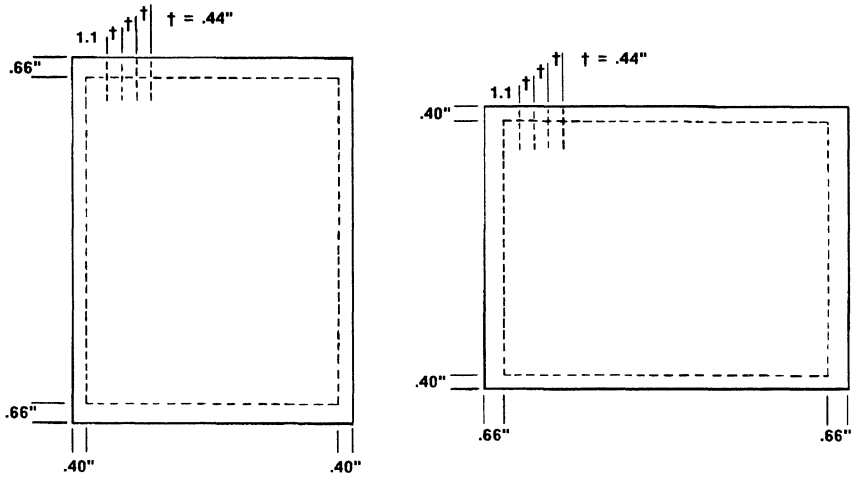


Figure 3-7 **Default tab settings**

Horizontal tab clear

The Horizontal Tab Clear command clears all horizontal tab settings, allowing you to set new horizontal tabs.

The format of this command is:

*d

Character(s)	Description
*	The User-Defined Key you created.
d	The lowercase letter d ("deletes" all horizontal tabs).

Horizontal tabs are set in units of 1/60 of an inch. If you are using 12-pitch or 10-pitch font, you may wish to consult appendix D which gives tables converting these pitches to 1/60-inch.

To convert from inches to 1/60 inches, you multiply the number of inches by 60.

If you prefer to use 1/300 of an inch instead of 1/60 of an inch, refer to the Units—1/300 command discussed earlier.

Horizontal tab set

The format of the Horizontal Tab Set command is:

*t<n_1,n_2,....n_{160}><LE>

The characters in the Horizontal Tab command are explained in greater detail in the chart following.

Character(s)	Description
*	The User-Defined Key you created.
t	The lowercase letter t (for "tabs"). This identifies the command as a Horizontal Tab Set.
<n_1,n_2,...n_{160}>	Up to 160 numbers (each separated by a comma from the next) that can range from 1 to 815, measuring in units of 1/60 of an inch (.42 mm) from the left edge of the paper.
<LE>	The Horizontal Tab Set must end with a line end.

Characteristics:

- Up to 160 horizontal tabs can be defined in one command.
- Tabs beyond 160 are ignored.
- Tabs may be entered in any order.
- Maximum tab set is 815 (13.58 inches)
- Tabs cannot be set beyond margins
- If you change page orientation, change the tab settings as well.
- Tabs remain until Horizontal Tab Clear or Reset. Horizontal Tab Clear clears all horizontal tabs; Reset returns tabs to default settings.

Example: Horizontal tabs set at 2, 3, 4, and 5.5 inches are entered as follows:

*d*t120,180,240,330<LE>

In the next example, tabs are set at 2, 4, and 5 inches. After you have entered the horizontal tab setting command, your tab key is used to skip from one setting to the next. In this example, <HT> represents a pressing of the tab key.

Figure 3-8 shows the placement of the three horizontal tabs.

```
=UDK=*
*d*t120,240,300<LE>
<HT>May Barton<HT>President<HT>54321
```

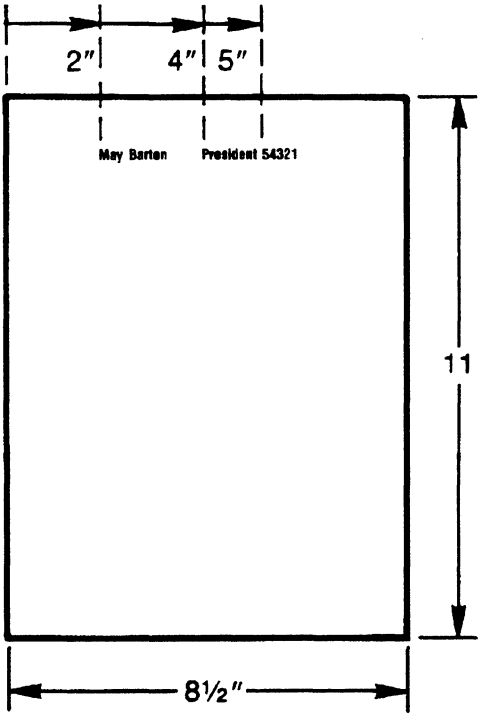


Figure 3-8 **Horizontal tab settings**

10. Placement (2700 mode)

The Model 50 printer has several commands which require you to identify an exact position on a page. Table 3-10 lists these commands and what they do.

Table 3-10 **List of commands**

Command	What it does
Drawing lines	Allows you to draw vertical and horizontal lines
Absolute text placement	Allows you to designate a specific spot on the page where you might want your logo, for example
Graphic Window	Allows you to designate a specific spot on the page where you want your graphics

All of these commands use the same page origins.

Origin of the page

Landscape	Top left-hand corner
Portrait	Bottom left-hand corner

The first two numbers for all three of these commands describe the exact position on a page by stating this position relative to the origin of the page. The illustration with each command shows the X and Y coordinates and which direction they go depending on whether the page is landscape or portrait.

Drawing horizontal and vertical lines

The Model 50 allows you to draw horizontal and vertical lines anywhere you want on a page. This permits you to draw boxes, forms, and charts among other things.

Placement of the lines is done by describing:

- The line's starting point, defined by giving two numbers, called coordinates.
- The length of the line.
- The thickness of the line.
- **All lines are measured in dots (300 per inch or .08 mm). Actual resolution is 303.5 dots per inch plus or minus approximately 1%. A line 2" long is stated as 600; a line 1/4" thick as 75.**

Characteristics:

- The Model 50 establishes page orientation according to first font on page. Give Font Change command before command to draw line.
- Drawing lines operates independently of margins, so it is possible to extend lines beyond margins.
- Format of Drawing Line command depends on whether page is landscape or portrait.

Landscape command

When your page is landscape and you want to draw a line, the format is:

Vertical line	*x<X,Y,L,T><LE>
Horizontal line	*y<X,Y,L,T><LE>

The letters X,Y,L, and T in brackets above represent numbers. For instance:

*y300,600,1200,15<LE>

This example is drawing a horizontal line beginning 1" from the top of the landscape page, 2" from the left edge of the landscape page. The horizontal line is 4" in length and 1/20th of an inch thick.

Table 3-11 explains how the characters in the Drawing lines command define the placement, length, and thickness of the line.

Table 3-11 **Drawing line on landscape page**

Character	Vertical line	Horizontal line
The User-Defined Key you created	*	*
Lowercase letter	x	y
How far down from top of page	X	X
Comma separates the numbers	,	,
How far over from left edge of paper	Y	Y
Comma separates the numbers	,	,
Length of line	L	L
Comma separates the numbers	,	,
Thickness of line	T	T
Line end	<LE>	<LE>

Figure 3-9 shows the X and Y coordinates on a landscape page and the arrows indicate the direction you are describing. On a landscape page:

X describes how far down from top edge of paper

Y describes how far over from left edge of paper

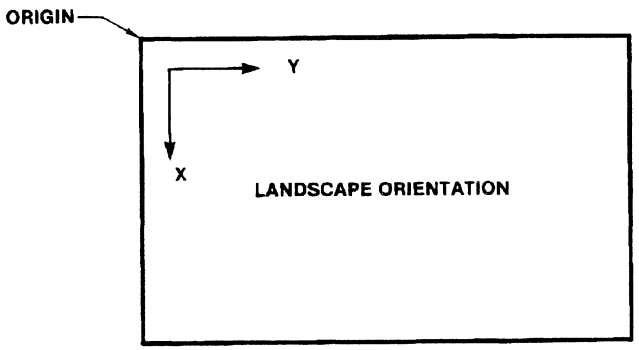
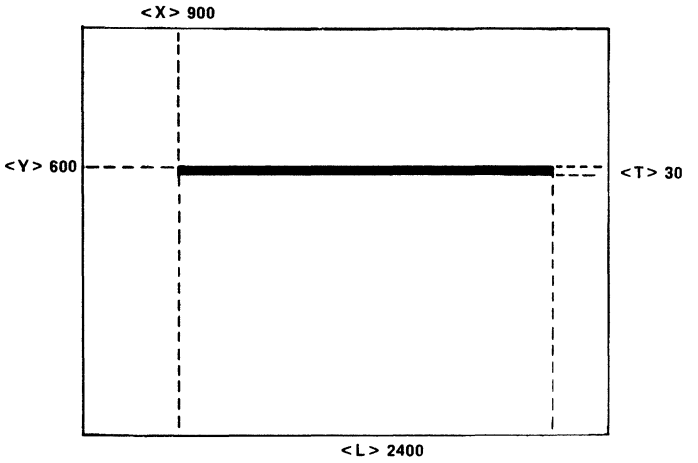


Figure 3-9 **Landscape page**

Example: To draw a line 3" down, 2" over, 8" long and 1/10" thick, enter the following command:

*y900,600,2400,30<LE>

Figure 3-10 illustrates how your line appears on the landscape page.



Note: Thickness of line is not to scale.

Figure 3-10 **Drawing line landscape page**

Portrait command

When your page is portrait and you want to draw a line, the format is:

Vertical line	*y<X,Y,L,T><LE>
Horizontal line	*x<X,Y,L,T><LE>

The letters X, Y, L, and T in brackets above represent numbers, such as:

*x900,600,2400,10<LE>

In this example, you are drawing a horizontal line 3" from the left edge of the paper and 2" from the bottom of the paper. The line is 8" long and 1/30" thick.

Table 3-12 on the following page explains how the characters in the Drawing lines on a portrait page define the placement, length, thickness of the line.

Table 3-12 **Drawing lines on portrait page**

Character	Vertical line	Horizontal line
The User-Defined Key you created	*	*
Lowercase letter	y	x
How far over from the left edge of the paper	X	X
Comma separates the numbers	,	,
How far up from the bottom of the paper	Y	Y
Comma separates the numbers	,	,
Length of line	L	L
Comma separates the numbers	,	,
Thickness of line	T	T
Line end	<LE>	<LE>

Figure 3-11 shows the X and Y coordinates on a portrait page and the arrows indicate the direction you are describing. On a portrait page:

X describes how far over from left edge of paper

Y describes how far up from bottom of paper

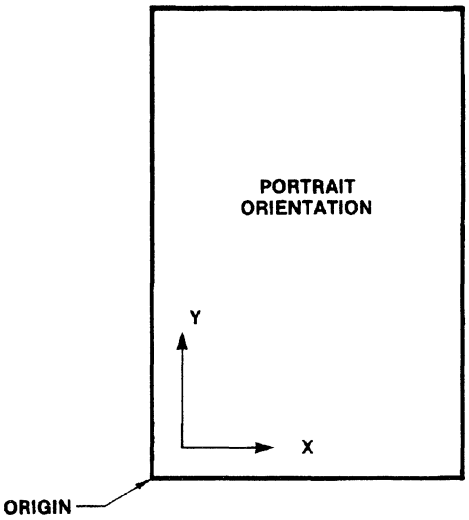


Figure 3-11 **Portrait page**

Example: To draw a line 1-1/3" over, 2-1/2" up, 5-1/3" long and 1/5" thick, you enter the following commands:

```
*x400,750,1600,60
```

Figure 3-12 illustrates where the above described line appears on a portrait page.

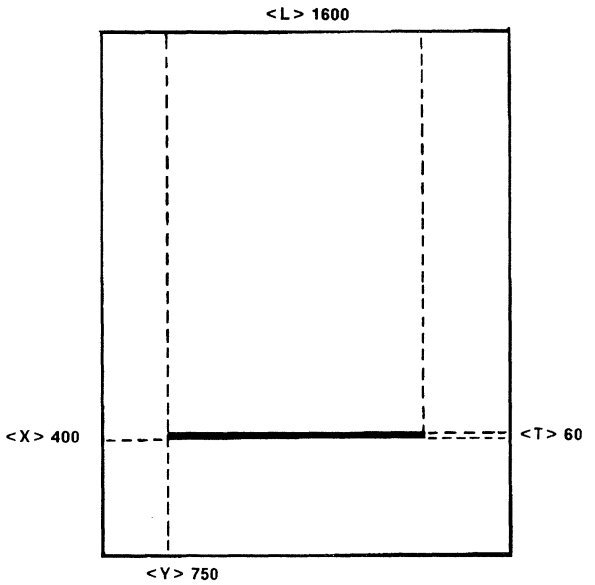


Figure 3-12 **Drawing lines portrait page**

Drawing boxes

When you are drawing lines to form a box, you must allow for the thickness of the lines or you will have a gap when the box is printed.

For example, suppose the lines of a box are 1800 dots long and 200 dots thick as shown in Figure 3-13.

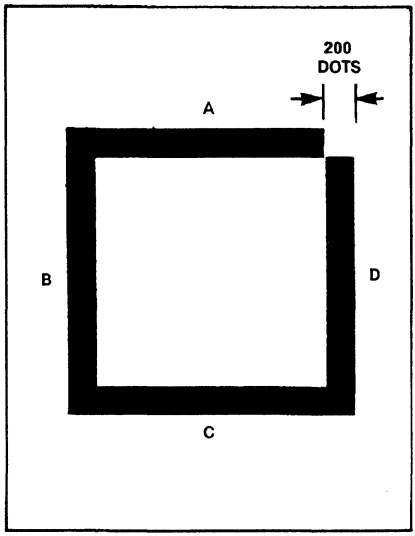


Figure 3-13 **Drawing boxes**

The 200 gap in the upper right corner of the box occurred because line B overlaps the thickness of line C whereas line A does not overlap the thickness of line D.

Placement of text

The Model 50 printer in the 4045 mode has two commands for placing text on the page: Absolute Text Placement and Relative Text Placement.

Table 3-13 lists the two commands and the difference in the way they are used.

Table 3-13 **Absolute and relative placement**

Command	Description of command
Absolute placement	Places text exactly where you want it on the page
Relative placement	Places text using last character printed as point of reference

Absolute placement of text

A line of text may be placed at any point on a page. Specifying the exact place where a line of text is to start is termed "Absolute Placement" of text. This command may be used to position logos or signatures on a page, or printing multicolumns of text. All lines are measured in dots (300 per inch or .08 mm).

Placement of a text line is done by describing:

1. The baseline of the character (portrait) or top of character (landscape).
2. The left side of the character cell of the first character in the line.

Characteristics:

- The baseline is an imaginary line on which all letters without descenders rest. Descenders are the part of the character that extends below the baseline like in the letters g, y, and p.
- The position for absolute placement is described using two numbers, represented by X and Y, called coordinates.
- **All lines are measured in dots (300 per inch or .08mm). Actual resolution is 303.5 dots per inch plus or minus approximately 1%. A line 2" long is stated as 600; a line 1/4" thick as 75.**

When placing a line of text on a page, the format of your command depends on whether the page is landscape or portrait. The format for the Absolute Placement command is:

*a<X,Y><LE>

The letters X and Y in brackets represent numbers, for instance:

*a1200,1650<LE>

Table 3-14 explains the characters in the Absolute Placement command.

Table 3-14 **Absolute placement command**

Character	Landscape	Portrait
The User-Defined Key you created	*	*
Lowercase letter a for "absolute"	a	a
How far down from the top edge of the paper	X	
How far over from the left edge of the paper		X
Comma separates the numbers	,	,
How far over from the left edge of the paper	Y	
How far up from the bottom of the page		Y
Line end	<LE>	<LE>

Figure 3-14 illustrates the coordinates on a landscape page and portrait page. The arrows describe the direction of each coordinate.

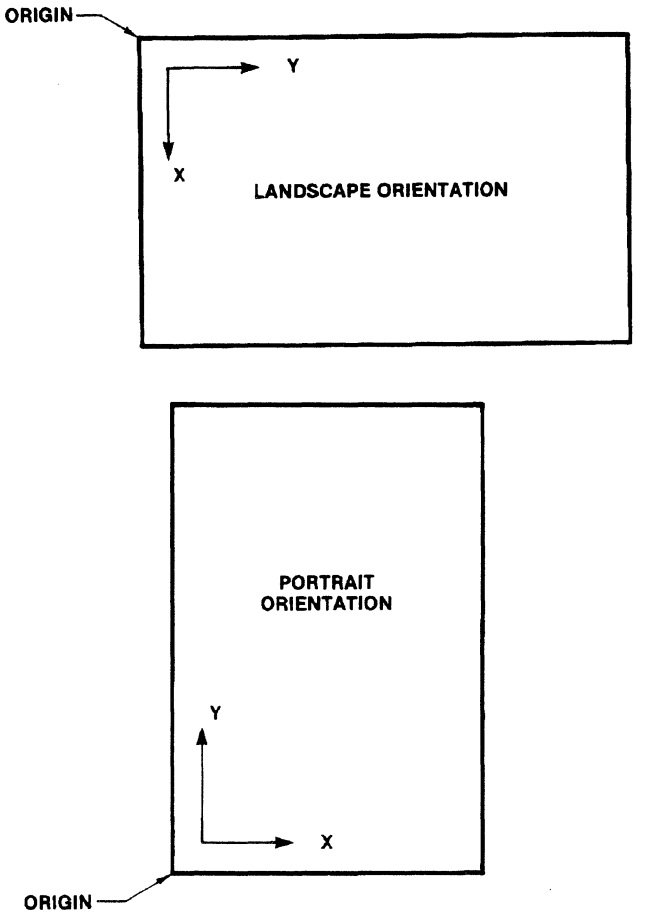


Figure 3-14 **Landscape and portrait orientation**

Example: You want to begin a line of landscape text shown in Figure 3-15 6" from the top of the page and 2" from the left edge of the page. The Absolute Placement command is entered as follows:

*a1800,600<LE>
The game is not over until it's over.

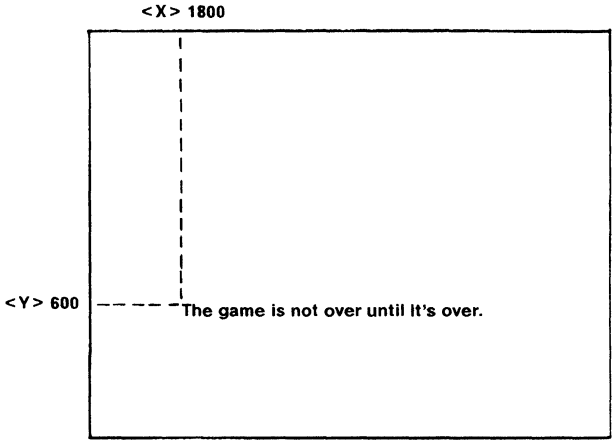


Figure 3-15 **Absolute placement landscape**

Example: You want to use the Absolute Placement command to begin a line of text 5" from the left edge of the page and 10" from the bottom of the page. Figure 3-16 illustrates the placement of text.

```
*a1500,3000<LE>
He who laughs
```

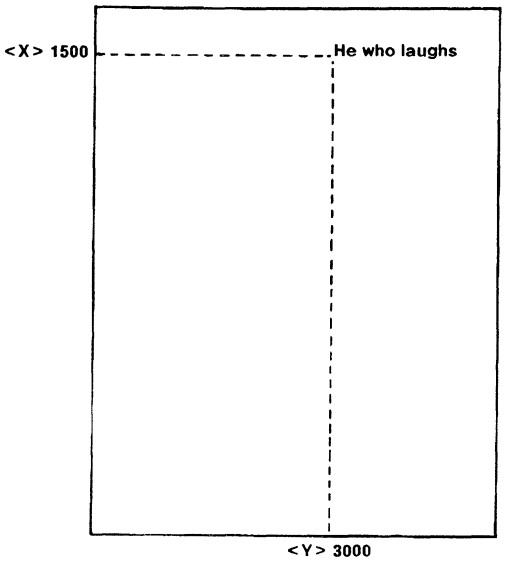


Figure 3-16 **Absolute placement portrait**

Relative text placement

A line of text can be placed in relation to the current text on the page. Specifying a point for text placement in terms of its distance from the current position is called "Relative Placement" of text.

The format of the Relative Text Placement command is:

*r<D><n><c>

The table following explains each of the characters above.

Character(s)	Description
*	The User-Defined Key you created.
r	The lowercase letter r (for "relative").

Character(s)	Description
<D>	A lowercase letter that indicates the direction from the current point to the new point. The choice of letters representing the direction is below: u (up) d (down) l (left) r (right)
<n>	This is a number describing the distance from the original position to the new position in units of 1/300 per inch (or .08 mm).
<c>	Any printable non-numeric character terminator. This character is not printed as part of the text line being positioned; it only signals the end of the command.

Characteristics: **All lines are measured in dots (300 per inch or .08 mm). Actual resolution is 303.5 dots per inch plus or minus approximately 1%. A line 2" long is stated as 600; a line 1/4" thick as 75.**

Example: You want to start a line of text .5 inches below the period at the end of the sentence. The command is entered as follows:

```
This is sentence number one.*rd150<LE>
This is sentence number two.
```

The printed result of the above example is shown below:

This is sentence number one.

This is sentence number two.

Graphic window

The Model 50 Graphic Window command prints dots (300 to an inch) instead of characters making it possible to create logos, graphs, and pictures on the

printer. The command first defines the placement of the graphic. The graphic data is then entered followed by a terminator to tell the Model 50 that the command is complete. For more information about the Graphic command, consult the *Reference Manual.*

The format for the Graphic Window command is:

*gw<M>;<X,Y,A,B><LE>
Graphic Data

The letters M, X, Y, A, B in brackets above are expressed in numbers as the chart below explains.

Character(s)	Description
*	The User-Defined Key you created.
gw	The lowercase letters g (for graphics), w (for window).
M	How much the graphic is to be magnified. This is a number 1 (no expansion) or 2 (doubled in size). If no number appears, the Model 50 does not expand the graphic.
;	A semicolon follows M.
X	**Portrait mode:** How far over from the left edge of the paper to the left edge of the first dot. This is a number, measured in dots (300 per inch or .08 mm), defining the distance from the left edge to the starting point of the graphic. **Landscape mode:** How far down from the top edge of the paper to the top of the first dot. This is a number, measured in dots (300 per inch or .08 mm), defining the distance from the top edge to the starting point of the graphic.
,	A comma separates graphic values.

Character(s)	Description
Y	**Portrait mode:** How far up from the bottom of the page to the top of the graphic. This is a number, measured in dots (300 per inch or .08 mm), defining the distance from the bottom edge of the page to the top of the graphic. **Landscape mode:** How far over from the left edge of the paper to the left edge of the first dot. This is a number, measured in dots (300 per inch or .08 mm), defining the distance from the left edge of the page to the starting point of the graphic.
,	A comma separates graphic values.
A	How far across the graphic covers. This is a number, measured in dots (300 per inch or .08 mm).
,	A comma separates graphic values.
B	How far down the graphic covers. This is a number measured in dots (300 per inch or .08 mm).
<LE>	The Graphic Window command must end with a line end.
Graphic data	A series of binary ones and zeros. A binary one represents a dot to be printed on a page; a binary zero represents no dot to be printed.

Characteristics:

- If the graphic is expanded, no text may appear on the page.
- This command is explained in greater detail in the *Reference Manual.*
- Graphic may be up to 5" x 7" or 35 square inches. The complete graphic printed on a page may be composed of up to sixteen individual graphics.
- Can omit X and Y values, but not commas. If X and Y are omitted, graphic starts at current position on page.
- The scan direction of the graphic window need not correspond to the scan direction of the Model 50 laser images.

Figure 3-17 illustrates the X and Y coordinates for the Graphic Window command.

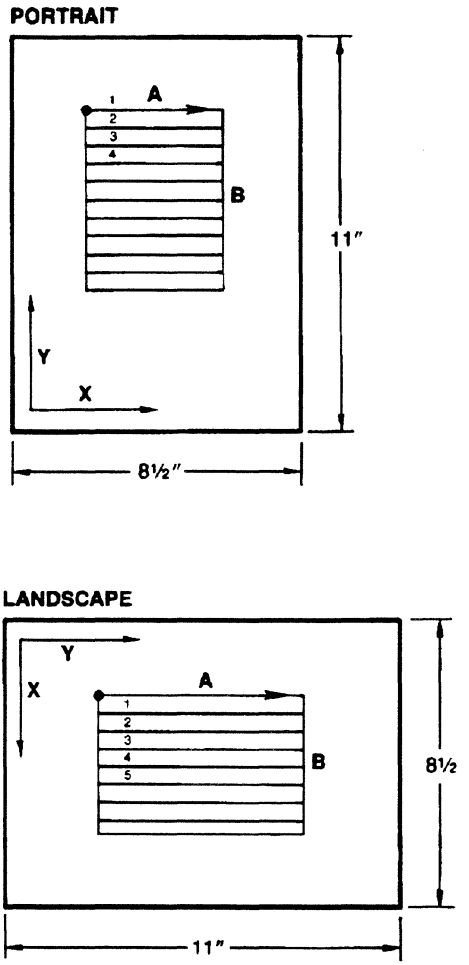


Figure 3-17 **X and Y coordinates for graphics**

Repeat window

The Model 50 Repeat Window command prints the last-stored graphic window on the current page.

The format for the Repeat Window command is:

*gr<M>;<X,Y><LE>

The letters M, X, Y in brackets above are expressed in numbers as the following chart explains:

Character(s)	Description
*	The User-Defined Key you created.
gr	The lowercase letters g (for graphics), r (for repeat).
M	How much the graphic is to be magnified. This is a number 1 (no expansion), 2 (doubled in size) or 4 (quadrupled in size). If no number appears, the Model 50 does not expand the graphic.
;	A semicolon follows M.
X	**Portrait mode:** How far over from the left edge of the paper to the left edge of the first dot. This is a number, measured in dots (300 per inch or .08 mm), defining the distance from the left edge to the starting point of the graphic. **Landscape mode:** How far down from the top edge of the paper to the top of the first dot. This is a number, measured in dots (300 per inch or .08mm), defining the distance from the top edge to the starting point of the graphic.
,	A comma separates graphic values.
Y	**Portrait mode:** How far up from the bottom of the page to the top of the graphic. This is a number, measured in dots (300 per inch or .08 mm), defining the distance from the bottom edge of the page to the top of the graphic. **Landscape mode:** How far over from the left edge of the paper to the left edge of the first dot. This is a number, measured in dots (300 per inch or .08 mm), defining the distance from the left edge of the page to the starting point of the graphic.
<LE>	The Repeat Window command must end with a line end.

Characteristics: • This command is explained in greater detail in the *Reference Manual.*

11. Merging (2700 mode)

Merge page load

The Model 50 printer allows you to merge a constant page with variable information. In this way, you can create a form letter (constant page) and merge it with different names and addresses (variable information).

The constant page is stored in memory just like downloaded fonts. Once in memory, this page can be merged with variable pages and printed on the Model 50.

The Merge Page Load command, which tells the printer the data after the command is the constant page, is given in the following format:

*+M<LE>

A comment may be incorporated into the Merge Page Load command for printing on the job status sheet. The table following explains the characters.

Character(s)	Description
*	The User-Defined Key you created.
+	The plus sign.
M	Uppercase M (for "Merge").
<LE>	The Merge Page Load command must end with a line end.

Characteristics:

- Commands given for constant page are independent from commands for variable page.
- Model 50 loads constant page until it receives page end, Print command or Reset command. Page ends are explained in *Background information* of this section.
- Only one constant page can be stored in memory. If new constant page is loaded, it writes over old constant page.

Merge start

The Merge Start command tells the Model 50 to begin merging the constant page stored in memory with all subsequent pages. The format of the Merge Start command is:

*ze

Character(s)	Description
*	The User-Defined Key you created.
z	Lowercase z.
e	Lowercase e ("enables" the merging).

Characteristics:

- Merged pages do not need to be in same orientation as constant page.
- If no constant page is stored, the Model 50 ignores the Merge Start command.
- If Merge Start command is encountered anywhere on page, the Model 50 merges that page with constant page.

The Merge Stop command is placed at the end of the material you want merged. The format for the Merge Stop command is:

*zd

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
d	Lowercase d ("disables" merging).

Merge page unload

The Merge Page Unload command deletes the constant page from memory, releasing that area to page composition.

The Merge Page Unload command ends the current job under way, but none of the other commands being used by the Model 50 (such as margins, tabs, etc.) are affected.

A comment may be incorporated into the Merge Page Unload command for printing on the job status sheet.

The format of the Merge Page Unload command is:

*+V<LE>

The table following explains each of the characters shown above.

Character(s)	Description
*	The User-Defined Key you created.
+	The plus sign.
V	The uppercase letter V. (The constant page is "Voided" from memory with this command.)
<LE>	The Merge Page Unload command must be ended with a line end.

Example: The following is a step-by-step procedure to follow when using the merge page commands:

- Enter the Merge Page Load command to tell the Model 50 you are describing a constant page.

  *+M<LE>

- Enter the commands that format the constant page and text to be printed on the constant page.
- End constant page with Print command or page end.

  *+P<LE>

- Enter Merge Start command to tell the Model 50 the information following is to be merged with constant page.

  *ze

- Enter information you want to merge with constant page, ending each page with a page end. Merging continues until Model 50 receives Merge Stop.

  *zd

- Remove the page from memory using the Merge Page Unload command.

  *+V<LE>

The following is a sample of commands used to create a merged letter:

Figure 3-18 and Figure 3-19 show the letters printed using these commands.

```
=UDK=*
*+M<LE>
*+12700Optima12B-P<LE>
*1*m660,120,60,120,390<LE>
<LE>
<LE>
July 19, 1984<LE>
<LE>
<LE>
<LE>
<LE>                                    (name)
<LE>                                    (street)
<LE>                                    (city, state)
<LE>
<LE>
<LE>
<LE>
You have been selected to win one of our<LE>
wonderful prizes. All you need to do to<LE>
qualify is schedule an appointment with us to<LE>
hear all about our wonderful vacation homes<LE>
```

at Lake Fabulous.<LE>
<LE>
Please call us immediately so we may book your<LE>
appointment.<LE>
<LE>
Very truly yours,<LE>
<LE>
<LE>
<LE>
Steve Smith<LE>
(Page End Code)

*ze<LE>
<LE>
<LE>
<LE>
<LE>
Mr. Neil Silver<LE>
3770 Grant Avenue<LE>
La Habra, CA 90632<LE>
<LE>
Dear Mr. Silver:<LE>
(Page End Code)
<LE>
<LE>
<LE>
<LE>
<LE>
Ms. Noreen Wilson<LE>
472 S.W. Post Street<LE>
Albany, OR 97322<LE>
<LE>
Dear Ms. Wilson:<LE>
(Page End Code)

July 19, 1984

Mr. Neil Silver
3770 Grant Avenue
La Habra, Ca 90632

Dear Mr. Silver:

You have been selected to win one of our wonderful prizes. All you need to do to qualify is schedule an appointment with us to hear all about our wonderful vacation homes at Lake Fabulous.

Please call us immediately so we may book your appointment.

Very truly yours,

Steve Smith

Figure 3-18 **Merged letter**

July 19, 1984

Ms. Noreen Wilson
472 S.W. Post Street
Albany, OR 97322

Dear Ms. Wilson:

You have been selected to win one of our wonderful prizes. All you need to do to qualify is schedule an appointment with us to hear all about our wonderful vacation homes at Lake Fabulous.

Please call us immediately so we may book your appointment.

Very truly yours,

Steve Smith

Figure 3-19 **Merged letter**

12. Language (2700 mode)

Multinational fonts conforming to the character assignments of the International Standards Organization (ISO) Number 6937 are available to allow the Model 50 to print text in any of thirteen language character sets plus one user supplied translation table. (Further information on characteristics of ISO fonts is contained in the *Reference Manual*.)

When the configuration cartridge switch settings on the Model 50, B:1-B:4, are set up to print in a particular language using ISO fonts, the printer can print the correct characters and symbols used in that language.

The command to tell the Model 50 to change to a character set of another language is:

*zl<c>

Character(s)	Description
*	The User-Defined Key you created.
z	The lowercase letter z.
l	Lowercase l (for "language").
<c>	A character representing the language you are requesting. 0 U.S. English 1 U.K. English 2 French 3 Dutch 4 Spanish 5 Italian 6 Danish 7 Norwegian 8 Finnish 9 German A Swedish B Belgian C French Canadian D Portuguese E Latin America H User Supplied Translation Table

If <c> is any character other than those listed above, the default language table is used.

Example: The command below causes the text that follows it to be printed using the French character set.

*zl2

Character table

This command allows you to create your own character translation table. If, for example, you wanted the international currency symbol to print instead of the dollar sign, this command permits you to change the table.

The command used for the Character Table command is:

*+T,comment<LE>
(Special data)

Character(s)	Description
*	The User-Defined Key you created.
+	Plus Sign.
T	Uppercase T. (for Table)
,	When used, a comma specifies that a status sheet be printed.
comment	An optional 132-character (maximum) comment line you may type into the command for printing on the job status sheet.
<LE>	This command ends with a line end.

The steps to follow to use the Character Table command are as follows:

1. Load the character table you want to change using the appropriate switch selections on the configuration cartridge or use the Language command. In the example below, the letter H is used which represents User Supplied Translation Table.

   *zlH

2. Use the Character Table command which calls up the User-defined Table into memory. Follow the command with the special data which changes the table.

*+T<LE>
special data

Characteristics:

- Only one changed translation table is stored in memory. If an additional table is changed, it writes over the first changed table.
- Information after the line end defines the table. The *Reference Manual* describes how to create the special data used to change a character code assignment table.

13. Vertical tabs (2700 mode)

Vertical tab defaults

Vertical tabs are used to specify precise positions for accurate placement of information or as an alternative method of creating subscripts and superscripts.

The default vertical tabs which are set every one inch (2.54 cm) from the top edge of the paper in portrait orientation and every 6 lines in landscape must be cleared with the Vertical Tab Clear command before any new tabs are set.

Vertical tab clear

To clear all vertical tabs, use the command below:

*e

Character(s)	Description
*	The User-Defined Key you created.
e	The lowercase letter e ("erases" vertical tabs).

Vertical tab set

The format of the Vertical Tab Set command is:

*v<n_1,n_2,...n_{125}><LE>

The chart following explains characters in the Vertical Tab Set in greater detail.

Character(s)	Description
*	The User-Defined Key you created.
v	The lowercase letter v (for "vertical tabs"). This identifies the command as a Vertical Tab Set.
$<n_1,n_2,...n_{125}>$	Up to 125 numbers (each separated by a comma from the next) that can range from 1 to 840, in units of 1/60 inch (.42 mm) or 1/300 inch from the top edge of the page.
<LE>	The Vertical Tab Set must end with a line end.

Characteristics:

- Up to 125 vertical tabs can be defined in one command.
- If more than 125 tabs are set, higher numbered tabs, beyond 125, are ignored.
- Highest vertical tab setting is 840 (14 inches).
- Vertical tabs may be set in any order.
- Vertical tabs remain in effect until you use Vertical Tab Clear or Reset. Vertical Tab Clear removes all vertical tabs; Reset returns tabs to default settings.
- Appendix D contains tables for converting inches, lines (at 6 lines per inch), and 12- and 10-pitch characters to units of 1/60 inch.
- If vertical tabs are cleared and no new ones set, pressing the vertical tab key causes a page feed.
- When you input vertical tab character on your host (if this character exists), the printer skips to the next vertical tab. If your keyboard does not have a vertical tab key, the Absolute Text Placement command can be used instead.

Example: If you want text to appear 2", 4.5", 6" and 8" down the page, you would use the following Vertical Tab Set command:

Figure ?-? shows the placement of the four vertical tabs.

```
=UDK=*
*e*v120,270,360,480<LE>
```

This command is followed by the text to appear at the sites designated by the tab set using the vertical tab VT key on your keyboard.

Figure 3-20 shows the placement of the four vertical tabs.

```
=UDK=*
*e*v120,270,360,480<LE>
VT First Quarter<LE>
VT Second Quarter<LE>
VT Third Quarter<LE>
VT Fourth Quarter<LE>
```

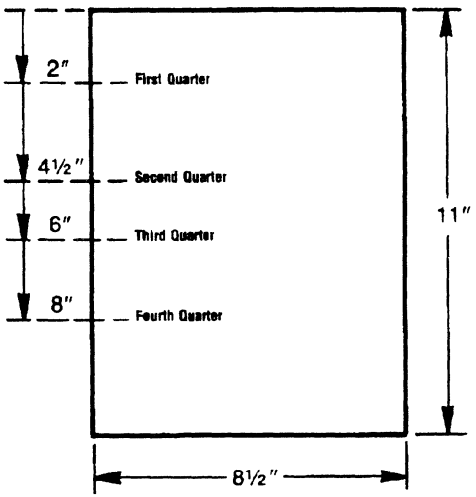


Figure 3-20 **Vertical tab settings**

14. Other

Data monitor

The Model 50 has the capability of printing out all the text and control information it receives from the host in the hexadecimal representation of the characters and ASCII representation.

The data monitor printout is useful when you want to check whether your data is being received correctly by the Model 50 printer.

Data monitor command

The Data Monitor command turns on the data monitor mode of the Model 50. The command is sent to the printer before the file which you want printed in this mode is sent. The command used to begin hexadecimal printing is:

*+D

detail:

Character(s)	Description
*	The User-Defined Key you created.
+	Plus sign.
D	Uppercase D. (for Data Monitor)

The Data Monitor command is ended using the Reset (*+X) command. A Reset command also resets the Model 50 to its default parameters. Figure 3-21 shows an example of the data monitor printout.

```
4000  15 40 40 40 40 40 40 40 40 40 40   40 5C 5C 5C 40 40 E3 D6 40 D7   NL SP SP SP SP SP SP SP SP SP SP SP *  *  *  SP SP T  O  SP P    P-005
      D9 C9 D5 E3 40 C9 D5 E2 E3 D9      C5 C1 D4 40 C3 C1 D9 C4 40 C9   R  I  N  T  SP I  N  S  T  R  E  A  M  SP C  A  R  D  SP I
      D4 C1 C7 C5 E2 6B 40 E4 E2 C5      40 E3 C8 C9 E2 40 C3 C1 D9 C4   M  A  G  E  S  .  SP U  S  E  SP T  H  I  S  SP C  A  R  D
      7A 15 40 40 40 40 40 40 40 40      40 40 5C 5C 5C 15 40 40 40 40   :  NL SP SP SP SP SP SP SP SP SP SP *  *  *  NL SP SP SP SP
      40 40 40 40 40 40 40 5C 5C 5C 40   40 61 61 E2 E8 E2 E4 E3 F1 40   SP SP SP SP SP SP SP *  *  *  SP SP /  /  S  Y  S  U  T  1  SP

4100  40 40 C4 C4 40 40 40 40 5C 15      40 40 40 40 40 40 40 40 40 40   SP SP D  D  SP SP SP SP *  NL SP SP SP SP SP SP SP SP SP SP
      5C 5C 5C 40 40 E3 E8 D7 C5 40      C4 C1 E3 C1 40 C8 C5 D9 C5 15   *  *  *  SP SP T  Y  P  E  SP D  A  T  A  SP H  E  R  E  NL
      40 40 40 40 40 40 40 40 40 40      5C 5C 5C 60 60 60 60 60 60 60   SP SP SP SP SP SP SP SP SP SP SP *  *  *  -  -  -  -  -  -  -
      60 60 60 60 60 60 60 60 60 60      60 60 60 60 60 60 60 60 60 60   -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
      60 60 60 60 60 60 60 60 60 60      60 60 60 60 60 60 60 60 60 60   -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -

4200  60 60 60 60 60 60 60 15 40 40      40 40 F2 40 40 40 40 40 61 61   -  -  -  -  -  -  -  NL SP SP SP SP 2  SP SP SP SP SP /  /
      E2 E3 C5 D7 F1 40 40 40 40 C5      E7 C5 C3 40 40 D7 C7 D4 7E C9   S  T  E  P  1  SP SP SP SP E  X  E  C  SP SP P  G  M  =  I
      C5 C2 C7 C5 D5 C5 D9 15 40 40      40 40 F3 40 40 40 40 40 61 61   E  B  G  E  N  E  R  NL SP SP SP SP 3  SP SP SP SP SP /  /
      E2 E8 E2 D7 D9 C9 D5 E3 40 C4      C4 40 40 40 40 E2 E8 E2 D6 E4   S  Y  S  P  R  I  N  T  SP D  D  SP SP SP S  Y  S  O  U
      E3 7E C1 15 40 40 40 40 F4 40      40 40 40 40 61 61 E2 E8 E2 C8   T  =  A  NL SP SP SP SP 4  SP SP SP SP SP /  /  S  Y  S  I

4300  D5 40 40 40 40 C4 C4 40 40 40      40 C4 E4 D4 D4 E8 15 40 40 40   N  SP SP SP SP D  D  SP SP SP SP D  U  M  M  Y  NL SP SP SP
      40 F5 40 40 40 40 40 40 61 61      E8 E2 E4 E3 F2 40 40 40 C4 C4   SP 5  SP SP SP SP SP SP /  /  S  Y  S  U  T  2  SP SP D  D
      40 40 40 40 E2 E8 E2 D6 E4 E3      7E C1 15 40 40 40 40 F6 40 40   SP SP SP SP 5  Y  S  O  U  T  =  A  NL SP SP SP SP 6  SP SP
      40 40 40 61 61 E2 E8 E2 E4 E3      F1 40 40 40 C4 C4 40 40 40 40   SP SP SP /  /  S  Y  S  U  T  1  SP SP D  D  SP SP SP SP
      5C 15 0C 15 C9 C5 C6 F2 F3 F6      C9 40 C1 D3 D3 D6 C3 4B 40 C8   *  NL FF NL I  E  F  2  3  6  I  SP A  L  L  O  C  .  SP F

4400  D6 D9 40 D5 C7 F3 F5 F5 F0 F3      E7 40 E2 E3 C5 D7 F1 0D 15 C9   O  R  SP N  G  3  5  5  0  3  X  SP S  T  E  P  1  CR NL I
      C5 C6 F2 F3 F7 C9 40 D1 C5 E2      F2 40 C1 D3 D3 D6 C3 C1 E3 C5   E  F  2  3  7  I  SP J  E  S  2  SP A  L  L  O  C  A  T  E
      C4 40 E3 D6 40 E2 E8 E2 D7 D9      C9 D5 E3 0D 15 C9 C5 C6 F2 F3   D  SP T  O  SP S  Y  S  P  R  I  N  T  CR NL I  E  F  2  3
      F7 C9 40 C4 D4 E8 40 40 C1 D3      D3 D6 C3 C1 E3 C5 C4 40 E3 D6   7  I  SP D  M  Y  SP SP A  L  L  O  C  A  T  E  D  SP T  O
      40 E2 E8 E2 C9 D5 0D 15 C9 C5      C6 F2 F3 F7 C9 40 D1 C5 E2 F2   SP S  Y  S  I  N  CR NL I  E  F  2  3  7  I  SP J  E  S  2

4500  40 C1 D3 D3 D6 C3 C1 E3 C5 C4      40 E3 D6 40 E2 E8 E2 E4 E3 F2   SP A  L  L  O  C  A  T  E  D  SP T  O  SP S  Y  S  U  T  2
      0D 15 C9 C5 C6 F2 F3 F7 C9 40      D1 C5 E2 F2 40 C1 D3 D3 D6 C3   CR NL I  E  F  2  3  7  I  SP J  E  S  2  SP A  L  L  O  C
      C1 E3 C5 C4 40 E3 D6 40 E2 E8      E2 E4 E3 F1 0D 15 C9 C5 C6 F1   A  T  E  D  SP T  O  SP S  Y  S  U  T  1  CR NL I  E  F  1
      F4 F2 C9 40 D5 C7 F3 F5 F5 F0      F3 E7 40 E2 E3 C5 D7 F1 40 60   4  2  I  SP N  G  3  5  5  0  3  X  SP S  T  E  P  1  SP -
      40 E2 E3 C5 D7 40 E6 C1 E2 40      C5 E7 C5 C3 E4 E3 C5 C4 40 60   SP S  T  E  P  SP W  A  S  SP E  X  E  C  U  T  E  D  SP -

4600  40 C3 D6 D5 C4 40 C3 D6 C4 C5      40 F0 F0 F0 F0 0D 15 C9 C5 C6   SP C  O  N  D  SP C  O  D  E  SP 0  0  0  0  CR NL I  E  F
      F2 F8 F5 C9 40 40 40 D1 C5 E2      F2 4B D1 D6 C2 F0 F9 F2 F1 F1   2  8  5  I  SP SP SP J  E  S  2  .  J  O  B  0  9  2  1  1
      4B E2 D6 F0 F1 F0 F2 40 40 40      40 40 40 40 40 40 40 40 40 40   .  S  O  0  1  0  2  SP SP SP SP SP SP SP SP SP SP SP SP SP SP
      40 40 40 40 40 40 40 40 40 40      40 40 E2 E8 E2 D6 E4 F3 0D 15   SP SP SP SP SP SP SP SP SP SP SP SP SP S  Y  S  O  U  T  CR NL
      C9 C5 C6 F2 F8 F5 C9 40 40 40      D1 C5 E2 F2 4B D1 D6 C2 F0 F9   I  E  F  2  8  5  I  SP SP SP SP J  E  S  2  .  J  O  B  0  9

4700  F2 F1 F1 4B E2 D6 F0 F1 F0 F3      40 40 40 40 40 40 40 40 40 40   2  1  1  .  S  O  0  1  0  3  SP SP SP SP SP SP SP SP SP SP
      40 40 40 40 40 40 40 40 40 40      40 40 40 40 40 F2 F8 E2 D6 E4   SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP S  Y  S  O  U
      E3 0D 15 C9 C5 C6 F2 F8 F5 C9      40 40 40 D1 C5 E2 F2 4B D1 D6   T  CR NL I  E  F  2  8  5  I  SP SP SP J  E  S  2  .  J  O
      C2 F0 F9 F2 F1 F1 4B E2 C9 F0      F1 F0 F1 40 40 40 40 40 40 40   B  0  9  2  1  1  .  S  I  0  1  0  1  SP SP SP SP SP SP SP
      40 40 40 40 40 40 40 40 40 40      40 40 40 40 40 40 40 40 E2 E8   SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP SP S  Y

4800  E2 C9 D5 0D 15 C9 C5 C6 F3 F7      F3 C9 40 E2 E3 C5 D7 40 61 E2   S  I  N  CR NL I  E  F  3  7  3  I  SP S  T  E  P  SP /  S
      E3 C5 D7 F1 40 40 40 61 40 E2      E3 C1 D9 E3 40 F8 F6 F2 F6 F7   T  E  P  1  SP SP SP /  SP S  T  A  R  T  SP 8  6  2  6  7
      4B F1 F0 F1 F2 0D 15 C9 C5 C6      F3 F7 F4 C9 40 E2 E3 C5 D7 40   .  1  0  1  2  CR NL I  E  F  3  7  4  I  SP S  T  E  P  SP
      61 E2 E3 C5 D7 F1 40 40 40 61      40 E2 E3 D6 D7 40 40 F8 F6 F2   /  S  T  E  P  1  SP SP SP /  SP S  T  O  P  SP SP 8  6  2
      F6 F7 4B F1 F0 F1 F2 40 C3 D7      E4 40 40 40 40 F0 D4 C9 D5 40   6  7  .  1  0  1  2  SP C  P  U  SP SP SP SP SP O  M  I  N  SP

4900  F0 F0 4B F1 F6 E2 C5 C3 40 E2      D9 C2 40 40 40 40 F0 D4 C9 D5   0  0  .  1  6  S  E  C  SP S  R  B  SP SP SP SP SP O  M  I  N
      40 F0 F0 4B F0 F1 E2 C5 C3 40      E5 C9 D9 E3 40 40 40 40 F3 F6   SP 0  C  .  0  1  S  E  C  SP V  I  R  T  SP SP SP SP 3  6
      D2 40 E2 E8 E2 40 40 40 F3 F7      F6 D2 0D 15 C9 C5 C6 F3 F7 F5   K  SP S  Y  S  SP SP SP 3  7  6  K  CR NL I  E  F  3  7  5
      C9 40 40 D1 D6 C2 40 61 D5 C7      F3 F5 F5 F0 F3 E7 61 40 E2 E3   I  SP SP J  O  B  SP /  N  G  3  5  5  0  3  X  /  SP S  T
      C1 D9 E3 40 F8 F6 F2 F6 F7 45      F1 F0 F1 F2 0D 15 C9 C5 C6 F3   A  R  T  SP 8  6  2  6  7  .  1  0  1  2  CR NL I  E  F  3
```

Figure 3-21 **Data monitor printout**

15. 630 mode

630 commands

The following is a list of 630 (Diablo) formatting commands used in the Model 50 (630 mode). A complete list of all 630 commands is in the *Reference Manual*. The explanation of how the commands work follow the same conventions as the 4045 (2700 mode). If you need an explanation of the command, check the description given in the 2700 sections of this manual. An asterisk is used as an escape code in all the commands listed.

Font Load		*+F<LE>
Font ID Assignment		*+<n><fontname><LE>
Font Change		*F<n>(n=0-9)
Font Unload		*+U<LE>
Font Add Selected		*+A<LE>
Font Delete Selected		*+B<LE>
	<Fontname,Fontname,...><LE>	
Print		*+P<LE>
Reset		* CR P
Set Left Margin		*l<n><LE>
Set Right Margin		*r<n><LE>
Set Top Margin		* wt<n><LE>
Set Bottom Margin		* wb<n><LE>
Set Top Margin Here		*T
Set Bottom Margin Here		*L
Set Right Margin Here		*0 (zero)
Set Left Margin Here		*9
Clear Top and Bottom Margins		*C
Justification	Start	*M
	Stop	*X

Underline	Start	*E
	Stop	*R or *X
Line Spacing		*k<n> (n=0-2)
Bolding	Start	*W or *O
	Stop	*& or *X
Centering	Start	*=
	Stop	*X
Clear Horizontal Tabs		*2
Clear Horizontal Tab Here		*8
Horizontal Tab Assignmt		*i<n_1,...n_{160}><LE>
Set Horizontal Tab Here		*1 (one)
Drawing Lines		
Landscape Orientation		
Drawing Lines—Horiz		*x<X,Y,L,T><LE>
Drawing Lines—Vertical		*y<X,Y,L,T><LE>
Portrait Orientation		
Drawing Lines—Horiz		*x<X,Y,L,T><LE>
Drawing Lines—Vertical		*y<X,Y,L,T><LE>
Absolute Text Placement		*p<X,Y,><LE>
Relative Text Placement		N/A
Superscript	Start	*t
	Stop	*s
Subscript	Start	*u
	Stop	*s
Merge Page Load		*+M<LE>
Merge Start		*we
Merge Stop		*wd
Merge Page Unload		*+V<LE>
Language		*w(ASCII char)
Character Table		*SO DC2
Set Vertical Tabs Assignmt		*j<n_1,...n_{125}><LE>
Set Vertical Tab Here		*- (minus)
Clear Vertical Tabs		*2
Data Monitor		*+D
Graphic Window		*v<X,Y,A.B.E><LE>
Repeat Window		*vr<M>;<X,Y><LE>
Electronic Spacing		*_<LE>
Proportional Space	Start	*P
	Stop	*Q
Offset Selection		*<DC2>(code)

New 630 commands

The Model 50 printer in the 630 mode offers you some printing capabilities new to the 630 printer if the 630 software driver you are using recognizes them. In the 630 mode, you can:

- Download 2700 fonts from a host to the Model 50 printer. The fonts then become available to use in your 630 document. The font commands for the 630 work like the 4045 mode **except the format of the command differs**.
- Create and print graphics and logos. Refer to the description of the Graphic Window command in chapter 10 of the *Creating documents* section of this manual. The command works like the 4045 mode **except the format of the command differs**.
- Merge constant page with variable information. Refer to the description of the merge commands in chapter 11 of the *Creating documents* section of this manual. The command works like the 4045 mode **except the format of the command differs**.

630 differences

The Model 50 in the 630 mode does not emulate the Diablo 630 exactly. The following is a list of exceptions:

- No automatic backward printing (ESC/,ESC\).
- No inverted horizontal motion (ESC<,ESC>).
- No print suppression, ESC 7.
- No hy plot commands or 630 graphics mode, ESC 3. (See Model 50 Graphic command)
- No remote diagnostics, except ESC SUB 1.
- No user programmable test mode, ESC SUB U.
- No echo test mode, ESC SUB W.
- No bold overprint. The ESC O command is interpreted identically to ESC W (shadow printing).

- No print-wheel tables for proportional spacing (character space values come from the fonts).
- In Offset Selection the parameter range is -62 to +63 in contrast to 630 where -63 to +63 are legal values.
- No IEEE 488 interface.
- No API cable support.
- Proportional Spacing does not follow print-wheel spacing tables for metal/plastic wheels but uses font information.

16. Problem solving

Problems with...

Bolding

You have correctly designated a group of words on a page to be bolded, but part of the data is lost when the page is printed.

Cause: You have placed too much bolding on one page. Bolding doubles the character count.

Solution: Redesign your copy using, perhaps, a bold font instead of the bolding command.

Centering

You have entered a Centering command into your file, but the text is printed without being centered.

Cause: You may have inadvertently pushed the tab key.

Solution: Remove the tab from your file.

You have entered a Centering command into your file, but the text is printed with the centering to the right of where it should be.

Cause: You may have inadvertently spaced to the center of the page before entering the Centering command.

Solution: Enter the Centering command from the left margin.

Drawing lines

You are drawing boxes, but the corners are not connected.

Cause: You may have forgotten to calculate the thickness of the lines into your command.

Solution: Refigure your values taking into account the thickness of the lines.

Horizontal tabs

You have set a horizontal tab, but the tab is not invoked when you print your file.

Cause: You may have set your tab outside of your margin.

Solution: Check your file to be sure the tab is set within the margin settings you are using.

You have set horizontal tabs for numbers which you want flush right, but the tabbing does not seem to be working.

Cause: Many of the Xerox fonts are proportional space fonts. Spaces in these fonts are not necessarily all the same size.

Solution: Use a 10-pitch, 12-pitch, or 15-pitch font. The table in appendix D helps you convert the pitch characters to 1/60th of an inch units.

Justification

You have changed font size and suddenly your justification command does not work.

Cause: The problem has occurred because of the difference in type font size. Justification has limits. The minimum allowable distance between words cannot be less than two-thirds of the space character. The maximum distance cannot be greater than three times the space character. The Model 50 printer does not make line ending decisions.

Solution: You need to recalulate the number of characters per line and adjust your line endings accordingly.

You are printing a file which does not contain a justification command, but your text is printed with justification.

Cause: Commands are carried over from one file to another unless a Reset command is entered into a file. Very possibly, you printed a file with a Justification Start command, but with no Justification Stop command or Reset command.

Solution: Enter a Justification Stop command in the file with the Justification Start command or begin your new file with a Reset command as follows:

```
=UDK=*
*+X<LE>
=UDK=*
```

Merge command

You have calculated the space layout from the constant page to the merge page, but the spacing is not correct.

Cause: If the Merge Start command (*ze) is placed on a separate line, it must be counted as a line.

Solution: Count the line containing the Merge Start command (*ze) as a line. For example, if you want to place an inside address six lines down from the top of the page and you have the Merge Start command at the top of the page, you will come down five lines.

You load a new constant page into the printer and seem to have lost the original constant page you were using.

Cause: Only one constant page can be loaded into the printer. When a new constant page is loaded, it writes over the page already in the printer.

Solution: Do all the printing you need to using the first constant page before loading a new constant page.

You have finished your merging job, but when you attempt to print another job, the constant page prints out over your new job.

Cause: The Merge Stop command (*zd) was omitted from the merge file.

Solution: Enter the Merge Stop command at the end of the merge page file.

Relative text placement

You have entered a Relative Text Placement command into your file, but the command does not seem to be working.

Cause: You may have not ended the command with a line end, space, or other character.

Solution: Check your file and place an end to the command. You may use a space to end the command. If you use a line ending, the printer adds a line ending to your file which changes where your text is placed.

Subscripts/superscripts

You are using the Underline command, but when you also use the Subscript and/or Superscript commands, the underlining remains on the original line.

Cause: The Underline command does not make an adjustment for the Subscript and/or Superscript commands.

Solution: Put the Underline command within the Subscript or Superscript command. The following is an example: *uEveryone who knows that the formula for water is H*w*l*u2*w*s*uO will get it correct on the test.*w

Everyone who knows that the formula for water is H_2O will get it correct on the test.

General troublespots

You want to print a landscape page and you set the appropriate margins, but the page prints out in the portrait mode.

Cause: The printer is not aware you want to print in the landscape mode.

Solution: You must tell the printer you want to use a landscape page. **Which page orientation is used is determined by the first font specified on a page.** The Font Change command should come before your margin settings, tab settings, etc.

You have set up a file, and the printed copy also has all your commands on it.

Cause: The escape code has not been entered properly and the printer thinks all the command codes are data that you want printed. Or, a job before yours ended with a Reset command which cancelled your escape code.

Solution: Check your file to be sure the UDK code is entered properly.

The text is printing with an odd placement on the page.

Cause: The host may be inserting additional line feeds at the beginning of the page or spaces at the beginning of lines. These additions change your margin settings and may change page feeding.

Solution: Check the documentation about your host to see what it does at the beginning of a page and at the beginning of a line. Where necessary, set your margins taking into account additional line feeds and spaces.

1. Sample documents

The following pages contain examples of pages that have been printed on the Model 50 Electronic Printer. These samples are included to give you an idea of the printing capabilities of the Model 50.

Because of the page size of this Model 50 User Manual, some of the samples are shown as partial pages. The dotted lines across the bottom or right side indicate the pages which are as partial pages.

Also, because of the page size of this manual, some lines of coding appear on two or more lines which must be entered on one line. There is a notation to that effect whenever splitting a line of coding was necessary.

```
=UDK=
 +1Kosmos10-P                                        Font Assignments
 +2Kosmos8-P
 1 m660,206,90,37,510                                        Margins
 a187,2270                                          Absolute Placement
 1NET SALES rr562xNET INCOME rr525xEARNINGS PER SHARE
 a187,2210                                          Absolute Placement
 2(THOUSANDS) rr562x(THOUSANDS) rr553x(DOLLARS)
 x187,2174,562,2                                          Drawing Lines
 x974,2184,553,2
 x1762,2104,562,2
 x187,1556,478,2
 x974,1649,469,2
 x1762,1725,499,2
 x187,1462,394,2
 x974,1545,384,2
 x1762,1677,394,2
 x187,1406,300,2
 x974,1377,300,2
 x1762,1566,309,2
 x187,1341,225,2
 x974,1322,236,2
 x1762,1386,225,2
 x187,1270,141,2
 x974,1265,131,2
 x1762,1330,141,2
 y337,1125,150,37
 y421,1125,216,37
 y506,1125,281,37
 y590,1125,337,37
 y674,1125,431,37
 y759,1125,1050,37
 y1115,1125,141,37
 y1199,1125,103,37
 y1209,1237,86,2
 y1284,1125,253,37
 y1368,1125,422,37
 y1453,1125,525,37
 y1537,1125,1059,37
 y1912,1125,206,37
 y1996,1125,262,37
 y2081,1125,441,37
 y2165,1125,553,37
 y2249,1125,525,37
 y2334,1125,984,37
 y2259,1659,66,2
 a187,2143
```

2$90,076
a207,1525
34,626
a207,1431
24,557
a207,1375
18,775
a207,1310
14,492
a222,1239
9,482
a974,2153
$8,998
a994,1618
4,061
a994,1514
3,210
a994,1346
1,591
a1022,1291
487
a1022,1234
679
a1762,2073
$.84
a1782,1694
.43
a1782,1646
.44
a1782,1535
.35
a1782,1355
.15
a1782,1299
.13
a187,1097
FISCAL
a187,1067
YEAR
a337,1082
79
a421,1082
80
a506,1082
81
a590,1082
82

a674,1082
83
a759,1082
84
a974,1097
FISCAL
a974,1067
YEAR
a1115,1082
79
a1199,1082
80
a1284,1082
81
a1368,1082
82
a1453,1082
83
a1537,1082
84
a1762,1097
FISCAL
a1762,1067
YEAR
a1912,1082
79
a1996,1082
80
a2081,1082
81
a2165,1082
82
a2249,1082
83
a2334,1082
84

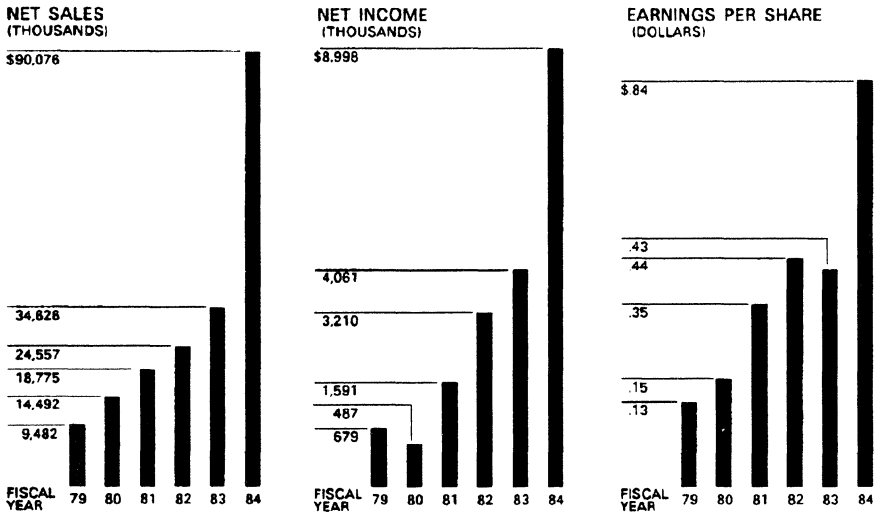


Figure 4-1 **Sample bar chart**

```
=UDK=*
*+1Kosmos6-P                                    Font Assignments
*+5Titan10iso-P                                        |
*+6Kosmos12-P                                          |
*+7Kosmos14-P                                          |
*7*m660,60,30,107,417                           Margin Settings
*q*bFLEXIBLE PAGE FORMATTING*p                  Centering Text
```

The *bXerox 4045*p allows you to use up to 22 type styles/sizes on the same page. *uAnd*w you can print in mixed landscape or portrait typestyles. The *b4045*p will electronically change type styles *Bolding*

*5from line to *Changing Fonts*

*1line, from
*6 word *4to *7word

This printing versatility helps to:

*d*t143,157 *Horizontal Tabs*

- o Improve the readability of documents
- o Emphasize key points
- o Distinguish headings and sub-headings
- o Create a high quality, customized appearance
- o Communicate information effectively

These type styles and type sizes are referred to as "fonts." The *bXerox 4045*p fonts range in size from 6 to 24 points and are available in fixed and proportional spacing for a "typeset" look. Two type fonts are internally resident in the *b4045*p. These are used for standard text output and for high quality landscape printing of data processing-type reports.

FLEXIBLE PAGE FORMATTING

The **Xerox 4045** allows you to use up to 22 type styles/sizes on the same page. And you can print in mixed landscape or portrait typestyles. The **4045** will electronically change type styles

from line to

line. from

word to word

This printing versatility helps to:

- o Improve the readability of documents
- o Emphasize key points
- o Distinguish headings and sub-headings
- o Create a high quality, customized appearance
- o Communicate information effectively

These type styles and type sizes are referred to as "fonts." The **4045** fonts range in size from 6 to 24 points and are available in fixed and proportional spacing for a "typeset" look. Two type fonts are internally resident in the **4045**. These are used for standard text output and for high quality landscape printing of data processing-type reports.

Figure 4-2 **Sample of fonts**

```
=UDK=
 +1Kosmos8-P                          Font Assignments
 +2Kosmos10-P
 +3Kosmos6-P
 +4Kosmos12-P
 m660,7,15,12,500                     Margin Settings
 x2023,3253,462,2                     Drawing Lines
 x2023,3150,460,2
 y2023,3150,102,2
 y2483,3150,102,2
 a2042,3215                           Absolute Text Placement
 b 3Date                              Bold—Change Font
 a505,3170
 4Capital/Lease Appropriation Request p
 b x45,3103,2438,6                    Drawing Lines
 x45,2606,2438,6
 x45,2493,2438,6
 x45,2100,2438,6
 x45,1415,2438,6
 x45,1115,2438,6
 x45,815,2438,6
 x45,356,2438,6
 x45,84,2438,6
 x664,2797,1812,12
 x664,2694,1812,12 p
 x45,3000,2438,2
 x45,2896,2438,2
 x45,2803,2438,2
 x45,2700,2438,2
 x45,2400,2438,2
 x45,2296,2438,2
 x45,2193,2438,2
 x45,2025,2438,2
 x45,1950,2438,2
 x45,1875,2438,2
 x45,1800,2438,2
 x45,1725,2438,2
 x45,1650,2438,2
 x45,1575,2438,2
 x45,1500,2438,2
 x45,1350,2438,2
 x45,1275,2438,2
 x45,1200,2438,2
 x45,1050,2438,2
 x45,975,2438,2
```

```
x45,900,2438,2
x45,740,2438,2
x45,665,2438,2
x45,590,2438,2
x45,515,2438,2
x45,440,2438,2
x665,2953,899,2
y45,85,3021,2
y2483,85,3021,2
y505,3000,103,2
y861,3000,103,2
y1667,3000,103,2
y664,2100,300,2
y964,2100,300,2
y1564,2100,300,2
y1873,2100,300,2
y664,2495,505,2
y964,2495,458,2
y1273,2495,458,2
y1564,2495,505,2
y1873,2495,505,2
y2173,2495,505,2
y1273,356,2045,2
y2173,356,2045,2
b y664,2705,100,12
y958,2705,100,12
y1267,2705,100,12
y1558,2705,100,12
y1867,2705,100,12
y2167,2705,100,12
y2471,2694,114,12 p
a58,3060
3Operating Group rr245xProject No.
rr215xProject Title rr650xOriginating Manager
a1070,2962
1Capital
a1630,2955
Associated rr165xLease
a730,2915
Budgeted rr112xNot Budgeted rr145xTotal
a1648,2915
Expense rr170xPer Year rr130xLease Total
a200,2823
p 2Prior Approvals
a200,2720
This Request
```

Drawing Lines

Must be entered as one line of coding

Absolute Text Placements

Absolute Text Placements

```
 a200,2626
Future Requests
 a200,2513
Total Project
 a200,2420
Cash Flow This Request:
 a200,2213
Capital
 a200,2120
Expense
 a670,2823
 1$ rr280x$ rr290x$ rr270x$ rr290x$ rr280x$
 a670,2513
$ rr280x$ rr290x$ rr270x$ rr290x$ rr280x$
 a670,2213
$ rr280x$ rr290x$ rr270x$ rr290x$ rr280x$
 a795,2310
19 rr260x19 rr260x19 rr255x19 rr265x19 rr260x19
 a420,2040
Concurrence or Approval rr793xSignature rr480xDate
 a90,1970
 2Operating Unit
 a90,1885
Division/Department:
 a635,1895
 1Originator
 a635,1825
Level 4 Manager
 a635,1750
Level 3 Manager
 a635,1675
Level 2 Manager
 a635,1600
Division/Dept. Staff
 a635,1525
Division/Dept. Controller
 a635,1460
Division/Dept. Manager
 a635,1430
 3(Region, Country or Subsidiary Manager)
 a90,1375
 2Group 2:
 a635,1370
 1Group Controller
 a635,1305
Group Facility Manager
```

Absolute Text Placements

```
 a635,1225
Group Product Program Manager
 a635,1145
Group President
 a90,1070
 2Group 1:
 a635,1070
 1Group Controller
 a635,1000
Group Facility Manager
 a635,925
Group Product Program Manager
 a635,845
Group President
 a90,760
 2Corporate:
 a635,765
 1Corporate Staff
 a635,690
Corporate Staff
 a635,615
Corporate Vice President Finance
 a635,535
Executive Vice President
 a635,460
President/Chairman of the Board
 a90,310
Comments/Qualifications
```

Capital/Lease Appropriation Request

Date

Operating Group	Project No.	Project Title	Originating Manager

	Capital			Associated Expense	Lease Per Year	Lease Total
	Budgeted	Not Budgeted	Total			
Prior Approvals	$	$	$	$	$	$
This Request						
Future Requests						
Total Project	$	$	$	$	$	$
Cash Flow This Request:						
	19	19	19	19	19	19
Capital	$	$	$	$	$	$
Expense						

Concurrence or Approval	Signature	Date
Operating Unit		
Divison/Department: Originator		
Level 4 Manager		
Level 3 Manager		
Level 2 Manager		

Figure 4-3 **Sample capital/lease**

	Division/Dept. Staff		
	Division/Dept. Controller		
	Division/Dept. Manager (Region, Country or Subsidiary Manager)		
Group 2:	Group Controller		
	Group Facility Manager		
	Group Product Program Manager		
	Group President		
Group 1:	Group Controller		
	Group Facility Manager		
	Group Product Program Manager		
	Group President		
Corporate:	Corporate Staff		
	Corporate Staff		
	Corporate Vice President Finance		
	Executive Vice President		
	President/Chairman of the Board		
Comments/Qualifications			

Figure 4-3 **Sample capital/lease (continued)**

```
=UDK=
 +1Kosmos8-L                                        Font Assignments
 +2XCP14-L
 m510,50,28,500                                     Margin Settings
 d t142,179,216,253,290,327,364,401                 Horizontal Tab Clear/Set
 1
 bONE-TIME COSTS    JAN   FEB   MAR                 Must be entered as
  APR   MAY   JUN   JUL   AUG  p                    one line of coding

Education Materials

 d t140,177,214,254,291,328,365,402
 Development      35000     35000     35000         Must be entered as
      0      0      0      0      0                 one line of coding
 d t141,178,215,254,291,328,365,402
 Packaging   5000      5000      5000               Must be entered as
      0      0      0      0      0                 one line of coding

 d t144,181,218,254,291,328,365,402

Miscellaneous       0       0       0               Must be entered as
      0      0      0      0      0                 one line of coding
 d t141,178,215,252,289,326,363,401
    ___________   ___________                       Must be entered as
    ___________   ___________                       one line of coding
    ___________   ___________
    ___________   ___________

 d t140,177,214,254,291,328,365,402
Subtotal    40000     40000     40000               Must be entered as
      0      0      0      0      0                 one line of coding


 bMONTHLY COSTS                                     Bold

Personnel

 d t97,141,178,215,252,289,326,363,400
 Sales Manager   (] 45000)    3750      3750        Must be entered as
     3750      3750      3750                       one line of coding
     3750      3750      3750
 Analyst   (] 30000)    2500      2500              Must be entered as
     2500      2500      2500                       one line of coding
     2500      2500      2500
```

```
Service 1 (] 30000)     2500        2500
     2500        2500        2500
     2500        2500        2500
Service 2 (] 30000)     2500        2500
     2500        2500        2500
     2500        2500        2500
Admin. Aid      (] 19200)    1600
     1600        1600        1600
     1600        1600        1600        1600
```

Must be entered as one line of coding

Must be entered as one line of coding

Must be entered as one line of coding

Marketing Expenses

```
d t142,179,216,253,290,327,364,401,438
Entertain.      (2 reps)    400         400
     400         400         400
     400         400         400
Mileage         (2 cars)    240         240
     240         240         240
     240         240         240
```

Must be entered as one line of coding

Must be entered as one line of coding

```
d t141,178,215,252,289,326,363,400
Advertising  1600        1600        1600
     1600        1600        1600
     1600        1600
Facilities   6000        6000        6000
     6000        6000        6000
     6000        6000
```

Must be entered as one line of coding

Must be entered as one line of coding

ONE-TIME COSTS		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
Education Materials									
Development		35000	35000	35000	0	0	0	0	0
Packaging		5000	5000	5000	0	0	0	0	0
Miscellaneous		0	0	0	0	0	0	0	0
Subtotal		40000	40000	40000	0	0	0	0	0
MONTHLY COSTS									
Personnel									
Sales Manager	(@ 45000)	3750	3750	3750	3750	3750	3750	3750	3750
Analyst	(@ 30000)	2500	2500	2500	2500	2500	2500	2500	2500
Service 1	(@ 30000)	2500	2500	2500	2500	2500	2500	2500	2500
Service 2	(@ 30000)	2500	2500	2500	2500	2500	2500	2500	2500
Admin. Aid	(@ 19200)	1600	1600	1600	1600	1600	1600	1600	1600
Marketing Expenses									
Entertain.	(2 reps)	400	400	400	400	400	400	400	400
Mileage	(2 cars)	240	240	240	240	240	240	240	240
Advertising		1600	1600	1600	1600	1600	1600	1600	1600
Facilities		6000	6000	6000	6000	6000	6000	6000	6000

Figure 4-4 **Sample spread sheet**

```
=UDK=
 +1Kosmos6-L                          Font Assignments
 +2Kosmos8-L
 +3Classic10iso-L
 +4Kosmos12-L
 4 m510,17,4,32,620                   Margin Settings
 qPROJECT SCHEDULE                    Change Font/Center

 qCURRENT AS OF:
 y300,168,2925,4                      Drawing Lines
 y450,168,2925,4
 y600,168,2925,4
 y750,168,2925,4
 y768,168,2925,4
 y937,168,2925,4
 y881,768,2325,4
 y2475,168,2929,4
 y1091,168,2925,4
 y1245,168,2925,4
 y1399,168,2925,4
 y1553,168,2925,4
 y1707,168,2925,4
 y1861,168,2925,4
 y2015,168,2925,4
 y2169,168,2925,4
 y2323,168,2925,4
 x300,168,2175,4
 x450,1200,300,4
 x300,1987,300,4
 x300,3093,2175,4
 x768,768,1707,4
 x881,843,1594,4
 x881,918,1594,4
 x881,993,1594,4
 x881,1068,1594,4
 x768,1143,1707,4
 x881,1218,1594,4
 x881,1293,1594,4
 x881,1368,1594,4
 x768,1443,1707,4
 x881,1518,1594,4
 x881,1593,1594,4
 x881,1668,1594,4
 x768,1743,1707,4
 x881,1818,1594,4
```

```
x881,1893,1594,4
x881,1968,1594,4
x881,2043,1594,4
x768,2118,1707,4
x881,2193,1594,4
x881,2268,1594,4
x881,2343,1594,4
x768,2418,1707,4
x881,2493,1594,4
x881,2568,1594,4
x881,2643,1594,4
x768,2718,1707,4
x881,2793,1594,4
x881,2868,1594,4
x881,2943,1594,4
x881,3018,1594,4
2
a393,195
PROJECT NAME:
a393,2015
PROJECT NUMBER:
a543,195
PROJECT MANAGER:
a543,1225
EXTENSION:
a543,2015
CHARGE NUMBER:
a693,195
START DATE:
a693,1225
ESTIMATED COMPLETION DATE:
a900,195
ACTIVITY
a843,909
APRIL
a843,1255
MAY
a843,1546
JUNE
a843,1888
JULY
a843,2230
AUG.
```

Drawing Lines

Absolute Text Placements

Absolute Text Placements

```
 a843,2521
SEPT.
 a843,2868
OCT.
 1
 a909,792
02
 a909,867
09
 a909,942
16
 a909,1017
23
 a909,1092
30
 a909,1167
07
 a909,1242
14
 a909,1317
21
 a909,1392
28
 a909,1467
04
 a909,1542
11
 a909,1617
18
 a909,1692
25
 a909,1767
02
 a909,1842
09
 a909,1917
16
 a909,1992
23
 a909,2067
30
 a909,2142
06
 a909,2217
13
```

Absolute Text Placements

a909,2292
20
a909,2367
27
a909,2442
03
a909,2517
10
a909,2592
17
a909,2667
24
a909,2742
01
a909,2817
08
a909,2892
15
a909,2967
22
a909,3042
29
a197,1668
3April 30, 1985
a375,580
Model 50 Installation
a375,2445
0A-497
a525,655
John Stevens
a525,1535
3617
a525,2425
0A-10190
a675,525
May 21, 1985
a675,1895
August 31, 1985
a1031,243
Attend demonstration
a1031,1317
X
a1181,243
Process requisition
a1181,1397
X

Absolute Text Placements

```
 a1181,1472
X
 y1205,1414,75,4
 a1331,243
Sign Xerox order
 a1331,1468
X
 a1481,243
Order supplies
 a1481,1543
X
 a1650,243
Install in Corporate
 a1650,1768
X
 a1800,243
Train in Corporate
 a1800,1768
X
 a1950,243
Install in Accounting
 a1950,2070
X
 a2100,243
Train in Accounting
 a2100,2070
X
 a2250,243
Install in Marketing
 a2250,2365
X
 a2400,243
Train in Marketing
 a2400,2365
X
```

PROJECT SCHEDULE

CURRENT AS OF: April 30, 1985

PROJECT NAME: Xerox 4045 Installation	
PROJECT MANAGER: John Stevens	**EXTENSION:** 3617
START DATE: May 21, 1985	**ESTIMATED COMPLETION DATE:** Au

	APRIL					MAY				JUNE				JUL		
ACTIVITY	02	09	16	23	30	07	14	21	28	04	11	18	25	02	09	16
Attend demonstration								X								
Process requisition									X	X						
Sign Xerox order										X						

Figure 4-5 **Sample project schedule**

```
=UDK=*
*+1Kosmos10-P                          Font Assignments
*+2Kosmos8-P
*+3YourSig24-P
*2*m660,34,30,90,442                   Margin Settings
*bFIRST GALAXY FINANCIAL*p             Change Font/Bold
123 Elm Street
P. O. Box 6666
Los Angeles, CA 90045
Attn: Overline Collector
*a1200,2580                            Absolute Placement
*1JOHN C. SMITH                        Change Font
*a1200,2533
2345 MAPLE STREET
*a1200,2486
DALLAS,TX 75999

Re: MasterCard No. 5106100012123456

      BALANCE

      AMOUNT DUE
*a900,2240                             Absolute Placement
$
*a900,2137
$
*a984,2240
633.60
*a1012,2137
31.00
*a1200,2031
January 20, 1985

Dear John C. Smith:

Your recent payment to your credit card account
is appreciated. I would like to call to your
attention that the amount was not sufficient to
bring your balance below your credit limit of
$500.00.

Will you please curtail charges for the present
and remit $  31.00 to overcome this situation.

We appreciate your patronage and active partic-
ipation in our credit card plan, and ask your
```

cooperation in observing your credit limit.

A return envelope is enclosed for your convenience. Please detach and return the top portion of this letter with your payment or correspondence.

Sincerely,

*3ABCD
*1OVERLINE COLLECTOR
213-555-1212
First Galaxy Financial
Los Angeles, CA 90045

Logo

5106100012123456

FIRST GALAXY FINANCIAL
123 Elm Street
P. O. Box 6666
Los Angeles, CA 90045
Attn: Overline Collector

JOHN C. SMITH
2345 MAPLE STREET
DALLAS, TX 75999

Re: MasterCard No. 5106100012123456

BALANCE $ 633.60

AMOUNT DUE $ 31.00

January 20, 1985

Dear John C. Smith:

Your recent payment to your credit card account is appreciated. I would like to call to your attention that the amount was not sufficient to bring your balance below your credit limit of $ 500.00.

Will you please curtail charges for the present and remit $ 31.00 to overcome this situation.

We appreciate your patronage and active participation in our credit card plan, and ask your cooperation in observing your credit limit.

A return envelope is enclosed for your convenience. Please detach and return the top portion of this letter with your payment or correspondence.

Sincerely,

Your Signature

Overline Collector
213-555-1212
First Galaxy Financial
Los Angeles, CA 90045

5106100012123456

Figure 4-6 **Sample letter**

```
=UDK=*
*+1Kosmos8B-P                                    Font Assignments
*+2Kosmos10-P                                          |
*+3Kosmos6-P                                           |
*2*m660,163,60,28,502                            Margin Settings
*x10,2475,2510,18                                Drawing Line
*a121,2362
*bFinancial Highlights*p                         Change Font/Bold
*a121,2315                                       Absolute Placement
*1(in thousands, except share amounts and sales per employee)
                                                 Font Change

*d*t162,212,267                                  Horizontal Tab Set
*2  1984    1983    1982
*x131,2137,2355,2

*d*t146,197,249
*2Net Sales $  90,076   $  34,626   $  24,557

*d*t163,214,266
Net Income  8,998  4,061  3,210

*d*t173,224,276
Earnings Per Share      .84   .43   .44

*d*t158,209,261
Total Assets      61,664      31,201      18,527

*d*t158,209,261
Working Capital   38,288      15,854      14,034

*d*t175,221,278
Long-term Obligations   61    181   33

*d*t158,209,261
Stockholders' Equity    46,509      21,097      14,637

*d*t158,214,266
Retained Earnings 18,707      9,709      5,355

*d*t153,204,257
Net Sales Per Employee  168,366     110,626     132,027
```

Financial Highlights
(in thousands, except share amounts and sales per employee)

	1984	1983	1982
Net Sales	$ 90,076	$ 34,626	$ 24,557
Net Income	8,998	4,061	3,210
Earnings Per Share	.84	.43	.44
Total Assets	61,664	31,201	18,527
Working Capital	38,288	15,854	14,034
Long-term Obligations	61	181	33
Stockholders' Equity	46,509	21,097	14,637
Retained Earnings	18,707	9,709	5,355
Net Sales Per Employee	168,366	110,626	132,027

Figure 4-7 **Sample financial highlights**

To print the sample calendar, you need to create two files.

1. The constant page merge file:
   - draws the lines,
   - uses absolute placement to assign positions to the days of the week,
   - uses the '+M command.
2. The file to be merged:
   - assigns positions to the month and the date,
   - uses the 'ze command

The constant page merge file should be sent to the printer first, then the file to be merged should be sent.

```
=UDK=**+M                          Merge Page Load
*+12700Optima12B-L                 Font Assignment

*1*m660,10,10,10,2200              Margins

*a330,340                          Absolute Placement
SUNDAY

*a330,735
MONDAY

*a330,1145
TUESDAY

*a330,1495
WEDNESDAY

*a330,1920
THURSDAY

*a330,2365
FRIDAY

*a330,2715
SATURDAY

*x400,250,2000,12                  Drawing Lines
*x400,650,2000,12
*x400,1050,2000,12
*x400,1450,2000,12
*x400,1850,2000,12
*x400,2250,2000,12
*x400,2650,2000,12
*x400,3050,2012,12

*y300,250,2800,12
*y400,250,2800,12
*y800,250,2800,12
*y1200,250,2800,12
*y1600,250,2800,12
*y2000,250,2800,12
*y2400,250,2812,12
```

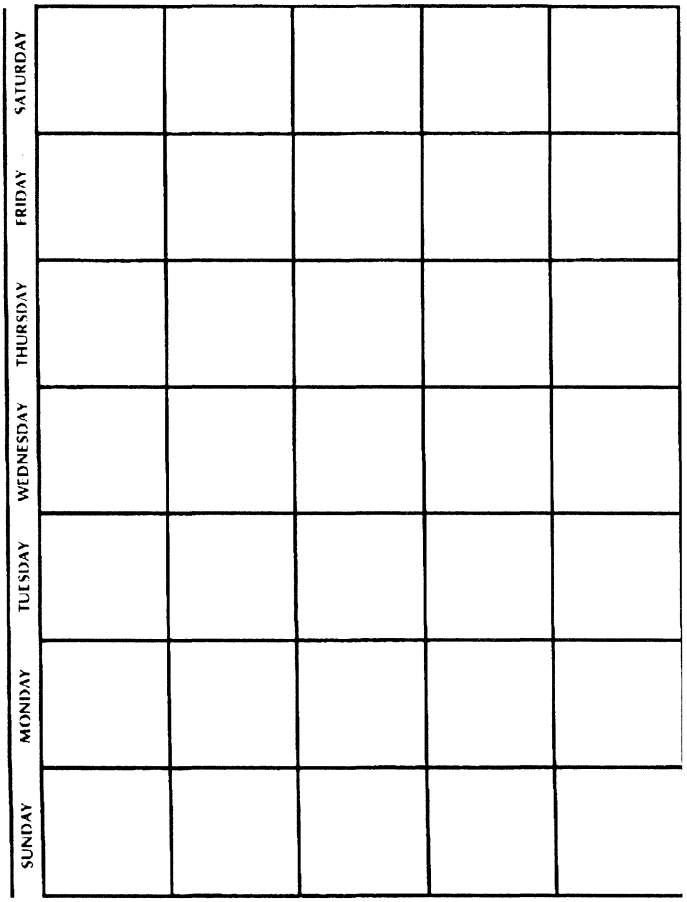


Figure 4-8 **Calendar constant page**

```
=UDK=**ze                                    Merge Start
*+22700Optima18Brr-L                         Font Assignment

*m660,10,10,2200                             Margins
*d*t55,135,215,295,375,455,535               Horizontal Tabs Set

*2JUNE 1986'q


*rd12          1     2     3 4 5 6 7         Relative
*rd312         8     9     10 11 12 13       Placement
*rd312         15    16    17 18 19 20       and
*rd312         22    23    24 25 26 27       Tabs
*rd312         29    30
```

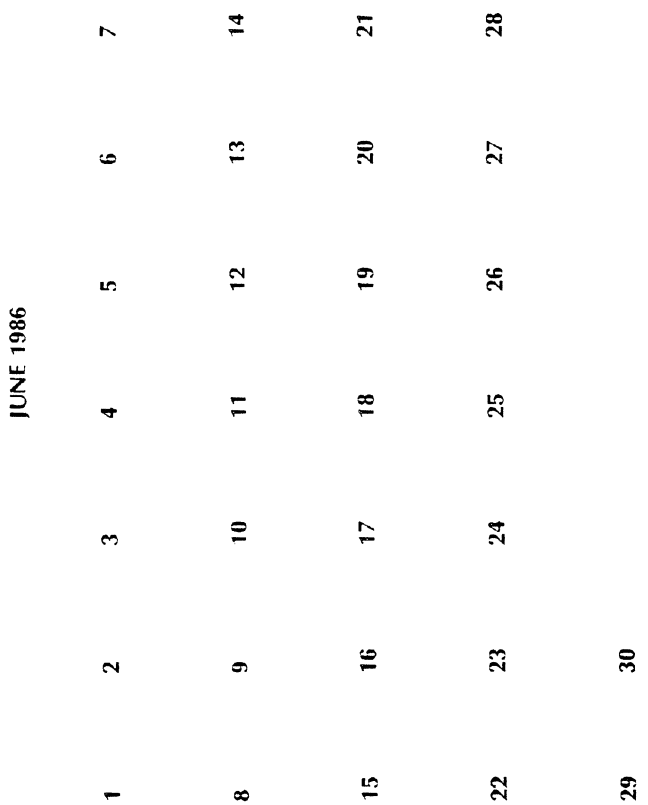
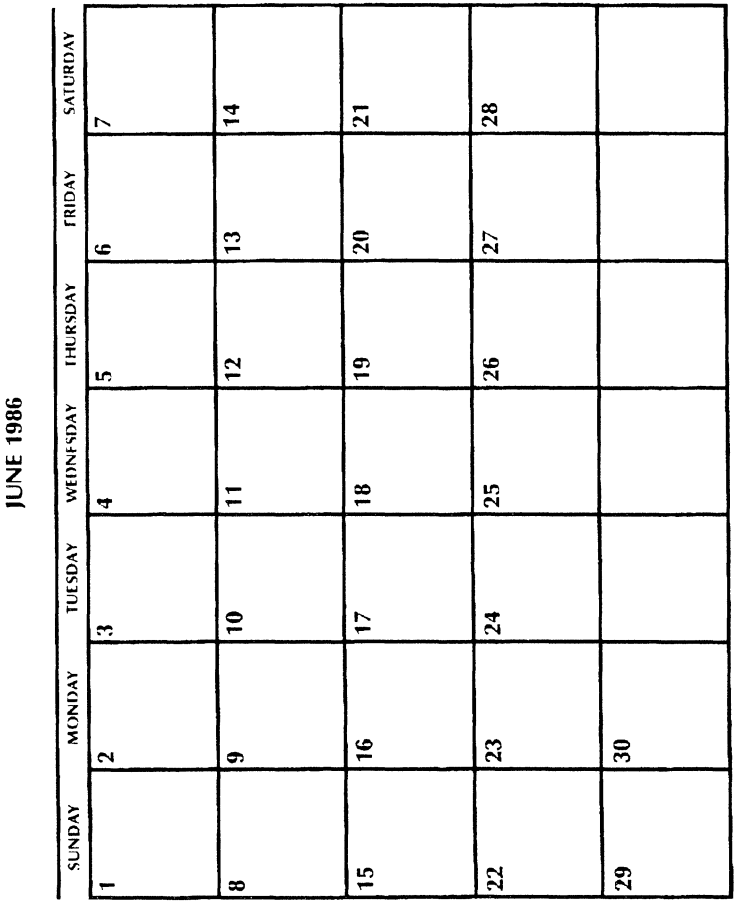


Figure 4-8 **Calendar merge page**



JUNE 1986

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Figure 4-8 **Finished calendar (continued)**

1. Fonts

Some of the Xerox fonts are packaged several fonts on a cartridge. This is especially true of 64k font cartridges.

When you are using the Font ID Assignment, Font Add Selected, and Font Delete Selected commands, you must enter the name of the font exactly as it appears on the cartridge label.

The following list indicates the font cartridges by number and name. This helps you have close at hand the proper font name to use in the Font ID Assignment, Font Add Selected, and Font Delete Selected commands.

Cartridge #	Font name(s)
9R23557	APLA10-P APLA10-L OCRA10-P OCRA10-L OCRB10-P OCRB10-L
9R23558	SymbolC10-P SymbolC10-L LP132x72iso-P LP132x72iso-L LP162x66iso-P LP162-66iso-L
9R23559	XCP12.5iso-P XCP12.5iso-L XCP14iso-P XCP14iso-L

Cartridge #	Font name(s)
9R23560	Chart10-P Chart10-L Forms10-P Forms10-L Forms12-P Forms12-L
9R23561	Forms12.5-P Forms12.5-L Forms14-P Forms14-L Forms15-P Forms15-L
9R23562	Elite12iso-P Elite12iso-L
9R23563	LetterGothic10iso-P LetterGothic12iso-P LetterGothic15iso-P
9R23564	LetterGothic10iso-L LetterGothic12iso-L LetterGothic15iso-L
9R23565	Titan10Iiso-P Titan12iso-P Titan12Iiso-P Titan15iso-P
9R23566	Titan10iso-P Titan10Iiso-P Titan12Iiso-P Titan15iso-P
9R23567	Titan10iso-L Titan10Iiso-L
9R23568	Titan12iso-L Titan12Iiso-L Titan15iso-L
9R23569	Vintage10iso-P Vintage12iso-P

Cartridge #	Font name(s)
9R23570	Vintage10iso-L Vintage12iso-L
9R23571	LetterGothic10iso-P LetterGothic10iso-L
9R23572	LetterGothic12iso-P LetterGothic12iso-L LetterGothic15iso-P LetterGothic15iso-L
9R23573	Titan10iso-P Titan10iso-L Titan15iso-L
9R23574	Titan10Iiso-P Titan10Iiso-L
9R23575	Titan12iso-P Titan12iso-L Titan15iso-P
9R23576	Titan12Iiso-P Titan12Iiso-L
9R23577	Vintage10iso-P Vintage10iso-L
9R23578	Vintage12iso-P Vintage12iso-L

Some of the Xerox fonts are packaged on diskettes. The following list indicates the diskette package number, the font load number, and the font ID name.

Diskette package number	Font load #	Font ID name
5D4045PU001	23701	Helvetica6i2-P
	23702	Helvetica6i2-L
	22465	Helvitica7i2-P
	22466	Helvitica7i2-L
	22473	Helvitica8i2-P
	22474	Helvetica8i2-L
	22481	Helvetica9i2-P
	22482	Helvetica9i2-L
	22489	Helvetica10i2-P
	22490	Helvetica10i2-L
	22497	Helvetica11i2-P
	22498	Helvetica11i2-L
5D4045PU002	22539	Helvetica12i2-P
	22540	Helvetica12i2-L
	22547	Helvetica14i2-P
	22548	Helvetica14i2-L
	22593	Helvetica18i3-P
	22594	Helvetica18i3-L
5D4045PU003	23761	Helvetica24i4-P
	23762	Helvetica24i4-L
5D4045PU004	22459	Helvetica6Bi2-P
	22460	Helvetica6Bi2-L
	22467	Helvetica7Bi2-P
	22468	Helvetica7Bi2-L
	22475	Helvetica8Bi2-P
	22476	Helvetica8Bi2-L
	22483	Helvetica9Bi2-P
	22484	Helvetica9Bi2-L
	22491	Helvetica10Bi2-P
	22492	Helvetica10Bi2-L
	22499	Helvetica11Bi2-P
	22500	Helvetica11Bi2-L
5D4045PU005	22541	Helvetica12Bi2-P
	22542	Helvetica12Bi2-L
	22553	Helvetica14Bi2-P
	22554	Helvetica14Bi2-L
	22595	Helvetica18Bi3-P
	22596	Helvetica18Bi3-L
5D4045PU006	23763	Helvetica24Bi4-P
	23764	Helvetica24Bi4-L

Diskette package number	Font load #	Font ID name
5D4045PU007	22461	Helvetica6Ii2-P
	22462	Helvetica6Ii2-L
	22469	Helvetica7Ii2-P
	22470	Helvetica7Ii2-L
	22477	Helvetica8Ii2-P
	22478	Helvetica8Ii2-L
	22485	Helvetica9Ii2-P
	22486	Helvetica9Ii2-L
	22493	Helvetica10Ii2-P
	22494	Helvetica10Ii2-L
	22535	Helvetica11Ii2-P
	22536	Helvetica11Ii2-L
5D4045PU008	22543	Helvetica12Ii2-P
	22544	Helvetica12Ii2-L
	22555	Helvetica14Ii2-P
	22556	Helvetica14Ii2-L
	22607	Helvetica18Ii3-P
	22608	Helvetica18Ii3-L
5D4045PU009	23765	Helvetica24Ii4-P
	23766	Helvetica24Ii4-L
5D4045PU010	22463	Helvetica6BIi2-P
	22464	Helvetica6BIi2-L
	22471	Helvetica7BIi2-P
	22472	Helvetica7BIi2-L
	22479	Helvetica8BIi2-P
	22480	Helvetica8BIi2-L
	22487	Helvetica9BIi2-P
	22488	Helvetica9BIi2-L
	22495	Helvetica10BIi2-P
	22496	Helvetica10BIi2-L
	22537	Helvetica11BIi2-P
	22538	Helvetica11BIi2-L
5D4045PU011	22545	Helvetica12BIi2-P
	22546	Helvetica12BIi2-L
	22557	Helvetica14BIi2-P
	22558	Helvetica14BIi2-L
	22629	Helvetica18BIi3-P
	22630	Helvetica18BIi3-L
5D4045PU012	23767	Helvetica24BIi4-P
	23768	Helvetica24BIi4-L

Diskette package number	Font load #	Font ID name
5D4045WP001	22529	Elite12iso-P
	22530	Elite12iso-L
	22597	Elite12Biso-P
	22598	Elite12Biso-L
5D4045WP002	22581	Vintage10iso-P
	22582	Vintage10iso-L
	22585	Vintage10Biso-P
	22586	Vintage10Biso-L
	22507	Vintage12iso-P
	22508	Vintage12iso-L
	22583	Vintage12Biso-P
	22584	Vintage12Biso-L
5D4045WP003	22573	LetterGothic10iso-P
	22574	LetterGothic10iso-L
	22575	LetterGothic10Biso-P
	22576	LetterGothic10Biso-L
	22531	LetterGothic12iso-P
	22532	LetterGothic12iso-L
	22579	LetterGothic12Biso-P
	22580	LetterGothic12Biso-L
5D4045WP004	22571	LetterGothic15iso-P
	22572	LetterGothic15iso-L
	22577	LetterGothic15Biso-P
	22578	LetterGothic15Biso-L
5D4045WP005	22501	Titan10iso-P
	22502	Titan10iso-L
	22505	Titan10Biso-P
	22506	Titan10Biso-L
	22503	Titan10Iiso-P
	22504	Titan10Iiso-L
	22559	Titan10BIiso-P
	22560	Titan10BIiso-L
5D4045WP006	22561	Titan12iso-P
	22562	Titan12iso-L
	22563	Titan12Biso-P
	22564	Titan12Biso-L
	22565	Titan12Iiso-P
	22566	Titan12Iiso-L
	22601	Titan15iso-P
	22602	Titan15iso-L

Diskette package number	Font load #	Font ID name
5D4045WP007	22455	Chart10-P
	22456	Chart10-L
	22435	Forms10-P
	22436	Forms10-L
	22437	Forms12-P
	22458	Forms12-L
	22631	Forms12.5-P
	22632	Forms12.5-L
	22441	Forms14-P
	22442	Forms14-L
	22633	Forms15-P
	22634	Forms15-L
5D4045WP008	22509	BoldPSiso-P
	22510	BoldPSiso-L
	22653	BoldPSIiso-P
	22654	BoldPSIiso-L
	22511	TrendPSiso-P
	22512	TrendPSiso-L
5D4045WP009	22567	Square3PSiso-P
	22568	Square3PSiso-L
	22569	Square3PSBiso-P
	22570	Square3PSBiso-L
	22667	CenturySBK8Bi2-P
	22668	CenturySBK8Bi2-L
	22675	CenturySBK9Bi2-P
	22676	CenturySBK9Bi2-L
	22683	CenturySBK10Bi2-P
	22684	CenturySBK10Bi2-L
	22691	CenturySBK11Bi2-P
	22692	CenturySBK11Bi2-L
5D4045PU017	23601	CenturySBK12Bi2-P
	23602	CenturySBK12Bi2-L
	23609	CenturySBK14Bi2-P
	23610	CenturySBK14Bi2-L
	23617	CenturySBK18Bi3-P
	23618	CenturySBK18Bi3-L
5D4045PU018	23739	CenturySBK24Bi4-P
	23740	CenturySBK24Bi4-L

Diskette package number	Font load #	Font ID name
5D4045PU019	23705	CenturySBK6Ii2-P
	23706	CenturySBK6Ii2-L
	22661	CenturySBK7Ii2-P
	22662	CenturySBK7Ii2-L
	22669	CenturySBK8Ii2-P
	22670	CenturySBK8Ii2-L
	22677	CenturySBK9Ii2-P
	22678	CenturySBK9Ii2-L
	22685	CenturySBK10Ii2-P
	22686	CenturySBK10Ii2-L
	22693	CenturySBK11Ii2-P
	22694	CenturySBK11Ii2-L
5D4045PU020	23603	CenturySBK12Ii2-P
	23604	CenturySBK12Ii2-L
	23611	CenturySBK14Ii2-P
	23612	CenturySBK14Ii2-L
	23619	CenturySBK18Ii3-P
	23620	CenturySBK18Ii3-L
5D4045PU021	23741	CenturySBK24Ii4-P
	23742	CenturySBK24Ii4-L
5D4045PU022	23707	CenturySBK6BIi2-P
	23708	CenturySBK6BIi2-L
	22663	CenturySBK7BIi2-P
	22664	CenturySBK7BIi2-L
	22671	CenturySBK8BIi2-P
	22672	CenturySBK8BIi2-L
	22679	CenturySBK9BIi2-P
	22680	CenturySBK9BIi2-L
	22687	CenturySBK10BIi2-P
	22688	CenturySBK10BIi2-L
	22695	CenturySBK11BIi2-P
	22696	CenturySBK11BIi2-L
5D4045PU023	23605	CenturySBK12BIi2-P
	23604	CenturySBK12BIi2-L
	23613	CenturySBK14BIi2-P
	23615	CenturySBK14BIi2-L
	23621	CenturySBK18BIi3-P
	23622	CenturySBK18BIi3-L

Diskette package number	Font load #	Font ID name
5D4045PU024	23743	CenturySBK24BIi4-P
	23744	CenturySBK24BIi4-L
5D4045PU037	23785	Times6i2-P
	23786	Times6i2-L
	23793	Times7i2-P
	23794	Times7i2-L
	24403	Times8i2-P
	24404	Times8i2-L
	24411	Times9i2-P
	24412	Times9i2-L
	24419	Times10i2-P
	24420	Times10i2-L
	24427	Times11i2-P
	24428	Times11i2-L
5D4045PU038	24435	Times12i2-P
	24436	Times12i2-L
	24443	Times14i2-P
	24444	Times14i2-L
	24451	Times18i3-P
	24452	Times18i3-L
5D4045PU039	24467	Times24i4-P
	24468	Times24i4-L
5D4045PU040	23787	Times6Bi2-P
	23788	Times6Bi2-L
	23795	Times7Bi2-P
	23796	Times7Bi2-L
	24405	Times8Bi2-P
	24406	Times8Bi2-L
	24413	Times9Bi2-P
	24414	Times9Bi2-L
	24421	Times10Bi2-P
	24422	Times10Bi2-L
	24429	Times11Bi2-P
	24430	Times11Bi2-L

Diskette package number	Font load #	Font ID name
5D4045PU041	24437	Times12Bi2-P
	24438	Times12Bi2-L
	24445	Times14Bi2-P
	24446	Times14Bi2-L
	24453	Times18Bi3-P
	24454	Times18Bi3-L
5D4045PU042	24469	Times24Bi4-P
	24470	Times24Bi4-L
5D4045PU043	23789	Times6Ii2-P
	23790	Times6Ii2-L
	23797	Times7Ii2-P
	23798	Times7Ii2-L
	24407	Times8Ii2-P
	24408	Times8Ii2-L
	24415	Times9Ii2-P
	24416	Times9Ii2-L
	24423	Times10Ii2-P
	24424	Times10Ii2-L
	24431	Times11Ii2-P
	24432	Times11Ii2-L
5D4045PU044	24439	Times12Ii2-P
	24440	Times12Ii2-L
	24447	Times14Ii2-P
	24448	Times14Ii2-L
	24456	Times18Ii3-P
	24457	Times18Ii3-L
5D4045PU045	24471	Times24Ii4-P
	24472	Times24Ii4-L
5D4045PU046	23791	Times6BIi2-P
	23792	Times6BIi2-L
	24401	Times7BIi2-P
	24402	Times7BIi2-L
	24409	Times8BIi2-P
	24410	Times8BIi2-L
	24417	Times9BIi2-P
	24418	Times9BIi2-L
	24425	Times10BIi2-P
	24426	Times10BIi2-L
	24433	Times11BIi2-P
	24434	Times11BIi2-L

Diskette package number	Font load #	Font ID name
5D4045PU047	24441	Times12BIi2-P
	24442	Times12BIi2-L
	24449	Times14BIi2-P
	24450	Times14BIi2-L
	24457	Times18BIi3-P
	24458	Times18BIi3-L
5D4045PU048	24473	Times24BIi4-P
	24474	Times24BIi4-L
5D4045PU025	23691	Univers6iso-P
	23692	Univers6iso-L
	23651	Univers7iso-P
	23652	Univers7iso-L
	23693	Univers8iso-P
	23694	Univers8iso-L
	23659	Univers9iso-P
	23660	Univers9iso-L
	23695	Univers10iso-P
	23696	Univers10iso-L
	23667	Univers11iso-P
	23668	Univers11iso-L
5D4045PU026	23697	Univers12iso-P
	23698	Univers12iso-L
	23699	Univers14iso-P
	23700	Univers14iso-L
	23675	Univers18i3-P
	23676	Univers18i3-L
5D4045PU027	23713	Univers24i4-P
	23714	Univers24i4-L
5D4045PU028	22515	Univers6Biso-P
	22516	Univers6Biso-L
	23653	Univers7Biso-P
	23654	Univers7Biso-L
	22519	Univers8Biso-P
	22520	Univers8Biso-L
	23661	Univers9Biso-P
	23662	Univers9Biso-L
	22523	Univers10Biso-P
	22524	Univers10Biso-L
	23669	Univers11Biso-P
	23670	Univers11Biso-L

Diskette package number	Font load #	Font ID name
5D4045PU035	22527	Univers12Biso-P
	22528	Univers12Biso-L
	22551	Univers14Biso-P
	22552	Univers14Biso-L
	23677	Univers18Bi3-P
	23678	Univers18Bi3-L
5D4045PU030	23715	Univers24Bi4-P
	23716	Univers24Bi4-L
5D4045PU031	23631	Univers6Iiso-P
	23632	Univers6Iiso-L
	23655	Univers7Iiso-P
	23656	Univers7Iiso-L
	23635	Univers8Iiso-P
	23636	Univers8Iiso-L
	23663	Univers9Iiso-P
	23664	Univers9Iiso-L
	23639	Univers10Iiso-P
	23640	Univers10Iiso-L
	23671	Univers11Iiso-P
	23672	Univers11Iiso-L
5D4045PU029	23643	Univers12Iiso-P
	23644	Univers12Iiso-L
	23647	Univers14Iiso-P
	23648	Univers14Iiso-L
	23679	Univers18Ii3-P
	23680	Univers18Ii3-L
5D4045PU033	23717	Univers24Ii4-P
	23718	Univers24Ii4-L
5D4045PU034	23633	Univers6BIiso-P
	23634	Univers6BIiso-L
	23657	Univers7BIiso-P
	23658	Univers7BIiso-L
	23637	Univers8BIiso-P
	23638	Univers8BIiso-L
	23665	Univers9BIiso-P
	23666	Univers9BIiso-L
	23641	Univers10BIiso-P
	23642	Univers10BIiso-L
	23673	Univers11BIiso-P
	23674	Univers11BIiso-L

Diskette package number	Font load #	Font ID name
5D4045PU032	23645	Univers12BIiso-P
	23646	Univers12BIiso-L
	23649	Univers14BIiso-P
	23650	Univers14BIiso-L
	23681	Univers18BIi3-P
	23682	Univers18BIi3-L
5D4045PU036	23719	Univers24BIi4-P
	23720	Univers24BIi4-L

Options

This section is divided into the following chapters and details the interfaces and interface sharing device available for your Model 50:

1. 3270/SNA Communication via 3274 (274 Interface Controller)

2. System 34/36/38 Environments (275 Interface Controller)

3. IBM Loop Controller (276 Interface Controller)

4. Multiple Host Sharing Device (280 Interface Sharing Device)

5. Page Sequencer (installation and operating instructions are included with the delivery of the Page Sequencer.)

1. 274 interface controller

The 274 Interface Controller (IC) is a protocol converter which enables the Xerox 4045 Laser CP and Xerox 4045 Laser CP Model 50 to simulate the IBM 3287 Model 1 and 2 printers. The 274 IC is attached to the IBM 3274/76 communications controller via a customer supplied coaxial cable on a type "A" port attachment. The Model 50 is attached to the 274 IC via a Xerox supplied five foot 36-pin Centronics Parallel Interface shielded cable and connector assembly.

Installing the 274 IC

Before the 274 IC can be installed, the Model 50 must first be installed. Please see Chapter 2, *Installing the Model 50* in the *Operating the Model 50* section of this manual for installation instructions.

Once you have installed your Model 50, please call your local Xerox service representative to arrange for installation of the 274 IC. The Xerox service representative will set the option switches within the 274 IC, based on your host system's requirements and connect the Centronics parallel interface cable from the 274 IC to the Model 50.

Please determine how you want the switches (as outlined in Table 6-1) set before the Xerox service representative arrives to install the 274 IC. The service representative needs your switch setting selections to install the 274 IC.

Coaxial cable

If you have not already done so, you need to order a coaxial cable to connect your communication controller to the 274 IC.

Following are the specifications for this cable:

	274 interface controller cable specification
Type	Coaxial cable—type RG62AU
Connectors	BNC at both ends
Cable length	Length should not exceed 5,000 feet (1.5 km)

Option switch settings

The 274 IC contains switchbanks which control functions and operating formats for your host system. Following is a description of the individual switches. The recommended default settings are bolded.

Note: For detailed information regarding the switch settings, please refer to the *274 Interface Controller User Guide* delivered with the unit.

Table 6-1 **Switch settings**

Switch SWS1-1	**Variable format diagnostics mode**
	• ON enables DSC variable format diagnostics mode • **OFF** disables DSC variable format diagnostics mode
Switch SWS1-2	**Internal page formatting**
	This switch determines whether page formattting is performed by the 274 IC or by the Model 50. • ON means that the 274 IC performs internal page formatting. • **OFF** indicates that the Model 50 performs page formatting.
Switch SWS1-3	**Paper size**
	This switch determines whether the paper size used is U.S. (8.5" x 11") or multinational A4 (210mm x 297mm). • ON selects U.S. paper • OFF selects multinational paper
Switch SWS1-4	**Line ending decisions**
	If this switch is enabled, the 274 IC generates a carriage return (CR) and a line feed (LF) after the maximum print position (MPP) in SCS (SNA character string) and DSC (3270 data stream compatibility) modes. • **ON** generates (CR)(LF) after the MPP. • OFF disables (CR)(LF) after the MPP.

Switch SWS1-5 **Hyphens set for graphic escape**

This switch sets the 274 IC to convert any graphic escape (GE) into hyphens that will be printed in the output.

- **ON** converts GE into a hyphen.
- OFF generates "parameter error" sense code, X "1005," for the GE sequence in SCS mode.

Switch SWS1-6 **Data code conversion mode**

The 274 IC has a switch selection for one of two incoming data code conversion functions: the user may select either to pass through the incoming EBCDIC character code set or to convert the incoming EBCDIC to an 8-bit ASCII character code set. When the EBCDIC code pass- through option is selected, incoming EBCDIC codes are transmitted to the Model 50 in EBCDIC. When the ASCII code conversion is selected, incoming EBCDIC codes are transmitted to the Model 50 in ASCII.

- ON enables the 274 IC to convert EBCDIC data code to ASCII
- **OFF** enables the 274 IC to use EBCDIC data code without conversion.

Switch SWS1-7 **Diagnostic switch test**

This switch executes a diagnostic test when the diagnostic switch is turned on.

- **On** prints the diagnostic test when the diagnostic switch is turned on
- OFF prints out the Request/Response Unit buffer in hexadecimal when the diagnostic switch is turned on.

Switch SWS1-8 **SCS format diagnostics mode**

- ON enables SCS format diagnostics mode
- **OFF** disables SCS format diagnostics mode

Switch SWS2-1 **SCS nulls**

- ON enables SCS mode end-of-line trailing (NULLS).
- **OFF** suppresses SCS mode end-of-line trailing (NULLS).

Switch SWS2-2 **SCS spaces**

- ON enables SCS mode end-of-line trailing (SPACES).
- **OFF** suppresses SCS mode end-of-line trailing (SPACES).

Switch SWS2-3 **DSC nulls**

- ON enables DSC mode (NULL) lines.
- **OFF** supresses DSC mode (NULL) lines. (Any lines consisting entirely of (NULLS) and/or field attribute characters.

Switch SWS2-4 **Controller diagnostics**

- ON dumps the contents of the PCIA buffer in hexidecimal format.
- **OFF** disables controller diagnostics test (PCIA).

Switch SWS2-5 **End of message/end of buffer decisions**

- **ON** enables the 274 IC to generate a carriage return (CR) and line feed (LF) upon receipt of an end-of-message (EM) code, or on an end-of-buffer (EOB) condition.
- OFF disables (CR) (LF) generation by the 274 IC on receipt of the EM code, or an end-of-buffer (EOB) condition.

Switch SWS2-6 **Form feed (operator initiated)**

- **ON** enables the 274 IC to insert a form feed on end-of-buffer (EOB) for an operator initiated local copy/screen dump.
- OFF disables generation of a form feed on end-of-buffer (EOB) for an operator initiated local copy/screen dump.

Switch SWS2-7 **Form feed (host initiated)**

- **ON** enables the 274 IC to insert a form feed on an end-of-buffer for a host initiated local copy/screen dump.
- OFF disables generation of a form feed on an end-of-buffer for a host initiated local copy/screen dump.

Switch SWS2-8 **"Intervention required" message timer**

- **ON** enables the 274 IC to wait 11 minutes before sending an "Intervention required" status code to the communications controller.
- OFF sets a one minute time out before sending an "Intervention required" status code to the communications controller.

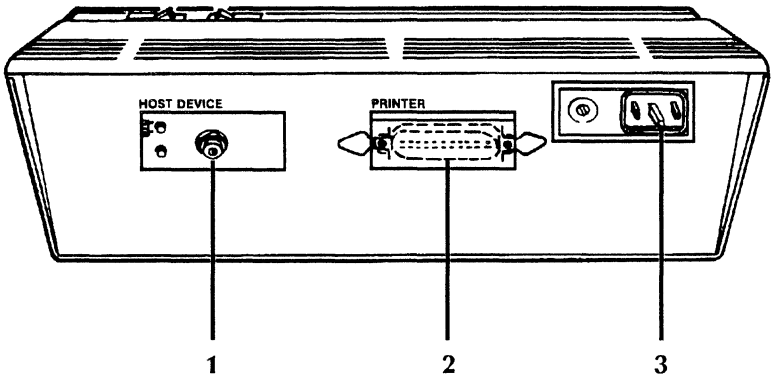
Switches SWS3 1-8 **Maximum print line value**

Sets the value of the maximum print line (MPL) parameter. Set to **Off**.

Switches SWS3:1 through SWS3:8. The MPL is set by selecting a combination of switches whose binary values, when totaled, equal the MPL. When all switches are off, the printer uses the default value of 1 for the MPL.

Connecting the coaxial cable

1. Locate the coaxial connector labeled **Host Device** on the back of the 274 IC. Figure 6-1 shows the back panel of the 274 IC.



1. **Coaxial connector**
2. **Interface connector(s)**
3. **Power cord outlet**

Figure 6-1 **Back of 274 IC**

2. Attach the coaxial cable to the connector by turning the cable clockwise until it latches.
3. To connect the coaxial cable to the IBM communications controller, refer to the appropriate IBM System manual for instructions.

Connecting the power cord

The 274 IC should have its own dedicated electrical circuit. The electrical requirements are 115 VAC for USA/Canada, and 220-240 VAC for International.

1. Connect the female connector of the power cord into the power input on the back of the 274 IC.
2. Plug the male connector of the power cord into an electrical outlet.

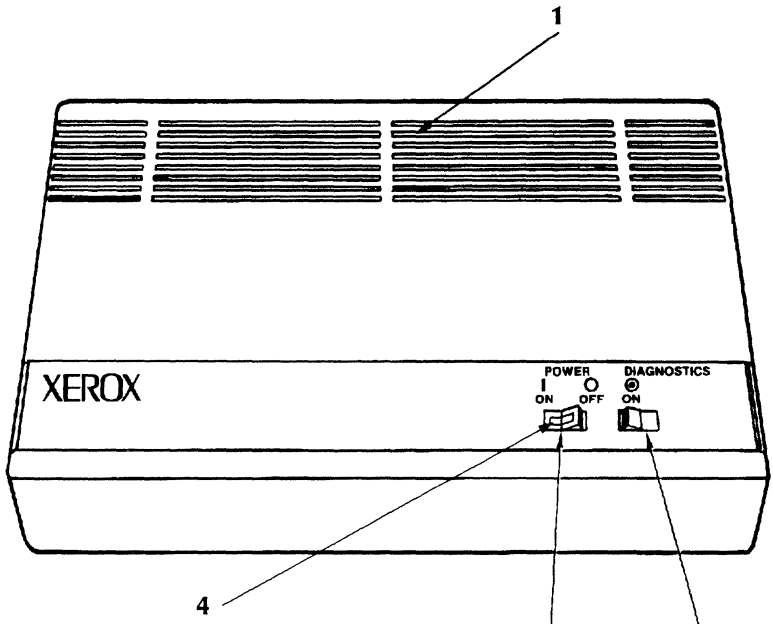
Powering on the 274 IC

1. If the Model 50 is not already on, turn it on. Wait until the READY indicator appears on the control panel before proceeding.

   The Model 50 should always be turned on **before** turning on the 274 IC.

2. Once the READY indicator appears on the control panel of the Model 50, turn the 274 IC on.

   - The 274 IC is turned on by pressing the red power ON/OFF toggle switch, (located on the top of the 274 IC), to the ON position. Figure 6-2 shows the top of the 274 IC, the diagnostics switch, the power switch, and power on indicator.



1 Red status indicator light
2 Diagnostics switch
3 Power switch
4 Power on light

Figure 6-2 **Top of the 274 IC**

- The red light in the switch indicates the power is on.

274 IC job status sheet

Each time the 274 IC is turned on, a job status sheet is printed at the Model 50. This status sheet indicates the 274 IC has powered on successfully. Printed on the status sheet are the current switch settings of the 274 IC. You will want to check this status sheet to be sure you have set the default switches as outlined in Table 6-1.

Please note that the switch settings are printed on the status sheet in the reverse order that they appear in

the unit. That is, the settings are read from right to left on the status sheet.

Note: When the 274 IC is powered on, the Model 50 may print some random data before producing the status sheet. This does not indicate a problem and should be ignored.

An example of the 274 IC job status sheet is shown in Figure 6-3.

STATUS SHEET

MB-0010*DB-0017*DB-3276*SWS1-01011110*SWS2-00110000*MB -OK*DB-OK

0 Page Dels Ignored

458736 Bytes Available

FONTS:

Resident:
- Titan10iso-P
- XCP14iso-L

Cartridge:
- Classic10-P
- Classic10B-P
- Classic12-P
- Classic12B-P
- Elite12-P
- Elite12-L
- XeroxLogo24-P
- LetterGothic12-L
- NewKosmos6-P
- NewKosmos8-P
- NewKosmos10-P
- NewKosmos12-P
- NewKosmos14-P

Figure 6-3 **274 IC job status sheet**

The comment line of the job status sheet reflects the current status of the 274 IC including any problems with the unit. If BAD replaces either of the two OKs in the comment line, a Xerox service representative should be notified.

The problem solving section which follows lists procedures to check if certain problems with the Model 50 and/or 274 IC occur.

Diagnostics switch

In addition to the on/off switch, the top panel of the 274 IC contains a DIAGNOSTICS switch. When this switch is pressed to ON, a Test Pattern sheet is printed at the Model 50.

This sheet indicates the status of the Model 50, 274 IC, and the Centronics parallel interface connecting these units. The Test Pattern sheet is used by the Xerox service representative to help pinpoint the source of operational problems.

Should the Model 50 or 274 IC not be working properly, before calling for service, it is a good idea to generate a Test Pattern sheet so the Xerox service representative can refer to it.

274 Interface Controller User Guide

Delivered with the 274 IC is a *274 Interface Controller User Guide*. This User Guide contains detailed information on the 274 IC and a problem solving section. Following is an excerpt from that section for troubleshooting.

Problems with...

There appears to be no power.	Verify that: • the Model 50 power switch is on. • the 274 IC power switch is on. • the Model 50 and the 274 IC are turned on in the proper order (Model 50 first, then 274 IC). • the Model 50 and the 274 IC are plugged into wall outlets. • the wall outlets work properly.
274 IC power light is not on.	Verify that: • there is no loose connection to the light. • the bulb is not burned out.
Model 50 status sheet does not print.	Verify that: • the Model 50 is powered on. • the top cover is closed. • the Model 50 is in the on-line mode. • there is paper in the paper tray.
274 IC status sheet does not print.	Verify that: • the 274 IC is powered on. • the 274 IC is connected properly to the Model 50.
274 IC status sheet is not like the sample.	Call Xerox service representative.
A job sent to the Model 50 and 274 IC is not printing.	• If the green light on the back panel of the 274 IC is off, check the cables at both ends. • If the green light is on, press the **Last Page** switch on the Model 50. • Make sure the Model 50 is on-line and the host is operational.

2. 275 interface controller

The Xerox 275 Interface Controller (IC) enables the Xerox 4045 Laser CP and Xerox 4045 Laser CP Model 50 to simulate IBM 5225 and 5256 printers and supports SCS (SNA character string) in an SNA/SDLC environment. The 275 IC is attached to the Model 50 via a Xerox-supplied 36-pin Centronics Parallel Interface shielded cable and connector assembly. Once these are attached, the 275 IC receives signals and codes from the IBM System 34/36/38 and translates them for the Model 50.

Installing the 275 IC

Before the 275 IC can be installed, the Model 50 must first be installed. Please see Chapter 2, *Installing the Model 50* in the *Operating the Model 50* section of this manual for installation instructions.

Once you have installed the Model 50, please call your local Xerox service representative to arrange for installation of the 275 IC. The Xerox service representative will set the option switches within the 275 IC, based on your host system's requirements and connect the Centronics parallel interface cable from the 275 IC to the Model 50.

Please determine how you want the switches (as outlined in Table 6-2) set before the Xerox service representative arrives to install the 275 IC. The service representative needs your switch setting selections to install the 275 IC.

Twin-axial cable

If you have not already done so, you need to order a twin-axial cable to connect your communication controller to the 275 IC.

Following are the specifications for this cable:

275 IC cable specifications	
Type	Twin-axial cable—type IBM 7362211* or equivalent. IBM 7362229 or equivalent.
Connectors	Male at both ends.
Cable length	Length should not exceed 5,000 feet (1.5 km).
* IBM 7032772 or equivalent cable assembly.	

Option switch settings

The 275 IC contains switchbanks which control functions and operating formats for your host system. Following is a description of the individual switches. The recommended default settings are bolded.

Note: For detailed information regarding the switch settings, please refer to the *275 Interface Controller User Guide* delivered with the unit.

Table 6-2 **Switch settings**

Switch SWS1-1
Switch SWS1-2
Switch SWS1-3

Device Loop Address

The Device Loop Address is the physical address by which the host system polls each receiving unit to determine where the data is to be sent. If your identification is a two digit number, the first digit indicates the port on your host system, and the second digit the terminal address. Therefore, if the address is 24, the 275 address would be set to 4. (The 275 IC would be device 4 on port 2.)

Loop Address	Switch Settings SWS1-1	SWS1-2	SWS1-3
0	Off	Off	Off
1	On	Off	Off
2	Off	On	Off
3	On	On	Off
4	Off	Off	On
5	On	Off	On
6	Off	On	On
0	On	On	On

Switch SWS1-4 **IBM Printer Modes**

This option enables you to select an IBM 5256 or IBM 5225 printer mode.

Set to **On**. Enables the 275 IC to accept data intended for the IBM 5256.

OR

Set to **Off**. Enables the 275 IC to accept data intended for the IBM 5225.

Switch SWS1-5 **Buffer Dump Mode**

A diagnostic feature used by the Xerox service representative. Set to **Off**. The off position enables normal operation of the 275 IC.

Switch SWS1-6 **Data Code Conversion Mode**

Set to **Off**. This setting enables the 275 IC to use EBCDIC data code without conversion. (Note: Switches A:6 and A:7 of the Model 50 Configuration Cartridge must also be set for EBCDIC.)

Switch SWS1-7 **Cancel Request Flag**

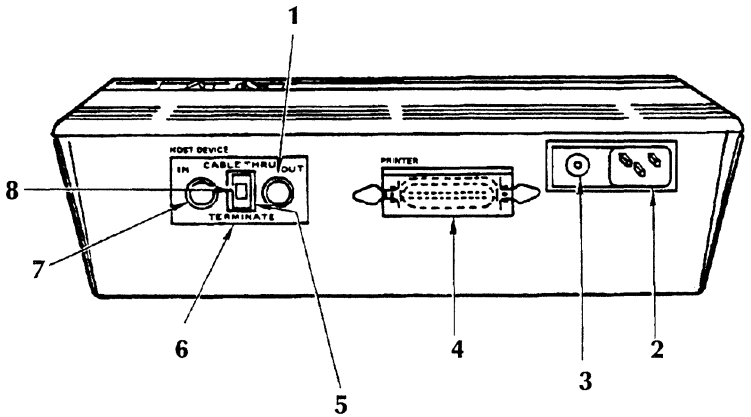
Set to **Off**. This switch is used by Xerox personnel, only. The printer is in its normal operational mode.

Switch SWS1-8 Set to **Off**. This switch is unassigned.

Connecting the twin-axial cable

The twin-axial cable connects the Xerox 275 IC to the IBM System 3X communication controller.

1. Locate the twin-axial connector labeled **Host Device** on the back of the 275 IC. (Figure 6-4 shows the back panel of the 275 IC.)



1 Out
2 Power cord connector
3 Fuse
4 Interface connector cable
5 Cable thru switch
6 Twin-axial cable connector
7 In
8 Green indicator light

Figure 6-4 **Back of 275 IC**

2. Attach the twin-axial cable to the IN Connector by turning the cable connector clockwise until it latches.

   Note: the OUT connector may be attached to another device in the loop. Set the cable-thru switch to CABLE-THRU if there are additional devices cabled to the 275 IC.

If additional devices are not to be attached to the 275 IC, set the cable-thru switch to TERMINATE.

3. To connect the other end of the twin-axial cable to the IBM communication controller, refer to the appropriate IBM System manual for instructions.

Connecting the power cord

The 275 IC should have its own dedicated power outlet. The electrical requirements are 115 VAC for USA/Canada, and 220-240 VAC for International.

1. Connect the female connector of the power cord into the power input on the back of the 275 IC.
2. Plug the male connector of the power cord into a power outlet.

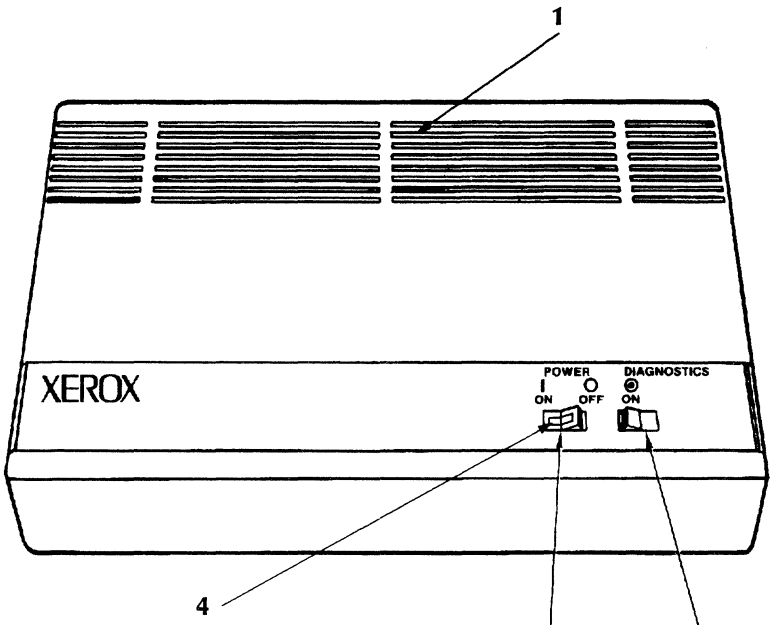
Powering on the 275 IC

1. If the Model 50 is not already on, turn it on. Wait until the READY indicator appears on the control panel before proceeding.

   Always turn on the Model 50 **before** turning on the 275 IC.

2. Once the READY indicator appears in the control panel of the Model 50, turn the 275 IC on.

   - Turn the 275 IC on by pressing the red power ON/OFF toggle switch (located on the top of the 275 IC) to the ON position. Figure 6-5 shows the top of the 275 IC, the diagnostics switch, the power switch, and power on indicator.



1 Red status indicator light
2 Diagnostics switch
3 Power switch
4 Power on light

Figure 6-5 **Top of 275 IC**

- The red light in the switch indicates the power is on.

275 IC job status sheet

Each time the 275 IC is turned on, a job status sheet is printed at the Model 50.

The comment line of the job status sheet reflects the current status of the 275 IC including any problems with the unit.

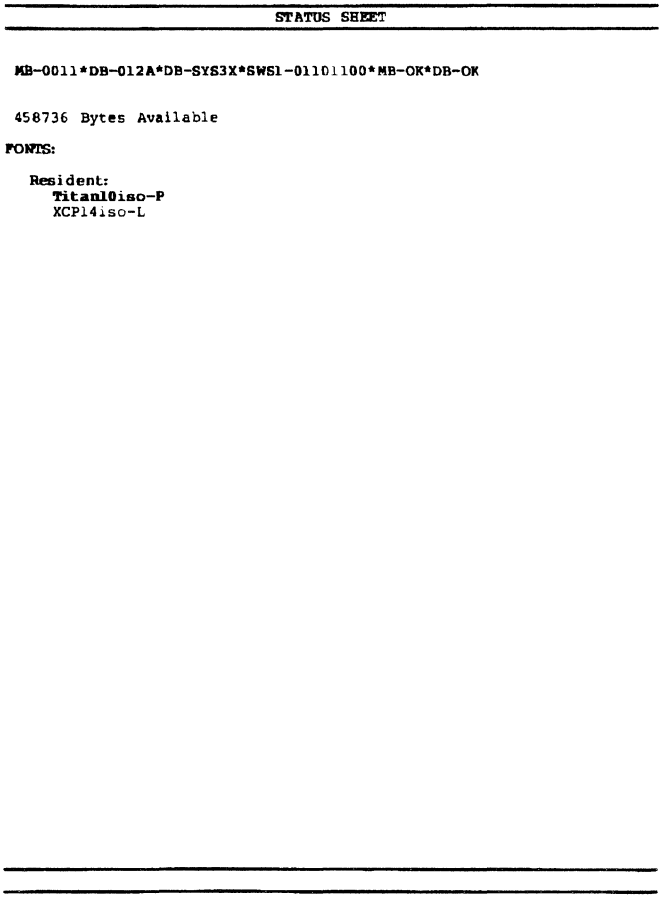


Figure 6-6 **Job status sheet**

The 275 IC is functioning properly and ready to operate when:

- The green light on the back panel of the 275 IC comes on to indicate communication between the System 3X Communications Controller and the Model 50.
- The 275 IC contains two circuit boards called a mother board (MB) and a daughter board (DB). If both the 275 IC mother board and daughter board are fully functional, the Model 50 will produce a 275 IC job status sheet and the comment line will read:

```
MB-XXXX*BD-XXXX*BD-SYS3X*SWS1-00100011*MB-OK*DB-OK
```

Note: When the 275 IC is powered on, the Model 50 may print some random data before producing the status sheet. This does not indicate a problem and should be ignored.

When the 275 IC is not functioning properly:

- The printer may not produce a job status sheet, or
- If the mother board and/or the daughter board are not fully functional, the printer may produce a job status sheet which reports "BAD" in the comment line.

```
MB-XXXX*BD-XXXX*BD-SYS3X*SWS1-00100011*MB-OK*DB-BAD
                    or
MB-XXXX*BD-XXXX*BD-SYS3X*SWS1-00100011*MB-BAD*DB-OK
                    or
MB-XXXX*BD-XXXX*BD-SYS3X*SWS1-00100011*MB-BAD*DB-BAD
```

Note: There could be a number of simple reasons why the 275 IC is not functioning properly. The Problem Solving section at the end of this chapter contains a chart explaining what to do for a particular problem. After following the instructions given on the problem solving chart, if the 275 IC still is not functioning properly, call the Xerox service representative.

Printed on the status sheet are the current switch settings of the 275 IC. You will want to check this status sheet to be sure you have set the option switches as outlined in Table 6-2.

Please note that the switch settings are printed on the status sheet in the reverse order that they appear in the unit. That is, the settings are read from right to left on the status sheet.

Diagnostics switch

In addition to the on/off switch, the top panel of the 275 IC contains a DIAGNOSTICS switch. When this switch is momentarily pressed to ON, a Test Pattern sheet is printed at the Model 50.

This sheet indicates the status of the Model 50, 275 IC, and the Centronics parallel interface cable connecting these units. The Test Pattern sheet is used by the Xerox service representative to help pinpoint the source of operational problems.

Should the Model 50 or 275 IC not be working properly, before calling for service, it is a good idea to generate a Test Pattern sheet so the Xerox service representative can refer to it.

275 Interface Controller User Guide

Delivered with the 275 IC is a *275 Interface Controller User Guide*. This user guide contains detailed information on the 275 IC and a problem solving section. Following is an excerpt from that section for troubleshooting.

Problems with...

There appears to be no power.	Verify that: • the Model 50 power switch is on. • the 275 IC power switch is on. • the Model 50 and the 275 IC are turned on in the proper order (Model 50 first, then 275 IC). • the Model 50 and the 275 IC are plugged into wall outlets. • the wall outlets work properly.
275 IC power light is not on.	Verify that: • there is no loose connection to the light. • the bulb is not burned out.
Model 50 status sheet does not print	Verify that: • the Model 50 is powered on. • the top cover is closed. • the Model 50 is in the on-line mode. • there is paper in the paper tray.
275 IC status sheet will not print.	Verify that: • the 275 IC is powered on. • the 275 IC is connected properly to the Model 50.
275 IC status sheet does not look like the sample.	Call Xerox service representative.
A job sent to the Model 50 and 275 IC is not printing.	• If the green light on the back panel of the 275 IC is off, check the cables at both ends. • If the green light is on, press the **Last Page** switch on the Model 50. • Make sure the Model 50 is on-line and the host is operational.

3. 276 Interface Controller

The Xerox 276 Interface Controller (IC) is a protocol converter which enables the Xerox 4045 Laser CP and Xerox 4045 Laser CP Model 50 to accept data formatted for printing on the IBM 3287 Model 11 and 12 printers.

The 276 IC is attached to an IBM 8100 Loop Controller via a Xerox-supplied loop cable. The Model 50 is attached to the 276 IC via a Xerox-supplied 36-pin Centronics parallel interface cable. Once these are attached, the 276 IC receives signals and codes from the 8100 Loop Communications Controller and translates them for the Model 50.

Installing the 276 IC

Before the 276 IC can be installed, the Model 50 must first be installed. Please see Chapter 2, *Installing the Model 50* in the *Operating the Model 50* section of this manual for installation instructions.

Once you have installed your Model 50, please call your local Xerox service representative to arrange for installation of the 276 IC. The Xerox service representative will set the option switches within the 276 IC based on your host system's requirements and connects the Centronics parallel interface cable from the 276 IC to the Model 50.

Please determine how you want the switches (as outlined in Table 6-3) set before the Xerox service representative arrives to install the 276 IC. The service

representative needs your switch setting selections to install the 276 IC.

Option switch settings

The 276 IC contains switchbanks which control functions and operating formats for your host system. Following is a description of the individual switches. The recommended default settings are bolded.

Table 6-3 **Switch settings**

Switch SWS1-1 **Request/Response unit buffer dump mode**

This buffer dump is a diagnostic feature that prints all Request/Response Unit data stored in the 276 IC on the Model 50. The resulting printout sheet contains the control characters interpreted by the 276 IC and the data characters sent to the Model 50. The output is hexadecimal and can be diagnosed by a Xerox technical representative who performs the buffer dump.

- ON begins a buffer dump. This mode will continue until the switch is set to the OFF position again.
- **OFF** means that the 276 IC is in normal operations mode.

Switch SWS1-2 **Internal page formatting**

This switch determines whether page formattting is performed by the 276 IC or by the Model 50.

- ON means that the 276 IC performs internal page formatting.
- **OFF** indicates that the Model 50 performs page formatting.

Switch SWS1-3 **Paper size**

This switch determines whether the paper size used is U.S. (8.5" x 11") or multinational A4 (210mm x 297mm).

- ON selects U.S. paper
- OFF selects multinational paper

Switch SWS1-4 **Line ending after MPP**

If this switch is enabled, the 276 IC generates a carriage return and a line feed after the maximum print position (MPP) is reached, even when SWS 1-2 is OFF.

- **ON** generates (CR)(LF) after the MPP.
- OFF disables (CR)(LF) after the MPP.

Switch SWS1-5 **Hyphens for invalid SCS control characters**

This switch sets the 276 IC to convert any invalid SCS control characters into hyphens that will be printed in the output.

- **ON** prints out any invalid SCS control characters as hyphens.
- OFF rejects invalid SCS control characters with a "function not supported" sense code and stops printing.

Switch SWS1-6 **Data code conversion mode**

The 276 IC has a switch selection for one of two incoming data code conversion functions: the user may select either to pass through the incoming EBCDIC character code set or to convert the incoming EBCDIC to an 8-bit ASCII character code set. When the EBCDIC code pass-through option is selected, incoming EBCDIC codes are transmitted to the Model 50 in EBCDIC. When the ASCII code conversion is selected, incoming EBCDIC codes are transmitted to the Model 50 in ASCII.

- ON position indicates ASCII
- OFF position indicates EBCDIC

Switch SWS1-7 **Diagnostic switch test**

This switch executes a diagnostic test when the diagnostic switch is turned on.

- **ON** prints the diagnostic test when the diagnostic switch is turned on.
- OFF prints out the Request/Response Unit buffer in hexadecimal when the diagnostic switch is turned on.

Switch SWS1-8 **SCS format diagnostics mode**

- ON enables SCS format diagnostics mode
- **OFF** disables SCS format diagnostics mode

Switch SWS2-6 **Form feed**

- **ON** enables auto form feed after an end-of-buffer for an operator initiated local screen dump.
- OFF disables auto insertion of form feed at end-of-buffer

Switches SWS3-1— SWS3-8 **Printer Loop Address**

The logical address of the printer on the 8100 loop.

Switches SWS4-1— SWS4-8 **Printer Serial Number: Least significant byte**

- Set to ON. These switches are unassigned.

Switches SWS5-1— SWS5-8 **Printer Serial Number: Most significant byte**

- Set to ON. These switches are unassigned.

Daughter board switches

Switch S1 Bits 1-5 **Data Rate**

The data rate is the speed at which the 276 IC will communicate with either the loop control unit or the 8100 control unit.

					Data rate	
Bit1	Bit2	Bit3	Bit4	Bit5	Bit8 ON	Bit8 OFF
ON	OFF	OFF	OFF	OFF	9600	38400
OFF	ON	OFF	OFF	OFF	4800	19200
OFF	OFF	ON	OFF	OFF	2400	9600
OFF	OFF	OFF	ON	OFF	1200	4800
OFF	OFF	OFF	OFF	ON	600	2400

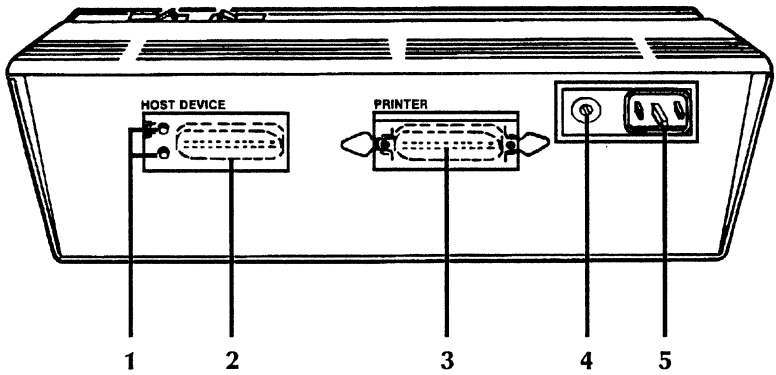
Switch S1 Bit 8 **Carrier Rate**

The carrier is a high frequency signal that is always present in the loop. The data rates the carrier.

- ON carrier rate is 9.6 Kbaud
- OFF carrier rate is 38.4 Kbaud

Connecting the loop cable

1. Locate the loop cable connector labeled HOST DEVICE on the back of the 276 IC. Figure 6-7 shows the back panel of the 276 IC.



1. **Indicator lights**
2. **8100 loop cable connector**
3. **Interface connector**
4. **Fuse**
5. **Power cord outlet**

Figure 6-7 **Back of 276 IC**

1. Attach one end of the loop cable to the back of the 276 IC. Flip the wire bailes in toward the cable.
2. Refer to the appropriate IBM Systems manual for instruction to connect the Loop cable to the IBM communications controller.

Connecting the power cord

The 276 IC should have its own dedicated electrical circuit. The electrical requirements are 115 VAC for USA/Canada and 220-240 VAC for International.

1. Connect the female connector of the power code into the power input on the back of the 276 IC.
2. Plug the male connector of the power code into an electrical outlet.

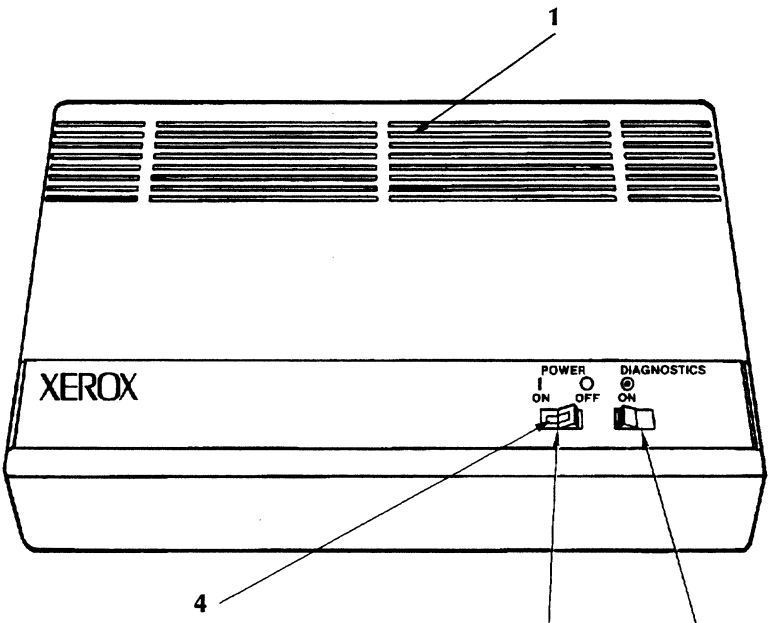
Powering on the 276 IC

1. Turn on the Model 50, if it is not already on. Wait until the READY appears on the control panel before proceeding.

   Note: The Model 50 should always be turned on before turning on the 276 IC.

2. Turn the 276 IC on when the READY indicator appears in the control panel of the Model 50.

   - The 276 IC is turned on by pressing the red power ON/OFF toggle switch, (located on the top of the 276 IC), to the ON position. Figure 6-8 shows the top of the 276 IC, the diagnostics switch, the power switch, and power on indicator.



1 Red status indicator light
2 Diagnostics switch
3 Power switch
4 Power on light

Figure 6-8 **Top of 276 IC**

- The red light in the switch indicates the power is on.

276 IC job status sheet

Each time the 276 IC is turned on, a job status sheet is printed at the Model 50. This status sheet indicates the 276 IC has powered on successfully. The comment line of the job status sheet reflects the current status of the 276 IC including any problems with the unit.

The 276 IC is functioning properly and ready to operate when:

- The green light on the back panel of the 276 IC comes on to indicate communications between the 8100 Loop Controller and the Model 50.
- The Model 50 produces a 276 IC job status sheet (as illustrated in Figure 6-9).
- The 276 IC contains two circuit boards called a mother board (MB) and a daughter board (DB). The "Mother/Daughter Operational Verification" will read: MB-OK*DB-OK.

Note: When the 276 IC is powered on, the Model 50 may print some random data before producing the job status sheet. This does not indicate a problem and should be ignored.

When the 276 IC is not functioning properly:

- The printer may not produce a job status sheet, or
- If the mother board and/or the daughter board are not fully functional, the printer may produce a job status sheet which reports "BAD" in the comment line. Examples:

  MB-OK*DB-BAD
  MB-BAD*DB-OK
  MB-BAD*DB-BAD

There could be a number of simple reasons why the 276 IC is not functioning properly. The *Problem solving* section at the end of this chapter contains a chart explaining what to do for a particular problem. After following the instructions given on the problem

solving chart, if the 276 IC still is not functioning properly, call the Xerox service representative.

Printed on the job status sheet are the current switch settings of the 276 IC. You will want to check this status sheet to be sure the default switches are set as outlined in Table 6-3.

Please note that the switch settings are printed on the status sheet in the reverse order that they appear in the unit. That is, the settings are read from right to left on the status sheet.

```
                    STATUS SHEET

MB-0013*DB-0011*DB-8100 LOOP*SWS1-01011110*SWS2-00100000*SWS3-00000000
*SWS4-00000000*SWS5-00000000*MB-OK*DB-OK


 448496 Font Bytes Available
 972799 System Bytes Available

FONTS:

   Resident:
      Titan10iso-P
      XCP14iso-L
```

Figure 6-9 **Job status sheet**

Diagnostics switch

In addition to the on/off switch, the top panel of the 276 IC contains a DIAGNOSTICS switch. When this switch is momentarily pressed to ON, a Test Pattern sheet is printed at the Model 50.

This sheet indicates the status of the Model 50, 276 IC, and the Centronics parallel interface cable connecting these units. The test pattern sheet is used by the Xerox service representative to help pinpoint the source of operational problems.

Should the Model 50 or 276 IC not be working properly, before calling for service, generate a test pattern sheet so the Xerox service representative can refer to it.

276 Interface Controller User Guide

Delivered with the 276 IC is a *276 Interface Controller User Guide*. This guide contains detailed information on the 276 IC and a problem solving section. Following is an excerpt from that section for troubleshooting.

Problems with ...

There appears to be no power.

Verify that:

- Model 50 power switch is on.
- 276 IC power switch is on.
- Model 50 and the 276 IC are turned on in the proper order (Model 50 first, then 276 IC).
- Model 50 and the 276 IC are plugged into wall outlets.
- Wall outlets work properly.

276 IC power light is not on.

Verify that:

- There is no loose connection to the bulb.
- The bulb is not burned out.

Model 50 status sheet does not print	Verify that: • Model 50 is powered on. • Top cover is closed. • Model 50 is in the on-line mode. • There is paper in the paper tray.
276 IC job status sheet will not print	Verify that: • 276 IC is powered on. • 276 IC is connected properly to the Model 50. • Switches A:6 and A:7 on the Model 50 configuration cartridge are set to EBCDIC (A:6 set to Off, A:7 set to On). • If problem is not resolved, call the Customer Support Center.
276 IC job status sheet does not look like the sample.	Call Customer Support Center
A job sent to the Model 50 and 276 IC is not printing.	• If the green light on the back panel of the 276 IC is off, check the cables at both ends. • If the green light is on, press the **Last Page** switch on the Model 50. • Make sure the Model 50 is on-line and the host is operational. • If problem is not resolved, call the Customer Support Center.

4. 280 ISD installation instructions

Description

The Xerox 280 Interface Sharing Device, ISD, enables up to four input hosts to share one or two output printers. The ISD can simultaneously receive input from four hosts, store data in a 256K buffer until it can be output, and direct the output to a serial printer, a parallel printer, or both a serial printer and a parallel printer.

There are two models of the 280 ISD available: a serial model and a parallel model. The particular model is distinguished by the Xerox Product Code, located on the box and on the data plate on the bottom of the ISD (see Figure 6-12).

The serial model has four RS232 serial input ports. The Xerox Product Codes for the serial model are:

- 02H for international
- 70G for the U.S. and Canada

The parallel model has three Centronics parallel input ports and one RS232 serial input port. The Xerox Product Codes for the parallel model are:

- 53H for international
- 52H for the U.S. and Canada

CAUTION: The Xerox 280 Interface Sharing Device is for use in commercial or industrial sites only. The unit must be used with shielded data cables.

Delivered with the 280 ISD is a *Xerox 280 Interface Sharing Device User Guide*. This user guide contains detailed information on the 280 ISD theory of operation, use of escape codes, cable pin assignments, and

a problem solving section. It is important to read the user guide before installing the 280 ISD.

Table 6-4 is a quick reference guide that lists the necessary steps for installing the Model 50 printer and the 280 ISD. Each step is explained in more detail in this section.

Table 6-4 **Installing the Model 50 and the 280 ISD**

Installing the Model 50	Set the switches on the Model 50 configuration cartridge
Installing the 280 ISD	Decide if you want to: (a) configure your host to the factory default settings of the 280 ISD, or (b) configure the internal switches on the 280 ISD to match the requirements of your host.
Setting the 280 ISD internal switchbanks Serial Model	Set the two 8-lever switchbanks • Input A • Serial (printer) out Set the three 8-lever switchbanks • Input B • Input C • Input D Set the 4-lever switchbank • 280 ISD status sheet • printer priority
Setting the 280 ISD internal switchbanks Parallel Model	Set the two 8-lever switchbanks • Input A • Serial (printer) out Set the 4-lever switchbank • 280 ISD status sheet • printer priority

Connecting the cables	Connect the cable(s) from the host(s) to the 280 ISD Connect the cable(s) from the 280 ISD to the printer(s)
Connecting the power cord	Connect the power cord from the 280 ISD to an electrical outlet
Power up	Power on the Model 50 printer, then power on the 280 ISD Wait for the Model 50 Configuration Sheet and the 280 ISD status sheet

Installing the Model 50

Installing the Model 50	Set the switches on the Model 50 configuration cartridge

Before installing the 280 ISD, you must install the Model 50. Please see Chapter 2, *Installing the Model 50,* of the *Operating the Model 50* section of this manual for installation instruction.

When installing the Model 50, the switches on the Model 50 configuration cartridge should be set as shown in the following illustrations to be compatible with the 280 ISD.

Figure 6-10 shows the configuration cartridge switch settings for a parallel Centronics interface.

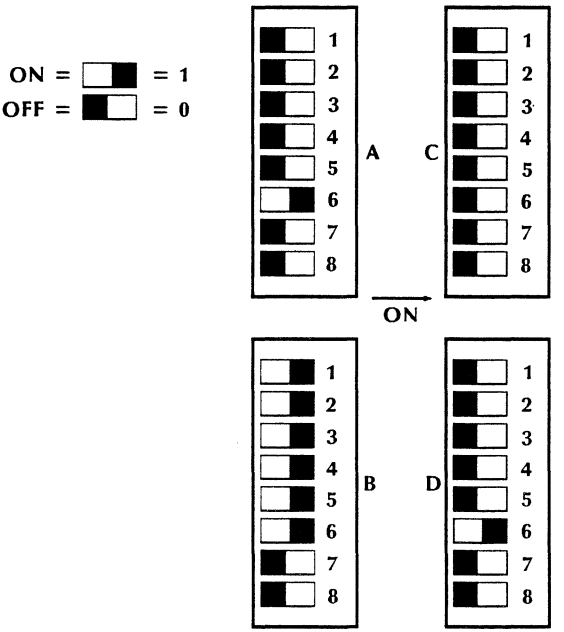


Figure 6-10 **Parallel Centronics switch settings**

Figure 6-11 shows the configuration cartridge switch settings for a serial asynchronous interface:

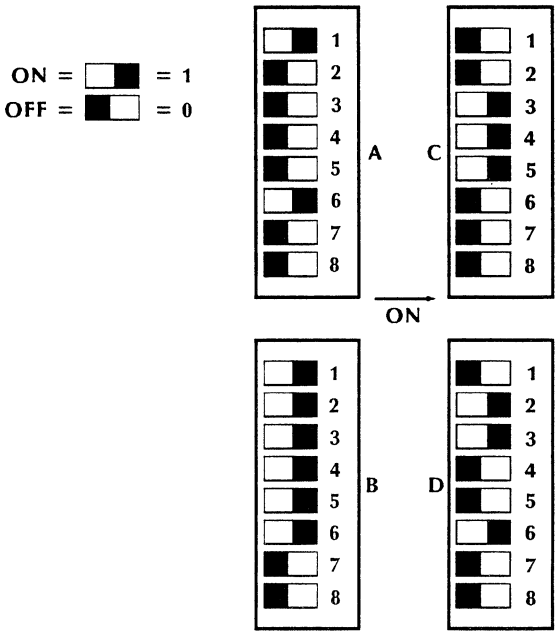


Figure 6-11 **Serial Asynchronous switch settings (2700 mode)**

Installing the 280 ISD

Installing the 280 ISD	Decide if you want to: (a) configure your host to the factory default settings of the 280 ISD, or (b) configure the internal switches on the 280 ISD to match the requirements of your host.

Once your printer is set up, you are ready to install the 280 ISD.

Serial Model: There are five switchbanks, one for each of the four input hosts and one for the serial (printer) output.

Parallel Model: There are two switchbanks, one for Input A and one for serial (printer) output.

The switches have been set at the factory to the settings shown in Table 6-5.

Table 6-5 **Default factory setting of eight-lever switchbank**

ISD switch	Color	Function	Setting
1	Brown	7-Bit Data	OFF
2	Red	1-Stop Bit	OFF
3	Orange	Even Parity	ON
4	Yellow	Enable Parity	ON
5	Green	Printer Ready	OFF
6	Blue		ON
7	Purple	9600	ON
8	Gray		ON

If you want to configure your hosts to these defaults, it is not necessary to change the ISD's settings.

If you do not want to configure your hosts to the default settings of the ISD, you can change the internal ISD settings.

The serial model internal settings are:

- Eight-lever switchbank containing Input A and serial (printer) out
- Eight-lever switchbank containing Input B, Input C and Input D
- Four-lever switchbank containing status sheet and printer priority

The parallel model internal settings are:

- Eight-lever switchbank containing Input A and serial (printer) out
- Four-lever switchbank containing status sheet and printer priority

Each host acts independently with the ISD so, for example, you may configure one host to use 8-bit characters and another to use 7-bit characters.

There is also a four-lever switchbank which controls the ISD status sheet printing and printer priority.

Table 6-6 **Default factory setting of four-lever switchbank**

ISD switch	Color	Function	Setting
1	Brown	ISD Status Sheet enabled	ON
2	Red	Parallel printer on power-up	ON
3	Orange	Reserved	
4	Yellow	Reserved	

Before setting the internal ISD switches, you need:

- slotted screwdriver 1/4"
- This information about your host:
  - — Character Bit: 7 bit or 8 bit
  - — Stop Bit: 1 stop bit or 2 stop bits
  - — Parity: odd, even or none
  - — Protocol: Printer Ready or XON/XOFF
  - — Baud rate

Setting the internal switchbanks on the 280 ISD

Setting the 280 ISD internal switchbanks Serial Model	Remove the plate on the bottom of the ISD Set the two 8-lever switchbanks, Input A and serial (printer) out. Replace the plate. Remove the top cover. Set the three 8-lever switchbanks, Input B, Input C and Input D. Set the one 4-lever switchbank, 280 ISD status sheet and printer priority. Reinstall the top cover.
Setting the 280 ISD internal switchbanks Parallel Model	Remove the plate on the bottom of the ISD Set the two 8-lever switchbanks, Input A and serial (printer) out. Replace the plate. Remove the top cover. Set the one 4-lever switchbank, 280 ISD status sheet and printer priority. Reinstall the top cover.

Two switchbanks are located beneath the removable plate on the bottom of the ISD. On the serial model, three more switches are located together inside the ISD. On both models, another switchbank is also located inside the ISD.

Step-by-step instructions follow for setting the internal switchbanks. Which internal switches are set depends on the 280 ISD model.

— Serial Model follow steps 1-11.

— Parallel model follow steps 1-7 and 9-11.

Caution: Do not connect the 280 ISD to your host or the Model 50 before you have set the appropriate switches. Do not leave the ISD plugged into an electrical unit while setting the switches.

1. Open the carton containing the ISD and remove the output cable which sits on top of the 280. The ISD is packed in a transparent plastic bag. Carefully remove the ISD from the carton and remove the plastic transparent bag. Save the carton and packing until you have the ISD working properly.
2. Turn the ISD upside down and carefully rest it on its top.
3. Using the slotted 1/4" screwdriver, remove one of the screws from the plate located in the center and towards the back of the unit. Then, slide the plate so the two switchbanks are accessible. See Figure 6-12 and Figure 6-13.

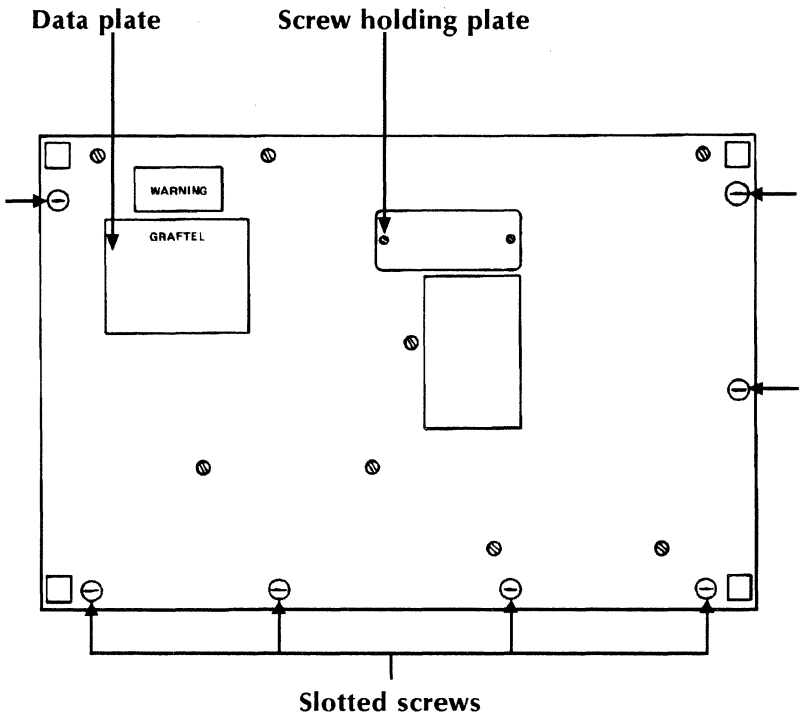


Figure 6-12 **Bottom of ISD unit**

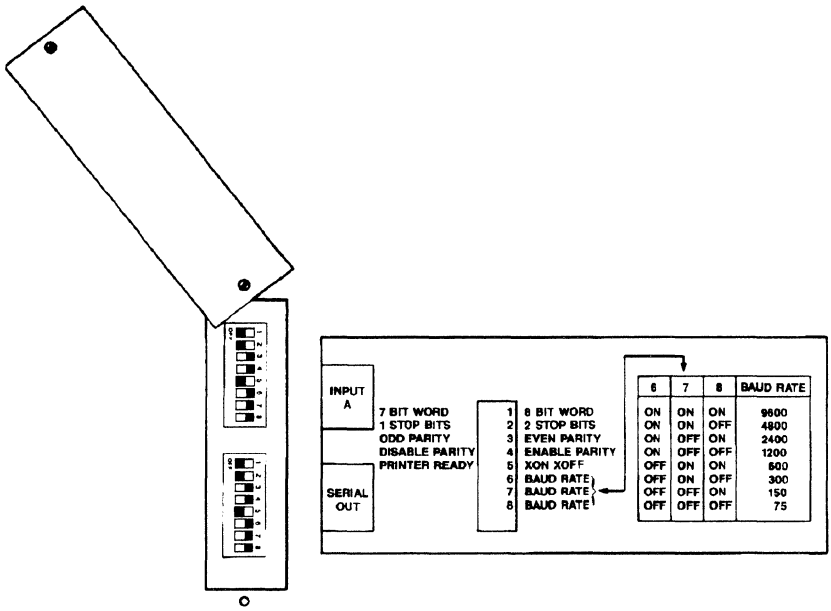


Figure 6-13 **Switchbank plate on the bottom of ISD**

The switchbank labelled **INPUT A** sets the switches telling the ISD how the information from Host A is coming into the ISD. The switches are set by flipping the switch to either the on or off position. The off position, located closest to the back of the unit, is marked on each switchbank. The switches are moved from **off** to **on** using a ballpoint pen, a mechanical pencil, a letter opener, or some other pointed instrument.

The switchbank labelled Serial Out sets the switches telling the ISD how the Model 50 is expected to receive the data from the 280 ISD through the serial port.

Each switch of the 8-lever switchbank controls the same function. See Table 6-7 which explains where each switchbank is located, what each switchbank controls, and if it is for the serial and parallel models or just the serial model.

Table 6-7 **Switchbank controls**

Switchbank	Located	Controls	Model
Input A	Bottom of ISD	How information from Host A is sent to ISD.	serial and parallel
Serial Out	Bottom of ISD	How information is sent to the Model 50 through the serial port from the ISD.	serial and parallel
Input B	Inside unit	How information from Host B is sent to ISD.	serial
Input C	Inside unit	How information from Host C is sent to ISD.	serial
Input D	Inside unit	How information from Host D is sent to ISD.	serial
Printer priority/ status sheet	Inside unit	Enables or disables status sheet and determines parallel/serial printer priority.	serial and parallel

Table 6-8 explains each switch function.

Table 6-8 **8-lever switchbank function**

ISD switch	Color	Function	Setting
Switch 1	Brown	Sets the data bits:	
		7-bit Data	OFF
		8-bit Data	ON
Switch 2	Red	Sets the number of stop bits:	
		1 Stop Bit	OFF
		2 Stop Bits	ON
Switch 3	Orange	Sets parity to odd or even:	
		Odd	OFF
		Even	ON
Switch 4	Yellow	Sets parity to disable or enable:	
		Disable	OFF
		Enable	ON
Switch 5	Green	Sets the protocol:	
		Printer Ready	OFF
		XON/OFF	ON
Switch 6 Switch 7 Switch 8	Blue Purple Gray	Sets the baud rate (in bits per second)	
		9600 — 6 ON, 7 ON, 8 ON	
		4800 — 6 ON, 7 ON, 8 OFF	
		2400 — 6 ON, 7 OFF, 8 ON	
		1200 — 6 ON, 7 OFF, 8 OFF	
		600 — 6 OFF, 7 ON, 8 ON	
		300 — 6 OFF, 7 ON, 8 OFF	
		150 — 6 OFF, 7 OFF, 8 ON	
		75 — 6 OFF, 7 OFF, 8 OFF	

4. Set the switchbanks for **INPUT A** and Serial Out.
5. Replace the screw on the plate.
6. Remove the seven slotted screws and washers on the bottom of the ISD. Gently turn the ISD right-side up with the back of the unit closest to you.

7. Gently lift the top of the ISD only far enough to expose the insides of the unit. Place the top down in such a way as not to dislodge the cable and plug attached to the front and lid of the unit. If the plug is dislodged, it can be attached again by gently pressing the two units together.

Parallel model: Skip to step 9, the setting of the switchbank controlling printer default and ISD status sheet.

In the serial model, the three eight-lever switchbanks are located side-by-side at the back of the unit. Figure 6-14 shows where the switches are located and to which input they relate. The right most switchbank sets the parameters for **INPUT B**, the middle switchbank for **INPUT C** and the left most bank for **INPUT D**.

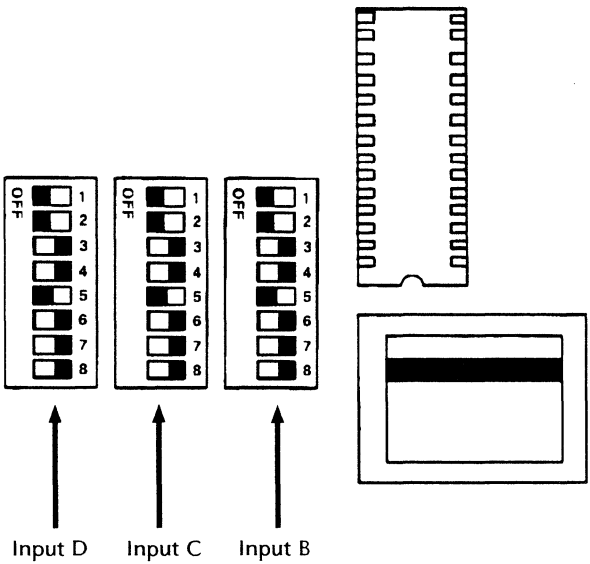


Figure 6-14 **Internal ISD 8-lever switchbanks**

8. Set the switchbanks. Refer to Table 6-8 for the listing of what each switch controls.

The four-lever switchbank located near the front of the unit on the right-hand side (see Figure 6-15) controls the status sheet and default printer priority.

Table 6-9 **Four-lever switchbank function**

ISD switch	Color	Function	Setting
Switch 1	Brown	Controls printing of the ISD status sheet:	
		Enables ISD status sheet	ON
		Disables ISD status sheet	OFF
Switch 2	Red	Sets Printer Priority:	
		Parallel Output	ON
		Serial Output	OFF
Switch 3	Orange	Reserved	
Switch 4	Yellow	Reserved	

9. Set the switchbanks. Refer to Table 6-9 for the listing of what each switch controls.

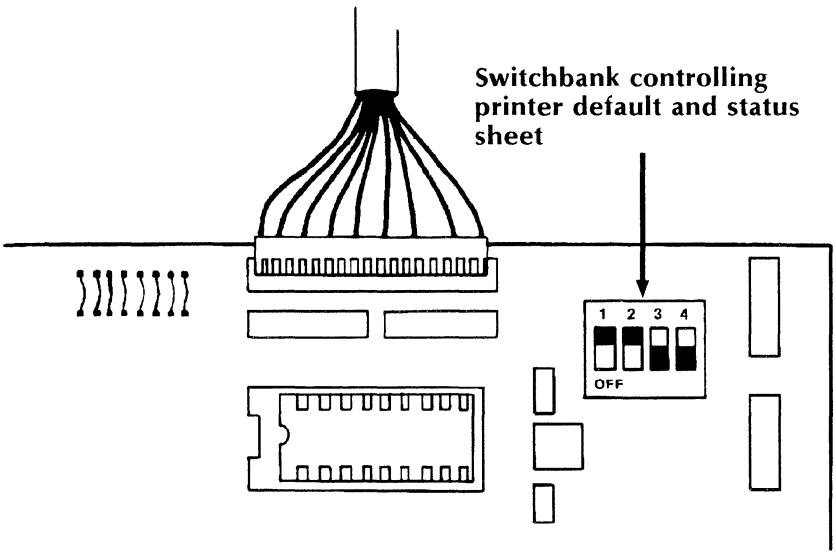


Figure 6-15 **Four-lever switchbank**

10. When all the switches have been set, place the top cover carefully back in place.

11. Turn the ISD over and reinsert the seven slotted screws and washers. Be careful to line up the holes which makes replacing the screws easier.

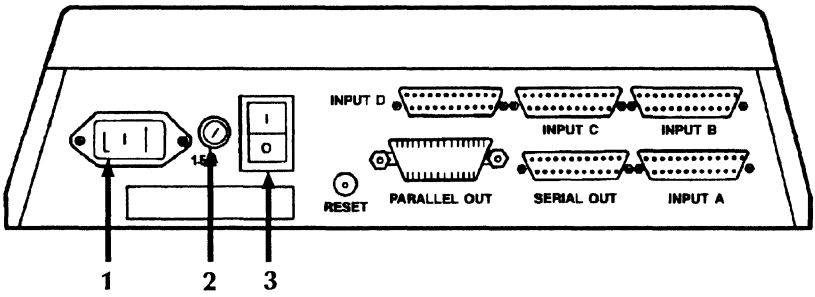
Connecting input cables—host to ISD

Connecting the cables	Connect the cable(s) from the host(s) to the 280 ISD Connect the cable(s) from the 280 ISD to the printer(s) **Note:** The *280 Interface Sharing Device User Guide* contains the input cable pin outs.

You also need to connect input cables from the host to the ISD, output cables (not provided) connecting the ISD to the printer, and a power cable connecting the ISD to a 115 VAC outlet.

Serial model

1. To connect a serial host, locate the female interface cable connector on the back of the 280 ISD labeled **INPUT A**. See Figure 6-16. Attach one end of the interface cable to the interface connector and tighten the two slotted screws located on either side of the male interface connector.



1 Power cord outlet
2 Fuse
3 Power switch

Figure 6-16 **Back of serial ISD with four serial inputs**

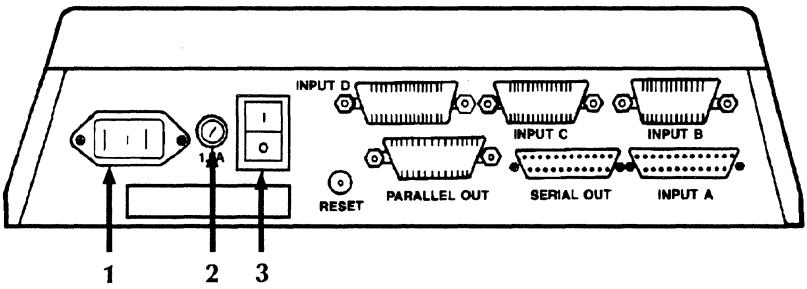
2. Locate the printer interface cable connector on the back of the host. Attach the other end of the interface cable to the host interface cable connector and tighten the two slotted screws located on either side of the interface connector.

Note: If you are connecting to a serial communication port wired as DTE (Data Terminal Equipment), you need a null modem between the ISD and the host.

3. Repeat steps 1 and 2 to connect the other three serial hosts to the female interface connectors labeled **INPUT B**, **INPUT C**, and **INPUT D**.

Parallel model

1. To connect a serial host, locate the female interface cable connector on the back of the 280 ISD labeled **INPUT A**. See figure 6-16. Attach one end of the interface cable to the interface connector and tighten the two slotted screws located on either side of the male interface connector.



1 Power cord outlet
2 Fuse
3 Power switch

Figure 6-17 **Back of parallel ISD with three parallel inputs, one serial input**

2. Locate the printer interface cable connector on the back of the host. Attach the other end of the interface cable to the host interface cable connector and tighten the two slotted screws located on either side of the interface connector.

Note: If you are connecting to a serial communication port wired as DTE (Data Terminal Equipment), you need a null modem between the ISD and the host.

3. To connect a parallel host, locate the interface cable connector on the back of the 280 ISD labeled **INPUT B**. See Figure 6-17. Attach one end of the interface cable to the interface cable connector and flip the wire bails in toward the cable.

4. Locate the printer interface cable connector on the back of the host. Attach the other end of the interface cable connector and flip the wire bails in toward the cable.

5. Repeat steps 3 and 4 to connect the other two parallel hosts to the interface connectors labeled **INPUT C** and **INPUT D**.

Connecting output cables—ISD to serial printer

1. Locate the female connector on the back of the ISD labeled **SERIAL OUT**. See Figure 6-16 and Figure 6-17. Attach one end of the interface cable (not provided) to the ISD's female connector and tighten the screws on either side of the male interface connector.
2. Locate the female connector on the back of Model 50. Attach the other end of the interface cable to the Model 50 female connector and tighten the two slotted screws on either side of the male connector.

Note: The *280 Interface Sharing Device User Guide* contains the output cable pin outs.

Connecting output cable—ISD to parallel printer

1. Locate the female interface cable connector on the back of the ISD labeled **PARALLEL OUT**. See Figure 6-16 and Figure 6-17. Attach one end of the interface cable (Xerox provided) to the interface cable connector and flip the wire bails in toward the cable.
2. Locate the host interface cable connector on the back of the Model 50. Attach the other end of the interface cable to the Model 50 interface cable connector and flip the wire bails in toward the cable.

Connecting the power cord

Connecting the power cord	Connect the power cord from the 280 ISD to an electrical outlet

1. The 280 ISD should have its own dedicated electrical circuit. The electrical requirements are 115 VAC for USA/Canada, and 220-240 VAC for Europe.
2. Connect the female connector of the power cord into the power input on the back of the ISD. Refer to Figure 6-16 and Figure 6-17.
3. Plug the male connector of the power cord into an electrical outlet.

Powering on the 280 ISD

Power up	Power on the Model 50 printer, then power on the 280 ISD Wait for the Model 50 configuration sheet and the 280 ISD status sheet

1. If the Model 50 is not already on, turn it on. Wait until the **READY** indicator appears on the control panel before proceeding.

   The Model 50 should always be turned on before turning on the 280 ISD.
2. Once the **READY** indicator appears in the control panel of the Model 50, turn the ISD on. The ISD is turned on by pressing the black power toggle switch located on the back of the ISD. See Figure 6-16 and Figure 6-17.

When the ISD is powered on it goes through a series of internal tests. As each test is carried out, one or more of the front panel lamps is illuminated. If a test fails, the lamp continues to flash. If the lamp continues to flash, turn off the ISD and call your Xerox Service Representative.

When the 280 ISD passes all the internal tests, an ISD status sheet is printed, unless the status sheet has been suppressed by setting switch 1 on the four-lever switchbank. See Figure 6-18 and Figure 6-19 for examples of the serial and parallel status sheets.

The 280 ISD and the Model 50 should not be powered off until all the data has been sent from the buffer to the printer. Powering off the 280 ISD causes it to lose all the memory in the buffer. The 280 ISD and the Model 50 may be powered off in any order.

Note: The **Reset** button, Figure 6-16 and Figure 6-17, has the same effect as turning the machine off and then on. All the memory in the buffer is lost.

```
                    STATUS SHEET

A=9600,E,7,1,PRN/RDY    B=9600,E,7,1,PRN/RDY    C=9600,E,7,1,PRN/RDY
D=9600,E,7,1,PRN/RDY    O=9600,E,7,1,PRN/RDY    V1.1  REV5  PC2

458736 Bytes Available

FONTS:

   Resident:
      Titan10iso-P
      XCP14iso-L
```

Figure 6-18 **280 ISD serial status sheet**

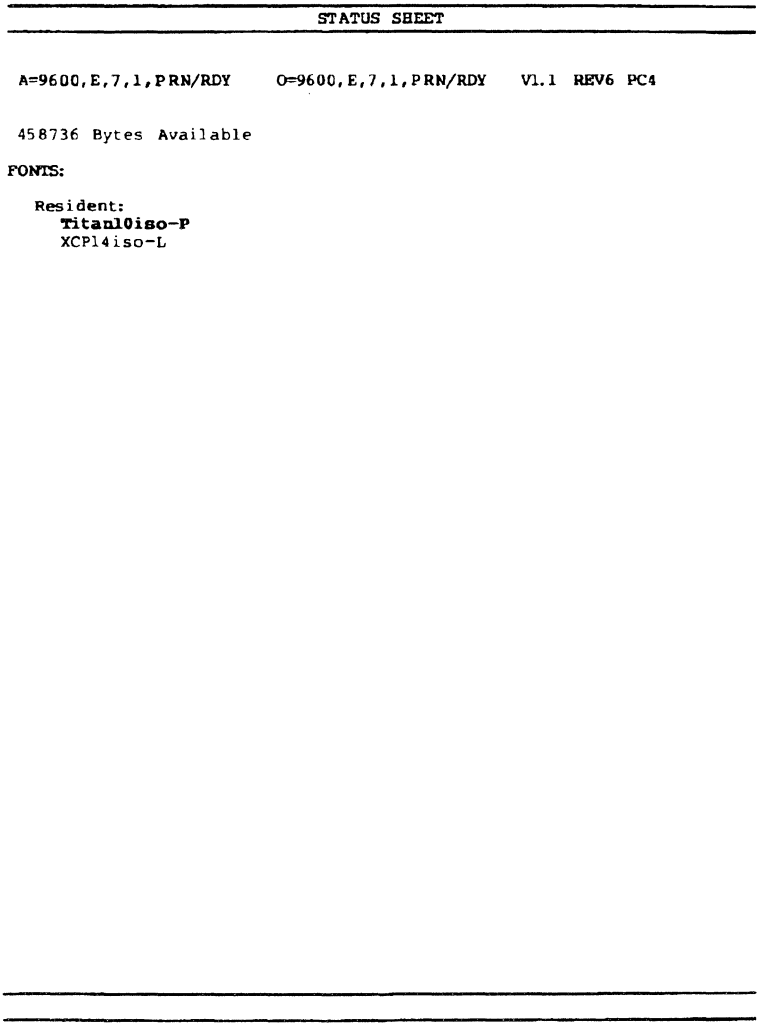


Figure 6-19 **280 ISD parallel status sheet**

280 ISD status sheet

The 280 ISD status sheet is similar to the Model 50 status sheet. For a complete explanation of a Model 50 status sheet see appendix A of this manual.

The 280 ISD serial status sheet (Figure 6-18) shows the switch settings for the four serial hosts and the serial printer. The letters **A**, **B**, **C**, and **D** on the 280 ISD serial status sheet refer to the switch settings for each host input. Table 6-10 explains what information is contained on the ISD status sheet. The number **0**, refers to the switch settings for the serial printer. On the status sheet, the information is separated by commas.

The 280 ISD parallel status sheet (Figure 6-19) shows the switch settings for the one serial host and the serial printer.

Table 6-10 **280 ISD status sheet settings**

Code	What does it mean
A=	Indicates the input host. O indicates the serial output printer.
9600	Baud rate. May be 75, 150, 300, 600, 1200, 2400, 4800 or 9600.
E	Parity. May be Even, Odd or No Parity.
7	Character bits. May be 7 or 8.
1	Stop bits. May be 1 or 2.
PRN/RDY	May be PRN/RDY (hardware protocol) or XON/OFF (software protocol)

On the 280 ISD status sheet, following the information given for the switch settings of the serial printer, the software revision level is given.

Problem solving

If there appears to be no power.	Verify that: • the Model 50 and the 280 ISD are plugged into wall outlets • the wall outlets work properly • the Model 50 power switch is on • the 280 ISD power switch is on • the Model 50 and the 280 ISD are turned on in the proper order (Model 50 first, then the 280 ISD)
If the Model 50 configuration sheet is not being printed	Verify that : • the Model 50 is powered on • the top cover is closed • the Model 50 is in the on-line mode • there is paper in the paper tray
If the 280 ISD status sheet is not being printed	Verify that: • the 280 ISD is powered on • the 280 ISD is connected properly to the host and the printer • check Model 50 configuration sheet to be sure switches on the Model 50 configuration cartridge are set properly. (For a complete explanation of the Model 50 configuration sheet and cartridge refer to the *Operating the Model 50* section of this manual.)

If a job sent to the Model 50 through the 280 ISD is not being printed or is garbled	• Check to make sure that all the cables are connected properly to the host and the printer • make sure the Model 50 is on-line and the host is operational • check the Model 50 configuration sheet to be sure switches on the Model 50 configuration cartridge are set properly. (For a complete explanation of the Model 50 configuration sheet and cartridge see the *Operating the Model 50* section of this manual.)
If the 280 ISD status sheet is not like the sample	Call your Xerox service representative

5. Page Sequencer

Installation and operating instructions are included with the delivery of the Page Sequencer. Please replace this sheet with the instructions.

A. Configuration and status sheets

Configuration sheet contents

The configuration sheet contains many different areas that provide you with much information. On page A-3 is a configuration sheet with the different areas sectioned out.

There are two types of configuration sheets. One is produced at power on. The other is produced after a soft reset. The example shown in Figure A-1 is a combination of both sheets since many of the areas are the same.

The different areas are:

1. Two parallel lines are produced during a soft reset only as a result of the printer passing internal diagnostics.
2. The revision level of software in the printer. The number "3.__" also distinguishes the Model 50 from other models of the Xerox 4045 Laser CP.
3. Area A—Interface switch settings.

   Area B—Emulation selected.

   Area C—User optional switch settings.
4. Hex # and switchbank diagrams—The hex # gives the hexadecimal value of the switch positions in each switchbank, wherein an on-position is a 1 and an off-position is a 0. Thus, four two-character values are given. The first represents the switch positions in Switchbank A, the second, those in Switchbank B, and so on. The switch positions are also represented pictorially.

For example, note in Figure A-1, that the first hexadecimal value printed is X'04'. The binary value of X'04' is 00000100, where here represents switch positions of OFF, OFF, OFF, OFF, OFF, ON, OFF, aand OFF, as illustrated in the switchbank diagram. The hexadecimal values of the switch setting are useful to a remote diagnostician, who may not be able to actually see the switchbanks.

5. Area A—Memory available for font/graphics download.

   Font Bytes Available—The number of bytes of memory available for storage of fonts.

   System Bytes Available—The number of bytes of memory available for storage of graphic data.

6. Area A—Resident fonts (stored in firmware), with the default font selected indicated in bold letters.

   Area B—Fonts stored in font cartridges in the font cartridges. The number preceding the font is the slot in the font compartment the font is located.

7. Area A—Used to check print quality.

   Area B—Produced during a soft reset only. This area is for use by service personnel.

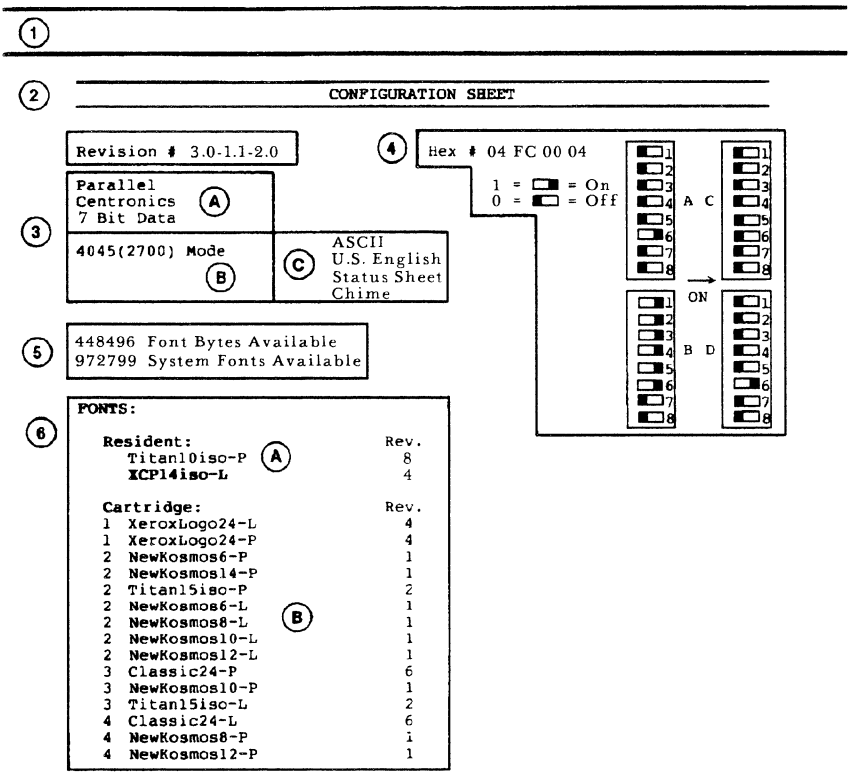


Figure A-1 **Configuration sheet**

Status sheet

When requested through an instruction in the data stream, or an error detected during power up or the printing of a job, a status sheet is produced. The status sheet like the configuration sheet contains many areas of information. Figure A-2 is an example of a status sheet with the different areas sectioned out. The different areas are:

1. This is an area for user created messages. See *Creating documents* for details on how to insert messages.
2. If an error was detected a number indicating the type of error is printed to the right of the colon (:). Refer to the *Reference Manual* for the definition of these codes.
3. Memory available.

   Font Bytes Available—The number of bytes of memory available for storage of fonts.

   System Bytes Available—The number of bytes of memory available for storage of graphic data.
4. Area A—Resident fonts. The default font selected is shown in bold letters.

   Area B—Fonts stored in cartridges.

   Area C—Fonts that have been downloaded from the host and stored in memory in the printer.

STATUS SHEET

(1) Letter to Extended Systems

(2)
1 JOB ERRORS:
Page 1 : 49

(3) 2 Pages 375120 Font Bytes Available
899422 System Bytes Available

FONTS:

(4a)
Resident:
Titan10iso-P
XCP14iso-L

Downloaded: Bytes
VintageLS12-P 13056
YourSig24-P 9118
XEROX24Logo-P 3384
C3901-P 16812
BoldPS-P 13994

(4b)
Cartridge:
NewKosmos6-P
NewKosmos8-P
NewKosmos10-P
NewKosmos12-P
NewKosmos14-P
Elite12-P
Elite12-L
XeroxLogo24-P
LetterGothic12-L
Classic10-P
Classic10B-P
Classic12-P
Classic12B-P

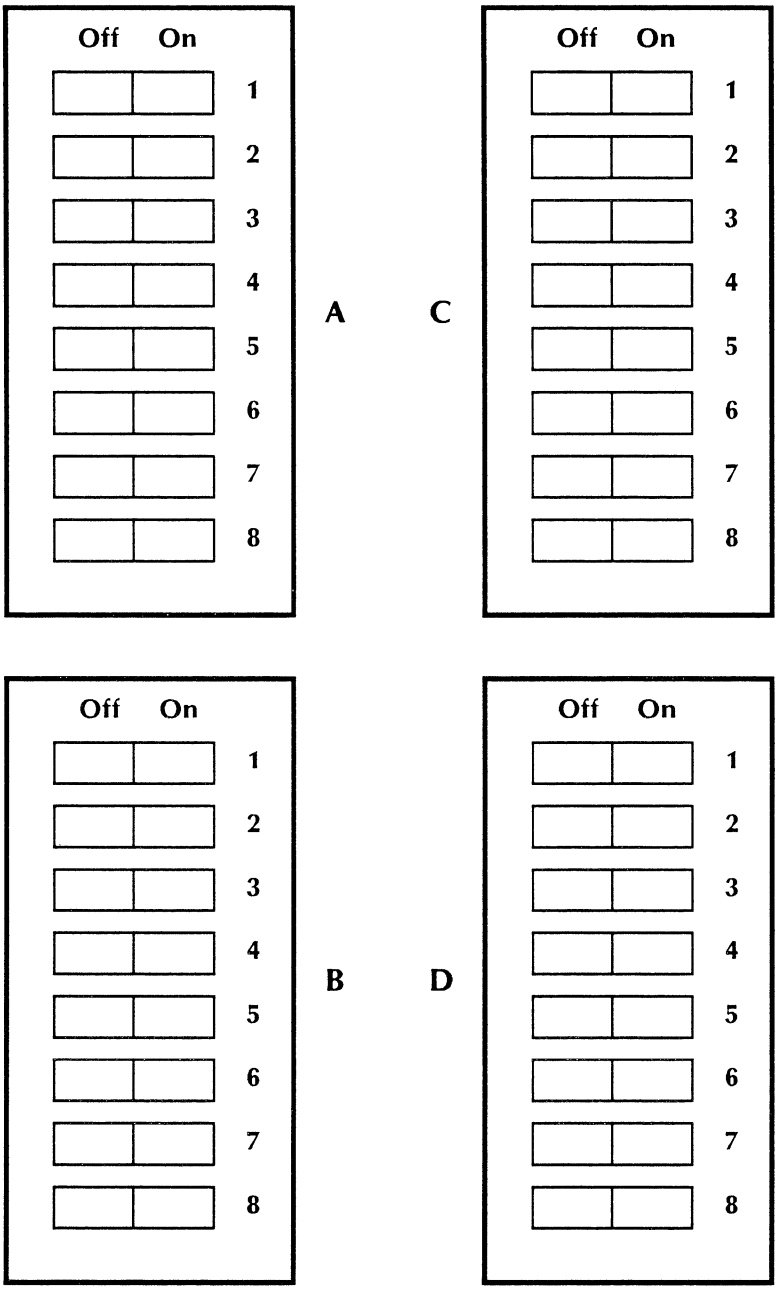
(4c)
Downloaded: Bytes
Kosmos6-L 5228
Kosmos6-P 6796
Kosmos8-L 7396
Kosmos8-P 8682
Kosmos10-L 10318
Kosmos10-P 12344
Kosmos12-L 13626
Kosmos12-P 16312
Kosmos12B-L 14270
Kosmos12B-P 17298
Kosmos14-P 20784
Kosmos14-L 18456
Classic6iso-P 13280
Classic8iso-P 18904
Classic8iso-L 13144
Classic10iso-L 17978
Classic10iso-P 25676
Classic12iso-P 34906
Classic14iso-P 46854
OCRA10-L 11970
OCRA10-P 11862
Spokesman10-P 17478
LetterGothic15iso-P 18470

Figure A-2 **Status sheet**

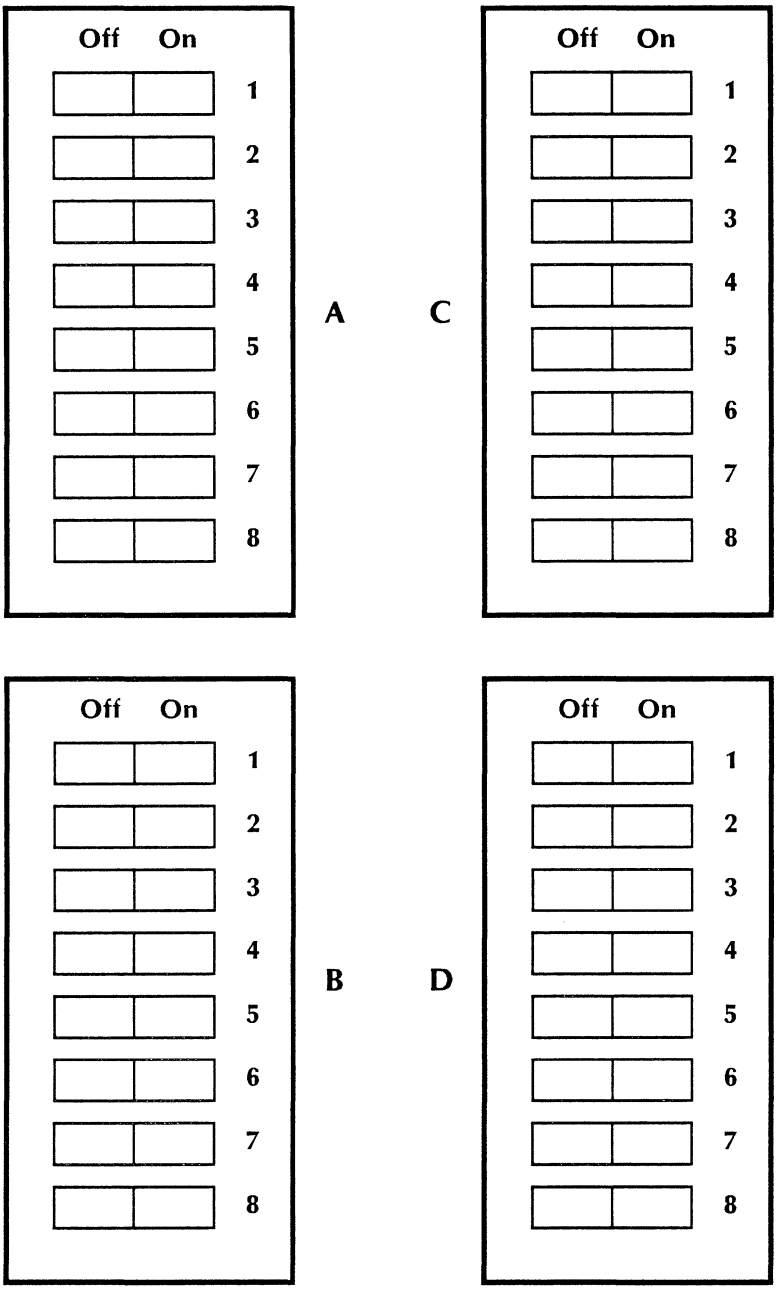
B. Configuration cartridge checklists

The following pages contain several Configuration cartridge checklists for use when selecting the configuration cartridge settings for your Model 50. See *Configuration cartridge switch settings* in the *Operating the Model 50* section of this manual for information on selecting settings.

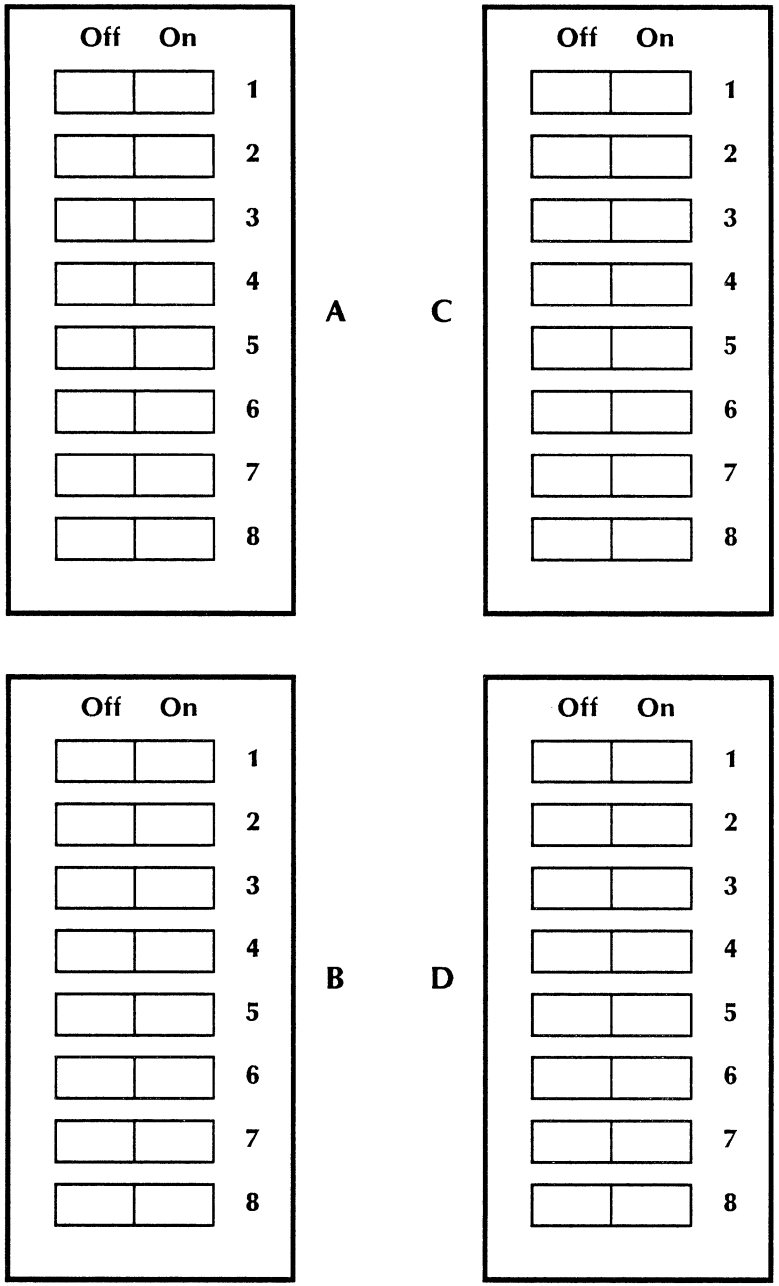
Configuration cartridge checklist



Configuration cartridge checklist



Configuration cartridge checklist



C. Status sheet error codes

	Code-Hex	Meaning
Job control commands	02	A job control command with an unrecognized JOB TYPE field was encountered and ignored.
Font load jobs:	11	Unrecognizable font(s) in font load.
	12	The Font Load exceeded maximum dynamic memory.
	18	Font downloading not completed satisfactorily.
	19	Unloading a resident default font.
Print jobs:	20	Unknown Escape sequence encountered and ignored.
	21	Too much processing time makes the page too complex to print.
	22	Line extends beyond right margin. Possible data loss.
	25	Possible duplicate page.
	26	More than nine errors detected in this document.
	28	An error was detected in a table download, the download was abandoned or may have produced unexpected results.

	Code-Hex	Meaning
Font usage:	29	Illegal parameter in command.
	40	A Font ID Assignment referenced a non-existent font. The assignment was ignored.
	41	A font of different orientation from that in which the page was being composed was invoked.
	42	An undeclared Font ID was invoked and ignored.
	45	Font ID Assignment syntax error: Font ID field greater than 9. The font assignment was ignored.
	49	Cartridge checksum error.
Graphic load jobs:	80	Graphic could not be printed beyond the physical limits of the page.
	81	The S_x value was not an even multiple of 8; S_x was rounded down.
	82	Graphic truncated due to error in document formation.
	83	The sixel-encoded data contained a repetition value in excess of 32,767. All data was ignored.
	84	The Repeat Window command was received when no graphic window was defined.
	85	Only a portion of the graphic data was loaded due to insufficient storage area.

D. Conversion tables

Margins and horizontal tabs

1/60-inch units to 12-pitch characters

5	=	1 character
10	=	2 characrers
15	=	3 characters
20	=	4 characters
25	=	5 characters
30	=	6 characters (.5 inch)
35	=	7 characters
40	=	8 characters
45	=	9 characters
50	=	10 characters
55	=	11 characters
60	=	12 characters (1 inch)
90	=	18 characters (1.5 inches)
120	=	24 characters (2 inches)
180	=	36 characters (3 inches)
240	=	48 characters (4 inches)
300	=	60 characters (5 inches)
360	=	72 characters (6 inches)
420	=	84 characters (7 inches)
450	=	90 characters (7.5 inches)
480	=	96 characters (8 inches)
510	=	102 characters (8.5 inches)
540	=	108 characters (9 inches)
600	=	120 characters (10 inches)
660	=	132 characters (11 inches)
720	=	144 characters (12 inches)
780	=	156 characters (13 inches)
840	=	168 characters (14 inches)

1/60-inch units to 10-pitch characters

6	=	1 character
12	=	2 characters
18	=	3 characters
24	=	4 characters
30	=	5 characters (.5 inch)
36	=	6 characters
42	=	7 characters
48	=	8 characters
54	=	9 characters
60	=	10 characters (1 inch)
90	=	15 characters (1.5 inches)
120	=	20 characters (2 inches)
180	=	30 characters (3 inches)
240	=	40 characters (4 inches)
300	=	50 characters (5 inches)
360	=	60 characters (6 inches)
420	=	70 characters (7 inches)
450	=	75 characters (7.5 inches)
480	=	80 characters (8 inches)
510	=	85 characters (8.5 inches)
540	=	90 characters (9 inches)
600	=	100 characters (10 inches)
660	=	110 characters (11 inches)
720	=	120 characters (12 inches)
780	=	130 characters (13 inches)
840	=	140 characters (14 inches)

Vertical tabs

1/60-inch units to lines (at 6 lines per inch)

10	=	1 line
20	=	2 lines
30	=	3 lines (.5 inch)
40	=	4 lines
50	=	5 lines
60	=	6 lines (1 inch)
90	=	9 lines (1.5 inches)
120	=	12 lines (2 inches)
180	=	18 lines (3 inches)
240	=	24 lines (4 inches)
300	=	30 lines (5 inches)
360	=	36 lines (6 inches)
420	=	42 lines (7 inches)
450	=	45 lines (7.5 inches)
480	=	48 lines (8 inches)
510	=	51 lines (8.5 inches)
540	=	54 lines (9 inches)
600	=	60 lines (10 inches)
660	=	66 lines (11 inches)
720	=	72 lines (12 inches)
780	=	78 lines (13 inches)
840	=	84 lines (14 inches)

Dots

1/300-inch units to 12-pitch characters

25	=	1 character
50	=	2 characters
75	=	3 characters
100	=	4 characters
125	=	5 characters
150	=	6 characters (.5 inch)
175	=	7 characters
200	=	8 characters
225	=	9 characters
250	=	10 characters
275	=	11 characters
300	=	12 characters (1 inch)
450	=	18 characters (1.5 inches)
600	=	24 characters (2 inches)
900	=	36 characters (3 inches)
1200	=	48 characters (4 inches)
1500	=	60 characters (5 inches)
1800	=	72 characters (6 inches)
2100	=	84 characters (7 inches)
2250	=	90 characters (7.5 inches)
2400	=	96 characters (8 inches)
2550	=	102 characters (8.5 inches)
2700	=	108 characters (9 inches)
3000	=	120 characters (10 inches)
3300	=	132 characters (11 inches)
3600	=	144 characters (12 inches)
3900	=	156 characters (13 inches)
4200	=	168 charactrers (14 inches)

1/300-inch units to 10-pitch characters

30	=	1 character
60	=	2 characters
90	=	3 characters
120	=	4 characters
150	=	5 characters (.5 inch)
180	=	6 characters
210	=	7 characters
240	=	8 characters
270	=	9 characters
300	=	10 characters (1 inch)
450	=	15 characters (1.5 inches)
600	=	20 characters (2 inches)
900	=	30 characters (3 inches)
1200	=	40 characters (4 inches)
1500	=	50 characters (5 inches)
1800	=	60 characters (6 inches)
2100	=	70 characters (7 inches)
2250	=	75 characters (7.5 inches)
2400	=	80 characters (8 inches)
2550	=	85 characters (8.5 inches)
2700	=	90 characters (9 inches)
3000	=	100 characters (10 inches)
3300	=	110 characters (11 inches)
3600	=	120 characters (12 inches)
3900	=	130 characters (13 inches)
4200	=	140 characters (14 inches)

E. Command summary (2700 mode)

Command	Format	Description	Page #
Absolute Text Placement	*a X,Y<LE>	Places text at exact point on page	3-74
Bolding Start	*b	Begins bolding of characters	3-47
Bolding Stop	*p	Ends bolding	3-48
Centering	*q	Centers line of text between left and right margin	3-48
Character Table	*+T,<LE>	Allows you to create own character translation table	3-95
Data Monitor	*+D	Prints designated file in hexadecimal	3-101
Drawing Lines			
Landscape			
Vertical	*x<X,Y,L,T><LE>	Draws line on page	3-66
Horizontal	*y<X,Y,L,T><LE>		
Portrait			
Vertical	*y<X,Y,L,T><LE>		3-69
Horizontal	*x<X,Y,L,T><LE>		

Command	Format	Description	Page #
Font Add Selected	*+A<LE>	Loads additional downloaded fonts after fonts initially loaded	3-23
Font Change	*<n>	Specifies font ID number in text	3-22
Font Delete Selected	*+B<LE>	Deletes specified fonts from memory	3-24
Font ID Assignment	*+<n><fontname><LE>	Sets up numbered index for fonts	3-20
Font Load	*+F<LE>	Loads downloaded fonts from host into Model 50 memory	3-16
Font Unload	*+U<LE>	Clears all downloaded fonts from memory	3-23
Graphic Window	*gw<M>;<X,Y,A,B><LE> Graphic Data	Creates logos, graphs pictures on printer	3-79
Repeat Window	*gr<M>;<X,Y><LE>	Prints last-stored graphic window on current page	3-82
Horizontal Tab Clear	*d	Clears all horizontal tabs	3-61
Horizontal Tab Set	*t $<n_1,n_{160}>$<LE>	Sets horizontal tabs	3-62
Justification Start	*j	Spaces text evenly between left and right margin	3-45
Justification Stop	*k	Stops justification	3-46
Language	*zl<c>	Changes character set	3-93

Command	Format	Description	Page #
Line Spacing	*i<n>	Changes spacing between lines	3-49
Margins	*m<S,T,B,L,R><LE>	Sets margins on page	3-36
Top Margin	*zn<T><LE>	Sets top margin independently after using Margins Command	3-40
Bottom Margin	*zq<B><LE>	Sets bottom margin independently after using Margins Command	3-40
Left Margin	*zk<L><LE>	Sets left margin independently after using Margins Command	3-41
Right Margin	*zm<R><LE>	Sets right margin independently after using Margins Command	3-41
Merge Page Load	*+M<LE>	Stores constant page in memory	3-85
Merge Page Unload	*+V<LE>	Deletes constant page from memory	3-87
Merge Start	*ze	Merges constant page with subsequent pages	3-86
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Superscript Start	*h	Places characters above line	3-50
Underline Start	*u	Underlines all subsequent characters	3-46
Underline Stop	*w	Stops underlining	3-46
Units—1/60	*zg	Returns from 1/300th to 1/60th for margin settings and tabs	3-42
Units—1/300	*zf	Changes from 1/60th to 1/300th for margin settings and tabs	3-42
UDK	=UDK=<c>	Establishes escape sequence	3-11
Vertical Tab Clear	*e	Clears all vertical tabs	3-97
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VFU Stops Clear	*zw	Explained in *Reference Manual*	
VFU Stops Set	*zv<n><v_1,v_7><LE>	Explained in *Reference Manual*	

F. Defaults values

4045 (Xerox 2700) mode

Margins **US Paper 8½ x 11 inches/215 x 279 mm**

Orientation		Top	Bttm	Left	Right
Landscape	(inches)	0.40	0.40	0.66	0.66
	(mm)	10.20	10.20	16.80	16.80
Portrait	(inches)	0.66	0.66	0.40	0.40
	(mm)	16.80	16.80	10.20	10.20

A4 paper 210 x 297 mm/8.27 x 11.69 inches

Orientation		Top	Bttm	Left	Right
Landscape	(mm)	7.20	7.20	14.20	14.20
	(inches)	0.28	0.28	0.56	0.56
Portrait	(mm)	13.00	13.00	20.30	20.30
	(inches)	0.51	0.51	0.80	0.80

Horizontal tab Every 6th character from left margin

Vertical tab Every one inch (25.4 mm)

Line spacing Single

Configuration sheet Yes, at power up

Default font Resident portrait font

630 Diablo mode

Horizontal margins	Left = 0.0 inch Right = 8.50 inch (21.295 cm)
Vertical margins	Top = 0 Bottom = 0
Horizontal tab	If configuration cartridge switch D:4 is on, 8 HMI, else, 0.
Vertical tab	None
Line spacing	Single
Configuration sheet	Yes, at power up
Default font	Resident portrait font

G. Special applications

Printing the sequence =UDK=

There may be a situation where you wish to print the =UDK= in text. For example, if you were developing instructions on how to enter codes for the Model 50 printer.

Normally the Model 50 printer does not print the character sequence =UDK= because the printer recognizes these characters as a command and it redefines the UDK rather than printing out the characters.

However, there is a technique you can use to make the characters =UDK= unrecognizable as a command to the Model 50. Then you can print the command successfully.

When a Font Change command references the font that is currently being used for printing, the Model 50 continues using the font and the printed result looks as if there was no such command.

For example, if the Model 50 is currently printing with font 4, placing a Font Change instuction of *4 into the command enables it to print as follows:

Entered: =*4UDK= **Prints:** =UDK=

Duplicate font names

The Model 50 allows the host to load a downloaded font that has the same name as a font already present. When the duplicated font is specified later for printing a job, the Model 50 checks first the resident, then

cartridge, then downloaded fonts until the correct font is found. If two downloaded fonts of the same name are loaded into the system, it uses the font loaded first for printing the job.

Ignored characters and commands in 4045 mode

Among the host system characters that the Model 50 printer in the 4045 mode ignores are the following:

- Backspace, cancel, delete and null
- Word-processor command keys (such as for bolding, underlining, centering, etc.)
- Word-processor format blocks

For further information on the characters and features that are ignored or accepted by the Model 50 printer, see the *Reference Manual.*

Using 2700 files on Model 50

The Model 50 printer in the 4045 (Xerox 2700) mode works like the Xerox 2700 printer with few exceptions. If you have files formatted for the Xerox 2700, the following information will insure that your files run properly on the Model 50 printer.

The Model 50 printer emulates the Xerox 2700 II printer with the following exceptions:

- No bisync communication capability.
- Model 50 has only one output paper tray and no output paper offset. (Paper select and offset commands are ignored.)
- Any ESC code (X'1B') encountered during font downloading will terminate the job.
- No switch selectable margin defaults.
- Model 50 printer senses paper size and adjusts default margins accordingly.

- <CR> or <LE> terminates Subscripting/Superscripting command.
- Model 50 printer does not accept 2700 II font cartridges.

Downloading Xerox 2700 fonts

The Model 50 printer accepts 2700 downloaded fonts. Switch D:8 on the configuration cartridge gives you the option of rotating the 2700 downloaded fonts.

If switch D:8 is ON, the Model 50 printer rotates the orientation of the fonts. For example, landscape fonts are loaded in the portrait orientation and are listed as -P on the status sheet.

If switch D:8 is OFF, the Model 50 printer downloads fonts without changing orientation. For example, portrait fonts are loaded as portrait.

Table G-8 further explains the D:8 switch on the configuration cartridge.

Table G-11 **Switch D:8 on configuration cartridge**

Switch D:8	2700 Downloaded fonts
ON	Fonts rotated Portrait loaded as landscape Landscape loaded as portrait
OFF	Fonts not rotated Portrait loaded as portrait Landscape loaded as landscape

Glossary

absolute placement — Specification of the exact place where a line of text is to start.

ascender — The tall part of letters, such as "b," "d," "h," etc., that extends above the main body.

baseline — An imaginary line on which all letters without descenders (particularly capitals) appear to rest.

bit — Binary digit. The smallest unit of information in a digital computer. It can take on the value of 0 or the value of 1.

byte — Unit of eight consecutive bits.

carriage return — A control character that (unless set to be interpreted as a line end) causes the printer to begin printing at the left margin of the current line.

centering — Automatically positioning a line of text so that it is equidistant from the defined right and left margins.

character cell — The digitized space containing a single character of a font set.

character set — The collection of characters contained in a font.

constant page — Page created by the user and stored in the printer for merging with subsequent pages.

coordinates A set of numbers specified in dots (300 per inch) used to determine the exact position of the start of a line of text, graphic, or a horizontal or vertical line on a page.

defaults Settings on the printer used for formatting a print job when no instructions are given.

descender The part of a character that extends below the baseline.

diagnostics Software designed to verify the operation of the system hardware and to identify failures.

document One or more recorded or printed pages forming a logical whole.

dot A unit of measurement representing 1/300 inch (also referred to as "spots").

downloaded fonts These are fonts loaded from the host system into the dynamic memory of the printer. Downloaded fonts must be reloaded each time the system is powered up.

electronic typesetting The capability of the printer to perform typesetting functions using its own electronics.

embedded commands Control codes within the text of a file.

escape character A control key available on some host key-boards that is used to signal the printer of the beginning of a command sequence.

fixed pitch A font set in which every character cell has the same width.

font Set of similarly styled, sized, and oriented printed characters which consist of capital letters, lowercase letters, figures, and punctuation (i.e., typeface or type style).

form feed A control character that causes the printer to print the current page.

hardware Physical (i.e., electronic, electrical, or mechanical) elements of a system as opposed to the software routines and programs created to control the system operation.

horizontal tab A horizontal skip in spacing across a page to a predesignated location.

host The source of data or the input device for the printer.

interface Place of interaction between two systems.

internal fonts Permanent landscape (XCP14iso-L) font and portrait (Titan10iso-P) font which reside in the Model 50 printer and are not affected when the printer is powered up or down.

job A sequence of operations performed to result in a desired product or service.

justification Equal distribution of the spacing between words in a line used to adjust a line of text so that the first character begins at the left margin and the last character ends at the right margin.

landscape Page orientation where the longer edges of the sheet are at the top and bottom.

line feed A control character that causes the printer to begin printing in the current character position of the next line.

loading fonts Supplying a system with digitized font information that can be used in printing documents.

logo A symbol or sign used as a trademark or as representative of entire name. May be digitized for use in the printer.

merging Superimposition of a page from memory over a page of data currently being received.

memory The space in a device where information is kept; or the ability of a device to keep information until needed.

orientation Choice of printing portrait (vertically) or landscape (horizontally). The font selection controls printing orientation in the printer.

overstriking Superimposition of a selected character over every character that follows the instruction.

page ends A instruction (e.g., form feed) to terminate the current page.

pitch The numbers of characters to the inch. (10 pitch has 10 characters per inch; 12 pitch, 12 characters per inch, etc.)

point Traditionally type is measured in points. 12-point type is roughly equal in size to 10-pitch characters.

point size A typographical term describing the height of a character set from the top of its capitals to the bottom of its descenders in points.

portrait Page orientation where the longer edges of the sheet are at the sides.

print To produce a paper document using data received from a host.

proportional spacing Refers to a font in which each character cell is of a different width, according to the size and shape of the letter.

relative placement Positioning of a line of text at a point described in relationship to the current position on the page.

sans serif Type without serifs.

serif The "flicks" or small horizontal endings, originally formed with the pen, which define a character as a "serif typeface."

storage Space in memory where information is held for later use.

subscript Any letter or symbol printed below characters immediately previous in the same line.

superscript Any letter or symbol printed above characters immediately previous in the same line.

syntax Construction or format of an instruction or command.

truncate To shorten or abbreviate by cutting off the end.

typeface The appearance of a set of characters which gives it an identity.

typeface family Matching fonts in different weights and their related italics.

vertical spacing The number of lines per inch.

vertical tab A vertical skip in spacing down a page to a predesignated location.

xerographic engine Component of the printer that develops the image, transfers it to paper, and fuses it for output as hard copy.

Acronyms and abbreviations

ASCII American (National) Standard Code for Information Interchange; ASCII/7 is 7-bit ASCII and ASCII/8 is 8-bit ASCII

BSC Binary Synchronous Communications

DSC Data Stream Compatible (IBM)

EBCDIC Extended Binary Coded Decimal Interchange Code

ESC Escape

ISO	International Standards Organization
ISO 6937	International Standards Organization Character Set Number 6937
RAM	Random Access (read and write) Memory
SNA	Systems Network Architecture (IBM)
UDK	User-Defined Key
VFU	Vertical Format Unit

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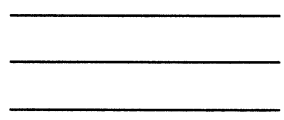

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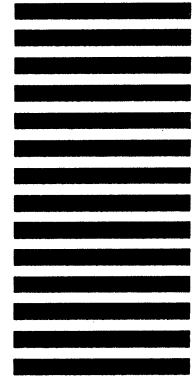

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