
4045 LASER CP USER MANUAL

XEROX

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Xerox Corporation
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WARNING: This equipment generates, uses and can radiate radio frequency energy and, if not installed in accordance with this manual, may cause interference to radio 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. This equipment generates and uses radio frequency energy, and if not installed and used properly in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. 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) 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 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 2.0 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 #
<i>4045 Laser CP Reference Manual</i>	600P87279
<i>4045 Document Creation Reference Card</i>	610P50749
<i>4045 Laser CP Installation Planning Guide</i>	600P87284
<i>274 Interface Controller User Guide</i>	600P86478
<i>275 Interface Controller User Guide</i>	600P86732
<i>280 Interface Sharing Device User Guide</i>	600P87285

Introduction

- *Quality*
- *Productivity*
- *Ease of Use*

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

The Laser CP gives your documents a high quality, professional appearance by combining high resolution character formation (300 x 300 spots per inch) 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 allows it to fit easily into your office, and when equipped with the optional copier feature, the 4045 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 4045 Laser CP manuals*, tells you where to look to find out exactly what you want to know.

How to use your 4045 Laser CP manuals

The 4045 documentation is divided into two books. Book 1 contains basic operating instructions (*Operating the 4045*) 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 4045* is one section and *Creating Documents* is another section. Within sections of the manual are chapters. For example, chapter 2 of the *Operating the 4045* section is "Installing the 4045," while chapter 2 of the *Creating Documents* section is "Background Information."

You should read the *Operating the 4045* portion of this manual thoroughly before printing any documents. It tells you the following:

- How to set up your 4045 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 4045 printer
- How to solve problems encountered in setting up and running the 4045 printer

The *Creating Documents* portion of the *4045 User Manual* tells you how to prepare your document for printing. It tells you the following:

- 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 4045 commands

The *Reference Manual* includes more technical information about the 4045 printer. It tells you the following:

- How to format graphic data
- How to format a character translation table
- How to configure your 4045 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 4045 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 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.

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What this section contains

The *Operating the 4045* section of this manual is divided into the following chapters:

1. Introduction. This chapter explains how to select a location for your 4045, electrical requirements, and how to move the 4045.

2. Installing the 4045. This chapter explains how to install your new Xerox 4045.

3. Printing Data From a Host System. This chapter tells you how to connect the 4045 Electronic Printer to, and make it compatible with, your host system. This chapter also explains how to install, change, and select fonts (typestyles).

4. Options and Accessories. This chapter describes the copier option and how to operate it.

5. Maintenance and Problem Solving. This chapter explains how to care for your 4045. It also tells you what to do when the 4045 does not do what you expect.

6. Supplies. This chapter contains a list of supplies available and how to order them.

The following appendices contain more information about operating the 4045:

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

Appendix B: Configuration cartridge checklists for use with your 4045.

Getting started

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

- Paper—Information about paper and how to order it is included in Chapter 6—*Supplies*.
- A Host Interface Cable—a cable with the proper connectors for connecting your host system to the 4045. 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 4045:

- 1 bottle dry imager
- Output tray
- Power cord
- 4045 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 4045'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.

4045 specifications

The following diagram is a top view of the 4045, and gives the space requirements. The measurements, in Figure 2-1, are shown in both inches and centimeters. These are the minimum dimensions required for operating and maintaining the 4045 and should be considered when selecting a location.

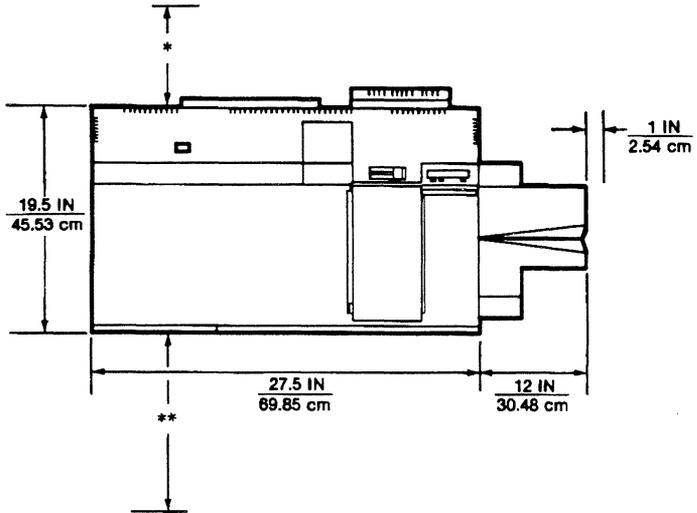


Figure 2-1 Space requirements - top view

- * This dimension is 5 inches/12.7 cm when the 4045 is stationary, or 3 inches/7.62 cm when the 4045 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 29 inches/73.6 cm of clearance above the top of the printer. The 4045 is 11 inches/27.94 cm high so you will need 40 inches/101.6 cm total clearance above the surface upon which it rests.

The 4045 weighs approximately 140 pounds (63.5 kg). Therefore, you will need to place it on a surface that can support that weight.

Note: It is important that the surface on which the 4045 is placed is **level**.

A printer stand, discussed in the *Options and accessories* chapter, specifically designed for the 4045, is available from Xerox. This stand also provides a storage area for storing supplies and can be ordered from your Xerox Sales Representative or local Xerox office.

Electrical requirements

Listed below are the 4045'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 4045's power cord in the U.S. and Canada.

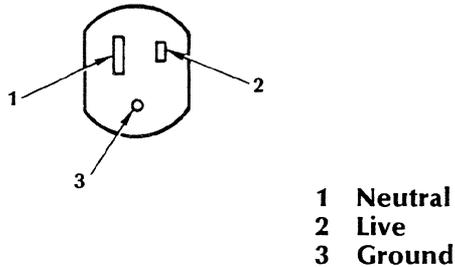


Figure 2-2 **Receptacle**

Extension cords cannot be used. Although three-wire-to-two-wire adapter plugs can be used, 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 4045 operates best in the following environment:

Temperature: 15 to 32 degrees Centigrade (60 to 90 degrees Fahrenheit)

Humidity: 15% to 65% relative humidity

Moving the 4045

Once you have selected a location that meets the 4045's space, electrical, and environmental requirements, you are ready to place the 4045 in its permanent location.

The 4045 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 4045, always lift the 4045 from underneath, as near to the four supports as possible.

WARNING: The 4045 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 4045

Introduction

The 4045 is easy to install. This chapter contains information you need to install your new Xerox 4045 Laser CP. Before you begin to set up your new 4045, take a few minutes to familiarize yourself with its main components. On the next page is a front view of the 4045.

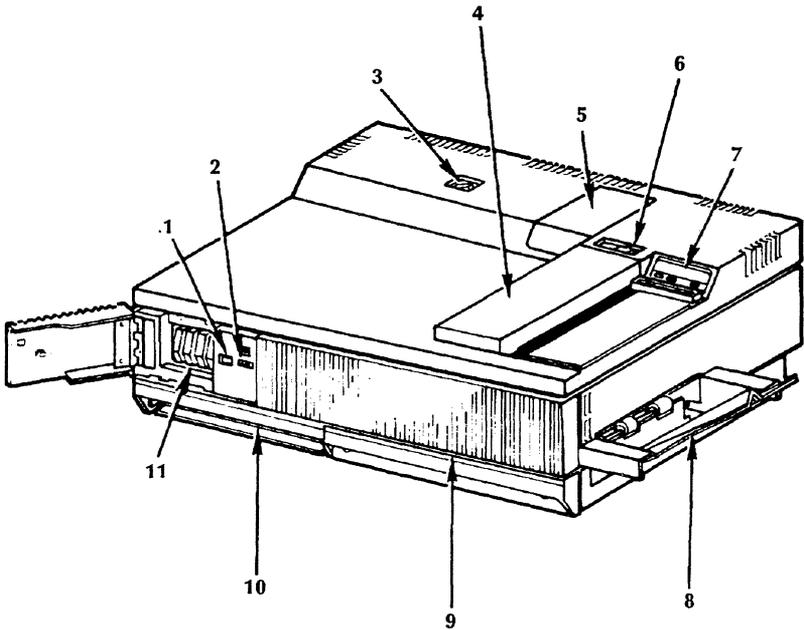


Figure 2-3 Front view

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. **Document Feeder Option**—If you have ordered the 4045 with the optional copier, it can copy single pages, one copy at a time, in sizes up to 8.50" x 14.00".
5. **Dry Imager Hopper**—Dry Imager is added here.
6. **Copy Lighter/Darker Control** (with document feeder 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 4045.
8. **Output Tray**—Printed output is delivered here; holds up to 100 sheets of 8.50" x 11.00", 8.27" x 11.69" (A4), and 8.50" x 14.00" 20-pound (80 G.S.M.) bond paper.
9. **Paper Path Access Handle**—Used to open the printer cover.
10. **Paper Tray**—Holds up to 250 sheets of 8.50" x 11.00", 8.27" x 11.69" (A4), and 8.50" x 14.00" 20-pound (80 G.S.M.) 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 4045 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 4045.

The control panel also contains a two-digit LED (Light Emitting Diode) display that provides codes about the status of the printer. Chapter 5, *Maintenance and Problem Solving* contains a listing of these codes and their meaning.

Figure 2-5 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

READY*
 PLEASE WAIT*
 Add Paper *
 Add Dry Imager *
 Clear Paper Path *
 Clear Page Sequencer *
 Last Page
 Off Line

Switches

Last Page
 Reset
 Off-line

Additionally, a chime can be set to alert you when the 4045 requires attention or turned off for silent operation (discussed in Chapter 3, *Printing Data From a Host System*).

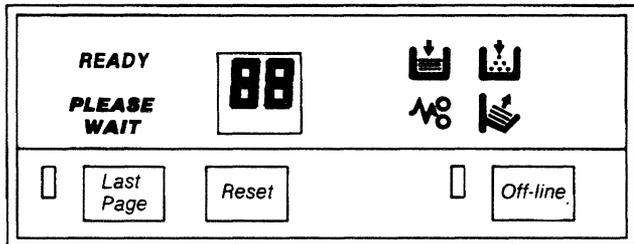


Figure 2-4 Control panel

Flip cards

Included with the delivery of your new 4045 are flip cards. After reading this manual, the flip cards will provide a handy, quick reference for the operation of the 4045.

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.

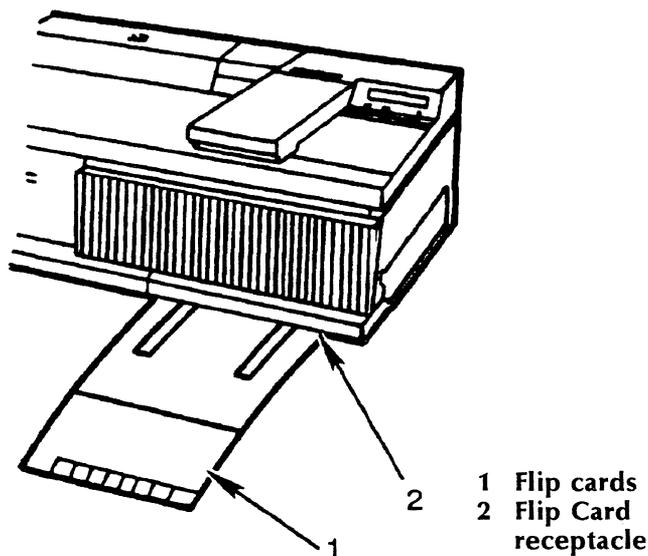


Figure 2-5 Flip card receptacle

2. Slide the cards all the way in toward the printer.

Connecting the 4045 to a power source

To connect the 4045 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.

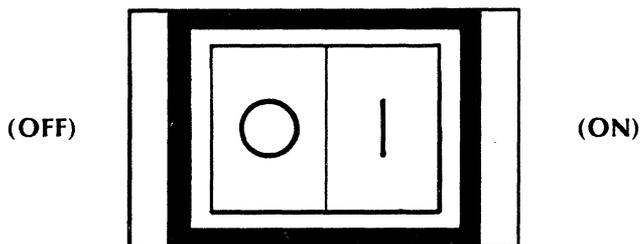
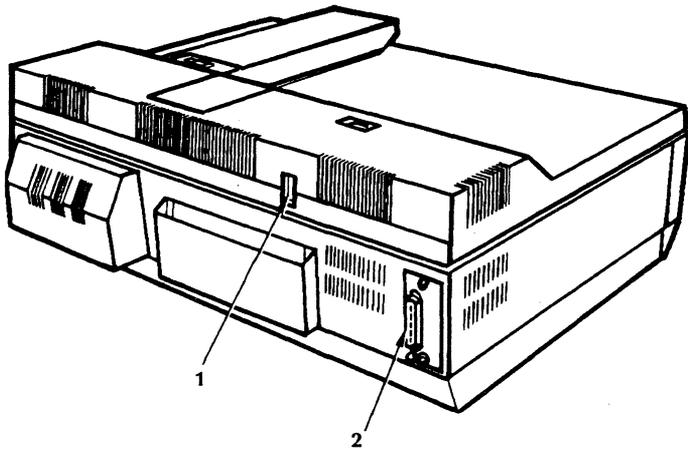


Figure 2-6 Power switch

2. Plug the female connector of the power cable into the A.C. power input connector located on the rear panel of the 4045.



- 1 Power Input
- 2 Host Interface Cable Connector

Figure 2-7 A.C. power input connector

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

Installing the output tray

The output tray holds up to 100 sheets of 20-pound (80 G.S.M.) bond paper. The output tray is attached to the outer right side of the 4045. To install the tray, you must first open the printer cover.

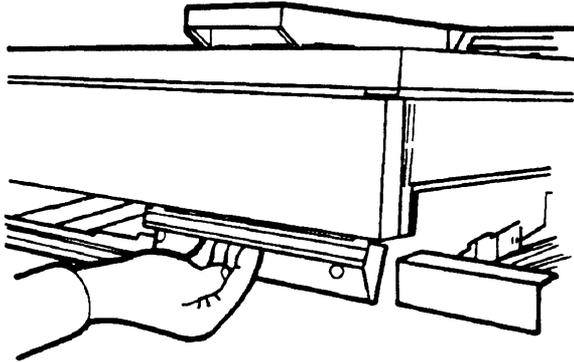


Figure 2-8 **Opening the printer**

1. Open the printer cover by pulling the paper path access handle (located at the bottom right front of the 4045) and lifting the entire cover up to open.
2. Place the tray's rear pin into the hole in the 4045's metal plate.

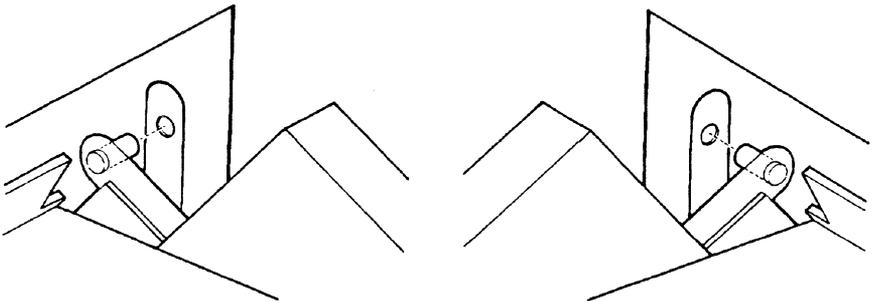


Figure 2-9 **Installing the rear & front pins**

3. Guide the tray's front pin into the hole in the 4045's side metal plate by applying gentle pressure on the output tray. The output tray bends to allow the pin to slide past the metal plate.
4. Release the tray. The tray springs back to its original shape.
5. Push down on the front corners of the cover to close the printer cover.

Paper tray

The 4045 prints on plain paper in weights of 16 to 24 pound/60 to 90 G.S.M. (grams per square meter). It also prints on colored paper, pre-drilled paper, letter-head paper, preprinted forms, labels, xerographic envelopes, and transparencies. The paper tray, located on the bottom left front of the 4045, holds up to 250 sheets of 20-pound bond/80 G.S.M. paper.

A paper size guide in the paper tray adjusts to either of two positions to allow for 8.50" x 11.00" or 8.50" x 14.00" 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 (210 x 297 mm).

Paper may be loaded or changed when the 4045 is **not printing** or when the ADD PAPER symbol on the control panel is lit.

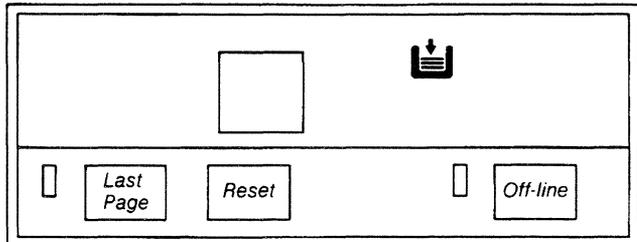


Figure 2-10 Add paper symbol

Loading paper

CAUTION: It is important you open the printer cover of the 4045 before removing and reinserting the paper tray. This is only necessary during the installation of the 4045. Once the 4045 has printed the first page, it no longer will be necessary for the top cover to be raised when removing/reinserting the paper tray.

Instructions for loading paper are provided on the following page. (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 4045 is printing.

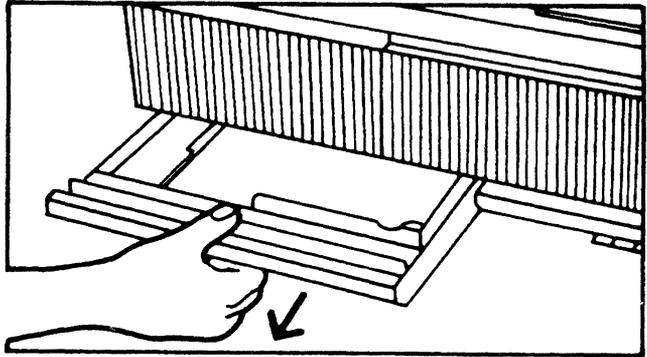


Figure 2-11 Removing the paper tray

2. Adjust the paper size guide in the paper tray to correspond to the paper size you are loading.
3. Load the paper by first sliding it against the paper size guide.

CAUTION: Do not load paper above the white line.

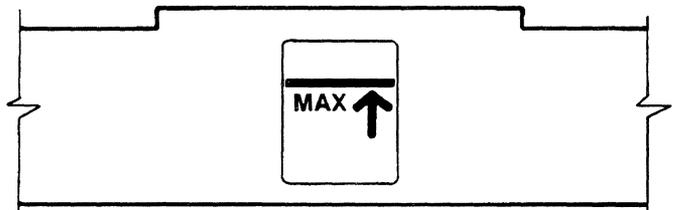


Figure 2-12 White line

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

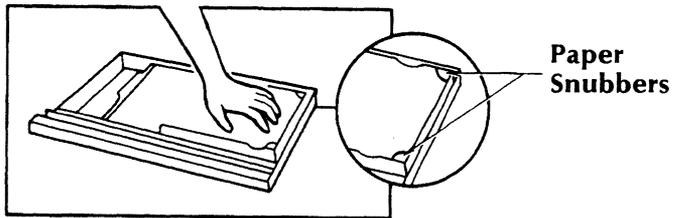


Figure 2-13 **Pushing paper below snubbers**

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

Loading special papers

The following are instructions for loading labels, transparencies, predrilled, letterhead paper, and preprinted forms.

Pre-drilled paper

Place pre-drilled paper into the paper tray with the holes to the rear of the tray.

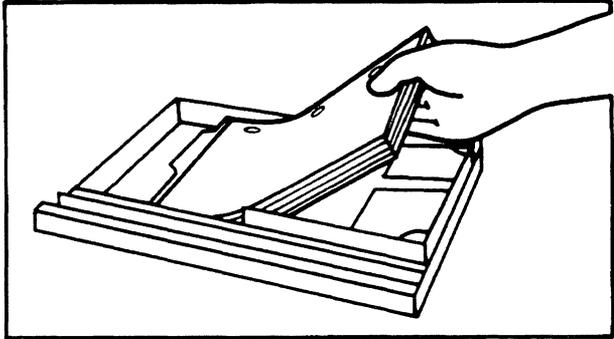


Figure 2-14 Loading pre-drilled paper

Labels

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

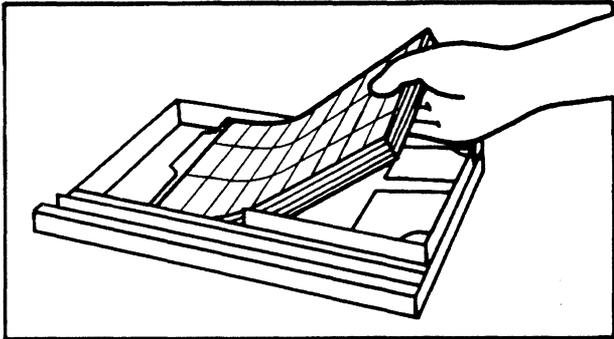


Figure 2-15 Loading labels.

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.

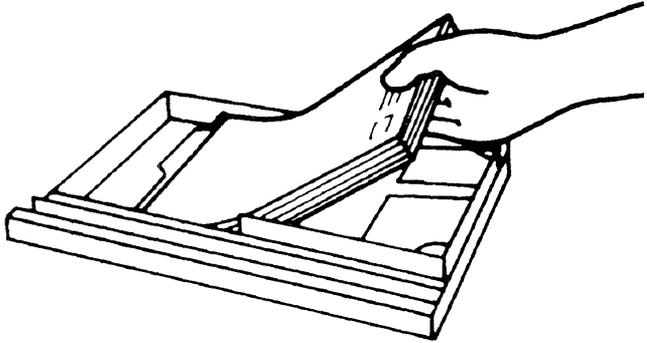


Figure 2-16 **Loading letterhead or preprinted paper**

Transparencies

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

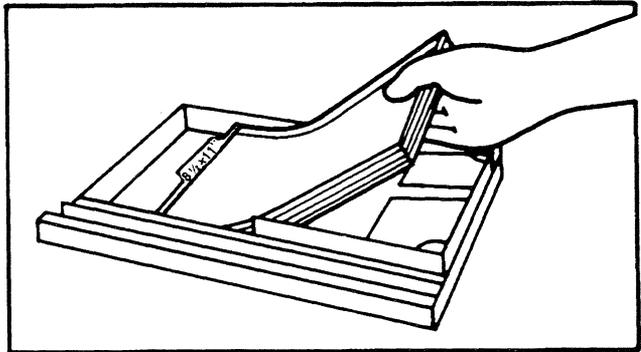


Figure 2-17 **Loading transparencies**

Dry imager (toner)

Dry imager, often referred to as “toner” or “dry ink,” is the black powder which forms the image on the printed page. The 4045 is shipped with a quantity of dry imager in the dry imager housing.

During operation the 4045 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 4045 automatically stops printing and goes off-line (Off-line lamp lights) and the **ADD DRY IMAGER** symbol appears on the control panel (fig. 2-18). When the 4045 is off-line (Off-line lamp lights), the 4045 cannot receive data.

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

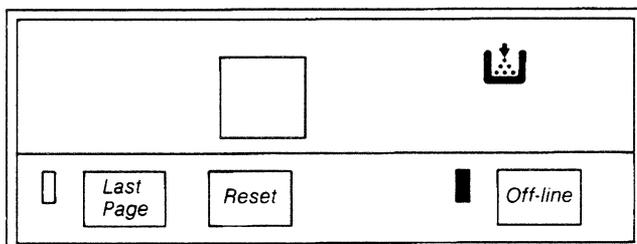


Figure 2-18 Add dry imager symbol.

Adding dry imager

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 for adding dry imager that are printed on the dry imager hopper cover on the 4045.
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 4045 on and off

Each time your 4045 is powered on, it runs a series of diagnostic tests that check the printer. At the end of the test a status sheet is automatically printed.

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

The following occurs when the 4045 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 status sheet is automatically delivered to the output tray.

Note: The Off-line indicator remains lit while the 4045 prints a status sheet.

The following is an example of a status sheet. The status sheet is further explained in Appendix A.

STATUS SHEET

1 Pages 458736 Bytes Available

FONTS:

Resident:

Titan10iso-P
XCP14iso-L

Cartridge:

Downloaded:

Figure 2-19 Status sheet

After the status sheet is printed, the 4045 automatically goes on-line (Off-line indicator turns off). The READY lamp turns on to indicate that the 4045 is ready to receive data from the host system.

Note: Should the 4045 fail to produce a status sheet within one minute:

1. Record the code appearing in the display on the control panel.

2. Go to Chapter 5 *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 4045 off, then on again.
 - Wait 60 seconds for the 4045 to produce the status sheet.
 - If the 4045 again fails to produce a status sheet, record the code and call Xerox Service. Instructions for placing a service call are in Chapter 5 *Maintenance and Problem Solving*.

3. Printing data from a host system

Introduction

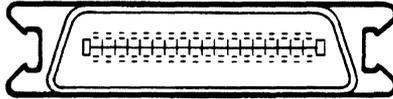
The 4045 prints data received from a variety of host systems by changing the way it communicates to match the host. You can make the 4045 compatible with your host system by:

- Connecting the 4045 to the host system with the proper interface cable.
- Setting switches on the configuration cartridge to match your host system's requirements.

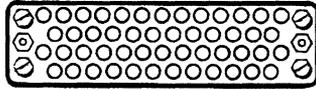
This chapter discusses how to ensure compatibility between the 4045 and your host system.

Connecting the 4045 to the host system

Each host system has specific interface requirements. The 4045 supports standard RS-232-C, Centronics 100, and Dataproducts 2260 interfaces. Your 4045 was ordered with an interface connector based upon the requirements of your host system.



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DATA PRODUCTS



RS-232

Note: You must provide the cable that connects your 4045 to the host system. If you have questions, contact the manufacturer of the host system.

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)
Shield connector	To the connector conductive case at the 4045; to the frame ground at the data source.
Cable connection	Male connector
See the <i>Reference Manual</i> for information on pin assignments and signals.	

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 host interface cable connector on the rear of the 4045.

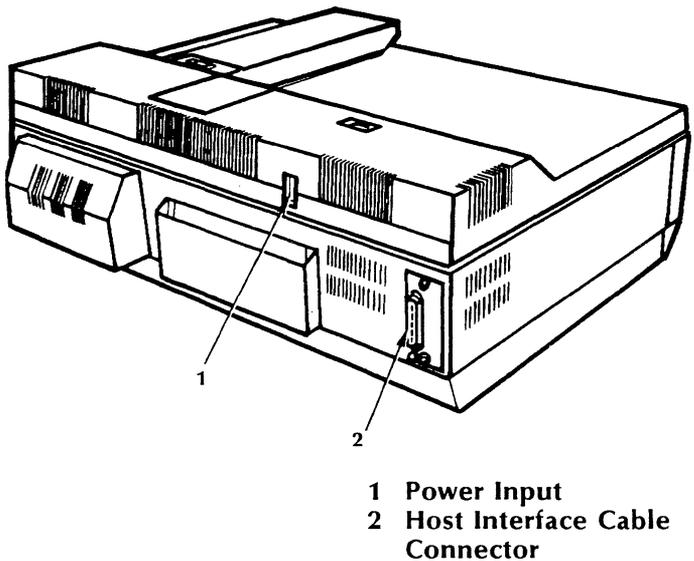


Figure 2-20 Connecting the interface cable

Should the cable not match the host interface cable connector on the 4045, contact your Xerox Sales Representative or local Xerox office.

Configuration sheet

The 4045's configuration is determined by switch settings on the configuration cartridge located in the

font cartridge compartment. You can find out how your 4045 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 4045 to print a configuration sheet. The configuration sheet displays the individual switch settings.

Printing a configuration sheet

As you have learned, the 4045 automatically produces a status sheet when the printer is powered on. You can also request a configuration sheet be printed to determine how the 4045 is currently configured.

1. Press and hold the **Reset** switch.
2. While pressing the Reset switch, press the **Off-line** switch.

A configuration sheet is printed and delivered to the output tray.

CAUTION: Never print a configuration sheet when the 4045 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. This is accomplished by resetting the switches on the configuration cartridge which is located inside the font cartridge compartment.

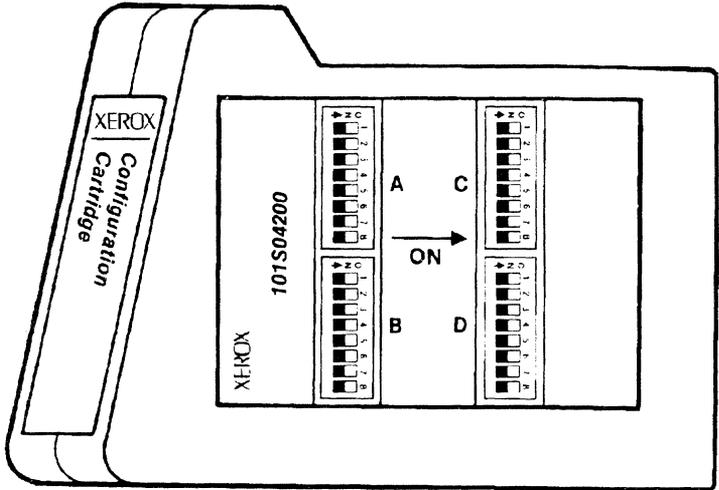


Figure 2-21 Configuration cartridge

The switches on the configuration cartridge enable you to change the settings so your 4045 is compatible with your host system.

Configuration cartridge switch settings

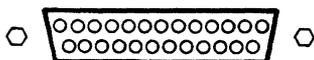
To determine how the switches should be set, a series of switch setting selection questions is provided on the following pages. The questions lead you through the settings that are both specific to your interface and generic to all the interfaces.

Answer all the questions that relate to the type of interface (serial, parallel, or serial and parallel) you will be using. A Configuration Cartridge Checklist Worksheet is provided in Appendix B for you to mark the settings you have selected.

Please refer to the *Reference Manual* for additional information about each switch setting.

SERIAL (ASYNCHRONOUS) INTERFACE

1. Set switch **A:1** to **on** for **serial interface**.



RS-232

Figure 2-22 **Serial (RS-232) connector**

2. Does your host use **XON/XOFF** protocol? If **yes**, set switch **C:1** to **on**.
If **no**, set switch **C:1** to **off**.
3. Does your host use **ETX/ACK** protocol? If **yes**, set switch **C:2** to **on**.
If **no**, set switch **C:2** to **off**.
4. Does your host use **PRINTER READY/DTR** protocol? If **yes**, set switch **C:3** to **on**.
If **no**, set switch **C:3** to **off**.
5. Select the **Baud** rate at which your host transmits data. Set the switches for the rate selected according to the chart.

Baud rate	Switch settings		
	C:4	C:5	C:6
300	Off	Off	On
600	Off	On	Off
1200	Off	On	On
2400	On	Off	Off
4800	On	Off	On
9600	On	On	Off
19.2K	On	On	On

6. Does your host transmit parity bits? If **yes**, set switch **D:2** to **on** and continue with question 7.
If **no**, go to question 8.
7. Select the parity that your host uses. Set switch **D:3** to **on** for **even** parity. Set switch **D:3** to **off** for **odd** parity.

8. Your 4045 operates in either the 4045 (2700) mode or the 630 (Diablo) mode. For the **4045 mode** set switch **A:2** to **off**. For the **630 mode** set switch **A:2** to **on**.

If you selected the 630 mode continue with question 9.

Skip to question 12 if you selected 4045 mode.

9. **630 mode only**. If you want to use **electronic spacing** set switch **D:4** to **on**.

If **not**, set switch **D:4** to **off**.

10. **630 mode only**. Select character spacing.

Spacing	Switch settings	
	D:5	D:6
Proportional	Off	Off
10 characters per inch	Off	On
12 characters per inch	On	Off
15 characters per inch	On	On

11. **630 mode only**. If you want to use **standard horizontal tabs**, set switch **D:7** to **on**.

If **not**, set switch **D:7** to **off**.

12. Select the line ending decision you want.

Line ending	Switch settings	
	A:3	A:4
Line ending decisions off	Off	Off
Auto carriage return on	Off	On
Auto line feed on	On	Off
Auto line ending on	On	On

13. If your host sends **8 bit data**, set switch **A:5** to **on**.

If it sends **7 bit data**, set switch **A:5** to **off**.

14. Set the switches for the character codes your host sends.

Note: If you will be installing the 274 or 275 Interface Controller, switches A:6 and A:7 must be set for EBCDIC.

Character codes	Switch settings	
	A:6	A:7
ISO 6937	Off	Off
EBCDIC	Off	On
ASCII	On	Off
IBM PC	On	On

If you selected EBCDIC, go to question 15.

If not, go to question 16.

15. Having selected EBCDIC in question 14, Set switch **D:4** to **on** for **DSC**, or set switch **D:4** to **off** for **SNA**.
16. Which language do you want the 4045 to be compatible with? (Refer to the reference manual for further details.)

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

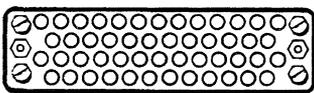
17. Do you want a status sheet printed when errors in jobs occur? If **yes**, set switch **B:5** to **on**.
If **no**, set switch **B:5** to **off**.
18. Do you want the chime to sound when the 4045 requires attention? If **yes**, set switch **B:6** to **on**.
If **no**, set switch **B:6** to **off**.
19. Select the default font.

Font	Switch settings	
	B:7	B:8
Resident portrait font	Off	Off
Resident landscape font	Off	On
First font in cartridge 1	On	Off
First font in cartridge 2	On	On

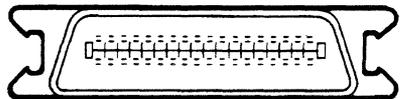
20. Are you using a Custom Translation Cartridge in the 4045? If **yes**, set switch **A:8** to **on**.
If **no**, set switch **A:8** to **off**.
21. Once you have determined the switch settings, set the switches on the configuration cartridge according to the Configuration Cartridge Checklist.

PARALLEL INTERFACES

1. Set switch **A:1** to **off** for **parallel interface**.
2. Your interface is either Centronics or Data-products. A drawing of each connector is shown below. Set switch **D:1** to **on** for **Dataproducts** interface. Set switch **D:1** to **off** for **Centronics** interface.



DATA PRODUCTS



CENTRONICS

Figure 2-23 Dataproducts/Centronics connectors

3. Data from the host is either normal or inverted.
If it is **normal** set switch **D:2** to **off**.
If it is **inverted** set switch **D:2** to **on**.
4. Does your host use the vertical format unit? If it **does**, set switch **D:3** to **on**.
If it **does not**, set switch **D:3** to **off**.
5. Your 4045 operates in either the 4045 (2700) mode or the 630 (Diablo) mode. For the **4045 mode** set switch **A:2** to **off**. For the **630 mode** set switch **A:2** to **on**.
If you selected the 630 mode continue with question 6.
Skip to question 9 if you selected 4045 mode.
6. **630 mode only**. If you want to use **electronic spacing** set switch **D:4** to **on**.
If **not**, set switch **D:4** to **off**.
7. **630 mode only**. Select character spacing.

Spacing	Switch settings	
	D:5	D:6
Proportional	Off	Off
10 characters per inch	Off	On
12 characters per inch	On	Off
15 characters per inch	On	On

8. **630 mode only**. If you want to use **standard horizontal tabs**, set switch **D:7** to **on**.
If **not**, set switch **D:7** to **off**.
9. Select the line ending decision you want.

Line ending	Switch settings	
	A:3	A:4
Line ending decisions off	Off	Off
Auto carriage return on	Off	On
Auto line feed on	On	Off
Auto line ending on	On	On

10. If your host sends **8 bit data**, set switch **A:5** to **on**.
If it sends **7 bit data**, set switch **A:5** to **off**.

11. Set the switches for the character codes your host sends.

Note: If you will be installing the 274 or 275 Interface Controller, switches A:6 and A:7 must be set for EBCDIC.

Character codes	Switch settings	
	A:6	A:7
ISO 6937	Off	Off
EBCDIC	Off	On
ASCII	On	Off
IBM PC	On	On

If you selected EBCDIC, go to question 12.

If not, go to question 13.

12. Having selected EBCDIC in question 11, set switch **D:4** to **on** for **DSC**, or set switch **D:4** to **off** for **SNA**.
13. Which language do you want the 4045 to be compatible with? (Refer to the reference manual for further details.)

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

14. Do you want a status sheet printed if errors in jobs occur? (For additional information on status sheets, see Appendix A.) If **yes**, set switch **B:5** to **on**.

If **no**, set switch **B:5** to **off**.

15. Do you want the chime to sound when the 4045 requires attention? If **yes**, set switch **B:6** to **on**.

If **no**, set switch **B:6** to **off**.

16. Select the default font.

Font	Switch settings	
	B:7	B:8
Resident portrait font	Off	Off
Resident landscape font	Off	On
First font in cartridge 1	On	Off
First font in cartridge 2	On	On

17. Are you using a Custom Translation Cartridge in the 4045? If **yes**, set switch **A:8** to **on**.

If **not**, set switch **A:8** to **off**.

18. Once you have determined the switch settings, set the switches on the configuration cartridge according to the Configuration Cartridge Checklist.

Removing the configuration cartridge

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

1. Press the **Off-line** button to take the printer offline. The Offline indicator lights.
2. Wait until printer stops printing.
3. Open the font compartment outer and inner doors (on the left front panel of the 4045).

As you can see in Figure 2-24, 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.

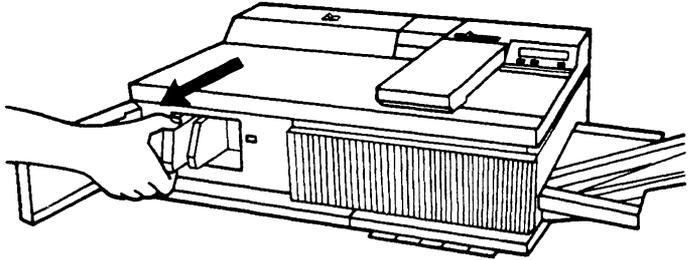


Figure 2-24 **Removing configuration cartridge**

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

4. To remove the cartridge, grasp and pull it toward you.
5. Set the configuration cartridge switches according to the Configuration Cartridge Checklist worksheet 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).

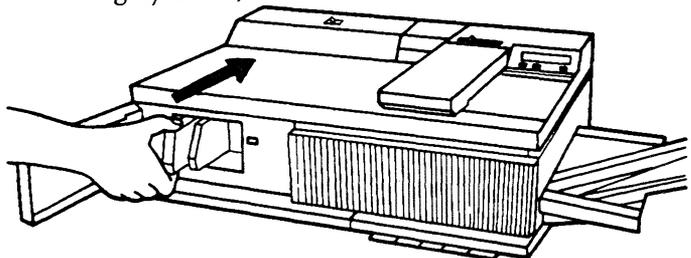


Figure 2-25 **Inserting configuration cartridge**

2. Push the cartridge gently until it stops.
3. Close the font compartment doors.
4. Print a configuration sheet (press and hold **RE-SET** switch, press **Off-Line** switch), to check switch settings against your host system's requirements.

Fonts

Data can be printed on the 4045 in many typestyles and sizes called fonts. Each font is a set of instructions which enable the 4045 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 4045 can use fonts from three sources:

- Either of two resident fonts, permanently stored in the 4045's memory.
- Fonts stored in cartridges in the font cartridge compartment.
- Fonts which are downloaded from the host system and stored in the 4045'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 4045 for U.S. and Canada:

XCP14iso-L (landscape orientation) font. This font produces 8.5 x 11.00 inch landscape pages proportional to 11.00 x 17.00 inch line printer pages (standard computer output). Printing 66 lines of 132 characters each, this font can produce pages designed for line printers without any format changes.

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 4045 are:

XCP12.5iso-L (landscape orientation) font. This is the international version of the internal landscape fonts designed for A4 paper (8.28" x 11.69"). 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:

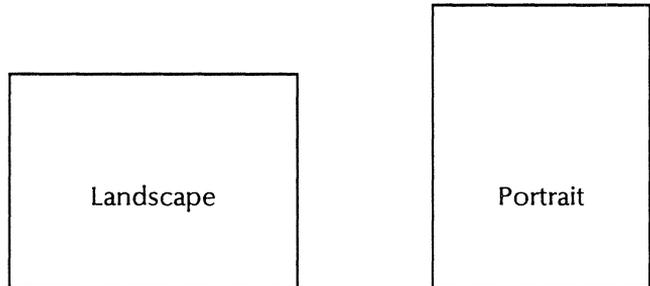


Figure 2-26 **Landscape and portrait orientations.**

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 4045 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 4045 are available in font cartridges from the Xerox Corporate Font Center for the U.S. and Canada.

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

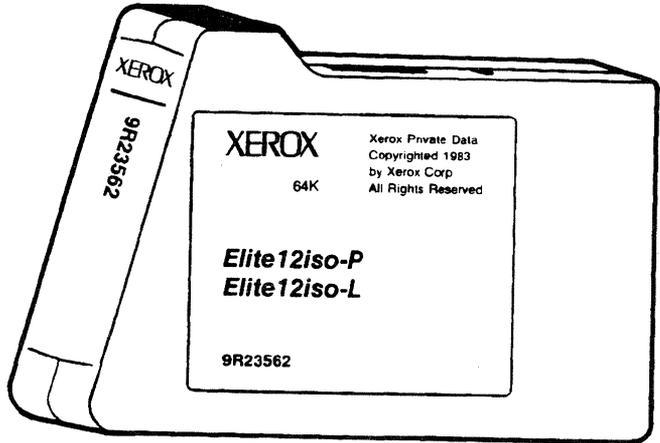


Figure 2-27 Font cartridge

In addition, the Xerox Corporate Font Center 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. Section 5—*Typeface Samples* contains font samples and information on how to order 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 4045's font cartridges. To install a font cartridge into one of the four slots:

Note: Font cartridges should **only** be installed when the 4045 is not printing.

1. Press the **Off-line** switch to take the 4045 off-line. The offline indicator illuminates.
2. Wait until printer stops printing.
3. Open the font compartment doors.
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).

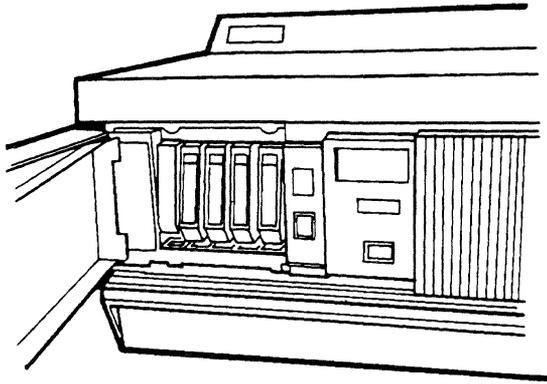


Figure 2-28 **Installing a font cartridge**

5. Close both font cartridge compartment doors.
6. Place the 4045 on-line by pressing the **Off-line** switch once. The Off-line indicator goes off.

Printing a document

By entering commands in the data stream at the host system, the 4045 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 4045 selects default values, determined by configuration cartridge switch settings and the software in the 4045, 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 4045 for printing by placing the 4045 on-line (press the **Off-line** switch, the offline indicator turns off).

The 4045 begins printing automatically as data is received from the host system.

Printing the last page

During printing the 4045 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 4045 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.

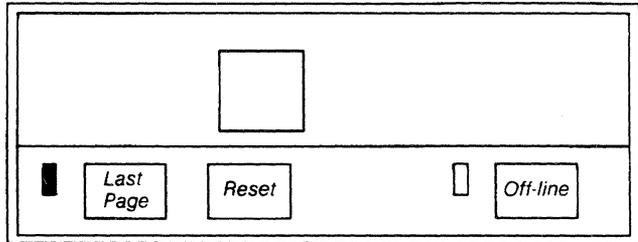


Figure 2-29 Last page indicator

4. Options and accessories

Introduction

This chapter describes the operation of options and accessories that are available for the 4045.

Copier option

The copier option enables you to make copies of originals on the 4045.

Copying an original

If your 4045 is equipped with the copier option, it can copy single pages, one copy at a time, in sizes 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.

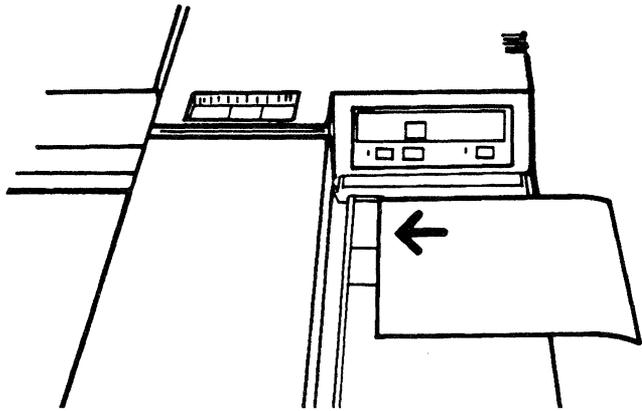


Figure 2-30 **Inserting an original**

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 same original repeat steps 1 and 2.

Copier priority setting

The 4045 can be set by your Xerox service representative to operate in a copier priority mode. When your 4045 is set to this mode and an original is inserted into the document feeder while a job is printing, the **READY** light flashes until the printer detects a gap in the data stream. At that time printing stops and the copy is made. Printing resumes automatically 20 seconds after the last copy is delivered to the output tray.

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.

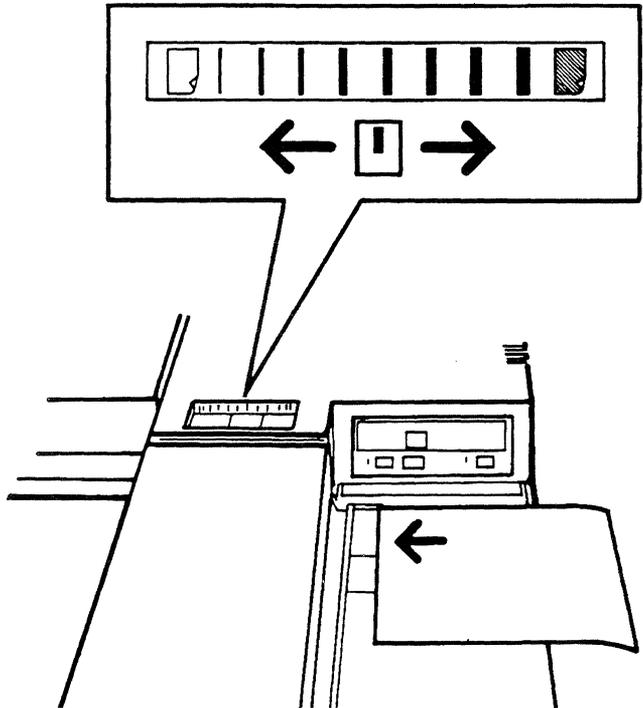


Figure 2-31 Copy lighter/darker control

Sequencer

The Xerox 4045 Sequencer is an optional output tray which delivers the printed job with the first page of the job on top.

The sequencer can also operate in a standard mode, delivering the pages with the first page of the job on the bottom.

The sequencer takes the place of the output tray. Contact your Xerox sales representative for additional information.

DRAM

An additional 384K of memory, known as Dynamic Random Access Memory (DRAM), is available to enhance the ability of your 4045. Contact your Xerox sales representative for additional information.

Printer stands

Two printer stands for your 4045 are available from Xerox. A Metal Stand with castors for easy movement provides a cabinet for storage of cassettes and supplies.

The Economy Stand provides an open shelf for supplies and a large work area. Contact your Xerox sales representative for additional information.

274 interface controller

The Xerox 274 Interface Controller (IC) is a protocol converter which enables the Xerox 4045 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 Xerox 4045 is attached to the 274 IC via a Xerox supplied 36-pin Centronics Parallel Interface shielded cable and connector assembly. Chapter 6 of this manual, *Options*, provides instructions for installing the 274 IC. For additional information, contact your Xerox sales representative.

275 interface controller

The Xerox 275 Interface Controller (IC) enables the 4045 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 4045 via a 36-pin Centronics Parallel Interface shielded cable and connector assembly. Once these are attached, the 275 IC receives signals and codes from the IBM communication controller and translates them for the 4045. Chapter 6 of this manual, *Options*, provides instructions for installing the 275 IC. For additional information, contact your Xerox sales representative.

280 interface sharing device

The 280 Interface Sharing Device (ISD) enables the sharing of up to four input hosts with one or two output printers. The ISD can simultaneously receive input from four hosts, store data on a 256K buffer until it can be output, and direct the output to a serial printer and a parallel printer. The 280 ISD can be attached to the 4045 via a Xerox-supplied 36-pin Centronics Parallel Interface shielded cable and connector assembly, or a customer-supplied serial output cable. Chapter 6 of this manual, *Options*, provides instructions for installing the 280 ISD. For additional information, contact your Xerox sales representative.

5. Maintenance and problem solving

Introduction

Your 4045 Laser CP may require your help in resolving a problem. The following information helps you diagnose, resolve, and prevent problems that might occasionally occur. This chapter provides instructions for:

- Cleaning the 4045
- Clearing paper misfeeds
- Interpreting status codes
- Solving problems

Routine cleaning

Before cleaning, the 4045 should be powered off.

Check with other 4045 users to see if all jobs have been printed before turning off the 4045.

The 4045 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 4045.

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. Fig. 2-32 shows the patch sensor.

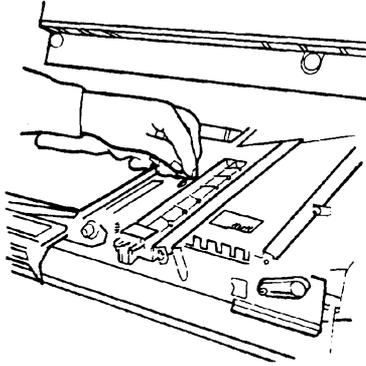


Figure 2-32 Patch sensor

Clearing paper misfeeds

The 4045 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 it sounds to alert you of a problem.

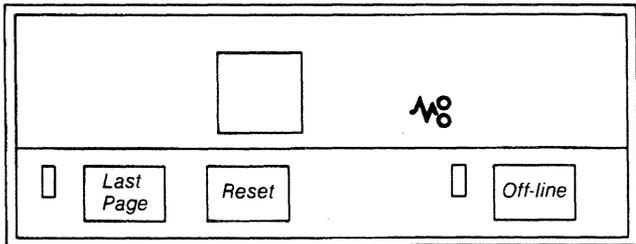


Figure 2-33 Clear paper path indicator

To clear the misfeed:

1. Pull the paper path access handle and lift up to open the printer.

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

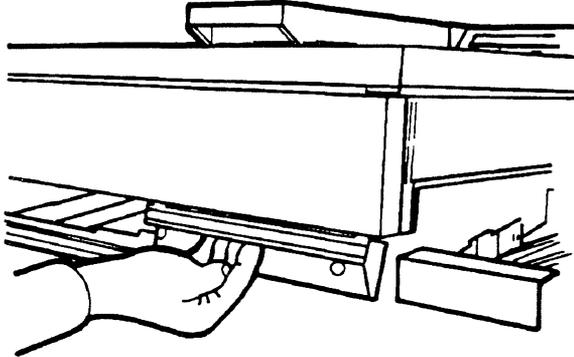


Figure 2-34 **Paper path access handle**

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.

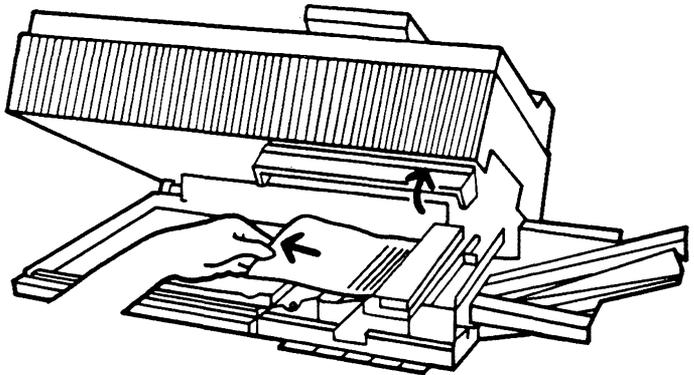


Figure 2-35 **Removing paper**

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

If misfeeds begin occurring 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	<p>Reason: The 4045 is in Data Monitor mode.</p> <p>Action: To clear Data Monitor mode, press and hold the Reset switch. While holding the Reset switch, press the Off-line switch.</p>
A1	<p>Reason: An original has misfed while being copied.</p> <p>Action: Lift document feeder and remove original. Close document feeder and refeed the original.</p>
A2	<p>Reason: An attempt was made to use the document feeder while the 4045 is offline.</p> <p>Action: Push the Off-line switch to place the 4045 online. The off-line indicator light goes off.</p>
C1	<p>Reason: Paper feed rollers not in the home position.</p> <p>Action: Open printer to remove misfed sheet of paper. Close printer. Printing automatically resumes.</p> <p>Note: The next sheet may jam. If this occurs, open printer, remove jammed sheet, and close printer.</p>
C3	<p>Reason: The paper tray is not seated properly.</p> <p>Action: Push the paper tray in until it stops.</p>
C4	<p>Reason: A sheet of paper has misfed <u>or</u> the paper tray is empty.</p> <p>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.</p>
d3, d5, d6, d7, d8, d9	<p>Reason: The 4045 failed power on diagnostics.</p> <p>Action: Power off, then on. If problem recurs, record code and call for service.</p>

Codes:

E1*, E2*, E3*, E4*	Reason: A paper path misfeed has been detected.
	Action: Lift the paper path access handle, open the 4045 and clear the paper path.
E5	Reason: The paper path is open.
	Action: Push down on the upper front corners of the 4045.
(1-9)L	Reason: The top cover is not properly closed.
	Action: Push down on the top cover at the sides.
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: Push 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 doors 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.

If the actions listed do not clear the code displayed, call for service and report the code which was displayed.

Problem solving

On occasion your 4045 Electronic Printer will require your help in resolving a problem. The following information is intended to guide you in resolving problems that might occur.

Problem

4045 will not power on.

A configuration sheet is not delivered to the output tray when the 4045 is powered on.

Transmitted data from the host system not printing at the 4045.

Transmitted data is printing too light or too dark.

A display code cannot be cleared.

Solution

Check that the AC power cord is plugged into the wall outlet and rear of 4045. Be sure that there is power at the outlet. If the 4045 still does not turn on, call for service.

Check the control panel for indicators or codes. Clear the condition indicated on the control panel by following actions listed under *Display codes*.

Check the 4045's configuration cartridge settings to be sure they are set correctly.

Check the interface cable at the rear of the 4045. 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.

Call for service.

Follow the action for that code listed under *Display Codes*. If procedures fail, call for service.

Problem

The 4045 suddenly stopped printing.

Solution

Check the control panel to see if a code is displayed. Refer to the Display Code section on the preceding pages and follow the suggested solutions for that code.

If the "clear" font compartment door was opened while the 4045 was printing, printing will stop. Press and hold the **Reset** switch and press the **Off-line** switch to reset the printer.

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.

Power failure while printing a job.

Retransmit job from the host system.

4045 making unusual noises or emitting odors.

Turn 4045 off and call for service

Copier option

Copies too light or dark.

Adjust copy lighter/darker control.

Placing service calls

Even the most reliable equipment may at times malfunction. The 4045's modular design and built-in diagnostics make it simple to maintain and service. Should your 4045 malfunction, follow the procedures below when placing a service call.

Information you need

When the 4045 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: 733504393

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 (4045, 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 requests.

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 4045 recently?
 - Did the application print properly on the 4045 prior to this problem?
6. Determine the severity of the problem. Use the following categories to determine how the problem impacts operator of the 4045:

Down: Indicates an inability to produce a critical job.

Impaired: Indicates that 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:
 - Copy 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

You will also be asked for:

- Your name,
- Your company name,
- Your machine serial number.

The administrator will then ask you to provide a brief description of the reason for your call. The administrator will then research your problem and provide you with a basic answer to your question.

If, at this point, you are satisfied with the response which is presented, you have the option of telling the call administrator to close the call. If not satisfied, you should indicate this to the call administrator. 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 4045, 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.

6.

Supplies

Introduction

Supplies such as paper, dry imager and developer need to be ordered for your 4045. It is important that you always have an adequate supply on hand, as you should plan on five working days to receive supplies from Xerox. This chapter outlines the supplies you need and how to order them.

Consumable supplies

Consumable supplies are those which are related to the operation of your 4045. 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 4045 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 the following:

- **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)
Heaviest: 24 pound (Substance 24)
- **Sizes**—The 4045 will accept 8.50 x 11.00 inch, 8.27 x 11.69 inch (A4), and 8.50 x 14.00 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 4045 with the 8.50 inch side as the leading edge. The grain should be parallel with the 11.00 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 4045 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. This item needs to be ordered and kept on hand. The consumption rate is approximately one bottle per 6,000 pages.

Developer

Developer is a consumable item required by the 4045 and replaced by the Xerox service representative. This item also needs to be ordered and kept on hand. The consumption rate is approximately one bottle per 40,000 pages.

Supplies and accessories table

Table 2-1 lists the supplies and accessories that are available from Xerox for your 4045. Use this table to help in determining your supplies and accessories needs.

Table 2-1 Supplies and accessories

Item	Description	Part number
Paper	Xerox paper quantities are 10 reams (5,000 sheets) to a carton unless otherwise noted below.	
8.50 x 11.00	4024 Dual Purpose Paper *	3R721
8.27 x 11.69	4024 Dual Purpose Paper	3R2594
8.50 x 14.00	4024 Dual Purpose Paper	3R727
8.50 x 11.00	4024 Dual Purpose Paper—3 hole	3R723
8.50 x 11.00	4024 Dual Purpose Paper—4 hole	3R1983
8.50 x 11.00	4024 Dual Purpose Paper—7 hole	3R1984
8.50 x 11.00	4024 Smooth	3R2675
8.50 x 14.00	4024 Smooth	3R2677
8.50 x 11.00	Dual Purpose Colors—Blue *	3R3052
8.50 x 11.00	Dual Purpose Colors—Blue, 3 hole	3R3068
8.50 x 14.00	Dual Purpose Colors—Blue	3R3084
8.50 x 11.00	Dual Purpose Colors—Green *	3R3056
8.50 x 11.00	Dual Purpose Colors—Green, 3 hole	3R3072
8.50 x 14.00	Dual Purpose Colors—Green	3R3088
8.50 x 11.00	Dual Purpose Colors—Pink *	3R3058
8.50 x 11.00	Dual Purpose Colors—Pink, 3 hole	3R3074
8.50 x 14.00	Dual Purpose Colors—Pink	3R3090
8.50 x 11.00	Dual Purpose Colors—Yellow *	3R3054
8.50 x 11.00	Dual Purpose Colors—Yellow, 3 hole	3R3070
8.50 x 14.00	Dual Purpose Colors—Yellow	3R3086
8.50 x 11.00	Dual Purpose Colors—Buff *	3R3060
8.50 x 11.00	Dual Purpose Colors—Buff, 3 hole	3R3076
8.50 x 14.00	Dual Purpose Colors—Buff	3R3092
8.50 x 11.00	Dual Purpose Colors—Goldenrod *	3R3062
8.50 x 11.00	Dual Purpose Colors—Goldenrod, 3 hole	3R3078
8.50 x 14.00	Dual Purpose Colors—Goldenrod	3R3094
8.50 x 11.00	Dual Purpose Colors—Ivory *	3R3064
8.50 x 11.00	Dual Purpose Colors—Ivory, 3 hole	3R3080
8.50 x 14.00	Dual Purpose Colors—Ivory	3R3096
8.50 x 11.00	Dual Purpose Colors—Gray *	3R3066
8.50 x 11.00	Dual Purpose Colors—Gray, 3 hole	3R3802
8.50 x 14.00	Dual Purpose Colors—Gray	3R3098
8.50 x 11.00**	Dual Purpose Colors—Rainbow Pack (3,500 sheets per carton)	3R3107

Table 2-1 **Supplies and accessories
(continued)**

Item	Description	Part number
Transparencies	Xerox transparencies are packaged 100 to a box.	
8.50 x 11.00	Clear	3R2783
8.50 x 11.00	Red	3R2784
8.50 x 11.00	Blue	3R2785
8.50 x 11.00	Green	3R2786
8.50 x 11.00	Yellow	3R2787
8.50 x 11.00	Rainbow	3R2788
Dry Imager	Packaged 4 bottles per carton. (Consumption rate is approximately one bottle per 6,000 pages.)	6R139
Developer	Packaged 1 bottle/carton. (Consumption rate is approximately one bottle per 40,000 pages.)	5R153
Labels (Gummed)	All labels are on 8.50 x 11.00 sheets, 100 sheets to a box. 8.50 x 11.00 33 labels per sheet 8.50 x 11.00 24 labels per sheet 8.50 x 11.00 8 labels per sheet 8.50 x 11.00 custom form sheet	3R2362 3R2363 3R2364 3R2365
Xerographic Envelopes	Unique 4.50 x 10.00 20-pound (80 G.S.M.) paper envelope designed for xerographic printers and copiers, packaged 1,000 to a box.	3R3116
Paper Trays	Standard —Adjusts from 8.50 x 11.00 to 8.50 x 14.00 (one delivered with each printer). A4 Metric —Designed for metric A4 paper (210 x 297 mm). Envelope —Designed for feeding xerographic envelopes.	9R178 9R179 9R181
<p>* Available in 250 sheet ProtectorPaks</p> <p>** Rainbow pack contains 750 sheets of 8.50 x 11.00 blue and yellow, 500 sheets each of green and pink, and 250 sheets each of buff, goldenrod, gray, and ivory.</p>		

Table 2-1 **Supplies and accessories (continued)**

Item	Description	Part number
Sequencer	Output tray. Delivers printed output with the first page of the job on top.	9R206
Printer Stands	Cabinet —Stand with castors and cabinet for supplies.	9R205
	Economy —Stand with open shelf for supplies and a work area.	9R140

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:

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 which is the **4045**.

3. You then give your supply order to the supply representative. The order should include:
 - Item name
 - Quantity
4. If your company requires a purchase order for payment of an invoice, you need to 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.

Xerox offers a printer stand and storage cabinet which provides an ideal way of storing your paper and supplies.

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1.

Introduction

This section of the *4045 User Manual* explains how actual documents are created on the Xerox 4045 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 *4045 Samples* 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; miscellaneous information

Using the 4045

The 4045 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 4045 functions as a standard computer line printer in this way.) Switch settings on the configuration cartridge must be set appropriately however. See *Operating the 4045* 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 4045 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 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 4045* section of this manual.

630 mode When the 4045 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 personal computer so it is compatible with the Diablo 630 printer.

A complete list of the 630 commands and their escape sequences appears in the *4045 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 4045 (630 mode) exceptions are listed in that section.

4045 mode When the 4045 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 to perform many other formatting features. If you have used the Xerox 2700 electronic printer, the 4045 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 4045 printer in the 4045 mode. Any software packages written for the Xerox 2700 II printer work on the 4045 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 4045 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>
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
Overstriking	Start	* zo <x>
	Stop	* zp

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

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<E>;<X,Y,A,B><LE> Graphic data
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

²VFU 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 commands.**

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	*2*b
Centering	*q
Bolding - Stop	*p
Margins	*m660,90,60,60,450

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 <i>Operating the 4045</i> 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 4045 when the return or new line key is touched, you must use the line feed key after touching return or configure the 4045 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 4045 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.

The 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 4045 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 4045 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 4045 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 4045 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 4045 receives a Reset command which will be explained later.

To establish a UDK that signals the 4045 of an upcoming command or instruction, use the following format:

=UDK= <c>

Character(s)	Description
=	The equal sign.
UDK	Uppercase abbreviation for <u>U</u> ser- <u>D</u> efined <u>K</u> ey.
=	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.

Font overview

The 4045 printer is equipped in memory with two permanent internal fonts, type styles, one landscape line-printer font, XCP14iso-L, and one portrait font, Titan10iso-P, 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 4045 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	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 4045 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 4045 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 4045'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 4045 available for font cartridges.

Fig. 3-1 shows a typical font cartridge for the 4045 printer.

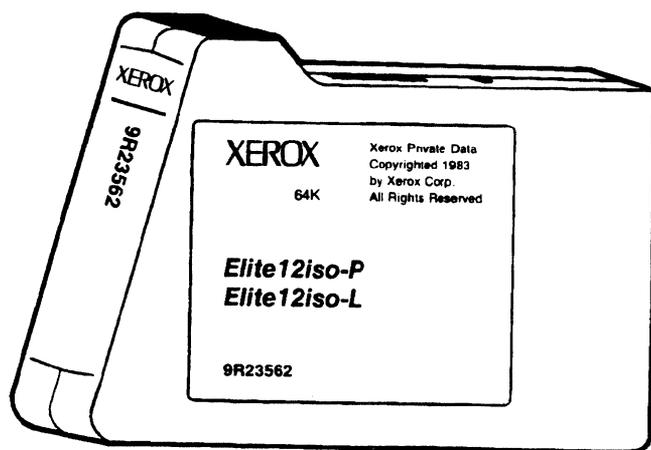


Figure 3-1 4045 font cartridge

Downloaded fonts are:

- Fonts loaded temporarily into the 4045 printer.
- Fonts sent from host to 4045 using Font Load or Font Add Selected commands
- Fonts removed from memory when power is off

The 4045 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 4045 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 switch 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 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 4045 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 4045 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 <ul style="list-style-type: none"> ● 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.

Example: Shown below is a typical Font Load sequence:

Send first file containing:

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

Send font files containing:

```
Kosmos10-P
Kosmos8-P
```

Send last file containing:

```
*+X<LE>
```

In the first file, 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, Kosmos10-P and Kosmos8-P. The last file contains the Reset command. From your host, you send first file, fonts, and last file to the 4045 printer to download fonts.

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.

Character(s)	Description
<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.
<fontname>	The correct font name, taken exactly from either of the following: <ul style="list-style-type: none"> – 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.

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 *Typeface samples* 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:

```
* + 1Titan10I-L <LE>
* + 2Titan10Biso-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 Organiza-tion.

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 4045 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 which are part of a constant page 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 <u>A</u> dditional fonts.)
<LE>	The Font Add Selected command must end with a line end.

Example: First file contains:

=UDK=*
* + A <LE>

Fonts:

Classic12-L
Classic14-L

Last file contains:

* + P <LE>

This example uses the Font Add Selected command, * + A, in the first file. Fonts make up the next file and the last file contains the Print command as an end of job delimiter.

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 4045 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. **Place the logo or signature after all regular text on the page has been entered.**
- 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 logos 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<LE>
*+ X<LE>
```

The signature, called "YourSig," is downloaded to the 4045 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. 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.

Fig. 3-2 illustrates landscape and portrait orientation.

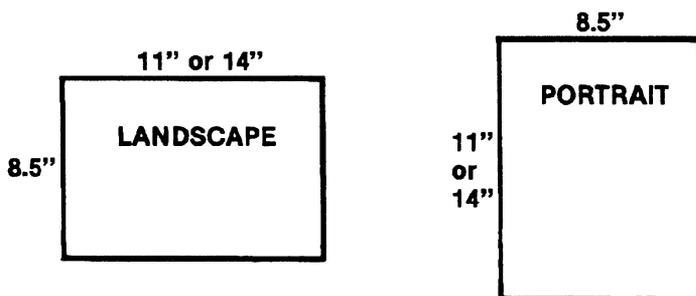


Figure 3-2 **Page orientation**

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

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>
*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 4045, using the Font ID Assignment. 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 4045 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 <u>and</u> resets job parameters.

Print

The Print command is a job command. It tells the 4045 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 4045 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. (<u>P</u> rint 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: <ul style="list-style-type: none"> ● 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 4045 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. Stop 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 4045 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= *
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.

Default margins

The 4045 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 4045.

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 page.

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

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 insures that the page is in the correct orientation for the margins you set.

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 4045. 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 <u>down from the top edge</u> 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 <u>up from the bottom edge</u> 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 <u>from the left edge</u> 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.

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.

`*m<660,60,60,90,450><LE>`

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

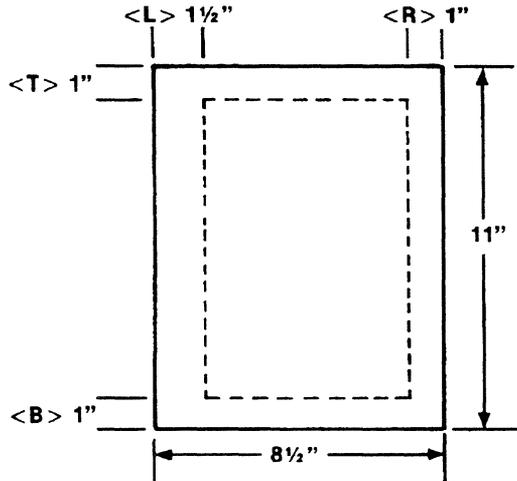


Figure 3-3 Setting margins portrait

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 Fig. 3-4 indicate where the margins are on the page.

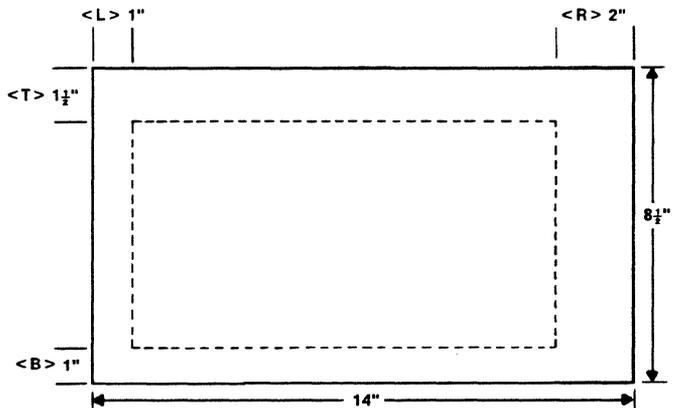


Figure 3-4 Setting margins landscape

Units—1/300th

The 4045 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 4045 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 4045 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

Justification

The Justification command spaces text evenly between left and right margins. The 4045 begins justification when it receives a Justification Start, and ends justification upon receipt of a Justification Stop.

- Characteristics:**
- When justifying, the 4045 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 (<u>k</u> ills justification).

Underline

The Underline command tells the 4045 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 <u>u</u> nderline).

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 (<u>w</u> ithhold underlining).

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

Input:

```
=UDK=* * +P,
*m660,90,90,150,360<LE>
*jDeveloped by Xerox, *uthe world leader in
electronic printing*w, the 4045 provides a
wide range of features. The 4045 prints
forms, charts, logos, and signatures.
*+X<LE>
```

Output:

Developed by Xerox, the world leader in electronic printing, the 4045 provides a wide range of features. The 4045 prints forms, charts, logos, and signatures.

Bolding

The 4045 has the ability to make a character appear bold without using a bold font. To create the bold appearance, the 4045 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 4045 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 4045 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.
 - 4045 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:

*|

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.
 - Up to 32 superscripts and/or subscripts may be used on a line.
 - 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 4045 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 something like this:

To thine own self be true.^a

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

`C*I2*sH*I5*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 4045 continues to overstrike characters until it receives an Overstrike Stop, a 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>  
*zo+ April 1, 1984*zp May 1, 1984.<LE>
```

The printed result is:

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

8. Sample document

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

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

*jThe *bXerox 4045*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.*k

Your choices of *bXerox 4045*p compatible interfaces are: *k

*1*b

- o RS 232C Serial Asynchronous
- o Centronics Parallel
- o Dataproducts Parallel*p

*2*jThe installation and setup of the *bXerox 4045*p is easy. And the *b4045*p supports the same command sets as those of two of the industry's most popular printers -- the Xerox 2700 II and the Diablo 630. Existing programs written for the 2700 II and the Diablo 630 will print on the *bXerox 4045*p. This compatibility saves time and protects the investment that you may have in

existing software.

*+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.
*+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 4045 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.
*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).
*2	This Font ID Assignment calls out the second font, Kosmos14-P, to be used in printing the characters that come after it.
*q	This command centers the line of text following the command.
*j	This justifies the text to follow until the *k (Stop Justification) is received at the end of the paragraph.
*b...*p	This command bolds the text between *b and *p.

Command sequence	Description
*1	The Font ID Assignment calls out the first font, Kosmos12-P, to be used to print the text that follows.
*+X	The Reset command returns all job parameters to the default.

COMPATIBLE INTERFACES

The **Xerox 4045** 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 the future systems, too.

Your choices of **Xerox 4045** compatible interfaces are:

- o **RS232C Serial Asynchronous**
- o **Centronics Parallel**
- o **Dataproducts Parallel**

The installation and setup of the **Xerox 4045** is easy. And the **4045** supports the same command sets as those of two of the industry's most popular printers--the **Xerox 2700 II** and the **Diablo 630**. Existing programs written for the **2700 II** and the **Diablo 630** will print on the **Xerox 4045**. This compatibility saves time and protects the investment that you may have in existing software.

Figure 3-5 Sample document

9.

Horizontal tabs

There are two types of tabs that you can set on the 4045 illustrated in Fig. 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.)

HORIZONTAL TABS

<u>JAN</u>	<u>FEB</u>	<u>MARCH</u>	<u>APRIL</u>	<u>MAY</u>
\$ 111 →	\$222 →	\$ 333 →	\$ 444 →	\$ 555
100	500	300	700	400
55	39	420	63	200
<u>\$ 266</u>	<u>\$761</u>	<u>\$1053</u>	<u>\$1207</u>	<u>\$1155</u>

VERTICAL TAB

<u>JUNE</u>	<u>JULY</u>	<u>AUG</u>	<u>SEPT</u>	<u>OCT</u>
\$3020 →	\$180 →	\$ 264 →	\$ 308 →	\$ 121
80	75	130	50	49
125	439	650	717	200
<u>\$3225</u>	<u>\$694</u>	<u>\$1044</u>	<u>\$1075</u>	<u>\$ 370</u>

Figure 3-6 Horizontal and vertical tabs

Horizontal tab defaults

If no Horizontal Tab Set command is given before a job is run, the 4045 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.

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

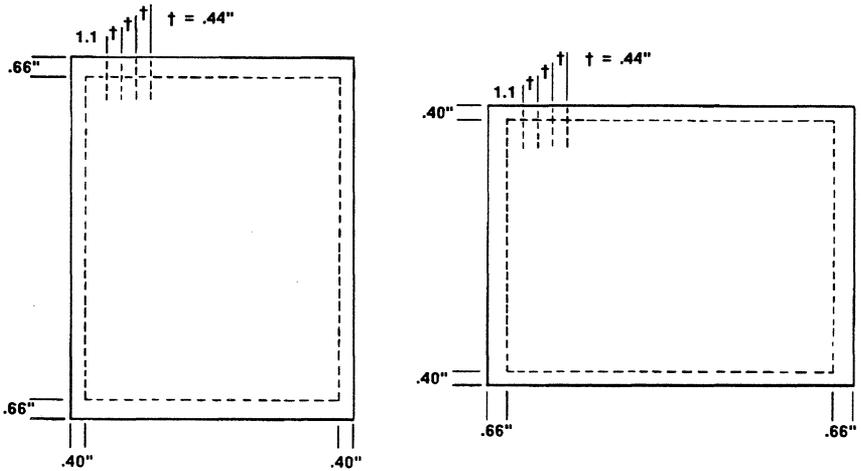


Figure 3-7 Default tab settings

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 tabs set

The format of the Horizontal Tab Set command is:

$$*t\langle n_1, n_2, \dots, n_{160} \rangle \langle LE \rangle$$

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.
$\langle n_1, n_2, \dots, n_{160} \rangle$	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.
$\langle LE \rangle$	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.

```
=UDK=*
```

```
*d*t120,240,300<LE>
```

```
<HT>May Barton<HT>President<HT>54321
```

The 4045 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 4045 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 4045 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	<code>*x<X,Y,L,T> <LE></code>
Horizontal line	<code>*y<X,Y,L,T> <LE></code>

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.

The Table 3-11 following 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	*	*
Lower case letter	x	y
How far <u>down</u> from top of page	X	X
Comma separates the numbers	,	,
How far <u>over</u> 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>

Fig. 3-8 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

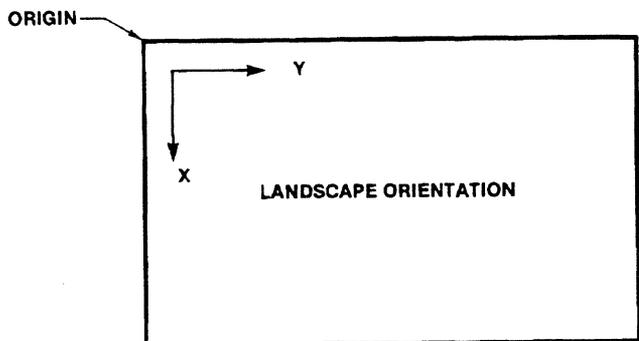
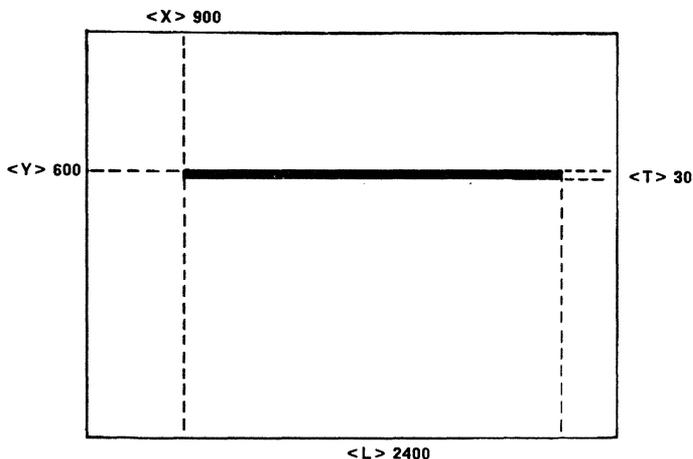


Figure 3-8 Landscape page

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

```
*y900,600,2400,30<LE>
```

Fig. 3-9 illustrates how your line appears on the landscape page.



Note: Thickness of line is not to scale.

Figure 3-9 Drawing line landscape page

Portrait command

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

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

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	*	*
Lower case letter	y	x
How far <u>over</u> from the left edge of the paper	X	X
Comma separates the numbers	,	,
How far <u>up</u> 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>

Fig. 3-10 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

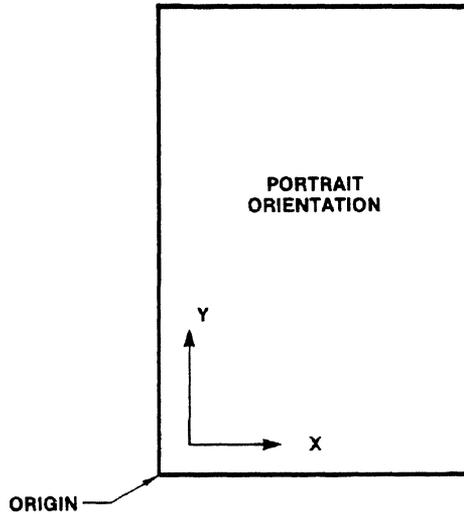


Figure 3-10 **Portrait page**

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
```

Fig. 3-11 illustrates where the above described line appears on a portrait page.

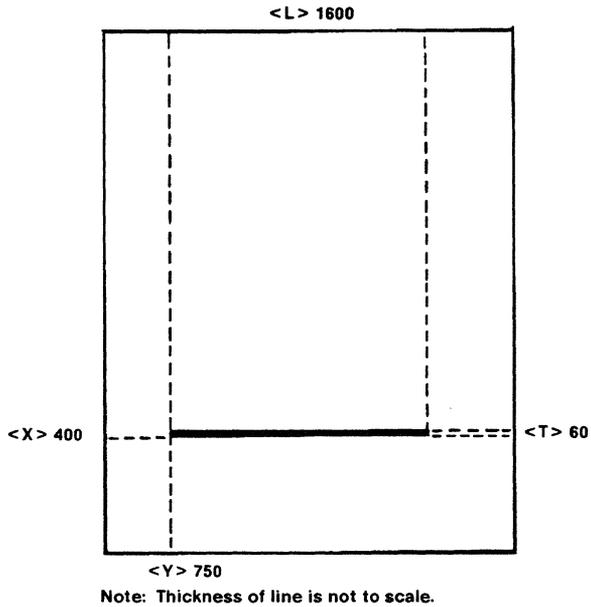


Figure 3-11 Drawing lines portrait page

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 Fig. 3-12.

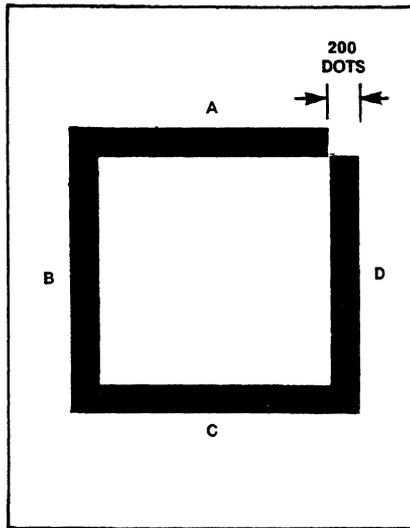


Figure 3-12 **Drawing boxes**

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 B.

Placement of text

The Xerox 4045 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 multi-columns 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>

The 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 <u>down</u> from the top edge of the paper	X	
How far <u>over</u> from the left edge of the paper		X
Comma separates the numbers	,	,
How far <u>over</u> from the left edge of the paper	Y	
How far <u>up</u> from the bottom of the page		Y
Line end	<LE>	<LE>

Fig. 3-13 illustrates the coordinates on a landscape page and portrait page. The arrows describe the direction of each coordinate.

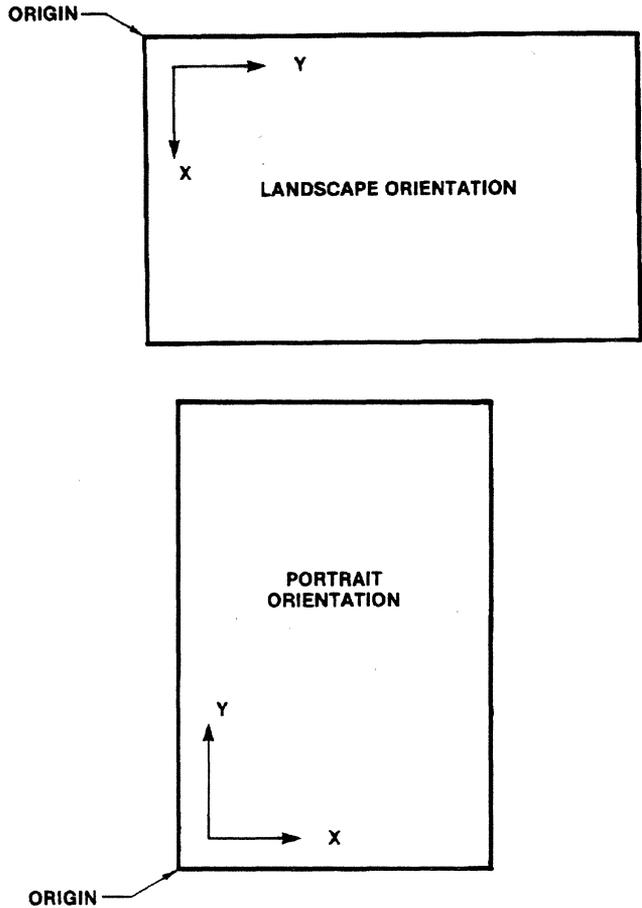


Figure 3-13 Landscape and portrait orientation

Example: You want to begin a line of landscape text shown in Fig. 3-14 below 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.

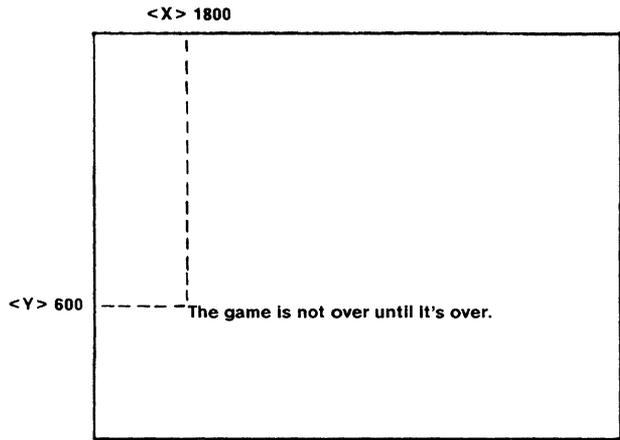


Figure 3-14 **Absolute placement landscape**

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. Fig. 3-15 illustrates the placement of text.

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

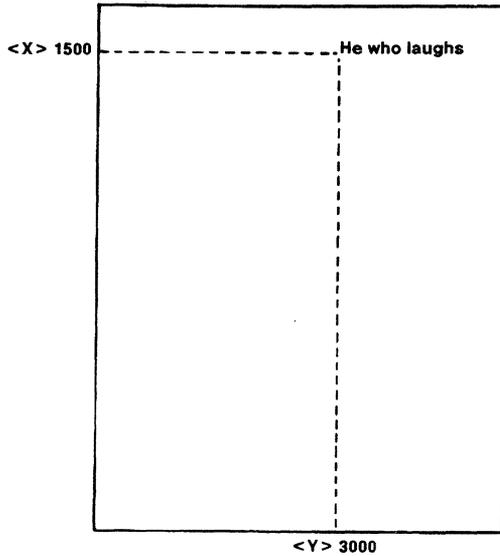


Figure 3-15 Absolute placement portrait

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 4045 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 4045 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<E>;<X,Y,A,B><LE>
Graphic Data
```

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

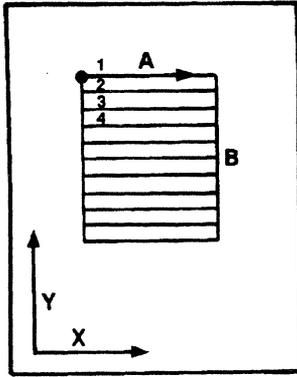
Character(s)	Description
*	The User-Defined Key you created.
gw	The lowercase letters g (for graphics), w (for window).
E	How much the graphic is to be expanded. This is a number 1 (no expansion) or 2 (doubled in size). If no number appears, the 4045 does not expand the graphic.
;	A semicolon follows E.
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	<p>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.</p> <p>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.</p>
,	A comma separates graphic values.
A	How far across (in the portrait mode) or how far down (in the landscape mode) 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 (in the portrait mode) or how far across (in the landscape mode) 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.

Fig. 3-16 illustrates the X and Y coordinates for the Graphic Window command.

PORTRAIT



LANDSCAPE

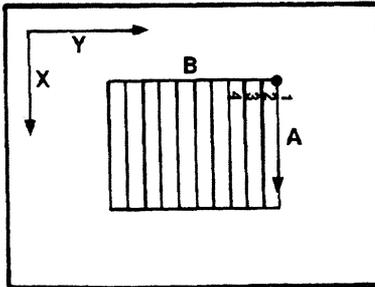


Figure 3-16 X and Y coordinates for graphics

Merge page load

The Xerox 4045 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 4045.

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.
 - 4045 loads constant page until it receives page end, Print command or Reset command. Page ends are explained in the 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 4045 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 4045 ignores the Merge Start command.
 - If Merge Start command is encountered anywhere on page, the 4045 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 4045 (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 "Voiced" 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 4045 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 4045 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 4045 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:

Fig. 3-17 and Fig. 3-18 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>                (name)
<LE>                (street)
<LE>                (city, state)
<LE>
<LE>
<LE>
<LE>
```

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.

<LE>

Please call us immediately so we may book your appointment.

<LE>

Very truly yours,

<LE>

<LE>

<LE>

Steve Smith

(Page End Character)

*ze<LE>

<LE>

<LE>

<LE>

<LE>

Mr. Neil Silver

3770 Grant Avenue

La Habra, CA 90632

<LE>

Dear Mr. Silver:

(Page End Character)

<LE>

<LE>

<LE>

<LE>

<LE>

Ms. Noreen Wilson

472 S.W. Post Street

Albany, OR 97322

<LE>

Dear Ms. Wilson:

(Page End Character)

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 3-17 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 3-18 Merged letter

12.

Language

Multinational fonts conforming to the character assignments of the International Standards Organization (ISO) Number 6937 are available to allow the 4045 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 4045, 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 4045 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. <table><tbody><tr><td>0</td><td>American English</td><td>8</td><td>Finnish</td></tr><tr><td>1</td><td>U.K. English</td><td>9</td><td>German</td></tr><tr><td>2</td><td>French</td><td>A</td><td>Swedish</td></tr><tr><td>3</td><td>Dutch</td><td>B</td><td>Belgian</td></tr><tr><td>4</td><td>Spanish</td><td>C</td><td>French Canadian</td></tr><tr><td>5</td><td>Italian</td><td>D</td><td>Portuguese</td></tr><tr><td>6</td><td>Danish</td><td>H</td><td>User Supplied</td></tr><tr><td>7</td><td>Norwegian</td><td></td><td>Translation Table</td></tr></tbody></table>	0	American English	8	Finnish	1	U.K. English	9	German	2	French	A	Swedish	3	Dutch	B	Belgian	4	Spanish	C	French Canadian	5	Italian	D	Portuguese	6	Danish	H	User Supplied	7	Norwegian		Translation Table
0	American English	8	Finnish																														
1	U.K. English	9	German																														
2	French	A	Swedish																														
3	Dutch	B	Belgian																														
4	Spanish	C	French Canadian																														
5	Italian	D	Portuguese																														
6	Danish	H	User Supplied																														
7	Norwegian		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 <u>T</u> able)
,	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.

*zIH

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

Vertical tabs 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<n₁,n₂,...n₁₂₅> <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:

```
=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.

=UDK=*
*e*v120,270,360,480<LE>
VT First Quarter<LE>
VT Second Quarter<LE>
VT Third Quarter<LE>
VT Fourth Quarter<LE>

Data monitor

The 4045 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 4045 printer.

Data monitor command

The Data Monitor command turns on the data monitor mode of the 4045. 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

The chart following explains the Data Monitor command in detail:

Character(s)	Description
*	The User-Defined Key you created.
+	Plus sign.
D	Uppercase D. (for <u>D</u> ata Monitor)

The Data Monitor command is ended using the Reset (*+X) command. A Reset command also resets the 4045 to its default parameters. Fig. 3-19 shows an example of the data monitor printout.

Figure 3-19 Data monitor printout

0	3D 55 44 4B 3D 2A 0D 0A 2A 64 31 30 2D 50 0D 0A 2A 2B 31 54 50 0D 0A 2A 2B 32 54 69 74 61 2A 2B 33 4E 65 77 4B 6F 73 6D 4E 65 77 4B 6F 73 6D 6F 73 3B	0D 0A 2A 2B 30 54 69 74 61 6E 69 74 61 6E 31 32 69 73 6F 2D 6E 31 35 69 73 6F 2D 50 0D 0A 6F 73 36 2D 50 0D 0A 2A 2B 34 2D 50 0D 0A 2A 2B 35 4E 65 77	= U D K = * CR LF * 1 0 - P CR LF * + 1 P CR LF * + 2 T i t * + 3 N e w K o s N e w K o s m o s
100	4B 6F 73 6D 6F 73 31 30 2D 50 73 6D 6F 73 31 32 2D 50 0D 0A 6F 73 31 34 2D 50 0D 0A 2A 2B 2D 50 0D 0A 2A 74 31 32 30 2C 2C 31 32 30 2C 31 32 30 2C 39	0D 0A 2A 2B 36 4E 65 77 4B 6F 2A 2B 37 4E 65 77 4B 6F 73 6D 3B 43 6C 61 73 73 69 63 32 34 32 36 35 0D 0A 2A 6D 36 36 30 30 2C 34 32 30 0D 0A 2A 36 0D	K o s m o s 1 0 - s m o s 1 2 - P CR o s 1 4 - P CR LF * - P CR LF * t 1 2 0 , 1 2 0 , 1 2 0 ,
200	0A 09 09 58 65 72 6F 7B 20 43 0D 0A 09 09 37 30 31 20 53 2E 42 6C 2E 20 20 41 31 2D 36 36 75 6E 64 6F 2C 20 43 41 20 20 63 74 6F 62 65 72 20 31 31 2C	6F 72 70 6F 72 61 74 69 6F 6E 20 41 76 69 61 74 69 6F 6E 20 0D 0A 09 09 45 6C 20 53 65 67 39 30 32 34 35 0D 0A 09 09 4F 20 31 39 38 34 0D 0A 0D 0A 43	LF HT HT X e r o x SP CR LF HT HT 7 0 1 SP S B l . SP SP A 1 - 6 u n d o , SP C A SP c t o b e r SP 1 1
300	68 75 63 6B 20 4A 6F 70 73 6F 20 53 75 70 70 6F 72 74 0D 0A 79 73 74 65 6D 73 20 49 6E 63 78 20 34 39 33 37 0D 0A 42 6F 20 20 38 33 37 31 31 0D 0A 0D	6E 0D 0A 50 72 6F 64 75 63 74 45 78 74 65 6E 64 65 64 20 53 2E 0D 0A 50 2E 4F 2E 20 42 6F 69 73 65 2C 20 49 64 61 68 6F 0A 0D 0A 44 65 61 72 20 43 68	h u c k SP J o p s SP S u p p o r t CR y s t e m s SP I n x SP 4 9 3 7 CR LF B SP SP 8 3 7 1 1 CR LF
400	75 63 6B 3A 0D 0A 0D 0A 09 2A 72 20 74 68 65 20 63 61 62 6C 20 61 72 65 20 70 72 6F 67 72 6C 20 66 6F 72 0D 0A 74 68 65 20 65 6E 64 65 64 20 75 70 20	6A 54 68 61 6E 6B 73 20 66 6F 65 2E 20 20 54 68 69 6E 67 73 65 73 73 69 6E 67 20 77 65 6C 20 64 65 6D 6F 2E 20 20 57 65 75 73 69 6E 67 20 74 68 65 20	u c k : CR LF CR LF HT r SP t h e SP c a b SP a r e SP p r o g l SP f o r CR LF t h SP e n d e d SP u o

630 commands

The following is a list of 630 (Diablo) formatting commands used in the 4045 (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		* <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>
Proportional Space	Start	*P
	Stop	*Q

New 630 commands

The 4045 printer in the 630 mode offers you some printing capabilities new to the 630 printer. In the 630 mode you can:

- Download 2700 fonts from a host to the 4045 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 4045 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 4045 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.
- The ECS character set is not fully supported.
- Proportional Spacing does not follow print-wheel spacing tables for metal/plastic wheels but uses font information.

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 4045 printer does not make line ending decisions.

Solution: You need to recalculate 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*1*u2*w*s*uO will get it correct on the test.*w

Everyone who knows that the formula for water is H₂O will get it correct on the test.

General troubleshooting

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 Xerox 4045 Electronic Printer. These samples are included to give you an idea of the printing capabilities of the 4045.

Because of the page size of this 4045 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

Margins

~m660,206,90,37,510

Absolute Placement

~a187,2270

~ 1NET SALES~rr562xNET INCOME~rr525xEARNINGS PER SHARE

Absolute Placement

~a187,2210

~ 2(THOUSANDS)~rr562x(THOUSANDS)~rr553x(DOLLARS)

Drawing Lines

~x187,2174,562,2

~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

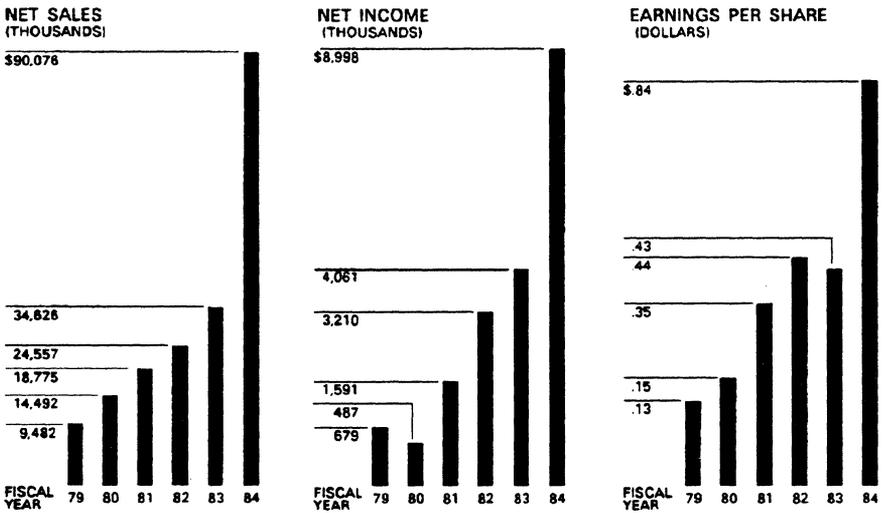


Figure 4-1 Sample bar chart

=UDK=
*+1Kosmos6-P
*+5Titan10iso-P
*+6Kosmos12-P
*+7Kosmos14-P
*m660,60,30,107,417
*7*q*bFLEXIBLE PAGE FORMATTING*p

Font Assignments

Margin Settings
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 typesyles. The *b4045*p will electronically change type styles

Bolding

*5from line to
*1line, from
*6 word *4to *7word

Changing Fonts

This printing versatility helps to:

- *d*t143,157
 - 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

Horizontal Tabs

These type styles and type sizes are referred to as "fonts." The *b4045*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
~ + 2Kosmos10-P
~ + 3Kosmos6-P
~ + 4Kosmos12-P
~m660,7,15,12,500
~x2023,3253,462,2
~x2023,3150,460,2
~y2023,3150,102,2
~y2483,3150,102,2
~a2042,3215
~b~3Date
~a505,3170
~4Capital/Lease Appropriation Request~p
~b~x45,3103,2438,6
~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

Font Assignments

*Margin Settings
Drawing Lines*

*Absolute Text Placement
Bold—Change Font*

Drawing Lines

Drawing Lines

~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

*Must be entered as
one line of coding*

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

~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

Absolute Text Placements

Date

Capital/Lease Appropriation Request

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

~ +2XCP14-L

~m510,50,28,500

~d t142,179,216,253,290,327,364,401

~1

~bONE-TIME COSTS JAN FEB MAR
APR MAY JUN JUL AUG~p

Font Assignments

Margin Settings

Horizontal Tab Clear/Set

Must be entered as
one line of coding

Education Materials

~d~t140,177,214,254,291,328,365,402
Development 35000 35000 35000
0 0 0 0 0

Must be entered as
one line of coding

~d~t141,178,215,254,291,328,365,402
Packaging 5000 5000 5000
0 0 0 0 0

Must be entered as
one line of coding

~d~t144,181,218,254,291,328,365,402

Miscellaneous 0 0 0
0 0 0 0 0

Must be entered as
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
0 0 0 0 0

Must be entered as
one line of coding

~bMONTHLY COSTS

Bold

Personnel

~d~t97,141,178,215,252,289,326,363,400
Sales Manager (@ 45000) 3750 3750
3750 3750 3750
3750 3750 3750
Analyst (@ 30000) 2500 2500
2500 2500 2500
2500 2500 2500

Must be entered as
one line of coding

Must be entered as
one line of coding

Service 1 (@ 30000)	2500	2500	2500
2500	2500	2500	
2500	2500	2500	
Service 2 (@ 30000)	2500	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	400	
Mileage (2 cars)	240	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

~ +2Kosmos8-L

~ +3Classic10iso-L

~ +4Kosmos12-L

~m510,17,4,32,620

~4~qPROJECT SCHEDULE

Font Assignments

Margin Settings

Change Font/Center

~qCURRENT AS OF:

~y300,168,2925,4

~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

Drawing Lines

~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

Drawing Lines

~2

~a393,195

Absolute Text Placements

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.

~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
Xerox 4045 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

Figure 4-5 Sample project schedule

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						
ACTIVITY	APRIL					MAY				JUNE				JUL		
	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						

=UDK= *

* + 1Kosmos10-P

* + 2Kosmos8-P

* + 3YourSig24-P

*m660,34,30,90,442

*2*bFIRST GALAXY FINANCIAL*p

123 Elm Street

P. O. Box 6666

Los Angeles, CA 90045

Attn: Overline Collector

*a1200,2580

*1JOHN C. SMITH

*a1200,2533

2345 MAPLE STREET

*a1200,2486

DALLAS, TX 75999

Font Assignments

*Margin Settings
Change Font/Bold*

*Absolute Placement
Change Font*

Re: MasterCard No. 5106100012123456

BALANCE

AMOUNT DUE

*a900,2240

\$

*a900,2137

\$

*a984,2240

633.60

*a1012,2137

31.00

*a1200,2031

January 20, 1985

Absolute Placement

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,

*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,



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

*m660,163,60,28,502

Margin Settings

*x10,2475,2510,18

Drawing Line

*a121,2362

*2*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

Figure 4-7 Sample financial highlights

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

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	Titan10iso-P Titan12iso-P Titan12liso-P Titan15iso-P
9R23566	Titan10iso-P Titan10liso-P Titan12liso-P Titan15iso-P
9R23567	Titan10iso-L Titan10liso-L
9R23568	Titan12iso-L Titan12liso-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	Titan10liso-P Titan10liso-L
9R23575	Titan12iso-P Titan12iso-L Titan15iso-P
9R23576	Titan12liso-P Titan12liso-L
9R23577	Vintage10iso-P Vintage10iso-L
9R23578	Vintage12iso-P Vintage12iso-L

XEROX

4045

Century
Schoolbook 300

Century Schoolbook 300

Century Schoolbook 300 typeface is a serif design made for maximum readability.

It was originally introduced in the late 1890's by Lynn Boyd Benton and Theodore DeVinne as a typeface for Century Magazine. In 1920, American Type Founders began selling an expanded version designed by Morris Fuller Benton under the name Century Schoolbook.

Century Schoolbook 300 typeface was developed for Xerox by Mergenthaler Linotype Company for use on Xerox electronic printing products. This versatile typeface has seen extensive use from its original release to the present day and is the typeface most school children first learn to read.

- 6 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read quickly and accurately.
- 7 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read.
- 8 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.
- 9 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning.
- 10 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.
- 11 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read.

6 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.

7 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning.

8 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

9 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

10 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. Typography is art.

11 point

Century
Schoolbook 300

Bold Text

- 6 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read quickly and accurately.*
- 7 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read quickly.*
- 8 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.*
- 9 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.*
- 10 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. Typography is an art.*
- 11 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.*

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read.

6 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility.

7 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.

8 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

9 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

10 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. Typography is art.

11 point

12 point

Medium

Xerox Quality Fonts,
For The Quality Image

Bold

**Xerox Quality Fonts,
For The Quality Image**

Italic

*Xerox Quality Fonts,
For The Quality Image*

Bold Italic

***Xerox Quality Fonts,
For The Quality Image***

14 point

Medium

Xerox Quality Fonts,
For The Quality Image

Bold

**Xerox Quality Fonts,
For The Quality Image**

Italic

*Xerox Quality Fonts,
For The Quality Image*

Bold Italic

***Xerox Quality Fonts,
For The Quality Image***

Century
Schoolbook 300

Headline

Xerox Quality Fonts

18 point

Medium

Xerox Quality Fonts

Bold

Xerox Quality Fonts

Italic

Xerox Quality Fonts

Bold Italic

Xerox Quality

24 point

Medium

Xerox Quality

Bold

Xerox Quality

Italic

Xerox Quality

Bold Italic

Century
Schoolbook 300

Headline

**Packaged
Cartridges**
Portrait &
Landscape

	Medium	Bold	Italic	Bold Italic
6 point	9R23231	9R23232	9R23233	9R23234
7 point	9R23235	9R23236	9R23237	9R23238
8 point	9R23239	9R23240	9R23241	9R23242
9 point	9R23243	9R23244	9R23245	9R23246
10 point	9R23247	9R23248	9R23249	9R23250
11 point	9R23251	9R23252	9R23253	9R23254
12 point	9R23255	9R23256	9R23257	9R23258

Cartridge

14 point

Portrait	9R23463	9R23465	9R23467	9R23469
Landscape	9R23464	9R23466	9R23468	9R23470

18 point

Portrait	9R23471	9R23473	9R23475	9R23477
Landscape	9R23472	9R23474	9R23476	9R23478

24 point

Portrait	9R23479*	9R23481*	9R23483*	9R23485*
Landscape	9R23480*	9R23482*	9R23484*	9R23486*

* 24 Point i4 Character Set

Century
Schoolbook 300

4045 Order Numbers

Medium	Bold	Italic	Bold Italic	Diskettes Portrait Landscape
5D4045PU013	5D4045PU016	5D4045PU019	5D4045PU022	6-11 point
5D4045PU014	5D4045PU017	5D4045PU020	5D4045PU023	12-18 point
5D4045PU015	5D4045PU018	5D4045PU021	5D4045PU024	24 point
				Packaged Diskettes
5D4045PP005	5D4045PP006	5D4045PP007	5D4045PP008	6-24 point
				Century Schoolbook Family
				5D4045PF002
				Tape *
2700PP005	2700PP006	2700PP007	2700PP008	6-24 point
				Century Schoolbook Family
				2700PF002

- * 6-14 point i2 Character Set
- * 18 point i3 Character Set
- * 24 point i4 Character Set

Century
Schoolbook 300

4045 Order Numbers

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trademarks of Xerox Corporation.
Century Schoolbook 300 is a
trademark of Allied Corporation.

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

Century
Schoolbook 300

800/558-1444 (Nationwide)
800/558-5650 (California)
213/536-9707 (Los Angeles)
213/536-9935 (Los Angeles)

XEROX

4045

Word
Processing

Word Processing

Xerox offers fonts that match the most popular designs used on printers, typewriters, and word processors. This assures that office correspondence produced on a variety of equipment will have a coordinated look.

For example, if you currently use one of the typefaces in the left column, it can be matched with a Xerox product from the right column:

Elite	Elite iso
Prestige Elite	Vintage iso
Letter Gothic	Letter Gothic iso
Courier	Titan iso

The Xerox Data Processing fonts listed come in either 10, 12, or 15 pitch, again, to assure the best possible match.



Word
Processing

Word Processing

abcdefghijklmnopqrstuvwxyzABCDEFGHIJ Elite
KLMNOPQRSTUVWXYZ 0123456789 1131357 12 iso
4248888
. , ; ; ! ; ? ; ' " ' ' " " * & / \ | _ @ \$ % & \$ ¥ ¤ % # °
← → ↕ + - ± = < > ÷ × ~ · § ¶ # ® © ™ ¹ ² ³ () [] { } « »
Æ Ð Η Ι Λ Ł Ø Æ Þ Ñ æ ð ħ ι λ ø æ þ η ∫ - μ Ω κ δ ᾀ ᾁ ᾂ ᾃ

abcdefghijklmnopqrstuvwxyzABCDEFGHIJ Vintage
KLMNOPQRSTUVWXYZ 0123456789 1131357 12 iso
4248888
. , ; ; ! ; ? ; ' " ' ' " " * & / \ | _ @ \$ % & \$ ¥ ¤ % # °
← → ↕ + - ± = < > ÷ × ~ · § ¶ # ® © ™ ¹ ² ³ () [] { } « »
Æ Ð Η Ι Λ Ł Ø Æ Þ Ñ æ ð ħ ι λ ø æ þ η ∫ - μ Ω κ δ ᾀ ᾁ ᾂ ᾃ

abcdefghijklmnopqrstuvwxyzABCDEFGHIJ Letter Gothic
KLMNOPQRSTUVWXYZ 0123456789 1131357 12 iso
4248888
. , ; ; ! ; ? ; ' " ' ' " " * & / \ | _ @ \$ % & \$ ¥ ¤ % # °
← → ↕ + - ± = < > ÷ × ~ · § ¶ # ® © ™ ¹ ² ³ () [] { } « »
Æ Ð Η Ι Λ Ł Ø Æ Þ Ñ æ ð ħ ι λ ø æ þ η ∫ - μ Ω κ δ ᾀ ᾁ ᾂ ᾃ

abcdefghijklmnopqrstuvwxyzABCDEFGHIJ Titan
KLMNOPQRSTUVWXYZ 0123456789 1131357 12 iso
4248888
. , ; ; ! ; ? ; ' " ' ' " " * & / \ | _ @ \$ % & \$ ¥ ¤ % # °
← → ↕ + - ± = < > ÷ × ~ · § ¶ # ® © ™ ¹ ² ³ () [] { } « »
Æ Ð Η Ι Λ Ł Ø Æ Þ Ñ æ ð ħ ι λ ø æ þ η ∫ - μ Ω κ δ ᾀ ᾁ ᾂ ᾃ

Word Processing

Character Set

12 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries.

12 Bold iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries.

Word
Processing

Elite 12 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

12 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

12 Bold iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. Typography is art.

10 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. Typography is art.

10 Bold iso



Word
Processing

Vintage 10 and 12 iso



12 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries.

12 Bold iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries.

10 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The page carries it through the centuries.

10 Bold iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The page carries it through the centuries.

Word
Processing

Letter Gothic 12 and 10 iso

Typography is a servant, the servant of
thought and language to which it gives vis-
ible existence. Type gives body and voice
to silent thought. The speaking page
carries it through the centuries. To read
means to obtain meaning from words.

15 iso

**Typography is a servant, the servant of
thought and language to which it gives vis-
ible existence. Type gives body and voice
to silent thought. The speaking page
carries it through the centuries. To read
means to obtain meaning from words.**

15 Bold iso

Word
Processing

Letter Gothic 15 iso

10 iso Typography is a servant, the
servant of thought and lan-
guage to which it gives
visible existence. Type gives
body and voice to silent
thought. Typography is art.

10 Bold iso **Typography is a servant, the**
servant of thought and lan-
guage to which it gives
visible existence. Type gives
body and voice to silent
thought. Typography is art.

10 Italic iso *Typography is a servant, the*
servant of thought and lan-
guage to which it gives
visible existence. Type gives
body and voice to silent
thought. Typography is art.

10 Bold Italic ***Typography is a servant, the***
servant of thought and lan-
guage to which it gives
visible existence. Type gives
body and voice to silent
thought. Typography is art.



Word
Processing

Titan 10 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.

15 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

12 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

12 Bold iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

12 Italic iso

Word
Processing

Titan 15 and 12 iso

The Business Graphics package, a variety of distinct shading fonts, assures that your communicative art is presented with the utmost professionalism.

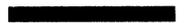
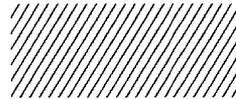
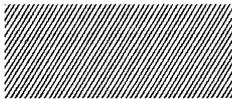
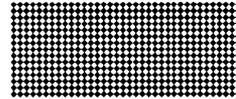
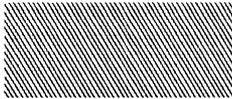
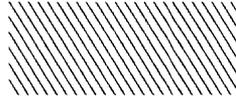
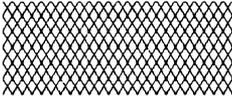
Primarily the package provides you with the forms character set, the backbone of forms design, allowing for both symmetrical and asymmetrical design.

As an added bonus, the Xerox Business Graphics package provides the ability to produce pie and bar charts, multilayered graphs, and organizational charts compatible with most word processing fonts.



Word
Processing

Business Graphics



Word
Processing

Chart 10





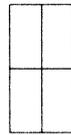
Forms 15



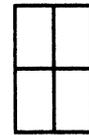
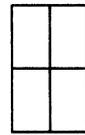
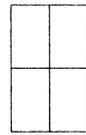
Forms 14



Forms 12.5



Forms 12



Forms 10

**Word
Processing**

Forms

**Packaged
Cartridges**

Portrait & Landscape

Elite 12iso	9R23562
Vintage 10iso	9R23577
Vintage 12iso	9R23578
Letter Gothic 10iso	9R23571
Letter Gothic 12iso 15iso	9R23572
Titan 10iso 15iso-L	9R23573
Titan 10Iiso	9R23574
Titan 12iso 15iso-P	9R23575
Titan 12Iiso	9R23576
Chart 10 Forms 10 12	9R23560
Forms 12.5 14 15	9R23561

**Word
Processing**

4045 Order Numbers

Diskette Portrait & Landscape	Tape Portrait & Landscape	Packaged Fonts
5D4045WP001	2700WP001	Elite 12iso 12Biso
5D4045WP002	2700WP002	Vintage 10iso 10Biso 12iso 12Biso
5D4045WP003	2700WP003	Letter Gothic 10iso 10Biso 12iso 12Biso
5D4045WP004	2700WP004	Letter Gothic 15iso 15Biso
5D4045WP005	2700WP005	Titan 10iso 10Biso 10Iiso 10BIiso
5D4045WP006	2700WP006	Titan 12iso 12Biso 12Iiso 15iso
5D4045WP007	2700WP007	Chart 10 Forms 10 12 12.5 14 15

Word
Processing

4045 Order Numbers

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trademarks of Xerox Corporation.

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

Word
Processing

800/558-1444 (Nationwide)
800/558-5650 (California)
213/536-9707 (Los Angeles)
213/536-9935 (Los Angeles)

XEROX

4045

████████████████████
Data
Processing

Data Processing

████████████████████

Xerox offers a complete line of typestyles and character sets to match the most widely-used data processing (DP) faces. These fonts are designed to add to your ability to print almost any data processing application.

Among the DP fonts Xerox offers are:

APL-A
LP162x66 iso
LP132x72 iso
OCR-A 10
OCR-B 10
Symbol C 10
XCP 14 iso
XCP 12.5 iso

Several Xerox line printer typefaces are also compatible with international paper sizes.


Data
Processing

Data Processing

abcdefghijklmnopqrstuvwxyz ^ OCR-A 10
ABCDEFGHIJKLMNOPQRSTUVWXYZ &
0123456789 @#\$%# +=<>
. , ; ! ? ' " * () [] { } / \ | - ~ _ □

Typography is a servant, the
servant of thought and lan-
guage to which it gives vis-
ible existence. Type gives
body and voice to silent
thought. The page carries
through the centuries.

abcdefghijklmnopqrstuvwxyz ^ ' OCR-B 10
ABCDEFGHIJKLMNOPQRSTUVWXYZ &
0123456789 @\$f%# +=<>~
. , ; ! ? ' " * () [] { } / \ | _ □

Typography is a servant, the
servant of thought and lan-
guage to which it gives vis-
ible existence. Type gives
body and voice to silent
thought. The page carries
through the centuries.

████████████████████
Data
Processing

Symbol C 10

$\alpha\beta\gamma\delta\epsilon\zeta\eta\theta\kappa\lambda\mu\nu\xi\pi\rho\sigma\tau\upsilon\phi\chi\psi\omega$ ^
 $\Gamma\Delta\Theta\Lambda\Xi\Pi\Sigma\Upsilon\Phi\Psi\Omega$ $\sim\ell\alpha_1$
 $0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9$ $+ \pm \times \div \approx \equiv \langle \rangle \sum \int \partial \nabla \infty \sim \cdot \circ$
 $\wedge \sim \otimes \pi \dots$ $\S \P$ $() \{ \} [] = | _ + \sqrt{} \leftrightarrow \uparrow \downarrow$

$$\alpha \leftarrow \{ \int \rho \kappa \partial \rho \}$$

$$\beta \rho \approx | \pi \kappa \theta | \pm \partial \phi$$

$$(\Psi \pi \nu^2 \times \int \lambda^3 \gamma \partial \gamma)$$

$$\sum_{\delta \leftarrow \ell}^{\infty} \ell \zeta^2 \pm \int \phi \psi \beta \partial \omega$$



Data
Processing

Symbol C 10

abcdefghijklmnopqrstuvwxyzABCDEFGHI
JKLMNOPQRSTUVWXYZ 0123456789 ¼½¾%&%'&
.,:;!;?¿' " ' ' " " * &/\|_ @\$¢£\$¥¤%#°
←↑→↓ +-±=⟨⟩÷×~ ·§¶#°@™¹²³ () [] { } « »
ÆÐHIJLŁØƆPFD æðhijl·łøæpłŋ Ĵ- μΩκδεεβñı

XCP 14 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries. To read means to obtain meaning from words.

abcdefghijklmnopqrstuvwxyzABCDEFGHI
JKLMNOPQRSTUVWXYZ 0123456789 ¼½¾%&%'&
.,:;!;?¿' " ' ' " " * &/\|_ @\$¢£\$¥¤%#°
←↑→↓ +-±=⟨⟩÷×~ ·§¶#°@™¹²³ () [] { } « »
ÆÐHIJLŁØƆPFD æðhijl·łøæpłŋ Ĵ- μΩκδεεβñı

XCP 12.5 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries. To read means to obtain meaning.

Data
Processing

XCP 14 iso and XCP 12.5 iso

Packaged Cartridges	Cartridge Portrait & Landscape
---------------------	--------------------------------

APLA10	9R23557
--------	---------

OCRA10

OCRB10

Sybo1C10	9R23558
----------	---------

LP132x72iso

LP162x66iso

XCP12.5iso	9R23559
------------	---------

XCP14iso

Data Processing

4045 Order Numbers

Diskette

Tape

Packaged

Portrait & Landscape

Fonts

5D4045DP001

2700DP001

APLA10
OCRA10
OCRB10
SymbolC10
LP132x72iso
LP162x66iso
XCP12.5iso
XCP14iso

Data
Processing

4045 Order Numbers

Journal of Applied Behavior Analysis

**Data
Processing**

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trademarks of Xerox Corporation.

████████████████████
Data
Processing

████████████████████

Data
Processing

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

**800/558-1444 (Nationwide)
800/558-5650 (California)
213/536-9707 (Los Angeles)
213/536-9935 (Los Angeles)**

XEROX

4045



Helvetica 300

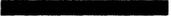
Helvetica 300



Helvetica 300 typeface is a sans serif noted for its popularity and readability.

It originated in late nineteenth century Germany, but was later revived and redesigned by the Swiss type foundry Haas in 1957. Its open counters and generous x-height make it one of the most legible typeface designs in the gothic tradition.

Helvetica 300 typeface was developed for Xerox by Mergenthaler Linotype Company for use on Xerox electronic printing products. It is appropriate for most every application, and is widely used in printing, publishing, advertising, and corporate design.



Helvetica 300

Helvetica 300

abcdefghijklmnopqrstuvwxyzABC
DEFGHIJKLMNOPQRSTUVWXYZ
0123456789 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$.,:;!;?¿ ' " ' ' " '*
& \/_ @ ¤ £ \$ % # ° + - ± = < > ÷ ×
·\$!#®©¹²³ ()[]{}«» Æ I J L Ø Œ æ i j l ø œ
- μ α ϖ β ' n i

Medium

abcdefghijklmnopqrstuvwxyzABC
DEFGHIJKLMNOPQRSTUVWXYZ
0123456789 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$.,:;!;?¿ ' " ' ' " '*
& \/_ @ ¤ £ \$ % # ° + - ± = < > ÷ ×
·\$!#®©¹²³ ()[]{}«» Æ I J L Ø Œ æ i j l ø œ
- μ α ϖ β ' n i

Bold

abcdefghijklmnopqrstuvwxyzABC
DEFGHIJKLMNOPQRSTUVWXYZ
*0123456789 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$.,:;!;?¿ ' " ' ' " '**
& \/_ @ ¤ £ \$ % # ° + - ± = < > ÷ ×
·\$!#®©¹²³ ()[]{}«» Æ I J L Ø Œ æ i j l ø œ
- μ α ϖ β ' n i

Italic

abcdefghijklmnopqrstuvwxyzABC
DEFGHIJKLMNOPQRSTUVWXYZ
0123456789 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$.,:;!;?¿ ' " ' ' " '*
& \/_ @ ¤ £ \$ % # ° + - ± = < > ÷ ×
·\$!#®©¹²³ ()[]{}«» Æ I J L Ø Œ æ i j l ø œ
- μ α ϖ β ' n i

Bold Italic



Helvetica 300

Character Set



- 6 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read quickly and accurately.
- 7 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read.
- 8 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.
- 9 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning.
- 10 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. Typography is an art.
- 11 point Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

██████████
Helvetica 300

Medium Text

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read.

6 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.

7 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type give body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.

8 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

9 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

10 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. Typography is art.

11 point

Helvetica 300

Bold Text

- 6 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read quickly and accurately.*
- 7 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read quickly.*
- 8 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.*
- 9 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.*
- 10 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. Typography is an art.*
- 11 point *Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means obtaining meaning from words.*

██████████
Helvetica 300

Italic Text

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read quickly.

6 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words, and legibility is that quality which enables words to be read.

7 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. To read means to obtain meaning from words.

8 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. read means to obtain meaning from words.

9 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries.

10 point

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries it through the centuries. Typography is art.

11 point


Helvetica 300

Bold Italic Text



12 point

Medium

Xerox Quality Fonts,
For The Quality Image

Bold

**Xerox Quality Fonts,
For The Quality Image**

Italic

*Xerox Quality Fonts,
For The Quality Image*

Bold Italic

***Xerox Quality Fonts,
For The Quality Image***

14 point

Medium

Xerox Quality Fonts,
For The Quality Image

Bold

**Xerox Quality Fonts,
For The Quality Image**

Italic

*Xerox Quality Fonts,
For The Quality Image*

Bold Italic

***Xerox Quality Fonts,
For The Quality Image***

Helvetica 300

Headline

Xerox Quality Fonts

18 point

Medium

Xerox Quality Fonts

Bold

Xerox Quality Fonts

Italic

Xerox Quality Fonts

Bold Italic

Xerox Quality

24 point

Medium

Xerox Quality

Bold

Xerox Quality

Italic

Xerox Quality

Bold Italic

Helvetica 300

Headline

Packaged Cartridges

Portrait &
Landscape

	Medium	Bold	Italic	Bold Italic
6 point	9R23259	9R23260	9R23261	9R23262
7 point	9R23263	9R23264	9R23265	9R23266
8 point	9R23267	9R23268	9R23269	9R23270
9 point	9R23271	9R23272	9R23273	9R23274
10 point	9R23275	9R23276	9R23277	9R23278
11 point	9R23279	9R23280	9R23281	9R23282
12 point	9R23283	9R23284	9R23285	9R23286

Cartridge

14 point

Portrait	9R23181	9R23183	9R23185	9R23187
Landscape	9R23182	9R23184	9R23186	9R23188

18 point

Portrait	9R23189	9R23191	9R23193	9R23195
Landscape	9R23190	9R23192	9R23194	9R23196

24 point

Portrait	9R23197*	9R23401*	9R23403*	9R23405*
Landscape	9R23198*	9R23402*	9R23404*	9R23406*

* 24 Point i4 Character Set

Helvetica 300

4045 Order Numbers

Medium	Bold	Italic	Bold Italic	Diskettes Portrait Landscape
5D4045PU001	5D4045PU004	5D4045PU007	5D4045PU010	6-11 point
5D4045PU002	5D4045PU005	5D4045PU008	5D4045PU011	12-18 point
5D4045PU003	5D4045PU006	5D4045PU009	5D4045PU012	24 point
				Packaged Diskettes
5D4045PP001	5D4045PP002	5D4045PP003	5D4045PP004	6-24 point
			5D4045PF001	Helvetica Family
				Tape *
2700PP001	2700PP002	2700PP003	2700PP004	6-24 point
			2700PF001	Helvetica Family

- * 6-14 point i2 Character Set
- * 18 point i3 Character Set
- * 24 point i4 Character Set

Helvetica 300

4045 Order Numbers

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Helvetica and Helvetica 300 are
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Typographic Marketing A3-23
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El Segundo, California 90245


Helvetica 300

800/558-1444 (Nationwide)
800/558-5650 (California)
213/536-9707 (Los Angeles)
213/536-9935 (Los Angeles)

1. 274 interface controller

The 274 Interface Controller (IC) is a protocol converter which enables the Xerox 4045 Laser CP 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 Xerox 4045 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 installing the 274 IC, the 4045 must first be installed. Please see Chapter 2, *Installing the 4045*, for installation instructions.

Once you have installed the 4045, you are ready to install the 274 IC. To install the unit, you need to set option switches within the 274 IC. These option switch settings control functions and operating formats for your host system.

In addition to setting the option switches, you need to connect the coaxial cable from your communications controller to the 274 IC, connect the Centronics parallel interface cable from the 274 IC to the 4045, and connect the power cable from the 274 IC to a 115 VAC outlet.

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)
<i>For detailed information regarding the 274 IC, contact your Xerox Sales Representative or local Xerox office.</i>	

Setting the 274 IC's switches

The option switches are located under the top cover of the 274 IC. To remove the top cover you need a 5/16" open end wrench and a 1/4" blade screwdriver.

CAUTION: Do not connect the 274 IC to your host or the 4045 before you have set the switches. **Do not leave the unit plugged into an electrical outlet while setting the switches.**

1. Turn the 274 IC over and rest it on its top.
2. Remove the top cover of the 274 IC:
 - Using the blade screwdriver, loosen and remove the two screws in front of the rubber feet on the front of the unit.
 - Using the wrench, loosen and remove the hex nut at the rear of the unit.
3. Turn the 274 IC right side up and gently separate and lift the top cover from the base.

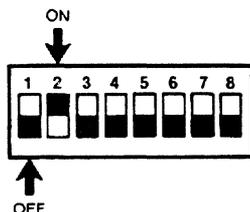
CAUTION: The top cover is connected to a printed circuit board by wires. **DO NOT PULL THE TOP COVER** more than the length the wires allow.

4. Place the top cover adjacent to the base.

The option switches are located at the left front of the unit. You will be setting option switches SWS1 and SWS2 (labeled on the left side of the switches). All other switches should be set to the OFF position.

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

With the switch setting label (SWS1) to the left side of the switch, use an instrument with a point, such as a letter opener or a mechanical pencil, to set the switch. A switch is set to OFF by pressing the bottom of the switch; pressing the top of the switch sets the switch to ON.



SWITCH SETTING EXAMPLE

Fig. 6-1, Options Setting, on the following page, illustrates where the switches are located.

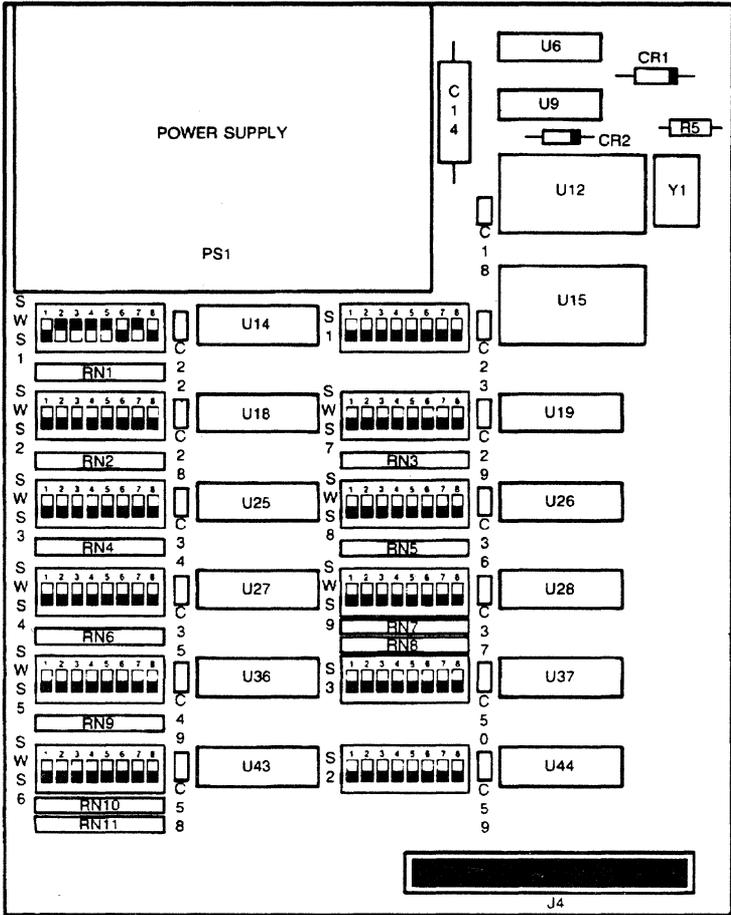


Figure 6-1 Options setting

- Set SWS1 and SWS2 option switches as shown in Table 6-1.

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 S1	
Switch 1:	Disables DSC format diagnostics mode. set to off
Switch 2:	Enables internal page formatting. set to on
Switch 3:	set to on —Indicates paper size is 8.50 x 11.00 inch (United States and Canada). or set to off —Indicates paper size is 8.28 x 11.69 inch (A4—International).
Switch4:	Enables CR (carrier return) and LF (line feed) after MPP (multiple print position) in SCS (SNA character string) mode. set to on
Switch 5:	Converts GE (graphic escape) into a hyphen in SCS mode. set to on
Switch 6:	This setting enables the 274 IC to use EBCDIC data code without conversion. (Note: Switch A:6 and A:7 of the 4045 Configuration Cartridge must also be set for EBCDIC.) set to off
Switch 7:	Enables the 274 IC to execute internal diagnostic tests when the switch marked DIAGNOSTICS on the 274 IC is pushed. set to on
Switch 8:	Disables SCS format diagnostics mode. set to off

Table 6-1 Switch settings (continued)

Switch S2	
Switch 1:	Suppresses SCS mode end-of-line trailing (NULLS). set to off
Switch 2:	Suppresses SCS mode end-of-line trailing (SPACES). set to off
Switch 3:	Suppresses DSC mode (NULL) lines, that is, any lines consisting entirely of (NULL)s and/or field attribute characters. set to off
Switch 4:	Disables controller diagnostics test (PCIA). set to off
Switch 5:	Enables the 274 IC to generate a CR and LF upon receipt of an EM (end of message) code. set to on
Switch 6:	Enables the 274 IC to insert a form feed on End of Buffer for an operator initiated local copy/screen dump. set to on
Switch 7 and Switch 8	N/A

6. Once the switches are set, carefully replace the cover onto the base of the 274 IC, but do not install the screws or hex nut at this time.

CAUTION: When replacing the cover, be careful not to catch the wires between the cover and the base. The wire connector should be perpendicular to the covers for ease in replacing the cover.

Connecting the coaxial cable

1. Locate the coaxial connector labeled **Host Device** on the back of the 274 IC. Fig. 6-2 shows the back panel of the 274 IC.

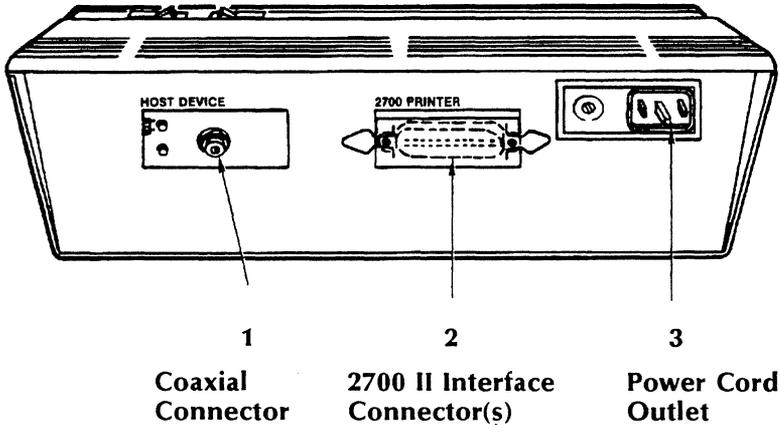


Figure 6-2 Back of 274 IC

1. Attach the coaxial cable to the connector by turning the cable clockwise until it latches.
2. To connect the coaxial cable to the IBM communications controller, refer to the appropriate IBM System manual for instructions.

Connecting the interface cable

1. Locate the interface cable connector on the back of the 274 IC labeled **PRINTER**.
 - Attach one end of the interface cable 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 4045.
 - Attach the other end of the interface cable to the host interface cable connector and flip the wire bails in toward the cable.

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 4045 is not already on, turn it on. Wait until the READY indicator appears on the control panel before proceeding.

The 4045 should always be turned on **before** turning on the 274 IC.

2. Once the READY indicator appears in the control panel of the 4045, 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. Fig. 6-3 shows the top of the 274 IC, the diagnostics switch, the power switch, and power on indicator.

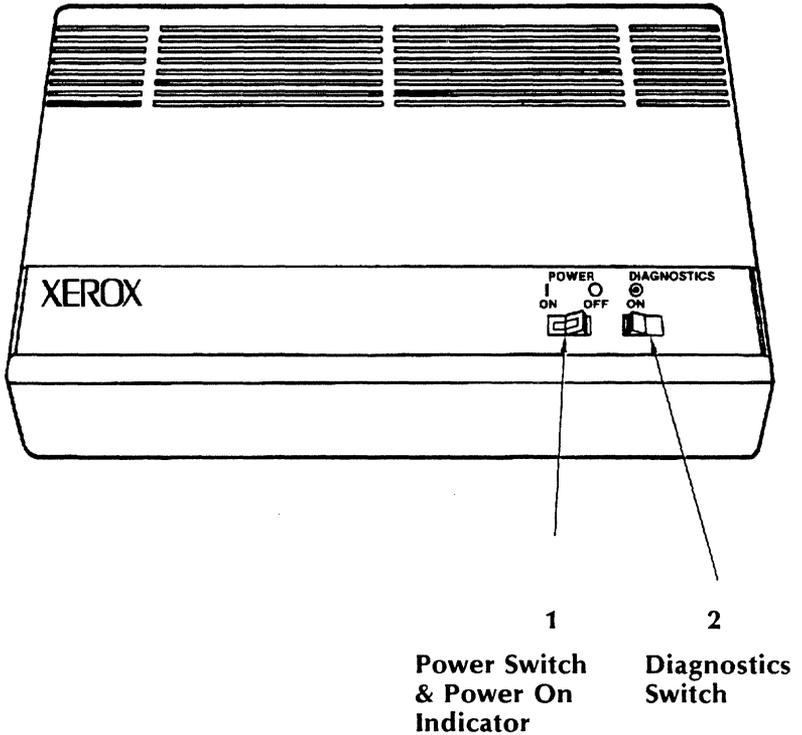


Figure 6-3 Top of the 274 IC

- The red light in the switch indicates that the power is on.

274 IC job status sheet

Each time the 274 IC is turned on, a Job Status Sheet will be printed at the 4045. 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 tables 6-1A and 6-1B.

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 274 IC 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 Fig. 6-4.

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 6-4 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 when certain problems with the 4045 and/or 274 IC occur.

Reinstalling the top cover

1. Turn 274 IC's power switch to the OFF position and then turn the 4045's power switch to the OFF position.

The 274 IC should always be turned off **before** turning off the 4045.

2. Reinsert the screws and the hex nut in the cover and tighten them.
3. Place the 274 IC in its permanent position.
4. Turn on the 4045's power switch.
5. Turn on the 274 IC's power switch.

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 4045.

This sheet indicates the status of the 4045, 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 4045 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.

Problems with...

There appears to be no power.

Verify that:

- the 4045 power switch is on.
- the 274 IC power switch is on.
- the 4045 and the 274 IC are turned on in the proper order (4045 first, then 274 IC).
- the 4045 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.

4045 Status Sheet does not print.

Verify that:

- the 4045 is powered on.
- the top cover is closed.
- the 4045 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 4045.

274 IC Status Sheet is not like the sample.

Call Xerox service representative.

A job sent to the 4045 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 4045.
- Make sure the 4045 is on-line and the host is operational.

2. 275 interface controller

The Xerox 275 Interface Controller (IC) enables the 4045 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 4045 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 communication controller and translates them for the 4045.

Installing the 275 IC

Before you install the 275 IC, the 4045 must first be installed. Please see Chapter 2, *Installing the 4045*, for installation instructions.

Once you have installed the 4045, you are ready to install the 275 IC. To install the unit, you need to set option switches within the 275 IC. These option switch settings control functions and operating formats for your host system.

In addition to setting the option switches, you need to connect the twin-axial cable from your communication controller to the 275 IC, connect the Centronics parallel interface cable from the 275 IC to the 4045, and connect the power cable from the 275 IC to a 115 VAC outlet.

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.	

Setting the 275 IC's switches

The option switches are located under the top cover of the 275 IC. To remove the top cover you need pliers and a 1/4" blade screwdriver.

CAUTION: Do not connect the 275 IC to your host or the 4045 before you have set the switches. **Do not leave the unit plugged into an electrical outlet while setting the switches.**

1. Turn the 275 IC over and rest it on its top.
2. Remove the base from the top cover of the 275 IC:
 - Using the blade screwdriver, loosen and remove the two screws in front of the rubber feet on the front of the unit.
 - Using the pliers, loosen and remove the hex nut at the rear of the unit.
3. Turn the 275 IC right side up and gently separate and lift the top cover from the base.

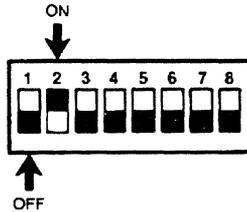
CAUTION: The top cover is connected to a printed circuit board by wires. **DO NOT PULL THE TOP COVER** more than the length the wires allow.

4. Place the top cover adjacent to the base.

The option switches are located at the left front of the unit. You will be setting option switches SWS1 (labeled on the left side of the switch), only. All other switches should be set to the OFF position.

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

With the switch setting label (SWS1) to the left side of the switch, use an instrument with a point, such as a letter opener or a mechanical pencil, to set the switch. A switch is set to OFF by pressing the bottom of the switch; pressing the top of the switch sets the switch to ON.



SWITCH SETTING EXAMPLE

Fig. 6-5, Options Setting, on the following page, illustrates where the switches are located.

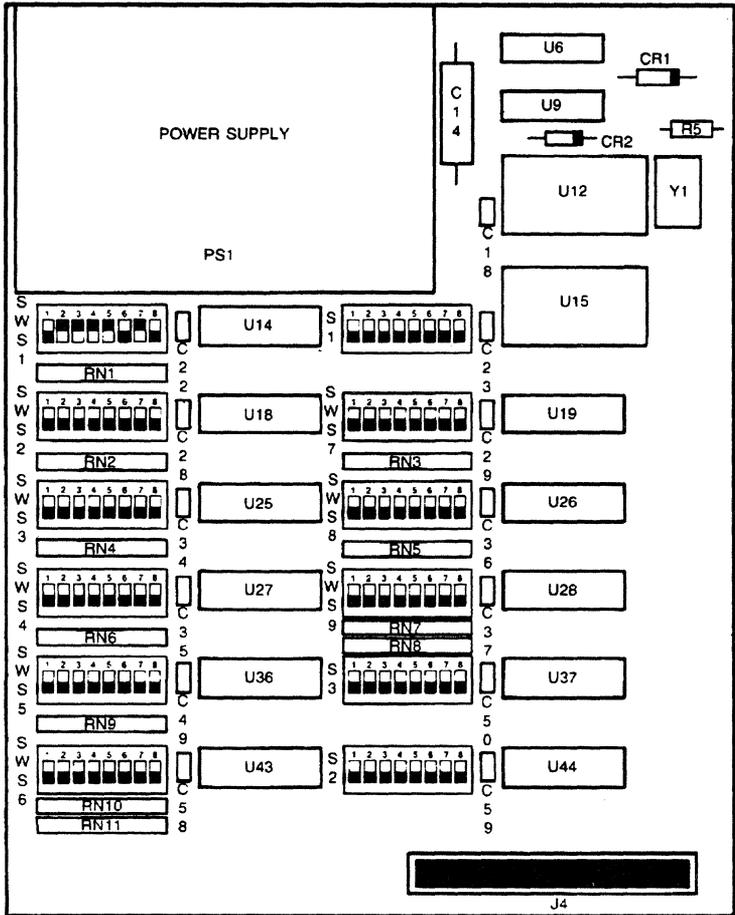


Figure 6-5 Options setting

- Set the SWS1 option switches as shown in the following table. (Underscoring of the switch setting represents the default setting.)

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 SWS1 switch settings

Switches 1, 2, and 3	<p>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.)</p> <p>Address switch settings:</p> <table border="0"> <tr> <td></td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>0</td> </tr> <tr> <td>Set Switch 1:</td> <td>Off</td> <td>On</td> <td>Off</td> <td>On</td> <td>Off</td> <td>On</td> <td><u>Off</u></td> <td>On</td> </tr> <tr> <td>Set Switch 2:</td> <td>Off</td> <td>Off</td> <td>On</td> <td>On</td> <td>Off</td> <td>Off</td> <td><u>On</u></td> <td>On</td> </tr> <tr> <td>Set Switch 3:</td> <td>Off</td> <td>Off</td> <td>Off</td> <td>Off</td> <td>On</td> <td>On</td> <td><u>On</u></td> <td>On</td> </tr> </table>		0	1	2	3	4	5	6	0	Set Switch 1:	Off	On	Off	On	Off	On	<u>Off</u>	On	Set Switch 2:	Off	Off	On	On	Off	Off	<u>On</u>	On	Set Switch 3:	Off	Off	Off	Off	On	On	<u>On</u>	On
	0	1	2	3	4	5	6	0																													
Set Switch 1:	Off	On	Off	On	Off	On	<u>Off</u>	On																													
Set Switch 2:	Off	Off	On	On	Off	Off	<u>On</u>	On																													
Set Switch 3:	Off	Off	Off	Off	On	On	<u>On</u>	On																													
Switch 4	<p>IBM Printer Modes: This option enables you to select an IBM 5256 or IBM 5225 printer mode.</p> <p>set to on Enables the 275 IC to accept data intended for the IBM 5256.</p> <p>or</p> <p>set to <u>off</u> Enables the 275 IC to accept data intended for the IBM 5225.</p>																																				
Switch 5	<p>Buffer Dump Mode: A diagnostic feature used by the Xerox service representative.</p> <p>set to <u>off</u> The off position enables normal operation of the 275 IC.</p>																																				
Switch 6	<p>Data Code Conversion Mode: This setting enables the 275 IC to use EBCDIC data code without conversion. (Note: Switches A:6 and A:7 of the 4045 Configuration Cartridge must also be set for EBCDIC.)</p> <p>set to <u>off</u></p>																																				
Switch 7	<p>Cancel Request Flag: This switch is used by Xerox personnel.</p> <p>set to <u>off</u> The printer is in its normal operational mode.</p>																																				
Switch 8	<p>Unused switch</p> <p>set to <u>off</u> N/A</p>																																				

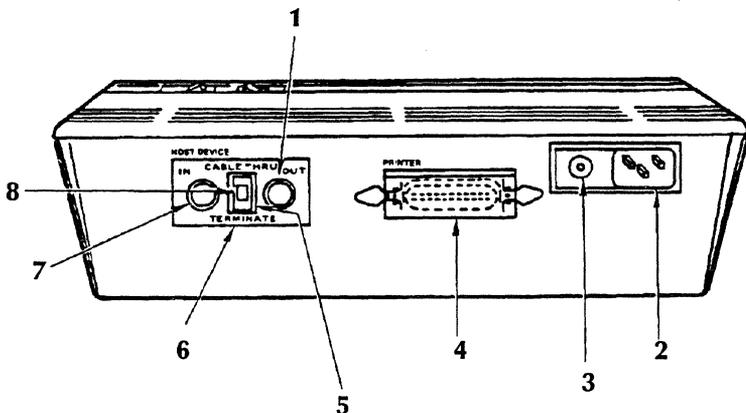
- Once the switches are set, carefully replace the cover onto the base of the 275 IC, but do not install the screws or hex nut at this time.

CAUTION: When replacing the cover, be careful not to catch the wires between the cover and the base. The wire connector should be perpendicular to the covers, for ease in replacing the cover.

Connecting the twin-axial cable

The twin-axial cable connects the Xerox 275 IC to the IBM System 3X communication controller.

- Locate the twin-axial connector labeled **Host Device** on the back of the 275 IC. (Fig. 6-6 shows the back panel of the 275 IC.)



- | | |
|-----------------------------|------------------------------|
| 1 Out | 5 Cable thru switch |
| 2 Power cord connector | 6 Twin-axial cable connector |
| 3 Fuse | 7 In |
| 4 Interface connector cable | 8 Green indicator light |

Figure 6-6 Back of 275 IC

- 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 interface cable

1. Locate the interface cable connector on the back of the 275 IC labeled **PRINTER**.
 - Attach one end of the interface cable 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 4045.
 - Attach the other end of the interface cable to the host interface cable connector and flip the wire bails in toward the cable.

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 4045 is not already on, turn it on. Wait until the READY indicator appears on the control panel before proceeding.

Always turn on the 4045 **before** turning on the 275 IC.

2. Once the READY indicator appears in the control panel of the 4045, 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. Fig. 6-7 shows the top of the 275 IC, the diagnostics switch, the power switch, and power on indicator.

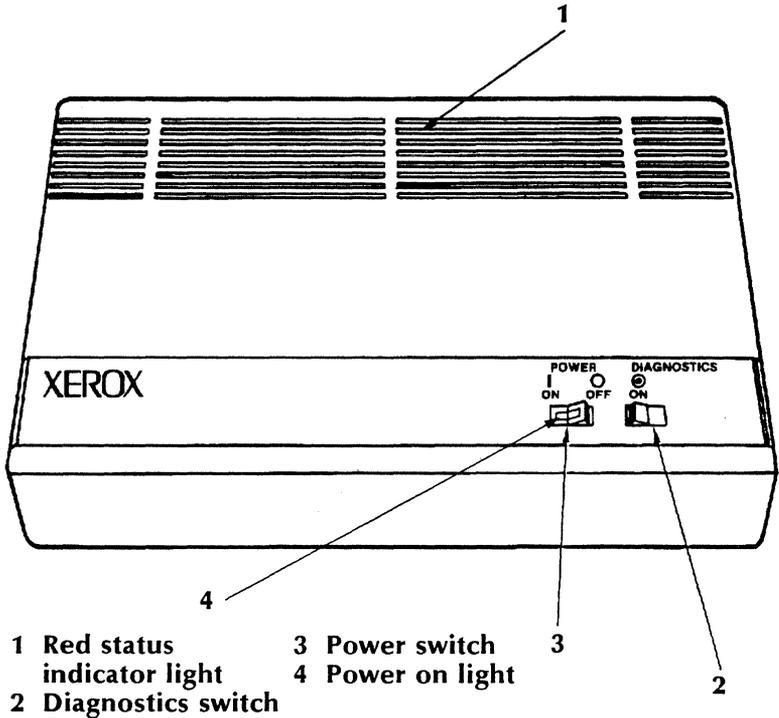


Figure 6-7 Top of 275 IC

- The red light in the switch indicates that the power is on.

275 IC job status sheet

Each time the 275 IC is turned on, a Job Status Sheet will be printed at the 4045.

The comment line of the Job Status Sheet reflects the current status of the 275 IC including any problems with the unit.

STATUS SHEET

MB-0011*DB-012A*DB-SYS3X*SWS1-01101100*MB-OK*DB-OK

458736 Bytes Available

POINTS:

Resident:
Titan10iso-P
XCP14iso-L

Figure 6-8 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 4045.
- 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 4045 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 275 IC 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.

Reinstalling the top cover

1. Turn the 275 IC's power switch to the OFF position and then turn the 4045's power switch to the OFF position.

Always turn the 275 IC off **before** turning off the 4045.

2. Reinsert the screws and the hex nut in the cover and tighten them.
3. Place the 275 IC in its permanent position.
4. Turn on the 4045's power switch.
5. Turn on the 275 IC's power switch.

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 4045.

This sheet indicates the status of the 4045, 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 4045 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.

Problems with...

There appears to be no power.

Verify that:

- the 4045 power switch is on.
- the 275 IC power switch is on.
- the 4045 and the 275 IC are turned on in the proper order (4045 first, then 275 IC).
- the 4045 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.

4045 Status Sheet does not print

Verify that:

- the 4045 is powered on.
- the top cover is closed.
- the 4045 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 4045.

275 IC Status Sheet does not look like the sample.

A job sent to the 4045 and 275 IC is not printing.

Call Xerox service representative.

- 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 4045.
- Make sure the 4045 is on-line and the host is operational.

3. 280 ISD installation instructions

Description

The Xerox 280 Interface Sharing Device, ISD, allows the sharing of up to four input hosts with one or two output printers. The ISD can simultaneously receive input from four hosts, store data on 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 fig. 6-11).

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, and a problem solving

section. It is important to read the user guide before installing the 280 ISD.

Table 6-3 is a quick reference guide that lists the necessary steps for installing the 4045 printer and the 280 ISD. Each step is explained in more detail in this section.

Table 6-3 **Installing the 4045 and the 280 ISD**

<p>Installing the 4045</p>	<p>Determine which output your 4045 supports:</p> <p style="text-align: center;">Centronics Parallel Serial Asynchronous</p> <p>Set the switches on the 4045 configuration cartridge</p>
<p>Installing the 280 ISD</p>	<p>Decide if you want to:</p> <p>(a) configure your host to the factory default settings of the 280 ISD, or</p> <p>(b) configure the internal switches on the 280 ISD to match the requirements of your host.</p>
<p>Setting the 280 ISD internal switchbanks Serial Model</p>	<p>Set the two 8-lever switchbanks</p> <ul style="list-style-type: none"> • Input A • Serial (printer) out <p>Set the three 8-lever switchbanks</p> <ul style="list-style-type: none"> • Input B • Input C • Input D <p>Set the 4-lever switchbank</p> <ul style="list-style-type: none"> • 280 ISD status sheet • printer priority
<p>Setting the 280 ISD internal switchbanks Parallel Model</p>	<p>Set the two 8-lever switchbanks</p> <ul style="list-style-type: none"> • Input A • Serial (printer) out <p>Set the 4-lever switchbank</p> <ul style="list-style-type: none"> • 280 ISD status sheet • printer priority

Connecting the cables	<p>Connect the cable(s) from the host(s) to the 280 ISD</p> <p>Connect the cable(s) from the 280 ISD to the printer(s)</p>
Connecting the power cord	Connect the power cord from the 280 ISD to an electrical outlet
Power up	<p>Power on the 4045 printer, then power on the 280 ISD</p> <p>Wait for the 4045 Configuration Sheet and the 280 ISD status sheet</p>

Installing the 4045

Installing the 4045	<p>Determine which input your 4045 supports:</p> <p style="text-align: center;">Centronics Parallel Serial Asynchronous</p> <p>Set the switches on the 4045 configuration cartridge</p>
----------------------------	---

Before installing the 280 ISD, you must install the 4045. Please see Chapter 2, *Installing the 4045*, of the *Operating the 4045* section of this manual for installation instruction.

When installing the 4045, the switches on the 4045 configuration cartridge should be set as shown in the following illustrations to be compatible with the 280 ISD

Fig. 6-9 shows the configuration cartridge switch settings for a Centronics parallel interface.

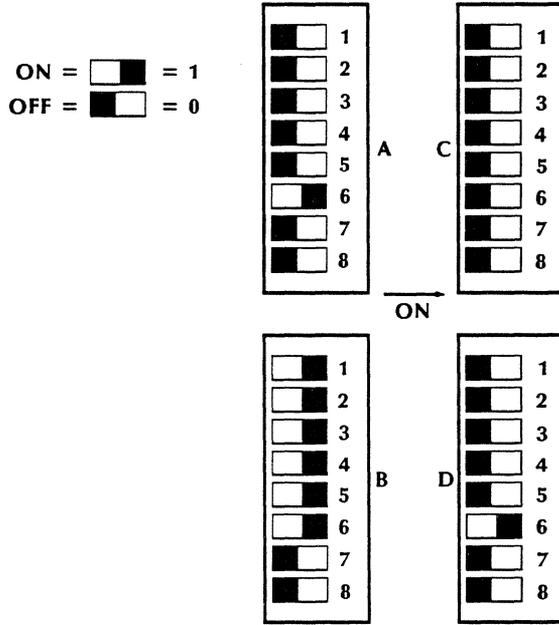


Figure 6-9 Centronics parallel switch settings

Fig. 6-10 shows the configuration cartridge switch settings for a serial asynchronous interface:

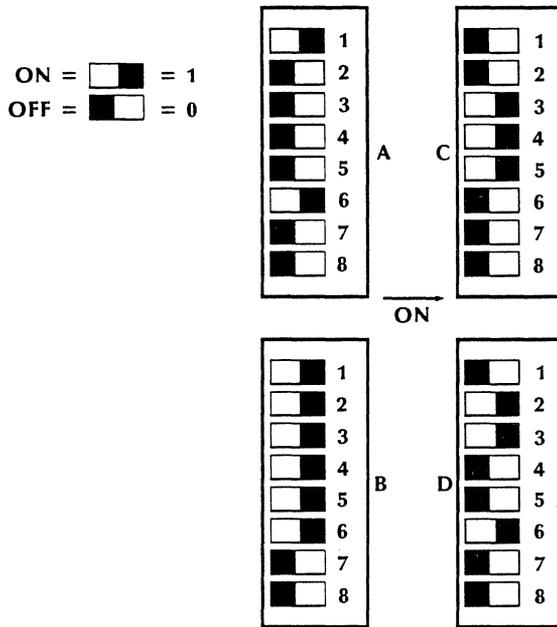


Figure 6-10 Serial Asynchronous switch settings

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 6-4.

Table 6-4 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 has the following internal settings:

- 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 has the following internal settings:

- 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 printing of the ISD status sheet and priority of the printers. The default settings for these switches are shown in Table 6-5.

Table 6-5 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"
- The following 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 XONXOFF
 - 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 4045 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 Fig. 6-11 and Fig. 6-12.

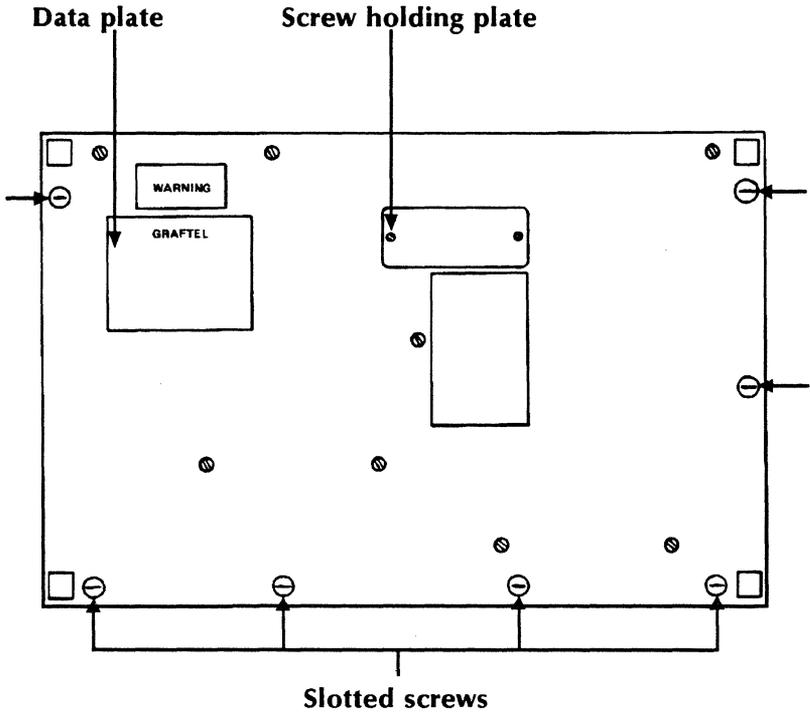


Figure 6-11 Bottom of ISD unit

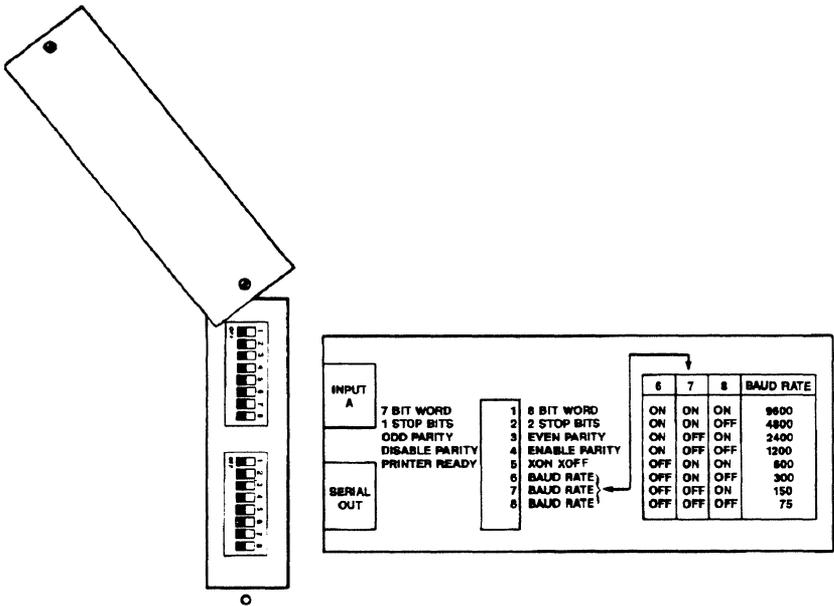


Figure 6-12 Switchbank plate on the bottom of ISD

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 4045 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 6-6 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 6-6 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 4045 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 6-7 explains each switch function.

Table 6-7 **8-lever switchbank function**

ISD switch	Color	Function	Setting
Switch 1	Brown	Sets the data bits: 7-bit Data 8-bit Data	OFF ON
Switch 2	Red	Sets the number of stop bits: 1 Stop Bit 2 Stop Bits	OFF ON
Switch 3	Orange	Sets parity to odd or even: Odd Even	OFF ON
Switch 4	Yellow	Sets parity to disable or enable: Disable Enable	OFF ON
Switch 5	Green	Sets the protocol: Printer Ready XON/OFF	OFF ON
Switch 6 Switch 7 Switch 8	Blue Purple Gray	Sets the baud rate (in bits per second)	
			<u>6</u> <u>7</u> <u>8</u>
		9600	ON ON ON
		4800	ON ON OFF
		2400	ON OFF ON
		1200	ON OFF OFF
		600	OFF ON ON
		300	OFF ON OFF
		150	OFF OFF ON
		75	OFF OFF 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. Now remove the three slotted screws and washers located at the bottom of the gray lip at the back of the ISD.

- 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. Fig. 6-13 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**.

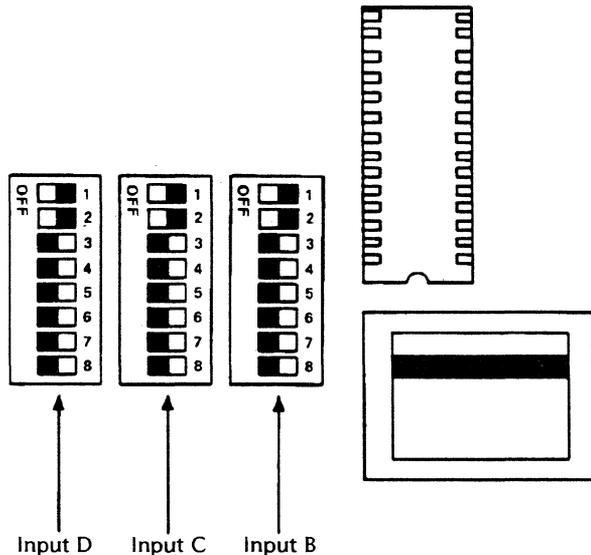


Figure 6-13 Internal ISD 8-lever switchbanks

- 8. Set the switchbanks. Refer to Table 6-7 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 Fig. 6-14) controls the status sheet and default printer priority.

Table 6-8 **Four-lever switchbank**

ISD switch	Color	Function	Setting
Switch 1	Brown	Controls printing of the ISD status sheet: Enables ISD status sheet Disables ISD status sheet	ON OFF
Switch 2	Red	Sets Printer Priority: Parallel Output Serial Output	ON OFF
Switch 3	Orange	Reserved	
Switch 4	Yellow	Reserved	

- Set the switchbanks. Réfer to Table 6-8 for the listing of what each switch controls.

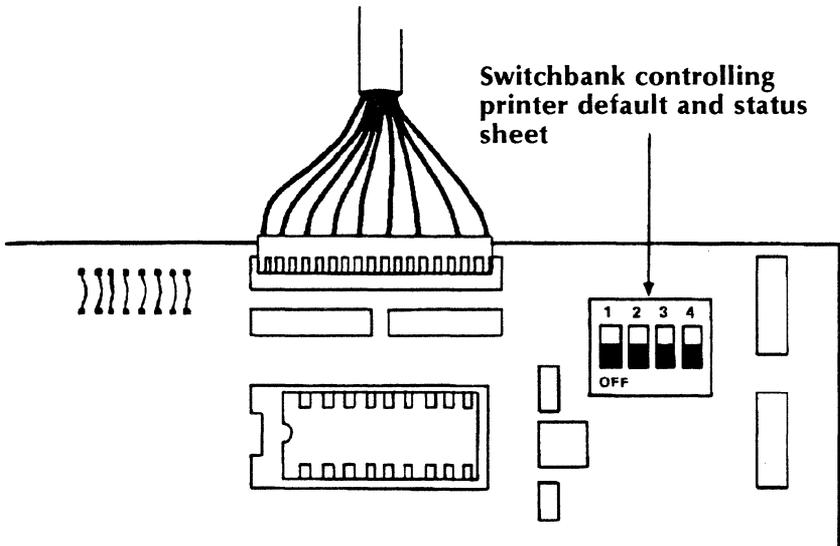


Figure 6-14 **Four-lever switchbank**

10. When all the switches have been set, place the top cover carefully back in place and reinsert the three slotted screws and washers.
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)
------------------------------	---

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 Fig. 6-15. 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.

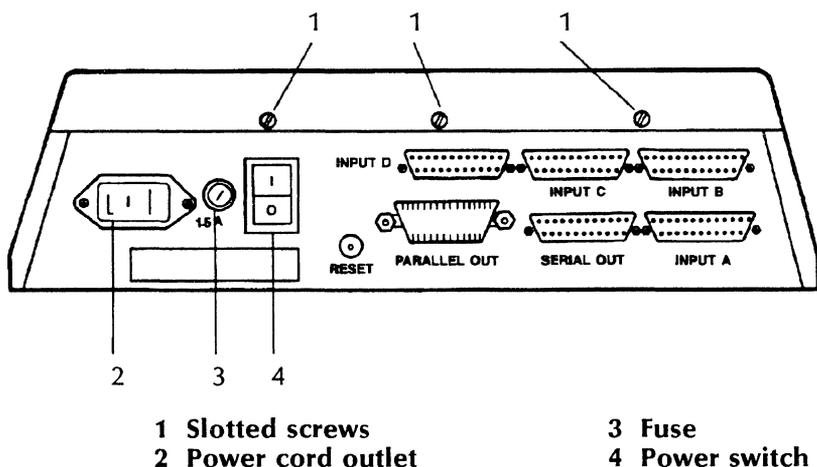


Figure 6-15 Back of serial ISD with four serial inputs

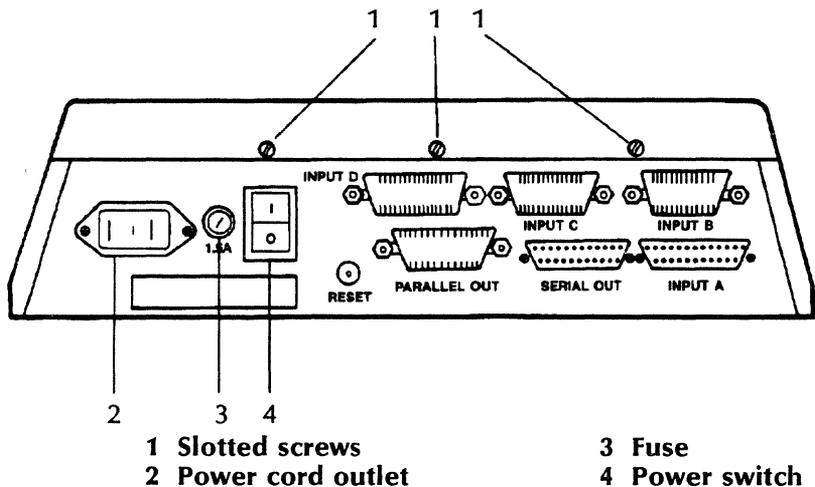
2. Locate the printer interface cable connector on the back of the host. Attach the other end of the interface cable to the host interface cable connector and tighten the two slotted screws located on either side of the interface connector.

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 Fig. 6-15. 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 Slotted screws
- 2 Power cord outlet
- 3 Fuse
- 4 Power switch

Figure 6-16 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 Fig. 6-16. 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 Fig. 6-15 and Fig. 6-16. 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 4045. Attach the other end of the interface cable to the 4045 female connector and tighten the two slotted screws on either side of the male connector.

Connecting output cable—ISD to parallel printer

1. Locate the female interface cable connector on the back of the ISD labeled **PARALLEL OUT**. See Fig. 6-15 and Fig. 6-16. 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 4045. Attach the other end of the interface cable to the 4045 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 Fig. 6-15 and Fig. 6-16.
3. Plug the male connector of the power cord into an electrical outlet.

Powering on the 280 ISD

Power up	Power on the 4045 printer, then power on the 280 ISD Wait for the 4045 configuration sheet and the 280 ISD status sheet
-----------------	--

1. If the 4045 is not already on, turn it on. Wait until the **READY** indicator appears on the control panel before proceeding.

The 4045 should always be turned on before turning on the 280 ISD.

2. Once the **READY** indicator appears in the control panel of the 4045, turn the ISD on. The ISD is turned on by pressing the black power toggle switch located on the back of the ISD. See Fig. 6-15 and Fig. 6-16.

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 Fig. 6-17 and Fig. 6-18 for examples of the serial and parallel status sheets.

The 280 ISD and the 4045 printer 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 4045 printer may be powered off in any order.

Note: The Reset button, Fig. 6-15 and Fig. 6-16, 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 6-17 280 ISD serial status sheet

STATUS SHEET

A=9600,E,7,1,PRN/RDY O=9600,E,7,1,PRN/RDY V1.1 REV6 PC4

458736 Bytes Available

FONTS:

Resident:
Titan10iso-P
XCPl4iso-L

Figure 6-18 280 ISD parallel status sheet

280 ISD status sheet

The 280 ISD status sheet is similar to the 4045 status sheet. For a complete explanation of a 4045 status sheet see appendix A of this manual.

The 280 ISD serial status sheet (Fig. 6-17) 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 6-9 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 (Fig. 6-18) shows the switch settings for the one serial host and the serial printer.

Table 6-9 **280 ISD status sheet settings**

Code	What does it mean
A=	Indicates the input host. O indicates the serial <u>o</u> utput printer.
9600	Baud rate. May be 75, 150, 300, 600, 1200, 2400, 4800 or 9600.
E	Parity. May be <u>E</u> ven, <u>O</u> dd or <u>N</u> o 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 4045 and the 280 ISD are plugged into wall outlets
- the wall outlets work properly
- the 4045 power switch is on
- the 280 ISD power switch is on
- the 4045 and the 280 ISD are turned on in the proper order (4045 first, then the 280 ISD)

If the 4045 configuration sheet is not being printed

Verify that :

- the 4045 is powered on
- the top cover is closed
- the 4045 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 4045 configuration sheet to be sure switches on the 4045 configuration cartridge are set properly. (For a complete explanation of the 4045 configuration sheet and cartridge refer to the *Operating the 4045* section of the *4045 User Manual*.)

If a job sent to the 4045 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 4045 is on-line and the host is operational
- check the 4045 configuration sheet to be sure switches on the 4045 configuration cartridge are set properly. (For a complete explanation of the 4045 configuration sheet and cartridge see the *Operating the 4045* section of the *4045 User Manual*.)

If the 280 ISD status sheet is not like the sample

Call your Xerox Service Representative

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 the sheet produced at power on. The other is the sheet produced after a soft reset. The sheet shown here is a combination of both sheets since many of the areas are the same on both.

The different areas are:

1. Two parallel lines that 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.
3. Area A—Interface switch settings.
Area B—Emulation selected.
Area C—User optional switch settings.
4. A pictorial and hexadecimal representation of the switches of your configuration cartridge.
5. Area A—Memory available for font/graphics download.
Area B—A message that appears only if DRAM (optional) memory is not installed or is inoperative.

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 before 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.

① _____

② **CONFIGURATION SHEET**

③ **Revision #** N0319A-1L

Parallel Centronics 8 Bit Data (A)

4045(2700) Mode (B)

ASCII (C)
U.K. English
Chime

④ **Hex #** 0C 15 8C 06

ON = = 1
OFF = = 0

⑤ **393200 Bytes Available**

⑥ **POINTS:**

Resident:		Rev.
Titan10iso-P	(A)	7
XCP14iso-L		4
Cartridge:		Rev.
1 XeroxLogo24-L		4
1 XeroxLogo24-P		4
2 NewKosmos6-P		1
2 NewKosmos14-P		1
2 Titan1Siso-P		2
2 NewKosmos6-L		1
2 NewKosmos8-L	(B)	1
2 NewKosmos10-L		1
2 NewKosmos12-L		1
3 Classic24-P		6
3 NewKosmos10-P		1
3 Titan1Siso-L		2
4 Classic24-L		6
4 NewKosmos8-P		1
4 NewKosmos12-P		1

⑦a _____

⑦b **Account #** _____ **Serial #** _____

Date _____ **Meter** _____

Figure A-1 Configuration sheet

Status sheet

If requested through an instruction in the data stream, or an error is detected during power up or the printing of a job, a status sheet will be produced. The status sheet like the configuration sheet contains many areas of information. On the following page is 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 will be printed to the right of the colon (:). Refer to the *Reference Manual* for the definition of these codes.
3. Memory available.
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 Loaded fonts]
- ③ 20160 Bytes Available]

② 1 JOB ERRORS:
Page 0 : 49

FONTS:

- ④a Resident:
 - Titan10iso-P]
 - XCP14iso-L]
- Cartridge:
 - NewKosmos6-P]
 - NewKosmos8-P]
 - NewKosmos10-P]
 - NewKosmos12-P]
 - NewKosmos14-P]
 - Elitel2-P]
 - Elitel2-L]
 - XeroxLogo24-P]
 - LetterGothic12-L]
 - Classic10-P]
 - Classic10B-F]
 - Classic12-P]
 - Classic12B-F]
- ④b

Downloaded:	Bytes
VintageLS12-P	13056
YourSig24-P	9118
XEROX24Logo-P	3384
C3901-P	16812
BoldPS-P	13994

- 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 in selecting the configuration cartridge settings for your 4045. See *Configuration cartridge switch settings* in the *Operating the 4045* section of this manual for information on selecting settings.

Configuration Cartridge Checklist

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

A

C

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

B

D

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

Configuration Cartridge Checklist

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

A

C

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

B

D

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

Configuration Cartridge Checklist

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

A

C

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

B

D

Off	On	
<input type="checkbox"/>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input type="checkbox"/>	2
<input type="checkbox"/>	<input type="checkbox"/>	3
<input type="checkbox"/>	<input type="checkbox"/>	4
<input type="checkbox"/>	<input type="checkbox"/>	5
<input type="checkbox"/>	<input type="checkbox"/>	6
<input type="checkbox"/>	<input type="checkbox"/>	7
<input type="checkbox"/>	<input type="checkbox"/>	8

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.
	18	Unloading font not properly loaded.
	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.
	23	Page character limit of 15,000 printable and control characters has been exceeded. Data was lost if too complex. Excess data printed on following page.
	25	Possible duplicate page.
	26	More than ten errors detected in this document.
	29	Illegal parameter in command.

	Code-Hex	Meaning
Font usage:	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:	81	Graphic data error.
	82	Graphic truncated due to error in document formation.
	83	Graphic partially loaded because RAM is full.
	84	Graphic storage is exhausted.
	85	Graphic count is exceeded.

D. Conversion tables

Margins and horizontal tabs

1/60-inch units to 12-pitch characters

5	=	1 character
10	=	2 characters
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 characters (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

Command	Format	Description	Page #
Absolute Text Placement	*a X,Y<LE>	Places text at exact point on page	3-68
Bolding Start	*b	Begins bolding of characters	3-43
Bolding Stop	*p	Ends bolding	3-44
Centering	*q	Centers line of text between left and right margin	3-44
Character Table	*+T,<LE>	Allows you to create own character translation table	3-86
Data Monitor	*+D	Prints designated file in hexadecimal	3-93
Drawing Lines Landscape			
Vertical	*x<X,Y,L,T> <LE>	Draws line on page	3-60
Horizontal	*y<X,Y,L,T> <LE>		
Portrait			
Vertical	*y<X,Y,L,T> <LE>		3-63
Horizontal	*x<X,Y,L,T> <LE>		

Command	Format	Description	Page #
Font Add Selected	*+A<LE>	Loads additional downloaded fonts after fonts initially loaded	3-21
Font Change	*<n>	Specifies font ID number in text	3-20
Font Delete Selected	*+B<LE>	Deletes specified fonts from memory	3-22
Font ID Assignment	*+<n><fontname><LE>	Sets up numbered index for fonts	3-18
Font Load	*+F<LE>	Loads downloaded fonts from host into 4045 memory	3-16
Font Unload	*+U<LE>	Clears all downloaded fonts from memory	3-21
Graphic Window	*gw<E>;<X,Y,A,B><LE> Graphic Data	Creates logos, graphs pictures on printer	3-73
Horizontal Tab Clear	*d	Clears all horizontal tabs	3-56
Horizontal Tab Set	*t <n ₁ ,n ₁₆₀ ><LE>	Sets horizontal tabs	3-57
Justification Start	*j	Spaces text evenly between left and right margin	3-41
Justification Stop	*k	Stops justification	3-42
Language	*zl<c>	Changes character set	3-85

Command	Format	Description	Page #
Line Spacing	*i<n>	Changes spacing between lines	3-45
Margins	*m<S,T,B,L,R> <LE>	Sets margins on page	3-34
Merge Page Load	*+M<LE>	Stores constant page in memory	3-77
Merge Page Unload	*+V<LE>	Deletes constant page from memory	3-79
Merge Start	*ze	Merges constant page with subsequent pages	3-78
Merge Stop	*zd	Stops merging of pages	3-78
Overstriking Start	*zo(c)	Prints one character over another	3-49
Overstriking Stop	*zp	Stops overstriking	3-49
Print	*+P<LE>	Job delimiter which separates jobs	3-28
Relative Text Placement	*r<D> <n> <c>	Specifies text placement in terms of current position	3-72
Reset	*+X<LE>	Job delimiter which sets job parameters to defaults	3-29
Subscript Start	*l	Places characters below line	3-47
Subscript/Superscript Stop	*s	Stops subscript and superscript	3-47
Superscript Start	*h	Places characters above line	3-46

Command	Format	Description	Page #
Underline Start	*u	Underlines all subsequent characters	3-42
Underline Stop	*w	Stops underlining	3-42
Units—1/60	*zg	Returns from 1/300th to 1/60th for margin settings and tabs	3-38
Units—1/300	*zf	Changes from 1/60th to 1/300th for margin settings and tabs	3-38
UDK	=UDK=<c>	Establishes escape sequence	3-11
Vertical Tab Clear	*e	Clears all vertical tabs	3-89
Vertical Tab Set	*v<n ₁ ,n ₁₂₅ ><LE>	Sets vertical tabs	3-89
VFU Stops Clear	*zw	Explained in <i>Reference Manual</i>	
VFU Stops Set	*zv<n><v ₁ ,v ₇ ><LE>	Explained in <i>Reference Manual</i>	

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 (2.54 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 4045 printer.

Normally the 4045 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 4045. Then you can print the command successfully.

When a Font Change command references the font that is currently being used for printing, the 4045 continues using the font and the printed result looks as if there was no such command.

For example, if the 4045 is currently printing with font 4, placing a Font Change instruction of *4 into the command enables it to print as follows:

Entered: =*4UDK= **Prints:** =UDK=

Duplicate font names

The 4045 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 4045 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 4045 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 4045 printer, see the *Reference Manual*.

Using 2700 files on 4045

The 4045 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 4045 printer.

The 4045 printer emulates the Xerox 2700 II printer with the following exceptions:

- No bisync communication capability.
- 4045 has only one output paper tray and no output paper offset. (Paper select and offset commands are ignored.)
- Downloaded 2700 fonts must be of the opposite orientation than the expected output because of the direction of scan. (More details about this later.)
- Any ESC code (X'1B') encountered during font downloading will terminate the job.
- No personality cartridges (for code extensions).

- No switch selectable margin defaults.
- Even-pixel-only placement applies to short edge direction.
- 4045 printer senses paper size and adjusts default margins accordingly.
- In overstruck text, spaces are not overstruck. On overstruck text lines with multiple fonts, the character used as overstrike will change with font of the overstruck characters. Overstrike is not terminated by a change of font.
- <CR> or <LE> terminates Subscripting/ Superscripting command.

Downloading Xerox 2700 fonts

The 4045 printer accepts 2700 fonts with minor adaptations. The 4045 printer has a different page orientation than the 2700 printer, so 2700 downloaded fonts are automatically converted as they are downloaded to the 4045 printer from -P to -L or -L to -P. If you plan to use 2700 fonts in a portrait job, you want to load landscape fonts to the 4045. Likewise, if you plan to use 2700 fonts in a landscape job, you want to load portrait fonts to the 4045.

Note: Use the downloaded 2700 font name as it appears on the 4045 status sheet in your Font ID Assignment command.

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, lower case 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 4045 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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12 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries.

12 Bold iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The speaking page carries through the centuries.

10 iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The page carries it through the centuries.

10 Bold iso

Typography is a servant, the servant of thought and language to which it gives visible existence. Type gives body and voice to silent thought. The page carries it through the centuries.

Word
Processing

Letter Gothic 12 and 10 iso
