
Xerox DocuPrint 180 Laser Printing System Product Guide

**THE DOCUMENT COMPANY
XEROX**

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Changes are periodically made to this document. Changes, technical inaccuracies, and typographic errors will be corrected in subsequent editions.

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Related publications

The Xerox DocuPrint 180 Laser Printing System Product Guide is part of the ten-manual reference set for your laser printing system. The entire reference set is listed in the table below. Several other related documents are also listed for your convenience. For a complete list and description of available Xerox documentation, refer to the Xerox Documentation Catalog (Publication number 610P17417) or call the Xerox Documentation and Software Services (XDSS) at 1-800-327-9753.

Table 1. **Related Publications**

Publication	Number
<i>Xerox DocuPrint 180 Laser Printing System Operator Guide</i>	721P85490
<i>Xerox DocuPrint 180 Laser Printing System Operations Reference</i>	721P85500
<i>Xerox DocuPrint 180 Laser Printing System Message Guide</i>	721P85550
<i>Xerox DocuPrint 180 Laser Printing System PDL Reference</i>	721P85530
<i>Xerox DocuPrint 180 Laser Printing System Forms Creation Guide</i>	721P85520
<i>Xerox DocuPrint 180 Laser Printing System System Generation Guide</i>	721P85510
<i>Xerox DocuPrint 180 Laser Printing System Installation Planning Guide</i>	721P85480
<i>Xerox DocuPrint 180 Laser Printing System Operator Command Summary Card</i>	721P85560
<i>Xerox DocuPrint 180 Laser Printing System PC User Interface Reference</i>	721P85540
<i>Xerox DocuPrint 180 Laser Printing System Product Guide</i>	721P85570
<i>Xerox Laser Printing Systems Tape Formats Manual</i>	600P86175
<i>Xerox Laser Printing Systems Standard Font Library Font User Guide</i>	600P86174
<i>Helpful Facts About Paper</i>	721P82492

Notice

This publication may contain descriptions of concepts and features not currently available for your Xerox Laser Printing System. Consult your Xerox sales representative or your operating system software program description for additional information.

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The purpose of the Xerox DocuPrint 180 LPS Product Guide is to introduce you to the Xerox DocuPrint 180 Laser Printing System (LPS).

Xerox DocuPrint 180 LPS Product Guide

The purpose of the Xerox DocuPrint 180 LPS Product Guide is to:

- Introduce the Xerox DocuPrint 180 Laser Printing System (LPS) hardware and software
- Introduce basic concepts associated with DocuPrint 180 LPS printing
- Compare the Xerox DocuPrint 180 LPS to other LPS products
- Describe some of the user considerations associated with Xerox DocuPrint 180 LPS performance.

Since the Xerox DocuPrint 180 LPS Product Guide is a composite of information aimed at satisfying a variety of reader requirements, certain chapters or chapter sections may be skipped by the experienced LPS user. For example, the basic concepts would be desirable reading for someone with little or no LPS experience, while an experienced LPS user need not read it. The contents of each chapter are described below.

Overview	Presents Xerox DocuPrint 180 LPS features, options, and specifications.
Basic concepts	Introduces basic concepts associated with DocuPrint 180 LPS printing, as well as an overview of the DocuPrint 180 LPS production process.
Hardware	Introduces major standard and optional hardware components
Software	Introduces DocuPrint 180 LPS software, describes the functional operation of the software, and provides an overview of software features.
Product difference	Provides a comparison of LPS products, addresses compatibility issues, and explains inherent user considerations.
Xerox customer resources	Xerox customer resources. Provides descriptions and telephone numbers for service, customer support, upgrades, and supplies for Xerox customers in the United States.

A glossary and an index are provided at the back of this guide.

About the reference set

This document is part of a reference set designed to help you receive maximum benefit from your Xerox DocuPrint 180 laser printing system.

To help you select the appropriate document for your needs, the following section identifies the documents in the set and describes the information contained in each.

Xerox DocuPrint 180 Laser printing system document set

The Xerox DocuPrint 180 laser printing document set consists of the following.

Xerox DocuPrint 180 LPS Product Guide

The Xerox DocuPrint 180 LPS Product Guide consists of the following:

- Product overview
- Hardware and software
- DocuPrint 180 LPS connections
- User considerations
- LPS comparisons.

Xerox DocuPrint 180 LPS Operator Guide

The Xerox DocuPrint 180 LPS Operator Guide consists of the following:

- System overview
- PC UI procedures
- Paper facts and procedures
- Operating procedures
- Maintenance
- Problem solving
- Supplies
- Meter reading and reporting.

Xerox DocuPrint 180 LPS PDL Reference	<p>The Xerox DocuPrint 180 LPS PDL Reference consists of the following:</p> <ul style="list-style-type: none">• Print Description Language components and processes• Input processing functions• Output processing functions• PDL/DJDE command summary• Page formatting guidelines• Character code assignment tables• PDL/DJDE programming information with step-by-step instructions.
Xerox DocuPrint 180 LPS System Generation Guide	<p>The Xerox DocuPrint 180 LPS System Generation Guide consists of the following:</p> <ul style="list-style-type: none">• Configuration options• Commands• OSS software installation, upgrade, and modification procedures.
Xerox DocuPrint 180 LPS Operations Reference	<p>The Xerox DocuPrint 180 LPS Operations Reference consists of the following:</p> <ul style="list-style-type: none">• Command syntax for operator and system administrator procedures• DocuPrint 180 LPS defaults• DocuPrint 180 LPS resources• Command summaries• Communication and graphics on the DocuPrint 180 LPS• Command files.
Xerox DocuPrint 180 LPS Forms Creation Guide	<p>The Xerox DocuPrint 180 LPS Forms Creation Guide consists of the following:</p> <ul style="list-style-type: none">• Basic concepts for creating forms• Coding and compiling for DocuPrint 180 LPS Forms Description Language• Sample form setup command sets• Tips for successful forms creation.
Xerox DocuPrint 180 PC UI Reference	<p>The Xerox DocuPrint 180 PC UI Reference consists of the following:</p> <ul style="list-style-type: none">• PC UI procedures• Hierarchy of PC UI windows.
Xerox DocuPrint 180 LPS Operator Command Summary Card	<p>The <i>Xerox DocuPrint 180 LPS Operator Command Summary Card</i> consists of the following:</p> <ul style="list-style-type: none">• Quick reference of commonly-used operator commands.

Xerox DocuPrint 180 LPS Message Guide

The Xerox DocuPrint 180 LPS Message Guide consists of the following:

- OSS and other messages
- Meaning and recovery procedures.

Xerox DocuPrint 180 LPS Installation Planning Guide

The Xerox DocuPrint 180 LPS Installation Planning Guide consists of the following:

- DocuPrint 180 LPS basic components and options
- Tasks that must be accomplished before installation
- Preinstallation requirements
- Installation process
- Postinstallation activities.

Xerox LPS Tape Formats Manual

The Tape Formats Manual consists of the following:

- Characteristics of different formats
- File organization
- Data formats
- Carriage control conventions.

Xerox LPS Standard Font Library Font User Guide

The LPS Standard Font Library Font User Guide consists of the following:

- Font naming conventions
- Listing of standard fonts
- Data sheets
- Glossary of typography terminology.




Helpful Facts About Paper

Helpful Facts About Paper consists of the following:

- Selection and guidelines
- Storage and handling
- Specifications for different printers.

Document conventions

This guide uses the following conventions:

- < >** Angle brackets are used for keys on the system controller keyboard.
 - { }** Curly brackets are used for required characters.
 - ...** Ellipses indicate that you can repeat a parameter or list a series of parameters.
 - []** Square brackets are used for optional command characters.
 - |** Vertical bars are used to separate parameters in a series. The vertical bar stands for “or.”
 - bold** Bold is used for characters you enter at the command line.
 - italics** Italics is used for variable information.
 - terminal font** Terminal or monospace font is used to display system responses.
 - underline** System default parameters are underlined.
 - UPPERCASE** Uppercase letters are used for `command` names.
-  **Note:** You may key in entire words for each command or the first three characters of each word. In this manual the entire word of each command is spelled out.
-  **Caution:** Cautions alert you to an action that could damage hardware or software.
-  **Warning:** Warnings alert you to conditions that may affect the safety of people.

1. Xerox DocuPrint 180 LPS overview

The Xerox DocuPrint 180 Laser Printing System (LPS) is a versatile, high-performance printing system that processes and prints data from a variety of sources. It enables host mainframe computers and network-connected devices (such as workstations and graphic scanners) to produce publications and other documents, incorporating graphics, forms, logos, signatures, and a variety of fonts.

With the Xerox DocuPrint 180 LPS, management information systems (MIS) and data processing (DP) environments have a high-performance printer in which built-in intelligence eliminates the need for the host computer to store and manage forms, fonts, and other document resources.

Data is printed at a rate of up to 180 pages per minute (206 with the optional Paper Feeding Enhancement Kit installed). A variety of fonts ranging in size from 3 points to 36 points, in all four orientations (portrait, inverse portrait, landscape, inverse landscape), and many publishing typefaces are available to meet your printing requirements. In addition to the standard set of fonts that is delivered with the DocuPrint 180 LPS, special or customized fonts can be developed by the Xerox Font Center. Your sales representative will provide you with further information.

The following material is presented in this chapter:

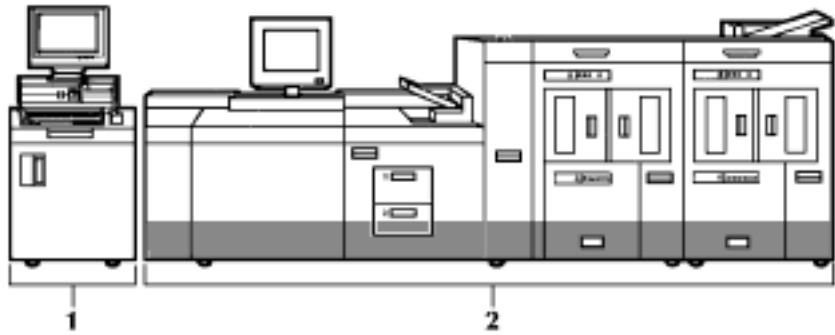
- Hardware and software components
- Options
- Specifications
- Features list.

Xerox DocuPrint 180 LPS

The standard Xerox DocuPrint 180 LPS consists of two main components:

Figure 1-1 shows the Xerox DocuPrint 180 LPS.

Figure 1-1. **Xerox DocuPrint 180 Laser Printing System**



- 1 System controller**
- 2 Printer**

The system controller is a minicomputer which manages the processing of input data; processes operator commands; provides for the entry and compiling of form, print, and job description files; executes job processing commands; and manages low-level control of the printer.

Your Xerox DocuPrint 180 LPS has a PC user interface (PC UI) that enables you to start and monitor print jobs. In figure 1-1, the PC UI is shown on top of the system controller.

The printer contains the mechanics and electronics involved in the imaging and paper handling processes. Touch screen control on the printer control console allows you to easily monitor and control printer functions. Jam clearance areas and instructions are clearly displayed with color graphics.

For more detailed descriptions of the Xerox DocuPrint 180 LPS hardware components, refer to the “Xerox DocuPrint 180 LPS hardware components” chapter.

Software

DocuPrint 180 LPS software functionally consists of several components to manage printing system resources. Refer to the "System software functional description" section of the "Xerox DocuPrint 180 LPS software components" chapter for additional information. Among these components are two DocuPrint 180 LPS-resident languages: FDL and PDL.

**Forms description language (FDL)
(standard)**

FDL is a laser printing system resident language for designing electronic forms which can include logos, signatures, and shading. Form libraries (source and object) are stored on the system disks. Refer to *Xerox DocuPrint 180 LPS Forms Creation Guide* for more information.

**Print description language (PDL)
(standard)**

PDL is a laser printing system resident language used to describe the input, logical processing, and output requirements of a print job. Refer to *Xerox DocuPrint 180 LPS PDL Reference* for more information.

Options

The following options are available to further enhance the capabilities of your Xerox DocuPrint 180 LPS.



Note: For detailed information regarding these options, please contact your sales representative.

Floppy disk drive

The floppy disk drive is located in the system controller, to the right of the 1/4 inch cartridge tape drive. It allows you to transfer files between a floppy disk and the system controller's hard disk. Therefore, it provides an alternative way for backing up and restoring system controller rigid disk files.

9-track magnetic tape drive

The 9-track (1600/6250) magnetic tape drive is an alternative or additional offline capability to the 18 or 36-track cartridge tape drive for inputting print and nonprint data to the Xerox DocuPrint 180 LPS. (Refer to figure 3-5.)

Refer to *Xerox DocuPrint 180 LPS Operator Guide* and to the *Xerox LPS Tape Formats Manual* for additional information

36-track cartridge tape drive

The 36-track cartridge tape drive is an alternative or additional offline capability to the 9-track magnetic tape drive for inputting print and nonprint data to the Xerox DocuPrint 180 LPS. It reads 18 and 36-track and writes 36-track IBM- and ANSI-compatible half-inch tape in the 36-track IBM 3480/3490 data format.

Refer to the *Xerox DocuPrint 180 LPS Operator Guide* and to the *Xerox LPS Tape Formats Manual* for additional information.

Feeder stacker

The DocuPrint 180 LPS has an Inverter Feeder Stacker, and up to three optional feeder stackers.

Refer to the section "Printer components" in the "DocuPrint 180 LPS overview" chapter for information on the feeder stackers.

Bypass transport

The bypass transport increases your production capabilities by providing you with a means of using finishing devices with your Xerox DocuPrint 180 LPS. Conforming to Xerox Document Feeding and Finishing Architecture (DFA) Level 1 specifications, it allows you to choose from a variety of finishers.

Input enablement device

The input enablement device provides the means to directly connect bulk feeders to your Xerox DocuPrint 180 LPS.

Expanded system disk memory

The DocuPrint 180 LPS base system has three SCSI 1.2 GB (formatted) disk drives for the system disk with optional expansion of up to four SCSI 1.2 GB disk drives.

Enhanced graphics ink and font memory (EGIFM)

The DocuPrint 180 LPS has a standard 256 Mbits of font/graphic memory.

Expanded bitmap memory

The Xerox DocuPrint 180 LPS has as a standard feature 32 Mbits of bitmap memory that supports font and graphics. The bitmap memory can be expanded to 256 Mbits.

DocuPrint 180 LPS connection

The Xerox DocuPrint 180 LPS may be ordered with the following optional connections:

Online interface The online channel interface receives input directly from the host system. All IBM systems which support the channel-attached 3811/3211 or 4245 interface are supported. Non-IBM systems are supported through a variety of connections such as DDI. (Refer to the DDI description below.)

Offline interface The offline interface is an excellent alternative or addition to an online operation. It supports 9-track (1600/6250 bpi), 18 track (read only), and 36-track (3480/3490 format) tapes conforming to one of the following formats:

- American National Standards Institute (ANSI)
- IBM (OS/VS/370, OS/360, DOS/VS/370, DOS/360/370)
- Burroughs (MCP 2500-4700, 6700)
- Honeywell (OS 200/2000, OS 200/6000 series)
- Sperry/Univac Series 70 (1100-OS standard files)
- DEC (RSX-11)
- CDC (external format)
- NCR (Century-B1)
- Tape input codes: EBCDIC, ASCII, BCD
- Univac (SDF-formatted tapes)
- ICL (2900 VME/B)

Refer to *Xerox DocuPrint 180 LPS Operator Guide* and to *Xerox LPS Tape Formats Manual* for additional information.

DDI interface The Dynamic Document Interface (DDI) enables communication between a Xerox DocuPrint 180 LPS and other products via a shared disk mechanism. The interface allows the other products (such as DEC, PC, MAC, and UNIX local area network (LAN) workstations) to save print files to an external hard disk. The Xerox DocuPrint 180 LPS then directly accesses the external hard disk to retrieve files for printing. The DDI passes data over a high performance SCSI bus.

Xerox DocuPrint 180 LPS specifications

The specifications for the Xerox DocuPrint 180 LPS are described in the following sections:

Equipment Dimensions

Table 1-1 shows the specifications for the Xerox DocuPrint 180 LPS.

Table 1-1. **Equipment dimensions**

Hardware	Width	Depth	Height	Weight
System controller	24 in/610 mm	28 in/712 mm	38.2 in/970 mm	300 lbs/136 kg
with optional peripheral cabinet (fully loaded)	48 in/1219 mm	28 in/712 mm	38.2 in/970 mm	616 lbs/280 kg
Printer				
Printer Module including Printer Control Console	77.3 in/1,963 mm	35.9 in/911 mm	55 in/1,037 mm	1,434 lbs/650.9 kgm
High-Capacity Inverter Feeder/Stacker	41.7 in/1,060 mm	28.3 in/719 mm	57.7 in/1,466 mm	663 lbs/301 kgm
High-Capacity Feeder/Stacker Middle Module (optional)	32.4 in/822 mm	28.3 in/719 mm	57.7 in/1,466 mm	521 lbs/237 kgm
High-Capacity Feeder/Stacker	32.4 in/822 mm	28.3 in/719 mm	59.6 in/1,513 mm	521 lbs/237 kgm
Bypass Transport (optional)	20.4 in/518 mm	28.3 in/719 mm	59.6 in/1,513 mm	176 lbs/80 kgm



Note: For more information on Xerox DocuPrint 180 LPS installation planning and specifications, refer to *Xerox DocuPrint 180 LPS Installation Planning Guide*.

Clearance requirements

Table 1-2 describes the amount of clearance required for the various components.

Table 1-2. **Clearance requirements**

Component	Clearance required
Printer	36 inches/914 mm on each side 50 inches/1270 mm at front of printer
System controller	36 inches/914 mm on each side
Finishers and bulk feeders (attached to your bypass transport)	36 inches/914 mm on each side

Environmental requirements

Table 1-3 lists the environmental requirements.

Table 1-3. **DocuPrint 180 environmental requirements**

Environmental requirements		
Operating temperature	Recommended: Minimum: Maximum:	72° F ± 4° F / 22° C ± 2° C 50° F / 10° C 85° F / 29° C
Humidity	Minimum: Maximum: Recommended:	30% 65% 45% +/- 10%
Altitude	Normal: Maximum:	Up to 6,000 feet/1830 m above sea level 9,000 feet/2743 m above sea level
Heat dissipation		
System controller	3,754 Btu per hour	
Peripheral cabinet (fully configured)	3,195 Btu per hour	
Printer	Standby: Operating: Energy Saver:	4,454 Btu per hour 32,770 Btu per hour 2,700 Btu per hour
Audible noise	Standby: Operating:	Continuous: 52dB (A) Impulse: N/A Continuous: 82dB (A) Impulse: 82dB (A)

Electrical requirements

Table 1-4 shows the electrical requirements for the Xerox DocuPrint 180 LPS.

Table 1-4. **DocuPrint 180 electrical requirements**

Electrical requirements	
Printer	Dual cord system (60Hz): Cord 1: 120/208 VAC(182V to 220V) (2 phase), 50 amp dedicated service Cord 2: 120/208 VAC(182V to 220V) (2 phase), 30 amp dedicated service Single cord system (50Hz): WYE: 80/400/415 VAC (3 phase, 5 wire), 20 amp dedicated service Delta: 220/230/240 VAC (3 phase, 4 wire), 30 amp dedicated service KVA rating: 7.3 (operating)
System Controller	U.S. and Canada, 60 Hz: 208/240 VAC (1 phase) or 208/220 VAC (Line 1 to Line 2); 15 amp service NEMA 6-15R or ANSI C73, 20R KVA 1.1 (operating) International, 50 Hz: 200/230 VAC (1 phase) 15 amp service; Power connector per local codes
Optional Peripheral Cabinet	U.S. and Canada, 60Hz: 208/240 VAC (1 phase) or 208/220 VAC (Line 1 to line 2); 15 amp service; NEMA6-15R or ANSI C73, 20R KVA .9 in both standby and operation International, 50 Hz: 200/230 VAC (1 phase); 15 amp service; Power connector per local codes
Optional bypass transport	The power requirements for the bypass transport module are all satisfied by the DocuPrint 180 LPS printer module.
Agency certification	UL, CSA, IEC, VDE



Note: For more information on Xerox DocuPrint 180 LPS electrical requirements, including power cord and outlet specifications, refer to the *Xerox DocuPrint 180 LPS Installation Planning Guide*.

Xerox DocuPrint 180 LPS features

Listed below are features of the Xerox DocuPrint 180 LPS.

System controller

The following are features of the system controller:

- PC UI (refer below)
- Three 1.2 GB formatted system disks standard
- 1024K words of control memory
- Minimum of graphic, ink, and font memory (GIFM) of 256 Mb.
- 3.5-inch floppy disk drive (optional Media Conversion Kit)
- Quarter-inch cartridge tape drive (QIC); up to 320 MB capacity in streaming mode; quarter-inch ANSI (standard)
- Front loading 9-track (1600/6250 bpi) magnetic tape drive (requires optional peripheral cabinet)
- Xerox 36-track cartridge tape drive; reads 18-track and 36-track tapes and has the write capability for IBM- and ANSI-compatible half-inch tapes in the 36-track IBM 3480/3490 data format (requires optional peripheral cabinet).

PC UI

The following are features of the PC UI:

- The PC User Interface (PC UI) is a Pentium-based processor PC with at least 100-megabyte hard disk, mouse pointing device, 3.5-inch floppy disk drive, multinational keyboard, and 14-inch color monitor..
- Color graphic windows and icons
- Full text editor allows you to perform complete textual editing tasks (such as moving, searching and replacing, adding and deleting text, and so on) on the entire file, within a window environment
- File transfer provides a two-way file transfer between the PC UI floppy or hard disk drive and the system controller hard disk
- Start command library stores often-used start commands for easy selection with mouse; no need to key in start commands repeatedly
- Command line mode accessible from PC UI windows
- Console logging allows you to print, display, or save DocuPrint 180 LPS activity record for tracking or service purposes
- Multinational language and feature support.

Printer The following are features of the printer:

- Xerographic engine
- Laser raster scanning
- Rated speed of up to 180 pages per minute (up to 13,800 lines per minute) simplex; up to 90 pages per minute duplex (with the optional Paper Feeding Enhancement Kit installed, the rated speed for simplex is 206 pages per minute)
- Multiple-pitch feature allows the printer to change between six pitch modes (from 3 pitch to 8 pitch), depending on the paper size
- 300 spi input data interpolated to produce 600 spi output print resolution
- Prints on front and back side (duplex) of paper under software control
- Page inversion printing that allows the system to invert the image on a physical page by 180 degrees
- Printer control console with color touch screen graphically displays printer jam clearance information and allows control of paper loading/unloading
- Stop, continue, and print sample buttons on printer control console
- 100-sheet sample print tray using 20-pound/75-gsm bond
- Feeder trays:

Main tray 1 (Main)	=	1100-sheet, 20 pound/75-gsm paper
Auxiliary tray (tray 2)	=	600-sheet, 20 pound/75-gsm paper
- Feeder/stacker modules:

Each high-capacity feeder (HCF) tray (two standard and two optional)	=	2600-sheets of 20 pound/75-gsm paper
Each high-capacity stacker (HCS) bin (two standard and two optional)	=	2500-sheets of 20 pound/75-gsm paper
- Attention light, located on top of the inverter-feeder/stacker module, alerts operator when printer needs attention
- Attention alarm, located within the printer, alerts the operator when the printer needs attention
- Screen saver on the printer monitor.

Paper handling

Paper handling features include the following:

- 16-pound bond to 110-pound index/60-gsm to 200-gsm, cut-sheet paper, colored, preprinted, predrilled, or preperforated paper
- Variable paper sizes such as A3 (11.69 by 16.54 inches/297 by 420 mm, 11 by 17 inches/297 by 432 mm), B4 (10.12 by 14.3 inches/257 by 363 mm), and B5 (7.17 by 10.12 inches/182 by 257 mm)
- Transparencies, high-speed label stock, oversized covers, tab stock, and other specialized application materials
- Software-controlled paper stock management with four feeder trays
- Waste management and audit logging that allow more control of sensitive paper stocks by increasing the amount of information available with regard to how many sheets were fed from which tray as well as the final destination of the sheets.

Forms

Forms for the Xerox DocuPrint 180 LPS include the following:

- Electronically created and stored at DocuPrint 180 LPS or host
- Changeable on a page-to-page basis
- Functionally compatible with Xerox 9790/8790/4090/4050 LPS forms, logos, and signatures
- Electronic form and variable data printed at the same time for accurate registration
- Multiple forms per page
- Printed forms.

Fonts

The features for fonts include the following:

- Proportional or fixed character spacing
- Variable character size of 3 to 36 points
- Spacing of 4 to 30 characters per inch (cpi)
- Up to 128 fonts per page from extensive library of standard and optional fonts
- 300 dots per inch (dpi) font data interpolated to produce 600 spi print resolution
- Logo and signature fonts
- Multinational character set
- Loadable from host, magnetic tape, or cartridge tape
- 32 Mbits font memory; expandable to 128 Mbits
- Selectable on a character-to-character basis.

- Printed format** The features for printed formats include the following:
- Variable spacing of 3 to 18 lines per inch (lpi)
 - Spacing of 4 to 30 characters per inch (cpi)
 - Landscape or portrait orientation
 - Up to 38K alphanumeric characters per 8.5- by 14-inch/216- by 356-mm page total variable density
 - 252 maximum lines per 8.5- by 14-inch/216- by 356-mm portrait page; 198 (5 points, 18 lpi) maximum lines per 8.5- by 11-inch/216- by 279-mm landscape page
 - Up to 150 lines with 132 characters per line on 8.5-by 11-inch/216- by 279-mm landscape page
 - Up to 16 images per page; over 16 images per page and vector graphics capability will degrade performance.
 - Multiple logical pages on a physical page
 - Simplex or duplex printing.

- Types of output** Types of output include the following:
- Interspersed reports
 - Stacked reports
 - Multiple sets
 - Offsetting
 - Report and job accounting
 - Collated or uncollated.

2.

Basic concepts

This chapter introduces basic concepts associated with a Xerox Laser Printing System (LPS). Major sections in this chapter cover the following topics:

- DocuPrint 180 LPS overview
- DocuPrint 180 LPS production process overview
- Fonts.

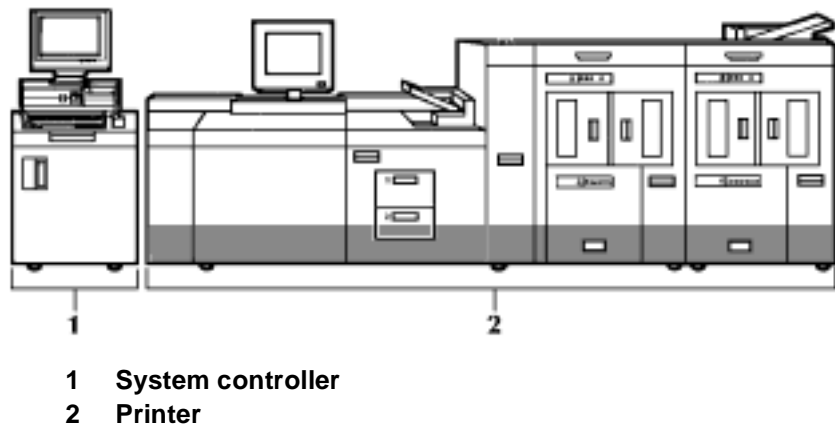
DocuPrint 180 LPS overview

The Xerox DocuPrint 180 LPS provides innovative solutions for a variety of business requirements. It consists of two separate units:

- System controller
- Printer.

Figure 2-1 shows the Xerox DocuPrint 180 LPS. Refer to the “Xerox DocuPrint 180 LPS hardware components” chapter for further information on available options.

Figure 2-1. **Xerox DocuPrint 180 Laser Printing System**



System controller

The system controller contains the input subsystem and the control subsystem electronics.

The input subsystem provides interfacing capability (online, offline, and Dynamic Document Interface (for DEC, PC, MAC, and UNIX LAN connectivity) for a variety of input sources (host, magnetic tape, workstations, and graphic scanners).



Note: Your quarter-inch cartridge tape and floppy disk drives are not input sources for print jobs (refer to “Xerox DocuPrint 180 LPS hardware components”).

The control subsystem performs all data handling, formatting, buffering, and operational control of the system. It also provides operator control through the DocuPrint 180 LPS PC User Interface (UI). Refer to the “Xerox DocuPrint 180 LPS hardware components” chapter for more information on system controller components and these subsystems.

DocuPrint 180 LPS interface

The following DocuPrint 180 LPS interfaces are available to connect a variety of input sources to the DocuPrint 180 LPS:

- | | |
|--------------------------|---|
| Offline interface | The offline interface permits input from a computer-prepared magnetic tape which is loaded onto the magnetic tape drive. The 9-track and 18/36-track magnetic tape drives are the optional offline interfaces available for the Xerox DocuPrint 180 LPS. Refer to the “Xerox DocuPrint 180 LPS hardware components” chapter for more information. |
| Online interface | The online interface permits input from a channel-attached host computer. |
| DDI interface | The Dynamic Document Interface (DDI) enables communication between a Xerox DocuPrint 180 LPS and network via a shared disk mechanism over a SCSI bus. Refer to the Xerox Dynamic Document Interface Operator Guide for information regarding the DDI. |

DocuPrint 180 LPS system disk storage and memory

The system disks store the operating system software (OSS) as well as the system resources (fonts, forms, and graphics) that are to be loaded into memory for use during input processing. Refer to the “DocuPrint 180 LPS software components” chapter for more information on OSS.

Printer

The printer contains the imaging, xerographic, and output subsystems.

Imaging subsystem

The imaging subsystem accepts a formatted page of data from the system controller (forms and graphics have already been merged) for the xerographic process.

Xerographic subsystem

One of the important keys to DocuPrint 180 LPS print quality lies in the xerographic process itself. The print image produced by the dry ink is very dark to create more contrast between the printing and the page, making images easier to read.

The following steps describe the xerographic process:

- Step 1.** A band full of video data (1s and 0s) is transferred from the band buffer to the laser scanner.
- Step 2.** The laser beam moves across the surface of the photoreceptor belt based on the value of the incoming bit (1 or 0), producing a latent image.

In this step, a charge is applied to the surface of the photoreceptor belt. The surface is discharged when it is exposed to the laser beam, thus creating a pattern of dots corresponding to the page that is to be printed.
- Step 3.** The photoreceptor belt is then exposed to dry ink. The dry ink clings to the pattern of dots corresponding to the page that is to be printed.
- Step 4.** A sheet of paper traveling along the paper path is brought into contact with the surface of the photoreceptor belt. The dry ink is then transferred from the photoreceptor belt onto the paper.
- Step 5.** The paper carrying the pattern of dots passes through a fusing mechanism that permanently affixes the dry ink to the paper.
- Step 6.** The finished page is deposited in the output tray or bin. The data from that page is erased from memory. The photoreceptor belt is then cleaned and prepared for the next page.

Resolution An DocuPrint 180 LPS imaging system converts a character from digitized form into a printed image composed of tiny dots. These dots are so small and close together that they appear to form solid black areas. Image clarity is determined largely by the resolution or the number of dots per inch printed. Within the Xerox DocuPrint 180 LPS Reference Set, the terms spots, dots, and pixels are used interchangeably.

The Xerox DocuPrint 180 LPS accepts 300 dots per inch (dpi) print data and images and electronically modifies them to produce 600 dpi print resolution. 600 dpi input print data is not accepted by the Xerox DocuPrint 180 LPS for printing. References to 300 dpi or 600 dpi apply to both coordinate axes (300 by 300 dpi or 600 by 600 dpi).

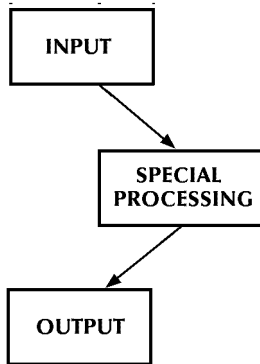
Output subsystem

The output subsystem provides paper stacking, report collating, and sample print capabilities.

DocuPrint 180 LPS production process overview

The process of producing a job on an DocuPrint 180 LPS can be broken down into three distinct phases: input, special processing, and output. Figure 2-2, illustrates these three phases below.

Figure 2-2. **Basic processing flow**



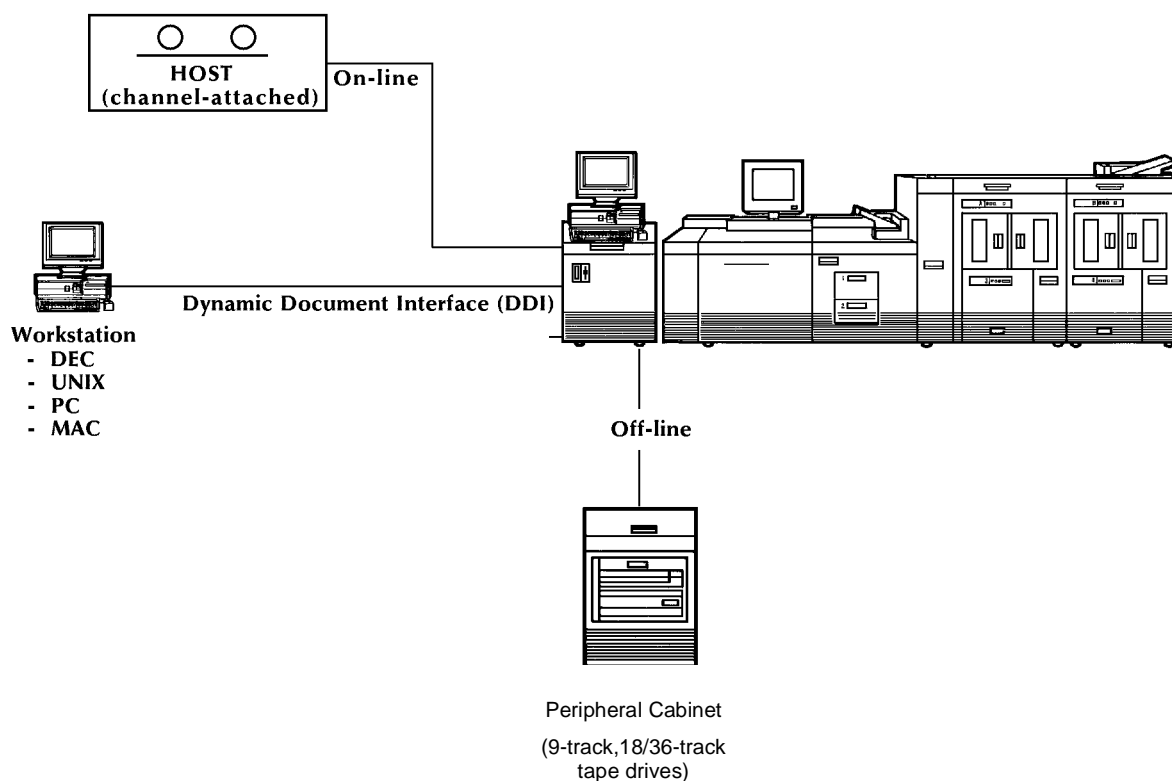
A description of each phase is described in the input section that follows.

Sources of input for the DocuPrint 180 LPS

The input phase of job production begins with the collecting and inputting of data using one of the following sources:

Several data input methods are available, as shown in figure 2-3

Figure 2-3. Xerox DocuPrint 180 LPS input options



Online The channel-attached host computer input is received by the DocuPrint 180 LPS online interface. In an online environment, the system controller is physically wired to the host computer. The host computer “thinks” it is communicating with an IBM 3211 line printer and an IBM 3811 printing system controller, or an IBM 4245 line printer.

DDI interface The Dynamic Document Interface (DDI) enables communication between a Xerox DocuPrint 180 LPS and network via a shared disk mechanism over a SCSI bus. Refer to the *Xerox Dynamic Document Interface Operator Guide* for information regarding the DDI.

Offline Magnetic tape input (9- or 18/36-track) is received by the offline interface. The *LPS Tape Formats Manual* describes the tape format and encryption schemes which a Xerox LPS recognizes.

Types of data

Data is created at one of the above sources and transmitted to the DocuPrint 180 LPS. As mentioned previously (refer to “Xerox DocuPrint 180 LPS overview”), the system controller receives the incoming data using one of the interfaces for processing. If the input is print data, a stream of data is sent to the printer for imaging. If the input is nonprint data, it is stored on the system disks.

The following types of data can be printed by an DocuPrint 180 LPS:

- Variable data
- Fixed (forms) data
- Graphic data (usually merged with variable data or form data).

Variable data Variable data changes from page to page; for example, the text in this document or the numbers in a financial report.

Fixed data Fixed (forms) data (FRM file) remains constant from page to page (for example, letterheads and column headings). Forms data usually refers to information found on preprinted forms or overlays.



Note: A host-resident forms design software package, such as HFDL, is required for form generation at a host.

Any form suitable for computer printout can be described and entered into system storage. Once stored on the system, a form can be activated by referencing the form's name in the job source library (JSL) file or job descriptor entry (JDE).

All Xerox laser printing systems have as a standard feature a line editor utility for the creation and modification of program source files (FSL and JSL extension files). Refer to *Xerox DocuPrint 180 LPS Operations Reference* for more information on the DocuPrint 180 LPS Editor.

Forms are entered into the system as data using the DocuPrint 180 LPS Editor. They are described using forms description language (FDL) commands to design the form for variable data. These commands create what is referred to as a forms source library (FSL) file which, when compiled, becomes an FRM file. Refer to *Xerox LPS Forms Creation Guide* for more information on creating electronic forms.

Graphic data Graphic data (IMG file) refers to digitized images (both line art and continuous tone images) that are to be merged with variable or forms data. Sources of graphic data include (but are not limited to): (1) graphic data generated by XPPI/XDGI host-resident software, and (2) scanned images from the Xerox 7650 Pro Imager (using XPIW).

Special processing

Special processing features distinguish the Xerox LPS from an impact printer. By using commands such as RFEED, ROFFSET, and RPAGE you can specify that certain logical functions including: switching paper trays, offsetting certain pages or logically repositioning a page, be performed during the printing process. Refer to the *Xerox DocuPrint 180 LPS PDL Reference* for more information on these command functions.

- DJDE** Dynamic Job Descriptor Entry (DJDE) command enables you to modify the printing environment dynamically. These commands are inserted into the input data stream to modify command characteristics of the existing JDE. DJDEs can take effect on a report-to-report, page-to-page, and record-to-record basis. Refer to the *Xerox DocuPrint 180 LPS PDL Reference* for more information.
- CME** A Copy Modification Entry (CME) command enables you to replace certain parts of a report with predefined static data on selected copies or to specify font changes within the variable data. Refer to the *Xerox DocuPrint 180 LPS PDL Reference* for more information.

Output

The final production phase is output. The Xerox DocuPrint 180 LPS provides powerful finishing and disbursement features. You can have a true cover-to-cover printing process on any job. This means that an inventory stock report job could have:

- Blue card stock front cover, with the title in a 24-point bold font
- Forty-nine pages of equipment inventory, with the last page designed to summarize totals
- Thirty-seven pages of equipment description, with pricing information removed and a shaded grid filling all page columns
- A matching blue card stock back cover printed on the reverse side with "END OF REPORT" in a 14-point bold font.

Each copy of the inventory report can be offset in a stacker bin (no offsetting in the sample tray) for easy identification, with a routing sheet on top of each offset stack which contains such information as "Jones and Smith Supplies, Inc." This particular feature is useful when individual copies must be separated for binding or distribution to different groups. By adding the optional bypass transport and a third-party finisher to your Xerox DocuPrint 180 LPS, you expand your finishing choices for your report to include options such as making it into a booklet and shrink wrapping it.

Job source library (JSL) files

Print description language (PDL) commands are used to describe the data layout and provide instructions for data placement on a page with or without an FDL-created form. The JSL file contains PDL statements defining the format of the input, processing requirements, and the format of printed output. When the JSL file is compiled, it is referred to as a job descriptor library (JDL) file and is referenced for printing a job.

Within a JDL file, there may be one or more unique definitions for different processing features, output formats, and tape formats. Each set of unique definitions represents a job and is called a JDE or a job.

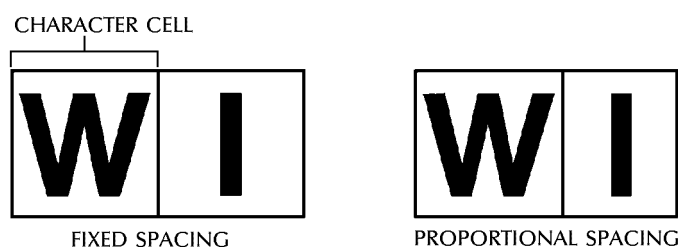
A JDL (compiled JSL) file containing printing instructions for the DocuPrint 180 LPS is required to print any job on any configuration. Many specialized functions can be accomplished with PDL statement commands. Refer to the *Xerox DocuPrint 180 LPS PDL Reference* for specifics.

Several basic JSL files are provided with the OSS; for example, ONLINE.JSL is provided for printing online jobs, a XEROX.JSL is provided for printing magnetic tape jobs, and so on. To meet specific application needs, any OSS-supplied JSL can be copied and modified. All Xerox LPS's have as a standard feature the LPS Editor utility for the creation and modification of program source files (FSL and JSL extension files).

Fonts

A font is a character set which has a unique typestyle, type size, and orientation. Both fixed and proportionally spaced fonts are available for use on an LPS. Each font character occupies an area called a character cell. All character cells in a fixed font are the same width, while character cells in a proportional font vary in width, as shown in figure 2-4.

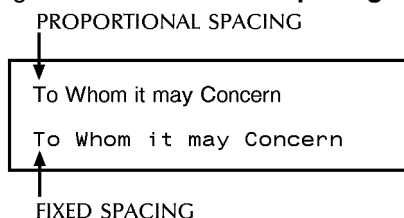
Figure 2-4. **Character spacing**



Because the length of a line printed with a proportional font is relatively unpredictable, fixed fonts are used for variable data on a report to avoid overprinting of forms by variable data.

Proportional fonts are normally used for forms data, such as, titles, headings, and so on. A business letter is an example of the use of proportional fonts for variable data. The difference in line length is illustrated in figure 2-5.

Figure 2-5. **Character spacing examples**



Fonts are available in various typefaces (such as, OCR and Titan), sizes, styles (such as, serif and sans serif), and weights (such as, medium and bold). The *LPS Standard Font Library Font User Guide* lists the standard fixed and proportional fonts.

In addition to typeface, style, and size, a font can be defined by its orientation:

- Landscape
- Portrait
- Inverse landscape
- Inverse portrait.

Refer to the *Xerox 4850 HighLight Color and 4135 Laser Printing Systems Font User Guide* for specific font information, the *Xerox LPS Forms Creation Guide* for using fonts in a form, and the *Xerox DocuPrint 180 LPS Operations Reference* for information on Font Editor keyword commands (used to create source font files from existing licensed and non-licensed font files).

3. Xerox DocuPrint 180 LPS hardware components

This chapter describes the hardware components associated with the Xerox DocuPrint 180 Laser Printing System (LPS).

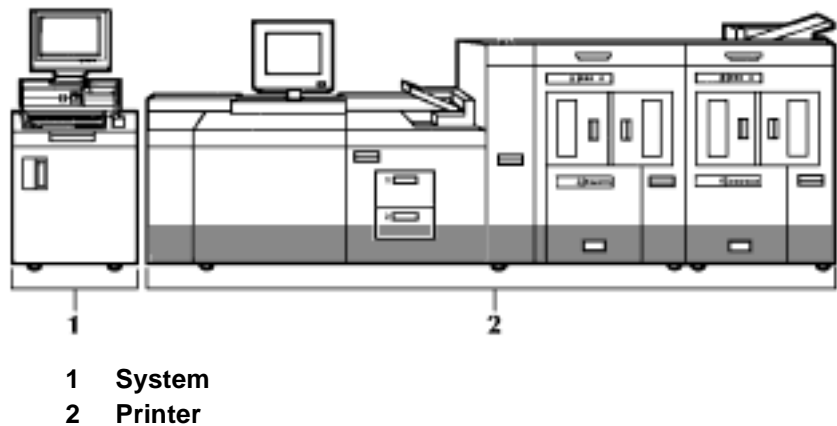
Major components

The Xerox DocuPrint 180 Laser Printing System (LPS) consists of two separate units:

- System controller
- Printer.

Figure 3-1 shows the Xerox DocuPrint 180 LPS.

Figure 3-1. Xerox DocuPrint 180 Laser Printing System

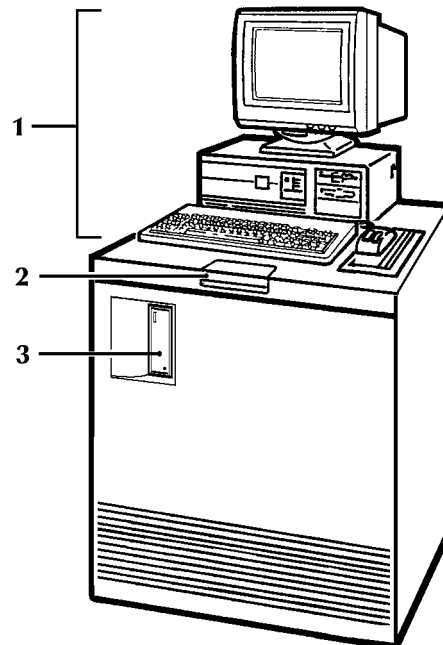


System controller hardware components

The system controller components are the system disks, the system controller panel, the PC user interface (PC UI), the quarter-inch cartridge (QIC) tape drive and optional floppy disk drive. A 9-track magnetic tape drive and a 36-track cartridge tape drive are available as options and are housed in the peripheral cabinet.

Figure 3-2 shows the Xerox DocuPrint 180 LPS system controller with the cartridge tape drive.

Figure 3-2. **Xerox DocuPrint 180 LPS system controller**



- 1 **System user interface (PC UI)**
- 2 **Operator control panel**
- 3 **QIC tape drive**

Quarter-inch cartridge tape drive

The standard QIC tape drive (320 or 525 MB in streaming mode; quarter-inch ANSI) provides an alternative source for the loading and backing up of user files (extension files such as .FRM) and fonts to and from the system disk. Disk save and restore (DSR) and system generation (sysgen) functions can be performed from the quarter-inch tape drive. It is not an input source for print jobs.

Floppy disk drive

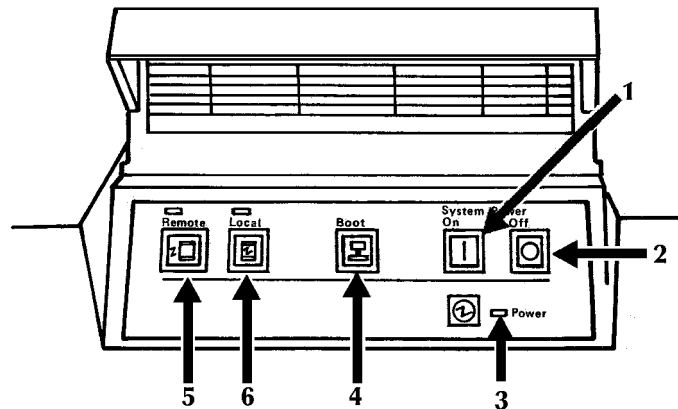
The optional floppy disk drive is located in the front panel of the system controller. It provides an alternative way of backing up and restoring system controller rigid disk files.

System disks

Three 1.2 GB (formatted) SCSI system disks are provided as a standard feature. It resides inside the system controller and stores the operating system, fonts, forms, and general user files for the Xerox DocuPrint 180 LPS. Optionally, one additional system disks (each 1.2 GB formatted) can be installed, depending on storage needs.

System controller panel

As shown in figure 3-3, the system controller is powered on or off, booted, and switched between local and remote using the buttons on this panel.

Figure 3-3. **System controller panel**

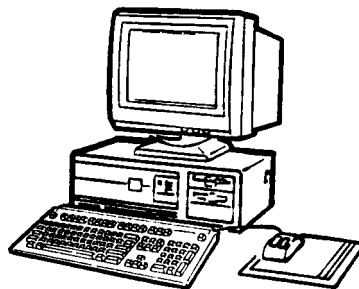
- 1 Power On switch
- 2 Power Off switch
- 3 Power On indicator
- 4 Boot switch
- 5 Remote switch and indicator
- 6 Local switch and indicator

PC UI

Your Xerox DocuPrint 180 LPS has a PC UI connected to the system controller.

The PC UI is an IBM-compatible Pentium-based personal computer (PC) with a 100 MB or larger hard disk, 3.5-inch floppy disk drive, keyboard, color monitor, mouse, and a mouse pad. The PC UI allows you to communicate with the Xerox DocuPrint 180 LPS, to start and monitor print jobs. Tasks are performed through a dynamic set of windows and graphic objects displayed on the PC UI screen. Windows and options are selected with the mouse pointing device or by pressing certain keys on the keyboard. You can also key in commands through a command line window on the PC UI display screen.

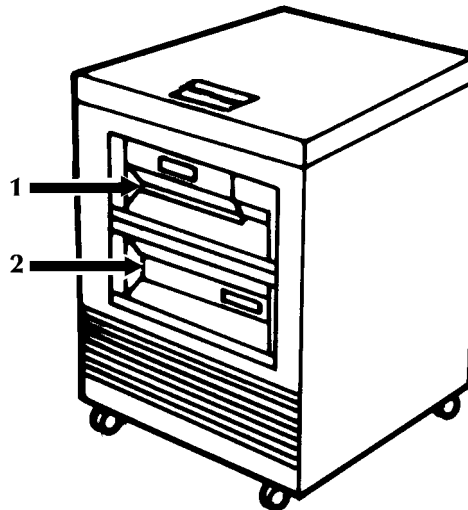
Figure 3-4 shows the Xerox DocuPrint 180 LPS PC UI.

Figure 3-4. **PC UI**

PC UI

As shown in figure 3-5, the optional peripheral cabinet houses the 9-track magnetic tape drive and 36-track cartridge tape drive.

Figure 3-5. **Optional peripheral cabinet with 9-track and 36-track tape drives**



- 1 9-track magnetic tape drive
- 2 36-track cartridge tape drive

9-track magnetic tape drive

The 9-track magnetic tape drive is optional. It provides an offline capability for inputting data to the Xerox DocuPrint 180 LPS. The 9-track can also be used for DSR or sysgen. Refer to *Xerox DocuPrint 180 LPS Operator Guide* for more information. The "Options" section of the "Xerox DocuPrint 180 LPS overview" describes supported tape formats.

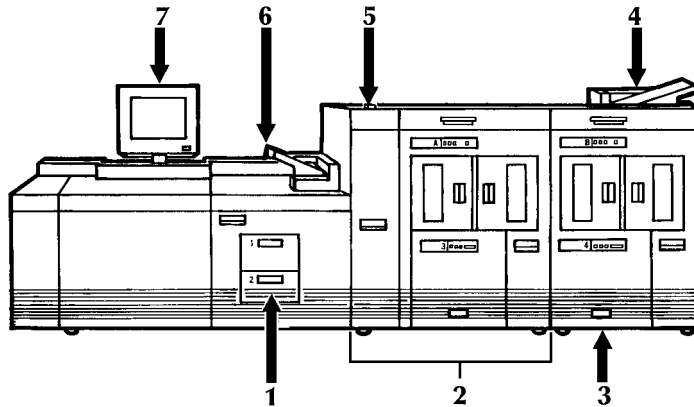
36-track cartridge tape

The 36-track cartridge tape drive is an alternative to the 9-track magnetic tape drive or an additional offline capability for the system. It reads (18-track and 36-track) and writes (36-track only) IBM- and ANSI-compatible half-inch tape in the 36-track IBM 3480/3490 data format. Like the 9-track magnetic tape drive, the 36-track can be used as a source for the loading and backing up of user files (extension files such as .FRM) and fonts to and from the system disks as well as providing an input source for print jobs. The 36-track tape drive can also be used for DSR or sysgen. The "Options" section of the "Xerox DocuPrint 180 LPS overview" describes supported tape formats.

Printer hardware components

Figure 3-6 shows the components of the Xerox DocuPrint 180 LPS printer module.

Figure 3-6. Xerox DocuPrint 180 LPS Printer



- 1 Processor feeder trays
- 2 Inverter-feeder/stacker module (containing inverter, high-capacity feeder, and high-capacity stacker)
- 3 Feeder/stacker module (containing high-capacity feeder and high-capacity stacker)
- 4 Purge tray
- 5 Attention light
- 6 Sample tray
- 7 Printer control console



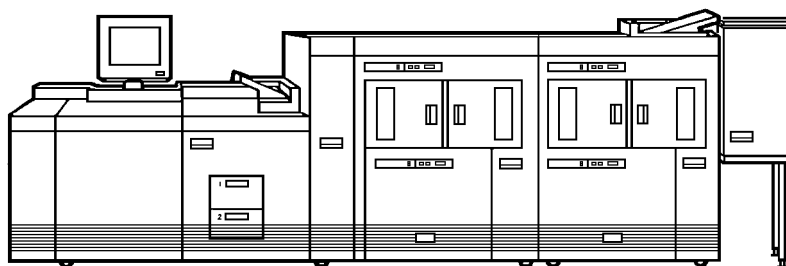
Note: Configuration shown in Figure 3-6 does not depict the optional Bypass Transport or Input Enablement feature devices.

- | | |
|---|--|
| Processor feeder tray 1 | Located in the main part of the printer, the capacity of feeder tray 1 is 1,100 sheets of 20-pound/75-gsm paper. |
| Processor feeder tray 2 | The capacity of feeder tray 2 is 600 sheets of 20-pound/75-gsm paper.

Trays 1 and 2 can handle paper sized from 8- by 10-inch to 9- by 14-inch/203- by 254-mm to 229- by 356-mm |
| High-capacity feeders (HCF)— trays 3, 4, 5, and 6 (5 and 6 optional) | Each HCF can hold up to 2,600 sheets of 20-pound/75-gsm paper as small as 7- by 10-inch and including large paper sizes, such as 11.69- by 16.54-inch (A3), 11- by 17-inch (297- by 432-mm), and 10.12- by 14-inch (B4). |
| High-capacity stackers (HCS) bins— A, B, C, and D (C and D optional) | Each HCS can hold up to 2,500 sheets of 20-pound/75-gsm paper, if a stacking container is not used. Printed sets can be offset in the HCS for easier separation of reports. |
| Sample tray | The capacity of the sample tray is 100 sheets of 20-pound/75-gsm paper. |

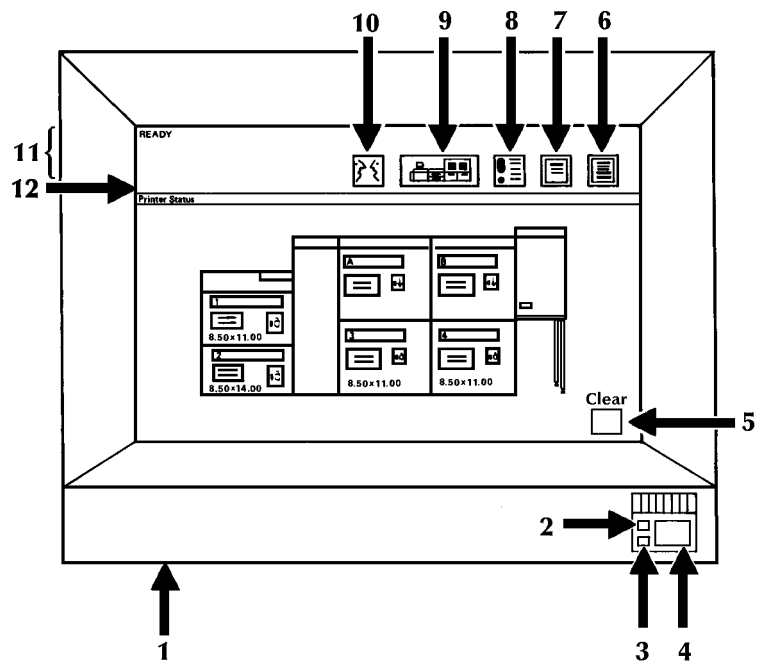
- Purge tray** The purge tray located at the top of the last feeder/stacker module is where waste sheets are sent when cleared from the printer. The purge tray can hold 100 sheets of paper.
- Printer control console** The printer control console located on top of the printer contains the continue, stop, and sample buttons. The console has a color monitor with a touch-sensitive screen which displays detailed graphics showing jam clearance instructions and feeder/stacker status. Printer tasks, such as lowering feeder trays and stacker bins, can be performed by touching areas of the console screen.
- Optional bypass transport** The ability to increase your production capability by adding finishing devices to your Xerox DocuPrint 180 LPS is made possible by the Bypass Transport option. Finishers give you the ability to choose a wide range of finishing options, such as shrink wrapping and stitching. The bypass transport processes simplex and duplex jobs and accepts any type of paper that your Xerox DocuPrint 180 LPS is capable of handling (refer to the “Xerox DocuPrint 180 LPS overview” chapter).
- Connected to the feeder/stacker, the bypass transport allows finishing devices to interface directly with your Xerox DocuPrint 180 LPS. It is fully integrated into your Xerox DocuPrint 180 LPS hardware and software utilities, allowing you to select it at the UI or within your job setup. The bypass transport meets the Xerox Document Feeding and Finishing Architecture (DFA) Level 1 specifications.
- Optional input enablement device** The input enablement device is connected to the right side of the feeder/stacker module and provides the means to add bulk feeders to your Xerox DocuPrint 180 LPS. Fully integrated into your Xerox DocuPrint 180 LPS hardware and software utilities, your input enablement device is selectable at the UI or within your job setup.
- Figure 3-7 shows the Xerox DocuPrint 180 LPS with the optional bypass transport.

Figure 3-7. Xerox DocuPrint 180 LPS with optional bypass transport



As shown in figure 3-8, the printer control console is where you perform many printer adjustments and select printer functions.

Figure 3-8. **Printer control console**



- 1 **Brightness control thumbwheel.** Use this thumbwheel to adjust the brightness of the printer control console display.
- 2 **Sample button.** Press this button to cause a sample sheet of the current print job to be sent to the sample tray.
- 3 **Stop button.** Press this button to stop printing.
- 4 **Continue button.** Press this button to resume printing.
- 5 **Clear button.** Select this button to clear fault messages.
- 6 **Guarded Tools icon.** This icon is reserved for the Xerox service representative and operators who have completed Advanced Customer Training (ACT).
- 7 **Tools icon.** Select this icon to display call for service information and to adjust display features of the printer control console (for example, alarm loudness).
- 8 **Fault icon.** Select this icon to display the Fault List screen.
- 9 **Printer icon.** Select this icon to display the printer mimic. (This is the default display on the printer control console.)
- 10 **Language icon.** Select this icon to choose the language for the printer control console messages.
- 11 **Message area.**
- 12 **Miscellaneous icons.**

Appearing in the message area are the following messages:

- Lines 1 and 2. These lines display the current status of the printer, for example, READY.
- Line 3. This line displays messages concerning masked conditions, such as low dry ink. These messages are preceded by an asterisk.
- Line 4. This line displays messages concerning masked conditions, such as low dry ink. These messages are preceded by an asterisk.

The miscellaneous icons that appear in area 12 are as follows:



Hint icon This icon appears when a masked fault or condition exists in the printer. (Refer to the *Xerox DocuPrint 180 LPS Operator Guide*, “Fault masking and the printer control console” section.) The icon also appears on the PC UI.



Fault icon This icon appears only when a fault exists in the system that stops the printer or prevents it from printing. The icon also appears on the PC UI.



Guarded tools icon. This icon appears when a maintenance task requiring a Customer Productivity Workshop (CPW) trained operator must be done. If you have successfully completed CPW, either check the PC UI for messages concerning the maintenance task or touch the Guarded Tools icon to display the Guarded Tools screen. If you are not a CPW trained operator, notify your lead operator or a CPW trained operator at your site.



Note: The bypass transport is optional and appears on the printer control console of those systems that are configured as such.

Attention light

An attention light is mounted on top of the inverter module. (Refer to figure 3-6.) The attention light can be enabled or disabled. (Refer to *Xerox DocuPrint 180 LPS Operator Guide* for instructions.) When enabled, the light has three states:

- | | |
|---------------------|---|
| Off | No printer problems exist that require your attention. |
| Steady light | A situation exists that needs your attention (such as a low dry ink condition). |
| Flashing | The printer has stopped and your attention is required immediately. |

Attention alarm

An attention alarm is located within the printer. Like the attention light, the attention alarm is enabled and disabled by the operator (refer to *Xerox DocuPrint 180 LPS Operator Guide*). When enabled, the alarm has two states:

Off No printer problems exist that require your attention.

Beeping The printer has stopped and your attention is required immediately.

4. Xerox DocuPrint 180 LPS software components

This chapter describes the software components associated with the Xerox DocuPrint 180 Laser Printing System (LPS). The major topics are as follows:

- DocuPrint 180 LPS operating system
- Operating System Software (OSS) functional description
- Optional host-resident software packages.

DocuPrint 180 LPS operating system

The Xerox DocuPrint 180 LPS System Software consists of the Xerox OSS, System User Interface (UI) Software, User Interface Dialog, and the Printer Software. The OSS is the primary software; however, each software type working in conjunction controls and monitors the operation of your Xerox DocuPrint 180 LPS.

The DocuPrint 180 LPS OSS, like any other operating system, is a set of programs which allow the printing system to manage its own resources. Xerox distributes new versions of the Xerox DocuPrint 180 LPS OSS on a quarter-inch cartridge tape. The OSS tape contains:

- New system files
- A system generation processor program that is used to load the new system files onto the system disks and configure them for a particular system
- A concatenated version of the system files and system generation processor which is used for performing an online system generation (wherein the processor and files are downloaded to the printing system from a host computer)
- Patch files which are used to modify the new system files for optimal performance.

Refer to the “System software functional description” chapter for more details on OSS contents.

The process by which the OSS is installed, upgraded, or modified is called system generation or sysgen. There are three types of sysgens that can be performed: mini, update, or full.

Mini sysgen In a mini sysgen, an existing operating system is modified in a way that does not require new system file input or patching. For example, an existing feature is deactivated or reactivated, or a specification is changed that is independent of the operating system files.

Update sysgen In an update sysgen, an existing operating system is upgraded to include new features or is replaced with a new version of the system. During this process, some or all of the existing system files on the system disks are replaced with new files; user files are not affected.

Full sysgen In a full sysgen, a new operating system is built on empty system disks; that is, new or used disks that have been cleared and formatted prior to sysgen.

Complete instructions for each of these sysgens are contained in the *Xerox DocuPrint 180 LPS System Generation Guide*.

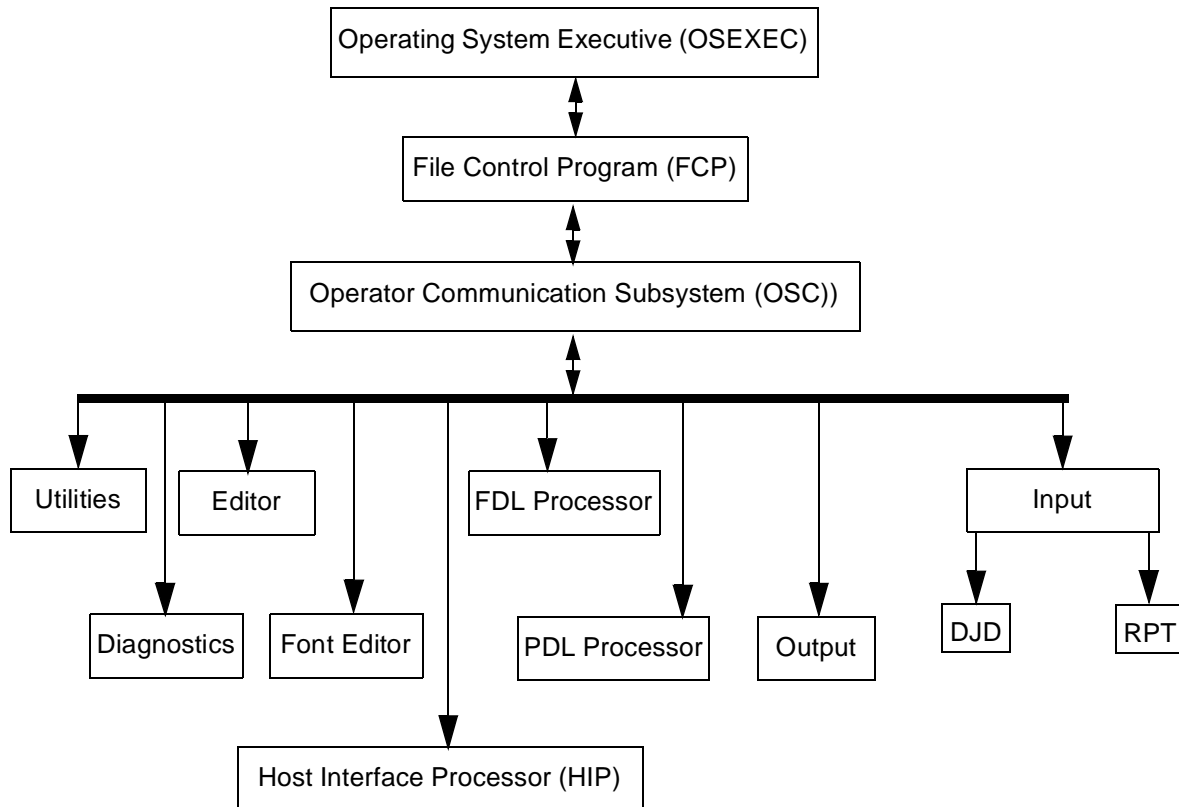
The UI Software consists of two 3.5-inch floppy diskettes (one supports the system UI Software, and one supports the UI Dialog). The Printer Software also consists of several 3.5-inch floppy diskettes. Refer to the "System software functional description" chapter for further information on the System UI Software, UI Dialog, and Printer Software.

Operating System Software functional description

The DocuPrint 180 LPS OSS, or system controller, runs both background and foreground processing. All Xerox LPS systems are run by basically the same software. The OSS is delivered for installation and sysgen on quarter-inch cartridge tapes. The major utilities or "tasks" run by the system controller are shown in their hierarchical relationships in the chart below.

Figure 4-1 illustrates the hierarchy of the major DocuPrint 180 LPS processing tasks. Following the figure is an overview of each task.

Figure 4-1. Major DocuPrint 180 LPS PROCESSING TASKS



- Operating system executive task** The OSEXEC task is always running. It interfaces with the DocuPrint 180 LPS hardware and logs hardware errors. In addition, it queues devices, manages resources, establishes priority for software tasks, and schedules processing.
- File control program** The FCP or FMS task manages disk resources. It manages and allocates all disk space, creates all disk files, and accesses disk files.
- Operator communication subsystem** The OCS task acts as an interface between the operator and software tasks by receiving input from and displaying messages to the operator. OCS also interfaces between system tasks.
- Diagnostic tasks** The OSDS runs either under the OSEXEC task or from offline sources. It controls the processing for the PROBLEM command. Diagnostic support is also provided to your service technician by the stand-alone field engineering software (SAFES) task.
- System utilities** The DocuPrint 180 LPS has many utility programs which run under the OSEXEC task that provide maintenance services such as: backing up the system (DSR); tracking the unusable sectors on disks (FCHECK); assigning a maximum size to the working print file (REALLOCATE); eliminating wasted space on the disks (COMPRESS); and making used space available again (PURGE).

Editor task	The Editor task creates and modifies disk files. When you save a work file, it stores the contents permanently on the disk. It sends files to print; sends FSL and JSL files to be compiled; directs CMD files to execute; and manipulates temporary (TMP), miscellaneous (MSC), patch (PCH), and data (DAT) files.
Font Editor task	The Font Editor task creates and modifies font files. The font files are stored permanently on the disk when you save them.
Input task	The input task reads in print job data, creates a job control block file, and delivers job messages to the operator. Then the input task unpacks and converts the data; selects and deletes blocks or records; records any special processing instructions (for page offsets, DJDE records, CMEs); and records the disk addresses of the font, form, and image files used for the job. The result is a page buffer, consisting of the variable data and print instructions for the page, and the page log, consisting of tracking information used to process the page.
Dynamic job descriptor task	The DJD task compiles the Dynamic Job Descriptor Entries (DJDE's) in the job stream. (The DJDE's give the printer instructions for printing based on the result of true/false tests of the data in the job stream).
Output task	The output task uses the page logs written by the input task to load fonts in the font memory and variable data in the AIS. It causes paper to feed from the indicated tray and manages report integrity with multiple checks. In addition, Output manages delivery of the printed pages to the correct bins and performs page recovery if necessary.
Print description language compiler	The PDL task loads the PDL compiler and looks in the JSL library for the file to be compiled. Then it analyzes the JSL statements and creates the object module (the JDL file).
Forms description language compiler	The FDL task loads the FDL compiler and looks in the FSL library for the file to be compiled. Then it analyzes the FSL statements and creates the object module (the FRM file).
Host interface processor task	The HIP task controls DocuPrint 180 LPS communications with an online host.
Report (RPT) task	Works in connection with the Input task.

Printer Software

The Printer Software works in conjunction with the OSS (system controller) to print your job. The system controller interprets the user instructions contained in JDLs, DJDEs, and operator input, as well as the data being printed on each page. The system controller, driven by the OSS, sends this information to the printer. Once the information reaches the printer, it is the Printer Software that identifies the best way to carry out the task.

User Interface Software and User Dialog Software

As with the OSS and Printer Software, the System UI Software and the User Interface Dialog interact together to control your PC UI. Along with establishing and managing the communication between the PC UI and the printer, the User Interface Software displays the objects on the UI screen and performs the actions input by the operator, as specified within the UI Dialog.

Software

Xerox DocuPrint 180 LPS software features include:

- Continuous printing even when excessive character and IG local density stress conditions occur. Refer to *Xerox DocuPrint 180 LPS Operations Reference* for additional information.
- Cluster printing (user-defined logical grouping of trays). Refer to *Xerox DocuPrint 180 LPS Operations Reference* and to *Xerox DocuPrint 180 LPS Operator Guide* for additional information.
- Printing of over 16 images on a page. Refer to *Xerox DocuPrint 180 LPS Operations Reference* for additional information.
- Variable paper sizes up to the physical capacity of the feeder trays: 7-by 10-inches to 14- by 17-inches (178- by 254-mm to 356- by 432-mm, including A3, A4, B4, and B5). 7- by 10- inch thruput is enabled when the optional Paper Feeding Enhancement Kit is installed. Refer to the “Xerox DocuPrint 180 LPS edge-marking” chapter for additional information.
- A two-way file transfer between the PC UI and the system controller hard disk.
- Full text editing in a window environment which supports scrolling and text editing using the mouse and keyboard, and allows you to print and edit concurrently.
- Controlled finished sets of documents using segment management software, and the optional bypass transport with a finisher attached.

Optional host-resident software packages

This section describes a few of the many host-resident software packages available for use with your Xerox DocuPrint 180 LPS. For information on a specific program, please contact your site representative.

Xerox Pen Plotter Interface (XPPI)/DCF and GDDM Interface (XDGI)

XPPI/XDGI is a host-resident software package (on IBM MVS or VM/CMS) that translates computer-generated text and graphics into high-quality images that can be printed on a Xerox DocuPrint 180 LPS. A host-independent version of XPPI/XDGI is also available for non-IBM users. Refer to XPPI/XDGI documentation for more information.

Host Forms Description Language (HFDL)

HFDL is a host-resident forms design software package (on IBM MVS or VM) that allows forms to be created, changed, and merged with data at the host for printing.

Xerox Printer Access Facility (XPAF)

XPAF enhances the capabilities and use of your DocuPrint 180 LPS in an IBM MVS/XA environment. For example, it allows you to change printer destinations without restructuring the data stream. XPAF accepts numerous types of data streams, transforms or conditions them, and then sends them to the selected printer. To users of IBM Advanced Function Printing (AFP), XPAF appears to be an extension of the IBM product.



Note: Consult with your sales representative about the appropriate options for your laser printing system.

5. Product differences/user considerations

Your Xerox DocuPrint 180 Laser Printing System (LPS) has many unique standard and optional features which distinguish it from other Xerox LPS. Your Xerox DocuPrint 180 LPS is capable of running most jobs created on other Xerox LPS, and can create jobs to print on other LPS. The “DocuPrint 180 LPS compatibility and comparison” section of this chapter points out the unique qualities of your Xerox DocuPrint 180 LPS, and helps you evaluate whether your Xerox DocuPrint 180 LPS running software version 3C2 is a suitable backup printer for another Xerox LPS.

In order to ensure your jobs are created and produced with the highest quality, there are many things you need to consider. The “Xerox DocuPrint 180 LPS user considerations” section addresses such items in the following major sections:

- DocuPrint 180 LPS compatibility and comparison
- Xerox DocuPrint 180 LPS user considerations.

DocuPrint 180 LPS compatibility and comparison

The tables in the sections that follow identify what you need to consider when using your Xerox DocuPrint 180 LPS for printing jobs created on other Xerox LPS with different software versions. They also point out those features which are unique to your Xerox DocuPrint 180 LPS. The tables are not designed to address compatibility issues in an all-inclusive manner. Use them to make a high-level check when you want to know if your Xerox DocuPrint 180 LPS will process and print a particular job.

Each table addresses a different area of consideration from PDL commands to paper sizes and stocks. Often there is no need for any further checking because the tables provide the answer. Other times they show you where further investigation is needed, or suggest specifically what you should check, either on your Xerox DocuPrint 180 LPS or in the print job. You may need to refer to another manual in your Xerox DocuPrint 180 LPS reference set for detailed guidance on running a particular type of job or altering a job to make it compatible with your Xerox DocuPrint 180 LPS.

In order to evaluate whether your Xerox DocuPrint 180 LPS running software version 3C2 can be used as a suitable backup printer for a print job created on another Xerox LPS running a different software version, you must consider many factors. To help you begin the task of determining if a job will run on your Xerox DocuPrint 180 LPS, use this checklist for basic job compatibility:

1. Are font character sets required by the job loaded on the Xerox DocuPrint 180 LPS?
2. Are forms required by the job loaded on the Xerox DocuPrint 180 LPS?
3. Is the allocated size of the print file on the Xerox DocuPrint 180 LPS appropriate for the print job?
4. Is the current forms default on the Xerox DocuPrint 180 LPS appropriate for the print job?
5. Is the current graphics default on the Xerox DocuPrint 180 LPS appropriate for the print job?
6. Is the current font default on the Xerox DocuPrint 180 LPS appropriate for the print job?
7. Does the Xerox DocuPrint 180 LPS have sufficient memory for the print job?
8. Does the print job require a finishing device?
9. Does the print job require a configured XPAF, HIP, or SDI connection?

Using your Xerox DocuPrint 180 LPS as a backup LPS

Tables 5-1 through 5-6 identify particular job features to consider when printing a job on your Xerox DocuPrint 180 LPS which was created on another Xerox LPS running a different software version. Each table contains specific job features which may be encountered, the projected results when printed on your Xerox DocuPrint 180 LPS, and where to find further information.

Table 5-1. **Will this 4635 (V3A R1.7) job print on my Xerox DocuPrint 180 LPS**

Job features from 4635 (V3A2 R1.7)	Results when run on DP 180 LPS
Programmable bypass transport	Job prints if DP 180 LPS has a bypass transport and the finishing device is required by the job. Otherwise, it does not run.
Clusters	Job prints. Operator needs to redefine clusters if trays differ.
Edgemarking	Job prints
Fonts	Job prints if the fonts and character sets used are loaded on the DocuPrint 180 LPS or if substitutions for these fonts are defined.
Graphics	Job prints if sufficient graphic memory is available.
Labels	Job prints using only paper labels. Refer to the <i>Xerox DP 180 LPS Operator Guide</i> for loading instructions.
Page density	Job prints.
Paper sizes	Job prints.
Paper stock	Job prints if it does not use edge reinforced 3-hole stock.
Stitch commands	No stitcher available on DP 180 LPS, therefore stitch commands are ignored and job prints unstitched.
Transparencies	Job prints.
MICR	A message will appear stating that the system is not configured for this feature.
Bar Code	A message will appear stating that the system is not configured for this feature.
Interpress	A message will appear stating that the system is not configured for this feature.
XNS	A message will appear stating that the system is not configured for this feature.
Ethernet	A message will appear stating that the system is not configured for this feature.

Table 5-2. **Will this 4050/4090 (V3.5) job print on my Xerox DocuPrint 180 LPS**

Job features from 4050/4090 (V3.5)	Results when run on DP 180 LPS
Programmable bypass transport	Job prints if DP 180 LPS has a bypass transport and the finishing device is required by the job. Otherwise, it does not run.
Clusters	Job prints. Operator needs to redefine clusters if trays differ.
Edgemarking	Job prints
Fonts	Job prints if the fonts and character sets used are loaded on the DocuPrint 180 LPS or if substitutions for these fonts are defined.
Graphics	Job prints if sufficient graphic memory is available.
Labels	Job prints using only paper labels. Refer to the <i>Xerox DP 180 LPS Operator Guide</i> for loading instructions.
Page density	Job prints.
Paper sizes	Job prints.
Paper stock	Job prints if it does not use edge reinforced 3-hole stock.
Stitch commands	No stitcher available on DP 180 LPS, therefore stitch commands are ignored and job prints unstitched.
Transparencies	Job prints.

Table 5-3. Will this 4650 (V3.5) job print on my DP 180 LPS?

Job features from 4650 (V3.5)	Results when run on DP 180 LPS)
Clusters	Job prints. Operator needs to redefine clusters if tray differs.
Edgemarking	Job prints.
Fonts	Job prints if the fonts and character sets used are loaded on the DocuPrint 180 LPS or if sub-stitutions for these fonts are defined.
Graphics	Job prints if sufficient graphic memory is available and input source is 300 dpi resolution.
Labels	Job prints using only paper-faced labels. Refer to the <i>Xerox DP 180 LPS Operator Guide</i> for loading instructions.
Page density	Job prints.
Paper sizes	Job prints.
Paper stock	Job prints if it does not use edge reinforced 3-hole stock.
Stitch commands	No stitcher available on DP 180 LPS, therefore stitch commands are ignored and job prints unstitched.
600 dpi input	Job prints in 300 dpi. The 4650 LPS is the only Xerox LPS that accepts 600 dpi input.
300 dpi with interpolated 600 dpi output	Job prints.

Table 5-4. Will this 4850 (V3.7) job print on my DP 180 LPS?

Job features from 4850 (V3.7)	Results when run on DP 180 LPS
Clusters	Job prints. Operator needs to redefine clusters if trays differ.
Color	Jobs will compile, process and print in black ink and shades of gray. The system will alert the operator if a job will not print correctly, but the system will not roll over. Precompiled color forms will print in black and shades of gray, however, the DP 180 LPS does not compile color forms.
Edgemarking	Job prints.
Fonts	Job prints if the fonts and character sets used are loaded on the DocuPrint 180 LPS or if sub-stitutions for these fonts are defined.
Graphics	Job prints if sufficient graphic memory is available.
Labels	Job prints using only paper-faced labels. Refer to the <i>Xerox DP 180 LPS Operator Guide</i> for loading instructions.
Paper density	Job prints.
Paper sizes	Job prints.
Paper stock	Job prints.
Stitch commands	No stitcher available on DP 180 LPS. As a result, stitch commands are ignored and job prints unstitched.

Table 5-5. Will this 9790 (V2) print on my DP 180 LPS?

Job features from 9790 (V2.1)	Results when run on DP 180 LPS
Edgemarking	Job prints.
Fonts	Job prints if the fonts and character sets used are loaded on the DocuPrint 180 LPS or if sub-stitutions for these fonts are defined.
Graphics	Job prints if graphic memory is available.
Labels	Job prints using only paper labels. Refer to the <i>Xerox DP 180 LPS Operator Guide</i> for loading instructions.
Page density	Job prints.
Paper sizes	Job prints with the exception of 7- by 12-inch paper.
Paper stock	Job prints with the exceptions of edge reinforced 3-hole paper and envelopes.

Table 5-6. Will this 8790 (V2) print on my DP 180 LPS?

Job features from 8790 (V2.1)	Results when run on DP 180 LPS
Edgemarking	Job prints.
Fonts	Job prints if the fonts and character sets used are loaded on the DocuPrint 180 LPS or if sub-stitutions for these fonts are defined.
Graphics	Job prints if graphic memory is available.
Labels	Job prints using only paper-faced labels. Refer to the <i>Xerox DP 180 LPS Operator Guide</i> for loading instructions.
Paper density	Job prints.
Paper sizes	Job prints.
Paper stock	Job prints with the exceptions of edge reinforced 3-hole paper.

Checking paper sizes and special stocks

If your job requires a particular paper size, you need to make sure your Xerox DocuPrint 180 LPS can handle it. Table 5-7 identifies the paper sizes that will run in your Xerox DocuPrint 180 LPS, as well as the other Xerox LPS.

Table 5-7. Paper sizes for the LPS

Paper size (inches)	DP180 & 4635	4050/4650/4090	4850/4890	9790	8790
8.5 by 11	*	*	*	*	*
8.27 by 10.63			*		
8.27 by 11.69 (A4)	*	*	*	**	**
8.27 by 13			*		
8.37 by 10.78			*		
5.83 by 8.27 (A5)	*				
7.17 by 10.12 (B5)***	*				
7 by 12***				*	
8 by 13	*		*		
8.5 by 5.5	*				
8.5 by 10.75			*		
8.5 by 12.4	*				
8.5 by 13	*		*		
8.5 by 14	*	*	*	*	
8 by 10			*		
8 by 10.5	*		*		
10.12 by 14.33 (B4)	*				
11 by 17	*				
11.69 by 16.54 (A3)	*				

* With variable paper size option

** Available as standard on international version.

***Only if optional Paper Feeding Enhancement Kit is installed.



Note: Any paper size smaller than 8 inches must have the 7- by 10-inch Paper Feeding Enhancement Kit installed.

If your job requires specialty paper, you will need to check whether your Xerox DocuPrint 180 LPS can handle it. Table 5-8 identifies

which type of speciality paper and stock will run in your Xerox DocuPrint 180 LPS, as well as the other Xerox LPS.

Table 5-8. **Specialty paper and stock for the LPS**

Specialty paper/stock	DP180 & 4635	4050/4650/4090	4850	9790	8790
Cardstock (up to 110-pound)	*	*	*	*	*
Divider stock (65-pound)	*	*	*	*	*
Index stock (90-pound)	*	*	*	*	*
Image series elite (20-pound)	*	*	*	*	*
Reinforced 3-hole	*	*		*	*
Carbonless paper	*			*	*
Antique parchment (24-pound)	*	*	*	*	*
Envelopes				*	
Labels (self adhesive)		*	*	*	*
Labels (high-speed)	*	*	*	*	*
Perforated	*	\$	*	*	*
Predrilled	*	*	*	*	*
Preprinted	*	\$	*	*	*
Tinted	*	*	*	*	*
Transparencies	*	*	*	**	*
Zero solvent vellum (20-pound)	*	*	*	*	*
Never-tear paper	*	*	*	*	*

* With special materials feeder.

** High-speed paper-backed transparencies only.

\$ Please read all special instructions for 4050/4650, and 4090 in Operator Guide before using this stock.



Note: On the Xerox DocuPrint 180 LPS, transparencies must be loaded as a special stock in tray 1 or 2, and delivered to the sample

tray. Refer to the *Xerox DocuPrint 180 LPS Operator Guide* for loading instructions.



Note: Paper sizes with differences exceeding +25 mm in either dimension cannot stack in the same bin. Feed Auto must be used, and manual collation of the job is required upon completion. Some applications written for a 9700F printer using multiple sizes (e.g. 8 X 11 variable data merge with 8.5 X 11 forms) may not run on the DocuPrint 180 LPS due to added capability for paper size checking between feed trays and user defined paper size statements in the JSL/FSL.

Comparing DocuPrint 180 LPS print job resolution

Since Xerox laser printing systems have different print resolution capabilities, it is important to compare the print resolution functionality of your Xerox DocuPrint 180 LPS and of the LPS the job was created on. Table 5-9 illustrates the print resolution functionalities of the Xerox LPS.

Table 5-9. **Print resolution of print jobs created or printed on LPS**

Paper resolution functionality	DP180 & 4635	4050	4650	4090	4850	9790	8790
Creates and prints 300 dpi jobs	*	*		*	*	*	*
Creates 300 dpi jobs but prints in 600 dpi	*		*				
Creates and prints 600 dpi jobs			*				
Creates but does not print 600 dpi		*		*	*	*	*



Note: 600 dpi jobs can be created and compiled on an LPS only if 600 dpi fonts are loaded. Likewise, 300 dpi jobs can be created and compiled on an LPS only if 300 dpi fonts are loaded.

Checking JDL compatibility

Job descriptor libraries (JDLs) are collections of compiled job descriptions which are set up by the user. Many jobs may be compiled on one LPS and run on another. Table 5-10 shows how your Xerox DocuPrint 180 LPS handles JDL's from other LPS.

Table 5-10. **How the DocuPrint 180 LPS handles JDL's from other LPS**

JDLs from the following LPS	Printed results if run on the DP180 LPS
4635 LPS (V3A)	Prints the same as source LPS.
4850 LPS (300 dpi, color) (V3.7)	Prints in black ink and shades of gray only. If job includes two-color graphics, job aborts.
4890 LPS (300 dpi, color) (V5.0)	Prints in black ink and shades of gray only. If job includes two-color graphics, job aborts.
4050, 4090 LPS (300 dpi) (V3.5)	Prints the same as source LPS.
4650 LPS (300 dpi) (V3.5)	Prints on DocuPrint 180 LPS. (Does not print on 4650.)
4650 LPS (600 dpi) (V3.5)	Does not print.
9790/8790 (300 dpi) (V2.1)	Prints the same as source LPS.
DocuPrint 96 LPS (300 dpi) (V3B)	Prints on DocuPrint 180 LPS.

Checking PDL compatibility

Print Description Language (PDL) commands define the format of the input media, processing requirements, and the format of the printed output. Each command has a set of parameters that can be used to define a print job's characteristics. Table 5-11 shows the PDL command parameters that your Xerox DocuPrint 180 LPS does not process. However, your Xerox DocuPrint 180 LPS processes other parameters associated with the command.

PDL commands which the Xerox DocuPrint 180 LPS does not process are indicated by an asterisk.

Table 5-11. **PDL parameters and commands not accepted by the DocuPrint 180 LPS**

Command	Parameter
ABNORMAL	IMISMATCH
	ISUBSTITUTE
ac:CME	INKS
*IDR	ICATALOG
	ILIST
	PALETTE
LINE	INKINDEX
OUTPUT	IDFAULT
	IDR
	IRESULT
	XMP

Table 5-12 shows the PDL command parameters that are unique to your DocuPrint 180 LPS, and will not run on any other LPS except the 4635 LPS.

Table 5-12. **PDL command parameters unique to the DocuPrint 180 LPS**

Command	Parameter
MESSAGE	*BTEXT
OUTPUT	DESTINATION (EXPORT options)
	INVERT
	OSTK
	PAPERSIZE (A3 and B4 options)
	SEFFNT
	SF1FUNCTION
	SEFMAP
	SF2FUNCTION
	SYSPPR
	TMODE
	TRANS
	XSHIFT
RFEED	
SEFFNT	MAP
	SEFMAP

Your Xerox DocuPrint 180 LPS is capable of processing DJDEs that other LPS cannot handle. Table 5-13 shows the DJDEs that are unique to your Xerox DocuPrint 180 LPS.

Table 5-13. **DJDEs unique to the DocuPrint 180 LPS**

DJDEs
BTEXT
INVERT
MAP
SEFFNT
SEFMAP
SF1FUNCTION
SF2FUNCTION
TMODE
TRANS
XSHIFT

DocuPrint 180 LPS comparison

Table 5-14 compares hardware and software features, optional connections, and specific abilities of your Xerox DocuPrint 180 LPS and other Xerox LPS.

Table 5-14. **DocuPrint 180 LPS product comparison table**

Feature	DP180	4635	4050	4090	4650	4850	8790	9790
<i>LPS optional connections</i>								
On-line (3811/3211 interface)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
On-line (4245 interface)	Yes	Yes	No	No	No	Yes	Yes	Yes
Off-line (9- and/or 18-track tape)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Off-line (9- and/or 18/36-track tape)	Yes	No	No	No	No	No	No	No
871-CM: SNA/SDLC and BSC (OEM interface)	No	No	Yes	Yes	Yes	Yes	Yes	Yes
XNS (Ethernet interface)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DMR (DEC interface)	No	No	Yes	Yes	Yes	Yes	No	No
850/860 Communication option	No	No	No	No	No	No	Yes	Yes
Dynamic Document Interface	Yes	Yes	No	No	No	Yes	No	No

Table 5-14. DocuPrint 180 LPS product comparison table

Feature	DP180	4635	4050	4090	4650	4850	8790	9790
<i>System controller</i>								
System disk capacity (MB):								
Standard	3-1.2Gb	1-1.2Gb	2-50Mb	2-170Mb	2-170Mb	2-182Mb	2-50Mb	2-50Mb
Optional	1-1.2Gb	up to 4-1.2Gb	2-50Mb	2-170Mb or 2-380Mb	2-170Mb or 2-380Mb	2-182Mb or 2-380Mb	2-50Mb	2-50Mb
Multinational terminal	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PC UI graphic interface	Yes	Yes	No	No	No	No	No	No
Control memory	1024K	1024K	512K	512K	512K	512K	512K	512K
Font memory (Mbits)	256	64	8	64	64	32	8	8
Expandable to (Mbits)	NA	256	16	128	128	128	16	16
Floppy drive	3.5 in (opt)	5.25 in/ 3.5 in (opt)	5.25 in	5.25 in	5.25 in	5.25 in	5.25 in	5.25 in
Advanced Imaging System (AIS)	Yes	Yes	No	No	No	No	No	No
GVG memory (Mbits)	No	No	No	32	32	32	No	No
Expandable to Mbits	No	No	No	256	256	256		
GHO memory (Mbits)	No	No	8	8	No	No	8	8
32-track cartridge tape drive	No	No	Yes	Yes	Yes	No	No	No
Quarter-inch cartridge (QIC) tape drive	Yes	Yes	No	No	No	Yes	No	No
<i>Printer</i>								
Rated speed (PPM)	180	135	50	92	50	50	72	120
Output resolution (dpi)	600 with ERI	300 input interpolated to 600 output	300	300	600	300	300	300
Image area (inches)	Up to 17 by 14 432-by 356-mm	Up to 17 by 14.33 43-by 364-mm	8.6 by 13.65	8.6 by 14	8.6 by 14	8.62 by 14	8.66 by 12	8.66 by 12
Duplex printing	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Sample tray capacity (sheets)	100	100	100	100	100	100	25	25
<i>Stacker options:</i>								
Dual stacker (capacity per tray)	No	No	750	750	750	750	500	1500

Table 5-14. DocuPrint 180 LPS product comparison table

Feature	DP180	4635	4050	4090	4650	4850	8790	9790
Stitcher/stacker (unstitched sheets)	No	No	2000	2000	2000	2000	No	No
<i>High-capacity stacker (HCS)</i>								
Bin A	2500	2500	No	No	No	No	No	No
Bin B	2500	2500	No	No	No	No	No	No
Bin C	2500 (opt)	2500	No	No	No	No	No	No
Bin D	2500 (opt)	2500	No	No	No	No	No	No
<i>Feeder options:</i>								
Dual feeder trays								
Tray 1 (Main) capacity (sheets)	1100	1100	1000	1000	1000	1000	2500	2500
Tray 2 (Aux) capacity (sheets)	600	600	500	500	500	500	500	500
Expanded aux tray	No	No	No	No	No	No	2500	2500
High-capacity feeder (HCF)								
Tray 3 capacity (sheets)	2600	2600	1000	1000	1000	1000	No	No
Tray 4 capacity (sheets)	2600	2600	1000	1000	1000	1000	No	No
Tray 5 capacity (sheets)	2600 (opt)	2600	No	No	No	No	No	No
Tray 6 capacity (sheets)	2600 (opt)	2600	No	No	No	No	No	No
<i>Forms</i>								
Electronically created/stored	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Page-to-page changeability	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Preprinted forms	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Fonts</i>								
Proportional or fixed space	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multinational character set	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Standard character sizes (pt)	3-36	3-36	4-24	4-24	6-36	4-36	4-24	4-24
Max. no of fonts per page	128	128	128	128	128	128	95	95
Downloadable from host	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5-14. DocuPrint 180 LPS product comparison table

Feature	DP180	4635	4050	4090	4650	4850	8790	9790
Floppy disk loadable	Yes (opt)	Yes (opt)	Yes	Yes	Yes	Yes	Yes	Yes
Magnetic tape loadable	Yes (opt)	Yes (opt)	Yes	Yes	Yes	Yes	Yes	Yes
Resolution (dpi)	600 with ERI	300 input interpolated to 600 output	300	300	600 300	300	300	300
Logo and signature fonts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Character-to-character selectable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Paper</i>								
Variable paper sizes** (inches)	7 by 10 to 14 by 17 (178 by 254 mm to 356 by 432 mm, incl. A4, A3, B4, B5)	7 by 10 to 14.33 by 17 (178 by 254 mm to 365 by 432 mm, incl. A4, A3, B4, B5)	8 by 10 to 8.5 by 14 (incl. A4)	8 by 10 to 8.5 by 14 (incl. A4)	8 by 10 to 8.5 by 14 (incl. A4)	8 by 10 to 8.5 by 14 (incl. A4)	8.5 by 11 or 8.5 by 14 or A4	8.5 by 11 or 8.5 by 14 or A4
Weight: index, cut-sheet, colored, preprinted, predrilled or perforated paper	16-110 lb. (60-200 gsm)	16-110 lb. (60-200 gsm)	20-110 lb. (80-200 gsm)	20-110 lb. (80-200 gsm)	20-110 lb. (80-200 gsm)	20-110 lb. (80-200 gsm)	16-110 lb. (60-200 gsm)	16-110 lb. (60-200 gsm)
Transparencies	Yes	Yes	Yes	Yes	No	Yes	No	No

* Use high-speed transparencies only in the 4635 LPS and DP180 LPS, and they must be output to the sample tray.
 **7- by 10-inch thruput on the 4635 and DP180 LPS is enabled when the optional Paper Feeding Enhancement Kit is installed.



Note: Within the DocuPrint 180 LPS Reference set, spots, dots, and pixels are used interchangeably.

Resolution (300 spi or 600 spi) applies to both coordinate axes.

Xerox DocuPrint 180 LPS user considerations

This section describes Xerox DocuPrint 180 LPS user considerations.

Xerox DocuPrint 180 LPS edgemarking

To ensure consistency across all Xerox LPS printers, the coordinate system used by all printers is identical. However, the area upon which an actual image may appear is limited. Because of this, data which starts near the edge of or off of the physical page may be lost.

Edgemarking is the placement of marks at or near the edge of the physical page. To accommodate edgemarking, the system page must be larger than the physical page.

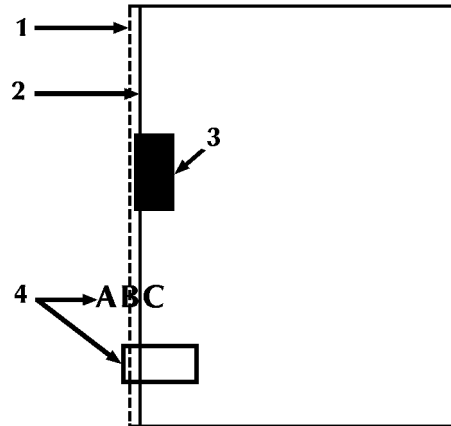
The Xerox DocuPrint 180 LPS edgemarking capability could be limited if the system page boundaries correspond to the sides of the physical page of paper.

If any part of a form element or variable data line is positioned off the leading edge of the system page (that is, the top edge of a landscape-oriented page or the left edge of a portrait-oriented page), the entire data element is not imaged. Refer to figure 5-1.

- If a line of variable text begins off the leading edge of the system page, the entire line of text is not printed.
- If a ruled line begins off the leading edge of the system page, the entire ruled line is not printed.
- A line running parallel to the leading edge needs to be positioned at least half the line thickness inside the leading edge of the system page in order to be printed. For example, a bold line is 8 dots thick and it must, therefore, be positioned at least 4 dots inside the leading edge of the system page.
- If any part of a signature or logo begins off the leading edge of the system page, the entire signature or logo is not printed.
- One common cause of print elements accidentally beginning off the system page is the improper use of the OUTPUT SHIFT command. This command is used to shift the entire contents of a page relative to the boundaries of the system page. When a negative shift value is entered (as is often the case for the back side of duplex pages), and that value exceeds the left margin, no text elements will print. When using a negative value for the OUTPUT SHIFT command, be sure that it is less than the value of the left margin.

Figure 5-1 illustrates the edgemarking considerations for a portrait page.

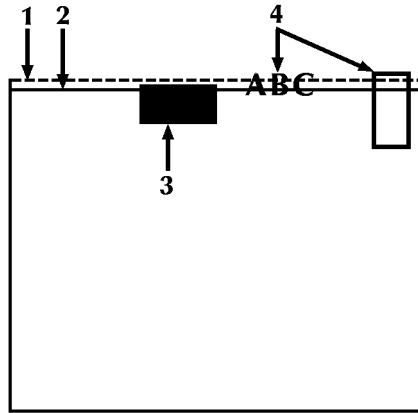
Figure 5-1. **Edgemarking a portrait page**



- 1 System page leading edge
- 2 Physical page leading edge
- 3 Within system page, data will edgemark
- 4 Off system page, data will not print.

Figure 5-2 illustrates the edgemarking considerations for a landscape page.

Figure 5-2. **Edgemarking a landscape page**



- 1 **System page leading edge**
- 2 **Physical page leading edge**
- 3 **Within system page, data will edgemark**
- 4 **Off system page, data will not print.**

To determine whether or not an item has fallen off the system page, the following formulas may be used in determining the number of dots (1/300 of an inch) which make up the area between the leading edge of the system page and the leading edge of the physical page. For 8.5- by 11 or 8.5- by 14-inch paper, the formula is:

Printer alignment in scan direction -1

For A4 paper, the formula is:

Printer alignment in scan direction +69

If any part of an item begins more than this number of dots before the leading edge of the physical page, the item falls off the system page and does not print.

Registration shift and skew

The registration of a printed image can appear shifted or skewed on a page if the sheet of paper is misaligned as it enters the printer. Because of the design of the DocuPrint 180 LPS feeder, the image registration on each page can vary slightly both horizontally and vertically by up to 0.65 mm. The image can also be slanted or skewed slightly by 3.97 milliradians. (Figures 5-3 and 5-4 illustrate landscape and portrait shift and skew.) Note that the following figures are the same specifications merely rotated to show portrait and landscape orientations. The shift and skew variances described here are within allowable specifications, but as this can affect the registration of variable data in preprinted forms and the placement of images close to the edge of the page, it is important to make allowance for this condition.

Figure 5-3 illustrates the landscape orientation shift and skew.

Figure 5-3. **Landscape orientation shift and skew (8.5- by 11-inches)**

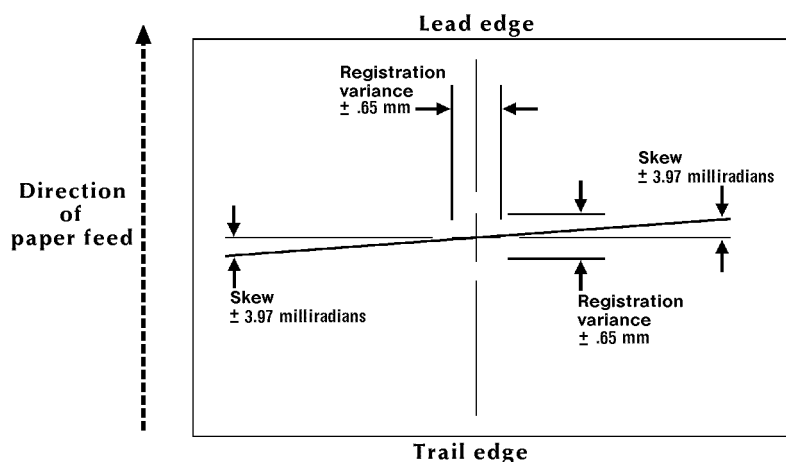
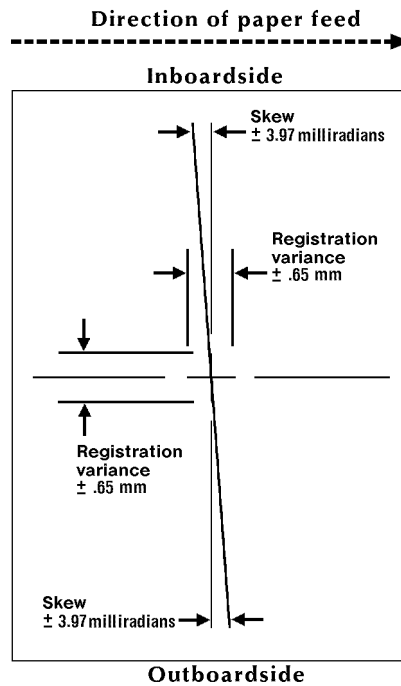


Figure 5-4 illustrates the portrait orientation shift and skew.

Figure 5-4. **Portrait orientation shift and skew (8.5- by 11-inches)**



Paper size

The following sections describe paper sizes.

Variable paper size

Page dimensions up to the physical capacity of the feeder trays may be selected. (The largest feeder tray physical capacity is 14 by 17 inch; the smallest is 7 by 10 inch with the optional Paper Feeding Enhancement Kit installed). At system generation (sysgen), you can select USLETTER, USLEGAL, or A4; or you can select "other" and specify any paper size between the smallest and largest allowed (x by y) in millimeters. 11- by 17-inch/297- by 432-mm jobs are not supported, however, your Xerox DocuPrint 180 LPS handles 11- by 17-inch/297- by 432-mm IMG jobs.

The use of the PAPERSIZE command in PDL and the PAPER command in FDL permits form compilation and job printing on a size of paper other than the sysgened paper size and allows the specification of nonstandard paper sizes for those jobs requiring nonstandard paper

It is recommended that you sysgen to the largest size paper that you commonly use. Smaller and less-used paper sizes should be specified using PDL and FDL commands.

Refer to *Xerox DocuPrint 180 LPS PDL Reference* and *Xerox DocuPrint 180 LPS Forms Creation Guide* for more information on commands.

System page size

The Xerox DocuPrint 180 maximum imaging area (that is, the system page) measures 14- by 17-inches.

Virtual page size

The default virtual page size is identical to the physical page size. If a virtual page size is user-defined, the virtual page is centered relative to the physical page. A user-defined virtual page may not be larger than the paper size value; larger dimensions are truncated.

Error messages

If any part of a print line originates off the system page, the following message is displayed:

OS6905 DATA ORIGIN OFF PAGE -- CHECK OUTPUT.

This message appears only once during a print job. It indicates a print line origin problem within the form description or an excessive SHIFT value. Refer to *Xerox LPS Forms Creation Guide* and *Xerox DocuPrint 180 LPS Message Guide* for more information.

Deletions

The Xerox DocuPrint 180 printer utilizes the newest xerographic advancements, providing good solid black print quality and spot control. However, in certain circumstances, there is a possibility that toner from the photoreceptor may not completely transfer to a sheet of paper before it is fused and sent to the output bin. This occurrence is known as a deletion. Generally, deletions will result in a small area of the printed page appearing lighter than the rest of the page. For example, a few letters of a word may appear lighter than the rest of the word.

To help reduce the occurrence of deletion, the Xerox DocuPrint 180 printer has been fitted with a four-segment transfer blade which presses the paper onto the photoreceptor during toner transfer. This blade is automatically activated based on the paper size setting in the job descriptor and does not involve any operator interaction or loss of productivity.

There are two different transfer blades: one for 60Hz systems and one for 50Hz systems. Each blade can adjust to four paper size lengths as follows:

- 60 Hz blade: 11-, 11.69-, 13-, and 14-inch (279-, 297-, 330-, 356-mm)
- 50 Hz blade: 10-, 11-, 11.69-, and 13-inch (254-, 279-, 297-, 330-mm).

Thus, if you switch from 8.5- by 11-inch/216- by 279-mm to U.S. legal (8.5- by 14-inch/216- by 356-mm), the 11-inch/279-mm segment is utilized first, then the additional blade extension to 14-inch/356-mm is activated automatically when the legal size paper is encountered.

Two points to note:

- For page lengths in between the preset blade lengths, there may be some deletion on paper that extends past the blade. The rate of occurrence of deletions varies widely, depending on paper stock, and should be tested. Also, note that no deletion will be noticed if no data is printed on the portion of paper that extends past the blade.

If you frequently use non-standard size paper, a custom transfer blade kit is available for installation on your printer. For more information on the custom transfer assist blade, refer to the *Xerox DocuPrint 180 LPS Operator Guide*.

- The activation of the blade is timed to place it on the lead edge of the sheet of paper as it moves through the system. The placement of the activation can vary with the actual speed of paper. Therefore, performance may demonstrate some deletions on the lead 0.25-inches/6-mm of the page. In particular, solid black lines on the lead edge of the page should be avoided if this is a major concern to you.

A consideration resulting from the very solid black characters that the DocuPrint 180 LPS can print is that toner on the lead edge of the paper may cause the sheet to stick to the fuser, due to the consistency and solidness of the toner. In order to eliminate fuser jams caused by this condition, the system uses a digital screen to lighten automatically any solid areas printed in the first 0.25 inches/6mm of the lead edge. If the solid areas are small, the amount of screen is barely noticeable, if at all. However, with very large solid black areas, the effect may not be acceptable. The system does provide an override using the Lead Edge Screen window at the PC UI, or the EDGE command entered at the command line. This window or command allows you to enable or disable the lead edge screen; however, overriding the screen in this manner is likely to increase fuser jams.

For particular applications, it is recommended that you run test prints both with and without the screen to ascertain which mode is most appropriate for you.

For more information on the Lead Edge Screen window, refer to the *Xerox DocuPrint 180 LPS Operator Guide* or the *Xerox DocuPrint 180 LPS PC User Interface Reference*. For more information on entering the EDGE command at the command line, refer to the *Xerox DocuPrint 180 LPS Operator Guide* or the *Xerox DocuPrint 180 LPS Operations Reference*.

Print Darkness

The Xerox DocuPrint 180 LPS provides you with capabilities for tuning your output print quality to meet the particular needs of your application. The Print Darkness window at the PC UI is a feature which allows you to adjust darkness of printed characters and images. Print darkness is a scale from 1 to 9, which either darkens or lightens the image, as well as broadening or thinning the look of various characters. The nominal setting is 5, which provides the optimal mix of darkness and line thickness.

It is recommended that you test the Print Darkness feature to determine the best setting for your site or application. For more information on the Print Darkness window, refer to the *Xerox DocuPrint 180 LPS Operator Guide* or to the *Xerox DocuPrint 180 LPS PC User Interface Reference*. For more information on entering the DARKNESS command at the command line, refer to the *Xerox DocuPrint 180 LPS Operator Guide* or the *Xerox DocuPrint 180 LPS Operations Reference*.

Interpolation and scanned images

The Xerox DocuPrint 180 LPS accepts 300 spi data and prints it using a 600 spi dual beam raster output scanner (ROS). To convert 300 spi input data to 600 spi print output, the system uses an interpolation algorithm to smooth lines and improve the quality of 300 spi fonts and line art.

Switching paper size and feed modes

The Xerox DocuPrint 180 LPS system operates in a multiple-pitch print mode: 8 pitch to 3 pitch.

The multi-pitch feature allows your Xerox DocuPrint 180 LPS to adjust the pitch mode according to the width of the paper you are using. Table 5-15 shows the relation between the pitch mode, the maximum width of the paper being fed in a long edge feed mode, and the page per minute (PPM) rate. Long edge feed mode means the sheet is fed into the paper path with its long edge first.

Table 5-15. **Pitch codes**

Pitch mode	Maximum paper width	PPM rate
3 pitch	17 inches/431 mm	77 PPM
4 pitch	15.3 inches/389 mm	103 PPM
5 pitch	12.1 inches/308 mm	128 PPM
6 pitch	10.2 inches/259 mm	154 PPM
7 pitch	9 inches/229 mm	180 PPM
8 pitch*	7.4 inches/188 mm	206 PPM

*8 pitch is enabled only with the optional Paper Feeding Enhancement Kit installed.

For papers whose widths range from 8.66 to 9 inches, the Xerox DocuPrint 180 prints with slightly reduced productivity at 180 pages per minute, with seven-page images per photoreceptor revolution. Productivity is slightly reduced because in order to maintain print speed for papers of this size, the system must temporarily suspend xerographic print quality checks. The Xerox DocuPrint 180 maintains the highest print quality by periodically reducing printer output to perform xerographic print quality checks. After a print quality check, the system automatically resumes printing at full productivity.

Cleaning time between pitch mode changes

Because the xerographic process places toner images on the photoreceptor belt, it is necessary for the printer to clean the system completely when switching to different modes. This cleaning process ensures that unprinted toner from one pitch mode is not deposited on sheets running in the other mode. This cleaning process requires approximately 25-30 seconds, during which time the system “dead cycles” before printing again. During this time, areas of the printer are running, but paper is not fed through the system.

Specialized papers

The Xerox DocuPrint 180 printer handles paper differently from the 9790 and other Xerox LPS. Paper sensors and the paper path are not the same from one printing product to another. An application running special papers on a 9790, for example, may yield slightly different results when printed on the Xerox DocuPrint 180 LPS. Therefore, it is recommended that you test applications that use specialized papers to ensure that output is satisfactory.

Pay special attention to the following materials:

- Die cut paper (paper with windows or areas cut out) must be tested to ensure that the sheet registers properly with paper sensors.
- Multiple-thickness materials may cause stacking problems. Such problems may be alleviated by using the Bin Limits window or command to limit the number of sheets that can be stacked in a bin.
- For information on the Bin Limits window and command, refer to the *Xerox DocuPrint 180 LPS Operator Guide* or the *DocuPrint 180 LPS PC User Interface Reference*.

Refer to Helpful Facts About Paper for more information on the selection, storage, and handling of papers for your DocuPrint 180 LPS.

6. Xerox customer resources

This chapter references the many resources available to Xerox customers in the U.S. If the resource you need is not listed in this chapter, contact your site representative.

Xerox support services

Xerox provides many services in support of your laser printing system (LPS). These services include the following:

- Xerox Customer Support Center
- Customer Service Support Center
- Xerox Font Center
- Xerox Customer Documentation Catalog
- Xerox Documentation and Software Services (XDSS)
- Xerox Supplies Order Service.

Detailed information about these services follows.

Prior to installation, your Xerox site representative is available to answer your questions about the products, services, or billing. However, if you need assistance in resolving application-related problems or questions, contact your local Xerox systems analyst or call the Xerox Customer Support Center (XCSC).

Xerox Customer Support Center

The XCSC is available to address your software and applications problems or to direct you to the appropriate documentation.

The key to effective use of the XCSC is correct identification of the problem. Before calling the center, it is helpful to have the following information available:

- A list of any error messages
- An explanation of how output is different from what was expected
- Whether the symptoms follow a consistent pattern or occur randomly
- A list of special conditions that may have an effect on the system, such as:
 - New applications
 - Changes made to the host system (that is, system software)
 - Recent service performed on the LPS
 - Whether the application printed properly on the LPS prior to the problem.

The XCSC telephone number is:

1-800-821-2797 (nationwide), 5 a.m. to 5 p.m. Pacific time.

Customer Service Support Center

If you encounter software- or hardware-related problems, such as system failures, continuous paper jams, or poor print quality, first try the corrective actions described in your LPS operator guide. If the problem persists, call 1-800-821-2797.

Before contacting Xerox service, please make note of the following:

- Status code numbers and messages which appear on the PC User Interface (UI) or terminal, including the 6-digit San Code that resulted from running the PROBLEM command
- Status messages which appear on the printer control console
- Indicator lights which may be lit
- Status codes which appear in the display window of the operator control panel if there is a tape drive problem.

Your call will be answered by a Xerox representative who will ask you for the following information:

- Your LPS model number: Xerox DocuPrint 180
- Your LPS serial number
- Your name
- Your company name
- Your work address
- Your company's work hours
- A contact's name and telephone number within your company
- The condition or status of your system.

This information is given to a Xerox representative who will call you back to discuss the information and give you an estimated time of arrival of a service representative, or assist you over the phone to resolve the problem.

Xerox Connection

For information on interfaces and connections available for on-line and off-line operation with the Xerox DocuPrint 180 LPS, contact Xerox Connection at:

1-800-451-9312 (continental U.S.)
7:00 a.m. to 4:00 p.m. Pacific time.

Xerox Font Center

The Xerox Font Center can send you samples and catalogs of the fonts available for your LPS.

To receive font samples, obtain price information, or to order licensed or custom fonts, call the font support center for your area. Their business hours are 8:00 a.m. to 5:00 p.m. Pacific time.

Call the Xerox Font Center for information or to place an order at:

1-800-445-FONT

If you prefer, you may write to the following address to request font information:

Xerox Corporation
Xerox Font Center ESCP-126
701 South Aviation Boulevard
El Segundo, CA 90245

For locations outside the United States, please contact your Xerox site representative or local Xerox office.

For technical support regarding fonts (such as, installing fonts or solving problems encountered using fonts), call the Xerox Font Center at:

1-800-521-8324.

Xerox Documentation and Software Services

XDSS offers a variety of services that can be customized to meet your documentation needs.

XDSS distributes the documents you need to facilitate the installation and use of Xerox printers, workstations, and host-software packages. Site subscription is a free service that will keep these documents up to date by automatically sending you updates and revisions as they become available.

XDSS will also send you a Customer Documentation Catalog free of charge upon request. Forms for ordering documents, requesting a Customer Documentation Catalog, and registering for the site subscription service are provided at the back of this manual. Complete the forms or call:

1-800-327-9753, 6:00 a.m. to 5:00 p.m. Pacific time.

XDSS representatives will explain the services available, answer your questions, and take orders for documentation.

Xerox Supplies Order Service

To avoid downtime, be sure always to have an adequate amount of the necessary supplies available. To do this, you need to establish a procedure for checking and ordering supplies. A supplies checklist is provided in the *Xerox DocuPrint 180 LPS Installation Planning Guide* to help you with this task.

It is important that you check your supplies regularly and order before you run out. Please plan on approximately five working days for delivery after the order has been placed. (Arrangements can be made to provide them sooner in emergency situations.)

Your Xerox site representative can help you submit the initial order of supplies needed for installation. These items include paper, dry ink, fuser agent, and developer.

Once your printer's volume is established, planning ahead and buying Xerox supplies in quantity can save you money. Your Xerox supply specialists can help you.

There are two centers available to assist you:

- To order Xerox paper, transparencies, labels, dry ink, fuser agent, and magnetic tape, call the following toll-free number weekdays between 7:30 a.m. and 6:00 p.m. Pacific time, at:
1-800-822-2200 (U.S. only).

If you prefer, you may mail orders to:

Xerox Corporation
P.O. Box 25075
Santa Ana, CA 92799-5075.

- To order cleaning supplies, call the Xerox Parts Marketing Center weekdays between 5:00 a.m. and 5:00 p.m. Pacific time, at:
1-800-828-5881 (U.S. only).

You may also mail cleaning supply orders to:

Xerox Corporation
Parts Marketing Center
Building 214-07S
P.O. Box 1020
Webster, NY 14580

Please provide the following information when placing orders:

- Your customer number (provided by your Xerox site representative)
- Your LPS model: Xerox DocuPrint 180
- Your supply order, including:

Item name

Part number

Quantity desired

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

Glossary

A3	Paper size measuring 297 by 420 mm.
A4	Paper size measuring 210 by 297 mm.
abort	To terminate the printing of a job or execution of a program before it completes.
algorithm	Computational procedure that can be repeated any number of times.
alignment	Positioning of an image on a page for printing.
alphanumeric	Set of characters including the letters A through Z, numerals 0 through 9, and all printable special symbols.
AIM	Ancillary IOT message processor. System task that initializes the client layer between the printer and the system controller. It also displays the Fault, Hint, and information messages.
ASCII	American Standard Code for Information Interchange. Standard 7-bit code that represents alphanumeric information. Each alphanumeric character and several nonprinting characters are assigned a binary number, covering 128 possible characters. It is used for information interchange among data processing systems, data communication systems, and associated equipment.
application	Use to which a computer program or system is put, for example, sorting employee records.
applications software	Host- or LPS-resident software that directs the computer to perform specific tasks or functions as opposed to the software used to operate the computer. Common business applications include payroll, accounting, and inventory.
ascender	Portion of alphabetic character that rises above the body of the character (its x-height portion). See also descender; x height.
asynchronous	Transmission in data communications controlled by start and stop elements at the beginning and end of each character. Thus, time intervals between transmitted characters may be unequal in length.
audit log	Captures the sheet delivery information for every page in an audited report, certain details about each sheet, the planned and actual report control totals, and waste management.

auxiliary menu	Menu that contains options not displayed in a window. The symbol for an auxiliary menu is a box containing three horizontal lines.
B4	Paper size measuring 250 by 353 mm.
background job	Low-priority job, usually batched, that is executed automatically as system resources become available.
backup file	File copied to a storage medium for safekeeping in case the original is damaged or lost.
band	Rectangular area in printer memory into which an image sent to the printer from a computer is divided.
batch processing	Allows for repetitive operations to be performed sequentially on batched data without much involvement of the computer operator.
baud	Measurement of data rate in bits per second. This term is used to describe information flow between two devices. Unit of data transmitting and receiving speed is roughly equal to a single bit per second. Common baud rates are 110, 300, 1200, 2400, 4800, and 9600.
binary	Numbering system based on 2 that uses only the symbols 0 and 1. Binary is used in computers and related devices since information can be represented with electric pulses (0=off, 1=on). Most computer calculations are binary.
binary digit (bit)	<p>In the binary numbering system, either of the characters 0 or 1. The "bit" is the base unit of information used by computers. It can take the form of a magnetized spot, an electric pulse, or a positive or negative charge. A sequentially stored set of bits represents a character on a computer.</p> <p>Multipliers are:</p> <p>1 or 0 byte = 8,192 bits</p> <p>kilobyte (KB) or 1,024 bytes = 8,388,608 bits.</p> <p>Computer space equivalents are:</p> <p>1.5 KB = about 1 single-spaced typed page</p> <p>30 KB = about 20 typed pages</p> <p>150 KB = about 100 typed pages</p>
binary synchronous transmission	Data transmission in which synchronization of characters is controlled by timing signals generated at the sending and receiving stations.
bit	Abbreviation for binary digit, the smallest unit of information recognized by a computer. See also binary digit.

bit map	Visual representation of graphic images in which a bit defines a picture element (pixel); for example, if a bit is 1, the corresponding pixel is printed.
bit mapped	Display image generated bit by bit for each point or dot. A software-driven scanner is used to create characters or graphics.
blocking	Process of combining two or more records into a single block of data which can then be moved, operated upon, or stored, as a single unit by the computer.
block length	Number of characters or bytes contained in a block of data (the block is treated as a unit within the computer). Block length is usually invariable within a system and may be specified in units such as records, words, computer words, or characters.
boot	To load the initial instructions of a program into computer memory; these instructions then direct the loading of the rest of the program. Booting may require entry of a few commands at the keyboard or the flip of a switch to begin the process.
bps	bits per second. In serial communication, the instantaneous bit speed with which a device or channel transmits a character.
BSC	binary synchronous communication. 1. Communication using binary synchronous line discipline. 2. Uniform procedure using a standardized set of control characters and control character sequences for synchronous transmission of binary-coded data between stations.
buffer	Compartment of memory in which this data is stored during transfer from one device to another. This is useful for accumulating data into blocks before storage or processing and for adjusting differences of speed between devices, or between a device and a communicating facility.
Bypass Transport	Optional module that moves paper from the last stacker bin to a finishing device.
byte	Fixed number of bits (in data processing, usually 8) operated upon as a unit. A byte may represent a character, a machine instruction, or some other logical unit of information.
carriage return	Control character that causes the printing system to start printing at the left margin of the current line unless set to be interpreted as a line end.
channel	1. In data communications, a path or line that enables two or more devices to communicate (sometimes called a circuit, facility, or link). 2. In computers, a path for communication between the central processing unit (CPU) and input/output units, or between the CPU and peripheral devices.

character	Single printable letter (A-Z), numeral (0-9), symbol (& % #), or punctuation mark (, . ! ?) used to represent data. Characters can also be nonprinting, such as space, tab, or carriage return.
character cell	Digitized space containing a single character within a font set.
character code	Code representing alphanumeric information, for example, ASCII.
character code identifier	Code associated with the universal identifier "Xerox" to indicate the version of the Xerox character code standard used to code Interpress strings.
character set	Number of different characters used by a particular device, including alphabetic, numeric, and special characters such as symbols.
client layer	The software interface used by the AIM task and the Output task to communicate with the printer, allowing printing commands and fault and status information to be exchanged.
clocking	A method of synchronizing the sending and receiving of data communications devices. Clocking allows synchronous transmission at high speeds.
cluster	Group of paper feeder trays, usually containing the same size and type of paper (stock). Each cluster has a name, consisting of one to six alphanumeric characters. See also stock; stockset.
CME	copy modification entry. Entry modifying the output printing characteristics of a report on a copy-to-copy basis.
code	1. Set of symbols representing data or instructions to a computer. 2. To write a list of instructions (software) to cause the product/system to perform specified operations.
code conversion	Translation of one type of character or symbol code to another.
collate	To arrange or assemble into ordered sets.
column	Vertical arrangement of characters.
command	User instruction to a computer, using the system controller keyboard or the PC UI. Commands are words, mnemonics, or characters that cause a computer to perform predefined operations. Coded instruction to a computer or computer-based system.
command language	Set of commands that can be used for a system, such as how the system can be instructed to perform a task.
comment	Explanations written with program instructions. They are ignored by the computer.

communication line	Telecommunication line connecting devices at one location with devices at other locations in order to transmit and receive information.
communication link	Physical means, such as data link, connecting one location to another to transmit and receive information.
communications	Ability of two devices to transmit information to each other.
compatibility	Characteristic of computer equipment permitting one device to use the same information or programs as another device without conversion or code modification.
compiler	Software that translates instructions written in high-level language into machine language for execution by a system.
computer	Functional unit capable of performing substantial computations, including numerous arithmetic or logic operations without human intervention during a run.
computer language	Computer-oriented language consisting solely of computer instructions. See also machine language.
computer system	Central processing unit (CPU) with main storage, input/output channels and devices, control units, and external storage devices connected to it.
concatenate	To connect or link in a series, as when files are grouped together for faster processing. See also job concatenation mode.
console	Functional unit containing devices used by an operator to communicate with an operating system. It may consist of a display, keyboard, and certain switches or other controls.
consumable supplies	Supplies such as paper and dry ink that are depleted (used up) during the course of normal printer operation.
continuous printing	Refers to Interpress job integrity under any of the following conditions: excessive graphics, forms, or font use problems.
control program	Program that supports the operating system by monitoring the flow of jobs, tasks, processing, and so on, within the system; for example, a data communication program.
coordinate	Point on the x and y axis that determines a grid position.
copy	To duplicate data in a new location or on an additional storage medium, for example, to copy files from disk to tape.

copy-sensitive	Term used to indicate jobs in which multiple copies of a report will contain different data, as with paychecks and banking statements.
cpi	characters per inch. Designates the number of characters per inch for a particular typeface. See also pitch.
CPU	central processing unit. Interprets and executes instructions, performs all operations and calculations, and controls input and output units and auxiliary attachments.
data	1. In general, facts, numbers, letters, symbols, and so on, which can be processed or produced by a computer. 2. In data processing, the source data or raw data entered for processing, as opposed to the results obtained by processing.
database	Information to meet specific processing and retrieval needs. Generally applies to integrated file of data, arranged for access by many subsystems.
data communications	Transmission and reception of encoded information over telecommunication lines.
data file	Collection of related data records organized in a specific manner so that each record is similarly structured, for example, a payroll file set up with one record for each employee, last name first, indicating the rate of pay and all deductions.
data processing	Operations carried out on data by means of algorithms and programs to produce information or a specific result. The rearrangement of data into a suitable form for further use.
data rate	In data communications, the rate at which a channel carries data, measured in bits per second (bps).
data storage	Preservation of data on various media, for example, tape, disks, magnetic bubble memory, and so on.
data transmission	Transmission of coded data over telephone or other telecommunication lines.
debug	To detect and correct errors in a program.
decompose	To break down into component parts, such as when Interpress breaks down a Font Interchange Standard (FIS) master to compile font information.
default	Value assigned to a field by the system. Default fields may be used for such items as document formats, menu selections, input fields, font selection, and paper or image size. The default value of a field may be changed.

descender	Portion of alphabetic character that extends below the baseline. See also ascender, x height.
desktop	Basic display screen of the PC UI.
device	Any piece of hardware other than the central processing unit (CPU).
digitize	To express or represent data in digital (binary) form so that it can be processed electronically.
disk drive	Device that can read or write magnetic media.
display	Viewing device (monitor) that visually communicates system warnings, status, and error messages and reflects operator interaction with the system on a display.
DJDE	Dynamic Job Descriptor Entry. Command within an input data stream used to modify the printing environment dynamically.
DMR	Command parameter that designates a Digital Equipment Corporation host system.
document	1. Data medium and the data recorded on it, usually permanent, which can be read by you or a computer. 2. Collection of information pertaining to a specific subject or related subjects.
dot	Unit of measurement representing a fraction of an inch, for example, 300 dots per inch (dpi). It may also be referred to as a picture element (pixel) or spot.
download	To copy files using communication lines from the host onto LPS system disks.
dry ink	Minute dry particles of resin and carbon black used to create images. Dry ink can accept an electrical charge.
duplex printing	Printing on both sides (front and back) of a page. See also simplex printing.
EBCDIC	Extended Binary Coded Decimal Interchange Code. Coded character set consisting of 8-bit coded characters. It can accommodate 256 characters.
edgemarking	Use of graphic objects, usually lines or boxes, that bleed off the edge of the physical page. See also physical page.
electronic publishing	Integrated production of documents on demand, using digitally stored documents, computerized composition, and electronic printing systems.

elite	Smallest size standard typewriter type: 12 characters per horizontal inch. See also pica.
embedded blanks	Blank spaces within a command line.
extended metrics	Measurements used in Interpress to alter the size of fonts, allowing more precision with character escapement. Used for rendered characters.
FCB	forms control buffer. Buffer for controlling the vertical format of printed output.
FDL	forms description language. LPS-resident source language used for designing electronic forms. See also FSL; form.
field	1. Part of a record that serves a similar function in all records of that group, such as name and address field. 2. Area or setting of practical activity or application.
file	Set of records or text that can be stored and retrieved. An organized, named collection of records treated as a unit. For offline, it is the data between the two tape marks. For online, it is the data between banner pages.
file protection	To prevent the contents on a disk or tape from being erased or written over by disabling the write head of a unit.
firmware	Permanent programs stored in read-only memory (ROM).
FIS	Font Interchange Standard. Standard that defines the digital representation of fonts and character metrics for the generation of an entire series of Interpress fonts.
fixed font	Font containing characters with fixed spacing. See also proportional font.
fixed pitch	Font set in which every character cell has the same width. In reference to character sets, this term describes typefaces in which all character cells are of equal width. Monospaced as opposed to proportional spaced.
fixed spacing	Arrangement of characters on a line so that all characters occupy the same amount of horizontal space.
floating accent	Nonspacing accent characters that can be combined with characters and printed as a composite.
font	Set of images, usually characters and symbols, having common characteristics such as style, width, height, and weight.

form	1. Compiled forms source library (.FSL) file. 2. Printed or typed document with blank spaces for inserting information. Specific arrangement of lines, text, and graphics stored in a computer under an identifying name. Page of data that, when preceded by proper commands, is stored on the system disk as a permanent file. It may be merged with variable data by a form start command. See also FDL; FSL.
format	1. Layout of a document, including margins, page length, line spacing, typeface, and so on. 2. In data storage, the way the surface of a disk is organized to store data. 3. To prepare the surface of a disk for acceptance of data.
form feed	Keyboard or printer control character that causes the printer to skip the top of the next page.
FSL	forms source library. Uncompiled collection of user-created files containing FDL commands. Refer to FDL; form.
function keys	Keyboard keys that produce no character but initiate a particular machine function, such as delete.
fuse	To affix dry ink to paper by heat or pressure or a combination of both.
GCR	group code recording mode. Refers to the specific density of data (such as 6250 bpi) as it is recorded on tape, which is measured in bits per inch (bpi).
graphics	Use of lines and figures to display data, as opposed to using text.
grid	Imaginary pattern of evenly spaced horizontal and vertical lines on a page.
grid unit	Smallest rectangle enclosed by horizontal and vertical lines on a grid. The size of a grid unit is expressed as the length of one side of a rectangle.
halftone screen	A tool used in offset printing, typesetting, and laser printing to convert a continuous tone (such as photographic) image to dots, which allows the image to be rendered accurately in these printing processes.
hardcopy	Machine output in permanent form, such as printed reports, listings, and so on. Output in a permanent form (usually on paper or paper tape) rather than in temporary form, as on a display. Contains readable printed copy of machine (for example, computer) output.
hard values	Nonoptimal adjustment of particular FIS fonts in terms of point size and orientation.
hardware	Physical components, such as mechanical, magnetic, and electronic elements of a system, as opposed to programs, procedures, rules,

and associated documentation. Hardware is operated by software and firmware.

HCF	high-capacity feeder. Feeder tray capable of holding 2500 sheets of 20 pound/75 gsm paper. The high-capacity feeder trays are the primary paper supply for the DP180 LPS. They are located in the bottom half of the feeder/stacker modules.
HCS	high-capacity stacker. Stacker bin capable of holding 2500 sheets of 20 pound/75 gsm paper. In the LPS, the high-capacity stacker bins are located in the top half of the feeder/stacker modules.
hexadecimal	Numbering system with a base of 16. In this system, 10 through 15 are represented by A through F, respectively.
hierarchy	Relative priority assigned to arithmetic or logical operations that must be performed.
high-level language	Language consisting of words and symbols that are close to normal English and, therefore, readily understandable by the user. High-level languages are oriented to problems or commercial procedures and are the source languages for most programs.
host	Computer accessed by users which serves as a source of high-speed data processing for workstations with less computer power. See also mainframe.
host interface	Connection between network and host computer.
icon	Symbol appearing on the PC UI or printer control console that can be opened to display a window or screen options.
id	identifier. Character used to identify or name data and possibly to indicate certain properties of that data.
image area	Area on a physical page that may contain text or graphics.
information processing	Generic term encompassing both word and data processing, used to describe the entire scope of operations performed by a computer.
initialize	1. To prepare the magnetic surface of a blank diskette so that it can accept data. 2. To set all information in a computer system to its starting values (usually the first step is accomplished when a program is booted).
input	Data or text introduced into a computer-based system.
input/output	General term encompassing the flow of data into and out of a system.
input processing	Formatting control for the pages of a report.

insert	To add text or graphics to a document.
interface	Device by which two systems connect and communicate with each other.
interpolation	Series of logical rules implemented in the printer to convert a 300 spi input video stream to a 600 spi output video stream. Interpolation is functionally analogous to bit doubling (2x scaling), except the logical rules result in superior output.
Interpress	Xerox standard that defines digital representation of lines for printing. Interpress documents can be printed on any sufficiently powerful printer equipped with Interpress print software.
Interpress font utility (IFU) program	Program used to convert FIS fonts to LPS fonts.
Interpress master	File written according to the Interpress standard.
IPL	initial program load. For the optional open-reel tape drive, the internal initialization sequence whereby certain functions are loaded into random access memory (RAM).
JDE	job descriptor entry. Collection of job descriptions. See also job; JSL.
JDL	job descriptor library. Collection of compiled job descriptions. See also JSL.
job	1. Set of instructions (JDEs) defining a unit of work for the system. 2. In setting a separation boundary through the Bin Full Criteria task, job refers to everything printed as the result of a single start command. See also JDE.
job concatenation mode	In HIP, a mode in which multiple print jobs are processed as reports in one print job. See also concatenate.
job control	Program called into storage to prepare each job or job step to be run.
job management	Collective functions of job scheduling and command processing.
JSL	job source library. Collection of uncompiled job descriptions. See also job; JDE; and JDL.
keyboard	Group of alphabetic, numeric, and/or function keys used to enter information into a system.
keyword	Required part of a command. See also operator command.
label	1. In data storage, a reference to a file saved on tape or disk, a record indicating the file name or date created, or other control information.

2. In programming, a name assigned to a particular instruction or portion of a program as a locational reference (the computer translates the label into an address).

landscape page orientation

Orientation of print lines or top of an illustration parallel to the long edge of the paper if the sheet is within the standard size range. (Sheets larger than standard have the reverse print orientation.)

language

Defined set of characters and symbols combined together by specific rules. See also high-level language; low-level language.

laser printing

Technology that uses a laser to transfer character forms to a page by direct or indirect means.

latent image

Static charge present on the photoconductor before contact with dry ink particles.

leading

1. Vertical distance between lines (also called line space), measured from a baseline of one line to the baseline of the next. 2. Extra spacing between lines of type. 3. In typography, spacing between lines and paragraphs.

LED

light emitting diode. Solid substance that glows when a current is passed through it. Often used for indicator lights on disk drives or modems, as well as for displays on other electronic equipment.

LEF

long-edge feed. The movement of paper through the printer in the direction of the paper length (the longer side of a sheet of paper).

legal size

Sheet the standard size of legal briefs, 8.5 by 14 inches.

letter size

Paper sized 8.5 by 11 inches/216 by 279 mm.

library

In data storage, a collection of related files or programs.

line

One horizontal flow of characters.

line feed

Control character that, unless set to be interpreted as a line end, causes the printing system to begin printing in the current character position of the next line.

line tables

Internal data structures providing a record in memory of lines to be drawn on a page.

listing

Printout or display of the statements in a program, usually used as a convenience in examining or editing programs.

literal

Alphanumeric beginning with a letter, optionally including an asterisk, period, colon, or slash, and not enclosed in single quotes.

load	To enter data into storage or working registers.
location	Place in which data can be stored.
log	Collection of messages or message segments placed on an auxiliary storage device for accounting or data collection purposes.
logical page	In the Xerox printing systems environment, a formatted page that is smaller than the physical page. A logical page is defined by an origin, thus allowing more than one logical page to be placed on a physical page.
logo	Small illustration or design, usually simple, typically used to identify a company.
log off	Procedure by which a user ends a session.
log on	Procedure by which a user begins a session between an application program and a logical unit.
magnetic media	Term for all storage devices, such as disks, diskettes, and tape, on which data is stored in the form of magnetized spots on surface of the media.
magnetic storage	Use of magnetic media to store data, programs, and so on.
magnetic tape	Flexible plastic tape, with one side offering a magnetic surface suitable for storing computer data in the form of magnetized spots. Magnetic tape is often used for long-term storage since it can accommodate large volumes of information.
mainframe	Central processing unit (CPU) and memory of a large computer. More often used to denote any large computer of the type that might be used to control a group of smaller computers, terminals, or other devices. See also host.
margins	White space on each side of printed text.
mask	1. Selection of bits from a storage unit by using an instruction that eliminates the other bits in the unit. 2. In accessing files, a file name mask is used to reference one or more files with similar file-id (identifier) syntax. 3. In Interpress, a mask serves as a template, indicating the shape and position of an object on a page.
MB	megabyte. Unit of one million bytes.
media	Vehicles or devices by which information is stored or transmitted. Classifications include source, input, and output.

medium	Object or material on which data is stored, for example, magnetic tape or floppy disk.
memory	Space in a device where information is kept, or the ability of a device to keep information until needed.
menu	List of available functions, commands, and options.
message	Unit of information transmitted by one facility to another in a form that the receiving facility can understand and act upon. The standard message format consists of a header (containing identifying and control information), followed by the actual message content, followed by a trailer (indicating that the message is completed).
metacode	Same as "native mode." The method of speaking to and controlling the image generator. These controls are used by the character dispatcher to generate scan line information. This information is sent in the form of character specifications to the image generator, which uses it to compose the bit stream that modulates the laser.
MHz	megahertz. 1. Unit of cycling speed (one million cycles per second) for an electromagnetic wave (in particular, a radio wave). 2. Sending and receiving stations of a radio wave transmission must be tuned in to the same unit of megahertz.
mode	Manner in which an activity or process is carried out.
modem	Device that converts digital information into an analog signal suitable for sending over analog telecommunication lines. Also converts an analog signal from telecommunication lines into digital information.
module	Cohesive unit within a program. It is consistent in its level and identifiable in terms of loading or with other units.
mouse	Electronic device used with the PC UI to select options and enter data.
mouse pad	Base that provides friction and direction information to the electronic mouse.
mouse tray	Optional extension module attached to the system controller to accommodate the mouse pad and provide ample working space.
network	1. System of geographically separate computers, linked to one another over transmission lines. 2. Communication lines connecting a computer to its remote terminals.
nonimpact printer	Printer that forms characters without any strikes of a key or element against the paper.
object file	Source file converted into machine language (binary code).

offline	Devices not under the active control of a central processing unit. For example, a computer makes output to a magnetic tape. The tape is then used by an offline printing system to produce printed data. Offline operations are much slower than online operations. See also online.
offset	To place pages currently being printed in slightly different positions from previous pages.
offset printing	Widely-used method of commercial and corporate printing, where ink is picked up by a metal or paper plate, passed to an offset drum, and then passed to the paper.
online	Devices under the direct control of a central processing unit, for example a printing system in interactive communication with a mainframe. See also offline.
operating system	Basic host- or LPS-resident controlling program that governs the operations of a computer, such as job entry, input/output, and data management. The operating system is always running when the computer is active. Unlike other types of programs, it does not run to an end point and stop. The operating system of a Xerox LPS is referred to as the operating system software (OSS).
operation	Well-defined action that, when applied to any permissible combination of known entities, produces a new entity.
operator area	The 24-inch exclusive clearance that must be available directly in front of each component of an LPS for operator activities.
operator command	Statement to control a program, issued through a console device, PC UI, or terminal, causing a control program to provide requested information, alter normal operations, initiate new operations, or terminate existing operations.
orientation	1. In reference to image area, orientation describes whether the printed lines are parallel to the long edge of the paper or the short edge of the paper. 2. Choice of printing portrait (vertically) or landscape (horizontally).
origin	In reference to image area, this is the upper left corner of a sheet.
output	1. Material produced by a peripheral device of a computer, such as a printout or a magnetic tape. 2. Result of completed operations.
overprinting	Printing more than one character at the same position.
overprint lines	Print lines whose carriage control specifies printing with no line spacing after the last printed line.
overprint ratio	Maximum number of variable data and form characters that may be intersected by a single scan line.

override	To take precedence or priority over, to overrule.
overstrike	To print characters over each other.
page	1. In computer programming, a block of instruction, data, or both that can be located in main or auxiliary storage. 2. In word processing, a defined section of a document.
page orientation	Direction in which data is printed on a report. See also landscape page orientation; portrait page orientation.
parameter	Part of a command, other than the keyword. See also keyword; operator command.
pass-through job	On systems with XPAF, a job that is sent directly from a host to a Xerox printer using XPAF, without undergoing XPAF processing.
password	Unique word or set of characters that an operator or user must supply to log on to a system.
patch	In programming, to modify a portion of the program at the machine language level, as opposed to modifying at the source program level.
PC UI	PC user interface. The PC hardware and Xerox-supplied software which allows the operator to control the LPS by means of a mouse, windows, and icons. See also object mode; TEM.
PDL	print description language. Language used to describe printing jobs to an LPS. PDL describes the input (type, format, characteristics), performs the processing functions (logical processing), and describes the output (type, format, font selection, accounting options).
physical page	Sheet of paper on which printing is done. See also edgemarking.
pitch	1. Horizontal character spacing; 10-pitch (10 characters per inch) spacing is called pica, and 12-pitch (12 characters per inch) spacing is called elite. 2. The number of page images placed on the xerographic belt during one revolution. The DocuPrint 180 LPS supports two pitch modes: 7 pitch when paper 9 inches/229 mm long or less is used to print a job, and 3 pitch when paper 9 to 17 inches/229 to 432 mm long is used to print a job.
pixel	Acronym for picture element. Smallest addressable point of a bit-mapped screen that can be independently assigned color and intensity. Pixels are definable locations on a display used to form images. For graphic displays, more pixels generally provide higher resolution. Spots, dots, and pixels are used interchangeably.
point	Unit of measurement equal to 0.0139 inch. Points are always used to express type size and leading. There are 12 points to a pica and about 72 points to every inch. See also pica.

point size	Height of character set from the top of its ascenders to the bottom of its descenders in units (points). Point size does not always include leading.
portrait page orientation	Orientation of print lines or the top of an illustration parallel to the short edge of the paper if the sheet is within the standard size range. Sheets larger than standard have the reverse print orientation.
printer	Output device that produces hardcopy printouts. Also referred to as the IOT.
print file	Position of the system disk memory (up to 4 MB) received for temporary storage of formatted pages for printing. Pages are retained until they are delivered to the output tray.
printout	Informal expression referring to almost anything printed by a computer peripheral device.
process	1. To perform a systematic sequence of operations, such as add, edit, delete. 2. To produce a specific result by manipulating data.
program	Complete set of instructions in language compatible with the device to be used. A program directs a system to perform each operation at the right time in the proper sequence.
programmer	Person involved in designing, writing, and testing computer programs.
prompt	Message or symbol displayed on a system console requiring the operator to take action.
proportional font	Font containing characters that vary in width. See also fixed font.
proportional spacing	Text in which each alphanumeric character is given a weighted amount of space. Such output has print-like appearance. Proportional spacing allows more space for wide characters and less space for narrow characters
proportional type	Characters that vary in width.
protocol	Formal set of conventions governing the format of data and the control of information exchange between two communication devices.
purge	To delete data from a system.
queue	List of documents waiting to be processed.

RAM	random access memory. Storage that allows data, such as documents, to be stored and retrieved directly by address location without reading through any other data.
raster data	Binary data, usually consisting of dots arranged in scan lines, according to the print order.
rasterization	Creation of a page's bit map image for printing.
read/write head	Input/output device that reads and writes data in the form of magnetic dots on the surface of an external storage medium, such as a magnetic disk.
record	Collection of data or words treated as a unit.
recovery	Act of overcoming a problem or error during processing. Typically, a specialized software recovery routine gains control and attempts to resolve the error without crashing the system.
remote access	Access to a central computer by terminals or devices geographically separated from that computer.
replace	Process of exchanging one portion of text for another. This process encompasses two functions: deleting old text and inserting new.
report	In setting a separation boundary through the Bin Full Criteria task, report refers to a subset of a job (a job may consist of one or more reports).
resolution	Number of dots per unit. The LPS imaging system converts a character from digitized data into a printed image composed of these tiny dots. The greater the number of dots per inch, that is, the resolution, the clearer the image that is produced.
ROM	read-only memory. Solid-state memory for programs. It cannot be rewritten.
save	To store programs, data, or text for retrieval at a later time.
scale	To adjust font or image size according to given proportions.
scroll	Manipulation of a display to bring upper or lower portions of a document page into view when no space is available for the entire document at once.
scroll bar	Part of a window that allows you to view information extending beyond the window display.
SCSI	small computer system interface. Accepted standard for connecting peripheral devices to computers.

secondary storage	Form of storage external to a system, such as magnetic tapes or floppy disks.
security	1. Procedure for limiting access to the system resources, programs, or files, to authorized personnel. 2. Protecting programs and files from unintentional or undesired modification.
SEF	short-edge feed. The movement of paper through the printer in the direction of the paper width (the shorter side of a sheet of paper). For the DocuPrint 180 LPS, short-edge feed allows larger sizes of paper (up to 11 by 17 inches/279 by 432 mm) to be printed.
sequential	In numeric sequence, usually in ascending order. As applied to a file organization, describes files in which records are written one after another and cannot be randomly accessed. For example, the first 99 records in a sequential file-access file have to be read before the 100th record is accessible.
set	In setting a separation boundary through the Bin Full Criteria task, set refers to multiple copies of the same report.
simplex printing	Printing on one side of the page. See also duplex printing.
software	Programs, including operating systems, procedures, utilities, and applications programs, written for a system. Software can be supplied by the hardware manufacturer or other firms but does not include programs written by the user.
sort	To rearrange data records according to a particular item (field) which they all contain, using a predetermined ordering scheme.
source	Terminal node at which data enters a network. For example, a computer transmitting data through telecommunication lines to several other computers or receiving terminals.
source file	File containing source language statements or commands.
source language	Language, high-level or low-level, used by a programmer. A source language must be converted by a compiler to machine language for the instructions to be executed.
source program	Program written in source language
space	Blank area between words, recognized as a character by word and data processing systems.
special processing	Commands allowing the user to process special reports, such as printing certain records, or printing on special paper.

spooling	Process of releasing data from main memory and storing it temporarily until a peripheral device is ready to accept it, for example storing text before sending it to a printer.
spot	Unit of measurement representing a fraction of an inch, for example, 300 spots per inch (spi). May also be referred to as a picture element (pixel) or dot.
statement	Detailed written instructions in a program step. A statement is written according to specific rules called syntax.
static data	Information usually found on preprinted forms or overlays.
stock	User-defined name in the JSL that specifies a certain type of paper for printing a job. See also cluster.
stockset	Collection of stocks to be used on a print job. See also stock; cluster.
storage	Retention of information. Primary storage refers to internal storage where data and program instructions pertinent to current operations/jobs are held. Auxiliary storage refers to external media, such as disks or tapes, for use at a later time.
string	Connected sequence of alphanumeric characters treated as one unit of data by a program.
symbol	Character used in a computer language to specify a particular function.
synchronous	Efficient encoding of data suitable for high-speed, block-oriented data transmission by using equal time elements.
syntax	Rules governing the structure of expressions in a programming language.
syntax error	System response to a mistake in a command entry.
system	1. In data processing, a collection of parts and procedures organized to accomplish a set of specific functions. 2. Assembly of components united by some form of regulated interaction to form an organized whole. 3. Operations or procedures through which a business activity is accomplished.
system controller	Part of the LPS that provides interfacing capability, data handling, formatting, buffering, and operator control for the system. Also referred to as the "ESS".
system disk	Magnetic disk storage medium, usually of large capacity, that is not removable as opposed to floppy disk or disk packs.

system file	Master software program that keeps all components working together.
system generation	Process whereby the system is made ready to operate. Typically involves selecting the operative parameters and activating the relevant software.
system page	Maximum area in which text and graphics can be imaged on a printing system.
system software	Software programs that support and/or control system functions by governing hardware operation and input/output processes, interpreting source programs and breaking them down into machine language, distributing tasks among various processors, and so on.
tab	To move the cursor on a display or printer to a prespecified column on the display or paper, most often by using the <TAB> key on a keyboard.
tape	Recording media for data or computer programs. Tape can be in permanent form, such as perforated paper tape. Generally, tape is used as a mass storage medium in magnetic form and has a far higher storage capacity than disk storage, but it takes longer to write or recover data from tape than from disk.
tape density	The number of characters that can be stored on magnetic media, such as how close together data can be recorded. The Xerox LPS may use either 1600 bpi or 6250 bpi density magnetic media.
tape drive	Input/output device that controls the movement of magnetic storage tape past the read/write head while data is accessed or stored.
task	1. Any major job performed by a computer. 2. One of several programs being executed by a system.
telecommunications	Voice or data communications transmitted and received through telephone lines.
teleprocessing	Sending and receiving data through telecommunication lines for processing among various remote terminals and the central processing unit (CPU).
TEM	terminal emulation mode. The processing method of the PC UI which features a character display and the operator's use of the keyboard. The mouse, windows, and icons are inactive in this mode. The PC UI operates in either the TEM mode or in the object mode. See also object mode.
terminal	Device equipped with a keyboard and connected to a computer or a network

testing	1. Process of running a program for the express purpose of discovering any errors it may contain. 2. For computer-oriented systems, the process of verifying a system's ability to meet performance objectives in a simulated environment or validating its actual performance in a live environment.
text	In communications, the content portion of a transmitted message.
text string	Consecutive series of characters to be printed exactly as specified in a command.
throughput	In data processing systems, the amount of data that can be processed, transmitted, printed, and so on, per a specified unit of time.
toggle	To switch (alternate) from one tray to another. The system switches from an active feeder or stacker tray to an inactive one to allow continuous printing when the proper commands are invoked.
trailer	In data communications, the last portion of a message that signals the end.
transaction processing	Method of data processing in which files are updated and results are generated immediately after data entry.
translation	1. In data communications, the conversion of one code to another on a character-by-character basis. 2. In programming, the function of a language processor which converts a source program from one programming language to another.
transmission speed	In data communications, the rate at which data is passed through communication lines, usually measured in bits per inch (bpi).
transmit	To send data from one place to another.
truncated	Cut off before completion, as when data transfer from a host to a printer is cut off before all data has been transmitted.
two-up	Application that prints two logical pages on one side of a physical page.
typeface	1. All type of a single design. 2. Set of characters with design features that make them similar to one another.
type size	Height of a typeface, measured from the bottom of its descenders to the top of its ascenders, expressed in points.
type style	Italic, condensed, bold, and other variations of typeface that form a type family.

UCS	Universal Character Set. Printer feature that permits the use of a variety of character
upload	To copy files from a remote peripheral device to a host. LPS files are not copied to the host because one of the LPS functions is to store files for the host.
utility program	General-purpose program that performs activities, such as initializing a disk or sorting, which are not specific to any application.
validation	Process of testing a system's ability to meet performance objectives by measuring and monitoring its performance in a live environment.
variable	Information of a changeable nature which is merged with a standard or a repetitive document to create specialized or personalized versions of that document.
variable data	Variable data is not a part of a form design. It varies from page to page.
variable text	Text of changing nature, such as various names and addresses combined with a form letter to make a complete document.
virtual page	Page area selected by a forms designer for printing.
warning message	System-issued message indicating that an error has been encountered even though the program has not failed.
weight	Characteristic of type determined by how light or dark it appears.
wildcard	Part of a command (* symbol, / symbol, ? symbol) that represents a category for which the possible options are requested.
wildcarding	In a command, calling out a general category rather than a specific item within that category. The purpose of wildcarding is to generate the options within the given category.
window	In the PC UI, the graphic display object that allows you to select options and enter information.
write	To record data in memory or an external storage medium.
write protection	Data protection feature implemented on magnetic media (for example floppy disk, 9-track tape) to prevent stored data from being modified, written over, or erased.
x axis	Horizontal axis on a forms grid.

xdot	Unit of measurement representing a fraction of an inch. It may also be referred to as a picture element (pixel) or spot, for example, 1/600 spots per inch (spi).
xerographic engine	Component of a printer that develops an image, transfers it to paper, and fuses it for output as hardcopy.
x height	Height of lowercase letters without their ascenders or descenders (height of letter "x"). See also ascender; descender.
y axis	Vertical axis on a forms grid
ACT	Advanced Customer Training
AFP	Advanced Function Printing
ANSI	American National Standards Institute
ASCII	American Standard Code for Information Interchange
BCD	binary coded decimal
BOF	bottom of form
BOT	beginning of tape
bpi	bits per inch
bps	bits per second
BSC	binary synchronous communications
CD	character dispatcher
CDC	control data communications
CD/IG	character dispatcher/image generator
CM	control module
CME	copy modification entry
cpi	characters per inch
CPU	central processing unit

CR	carriage return
DCE	data communications equipment
DDCMP	Digital Data Communication Message Protocol
DEC	Digital Equipment Corporation
DFA	Document Feeding and Finishing Architecture
DJDE	dynamic job descriptor entry
DMR	data mode ready (DEC interface for LPS)
DOS	disk operating system
dpi	dots per inch
DSDD	double sided double density
DSU	digital signal unit
DSR	disk save and restore
DSSD	double sided single density
DTE	data terminal equipment
EBCDIC	Extended Binary Coded Decimal Interchange Code
ENET	Ethernet network
EOT	end of tape
EP	electronic publishing
ESS	electronic subsystem, also referred to as the system controller
FCB	forms control buffer
FCG	finishing configuration utility
FCP	file control parameter
FDL	forms description language

FDR	file directory
FFM	font file management
FIS	Font Interchange Standard
FMS	file management subsystem
FPS	formatting print service
FSL	forms source library
FST	font specification table
GCR	group code recording
gsm	grams per square meter
HCF	high-capacity feeder
HCS	high-capacity stacker
HFDL	host forms description language
HIP	Host Interface Processor
hpos	horizontal positioning
IBM	International Business Machines Corporation
IFU	Interpress font utility
IG	image generator
IGM	image generator module
I/O	input/output
IOM	image output module
IOT	input output terminal, also referred to as "printer"
IPD	Interpress decomposer
IPFONTS	Interpress fonts

IPL	initial program load
IPM	Interpress mapping
ips	inches per second
JCB	job control block
JCL	job control language
JDE	job descriptor entry
JDL	job descriptor library
JID	job identifier
JSL	job source library
LAN	local area network
laser	light amplification by stimulated emission of radiation
LED	light-emitting diode
LEF	long-edge feed
LF	long-edge feed
lpi	lines per inch
LPS	Laser Printing System
MTU	magnetic tape unit (refers to the 9-track magnetic tape drive; also referred to as "magnetic tape drive")
OCR	optical character recognition
OCS	operator communications subsystem
OLI	online interface
OS	operating system
OSDS	operating system diagnostic software

OSEXEC	operating system executive
OSS	operating system software
PC	personal computer
PCC	printer carriage control
PC UI	personal computer user interface
PDL	print description language
PE	phase encoded
ppm	pages per minute
PQA	print quality adjustment
PROM	programmable read-only memory
PSC	printer subsystem controller
pt	point
PWBA	printed wiring board assembly
QIC	1/4 inch cartridge
RAM	random access memory
ROS	raster output scanner
SAFES	stand-alone field engineering software
SAN	software analysis number
sci	START command index
SCSI	small computer system interface
SDLC	synchronous data link control
SEF	short-edge feed
SFS	status file services

SIF	sequence insert file
SNA	system network architecture
spi	spots per inch
SST	system software tape
sysgen	system generation
TL/DL	text line/display list
TOF	top of form
tpi	tracks per inch
TPJ	test pattern job
TXC	total xerographic convergence
UCS	Universal Character Set
UCSB	Universal Character Set Buffer
UI	user interface
VM	virtual memory
vpos	vertical positioning
VS	virtual storage
WAN	wide area network
XCSC	Xerox Customer Support Center
XDGI	Xerox DCF and GDDM Interface
XDSS	Xerox Documentation and Software Services
XICS	Xerox Integrated Composition System
XJCF	Xerox Job Control Facility
XMP	xerographic mode persistence

XMS	xerographic mode switching
XPAF, XPF	Xerox Printer Access Facility
XPMF-VMS	Xerox Print Management Facility - VMS Version
XPPI	Xerox Pen Plotter Interface
XPS	Xerox Publishing System