Xerox DocuPrint 96/4635/180 IPS System Overview Guide

THE DOCUMENT COMPANY

XEROX

Laser safety

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Warning: Adjustments, use of controls, or performance of procedures other than those specified herein may result in hazardous light exposure. ⚠

The Xerox DocuPrint printers are certified to comply with the performance standards of the U.S. Department of Health, Education, and Welfare for Class 1 laser products. Class 1 laser products do not emit hazardous radiation. The DocuPrint printers do not emit hazardous radiation because the laser beam is completely enclosed during all modes of customer operation.

The laser danger labels on the system are for Xerox service representatives and are on or near panels or shields that must be removed with a tool. **DO NOT REMOVE LABELED PANELS OR PANELS NEAR LABELS. ONLY XEROX SERVICE REPRESENTATIVES HAVE ACCESS TO THESE PANELS.**

Ozone information

This product produces ozone during normal operation. The amount of ozone produced depends on copy volume. Ozone is heavier than air. The environmental parameters specified in the Xerox installation instructions ensure that concentration levels are within safe limits. If you need additional information concerning ozone, call 1-800-828-6571 to request the Xerox publication 600P83222, *OZONE*.

Operation safety

Your Xerox equipment and supplies have been designed and tested to meet strict safety requirements. They have been approved by safety agencies, and they comply with environmental standards. Please observe the following precautions to ensure your continued safety.

- Always connect equipment to a properly grounded electrical outlet. If in doubt, have the outlet checked by a qualified electrician.

  Warning: Improper connection of the equipment grounding conductor may result in risk of electrical shock.

- Never use a ground adapter plug to connect equipment to an electrical outlet that lacks a ground connection terminal.

- Always place equipment on a solid support surface with adequate strength for its weight.

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

- Never move either the printer or the Printer Controller without first contacting Xerox for approval.

- Never attempt any maintenance that is not specifically described in this documentation.

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

- Never override electrical or mechanical interlocks.

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

- Never operate the equipment if you notice unusual noises or odors. Disconnect the power cord from the electrical outlet and call service to correct the problem.

If you need any additional safety information concerning the equipment or materials Xerox supplies, call Xerox Product Safety at the following toll-free number in the United States:

1-800-828-6571

For customers outside the United States contact your local Xerox representative or operating company.

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Introduction

This *Xerox DocuPrint 96/4635/180 IPS System Overview Guide* provides an overview of the individual components of the DocuPrint IPDS Printer System (IPS) and how they work together. This reference is designed to provide you with background information that can be used to make informed decisions regarding printer use and performance.

About this guide

The *Xerox DocuPrint 96/4635/180 IPS System Overview Guide* provides information to help you quickly determine hardware, software, and connectivity requirements for printing from various clients to DocuPrint IPS.

This reference is useful for workstation users, printer operators, and system administrators who want to understand the overall DocuPrint IPS. Managers can use the reference information to assist them in making planning decisions.

Before using this guide, become familiar with its contents and conventions.

Contents

This section lists the contents of this guide:

- Chapter 1, "System overview," identifies and describes the function of the major components of the DocuPrint 96/4635/180 IPS.

- Chapter 2, "Printer Controller," provides the information on the Printer Controller components, software, and fonts.

- Chapter 3, "User interface," describes the features of the IPS graphical user interface.

- Chapter 4, "Printer," details the base printer components and optional printer components.

- Chapter 5, "MICR IPS," discusses the special features of the 96, 4635, and 180 MICR IPS systems, and the requirements for MICR printing on the IPS.

- Appendix A, "Paper and other supplies," provides information and specifications on paper and other media used with the IPS or MICR IPS, as well as instructions for ordering supplies.

- Appendix B, "Paper performance guidelines," summarizes the capabilities of the paper trays, duplex printing considerations, and paper stock considerations.

An index is provided at the back of the guide.

Conventions

This guide uses the following conventions:

- All caps and angle brackets — Within procedures, the names of keys are shown in all caps within angle brackets (for example, press <RETURN>).

- *Italics* — Document and library names are shown in italics (for example, the *Xerox DocuPrint 96/4635/180 IPS System Overview Guide*).

- Capitalization of graphical user interface (GUI) window titles matches the titles as they appear on the screen. In cases where a window does not have a title, it is referenced using all lower case. For example:

  — At the graphical user interface, use the Output Configuration window to group the trays.

  — The main window displays the current system status.

Note: Notes are hints that help you perform a task or understand the text.

Caution: Cautions alert you to an action that could damage hardware or software.

Warning: Warnings alert you to conditions that could affect the safety of people.

Related publications

This document is part of the Xerox DocuPrint IPS publication set.

Xerox documents

Following is a list of all Xerox DocuPrint IPS documents. For a complete list and description of available Xerox documentation, refer to the *Xerox Customer Documentation Catalog* (publication number 610P17517), or call your service representative.

Application Programmer/System Administrator Quick Reference Card

Customer Information Quick Reference Card

Generic MICR Fundamentals Guide

Glossary

Guide to Configuring and Managing the System

Guide to Performing Routine Maintenance

Helpful Facts About Paper

Installation Planning Guide

Master Index

Messages Guide

Solutions Guide

System Overview Guide

Troubleshooting Guide

Xerox Standard Font Library Font User Guide

The documentation set also includes an electronic version, the *DocuPrint IPS Interactive Customer Documentation CD*.

IBM documents

Following are related IBM documents. Contact your local IBM representative for ordering instructions for IBM AFP/PSF manuals that might be useful for your specific installation.

IBM 3825 Page Printer Product Description

IBM Intelligent Printer Data Stream Reference

IBM Advanced Function Presentation Printer Summary

IBM ITSC Distributing AFP Printing from a Host System

IBM Advanced Function Printing Data Stream Reference

IBM Data Stream and Object Architectures: Mixed Object Document Content Architecture Reference

Guide to Advanced Function Presentation

1.   System overview

This chapter introduces the DocuPrint 96 and 96 MICR IPS, the 4635 and 4635 MICR IPS, and the DocuPrint 180 and 180 MICR IPS printing systems. It describes the systems' hardware and software components, features, functions, and modes of operation.

Functional overview of the DocuPrint IPS

The 96 IPS, 96 MICR IPS, 4635 IPS, 4635 MICR IPS, 180 IPS, and the 180 MICR IPS print high quality documents in simplex or duplex mode at high speeds.

DocuPrint IPS printers support:

- Duplex printing

- Media handling of multiple weights, sizes, and types

- Optional modules for enhanced finishing and output to third-party finishing devices

- Optional enabling of third-party roll feeders

- Optional high-capacity feeder which provides additional feeder trays.

The IPS emulates an IBM AFP Group 3 page printer with the Advanced Function Image and Graphics (AFIG) option and can print in all the following PSF environments:

- MVS
- VM (channel-attached only)
- VSE (channel-attached only)
- OS/2
- OS/400 (with TCP/IP only)
- AIX

Note: Although PSF/VSE does not support TCP/IP directly, a printing system with PSF/2, PSF/6000, or IBM InfoPrint Manager can attach to a PSF/VSE system and the PSF/2, PSF/6000, or IBM InfoPrint Manager can furnish the TCP/IP support for the IPS printer.

For information on the minimum PSF levels needed to support the IPS, refer to your *Xerox DocuPrint 96/4635/180 IPS Installation Planning Guide*.

Major system components

The IPS has the following main components, each of which is described in greater detail in later chapters of this guide:

Printer Controller The Printer Controller accepts IPDS data from the host, processes the data, and sends it to the printer using the IPS operating system for IPDS or the NPS operating system for PostScript or PCL.

The Printer Controller provides the printer with print data and commands and receives status information from the printer.

Host Channel Unit: On channel-attached systems, the Printer Controller has an additional component called the Host Channel Unit, or HCU. The HCU contains the channel communications board, and handles communication between PSF and the controller when data is received over a bus and tag connection.

Graphical user interface The full-color graphical user interface (GUI) provides an easy-to-use, mouse-driven interface to the IPS. Using the windows on the GUI screen, you can configure your system; perform diagnostic and administrative tasks; and set up, change, and implement system options, and run print jobs.

The IPS main window displays the current system status, as well as the current printer settings, including the current input and output tray configurations. From the IPS main window you access the various menus and windows you use to configure and operate the system. Refer to the chapter "User interface" in this guide, for more detailed information on the IPS graphical user interface components.

Printer The printer accepts data from the Printer Controller and prints the document according to the print options specified by the user. The printer also provides paper stacking, collating, and optional finishing.

The 96, 4635, and 180 IPS are monochrome printers. Print jobs that contain color commands are printed in black.

Throughput speed

The 96 IPS, 4635 IPS and 180 IPS can print at the following speeds, using stocks 8 by 10 inches / 203 by 254 mm or larger:

- **96 IPS and 96 MICR IPS:** Up to 96 impressions per minute
- **4635 IPS and 4635 MICR IPS:** Up to 135 impressions per minute
- **180 IPS and 180 MICR IPS:** Up to 180 impressions per minute.

With small paper sizes
Using the smaller papers, such as 7 by 10-inch / 178 by 254 mm or B4, with the 7 by 10-inch paper option kit, the throughput rates increase:

- **4635 IPS/4635 MICR IPS:** Up to 154 impressions per minute
- **180 IPS/180 MICR IPS:** Up to 206 impressions per minute.

Note: The 7 by 10-inch kit is not available on the 96 IPS.

Monthly print volume
The monthly print volumes for these systems are:

- **96 IPS:** Up to 3 million impressions
- **4635 IPS:** Up to 4 million impressions
- **180 IPS:** Up to 6 million impressions

Host connectivity options

The IPS can be set up to receive data from a host in one of two ways:

- Over a channel with bus and tag cable connection, via the Host Channel Unit (HCU)

- Through a Token Ring or Ethernet interface, using TCP/IP protocol (not available in a VM or VSE host environment)
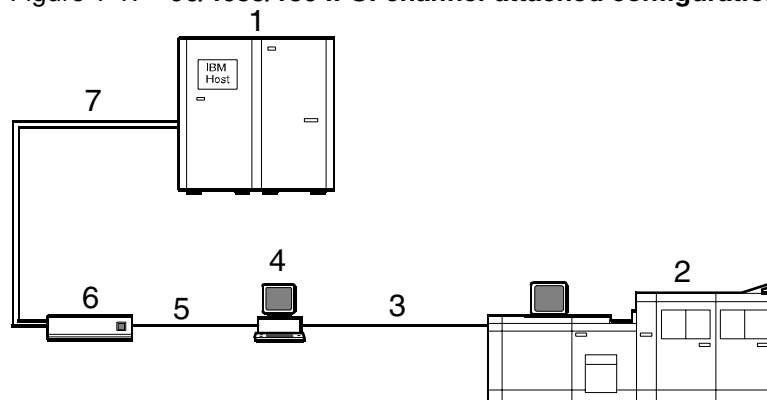
  Note: A transmission rate of at least 16 megabits per second should be used with a Token Ring interface on the IPS. (Overall performance depends on network traffic and job density.)

Channel-attached configuration

Figure 1-1 illustrates the components of a channel-attached IPS. This configuration requires a Host Channel Unit (HCU) to interface between the host channel and the IPS controller.

Figure 1-1. **96/4635/180 IPS: channel-attached configuration**
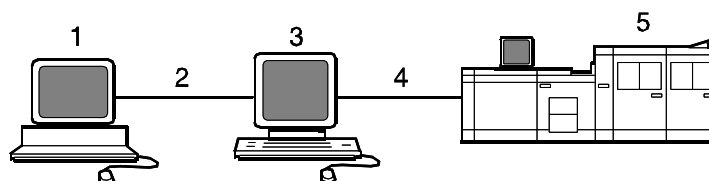
1   Host system (PC or mainframe)
2   96, 4635, or 180 IPS printer
3   Printer interface cable
4   Printer Controller
5   SCSI interface
6   Host Channel Unit (HCU)
7   Bus and tag cables

TCP/IP configuration

If you are using Token Ring or Ethernet with TCP/IP, as shown in figure 1-2, the bus and tag cables and the HCU are not required.

Figure 1-2. **96/4635/180 IPS: TCP/IP configuration**

1   Host system (PC or mainframe)
2   Token Ring or Ethernet network connection
3   Printer Controller
4   Printer interface cable
5   96, 4635, or 180 IPS printer

IPDS data stream

All IPDS resources (print data sets, page definitions, form definitions, page segments, fonts, and overlays) supported by the IBM 3825 and 3827 printers are supported by the Xerox IPS software. Additionally, there are several data towers supported within the AFP environment which are fully supported by the IPS software, to a level supported by the IBM 3825 and IBM 3827 printer capabilities:

- **IM Image IMD1**

- **FOCA:** Font Object Content Architecture

- **MO:DCA-P:** Mixed Object Document Content Architecture for Presentation

- **PTOCA PT1, PT2, and PT3:** Presentation Text Object Content Architecture

- **IOCA:** Image Object Content Architecture

- **GOCA:** Graphics Object Content Architecture

- **BCOCA:** Bar code Object Content Architecture

- **OL1:** Overlay One

- **PS1:** Page Segment One

- **Line mode data streams**

Each of the data objects follow the same object rule of containing delimiting fields with structured fields describing each object.

Dual Mode

Xerox DocuPrint Dual Mode option enables both DocuPrint NPS and IPS systems to coexist on the same Printer Controller (Sun workstation). This allows the DocuPrint system to receive data streams supported by NPS and IPS, including IPDS, PostScript Levels 1 and 2, HP PCL5c, HP PCL5e, and ASCII.

Either of the following types of configurations may be used:

- The same Token Ring or Ethernet connection can be used for both IPDS (IPS) and Postscript/PCL (NPS).

- Both a Token Ring card and an Ethernet card can reside in the Sun workstation controller, with one being used for IPDS and the other for PostScript/PCL.

- Bus and tag attachment through the HCU can be used for IPDS, and Token Ring or Ethernet connection for the NPS.

When the DocuPrint system is in IPS mode, it can accept PostScript and PCL data streams in the background; however, it can print these jobs only after it is switched to NPS mode. However, when the system is in NPS mode, it cannot accept IPDS data streams in the background.

96/4635/180 IPS hardware features

The 96, 4635, and 180 IPS provide numerous features that can be enabled or configured using the graphical user interface on the printer controller.

Multiple input trays

Multiple feeder trays can be configured to feed paper for jobs in the most effective manner. For example, the trays can provide nonstop printing of a complex job that requires many paper stocks, or only a few stocks, by using the trays' continuous loading capability. A different input tray can also be selected for each copy of a specific page in a print job, for example, to provide different paper colors for specific pages.

- **96 IPS:** Three addressable input trays are standard with the system, and one additional tray is available as an option.

- **4635 and 180 IPS:** Four addressable input trays are standard with the system, and two additional trays are available as options.

Feeder tray capacities, based on 20-pound or 80 gsm (grams per square meter) bond, are:

- **Tray 1:** 1100 sheets

- **Tray 2:** 600 sheets

- **Trays 3, 4, 5, and 6:** 2600 sheets

Note: The equivalent grams per square meter of 20-pound bond is actually 75 gsm. However, there is no standard 75 gsm paper — the available stock that is closest in weight to 20-pound bond is 80 gsm.

Roll feeder support

The 96, 4635, and 180 IPS can each accommodate a third-party roll feeder as an optional input tray.

- The 96 and 4635 IPS have an optional configuration in which the roll feeder interfaces with the last feeder/stacker module. With this configuration the 4635 IPS may have up to six feeder trays with the sixth being the roll feeder. The 96 IPS may have up to five input trays, with the roll feeder as the fifth.

   Note: To be able to use this roll feeder option on the 96/4635 IPS, you must have the Input Enablement kit installed. (Refer to "Options enabling feeding and finishing," later in this chapter.)

- The roll feeder option for the 180 IPS is installed in the inverter feeder/stacker module, replacing the feeder tray. It does not require the Input Enablement kit or DFA software. The maximum number of feeder/stacker modules supported for this configuration is four, including the inverter module with the roll feeder. With the two processor feeder trays, this makes a total of six input trays possible.

Advanced paper handling

The 96/4635/180 IPS can handle paper stock ranging in size from 8 by 10 inches / 203 by 254 mm to 14.33 by 17 inches / 364 by 432 mm, including sizes A3 and A4. They process paper weights from 16- to 110-pound / 60 to 200 gsm.

Note: The 4635 and 180 IPS can also print on paper as small as 7 by 10 inches / 178 by 254 mm, with the optional 7 by 10-inch kit.

Jobs can also be printed on label stock, transparencies, precollated stock, tab stock, carbonless paper, and other specialized stocks. The printer engine monitors the print job so that, should a paper jam occur, the job resumes on the correct page, at the correct tab, using the same color, and so forth, providing complete document integrity.

600 dpi resolution

The 96, 4635, and 180 IPS all print at high resolution. The printers can receive data at 240, 300, and 600 dpi (dots per inch). All 240 or 300 dpi data is interpolated to 600 dpi for higher print quality.

Table 1-1 shows how data streams of different resolutions are interpolated.

Table 1-1. **Data stream conversion to 600 dpi**

	Incoming input resolution of document		
Printer	**240 dpi data**	**300 dpi data**	**600 dpi data**
180 IPS	Interpolated by printer to 600 x 2400 dpi (when 240 board is installed in the printer)	Interpolated by printer to 600 x 2400 dpi	Print at 600 x 2400 dpi
96/4635 IPS	Converted by controller to 600 dpi	Interpolated by printer to 600 x 600 dpi	Print at 600 x 600 dpi

For the 96 IPS, the 4635 IPS, and the 96/4635 MICR IPS, it is recommended that all fonts and other resources that are at 240 dpi be converted to 300 dpi before printing, rather than leaving the conversion for the controller to do. This ensures better print quality.

Caution: The 96/4635/180 IPS must have the same font resolution specified as the host input data stream (refer to your *96/4635/180 IPS Guide to Configuring and Managing the System* for instructions on specifying the input resolution). Conflicts between the input font resolution and the IPS specification could result in inability to print the job, or in missing variable data in the output.

Multiple high-capacity output bins

Each output bin has offsetting capability and a capacity of 2500 sheets of 20-pound or 80 gsm bond.

Note: This capacity does not apply to 11 by 17-inch and A3 papers. Because of the additional weight these large sheets add to the bins, each bin can hold only up to 1500 sheets of A3 or 11 by 17-inch papers.

- **96 IPS:** One output bin is standard for the system, with one additional bin available as an option (providing up to two bins total).

- **4635 and 180 IPS:** Two output bins are standard, with up to two additional bins available as options (providing up to four bins total).
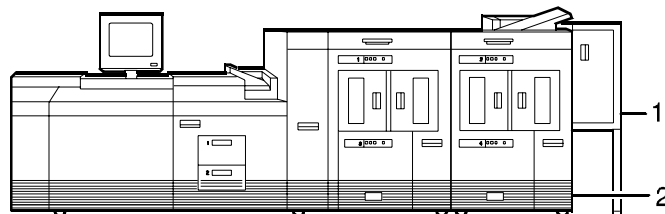
Bypass transport option

The programmable bypass transport moves paper from the stacker to a third-party finishing device (for example, a stitcher). When installed, the bypass transport is attached to the last feeder stacker module.

Note: With the bypass transport installed, the 4635 and 180 IPS can support up to three feeder/stacker modules, including the inverter feeder/stacker. The 96 IPS can have no more than two feeder/stackers.

Figure 1-3. **96/4635/180 IPS with bypass transport**

1   **Bypass transport paper output location**
2   **Input enablement device paper input location**

The illustration above shows a 96/4635/180 IPS with two feeder/stacker modules and a bypass transport. For complete information on printer configurations available with the bypass transport, refer to the chapter "Printers."

User interface

The IPS full-color graphical user interface provides an easy-to-use, mouse-driven interface to the IPS. Using the graphical screens, you can configure your system; perform diagnostic and administrative tasks; and set up, change, and implement system options.

The IPS main window displays the current system status, as well as the current printer settings, including the current input and output tray configurations. From the IPS main window you access the various menus and windows you use to change the system settings and perform diagnostic and administrative tasks. Refer the "User interface" chapter in this guide for further information on the IPS graphical user interface.

Figure 1-4. **DocuPrint 96/4635/180 IPS main window (system with DFA)**

Software features

The following special IPS software features provide system flexibility.

Mixed paper sizes within a job

The IPS can print jobs that call for a mix of paper sizes, without needing to interrupt or slow down printing.

An example of such an application would be a multi-page billing statement consisting of:

- One or more 8 1/2 by 11-inch sheets itemizing charges, and

- A final 8 1/2 by 14-inch page containing the rest of the billing items, the total amount due, and a tear-off section to mail back with payment.

Note: When a print job calls for paper sizes that span over different pitch modes, the software will either cycle down or run at a lower pitch mode, based on the different pitch modes required, the paper sizes called for, the speed of the printer, and the time it takes to shut down the printer.

Note: Paper size and printer trays cannot be changed while the job is running.

Tray selection capabilities

You can select a different input tray or output bin for each job. You can also select a different input tray for each page of a job.

Input tray With the input tray selection capability at the Copy Subgroup level, you can select a different input tray for each copy of a page of a job. You can use this capability to print each page of a multiple-part form on a different color paper stock, or to print the cover of a job on a card stock and to print specific pages within the job on a different color stock.

To specify a different input tray for each job, use the BIN command in the SUBGROUP level of the COPYGROUP in the FORMDEF.

Output tray With the output bin selection capability you can select a different output bin group for each print job. This selection requires two steps:

1. At the host, set the JCL keyword OUTBIN in the OUTPUT statement to specify a bin number from 1 to 65535, or use the OUTBIN command in the FORMDEF to specify a bin number from 1 to 255.

2. At the graphical user interface, use the Output Configuration window to group the trays. You must also select Allow Host Control from the Bin Selection Mode pull-down menu.

IOCA Replicate and Trim

The IPS also supports Replicate and Trim, which improves the processing of IM and IO images that contain large areas of shaded graphics. (IM images are resolution-dependent images that cannot be compressed or scaled; IO images are resolution-independent.)

The IOCA Replicate and Trim capability allows for faster transmission to the printer of AFP applications with IM images that have large or widespread shaded areas. It also reduces the storage area required on the host and on the printer.

Mixed plex

The IPS allows switching between plex modes (simplex to duplex and vice versa) within and between jobs without shutting down the printer.

Switching of plex modes occurs as follows:

- **From simplex to duplex:** The switch is done without a printer shutdown or dead cycles.

- **From duplex to simplex:** The switch is done without a printer shutdown. However, the printer may, if necessary, dead cycle to clear the paper path of all duplex sheets before feeding the first simplex sheet.

Users can avoid switching from duplex to simplex mode (and thus, avoid the dead cycles) by using the Maximum Simplex GUI panel to perform simulated simplex. For more details, refer to the "Setting the system configuration" chapter in the *Xerox DocuPrint 96/4635/180 IPS Guide to Configuring and Managing the System*.

Note: When you print simplex pages in duplex mode, the throughput speed is halved. The blank back pages of the simulated simplex sheets are counted as billable pages by the system's meter.

Enhanced N-Up

Enhanced N-Up provides the following capabilities:

Sheets   On a given sheet, users can place individual pages:

- At any position on either side of the sheet
- In any orientation
- In any size that fits on the sheet

Each side of the sheet of paper can have up to four pages.

Overlays   Users can place overlays relative to any partition origin, with or without variable page data from the application program.

Users can specify different overlays for each page.

Offsets   Users can specify different offsets for each page.

Rotations   Users can specify different rotations for each page.

Form ejection   Users can specify form ejection to a new partition or a new sheet.

Trace facility

To help diagnose problems, the system provides a trace mechanism. Trace files store system configuration information, maintain TCP/IP protocol headers, and time-stamp all records.

For detailed information on this feature, refer to the "Setting the system configuration" chapter in the *Xerox DocuPrint 96/4635/180 IPS Guide to Configuring and Managing the System*.

Overstrike, underscore, subscript, and superscript

Support for the PT2 Subset of PTOCA enables the IPS to print overstrikes, underscores, subscripts, and superscripts where specified in jobs.

Background color for OCA colors

Users can specify COLOR on DRAWBOX (i.e., background color) as long as the color is restricted to colors defined with the OCA or the Highlight Color model.

Full-page 600 dpi images

This feature allows for 600 dpi full-page images to be printed on the IPS. To invoke this feature, you must have the resolution set at the controller to 600 dpi.

Note: 600 dpi images can be *generated* only in the PSF/6000 environment. However, they can be transported to other environments for printing.

Document Feeding and Finishing Architecture (DFA)

The Document Feeding and Finishing Architecture (DFA) on the 4635 and 180 IPS supports all third-party finishing devices currently validated for the LCDS (J11) printers. The bypass transport option is required for in-line finishing devices and support of ENDOFSET and ENDOFJOB (using the PSF MARKFORM or FORMDEF JOG command). DFA also supports personality profiles, which identify the unique characteristics (for example, the sheet timing and the status feedback profiles) of the attached finishing devices.

DFA also enables use of certain third-party roll feed-to-cut sheet feeders. An Input Enablement kit is required for some of these devices.

Page origin rotation for continuous form jobs

The 90-degree page origin rotation feature enables the IPS to print jobs designed for continuous form printing, without the need to rework an existing application. At the user interface, you can set a job's page origin to be rotated 90° to accommodate printing continuous form jobs on cut-sheet paper.

Double-byte fonts

Double-byte fonts consist of characters that are larger and more complex than the single-byte characters making up the Roman alphabet. Therefore, each character of a double-byte font requires two bytes to represent it. Some languages requiring double-byte fonts include Chinese, Korean, and Japanese.

The IPS supports printing with certain double-byte fonts, which can be used in combination with single-byte fonts.

The following double-byte character sets are supported:

- Simplified Chinese
- Traditional Chinese
- Japanese
- Korean
- Thai.

Note: When using double-byte fonts, the font loading time will increase if a font change occurs between reports.

Outline font support

The IPS supports the use of IBM outline fonts for both single- and double-byte applications. These fonts may be downloaded during the jobs or may be loaded into the system and made resident through the use of a user interface option on the Configuration menu.

These outline fonts allow users to specify a single font that can be rasterized in a variety of point sizes by the IPS. The IBM outline fonts are based on Adobe type 1 and type 0 fonts that are in PostScript format.

Note: The IPS supports printer resident *outline* fonts. It does not support printer resident *raster* fonts.

Printer resident font support

The IPS stores both single-byte and double-byte fonts locally on the Printer Controller and does not require you to download the fonts from the host. This can lead to significant performance gains, especially when the printer is attached remotely.

Users can also set the default font for text or barcode Human Readable Interpretation (HRI) to one of the installed fonts to replace a font that is distributed with the system.

Fonts can be installed from an IBM supplied font CD or via FTP to the Controller workstation.

Note: The IPS supports printer resident *outline* fonts. It does not support printer resident *raster* fonts.

Processing options

The IPS allows users to specify processing options using the GUI. For example, changing the model number reported to the host. Refer to the *Xerox DocuPrint 96/4635/180 IPS Guide to Configuring and Managing the System* for details on these options.

Message translation

The IPS provides some message translatability for the GUI and printer monitor. Users can select the language of their choice from a GUI menu option.

Configuration file processing

The IPS adds a version identifier to the configuration files. The identifier allows for migration of configuration data from one release to a subsequent release at upgrade time. The IPS allows users to save, upgrade, and restore configuration data such as input and output tray mappings and DFA configurations.

PCI Bus support

The IPS supports the SUN Peripheral Component Interconnect (PCI) Bus architecture, in addition to the S-Bus platform. PCI support provides the following advantages:

- Migration of Printer Controller components to newer technology

- Higher performance on the Printer Controller

- Wider selection of system peripherals

- Adherence to industry standards.

Access control by privilege mode

The IPS controls access to various functions based on four privilege modes:

1. User

2. Operator

3. Administrator

4. Service.

Depending on the privilege mode set by the Customer Service Engineer, users will have access to certain graphical user interface (GUI) functions, while other functions will be grayed out. Refer to the *Xerox DocuPrint 96/4635/180 IPS Guide to Configuring and Managing the System* for details on this functionality.

Software license

When an IPS is purchased, the owner needs a license to use the operating system software. After a user calls in with a host ID (Sun SPARC/Ultra host ID), the user will receive a license string.

The user license is enabled by entering the 20-character authorization text string at the Printer Controller keyboard. Your Xerox service representative can obtain the license text string for you and enter it when your IPS is installed, or when you receive your IPS software upgrade. For details on how to obtain the license string from Xerox, refer to the *Xerox DocuPrint 96/4635/180 IPS Guide to Configuring and Managing the System*, in the chapter "Setting up the printer controller."

Until the license string is entered, your IPS cannot receive data from the host to print. You can power on and boot the system, and perform all offline tasks such as setting up input and output configurations, but the IPS remains in Disabled mode and cannot print.

Although your service representative usually does this for you, you are able to enter your license string yourself from the IPS main window. The procedures are outlined in the chapter "Setting up the printer controller" in your *Xerox DocuPrint 96/4635/180 IPS Guide to Configuring and Managing the System*.

Note: If your system will be operating in Dual Mode, it requires *two* license strings: one for IPS and one for NPS.

Remote service (Sixth Sense Technology)

Sixth Sense Technology is a user-friendly suite of tools that allow service personnel to connect with a customer system and evaluate its performance while the system is being used. The Customer Service Engineer (CSE) can troubleshoot problems remotely, transfer, apply, and remove patches remotely, and, if an on-site call is required, arrive with the solution to fix the problem.

Customer benefits of using this technology include:

- Diagnostic help and identification of required parts before the service visit

- Planned visits based on known problems and/or replacement of wear-out items

- Customer self-maintenance to provide faxed replacement change reminder to trained operators.

Using the Sixth Sense Technology, CSEs can access your system's diagnostic data remotely using a regular telephone line almost as if they were at the Printer Controller (SPARCstation).

For security reasons, the customer maintains control of the modem connection, and may leave the modem disconnected. Also, the customer provides a password for access to the Sixth Sense Technology via the modem.

For information on enabling and disabling of the Sixth Sense Technology, refer to the chapter "Calling for Service" in your *Xerox DocuPrint 96/4635/180 IPS Troubleshooting Guide*.

2. Printer Controller

This chapter describes the DocuPrint IPS Printer Controller (also called the system controller). It includes a list of component hardware, software, and fonts, and discusses the key elements of software operation.

Components of the Printer Controller

The Printer Controller enables you to use proprietary Xerox IPS hardware, firmware, and software to control the printer. It has the following major hardware components:

- **Sun UltraSPARC workstation.** The Sun workstation has a high-performance RISC processor chipset, based on the industry-standard Scalable Processor Architecture (SPARC) and a high-capacity hard disk drive. It contains the following components:

    — Processor

        – Hard disk

        – Diskette drive

        – CD-ROM drive

        – Connectivity boards for Ethernet and, optionally, Token Ring

    — Monitor

    — Keyboard

    — Mouse

- **Host Channel Unit (HCU)** (Channel-attached systems only). The HCU contains the channel communications board. This is used only when printing data received over a channel via a bus and tag connection.
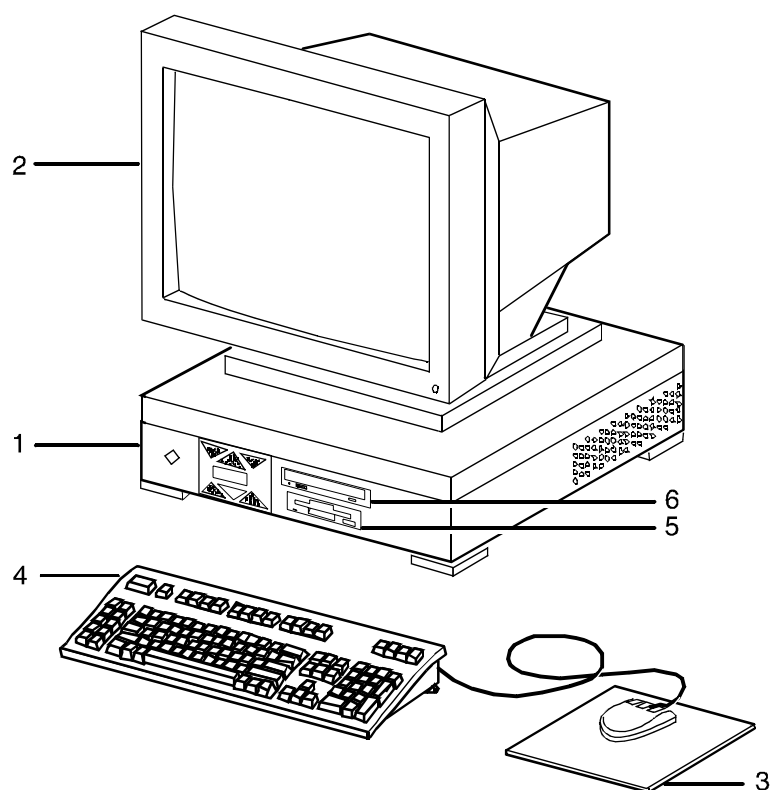
Note: Some elements and components of the Printer Controller are accessible only by a service representative; for example, the diagnostics for the Sun workstation processor.

Note: Printer controller hardware configurations are subject to upgrade.
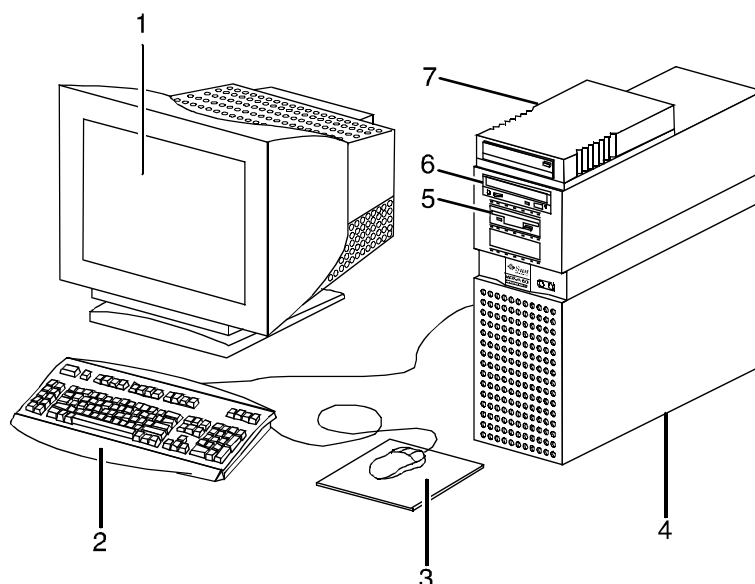
The Sun Ultra workstation consists of the processor, monitor, keyboard and mouse. Both Sun Ultra 2 and Sun Ultra 60 workstations are available.

Figure 2-1. **Components of the Sun Ultra 2**

1   **Processor**
2   **Monitor**
3   **Mouse and mouse pad**
4   **Keyboard**
5   **Diskette drive**
6   **CD-ROM drive**

Figure 2-2. **Components of the Sun Ultra 60**

1 **Monitor**
2 **Keyboard**
3 **Mouse**
4 **Processor**
5 **Diskette drive**
6 **CD-ROM drive**
7 **Cartridge tape drive**

Processor

The processor is the central processing unit (CPU) of the Sun workstation. It contains a power switch, a hard drive, a diskette drive, a CD-ROM drive, a power receptacle and outlet, connectors, and ports.

A Data Control Interface Module (DCIM2) card for the Sun Ultra 2, or a PCIM2 card for the Sun Ultra 60 is installed in the processor, to which the printer cable is connected. In addition, the processor contains the connectivity boards for Ethernet and, optionally, Token Ring.

Hard disk

One addressable, high-speed, high-capacity hard disk is provided. The hard disk stores the operating system, the IPS application, and any buffered pages. Do not use the hard disk to store other applications or data except as directed by your service representative.

Diskette drive

The floppy disk drive is located in the processor, on the front section of the UltraSPARC. It uses industry standard 3.5 inch, 1.44-MB, double-sided, high-density floppy disks. This disk drive is not an input source for print jobs or for any other data or application. It is reserved exclusively for use by a service representative to update software and to store files.

CD-ROM drive

The CD-ROM drive, located in the processor above the diskette drive, is a high-density, read-only, optical laser storage device used for loading the IPS operating system, online documentation, and other files.

Cartridge tape drive

An optional 8 GB, 4 mm external SCSI cartridge tape drive also is available for the IPS. Like the diskette and CD drives, this tape drive is not an input source for print jobs or for any other data or application. It provides the service representative with another means of loading system maintenance files or saving diagnostic information.

Monitor

The monitor has a high-resolution color screen, which displays the IPS graphical user interface screen.

Keyboard

The type 4 or 5 keyboard has 107 alphanumeric keys, symbol and special character keys, an extended character set, and function keys.

Mouse

The mouse has three buttons. The left and right buttons are used to select IPS functions. The center button provides additional functions that you will not be required to use.

If your workstation has an optical mouse, it must remain on its designated metallic pad to be active. If the mouse has a roller ball instead of an optical sensor underneath, it requires a non-metallic pad.

## Host Channel Unit (HCU) — channel-attached systems only
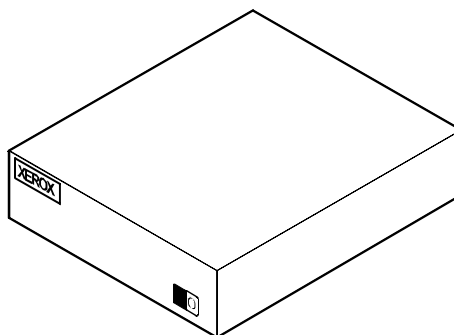
The HCU handles all of the IPDS communications and handshaking with PSF on the host when receiving data over a channel. (It is not used when the IPS is printing data using TCP/IP.)

- The front panel of the HCU has a single-digit LED display, which enables you to monitor power-up and offline status, and alerts you to error conditions. (Refer to your *IPS Messages Guide* for an explanation of the HCU codes displayed here.)

- The back panel of the HCU has a power switch and outlet, bus and tag cable input and bypass connectors, and a dual serial port. The standard switching power supply is capable of 10 amp on the 5-volt output.

Note: You are responsible for obtaining, stringing, and maintaining *fully-populated* bus and tag cables.

Figure 2-3.   **Host channel unit (HCU)**

Placement of the processor

When you place your Printer Controller processor on a desktop, make sure to allow at least 6 inches / 152 mm of unobstructed space at the rear and both sides of the processor. Do not allow any piece of equipment to blow warm air into the air-intake vents of the processor.

Caution: Do not place a monitor with a base larger than the processor on top of the unit. Do not block any fan or vents on the sides or rear of the processor. ◯

Caution: If you plan to move the Printer Controller, make sure to consult with your service representative. ◯

3.   User interface

The IPS graphical user interface on the Printer Controller enables
you to interact with the IPS. It contains windows and pull-down
menus through which you can perform operator and system
administrator tasks.

Graphical user interface screen

After you power on the HCU (if appropriate) and the Sun workstation, the Printer Controller monitor displays three windows:

- IPS main window
- IPS Console window
- IPS Print Engine Monitor window.

The **IPS main window** is the largest window on the screen. The main window displays the current system setup, the current system status, and any jobs that are running. This window also provides access to menus and subwindows from which you can configure and operate your system.

The **IPS Console window** displays messages that warn you of Printer Controller problems. (This window initially displays below the IPS main window on the left, but it can be moved where desired.)

Note: High frequency service indicator (HFSI) messages may appear occasionally in this window. These messages do not indicate any problem, merely that you should advise your service representative to check the indicated areas during the next service call.

The **IPS Print Engine Monitor window** shows printer error messages, indicates the printer status and displays printer and DFA messages. (This window initially displays below the IPS main window on the right, but it can be moved where desired.)

The following figure shows these windows on the screen of the Printer Controller monitor.
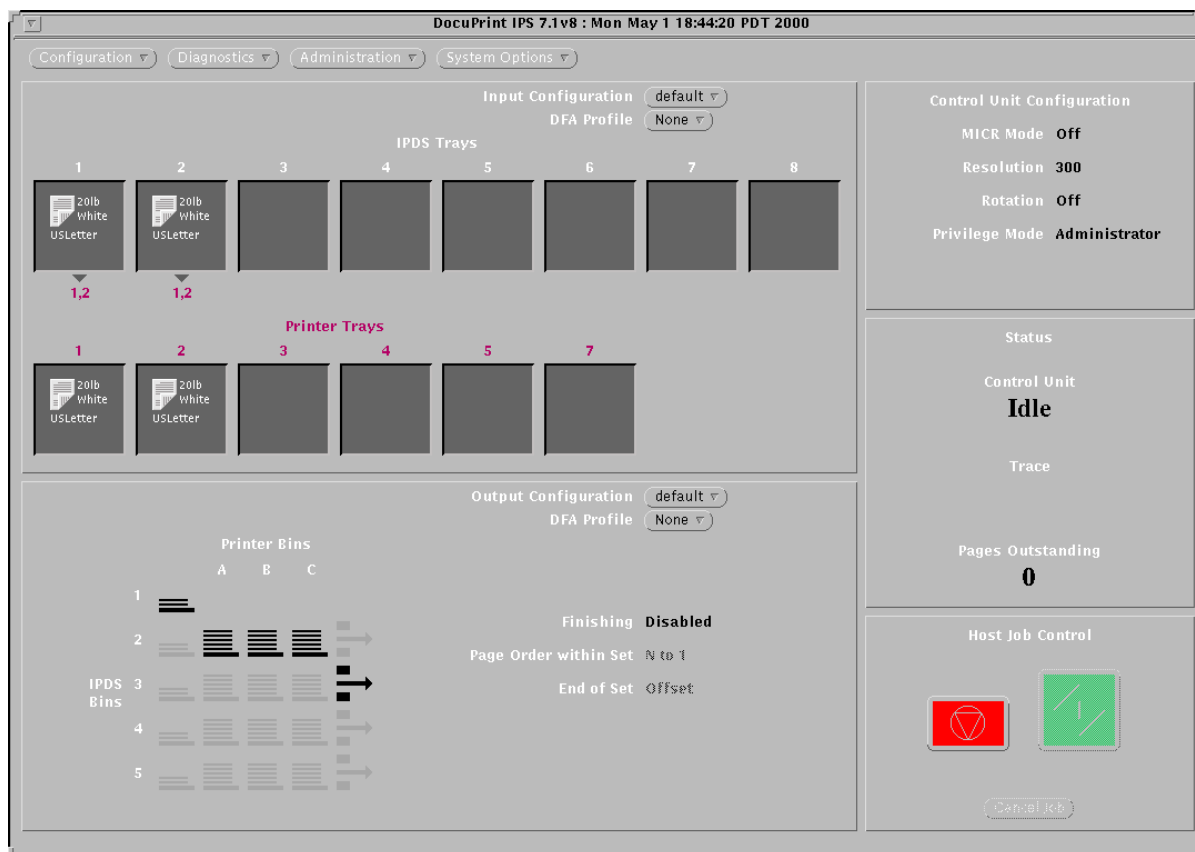
Figure 3-1. **Printer Controller monitor with IPS main window, IPS Console window, and IPS Print Engine Monitor window**

IPS main window

Use the IPS main window to access other windows for configuring, setting up, and operating the system, for monitoring the current setup and status of the system, for performing various administration tasks, and for interrupting and resuming printing.

Figure 3-2.   **IPS main window (system with DFA)**

The IPS main window consists of the following:

- **Menus:**
    - Configuration
    - Diagnostics
    - Administration
    - System Options
- **Input Configuration** section, which provides access to the windows that enable you to configure input trays to feed required paper stocks, and to set up margin values. It also displays the current configuration of the feeder trays.

- **Output Configuration** section, which provides access to the direct windows that enable you to direct printed output to the desired output tray or bin. It also displays the current configuration of the stacker trays.

- **Setup and status information**, which consists of the following sections:

  — Control Unit Configuration section, which displays the current configuration of the system

  — Status section, which indicates what the printer is doing

  — Host Job Control section, which allows you to stop or continue job processing.

For detailed information on the main window and its various functions, refer to the chapter "Introduction to the graphical user interface" in the *Xerox DocuPrint 96/4635/180 IPS Guide to Configuring and Managing the System*.

4. Printers

The IPS printer (sometimes referred to as the image output terminal or IOT) is where the actual printing takes place. This chapter discusses the components and possible configurations of the 96/4635/180 IPS printer.

Printer components

The 96 IPS, the 4635 IPS, and the 180 IPS printers have almost the same appearance, print engine, and base components. All printers contain a xerographic engine, one or more high-capacity feeder/stacker modules, sample and purge trays, and a printer control console.
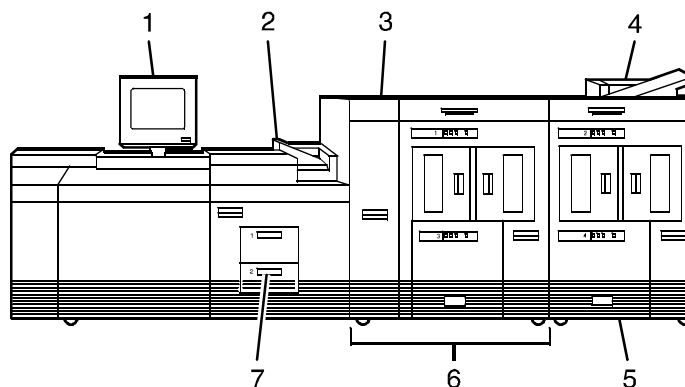
Components overview

The components of the base printer for the 4635 and 180 IPS are shown in figure 4-1.

Note: The 96 IPS base printer configuration contains only the inverter feeder/stacker module. An additional feeder/stacker (giving the 96 IPS the configuration shown below) is an option.

Figure 4-1.   **Base printer components (4635/180 IPS)**

   1   Printer control console
   2   Sample tray
   3   Attention light
   4   Purge tray
   5   Feeder/stacker module
   6   Inverter feeder/stacker module
   7   Processor feeder trays

These components are described in more detail in the following sections.
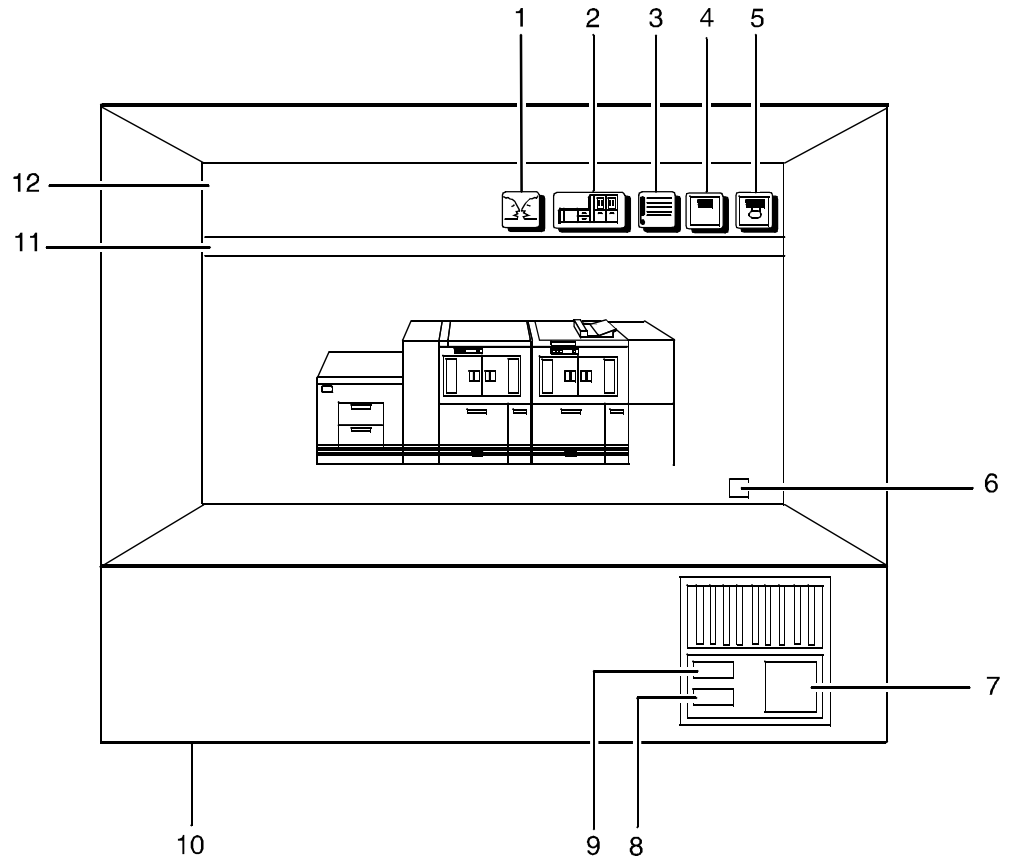
Printer control console

The printer control console is the color monitor located on top of the printer. It contains message areas and graphic displays that alert you to paper jams and other fault conditions, such as low dry ink. The printer control console also contains buttons that allow you to control certain functions of the printer—such as stopping printing and continuing an interrupted job—without returning to the Printer Controller.

The printer control console has the following features:

- Local controls and displays for jam clearance, paper loading/ unloading, and diagnostics/service (used by the service representative). Two types of messages are displayed on the printer control console: fault messages, which relate to printer malfunctions, and information messages, which relate to printer conditions such as low dry ink.

- Touch-sensitive areas that allow you to select options by touching the printer control console screen. A tone sounds when you touch one of these areas.

- A printer alarm which gives three beeps, repeated for ten seconds. The alarm is generated by any event that stops the printer.

  The alarm stops after three cycles or as soon as you start to clear the fault condition (for example, when you open printer doors or covers specified in the clearance instructions). You can stop the alarm by pressing one of the printer control console buttons or by selecting a function through the touch screen.

Figure 4-2.   **Printer control console**

1   Language icon
2   Printer icon
3   Fault List icon
4   Tools icon
5   Guarded Tools icon
6   Clear button
7   Continue button
8   Stop button
9   Sample button
10   Brightness control thumbwheel
11   Icon area
12   Message area

1. **Language icon**

    If two languages are available for your printer control console, selecting this icon allows you to choose the language for the printer control console messages.

2. **Printer icon**

    Select this icon to display the printer mimic. This is the default display on the printer control console.

3. **Fault List icon**

    Select this icon to display the Fault List screen.

4. **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).

5. **Guarded Tools icon**

This icon is reserved for the service representative and operators who have completed Advanced Customer Training (ACT).

6. **Clear button**

Select this button to clear fault messages.

7. **Continue button**

Press this button to resume printing.

8. **Stop button**

Press this button to stop printing.

9. **Sample button**

Press this button to print a sample to the sample tray.

Note: The following software levels are required for the sample button to function:

- 96 IPS: 21.50 or higher

- 4635 IPS: 11.51 or higher

- 180 IPS: 70.10 or higher

Note: Once pressing the Sample button, the message `Sample is being delivered` is displayed on the printer console, and remains there until another message overwrites it.

Note: The sample button is disabled during MICR print jobs.

10. **Brightness control thumbwheel**

Use this thumbwheel to adjust the brightness of the printer control console display.

11. **Icons**

Area where the following icons appear:

Fault icon — Appears when a fault exists in the system that stops the printer or prevents it from printing. If you click this button, the Clear button is displayed on the screen.

Hint icon — Appears when a masked fault or condition exists in the printer. See the chapter "Fault masking" in the *Xerox DocuPrint 96/4635/180 IPS Troubleshooting Guide.*

ACT icon — Appears when a maintenance task requiring an ACT trained operator must be done. If you have successfully completed ACT, either check the Printer Controller for messages concerning the maintenance task or touch the Guarded Tools icon to display the Guarded Tools screen. If you are not an ACT trained operator, notify your lead operator or an ACT trained operator at your site.

12. **Message area**

The message area is used as follows:

- **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 that originate at the System Controller.

Sample tray

The sample tray located on top of the printer receives output such as transparencies, sample prints or system files, and waste sheets that cannot be sent to the purge tray. The sample tray should be monitored and emptied when it contains 100 sheets, although no notification is given when the tray is full.

Attention light

An Attention light is mounted on top of the inverter module. This light either blinks or modulates (alternately brightens and dims) when the printer requires operator attention. The light has three states:

- **Off** — No printer problems exist that require attention.

- **Steady light** — A situation exists that needs attention soon (such as a low dry ink condition).

- **Flashing —** The printer has stopped and requires your attention immediately.

Note: When the Attention light starts flashing, an explanatory message appears on the printer control console display. A similar message appears in the IPS Print Engine Monitor window on the Printer Controller screen.

Purge tray

The purge tray is located on top of the feeder/stacker module. Aborted sheets (for example, damaged sheets or sheets cleared after a paper jam) are sent to this tray. The purge tray should be emptied when it has received 100 sheets of paper, although the printer does not notify you when the tray is full.

Inverter

The inverter is part of the inverter feeder/stacker module. It allows for proper collation of the print job. It also directs printed output to the sample tray, when required.

Feeder/stacker modules

Each feeder/stacker module contains a high-capacity feeder tray and a high-capacity stacker.

High-capacity feeder (HCF) tray

This tray is located in the bottom half of the feeder/stacker module. Each HCF tray can hold up to 2600 sheets of 20 pound or 80 gsm paper.

The high-capacity feeder trays can handle paper sized from 8 by 10 inches/ 203 by 254 mm to 14 by 17 inches / 364 by 432 mm.

High-capacity stacker (HCS)

This bin is located in the top half of the feeder/stacker module. Each HCS can hold 2500 sheets of 20 pound or 80 gsm paper.

The 4635 and 180 printers may have up to four feeder/stacker modules (including the inverter feeder/stacker), containing feeder trays 3, 4, 5, and 6, and stacker bins A, B, C, and D. The 96 IPS can have up to two feeder/stacker modules, containing feeder trays 3 and 4, and stacker bins A and B.

Processor feeder trays

Two processor feeder trays are located in the main part of the printer and are not part of a feeder/stacker module.

- The main tray (tray 1) holds up to 1100 sheets of 20 pound or 80 gsm paper.

- The auxiliary tray (tray 2) holds up to 600 sheets of 20 pound or 80 gsm paper.

- Trays 1 and 2 can handle paper sized from 8 by 10 inches / 203 by 254 mm to 9.02 by 14.02 inches / 230 by 356 mm.

Feeder trays

The 4635 IPS and the 180 IPS may have up to six feeder trays: the two processor trays and two to four high-capacity trays. The 96 IPS can have up to four input trays: the two processor trays and one to two high-capacity feeder trays.

The total input and output page quantities for each high-capacity feeder tray are shown in table 4-1.

Table 4-1. **Total input and output capacity for printer with each added feeder/stacker module**

Configuration — 2 processor feeder trays plus:	Total input (pages)	Total output (pages)
First (inverter) F/S	4300	2500
Second F/S	6900	5000
Third F/S	9500	7500
Fourth F/S	12100	10000
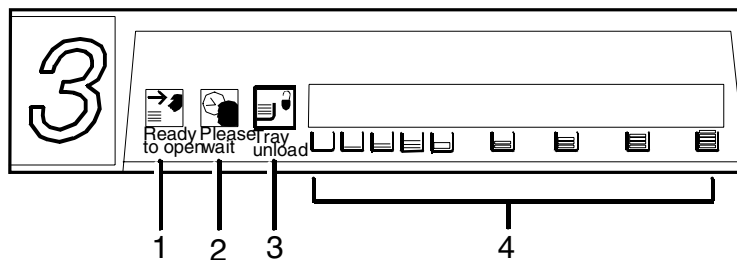
- The 4635 and 180 IPS can feed papers as small as 7 inches / 178 mm in width if the optional 7 by 10-inch enablement kit is installed. The 7 by 10-inch paper option is not available on the 96 IPS.

- Paper that is 17 inches / 432 mm long can be fed only short edge first.

An elevator moves the tray up or down when it is in use. The HCF trays have Paper Level switches which detect the position of the elevator to determine the fullness of the tray. Paper Size switches detect the size of the paper loaded in the trays.

Feeder tray control panels   Each processor feeder tray and HCF tray has a control panel consisting of a button, indicators, and paper level displays.

Figure 4-3.   **Feeder tray control panel**

1   Ready to Open indicator
2   Please Wait indicator
3   Tray Unlock button
4   Paper Level indicators

1. **Ready to Open indicator**

    This indicator glows when paper can be added to the tray.

2. **Please Wait indicator**

    This indicator shows that the tray is in motion. It is lit when the Tray Unlock button is pressed, when the tray is being lowered, or when the tray is being raised. The indicator goes off when the tray elevator reaches its destination.

3. **Tray Unlock button**

    You can use this button any time the Please Wait indicator is off.

    - If the tray is in use when this button is pressed, the feed selection changes to the backup tray if one exists. Otherwise, printing stops.

    - If the tray is in use and selected as a backup tray, pressing this button causes the tray elevator to lower and the tray is no longer available for auto switching.

    - If the tray elevator is in the raised position and the tray is not in use or selected as a backup tray, pressing this button causes the elevator to lower with no effect on printing operations.
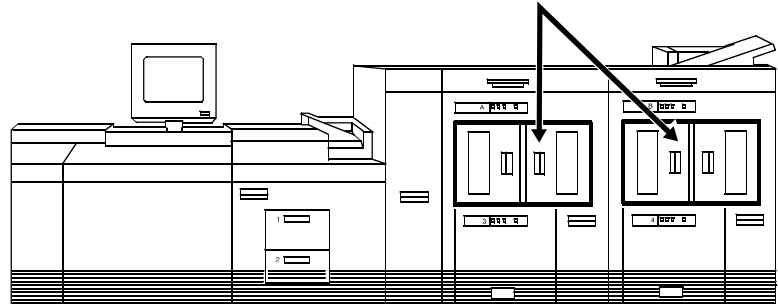
4. **Paper Level indicators**

    These indicators display the approximate quantity of paper within the tray. The display shows paper by quarter reams up to one ream, and then by full reams. The green indicator light appears above the Paper Level indicator which shows the amount of paper in the tray.

High-capacity stackers

The 4635 IPS and 180 IPS can have from two to four high-capacity stacker bins, and the 96 IPS can have from one to two. Each bin holds up to 2500 sheets.

Figure 4-4.   **High-capacity stackers (HCS)**
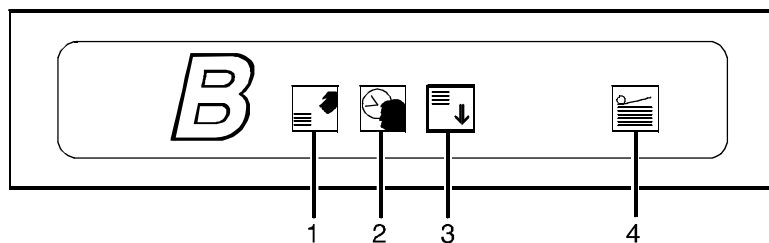
The printed output is stacked onto the bin platform. The stacking capacity is approximately 100 to 150 sheets less when stacking into a container.

It is also possible to select the level to which paper will be stacked in the HCS.

A stacking elevator maintains the paper at the proper level for stacking and lowers the stack for unloading. There is an offset mechanism that offsets printed sets toward the front or back of the HCS bin. Each HCS bin has unlinked double doors to provide you with easy, yet safe, access for unloading paper from the printer.

Bin control panels   Each HCS bin has a control panel consisting of buttons and indicators.

Figure 4-5. **HCS bin control panel**

1   Ready to Unload indicator
2   Please Wait indicator
3   Bin Unload button
4   In Use indicator

1. **Ready to Unload indicator**

    When this indicator glows, you can remove printed sheets from the stacker bin.

2. **Please Wait indicator**

    When this indicator glows, the elevator is in motion. This indicator goes off when the platform reaches its destination.

3. **Bin Unload button**

    Pressing this button causes the bin elevator to lower. If the bin is in use and part of a SELECT AUTO combination, the printed pages begin stacking in the other stacker bin. If the bin is not in use, there is no effect on printing operations.

4. **In Use indicator**

    When this indicator glows, the bin is selected to receive the next printed sheet.

Printer configurations

The DocuPrint 96, 4635, and 180 IPS are available in the following configurations, some of which may include the bypass transport and/or Input Enablement kit.

Figure 4-6.   **96 IPS printer with inverter feeder/stacker only**
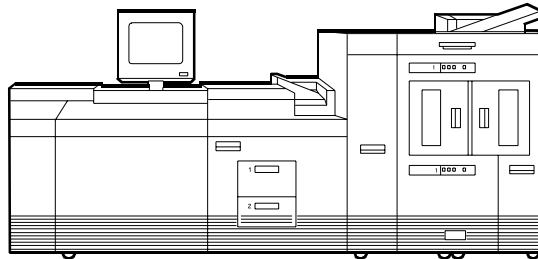
Figure 4-7.   **96 IPS printer with inverter feeder/stacker + bypass transport**
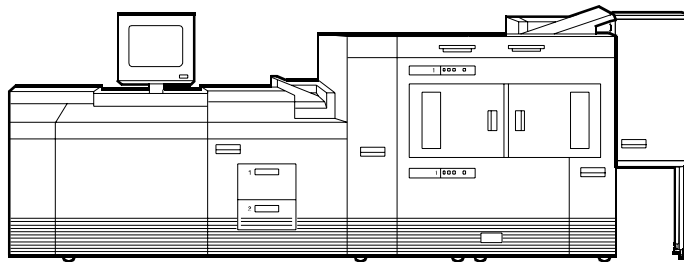
Figure 4-8.   **96/4635/180 IPS printer with inverter feeder/stacker + feeder/stacker**
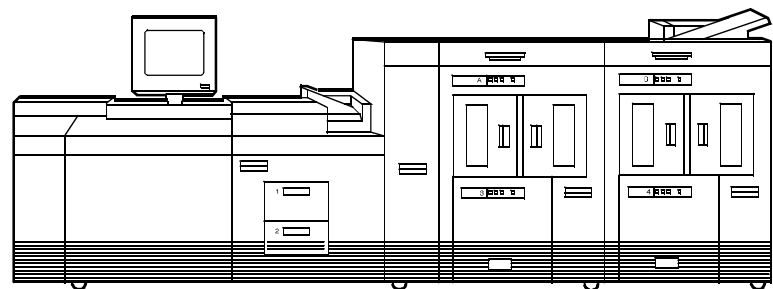
Figure 4-9.   **4635/180 IPS printer with inverter feeder/stacker + feeder/stacker + bypass transport**
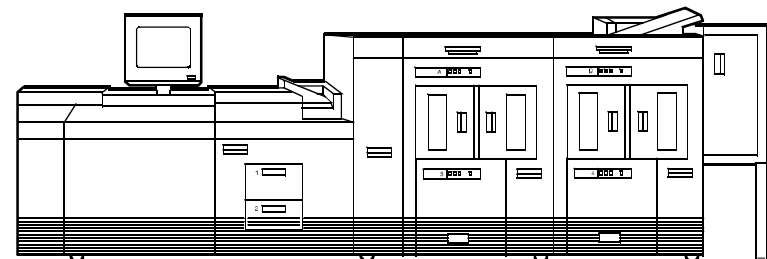
Figure 4-10. **4635/180 IPS printer with inverter feeder/stacker + feeder/stacker + feeder/stacker**
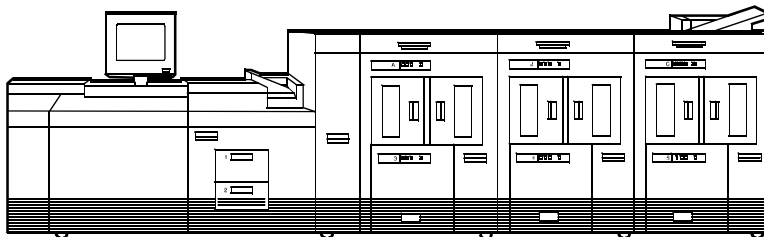
Figure 4-11. **4635/180 IPS printer with inverter feeder/stacker + feeder/stacker + feeder/stacker + bypass transport**
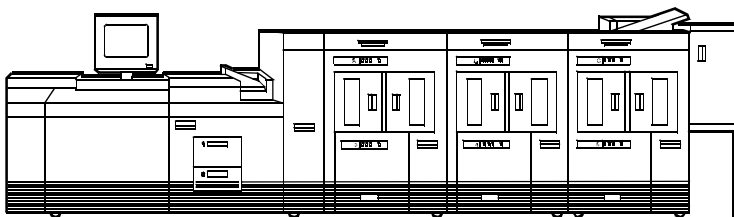
Figure 4-12. **4635/180 IPS printer with inverter feeder/stacker + feeder/stacker + feeder/stacker + feeder/stacker**

Note: The bypass transport device is not available for this configuration four feeder/stacker modules). The Input Enablement kit is available for this configuration on the 180 IPS only.

Options enabling third-party feeding and finishing

The Input Enablement and bypass transport devices are offered as optional components. These options allow you to customize your printer for increased efficiency and specialized applications, such as roll feed and finishing devices.

Programmable bypass transport

The ability to add a third-party finisher to your 96/4635/180 IPS is made possible by the programmable bypass transport option. Finishers increase your production capabilities by providing a wide variety of finishing choices (for example, slitting, booklet making, binding, and so forth).

Connected to the printer's last feeder/stacker module, the programmable bypass transport allows finishers to interface directly with your 96/4635/180 IPS. It accepts all paper stocks within the 96/4635/180 range and accommodates simplex and duplex printing. The programmable bypass transport meets the Xerox Document Feeding and Finishing Architecture (DFA) specifications.

Input Enablement kit

Adding a third-party feeder to your 96, 4635, or 180 IPS is made possible by the Input Enablement option. The 96/4635/180 IPS accepts cut sheets from the feeding device through an entry slot at the lower right of the last feeder/stacker module.

The input enablement option provides extended paper feed capability from third party feeder devices. Sheets are received from a third party feeder device through an entry slot located in the last feeder/stacker module of the system. The 96/4635/180 IPS controls the input sheet feeding in accordance with DFA specifications.

Note: The 180 IPS has the option of a roll feeder that does not require the Input Enablement kit and is not enabled by DFA. This feeder is installed in the inverter feeder/stacker module in the place of the feeder tray.

Configurations supporting bypass transport and Input Enablement kit

The Input Enablement kit and/or bypass transport are supported on the 96/4635/180 IPS configurations as follows:

96 IPS configurations

Input Enablement Kit <u>and/or</u> bypass transport:

- Inverter feeder/stacker only
- Inverter feeder/stacker + feeder/stacker

4635 IPS configurations

Input Enablement kit <u>and/or</u> bypass transport:

- Inverter feeder/stacker + feeder/stacker
- Inverter feeder/stacker + feeder/stacker + feeder/stacker

180 IPS configurations

Input Enablement kit <u>and/or</u> bypass transport:

- Inverter feeder/stacker + feeder/stacker
- Inverter feeder/stacker + feeder/stacker + feeder/stacker

Input Enablement kit only (no bypass transport):

Inverter feeder/stacker + feeder/stacker + feeder/stacker + feeder/stacker + feeder/stacker.

Additional IPS printer features

Additional features of the DocuPrint 96/4635/180 IPS printers include:

Instruction labels   Located throughout the printer to assist you with jam clearance and other tasks.

Power saver   To conserve energy, the printer has a power saver in the fuser. After a predetermined period, it times itself out and shuts down. The time-out period can be adjusted by a service representative to meet your needs. The Printer Controller automatically brings the printer out of power saver mode when there is a document to be printed.

The power saver times itself out after about four hours and requires four to seven minutes to warm up.
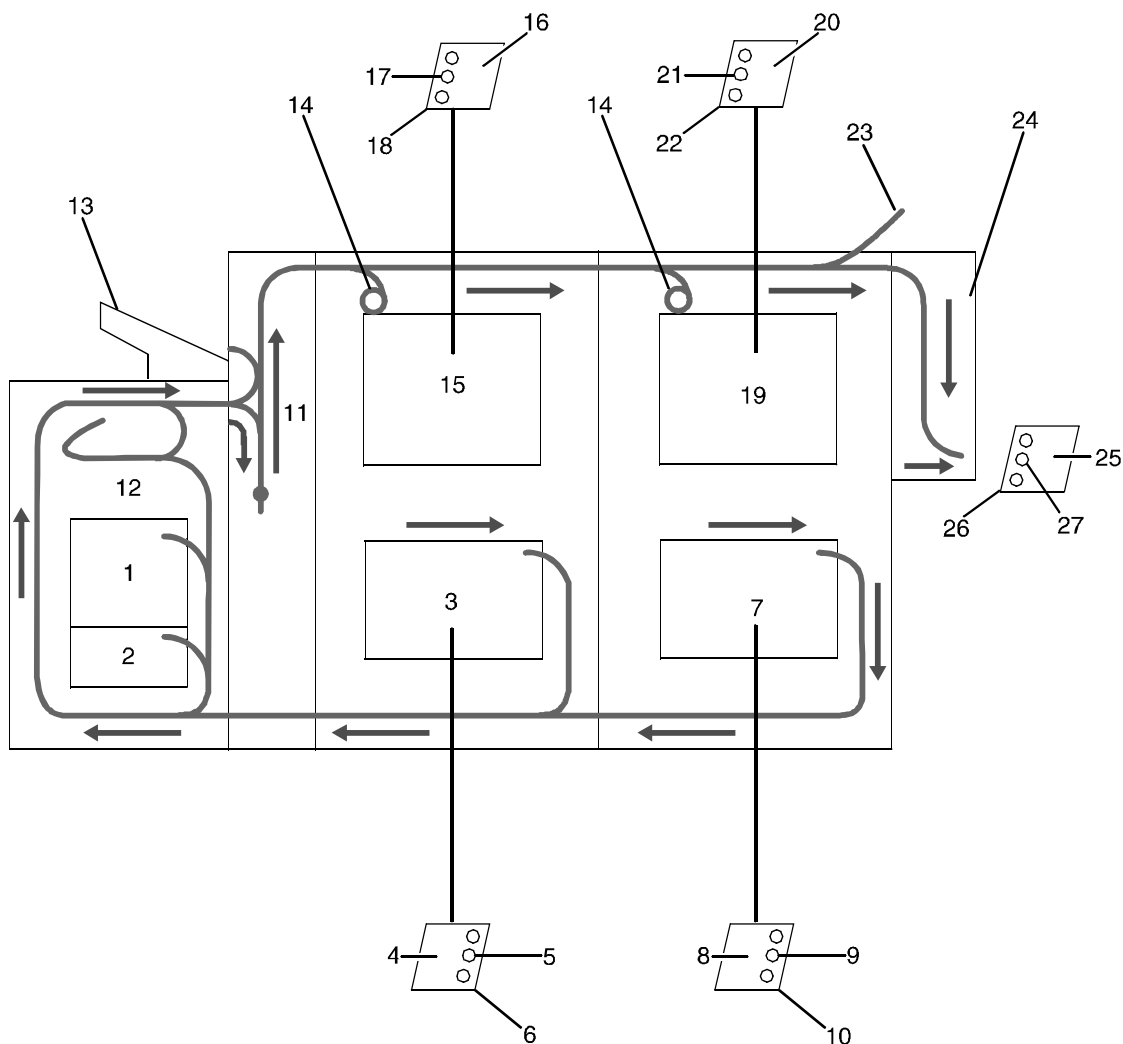
Printer paper paths

The paper path is the route materials (paper, transparencies, labels, etc.) follow through the printer from the feeder trays to the output bins or finisher receptacle.

Paper path through the IPS printer   The following figure illustrates the entire IPS printer paper path.

Figure 4-13. **Route of paper through 96/4635/180 IPS**
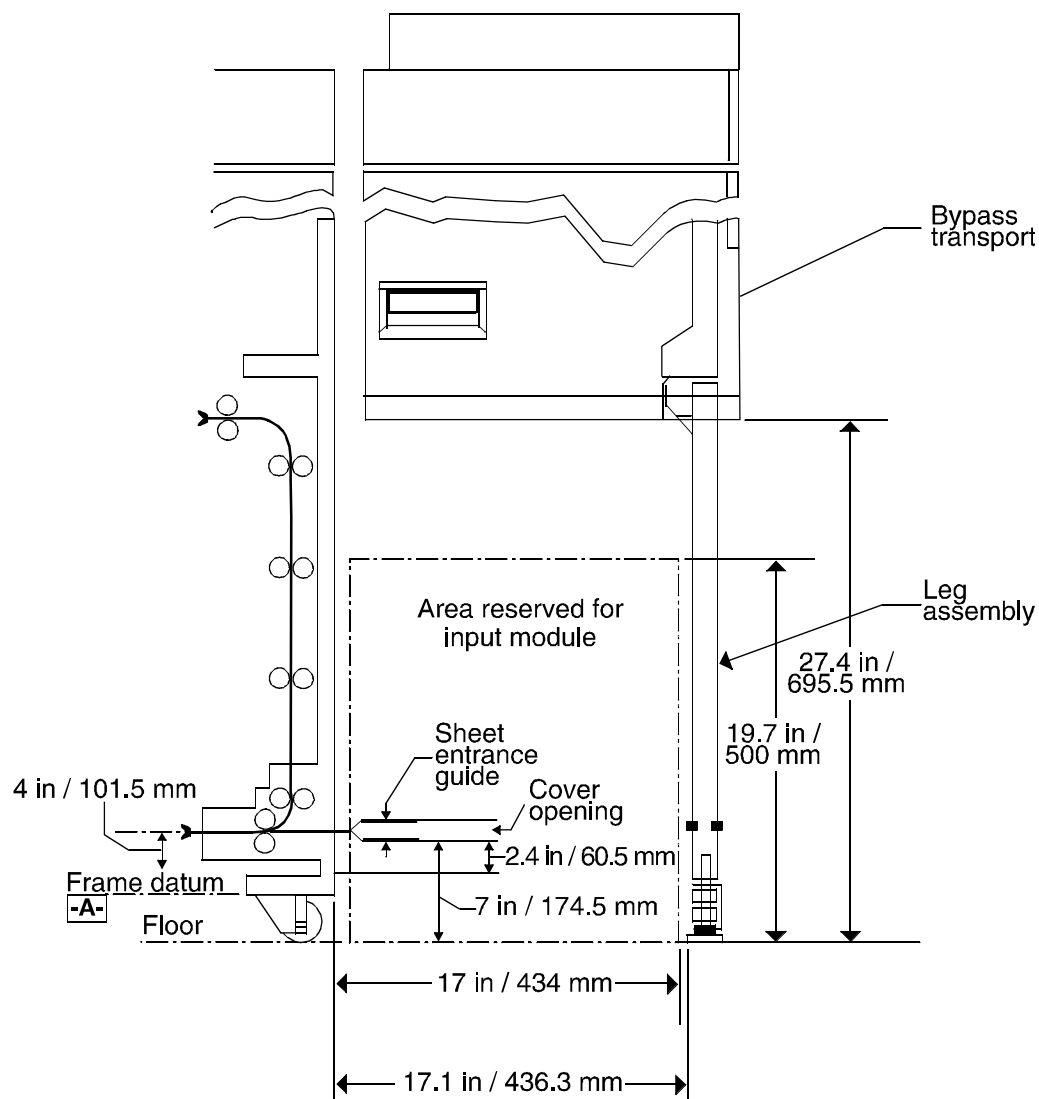
1   Processor feeder tray 1
2   Processor feeder tray 2
3   High-capacity feeder tray 3
4   Side 1 of sheet leaving feeder tray
5   Drilled holes (on right edge)
6   Origin 0,0: portrait feeder tray 4
7   High-capacity feeder tray 4
8   Side 1 of sheet leaving feeder tray
9   Drilled holes (on right edge)
10   Origin 0,0: portrait feeder tray 4
11   Inverter
12   Duplex inverter
13   Sample tray
14   Disk inversion

15   High-capacity stacker bin A
16   Side 2 of sheet stacked in bin
17   Drilled holes (on left edge)
18   Origin 0,0: portrait orientation
19   High-capacity stacker bin B
20   Side 2 of sheet stacked in bin
21   Drilled holes (on left edge)
22   Origin 0,0: portrait orientation
23   Purge tray
24   Bypass transport
25   Side 2 of sheet passing through bypass transport
26   Drilled holes (on left edge)
27   Origin 0,0: portrait orientation

Input enablement paper path   The following figure shows the paper path and the dimensions of the input enablement area from a printer front view. The input enablement kit option supports third-party feeding devices.
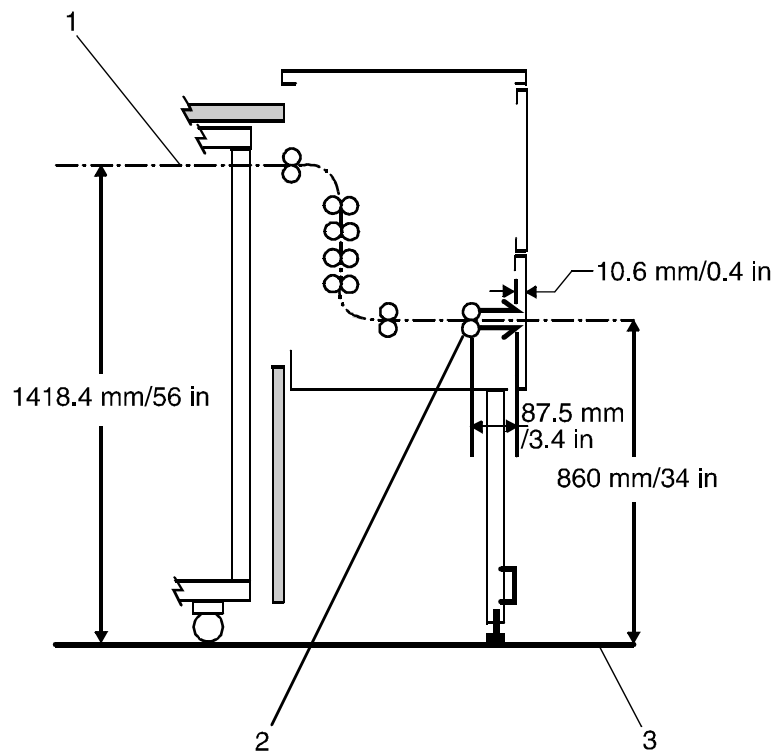
Figure 4-14. **Input enablement paper path and dimensions**

Bypass transport paper path   The following figure shows the paper path through the bypass transport from a printer front view.

Figure 4-15. **Bypass transport paper path**

1   **Sheet path**
2   **Exit rollers**
3   **Floor**

5. MICR IPS

The 96 MICR IPS, 4635 MICR IPS, and 180 MICR IPS produce a magnetic ink character recognition (MICR) line on negotiable and turnaround documents such as checks and bills. The 96/4635/180 MICR IPS prints documents using magnetic ink and special fonts to create machine-readable information that allows for quick document processing.

In general, MICR is used to print accounting and routing information on blank checks and other negotiable documents, the magnetic encoding capabilities can be used for any printed output.

For more information on creating MICR documents and using MICR tools, refer to the *Generic MICR Fundamentals Guide*, publication number 721P14083, provided with your IPS.

96/4635/180 MICR IPS printing features

The 96, 4635, and 180 MICR IPS meet ABA standards and ANSI and ISO specifications for automatic check handling. These printing systems print the MICR line and the rest of the check at the same time, which reduces processing time and cost. Their special features include the following.

MICR fonts   Xerox provides a set of 300 dpi MICR fonts for use on the 96/4635/180 MICR IPS. You must use only these Xerox-supplied MICR fonts to have the high print quality Xerox guarantees.

The 96/4635/180 MICR IPS creates machine-readable documents using the standard E13B and CMC7 fonts. These fonts support 14 characters, including the numerals zero through nine.

The "Test" fonts are non-readable MICR hollow bitmap (or outline) fonts, provided for testing MICR applications and printing non-negotiable documents.

E13B font set: The E13B series includes:

- E13B
- E13B Landscape
- E13B Test
- E13B Test Landscape.

CMC7 font set: The CMC7 set is an alternative set of MICR fonts that has been adopted in various countries outside the U.S., and is the official standard in France. Like the E13B font, it is magnetically readable, but with a different character design and recognition criteria. The series includes:

- CMC7
- CMC7 Landscape
- CMC7 Test
- CMC7 Test Landscape.

Check Performance Guarantee   Xerox's Check Performance Guarantee means Xerox stands behind the performance of its MICR printers and inks. However, if any E13B or CMC7 font is used other than the ones supplied by Xerox, this guarantee is invalidated.

300/600 dpi resolution   The 96/4635/180 MICR IPS receives data at 300 dpi and interpolates it to print at 600 dpi. All AFP resources, including fonts, required for MICR print jobs must be available at 300 dpi. Print image size can be up to 14.33 by 17 inches.

Note: Non-MICR 240 dpi fonts must be converted to 300 dpi before they can be used on the 96/4635/180 MICR IPS.

Transfer Assist Blade   When you enable MICR from the MICR Mode window, the IPS makes adjustments so that the MICR line on your documents prints all the way to the edges of the paper with no fading or lightening. To ensure reliable print quality of the entire MICR line, you must have the Transfer Assist Blade installed in your 96/4635/180 MICR IPS printer.
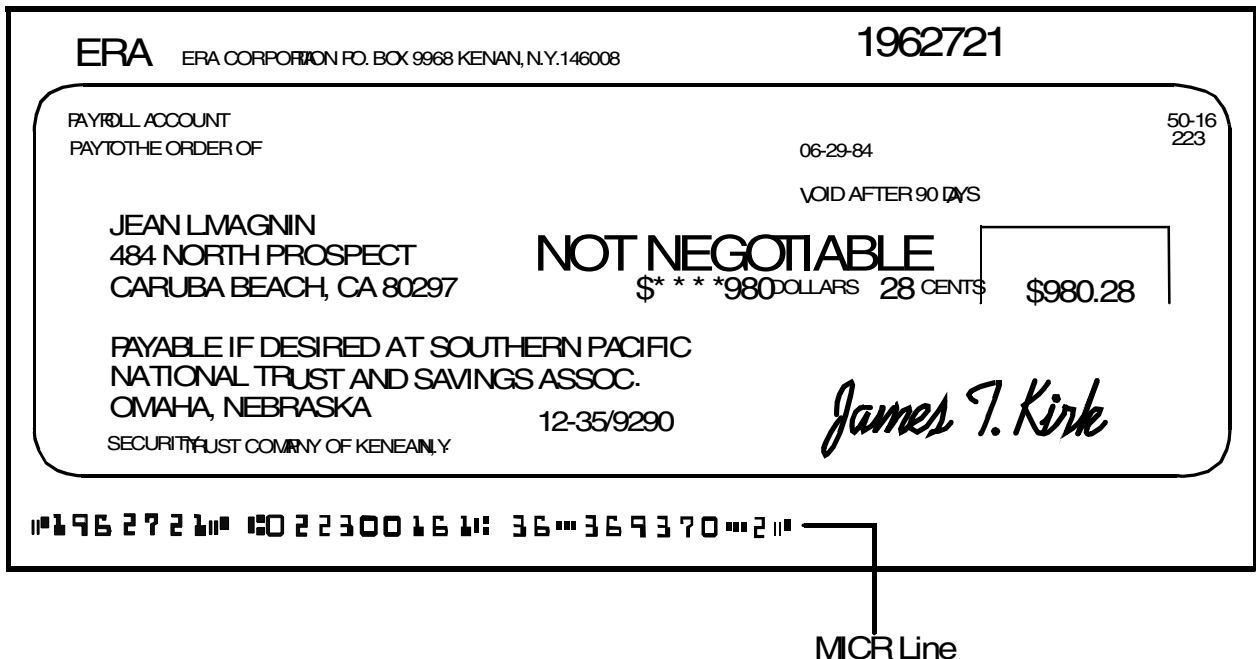
Note: The Custom Transfer Assist Blade should be used on your 96/4635/180 MICR IPS when you are using nonstandard paper sizes. This will ensure acceptable MICR line quality.

Check example   The following figure shows a check (U. S.) printed with a MICR line. The entire MICR line, which consists of numbers and symbols, is printed in magnetic ink.

Figure 5-1.   **Example of a check with MICR line (U. S.)**

MICR Line

MICR output

It is important that the MICR output be checked periodically for readability of the MICR line. The MICR Clear Band, illustrated below, should be verified at regular intervals. Refer to the *Generic MICR Fundamentals Guide* for further information.

Figure 5-2.   **Parts of the MICR Clear Band on a U. S. check**

Auxiliary On-us field   Transit number field   On-us field   Amount field

- **Transit** — There are two transit symbols in a MICR line. The numbers between the transit symbols indicate the institution on which the check is drawn and the location which the document should be sent for processing.

- **Amount** — There are two amount symbols in a MICR line. The numbers between the amount symbols indicate the amount of the check. Generally, the amount information is added to the MICR line by the bank during processing.

- **On-Us** — The field to the left of this symbol contains the account number. The content of the On-Us field is determined by the issuing institution. The branch of the bank on which the check is drawn may also be indicated in this field.

  In general, the account number, bank branch number, and check number are easily recognizable. Typically, the serial number for the check displays to the right of the On-Us symbol.

  On larger business size checks, this symbol also defines the Auxiliary On-Us field located on the left end of the check. Generally, this optional field contains a multiple digit serial number.

- **Dash** — The dash symbol can be used as a separator in the On-Us field. For example, some banks use the dash to separate the bank branch number from the account number. However, reader and sorter manufacturers discourage this use as it can cause detection problems.

Verifying MICR output with the MICR Position and Dimension Gauge

The MICR Position and Dimension Gauge, which consists of a thin sheet of flexible plastic attached to the bottom of a piece of hard thick plastic, is provided in a kit that includes a small magnifying glass.

The gauge is used by placing the printed output between the two pieces of plastic, which allows for a comparison of the MICR output elements against industry standard output. This process verifies the character spacing, horizontal and vertical alignment as well as checks for spots and voids.

Verifying MICR output with the MICR comparator

The 8 power (8X) Comparator with MICR Grid is used to compare the characters on the MICR output to industry standard output.

The comparator is an optical tool that magnifies each character eight times. It has a built-in measuring scale that measures the size of the MICR characters and checks for spots and voids (deletions). Keep the following in mind when using the 8 power (8X) Comparator with MICR Grid:

- Patterned paper can cause viewing problems. White paper should be used when performing quality evaluations.

- The quality of the MICR output may vary with the type of paper used.

- Handle the comparator with care. The grid is printed on the bottom and may be damaged or worn off in time.

The comparator can be used with transmitted light or reflected light.

Transmitted light   To use the comparator with transmitted light, place the bottom of the comparator on the document and hold the document in front of a transmitted light source. This allows the light to be transmitted through the document. This is particularly useful when checking for voids and verifying the edges of the characters.

Using the comparator with transmitted light is the most accurate method of verifying character quality, as transmitted light tends to make the line more narrow and make spots appear smaller.

Reflected light   To use the comparator with reflected light, place the bottom of the comparator on the document and hold the document in front of a reflected light source.

Using the comparator with reflected light is the most accurate method of checking for spots.

A. Paper and other supplies

This appendix provides information and specifications for the media you use with your Xerox DocuPrint 96, 4635, or 180 printer. Instructions for ordering supplies are also provided.

Consumable supplies (those that are depleted during operation of the system), such as paper, dry ink, developer, fuser agent, etc., must be ordered for your printer. It is important that an adequate supply of these items be on hand for installation, and that your supply be maintained afterwards.

Paper and other throughput stocks

The success of any print run is greatly dependent on the proper selection, care, and handling of the stock used.

Selecting paper

You need to select your paper carefully. If you do not use the proper paper, you increase the probability of paper jams and misfeeds. The stocks you use must meet the specifications set forth by Xerox for operability in the printer. For additional information about paper specifications, refer to *Helpful Facts about Paper*, delivered with your printer.

Acceptable paper stocks and sizes   Your 96, 4635 or 180 printer accepts the following standard size cut-sheet papers:

- 7 by 10 inches / 178 by 254 mm (with 7-inch kit option)
- B5: 7.17 by 10.12 inches / 182 by 257 mm (with 7-inch option)
- US Letter: 8.5 by 11 inches / 216 by 279 mm
- US Legal: 8.5 by 14 inches / 216 by 356 mm
- A4: 8.27 by 11.69 inches / 210 by 297 mm
- B4 (European): 9.84 by 13.89 inches / 250 by 353 mm
- JIS B4 (Japanese): 10.12 by 14.33 inches / 257 by 364 mm
- US Ledger/US Tabloid: 11 by 17 inches / 279 by 432 mm
- A3: 11.69 by 16.54 inches / 297 by 420 mm.

Recommended weight and grade: Use a good quality, xerographic-grade paper. For best results, use paper that is 20-pound or 80 gsm (grams per square meter) bond, xerographic grade. Xerox 4024 Dual Purpose Paper provides optimal performance in the printer. Refer to the consumable supplies table later in this appendix.

Use paper within these parameters:

- Lightest: 16-pound or 65 gsm bond
- Heaviest: 110-pound or 200-gsm index.

Note: It is recommended that you use 24-pound paper with MICR applications, or paper specified by your local banking regulatory authority.

Characteristics   The paper stock should have the following characteristics:

- Low moisture content (a paper-to-moisture ratio below 5.7 percent). Paper with higher moisture content may curl and jam.
- Smooth surface
- Moisture-resistant wrapping
- No defects (bent edges, uneven surfaces)
- Grain long (parallel with the long side of paper).

    Paper is usually fed into the printer with the long side as the leading edge (except 11 by 17-inch or A3 paper). When you purchase paper, buy long-grain paper. Make sure the grain is parallel with the long side (long-grain) for the most reliable feeding and stacking.

Special stocks   Following are some guidelines for choosing and using special materials:

- **Labels** — Must be the type designed for high-speed printers and must meet the specifications described in the section above. Loading instructions are printed on all paper trays.

    Use only the processor feeding trays (trays 1 and 2) for labels. Load labels in the tray with the label side up.

    You can direct printed labels to any output tray. Be sure the printed labels are stacked *face up* in the output tray, to avoid ink offsetting and jams due to delamination.

- **Transparencies** — Must be the type designed for high-speed printers and must meet the specifications described in the section above. Loading instructions are printed on all paper trays.

    Load transparencies with the opaque strip to the right. All printed transparencies are delivered to the sample tray.

    As long as they meet your printer's paper specifications, you can also use:

- **Tinted paper** — Available in a variety of colors, it has many uses, including calling attention to certain printed material, separating special sections, or dividing chapters of a report.

- **Preprinted paper** — May be letterhead, forms, or logos.

- **Predrilled paper** — Has a varying number of holes for use in binders or binder rings. Before loading predrilled paper, fan it to remove loose plugs that could cause paper jams. Load predrilled paper in the printer with holes to the right.

- **Perforated paper**
- **Pre-cut or full tabs**
- **Carbonless paper**.

Note: The 96/4635/180 printer can print on precollated or ordered stocks, including ordered tabs. However, jam recovery is not supported with these stocks.

Paper width and printer performance

The width of the paper you use for your print job is directly related to the rate at which the 96, 4635, and 180 printer can print a job. The rate at which a job prints is the throughput speed and is measured in pages per minute (ppm). You will want to keep in mind the following information on the relationship of paper width to printer performance, when selecting paper for your applications.

The printer operates in different pitch modes. The pitch mode the printer uses for a specific print job is based on the paper size on which that job is printed. The following tables list the pitch mode boundary values, paper widths, and related printing speeds supported on the 96/4635/180 printer. These charts show that the shorter the paper width, the higher the pitch mode and the faster the throughput speed—higher pages per minute (ppm) rate. ("Pages per minute" is synonymous with "impressions per minute.")

Table A-1.   **Throughput data: 96 printer**

Pitch	Paper width	Speed
5	7.4 to 12.12 in. / 188 to 308 mm	96 ppm
4	12.12 to 15.31 in. / 308 to 389 mm	77 ppm
3	15.31 to 17 in. / 389 to 432 mm	58 ppm

Table A-2.   **Throughput data: 4635 printer**

Pitch	Paper width	Speed
8	7 to 7.4 in. / 178 to 188 mm	154 ppm
7	7.4 to 9.01 in. / 188 to 229 mm	135 ppm
6	9.01 to 10.19 in. / 229 to 259 mm	116 ppm
5	10.19 to 12.12 in. / 259 to 308 mm	96 ppm
4	12.12 to 15.31 in. / 308 to 389 mm	77 ppm
3	15.31 to 17 in. / 389 to 432 mm	58 ppm

Table A-3.   **Throughput data: 180 printer**

Pitch	Paper width	Speed
8	7 to 7.4 in. / 178 to 188 mm	206 ppm
7	7.4 to 9.01 in. / 188 to 229 mm	180 ppm
6	9.01 to 10.19 in. / 229 to 259 mm	154 ppm
5	10.19 to 12.12 in. / 259 to 308 mm	128 ppm
4	12.12 to 15.31 in. / 308 to 389 mm	103 ppm
3	15.31 to 17 in. / 389 to 432 mm	77 ppm

When the printing speed appears to degrade, you may be able to improve it by running the print job in a higher pitch mode.

Paper size/pitch mode minimum and maximum

The illustrations in this section show the pitch modes in which you can operate with the smallest and largest size papers supported by the 96/4635/180 printer.
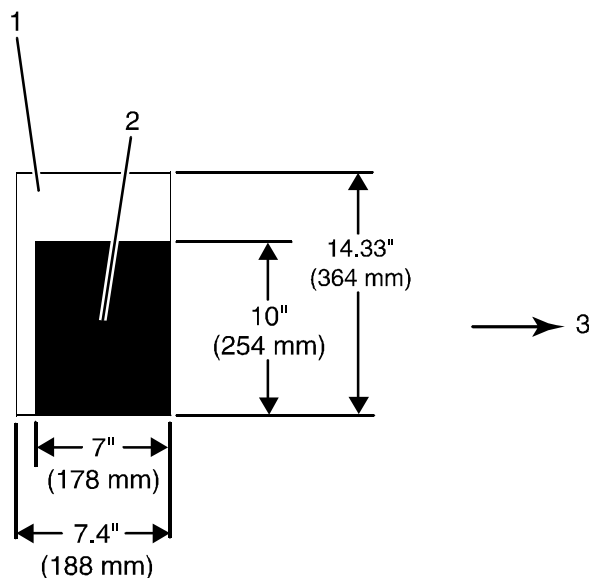
Using small paper sizes in 8-pitch mode:

Printing in 8-pitch mode provides the highest throughput speed available —up to 154 ppm for the 4635 printer and up to 206 ppm for the 180 printer. (The 96 printer does not support 8-pitch mode.) However, you should keep the following in mind when you select the paper you want to use for this mode:

- Paper sizes smaller than 8 inches / 203 mm are supported only when the optional 7-inch paper kit is installed on the printer.

- The leading edge of any paper used in the printer cannot be less than 10 inches / 254 mm long.

The following figure illustrates the maximum and minimum paper sizes supported in 8-pitch mode.

Figure A-1. **8-pitch mode paper sizes (4635 and 180 only)**

1 **Maximum paper size for 8 pitch mode**
2 **Minimum paper size for 8 pitch mode**
3 **Travel direction of sheets out of paper tray**

Using large paper sizes in 3-pitch mode:
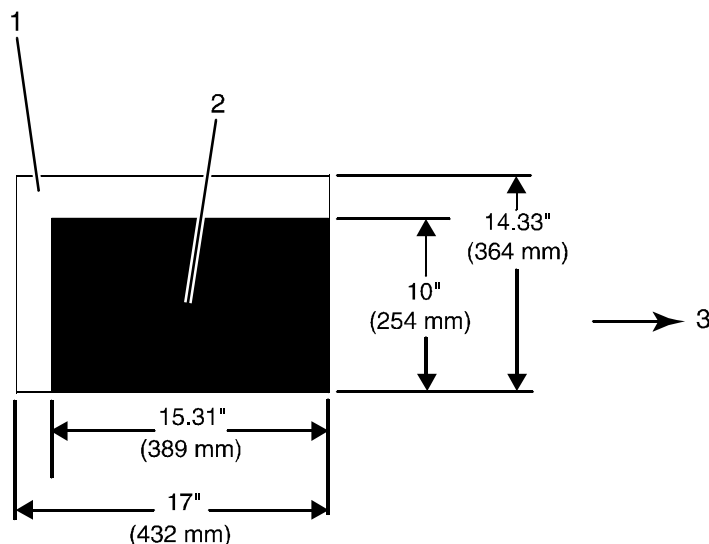
Large paper sizes—widths of 15.31 to 17 inches / 389 to 432 mm— are supported only in 3-pitch mode and must feed short edge first. These paper sizes slow down the throughput speed (as shown in tables above).

Note: The 96/4635/180 printer can support 14 by 17-inch / 356 by 432 mm, 20 pound or 80 gsm paper stock in 3-pitch mode. However, printing performance is not guaranteed for all types of paper of this size. Heavy (110-pound / 200 gsm) and light (16-pound / 60 gsm) large papers can cause jams throughout the system and are not recommended.

The following figure illustrates the maximum and minimum paper sizes supported in 3-pitch mode.

Figure A-2. **3-pitch mode paper sizes**

1   **Maximum paper size for 3 pitch mode**
2   **Minimum paper size for 3 pitch mode**
3   **Travel direction of sheets out of paper tray**

Feed direction for some standard paper sizes

Currently, 14 inches / 356 mm is the maximum paper length supported for long edge feeding (5 to 8 pitch mode). Any papers with long edges greater than this (such as 11 by 17 inch / 279 by 432 mm paper) must be loaded for short edge feeding (3 or 4 pitch mode).

The following figures illustrate how some of the supported standard paper sizes, in various pitch modes, feed through the printer.

European papers:

The following diagrams show how A4 and A3 paper sizes feed through the printer.

Figure A-3. **A4 (210 by 297 mm) paper feeding (long edge feed)**
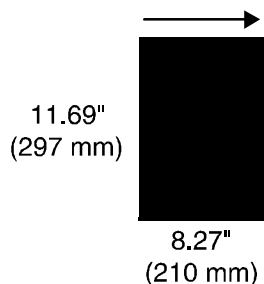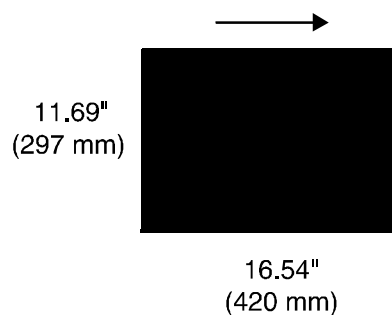
Figure A-4. **A3 (297 by 420 mm) paper feeding (short edge feed)**

11.69"
(297 mm)

16.54"
(420 mm)

US Papers

The following diagrams show how US Letter and US Ledger (or US Tabloid) paper sizes feed through the printer.

Figure A-5. **US Letter (8.5 by 11 inch) paper feeding (long edge feed)**

11"
(279 mm)

8.5"
(216 mm)
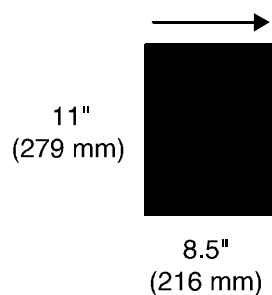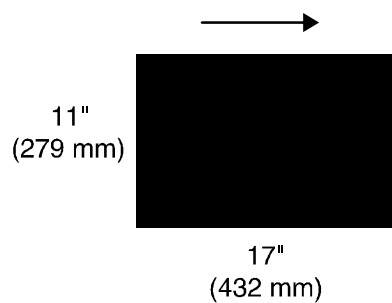
Figure A-6. **US Ledger or US Tabloid (11 by 17 inch) paper feeding (short edge feed)**

11"
(279 mm)

17"
(432 mm)

B4 Papers

There are two sizes of B4 paper—European or ISO (9.84 by 13.89 inches / 250 by 353 mm) and Japanese or JIS B4 (14.33 by 10.12 inches / 364 by 257 mm). European B4 feeds long edge first, while JIS B4 feeds *either* long edge or short edge first.

Figure A-7. **B4 (250 by 353 mm) paper feeding (long edge feed)**
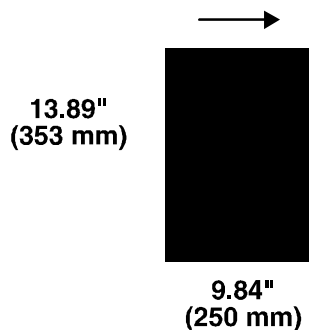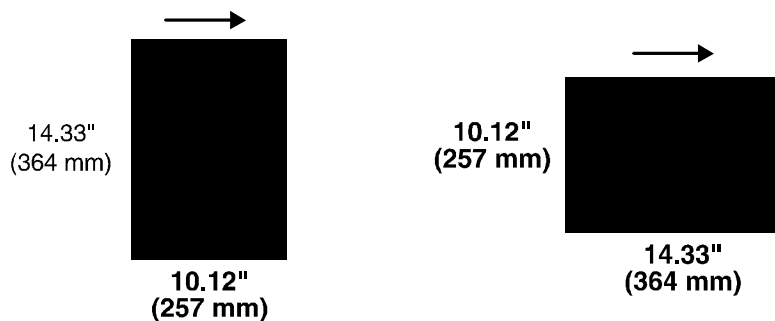
Figure A-8. **JIS B4 (257 by 364 mm) paper feeding (long edge feed and short edge feed)**

Paper care

Once you have purchased your paper, you must be sure it is stored and conditioned properly, so that it performs optimally in the printer with a minimum of jams.

Storing paper   Paper has a tendency to curl under the heat that is present inside xerographic equipment. To minimize the amount of curling, use paper with low moisture content. Paper with excessive moisture content has a tendency to jam because of the greater curl. The maximum recommended moisture content is 5.7 percent.

Keep these points in mind when preparing your paper storage area:

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

- Store paper on a flat surface and not on its side or edge.

- Store reams of paper in a closed cabinet.

- Always store paper in a cool, dry area. Store on pallets or shelves, not on the floor.

- Plan ahead and keep at least a day's supply of paper in the same area as the printer to allow environmental stabilization prior to printing.

For more detailed information on paper for Xerox printers, refer to *Helpful Facts about Paper*, provided with your printer.

Figure A-9.   **Storing paper correctly**
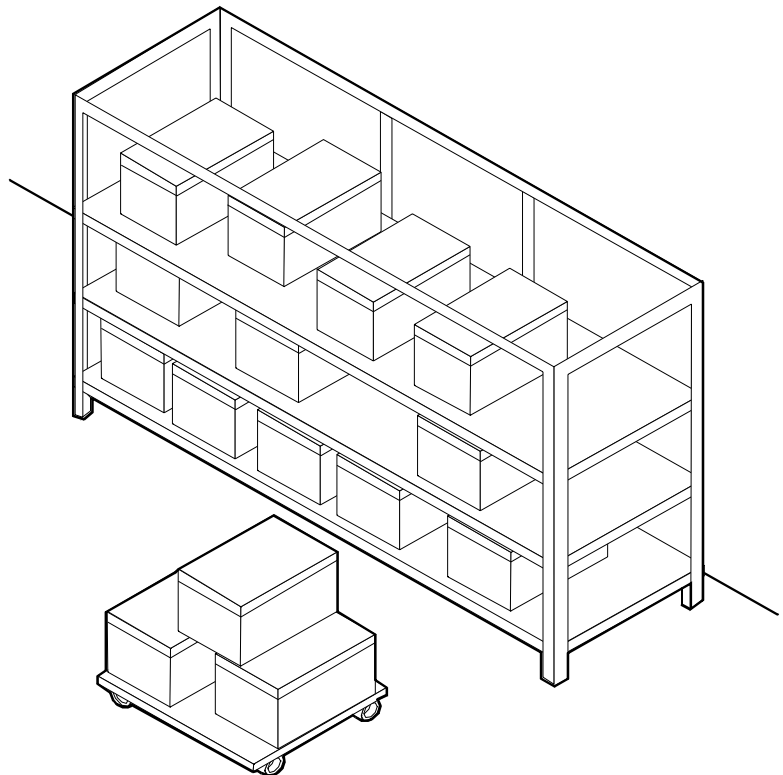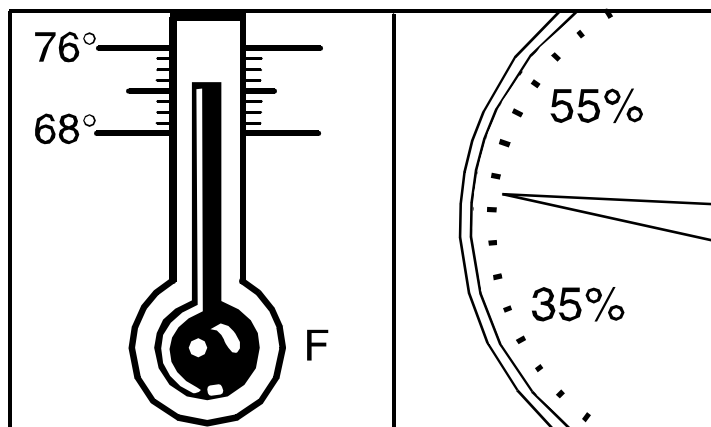
Figure A-10. **Recommended temperature and humidity for paper storage**

Conditioning paper   Because temperature and humidity affect paper performance in the printer, you need to condition paper before using it. To do this, store paper for a specified length of time in the same type of environment as your printer.

The length of time you should condition your paper depends on the amount of paper and the difference between the storage and operating temperatures.

Use the following chart to determine the length of time needed to condition stacked cartons of paper.

Note: The numbers in the top two rows indicate the temperature difference between the storage area and the operating environment, not actual room temperatures.

Table A-4.**Paper conditioning: Recommended temperature differences between storage and operating areas**

Temperature differences between storage and operating areas							
Fahrenheit							
	10°	15°	20°	25°	30°	40°	50°
Centigrade							
	5.5°	8.5°	11°	13°	17°	22°	28°
Cartons	**Hours**						
1	4	8	11	14	17	24	34
5	5	9	12	15	18	25	35
10	8	14	18	22	27	38	51
20	11	16	23	28	35	48	67
40	14	19	26	32	38	54	75

Example: (See the shaded rows in the table above.) If you want to move ten cartons of paper from a storage area with a temperature of 90 °F to an operating area with a temperature of 75 °F (a 15° difference), you should do so at least 14 hours before using the paper.

Other supplies

This section describes the supplies other than paper that are necessary for installation and afterward. Your sales representative will help you place your initial supply order.

Dry ink

Dry ink (also called toner) is the black powder which forms the image on the printed page. There are three cartridges of dry ink in each carton. You should keep at least one extra cartridge on hand at all times. The disposable cartridges are easily changed with no mess. The consumption rate of Xerox dry ink is approximately one cartridge per 60,000 pages. Use only dry ink that is specified for use in the 96, 4635, or 180 printer, as described in the consumable supplies table.

MICR dry ink   MICR dry ink is the magnetic black powder which forms the image on the printed MICR document. There are three cartridges of MICR dry ink in each carton. The consumption rate of Xerox MICR dry ink is approximately one cartridge per 60,000 pages. Use only MICR dry ink in your 96/4635/180 MICR printer.

The dry ink used with the 96/4635/180 MICR system is designed for MICR printing and does not function well when used in non-MICR systems. The same procedure used for non-MICR printing systems is used to add the dry ink to the 96/4635/180 MICR printer.

Note: Dry ink (toner) yields are based on 7% area coverage. Your yield may vary, depending on coverage.

Caution: Use only MICR dry ink in the 96/4635/180 MICR printer. Do not use standard dry ink. MICR dry ink cannot be reused.

Fuser agent

Fuser agent (the lubricant for the printer fuser) is a consumable item required by the 96/4635/180 printers. You should keep at least two boxes (each box contains one bottle) on hand for installation by the service representative. The consumption rate of Xerox fuser agent is approximately one bottle per 250,000 pages. For product information, refer to the consumable supplies table in this appendix.

Developer

Developer is not consumed by the printer but does have an effective life of approximately 1,000,000 pages per carton (600,000 per carton for MICR developer). Both kinds of developer are guaranteed by Xerox for 600,000 pages per carton. Developer is a required item and must be kept on hand.

Use only the developer specified for use in your 96, 4635,or 180 printer.

Caution: The 96/4635/180 MICR printers require a different developer, with a different part number, from the developer used in the standard 96/4635/180 printer. Be sure you use only designated MICR developer in the 96/4635/180 MICR printers.

The developer is changed by your service representative. For product information, refer to the consumable supplies table in this appendix.

Diskettes

Diskettes are optional items that provide loading and backup of fonts, forms, and user files to and from the printing system. The processor accepts 3.5-inch, 1.44 MB, double-sided, high density diskettes.

Cartridge tapes

The optional 4 mm cartridge tape drive uses 5 GB or 8 GB tapes. The optional quarter-inch cartridge (QIC) tape drive uses 150 MB QIC tapes.

MICR tools

You can use the following tools to determine whether the MICR output is printing within MICR specifications:

- MICR Positioning and Dimension Gauge.

- 8 Power (X) Comparator with MICR grid.

Note: You should use the Custom Transfer Assist Blade to ensure acceptable MICR line quality on all MICR printing systems that use nonstandard paper sizes.

MICR Positioning and Dimension Gauge

The MICR Positioning and Dimension Gauge (part number 600T80025) consists of a thin sheet of flexible plastic attached to the bottom of a piece of hard thick plastic. The gauge is provided in a kit that includes a small magnifying glass.

To use the gauge, place the printed output between the two pieces of plastic. This allows you to compare the MICR output elements against industry standard output. Using this process, you can verify the character spacing, check the horizontal and vertical alignment, and look for spots and voids.

MICR comparator

You use the eight power (X) comparator with MICR grid to compare the characters on the MICR output to industry standard output.

The comparator is an optical tool that magnifies each character eight times. It has a built-in scale that measures the size of the MICR characters and checks for spots and voids (deletions).

Keep the following in mind when using the 8 Power (X) Comparator with MICR grid:

- Patterned paper can cause viewing problems. You should use white paper when you perform quality evaluations.

- The quality of the MICR output may vary, depending on the type of paper you use.

- Handle the comparator with care. The grid is printed on the bottom and may be damaged or worn off in time.

You can use the comparator with transmitted or reflected light.

Consumable supplies tables

A number of supplies are available from Xerox for your DocuPrint printer. Use the following tables to help determine your supply needs.

Note: Customers in the U. S. may use the part numbers in these tables to order supplies. Customers outside the U. S. should contact their local service organization for part numbers.

Paper and special stocks tables

The following tables list all throughput stocks available for the 96/4635/180 printers, with size, order number, and a brief description for each.

Table A-5.**Stocks list for 96/4635/180 printers**

Item	Description	Part number
Paper	Xerox paper quantities are 10 reams (5,000 sheets) to a carton unless otherwise noted below.	
8.5 x 11 inch	4024 Dual Purpose Paper	3R721
A4	4024 Dual Purpose Paper	3R2594
8.5 x 14 inch	4024 Dual Purpose Paper	3R727
8.5 x 11 inch	4024 Dual Purpose Paper, 3-hole	3R723
8.5 x 11 inch	4024 Dual Purpose Paper, 3-hole*	3R2193
8.5 x 11 inch	4024 Dual Purpose Paper, 4-hole	3R1983
8.5 x 11 inch	4024 Dual Purpose Paper, 4-hole*	3R3008
8.5 x 11 inch	4024 Dual Purpose Paper, 7-hole	3R1984
8.5 x 11 inch	4024 Dual Purpose Paper, 7-hole*	3R3010
8.5 x 11 inch	4024 Smooth	3R2675
8.5 x 14 inch	4024 Smooth	3R2677
8.5 x 11 inch	4200 Dual Purpose Paper	3R2047
8.5 x 14 inch	4200 Dual Purpose Paper	3R2051
8.5 x 11 inch	4200 Dual Purpose Paper, 3-hole	3R2641
8.5 x 11 inch	4200 Dual Purpose Paper, 4-hole	3R3012
8.5 x 11 inch	4200 Dual Purpose Paper, 7-hole	3R3014
8.5 x 11 inch	Dual Purpose Colors—Blue	3R3052
8.5 x 11 inch	Dual Purpose Colors—Blue, 3-hole	3R3068
8.5 x 14 inch	Dual Purpose Colors—Blue, 3-hole	3R3084
*5/16-inch drilled holes ** Rainbow pack contains 750 sheets each of blue and yellow, 500 sheets each of green and pink, and 250 sheets each of buff, gray, goldenrod, and ivory.		

Table A-5.**Stocks list for 96/4635/180 printers** (continued)

Item	Description	Part number
8.5 x 11 inch	Dual Purpose Colors—Green	3R3056
8.5 x 11 inch	Dual Purpose Colors—Green, 3-hole	3R3072
8.5 x 14 inch	Dual Purpose Colors—Green	3R3088
8.5 x 11 inch	Dual Purpose Colors—Pink	3R3058
8.5 x 11 inch	Dual Purpose Colors—Pink, 3-hole	3R3074
8.5 x 14 inch	Dual Purpose Colors—Pink	3R3090
8.5 x 11 inch	Dual Purpose Colors—Yellow	3R3054
8.5 x 11 inch	Dual Purpose Colors—Yellow, 3-hole	3R3070
8.5 x 14 inch	Dual Purpose Colors—Yellow	3R3086
8.5 x 11 inch	Dual Purpose Colors—Buff	3R3060
8.5 x 11 inch	Dual Purpose Colors—Buff, 3-hole	3R3076
8.5 x 14 inch	Dual Purpose Colors—Buff	3R3092
8.5 x 11 inch	Dual Purpose Colors—Goldenrod	3R3062
8.5 x 11 inch	Dual Purpose Colors—Goldenrod, 3-hole	3R3078
8.5 x 14 inch	Dual Purpose Colors—Goldenrod	3R3094
8.5 x 11 inch	Dual Purpose Colors—Ivory	3R3064
8.5 x 11 inch	Dual Purpose Colors—Ivory, 3-hole	3R3080
8.5 x 14 inch	Dual Purpose Colors—Ivory	3R3096
8.5 x 11 inch	Dual Purpose Colors—Gray	3R3066
8.5 x 11 inch	Dual Purpose Colors—Gray, 3-hole	3R3802
8.5 x 14 inch	Dual Purpose Colors—Gray	3R3098
8.5 x 11 inch**	Dual Purpose Colors, Rainbow Pack—35,000 sheets per carton**	3R3107
8.5 x 11 inch	10 Series Dual Purpose Paper	3R2950
8.5 x 11 inch	10 Series Dual Purpose Paper, 3-hole	3R2952
8.5 x 11 inch	10 Series Dual Purpose Paper, 3-hole*	3R3016
8.5 x 14 inch	10 Series Dual Purpose Paper	3R2954
8.5 x 11 inch	10 Series Smooth	3R54
8.5 x 14 inch	10 Series Smooth	3R83
8.5 x 11 inch	4024 Dual Purpose, reinforced 3-hole*	3R2057
A3	4024 Dual Purpose paper	3R91721
A3	4024 Dual Purpose paper	3R2594

*5/16-inch drilled holes
** Rainbow pack contains 750 sheets each of blue and yellow, 500 sheets each of green and pink, and 250 sheets each of buff, gray, goldenrod, and ivory.

Table A-5.**Stocks list for 96/4635/180 printers** (continued)

Item	Description	Part number
8.5 x 11 inch	Dual Purpose Colors—Green	3R3056
8.5 x 11 inch	Dual Purpose Colors—Green, 3-hole	3R3072
8.5 x 14 inch	Dual Purpose Colors—Green	3R3088
8.5 x 11 inch	Dual Purpose Colors—Pink	3R3058
8.5 x 11 inch	Dual Purpose Colors—Pink, 3-hole	3R3074
8.5 x 14 inch	Dual Purpose Colors—Pink	3R3090
8.5 x 11 inch	Dual Purpose Colors—Yellow	3R3054
8.5 x 11 inch	Dual Purpose Colors—Yellow, 3-hole	3R3070
8.5 x 14 inch	Dual Purpose Colors—Yellow	3R3086
8.5 x 11 inch	Dual Purpose Colors—Buff	3R3060
8.5 x 11 inch	Dual Purpose Colors—Buff, 3-hole	3R3076
8.5 x 14 inch	Dual Purpose Colors—Buff	3R3092
8.5 x 11 inch	Dual Purpose Colors—Goldenrod	3R3062
8.5 x 11 inch	Dual Purpose Colors—Goldenrod, 3-hole	3R3078
8.5 x 14 inch	Dual Purpose Colors—Goldenrod	3R3094
8.5 x 11 inch	Dual Purpose Colors—Ivory	3R3064
8.5 x 11 inch	Dual Purpose Colors—Ivory, 3-hole	3R3080
8.5 x 14 inch	Dual Purpose Colors—Ivory	3R3096
8.5 x 11 inch	Dual Purpose Colors—Gray	3R3066
8.5 x 11 inch	Dual Purpose Colors—Gray, 3-hole	3R3802
8.5 x 14 inch	Dual Purpose Colors—Gray	3R3098
8.5 x 11 inch**	Dual Purpose Colors, Rainbow Pack—35,000 sheets per carton**	3R3107
8.5 x 11 inch	10 Series Dual Purpose Paper	3R2950
8.5 x 11 inch	10 Series Dual Purpose Paper, 3-hole	3R2952
8.5 x 11 inch	10 Series Dual Purpose Paper, 3-hole*	3R3016
8.5 x 14 inch	10 Series Dual Purpose Paper	3R2954
8.5 x 11 inch	10 Series Smooth	3R54
8.5 x 14 inch	10 Series Smooth	3R83
8.5 x 11 inch	4024 Dual Purpose, reinforced 3-hole*	3R2057
A3	4024 Dual Purpose paper	3R91721
A3	4024 Dual Purpose paper	3R2594
*5/16-inch drilled holes ** Rainbow pack contains 750 sheets each of blue and yellow, 500 sheets each of green and pink, and 250 sheets each of buff, gray, goldenrod, and ivory.		

Table A-5.**Stocks list for 96/4635/180 printers** (continued)

Item	Description	Part number
9.5 x 11 inch	65-pound divider white 2,500 sheets per carton	3R3428
11 x 17 inch	4024 Dual Purpose Paper 2500 sheets per cartons	3R729
11 x 17 inch	4024 Dual Purpose Paper, 7-hole* 2500 sheets per cartons	3R3074
*5/16-inch drilled holes ** Rainbow pack contains 750 sheets each of blue and yellow, 500 sheets each of green and pink, and 250 sheets each of buff, gray, goldenrod, and ivory.		

Table A-5. **Stocks list for 96/4635/180 printers** (continued)

Item	Description	Part number
Transparencies	Xerox transparencies are packaged 100 sheets to a box.	
8.5 x 11 inch	Clear, with a white strip on the edge	3R2780
8.5 x 11 inch	Clear, with removable strip	3R3108
8.5 x 11 inch	Clear, high speed, with paper backing	3R3028
Labels (Gummed)	Xerox labels are packaged 100 sheets to a box.	
8.5 x 11 inch	33 labels per sheet	3R3139
8.5 x 11 inch	6 labels per sheet	3R3146
8.5 x 11 inch	Custom form (uncut)	Contact Xerox Supplies Order Service
8.5 x 11 inch	1-up label	3R4476
8.5 x 11 inch	1-up label	3R4475
8.5 x 11 inch	1-up label	3R4474
Tab stock	Xerox tab stock is packaged in 5-tab sets. 250 sheets per carton.	
	Straight collated singles (forward, top down):	
	— Non-drilled 90-pound, Index white — Non-drilled 90-pound, blue — Three-hole 90-pound, Index white — Three-hole 90-pound, blue	3R4417 3R4425 3R4418 3R4426
	Reverse collated singles (bottom up):	
	— Non-drilled 90-pound, Index white — Three-hole 90-pound, Index white	3R4415 3R4416
Cover stock	Xerox cover stock is packaged 2,500 sheets per carton.	
8.5" x 11"	65-pound, blue	3R3044
8.5" x 11"	65-pound, white	3R3041
*5/16-inch drilled holes ** Rainbow pack contains 750 sheets each of blue and yellow, 500 sheets each of green and pink, and 250 sheets each of buff, gray, goldenrod, and ivory.		

Table A-6.**Carbonless stocks for 96/4635/180 printers**

Size	Parts	Sequence	Sheets	Sheets per carton	Sets per carton	Cartons per pallet	Part number
8.5 in. x 11 in. *	2	Reverse/ Straight	Alternating CB-White CF-Canary	5000	2500	40	3R4225
	2	Straight/ Double	Alternating CB-White CB-White CF-Canary CF-Canary	5000	2500	40	3R4226
	2	Reverse/ Straight	Alternating CB-White CF-Pink	5000	2500	40	3R4227
	3	Straight	Alternating CB-White CFB-Canary	5010	1670	40	3R4230
	3	Straight/ Double	Alternating CB-White CB-White CFB-Canary CFB-Canary CF-Pink CF-Pink	5010	1670	40	3R4231
	4	Straight	Alternating CB-White CFB-Canary CFB-Pink CF-Goldenrod	5000	1250	40	3R4235
	N/A	N/A	CB-White	5000	N/A	40	3R4236
	N/A	N/A	CFB-White	5000	N/A	40	3R4238
	N/A	N/A	CFB-Canary	5000	N/A	40	3R4239
	N/A	N/A	CFB-Pink	5000	N/A	40	3R4240
	N/A	N/A	CF-White	5000	N/A	40	3R4242
	N/A	N/A	CF-Canary	5000	N/A	40	3R4243
	N/A	N/A	CF-Pink	5000	N/A	40	3R4244
	N/A	N/A	CF-Goldenrod	5000	N/A	40	3R4245

* All papers are packaged 500 sheets per ream, with 10 reams per carton. Each ream contains only complete carbonless sets (i.e., 501 sheets in a three-part ream for 167 sets).

Table A-6. **Carbonless stocks for 96/4635/180 printers**

Size	Parts	Sequence	Sheets	Sheets per carton	Sets per carton	Cartons per pallet	Part number
8.5 in. x 14 in.*	2	Reverse/ Straight	Alternating CB-White CF-Canary	5000	2500	30	3R4228
	3	Straight	Alternating CB-White CFB-Canary CF-Pink	5010	1670	30	3R4233
	N/A	N/A	CB-White	5000	N/A	30	3R4237
	N/A	N/A	CFB-Canary	5000	N/A	30	3R4241
	N/A	N/A	CF-Canary	5000	N/A	30	3R4246
	N/A	N/A	CF-Pink	5000	N/A	30	3R4247

* All papers are packaged 500 sheets per ream, with 10 reams per carton. Each ream contains

only complete carbonless sets (i.e., 501 sheets in a three-part ream for 167 sets).

Complete supplies list—96/4635/180 printers

The following table lists the supplies in addition to paper that are available for your printer. Use this table to help you determine your supplies needs.

Table A-7. **Complete supplies list for 96/4635/180**

Item	Description	Part number	Items/ carton	Expected yield / carton
Dry ink	Consumption rate is approximately one cartridge per 60,000 pages.	6R206	3/carton	180,000 pages/carton **Note:** Dry ink (toner) yields are based on 7% area coverage. Your yield may vary, depending on coverage.
Dry ink, **MICR**	Packaged 3 cartridges per carton. Consumption rate is approximately one cartridge per 60,000 pages.	6R819	3/carton	180,000 pages/carton
Dry ink waste bottle		93K460		
Developer	Packaged 2 bottles per carton. Effective life is approximately one carton per 1,000,000 pages. (2 bottles required for replacement.)	5R161	2/carton	1,000,000 pages/ carton
Developer, MICR	Packaged 2 bottles per carton. Effective life is approximately one carton per 600,000 pages. (2 bottles required for replacement.)	5R573	2/carton	600,000 pages/carton
Fuser agent	Packaged 1 bottle per carton. Consumption rate is approximately one bottle per 250,000 pages.	8R2955	1/carton	250,000 pages/bottle
Cleaning supplies	Foam-tipped swabs	99P87256		
	Lint-free towels	35P2163		
	Magnetic head cleaning kit. Packaged 2 diskettes per box.	8R3811		
	1/4-inch cartridge head cleaning kit	9R88432		
	Hub and Transport Cleaner	99P87486		
	4 mm cartridge drive head cleaning kit	9R01189		
Diskettes	3.5-inch, 1.44 MB, double-sided, high density diskettes. Packaged 10 diskettes per box.	8R7683	10/box	
Cartridge tapes	1/4-inch (26-track) blank cartridge tape (QIC), 150MB	9R84168		
	4mm blank cartridge tape, 5GB	9R01190		
	4mm blank cartridge tape, 8GB	109R00314		

Ordering supplies

To avoid unnecessary downtime, always have an adequate amount of the necessary supplies. To do this, you need to establish a procedure for checking and ordering supplies. A supplies checklist is provided at the end of this chapter to help you with this task. It lists the supplies needed for the printer and contains a column for you to enter the date when you want to place the order and a column to record the date of the actual order. The consumable supplies table, above, contains a list of Xerox supplies available for the printer.

It is important that you check your supplies regularly and order before you run out. Plan on approximately five working days for delivery after placing the order. You can make arrangements to receive them sooner in emergency situations.

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

Once your printer 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, MICR dry ink, developer, MICR developer, fuser agent, cartridge tapes, and diskettes, call the Xerox Supply Center at 1-800-822-2200, weekdays between 7:30 a.m. and 6:00 p.m., Pacific time.

  If you prefer, you may mail orders to the following address:

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

- To order cleaning supplies, call the Xerox Customer Parts and Product Support Center at 1-800-828-5881, weekdays between 5:30 a.m. and 5:00 p.m., Pacific time, (U.S. only).

  You may also mail cleaning supply orders to the following address:

  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 sales representative)

- Your printer model

- Your supply order, including the following information:

  — 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.

The following table is a checklist you can use to keep track of the supplies you order.

Table A-8.**Supplies checklist for 96/4635/180 printer**

Checklist: Supplies
Use this checklist to help record the supplies you require, the date on which the order should be placed, and the actual date of the order.

Item	Description and part number	Quantity	Date to order	Date ordered
Paper				
Transparencies				
Labels				
Dry ink				
MICR dry ink				
Developer				
MICR developer				

Table A-8. **Supplies checklist for 96/4635/180 printer** (continued)

Checklist: Supplies
Use this checklist to help record the supplies you require, the date on which the order should be placed, and the actual date of the order.

Item	Description and part number	Quantity	Date to order	Date ordered
Fuser agent				
Floppy disks				
Cleaning supplies				

B.   Paper performance guidelines

The following guides summarize the capabilities of the paper trays, duplex printing considerations, and paper stock considerations.

Table B-1.   **Trays 1 and 2 performance guide**

Paper	Superior performance	Good performance	Performance limits and suggested alternatives
Size range[1]	8 by 10 to 9 by 14 inches/203 by 254 to 229 by 356 mm. Includes: • 8.5 by 11 inches • A4 (210 by 297 mm)		Paper smaller than 8 by 10 inches/203 by 254 mm cannot be used. For paper larger than 9 by 14 inches/229 by 356 mm, refer to the Performance Guide for trays 3, 4, 5 and 6.
Weight range	20 to 110 pounds/80 to 200 gsm	16 to 20 pounds/60 to 80 gsm[2]	Weights outside the limits shown are not recommended. Refer to the Paper Stocks Guide later in this chapter for additional information.
Capacity	Tray 1: 1100 sheets, 20 pound/80 gsm paper Tray 2: 600 sheets, 20 pound/ 80 gsm paper		For greater capacity, use trays 3, 4, 5 and 6 and the Autoswitch feature.
Type or condition	• Xerographic paper in good condition • Predrilled stock (fanned thoroughly) • Tab stock (in perfectly flat condition)	• Transparencies • High-speed label stock • Slightly curled paper[3] • Intermixed weights • Paper with reinforced binding edges	• Excessively curled paper[4] • Manual two-sided (duplex) prints • Freshly printed offset prints

1. Optional 7 X 10 enablement kit allows 7 by 10 inches/178 by 254 mm paper size.
2. Make sure that heavy weight paper levers (located in areas 2 and 4 of the printer) are in the appropriate position for the weight of paper being used.
3. Curl direction should be determined before loading paper into trays. For additional information, refer to the "Clearing paper misfeeds and jams" chapter in your *Xerox DocuPrint 96/4635/180 Troubleshooting Guide*.
4. Curl direction should be determined before loading paper into trays. For additional information, refer to the "Clearing paper misfeeds and jams" chapter in your *Xerox DocuPrint 96/4635/180 Troubleshooting Guide*.

Table B-2. **Trays 3, 4, 5 and 6 (or high capacity trays) performance guide**

Paper	Superior performance	Good performance	Performance limits and suggested alternatives
Size range[1]	8 by 10 to 11.69 by 17 inches/ 203 by 254 to 297 by 432 mm. Includes: • 11 by 14 inches • 11 by 17 inches • B4 (250 by 353 mm) • A3 (297 by 420 mm)		Smaller or larger sizes cannot be used.
Weight range	20 to 110 pounds/80 to 200 gsm	16 to 20 pounds/60 to 80 gsm[2]	Weights outside the limits shown are not recommended.
Capacity	Tray 3: 2600 sheets, 20 pound/ 80 gsm paper Tray 4: 2600 sheets, 20 pound/ 80 gsm paper		For greater capacity, use the Autoswitch feature.
Type or condition	• Xerographic paper in good condition • Predrilled stock (fanned thoroughly)	• Slightly curled paper[3] • Manual two-sided (duplex) prints • High speed label stock	• Excessively curled paper[4] • Curl direction should be determined before loading paper into tray.[5] • DO NOT use mylar reinforced paper in trays 3, 4, 5 or 6. Hardware damage may result. Use trays 1 or 2.

1. Optional 7 X 10 enablement kit allows 7 by 10 inches/178 by 254 mm paper size.
2. Make sure that heavy weight paper levers (located in areas 2 and 4 of the printer) are in the appropriate position for the weight of paper being used.
3. Curl direction should be determined before loading paper into trays. For additional information, refer to the "Clearing paper misfeeds and jams" chapter in your *Xerox DocuPrint 96/4635/180 Troubleshooting Guide*.
4. Curl direction should be determined before loading paper into trays. For additional information, refer to the "Clearing paper misfeeds and jams" chapter in your *Xerox DocuPrint 96/4635/180 Troubleshooting Guide*.
5. Curl direction should be determined before loading paper into trays. For additional information, refer to the "Clearing paper misfeeds and jams" chapter in your *Xerox DocuPrint 96/4635/180 Troubleshooting Guide*.

Table B-3. **Two-sided (duplex) printing performance guide**

Paper	Superior performance	Good performance	Performance limits and suggested alternatives
Size range[1]	8 by 10 to 11.69 by 17 inches/ 203 by 254 to 297 by 432 mm.		Smaller or larger sizes cannot be used.
Weight range	20 to 110 pounds/80 to 200 gsm[2]		Weights outside the limits shown are not recommended. If show through occurs, adjust print quality or use heavier weight paper.
Type or condition	• Xerographic paper in good condition • Predrilled stock (fanned thoroughly)	• Slightly curled paper[3] • Paper with reinforced binding edges • Tabs Refer to the Paper Stocks Guide for additional information.	• Excessively curled paper[4] • Avoid Transparencies Stock not defined here is included in the Paper Stocks Guide, which follows.

1. Optional 7 X 10 enablement kit allows 7 by 10 inches/178 by 254 mm paper size.
2. Make sure that heavy weight paper levers (located in areas 2 and 4 of the printer) are in the appropriate position for the weight of paper being used.
3. Curl direction should be determined before loading paper into trays. For additional information, refer to the "Clearing paper misfeeds and jams" chapter in your *Xerox DocuPrint 96/4635/180 Troubleshooting Guide*.
4. Curl direction should be determined before loading paper into trays. For additional information, refer to the "Clearing paper misfeeds and jams" chapter in your *Xerox DocuPrint 96/4635/180 Troubleshooting Guide*.

Table B-4.   **Paper stocks guide**

Stock type	Instructions for use
16 pound/60 gsm paper	• Load paper with ream wrapper seam side down. If there is no arrow on the ream wrapper, load paper in trays 3, 4, 5 and 6 only, with curl up. • Duplexing 16 lb. paper is not recommended. • Best performance can be expected from trays 3, 4, 5 and 6.
20 pound/80 gsm paper	Load paper with ream wrapper seam down. If there is no arrow on the ream wrapper, load paper in trays 3 and 4 only, with curl up.
65 pound card stock 110 pound/200 gsm paper (index)	Run from any tray.
20 pound or 80 gsm dual-purpose 3-hole drilled 4-hole drilled 7-hole drilled	• Load with holes to the RIGHT. • Use the Shift task to avoid printing near the holes. • Fan paper thoroughly and check for loose paper plugs prior to loading
Non-tearing 3-hole	• Load in trays 1 and 2 only. • Load with holes to the RIGHT. • DO NOT run two-sided (duplex) prints.
Non-tearing	• Load in trays 1 and 2 only. • DO NOT run two-sided (duplex) prints.
Xerox carbonless paper	• Load paper in trays 3, 4, 5 and 6 only. • Only Xerox carbonless paper is recommended for High speed Xerographic equipment.
3-hole drilled, edge reinforced dual-purpose	• Use trays 1 and 2. • Load paper with holes to the right, reinforced side DOWN. • In two-sided (duplex) printing, degraded print quality may occur near the reinforcement. • Leave stock in wrapper until use to achieve maximum stock flatness. • Run with no more than 200 sheets in a tray.[1]
Transparencies— Oversized (8.5 by 14 inches, 0.5 inch white stripe/216 by 356 mm, 1 mm white strip)	• Load with the white stripe to the RIGHT in trays 1 and 2 ("shiny" side UP for best performance). • Simplex only.
Preprinted stock	Certain types of ink or insufficient drying time may cause the ink to adhere to various machine components and printed sheets. Allow at least 3 hours of drying time before using preprinted stock. CAUTION: Certain preprinted stocks lie unevenly in the feeder trays. If the right side of the stack is higher than the left in trays 3, 4, 5 and 6 SEVERE hardware damage can occur. Load the stock in trays 1 or 2 or load fewer sheets.
Transparencies— Paper-backed, high-speed, removable stripe	• High-speed paper-backed transparencies may be run from trays 1 and 2 with paper side DOWN. • Run no more than 50 removable stripe transparencies at one time. • Load the transparencies on top of approximately 50 sheets of paper.

Table B-4.   **Paper stocks guide** (continued)

Stock type	Instructions for use
Tab stock	• Load into trays 1 and 2 with tabs to the LEFT. • For best performance, print should be centered on the tab and should not extend to either edge. • Use tab stock in perfectly flat condition. DO NOT use deformed, bent, or damaged tabs.
9-inch cover stock 110 pound/200 gsm	Load into any tray.
High-speed label stock	• Load FACE UP. • DO NOT run two-sided (duplex) prints.
Letterhead	• Load into trays with side 1 UP and top edge toward the front of the tray (avoid placing the print in line with the feed belt in trays 1 and 2). • Avoid using freshly preprinted paper.
Manual two-sided (duplex) prints	• Load into trays with printed side DOWN and top edge toward the front of the tray (avoid placing the print in line with the feed belt in trays 1 and 2). • Print the second side as soon as possible after the first side to prevent wrinkling and excessive curl.
Textured paper	Heavily textured paper may yield prints with ragged character appearance and/or deletions. To test, print a sample sheet.

1.   You can order a mylar reinforcement tray which allows a feeder tray to handle up to 500 sheets of this type of stock. Contact your service representative for additional information.

Table B-5.   **Stacker bin performance guide**

Paper	Superior performance	Good performance	Performance limits and suggested alternatives
Size range[1]	8 by 10 to 11.69 by 17 inches/203 by 254 to 297 by 432 mm		Smaller or larger sizes cannot be used.
Weight range	20 to 110 pounds/80 to 200 gsm	Lighter than 20 pounds/80 gsm and no lighter than 16 pounds/60 gsm	Weights outside the limits shown here are not recommended.
Capacity			• Capacity automatically limited so stack weight will not exceed 30 lbs/13.g kg • Selectable with bin capacity programming (Refer to the "Bin full criteria and setting bin limits" section of the "Status and print tasks" chapter for instructions.
Stack quality	• Xerographic paper in good condition • 20 pound/80 gsm and heavier stock • Very low to no output curl	• Lighter weight stocks with low output curl • Intermixed stocks	• Adjust process decurler • Flip paper in paper feeders • Limit stack capacity to acceptable limits.
Type or condition	• Xerographic paper in good condition • Predrilled stock • No cut-outs, perforated or intermixed weights	• Labels, preprinted forms, perforated stocks • Intermixed weights	• High output curl stocks can cause severe stack quality problems • Tab stock intermixed with smaller stocks results in degraded stack quality • Reinforced mylar should be limited to small stacks of 200 sheets or less or sent to the sample tray

1.   Optional 7 X 10 enablement kit allows 7 by 10 inches/178 by 254 mm paper size.

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C:/IPS & LPS Graphics/NPSUG29A.TIF @ 300 dpi 4-5
C:/IPS & LPS Graphics/npsug29b.tif @ 300 dpi 4-5
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C:/IPS & LPS Graphics/Dpc0240a.cgm 4-9
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C:/IPS & LPS Graphics/qtc0325.cgm 4-13
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C:/IPS & LPS Graphics/Dpc0445a.cgm 5-2
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