

InfoColor 70



# Operator's Guide



InfoColor 70



# Operator's Guide

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## Machine Chemicals

The InfoColor 70 coolant is propylene glycol. If the coolant spills or leaks stop operations. Soak up the coolant with an absorbant material (such as absorbant towel, sand, etc.) and call your service representative. Dispose of the absorbant material and coolant according to all federal, state, and local regulations. For a copy of the Material Safety Data Sheet (MSDS) call 1-800-IBM-4333 (U.S. only).



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## Preface

This book explains how to operate the IBM InfoColor 70 Printer and InfoColor 70 Printer and Collator, hereafter referred to as the InfoColor 70.<sup>1</sup> The InfoColor 70 requires a full-time operator who should have:

- Reading and comprehension skills of a high-school graduate
- Personal-computer and Windows-software experience
- Offset-press operator-task experience
- Experience with various PostScript output devices.

---

## About This Book

This book is a reference for the experienced pre-press operator, who will perform many tasks to operate and maintain the InfoColor 70.

The book contains six parts. Each part represents a type of operator responsibility. Within each part are chapters, which explain specific operator tasks.

**Part 1:** The operator's responsibility is to prepare for using the InfoColor 70. The specific tasks are:

- Chapter 1, "Understanding How the InfoColor 70 Works" on page 3.
- Chapter 2, "Learning About the InfoColor 70 Operator Interfaces" on page 19.
- Chapter 3, "Getting Started with the InfoColor 70" on page 81.

**Part 2:** The operator's responsibility is to get the InfoColor 70 ready to use and to set up print jobs. The specific tasks are:

- Chapter 4, "Preparing Jobs for InfoColor 70 Output" on page 95.
- Chapter 5, "Using Variable Data" on page 113.
- Chapter 6, "File Transfers to the InfoColor 70" on page 135.

**Part 3:** The operator's responsibility is to output print jobs. The specific tasks are:

- Chapter 7, "RIPing Jobs" on page 153.
- Chapter 8, "Printing on the Model 02C" on page 173.
- Chapter 9, "Printing on the Model 002" on page 185.
- Chapter 10, "Managing the Printing Process" on page 213.

**Part 4:** The operator's responsibility is to monitor print quality and system processes. The specific tasks are:

- Chapter 11, "Controlling Print Quality" on page 225.
- Chapter 12, "Monitoring and Adjusting Processes" on page 253.

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<sup>1</sup> In this publication, the term InfoColor 70 refers to *both* printer models (Model 002 and Model 02C). The term InfoColor 70 Printer and Collator is used to refer specifically to the (Model 02C).

**Part 5:** The operator's responsibility is to manage the paper rolls and the inserter. The specific tasks are:

- Chapter 13, "Managing Paper Rolls and the Inserter" on page 275

**Part 6:** The operator's responsibility is to power down and restart the InfoColor 70. The specific tasks are:

- Chapter 14, "Shutdown Procedures for InfoColor 70" on page 299.

**Part 7:** The operator's responsibility is to maintain the InfoColor 70 The specific tasks are:

- Chapter 15, "Performing Scheduled Operator Maintenance" on page 313.
- Chapter 16, "Checking and Refilling Toner" on page 333.

**Part 8:** The operator's responsibility is to solve problems and monitor the print quality and report any print quality problems. The specific tasks are:

- Chapter 17, "Finding and Solving Problems" on page 343.
- Chapter 18, "Print Quality Problem Solving" on page 385.

Also included are appendices, a glossary, and an index.

## Terminology

This book contains terms, abbreviations, and acronyms that are:

- Specific to the InfoColor 70
- Specific to IBM
- Specific to the pre-press industry.

Each term, abbreviation, and acronym is defined where it is first used in this book and is included in the Glossary (see "Glossary" on page 433). Knowing these definitions should help you use and understand the information in this book.

## Notation Conventions

The following notation conventions are used in this book:

- The names of windows and window items in the operator interfaces appear in a bold typeface. For example, before you print a job, you should open the **Engine State** window and ensure that the engine is in **Standby** state.
- Menu choices that you need to select appear in a bold typeface.

The following notation is used to indicate the alternative methods you can use to open the **Engine State** window:

**Process Control** ⇒ **Engine State**



**Ctrl+E**

This notation replaces the following text:

- Click on the **Process Control** pushbutton and then the **Engine State** pushbutton.



- Click the tool bar icon

- Press the shortcut keys **Ctrl+E**.
- Window pushbuttons you need to select or keyboard keys you need to press appear in a bold typeface. For example, if you are not going to print immediately, click the **Go to conditioned** pushbutton in the **Engine State** window.
- Commands, directory names, or text you have to key in appear in computer print. For example, you will store your named page setups in an `.ini` file.
- Variables you have to replace with your own data appear in italic print. For example, the operator sets the job to RIP at *data\_depth* dps.

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## IBM InfoColor 70 Printer Library

The following additional InfoColor 70 publications are available:

- *IBM InfoColor 70 Printer: Introduction and Planning Guide*, S544-5333-03, which summarizes the functions provided by the InfoColor 70 and provides information to help your site prepare for installing an InfoColor 70.
- *IBM InfoColor 70 and 3170 Full Color Digital Printer/Press: Paper Selection Guide*, G544-5386-00, which summarizes the paper supported on the InfoColor 70.



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## What's New in This Release

This release contains the following improvements,

- Partial table of contents at the beginning of each part
- Die-cut tabs for each major part
- Additional information about InfoPrint has been added
- Chapter 5 was reorganized
- Chapter 7 was reorganized



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## Chapter 1. Understanding How the InfoColor 70 Works

This chapter provides an overview of the hardware and software components of the IBM InfoColor 70 Printer and the IBM InfoColor 70 Printer and Collator.<sup>2</sup> These printers replace the IBM 3170 printers Models 001 and 01C (Collator).

The InfoColor 70 printers contain many new and productive features. They contain IBM PowerPC technology for enhanced versatility, reliability, and expandability. In addition, new improvements in the life of consumables allow the cost of full-color printing to be dramatically decreased; they also use new, improved toner and developer mix. The InfoColor 70 printers support the IBM InfoPrint Solution.

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### IBM InfoColor 70 Printer Overview

The IBM InfoColor 70 Printer is specifically designed for high-speed, large-capacity, full-color printing with excellent print and image quality, fast turnaround, variable information, and the ability to customize. The InfoColor 70 should be used for short-run press applications, which typically consist of several hundred copies of each imaged page.

The InfoColor 70 prints directly from digital data and does not require any costly intermediate steps, such as film and platemaking. It is a true "direct-to-paper" solution.

The InfoColor 70 produces high-quality process color jobs at a speed of 70 A4 (210 mm x 297 mm or 8.27" x 11.69") pages per minute when printing duplex. The maximum page size is 307.6 mm x 2772 mm (12.1" x 109.1") with full page bleeds. Designed to operate in demanding production environments.

The print engine has two sets of cyan, magenta, yellow, and black (CMYK) print units, one for each side of the paper, which allows duplex printing in a single pass. Each of the electrophotographic print units uses an LED (light emitting diode) array as the imaging device, fed directly from the digital data.

The InfoColor 70 prints at 600 dots per inch (dpi). Each dot has a grey-scale capability of up to 4 bits or 16 shades. The screening algorithms print images at a screen frequency of up to 170 lines per inch. The InfoColor 70 is fully compatible with PostScript input from all standard pre-press platforms.

The InfoColor 70 is configured with a 4GB disk array (spool disk) and 72MB of image memory, upgradeable to 144MB of image memory. The machine can be upgraded with an additional 4GB disk array, for a total of 12GB.

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<sup>2</sup> In this publication, the term InfoColor 70 refers to *both* printer models (Model 002 and Model 02C). The term InfoColor 70 Printer and Collator is used to refer specifically to the (Model 02C).

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## IBM InfoColor 70 Printer and Collator Overview

The InfoColor 70 Printer and Collator is a model upgrade of the InfoColor 70 Printer. It provides the user with the ability to produce a multi-page document or multiple documents as collated books. The Collator model can merge variable data information, consisting of text and EPS graphics in an unlimited number of variable data fields.

Installation of the Collator requires both hardware and software. The Collator includes a 32GB high-speed disk array that can store RIPPed images, to enable printing of large collated documents at the printer's rated speed. This is equivalent to 500 A4 pages of a typical book with mixed images and text and a data depth of 4 bits per spot (bps) or 1000 pages at 2 bps. For pure text, the Collator can store 5000 pages at 4 bps or 10 000 pages at 2 bps.

Once the files are RIPPed on the control unit and stored on the Collator's high-speed disk array, the data is accessed directly by the print heads at print time. Multiple copies of a book can be printed so that the pages of each copy are printed in collated order, and the first copy is available before the second is started.

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## IBM Variable Data System Feature Overview

The Variable Data System (VDS) is a feature of the InfoColor 70 Model 002 and is standard on the Model 02C. It provides the user with the ability to produce customized documents.

The VDS feature on the Model 002 allows a printed job to have certain areas of an imaged signature change with each print. The variable information can consist of text and EPS graphics. The feature is available in two configurations, black only or full color. Installation of the VDS requires both hardware and software changes.

The VDS is a standard feature on the Model 02C. The Collator model, like the standard model, can also merge variable data information, consisting of text and graphics, but permits an unlimited number of variable data fields. In addition, the Collator can process both Horizontal Variable Data, where variable data is overlaid on every page, and Vertical Variable Data, where data can be personalized on selected pages.

See Chapter 5, "Using Variable Data" on page 113 for more information about the Variable Data System feature.

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## InfoPrint Solution

The InfoColor 70 printers support the InfoPrint solution. InfoPrint consists of several major components:

- The **InfoPrint Multiple Printer Controller** is the RS/6000 hardware on which the server runs.
- The server is a print spooler, scheduler, and driver that supports high-quality, high-speed IBM printers. The server schedules and manages work for a print job, including the print-job resources. You can manage your IBM printers from a centrally located workstation.

- **InfoPrinter Operations** is the tool your print shop uses to submit print jobs, receive customer job specifications, change those specifications, and provide simple status of a job. **InfoPrint Access** contains a subset of the functions of InfoPrint Operations and is the tool customers use to create job tickets and send the job to the print shop.
- **InfoPrint Library** is a document-storage system that electronically stores job tickets and their related files (PostScript data, application source data, fonts, and images) for future retrieval, customizing, and printing. The Advanced Distributed Storage Manager/6000 (ADSM/6000) automatically moves older data onto less expensive storage media after a specified period of time. The library is an optional feature of InfoPrint.

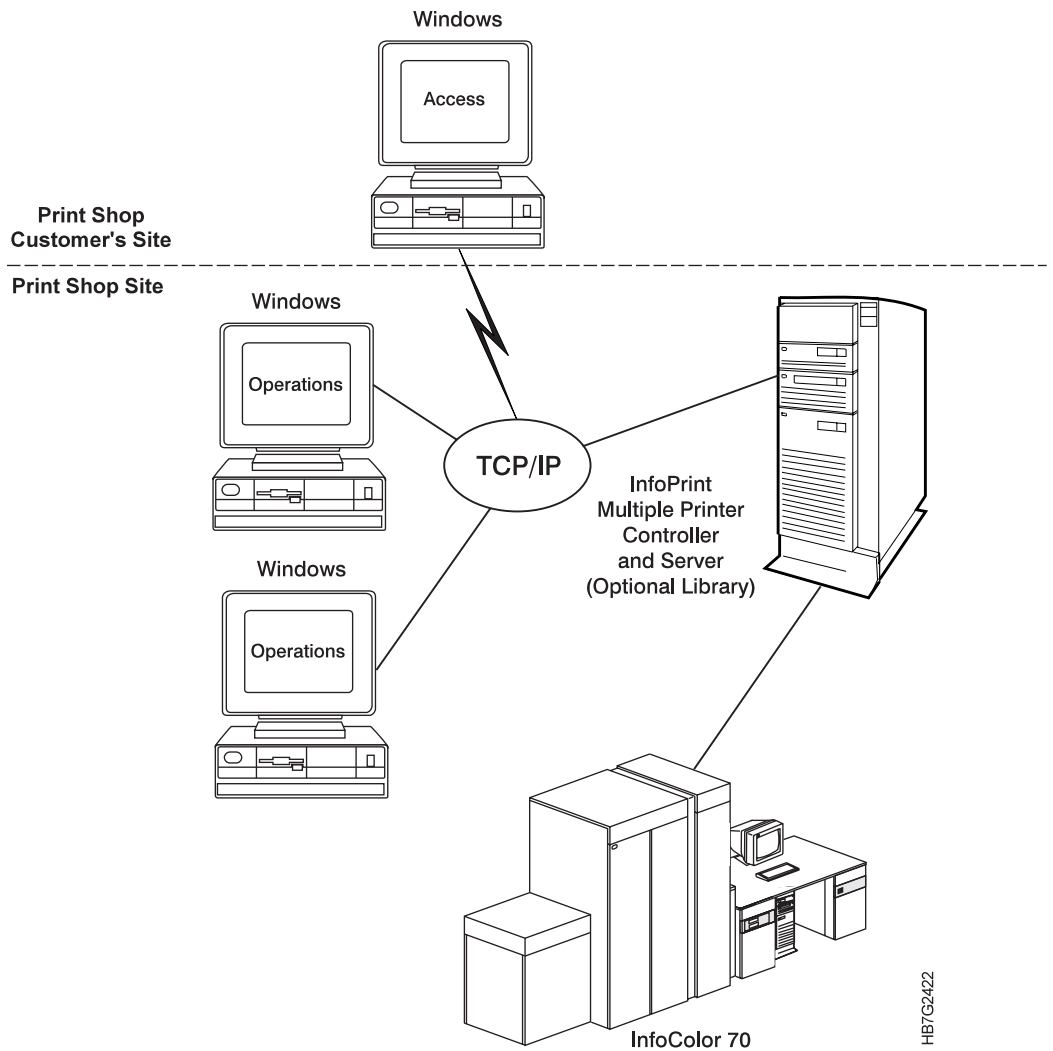


Figure 1. Overview of the InfoPrint Components

## InfoColor 70 Components

The InfoColor 70 consists of the following hardware and software components:

- Paper Supply
- Print Tower
- Output Stacker
- Conditioning System (not shown)
- Densitometer
- Collator hardware (Model 02C only)
- Printer Control System (PES)
- RIP and Operator's Control System (RS/6000)
- Collator software (Model 02C only)
- Variable Data System (VDS) software

Figure 2 shows several of the hardware and software components. Table 1 on page 7 describes the hardware and software components and refers to sections that provide more detail on each component.

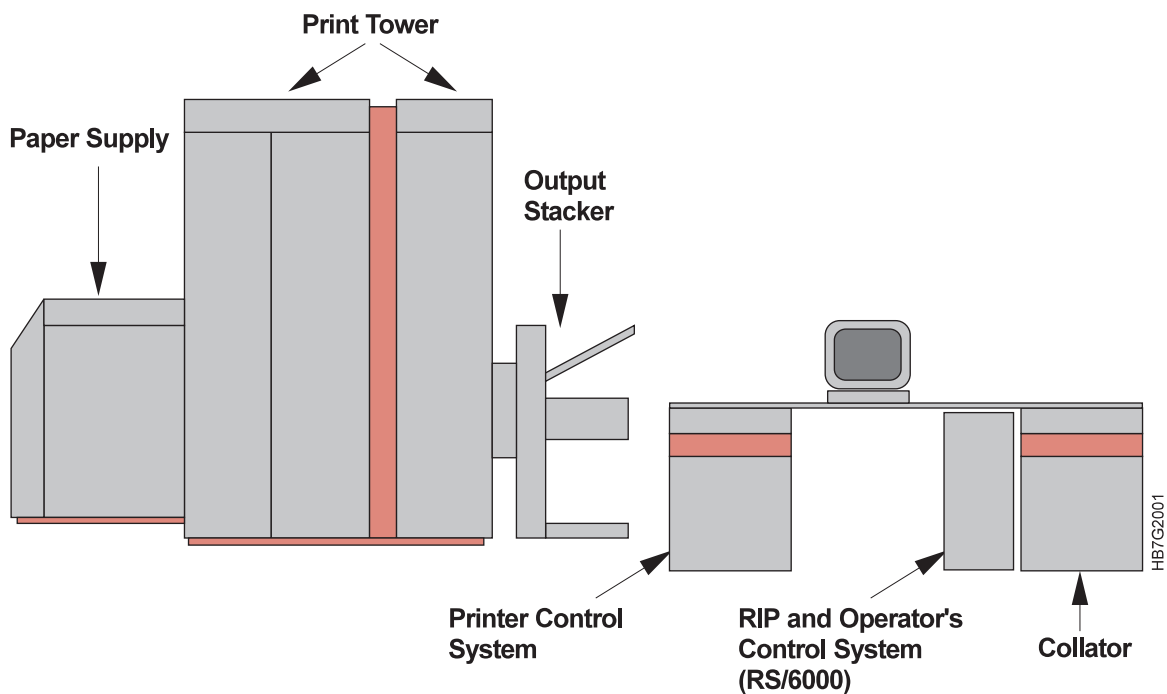


Figure 2. InfoColor 70 Components

<i>Table 1. InfoColor 70 Components and Functions</i>		
<b>Modules</b>	<b>Description</b>	<b>Refer to...</b>
Paper Supply	Paper roll unwinder Splicing table Paper conditioning	"Paper Supply" on page 8
Print Tower	Eight print units (CMYK) controlled by the image control system. Fuser Cutter Web drive	"Print Tower" on page 9
Output Stacker	Large capacity main tray Extra tray for test and waste prints.	"Output Stacker" on page 12
Conditioning System (not shown)	Auxiliary unit, which conditions the printing environment.	"Conditioning System" on page 13
Densitometer (not shown)	Auxiliary unit, which reads the control strip on a job and automatically sends density control readings to the InfoColor 70 interface.	"Densitometer" on page 14
Printer Control System (PES)	Controls the operation of the print engine.	"Printer Control System" on page 16
RIP and Operator's Control System (RS/6000)	Consists of the InfoColor 70 operator interface, the ThruPRINT interface, the interface to the pre-press network, the image disk system, and the PostScript RIP.	"RIP and Operator's Control System (RS/6000)" on page 16
Collator	High-speed disk array and software support.	"Collator Software Support" on page 18

## Paper Supply

The paper supply has the units shown in Figure 3.

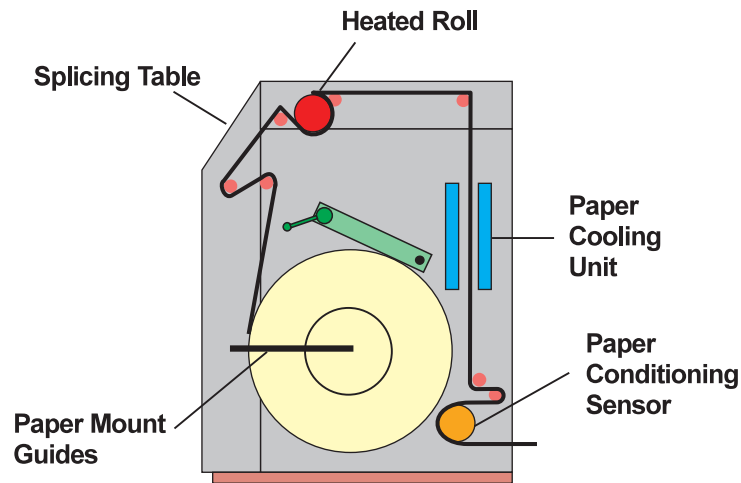


Figure 3. InfoColor 70 Paper Supply Units

The following processes take place in the paper supply:

- The operator first inserts an axle in the core of the paper roll and then places the roll in the paper supply using a small hand truck. The paper supply has no paper-driving function; instead, the web is pulled from the paper supply by the web-drive motors in the print tower. A brake system keeps the paper web at a certain tension between the reel and the first web drive motor. The brake system also detects when the amount of paper remaining on the roll is low.
- When a roll is finished, or when you decide to change paper before the roll is finished, you splice the leading edge of the new roll to the trailing edge of the old roll.
- Moisture influences print quality. Thus, the paper supply includes a paper-conditioning system that uses a heated roll to dry the paper to a certain moisture content. After drying, the paper temperature is reduced by the cooling unit. The entire system is controlled by a paper conditioning sensor. When printing stops, the paper is immediately pulled away from the heated roll to avoid scorching the paper.

# Print Tower

The print tower has the units shown in Figure 4.

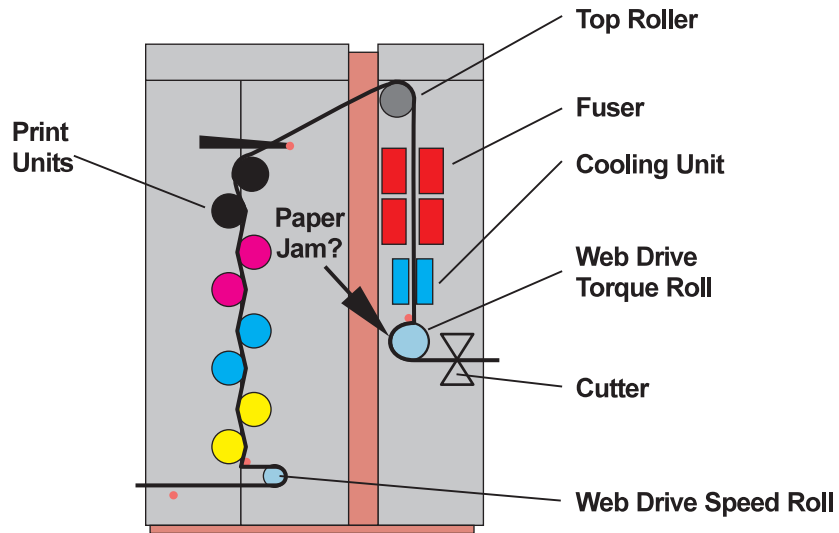


Figure 4. InfoColor 70 Print Tower Units

The following processes take place in the print tower:

- The print tower has eight print units, four for each side of the paper. Each unit prints one of the four “process” colors, cyan, magenta, yellow, and black (CMYK). The next section describes how a single print unit functions.
- After the paper passes through the eight print units, it goes over the top roller, which directs the paper toward the fuser.
- The non-contact fuser affixes the four toner layers to each side of the paper.
- Because the temperature of the paper is high when it leaves the fuser, the paper passes through the cooling unit, which blows cooled air on the paper's surface.
- The paper web is driven by two motors, which are accurately controlled to maintain a constant web speed and tension. This constancy provides a stable register (the correct positioning of the four color layers on top of each other and the positioning of the image on the front of the paper as compared to the back).
- Before the paper leaves the print tower, it passes the cutter, where it is cut perpendicular to the paper movement. The paper is then transported by a conveyer to the output stacker.

## A Single Print Unit

Figure 5 on page 10 is a diagram of a single print unit. The eight print units located in the print tower are similar.

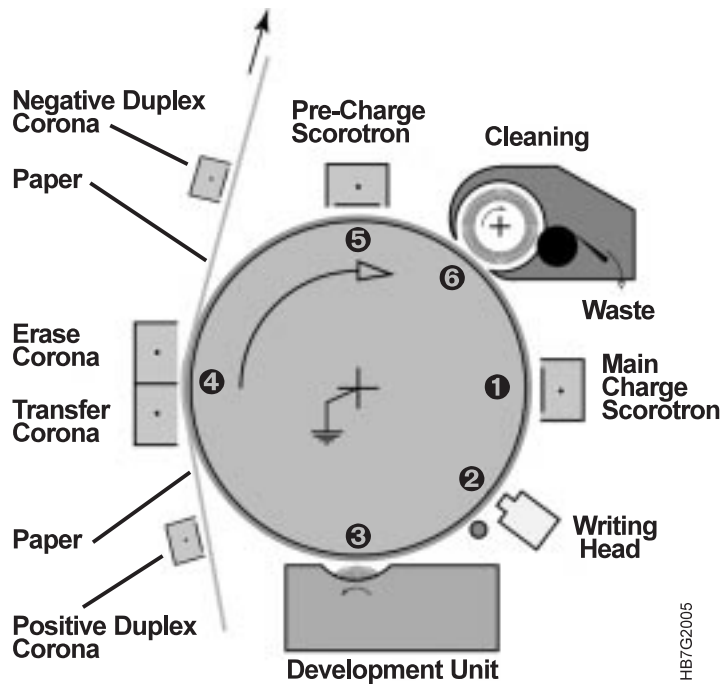


Figure 5. Parts of a Single Print Unit

## The Printing Process

The printing process has several steps, which are numbered in this section to correspond to where they occur in Figure 5.

- 1 The center of the print unit is the drum. This drum is a grounded aluminum core covered with a layer of organic photoconductor. The photoconductor is an insulator in darkness but, when exposed to light, becomes conductive. The drum rotates as the paper web moves.

The surface of the drum is charged to a uniform negative potential by the main charge scorotron, which is a type of corona that also contains a grid. This grid makes it possible to control the electrostatic potential of the underlying surface, as shown in Figure 6.

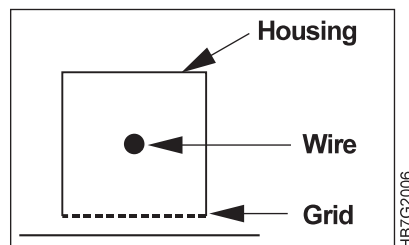


Figure 6. Scorotron and Underlying Surface

- 2 The printed image is formed by transmitting light on the drum's surface in the areas where the image should be and no light where the paper should remain white. In areas where the drum is exposed to light, the organic photoconductor layer becomes conductive, flows the charges to the ground, and forms a "latent electrostatic image," as shown in Figure 7 on page 11.



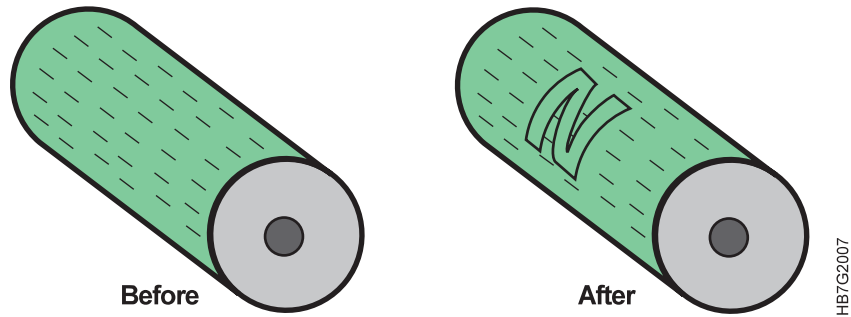


Figure 7. Image Formation

The light source that generates the image is a light emitting diode array (LDA), which contains 7424 LEDs spaced at 42.3 mm (600 LEDs per linear inch). Each LED is individually addressable. Different levels of grey can be achieved by modulating the amount of light exposure. The LDA is mounted parallel to the drum axis, so that the image is recorded linewise as the drum rotates. A new line of data is printed each time the paper moves 42.3 mm. This forms a 600 dpi matrix of spots on the drum with each spot having a grey level resolution of up to 4 bits, depending on the configuration.

- 3 A development unit develops the latent image by depositing toner particles on the drum. The development unit contains the developer, which is a mixture of toner and magnetizable carrier particles. When this mixture is stirred, the toner and carrier become electrically charged, causing the toner to stick to the carrier. The developer (toner plus carrier) is attracted to a magnetic roller and forms a magnetic brush (see Figure 8).

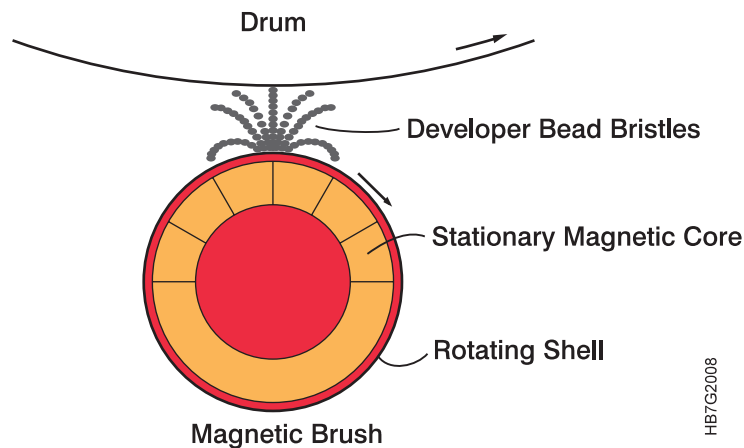


Figure 8. Attraction of Toner to the Drum

When an area of the drum containing an image passes the magnetic brush, the toner particles are attracted away from the carrier particles and toward the drum by the electrical field between the drum and the magnetic brush. The more the drum was exposed to light, the more toner will be attracted to the drum. The carrier remains in the development unit. Because toner leaves the development unit, an automatic toner dosing system adds toner back to the development unit.

- 4 The developed image formed by the toner particles on the drum is transferred to the paper passing the drum by the transfer corona.

- 5 The pre-charge scorotron operates in the same way as the main charge scorotron and is needed to precondition the drum's surface and the remaining toner particles for cleaning.
- 6 Because toner transfer is not 100% efficient, some toner will remain on the drum. This toner must be removed so the next image to be printed is not corrupted. The cleaning unit removes these particles and directs them to a toner waste bottle.
- 7 The cycle continues as the drum passes the main charge scorotron to charge the drum again.

## Output Stacker

The output stacker shown in Figure 9 performs the following functions:

- The cut sheets exiting from the print tower are placed in either the main tray or the test tray.
- You can manually adjust the main tray to accommodate different sheet sizes *one at a time*, as needed. The tray lowers as the sheets are stacked and the pile becomes higher. When the main tray is full, empty the tray.
- Blank sheets are automatically directed to the test tray. You can also direct one copy or more (a test sheet) in the middle of a print job to the test tray to check for print quality. Use the test tray when you print jobs with lengths that are longer than the main tray.
- You can also interleave printing a second print job and direct output of the second job to a the test tray.

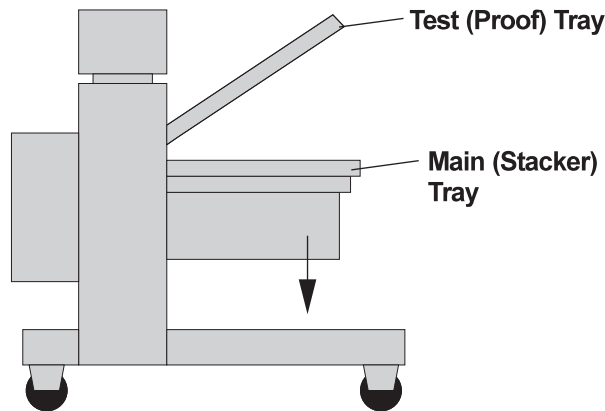


Figure 9. Output Stacker

## Paper Path

The InfoColor 70 is web fed, which provides several advantages, such as higher reliability, optimal register control, and duplex printing. In addition, the InfoColor 70 accepts several paper grades. The web drive shown in Figure 10 on page 13 has several units listed below.

- 1 Paper reel
- 2 Splicing table
- 3 Heated roll
- 4 Paper cooling unit

- 5 Paper conditioning sensor
- 6 Web-drive motor #1 (speed motor)
- 7 Print stations (front/back)
- 8 Top roller
- 9 Fuser
- 10 Paper cooling unit
- 11 Web-drive motor #2 (torque motor)
- 12 Cutter
- 13 Output stacker
- 14 Fixed tower
- 15 Y tower
- 16 X tower
- 17 Writing head cooling units

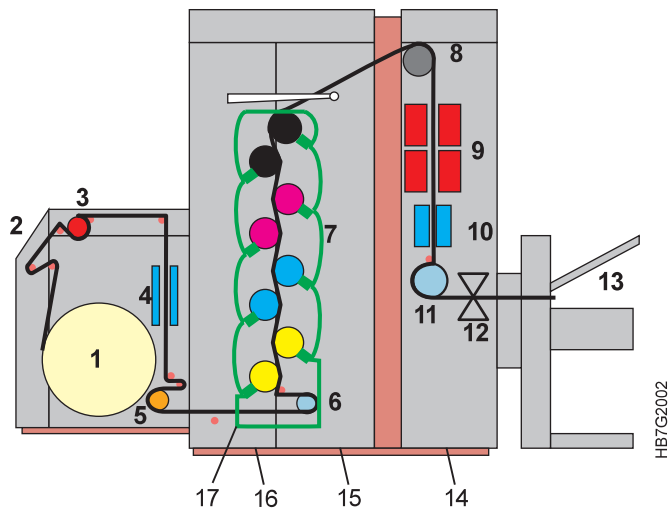


Figure 10. InfoColor 70 Web-Drive Units

## Conditioning System

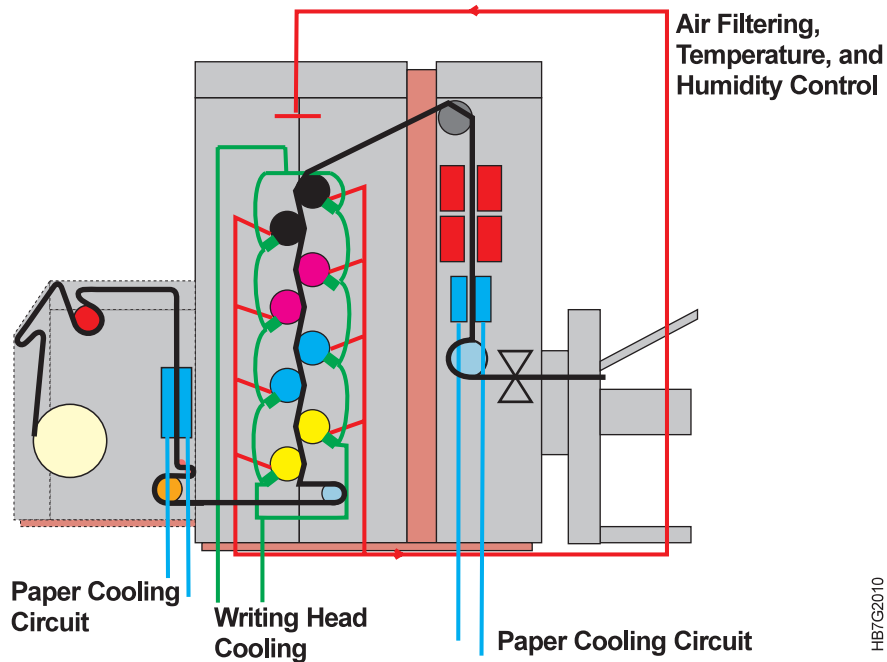
The InfoColor 70 uses the four conditioning circuits shown in Figure 11 on page 14.

- A conditioning circuit in the print tower controls the temperature and humidity of the air to ensure stable print quality and to filter ozone and dust.
- A paper-cooling circuit in the paper supply blows air on the paper to lower its temperature.
- A similar paper-cooling circuit cools the paper after it passes through the fuser.
- A water-cooling circuit keeps the writing heads at a constant temperature to ensure stable performance.

The first three conditioning circuits use chilled water anti-freeze solution from the cooling unit, a closed system, physically separated from the print tower, that requires no water-supply connections or drains. The cooling system for the writing heads uses room temperature water from a separate water supply at the bottom of the fixed tower.

The print tower also has a pair of heaters mounted on the inside of the doors to warm the air in the print tower and assist in maintaining internal print tower humidity in higher humidity environments.

When the print engine is turned off, the temperature inside the print tower is regulated to 30°C by the tower temperature-control system.



HB7G2010

Figure 11. Conditioning Circuits

## Densitometer

The Gretag D19C densitometer is connected to the RS/6000 to automate density control and improve print quality, reduce operator error, and reduce time to make adjustments.

The RS232 cable provided with your machine plugs into serial port 2 on the back of your AIX workstation. The other end of the cable plugs into the Data Interface on the semi-automatic densitometer. "Using the Densitometer" on page 242 describes how to attach and configure the densitometer.

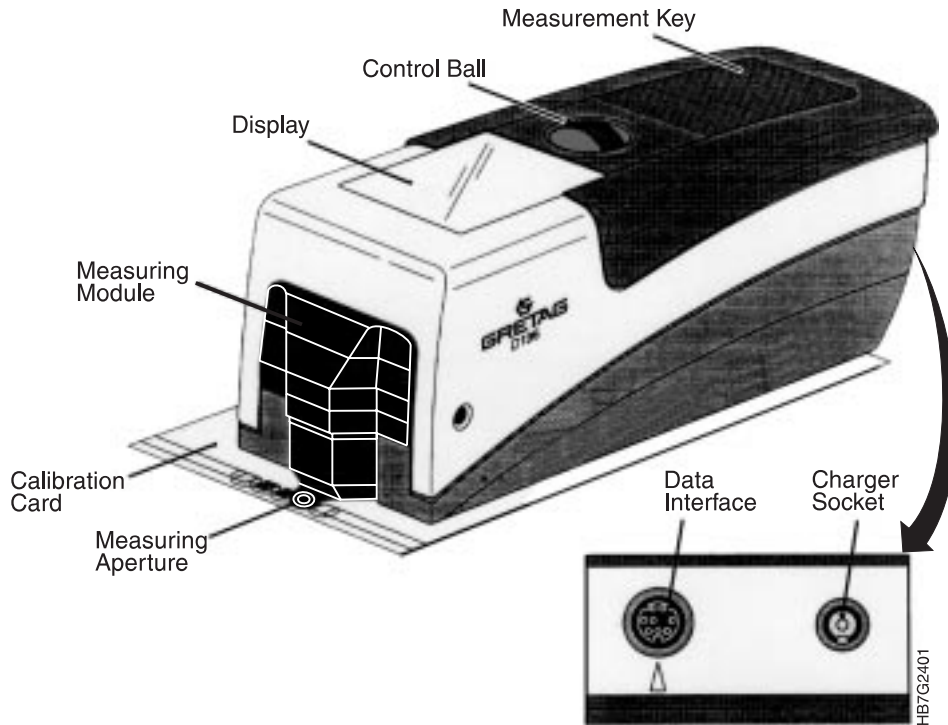


Figure 12. Gretag D19C Densitometer

## Collator Hardware Components

The Collator is a disk array consisting of 32GB of high-speed disk array. The control switches on the Collator are located at the front of the cabinet. The front panel is divided into sections, as shown in Figure 13.

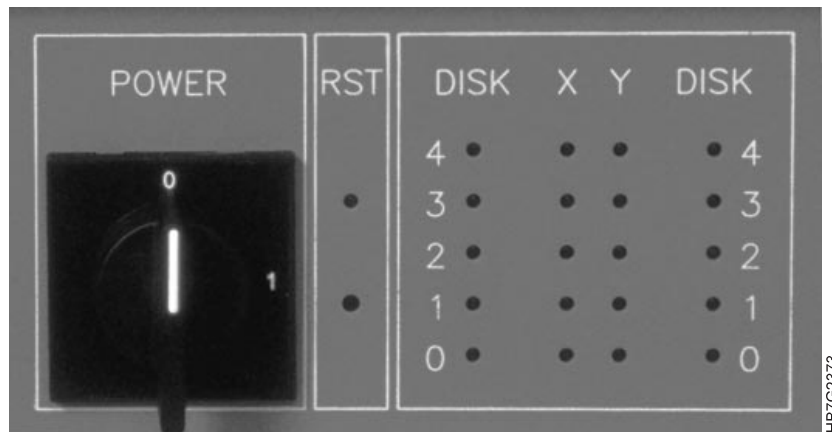


Figure 13. InfoColor 70 Printer and Collator Front Panel

The POWER section contains the power on-off switch.

The RST section contains a reset pushbutton and a reset light emitting diode (LED). This LED turns on when the reset pushbutton is pressed.

The third section contains LEDs that indicate the drive activity inside the cabinet. The numbers 0, 1, 2, 3, and 4 are related to the disk array inside the Collator. Numbers 1, 2, 3, and 4 are valid for this model. Number 0 is for future expansion.

The X and Y columns are related to the front and back of the paper. The LEDs turn on and off when data is written to a disk. The LED DISK columns indicate the hard disk activity when reading or writing data from a disk.

## Printer Control System

The Print Engine Supervisor (PES) controls the operation of the print engine. It receives jobs and other commands from the operator interface and controls the printing process. It also sends back status and error information to the InfoColor 70 operator interface.

## RIP and Operator's Control System (RS/6000)

The operation of the InfoColor 70 is controlled by the operator console using the following software components:

- **Interface to the pre-press network.** The controller attaches to a LAN through an Ethernet or Token Ring port. PostScript jobs enter the InfoColor 70 through this connection.
- **The InfoColor 70 operator interface.** The operator interface is a graphical-user interface, running on an AIX operating system. Through this interface, the operator can observe the engine status, react to alarms and warnings that appear on the display, and do many tasks using a menu-based system. On the Model 002, the operator uses this interface for RIPing and printing jobs.
- **The ThruPRINT interface.**

The ThruPRINT interface is also a graphical user interface running on AIX. The operator can submit jobs sent from InfoPrint for printing on the InfoColor 70. On the Model 002, the operator uses this interface for RIPing, printing and printing jobs. On the InfoColor 70 Model 002 this is used for RIPing and printing InfoPrint and Mergedocument print jobs.

- **PostScript RIP.** The incoming PostScript jobs are rasterized into bitmaps (called RIPing), which the InfoColor 70 print engine can print. The InfoColor 70 RIP provides PostScript compatibility.
- **Image Disk.** On the Model 002, RIPed files are stored here for later printing.
- **Imaging Control System (ICS).** The imaging control system controls the eight LED writing heads. For each writing head, the imaging system has a bitmap memory (a "digital printing plate") made of standard RAM, in which the current page that is being printed is stored. A custom-designed chip (ASIC) controls the huge amounts of data that need to be transported to the writing heads.

Figure 14 on page 17 shows the process flow.

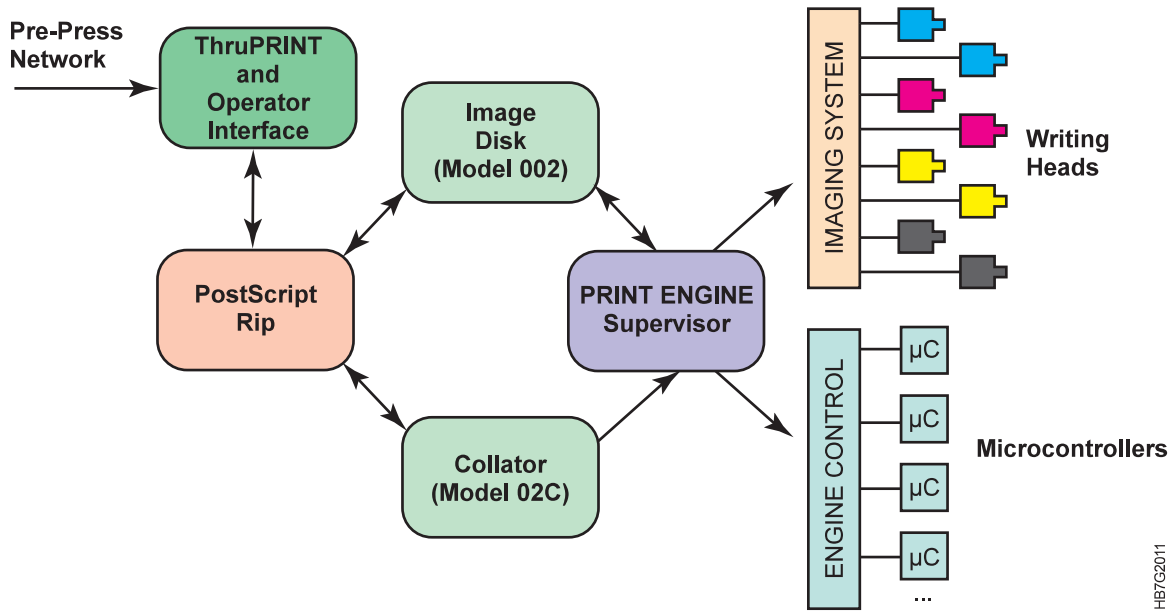


Figure 14. Digital System

### Job Flow

The InfoColor 70 provides asynchronous RIPing, spooling and printing to maximize total system throughput. This means that while job A is printing, another job can be RIPed and spooled. Figure 15 shows a job flow diagram.

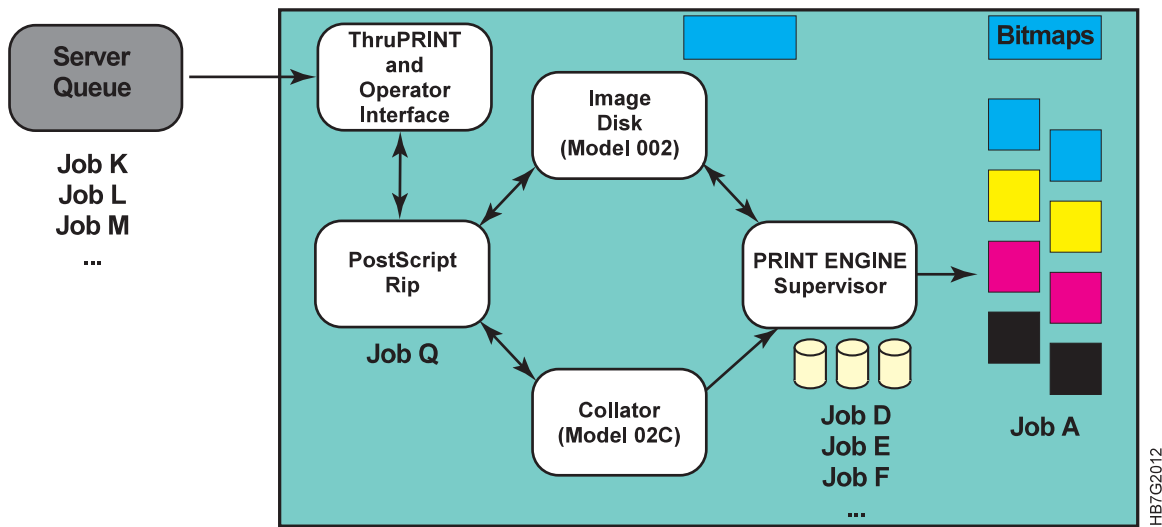


Figure 15. Job Flow

In production environments, the InfoColor 70 will be configured with a print server, where some jobs (PostScript files) may be waiting to be printed. RIP jobs are selected using the **InfoColor 70** window (for Model 002) or the **ThruPRINT** window (for Model 02C), for InfoPrint and MergeDocument jobs (for Model 002).

On the Model 002, the RIPed jobs are spooled on the Image disk of the engine. This results in large storage capacity and very high transfer rates, so that machine

idle time between two jobs is minimized. On the Model 02C, the RIPed jobs are saved on the Collator.

The operator can specify that a job can be kept on the disk array or the image disk. The job can then be printed again a few hours or even days later. This is helpful if the customer wants to see a proof print before final printing.

## Collator Software Support

The InfoColor 70 Printer and Collator provides the following software:

- Collator software, which is used to run the Collator:
  - **IBM ThruPRINT.** This software runs on the InfoColor 70 and is used to RIP and print files on the Collator and to manage the space on the Collator. For more information about ThruPRINT, see “IBM ThruPRINT Interface” on page 61.
  - **Extended Control Program (XCP).** A program running in the background that ThruPRINT uses to communicate with the Collator. The operator does not need to use this program, but it must be running so that ThruPRINT can operate properly.
  - **Virtual Electronic Collating System (VECS).** A program running in the background that ThruPRINT uses to communicate with the Collator. The operator does not need to use this program, but it must be running so that ThruPRINT can operate properly.
- Support for creating collated jobs:
  - **Book Ticket Files (BTFs).** BTFs describe how your job is organized, printed and collated. Collated jobs are printed by submitting the BTF for printing. See “Creating Book Ticket Files (BTFs)” on page 176 for more information about BTFs.

## Variable Data System (VDS) Software

The VDS software for the Model 002 feature and the Model 02C provides the following software:

- **IBM provided XTensions for QuarkXPress 3.32.** This software runs on a Windows 95 or Macintosh pre-press workstation. Using IBM provided XTensions for QuarkXPress 3.32, (hereafter referred to as QuarkXPress XTensions) the graphic arts professional can define variable data areas on the master page. See “Using QuarkXPress XTensions” on page 117.
- **IBM provided Plug-Ins for Adobe Pagemaker 6.0.** This software runs on a Windows 95 pre-press workstation. Using IBM provided Plug-Ins for Adobe PageMaker 6.0, (hereafter referred to as PageMaker Plug-Ins) the graphic arts professional can define variable data areas on the master page. For information on using Pagemaker Plug-Ins refer to “Using PageMaker Plug-Ins” on page 126.
- **The MergeDocumentation function.** This functions converts the variable data PostScript master and document definition files (generated by Quark XTensions or PageMaker Plug-Ins) to output files for printing.



---

## Chapter 2. Learning About the InfoColor 70 Operator Interfaces

This chapter describes the following software interfaces provided with the InfoColor 70 these interfaces are used for most operator tasks:

- **IBM InfoColor 70** window (see “IBM InfoColor 70 Interface” on page 20)
- **ThruPRINT** window (see “IBM ThruPRINT Interface” on page 61)

Both interfaces are accessed through the AIX desktop front panel, as shown in Figure 16.



Figure 16. AIX Desktop Front Panel

To open the **IBM InfoColor 70** and the **ThruPRINT** window, click the **InfoColor 70** icon on the desktop Front Panel.

Primary windows are accessed through the menu bar or tool bar of these interfaces. All primary windows are described in this chapter. The quick reference, shown in Table 2 on page 22, refers to sections that provide more detailed information about using the windows and performing operator tasks.

See “Notation Conventions” on page xvi for conventions used in describing how to access windows from the menu bar or tool bar.

---

## IBM InfoColor 70 Interface

The InfoColor 70 interface is an AIX user interface that provides the functions you need to operate the InfoColor 70. Figure 17 shows the **IBM InfoColor 70** window. See “Turning On the InfoColor 70 Printer” on page 83 for information about turning on the InfoColor 70.

The primary areas of the **IBM InfoColor 70** window are:

- Menu bar
- Tool bar
- Workspace
- Status bar.

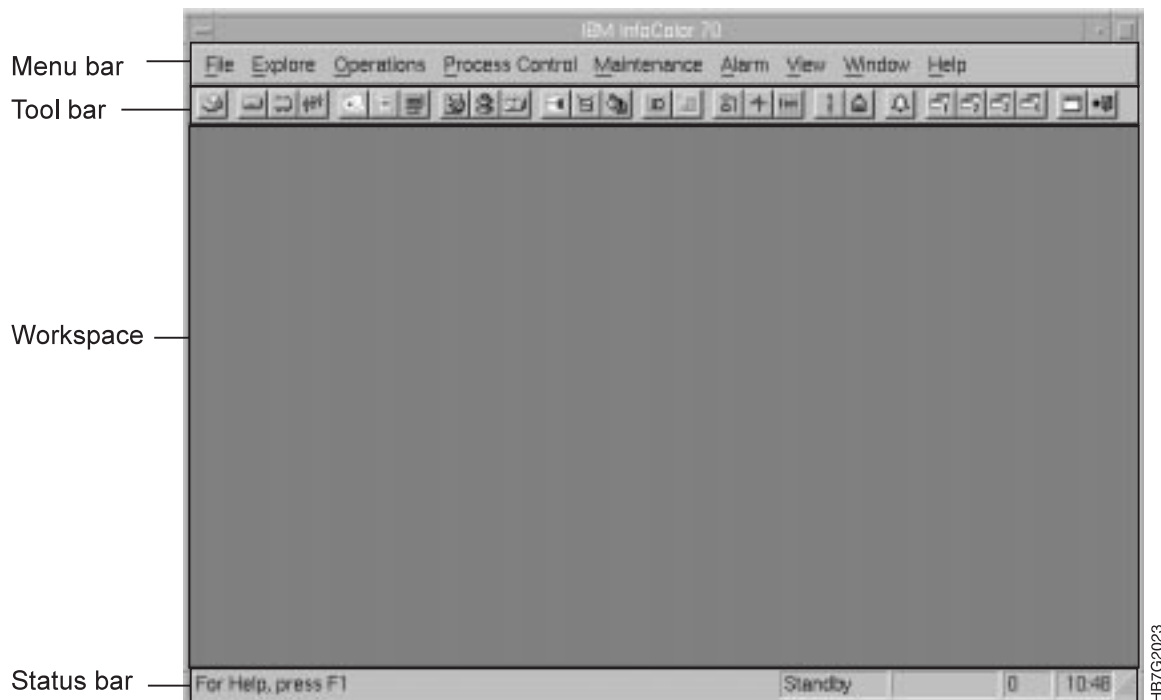


Figure 17. IBM InfoColor 70 Window Description

## The Menu Bar

The menu bar, as shown in Figure 18, contains the menu items that you use to access the functions needed to operate the InfoColor 70. The following functions are provided with the InfoColor 70:

- File functions (see Page 25)
- Explore functions (see Page 31)
- Operations functions (see Page 41)
- Process Control functions (see Page 47)
- Maintenance functions (see Page 57)
- Alarm functions (see Page 59)
- View functions (see Page 59)
- Window functions (see Page 59)

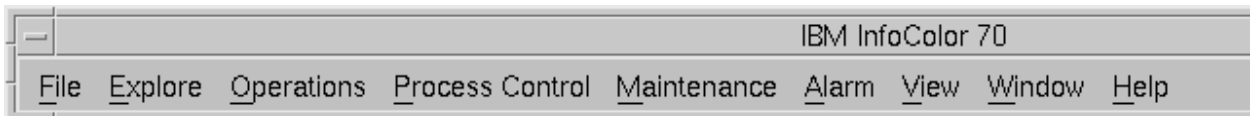


Figure 18. Menu Bar on the IBM InfoColor 70 Window

**Note:** Use Table 2 on page 22 as a quick reference to the functions available from the menu bar.

## The Tool Bar

The tool bar, as shown in Figure 19, provides a fast and easy way to access the most frequently used functions. Just click on a tool bar icon to access the function. In most cases, a window opens. To find out what each icon does, position the mouse cursor on an icon and wait about two seconds for a brief description to appear in the status bar.



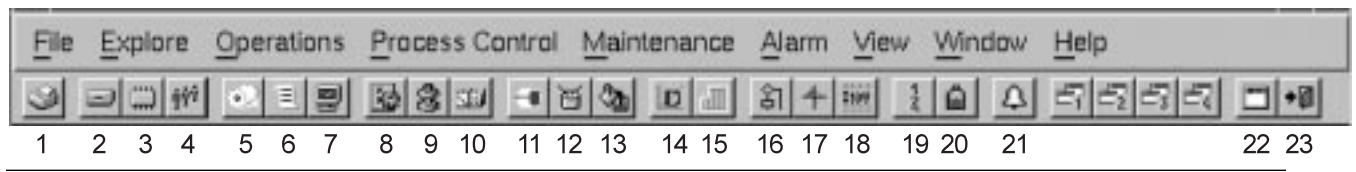
Figure 19. Tool Bar on the IBM InfoColor 70 Window























Select the following from the menu bar to display (or hide) the tool bar:

**View** ⇒ **Toolbar**

**Note:** Use Table 2 on page 22 as a quick reference to the functions available from the tool bar.

Table 2. Menu Bar and Tool Bar Quick Reference



File Functions			Operations Functions						
		Open Apis			Emergency Stop... (F4)	Page 25			Page 42
		Close apis			Mount Print Medium... (Ctrl+M)	Page 25	11		Page 42
22		Host Control panel			Refill Toner Containers...	Page 26	13		Page 43
		Make Backup			Change Developer...	Page 27			Page 44
		Preferences...			Calibrate PRS Sensors...	Page 27			Page 45
23		Exit (Alt+F4)			Service Intervention	Page 30			Page 46
Explore Functions			Process Control Functions						
		InfoColor 70			Density Control (Ctrl+D)	Page 31	14		Page 49
2		Image Disk			Toner Concentration Setpoint	Page 32			Page 50
3		Image Memory			Print Medium and Engine Conditioning	Page 34	15		Page 51
4		Print Queue			General Print Medium Settings	Page 35			Page 52
5		Print Media			Advanced Print Medium Settings	Page 36			Page 53
6		Scripts			Engine State (Ctrl+E)	Page 37	16		Page 54
7		Monitors			Engine State Progress (Ctrl+O)	Page 38			Page 54
8		Settings			Register Control (Ctrl+R)	Page 38	17		Page 55
9		Signals			Surface Potential (Ctrl+U)	Page 39	18		Page 55
10		Counters			Web Tension (Ctrl+W)	Page 39			Page 56
Maintenance Functions					Toner Containers (Ctrl+N)	Page 57	20		Page 58
19		Counters (Ctrl+C)				Page 57			
Alarm Functions									
21		Active Alarms (Ctrl+A)				Page 59			
View Functions						Page 59			
			Window Functions						Page 59

## IBM InfoColor 70 Window Workspace

The largest area of the **IBM InfoColor 70** window is the workspace. As you operate the InfoColor 70 and do different tasks, you have one or more windows open, as shown in Figure 20. Windows that you will probably have open during printing are:

- Image Disk
- Print Sequence
- Print Queue
- Image Memory

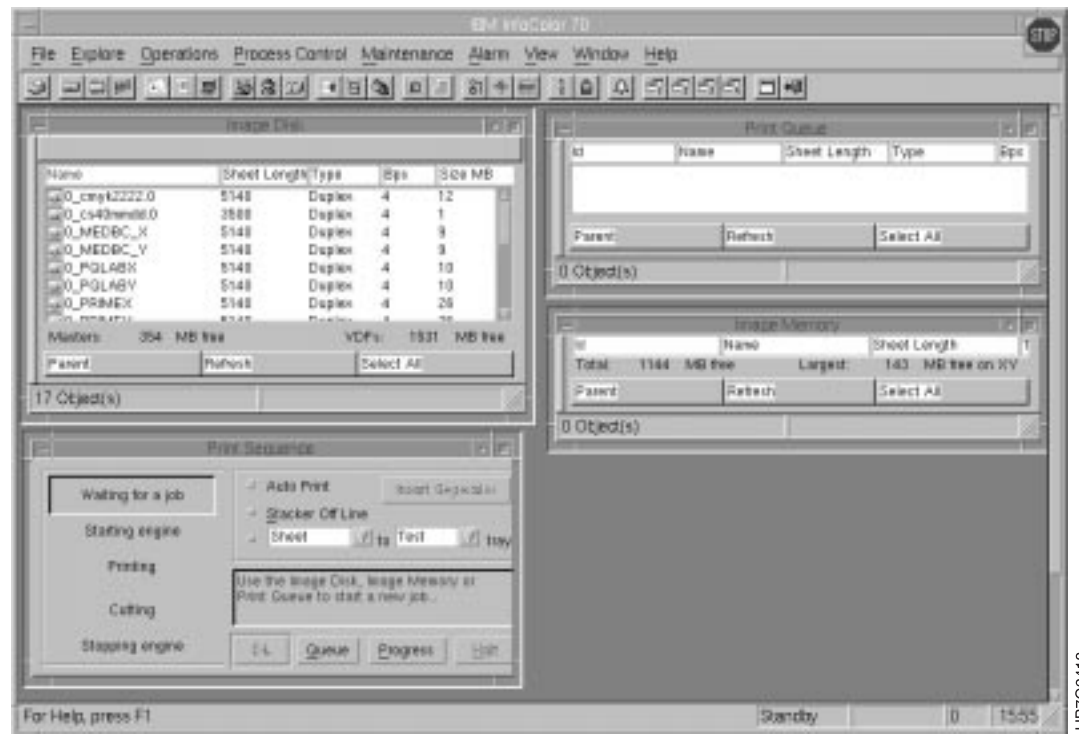


Figure 20. Workspace on the IBM InfoColor 70 Window (Multiple Windows Open)

You can move windows around and arrange them in the workspace. Just place the mouse cursor on the title bar of a window, hold the left mouse button down, and drag the window to a new location.

If a window you want to work with is partially hidden, click on a part of the window you can see to bring the window to the front and make it the active window.

You will have some windows open most of the time to perform repetitive tasks. You will probably want to arrange these windows in the workspace. See “File: Preferences” on page 27 and “Using the Window Menu Functions” on page 59 for information on how to save your workspace.

## The Status Bar

The last line at the bottom of the **IBM InfoColor 70** window is the status bar, as shown in Figure 21.

The status bar provides several types of information:

- General information, such as a brief description of a highlighted menu bar item
- The engine state (for example, Standby)
- The type of page currently being cut.
- The number of the page currently being cut, which restarts at 1 for each new print job
- The current time.



*Figure 21. Status Bar on the IBM InfoColor 70 Window*

Select the following from the menu bar to display (or hide) the status bar:

**View** ⇒ **Statusbar**

---

## Using the File Menu Functions

This section describes the functions available from the **File** menu. When you click on **File** from the menu bar, a pull-down menu lists all the functions available:

- Open Apis
- Close Apis
- Print Sequence
- Host Control Panel
- Make Backup
- Preferences...
- Exit

The functions that you will use *most* often are summarized in “Summary of the Most-Used Functions” on page 77.

### File: Open/Close Apis

APIS is the interface protocol used to exchange image data, commands, and status information between the **IBM InfoColor 70** window and the print engine supervisor (PES).

Before you can use the operator interface to control the InfoColor 70, the APIS channel must be open. Before the APIS channel is opened, the PES has to be running. By default, APIS opens automatically when you start the InfoColor 70 interface.

- To open the APIS connection manually, select the following from the menu bar:

**File** ⇒ **Open Apis**

When you open the APIS connection and the PES is not running, a message indicating that the APIS device cannot be opened is displayed.

Click the **OK** pushbutton, exit InfoColor 70, start the PES, and try again.

- To close the APIS connection manually, select the following from the menu bar:

**File** ⇒ **Close Apis**

**Note:** When you close the APIS connection, all windows will closed and all icons will become inoperable except for **Exit**.

### File: Print Sequence

The **Print Sequence** window, as shown in Figure 22 on page 26, opens automatically when either:

- You select a resident job in the **Image Disk** window, click the **Print** pushbutton, and specify the number of copies to print.
- You RIP a job and specify any number other than zero as the number of copies to print.
- Select Print or RIP then Print from the ThruPRINT window.

**File** ⇒ **Print Sequence**



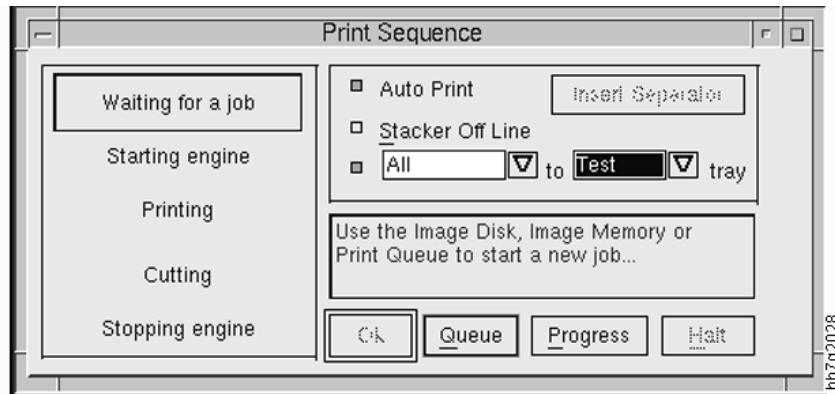


Figure 22. Print Sequence Window

After **Print Sequence** opens automatically and **Start engine** is highlighted, you can work in this window to progress through the steps to print a job. You can also open **Print Sequence** manually.

As printing progresses a message above the **Ok** pushbutton either tells you what to do next or explains what the print engine is doing.

Refer to Chapter 10, “Managing the Printing Process” on page 213 to learn about using the **Print Sequence** window to progress through the printing process.

## File: Host Control Panel

The **Host Control Panel** window, as shown in Figure 23, is used primarily by a service representative.

The service representative uses this window to perform many diagnostic and service functions through the use of commands entered in this window.

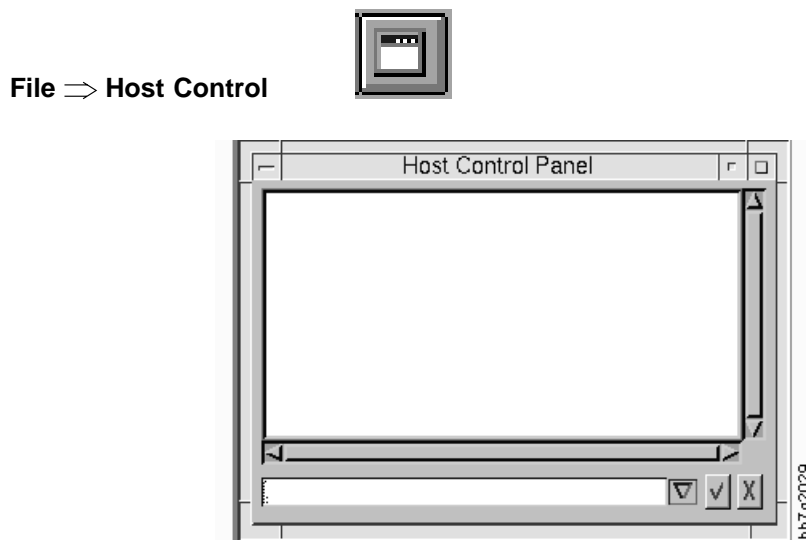


Figure 23. Host Control Panel Window



## File: Make Backup

The Make Backup function is not supported at this time.

## File: Preferences

The **Preferences** window, as shown in Figure 24, allows you to change some default settings.

The **Preferences** window has four groups of settings that you select by clicking on the tabs:

### File ⇒ Preferences

- General settings (see Table 3)
- Apis settings (see Table 4 on page 28)
- RIP settings (see Table 5 on page 29)
- Backup settings (is not supported at this time)

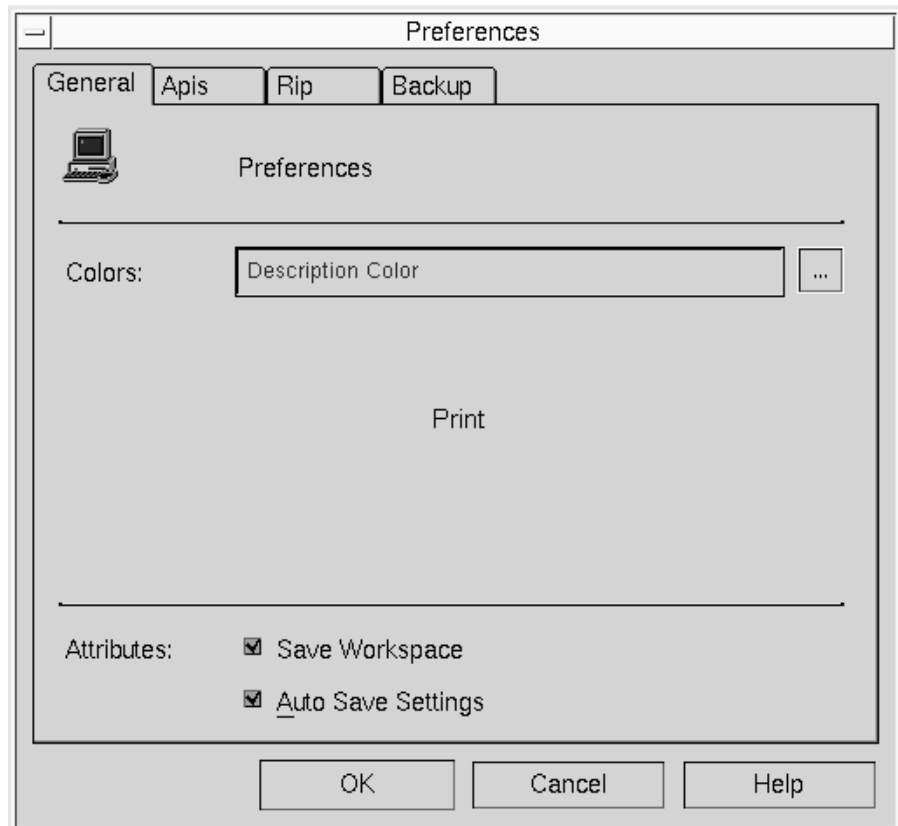


Figure 24. General Tab in the Preferences Window

Table 3 (Page 1 of 2). General Settings

Setting	Explanation and Operator Action
Colors	Use this to change the color of description text. Changing colors may make this text difficult or impossible to read.

\*  
\*  
\*  
\*  
\*

Table 3 (Page 2 of 2). General Settings	
Setting	Explanation and Operator Action
<b>Save workspace</b>	All the windows in the <b>Explore</b> need to be sized and placed before clicking on "Save Properties." The <b>Explore</b> windows can not be saved in the windows work space.  Once you have saved windows work space, they will be there all the time.
<b>Auto Save Settings</b>	Saves the positions of the windows with the exception of the <b>Explore</b> windows. This function does not work until you have selected <b>Auto save On</b> , then shut-down the PES and bring PES back up.

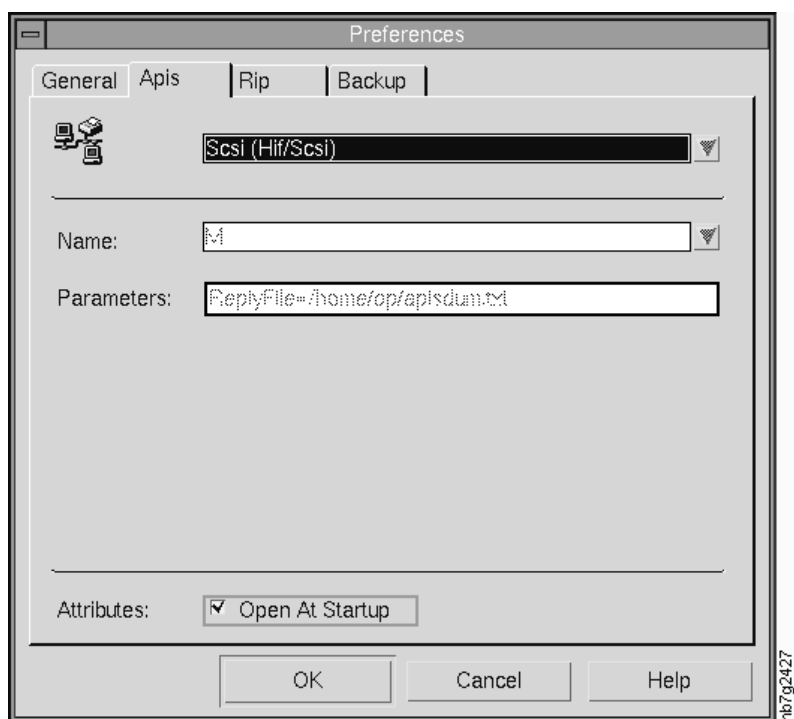


Figure 25. Apis Tab in the Preferences Window

Table 4. Apis Settings	
Setting	Explanation and Operator Action
<b>APIS device</b>	See page 25 for an explanation of APIS. Set to Scsi Hif/Scsi (host interface).
<b>Name</b>	This name specifies the InfoColor 70 APIS device.
<b>Open at startup</b>	The APIS connection with the PES opens automatically when you start the operator interface.
<b>Note:</b> The Apis settings are pre-set, do not change these settings.	

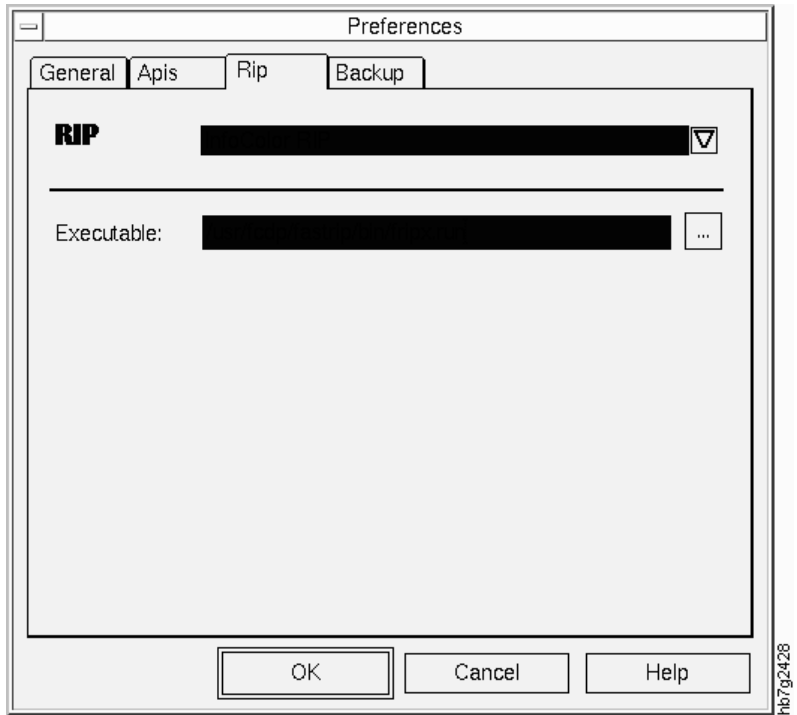


Figure 26. RIP Tab in the Preferences Window

Table 5. RIP Settings	
Setting	Explanation and Operator Action
<b>RIP</b>	Select InfoColor RIP for the RIP option to use.
<b>Executable</b>	This text field shows the path to the file that executes the RIP.
<b>Note:</b> The RIP settings are pre-set; do not change these settings.	

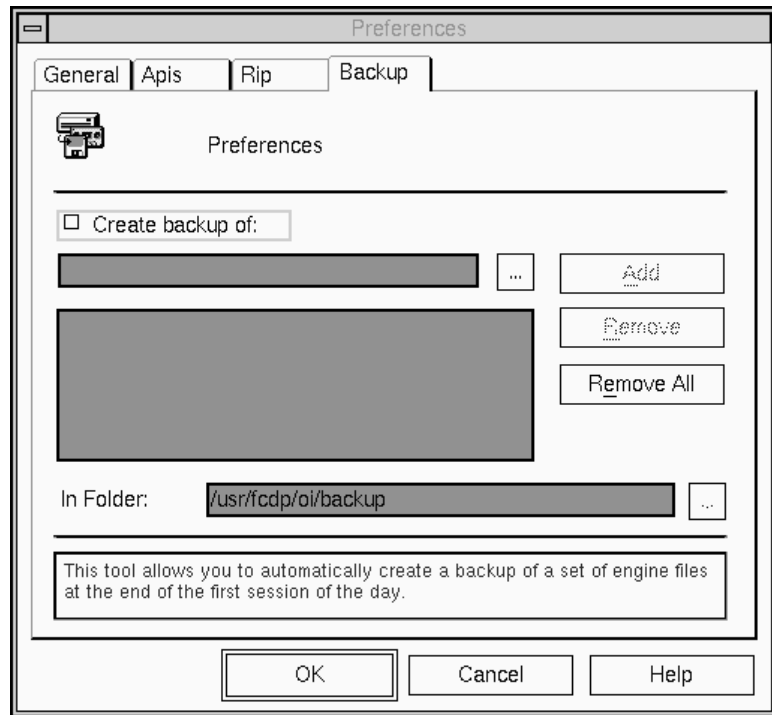



Figure 27. Backup Tab in the Preferences Window - To be supported at a later date

## File: Exit

When you want to turn off the InfoColor 70, you must first exit the operator interface software. To exit, select the following from the menu bar:

File ⇒ Exit  Alt+4

---

## Using the Explore Menu Functions

This section describes the functions available from the **Explore** menu. When you click on **Explore** from the menu bar, a pull-down menu lists all the **Explore** functions:

- InfoColor 70
- Image Disk
- Image Memory
- Print Queue
- Print Media
- Scripts
- Monitors
- Settings
- Signals
- Counters

The functions that you will use *most* often are summarized in “Summary of the Most-Used Functions” on page 77.

### Explore: InfoColor 70

The **InfoColor 70** window as shown in Figure 28 on page 32, lists the other Explore windows. It can be used to open the other Explore windows, however using the Explore pull-down menu list or the tool bar will open them faster.

**Explore** ⇒ **InfoColor 70**

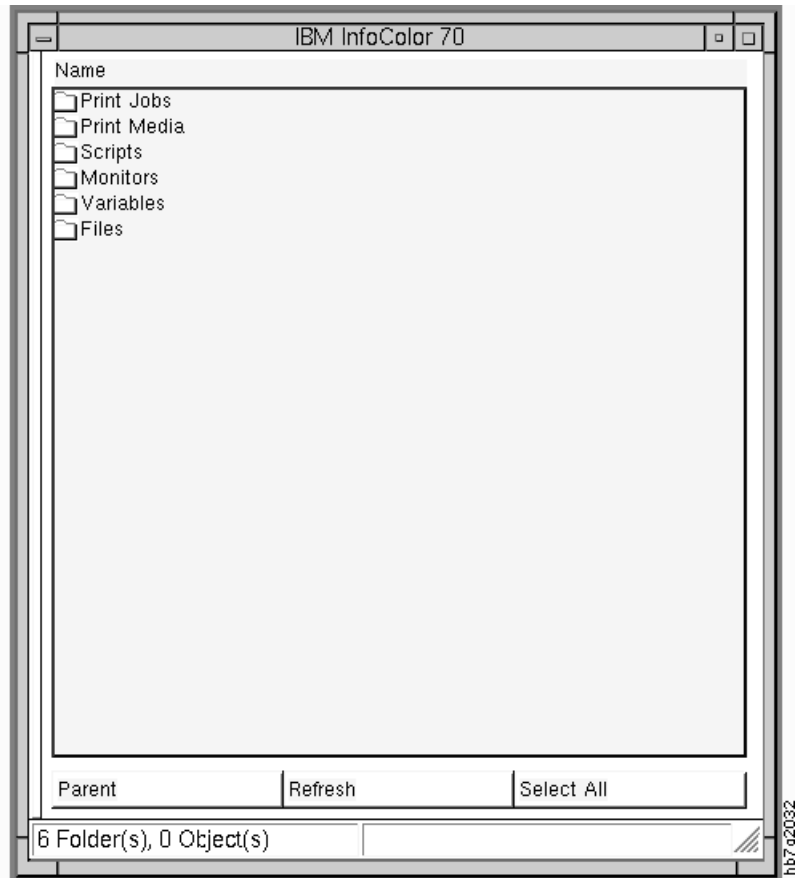


Figure 28. InfoColor 70 Window

## Explore: Image Disk

The **Image Disk** window, as shown in Figure 29 on page 33, provides an interface to manage job setup, RIPping, and printing for the Model 002.

Explore ⇒ Image Disk



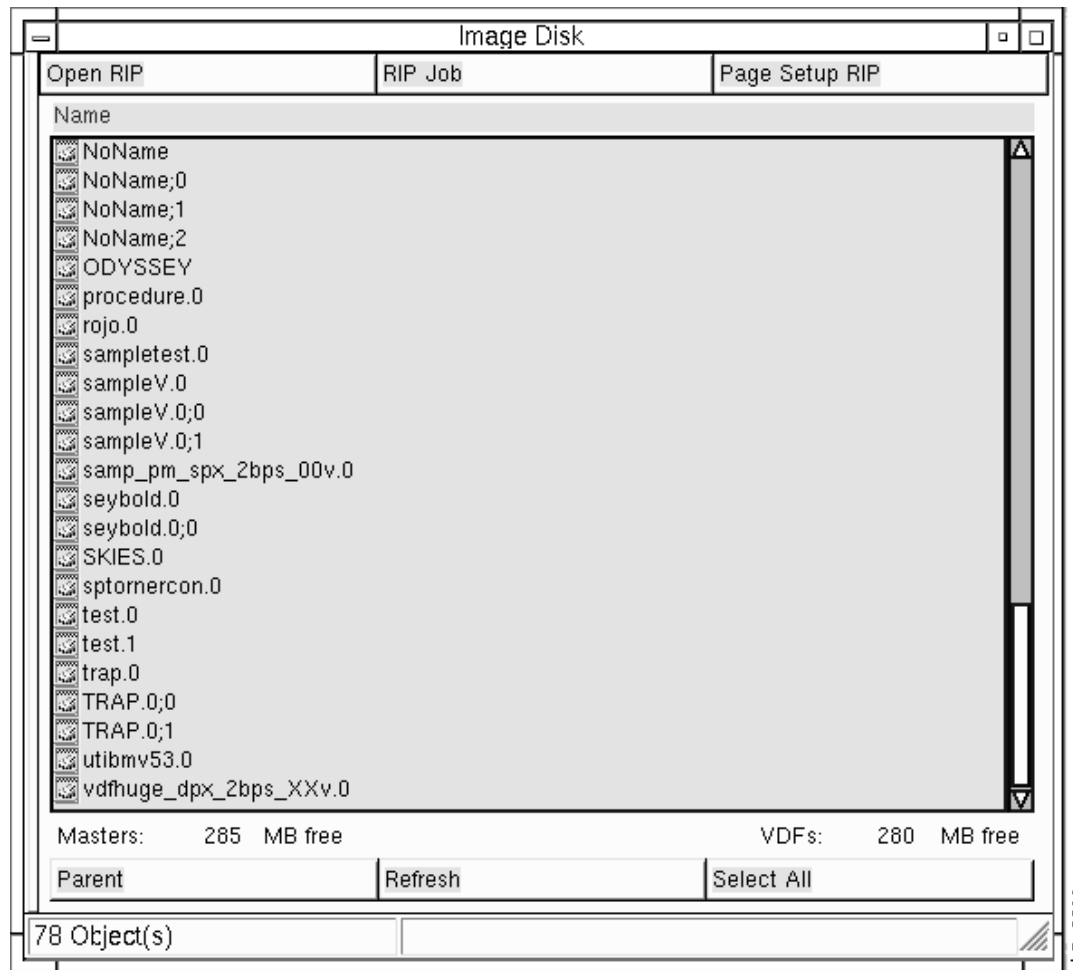


Figure 29. Image Disk Window

The **Image Disk** window allows you to:

- Define page setups
- RIP jobs
- Print jobs
- Check the properties of resident jobs
- Delete jobs from the list of resident jobs.

**Note:** The **Image Disk** window is not used in the InfoColor 70 Collator (Model 02C).

Refer to Chapter 9, “Printing on the Model 002” on page 185 for more information about using the **Image Disk** window.

## Explore: Image Memory

The **Image Memory** window, as shown in Figure 30, provides a list of jobs that have been completely downloaded, for the Model 002.

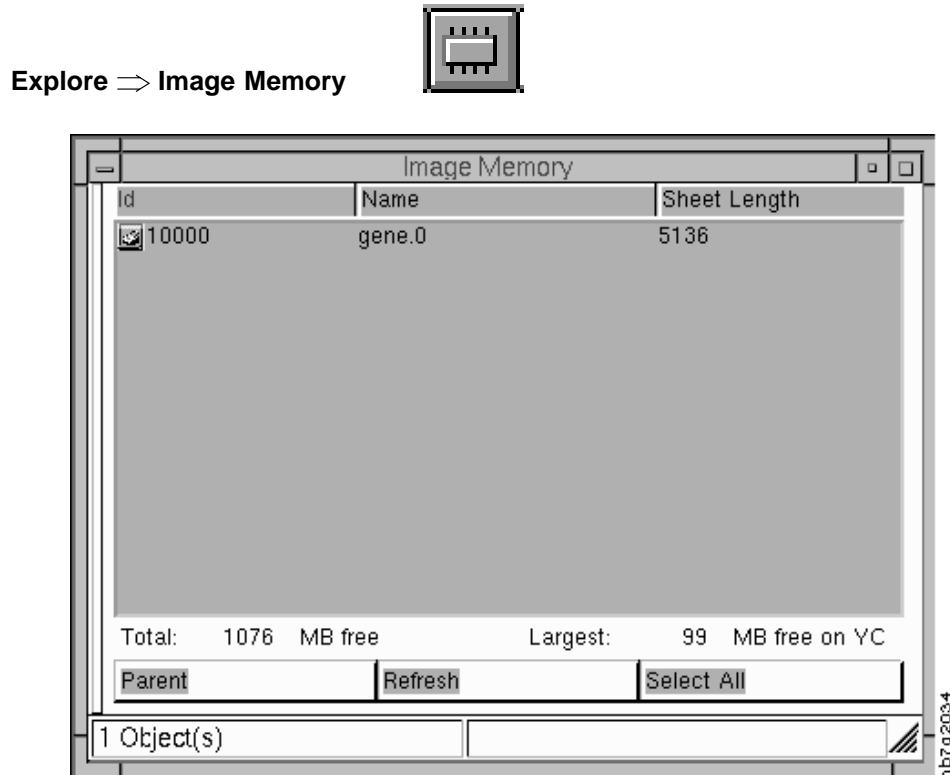


Figure 30. Image Memory Window

The **Image Memory** window allows you to:

- Monitor the amount of image memory
- Print jobs
- Check the properties of the jobs in memory
- Delete jobs from the list in memory, only if these jobs are not in the queue.
- Rename jobs in both the **Image Memory** window and **Print Queue** window.

**Note:** The **Image Memory** window is not used in the InfoColor 70 Collator (Model 02C).



## Explore: Print Queue

The **Print Queue** window, as shown in Figure 31, allows you to view and manage all jobs that are in the print queue. The InfoColor 70 has a first-in, first-out print queue.

Explore  $\Rightarrow$  **Print Queue** 

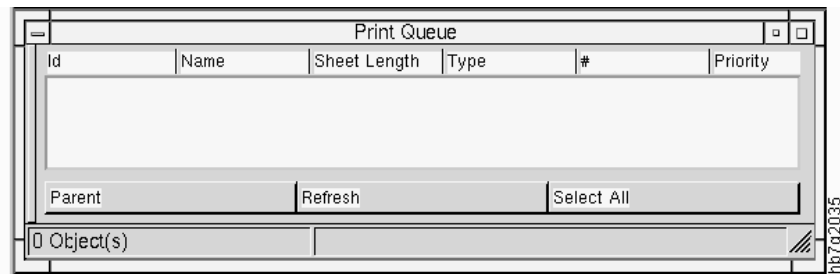


Figure 31. Print Queue Window

The **Print Queue** window allows you to:

- Remove jobs from the queue
- Check the properties of jobs in the queue
- Print jobs
- Rename jobs in both the **Print Queue** window and **Image Memory** window.

Refer to Chapter 10, “Managing the Printing Process” on page 213 for more information about using the **Print Queue** window to view and manage the print queue.

## Explore: Print Media

\*  
\*  
\*

The **Print Media** window, as shown in Figure 32, allows you to select the type of media you want to use for printing. Contact your marketing representative or your service representative for the latest information about the different medias for your InfoColor 70.

Explore  $\Rightarrow$  Print Media

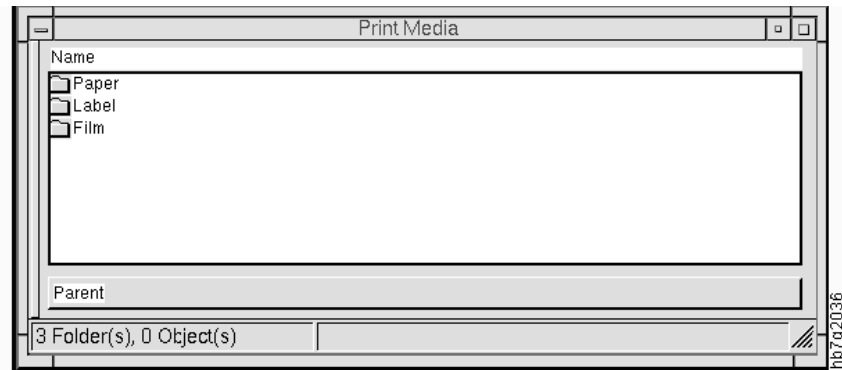


Figure 32. Print Media Window

## Explore: Scripts

The **Scripts** window, as shown in Figure 33, allows you to activate scripts. Scripts are predefined control sequences used by the InfoColor 70. Only a few scripts can be used by the operator; these include:

- Reset a fuser over temperature emergency stop
- Reset the paper conditioning control
- Reset the smoke alarm
- Reset the toner dosing controls.

A list of the script files an operator might use is located on “Scripts Commonly Used by the Operator” on page 399.

Explore ⇒ **Scripts**

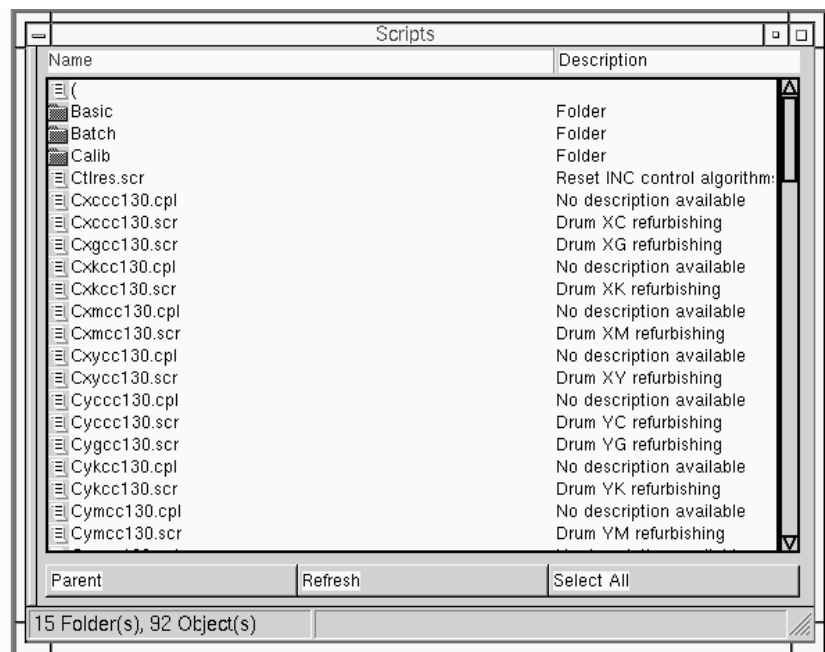


Figure 33. Scripts Window

To use the **Scripts** window, follow these steps:

1. Select the script you want to run.
2. Select the **Execute** pushbutton to run the script file.

## Explore: Monitors

The **Monitors** window, as shown in Figure 34, will be supported at a later date.

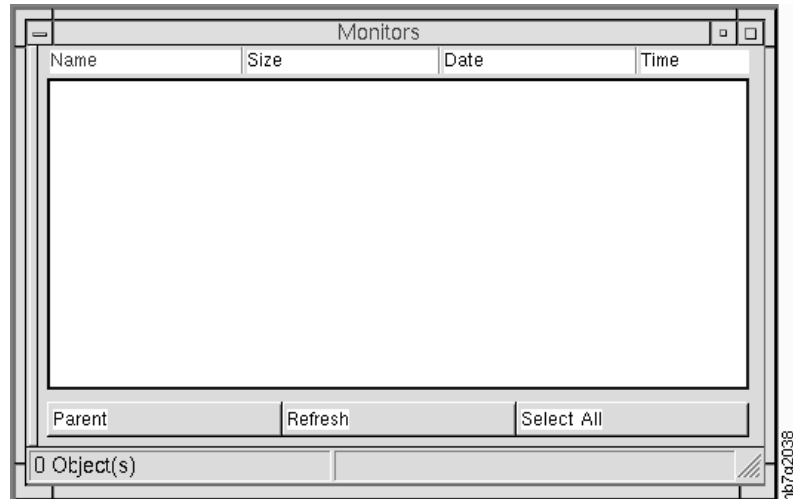


Figure 34. Monitors Window - To be supported at a later date

## Explore: Settings

The **Settings** window, as shown in Figure 35, contains different folders in which engine-specific settings are stored. This window is used *only* by your service representative.

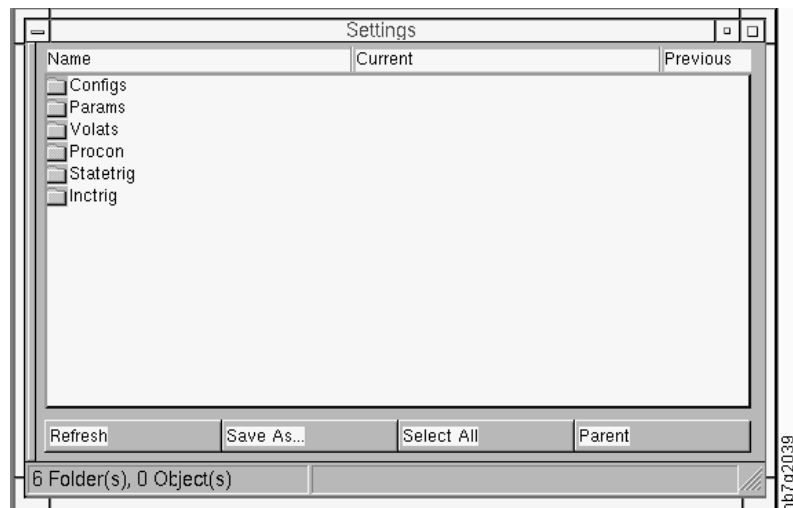


Figure 35. Settings Window

## Explore: Signals

The **Signals** window, as shown in Figure 36, contains different folders in which all the instrumentation signals are stored. This window is used only by your service representative.

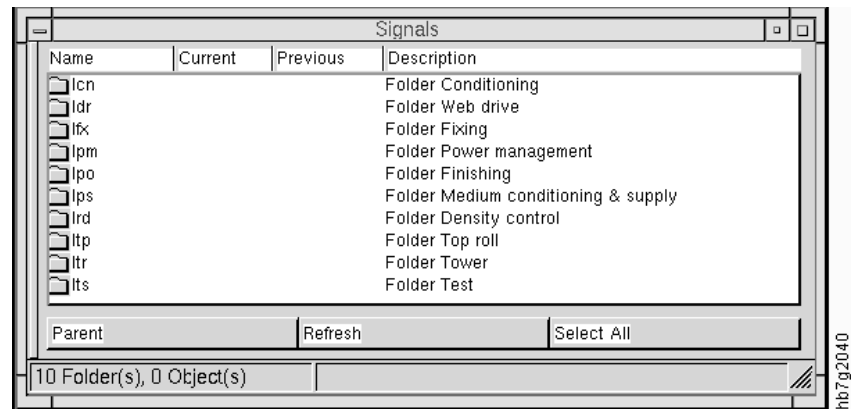


Figure 36. Signals Window

## Explore: Counters

The **Counters** window, as shown in Figure 37, contains **Factory** and **Custom** folders. The **Factory** folder contains non-resettable general counters and resettable counters for preventive maintenance. These counters are the same for every printing engine. You can define counters yourself and save them in the **Custom** folder.

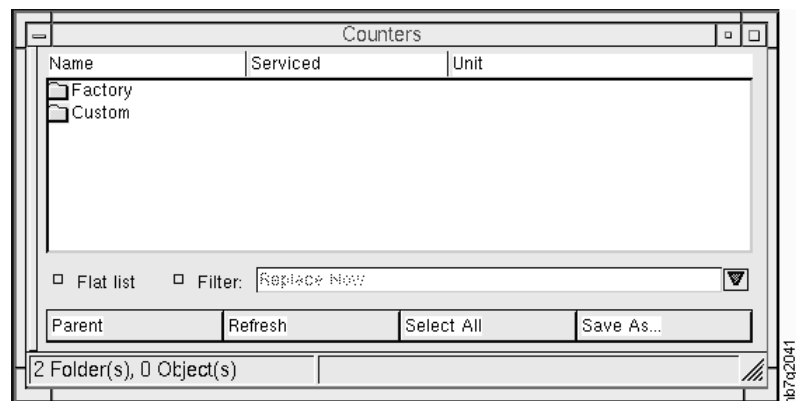


Figure 37. Counters Window

Check the **Filter** checkbox to filter the counters. Select **Replace now** or **Replace soon**, **Service now**, and **Service soon**.

Check the **Flat List** checkbox to list the counters.

### \* **Parent, Refresh, and Select All**

\* This section describes some of the functions available from the bottom of the  
\* Explore screens. Each one of these; **Parent**, **Refresh**, and **Select All**, have  
\* different functions.

\* For example, when you click **Parent**, you will go back to the previous screen.

\* For example, when you click **Refresh**, this causes the screen to refresh itself.

\* For example, when you click **Select All**, this selects all the items except for the  
\* folders on the list.

## Using the Operations Menu Functions

This section describes the functions available from the **Operations** menu. When you click on **Operations** from the menu bar, a pull-down menu lists all the functions available:

- Emergency Stop
- Mount Print Media
- Refill Toner Containers
- Change Developer (for service representative only)
- Calibrate PRS Sensors (for service representative only)
- Service Intervention (for service representative only)
- Download Iref (for service representative only)
- Refurbish Drums (currently not required)

The functions that you will use *most* often are summarized in “Summary of the Most-Used Functions” on page 77.

The **Mount Print Media** and **Refill Toner Containers** functions are similar in that these operations involve a sequence of actions that are performed partly by the operator and partly by the software. Before you use either of these functions, you must first stop the print engine.

Each window lists sequential actions to take. Each action is preceded by an icon.



	This icon means the action is done by the software and is initiated when you select the <b>Do It</b> pushbutton.
	This icon means the action has to be done by you. When an operator action is highlighted, a message near the bottom of the window tells you what you need to do. After you do the action, the <b>Do It</b> pushbutton changes to the <b>Done</b> pushbutton. You must click the <b>Done</b> pushbutton after you finish the action. You can interrupt an action with the <b>Cancel</b> pushbutton, but not all operations can be interrupted.

Table 6 tells you where to find more information about these functions.

<b>Operational Functions</b>	<b>Where To Go For Task Descriptions</b>
Mount Print Media	“Starting the Roll-Change Procedure” on page 275.
Refill Toner Containers	“Refilling the Toner” on page 334.
Change Developer	<b>Only a service representative should use this function</b>
Calibrate PRS Sensors	<b>Only a service representative should use this function</b>
Service Intervention	“Operations: Service Intervention” on page 46.

## Operations: Emergency Stop

The Emergency Stop function provides one way to stop the print engine immediately when you have an emergency.

Operations ⇒ Emergency Stop



F4

See “Interrupting Printing for an Emergency” on page 215 for all the methods you can use to cause the print engine to stop for an emergency.

## Operations: Mount Print Medium

The **Mount Print Medium** window as shown in Figure 38, is used when replacing the paper roll to set paper conditioning for the new paper roll.

Operations ⇒ Mount Print Media



Ctrl+M

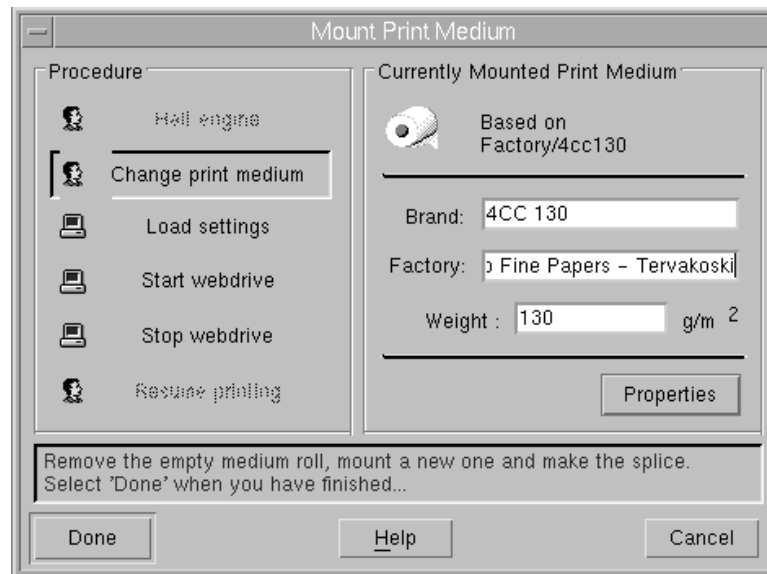


Figure 38. Mount Print Media Window

**Attention:** This operation involves a sequence of actions that are performed partly by the operator and partly by the software. Before you use this function, you must first stop the print engine.



## Operations: Refill Toner Containers

The **Refill Toner Containers** window as shown in Figure 39, is used during the procedure to refill the toner containers when they are low or empty. Refer to Chapter 16, “Checking and Refilling Toner” on page 333 for more information about refilling toner.

Operations ⇒ Refill Toner Containers

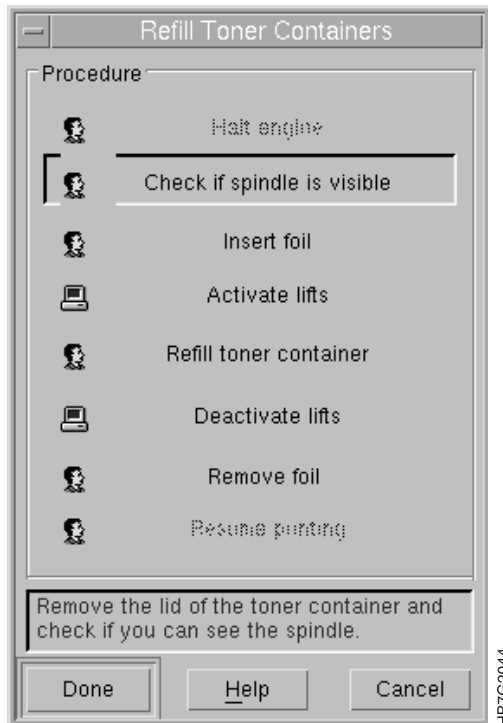


Figure 39. Refill Toner Containers Window

**Attention:** This operation involves a sequence of actions that are performed partly by the operator and partly by the software. Before you use this function, you must first stop the print engine.

## Operations: Change Developer

The **Change Developer** window as shown in Figure 40, is used only by the service representative.

Operations ⇒ Change Developer

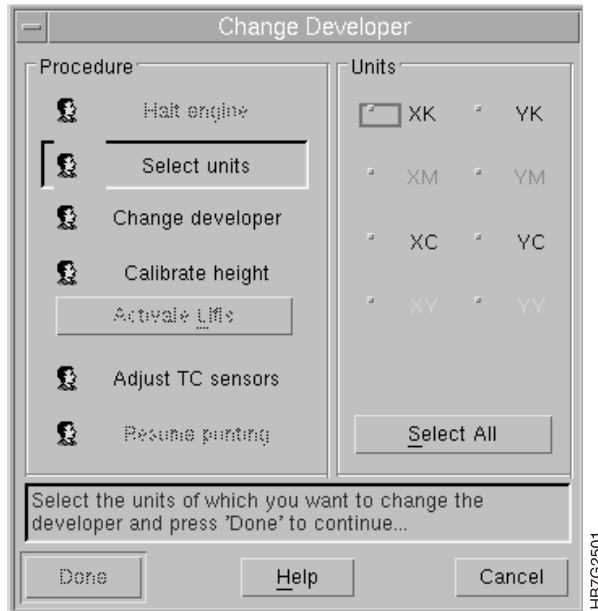


Figure 40. Change Developer Window

## Operations: Calibrate PRS Sensors

The **Calibrate PRS Sensors** window as shown in Figure 41, is used only by the service representative.

Operations ⇒ **Calibrate PRS Sensors**

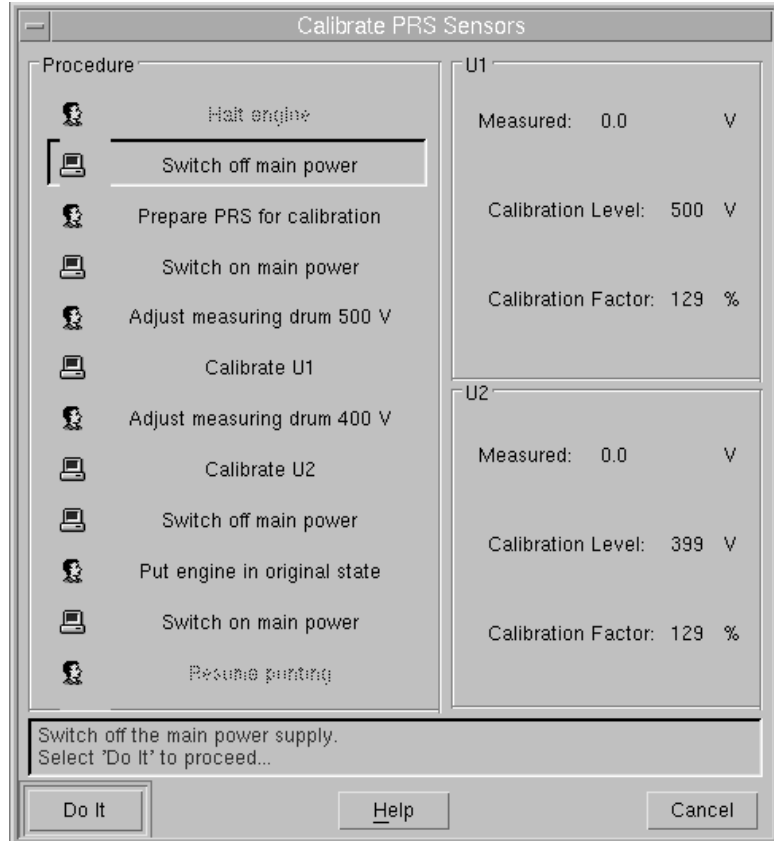


Figure 41. Calibrate PRS Sensors Window

## Operations: Service Intervention

The **Service Intervention** window allows you to open the print-tower doors to do maintenance or to solve problems without turning off the main power to the InfoColor 70.

The messages you see in this window, as shown in Figure 42, take you through the steps to do a service intervention. See “Beginning the Service-Intervention Procedure” on page 313 for an explanation of this procedure.

### Operations ⇒ Service Intervention

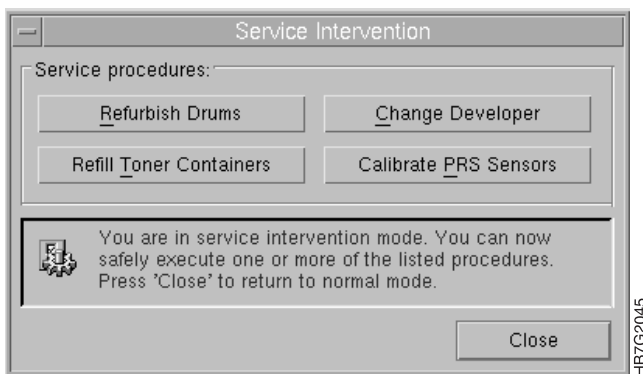


Figure 42. Service Intervention Window

## Operations: Download Iref

The Download Iref function is used only by the service representative.

---

## Using the Process Control Menu Functions

This section describes the functions available from the **Process Control** menu. When you click on **Process Control** from the menu bar, a pull-down menu lists all the functions available:

- Density Control
- Toner Concentration Setpoint
- Print Medium and Engine Conditioning
- General Print Medium Settings
- Advanced Print Medium Settings
- Engine State
- Engine State Progress
- Register Control
- Surface Potential
- Web Tension

The functions that you will use *most* often are summarized in “Summary of the Most-Used Functions” on page 77.

Several different processes need to be monitored. Some processes have various setpoints that you might need to adjust to control or to optimize print quality. These processes are listed in Table 7.

<b>Process Control Functions</b>	<b>Where To Go For Task Descriptions</b>
Density Control	“Controlling Density” on page 241
Toner Concentration Setpoint	“Correcting for High-Coverage Jobs” on page 249
Print Medium and Engine Conditioning	“Monitoring Print Medium Conditioning” on page 256
General Print Medium Settings	“Process Control: General Print Medium Settings” on page 52
Engine State	“Understanding Print Engine States” on page 255
Engine State Progress	“Process Control: Engine State Progress” on page 54
Register Control	“Understanding Registration” on page 228
Surface Potential	“Process Control: Surface Potential” on page 55
Web Tension	“Monitoring and Adjusting Web Tension” on page 253

To access the appropriate window for the process you want to monitor or adjust, select **Process Control** from the menu bar and then select the process.

The process-control functions listed previously have windows that are similar. Figure 43 on page 48 shows an example of a process control window in which you can adjust setpoints.

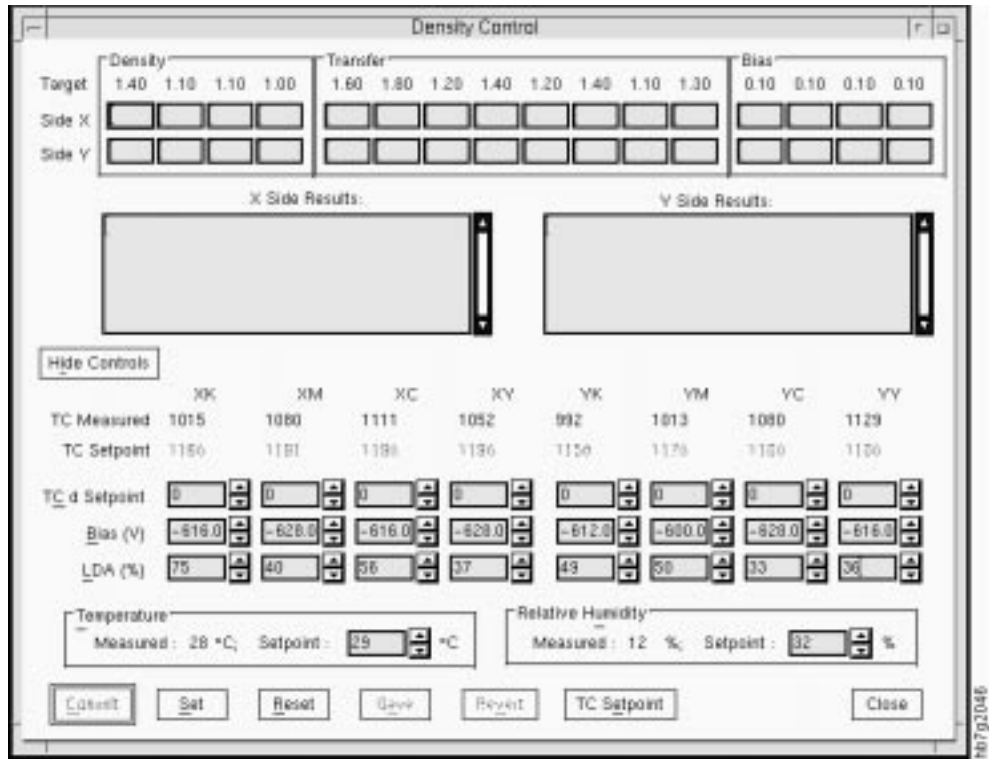


Figure 43. Example of a Process Control Window

The parameters that you can adjust are displayed in an edit box with two arrow buttons, as shown in Figure 44.

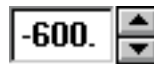


Figure 44. Sample Edit Box with Arrow Buttons

To change the value of any parameter that you can adjust, do one of the following:

- Double click to select the value and type a new value.
- Use the up and down arrows to increase or decrease the value of the parameter.

**Note:** When you change a parameter to an illegal value, you will see as **Illegal Value** prompt or message, with the high/low values displayed. The high/low value is automatically selected when you click the **OK** button.

The bottom of most process control windows contain pushbuttons, which you should use as follows:

- Set** When you enter new values in the edit boxes, click this pushbutton to send the new values to the PES.
- Reset** When you enter new values but decide you want to keep the original values, click on this pushbutton, as shown in Figure 45 on page 49, to reset new entries to their actual values in the PES. You can do this only if you have not yet clicked on the **Set** pushbutton.



Figure 45. Reset Pushbutton

**Save** When you enter and then set new values, wait until all the values go back to black, and then click this pushbutton to save the adjusted values. When the PES is restarted, these adjusted values will be used. This happens only when one or more values are adjusted and sent to the PES by the **Set** pushbutton.

**Revert** When you enter new values and have already clicked the **Set** pushbutton, use the **Revert** pushbutton, as shown in Figure 46, to revert to the original values. You can do this only when one or more values have been adjusted and sent to the PES by the **Set** pushbutton, and the numbers are black.

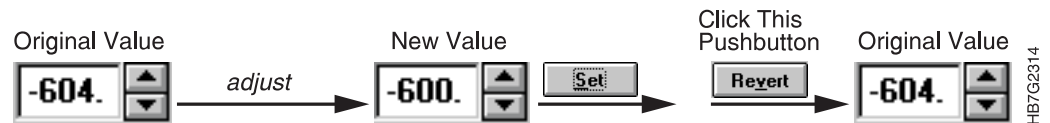


Figure 46. Revert Pushbutton

If you change a setting in a process control window it is automatically saved when the window is closed.

## Process Control: Density Control

The **Density Control** window, as shown in Figure 47 on page 50, is used to monitor and change the settings that affect print density. This window is used when the operator uses the densitometer. For more information about controlling density and using the densitometer see “Controlling Density” on page 241.

Process Control ⇒ Density Control  Ctrl+D

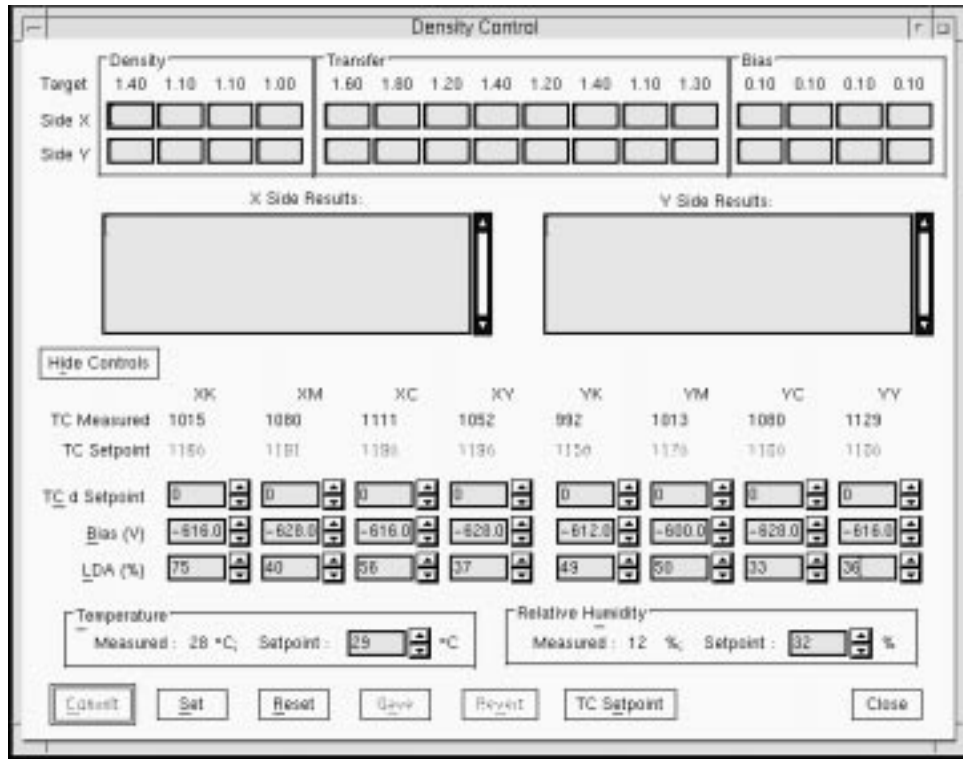


Figure 47. Density Control Window

## Process Control: Toner Concentration Setpoint

The **Toner Concentration Setpoint** window, as shown in Figure 48 on page 51, is used to check the age of the develop mix and other settings that affect print density. For more information, see “Correcting for High-Coverage Jobs” on page 249.

**Process Control** ⇒ **Toner Concentration Setpoint**



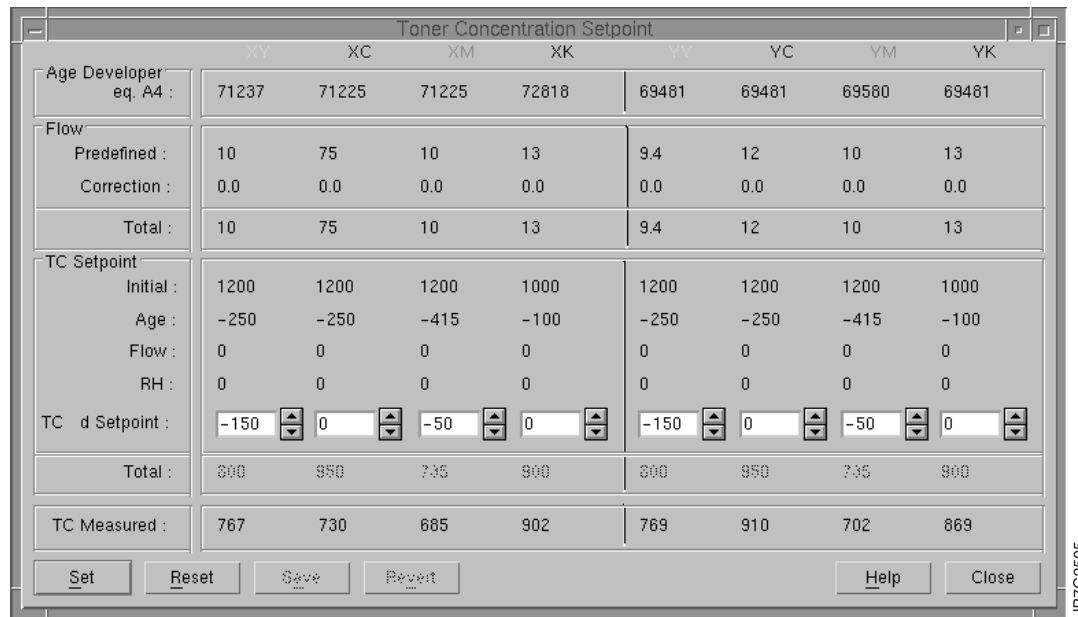


Figure 48. Toner Concentration Setpoint Window

## Process Control: Print Medium and Engine Conditioning

The **Print Medium and Engine Conditioning** window, as shown in Figure 49 on page 52, is used to monitor and change the settings that affect the print medium conditioning and engine conditioning. See Chapter 12, “Monitoring and Adjusting Processes” on page 253 for more information about monitoring the print medium and the engine.

Process Control ⇒ Print Medium and Engine Conditioning



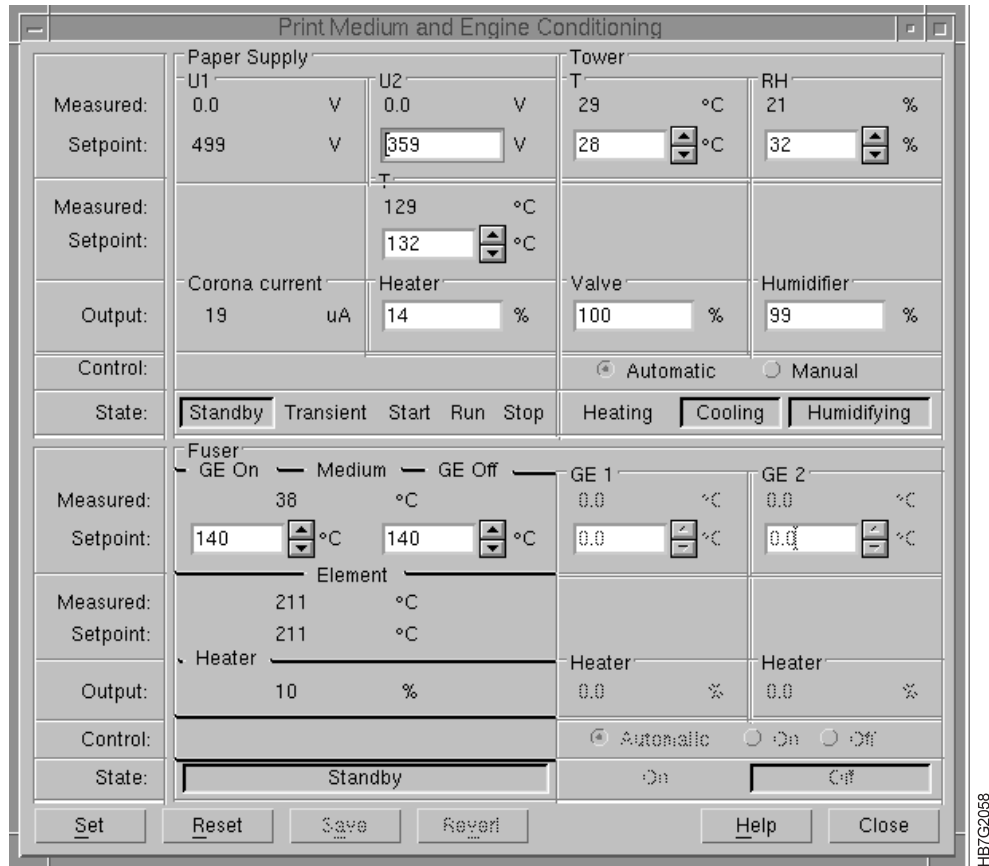


Figure 49. Print Medium and Engine Conditioning

## Process Control: General Print Medium Settings

The **General Print Medium Settings** window, as shown in Figure 50 on page 53, is used to view and change settings for paper conditioning and the fuser temperature.

**Process Control** ⇒ **General Print Medium Settings**

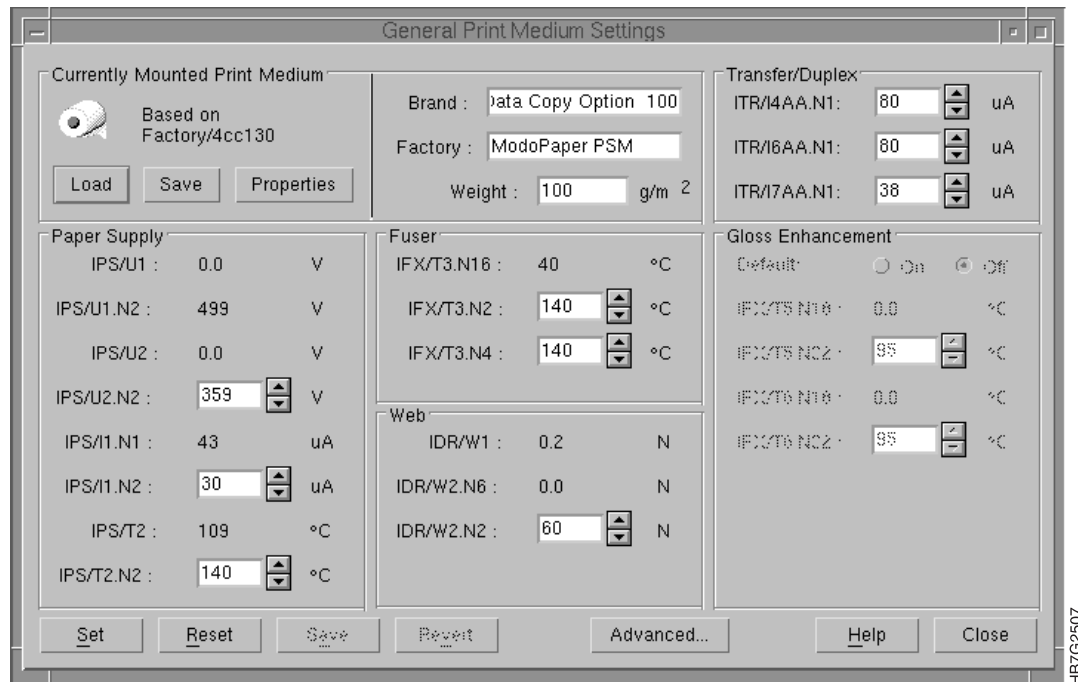


Figure 50. General Print Medium Settings Window

## Process Control: Advanced Print Medium Settings

The **Advanced Print Medium Settings** window, as shown in Figure 51, is primarily used by the service representative.

**Process Control** ⇒ **Advanced Print Medium Settings**

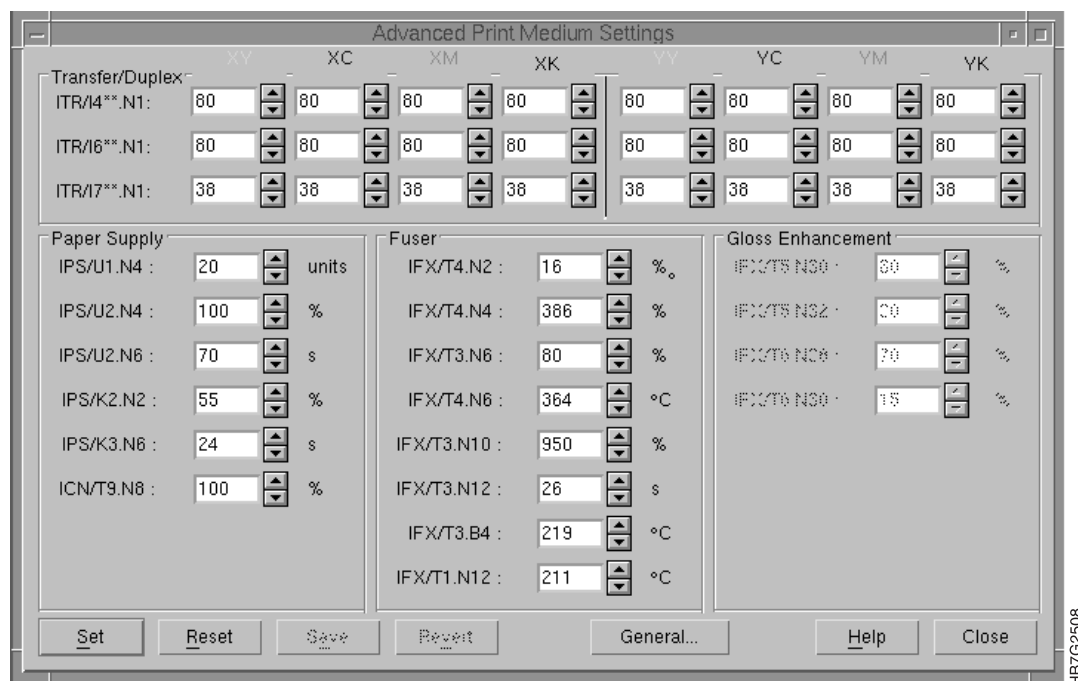


Figure 51. Advanced Print Medium Settings Window

## Process Control: Engine State

The **Engine State** window allows you to monitor the print engine. This window should be kept open during operation of the InfoColor 70. The **Engine State** window changes depending on the state of the print engine. An example is shown in Figure 52.

Process Control ⇒ Engine State  Ctrl+E

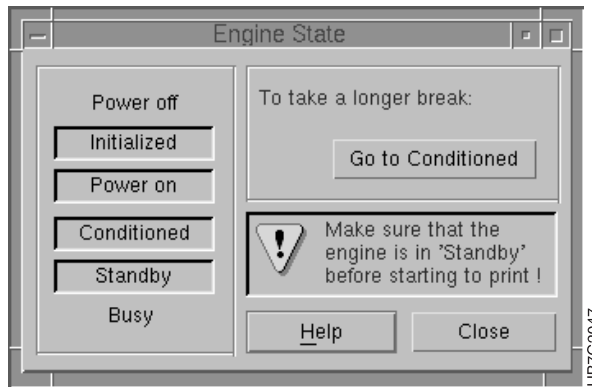


Figure 52. Engine State Window

The **Engine State** window not only shows the current state of the print engine, but also displays messages for the operator and pushbuttons to perform actions.

See “Monitoring the Engine” on page 254 for complete information on monitoring and interacting with the **Engine State** window.

## Process Control: Engine State Progress

The **Engine State Progress** window, as shown in Figure 53, allows you to monitor the engine as it warms up.

Process Control ⇒ Engine State Progress Ctrl+O

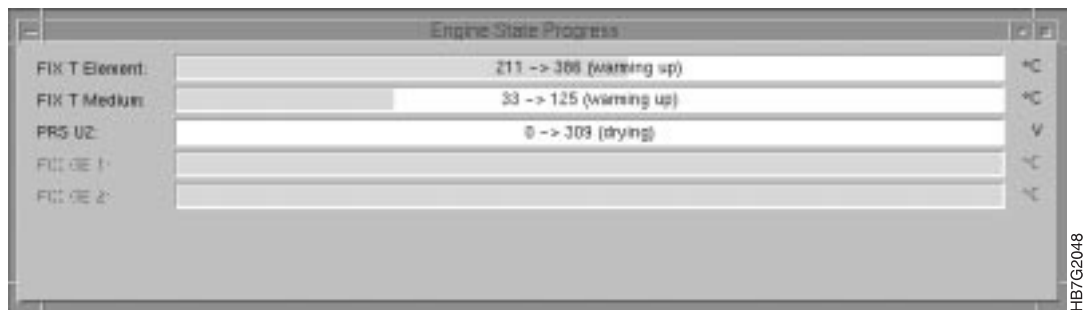


Figure 53. Engine State Progress Window

## Process Control: Register Control

The **Register Control** window, as shown in Figure 54, allows you to adjust registration. For more information about adjusting registration, see Chapter 11, “Controlling Print Quality” on page 225.

Process Control ⇒ Register Control  **Ctrl+R**

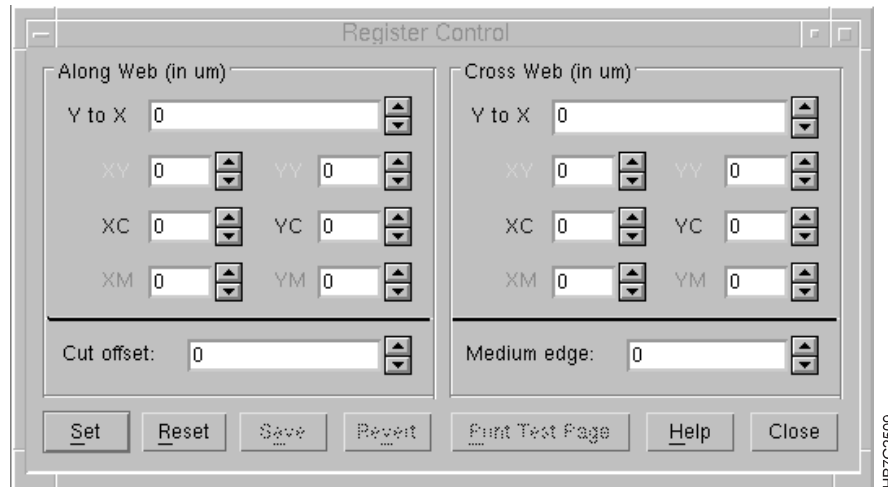


Figure 54. Register Control Window

## Process Control: Surface Potential

The **Surface Potential** window, as shown in Figure 55, allows you to see whether each drum surface is at the potential that is optimum for imaging, which is approximately -630V.

Process Control ⇒ Surface Potential  **Ctrl+U**

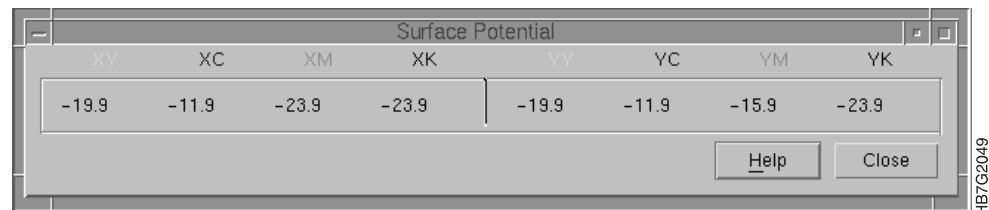


Figure 55. Surface Potential Window

## Process Control: Web Tension

The **Web Tension** window, as shown in Figure 56, allows you to adjust the torque motor setpoint. For more information about the torque motor setpoint, see Chapter 12, "Monitoring and Adjusting Processes" on page 253.

**Process Control** ⇒ **Web Tension**                      **Ctrl+W**

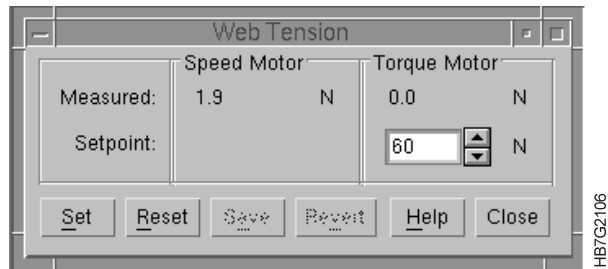


Figure 56. Web Tension Window

---

## Using the Maintenance Menu Functions

The operator is responsible for the paper and toner supplies and for emptying the toner waste bottles. Two Maintenance menu function windows are provided to allow you to monitor the use of paper, confirm the level of toner after filling the containers, and to monitor the toner waste bottles:

- Counters
- Toner Containers

The functions that you will use *most* often are summarized in “Summary of the Most-Used Functions” on page 77.

### Maintenance: Counters

The **Counters** window, as shown in Figure 57, allows you to view your paper usage.

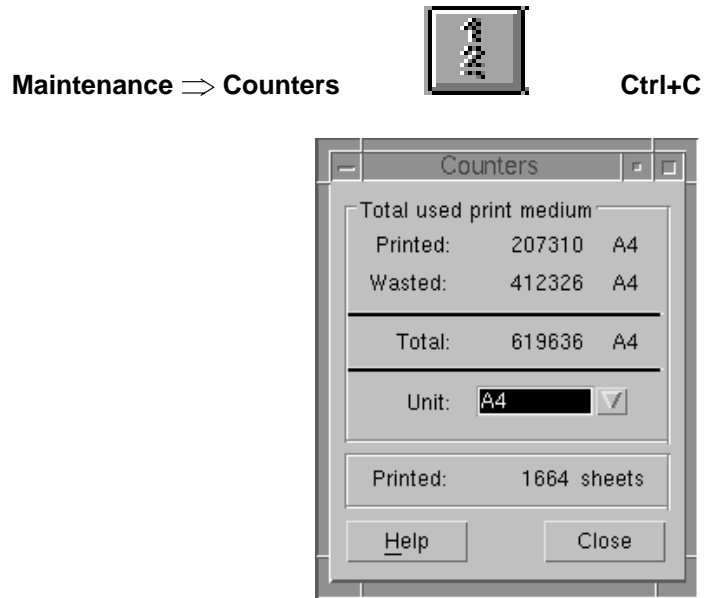


Figure 57. Counters Window

See “Understanding the Explore Counters” on page 265 for more information about the items you can monitor in the **Counters** window.

## Maintenance: Toner Containers

The **Toner Containers** window, as shown in Figure 58, allows you to monitor the status of your toner containers and waste bottles.

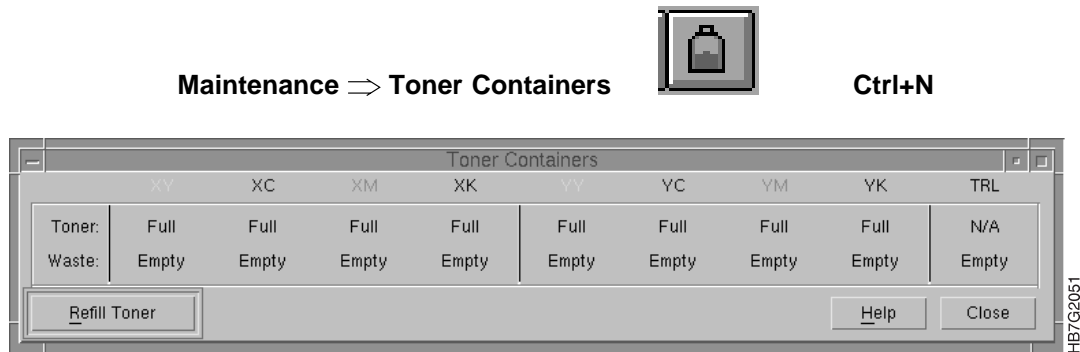


Figure 58. Toner Containers Window

**Attention:** Do not let any of the toner containers become empty. If the developer unit runs out of toner, the mix is ruined.

- \* An alarm is issued in the **Active Alarms** window when any toner container
- \* becomes empty or a waste bottle becomes full. The **Toner Containers** window
- \* shows full or empty conditions. “Refilling the Toner” on page 334 describes how to
- \* refill the toner containers and “Replacing Toner Waste Bottles” on page 338
- \* describes how to empty the toner waste containers.



---

## Using the Alarm Menu Functions

The Alarm function is provided to allow you to view current error conditions.

### Alarm: Active Alarms

The **Active Alarms** window, as shown in Figure 59, allows you to view the current error conditions.

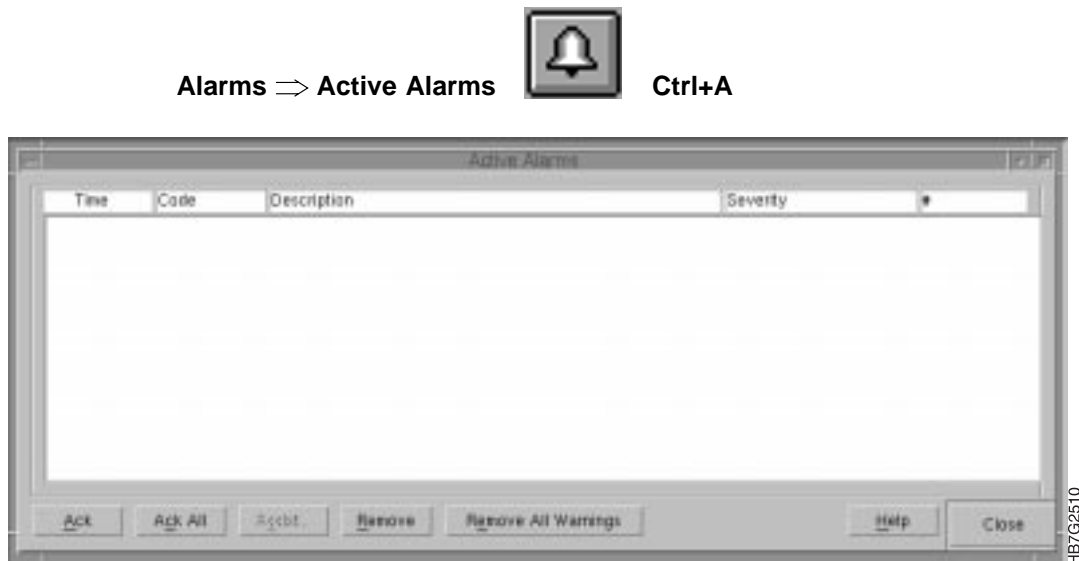


Figure 59. Active Alarms Window

Although you can open the **Active Alarms** window from the menu bar, this is not necessary. When an alarm or a warning occurs, the **Active Alarms** window opens automatically.

See “Using the Active Alarms Window” on page 379 for a detailed description of the **Active Alarms** window.

---

## Using the View Menu Functions

The View menu functions allow you to hide or show the tool bar and status bar. See “The Tool Bar” on page 21 and “The Status Bar” on page 24 for more information.

---

## Using the Window Menu Functions

The InfoColor 70 provides the following two unique Window functions:

- Save Workspace
- Load Workspace

You can save up to four different workspace setups. Once you know which windows you want open and how you want them positioned, select the following to save your workspace:

**Window** ⇒ **Save Workspace** ⇒ **Operator 1**

The next time you turn on and start the **IBM InfoColor 70** interface software, select the following to load the saved workspace:

**Window** ⇒ **Load Workspace** ⇒ **Operator 1**

You may also use the tool bar icon, as shown in Figure 60.



*Figure 60. Load and Save Workspace Functions*

**Note:** You can also save your workspace using the procedure described in “File: Preferences” on page 27.

---

## IBM ThruPRINT Interface

This section describes the IBM ThruPRINT Interface for the Model 002 and the Model 02C.

### ThruPRINT Interface for the Model 002

The **IBM ThruPRINT** interface is used to RIP then Print InfoPrint and Variable Data files.

ThruPRINT lists the InfoPrint and Variable Data file that you want to RIP then Print.

### ThruPRINT Interface for the Model 02C

The **IBM ThruPRINT** interface is used to RIP and print files on the Collator and to manage Collator space. ThruPRINT is also used for RIPing variable data files and jobs sent from the InfoPrint MPC.

ThruPRINT lists the files that you want to RIP or print.

For the Model 02C, PostScript files and Book Ticket Files can be listed on the **Files** tab of the **ThruPRINT** window. Variable data files created by the PageMaker Plug-ins or QuarkXPress XTensions are listed on the **MergeDocument** tab of the **ThruPRINT** window. Jobs sent from the InfoPrint MPC are listed on the **InfoPrint** tab. From these lists you can:

- Select a file to RIP
- Select a RIPed file to print
- Select a BTF to print
- Change the properties of a RIPed file.

---

## Using the ThruPRINT Window

This section describes the functions available from the **ThruPRINT** window. The following three tabs in the main window are described in this section:

- Files (Model 02C only)
- MergeDocument
- InfoPrint

### Files Tab

The **Files** tab is used to RIP and print Collator files.

**Note:** This tab is only available on the Model 02C.

Refer to “RIPing PostScript Files on the Model 02C” on page 161 for information about RIPing Collator files. Refer to Chapter 8, “Printing on the Model 02C” on page 173 for information about printing Collator files.

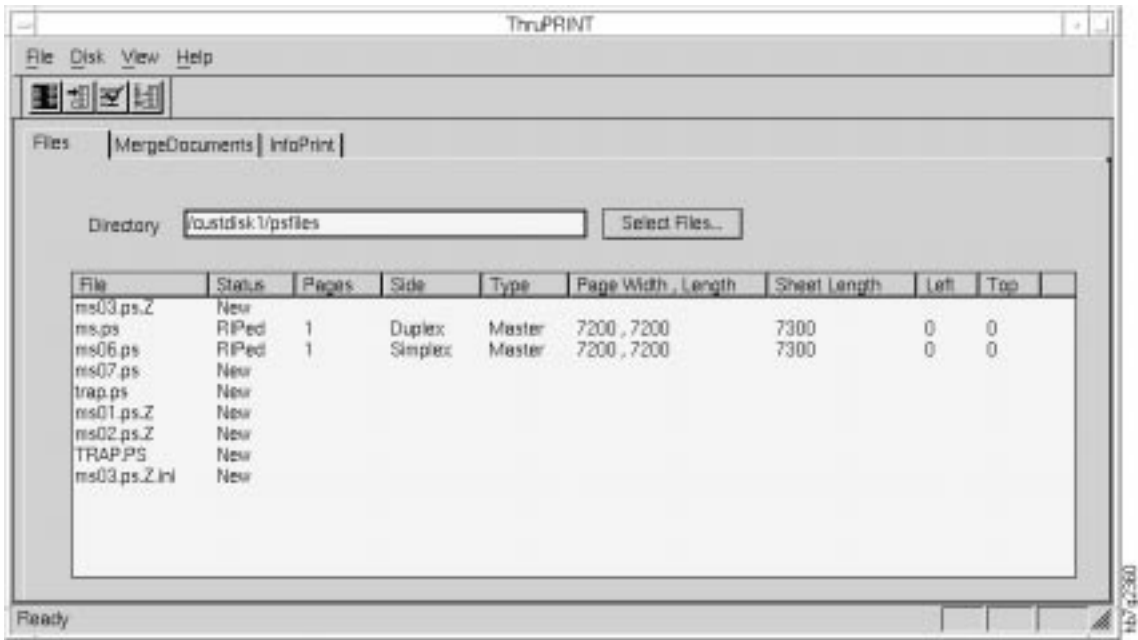


Figure 61. Files Tab in the ThruPRINT Window

Field	Description
Directory	This field indicates the directory whose files will be displayed. The default value is /custdisk1/psfiles. The <b>Select Files...</b> pushbutton allows you to select files to display in the file list.
File	The name of the file. The files are sorted alphabetically, but can be resorted by clicking on the <b>File</b> column header.
Status	<p>The PostScript files that are displayed have a status of New, RIPing, RIPed, or Queued.</p> <ul style="list-style-type: none"> <li>• A status of New means the file has not been RIPed and is not on the Collator.</li> <li>• A status of RIPing means that the file is currently RIPing.</li> <li>• A status of RIPed means the RIPing has completed and the file resides on the Collator. If the status is RIPed it does not mean that the file RIPed without errors.</li> <li>• A status of Queued means that any new jobs submitted for RIPing are held until the prior job is completed being RIPed.</li> </ul> <p>You can sort the files alphabetically under each category by clicking on the Status column header.</p>
Pages	The number of pages in the file.
Side	Simplex or Duplex
Type	This is the type of file. The values are Master, VDF0, VDF1, VDF2, VDF3, or Test. Refer to Chapter 5, "Using Variable Data" on page 113 for more information.

<i>Table 8 (Page 2 of 2). Files Tab Field Descriptions</i>	
<b>Field</b>	<b>Description</b>
Page Width, Length	Page width stated in number of spots, as it was RIPed. Page length stated in number of spots, as it was RIPed.
Sheet Length	This is the sheet length, stated in number of spots.
Left (left margin)	The number of spots from the left side of the sheet.
Top (top margin)	The number of spots from the top of the sheet.

## MergeDocument Tab

The **MergeDocument** tab is used to RIP and print variable data files generated by PageMaker Plug-Ins and QuarkXPress XTensions.

Refer to “RIPing Variable Data Files on the Model 02C” on page 161 and “RIP then Print Variable Data Files on the Model 002” on page 167 or “Printing Variable Data Files on the Model 002” on page 186 for information about RIPing and printing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

Refer to “Printing Variable Data Jobs on the Model 02C” on page 175 and “RIP then Print Variable Data Files on the Model 002” on page 167 for information about printing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

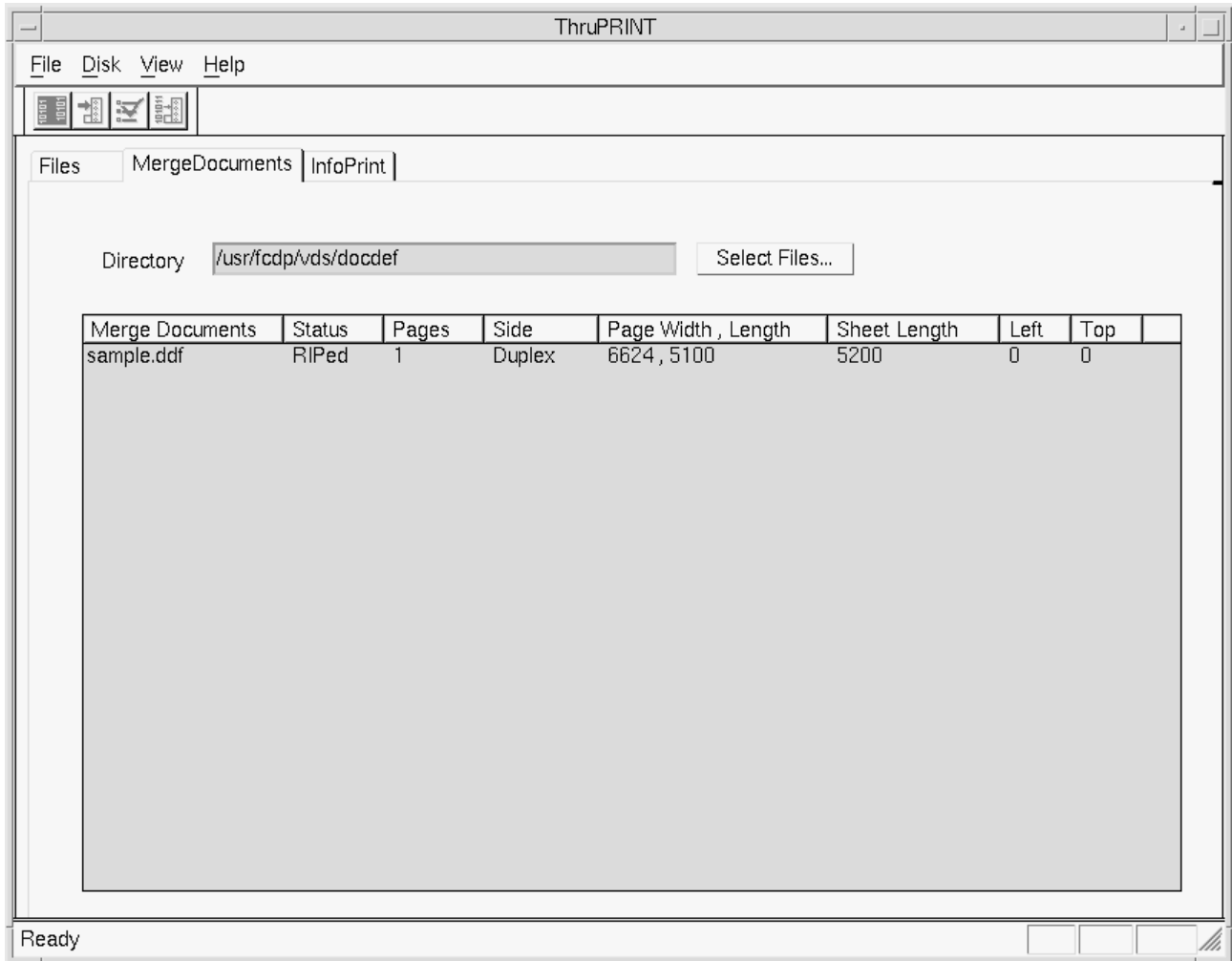


Figure 62. MergeDocument Tab in the ThruPRINT Window

Table 9 (Page 1 of 2). MergeDocument Tab Field Descriptions	
Field	Description
Directory For both the Model 002 and the Model 02C.	The directory that contains document definition files. The default value is /custdisk1/vds/docdef. The <b>Select Files...</b> pushbutton allows you to select files to display in the file list below.
Mergedocuments For both the Model 002 and the Model 02C.	The name of the document definition file. The files are sorted alphabetically, but can be resorted by clicking on the File column headers.

<i>Table 9 (Page 2 of 2). MergeDocument Tab Field Descriptions</i>	
<b>Field</b>	<b>Description</b>
Status For both the Model 002 and the Model 02C.	<p>The files that are displayed have a status of New, RIPing, RIPed, or Queued.</p> <p>A status of New means that the variable data PostScript files have not been RIPed and are not on the Collator.</p> <p>A status of RIPing means that the files are currently RIPing.</p> <p>A status of RIPed means the RIPing has completed and the files reside on the Collator. A status of RIPed does not mean that the files RIPed without errors.</p> <p>A status of Queued means that any new jobs submitted for RIPing are held until the prior job is completed being RIPed.</p> <p>You can sort the files alphabetically under each category by clicking on the Status column header.</p>
<b>For Model 02C only, for previously RIPed files.</b>	
Pages	The number of pages in the master file.
Side	Simplex or Duplex
Page Width, Length	<p>The page width of the master file, stated in the number of spots.</p> <p>The page length of the master file, stated in the number of spots.</p>
Sheet Length	This is the sheet length of the master file, stated in number of spots.
Left (left margin)	The number of spots from the left side of the sheet.
Top (top margin)	The number of spots from the top of the sheet.

## InfoPrint Tab

The **InfoPrint** tab is used to RIP and print jobs sent from the InfoColor 70 Multiple Printer Controller (MPC).

Refer to “RIPing InfoPrint Jobs on the Model 02C” on page 163 and “RIP then Print InfoPrint Jobs on the Model 002” on page 168 for information about RIPing InfoPrint jobs.

Refer to “Printing InfoPrint Jobs on the Model 02C” on page 175 and “RIP then Print InfoPrint Jobs on the Model 002” on page 168 or “Printing InfoPrint Files Model 002” on page 187 for information about printing InfoPrint jobs.

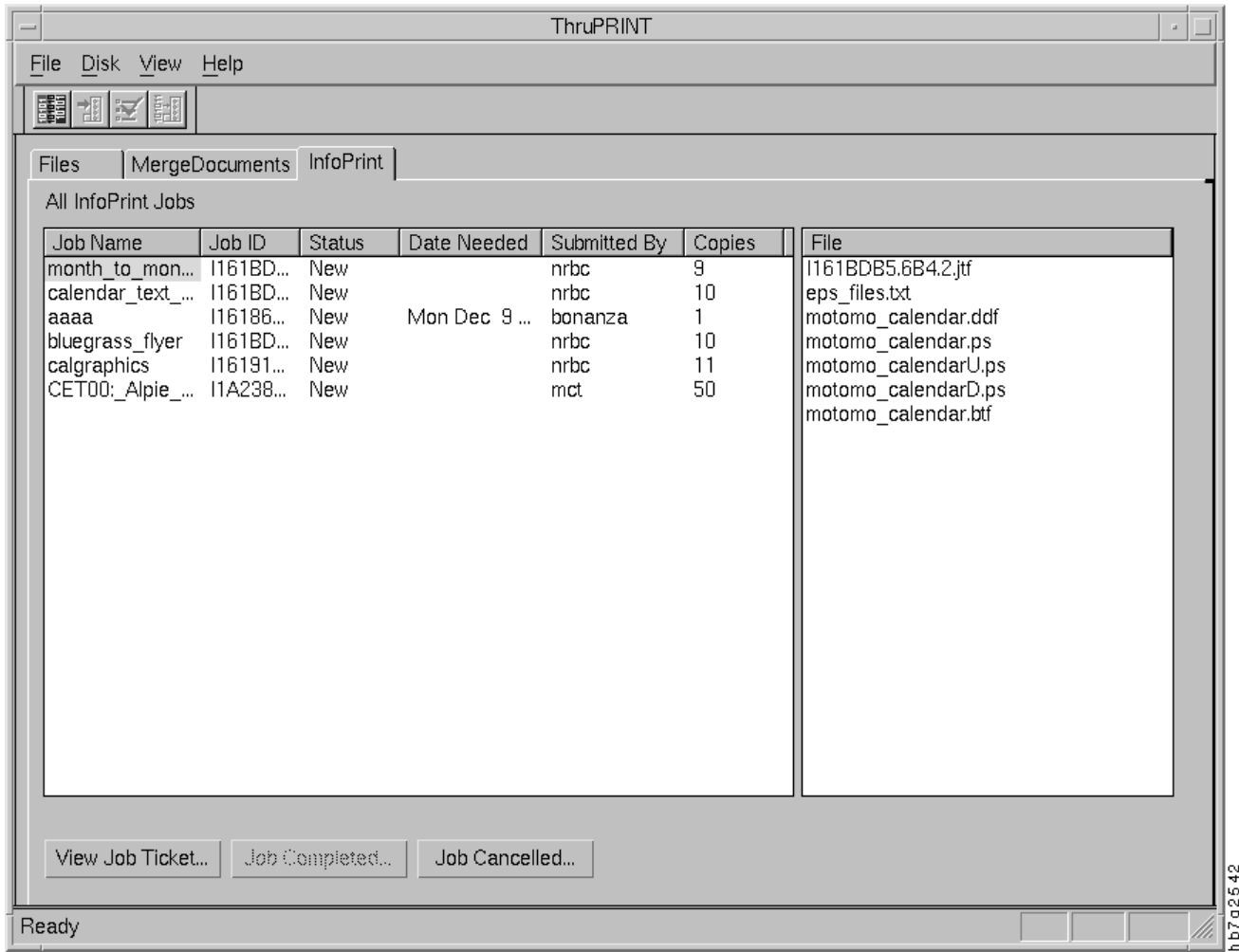


Figure 63. InfoPrint Tab in the ThruPRINT Window

<i>Table 10 (Page 1 of 2). InfoPrint Tab Field Descriptions</i>	
<b>Field</b>	<b>Description</b>
Job Name	The name of the job submitted for printing.
Job ID	The identifier of the job submitted for printing.



Table 10 (Page 2 of 2). InfoPrint Tab Field Descriptions

Field	Description
Status	<p>The files that are displayed have a status of New, RIPing, RIPed, Queued, or Saved.</p> <p>A status of New means that the files have not been RIPed.</p> <p>A status of RIPing means that the files are currently RIPing or are waiting to be RIPed.</p> <p>A status of RIPed means the RIPing has completed and the files reside on the Collator or spooling disk. A status of RIPed does not mean that the files RIPed without errors. If you have a Model 002, the files will be displayed in the <b>Image Disk</b> window.</p> <p>A status of Queued means that any new jobs submitted for RIPing are held until the prior job is completed being RIPed.</p> <p>A status of Saved means that the InfoColor 70 operator requested to keep the files on the InfoColor 70.</p>
Date Needed	The date by which this job should print.
Submitted by	The username of the person who submitted the job.
Copies	The number of copies requested to print.
File	Displays the individual files the make-up the complete job.
View Job Ticket	Opens the window displaying the job ticket that contains information about the job, how it should be RIPed, and printed.
Job Completed	Sends a message to the InfoColor 70 Multiple Printer Controller indicating that the job completed. The InfoColor 70 Multiple Printer Controller maintains status about this job.
Job Cancelled	Sends a message to the InfoColor 70 Multiple Printer Controller indicating that the job could not RIP or print successfully. The InfoColor 70 Multiple Printer Controller maintains status about this job. Once the job is corrected, the InfoColor 70 Multiple Printer Controller sends it to the InfoColor 70 again.

**Job Ticket:** A job ticket contains all the specifications for a customer's print job, plus details added by the print shop.

The job ticket includes:

- Name, address, telephone number, fax number
- Document name
- Job name
- Job description
- Type of paper (weight, color, finish)
- Number of copies
- Number of pages
- Cover specifications
- Finishing options (binding, folding, drilling)
- Date the job must be finished
- Special instructions
- Billing instructions
- Packing and shipping instructions
- The files or hardcopy pages to print

---

## Using the ThruPRINT Menu Bar

This section describes the functions available from the **ThruPRINT** menu bar. When you click on an item on the menu bar, a pull-down menu lists all the functions available. This section describes each function.

## Using the File Menu Functions

This section describes the functions available from the **ThruPRINT** menu. When you click on **File** from the menu bar, a pull-down menu lists all the functions available:

- RIP
- Print
- RIP then Print
- Properties
- Rename
- Delete

### File: RIP

This option is only available on the Model 02C.

From the **Files** tab:

- 1 Select a PostScript file



- 2 Select **File** ⇒ **RIP**

This opens the **Page Setup** window.

For more information about defining page setups and paper sizes, see “Understanding the Page Setup Parameters” on page 155. For information about RIPing PostScript files, see “RIPing PostScript Files on the Model 02C” on page 161.

From the **MergeDocument** tab:

- 1 Select the document definition file (\*.ddf)



- 2 Select **File** ⇒ **RIP**

This opens the **Merge Document** window, as shown in Figure 64 on page 70, which is used to specify the variable data input files as well as the variable data parameters.

Refer to “RIPing Variable Data Files on the Model 02C” on page 161 for information about RIPing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

Refer to “Printing Variable Data Jobs on the Model 02C” on page 175 for information about printing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

From the **InfoPrint** tab:

- 1 Select a job to RIP all files in the job, or select a file in the job.
- 2 Select **File** ⇒ **RIP**.

If this is a PostScript job, this opens the **Page Setup** window.

If this is a variable data job, this opens the **Merge Document** window, as shown in Figure 64.

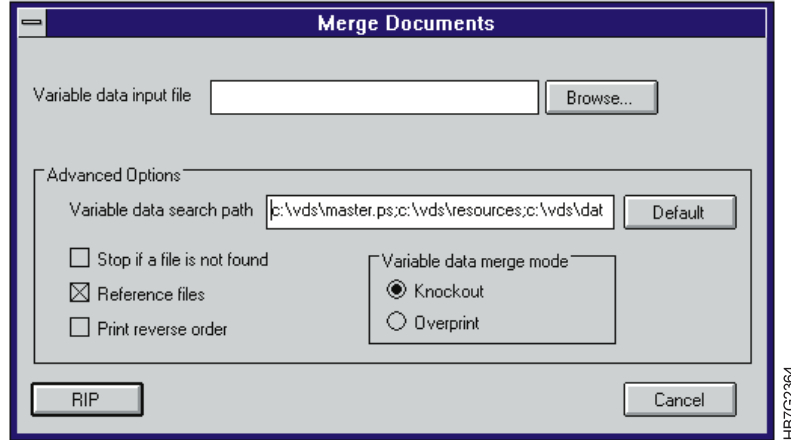


Figure 64. Merge Documents Window

Table 11. Description of Merge Document Window Fields	
Field	Description
Variable data input file	Name of the variable data input file included in the job.
Variable data search path	Directories for this job where the master PostScript file and the files referenced by the variable data input file are located. These directories are searched in the order specified.
Stop if a file is not found	Checking this box indicates that processing will stop if a file is not found, otherwise processing will continue even if the files are not found.
Reference files	Checking this box indicates that the files are referenced, otherwise the files are included in the document. <b>Note:</b> If the files are included in the document, the PostScript files are completely self-contained and transferable. A self-contained file may be larger than the file created when the files are referenced.
Print reverse order	Checking this box will print the last page of a job first.
Knockout	Selecting this option automatically creates knockouts in the master file and replaces them with variable data. This is the default.
Overprint	Selecting this option causes variable data to be printed on top of the underlying page data. This can change the color of the variable data. Use overprint when knockout does not provide the desired results or when you want the variable data to overlay the master page.
RIP	Pressing this pushbutton opens the <b>Page Setup</b> window. See “Defining Page Setups and Paper Sizes” on page 154 for more information about RIPing.

## File: Print

This option is only available on the Model 02C.

From the **Files** tab:

- 1 Select a RIPPed file



- 2 Select **File** ⇒ **Print**

This opens the **Print** window, as shown in Figure 65.

See Chapter 8, “Printing on the Model 02C” on page 173 for information about printing Collator files without variable data.

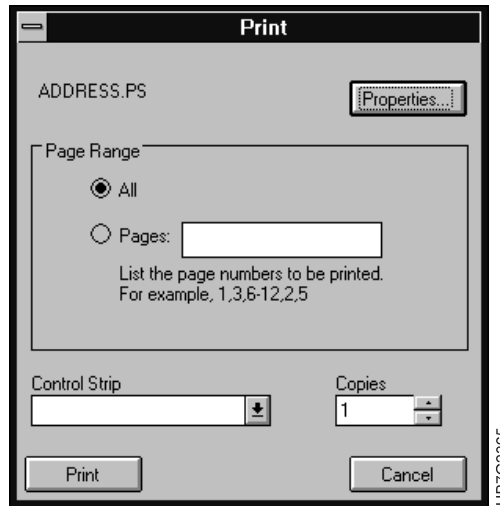


Figure 65. Print Window

Table 12. Print Window Field Descriptions

Field	Description
Page Range	Select All or indicate individual pages by selecting Pages.
Control Strip	Name of the file used to assess print quality.
Copies	This indicates the number of copies to print.
Properties	This pushbutton opens the Properties window.

From the **MergeDocument** tab:

- 1 Select a file
- 2 Select **File** ⇒ **Print**

This submits the variable data job for printing.

## File: RIP then Print

This option is available on the Model 002 only.

From the **MergeDocument** tab:

- 1 Select the document definition file (\*.ddf)

\*  
\*  
\*



**2 Select File ⇒ RIP then Print**

This opens the **Merge Document** window, as shown in Figure 64 on page 70, which is used to specify the variable data input files as well as the variable data parameters.

Refer to “RIP then Print Variable Data Files on the Model 002” on page 167 for information about RIP then Print variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

Refer to “RIP then Print Variable Data Files on the Model 002” on page 167 or “Printing InfoPrint Files Model 002” on page 187 for information about printing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

From the **InfoPrint** tab:

- 1 Select a job to RIP all files in the job, or select a file in the job.



**2 Select File ⇒ RIP then Print.**

If this is a PostScript job, this opens the **Page Setup** window.

If this is a variable data job, this opens the **Merge Document** window, as shown in Figure 64 on page 70.

Refer to “RIP then Print InfoPrint Jobs on the Model 002” on page 168 for information about RIP then Print InfoPrint jobs.

Refer to “RIP then Print InfoPrint Jobs on the Model 002” on page 168 or “Printing InfoPrint Files Model 002” on page 187 for information about printing InfoPrint jobs.

### **File: Properties**

**Note:** This option is only available for the Model 02C.

From the **Files** tab:

- 1 Select a RIPed file then



**2 Select File ⇒ Properties**

This opens the **Properties** window, as shown in Figure 66 on page 73.

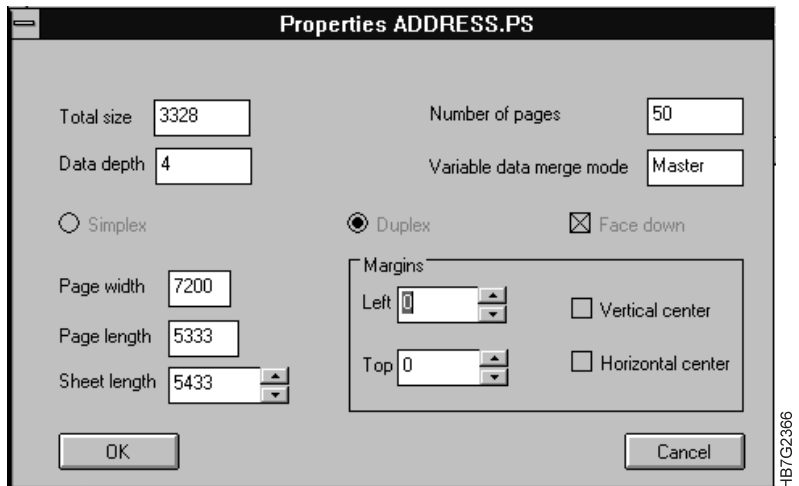


Figure 66. Properties Window

Table 13 (Page 1 of 2). Properties Window Field Descriptions	
Field	Description
Total size	The size of the RIPed file in megabytes. This value cannot be changed.
Data depth	The number of bits with which each spot's gray value is described. 1 bit per spot (bps) means that a spot can have two levels of gray (zero and maximum density). 4 bps means that a spot can have 16 levels of gray (between zero and maximum density). This value cannot be changed.
Number of pages	The number of pages in the file. This value cannot be changed.
Variable data merge mode	Master, VDF0, VDF1, VDF2, VDF3, Test. If the file is a merge document, this value is Master. This value cannot be changed.
Simplex	One-sided printing. This value cannot be changed.
Duplex	Two-sided printing. This value cannot be changed.
Face Down	If this box is checked, for duplex jobs, the front and back will be reversed. The front side of the paper is defined as the side that is printed by the X-tower or the side of the paper that is on top when the page exits the InfoColor 70. Simplex jobs will be printed on the back side of the paper. This value cannot be changed.
Page Width	The width of the page stated in bps. This value cannot be changed.
Page Length	The length of the page stated in bps. This value cannot be changed.
Sheet Length	The physical length of the sheet on which the job will be printed.
Left Margin	The size the left margin stated in bps.
Top Margin	The size the top margin stated in bps.
Vertical Center	If this box is checked, it enables vertical centering of the file.

<i>Table 13 (Page 2 of 2). Properties Window Field Descriptions</i>	
<b>Field</b>	<b>Description</b>
Horizontal Center	If this box is checked, it enables horizontal centering of the file.

From the **Files** tab:

- 1 Select a Book Ticket File (\*.btf)
- 2 Select **File** ⇒ **Properties**

This opens the desktop Editor.

From the **MergeDocument** tab:

- 1 Select a RIPed document definition file (\*.ddf)
- 2 Select **File** ⇒ **Properties**

This opens the desktop Editor for the book ticket file used for printing the variable data job.

### **File: Rename**

This option is only available for the Model 02C ThruPRINT files tab.

To rename files:

- 1 From the menu bar, Select **File** ⇒ **Rename**
- 2 Type over the existing name of the file.

If the file is RIPed, the Collator file will also be renamed.

## **File: Delete**

To delete files:

- 1 Select a file.
- 2 Select **File** ⇒ **Delete** from the menu bar.

### **From the MergeDocuments tab**

Open a window that lets you choose the type of files that you want to delete.

When you delete a document definition file, you can also delete the PostScript, Collator, and Book Ticket Files that were created automatically by MergeDocuments.

### **From the InfoPrint Tab**

You can delete the PostScript file and the RIPed file, for a saved job.

### **From the Files Tab**

You can delete the PostScript file, the RIPed file that reside on the Collator, or both files.



## Using the Disk Menu Functions

This section describes the functions available from the Disk menu. When you click on **Disk** from the menu bar, a pull-down menu lists all the Disk functions:

- Disk Summary
- Disk Report

**Note:** These functions are only available for the Model 02C.

### Disk: Disk Summary

Select **Disk** ⇒ **Disk Summary** to open the **Disk Summary** window, as shown in Figure 67.

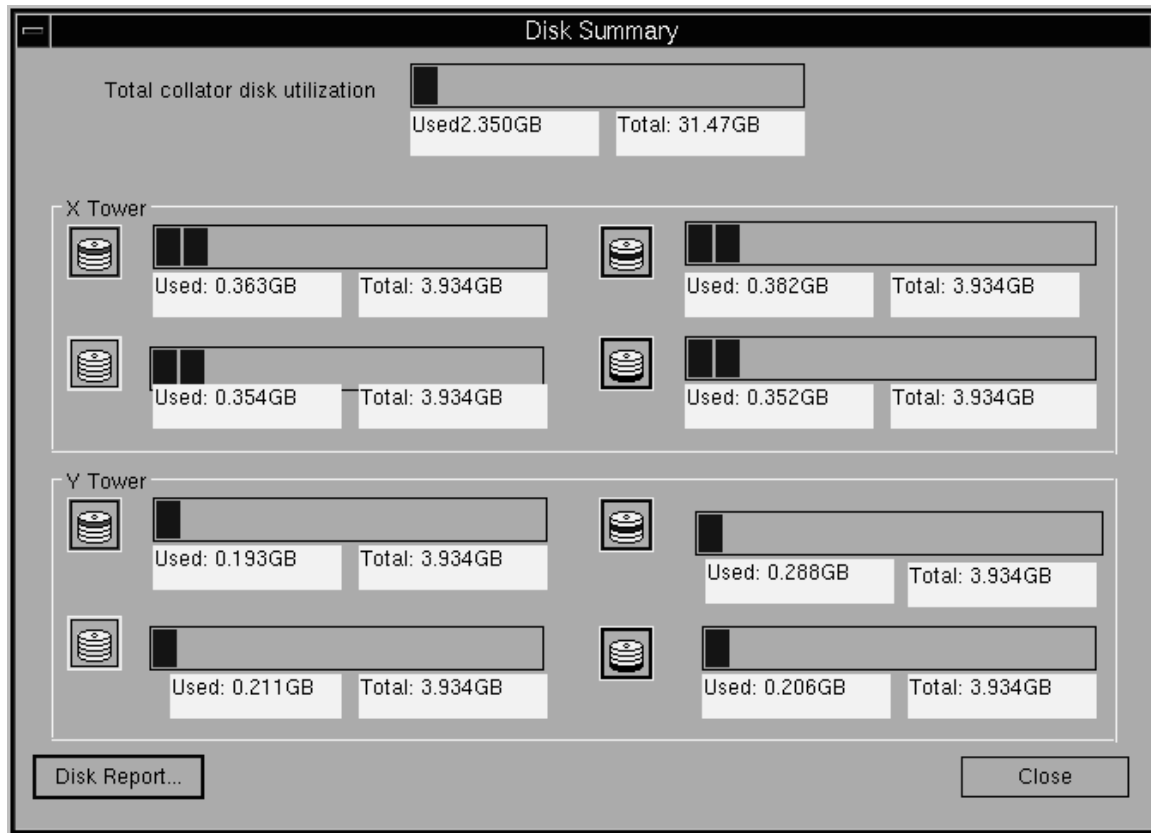


Figure 67. Disk Summary Window

Field	Description
Total Collator disk utilization	This indicates the total Collator disk available as well as the amount used.
X Tower	This group box contains a color and status indicator of the total and used space for each print station in the X tower.
Y Tower	This group box contains a color and status indicator of the total and used space for each print station in the Y tower.
Disk Report	This opens the <b>Disk Report</b> window.

## Disk: Disk Report

Select **Disk** ⇒ **Disk Report** to open the **Disk Report** window, as shown in Figure 68.

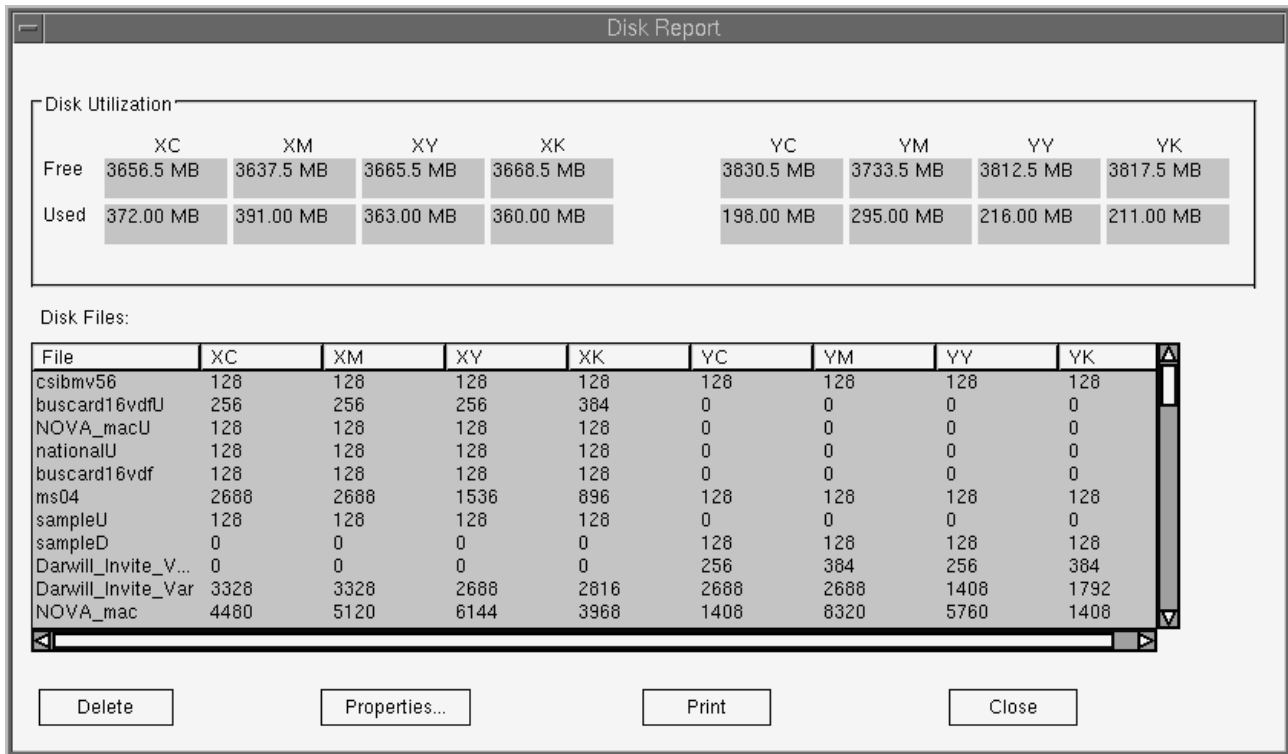


Figure 68. Disk Report Window

Field	Description
Disk Utilization	This group box shows the free and used disk space for each print station.
Disk Files	This shows a list of all files on the Collator and the space used for each print unit.
Delete	This displays a confirm delete message for the selected file.
Properties	This opens the <b>Properties</b> window for the selected file.
Print	This opens the <b>Print</b> window.

## Using the View Menu Function

The only View function available is Refresh.

Selecting **View** ⇒ **Refresh** refreshes the list of files in the **Files Tab** list box.

## Summary of the Most-Used Functions



This section summarizes the functions the operator uses most often to operate and maintain the InfoColor 70:

- After turning on the printer (see Table 16)
- Managing the printing process (see Table 17)
- Print Quality (see Table 18 on page 79)
- Maintaining the printer (see Table 19 on page 80)

## Summary of Most-Used Functions — After Turning on the Printer

The left column lists the most common tasks the operator performs. The middle column lists the function the operator uses and ways to access this function. The right column points to the places in this book where each task is fully described.

*Table 16. Summary of Most-Used Functions — After Turning on the Printer*

To perform this task(s)...	Use this function(s), and...	Go here for a description of the task
Check the state of the print engine after turning on the printer.	<b>Process Control</b> ⇒ <b>Engine State</b>  <b>Ctrl+E</b>	“Monitoring the Engine” on page 254
Ensure the air in the print tower is at the optimum temperature after you turning on the printer.	<b>Process Control</b> ⇒ <b>Print Medium and Engine</b> <b>Conditioning</b> 	“Checking the Air Temperature of the Print Tower” on page 88

## Summary of Most-Used Functions — Managing the Printing Process

The left column lists the most common tasks the operator performs. The middle column lists the function the operator uses and ways to access this function. The right column points to the places in this book where each task is fully described.

*Table 17 (Page 1 of 2). Summary of Most-Used Functions — Managing the Printing Process*











To perform this task(s)...	Use this function(s), and...	Go here for a description of the task
Monitor printing from conversion of the job to bitmaps through the final printing.	<b>File</b> ⇒ <b>Print Sequence</b> 	Chapter 10, “Managing the Printing Process” on page 213
Stop the print engine for a problem.	<b>File</b> ⇒ <b>Print Sequence</b> 	“Interrupting Printing for a Problem” on page 216







Table 17 (Page 2 of 2). Summary of Most-Used Functions — Managing the Printing Process

To perform this task(s)...	Use this function(s), and...	Go here for a description of the task
Stop the print engine for an emergency.		"Interrupting Printing for an Emergency" on page 215
Insert a separation sheet between print jobs.	<b>File</b> ⇒ <b>Print Sequence</b> 	"Inserting a Separation Strip" on page 220
Determine when the print engine is ready for printing.	<b>Process Control</b> ⇒ <b>Engine State</b>  <b>Ctrl+E</b>	"Understanding Print Engine States" on page 255
Prepare the print engine for printing after an emergency stop.	<b>Process Control</b> ⇒ <b>Engine State</b>  <b>Ctrl+E</b>	"Understanding Print Engine States" on page 255
Monitor paper-conditioning parameters and adjust setpoints.	<b>Process Control</b> ⇒ <b>Print Medium and Engine Conditioning</b> 	"Monitoring Print Medium Conditioning" on page 256
Monitor tower-conditioning parameters and adjust setpoints.	<b>Process Control</b> ⇒ <b>Print Medium and Engine Conditioning</b> 	"Monitoring Tower Conditioning" on page 259
Monitor the fusing system and adjust setpoints.	<b>Process Control</b> ⇒ <b>Print Medium and Engine Conditioning</b> 	"Monitoring the Fusing System" on page 264
Monitor the number of printed and wasted sheets coming from the InfoColor 70.	<b>Maintenance</b> ⇒ <b>Counters</b>  <b>Ctrl+C</b>	"Non-Resettable General Counters" on page 266

## Summary of Most-Used Functions — Print Quality

The left column lists the most common tasks the operator performs. The middle column lists the function the operator uses and ways to access this function. The right column points to the places in this book where each task is fully described.








Table 18. Summary of Most-Used Functions — Print Quality

To perform this task(s)...	Use this function(s), and...	Go here for a description of the task
Adjust color registration.	<b>Process Control</b> ⇒ <b>Register Control</b> <b>Ctrl+R</b> 	“Measuring and Adjusting Color Registration” on page 230
Adjust cutter registration.	<b>Process Control</b> ⇒ <b>Register Control</b> <b>Ctrl+R</b> 	“Measuring and Adjusting Cutter Registration” on page 232
Adjust front-to-back registration.	<b>Process Control</b> ⇒ <b>Register Control</b> <b>Ctrl+R</b> 	“Measuring and Adjusting Front-to-Back Registration” on page 234
Adjust signature position.	<b>Process Control</b> ⇒ <b>Register Control</b> <b>Ctrl+R</b> 	“Measuring and Adjusting Signature Position” on page 237
Monitor density-control parameters and adjust setpoints.	<b>Process Control</b> ⇒ <b>Density Control</b> <b>Ctrl+D</b> 	“Controlling Density” on page 241
Check the age of the developer.	<b>Process Control</b> ⇒ <b>Toner Concentration Setpoint</b>	“Correcting for High-Coverage Jobs” on page 249
Send a print to the output stacker test tray to check print quality.	<b>File</b> ⇒ <b>Print Sequence</b> 	“Producing Normal Prints or Test Prints” on page 219
Monitor and adjust the tension of the web.	<b>Process Control</b> ⇒ <b>Web Tension</b> <b>Ctrl+W</b>	“Monitoring and Adjusting Web Tension” on page 253

## Summary of Most-Used Functions — Maintaining the Printer

The left column lists the most common tasks the operator performs. The middle column lists the function the operator uses and ways to access this function. The right column points to the places in this book where each task is fully described.

Table 19. Summary of Most-Used Functions — Maintaining the Printer

To perform this task(s)...	Use this function(s), and...	Go here for a description of the task
Begin the procedure for changing the paper roll.	<b>Operations</b> ⇒ <b>Mount Print Medium</b>  <b>Ctrl+M</b>	“Starting the Roll-Change Procedure” on page 275
Prevent paper scorching during service or maintenance situations where the paper touches the heated roll.	<b>Process Control</b> ⇒ <b>Engine State</b>  <b>Ctrl+E</b>	“Preventing Paper Scorching” on page 293
Specify the correct paper type after changing to a different type of paper.	<b>Operations</b> ⇒ <b>Mount Print Medium</b>  <b>Ctrl+M</b> or	“Specifying the Correct Paper Type” on page 291
Correct the alignment of the paper supply to the print tower.	<b>Explore</b> ⇒ <b>Scripts</b>  <b>Ctrl+S</b>	“Correcting the Alignment of the Paper Supply” on page 293
Refill the toner containers.	<b>Operations</b> ⇒ <b>Refill Toner Containers</b> 	“Refilling the Toner” on page 334
Know when you can continue printing after refilling the toner containers.	<b>Maintenance</b> ⇒ <b>Toner Containers</b>  <b>Ctrl+N</b>	“Refilling the Toner” on page 334
Prevent the main power from turning off when you need to open the doors to the print tower to do a service or maintenance task or solve a problem.	<b>Operations</b> ⇒ <b>Service Intervention</b>	“Refilling the Toner” on page 334, “Preparing to Do Maintenance” on page 313, and Chapter 17, “Finding and Solving Problems” on page 343
Know when to replace the toner waste bottles.	<b>Maintenance</b> ⇒ <b>Toner Containers</b>  <b>Ctrl+N</b>	“Replacing Toner Waste Bottles” on page 338

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## Chapter 3. Getting Started with the InfoColor 70

This chapter is divided into two sections:

- Operating Guidelines — these should be read before using the InfoColor 70
- Startup procedures — these explain how to get the InfoColor 70 ready for printing.

---

### Operating Guidelines

Before you operate the InfoColor 70, you should be aware of the general guidelines and safety precautions described here. These will be discussed in more detail where appropriate in this book.

This section contains important information concerning operator safety and guidelines to prevent damage to the InfoColor 70

### During Printing

**Attention:** When the InfoColor 70 is printing, observe the following guidelines so you won't damage the print engine:

- Do not shut down the RS/6000.
- Do not open any door of the print engine or the cover of the paper supply.
- Do not move the paper supply.
- Do not move the output stacker.
- Do not leave the InfoColor 70 unattended.

### Heated Elements

The InfoColor 70 contains two elements that heat during printing. To protect yourself from burns, do the following:

 **CAUTION:**

**<34> Allow at least 30 minutes before touching the heated roll.**

When you open the top cover of the paper supply, ensure that you do not touch the heated roll. Wait at least thirty minutes for the roll to cool. Ensure that you put on the protective thermal gloves when you do any task that requires your hands to be close to the heated roll.

 **CAUTION:**

**<35> Allow at least 30 minutes before touching the fuser system.**

When you remove the front cover of the fusing system, ensure that you do not touch the fuser. Wait at least thirty minutes for the fuser to cool. Ensure that you put on the protective thermal gloves when you do any task that requires your hands to be close to the fuser.

## Paper Types

### Attention:

- \* The current list of papers and media that IBM has tested and approved is available
- \* from your IBM representative as *IBM 3170 Full Digital Color Printer/Press and*
- \* *InfoColor 70 Approved Media*. This list is updated from time to time as IBM
- \* continues to test and approved additional media types. Contact your marketing
- \* representative for the latest information.

## Idle Time

Whenever the InfoColor 70 is going to be idle and unattended for a time, such as overnight, you should always shut down the printer (see Chapter 14, "Shutdown Procedures for InfoColor 70" on page 299).

## Ozone Filtering

When the InfoColor 70 has just finished a print cycle, wait a few minutes before you open one or more doors of the print tower. This ensures that the ozone has been filtered by the conditioning system.

## Emergencies and Errors

You can stop the printing process in several ways, as described in "Interrupting Printing for an Emergency" on page 215.

## Wearing Jewelry

The InfoColor 70 operator should always remove all jewelry before replacing paper and toner, doing scheduled maintenance tasks, or finding and solving problems inside the InfoColor 70.

## Machine Chemicals

The InfoColor 70 printer coolant is propylene glycol. If the coolant spills or leaks, stop operations. Soak up the coolant with an absorbent material (such as absorbent towel or sand) and call your service representative. The absorbent material and coolant are to be disposed of according to all federal, state, and local regulations. For a copy of the MSDS call 1-800-IBM-4333 (U.S. only).



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## Startup Procedures for the InfoColor 70

This section describes how to perform the following startup procedures:

- Turning on the InfoColor 70 Printer
- Turning on the InfoColor 70 Printer and Collator
- Logging into AIX
- Logging out of AIX
- Ensuring InfoColor 70 Readiness

Before using the InfoColor printer the following components must be powered on.

- The printer
- The collator
- The control unit
- The RS/6000.

The RS/6000 should always be left powered on. Rather than turning the RS/6000 on and off, the operator logs into AIX and at the end of a shift, logs out of AIX.

---

## Turning On the InfoColor 70 Printer

To turn on the InfoColor 70 Printer, follow these steps:

- 1 Open the fixed tower door on the left side of the machine, as shown in Figure 69.

**Note:** When describing the doors of the InfoColor 70, the front of the machine is the paper supply and the back of the machine is the output stacker.

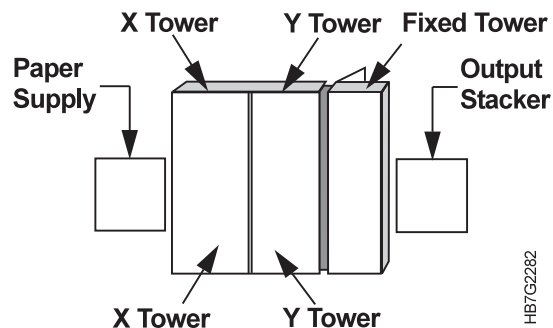


Figure 69. Right Side View of the InfoColor 70

- 2 Turn the main switch of the InfoColor 70 to the **On** position, as shown in Figure 70 on page 84.



Figure 70. InfoColor 70 Main Switch

- 3 Close the fixed tower door.
- 4 Turn on the control unit. Wait approximately two minutes for the printer to initialize before continuing.

**Note:** The InfoColor 70 console has two control platforms. The RIP platform runs the raster image processing and the operator interface. The PES platform runs the print engine supervisor, which controls the operation of the InfoColor 70.

The **PES/RIP** switch allows you to switch from one platform to the other.

To use the InfoColor 70 Printer, you must next log into AIX. See “Logging into AIX” on page 87.

---

## Turning On the InfoColor 70 Printer and Collator

To turn on the InfoColor 70 Printer and Collator follow these steps:

- 1 Open the fixed tower door on the left side of the machine, as shown in Figure 71 on page 85.

**Note:** When describing the doors of the InfoColor 70, the front of the machine is the paper supply and the back of the machine is the output stacker.

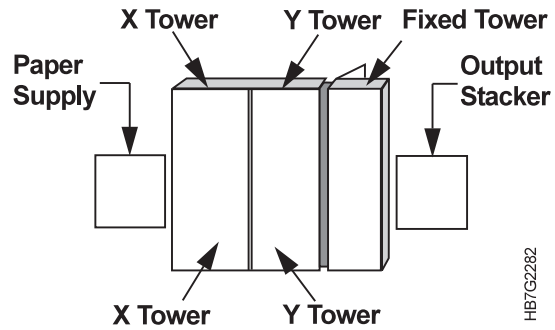


Figure 71. Right Side View of the InfoColor 70

- 2 Turn the main switch of the InfoColor 70 to the **On** position, as shown in Figure 72.



Figure 72. InfoColor 70 Main Switch

- 3 Close the fixed tower door.
- 4 Turn the power switch on the front panel of the Collator to the '1' position as shown in Figure 73.

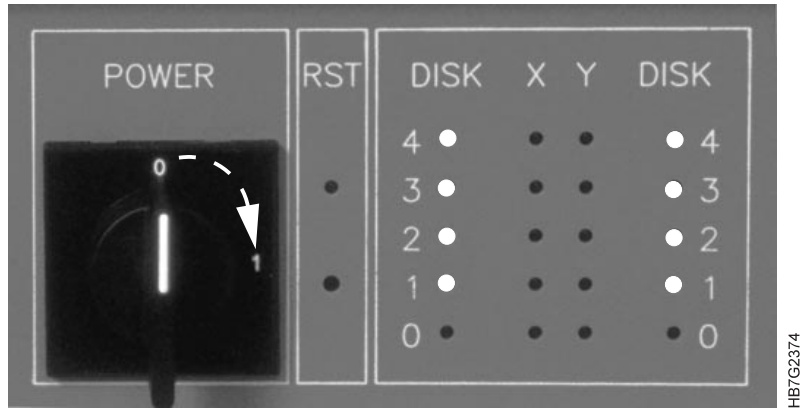


Figure 73. Collator Front Panel

- 5 Wait for the Collator self-test to complete (approximately two minutes).  
 During the self-test, each of the X and Y LEDs on the front panel are switched on for approximately one second. After approximately one minute, the X and Y LEDs will light up again for a few seconds, one at a time. This process takes approximately two minutes from the time you turn the power on until the Collator is operational. Successful completion of the self-test is indicated when the right and left columns of DISK LEDs, 1 through 4 are on.
- 6 After the Collator self-test has completed successfully, turn on the control unit power switch, as shown in Figure 74.
- 7 Wait approximately 2 minutes for the Printer to initialize before continuing.

\*

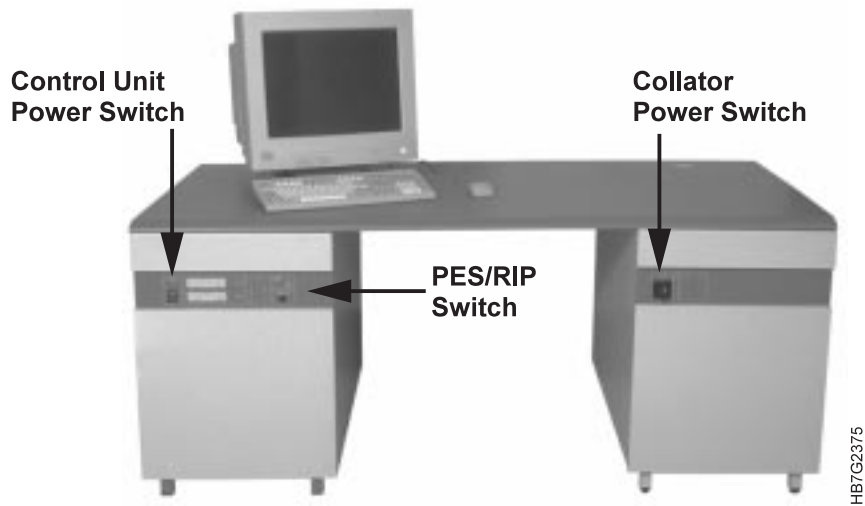


Figure 74. InfoColor 70 Console

**Note:** The InfoColor 70 console has two control platforms. The RIP platform runs the raster image processing and the operator interface. The PES platform runs the print engine supervisor, which controls the operation of the InfoColor 70.

The **PES/RIP** switch allows you to switch from one platform to the other.

To use the InfoColor 70 Printer, you must next log into AIX. See "Logging into AIX" on page 87.

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## Logging into AIX

\* After the printer and control unit are powered on and initialized, and the RS/6000 is  
\* powered on you may log into AIX.

\* If the RS/6000 has been powered off, and the green light on the RS/6000 is  
\* blinking, you can power on the RS/6000. It will take approximately 8 minutes for  
\* RS/6000 to initialize.

1 Ensure that the PES is up and running.

2 Switch the PES/RIP to the RIP side.

The AIX login screen appears.

3 Type in the default user name, op

4 Type the password, op, for your username and click the **OK** pushbutton.

This opens the desktop that is described in Chapter 2, "Learning About the InfoColor 70 Operator Interfaces" on page 19.

\* 5 Click on the **InfoColor70** icon on the desktop front panel.

\* This opens a window that prompts you for the root password, rip.

\* 6 Type the root password to get authority to connect to the printer and open the  
\* **IBM InfoColor 70** window and displays the ThruPRINT icon.

\* **Note:** If the system displays Cannot configure PES SCSI, switch to the PES  
\* side and check if PES is up. If the PES is not up, power the control unit off  
\* and then power the control unit back on. Wait until the PES is up. Switch to  
\* the RIP side, click **OK** in the message window, then click on the **InfoColor70**  
\* icon to start again.

---

## Logging out of AIX

You may want to log out of AIX and keep the printer powered on because you are leaving the printer area for a short period of time. To log out of AIX, press the **Exit** button on the Front Panel of the desktop.

If you are logging out of AIX and you intend to power down the InfoColor 70 Printer or Printer and Collator, follow the procedures in Chapter 14, "Shutdown Procedures for InfoColor 70" on page 299.

---

## Ensuring InfoColor 70 Readiness

After you power on the InfoColor 70 and before you print jobs, you need to check the readiness of the following:

- Air temperature
- Output stacker
- Supplies

## Checking the Air Temperature of the Print Tower

After you turn on the InfoColor 70, you should always check the temperature of the air in the print tower. The optimum temperature of the air should be 27–30°C. The air temperature is controlled automatically. “Monitoring Tower Conditioning” on page 259 describes how to monitor the print tower temperature and humidity.

To check the setpoint temperature after turning on the InfoColor 70, follow these steps:

- 1 Open the **Print Medium and Engine Conditioning** window, as shown in Figure 75.

Process Control ⇒ Print Medium and Engine Conditioning



Figure 75. Print Medium and Engine Conditioning Window

- 2 Check the measured TWR T temperature.
- 3 If the temperature is below the range of 27–30°C, open the **Engine State** window and click the **Go to Conditioned** pushbutton.

## Getting the Output Stacker Ready

Before you print jobs, you need to check the position of the output stacker and ensure that the stacker is in online mode.

### Positioning the Output Stacker

The output stacker can be moved easily, so always check its position before starting to print.

Ensure that the two positioning blocks at the back of the output stacker are placed correctly against the bearings mounted on the cutter unit. The pictures in Figure 76, Figure 77, and Figure 78 on page 90, show the correct placement of the positioning blocks.

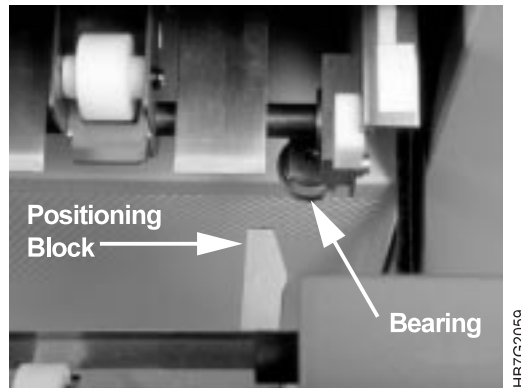


Figure 76. Right Side of Output Stacker

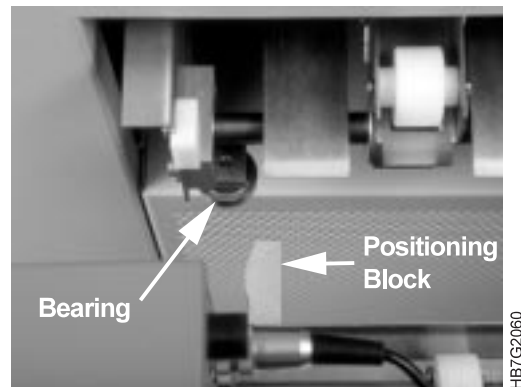
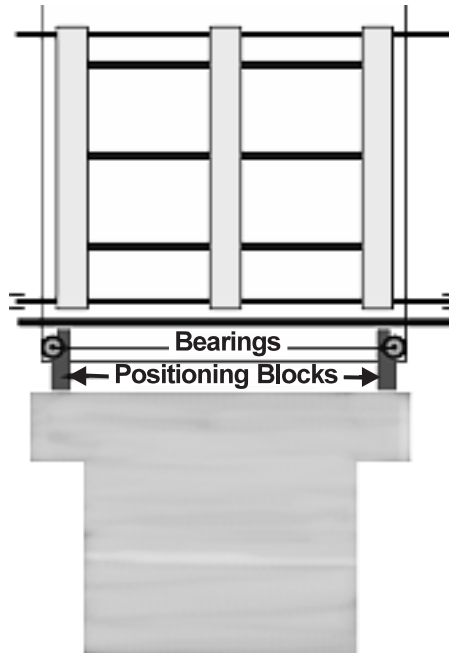


Figure 77. Left Side of Output Stacker



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Figure 78. Output Stacker Bearings and Positioning Blocks

### Putting the Output Stacker in Online Mode

Before you can put the output stacker in online mode, adjust the stacker to the output size and put the fixed bar on the stacker in the down position, as shown in Figure 79.



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Figure 79. Output Stacker



Check the position of the fixed bar and then follow these steps to place the stacker in online mode:

**1** Locate the keyboard, as shown in Figure 80, on the top left side of the output stacker.

**2** Press button **2** to move the main tray up. The tray will stop automatically in the uppermost position.

**Note:** Always ensure that the main tray is in its top position before starting to print.

**3** Press button **3** to activate the side jog bar.

**Note:** Whenever you need to move the main tray down, press button **4**. To select either the test tray or the main tray, use button **1**.

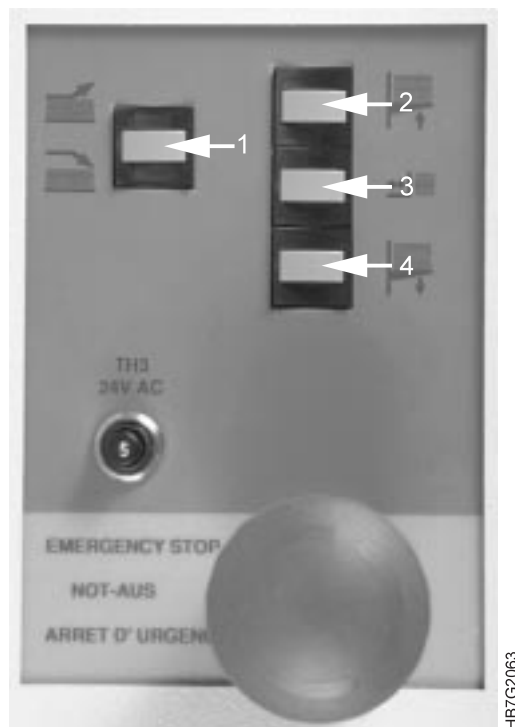


Figure 80. Output Stacker Keypad

**1** At the operator console locate the **Sequence Window**

**2** Locate **Stacker Off Line** and check to ensure that the button is not depressed. If the button is depressed, click on it to reinitialize the stacker.

**Note:** The default is the **Stacker** is always online.

## Checking Supplies

The printer operator is responsible for replacing paper and toner supplies. Before you print jobs, check the following:

- The amount of paper on the roll in the paper supply. If the amount of paper remaining on the roll is low, you should change the paper roll rather than wait until you might have to interrupt a print job. If you need a new roll, see Chapter 13, “Managing Paper Rolls and the Inserter” on page 275 for instructions on how to change the paper.
- The amount of toner in the toner dosing units.

**Attention:** Do not let any toner container become empty. If the developer unit runs out of toner, the mix is ruined.

An alarm is issued in the **Active Alarms** window when any toner container becomes empty. The **Toner Containers** window currently shows full or empty conditions. You should ensure that each toner container is at least half full at the start of each shift.

If you need to replace toner, see Chapter 16, “Checking and Refilling Toner” on page 333.

## Print-Job Setup Tasks

<b>Chapter 4. Preparing Jobs for InfoColor 70</b>	
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## Chapter 4. Preparing Jobs for InfoColor 70 Output

The InfoColor 70 is fully compatible with PostScript, the industry standard page-description language, and can print jobs coming from any pre-press system that produces PostScript.

To successfully produce jobs, you need a thorough knowledge of the InfoColor 70's printing capabilities and the requirements for preparing jobs for printing. This chapter outlines these specifics and assumes that you have a thorough understanding of the pre-press process.

---

### Image Preparation for the InfoColor 70

This section describes:

- Scan resolution
- Color separations
- Color management
- File formats
- Bitmap configurations

#### Scan Resolution

In printing technologies where image reproduction is based on halftone techniques (for example, offset), the scan resolution after scaling should be at least one and one half times as high as the screen ruling that is going to be used to print the image. For example, when printing with a 170 lines per inch (lpi) screen, the images usually should be scanned at 255 dots per inch (dpi). Using more than 255 dpi will not result in a significant improvement, however doubling the lpi is recommended for line art.

The image-forming method in the InfoColor 70 is completely different from the halftone technique. Although you can define a screen frequency for the InfoColor 70 screening, the rule mentioned above does not apply. For scan resolutions up to 600 dpi, all data is used when producing the final screened printing bitmap. Thus, tone or color gradients inside an elementary screening cell (for example, a basic calculation cell for the screening, approximate size equals one per screen resolution) are preserved. This means that increasing scan resolution also increases image quality—at least theoretically. Practice has proven that the gain in quality between 400 dpi and 600 dpi is minimal.

To determine optimal scan resolution, you should perform some experiments using a color calibration standard such as the Kodak Q-6 0 or the AGFA IT-8. Experience has proven that 255 dpi strikes a good balance between print quality and productivity. Scanning at a higher resolution results in larger images and PostScript files and longer processing time. For those applications not needing maximum quality, 200 dpi will be sufficient. Also, the file size will be 2.25 times smaller. Table 20 on page 96 shows how an increase in dpi can significantly increase the size of a file.

Table 20. Image Resolution versus File Size

Image Dimensions	200 dpi	175 lpi 1.5x (262 dpi)	300 dpi	175 lpi 2.0x (350 dpi)	400 dpi
4" x 5"	3.05Mb	5.24Mb	6.87Mb	9.35Mb	12.2Mb
5" x 7"	5.34Mb	9.17Mb	12.0Mb	16.4Mb	21.4Mb
8.75" x 11.25"	15.0Mb	25.8Mb	33.8Mb	46.0Mb	60.1Mb

## Color Separations

### Offset Simulation

Almost all high-end and desktop pre-press systems that exist and are widely used today are geared toward producing offset output.

The standard input-output relationship in the InfoColor 70 of each of the four basic colors is tuned as if it were an offset press having a dot gain. Based on this and the fact that the toners used in the InfoColor 70 have a color definition based on the Euroscale standard of offset printing, the result is acceptable reproduction quality. Because the InfoColor 70 is electrophotographic, the transfer of toner particles does not spread or soak into the paper. This means there is no dot gain, creating a crisper, less blurry transfer to the paper.

### Making Separations

The two major methods of making color separations are high-end scanners, which directly produce CMYK, and color-separation programs, such as Adobe PhotoShop 3.0.

To make separations with PhotoShop, you must specify the settings in the **Printing Inks Setup** window. You must also specify the level of dot gain in the dialog box. Practice has proven that a dot-gain level of 15% results in images that are acceptable reproduction quality.

**Note:** If you create separations for several imaging systems, ensure that you save the setup in use before you make any changes in the **Printing Inks Setup** window.

### Black Generation

Different levels of black generation produce good results and depend on the preference of the user.

**Note:** Once you make changes in the **Separation Setup** window and save the image, these changes are irreversible. You should experiment with black generation using a copy of your image.

IBM recommends that you do not exceed a total of 280% ink (toner).

Using a higher amount of gray component replacement (GCR) results in less toner concentration and a cost savings. However, ensure that you don't use a too-high value, which can cause washed-out areas on the printed image.

## Printer Calibration

The primary calibration of the InfoColor 70 is handled by your service representative using a Focus test, which is a PostScript file. The LED array is calibrated so that a consistent dot value is achieved based on the output from the Focus PostScript file. There is no printer calibration curve for an operator to adjust. The InfoColor 70 is not subject to film-specific light sensitivity or developer chemical reactions. Because the InfoColor 70 does not exhibit measurable dot gain, there is no need for traditional calibration. As long as you set the registration, density, transfer, and bias values, you should get accurate screen tints in the range of 5%–15%.

## Color Management

IBM provides an ICC compliant color profile for color management software, such as ColorSync 2.0. The color profile gives you the option to perform color management during the pre-press process, instead of during the RIP process. Using color management software with the ICC compliant color profile for the InfoColor 70, you can match screen colors to print colors as close as possible and enable color management on screen proofing or print proofing.

In addition to proofing, color management is required because of the difference between the range of visible and printable colors, and the different color models and inks used by varying devices to produce colors. Monitors for example use red, green and blue (RGB) color coding to create colors and the color model used by the InfoColor 70 combines cyan, magenta, yellow and black (CMYK). Color management in pre-press is accomplished through the use of profiles, which contain a table of values for the transformation of colors.

To install the InfoColor 70 profile on the pre-press workstation, follow the profile installation procedure for your color management software. The profile is in the file named IBM InfoColor Profile on the IBM InfoColor 70 Macintosh Utilities diskette.

You can decide on a per job basis, whether you want to adjust the color during the RIP or during pre-press.

**Note:** If you adjust the color during pre-press, you must disable color management during the RIP.

To disable color management during the RIP, set color correction in the **Page Setup** window to disabled. See “Defining Page Setups and Paper Sizes” on page 154 and “RIP Options Parameters” on page 156 for more information on defining the page setup.

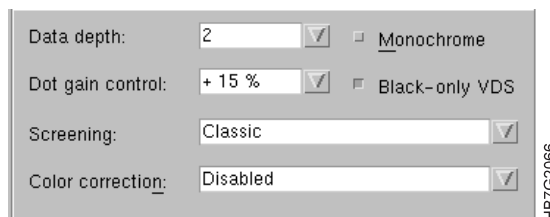


Figure 81. RIP Options Parameters in Page Setup Window

## File Formats

Four file formats are commonly used for CMYK scanned images in Desk Top Publishing (DTP):

EPS	Encapsulated PostScript file. This file format is preferable to TIFF because it is never sub-sampled and is generally processed faster by a RIP. However, EPS files are slightly larger than TIFF files.
TIFF-CMYK	This format should present no problems. However, some applications perform a sub-sampling of TIFF files if they think the file resolution is too high for the output device. These applications will use the screening lines per inch to determine the needed scan resolution.
DCS	Desktop Color Separations. This format consists of five EPS files, one acting as a header that contains a low-resolution viewfile, and four high-resolution files that contain one plate each. This format is meant for output on high-resolution devices, such as imagesetters, which need four or more black-only PostScript separations that together form a color page.  The InfoColor 70 prints from composite (non-separated) PostScript. Thus, when you output jobs containing DCS files to the InfoColor 70, only the low-resolution viewfiles will be present in the PostScript file. If you have no solution to this problem, then you should not use the DCS file format. <sup>3</sup>
JPEG	Joint Photographers & Expert Group. This format should be used carefully. Be aware that when saving images as TIFF, JPEG, or any bitmap format that sub-sampling can occur; that is, data can be discarded.  <b>Note:</b> RGB images should be converted to CMYK. The InfoColor 70 RIP will convert RGB to CMYK, however the results are not accurate.

**Note:** When porting images between the Macintosh and PC remember to convert the preview to the format for the appropriate platform.

## Bitmap Configurations

The maximum size of a job (or signature) to be printed is determined by the following factors:

- The amount of memory installed in each print unit. The standard configuration is 72MB and can be expanded to 144MB.
- The data depth. This is the number of data bits that are used for each addressable spot. A spot is the smallest writable area (for example, a 600 dpi dot). Data depth can be 2 or 4 bits per spot.
- The width and length of the signature can vary. By decreasing width, the maximum length increases when the bitmap size remains constant. The approximate area (width x length) should remain constant.

---

<sup>3</sup> Possible solutions are: 'SmartXT' Xtension for QuarkXpress™, the OPI-server "ColorCentral" from Adobe-Aldus-Compumation, or the 'Color Highway' utility from Highwater.



The maximum signature lengths for the InfoColor 70, based on installed memory and data depth, are listed in Table 21 on page 99.

*Table 21 (Page 1 of 2). Bitmap Configurations*

Bitmap Configurations in Millimeters					Bitmap Configurations in Inches					Bitmap Configurations in Pixels				
Width	72 MB		144 MB		Width	72 MB		144 MB		Width	72 MB		144 MB	
	4 bps	2 bps	4 bps	2 bps		4 bps	2 bps	4 bps	2 bps		4 bps	2 bps	4 bps	2 bps
307.6	874.8	1749.7	1749.7	2772.1	12.11	34.44	68.89	68.89	109.14	7272	20682	41365	41365	65535
307	874.8	1749.7	1749.7	2772.1	12.09	34.44	68.89	68.89	109.14	7258	20682	41365	41365	65535
305	881.4	1758.5	1762.9	2772.1	12.01	34.7	69.23	69.4	109.14	7210	20837	41571	41675	65535
300	897.1	1794.2	1794.2	2772.1	11.81	35.32	70.64	70.64	109.14	7092	21207	42415	42415	65535
297	904	1803.3	1807.9	2772.1	11.69	35.59	71	71.18	109.14	7021	21370	42631	42740	65535
295	910.9	1821.9	1821.9	2772.1	11.61	35.86	71.73	71.73	109.14	6974	21535	43071	43071	65535
290	927.7	1850.5	1855.4	2772.1	11.42	36.52	72.85	73.05	109.14	6856	21931	43747	43862	65535
285	942.5	1880	1885.1	2772.1	11.22	37.11	74.02	74.21	109.14	6738	22282	44445	44564	65535
280	960.5	1920.9	1920.9	2772.1	11.02	37.81	75.63	75.63	109.14	6619	22706	45412	45412	65535
279.4	963	1920.9	1926.1	2772.1	11	37.92	75.63	75.83	109.14	6605	22767	45412	45535	65535
275	976.4	1952.7	1952.7	2772.1	10.83	38.44	76.88	76.88	109.14	6501	23082	46164	46164	65535
270	995.6	1985.6	1991.3	2772.1	10.63	39.2	78.18	78.4	109.14	6383	23537	46942	47075	65535
265	1015.7	2031.3	2031.3	2772.1	10.43	39.99	79.97	79.97	109.14	6265	24011	48022	48022	65535
260	1033.5	2066.9	2066.9	2772.1	10.24	40.69	81.38	81.38	109.14	6147	24432	48864	48864	65535
255	1055	2103.9	2110.1	2772.1	10.04	41.54	82.83	83.08	109.14	6028	24942	49737	49885	65535
250	1074.3	2142.1	2148.6	2772.1	9.84	42.3	84.34	84.59	109.14	5910	25397	50641	50795	65535
245	1097.6	2195.3	2195.3	2772.1	9.65	43.21	86.43	86.43	109.14	5792	25949	51899	51899	65535
240	1118.5	2237	2237	2772.1	9.45	44.04	88.07	88.07	109.14	5674	26442	52885	52885	65535
235	1143.8	2280.3	2287.7	2772.1	9.25	45.03	89.78	90.07	109.14	5556	27041	53908	54083	65535
230	1166.5	2325.3	2333	2772.1	9.06	45.93	91.55	91.85	109.14	5437	27577	54972	55154	65535
225	1194.1	2388.2	2388.2	2772.1	8.86	47.01	94.02	94.02	109.14	5319	28229	56458	56458	65535
220	1223	2437.6	2446	2772.1	8.66	48.15	95.97	96.3	109.14	5201	28912	57626	57825	65535
215.9	1244.5	2489.1	2489.1	2772.1	8.5	49	97.99	97.99	109.14	5104	29421	58843	58843	65535
215	1248.9	2489.1	2497.9	2772.1	8.46	49.17	97.99	98.34	109.14	5083	29525	58843	59051	65535
210	1280.6	2561.2	2561.2	2772.1	8.27	50.42	100.84	100.84	109.14	4965	30274	60549	60549	65535
205	1309.1	2618.2	2618.2	2772.1	8.07	51.54	103.08	103.08	109.14	4846	30947	61895	61895	65535
200	1343.9	2677.6	2687.8	2772.1	7.87	52.91	105.42	105.82	109.14	4728	31771	63301	63542	65535
195	1375.3	2739.9	2750.6	2772.1	7.68	54.14	107.87	108.29	109.14	4610	32512	64773	65025	65535
190	1413.8	2772.1	2772.1	2772.1	7.48	55.66	109.14	109.14	109.14	4492	33423	65535	65535	65535
185	1454.5	2772.1	2772.1	2772.1	7.28	57.26	109.14	109.14	109.14	4374	34386	65535	65535	65535
180	1491.3	2772.1	2772.1	2772.1	7.09	58.71	109.14	109.14	109.14	4255	35256	65535	65535	65535
175	1536.7	2772.1	2772.1	2772.1	6.89	60.5	109.14	109.14	109.14	4137	36329	65535	65535	65535
170	1577.9	2772.1	2772.1	2772.1	6.69	62.12	109.14	109.14	109.14	4019	37302	65535	65535	65535
165	1628.8	2772.1	2772.1	2772.1	6.5	64.13	109.14	109.14	109.14	3901	38506	65535	65535	65535
160	1675.1	2772.1	2772.1	2772.1	6.3	65.95	109.14	109.14	109.14	3783	39601	65535	65535	65535
155	1732.6	2772.1	2772.1	2772.1	6.1	68.21	109.14	109.14	109.14	3664	40960	65535	65535	65535
150	1794.2	2772.1	2772.1	2772.1	5.91	70.64	109.14	109.14	109.14	3546	42415	65535	65535	65535
145	1850.5	2772.1	2772.1	2772.1	5.71	72.85	109.14	109.14	109.14	3428	43747	65535	65535	65535
140	1920.9	2772.1	2772.1	2772.1	5.51	75.63	109.14	109.14	109.14	3310	45412	65535	65535	65535
135	1985.6	2772.1	2772.1	2772.1	5.31	78.18	109.14	109.14	109.14	3191	46942	65535	65535	65535
130	2066.9	2772.1	2772.1	2772.1	5.12	81.38	109.14	109.14	109.14	3073	48864	65535	65535	65535
125	2142.1	2772.1	2772.1	2772.1	4.92	84.34	109.14	109.14	109.14	2955	50641	65535	65535	65535
120	2237	2772.1	2772.1	2772.1	4.72	88.07	109.14	109.14	109.14	2837	52885	65535	65535	65535
115	2340.7	2772.1	2772.1	2772.1	4.53	92.15	109.14	109.14	109.14	2719	55336	65535	65535	65535

*Table 21 (Page 2 of 2). Bitmap Configurations*

Bitmap Configurations in Millimeters					Bitmap Configurations in Inches					Bitmap Configurations in Pixels				
Width	72 MB		144 MB		Width	72 MB		144 MB		Width	72 MB		144 MB	
	4 bps	2 bps	4 bps	2 bps		4 bps	2 bps	4 bps	2 bps		4 bps	2 bps	4 bps	2 bps
110	2437.6	2772.1	2772.1	2772.1	4.33	95.97	109.14	109.14	109.14	2600	57626	65535	65535	65535
105	2561.2	2772.1	2772.1	2772.1	4.13	100.84	109.14	109.14	109.14	2482	60549	65535	65535	65535

If you express the previous configurations as the number of A4s, including crop marks, that can be positioned next to each other on the signature, the result is shown in Table 22:

*Table 22. Number of A4s per Installed Memory and Data Depth*

Installed Memory	Data Depth	
	2 BPS	4 BPS
144 MB	16	8
72 MB	8	4

## Print Preparation for the InfoColor 70

### Impositioning

Impositioning is arranging pages in a press form to ensure that they print in the correct order after the printed sheet is folded and trimmed. Most impositioning schemes used with the InfoColor 70 need not be very complicated. An example of a small, inexpensive utility that can be used is Build Booklet (Adobe Addition).

### Trapping

Because the InfoColor 70 is a multiple-station press, you must apply trapping, overprinting to eliminate white lines between colors, to your jobs to compensate for registration errors.

When you use the InfoColor 70 PDF, the jobs you produce will contain the trapping that Quark generates. The RIP can interpret these traps.

For more complex trapping, use dedicated trapping packages such as IslandTrapper and Adobe TrapWise. You can also use Adobe Illustrator to build traps into EPS vector art.

## Generating PostScript Files for the InfoColor 70

When using the Macintosh to produce jobs from a page-layout program, you need specific files that describe the capabilities of your output device. The two important files are:

- **PPD (PostScript Printer Description file).** Defined by Adobe to streamline the process of generating PostScript. PPD is platform independent and is primarily used by Adobe PageMaker 6.0, FreeHand, and other applications that support LaserWriter 8.

- **PDF (Printer Description File).** Defined by Quark for use only with QuarkXPress 3.32.

When using the PC to produce jobs from a page-layout program, we recommend that you use the Adobe PostScript printer driver instead of the standard Microsoft PostScript driver included with Windows 3.1. The Adobe driver also supports PPD files. For Windows 95 install the Microsoft and Adobe PostScript printer driver that comes with Windows 95 software using the supplied diskette.

## Applications Using PPD Files

The new PostScript driver integrates the PPD mechanism into system software level.

A PPD file contains all the information that is specific for a given output device, such as the following:

- Possible fixed page sizes
- Possible paper input trays
- Possible paper grades
- Capability to define customer page sizes
- Finishing
- Duplex capabilities
- Resolution
- Screen angle and rulings

The PPD also contains the PostScript code necessary to address all these functions.

This PPD mechanism could solve many of the problems associated with sending jobs from the Macintosh to the InfoColor 70; however, not all applications support all the functions that the PPDs offer. This is discussed further (see "Adobe PageMaker 6.0 Setup for the Macintosh" on page 103).

## Page Sizes in the InfoColor 70 PPD

The InfoColor 70 PPD supports custom page sizes, as well as a large set of predefined standard page sizes.

**Note:** Rotation on the Macintosh is not recommended, as it will result in the incorrect positioning of front and back.

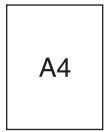
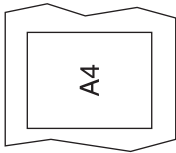

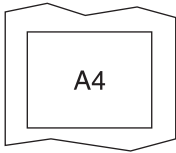
Page Setup In Application	Page Size Europe and US	Size (Width x Height)	Position on Web
	A4 Letter	210 mm x 297 mm 8.5" x 11"	
	A4 Transverse Letter.Transverse	297 mm x 210 mm 11" x 8.5"	

Table 23 (Page 2 of 3). InfoColor 70 Web Placement of Different Page Sizes

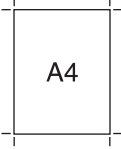
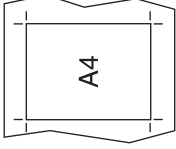
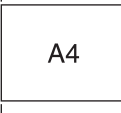
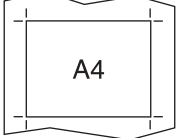
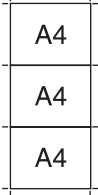
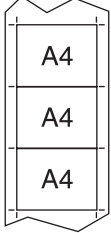
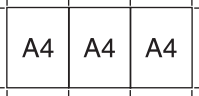
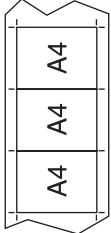
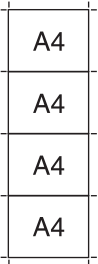
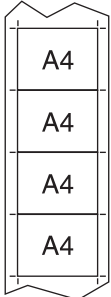
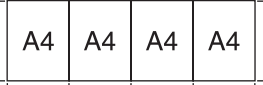
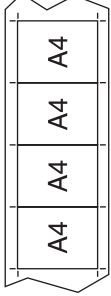
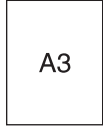
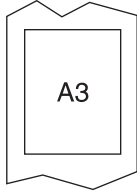
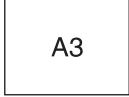
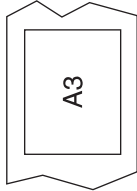
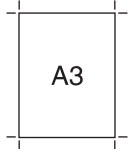
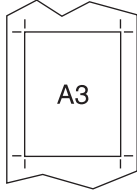
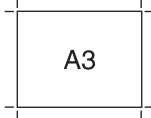
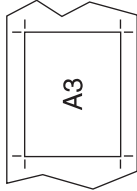
Page Setup In Application	Page Size Europe and US	Size (Width x Height)	Position on Web
	A4L LetterL	$(210+2*5)$ mm x $(297+2*5)$ mm $(8.5" + 2*0.19")$ x $11" + 2*0.19"$	
	A4L.Transverse LetterL.Transverse	$(297 + 2*5)$ mm x $(210 + 2*5)$ mm $(11" + 2*0.19")$ x $(8.5" + 2*0.19")$	
	A4TripleL LetterTripleL	$(297 + 2*5)$ mm x $(630 + 2*5)$ mm $(11" + 2*0.19")$ x $(25.5" + 2*0.19")$	
	A4TripleL. Transverse LetterTripleL. Transverse	$(630 + 2*5)$ mm x $(297 + 2*5)$ mm $(25.5" + 2*0.19")$ x $(11" + 2*0.19")$	
	A4QuadrupleL LetterQuadrupleL	$(297 + 2*5)$ mm x $(840 + 2*5)$ mm $(11" + 2*0.19")$ x $(34" + 2*0.19")$	
	A4QuadrupleL. Transverse LetterQuadrupleL. Transverse	$(840 + 2*5)$ mm x $(297 + 2*5)$ mm $(34" + 2*0.19")$ x $(11" + 2*0.19")$	

Table 23 (Page 3 of 3). InfoColor 70 Web Placement of Different Page Sizes

Page Setup In Application	Page Size Europe and US	Size (Width x Height)	Position on Web
	A3 Tabloid	297 mm x 420 mm 11" x 17"	
	A3.Transverse Tabloid.Transverse	420 mm x 297 mm 17" x 11"	
	A3L TabloidL	(297 + 2*5) mm x (420 + 2*5) mm (11" + 2*0.19") x (17" + 2*0.19")	
	A3L.Transverse TabloidL.Transverse	(420 + 2*5) mm x (297 + 2*5) mm (17" + 2*0.19") x (11" + 2*0.19")	

## Adobe PageMaker 6.0 Setup for the Macintosh

Adobe PageMaker 6.0 overrides a lot of the functionality of the LaserWriter 8 driver. It completely ignores the user interface of the driver and does not support some other functions, such as choosing media type. When you produce jobs using the LaserWriter 8 from any application (except Adobe PageMaker 6.0), you can select device-specific options in the **Print Options** dialog, as shown in Figure 82 on page 104.

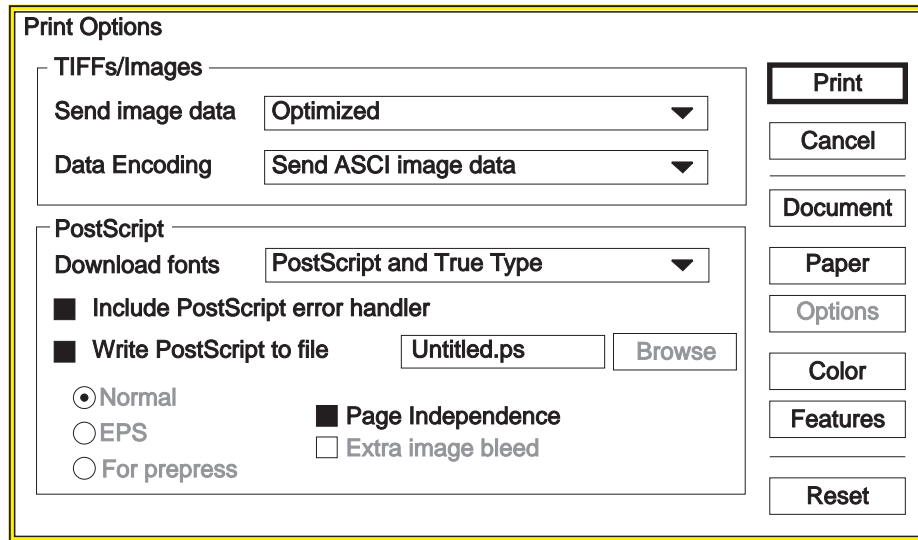


Figure 82. Sample Print Options Dialog from Adobe PageMaker 6.0

Supporting all of these functions is not essential for successful job generation. Adobe PageMaker 6.0 uses the information in the PPD internally in the application, meaning all page-size information and duplex printing are fully supported.

All output-related settings are in the **Print Document** dialog, shown in Figure 83.

- 1 Select the correct PPD file from the **Type** drop-down menu.

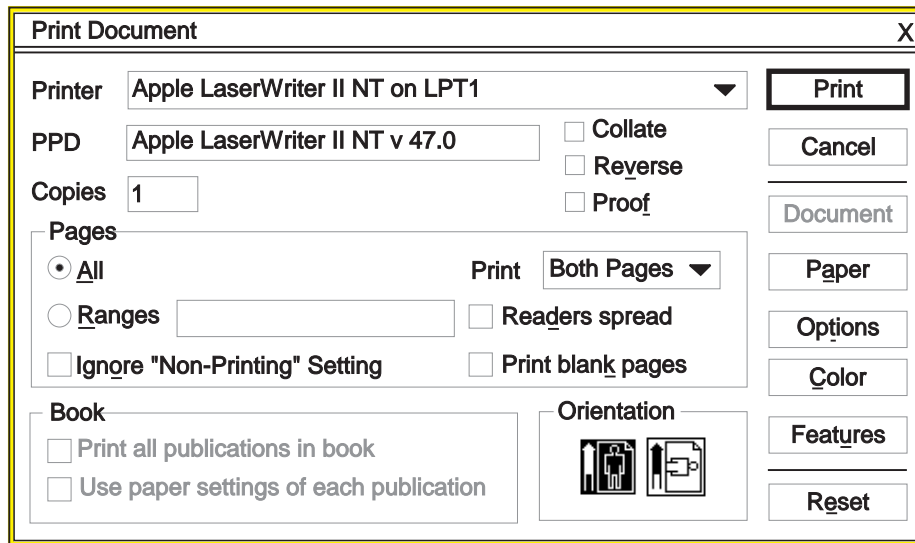


Figure 83. Sample Print Document Dialog from Adobe PageMaker 6.0

- 2 Select the correct paper size from the **Size** drop-down menu, as shown in Figure 84 on page 105 (see “Page Sizes in the InfoColor 70 PPD” on page 101). You can select either a standard paper size, or a custom paper size.

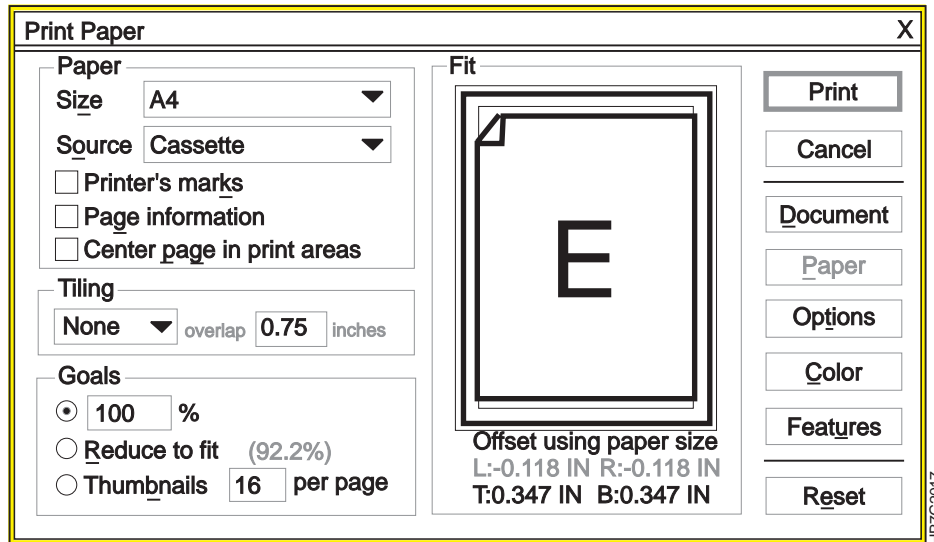


Figure 84. Sample Paper Dialog from Adobe PageMaker 6.0

If you select a custom paper size, the **Custom Paper Size Pop-up** window, as shown in Figure 85, opens. You can enter the desired width and length.

- The first value in the **Size** edit box should be equal to the width of the job.
- The second value should be equal to the height of the job.
- Always select **Normal page** for the **Page orientation**.

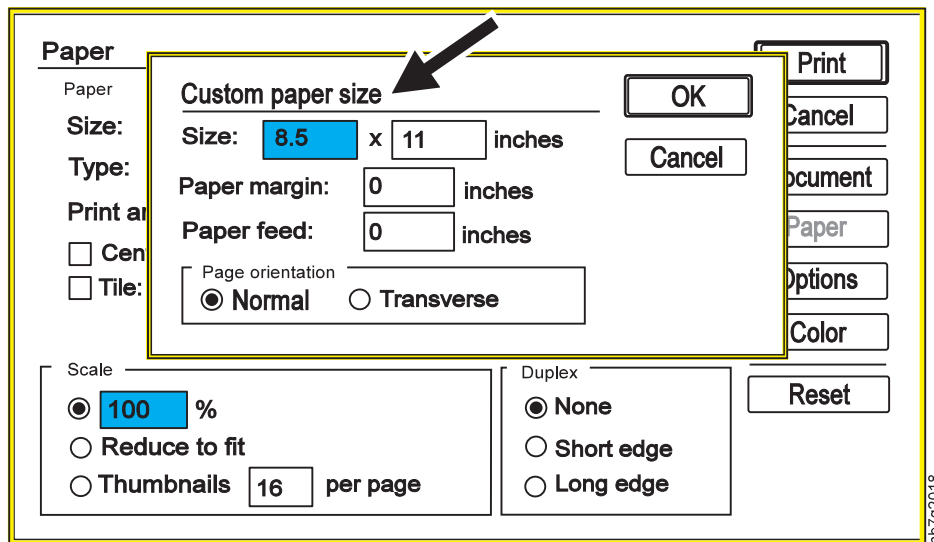


Figure 85. Sample Custom Paper Size Pop-Up Window from Adobe PageMaker 6.0

Adobe PageMaker 6.0 includes a Duplex printing option in the **Paper** dialog.

Only the None duplex option is available now.

The size of crop marks cannot be changed in Adobe PageMaker 6.0. Crop marks add 19.05 mm (.75") to both the width and height of the signature. If page information is also selected, then this becomes 22.23 mm (.88") in the vertical direction, which the 3170 cannot accept. Standard page sizes marked with "L", such as A4L, provide 5 mm (.2") at all sides for crop marks.

When you select **Center page in print area**, the crop marks are clipped at all sides equally, and the job can be produced successfully.

## Adobe PageMaker 6.0 Setup for Windows 3.1

Select standard page sizes from the Paper Size drop-down menu (see “Page Sizes in the InfoColor 70 PPD” on page 101), as shown in Figure 86.

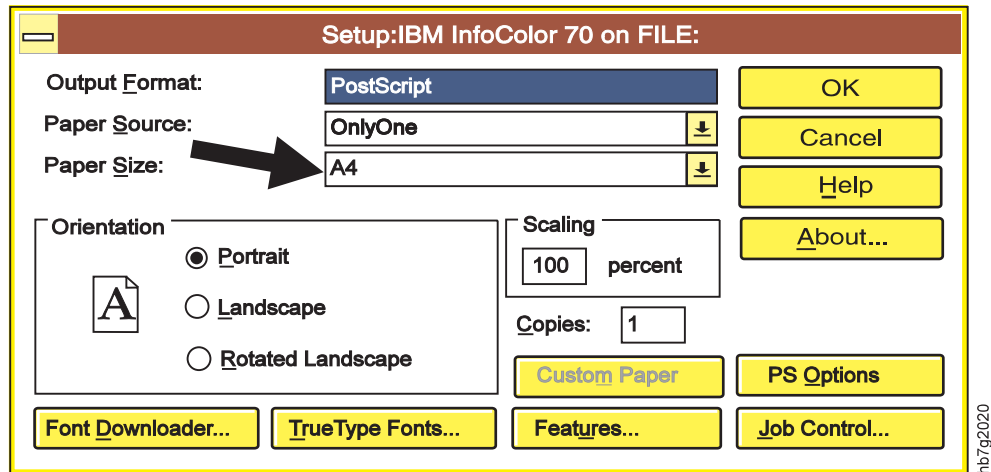


Figure 86. Sample Setup: IBM InfoColor 70 on LPT1 Window from Adobe PageMaker 6.0

Or select **Custom Paper** from the **Paper Size** drop-down menu, and click the **Custom Paper** pushbutton to specify the custom size.

## QuarkXPress 3.32 Setup for the Macintosh

The QuarkXPress 3.32 setup is different from Adobe PageMaker 6.0 setup. Instead of using the driver's page setup settings, it uses the paper width setting in QuarkXPress's printer setup (see “Paper Width” on page 107 for calculations).

When using PostScript printer drivers, like the Apple LaserWriter printer driver, there are two QuarkXPress 3.32 dialogs that you need to set up before you print to the InfoColor 70: the **Page Setup Dialog** window and the **Print** dialog. Both windows contain settings for the Apple LaserWriter driver and QuarkXPress 3.32. The Apple LaserWriter driver settings appear on the top half of the windows and the QuarkXPress 3.32 settings appear on the bottom half of the windows.

The Apple LaserWriter driver version 7 is recommended over version 8 since the print job is not spooled to the local disk before it is sent to the printer.

Set the values in the **Page Setup** dialog, as shown in Figure 87 on page 107, following the instructions below for **Orientation**, **Printer Type**, **Halftone Screen**, **Paper Offset**, **Page Gap**, and **Paper Width**.



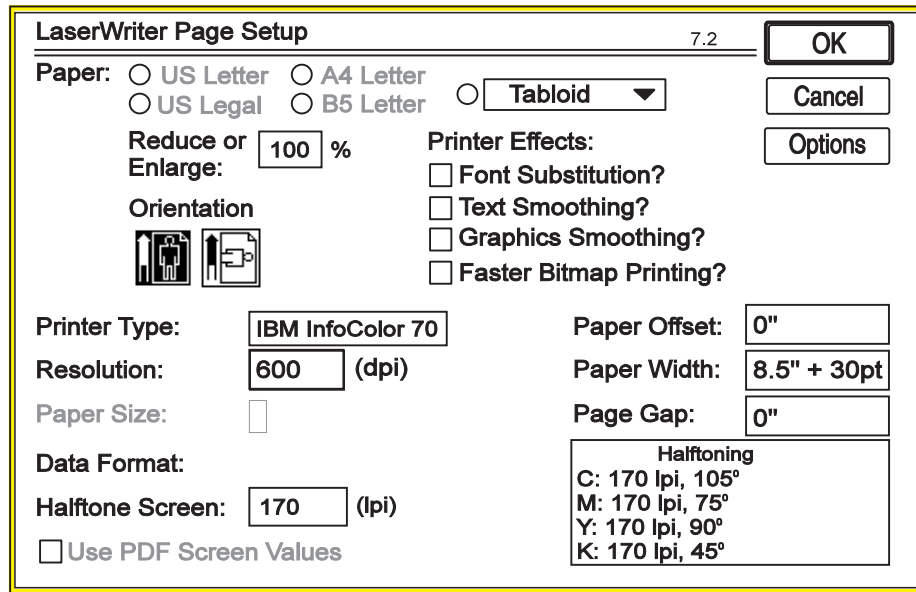


Figure 87. Sample LaserWriter Page Setup Window from QuarkXPress 3.32

**Orientation:** Select the **Portrait orientation**, not landscape. Changing the orientation to landscape will result in the incorrect positioning of front and back when printing duplex jobs. Any changes to the orientation should be done on the InfoColor 70 console, in the **Page Setup RIP...** window.

**Printer Type:** QuarkXPress 3.32 supports both PDF (Printer Description File) files and PPD (PostScript Printer Description). QuarkXPress 3.32 PDF files are designed for use by QuarkXPress 3.32 only and should reside in the QuarkXPress 3.32 PDF directory. PPDs are designed for multiple application usage and reside in the Macintosh System folder.

A QuarkXPress 3.32 PDF includes the following information:

- The page sizes the output device can handle — only fixed or variable sizes
- PostScript level
- Color or black-only device
- Whether trapping is needed
- Output calibration curves

To select the InfoColor 70 PDF, not the InfoColor 70 PPD, hold down the shift key and click on the **Printer Type** drop-down menu. PDFs appear in plain style type and PPDs appear in italic style type. Select the **IBM InfoColor 70** in the plain style type.

**Halftone Screen:** Set the **Halftone Screen** edit box to 170 lpi, the fixed screen frequency of the InfoColor 70.

**Paper Offset and Page Gap:** **Paper Offset** and **Page Gap** edit boxes should always be set to 0.

**Paper Width:** The Paper width value in points for portrait is calculated as follows:  
 $(\text{Width} \times \text{Number pages in widest spread}) + (2 \times (\text{Reg Mark Offset} + \text{Reg Crop Length}))$

**Note:** The landscape calculation for Paper width is the same except the number of pages in the widest spread is always 1.

Follow the instructions below to calculate the value to enter in the **Paper width** edit field.

- 1 Open the **Document Setup** dialog and note the value in the **Width** edit field.
- 2 Multiply it by the number of pages in the widest spread and enter it in the **Paper width** edit field, followed by a + sign. Continue with step 3 to complete the Paper width calculation.

**Note:** If you intend to use the Spreads option in the **Print** dialog, side by side pages will print as one spread.

- 3 Open the **Application Preferences** window and note the value in the **Reg Mark Offset** edit field.

The **Reg Mark Offset:** value can range from 0 to 30 points, depending on what you have set it to. It is the distance between the document and the registration mark.

- 4 Determine if the **Registration** drop-down menu selection is **Centered** or **Off Center**. If one of these is selected it means that registration and crop marks will be printed around the page. The registration crop mark is 24 points in length and cannot be changed by the user unless XTensions are used.
- 5 Add the value in the **Reg Mark Offset** edit box to the crop mark value of 24pt, if crop marks are turned on.
- 6 Enter this value in the **Paper width** edit box after the + sign.

QuarkXPress 3.32 supports mixed-unit math, for example, you can type the 8.5" + 30 pt into the **Paper Width** edit box and **QuarkXPress 3.32** will calculate the result after you click **OK** in the **Page Setup** dialog.

**Note:** The Paper Width calculation might result in a paper width larger than the web width of the InfoColor 70, in which case the job should be rotated on the InfoColor 70 console in the **Page Setup RIP...** window.

**TIFF Sub-Sampling:** Although the screen ruling value entered in the **Halftone Screen** edit box, of the **Page Setup** window does not influence the screening of the InfoColor 70, the value you enter is important, because Quark makes some assumptions based on this value which relates to bitmap images.

For example, Quark decides whether imported TIFF images should be sub-sampled. For example, if a ruling of 100 lpi is set, Quark decides that only 200 dpi scans are needed and will sub-sample all TIFFs having a finer resolution.

## QuarkXPress 3.32 Setup for the PC

The setup on Windows 95 and Windows 3.1 are different and described separately. The **Page Setup** window on Mac is **Printer Setup** window on PC.

## Windows 95

To set up QuarkXPress 3.32 on Windows 95 follow these steps:

- 1 Select the **Printer Setup** window, as shown in Figure 88.

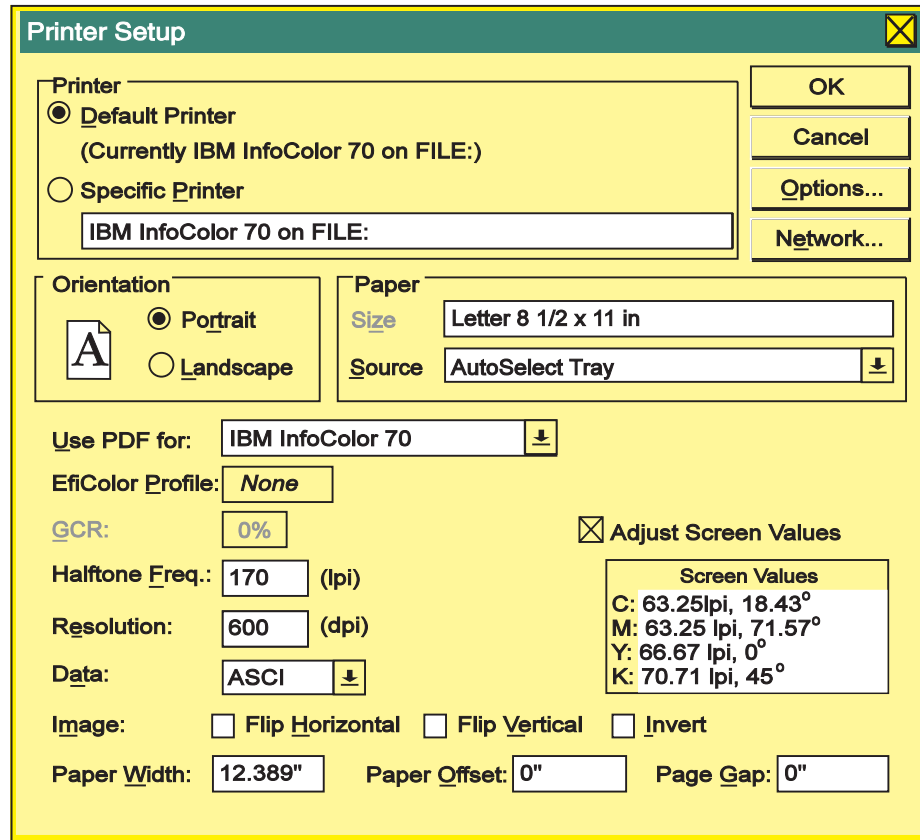


Figure 88. Sample Print Setup Window from QuarkXPress 3.32

When using this window you should use the following settings:

Specific Printer: IBM InfoColor 70 on FILE  
Use PDF for: IBM InfoColor 70  
Efi Color Profile: None  
Halftone Freq: 170  
Resolution: 600  
Data: ASCII

**Note:** When making a selection in the **Use PDF for** pull-down, hold down the shift key, click the down arrow, and select **IBM InfoColor 70** in normal font. This ensures that you are using the PDF file, not the PPD file so that Quark trapping will be available in the PostScript output.

**Note:** ASCII is recommended for **Data**, however the file size will be larger than Binary or PC Binary and it will take longer to RIP.

- 2 Press the **Options...** pushbutton to display the **Print Setup Options** window.

The **SetOverPrint** and **QuarkTrapping** in the **Printer features** edit box should be set to On.

- 3 In the **Application Preferences** window set the **Reg. Marks Offset** edit box to 6 pt. The application does not permit registration mark length adjustment.

The setup is now complete for using QuarkXpress 3.32 for Windows 95 on the InfoColor 70.

### Windows 3.1

To set up QuarkXPress 3.32 on Windows 3.1 follow these steps:

- 1 Select the **Printer Setup** window, as shown in Figure 89.

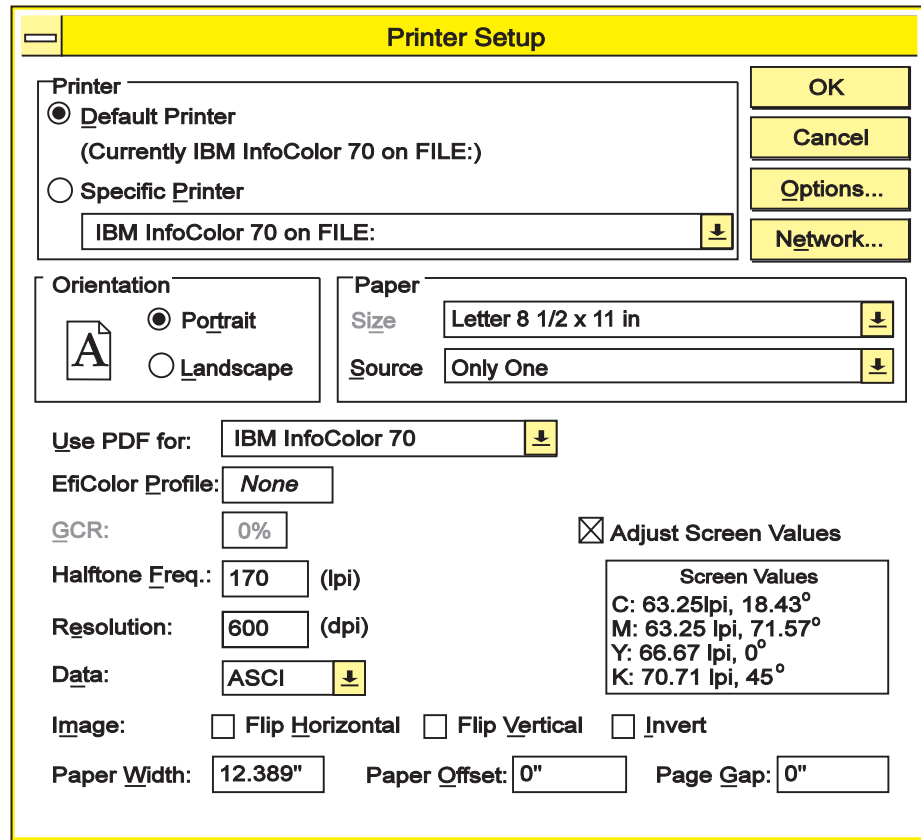


Figure 89. Sample Printer Setup Window from QuarkXPress 3.32

When using this window you should use the following settings:

Specific Printer:	IBM InfoColor 70 on FILE
Use PDF for:	IBM InfoColor 70
Efi Color Profile:	None
Half-tone Freq:	170
Resolution:	600
Data:	ASCII

**Note:** When making a selection in the **Use PDF for** pull-down, hold down the shift key, click the down arrow, and select **IBM InfoColor 70** in normal font. This ensures that you are using the PDF file, not the PPD file, so that Quark trapping will be available in the PostScript output.

**Note:** ASCII is recommended for Data:, however the file size will be larger than Binary or PC Binary and it will take longer to RIP.

- 2** Press the **Options...** pushbutton in the **Printer Setup** window. There are no special settings in this window required for the InfoColor 70.
- 3** Press the **Features...** pushbutton to display the window.  
The **SetOverPrint** and **QuarkTrapping** in the **Printer features** edit box should be set to On.
- 4** Open the **Document Setup** window and select US Letter for the default **Page Size**. QuarkXPress 3.32 will use the value you entered for **Paper Width** in the **Printer Setup** window to determine the page size.
- 5** In the **Application Preferences** window set the **Reg. Marks Offset** edit box to 6 pt. The application does not permit registration mark length adjustment.  
The setup is now complete for using QuarkXpress 3.32 for Windows 3.1 on the InfoColor 70.



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## Chapter 5. Using Variable Data

The Variable Data feature allows you to customize printed pages. For example, you can personalize calendars, business cards, and many other print jobs for your company by using the variable data field for each employees name, a business partners name or other companies names.

This section describes the following:

- The IBM Variable Data System
- How Variable Data Jobs are Created
- Guidelines for Creating Variable Data Jobs
- Creating Variable Data files with IBM's Variable Data Support Software
- Creating Variable Data for the Collator
- Using QuarkXpress Xtensions
- Using PageMaker Plug-Ins

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### \* The IBM Variable Data System

\* The Variable Data System (VDS) provides the user with the ability to produce  
\* customized documents. The VDS is a feature for the InfoColor 70 Model 002 and  
\* is standard for the Collator Model 02C.

\* The VDS feature on the Model 002 allows a printed job to have certain areas of an  
\* imaged signature change with each print. The variable information can consist of  
\* text and EPS graphics. The feature is available in two configurations, black only or  
\* full color. Installation of the VDS requires both hardware and software changes.

\* The VDS is a standard feature on the Model 02C. The Collator model like the  
\* standard model can also merge variable data information, consisting of text and  
\* graphics, but permits an unlimited number of variable data fields. In addition, the  
\* Collator can process both Horizontal Variable Data, where variable data is  
\* overlayed on every page, and Vertical Variable Data, where data can be  
\* personalized on selected pages. See Appendix E, "Manual Method to Create  
\* Variable Data" on page 413.

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### \* How Variable Data Jobs are Created

\* Variable data jobs are created by using various combinations of variable data text  
\* and EPS graphics files, and a PostScript master file. IBM provides a software  
\* application solution to generate files which contain all required information for job  
\* processing.

\* For information about producing the variable data file without using the  
\* IBM-provided software application solution, refer to Appendix E, "Manual Method to  
\* Create Variable Data" on page 413.

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## \* **Creating Variable Data Files with IBM's Variable Data Support Software**

\* IBM variable data support consists of several software applications.

- \* • QuarkXpress XTensions for Windows 95 and Macintosh

\* This software runs on a pre-press workstation. Using QuarkXpress 3.32 and  
\* IBM-provided XTensions, the graphic arts professional can define variable data  
\* areas on the master page.

- \* • PageMaker Plug-Ins for Windows 95

\* This software runs on a pre-press workstation. Using Adobe PageMaker 6.0  
\* and IBM-provided plug-ins, the graphic arts professional can define variable  
\* data areas on the master page.

- \* • ThruPRINT

\* This software has a graphic interface that runs on the InfoColor 70 and allows  
\* you to easily combine the variable data files with the master PostScript file and  
\* print variable data jobs.

---

## \* **Creating Variable Data for the Collator**

\* To create a new document containing variable data, use QuarkXPress XTensions  
\* or PageMaker Plug-Ins to:

- \* • Create a page layout with sample variable data and the static elements (see  
\* “Guidelines for Creating Variable Data Jobs”)
- \* • Define variable data fields
- \* • Create variable data boxes or objects
- \* • Produce variable data jobs
- \* • Transfer the files to the InfoColor 70 (see “Transferring Variable Data Files to  
\* the InfoColor 70” on page 146)

\* The files can then be RIP, see “RIPing Variable Data Files on the Model 02C” on  
\* page 161. The files can then be printed. See “Printing Variable Data Jobs on the  
\* Model 02C” on page 175.

---

## \* **Guidelines for Creating Variable Data Jobs**

\* The variable data input file is a text or database report file containing the variable  
\* data. You may need to change the variable data input file or the placement of your  
\* variable data objects for the layout of your documents. The following are guidelines  
\* to assist the document designer in successfully creating variable data jobs.

- \* • The variable data input file can contain only the variable data text and graphics.  
\* Remove formatting controls, headers, footers, and extra blank lines.
- \* • Start each record on a new line.
- \* • Add a delimiter character, such as a comma, or a delimiter line such as  
\* @@SEP, after each field or verify that the fields have fixed field lengths.
- \* • Variable data text can only use fonts resident on the InfoColor 70. If another  
\* font is used for the variable data text, it must be mapped to an InfoColor 70  
\* resident font in the `ibmdata.vda` file in the `\PM6\RSRC\USEGLISH\PLUGINS`



directory, when using the PageMaker Plug-Ins, or the \XPress\XTension directory, when using the QuarkXpress XTensions. The font selected for text variable data must support the characters in the variable data input file.

- Variable data from a particular record may not always fill a variable data object to its boundaries. Do not design a document that depends on the variable data filling the object to its boundaries. For example, including variable data text within a paragraph may cause the paragraph text to leave too much space for a partially filled text box or object. Consider including the entire paragraph in each record of the variable data file.
- Variable data objects may not be rotated or skewed.
- Variable data text cannot contain the following:
  - Hyphenation
  - Kerning
  - Reverse
  - Small caps
  - Subscripts
  - Superscripts
  - Strikethroughs
  - Tracking
  - Underscores
- Knockout method

The knockout method creates a knockout in the master page and replaces it with the variable data. The knockout is the exact size, shape, and position of the variable data. It is not trapped. This method produces the desired effect from most variable data jobs. See Figure 90.

**Note:** To print a white transparent overlay, specify 1% for the yellow color definition.

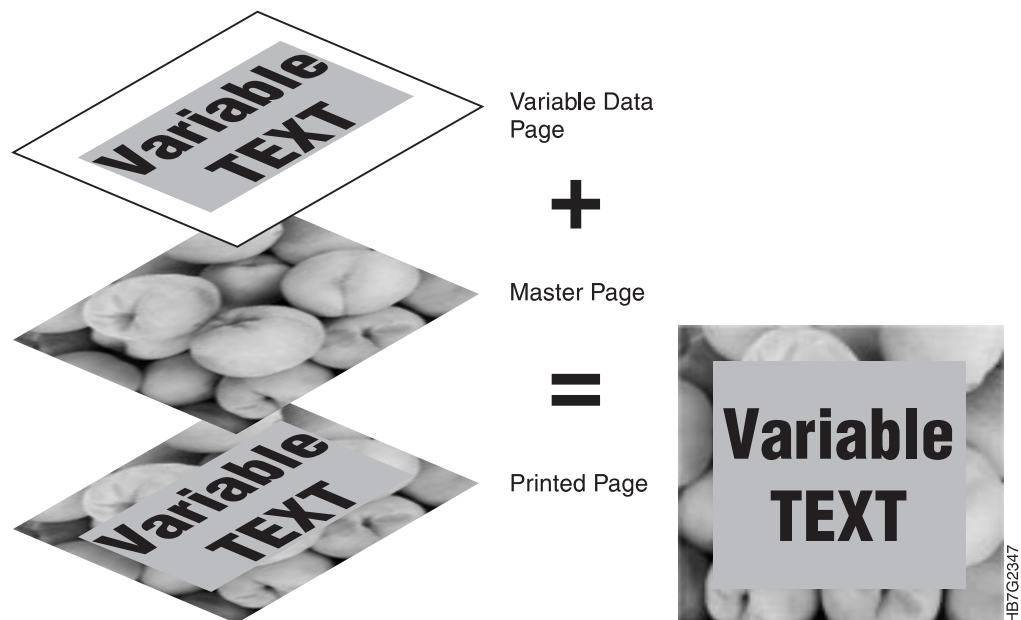
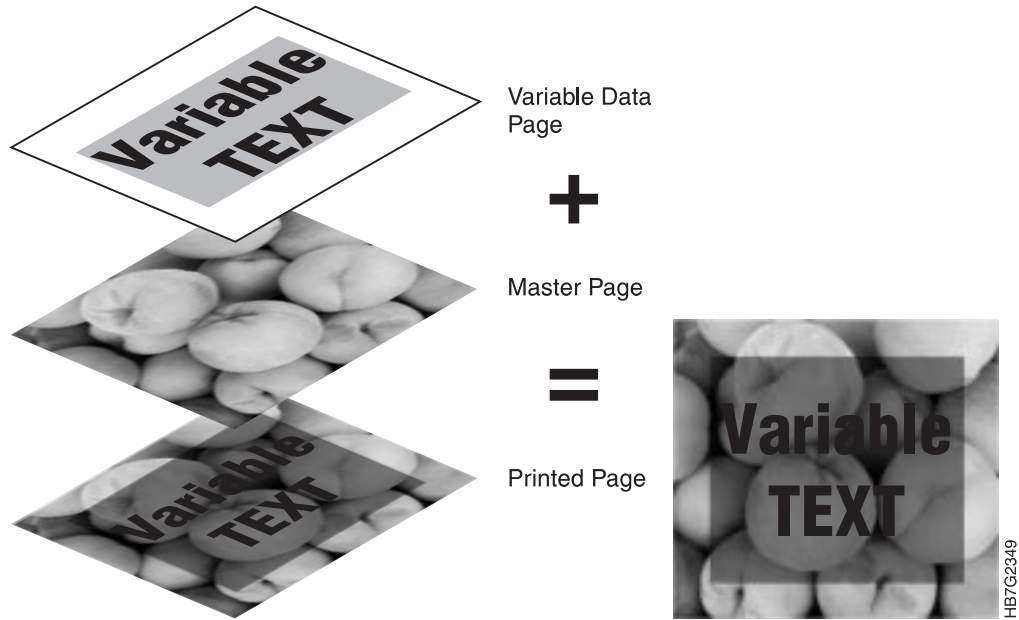


Figure 90. Sample "Knockout" Job Type

- Overprint method

\* Overprints the variable data on the master page. The color of the variable data  
 \* is combined with the color of the master page. Use this method when the  
 \* knockout method does not produce the desired effect or when you want the  
 \* colors of the variable data to be merged with the colors of the master page.  
 \* See Figure 91.



\* *Figure 91. Sample "Overprint" Job Type*

\* **Model 002 Specific Guidelines**

\* The document designer should understand the text and graphic variable data, text  
 \* and graphic field orientation, and job preparation guidelines specific to just the  
 \* Model 002.

\* **Please Note**

\* The following restrictions do not apply to the Model 02C.

\* **Text and Graphic Variable Data Guidelines**

- \* • Variable data can be added to a one page duplex job, or to a single page simplex job.
- \* • Variable data objects may be adjacent, but they must be separated by at least 6.4 mm (0.25") when they are horizontally next to each other. Horizontal is defined as across the paper web and vertical as along the web.
- \* • A single page can contain up to 16 variable data fields on each side of the page. You may be able to minimize the number of variable data fields by combining them and also combining the fields in the input file.
- \* • Do not overlap variable data fields. If this space is not acceptable in your layout and you want the fields to print with the same attributes, combine the fields in the input file.

## Text and Graphic Field Orientation

- Variable data fields must be at least 3.2 mm (0.125 in.) from the side edges and 0.08 mm (0.0033 in.) from the top of the paper.
- Variable data fields may be vertically adjacent, but they must be separated by at least 6.4 mm (0.25 in.) when they are horizontally next to each other. Horizontal is defined as across the paper web and vertical as along the web.
- Variable data fields cannot overlap. If this space is not acceptable in your layout and you want the fields to print with the same attributes, combine the fields in the input file.
- The length of the variable data field cannot be less than .13 mm (0.005 in.) or greater than 2769 mm (109 in.) in the vertical direction.

## Job Preparation

- You may select a data depth of either 2, 3, or 4 bps (bits per spot) in the **Page Setup** window for variable data jobs.
- If you want to do trial printing you may only select a data depth of 2, 3, or 4 bps (see “Doing Trial Printing to Improve Print Quality” on page 207).
- If you want to change the order in which jobs print you may only select a data depth of 2 or 3 bps (see “Changing Job Priority” on page 207).
- Use the following guidelines to determine the maximum allowable variable data coverage as a function of the total area of both sides of the duplex page. The maximum allowable variable data coverage differs for black only variable data files (VDFs) and color jobs, and is also dependent on the data depth, measured in bps, as shown in

Table 24. Maximum Allowable Variable Data Coverage

	VDF Black	VDF Color
2 bps	140%	50%
3 bps	80%	30%
4 bps	20%	10%

---

## Using QuarkXPress XTensions

QuarkXPress XTensions are used to add variable data to your publication on a Windows 95 workstation or on a Macintosh.

When the IBM provided XTensions for QuarkXPress 3.32 are installed, a QuarkXPress sample document (samp\_qx.qxd) that contains variable data is copied into the c:\ibm\_tmp directory (for Windows) or the ibm\_tmp folder (for Macintosh).

Online help is available by pressing the **Help** pushbutton on any of the QuarkXPress XTensions windows.

This section describes the following:

- Creating the page layout
- Defining variable data fields
- Creating variable data boxes

- Producing the variable data job using QuarkXPress on a PC
- Producing the variable data job using QuarkXPress on a Macintosh

## Creating the Page Layout

Create the master file adding static text and a sample of variable data. For text variable data, use the appropriate font, font size, leading, alignment, and color to determine the size of the text box.

Figure 92 shows the page layout of the provided sample file. The title and boxes are static elements and the text in the boxes is the sample variable data. If your variable data contains graphics, add a picture box with a sample of graphic variable data. The bounding box of the graphic is used to determine the size and shape of the variable data picture box. The variable data graphics will be scaled proportionally to fit in this area.

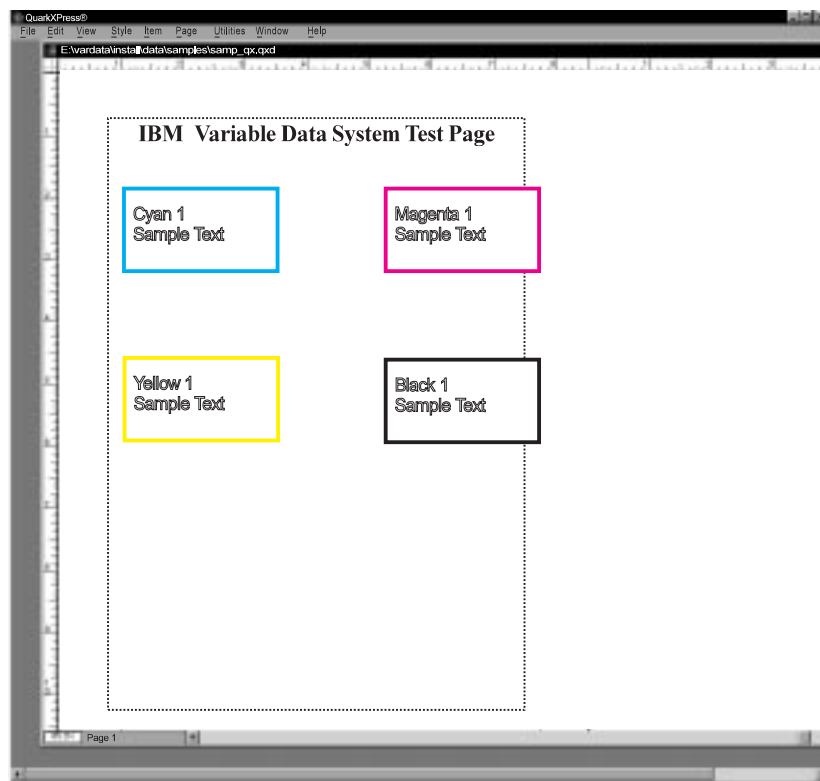


Figure 92. Sample Document of QuarkXPress release 3.32

## Defining Variable Data Fields

After creating a page layout with the static elements and a copy of the sample variable data, define the variable data fields, as follows:

- 1 From the menu bar: Select **Utilities** ⇒ **IBM Define Variable Data Fields**  
This opens the **IBM Variable Data Input File** dialog.
- 2 Select the input file that contains the variable data for this job.  
This opens the **Select Data for One Copy** dialog.

\*  
\*  
\*  
\*  
\*  
\*

**Note:** To open the input file for the sample job, select `sample.fil` in the `c:\ibm_tmp` directory or folder.

- 3 Select the first record. This will be the first record of information for the first copy of the document.
- 4 Highlight the first line up to the start of the next record, as shown for the sample file in Figure 93.

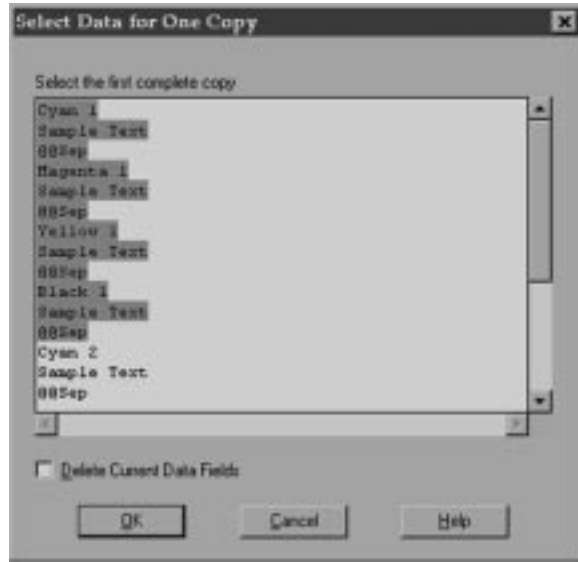


Figure 93. Select Data for One Copy Dialog

\*  
\*  
\*

- 5 Click the **OK** pushbutton.

This opens the **Define Variable Data Fields** dialog, as shown in Figure 94.



Figure 94. Define Variable Data Fields Dialog

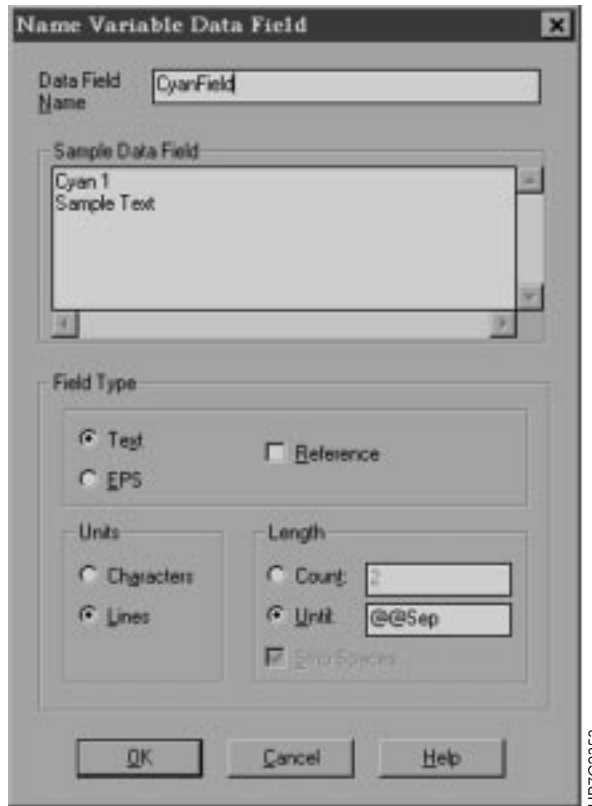
\*  
\*  
\*  
\*

- 6 Select the entire first field up to but not including the separator field.

**Note:** In the sample, the separator field is `@@Sep`, as shown in Figure 94.

- 7 Click the **Add...** pushbutton.

\* This opens the **Name Variable Data Field** dialog: as shown in Figure 95 on  
\* page 120.



\* *Figure 95. Name Variable Data Field Dialog*

\* **8** Enter a name for the data field and specify field type information to describe  
\* the type of variable data and its length.

\* **Note:** If necessary, Press the **Help** pushbutton for more information about  
\* this dialog.

\* **9** Click the **OK** pushbutton.

\* This closes the dialog and returns you to the **Define Variable Data Fields**  
\* dialog.

\* The name of the first field should appear in the **Data Field** box in the **Define**  
\* **Variable Data Fields** dialog.

\* **10** Repeat steps 6 through 8 until you have selected the last data field in the list  
\* and you have defined the contiguous data fields.

## \* **Creating Variable Data Boxes**

\* After you have defined all of the variable data fields, follow these steps to create  
\* the variable data boxes or objects in your document:

\* **1** Select the picture or text box of sample variable data. If you are using the  
\* sample, select the top left text box.

\* **2** From the menu bar select,

\* **Utilities** ⇒ **IBM Create Variable Data Box**

This opens the **Variable Data Box** dialog.

- 3 Enter a name for the box and specify the attributes of the text variable data or graphic variable data.

**Note:** If the variable data is text and the font for the text is not listed, you must first add the font to a font mapping.

**Important Note About Adding Fonts to the Font List**

If the font you want to use for variable data does not appear in the list of fonts, use the following procedure to add the font to the font list.

Variable data text can only use PostScript fonts resident at the printer. Ensure that the font you want to use is resident on the printer (see "Downloading Fonts to the InfoColor 70" on page 137) or map the font to a font that is resident at the printer.

To add a font to the list, edit the \XPress\XTension\ibmvdata.vda file that was installed when you installed the IBM Variable Data Support Software. This file contains 2 columns:

- The left column displays the QuarkXPress font
- The right column displays the PostScript font it maps to that is resident at the printer.

To add a font:

1. Type the QuarkXPress font name in the left column, replacing blanks and commas in the name with "-".
2. Type the PostScript font resident at the printer in the right column. The font name in the right column will be displayed in the list.

Blank lines in this file are ignored. Comment lines start with a slash character ("/").

- 4 Select the data field whose contents belong in this box. Figure 96 shows the CyanFront text box.

- 5 Click the **OK** pushbutton to create the variable data box.

**Note:** In your document, the variable data box will be grey and labelled with the name, as shown in Figure 97 on page 122.



HB7G2354

Figure 96. Variable Data Box Dialog

- \* 6 Repeat steps 1 through 3 for the remaining variable data fields in the document. After you have finished creating all of the variable data boxes, you are ready to produce the variable data job.

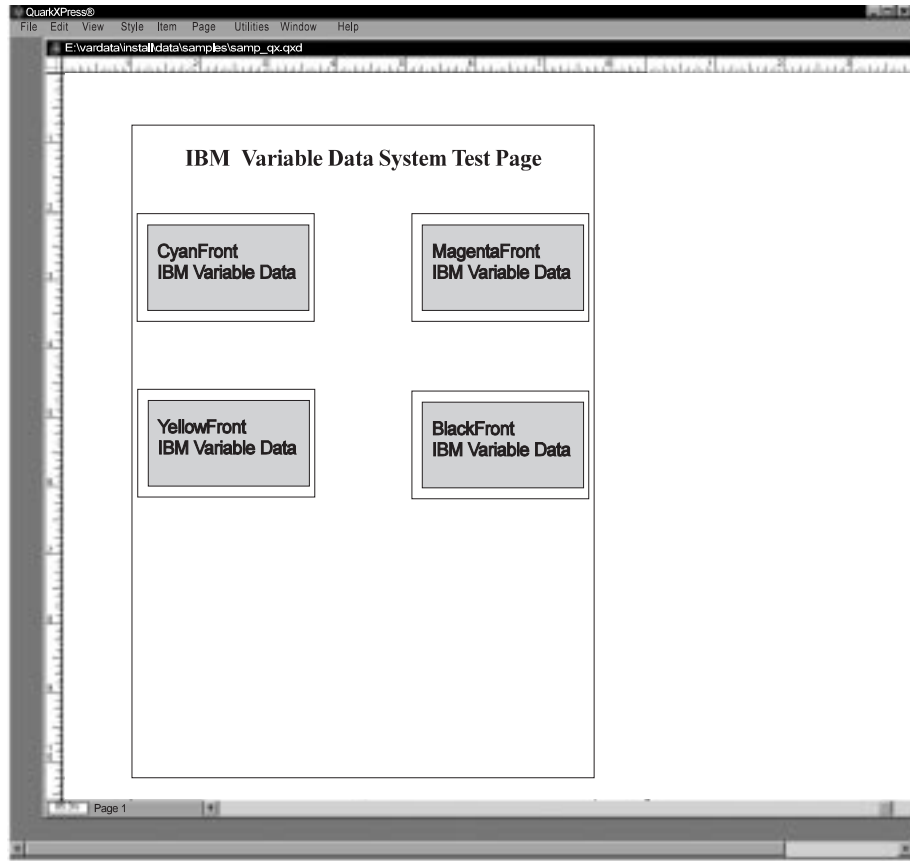


Figure 97. Final Sample QuarkXPress (Release 3.32) Document with Variable Data

- \* 7 Press the **Close** pushbutton to close the dialog.

## Producing the Variable Data Job Using QuarkXPress on a PC

To produce your variable data files, follow these steps:

- \* 1 From the menu bar, select **File** ⇒ **Printer Setup**  
This opens the **Printer Setup** dialog.
- \* 2 In the **Printer Setup** dialog, set the field values as follows:

Field	Value
Specific Printer	IBM InfoColor 70 on FILE
Use PDF for	IBM InfoColor 70
Efi Color Profile	None
Halftone Freq	170
Resolution	600
Data	ASCII
Image: Flip Horizontal	Not Checked



Field	Value
Image: Flip Vertical	Not Checked
Image: Invert	Not Checked
Orientation	Portrait

**Note:** When making a selection in the **Use PDF for:** pull-down, hold down the shift key, click the down arrow, and select **InfoColor 70** in normal font. This ensures that you are using the PDF file, not the PPD file so that Quark trapping will be available in the PostScript output.

**Note:** ASCII is recommended for **Data:**, however the file size will be larger than Binary or PC Binary and it will take longer to RIP.

**3** Enter the Paper width.

**Important Note on Paper Width**

If you are using Reg Mark Offset: IBM recommends that you specify the paper width in points using the following calculation.

$$(\text{Width} \times \text{Number pages in widest spread}) + (2 \times (\text{Reg. Mark Offset} + \text{Reg Crop Length}))$$

**Note:** Reg. Crop Length default value = 24pt.

**4** Click on the **Options....** pushbutton to display the **Print Setup Options** window.

**5** In the **Print Setup Options** window, select the **Device Options Tab** and set **SetOverPrint** and **QuarkTrapping** to On.

**6** In the **Printer Setup Options** window, select the **Graphics Tab** and set **Scaling** to 100%.

**7** Click on the **OK** pushbutton to save the settings and return to the document.

**8** From the menu bar, select **File** ⇒ **Print**

This opens the **Print** dialog.

**9** The following fields in the **Print** are set by QuarkXPress XTensions.

Field	Value
Copy	1
Pages	All
Cover Page	None
Page Sequence	All
Separation	Off
Include Blank Pages	Checked
Collate	Off
Back to Front	Off
Thumbnails	Off
Tiling	Off

- \* **10** Select **Edit** ⇒ **Preferences** ⇒ **Application** from the menu bar.
- \* This opens the **Application Preferences** window.
- \* **11** In the **Application Preferences** window, set the **Reg. Marks Offset**.
- \* **Note:** The application does not permit crop length adjustment.
- \* **12** Click on the **Save** pushbutton to save the settings.
- \* **13** Click on the **OK** pushbutton to save the settings and return to the document.
- \* **14** From the menu bar, select **Utilities** ⇒ **IBM Produce Variable Data Job**
- \* This opens the **IBM Produce Variable Data** dialog.
- \* **15** Copy the name of the PostScript file to the clipboard.
- \* **16** Click on the **OK** pushbutton to create the files used for printing.
- \* **17** In the **Print to File** dialog, paste the name of the PostScript file entered in the **IBM Produce Variable Data Job** dialog in the **File name:** edit box.

## \* Producing the Variable Data Job Using QuarkXPress on a Macintosh

To produce your variable data files, follow these steps:

- \* **1** From the menu bar, select **File** ⇒ **Printer Setup**
- \* This opens the **Page Setup** dialog.
- \* **2** In the **Page Setup** dialog, set the field values as follows:

Field	Value
Orientation	Portrait
Printer Type	IBM InfoColor 70
Halftone Screen	170
Paper Offset	0
Paper Width	see below

\* **Note:** When making a selection in the **Use PDF for:** pull-down, hold down the shift key, click the down arrow, and select **InfoColor 70** in normal font. This ensures that you are using the PDF file, not the PPD file so that Quark trapping will be available in the PostScript output.

\* **Note:** ASCII is recommended for **Data:**, however the file size will be larger than Binary or PC Binary and it will take longer to RIP.

- \* **3** Enter the Paper width.

### — Important Note on Paper Width —

If you are using Reg Mark Offset: IBM recommends that you specify the paper width in points using the following calculation.

(Width x Number pages in widest spread) + (2 × (Reg. Mark Offset + Reg Crop Length))

\* **Note:** Reg. Crop Length default value = 24pt.

- \* **4** Select **Edit** ⇒ **Preferences** ⇒ **Application** from the menu bar.

- \* This opens the **Application Preferences** window.
- \* **5** In the **Application Preferences** window, set the **Reg. Marks Offset:** edit box to 6 pts.
- \* **Note:** The application does not permit crop length adjustment.
- \* **6** Click on the **OK** pushbutton to save the settings and return to the document.
- \* **7** From the menu bar, select **Utilities** ⇒ **IBM Produce Variable Data Job**  
This opens the **IBM Produce Variable Data** dialog.
- \* **8** Click on the **OK** pushbutton to create the files used for printing.

## \* Using PageMaker Plug-Ins

\* PageMaker Plug-Ins are used to add variable data to your publication on a  
\* Windows 95 workstation.

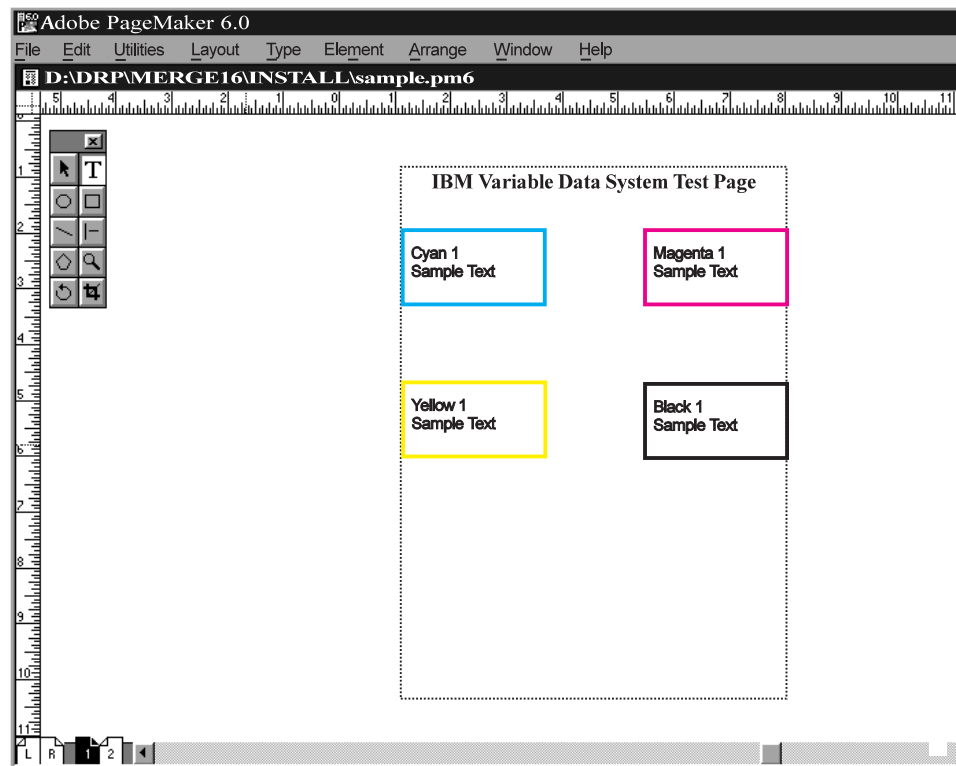
\* When the IBM provided Plug-Ins for Adobe PageMaker 6.0 are installed, a  
\* PageMaker sample document (samp\_pm.pm6) that contains variable data is copied  
\* into the c:\ibm\_tmp directory.

\* Online help is available by pressing the **Help** pushbutton on any of the PageMaker  
\* Plug-In windows.

## \* Creating the Page Layout

\* Create the master file adding static text and a sample of variable data. For text  
\* variable data, use the appropriate font, font size, leading, alignment, and color to  
\* determine the size of the text box.

\* Figure 98 shows the page layout of the provided sample file. The title and boxes  
\* are static elements and the text in the boxes is the sample variable data. If your  
\* variable data contains graphics, add an object with a sample of graphic variable  
\* data. The bounding box of the graphic is used to determine the size and shape of  
\* the variable data picture object. The variable data graphics will be scaled  
\* proportionally to fit in this area.



\* Figure 98. Sample Publication of Adobe PageMaker Release 6.0

## \* Defining Variable Data Fields

\* After creating a page layout with the static elements and a copy of the sample variable data, define the variable data fields, as follows:

\* **1** From the menu bar select,

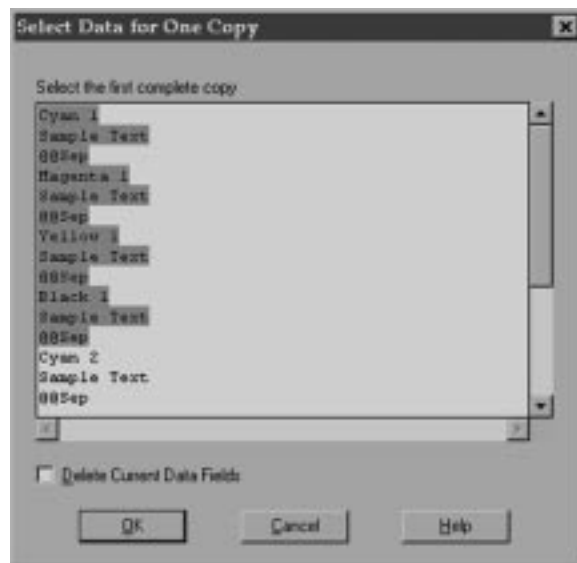
\* **Utilities** ⇒ **PageMaker Plug-Ins** ⇒ **IBM Define Variable Data Fields**

\* This opens the **IBM Variable Data Input File** dialog.

\* **2** Select the input file that contains the variable data for this job.

\* **Note:** To open the input file for the sample job, select `sample.fil` in the `c:\ibm_tmp` directory.

\* This opens the **Select Data for One Copy** dialog.



\* *Figure 99. Select Data for One Copy Dialog*

\* **3** Select the first record. This will be the first record of information for the first copy of the document.

\* **4** Highlight the first line up to the next record, as shown for the sample file in Figure 99.

\* **5** Click the **OK** pushbutton.

\* This opens the **Define Variable Data Fields** dialog.

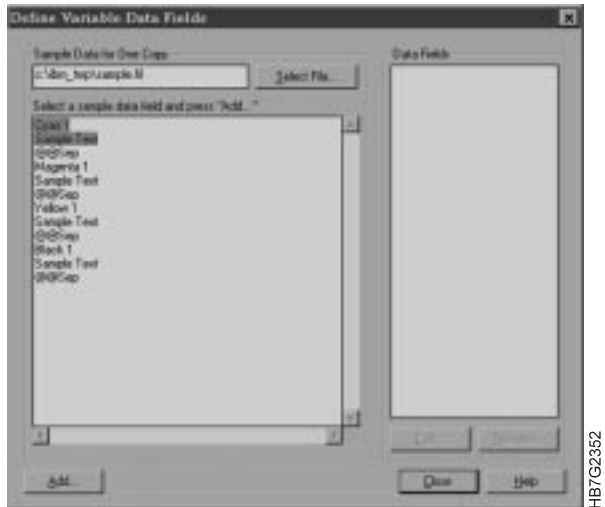


Figure 100. Define Variable Data Fields Dialog

- \* 6 Select the entire first field, up to but not including the separator field.
- \* **Note:** In the sample, the separator field is @@Sep, as shown in Figure 100.
- \* 7 Click the **Add...** pushbutton.
- \* This opens the **Name Variable Data Field** dialog.

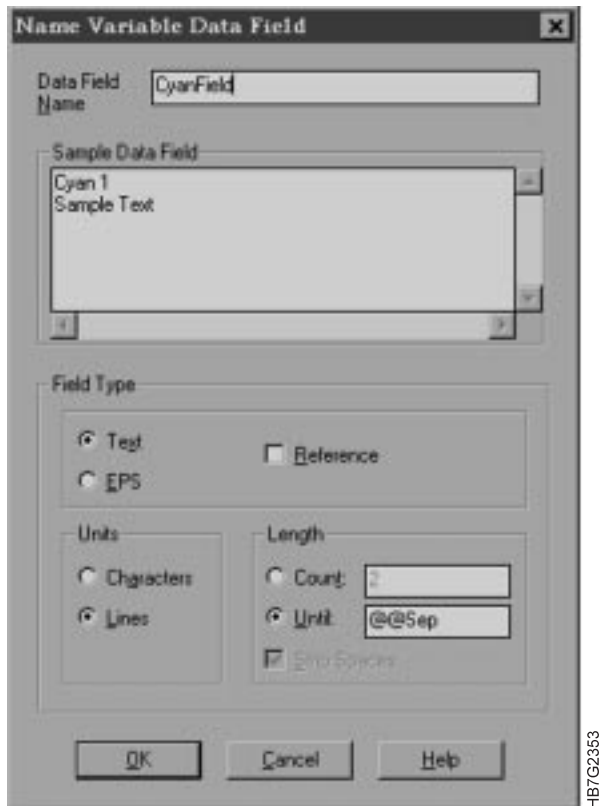


Figure 101. Name Variable Data Field Dialog

- \* 8 Enter a name for the data field and specify field type information to describe the type of variable data and its length.

\* **Note:** If necessary, press the **Help** pushbutton for more information about  
\* this dialog.

\* **9** Click the **OK** pushbutton.

\* This closes the dialog and returns you to the **Define Variable Data Fields**  
\* dialog.

\* The name of the first field should appear in the **Data Field** box in the **Define**  
\* **Variable Data Fields** dialog.

\* **10** Repeat steps 6 through 8 on page 128 until you have selected the last data  
\* field in the list and you have defined the contiguous data fields.

## \* **Creating Variable Data Objects**

\* After you have defined all of the variable data fields, follow these steps to create  
\* the variable data objects in your document:

\* **1** Select the text or graphic object of sample variable data. If you are using the  
\* sample, select the top left text object.

\* **2** From the menu bar select,

\* **Utilities** ⇒ **PageMaker Plug-Ins** ⇒ **IBM Create Variable Data Object**

\* This opens the **Named Object** dialog.

\* **3** Enter a name for the object and specify the attributes of the text variable data  
\* or graphic variable data.

\* **Note:** If the variable data is text and the font for the text is not listed, you  
\* must first add the font to a font mapping.

### — **Important Note About Adding Fonts to the Font List** —

\* If the font you want to use for variable data does not appear in the list of  
\* fonts, use the following procedure to add the font to the font list.

\* Variable data text can only use PostScript fonts resident at the printer.  
\* Ensure that the font you want to use is resident at the printer (see  
\* “Downloading Fonts to the InfoColor 70” on page 137) or map the font to  
\* a font that is resident at the printer.

\* To add a font to the list, edit the  
\* \pm6\src\usen1sh\plugins\ibmvdata.vda file that was installed when you  
\* installed the IBM Variable Data Support Software. This file contains 2  
\* columns:

- \* • The left column displays the PageMaker font
- \* • The right column displays the PostScript font it maps to that is resident  
\* at the printer.

\* To add a font:

- \* 1. Type the PageMaker font name in the left column, replacing blanks  
\* and commas in the name with "-".
- \* 2. Type the PostScript font resident at the printer in the right column.  
\* The font name in the right column will be displayed in the list.

\* Blank lines in this file are ignored. Comment lines start with a slash  
\* character ("/").

- \* 4 Select the data field whose contents belong in this object. Figure 102 on page 130 shows the CyanFront text object.
- \* 5 Click on the **OK** pushbutton to create the variable data object.
- \* **Note:** In your document, the variable data object will be grey and labelled with the name, as shown in Figure 103 on page 131.
- \*

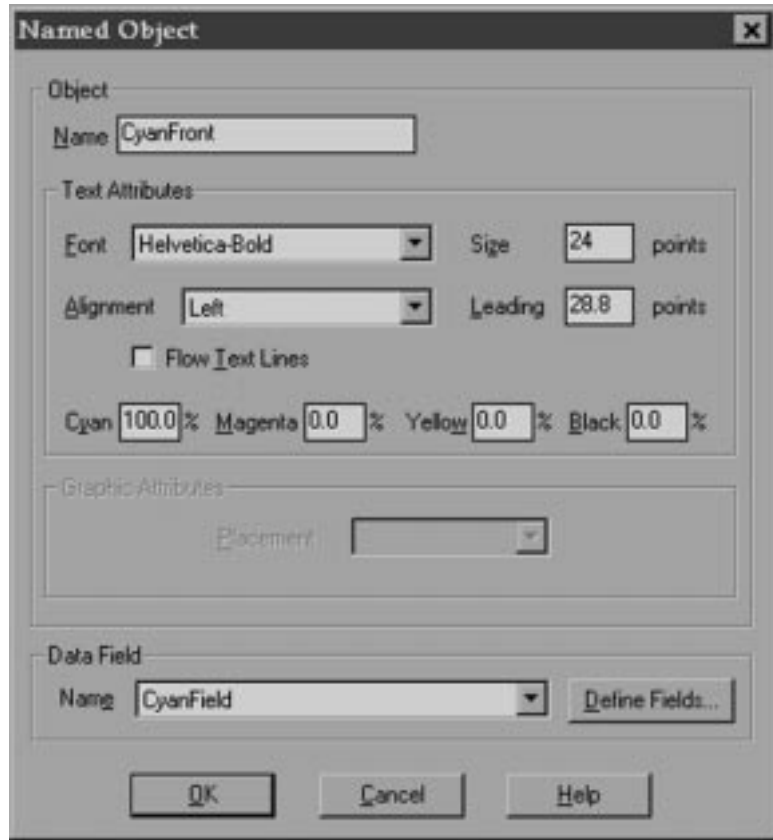
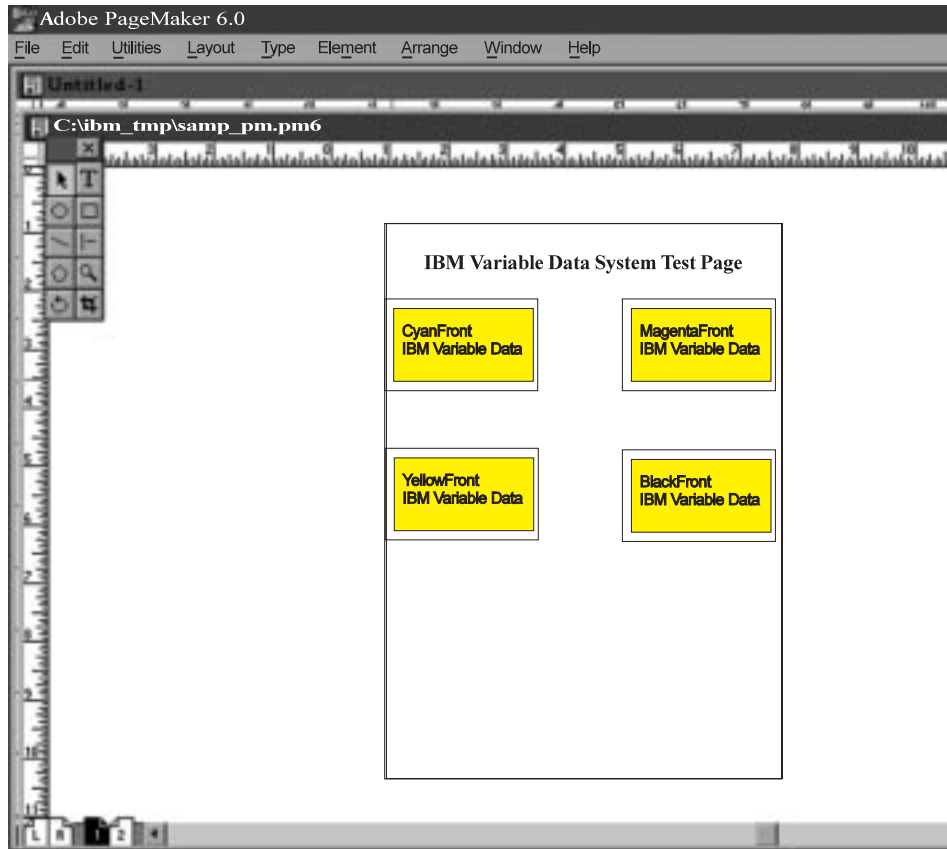


Figure 102. Named Object Dialog

- \* 6 Repeat steps 1 on page 129 through 3 on page 129 for the remaining variable data fields in the document. After you have finished creating all of the variable data objects, you are ready to produce the variable data job.
- \*
- \*
- \*





\*

Figure 103. Final Sample Adobe PageMaker (release 6.0) with Variable Data

## \* Producing Variable Data Jobs

\* To produce your variable data jobs, follow these steps:

\* **1** Select **File** ⇒ **Print** from the menu bar.

\* This opens the **Print Documents** dialog.

\* **2** Define your setup as follows:

\* IBM recommends that you use the following settings.

Field	Setting
Print	IBM InfoColor 70 on FILE
PPD	IBM InfoColor 70

\* **Note:** The following fields in the **Print Documents** dialog are set by  
\* PageMaker Plug-Ins and cannot be overridden.

Field	Setting
Copy	1
Collate	Not Checked
Reverse	Not Checked
Proof	Not Checked
Orientation	Portrait
Print	Both Pages
Print Blank Pages	Checked
Ignore Non-Printing Setting	Not Checked

\* **3** Click on the **Options.** pushbutton

\* This closes the **Print Document** dialog and opens the **Print Options** dialog.

\* **4** Check the **Write PostScript to File** : check box and set the **Data Encoding**  
\* to send ASCII image data.

\* **5** Click on the **Color.**

\* This closes the **Print Options** dialog and opens the **Print Color** dialog.

\* **6** Set the **Frequency** to 170.

\* **Note:** The following fields in the **Print Color** dialog are set by Pagemaker  
\* Plug-Ins and cannot be overridden.

Field	Setting
Composite	Select
Color	Select
Mirror	Not Checked
Negative	Not Checked
Preserve EPS Colors	Checked





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## \* Chapter 6. File Transfers to the InfoColor 70

\* You can transfer files to the InfoColor 70 for RIPing or printing using any of the  
\* following platforms:

- \* • Macintosh
- \* • Personal Computer (PC)
- \* • Diskette or CD-ROM

\* You can also transfer variable data files and access postscript files on the  
\* pre-press workstation.

---

### Transferring Files to the InfoColor 70 Using the Macintosh

You can transfer files to the InfoColor 70 for RIPing or printing using the Macintosh.

This section describes the following Macintosh unique features:

- Transferring files
- Submitting a print request
- Copying the PostScript files
- Downloading fonts.

---

### Transferring Files From the Macintosh to the InfoColor 70

This section covers the following Macintosh unique information:

- Submitting Print Request
- Copying the PostScript Files
- Downloading Fonts to the InfoColor 70.

### Submitting a Print Request Directly from a Macintosh

You can connect to the InfoColor 70 from any Macintosh running System Software 6.03 or later and AppleTalk. Once you have connected, you can submit a print request directly to the InfoColor 70.

Use the following procedure to set up the InfoColor 70 as your current printer:

- 1 Open the **Chooser** window and select the **LaserWriter8** icon.
- 2 In the **AppleTalk Zones** list, select the zone that is used for connection to the InfoColor 70.
- 3 In the **Select a PostScript Printer** list, select **InfoColor 70 Printer**.
- 4 Press the **Setup** pushbutton to open a new window.
- 5 Press the **Select PPD** pushbutton to open a new window.
- 6 From the **System Folder**, select **Extension**, then select **Printer Descriptions**.
- 7 Select the **IBM InfoColor 70 PPD** from the list and press the **Select** pushbutton to select this as the current printer.

Once the IBM InfoColor 70 is set up as your current printer, you can select **Print** from your application and the print request will be sent directly to the InfoColor 70.

When the print request is received by the InfoColor 70, the file is RIPed using one of the following files containing the Page Setup RIP values:

- For the Model 002, /custdisk1/infocolorrip/ini/pap\_fox.ini
- For the Model 02C, /custdisk1/infocolorrip/ini/pap\_foc.ini

After RIPing:

- On the Model 002, the RIPed file is listed in the **Image Disk** window. The file name is the same as the Macintosh file name. If the file name cannot be determined, it is named papjobn, where n is a number.
- On the Model 02C, the file is saved in /custdisk1/psfiles/macvol. Use the **Files** tab in the **ThruPRINT** window to display the contents of this directory. The file name is the same as the Macintosh file name. If the file name cannot be determined, it is named papjobn, where n is a number. The file will have a status of RIPed.

## Copying the PostScript Files from a Macintosh to the InfoColor 70

You can connect to the InfoColor 70 from any Macintosh running System Software 6.03 or later and AppleTalk. Once you have connected, you can copy files to the InfoColor 70.

Use the following procedure to connect to the InfoColor 70:

- 1 Open the **Chooser** window and select the **AppleShare** icon.
- 2 In the **AppleTalk Zones** list, select the zone that is used to connect to the InfoColor 70.
- 3 In the **Select a file server** list, select the InfoColor 70 you want to connect to and press the **OK** pushbutton to open the login window.
- 4 Enter the user name and password for your InfoColor 70.
- 5 Press the **OK** pushbutton to close this window and open the **IBM InfoColor 70** window.
- 6 In the **Select the items you want to use** list, select **sharemac**.
- 7 Press the **OK** pushbutton to connect to the InfoColor 70 and add the **sharemac** icon to your desktop.

After you have a **sharemac** icon on your desktop, you can copy PostScript files to that folder or you can print directly to a file in that folder. The file will reside on the InfoColor 70 in the /custdisk1/psfiles/macvol directory. Once the file is in this directory you can RIP the file using ThruPRINT or the Image Disk.

---

## Downloading Fonts to the InfoColor 70

Use the following criteria to decide whether or not you need to download fonts to your InfoColor 70:

- If the jobs you print on your InfoColor 70 only use fonts that are already on the printer, you do not need to download fonts.
- If the jobs you print only occasionally use an unusual font that is not on the printer, you do not need to download fonts. Instead, include the unusual font when you print the job.
- If you frequently print jobs that use a font not installed on the printer, you will save time by downloading the font to the printer. Once the font is installed on the printer, you no longer need to include it when you print the job. This:
  - reduces processing time when you create the PostScript file,
  - reduces the file size,
  - reduces the time needed to transfer the file across the network to the printer.

To download fonts from a Macintosh, use the instructions that follow.

---

## Setting up and Downloading from a Macintosh Computer

Use this section to set up a Macintosh for downloading fonts, and to download fonts.

**Note:** Before you can download fonts you need a file-transfer application installed on the Macintosh (one example of such an application is MacLinkPlus, by DataVIZ).

### Setting up the Macintosh

Use this section to set up your Macintosh for downloading.

- Mount the sharemac volume to your desktop. (Connect to the InfoColor 70 file server.).
- Choose the InfoColor 70 as your printer.

#### To mount the sharemac volume to your Macintosh desktop:

- 1 Open the Chooser from the Apple menu.
- 2 Select the AppleShare icon.
- 3 If your network has zones, select the zone in which your InfoColor 70 resides.
- 4 From the File Servers list, choose the InfoColor 70 to which you intend to download fonts. (InfoColor 70 is the default AppleShare network name, but the name could be different, especially if you have more than one InfoColor 70 printer on your network.).
- 5 Click on the OK button. The login screen is displayed.
- 6 Select **Registered User** and enter the name and password for connecting to your InfoColor 70. Choose **sharemac** as the volume. If your Macintosh is in a secure environment, you may want to save both your name and password in the login window. This allows anyone who uses the Macintosh to log into the InfoColor 70 without needing the password.

- 7 Click the OK button. This connects you to the InfoColor 70, and places an icon of the sharemac volume on your desktop.

**Note:** The sharemac volume on your desktop is the same as the directory:  
/custdisk1/psfiles/macvol  
on the InfoColor 70 PostScript hard disk.

The sharemac volume is now mounted to your Macintosh desktop. Next, choose the InfoColor 70 as your printer and set it up.

To choose the InfoColor 70 printer as your printer:

- 1 Open the Chooser desktop utility from the Apple menu.
- 2 In the Chooser window, click on the LaserWriter 8 printer driver icon.
- 3 If your network has zones, select the zone in which your InfoColor 70 resides.
- 4 Choose the InfoColor 70 printer to which you intend to download fonts.
- 5 Do one of the following:
  - If the printer is already set up (the correct PPD is selected) close the Chooser and go to “Downloading Fonts from the Macintosh” on page 139.
  - If the printer is not yet set up on your Macintosh, go on to the next step to set up the printer.
- 6 Click the Setup button. This displays the setup window.
- 7 Click the Select PPD button. This displays the Select PPD window.
- 8 Choose the IBM InfoColor 70 PPD and click the Select button. The setup window is again displayed, showing your choice of PPD.
- 9 Click the OK button to close the setup window.
- 10 Click the close box to close the Chooser.

The InfoColor 70 is now set up as your printer. To download fonts, see “Downloading Fonts from the Macintosh” on page 139.



## Downloading Fonts from the Macintosh

Before using this section, make sure you have:

- mounted the sharemac volume to your desktop,
- chosen and set up the InfoColor 70 as your printer on your Macintosh.

This section explains how to:

- transfer fonts to the InfoColor 70.
- install the transferred fonts on the InfoColor 70.

### To transfer fonts:

- 1 Open an application that allows you to specify the MacBinary file format when copying files from one location to another. One example of such an application is “MacLinkPlus,” by DataVIZ.

**Note:** It is important that the fonts are transferred to the printer using the MacBinary file format. This is why you must use a separate application such as MacLinkPlus to do the font transfer. The rest of this procedure uses MacLinkPlus, as does the font transfer.

- Set Direction point from left to right.
  - In the scrollbox on the left, select the PostScript font you want to download. If the font is installed on the Macintosh, you will find it in the **System/Fonts** folder. Be sure to select the PostScript fonts and not the screen font. To select multiple fonts, use **SHIFT-CLICK**.
  - In the scrollbox on the right, open the fontdrop folder inside the sharemac volume.
  - Above the scrollbox on the right, select IBM PC Files.
- 2 Click the **Translator Prefs....** button. This opens the **Translator Results Preferences** dialog box.

In the **Translator Results Preferences** dialog box, set the **Transfer** option to the MacBinary setting. Click the OK button. This returns you to the MacLinkPlus main window.
  - 3 At the bottom of the MacLinkPlus window, select **Transfer only** (MacBinary).
  - 4 Click the **Continue** button to copy the selected PostScript fonts from the Macintosh to the fontdrop folder.

The fonts are now in the fontdrop folder on the IBM InfoColor 70 Printer. To install the fonts on the IBM InfoColor 70 Printer and make them available for printing jobs, see “To Install the Fonts You Transferred” on page 140.

## To Install the Fonts You Transferred

Print any job directly to the IBM InfoColor 70 Printer printer. The job can be:

- a small file that you will later discard,
- a real production job.

The job can request the fonts you are installing.

**Important:** Print directly to the IBM InfoColor 70 Printer printer, rather than printing to file and copying the job to the sharemac folder.

As soon as you print the job to the IBM InfoColor 70 Printer printer, the fonts in the fontdrop folder are downloaded and become available for use in print jobs.

To confirm that the installation was successful, see “To Confirm that the Installation was Successful.”

## To Confirm that the Installation was Successful

- 1 Open the sharemac volume on your desktop. Look for the folders named:  
fontdrop  
fontlist

**Note:** If you are viewing by icon, these folders may be hidden under other objects.

- 2 Look inside the fontlist folder. Any fonts that have been successfully downloaded to the IBM InfoColor 70 Printer are listed here.

**Note:** This folder only lists fonts that were downloaded, it does not list the fonts that the printer came with.

---

## Transferring Files to the InfoColor 70 from PC

This section covers the following PC unique information:

- Submitting Print Request
- Copying the PostScript Files
- Downloading Fonts

## Submitting Print Request Directly from a PC

Before a print request can be submitted from a PC, the PC user must be added to the AIX system and must be authorized to connect to the InfoColor 70. Macintosh users do not have to be added to the InfoColor 70 because they can use the pre-press user name to connect to the InfoColor 70.

Use the following steps to add the PC user to the AIX system then authorize the user to the InfoColor 70:

- 1 Press the **AIXTasks** pushbutton on the desktop Front Panel to switch to the **AIXTasks** workspace.
- 2 Click the **Application Manager** icon on the desktop Front Panel to open the **Application Manager** window.
- 3 Double-click the **System\_Admin** icon to open the **System\_Admin** window.

- 4 Double-click the **Users & Groups** icon to open the **Users & Groups Manager** window.
- 5 In the **Users & Groups Manager** window, press the **Switch User...** pushbutton at the bottom of the window.
- 6 Type the root password to obtain the appropriate authority.
- 7 Drag the **New User** icon from the **Template Area** to the **Users Workarea**.  
This opens the **New User** window.
- 8 Type the PC user name in the **User Name** field. Use the default values for the other fields.
- 9 Press the **OK** pushbutton to process the request.  
This opens a processing window.
- 10 When the processing completes and the figure at the top right is standing, press the **Done** pushbutton.
- 11 Press the **Cancel** pushbutton to exit the **New User** window.
- 12 Press the **Exit** pushbutton to exit the **Users & Groups Manager** window.
- 13 In the **System\_Admin** window, double-click the **rootsmit** icon.
- 14 Type the root password to get the appropriate authorization.  
This opens the **SMIT** window.
- 15 Click the **Applications** box.
- 16 Click the **AIX Connections** box.
- 17 Click the **Common Services and Configuration** box.
- 18 Click the **Change/Delete AIX Connections password** box.
- 19 Click the **Change AIX Connections password** box.  
This opens a window prompting you for the AIX Connections User Name.
- 20 Type the PC User name in the **AIX Connections User Name** field or press the **List** pushbutton and select the PC user's name.
- 21 Press the **OK** pushbutton.  
This opens a window prompting you for the user's password.
- 22 Type the password for the PC user two times. The PC user will use this password when connecting to the InfoColor 70.
- 23 Press the **Cancel** pushbutton to return to the **SMIT** window.
- 24 Exit **SMIT**.

After the PC user is authorized to the InfoColor 70, the PC user can add the InfoColor 70 printer. Add the InfoColor 70 as a network printer. If the PC is running Windows for Workgroups, the printer can be added from Print Manager. The first time the PC connects to the printer, the path to the printer must be typed. Set the printer path to \\prntername\\LpdRIP, where prntername is the name of the InfoColor 70.

After selecting the appropriate InfoColor 70 printer, the PC user will be prompted for the password. The PC user should type the password that was defined to the AIX system in the previous steps.

## Copying the PostScript Files from a PC to the InfoColor 70

You can connect to the InfoColor 70 from any PC with Windows 95 or Windows for Workgroups. Connect to the `/custdisk1/psfiles/pcshare` directory on the InfoColor 70 that you want to use. You may have to type the path to the shared directory. Set the path to `\\prntername\sharepc` where `prntername` is the name of the InfoColor 70 you want to use. You can copy files directly into this directory or you can print directly to a file in this directory. Once the file is in this directory, the operator can RIP the file using ThruPRINT or the Image Disk.

## Downloading Fonts from a PC

Before fonts can be downloaded to the InfoColor 70, the PC user must be added to the AIX system and be authorized to connect to the InfoColor 70. See "Submitting Print Request Directly from a PC" on page 140 for instructions on adding the PC user to the AIX system and authorizing the user to the InfoColor 70.

After the PC user is authorized to the InfoColor 70, the following procedure can be used to download fonts to the InfoColor 70:

- 1 Connect to the InfoColor 70 **sharepc** directory. The first time the PC connects to the InfoColor 70 the path name may have to be typed in. Set the path to `\\prntername\sharepc` where `prntername` is the name of the InfoColor 70 you want to use.
- 2 Copy the fonts to the `\sharepc\fontdrop` directory.
- 3 Select the InfoColor 70 Fonts printer as your current printer. A special printer, with Fonts appended to the name, is set up for downloading fonts. This printer, not the InfoColor 70 printer you use for submitting print jobs, should be selected as the current printer.
- 4 Print the **installfont** file in the **sharepc** directory on the InfoColor 70 Fonts printer. This downloads the fonts to the InfoColor 70.

Verify that the fonts are downloaded by viewing the contents of the directory **/pcshare/fontlist**. The fonts resident on the InfoColor 70 are listed in this directory.

---

## Transferring PostScript Files using a Diskette or CD-ROM

You can use a disk or a CD-ROM to transfer PostScript files to the InfoColor 70.

### Using a Disk to Transfer PostScript Files to the InfoColor 70

You can use a disk to transfer files to the InfoColor 70, but it requires special processing on the RS/6000.

Use the following procedure to copy files from a disk:

- 1 At the pre-press workstation, copy the files to the disk in PC format.
- 2 At the InfoColor 70, insert the disk into the RS/6000 disk drive.
- 3 Press the **AIXTasks** pushbutton on the desktop Front Panel to switch to the **AIXTasks** workspace.  
To list the files on the disk, double-click the **List Disk Files** icon in **AIXTasks** workspace.
- 4 Click the **File Manager** icon on the desktop Front Panel to open the **File Manager** window.
- 5 Navigate to the folder where you want the files to be copied.
- 6 Drag the folder that you want to contain the disk files to the **Copy Disk Files** icon in the **AIXTasks** workspace.

This opens a window that lists the files as they are being copied.

### Using a CD-ROM to Transfer PostScript Files to the InfoColor 70

If you have a CD-ROM containing PostScript files, in PC format, you can copy these files to the InfoColor 70. Using the CD-ROM drive on the RS/6000 requires special processing.

Use the following procedure to copy files from a CD-ROM:

- 1 At the InfoColor 70, insert the CD-ROM into the RS/6000 CD-ROM drive.
- 2 Click the **File Manager** icon on the desktop Front Panel to open the **File Manager** window.
- 3 Navigate to the `/cdrom` directory.
- 4 If the files on the CD are listed, you can copy them to another directory or you can RIP them directly from the CD-ROM. If the files on the CD-ROM are not listed, continue with the following steps to mount the CD-ROM.
- 5 Click the **Application Manager** icon on the desktop Front Panel to open the **Application Manager** window.
- 6 Click the **System\_Admin** icon to open the **System\_Admin** window.
- 7 Click the **Storage Manager** icon to open the **Storage Manager** window, as shown in Figure 104 on page 144.

**Application Manager** ⇒ **System\_Admin** ⇒ **Storage Manager**

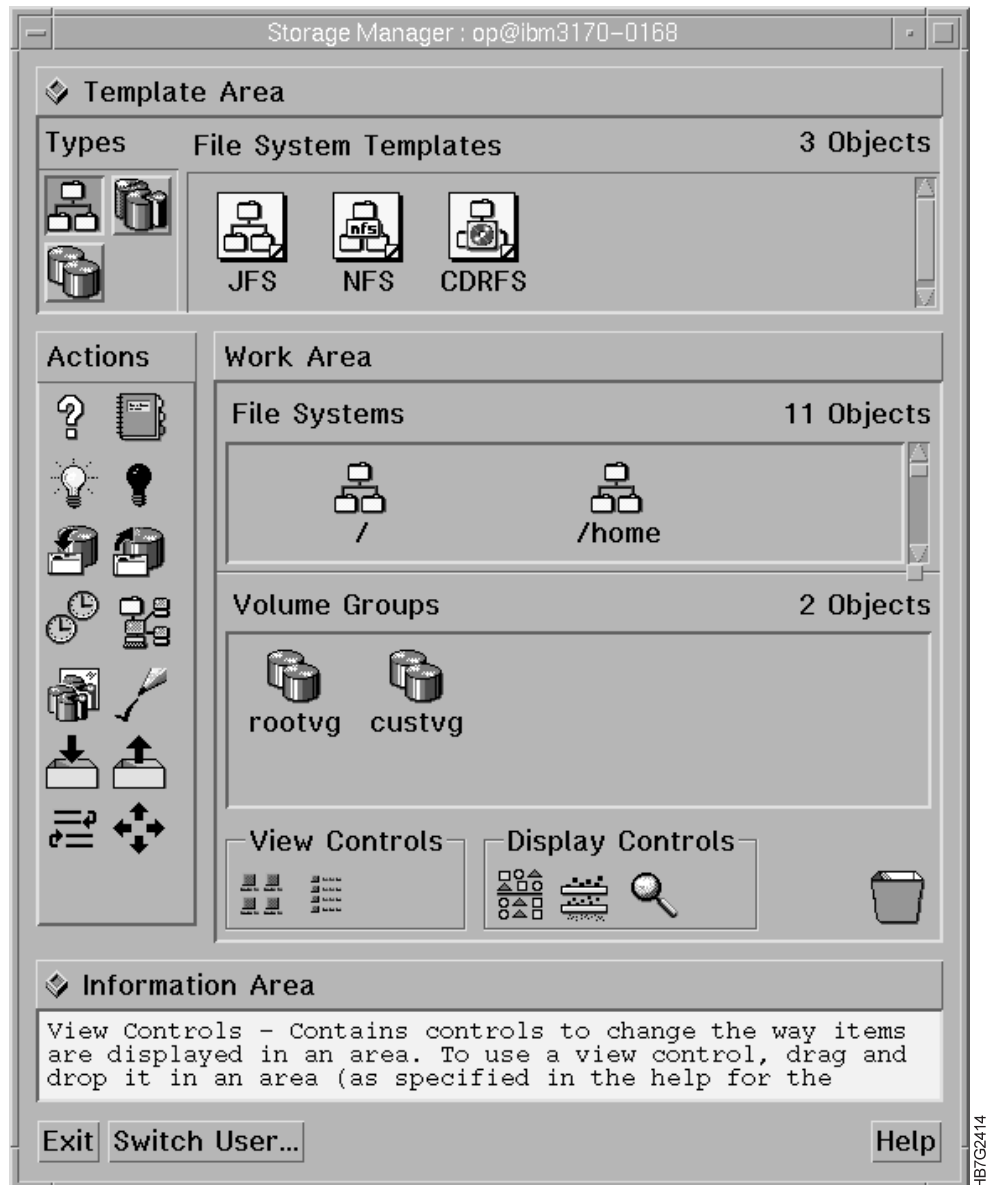


Figure 104. Storage Manager Window

- 8 In the **Storage Manager** window, press the **Switch User** pushbutton at the bottom of the window.
- 9 Type the root password. This gives you the proper authority to perform the mount operation.
- 10 In the **Storage Manager** window, drag the **On** action (the yellow lightbulb) to the **/cdrom** icon in the **File Systems** work area. This mounts the CD-ROM and makes it available for use. If you return to the **File Manager** window, the files will be listed. You can copy these files to another directory or you can RIP them directly from the CD-ROM.

To remove the CD-ROM from the drive, you must first unmount the `/cdrom` directory and make it unavailable. Use the following procedure to unmount the directory:

- 1 Click the **Application Manager** icon on the desktop Front Panel to open the **Application Manager** window.
- 2 Click the **System\_Admin** icon to open the **System\_Admin** window.
- 3 Click the **Storage Manager** icon to open the **Storage Manager** window, as shown in Figure 105.

**Application Manager** ⇒ **System\_Admin** ⇒ **Storage Manager**

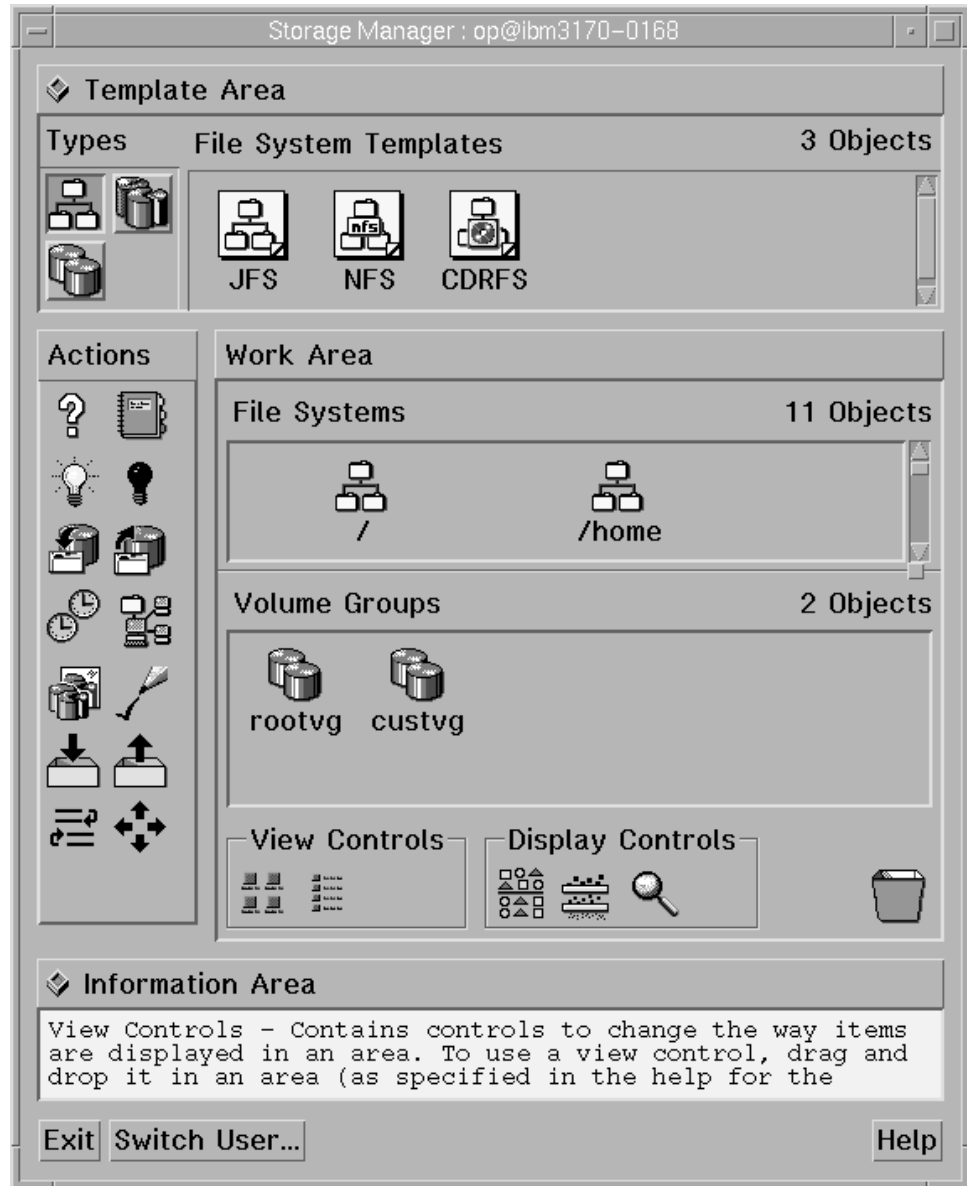


Figure 105. Storage Manager Window

- 4 In the **Storage Manager** window, press the **Switch User** pushbutton.
- 5 Type the root password. This gives you the proper authority to perform the unmount operation.
- 6 In the **Storage Manager** window, drag the **Off** action (the black lightbulb) to the **/cdrom** icon in the File Systems work area. This unmounts the CD-ROM. You can now remove the CD-ROM from the drive.

## Transferring Variable Data Files to the InfoColor 70

After the variable data job is produced, the files are ready to be transferred to the InfoColor 70. The following files must be transferred:

- Variable data input file
- Document definition file
- Master PostScript file
- Text and graphic files referenced by the variable data input file.

Any of the methods for copying files described in “Copying the PostScript Files from a Macintosh to the InfoColor 70” on page 136 can be used to transfer the variable data files to the InfoColor 70.

The files should be copied to the appropriate IBM InfoColor 70 directory.

- If you are copying the files directly from a Macintosh, copy the files to the **vds** folder in **sharemac**.
- If you are copying the files directly from a PC, copy the files to the `/sharepc/vds` directory.
- If you are copying the files from a disk or CDROM, copy the files to the `/custdisk1/vds` directory on the InfoColor 70.

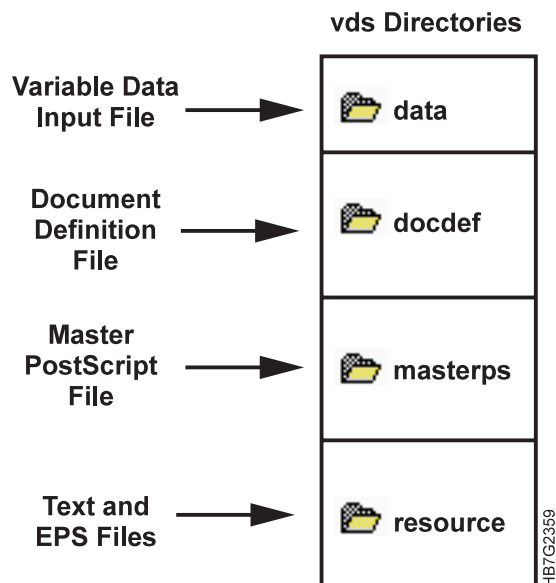


Figure 106. InfoColor 70 Variable Data System Directories and Files

**Note:** If the variable data job, was created on a different InfoColor 70, the variable data input file and all the files it references must be copied and restored on the printer you are transferring the files from.



---

## Accessing PostScript Files on the Pre-press Workstation

If your pre-press workstation has NFS configured, the InfoColor 70 operator can access the files directly. The files must reside in an NFS exported directory so the InfoColor 70 can access them from the network.

Use this procedure on the InfoColor 70 to mount the pre-press directory. Once the directory has been mounted, you can access the files the same way that you access local files. You can also use this procedure to access files on other InfoColor 70 printers.

- 1** At the InfoColor 70, press the **AIXTasks** pushbutton on the desktop Front Panel to switch to the **AIXTasks** workspace.
- 2** Click on the **Application Manager** icon on the desktop Front Panel to open the **Application Manager** window.
- 3** Double-click on the **System\_Admin** icon to open the **System\_Admin** window.
- 4** Double-click on the **Storage Manager** icon to open the **Storage Manager** window, as shown in Figure 107 on page 148.

**Application Manager** ⇒ **System\_Admin** ⇒ **Storage Manager**

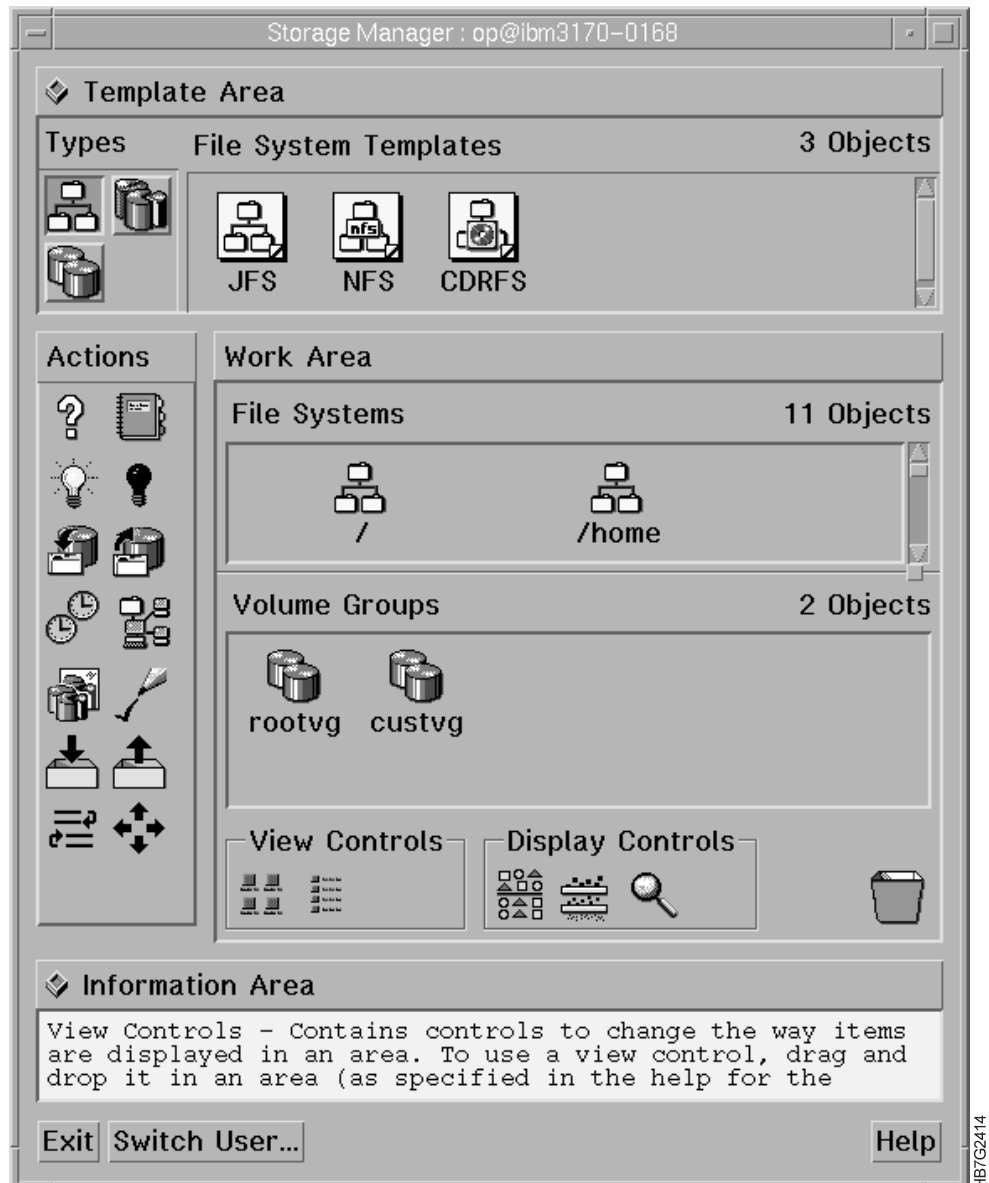


Figure 107. Storage Manager Window

- 5 Press the **Switch User** pushbutton at the bottom of the window and switch to the root user and have the proper authority.
- 6 Type the root user's password.
- 7 Drag the NFS template to the **File Systems** workarea.  
This opens the **Add a File System for Mounting** dialog.
- 8 In the **Add a File System for Mounting** dialog, enter the following information:  
**Note:** The defaults may be taken for the remainder of the fields displayed in this window.

Field	Entry
Local Mount Path	Name you want to use to refer to this directory.
Pathname of remote directory	Directory name on the pre-press workstation.
Host	host name of the pre-press workstation
Mount type	NFS
Mount now	both
On Restart	Yes, if you want to reestablish this connection when the RS/6000 is shutdown and restarted.
Hard/soft	soft

**9** Press the **OK** pushbutton.

This opens a window showing the results of your mount request.

When the process completes successfully, the figure at the top right stands with arms raised.

**10** Press the **Done** pushbutton to close this window.

**11** Press the **Exit** pushbutton to exit the **Storage Manager** window.

After mounting the remote file system, you can access the files as you would if they were local files.



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## Chapter 7. RIPing Jobs

All jobs must be RIPed before they can be printed. This chapter explains what the RIP is and how to use it in the following sections:

- Understanding RIPing
- Before RIPing
- The RIPing process
- Defining page setups and paper sizes.

---

### Understanding RIPing

The purpose of the RIP is to convert PostScript files into print runs. This is handled differently depending on the printer model.

On the Model 02C, the RIP creates one run for each file. The RIPed file is stored on the Collator's high-speed disk array.

On the Model 002, for every page (or two pages for duplex jobs) defined in a PostScript file, the RIP creates a new run and sends the run parameters and image data to the print engine supervisor (PES). If the job is a duplex job, the RIP interprets the second (back side) page, renders this page, transfers the image data to the print engine, and adds this image to the same signature that contains the image data for the front page. Now the PES has all the information it needs to print the run. The RIP continues to process the file, repeating the interpretation and rendering for each page in the job.

When the print engine generates an error that is not directly related to the RIPing process, even when the error prevents the print engine from accepting data from the RIP, the RIP does not report the error. It waits until the error is solved by the operator and then resumes RIPing. The RIP does report errors that are directly related to the interpreting or rendering phases of a job.

---

### Setting Up Your Job

Setting up a job means defining a page setup. If you have not defined a page setup, see "Defining Page Setups and Paper Sizes" on page 154, which explains all the parameters you can use to describe your job to the RIP. All the parameters are stored in a named .ini file. The InfoColor 70 provides a default.ini file in /usr/fcdp/fastrip/ini.

If you have previously defined a page setup (or several page setups) and you want to use one of these to define your job to the RIP, see "Saving and Loading a Page Setup" on page 160. It describes how to use a page setup you have already defined.

## Defining Page Setups and Paper Sizes

The InfoColor 70 has some specific page-setup parameters that have to be known to the RIP before the job is RIPed. Many of these parameters are defined by the PostScript code that can be inserted in the job when the job is created.

The operator is responsible for defining page-setup parameters that were not defined in the job when the job was created. All parameters that you define will override the values defined in the job's PostScript file.

To define a page setup using **ThruPRINT**, select a file to RIP, and then select **File** ⇒ **RIP**.

or

**File** ⇒ **RIP then PRINT**.

To define a page setup using **Image Disk** window, click on the **Page Setup Rip** pushbutton in the **Image Disk** window.

This opens the **Page Setup** window, shown in Figure 108.

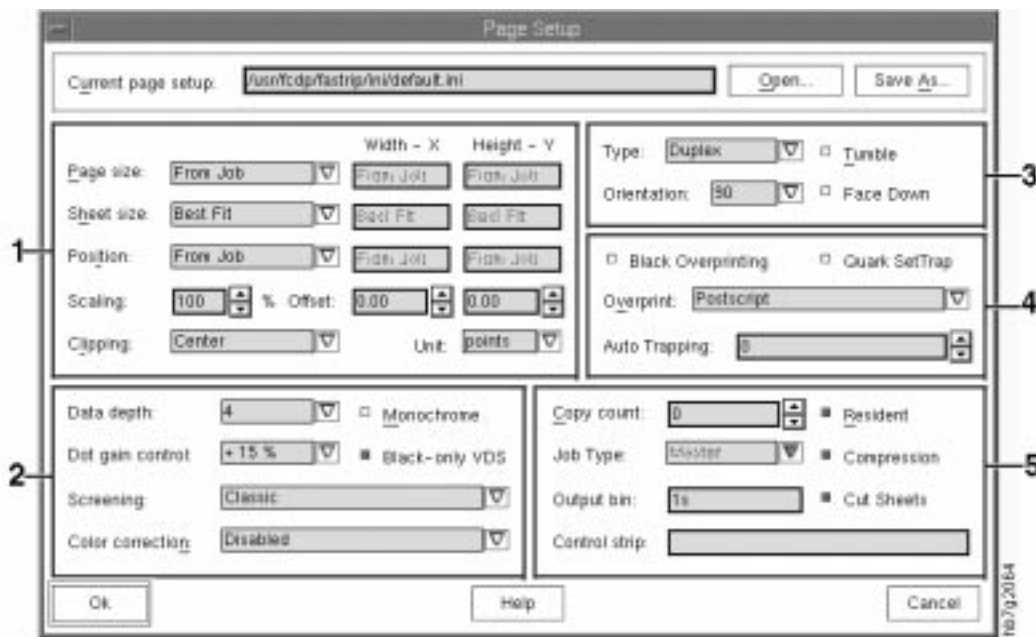


Figure 108. Page Setup Window

The **Page Setup** window consists of areas that define the following parameters:

- Size and position
- RIP options
- Image orientation
- Trapping
- Job setup

Detailed descriptions of each area are shown in Table 25 on page 155.



Label	Parameters	See this section...
1	Size and Position	"Size and Position Parameters" on page 155
2	RIP Option	"RIP Options Parameters" on page 156
3	Image Orientation	"Image Orientation Parameters" on page 156
4	Trap Option	"Trapping Parameters" on page 157
5	Job Setup	"Job Setup Parameters" on page 158

## Understanding the Page Setup Parameters

### Size and Position Parameters

The size and position parameters, shown in Figure 109, are described in detail in Table 26.

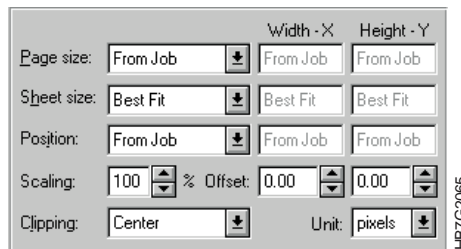


Figure 109. Size and Position Parameters in Page Setup Window

Setting	Explanation
<b>Page size</b>	The signature size to be used when the pages of a job are ripped. The options are From Job, A4, A4 transverse, A3, A3 transverse, US Letter, US Letter tr., US Legal, US Legal tr., Tabloid, Tabloid tr., Custom, and Clipped. (See "Page Sizes in the InfoColor 70 PPD" on page 101.)
<b>Sheet size</b>	The size of the physical sheet on which the job will be printed. The options are the same as Page Size except Clipped is replaced by Best Fit.
<b>Position</b>	The position of the job (after any orientation) on the physical sheet. A job can be centered in the X or Y direction (Center X or Center Y), in both directions (Center), the operator can define a custom position (Custom) or use the position from the job (From Job).
<b>Scaling</b>	This allows you to change the size of the document. 100% is 1 to 1.
<b>Offset</b>	Shifting the image on the web in the X or Y direction or both.
<b>Clipping</b>	When the page width exceeds the maximum imageable width the RIP will clip jobs as Error (the RIP issues an error message and ignores the job), Right clip ( the right part of the page that extends beyond the imageable width is clipped), or Center clip ( the page is clipped symmetrically).

<i>Table 26 (Page 2 of 2). Size and Position Parameter Descriptions</i>	
<b>Setting</b>	<b>Explanation</b>
<b>Unit</b>	The units that can be selected are pixels, mm, inch, points, mil.

## RIP Options Parameters

The RIP Options parameters shown in Figure 110 are described in Table 27.

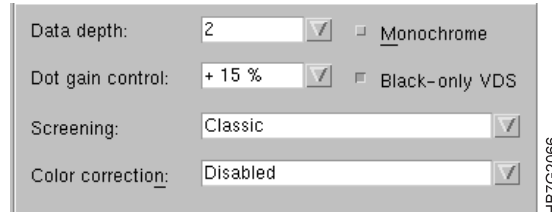


Figure 110. RIP Options Parameters in Page Setup Window

<i>Table 27. RIP Options Parameter Descriptions</i>	
<b>Setting</b>	<b>Explanation</b>
<b>Data depth</b>	The number of bits with which each spot's gray value is described. 1 bit per spot (bps) means that a spot can have two levels of gray (0 and maximum density). 4 bps means that a spot can have 16 levels of gray (between 0 and maximum density). Increasing the data depth will increase the output quality but will also increase the time needed to RIP, transfer, and download the respective runs. It will also increase the size of the run when it is being spooled on the Model 002. 2, 3, or 4 bps can be selected for Masters and VDFs.
<b>Dot gain control</b>	You can select from -5% to +35% in 5% increments.
<b>Screening</b>	Screening or No screening. The screening choices are Classic, Sofocles, Sofocles not calibrated, and Combined.
<b>Color correction</b>	Enabled or disabled. Color correction can be enabled to use the Euroscale or SWOP transformation tables. Disable color correction if color correction was performed by the application using ICC color profile for the InfoColor 70.
<b>Monochrome</b>	Converts all linear colors to gray scale and generates output only to the K (black) print unit. RIPing a job in monochrome significantly reduces the RIP, transfer, and download time.
<b>Black-only VDS</b>	This setting is used only for black VDS. This setting is used for variable data jobs on a InfoColor 70 with the Black-only VDS feature. A full color VDS machine can also print black-only by checking this box.

## Image Orientation Parameters

The Image Orientation parameters shown in Figure 111 on page 157 are described in Table 28 on page 157.



Figure 111. Image Orientation Parameters in Page Setup Window

Setting	Explanation
<b>Type</b>	Simplex or Duplex. When a job is RIPPed as a duplex job, a new run is created for every two PostScript pages. All odd pages are printed on the front side of the paper; all even pages are printed on the back side. When a job contains an odd number of pages, the RIP sends a dummy back page to the print engine at the end of the job. The print engine discards this dummy page and considers the respective run to be a simplex run.
<b>Orientation</b>	Rotates output. You can specify 0, 90, 180, or 270 degrees. The pages are rotated counterclockwise relative to their orientation when the job was created. The image itself does not change. The front and back side will turn in the same direction with respect to the paper. The front side rotates counterclockwise, and the back side rotates clockwise.
<b>Tumble</b>	Rotate the back page 180°. This rotation is cumulative with any rotation you specify in the Orientation field.
<b>Face Down</b>	Select this box to lay the respective runs face down. This means that, for duplex jobs, the front and back will be reversed. The front side of the paper is defined as the side that is printed by the X-tower or the side of the paper that is on top when the page exits the InfoColor 70. Simplex jobs will be printed on the back side of the paper.

## Trapping Parameters

The Trapping parameters shown in Figure 112 are described in Table 29.

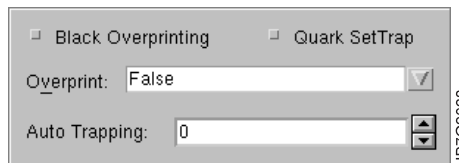


Figure 112. Trapping Parameters in Page Setup Window

Setting	Explanation
<b>Black Overprinting</b>	100% black overprint on the line-art, text, and solid elements (that is, solid background on a picture box). This will not affect graphics. This setting currently has no effect when you use the InfoColor 70 PDF in QuarkXpress. To control Black Overprinting, use the Overprint setting (see below). Select True for black overprinting or either False or PostScript for no overprinting.

*Table 29 (Page 2 of 2). Trapping Parameter Descriptions*

<b>Setting</b>	<b>Explanation</b>
<b>Overprint</b>	<p>You can specify False (Overprint is ignored), True (Objects are rendered as if they would truly overprint each other), or PostScript (Handles overprint according to PostScript specifications. Knocks out in separations where the object applies any ink.).</p> <p>The driver settings for Overprint on the Macintosh or PC have no effect on the RIP at this time; however, IBM recommends that you select the desired setting in the driver.</p>
<b>Quark SetTrap</b>	<p>This setting is used to indicate whether trapping should be turned ON or OFF for QuarkXPress jobs. The InfoColor 70 receives composite PostScript. Since QuarkXPress cannot change the dimensions of elements to create “chokes” and “spreads” with composite PostScript, it sends PostScript codes to indicate what changes are needed. These codes are called the “settrap” operators.</p>
<b>Auto Trapping</b>	<p>This setting (in pixels) is used to indicate how much to trap a job. If the value is set to 0, then auto trapping is OFF. If the value is non-zero, auto trapping is ON. IBM recommends that you use an auto trapping setting of 3.</p> <p>If QuarkSetTrap is also turned ON, then Quark trapping will be applied first and then auto trapping will be applied to the resulting job.</p> <p>Your printer may or may not have this feature installed. Contact your IBM representative for details.</p>

\*  
\*

### Job Setup Parameters

The Job Setup parameters shown in Figure 113 are described shown in Table 30 on page 159.

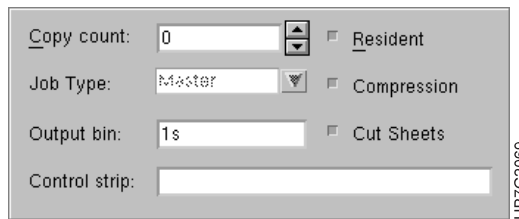


Figure 113. Job Setup Parameters in Page Setup Window

Table 30. Job Setup Parameter Descriptions

<b>Setting</b>	<b>Explanation</b>
<b>Copy count</b>	<p>On the Model 002 — The number of copies to be printed of each signature of a job. If you specify zero (0), the job will be RIPed but not printed. Instead, the RIPed job will be stored on the PES spooling disk for printing later.</p> <p>If you always specify 0 and make all jobs resident, no jobs are queued for printing. The advantage is that you can change the printing order and can immediately print the same job again. The disadvantage of this approach is that you have to manually download each job for printing.</p> <p>On the Model 02C — Specify a copy count greater than 0. If this file is a PostScript job on the Model 02C, values is not used. If this is a variable data job on the Model 02C, specify the number of copies you want to print.</p>
<b>Job type</b>	<p>Master, VDF (variable data field), or a Test job. (Model 02C only.)</p>
<b>Output bin</b>	<p>On the Model 002 — The name of the output bin of the sheets. The following syntax must be used: &lt;number of sheets&gt;&lt;destination tray&gt;. The destination tray options are: Output Stacker - T (test tray), S (stack tray) or Inline Finisher - W (waste into basket), T (test tray), S (stack tray), B (book gather tray).</p> <p>If this file is a PostScript job on the Model 02C, this field is ignored.</p>
<b>Control strip</b>	<p>On the Model 002 — The name of the control strip to be appended to each run of the job. The control strip should be resident on the print engine's spooling disk before it can be attached to a run. The name of the control strip equals the name of the resident run with which it is created.</p> <p>If this file is a PostScript job on the Model 02C, this field is ignored. If this is a variable data job on the Model 02C, specify the number of control strips you want to print.</p>
<b>Resident</b>	<p>Stores all jobs on the spooling disk after they have been printed. If this box is not selected, the PES will send the runs to the spooling disk only when it cannot yet download them to bitmaps. The PES will automatically delete the runs from the spooling disk as soon as they are downloaded to bitmaps.</p>
<b>Compression</b>	<p>Enable compression of the output raster image. Compression should always be on.</p>
<b>Cut sheets</b>	<p>Sheets will be cut when coming out.</p>

## Saving and Loading a Page Setup

You can create and save as many page setups as you need, each containing a specific set of job-parameter values. All the parameter settings of a page setup are saved in an .ini file. All the .ini files are stored in the subdirectory /usr/fcdp/fastrip/ini.

When you open the **Page Setup** window for the first time, the default.ini file is specified in the **Current page setup** field.

After you define the values for the page setup parameters, you should save your page setups in specific .ini files that you have named. You can then load and use any page setup before RIPing. To save and then load any page setup, do the following:

- 1 Click the **Save As** pushbutton in the **Page Setup** window.

The **Enter a page setup filename** window opens.

- 2 Enter a filename in the **File Name** field.

When you save a page setup, give it a unique name. The name could, for example, indicate the next three parameters:

- The rotation
- Simplex or duplex
- Data depth (number of bits per spot).

- 3 Click the **Ok** pushbutton to save your page setup in a specific .ini file that you have named.

**Attention:** If you open one of your .ini files and change any of the parameter values for a specific job you are going to RIP, first ensure that you use **Save as** to save the .ini file under a different name before you click the **Ok** pushbutton. If you don't, the values you changed will write over the values you had in the original .ini file.

Before you RIP a job, you can load a saved page setup. Just ensure that the parameter values are correct for the job to be RIPed.

To load a saved page setup, do the following:

- 1 Click the **Open** pushbutton in the **Page Setup** window.

The **Select a page setup file** window opens.

- 2 Select the .ini file that contains the page setup parameters you want to use and click the **OK** pushbutton.

Now when you RIP a job, the page-setup values in the file you just loaded are used.

## RIPing Files on the Model 02C

The method you use to RIP is based on both the type of file and the printer model. The following table, see Table 31, refers you to the sections that discuss RIPing files of different types.

Table 31 shows RIPing by file type on the Model 02C.

File Type	RIP Interface	Refer to...
PostScript files	ThruPRINT	Page 161
PageMaker Plug-Ins or Quark XTensions generated Variable Data files	ThruPRINT	Page 161
InfoPrint Job	ThruPRINT	Page 163
Control Strip	ThruPRINT	Page 164

## RIPing PostScript Files on the Model 02C

To RIP PostScript files on the Model 02C, do the following:

- 1 Open the **ThruPRINT** window and click on the **Files** tab.  
**Note:** If the file you want to RIP is not listed, press the **Select Files** pushbutton and then select the file or files you want to work with.
- 2 Select the file you want to RIP and then select **File** ⇒ **RIP** to open the **Page Setup** window.  
The **Page Setup** window is described in “Understanding the Page Setup Parameters” on page 155.
- 3 In the **Page Setup** window, press the **OK** pushbutton to start the RIP.  
This closes the **Page Setup** window and opens a **RIP** window.  
See “Monitoring the RIPing Process” on page 172 for more information about RIPing jobs.  
**Note:** You can stop the RIPing process at any time by pressing **CTRL+C** in the **RIP** window.
- 4 After the RIP is complete, the **RIP** window stops processing.
- 5 Close the **RIP** window.

### \* RIPing Variable Data Files on the Model 02C

\* Before RIPing the variable data files that were generated by Quark Xtensions or  
\* PageMaker Plug-Ins, ensure that the files described in “Transferring Variable Data  
\* Files to the InfoColor 70” on page 146 have been copied to the appropriate vds  
\* subdirectories. To RIP variable data files generated by the PageMaker Plug-Ins or  
\* Quark XTensions follow the steps below:

- 1 Open the **ThruPRINT** window and click on the **MergeDocuments** tab.  
**Note:** If the document definition file you want to RIP is not listed, click on the **Select Files...** pushbutton and select the file or files you want to work with.

\*  
\*  
\* 2 Select the document definition file (\*.ddf) you want to RIP.

\* 3 Select **File** ⇒ **RIP** from the menu bar.

\* This opens the **Merge Documents** window. (The **Merge Documents** window  
\* is shown in Figure 64 on page 70.)

\* 4 In the **Merge Documents** window, specify the variable data input file.

\* 5 Click on the **RIP** pushbutton to continue.

\* This opens the **Page Setup** window.

\* 6 In the **Page Setup** window, set the page setup values appropriately for your  
\* job.

\* See “Understanding the Page Setup Parameters” on page 155 for information  
\* about the **Page Setup** window.

\* These options will be used for RIPing the master and variable data PostScript  
\* files. Specify the number of copies in the **Copy Count** field and specify the  
\* control strip you want to print. This information will be used at print time.

\* 7 Click on the **OK** pushbutton.

\* This closes the **Page Setup** window and opens a **RIP** window.

\* Before the RIPing process starts, the following files are automatically created:

- \* • Variable data PostScript file for the face up pages. It is given the same  
\* name as the master PostScript file with U appended to the end of the  
\* name.

\* If this is a face down, simplex job, this file will not be created because  
\* there are no face up pages.

- \* • Variable data PostScript file for the face down pages. It is given the same  
\* name as the master PostScript file with D appended to the end of the  
\* name.

\* If this is a face up, simplex job, this file will not be created because there  
\* are no face down pages.

- \* • A book ticket file containing the print instructions for the variable data job.  
\* The book ticket file contains information about the control strip to use  
\* during printing and the number of copies to print. The values for these  
\* options are set to the values specified in the **Page Setup** window.

\* After the variable data files are created, the RIPing process begins. The  
\* following three files are RIPed:

- \* • The master PostScript file
- \* • The variable data PostScript file for the face up pages
- \* • The variable data PostScript file for the face down pages.

\* **Note:** Only the output files is RIPped on the Model 02C.

\* See “Monitoring the RIPing Process” on page 172 for more information about  
\* RIPing jobs.

\* **Note:** You can stop the RIPing process at any time by pressing **CTRL+C** in  
\* the **RIP** window.

\* After the RIP is complete, the **RIP** window stops.

\* 8 Close the **RIP** window.



## RIPing InfoPrint Jobs on the Model 02C

To RIP an InfoPrint job, do the following:

- 1 Open the **ThruPRINT** window and click on the **InfoPrint** tab.
- 2 Select the job you want to RIP and then select **File** ⇒ **RIP**.
  - If this is a variable data job, this opens the **MergeDocuments** window. (The **Merge Documents** window is shown in Figure 64 on page 70.)
  - Click on the **RIP** pushbutton, which opens the **Page Setup** window.
  - If this is not a variable data file, the **PageSetup** window opens. To continue, skip to the next step.

**Note:** To RIP a single PostScript file, select a file from the list to the right.

**Note:** To view job ticket information about how the job should be RIPed and printed, select the job then press the **View Job Ticket** pushbutton.

- 3 In the **Page Setup** window, set the page setup values appropriately for your job. All the files in the job will be RIPed using this page setup.

See “Understanding the Page Setup Parameters” on page 155 for information about the **Page Setup** window.

- 4 Press the **OK** pushbutton to start the RIP.

This closes the **Page Setup** window and opens the **InfoColor RIP** window.

If this is a variable data job, the following files are automatically created:

- Variable data PostScript file for the face up pages. It is given the same name as the master PostScript file with U appended to the end of the name.

If this is a face down, simplex job, this file will not be created because there are no face up pages.
- Variable data PostScript file for the face down pages. It is given the same name as the master PostScript file with D appended to the end of the name.

If this is a face up, simplex job, this file will not be created because there are no face down pages.
- A book ticket file containing the print instructions for the variable data job. The book ticket file contains information about the control strip to use during printing and the number of copies to print. The values for these options are set to the values specified in the **Page Setup** window.

After the variable data files are created, the RIPing process begins. The following three files are RIPed:

- The master PostScript file
- The variable data PostScript file for the face up pages.
- The variable data PostScript file for the face down pages.

If this is not a variable data job, all the PostScript files will be RIPed. See “Monitoring the RIPing Process” on page 172 for more information about RIPing jobs.

**Note:** You can stop the RIPing process at any time by pressing **CTRL+C** in the **InfoColor RIP** window.

After the RIP is complete, the **InfoColor RIP** window title changes to **Inactive InfoColor RIP**.

- 5 Close the **InfoColor RIP** window.

## RIPing Control Strips on the Model 02C

To RIP control strips, do the following:

- 1 Open the **ThruPRINT** window and click on the **Files** tab.

**Note:** If the control strip you want to RIP is not listed, press the **Select Files** pushbutton and then select the file or files you want to work with.

- 2 Select the control strip you want to RIP and then select **File** ⇒ **RIP** to open the **Page Setup** window.
  - 3 In the **Page Setup** window, set the page setup values as shown in Table 32.
- Note:** The data depth of the control strip must match that of the job. You may want to RIP the file using different data depth values.

Setting	Explanation
Scaling	100
Data depth	2 or 4
Dot gain control	+15%
Screening	Sofocles
Color correction	Disabled
Type	Duplex
Orientation	0°
Black overprinting	checked
Quark SetTrap	checked
Overprint	PostScript
Auto Trapping	4
Job type	Test
Copy count	1

The **Page Setup** window is described in “Understanding the Page Setup Parameters” on page 155.

- 4 Press the **OK** pushbutton to start the RIP.

This closes the **Page Setup** window and opens the **RIP** window.






See “Monitoring the RIPing Process” on page 172 for more information about RIPing jobs.

**Note:** You can stop the RIPing process at any time by pressing **CTRL+C** in the **RIP** window.

- 5 After the RIP is complete, the **RIP** window stops processing.
- 6 Close the **RIP** window.

## RIPing Files on the Model 002

The following table, see Table 33, refers you to the sections that discuss RIPing files of different types.

File Type	RIP Interface	Refer to...
PostScript files	Image Disk window 	Page 165
PageMaker Plug-Ins or Quark XTensions generated Variable Data files	ThruPRINT 	Page 161
InfoPrint Job	ThruPRINT 	Page 163
Manually Created Variable Data files	ThruPRINT 	Page 425
Control Strip	Image Disk window 	Page 169

To open the **IBM InfoColor 70** window, click on the **InfoColor70** icon on the desktop Front Panel.

To open the **ThruPRINT** window, click on the **ThruPRINT** icon on the IBM InfoColor 70 workspace.

## RIPing PostScript Files on the Model 002

To RIP PostScript files on the Model 002, do the following:

- 1 Open the **Image Disk** window, as shown in Figure 114 on page 166.

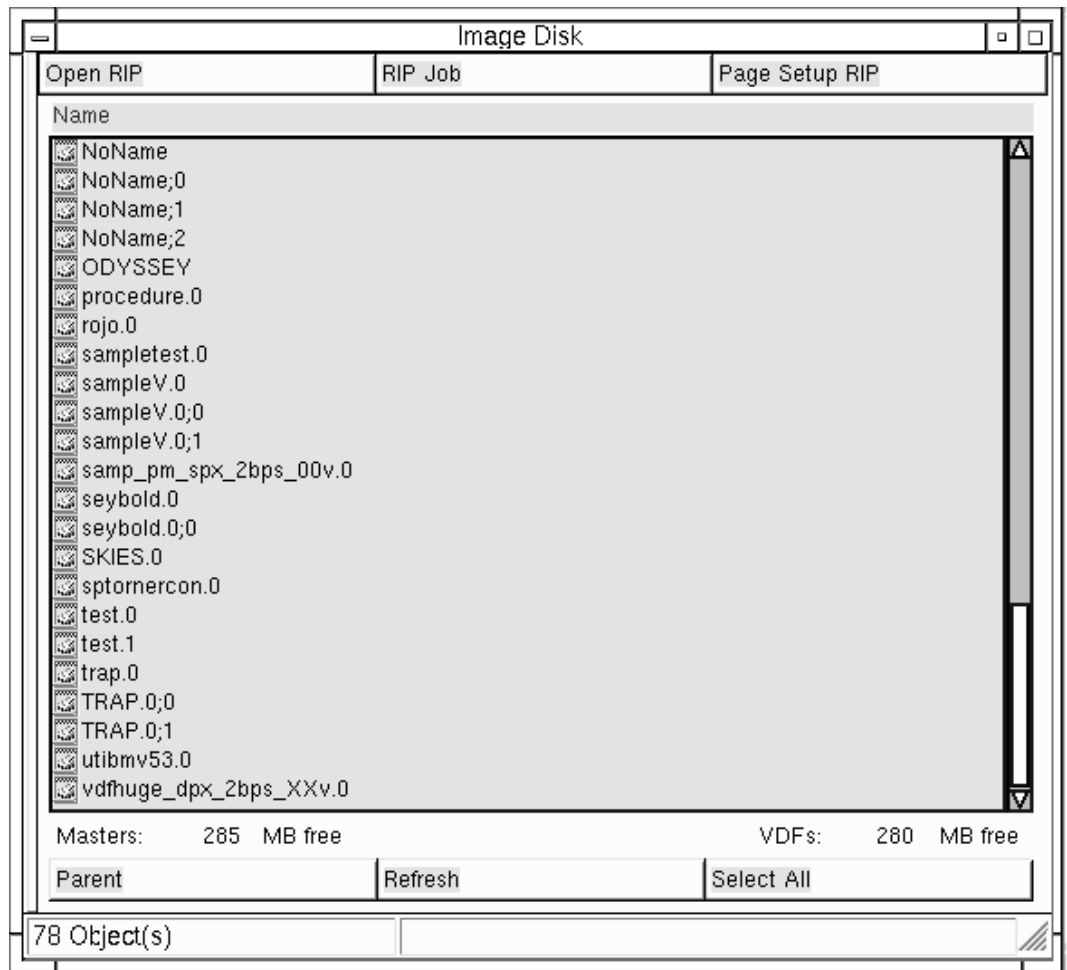


Figure 114. Image Disk Window

- 2 Click on the **Page Setup RIP** pushbutton to select your settings for RIPing.  
The **Page Setup** window is described in “Defining Page Setups and Paper Sizes” on page 154.
- 3 To begin RIPing, click the **Rip Job** pushbutton in the **Image Disk** window.  
The **Select a postscript file** window, as shown in Figure 115 on page 167, opens.

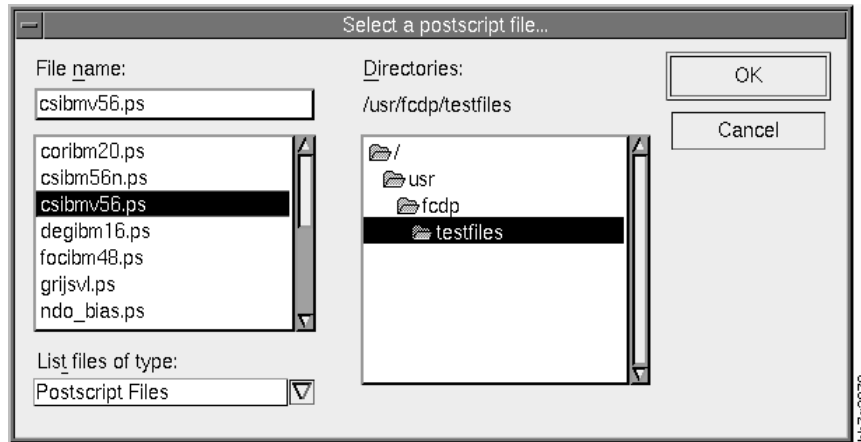


Figure 115. Select a postscript file... Window

- 4 Double-click on the subdirectory that contains your PostScript files.  
The left list box displays the files in the directory you selected. By default, only PostScript files are displayed.
- 5 Click the scroll arrow in the **List Files of Type** drop-down list box to display either all files in the directory, or all PostScript files. You can also type the file name in the **File Name** text box.
- 6 To RIP a file, either double-click it or click on the file name and then click the **OK** pushbutton.

As soon as you click **OK**, the **InfoColor RIP** window opens and RIPing begins. (See “Monitoring the RIPing Process” on page 172 for more information about RIPing jobs.)

**Note:** You can stop the RIPing process at any time by double-clicking the button in the top-left corner of the window.

- 7 After your job has been RIPed, double-click in the top left corner of the **InfoColor RIP** window to close the window.

**Note:** If you happen to be moving windows around on your screen and the **InfoColor RIP** window disappears, just click the **OPEN Rip** pushbutton or press **Alt+Esc** or **Alt+Tab** to get the **InfoColor RIP** window back.

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## \* RIP then Print Variable Data Files on the Model 002

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Before RIPing the variable data files that were generated by Quark Xtensions or PageMaker Plug-Ins, ensure that the files described in “Transferring Variable Data Files to the InfoColor 70” on page 146 have been copied to the appropriate vds subdirectories. To RIP variable data files generated by the PageMaker Plug-Ins or Quark XTensions follow the steps below:

- 1 Open the **ThruPRINT** window and click on the **MergeDocuments** tab.

**Note:** If the document definition file you want to RIP is not listed, click on the **Select Files...** pushbutton and select the file or files you want to work with.

- 2 Select the document definition file (\*.ddf) you want to RIP.
- 3 Select **FILE** ⇒ **RIP then PRINT**. This will RIP then Print the job.

\* This opens the **Merge Documents** window. (The **Merge Documents** window  
\* is shown in Figure 64 on page 70.)

\* **4** In the **Merge Documents** window, specify the variable data input file.

\* **5** Click on the **RIP** pushbutton to continue.

\* This opens the **Page Setup** window.

\* **6** In the **Page Setup** window, set the page setup values appropriately for your  
\* job.

\* See “Understanding the Page Setup Parameters” on page 155 for information  
\* about the **Page Setup** window.

\* These options will be used for RIPing the master and variable data PostScript  
\* files. Specify the number of copies in the **Copy Count** field and specify the  
\* control strip you want to print. This information will be used at print time.

\* **7** Click on the **OK** pushbutton.

\* This closes the **Page Setup** window and opens a **RIP** window.

\* Before the RIPing process starts, the following files are automatically created:

\* • Variable data PostScript file for the face up pages. It is given the same  
\* name as the master PostScript file with U appended to the end of the  
\* name.

\* If this is a face down, simplex job, this file will not be created because  
\* there are no face up pages.

\* • Variable data PostScript file for the face down pages. It is given the same  
\* name as the master PostScript file with D appended to the end of the  
\* name.

\* If this is a face up, simplex job, this file will not be created because there  
\* are no face down pages.

\* • A book ticket file containing the print instructions for the variable data job.  
\* The book ticket file contains information about the control strip to use  
\* during printing and the number of copies to print. The values for these  
\* options are set to the values specified in the **Page Setup** window.

\* See “Monitoring the RIPing Process” on page 172 for more information about  
\* RIPing jobs.

\* **Note:** You can stop the RIPing process at any time by pressing **CTRL+C** in  
\* the **RIP** window.

\* After the RIP is complete, the **RIP** window stops processing.

\* **8** For the Model 002 the output file **V** is created.

\* **9** Close the **RIP** window.

## RIP then Print InfoPrint Jobs on the Model 002

On the Model 002, InfoPrint jobs are automatically printed after they are RIPed. To  
RIP then print an InfoPrint job, do the following:

**1** Open the **ThruPRINT** window and click on the **InfoPrint** tab.

**Note:** To view job ticket information about how the job should be RIPed, printed, and the paper that should be used, select the job and then press the **View Job Ticket** pushbutton.

This opens a window displaying the contents of the job ticket.

- 2 Select the job you want to RIP and then select **File** ⇒ **RIP then Print**.
  - a If this is a variable data job, this opens the **MergeDocuments** window. (The **Merge Documents** window is shown in Figure 64 on page 70.)
  - b Click on the **RIP** pushbutton, which opens the **Page Setup** window.
  - c If this is not a variable data file, the **Page Setup** window opens. To continue, skip to the next step.

**Note:** To RIP and print a single file in the job, select the PostScript file from the list of files to the right.

- 3 In the **Page Setup** window, set the page setup values appropriately for your job. View the job ticket to determine the page setup values, including the copy count.

See “Understanding the Page Setup Parameters” on page 155 for information about the **Page Setup** window.

- 4 Press the **OK** pushbutton to start the RIP.

This closes the **Page Setup** window and opens a **RIP** with the job name as the title.

If this is a variable data job, before the RIPing process starts, an output file and the variable data is created. This is the file that is RIPed.

See “Monitoring the RIPing Process” on page 172 for more information about RIPing jobs.

**Note:** You can stop the RIPing process at any time by pressing **CTRL+C** in the **RIP** window.

After the RIP is complete, the **RIP** window title does not change, it remains on the screen and the printing process begins. Open the **InfoColor 70** window to manage the printing process.

- 5 Close the **RIP** window of the current job file.

## RIPing Control Strips on the Model 002

To RIP control strips on the Model 002, do the following:

- 1 Open the **Image Disk** window, as shown in Figure 116 on page 170.

\*  
\*

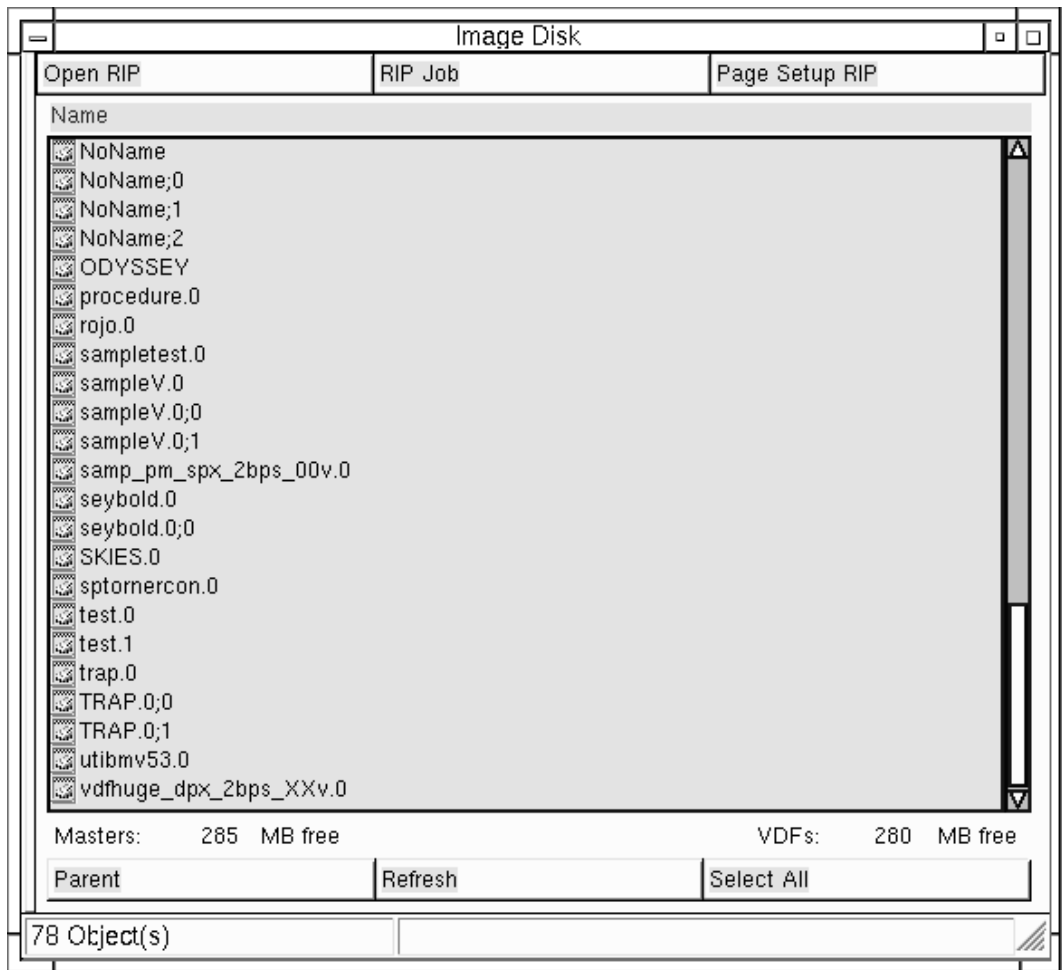


Figure 116. Image Disk Window

- 2 Press the **Page Setup** pushbutton in the **Image Disk** window, to open the **Page Setup** window.
- 3 In the **Page Setup** window, set the page setup values as shown in Table 34.

**Note:** The data depth of the control strip must match that of the job. You may want to RIP the file using different data depth values.

<i>Table 34 (Page 1 of 2). Page Setup Parameters for RIPing Control Strips</i>	
<b>Setting</b>	<b>Explanation</b>
<b>Scaling</b>	100
<b>Data depth</b>	2 or 4
<b>Dot gain control</b>	+15%
<b>Screening</b>	Sofocles
<b>Color correction</b>	Disabled
<b>Type</b>	Duplex
<b>Orientation</b>	0°
<b>Overprint</b>	PostScript



Table 34 (Page 2 of 2). Page Setup Parameters for RIPing Control Strips	
Setting	Explanation
<b>Auto Trapping Model 02C only</b>	4
<b>Copy count</b>	1
<b>Resident</b>	checked

The **Page Setup** window is described in “Understanding the Page Setup Parameters” on page 155.

- To begin RIPing, click the **Rip Job** pushbutton in the **Image Disk window**. Figure 117, opens.

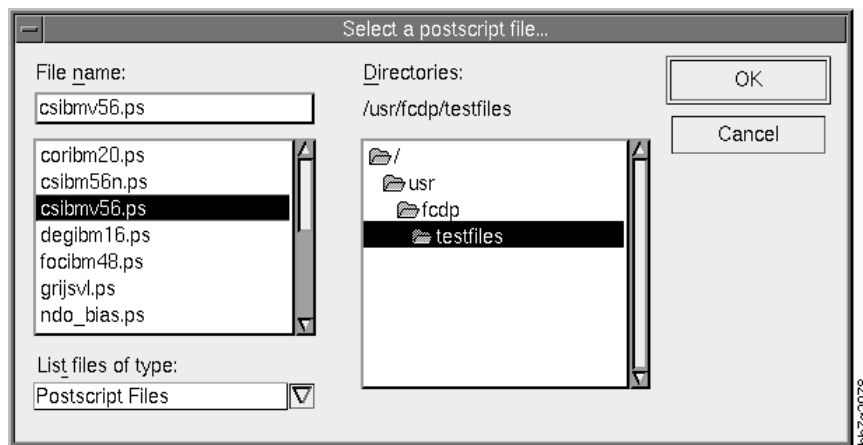


Figure 117. Select a postscript file... Window

\*

- Go to `/usr/fcdp/testfiles`.

The left list box displays the files in the directory you selected. By default, only PostScript files are displayed.

- To RIP a control strip, either double-click it or click on the file name and then click the **OK** pushbutton.

As soon as you click **OK**, the **InfoColor RIP** window opens and RIPing begins. (See “Monitoring the RIPing Process” on page 172 for more information about RIPing jobs.)

**Note:** You can stop the RIPing process at any time by double-clicking the button in the top-left corner of the window.

- After your job has been RIPed, double-click in the top left corner of the **InfoColor RIP** window to close the window.

**Note:** If you happen to be moving windows around on your screen and the InfoColor RIP window disappears, just click the **Open Rip** pushbutton or press **Alt+Esc** or **Alt+Tab** to get the **InfoColor RIP** window back.

---

## Monitoring the RIPing Process

The **RIP** window lets you monitor the steps of the RIPing process:

- The RIP interprets the first page and then renders the page. The window will show you the number of lines that have been sent to the print engine supervisor (600,1200) and will display other statistics.
- If the job is a duplex job or contains several pages, the next page will be interpreted.
- On the Model 002, if you specified any number other than 0 for copy count in the **Page Setup** window, the **Print Sequence** window will open automatically to be ready for you to start the printing process.

**Note:** If you happen to be moving windows around on your screen and the **RIP** window disappears, just double-click the **Open Rip** pushbutton on the **Image Disk** window or press **Alt+ESC** or **Alt+Tab** until the **RIP** window displays.

**Attention:** If a job is RIPing and the message “Out of Virtual Memory” is displayed, contact your system administrator or service representative to increase your paging size. This error occurs in a very limited number of jobs.

---

## Chapter 8. Printing on the Model 02C

After files are RIPPed and stored on the Collator, they are ready to be printed. Simple print jobs are run when an individual file is printed. More complex runs can be created using a Book Ticket File (BTF).

This chapter describes:

- How to print jobs
- How to create BTFs
- How to rename files on the Collator
- How to delete files on the Collator





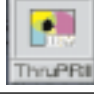
---

### Printing Jobs on the Model 02C

Before you print any jobs, ensure that:

- The print engine is in Standby state and the InfoColor 70 is ready (see Chapter 3, “Getting Started with the InfoColor 70” on page 81)
- The jobs have been set up correctly (see “Defining Page Setups and Paper Sizes” on page 154).
- The jobs have been RIPPed (see Chapter 7, “RIPing Jobs” on page 153).

You may want to print different types of files. The method you use to print depends on the type of file.

File Type	Print Interface	Refer to...
PostScript files	ThruPRINT 	Page 174
Book Ticket Files	ThruPRINT 	Page 174
PageMaker Plug-Ins or Quark XTensions	ThruPRINT 	Page 175
InfoPrint jobs	ThruPRINT 	Page 175
Manually created variable data files	ThruPRINT 	Page 425

## Printing PostScript Files on the Model 02C

To print PostScript Collator files, do the following:

- 1 Open the **ThruPRINT** window.
- 2 Click on the **Files** tab.  
**Note:** If the file you want to print is not listed, press the **Select Files** pushbutton and then select the file or files you want to work with.
- 3 Select the file you want to print.
- 4 Select **File** ⇒ **Print**.

This opens the **Print** window.

The **Print** window is described in “Using the File Menu Functions” on page 69.

- 5 In the **Print** window, specify the pages of the file you want to print and the number of copies. Press the **Print** pushbutton.

This sends the print request to the InfoColor 70.

## Printing with Book Ticket Files on the Model 02C

A Book Ticket File (BTF) lets you collate multiple files into a book or to define a day's production run. To learn how to create a BTF, refer to “Creating Book Ticket Files (BTFs)” on page 176. Before you can print a BTF, all the files it references must already be RIPed.

To print a BTF, do the following:

- 1 Open the **ThruPRINT** window and click on the **Files** tab.  
**Note:** If the Book Ticket File you want to print is not listed, press the **Select Files** pushbutton and then select the file or files you want to work with.

To view the BTF and verify that it is correct, double-click the file to open the desktop Editor. Once you have verified the BTF, save the file.

- 2 Select the BTF you want to print and select **File** ⇒ **Print**.

This submits the BTF for printing.

---

## \* **Printing Variable Data Jobs on the Model 02C**

\* To print a RIPPed variable data job, do the following:

- \* **1** Open the **ThruPRINT** window and click on the **MergeDocuments** tab.

\* **Note:** If the document definition file you want to print is not listed click on the **Select Files...** pushbutton and select the file or files you want to work with.

- \* **2** Select the document definition file (\*.ddf) you want to print.

- \* **3** From the menu bar, select **File** ⇒ **Print**.

\* A message window opens to indicate that the job has been submitted.

## **Printing InfoPrint Jobs on the Model 02C**

To print jobs sent from InfoPrint, do the following:

- 1** Open the **ThruPRINT** window and click on the **InfoPrint** tab. This displays a list of the jobs sent from the InfoPrint MPC.

- 2** Select the RIPPed job you want to print. When you select a job, a list of files contained in that job is displayed to the right. If you want to print a single file of the job, select the file.

To view information about the job and the paper requested for this job, press the **View Job Ticket** pushbutton.

- 3** From the menu bar, select **File** ⇒ **Print**.

- If the job is a variable data job, the BTF created during the RIP process is submitted for printing.
- If the job is a PostScript job, the **Print** window opens. In the **Print** window, specify the number of copies of each file to print. Press the **Print** pushbutton to submit the print request. The files print uncollated.

- 4** After the job prints, open the **ThruPRINT** window and click on the **InfoPrint** tab.

- 5** Select the job then press the **Job Completed** or **Job Canceled** pushbutton.

- a** Press **Job Completed** when the job RIPPed and printed completely and successfully.
- b** Press **Job Canceled** when the RIP fails or when the job cannot print successfully. This communicates status information back to the InfoPrint MPC and opens the **Save Job** window.
- c** In the **Save Job** window, specify whether or not you want to save the InfoPrint files on the InfoColor 70.
  - If you select to save the files, they will be kept for reprinting and the job status changes to Save. You can delete the job at any time to remove its files and the Collator files.
  - If you select not to save job, its files are deleted and the RIPPed files are deleted from the Collator.

---

## Creating Book Ticket Files (BTFs)

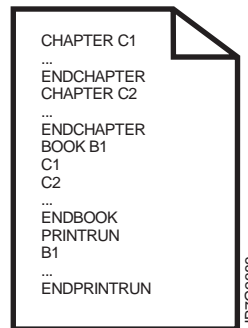
\* Book Ticket Files (BTFs) should be placed in /custdisk1/btf directory.

When PostScript files are rasterized by the RIP processor, the images are stored on the Collator. These image files can be combined and sequenced for printing in collated order. A Book Ticket File (BTF) describes the way the image files are combined to form a book.

Although the description of a job can be very simple, the BTF can also define very complex jobs. BTFs describe which files are printed and collated. They define how your document will be organized. They are used to organize individual files, organize files into collated books or define a complete production run for a full day.

Information that can be specified in a BTF includes:

- Number of copies to be printed
- Page collating sequence
- Paper cutting instructions
- Printing with or without control strips



```
CHAPTER C1
...
ENDCHAPTER
CHAPTER C2
...
ENDCHAPTER
BOOK B1
C1
C2
...
ENDBOOK
PRINTRUN
B1
...
ENDPRINTRUN
```

Figure 118. Sample Book Ticket File

A Book Ticket File consists of BOOK, CHAPTER, PRINTRUN, DEFINE, and VSTREAM statements. All of these statements are described here except the VSTREAM statements, which are described in “Creating Book Ticket Files with Vertical Variable Data” on page 422. A BTF is built using first DEFINE statements, then CHAPTER statements, followed by BOOK statements, and finally PRINTRUN statements. The following BTF statements are described in this section:

- BOOK
- CHAPTER
- DEFINE
- PRINTRUN

The syntax rules that apply to all BTFs are as follows:

- Space, tabs, and empty lines are ignored.
- All text after a semi-colon is considered comments and ignored.
- Files names are case sensitive.
- Do not use ambiguous logical names, such as Range and Range1.

- Do not use reserved words in any combination: BCONTROLSTRIP, BCOPIES, BCUTMEDIA, BOOK, BRESIDENT, CHAPTER, DEFINE, END, MOUTPUTB IN, MSTREAM, OPTIONS, PRINTRUN, RIP, and VSTREAM. For example, do not call a BOOK "TELEPHONEBOOK".

### BTF Example

Use the desktop Editor to type the contents of a Book Ticket File. Consider the following statements that print and collate copies of a play to learn how to create a BTF.

```

DEFINE MYSCENE1 "Scene1" (2,7-9,33,15-17):2
CHAPTER Act1          ;chapter named Act1
  MYSCENE1            ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"            ;All of Scene2
ENDCHAPTER
CHAPTER Act2
  MYSCENE1            ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"            ;All of Scene2
  "Scene3"            ;All of Scene3
ENDCHAPTER
BOOK Macbeth          ;book named Macbeth
  Act1, moutputbin=06S ;1 copy of Act1 sent to the stacker tray
  Act2(1,4-6,2)       ;pages 1, 4, 5, 6, 2 of Act2
  "Act3":3            ;3 copies of Act3
ENDBOOK
PRINTRUN Play
  Macbeth, BCOPIES=100 ;100 copies of Macbeth
ENDPRINTRUN

```

## Book Statements

A BOOK statement is a definition of a sequence of references. A BOOK statement does not print, but describes the organization of files to print. The syntax, described in Table 36, is:

```
BOOK bookname
    file,[bookprinthoptions]
    file,[bookprinthoptions]
    ...
ENDBOOK
```

The words BOOK and ENDBOOK are required syntax.

Parameters	Description
bookname	A reference to the BOOK statement which is used in a PRINTRUN statement. It is an alphanumeric parameter and may also contain underscores. The bookname will appear in the <b>Queue Manager</b> window of the <b>InfoColor 70</b> window when the book ticket is printed.
file	This is used to specify which files on the Collator are to be used. The file syntax is "filename" (pagerange): repeatcount where:  filename - This is always between double quotes and refers to a PostScript file that has been RIPed and stored on the Collator. The name of the file is case sensitive.  pagerange - This is the description of the pages you want to print and the order of printing. It consists of digits, commas and dashes. The pages are numbered logically as they are RIPed starting from 1. For example, if you RIPed duplex, page 1 is on the front, page 2 is on the back. A page 0 means a blank page. If you want to print only one page the brackets may be omitted. The page range defaults to (1-n) where n is the number of pages of that file. If the file is duplex the pages are actually sheets, with a sheet consisting of two pages.  repeatcount - This provides the repetition of the pagerange. It defaults to 1. The ":" is mandatory when using this parameter.
bookprinthoptions	These are options that determine how the files are printed. They are separated from each other and from the file description by commas. The printing option MOUTPUTBIN indicates the output bin for that file. It defaults to 01W, which is the test tray. 06S is the main or stacker tray.



## Example 1

Review the following file statements for Act1, Act2 and "Act3":

```
Act1
Act2(1,4-6,2)
"Act3":3
```

These statements are interpreted as all pages of Act1 and pages 1,2,3,4,1,2,3,4,1,2,3,4 for "Act3". The statement for Act2 is interpreted as pages 1,4,5,6,2. This selection of pages is called page picking. Page picking is very useful when printing variable data files (see "Example 2" on page 424).

## Example 2

To create a book called Macbeth composed of three files, use the following lines:

```
BOOK Macbeth
  Act1, moutputbin=06S
  Act2(1,4-6,2)
  "Act3":3
ENDBOOK
```

This means that all of Act1 goes to the stacker tray, pages 1,4,5,6,2 of Act2 go to the test tray, and three copies of "Act3" go to the test tray.

## Chapter Statements

A CHAPTER is a subsequence of files. CHAPTER can be used as references in BOOK statements and can be reused in several books within one BTF. All files in one CHAPTER statement must have the same page width, page length, top margin or vertical centering, and left margin or horizontal centering. The words CHAPTER and ENDCHAPTER are required key words. The syntax is:

```
CHAPTER
...
END CHAPTER
```

**Note:** Do not use CHAPTER statements in PRINTRUN blocks.

## Example 3

To print a book using CHAPTER statements use the following statements:

```
CHAPTER Act1           ;chapter named Act1
  MYSCENE1             ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"             ;All of Scene2
ENDCHAPTER
CHAPTER Act2
  MYSCENE1             ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"             ;All of Scene2
  "Scene3"             ;All of Scene3
ENDCHAPTER
BOOK Macbeth           ;book named Macbeth
  Act1, moutputbin=06S ;1 copy of Act1 sent to the stacker tray
  Act2(1,4-6,2)        ;pages 1, 4, 5, 6, 2 of Act2
  "Act3":3             ;3 copies of Act3
ENDBOOK
```

These statements define two chapters that are used inside the book Macbeth. Act1 includes MYSCENE1 and "Scene2". Act2 includes MYSCENE1, "Scene2", and "Scene3". The BOOK Macbeth contains Act1, which goes to the stacker tray, and

pages 1, 4, 5, 6, and 2 of "Act2", which goes to the test tray, and three copies of "Act3", which also goes to the test tray.

### Define Statements

DEFINE statements are definitions that make a literal substitution of a logical name by any other string before any parsing is done. For example, when files are repeated in multiple BOOK or CHAPTER statements, using DEFINE statements can be very useful. The syntax, described in Table 37 on page 180, is:

```
DEFINE newname string
```

The word DEFINE is required syntax.

Parameter	Description
newname	This parameter will be substituted in the text for a string that is used multiple times in a BTF. It is an alphanumeric and may also contain underscores, but the first digit cannot be a number. It is limited to 80 characters in length.
string	This string will be replaced by the newname parameter in a BTF. It is an alphanumeric and may also contain any of the following characters: " ' \$ & %   : ; ( ) [ ]. It is limited to 80 characters in length and spaces are not allowed. A DEFINE must be declared before its newname is used.

### Example 4

Assume that "Scene1." of Act1 and Act2 are the same and you want to print two copies of pages 2, 7-12, 33, and 15-17 of that scene whenever you print Macbeth. Use the following statements:

```
DEFINE MYSCENE1 "Scene1" (2,7-12,33,15-17):2
CHAPTER Act1                ;chapter named Act1
  MYSCENE1                    ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"                    ;All of Scene2
ENDCHAPTER
CHAPTER Act2
  MYSCENE1                    ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"                    ;All of Scene2
  "Scene3"                    ;All of Scene3
ENDCHAPTER
BOOK Macbeth                 ;book named Macbeth
  Act1, moutputbin=06S        ;1 copy of Act1 sent to the stacker tray
  Act2(1,4-6,2)              ;pages 1, 4, 5, 6, 2 of Act2
  "Act3":3                   ;3 copies of Act3
ENDBOOK
```

## Printrun Statements

A PRINTRUN statement is the description of what you want the printer to print. Every BTF must have at least one PRINTRUN statement and consists of a sequence of references to print. PRINTRUN statements are used with files and with BOOK statements. The syntax, described in Table 38 on page 181, using Files is:

```

PRINTRUN printrunname
        file,[printrunoptions]
        file,[printrunoptions]
        ...
ENDPRINTRUN

```

The words PRINTRUN and ENDPRINTRUN are required syntax.

Parameters	Description
printrunname	This is a reference to the PRINTRUN statement. It is an alphanumeric parameter and may also contain underscores.
file	<p>This is used to specify which files on the Collator are to be used. The file syntax is “filename” (pagerange): repeatcount where:</p> <p>filename - This is always between double quotes and refers to a file on the Collator without its extension. The name of the file is case sensitive.</p> <p>pagerange - This is the description of the pages you want to print and the order of printing. It consists of digits, commas and dashes. The pages are numbered logically as they are RIPed starting from 1. For example, if you RIPed duplex, page 1 is on the front, page 2 is on the back. A page 0 means a blank page. If you want to print only one page the brackets may be omitted. The page range defaults to (1-n) where n is the number of pages of that file. If the file is duplex the pages are actually sheets, with a sheet consisting of two pages.</p> <p>repeatcount - This provides the repetition of the pagerange. It defaults to 1. The “:” is mandatory when using this parameter.</p>

Table 38 (Page 2 of 2). Printrun Parameter Descriptions

Parameters	Description
printrunoptions	<p>Options that describe how the files are printed. They must be separated from each other and from the file description by commas. The options are:</p> <p>BCOPIES: The number of copies of the book. It defaults to the number of copies default in the first file of the book.</p> <p>BRESIDENT: This indicates whether the book description is kept resident in the PES for later use. It defaults to the resident flag in the first file of the book.</p> <p>BREVERSE: This indicates whether the first or last page is printed first. The default is 0 or first page, 1 is last page.</p> <p>BCUTMEDIA: This indicates whether cutting is enabled between sheets. It defaults to the cutmedia flag in the first file of the book.</p> <p>BCONTROLSTRIP: This adds a control strip on each printed sheet. It can be set to:</p> <ul style="list-style-type: none"> <li>• null (no control strip),</li> <li>• decimal (reference to control strip ID), or</li> <li>• "file" (Reference by name. Name is always wildcarded, even if no wildcard asterisk was added.)</li> </ul> <p>A control strip is chosen by the system with the following limits:</p> <ul style="list-style-type: none"> <li>• Type must be "T" (test file).</li> <li>• Data depth must be the same data depth of all files in the book.</li> <li>• Width is as large as possible, but smaller than the width of each file in the book.</li> </ul>

Files can be in BOOK statements as well as in PRINTRUN statements. A mix of file and book references is allowed in a PRINTRUN statement.

### Example 5

To print 100 copies of a book called Macbeth with a printrunname of Play, use the following lines:

```
PRINTRUN Play
      Macbeth, BCOPIES=100
ENDPRINTRUN
```

If you do not use books, but files in a PRINTRUN statement, the program will create intermediate books with a default name. Each book in the PRINTRUN is queued to the printer. IBM recommends that you use books because it is easier to interpret meaningful book names when printing rather than those created by the system default.

Notice that the printrunoptions apply to a book but are part of the PRINTRUN statement. This makes it possible to define one book and print it with different options.

### Example 6

To print a copy of the book with a control strip cs\_IBMV56 before you print 100 copies, insert the following statement after the PRINTRUN statement:

```
Macbeth, BCOPIES=1, BCONTROLSTRIP="cs_IBMV56"
```

### Example 7

Using BOOK statements also allows you to control the collating sequence. If you want to make five copies of two files, you can either print five copies of one and then five copies of the other file or you can collate five copies of both files. To make five copies of Act1 and then five copies of Act2 use the following statements:

```
PRINTRUN P1
  Act1, BCOPIES=5
  Act2, BCOPIES=5
ENDPRINTRUN
```

### Example 8

If you want to collate multiple files, you need to use books. To print one copy of Act1, followed by a copy of Act2, and repeat this five times, use the following statements:

```
BOOK B1
  Act1
  Act2
ENDBOOK
PRINTRUN P1
  B1, BCOPIES=5
ENDPRINTRUN
```

### Example 9

To print 100 simplex copies of Macbeth in the example you have been following use the following statements:

```
DEFINE MYSCENE1 "Scene1" (2,7-9,33,15-17):2
CHAPTER Act1                ;chapter named Act1
  MYSCENE1                   ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"                   ;All of Scene2
ENDCHAPTER
CHAPTER Act2
  MYSCENE1                   ;2 copies of pages 2, 7, 8, 9, 33, 15, 16, 17
  "Scene2"                   ;All of Scene2
  "Scene3"                   ;All of Scene3
ENDCHAPTER
BOOK Macbeth                ;book named Macbeth
  Act1, moutputbin=06S       ;1 copy of Act1 sent to the stacker tray
  Act2(1,4-6,2)             ;pages 1, 4, 5, 6, 2 of Act2
  "Act3":3                  ;3 copies of Act3
ENDBOOK
PRINTRUN Play
  Macbeth, BCOPIES=100      ;100 copies of Macbeth
ENDPRINTRUN
```

---

## Renaming Files on the Collator

When you rename a file using **ThruPrint**, you rename the PostScript file and the RIPPed file on the Collator. To rename a file, do the following:

- 1 Open the **ThruPRINT** window and click on the **Files** tab.  
**Note:** If the file you want to rename is not listed, press the **Select Files** pushbutton and then select the file or files you want to work with.
- 2 Select the file you want to rename and then select **File** ⇒ **Rename**. This puts an edit box around the file name.
- 3 Type the new name over the current name and press **Enter**. The PostScript file will be renamed and the RIPPed file on the Collator will be renamed.

---

## Deleting Files on the Collator

When you delete a file using **ThruPrint**, you can choose to delete the PostScript file, the RIPPed file on the Collator, or both files. To delete a file, do the following:

- 1 Open the **ThruPRINT** window.
  - If you are deleting PostScript files, click on the **Files** tab.
  - If you are deleting variable data files, click on the **MergeDocuments** tab.
  - If you are deleting a saved InfoPrint job, click on the **InfoPrint** tab.**Note:** If the file you want to delete is not listed, press the **Select Files** pushbutton and then select the file or files you want to work with.
- 2 Select the file or job you want to delete, then select **File** ⇒ **Delete**.
- 3 Select the files to delete.

---

## \* Deleting InfoPrint Jobs

- \* The following describes different ways to delete an InfoPrint job.
- \* 1 If the job is *New*, press the **Job Cancelled** button to delete the job.
  - \* 2 If the job is RIPPed, press the **Job Completed** or the **Job Cancelled** button to save or delete the job.
  - \* 3 If the job is **Saved** then select **File** ⇒ **Delete** to delete the job.

---

## Chapter 9. Printing on the Model 002

Using the Model 002, you can either print files immediately after RIPing or print files that have been RIPed, but not printed. Jobs that have been RIPed, but are not immediately printed are stored on the spooling disk, ready to print at a later time.

This chapter describes:

- Printing files on the Model 002
- Editing jobs
- Modifying the properties of RIPed files
- Deleting RIPed Files
- Renaming RIPed Files

To print files immediately after RIPing, specify a nonzero copy count in the **Page Setup RIP** window. See Chapter 7, "RIPing Jobs" on page 153 for more information about RIPing.

---





### Printing Files on the Model 002

Before you print any jobs, ensure that:

- The print engine is in Standby state and the InfoColor 70 is ready (see Chapter 3, "Getting Started with the InfoColor 70" on page 81)
- The jobs have been set up correctly (see "Defining Page Setups and Paper Sizes" on page 154).
- The jobs have been RIPed (see Chapter 7, "RIPing Jobs" on page 153).

You may want to print different types of files. The method you use to print depends on both the type of file and the printer model.

*Table 39. Printing Files Types on the Model 002*

File Type	Print Interface	Refer to...
PostScript files	Image Disk window 	Page 186
PageMaker Plug-Ins or Quark XTensions generated Variable Data files	Image Disk window 	Page 186
InfoPrint Job	Image Disk window 	Page 187
Manually Created Variable Data files	Image Disk window 	Page 425

## \* **Printing PostScript Files Model 002**

\* Use the following procedure to print a RIPPed file that is stored on the spooling disk:

\* To print PostScript files, do the following:

- \* **1** In the **Image Disk** window, click on the name of the job you want to print. If you cannot see the job in the list, use the scroll arrows. The functions will be displayed when you select a job.
- \* **2** Click the **Print** pushbutton near the bottom left of the **Image Disk** window. This displays the **Print** pop-up window.
- \* **3** Enter the number of copies you want to print and click the **Ok** pushbutton. The **Print Sequence** window opens automatically. Refer to “Submitting a Print Job” on page 213 for more information.

## \* **Printing Variable Data Files on the Model 002**

\* Before printing variable data files created using the PageMaker Plug-ins or Quark XTensions, use the MergeDoc function and RIP the PostScript file containing the variable data. See “RIPing Variable Data Files on the Model 02C” on page 161 for more information about RIPing.

\* If the installed VDS feature is black-only, ensure that the variable data contains only black data. If color variable data is sent to print, only the black separation will print, resulting in the loss of the cyan, magenta, and yellow separations.

\* Before printing your file you should verify that the number of variable data pages is correct.

- \* **1** Open the **Image Disk** window.
- \* **2** Select the variable data job in the **Image Disk** window.
- \* **3** Click on the **Properties** pushbutton to open the **Properties** window.
- \* **4** Click on the **Forms** tab to display the forms, or pages, in this job.
- \* **5** Verify that there is one variable data form (VDF) for each variable data page.
- \* **6** Press the **OK** pushbutton to close the **Properties** window and return to the **Image Disk** window.

\* To print a variable data file, use the following procedure:

- \* **1** In the **Image Disk** window, select the variable data job to print.
- \* **2** Press the **Print** pushbutton. This opens the **Print** window.
- \* **3** Enter the number of copies to print and press the **OK** pushbutton.  
\* **Note:** If you specify more than one copy, the printed pages will **not** be collated.  
\* The **Print Sequence** window opens automatically. Refer to Chapter 10, “Managing the Printing Process” on page 213 for more information.



## \* **Printing InfoPrint Files Model 002**

\* Use the following procedure to print a RIPPed file that is stored on the spooling disk:

\* To print InfoPrint files, do the following:

- \* **1** In the **Image Disk** window, click on the name of the job you want to print. If you cannot see the job in the list, use the scroll arrows. The functions will be displayed when you select a job.
- \* **2** Click the **Print** pushbutton near the bottom left of the **Image Disk** window. This displays the **Print** pop-up window.
- \* **3** Enter the number of copies you want to print and click the **Ok** pushbutton. The **Print Sequence** window opens automatically. Refer to “Submitting a Print Job” on page 213 for more information.

## **Editing Jobs**

You can edit InfoColor 70 files on the Model 002 by one doing one of the following:

**Note:** These options do not work on the Model 02C.

- Collate several files into one job
- Combine two simplex jobs or selected pages of two jobs into a duplexed job.
- Split a duplex job into two simplex jobs.
- Replace the static elements of the master file in a variable data job with another master file.

To edit a job, select the job and then click the **Edit** pushbutton in the **Image Disk** window, as shown in Figure 119 on page 188.

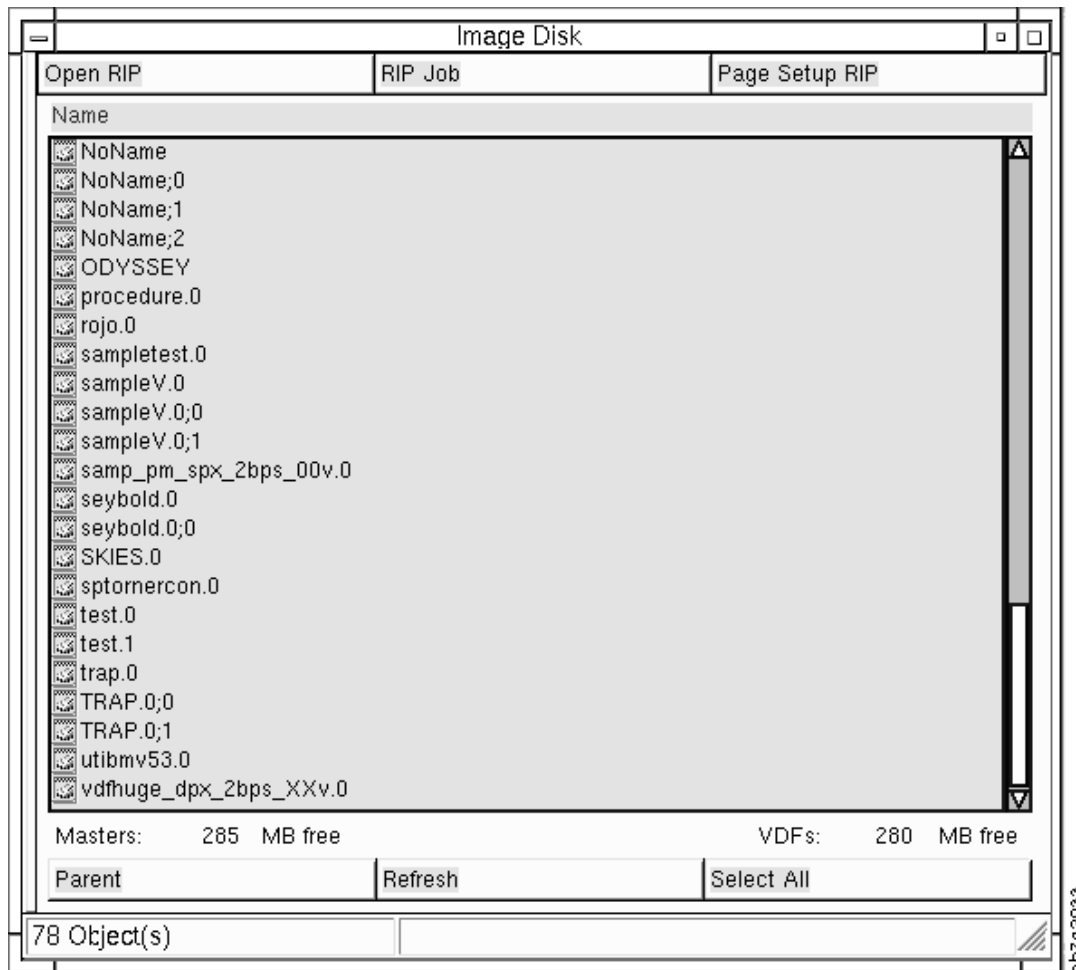


Figure 119. Image Disk Window

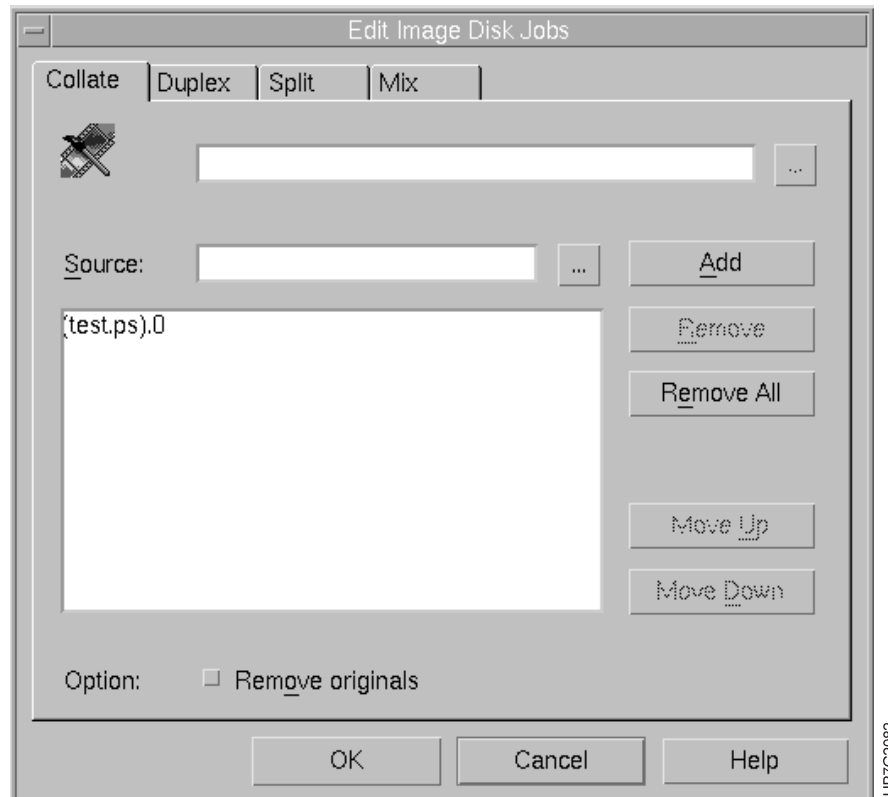


Figure 120. Edit Image Disk Jobs Window

The **Edit Image Disk Jobs** window, as shown in Figure 120, appears.

The **Edit Image Disk Jobs** window provides four edit functions that are listed near on the tabs at the top of the window. These edit functions are:

- Collate
- Make Duplex
- Split
- Mix

## Using the Collate Function

The Collate function allows you to combine several jobs into one job, somewhat like a small book. When you use the Collate function, the following apply:

- The jobs you collate must have the *same* data depth.
- The number of jobs you can collate at any one time is limited by the available bitmap memory. When you create a collated job the signature length is the sum of the signatures of the jobs collated. The signature length is limited to 2772.1 mm (109.14 in.), with a 2-byte addressability in a 144MB bitmap memory.
- All properties of the collated job are taken from the first job except the sheet size. The sheet size for the collated job is determined by the size of the largest sheet in the jobs that are collated.
- If you add a control strip to a collated job, the control strip will be printed on a separate sheet at the end of the job and will be sent to the test tray.

To use the Collate function, follow these steps:

- 1 Select all the jobs you want to combine in the **Image Disk** window.
  - 2 Click on the **Edit**, and the the jobs you selected will appear in the **Edit Image Disk Jobs**.
  - 3 Select the **Move Up** or the **Move Down** to move the files into the order you want.
- OR**
- 5 Click on the **Collate** tab in the **Edit Image Disk Jobs** window, as shown in Figure 121.

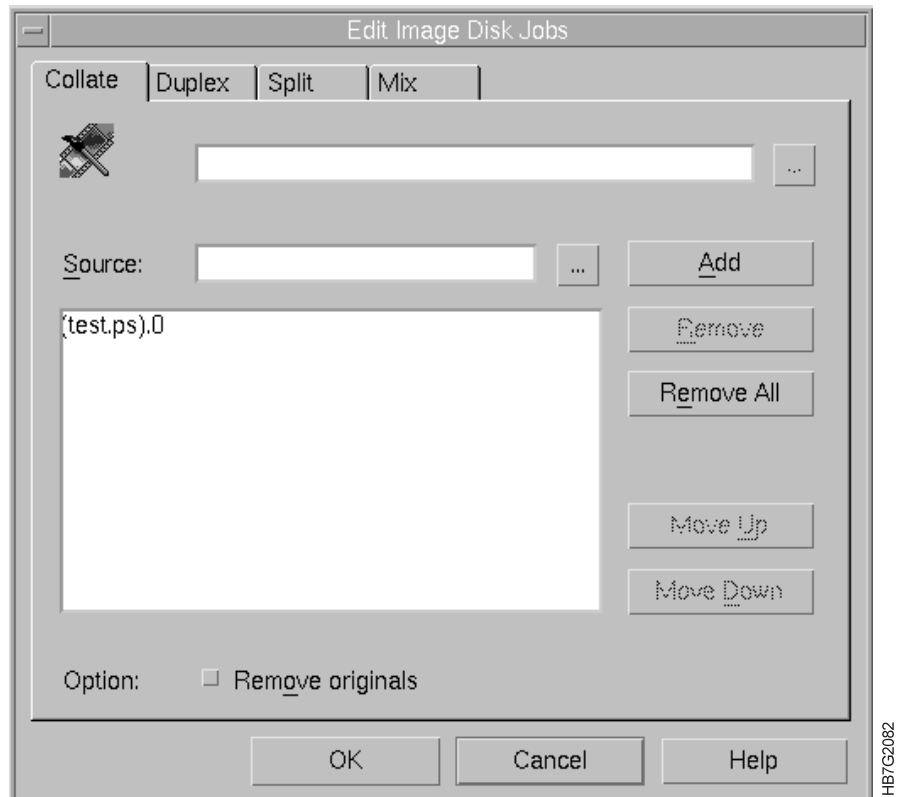


Figure 121. Collate Tab in Edit Image Disk Jobs Window

- 5 Click on the pushbutton to the right of the **Source** text box to display the **Select a job...** window, as shown in Figure 122 on page 191.

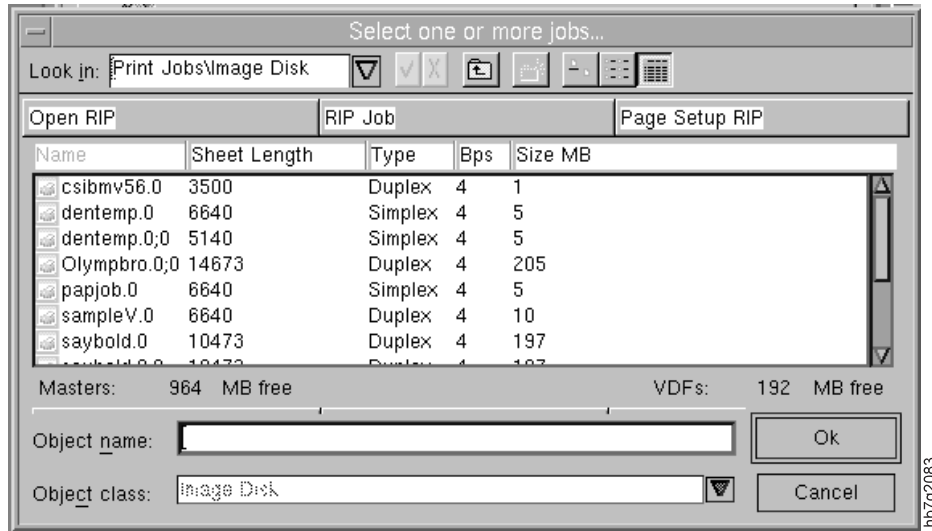


Figure 122. Select one job... Window

- \* 6 Select each job in the **Select a job** window.
- \* 7 Click **Close** on the **Select a job** window.
- \* 8 Select the **Edit Image Disk Jobs**, and click **Add**.

As you select each job and click the **Add** pushbutton, the name of each job displays in the **Source** text box in the **Edit Image Disk Jobs** window, as shown in Figure 123.

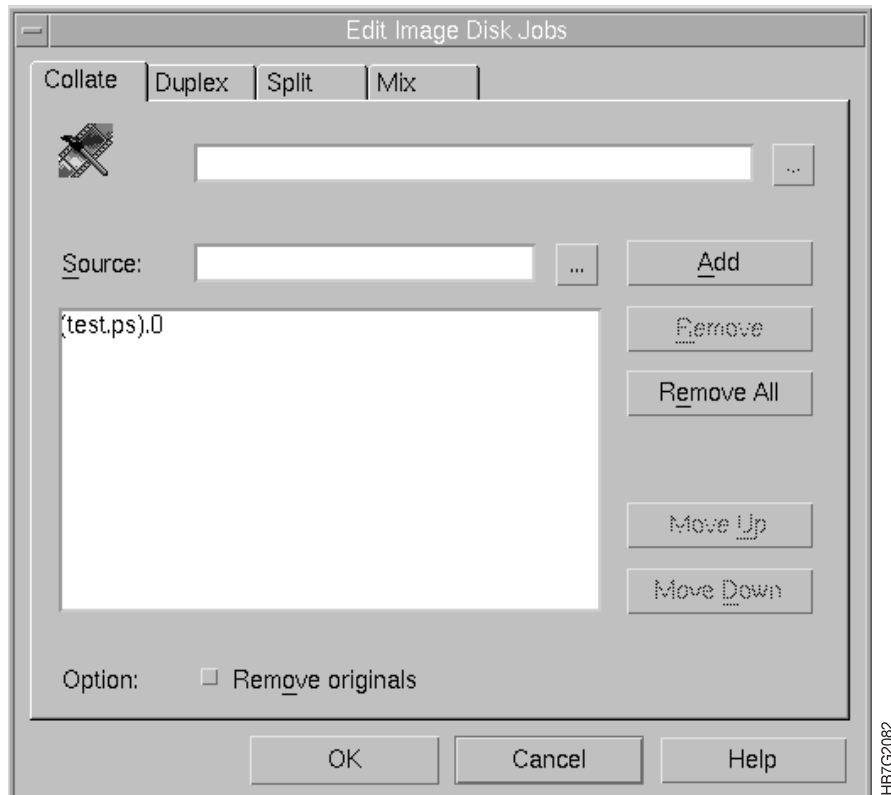


Figure 123. Edit Image Disk Jobs Window

**Note:** The first page of the collated job must be at the top of the list of jobs, and the last page must be at the bottom of the list of jobs. If you need to rearrange the list of jobs, use the **Move Up** or **Move Down** pushbuttons.

**Notes:**

A faster way to collate a number of jobs is:

- a. Use CTRL and the mouse to select the jobs.
  - b. Select them from the list in the **Image Disk** window
  - c. Click on the **Edit** pushbutton, and click on **Collate** from the **Edit Image Disk Jobs** window.
- 9** In the blank text box at the top of the window, type a name for the collated job.
- Attention.:** Before you delete the original runs, ensure that you really want to remove these files. Once the **Remove originals** has been selected, the files are removed.
- 10** If you want to delete the original runs, select the **Remove originals** checkbox.
- 11** After adding all the jobs to be included in the collated job, click the **OK** pushbutton.

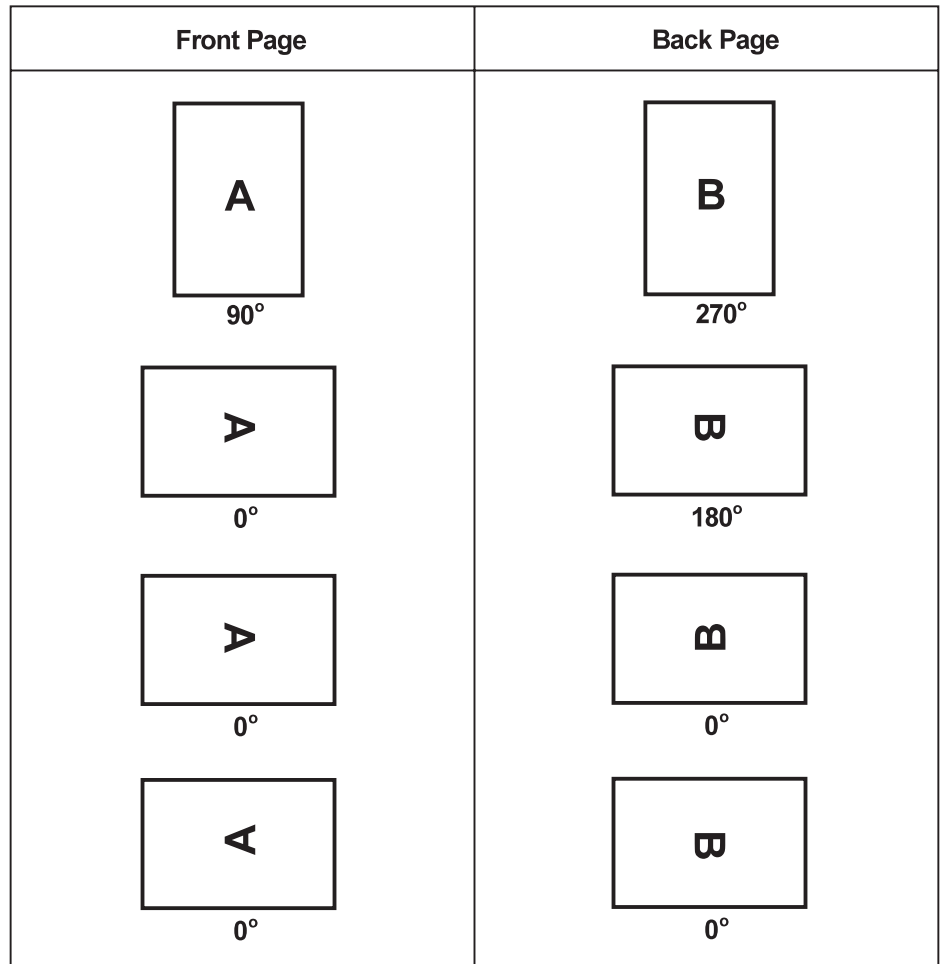
## Using the Duplex Function

This function allows you to combine two simplex jobs or selected pages of two duplex jobs into a duplex job.

**Note:** You do not have to use this function if you are able to make duplex PostScript files.

When you use the Duplex function, the following apply:

- The original jobs do not have to have the same data depth.
- The resulting duplex job will have the same sheet size as the largest sheet size of the two original jobs.
- When you make a duplex job, you need to check whether you have to rotate the job that will be placed on the back side of the duplexed job.
- For example, if the job that will be the front page was rotated 90° when the job was RIPed, the job that will be the back page will have to be rotated 270°. Figure 124 on page 193 shows some examples of rotation requirements.



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Figure 124. General Tab Terminology

To use the Duplex, function, follow these steps:

- 1 Click the **Duplex** tab in the **Edit Image Disk Jobs** window, as shown in Figure 125 on page 194.

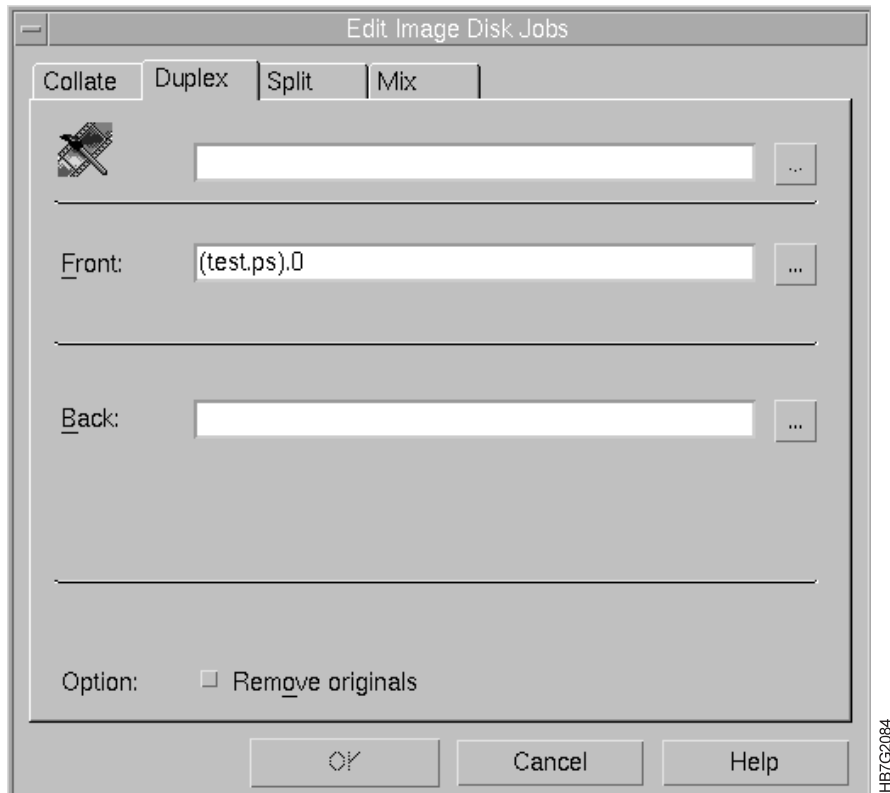


Figure 125. Edit Image Disk Jobs Window

- 2 In the blank text box at the top, type a name for the new duplex job.
- 3 Click on the pushbutton next to the **Front** text box to display the **Select a job** window, as shown in Figure 126.

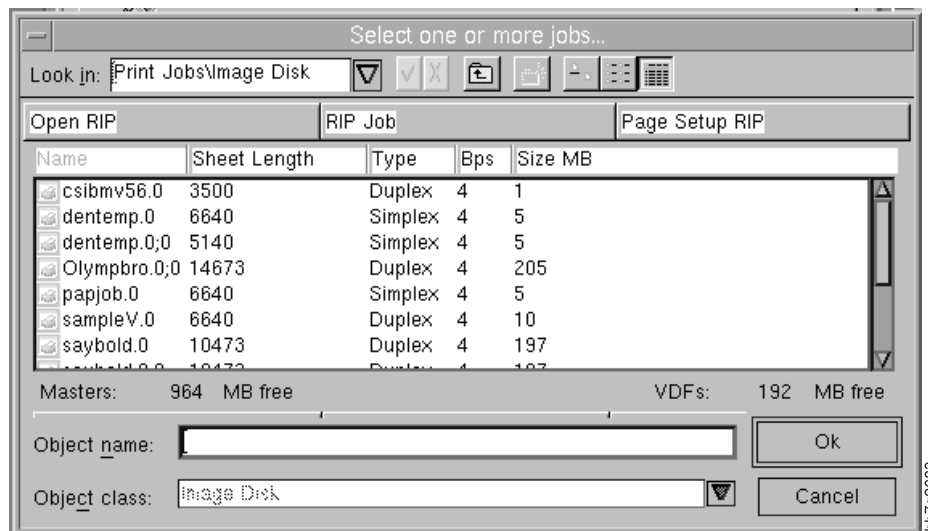


Figure 126. Select a job... Window

- 4 From the **Select a job** window, select the job you want to use for the front page of the new duplexed job.



The job name will display in the **Front** text box in the **Edit Image Disk Jobs** window.

\*

**5** Close the **Select a Job** window.

**6** Click on the pushbutton next to the **Back** text box to display the **Select a job** window.

**7** From the **Select a job** window, select the job you want to use for the back page of the new duplexed job.

The job name will display in the **Back** text box in the **Edit Image Disk Jobs** window.

\*

**8** Close the **Select a Job** window.

**9** If you want to delete the original runs, select the **Remove originals** checkbox.

**10** Click the **Ok** pushbutton.

## Using the Split Function

This function has the opposite effect of the Collate or Duplex functions. The Split function allows you to split a duplex job into two simplex jobs or to split a collated job into uncollated jobs that contain one form per side.

\*

\*

**Note:** The Face Down parameter of the **Finishing** function will be activated for only one side (see “Using the Forms Tab in the Properties Window” on page 203).

To use the Split function, follow these steps:

**1** Click the **Split** tab in the **Edit Image Disk Jobs** window, as shown in Figure 127 on page 196.

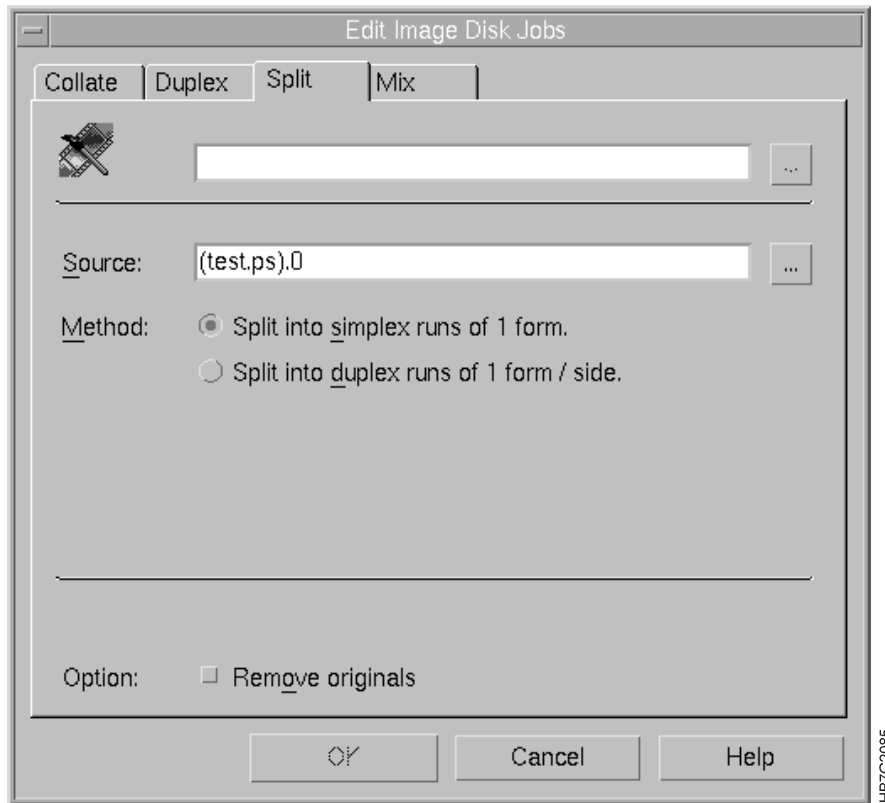


Figure 127. Split Tab in Edit Image Disk Jobs Window

- 2 In the blank text box at the top, type a name for the new split job.
- 3 Click on the pushbutton next to the **Source** text box to display the **Select a job** window.
- 4 From the **Select a job** window, select the collated job or the duplex job that you want to split into two simplex jobs.  
The job name will display in the **Source** textbox in the **Edit Image Disk Jobs** window.
- 5 Close the **Select a Job** window.
- 6 Select one of the following methods:
  - If the job you select is a duplex job, click on the upper circle to split the job into simplex jobs of 1 form (page).
  - If the job is a collated job, click the lower circle to split the job into duplexed jobs of 1 form (page) per side.
- 7 If you want to delete the original runs, select the **Remove originals** checkbox.
- 8 Click the **OK** pushbutton.  
A suffix will be added to the name of the resulting two simplex jobs. Using the example above, the two simplex jobs will be named JobASplit-0 and JobASplit-1.

## Using the Mix Function

This function supports the use of variable data in your print jobs. Variable data is custom information, such as names and addresses, you can add to a master job. When you print a master job, the variable data will vary from sheet to sheet. You can define up to 16 variable data fields to be included with each master job. Variable data can be printed in black only or full color.

A Ripped variable data job always contains a master and up to 16 VDFs on each side of the page. The Mix function allows you to replace the master with another master. This would allow you to replace a 2 bps master with a 4 bps master that you can use with the original variable data fields.

**Note:** When selecting a different master, the size should be identical to the original master.

**Note:** If you decide to overlay a small variable data field with a larger one, you will get overlapping fields.

To use the Mix function to replace master forms, follow these steps:

- 1 Open the **Image Disk** window and select a file.
- 2 Click on **Edit** pushbutton in the **Image Disk** window.
- 3 Click on the **Mix** tab in the **Edit Image Disk Jobs** window, as shown in Figure 128.

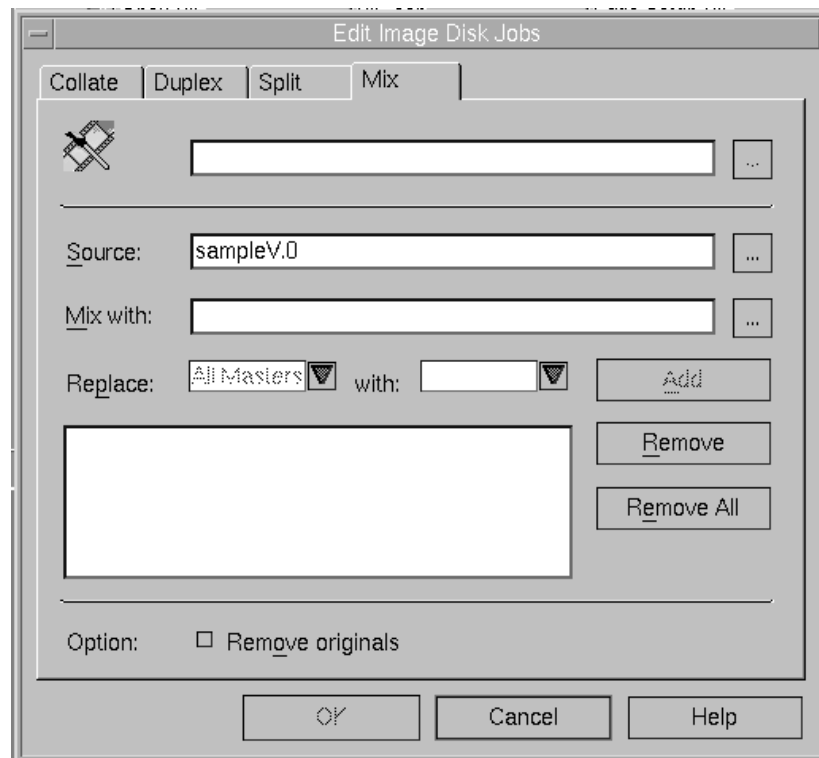


Figure 128. Mix Tab in Edit Image Disk Jobs window

- 4 Click on the pushbutton to the right of the **Source** text box to display the list of jobs.
- 5 Select the source variable data job in which you will replace the master forms.

The name of the job will display in the **Source** text box in the **Edit Image Disk** window.

- 6** Do the same to select another job containing the replacement master form.  
The name of the job will display in the **Mix with** text box.
- 7** From the **Replace** drop-down list, select one of the master form selections in the source job to be replaced.
- 8** From the **with** drop-down list, select one of the master form selections that will be the replacement.
- 9** Click the **Add** pushbutton.
- 10** The text box to the left of the **Add** pushbutton displays the mix operation you just performed.
- 11** In the unlabeled text box at the top, type a name for the new mixed variable data job.
- 12** Click the **OK** pushbutton.
- 13** The job is now ready for printing.

## Changing the Properties of Jobs

You can look at the properties of jobs and you can change all or some of a job's properties, depending on whether you access the properties from the **Image Disk** window, the **Print Queue** window, or the **Image Memory** window.

To change a job's properties, follow these steps:

- 1 Select the job you want to change from any of these windows:
  - Image Disk
  - Print Queue
  - Image Memory

Changing properties in either the **Print Queue** or **Image Memory** window changes properties in both windows, however changing properties in the **Image Disk** window does not change properties in any other window.

- 2 Click the **Properties** pushbutton to open the **Properties** window. The name of the job you select displays in the title bar of the window.

The available tabs are displayed across the top of the **Properties** window. The **Properties** window will change, depending on the tab you choose. In Figure 129, the **Layout** tab is active.

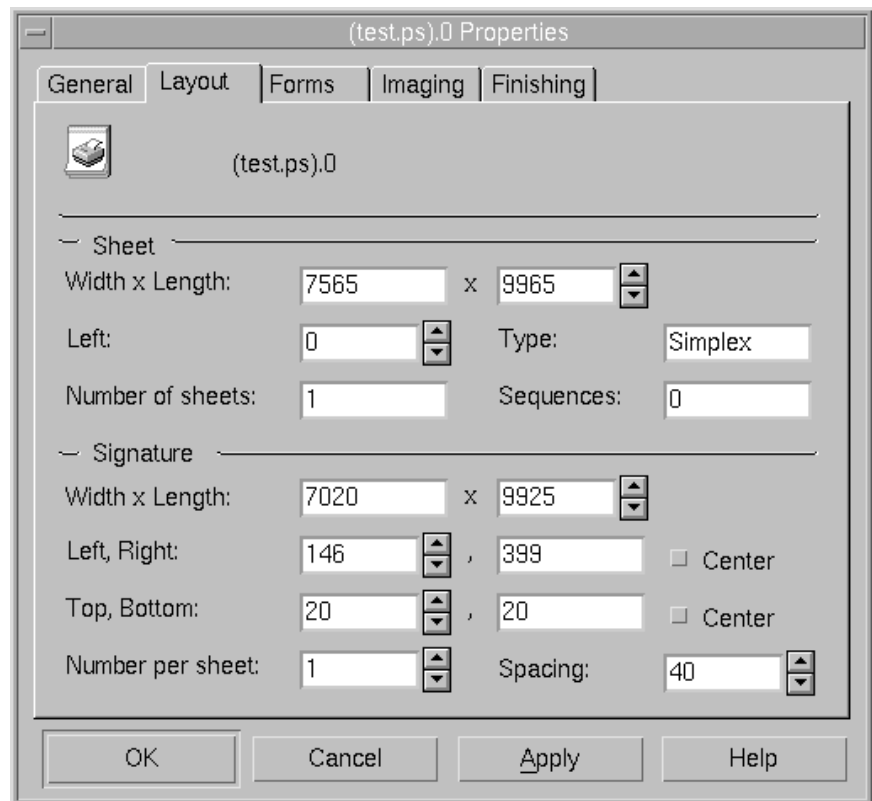


Figure 129. Layout Tab in Properties Window

The tabs and settings that are available depend on whether you opened the **Properties** window from **Image Disk**, **Print Queue**, or **Image Memory**.

**Attention:** As a job progresses from RIPing to the print queue and image memory to printing and then exits the print queue, the number of that job's properties you can edit decreases along the way.

Table 40 shows which of the six Properties tabs are available when Properties is accessed from the **Image Disk**, **Print Queue**, or **Image Memory** windows.

*Table 40. Properties Tabs Available from Different Windows*

Options	Image Disk	Print Queue	Image Memory
Layout	X	X	X
Forms	X		
Imaging	X	X	X
Finishing	X	X	X
Progress		X	
General	X	X	X

- 3 Click on the desired tab to display the settings you can change.
- 4 Edit the settings you want to change.
- 5 Do one of the following:
  - Click the **Apply Now** pushbutton to apply the changed settings and keep the **Properties** window open to select and change the settings for other tabs.
  - Click the **OK** pushbutton to apply the changed settings and close the **Properties** window.

## Using the General Tab in the Properties Window

The **General** tab in the **Properties** window, as shown in Figure 130 on page 201, lets you look at and change the properties, such as size, data depth, and allows you to deselect which colors you do not want to print.

When you select the **General** tab in the **Properties** window, the settings shown in Figure 130 on page 201 are displayed. Table 41 on page 201 describes the terms used in the **Properties** window.

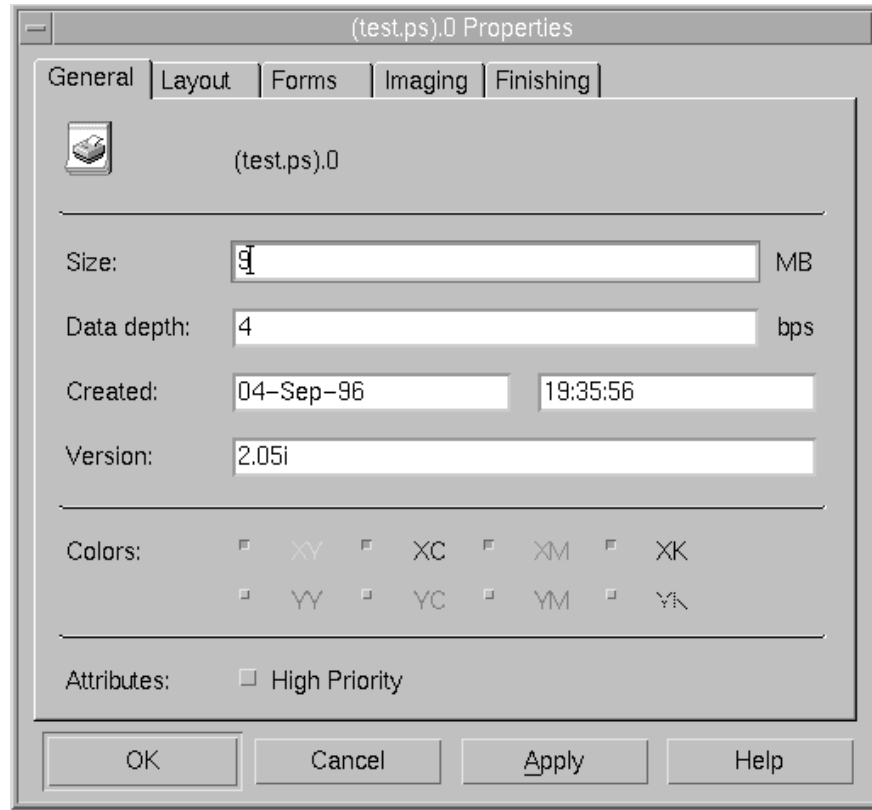


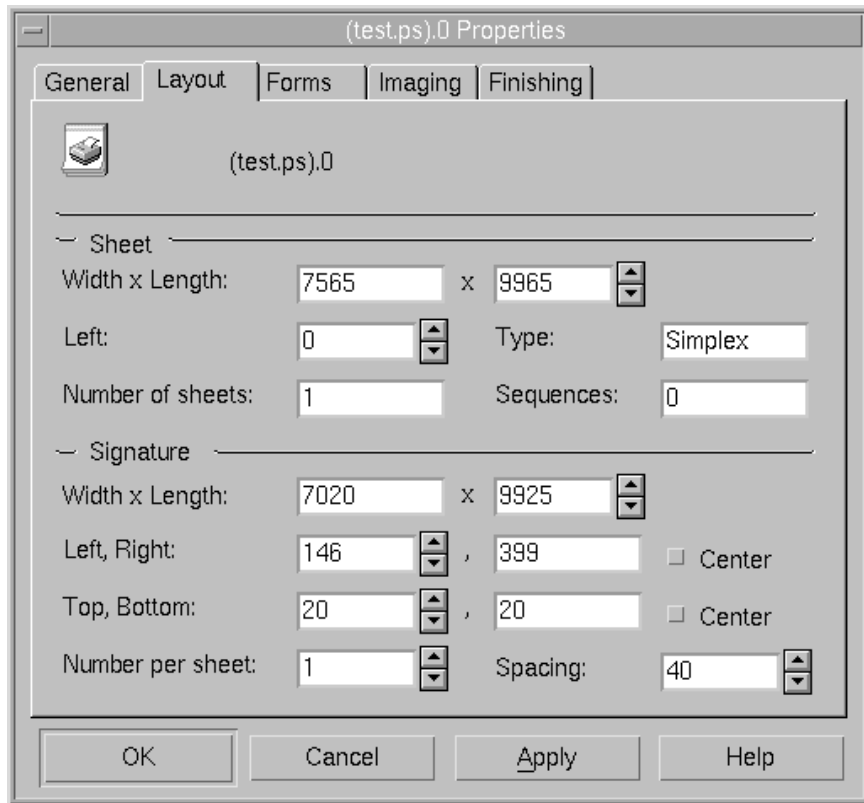
Figure 130. General Tab in the Properties Window

Parameter	Explanation
Size	The compressed size of the run stored on the spooling disk. Do not use this size to calculate whether the job will fit in image memory.
Data Depth	The number of bits per spot. The maximum data depth is 4 bps.
Created	This indicates the date and time the job was RIPed.
Version	This indicated the version of IBM InfoColor 70 software.
Colors	This allows you to deselect the colors you do not want to print. For a job that does not contain a particular color, you can disable the corresponding station by unchecking the box.
High Priority	Click this checkbox to use quick proofing (see “Changing Job Priority” on page 207).

## Using the Layout Tab in the Properties Window

The **Layout** tab in the **Properties** window lets you look at and edit various sheet and signature layout properties, such as sheet size and the number of signatures per sheet.

When you select the **Layout** tab in the **Properties** window, the settings shown in Figure 131 on page 202 are displayed. Table 42 on page 202 and Table 43 on page 202 describe the terms used in the **Properties** window. Figure 132 on page 203 shows an example.



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Figure 131. Layout Tab in the Properties Window

Table 42. Sheet Layout Parameter Description	
Parameter	Explanation
Length	This allows you to edit only the sheet length.
Left	This is the margin between the left edge of the sheet and the near edge of the paper roll.
Number of sheets	This indicates the number of sheets in a job. A non-collated job has one sheet and a collated job can have several sheets.
Type	Simplex or duplex.
Sequence	The number of variable signatures for variable data jobs, which indicates the number of variable data files.

Table 43 (Page 1 of 2). Signature Layout Parameter Description	
Parameter	Explanation
Width x Length	This allows you to edit the signature width and signature length.
Left, Right, Top, Bottom	These are the margins of the signature relative to the sheet. When you specify a left margin, the right margin is calculated automatically based on the total width of the sheet and the size of the signature. The same is true for top and bottom.
Center checkboxes	This centers the signatures on the sheet and automatically calculates the margins.
Number per sheet	This is the number of signatures per sheet. It is always one for collated jobs.



Table 43 (Page 2 of 2). Signature Layout Parameter Description	
Parameter	Explanation
Spacing	This is the amount of space between two signatures.

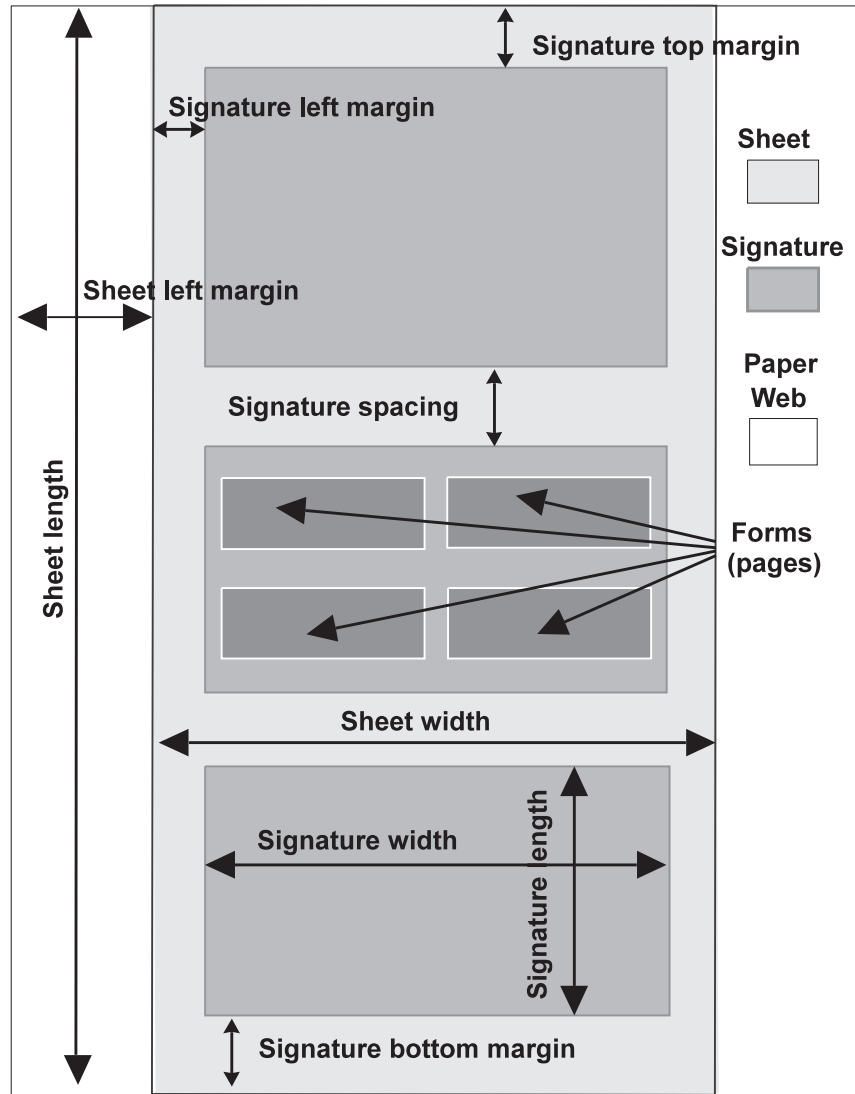


Figure 132. Sheet and Signature Layout Terminology

## Using the Forms Tab in the Properties Window

The **Forms** tab in the **Properties** window lets you look at the forms (pages) that make up the selected job. Once a job has downloaded to bitmap, forms information is no longer available. Therefore, the **Forms** tab is available *only* when you have selected **Properties** from the **Image Disk** window.

A normal simplex job displays one form, a duplex job displays two forms, and a collated job can display many forms. In the example shown in Figure 133 on page 204, the job selected is a collated job.

When you select the **Forms** tab in the **Properties** window, the settings shown in Figure 133 on page 204 are displayed. Table 44 on page 204 describes the terms used in the **Properties** window.

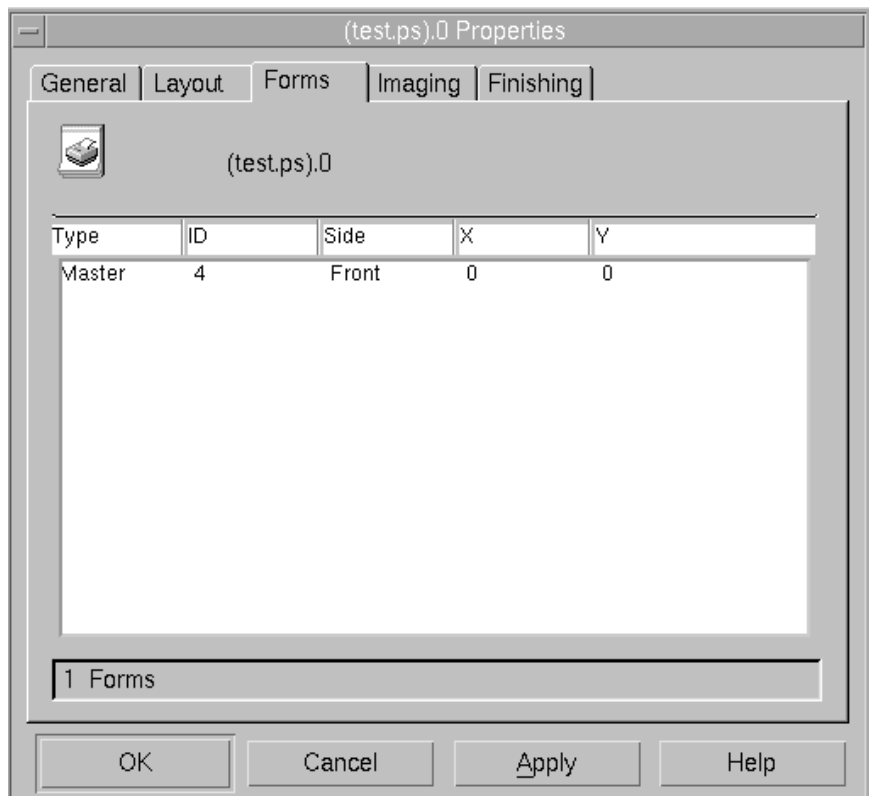


Figure 133. Forms Tab in the Properties Window

Information	Explanation
Type	Refers to whether the selected job is a master or a VDF
ID	The identification number given to each job
Side	Refers to whether the selected job is positioned on the front or the back
X, Y	The position, in pixels, for cutting each sheet relative to the last sheet cut

## Using the Imaging Tab in the Properties Window

The **Imaging** tab in the **Properties** window lets you look at and change imaging properties, such as copy count and job size, that make up the selected job.

When you select the **Imaging** tab in the **Properties** window, the settings shown in Figure 134 on page 205 are displayed. Table 45 on page 205 describes the terms used in the **Properties** window.

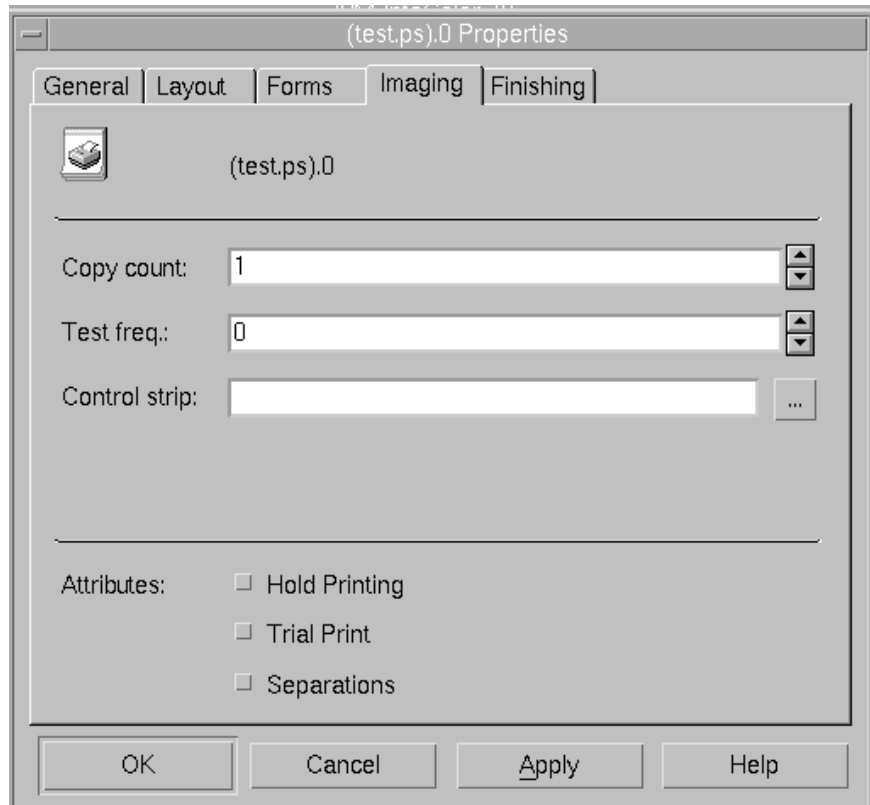


Figure 134. Imaging Tab in the Properties Window

Table 45. Properties Window Imaging Tab Terminology

Setting	Explanation
Copy count	The number of copies to be printed
Test frequency	The frequency at which test pages are to be printed (see “Inserting Test Sheets”).
Control strip	Click the icon, with 3 dots across the bottom of the icon, to the right to view a list of control strips. Click on the control strip you want to add to the job.
Hold Printing	Click this checkbox to hold the printing of a job in order to print a higher priority job. To release the held job, you must click <b>Hold</b> , again, to release the job.
Trial Print	Click this checkbox to enable trial printing (see “Doing Trial Printing to Improve Print Quality” on page 207).
Separations	Click this checkbox to separate the printing of your image into the four CMYK colors.

\*  
\*

## Inserting Test Sheets

Inserting test sheets at a specified frequency allows you to check overall print quality during the uninterrupted printing of one or several jobs that are in the print queue. For example, you can insert a specified job that you are using for a test sheet every 100 signatures. This means that if you are printing 500 copies of a simplex job with copy count equal to five, a test sheet will print after each 100 copies of the job. If you are printing a book, which is a collated job contained on one signature, a test sheet will print after every 100 books.

To insert a test sheet, follow these steps:

- 1 From the **Image Disk** window, select the job that you want to use as a test job.
- 2 Click the **Properties** pushbutton to open the **Properties** window and then select the **Imaging** tab.

When **Imaging** is active, the **Properties** window will contain the settings shown in Figure 135.

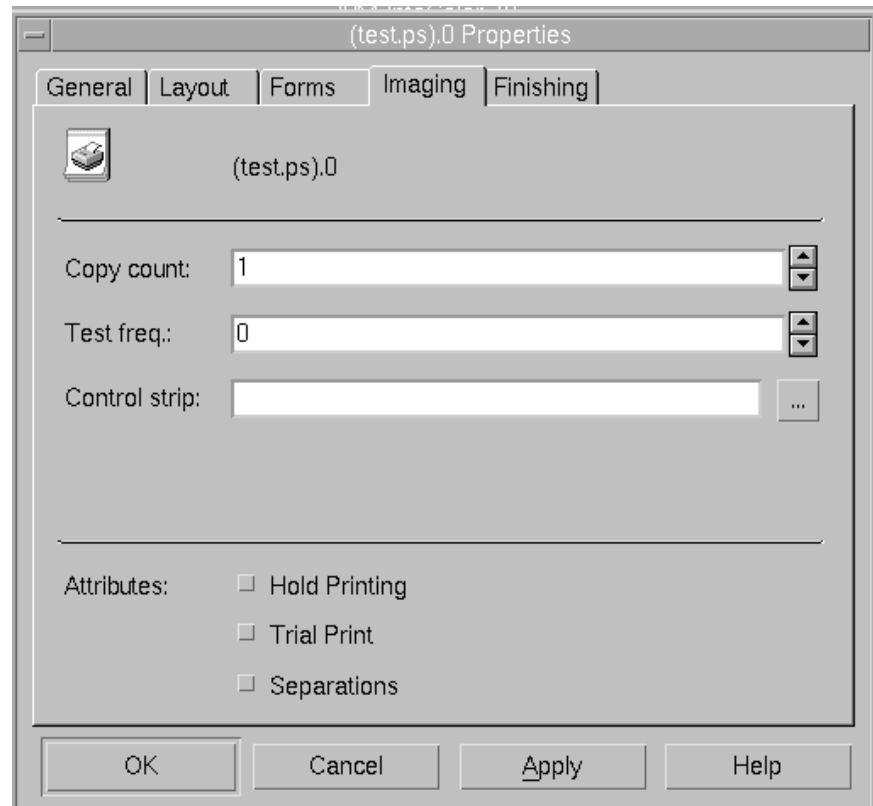


Figure 135. Imaging Tab in the Properties Window

- 3 Enter the frequency in the **Test frequency** edit box.  
**Attention:** If you want test sheets to print for any jobs in the print queue, the test job must be at the top of the queue. To place a test job at the top of the queue, either print the test job first, or give it a high priority (see "Changing Job Priority" on page 207).
- 4 A single test sheet will be inserted at the specified test frequency the number of times entered in the **Copy count** edit box. If you want a test sheet printed for the entire job, enter a very large value.
- 5 After you edit the settings to insert test sheets, either click **OK** or **Apply Now**.
- 6 To interrupt inserting test sheets for a while, in case you have a high priority job, put the printing of the test sheet on hold, by selecting the **Hold Printing** check box (see "Holding and Resuming Printing" on page 208).
- 7 To stop inserting test sheets, delete the test sheet job from the print queue (see "Deleting Jobs from Job Lists" on page 212).

**Note:** If you were inserting test sheets and then quit and restarted the software, test sheets will not automatically print. You must again set up test sheet printing in the **Properties** window.

You can use several different jobs as test sheets at the same time; however, you are limited by the amount of image memory. If not enough image memory remains for other jobs in the print queue, a warning message will appear.

## Changing Job Priority

The **General** tab in the **Properties** window allows you to change a job's priority from a normal priority to a high priority. Normally, jobs print in the order in which they are placed in the print queue. The first job in the queue prints first, and the last job in the queue prints last. The **High Priority** setting allows you to control the printing sequence of jobs that are in the print queue.

Various situations might cause you to change either one job's priority or several jobs' priorities:

- Quick proofing: you have a new job and you want to quick proof the layout of the job during the printing of another job.
- Because of customer or schedule demands, you need to print one or several jobs in the print queue ahead of other jobs in the queue.

When you change a job to high priority, the following apply:

- You need to change the job to high priority before the job has been completely downloaded into image memory; therefore, the **High Priority** setting is active only when you access **Properties** from the **Image Disk** or **Print Queue** windows.
- If not enough image memory is available, you need to delete one or more jobs from the print queue so the high priority job can be downloaded.

To change a job to a high priority, follow these steps:

- 1** From either the **Image Disk** window or the **Print Queue** window, select the job that you want to change to a high priority.
- 2** Click the **Properties** pushbutton to open the **Properties** window and then select the **General** tab.
- 3** Click on the **High Priority** checkbox.  
The box appears pressed in.
- 4** Click either **OK** or **Apply Now**.

## Doing Trial Printing to Improve Print Quality

The **Imaging** option in the **Properties** window allows you to do trial printing. The purpose of trial printing is to let you fine tune and adjust engine settings and print quality from a trial print before you print the entire job. You might want to use trial printing at the beginning of a shift or after the print engine has been idle for some time.

When you use trial printing, the following apply:

- When the job has not started to print, only the first sheet of a job or the signature of a collated job can be used as the trial print.
- When the job has already started to print, the next sheet of a job can be used as the trial print.
- You can enable and disable trial printing as much as you want.
- Trial printing continues indefinitely until you either disable it or quit the software.
- Trial sheets are not counted in the Print step of the **Print Sequence** window, however they are included in the values displayed in the **Counters** window (see “Machine Chemicals” on page 82).

To use the **Trial Print** setting, follow these steps:

**1** From either the **Image Disk** window or the **Print Queue** window, select the job for which you want trial prints.

**2** Click the **Properties** pushbutton to open the **Properties** window and then select the **Imaging** tab.

**3** Click on the **Trial Print** checkbox.

The box appears pressed in.

**4** Click either **OK** or **Apply Now**.

The job you are using for trial printing will be highlighted in the **Print Queue** window.

When the trial job is being printed, its progress will display in the **Print Sequence** window.

**5** To stop trial printing, click the **Trial Print** checkbox again in the **Properties** window with the **Imaging** tab selected.

When you turn **Trial Print** off, the normal sheets of the job will be cut, and the progress bar will lengthen to show the progress of printing the job.

## Holding and Resuming Printing

The **Imaging** option in the **Properties** window allows you to put a print job on hold so the next job in the queue can be printed first. Once the next job in the queue prints and the hold has been removed, the held printing job will resume printing.

**Hold Printing** can be activated from either the **Image Memory** window or the **Print Queue** window. When you use **Hold Printing**, the following apply:

- **Hold Printing** does *not* halt the print engine. The job that is printing at the time the **Hold Printing** was selected will continue to print. The next job is held, until you release it. When you halt or stop the print engine, no jobs will print.
- **Hold Printing** does *not* delete the job from the print queue. To delete a job from the print queue, see “Deleting Jobs from Job Lists” on page 212.
- You can put more than one job at a time on hold.
- When you put a hold on a job that has already started printing, the remaining sheets of the job will resume printing after you clear the hold.
- If you put too many jobs on hold and not enough image memory is available, a warning message will appear. To solve this, you should resume or delete one of the held runs.

\*  
\*  
\*

To use **Hold Printing**, follow these steps:

- 1 From either the **Image Memory** window or the **Print Queue** window, select the job that you want to hold for a while.
- 2 Click the **Properties** pushbutton to open the **Properties** window and then select the **Imaging** tab.
- 3 Click on the **Hold Printing** checkbox.  
The box appears pressed in.
- 4 Click either **OK** or **Apply Now**.  
The job you are holding will be highlighted in red in the **Print Queue** window. All the remaining jobs in the queue will continue printing.
- 5 To clear the hold on the job, click the **Hold Printing** checkbox again.

## Using the Finishing Tab in the Properties Window

The **Finishing** tab in the **Properties** window lets you look at and change several finishing settings.

When you select the **Finishing** tab in the **Properties** window, the settings shown in Figure 136 are displayed. Table 46 on page 210 describes the terms used in the **Properties** window.

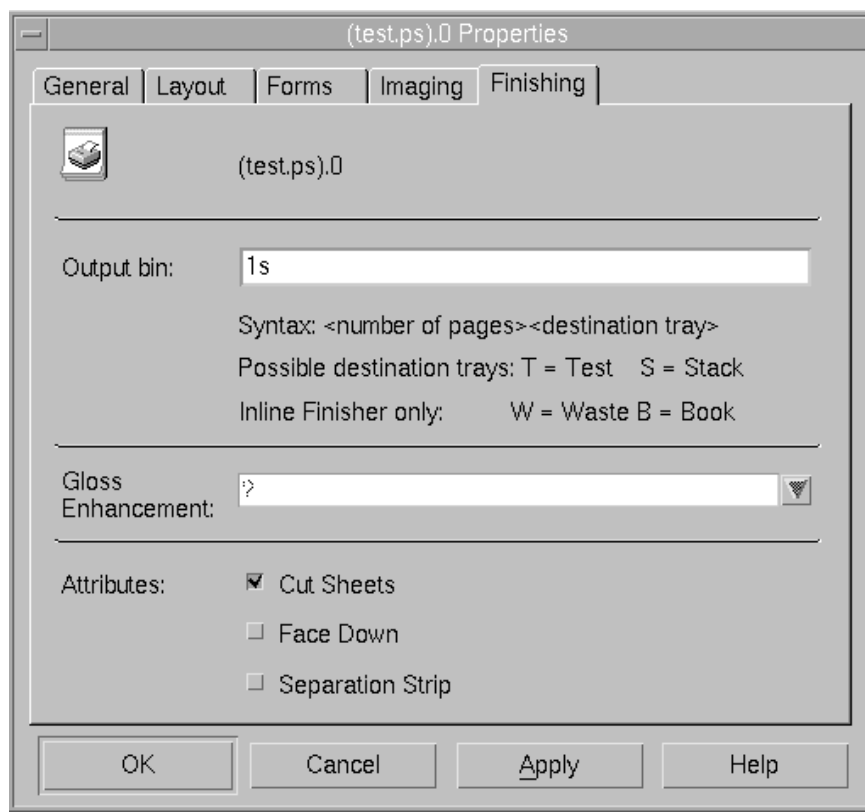


Figure 136. Finishing Tab in the Properties Window

Setting	Explanation
Output bin	Use this edit box to specify the destination tray. You must use the following syntax: <number of pages><destination tray>
Cut Sheets	When this checkbox is selected, the sheets will be cut. When the checkbox is cleared, the sheets will not be cut.
Separation Strip	When the output bin is the output stacker, select this checkbox to insert separator strips between jobs
Face Down	Select this checkbox to cause jobs to be printed face down. This means that the front and back of duplex jobs will be reversed, and simplex jobs will print on the back side of the paper.

## Using the Progress Tab in the Properties Window

The **Progress** tab is available only from the **Print Queue Properties** window. This tab lets you look at the actual progress of a queued job, as shown in Figure 137.

When you select the **Progress** tab in the **Properties** window, the settings shown in Figure 137 are displayed. Table 47 on page 211 describes the terms used in the **Properties** window.

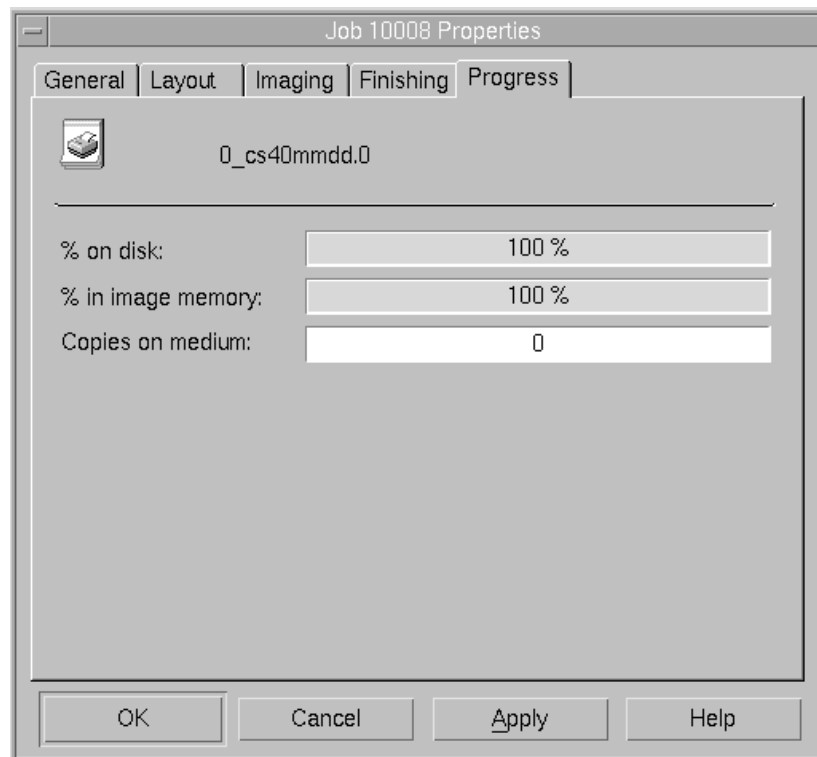


Figure 137. Progress Tab in the Properties Window



<i>Table 47. Properties Window Progress Tab Terminology</i>	
<b>Information</b>	<b>Explanation</b>
% on disk	This progress bar indicates how much of the job has already downloaded to the spooler disk array. When the job has completely down loaded to the bitmaps, the progress bar is full.
% in image memory	This progress bar indicates how much of a job has already been downloaded to image memory.
Copies on medium	If you are printing a regular job, this progress bar shows how many copies have already printed.  If you are printing a trial print, a progress bar shows how many trial print copies have already printed.

---

## Deleting Jobs from Job Lists

From time to time, you might want or need to delete jobs from the lists of jobs in either of these windows:

- Image Disk
- Print Queue
- Image Memory

When you delete jobs, the following apply:

- When you delete a job from the **Print Queue** window and that job has already started to print, the printing of that job immediately aborts and the next job in the queue begins to print.
- When you try to delete a job from the **Image Memory** window and that job is still in the print queue, an error displays.

To delete a job from the list of jobs, follow these steps:

- 1 Click on the job you want to delete from the appropriate window.
- 2 Click the **Delete** pushbutton.  
A window opens and asks you to verify the deletion.
- 3 Click the **OK** pushbutton to delete the job from the job list.

---

## Renaming Jobs

From time to time, you might want to rename a job from either of these windows:

- **Image Disk**
- **Print Queue**
- **Image Memory**

To rename a job from the list of jobs, follow these steps:

- 1 Click on the job you want to rename in the appropriate window. If you rename a job in the **Image Disk** window it will not be renamed anywhere else. If you rename a job in the either the **Image Memory** or **Print Queue** window it will be renamed in the other window.
- 2 Click the **Rename** pushbutton.  
A window opens and asks you to enter a new name.
- 3 Type the new name.
- 4 Click the **Ok** pushbutton to rename the job in the job list.

---

## Chapter 10. Managing the Printing Process

This chapter describes:

- Submitting a print job
- Printing with the output stacker
- Adjusting for page size

---

### Submitting a Print Job

When you submit a print job for printing, the **Print Sequence** window opens automatically. The **Print Sequence** window contains printing controls, a status area and a message area.

In the **Print Sequence** window, the **Downloading** state is highlighted. The percentage of a run that has been downloaded is displayed. The percentage of a run's signature that has been downloaded to bitmaps also will be displayed.

The message Please wait while downloading the job to image memory... is displayed in the window.

When the downloading finishes, **Start engine** will be highlighted.

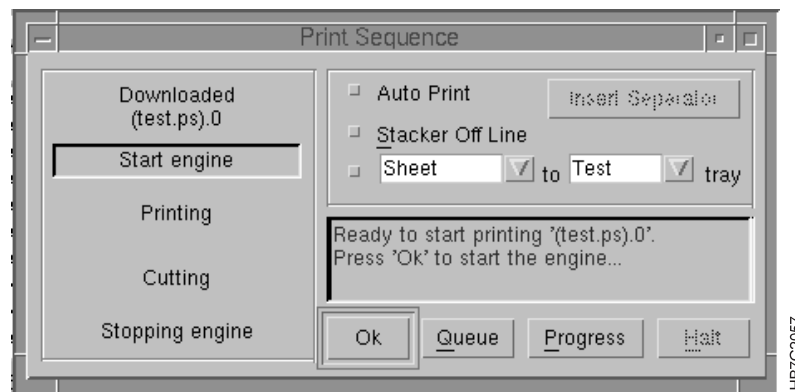


Figure 138. Print Sequence Window

A message indicating that the engine is starting is displayed in the message area. If **Auto Print** has been selected, when the downloading is finished, the print engine will start.

- To see the details and progress of the engine warming up for printing, click the **Progress** pushbutton. The **PRS U2** displays the paper supply voltage. The **FIX T Medium** and **FIX T Element** displays the temperature of the paper and fuser, respectively in the Fixed Tower.
- To open the **Print Queue** window, as shown in Figure 139 on page 214, click the **Queue** pushbutton in the **Print Sequence** window or

Explore ⇒ Print Queue



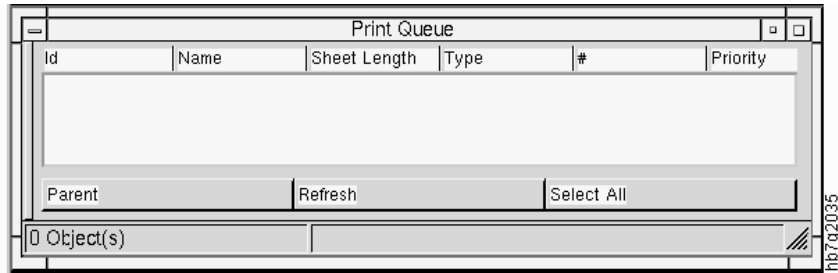


Figure 139. Print Queue Window

As soon as you submit a job to print, it is listed in the **Print Queue window**. This window displays all jobs currently in the print queue. As soon as a job is printed, it disappears from the list of jobs in the print queue.

**Note:** If you know you will want to print a job again, select that job before it leaves the **Print Queue** window and then click the **Print** pushbutton. The job will be added to the end of the print queue and will be printed again.

- If you are using a Model 002, open the **Image Memory** window, as shown in Figure 140.

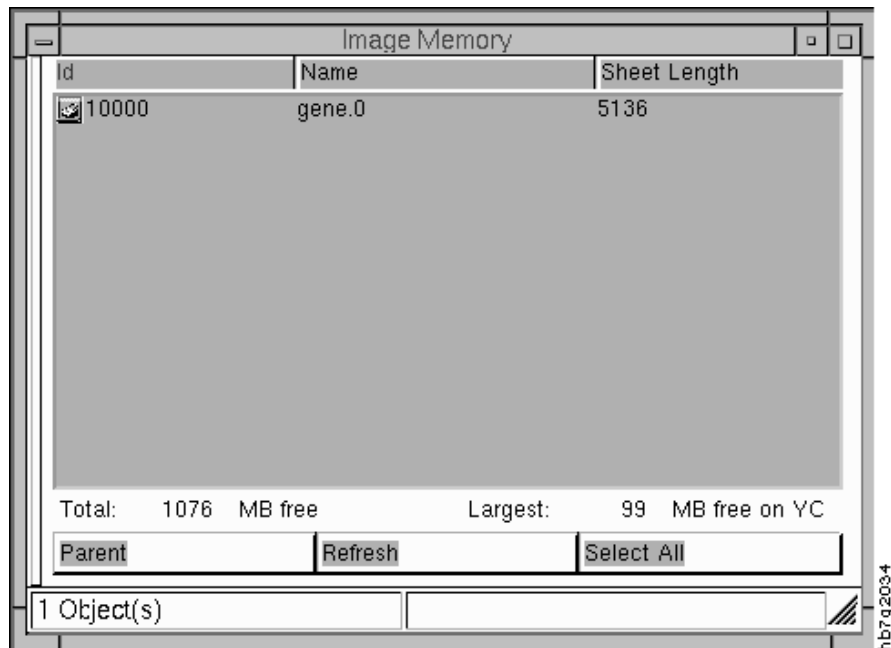


Figure 140. Image Memory Window

The **Image Memory** window displays all jobs that have been totally downloaded into the image memory. As long as memory is available, jobs in image memory are not automatically removed after printing.

**Note:** If you know you will want to print a job again but the job has already left the **Print Queue** window, select the job in the **Image Memory** window and then click the **Print** pushbutton. The job will be added to the end of the print queue and will be printed again.

---

## Interrupting the Printing Process

Sometimes you need to interrupt printing. When an emergency occurs, such as a paper jam or break, the printer stops.


When less severe problems occur, you don't have to stop the print engine immediately. A full toner waste bottle is an example of a problem.

## Interrupting Printing for an Emergency

When an emergency occurs, and the printer does not stop, stop printing immediately by one of the following methods:

- Push down on one of the large, red emergency buttons mounted on the paper supply or the output stacker.



- Click the emergency stop button  which is located at the top right corner of your console screen. When you click the emergency stop button on your screen, the **Emergency Stop Message** window opens. Click the **Ok** pushbutton. The print engine stops immediately.

- Press the **PF4** key, or

**Operations** ⇒ **Emergency Stop**.

Click the **Ok** push button. The print engine stops immediately.

### Emergency Stop: two buttons

The InfoColor 70 has two large, red emergency stop buttons, as shown in Figure 141. One button is located on the front of the paper supply at the right, and the other button is located on the top of the output stacker at the left.

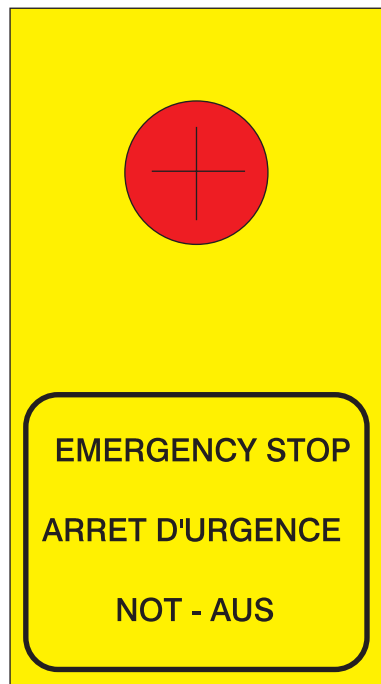


Figure 141. Emergency Stop Button

In an emergency, push one of these buttons to stop the print engine immediately.

To reset the emergency stop button, turn counter clockwise and pull up on the red knob.

## Interrupting Printing for a Problem

When a problem occurs you can stop printing:

- When you stop printing, you are actually stopping the job currently printing and the jobs in the queue waiting to print.

To stop the printing process, click the **Halt** pushbutton in the **Print Sequence** window.

One of the following happens:

- If the job is either waiting to be downloaded to bitmaps or is currently downloading, the print engine will not stop until downloading finishes.
- If the print engine is imaging, the imaging will stop immediately, but the sheets already imaged come into the stacker before the print engine stops.
- The print engine stops, until the operator clicks the **Ok** button in the **Print Sequence** window. Then the job continues where it was when it was halted.

After you interrupt printing and the print engine stops, the engine then goes to *Busy Waiting*, ready to print again.

---

## Printing with the Output Stacker

The operator adjusts the output stacker to produce normal or test prints, insert separator sheets, and handle alarms that may occur.

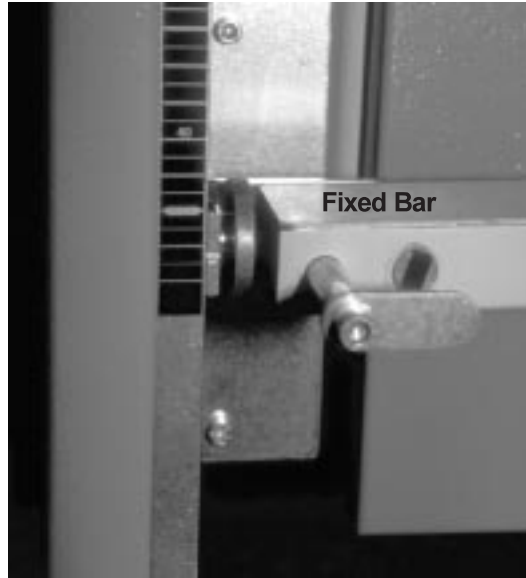
### Adjusting for Page Size

Before you print a job with a different page size than the last job, you need to adjust the position of the fixed horizontal bar on the output stacker, as shown in Figure 142 and Figure 143 on page 218. A graduation (in cm) is provided on both sides of the bar. The adjustment you make in sheet length depends on the sheet size defined in the page setup (see “Defining Page Setups and Paper Sizes” on page 154).

**Note:** You can only adjust one size at a time or the machine will jam.



Figure 142. Output Stacker



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Figure 143. Fixed Bar

Table 48 lists the most standard page sizes and the corresponding minimum sheet length and minimum stacker length to use.

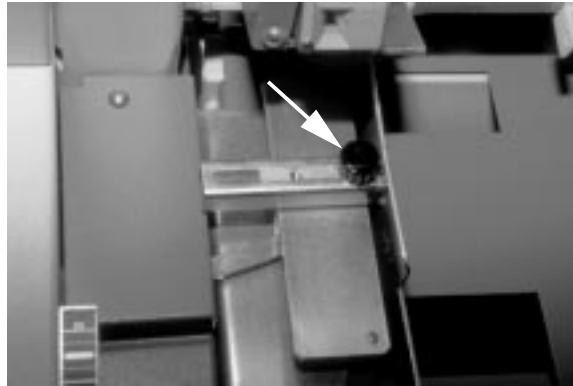
*Table 48. Adjusting the Output Stacker for Page Size*

<b>Format</b>	<b>Minimum Sheet Length (lines) without test strips</b>	<b>Minimum Sheet Length (lines) with test strips</b>	<b>Minimum Stacker Length (cm) without test strips</b>	<b>Minimum Stacker Length (cm) with test strips</b>
A4	7136	7311	30.5	31
A4T	5081	5256	21.5	22.5
A4L	7372	7547	31.5	32
A4LT	5317	5492	22.5	23.5
A3	10041	10216	42.5	43.5
A3L	10277	10452	43.5	44.5
Letter	6720	6895	28.5	29.5
LetterT	5220	5395	22.5	23
LetterL	6956	7131	29.5	30.5
LetterLT	5456	5631	23.5	24
Tabloid	10320	10495	44	44.5
TabloidL	10556	10731	45	45.5

## Adjusting the Paper Width

The side jog bar on the output stacker shakes up the sheets against the bumper bar. You can adjust the position of the side jog bar to the width of the paper, using the black screw, as shown in Figure 144 on page 219.





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Figure 144. Black Screw on Output Stacker Side Bar

**Attention:** You need to adjust both the fixed horizontal bar and the side jog bar very precisely to ensure that the paper is stacked in the trays correctly.

## Producing Normal Prints or Test Prints

When you print a job, blank sheets first go to the output stacker's test tray. After these blank sheets are cut, the printed sheets then go to the tray you have selected (see "Using the Finishing Tab in the Properties Window" on page 209).

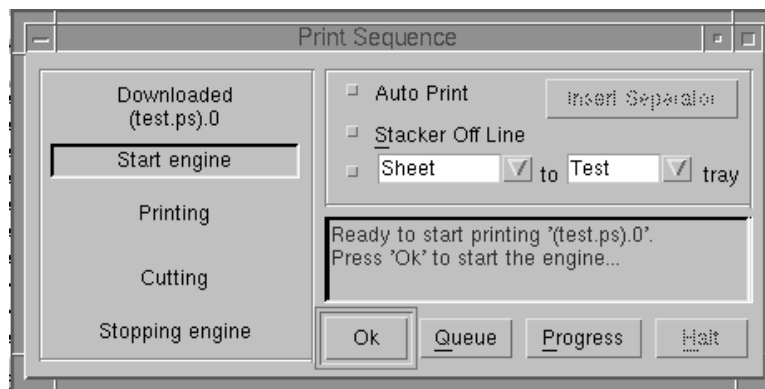
If you want to send a printed sheet or book to a different tray than the one you set in the **Finishing** option, you can use just the **Print Sequence** window (see "Using the Print Sequence Window") or you can use the **Print Sequence** window with the output stacker keyboard (see "Using the Print Sequence Window with the Output Stacker" on page 220).

Any of these three options that can be selected will override previous selections.

- Go to **Page Setup**.
- Click on **Finishing**.
- Select **Print Sequence**.

**Using the Print Sequence Window:** To use just the **Print Sequence** window, follow these steps:

- 1 In the **Print Sequence** window, as shown in Figure 145, use the tray drop-down list to select the tray you want.



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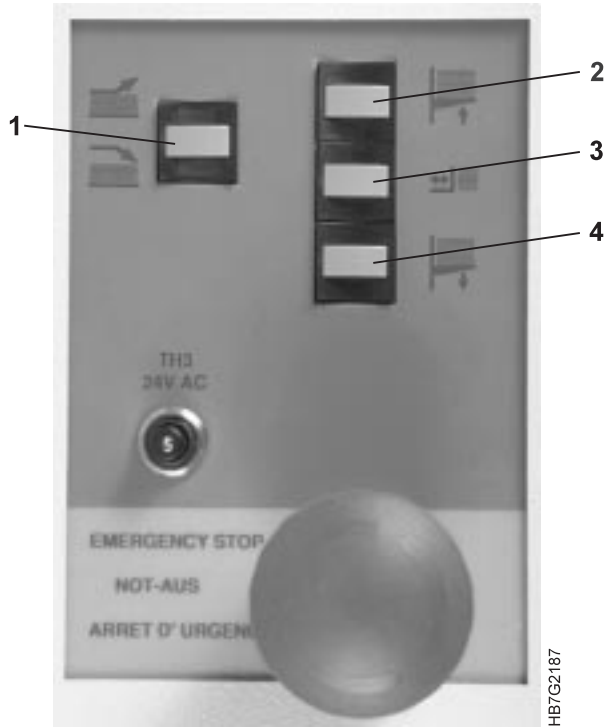
Figure 145. Print Sequence Window

\*  
\*  
\*  
\*  
\*

2 Click the lower checkbox.

**Note:** When you are doing trial printing, the sheets can be sent only to the test tray (see “Doing Trial Printing to Improve Print Quality” on page 207).

**Using the Print Sequence Window with the Output Stacker:** To use the **Print Sequence** window with the output stacker keyboard, follow these steps:



\*  
\*  
\*  
\*  
\*

Figure 146. Output Stacker Keyboard

1 Press button 1 on the output stacker keyboard to send a print to the test tray (top tray). The green LED at the right of this button will turn on.

**Note:** On the actual keyboard, this button is not numbered.

2 Press button 1 again to resume sending prints to the main or stacker tray. The green LED at the left will turn on.

## \* Inserting a Separation Strip

\*  
\*  
\*  
\*

When you want to print a new job before removing a previous job from the main tray, you can insert a separator strip between jobs. Use one of the following methods:

- When the printer is running, click the **Insert Separator** pushbutton in the **Print Sequence** window.
- Select the **Separation Strip** checkbox from the **Finishing** option in the **Properties** window. (See “Using the Finishing Tab in the Properties Window” on page 209).

## Handling Output Stacker Alarms

When an output stacker alarm occurs, the sheets are sent to the test tray automatically. Following is a list of possible alarms and how you can recognize them in the **Active Alarms** window:

Stacker Nearly Full:	This alarm occurs when the main tray is almost full. When the main tray reaches the lower Main Tray Full alarm, the test tray is activated.
Paper Jam:	This alarm occurs when: <ul style="list-style-type: none"><li>• A paper with a length longer than the maximum length is sent to the stacker at the beginning of a print cycle or between two runs.</li><li>• The time between two sheets is too long.</li></ul>
Cover Not Closed:	This alarm occurs when: <ul style="list-style-type: none"><li>• The emergency stop button is pushed.</li><li>• The cover is removed.</li><li>• The forward door is open.</li><li>• The test-tray switch is not in place.</li><li>• The output stacker is not in online mode.</li></ul>
Sheet Inserter Alarm:	This alarm occurs when only a few slip sheets remain in the inserter.
Main Tray Not Ready:	This alarm occurs when: <ul style="list-style-type: none"><li>• The main tray is not in the stacker. The alarm occurs after 50 sheets have been fed.</li><li>• The main tray is not in working position.</li><li>• The main tray is in working position, but the stack has been moved out of its normal position on the tray.</li><li>• The back-stop photocell is defective. The alarm occurs after 50 sheets have been fed.</li><li>• The sheets are not reaching the photocell back stop because of a curl or jam on the tray.</li></ul>

## Removing Print Jobs from the Main Tray

Periodically you need to remove jobs from the main tray. You need to ensure that the main tray does not become too full and cause an alarm. To remove jobs from the main tray, follow these steps:

**Note:** Figure 147 on page 222 shows numbered buttons.

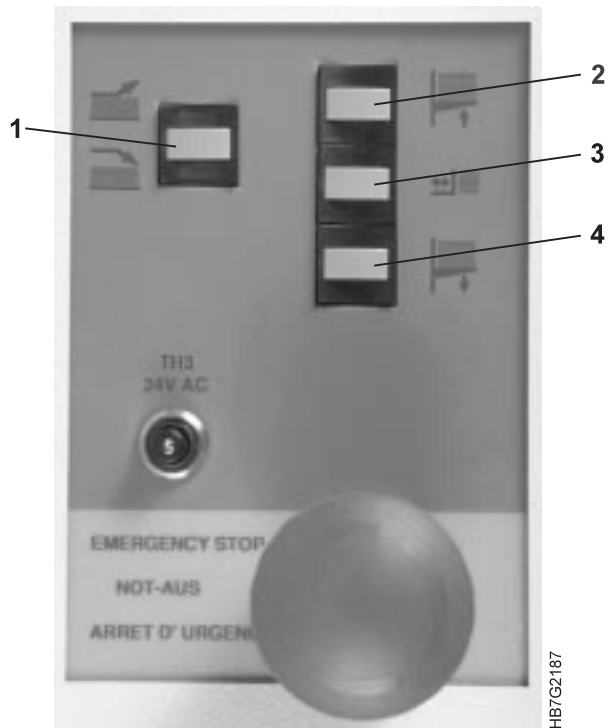


Figure 147. Output Stacker Keyboard

- 1** Press button **4** on the output stacker keyboard to move the main tray down.
  - a** If the stack in the main tray is high, let the tray go down until it stops automatically.
  - b** If the stack is not too high, press button **4** again, as the tray goes down, to stop the tray when it is low enough to remove the printed jobs.

You can either remove the main tray from the stacker and replace it with an empty tray, or just remove the jobs from the tray.
- 2** After you either mount a new tray or remove jobs from the existing tray, press button **2** to raise the main tray back to its top position.

Now you can begin to print again.

---

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# Chapter 11. Controlling Print Quality

One very important operator responsibility is to monitor and control print quality. To effectively control print quality, the operator must know how to use control strips and test pages to monitor and adjust registration and toner density. The operator must also know how to monitor and make corrections for other types of print-quality problems.

To effectively monitor print quality, first monitor and adjust registration, and then monitor and adjust density. The reason for this sequence is because print density changes during the first 20-30 prints. Time is needed for density to stabilize.

## Learning About Control Strips

The standard control strips for measuring densities, as shown in Figure 148, are in the /usr/fcdp/testfiles directory in a file named CSIBMV\*\*.PS. You can access this file by selecting the RIP Job pushbutton in the **Image Disk** window, as shown in Figure 29 on page 33. RIP the control strip, as described in “RIPing Control Strips on the Model 02C” on page 164 or “RIPing Control Strips on the Model 002” on page 169. Then print this file to measure registration and toner density. To add a control strip to a signature at print time, first ensure that the control strip has been RIPed. Then attach the control strip to your job using the Properties function for Model 002 (see “Using the Imaging Tab in the Properties Window” on page 204) or using a Book Ticket File for the Model 02C (see “Creating Book Ticket Files (BTFs)” on page 176).

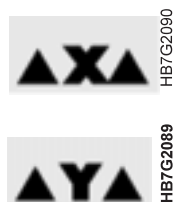


Figure 148. Control Strips

There is another control strip that is used for very narrow PostScript documents. This control strip can be found in the /usr/fcdp/testfiles directory in a file named CSIBM\*\*N.PS.

## Registration

You should adjust registration after you mount a new paper roll and after the InfoColor 70 has been idle for more than two hours.



The moving direction of the paper web is indicated on the control strips by the web-direction markers at the left and right side of the X and Y. To adjust registration, you must know in which direction a printed sheet has exited the print engine. The registration can be measured and corrected using the vertical and horizontal lines at the right side and under the X and Y.

The operator must learn how to measure and adjust color registration, cutter registration, front-to-back registration, and signature position.

## Density

You can measure density using three different test patches:

- Density test patches—use these test patches to control the higher densities. They are about 80% of the maximum densities.
- Transfer test patches—use these test patches to measure saturation.
- Bias test patches—use these test patches to measure the lower densities.

---

## Learning About the Universal Test Page

The universal test page is called UTIBMV\*\*.PS. Figure 149 on page 227 shows the X side of the test page.



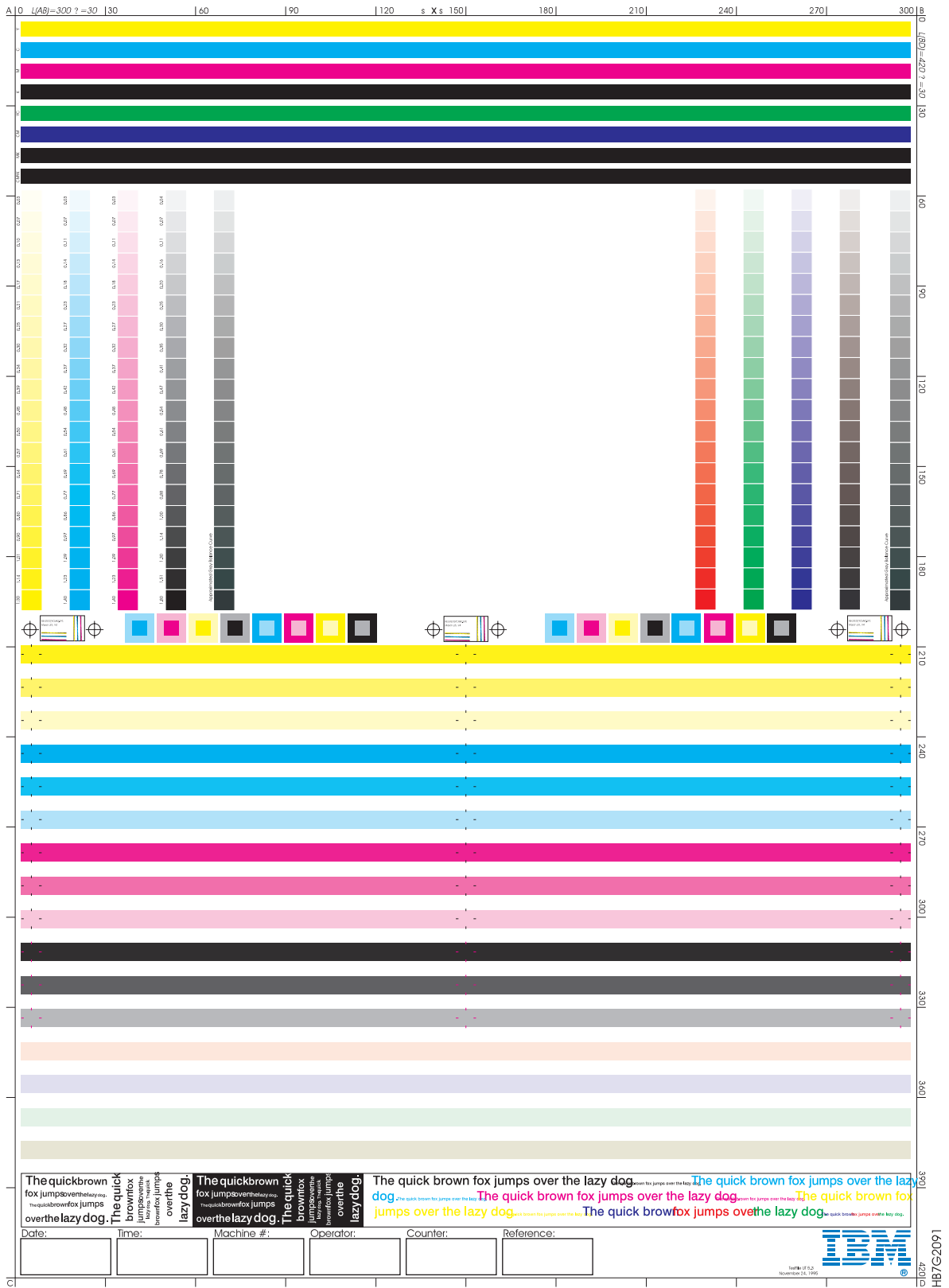


Figure 149. Side of the Universal Test Page

You can use the universal test page, found in the /usr/fcdp/testfiles directory, other IBM images, or images you have created to check the overall print quality of

the InfoColor 70 on both the X-side and the Y-side of the page. Use the test page as a test sheet, which can be printed every n copies of a regular print job. See “Inserting Test Sheets” on page 205 for instructions on how to insert test sheets.

**Note:** Before RIPing the universal test page, check the **Page Setup** window to ensure that the **Orientation** is 0 and **Type** is Duplex. The other setting in the **Page Setup** window should be consistent with the printing objectives for the job.

Listed below are the items to check, using the universal test page. These items are numbered to correspond to the areas numbered on the right side of the test page (see Figure 149 on page 227).

- 1 Transfer Coronas: If one or more horizontal bar(s) is spotty, then one or more transfer coronas are probably very dirty.
- 2 Rendering: Use the rendering information to print a test of the various grey scales.
- 3 Registration: Use the registration boxes to check registration and skew.
- 4 Densities: Use this area to check overall densities.
- 5 Text Quality.
- 6 General information described below should be written in the boxes on the test page.

Date: Date when the test page was printed

Time: Time when the test page was printed

Machine # : InfoColor 70 number on which the test page is printed

Operator: The operator who has printed the test page

Counter: The number of printed A4-sheets. This number can be found in the **Counters maintenance** window.

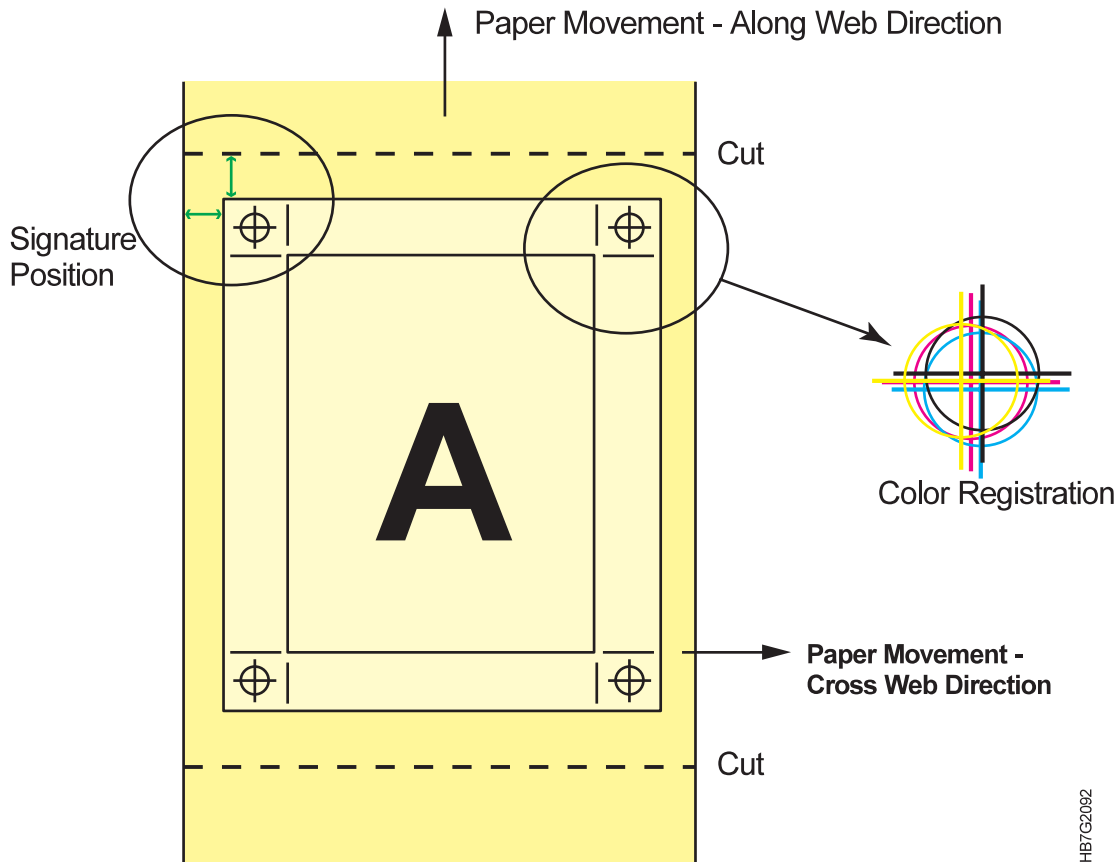
There is another print quality test page that the operator can use to determine how the individual colors perform. This test page can be found in the /usr/fcdp/testfiles directory in a file named CORIBM\*\*.PS.

---

## Understanding Registration

Generally speaking, registration is the positioning of the different colors on the paper. The operator is responsible for measuring and adjusting four types of registration, as listed below and shown in Figure 150 on page 229.

- Color registration
- Cutter registration
- Front-to-back registration
- Signature position.



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Figure 150. Four Types of Registration

When you measure registration, you can take the measurements in either inches or millimeters. However, the registration values that you adjust in the **Register Control** window must be entered in microns. Use Table 49 to convert your inch or millimeter measurements to microns. The conversion values are rounded to the nearest number divisible by 42 microns. (1 pel = 42 microns)

*Table 49. Conversion of Inches or Millimeters to Microns. (1 micron = 1 micro-meter (um))*

Distance in Inches	What You Enter In Microns
1/4"	6342
1/2"	12684
1"	25410
2"	50820
3"	76188

*Table 50 (Page 1 of 2). Conversion of Millimeters to Microns. (1 micron = 1 micro-meter (um))*

Distance in Millimeters	What You Enter In Microns
1 mm	1008
5 mm	4998
10 mm	9996

<i>Table 50 (Page 2 of 2). Conversion of Millimeters to Microns. (1 micron = 1 micro-meter (um))</i>	
<b>Distance in Millimeters</b>	<b>What You Enter In Microns</b>
20 mm	19992
30 mm	29988
40 mm	39984
50 mm	49980
60 mm	60018
70 mm	70014
80 mm	80010
90 mm	90006
100 mm	100002

## Measuring and Adjusting Color Registration

Color registration is the accurate alignment of the four color separations of an image on top of each other at each side of the paper. Color registration consists of:

- Along Web registration: the positioning of the different colors in the direction of the paper movement.
- Cross Web registration: the positioning of the different colors in the cross direction of the paper movement.

Measure color registration in the registration area of the standard control strip (see Figure 148 on page 225) or the universal test page (see Figure 149 on page 227), using a standard loupe (8x or 10x). Black is the color used as the reference.

Refer to the diagrams in Figure 151 for the instructions to measure color registration that follow.

**Note:** When you measure and adjust yellow, place a piece of pink or light blue tissue paper under your loupe.

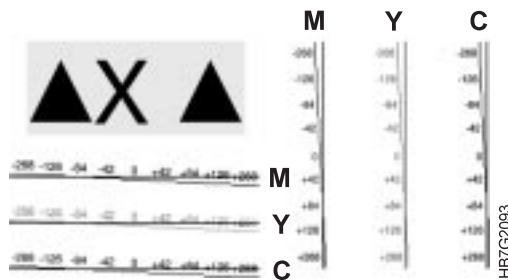


Figure 151. Horizontal and Vertical Lines for Measuring Registration

### Along Web Measurements

- 1 Use the horizontal lines to read Along Web registration errors for each of the three colors M, Y, and C compared to K. The registration error is the value in  $5\mu$ , microns, indicated above the point where the colored line and black line intersect. For example, the registration error of magenta =  $-84$ .

**Note:** If the colored line crosses the black line closer to zero (0) than to  $-42$ , do not try to make additional corrections.

### Cross Web Measurements

- 2 Use the vertical lines to read Cross Web registration errors for each of the three colors M, Y, and C compared to K. The registration error is the value in  $5\mu$ , microns, indicated at the left side of the point where the colored line and black line intersect. For example, the registration of cyan =  $+84$ .

**Note:** If the colored line crosses the black line closer to zero (0) than to  $+42$ , do not try to make additional corrections.

- 3 Open the **Register Control** window, as shown in Figure 152.

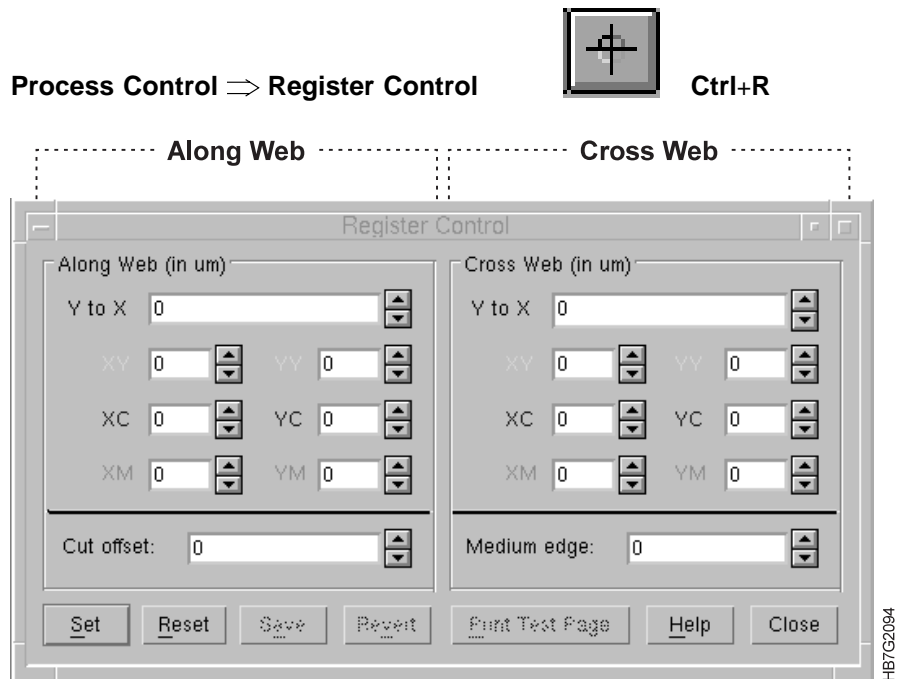


Figure 152. Register Control Window

- 4 Adjust the registration values in the **Register Control** window, as shown in Figure 152.

### Along Web Adjustments

- a Use the scroll arrows to scroll to the measured values in the boxes on the left side of the **Register Control** window.

### Cross Web Adjustments

- b Use the scroll arrows to scroll to the measured values in the boxes on the right side of the **Register Control** window.

- 5 After you change all the registration values, click the **Set** pushbutton, continue printing, and check the registration again. If the registration is good, click the **Save** pushbutton to save the values.

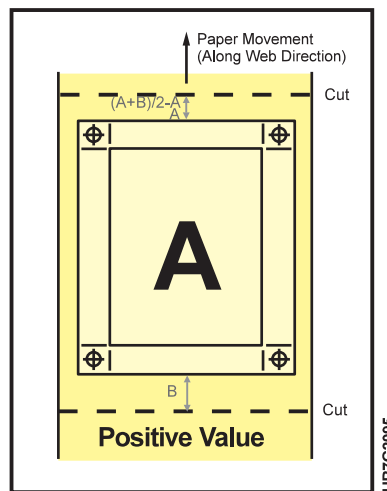
## Measuring and Adjusting Cutter Registration

You can measure cutter registration in inches or millimeters; however, the value you adjust in the **Register Control** window must be entered in microns. Use Table 49 on page 229 to convert your values to microns. Follow these steps:

- 1 Measure the distance from the top edge to the image (=A) and the distance from the bottom edge to the image (=B).
- 2 Calculate the cutter registration error using the formula:

$$(A+B)/2-A$$

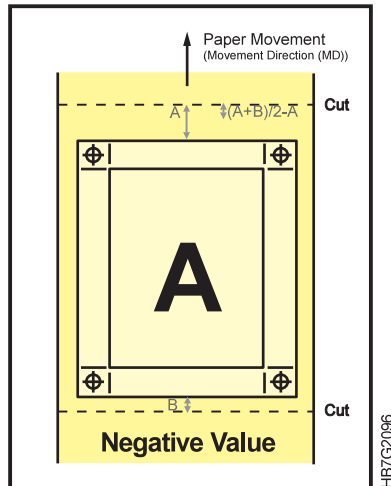
When the image is closer to the top edge, as shown in Figure 153, the result will be a positive value.



### FIX ART

Figure 153. Cutter Registration with a Positive Value -

When the image is closer to the bottom edge, as shown in Figure 154 on page 233, the result will be a negative value.



### FIX ART

Figure 154. Cutter Registration with a Negative Value -

- Adjust the cutter registration value in the **Cut Offset** box in the **Register Control** window, as shown in Figure 155.

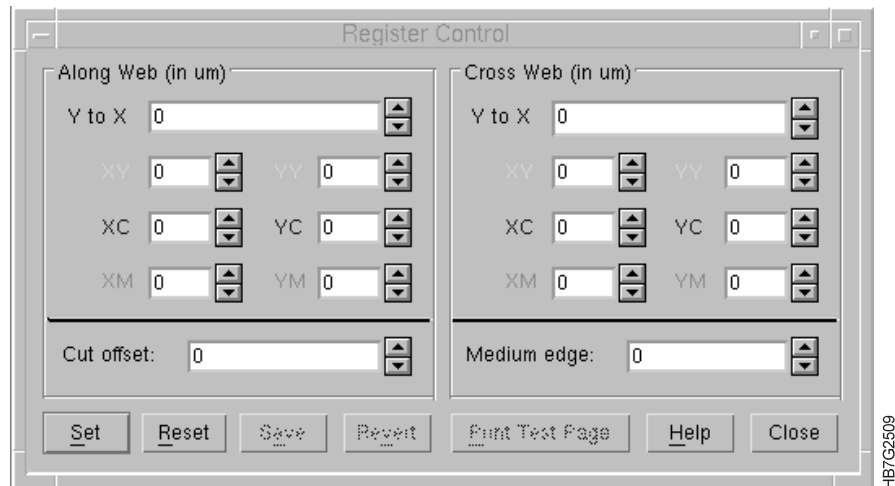


Figure 155. Register Control Window

Either enter the value, or click the up or down arrows until the correct value displays.

Cutter registration values should be adjusted in increments of 42 microns. Round the value to the nearest increment. If the value must be adjusted more than ¼ inch, use Table 49 on page 229 to calculate value.

- Click the **Set** pushbutton and print the image again. If the registration is adjusted correctly, click the **Save** pushbutton.

## Measuring and Adjusting Front-to-Back Registration

Front-to-back registration is the result of combining the signature position for front and back. To measure front-to-back registration, either use the control strips or your printed image. Follow these guidelines:

- The paper width that was defined when the job was created must be exactly equal to the width of the job plus the size of the crop marks, if they are present (see “Paper Width” on page 107). If not, the measured front-to-back registration using the control strips versus using the printed image will not be the same.
- Always use the X side of the paper.
- Convert your measurements to microns, using Table 49 on page 229.

### Using the Control Strips

You can adjust the relative position of the X-side to the Y-side using the horizontal and vertical lines that are located on the left side of the X control strip. The Y-side lines are solid, and the X-side lines are dashed.

Use a straight pin to poke holes through the paper to determine the value you should select to adjust front-to-back registration. You might have to make several holes to determine the correct value. Follow these steps:

#### Along Web Measurements

- 1 Find the front-to-back registration area on the X-side of the page. The horizontal control, as shown in Figure 156, is on top of the word “IBM”.

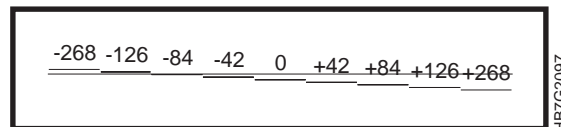


Figure 156. Horizontal Control

- 2 On the X-side of the page, poke a straight pin through the dashed line below each of the numbers. You may need to look through your loupe to guide the pin.
- 3 Turn the paper over to the Y-side and do the following:
  - a Find the pin hole that goes through the solid line on the Y-side, run the pin through the hole and note the number on the X-side.
  - b Enter that number in the **Register Control** window.

#### Cross Web Measurements

- 1 Find the front-to-back registration area on the X-side of the page. The vertical control, as shown in Figure 157 on page 235, is to the left of the word “IBM”.



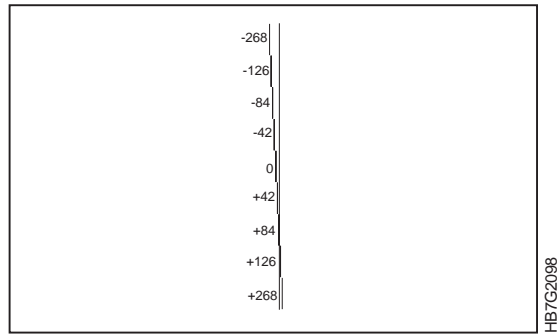


Figure 157. Vertical Control

- 2 On the X-side of the page, poke the straight pin through the dashed line to the right of each number. You may need to look through your loupe to guide the pin.
- 3 Turn the paper over to the Y-side and do the following:
  - a Find the pin hole that *goes through* the solid line on the Y-side, run the pin through the hole and note the number on the X-side.
  - b Enter that number in the **Register Control** window.

## Using the Image

If you have not added control strips to your print job, you can measure front-to-back registration using the image, as shown in Figure 158 and described below.

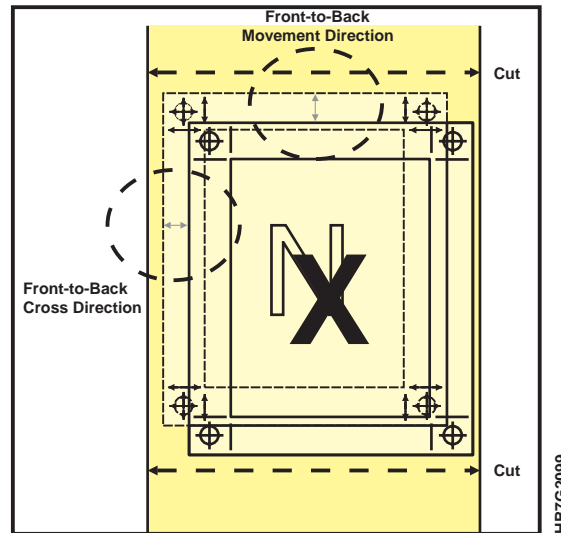


Figure 158. Measuring Front-to-Back Registration Using the Image

### Along Web Measurements

- 1 Measure the distance between the images on the X- and Y-side in the Along Web direction. If the X image is positioned below the Y image, the value is negative.
- 2 Convert your measurement to microns, using Table 49 on page 229.
- 3 Select this value in the **Register Control** window (see “Adjusting the Values”).

### Cross Web Measurements

- 1 Measure the distance between the images on the X- and Y-side in the Cross Web direction. If the X image is positioned at the right of the Y image, the value is negative.
- 2 Convert your measurement to microns, using Table 49 on page 229.
- 3 Select this value in the **Register Control** window (see “Adjusting the Values”).

## Adjusting the Values

After you take the Along Web and Cross Web measurements, follow these steps to adjust the front-to-back registration values:

- 1 Open the **Register Control** window, as shown in Figure 159 on page 237.

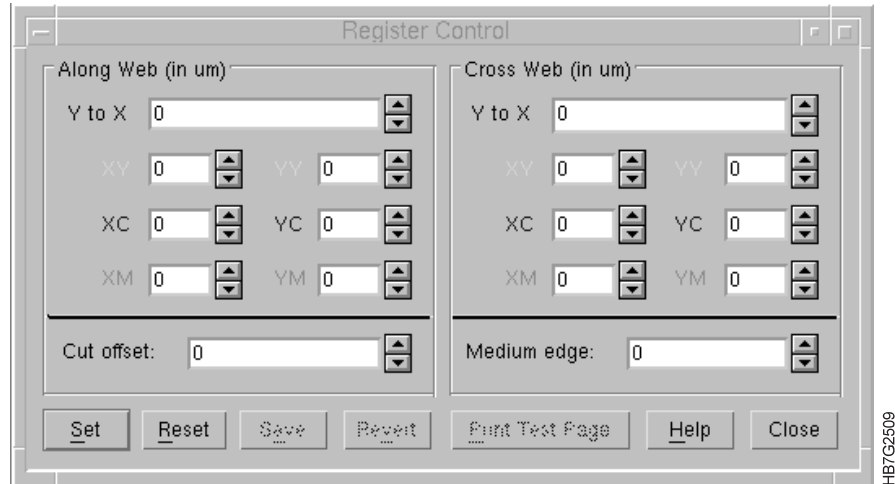


Figure 159. Register Control Window

2 Select the measured **Along Web** value in the **Along Web Y to X** box.

3 Select the measured **Cross Web** value in the **Cross Web Y to X** box.

**Note:** Only values that are multiples of 42 will be accepted in the Along and Cross Web Y to X boxes.

**Attention:** Be aware that before the registration shows that it is corrected, four pages with registration errors will print first.

4 Click the **Set** pushbutton.

5 Print either the control strips or the image again.

6 Check the registration again. If the registration is correct, click the **Save** pushbutton to save the values.

## Measuring and Adjusting Signature Position

Signature position is the position of the image (all four colors together on one side of the paper) with respect to the left edge of the paper and the leading cut. (The same holds for the back of the paper, but here the left edge of the paper becomes the right edge.)

**Note:** You can adjust signature position in the along web direction by adjusting cutter registration (see “Measuring and Adjusting Cutter Registration” on page 232). Adjusting signature position in the cross web direction applies only when you have mounted a paper roll of a smaller width and part of the signature is not written on the new roll. If this situation happens, follow these steps:

If the signature is positioned at the far left, as shown in Figure 160:

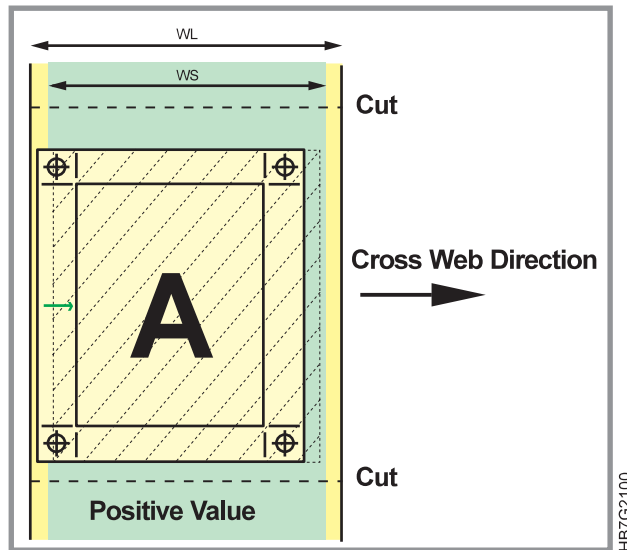


Figure 160. Signature Positioned at Far Left

- 1 Calculate the distance the signature has to be moved using the formula:

$$(WL-WS)/2$$

WL = width of the large paper roll

WS = width of the small paper roll

The value should be positive.

- 2 Use Table 49 on page 229 to convert the measured value to microns.

If the signature is positioned at the far right, as shown in Figure 161:

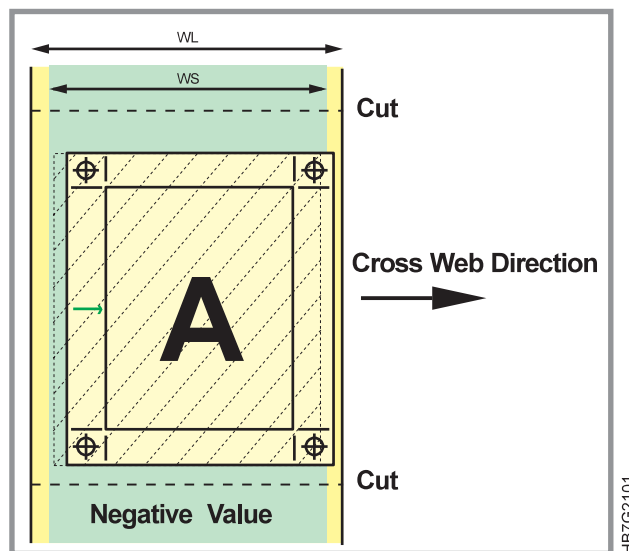


Figure 161. Signature Positioned at Far Right

- 1 Calculate the distance the signature has to be moved using the formula:

$$(WL-WS)/2$$

This value should be negative.

- 2 Use Table 49 on page 229 to convert the measured value to microns.

## Adjusting the Values

To adjust the values, follow these steps:

- 1 Open the **Register Control** window, as shown in Figure 162.

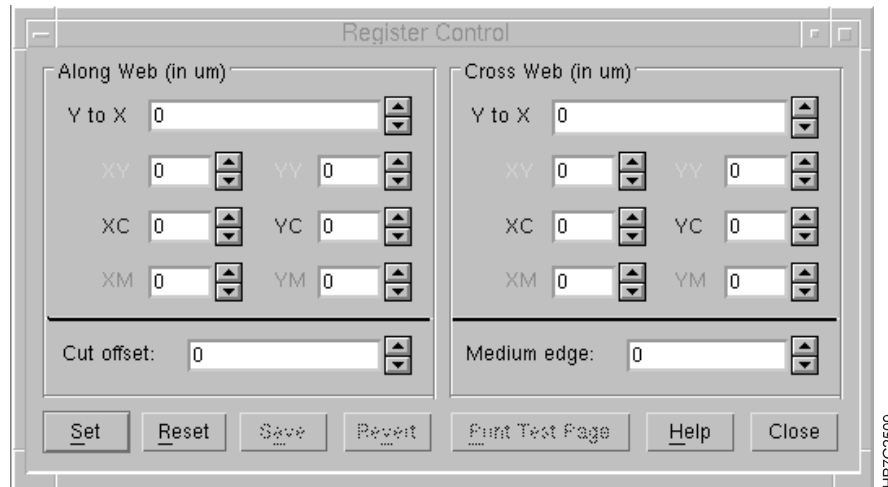


Figure 162. Register Control Window

- 2 Select the measured value in the **Medium Edge** box.
- 3 Click the **Set** pushbutton.
- 4 Print the control strips again. If the registration has been adjusted correctly, click the **Save** pushbutton to save the values.

## Adjusting the Driftmargin

If the driftmargin is out of range, the registration has been adjusted so that the image has been moved too far to one side causing the image to be off one edge of the print head.

**Note:** The margin is part of the image and an unprinted part of the margin could be off the edge, even though no part of the image is lost.

Check the value in the **Medium Edge** box, adjust it if possible, or do one of the following:

- If the value in the **Medium Edge** box exceeds the correction range, move the paper so it is closer to the center of the adjustment range. The paper web can be moved using the button on the paper supply (see “Correcting the Alignment of the Paper Supply” on page 293).
- If the value in the **Medium Edge** box is almost equal to its minimum or maximum value, follow these steps:
  - 1 Determine to which side you want to adjust the driftmargins.
  - 2 Adjust the paper edge in the opposite direction.
  - 3 Try to adjust the driftmargins again. If you get an error, you have to adjust the paper edge again.

- 4 Repeat this procedure until the message disappears.
- 5 If the signature is now positioned too far to the right or left you can move the paper web by using the button on the paper supply (see “Correcting the Alignment of the Paper Supply” on page 293).

---

## Controlling Density

Density control involves two types of operator responsibility:

- Obtaining correct densities and stable tone scales, which should be done every 25 to 50 A4 sheets for <1000 page jobs and every 500 A4 sheets for >1000 page jobs (see “Monitoring Counters” on page 265 to verify the number of A4 sheets printed).
- Optimizing the xerographic process for quality and minimum toner waste, which should be done every 5000 A4 sheets.

**Attention:** RIPing the control strip correctly is essential for proper density control (see “RIPing Control Strips on the Model 02C” on page 164 or “RIPing Control Strips on the Model 002” on page 169).

Several process parameters influence density:

- LED-array exposure (**LDA%**)
- Bias voltage
- Toner concentration
- Relative humidity
- Age of developer
- Page coverage

The operator can monitor and adjust the first four parameters. The operator can monitor the age of the developer and the page coverage, but cannot adjust these parameters.

## How Process Parameters Influence Density

LED-array exposure, the scale factor in the reproduction of the CMYK individual color densities can be controlled by the operator.

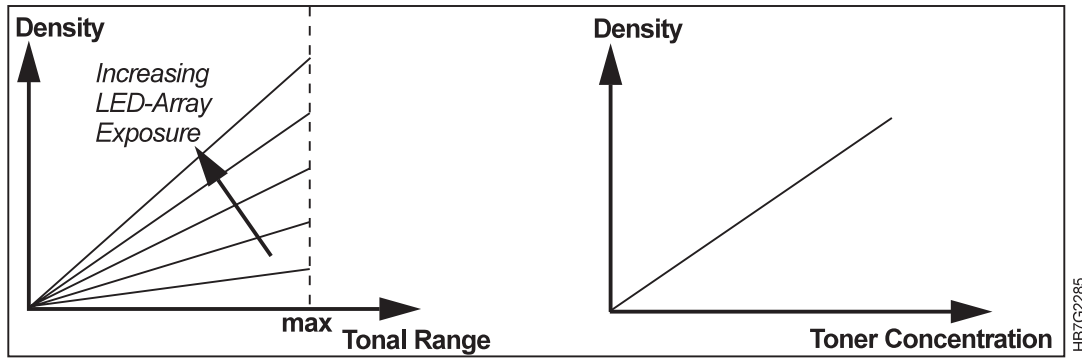
You can minimize the influence of toner concentration by keeping it as constant as possible (match toner inflow in the development unit to toner outflow) and close to a certain toner concentration setpoint.

The influence of parameters such as page coverage, age of developer, and print tower relative humidity are compensated for through the toner concentration setpoint.

However, this compensation provides only a rough approximation of optimum toner concentration, so the operator is responsible for adjusting the setpoint, if necessary. The operator may adjust the relative humidity in the printing tower to try to improve density. Raising the tower relative humidity will usually improve toner transfer and improve print density.

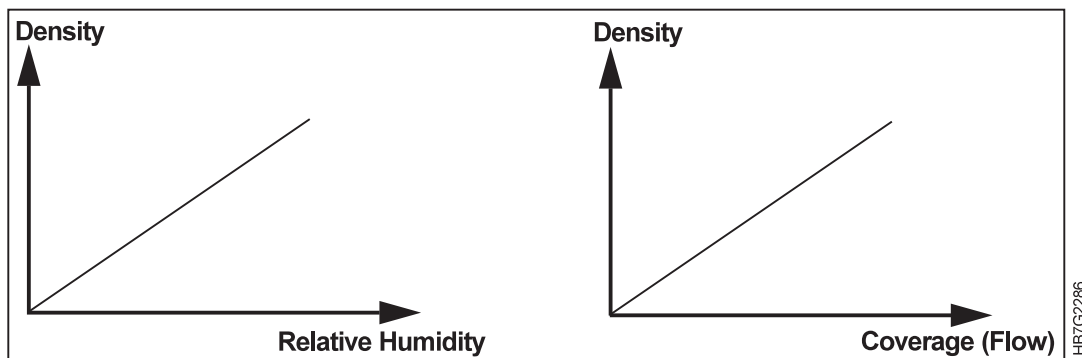
You can adjust low densities by adjusting the bias voltage. Adjusting bias voltage has no effect when you are printing a high density image. The default bias voltage is –590V. You can increase low density by lowering the bias voltage, for example, from –590V to –610V.

Figure 163 on page 242, Figure 164 on page 242, and Figure 165 on page 242 show graphs that display the relation of density to different process parameters.



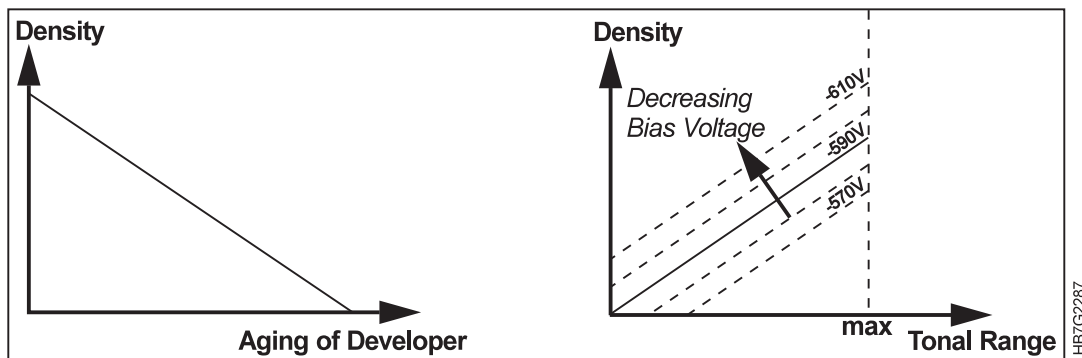
HB7G2285

Figure 163. Density in Relation to LED-Array Exposure and Toner Concentration



HB7G2286

Figure 164. Density in Relation to Relative Humidity and Page Coverage



HB7G2287

Figure 165. Density in Relation to Age of Developer and Bias Voltage

## Using the Densitometer

Included with your InfoColor 70 is a Gretag D19C densitometer to measure density. It can be used as a stand alone piece of equipment or attached directly to the InfoColor 70. The densitometer is operated with two elements, the control ball and the measurement key. The control ball is used to move the graphics bar for selection of menu lines on the display. The measurement key is used to activate a function or initiate a measurement. Before using this densitometer, you should:

- Attach the densitometer to the InfoColor 70
- Configure the densitometer



- Check the calibration daily
- Install the 47B filter, since proper densitometer readings are based on it
- Recalibrate the densitometer, if necessary.

To attach and configure the densitometer follow these steps:

- 1 Find the RS232 cable provided with your machine. Locate serial port 2 on the back of your AIX workstation and plug in the cable.
- 2 Take the other end of the cable and plug it into the Data Interface on the densitometer.
- 3 Turn on the display by pressing the measurement key. The display should look like the one in Figure 166.

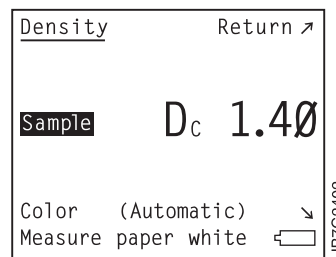


Figure 166. Gretag Density Display

- 4 Turn on the densitometer by pressing the measurement key.
- 5 Use the control ball to move to the **Return** position on the display and press the measurement key again.
- 6 Select **Settings** in the next display and move to **Data Interface** position on the next display.
- 7 Use the control ball to set the **Baud Rate** to 9600 and the **Handshake** to No.
- 8 Use the control ball again to move to **Return** position, move to the **Printer** position, and press the measurement key.
- 9 Use the control ball to set **Printer** to PC, **Print protocol** to D180, and **Date and time** to Off.
- 10 Go back to the first display by selecting **Return** on the next two displays and **Density** on the third display.

For a calibration target, use the calibration card shipped with the densitometer. (This card is specific to that serial number densitometer.) IBM recommends that you use paper white when calibrating the densitometer. This will require use of an unprocessed sheet of paper.

## Taking Density Measures

Measure densities using the CSIBMV\*\*.PS control strip, as shown in Figure 167 on page 244. This control strip has three test patches described below.

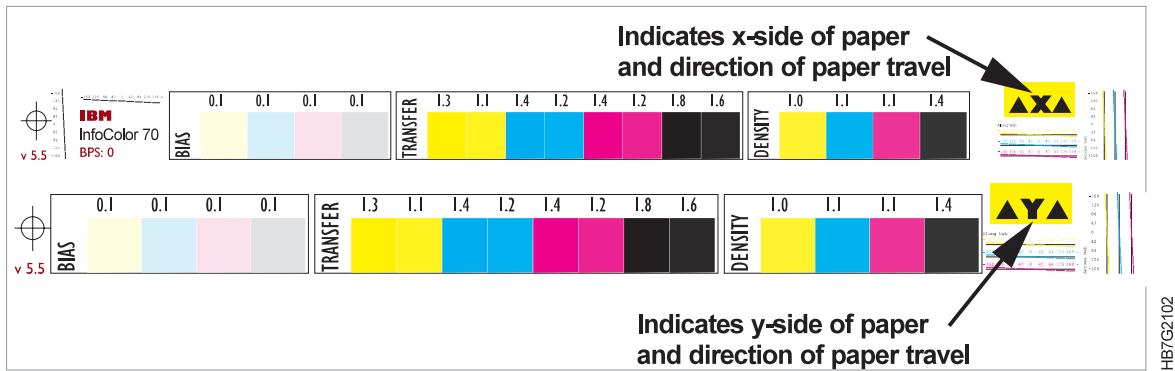


Figure 167. Control Strips

**Density.** Use the density test patches to measure high density values at 80% of the maximum density the printer was designed to print. The LDA setting in the **Density Control** window is used to adjust density.

**Transfer.** Use the transfer test patches to measure and control transfer efficiency (saturation). Bad transfer efficiency causes a non-linear tone scale and excessive toner waste. Each color has two test patches. The difference between these two patches has to be higher than 0.1 (see “Correcting for Density-Test-Patch Measurements” on page 247).

**Bias.** Use the bias test patches to measure and control low density. The nominal density setting is 0.1. However in most cases, when the operator adjusts the density a setting greater than 0.06 or less than 0.14 will be acceptable. The Bias voltage (Bias (V)) in the **Density Control** window is used to adjust the bias.

To measure density, follow these steps:

- 1 Press the measurement key to activate the display and move the graphics bar to **Measure paper white** and press the measurement key again to do a white measurement.
- 2 Using the control ball move the graphics bar to **Sample**.
- 3 Position the measuring aperture of the densitometer on the black test patch.
- 4 The value is automatically inserted in the **Density Control** window (see “Understanding the Density Control Window”).

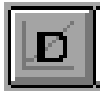
**Note:** At least ten meters of paper must go through the printer between uses of the densitometer. If not, a message window will ask you if you want to continue.

### Understanding the Density Control Window

To monitor and adjust density control, open the **Density Control** window, as shown in Figure 168 on page 245. The pushbuttons unique to the **Density Control** window are described in Table 51.

<i>Table 51 (Page 1 of 2). Description of Unique Density Control Window Pushbuttons</i>	
<b>Pushbutton</b>	<b>Description</b>
Commit	This processes all changes recommended in the Results box.

Pushbutton	Description
TC Setpoint	This opens the Toner Concentration Setpoint window, as shown in Figure 169 on page 250.
Show Controls	This displays when the window is compressed and the density controls are not displayed. When you press it the window expands, the density controls are displayed and the pushbutton label changes to Hide Controls. The next time the window is opened, it opens in the same state as the last time it was opened.
Hide Controls	This displays when the density controls are displayed. When you press it the window compresses, the density controls are hidden and the pushbutton label changes to Show Controls. The next time the window is opened, it opens in the same state as the last time it was opened.



Process Control ⇒ Density Control **Ctrl+D**

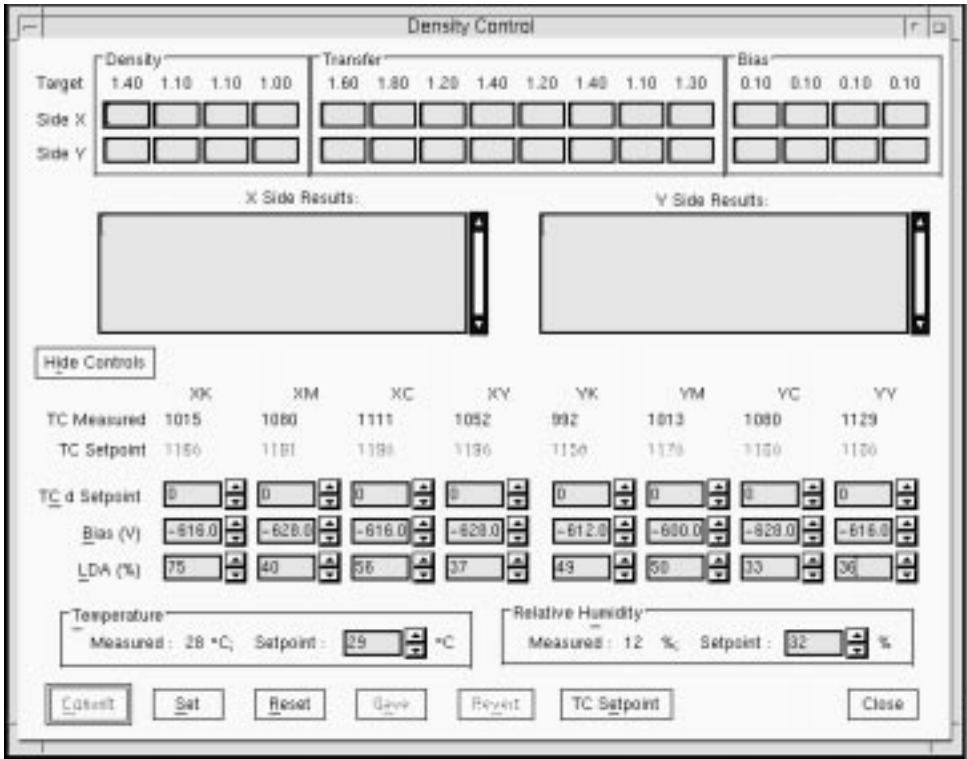


Figure 168. Density Control Window

The top section of the **Density Control** window displays values read from the densitometer. The two large boxes display recommendations for changing the density control parameters. After each density reading is recorded, the InfoColor 70 calculates the change that should be made to the the density controls to adjust density.

Before using the densitometer, ensure that it is set up and configured properly (see “Using the Densitometer” on page 242).

When you open the Density Control window, the Density, Transfer, and Bias readings for **Side X**, **Side Y**, as well as the **X Side Results** and **Y Side Results** boxes will be empty. The cursor will be in the **Side X** black edit box. To enter the densitometer readings into the boxes follow these steps:

- 1 Locate the x-side of the control strip on your sheet.
- 2 Place the measuring aperture of the densitometer on the black box in the control strip and press down on the measurement key. The reading will be recorded in the appropriate box for the color that was read on the **X Side**.  
**Note:** You must measure the colors in the following order, black, magenta, cyan, and yellow.  
To replace a reading, position the cursor on the existing value and press the left mouse button. Take the new density reading.  
After you take a density reading, recommendations for new density settings appear in the **Results** box.
- 3 Continue taking **X Side** readings.
- 4 To take **Y Side** readings, click on the black field on the **Y Side** row. Use the densitometer to record the **Y Side** readings.  
**Note:** You must measure the colors in the following order, black, magenta, cyan, and yellow.
- 5 Press the **Commit** pushbutton to make the changes displayed in the **Results** boxes or you can press the **Show Controls** button and manually adjust only the density controls that you want to adjust.  
**Note:** Some of the parameters are not adjustable and can only be monitored.

The following density controls are displayed when the the **Show Controls** pushbutton is pressed.

#### **Density Controls**

TC Measured	The actual toner concentration value measured by the sensor.
TC Setpoint	The value to which the actual toner concentration is adjusted.

#### **Density Control Parameters**

TC d Setpoint	The parameter you can use to manually adjust <b>TC setpoint</b>
Bias (V)	The value of the bias voltage
LDA (%)	The value of the LED array exposure

You can adjust these values.

### Tower Conditioning Parameters

Temperature Measured	The actual measured temperature of the print tower
Temperature Setpoint	The value to which the actual temperature should be adjusted
Relative Humidity Measured	The actual relative humidity of the print tower
Relative Humidity Setpoint	The value to which the relative humidity should be adjusted

You can adjust only the setpoint values of this parameter.

## Correcting Densities Manually and Optimizing Process Conditions

This section explains how to manually adjust the density controls. As you take densitometer readings, the InfoColor 70 automatically calculates the changes that are required to adjust the density controls. You can press the **Commit** pushbutton to accept these recommendation, or you can manually adjust the density controls.

### Correcting for Density-Test-Patch Measurements

The minimum, nominal, and maximum density values for each color taken on the density test patches are listed in Table 52. These test patches should have density values of about 80% Dmax, which is the maximum density the printer was designed to print.

Density	Y	C	M	K
Minimum	0.9	1.0	1.0	1.3
Nominal	1.00	1.10	1.10	1.40
Maximum	1.1	1.2	1.2	1.5
Dmax	1.3	1.4	1.4	1.8

If the measurements you take on the density patches are 0.1 higher or lower than the nominal values in Table 52, you need to correct the density, using the **Density Control** window, as follows:

- 1 First adjust the LED array exposures (**LDA %**).
- 2 If adjusting **LDA %** does not correct the density or the adjustment would not be within the preferred range, next adjust either the **TC Setpoint** or the **Relative Humidity Setpoint**. Be aware that changing relative humidity will affect the density for all print stations.

### Rules for Adjusting LED Array Exposure

- A higher **LDA %** increases density. When the density is 0.1 too low, adjust the exposure about +5% of the current exposure reading.
- A lower **LDA %** decreases density. When the density is 0.1 too high, adjust the exposure about -5% of the the current exposure reading.
- An **LDA %** higher than 60% may actually decrease density.
- Therefore, the following working ranges of **LDA %** have been established:

Allowed range: 30% < LDA < 75%

Preferred range:  $40\% < \text{LDA} < 60\%$

Adjust the LED-array exposures by changing the **LDA %** values  $-5\%$  or  $+5\%$  of the current exposure value in the **Density Control** window, depending on whether you need to increase or decrease the density for each color.

If adjusting **LDA %** did not correct the densities, then adjust the **TC Setpoint** or the **Relative Humidity**.

#### ***Rules for Adjusting TC Setpoint***

- If the density is too low and **LDA %** is at the maximum allowable value, increase the **TC Setpoint**.
- If the density is too high and **LDA %** is at the minimum allowable value, decrease the **TC Setpoint**.
- The following working ranges of **TC Setpoint** have been established:  
 $-150 < \text{TC d Setpoint} < 150$   
 $650 < \text{TC d Setpoint} < 1250$

**TC Setpoint:** When you correct the **TC Setpoint**, the increase or decrease in density is slow and gradual; however, the larger the page coverage, the faster the density is adjusted.

To correct the **TC Setpoint**, you must adjust the **TC d Setpoint**. The value you enter for **TC d Setpoint** in the **Density Control** window is either added to or subtracted from the **TC Setpoint**. If the value you enter causes **TC Setpoint** to be out of range, **TC Setpoint** will be limited automatically to its minimum or maximum value.

If changing **LDA %** and **TC Setpoint** do not yield the desired results, then adjust the **Relative Humidity**.

#### ***Rules for Adjusting Relative Humidity***

- If the density is too low and **LDA %** is at the maximum allowable value, increase the **Relative Humidity**. Note that a change in **RH** affects all print units.
- If the density is too high and **LDA %** is at the minimum allowable value, decrease the **Relative Humidity**.
- The following working range of **Relative Humidity** has been established:  $25\% < \text{RH} < 37\%$

**Relative Humidity:** When you adjust the **RH** within the printing tower you can increase or decrease print densities for a few hundred prints, but be aware that the printer control system will compensate for any changes in measured tower humidity by altering the **TC setpoint**. Densities may return to the original values after printing for a while.

## Correcting for Transfer-Test-Patch Measures

Once the densities are correct based on the density test patches, you should measure the values on the transfer test patches. The difference between the two patches for each color should be higher than 0.1, which indicates no saturation. A difference lower than 0.1 indicates saturation.

### *No Saturation—Rules for Adjustment*

- If **LDA%** is greater than 60%, increase the **TC d Setpoint** by 50 units.
- If **LDA%** is 40% to 60%, do not make any adjustment.
- If **LDA%** is less than 40%, decrease the **TC d Setpoint** by 50 units.

### *Saturation—Rules for Adjustment*

- If **LDA%** is greater than 60%, decrease the **LDA %**.
- If **LDA%** is less than 60%, decrease the **TC d Setpoint** by 50 units

**Note:** **LDA%** adjustments take effect almost immediately. Adjusting **TC d setpoint** takes place over up to 1000 prints. When adjusting **TC d. Setpoint** you will have to recheck and readjust **LDA%** until the **TC d Setpoint** stabilizes.

## Correcting for Bias-Test-Patch Measurements

You can obtain perfect reproduction of low-density coverage by correcting the bias voltage based on the measured values of the bias test patches. The default bias voltage is -590V, with a -630V minimum and a -530V maximum.

### *Rules for Adjustment*

- If the measured density is lower than 0.1, make the bias voltage more negative in 5 volt increments.
- If the measured density is higher than 0.1, make the bias voltage less negative in 5 volt increments.

## Correcting for High-Coverage Jobs

You might have a situation when you are printing a high-coverage job (>30% for 1 or more colors) and the difference between **TC Measured** and **TC Setpoint** remains high (more than 100) for a long time. When coverage is more than 120 mg/second, it is out of range and an alarm is generated. If this happens, temporarily decrease **TC Setpoint** to the level of or slightly below **TC Measured**. Then gradually increase **TC Setpoint** to its former level, or gradually adjust **TC d Setpoint** to 0.

You should monitor **Age Developer** and **Flow Predefined** in the **Toner Concentration Setpoint** window. You can open this window by clicking the **TC Setpoint** pushbutton in the **Density Control** window. If the **Density Control** window is not open, open the **Toner Concentration Setpoint** window, as shown in Figure 169 on page 250.

### **Process Control** ⇒ **Toner Concentration Setpoint**

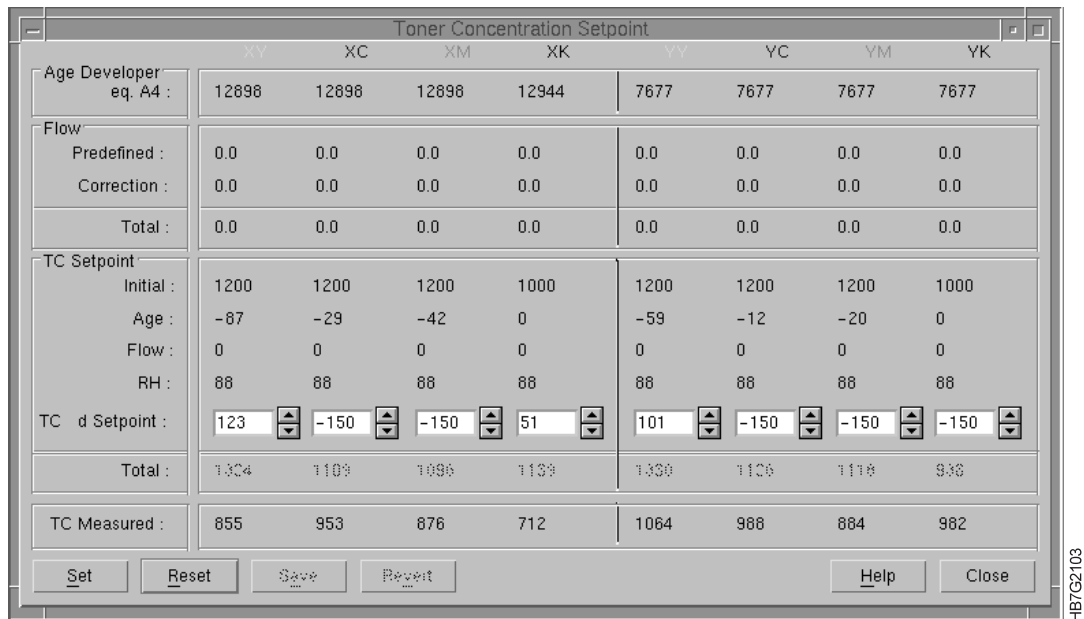


Figure 169. Toner Concentration Setpoint Window

## Avoiding Other Image Problems

Other problems that can occur are dirty background, bearding, and cloudiness. This section provides information on what causes these problems, with some hints on how to avoid them.

### Avoiding Dirty Background

Dirty background is especially noticeable in unprinted or white areas. This dirty background is caused by toner particles that have adhered to non-image areas. Background is an indication of printing problems and normally should not be easily visible to the eye.

The causes of dirty background are:

- Page coverage: the heavier the page coverage, the more dirty background
- Toner concentration: the higher the TC, the more dirty background
- Moisture: the higher the relative humidity, the more dirty background

Try the following hints for avoiding dirty background:

**Page Coverage for Long Runs:** Limit the average page coverage (see “Correcting for High-Coverage Jobs” on page 249) as follows:

- Maximum coverage per sheet should be less than 60%, with new developer mix.
- Maximum coverage per sheet should be less than 40%, with old developer mix.

**Page Coverage for Runs Requiring Higher Coverage for at Least One Color:** Increase the page length to decrease the overall coverage of the entire sheet. For example, enlarging an A4 sheet with 50% coverage to an A3-size format will reduce coverage to 25%. Be aware that this method will increase paper waste and decrease the number of sheets printed per minute.



**Toner Concentration Setpoints:** Lower the **TC d Setpoint** to decrease dirty background.

Contrast improvement in light areas of images:

Measure the bias patch densities on a control strip and adjust the bias voltages, as necessary (see “Correcting for Bias-Test-Patch Measurements” on page 249).

**LED-array exposure:** Ensure that **LDA %** is within the working range of 40% to 60%.

**Toner conditioning:** Relative humidity in the print tower must stay between 25% and 37%, with the optimal being 32%. Some increase in print density may be obtained by increasing the relative humidity within the prescribed limits.

The temperature in the print tower is not as critical to print quality as humidity. On a humid day the internal temperature of the tower may consistently exceed the temperature setpoint as the tower heaters attempt to maintain the relative humidity. If the tower temperature or humidity are not within the recommended ranges check the tower heater thermostat and the cooling unit.

### Avoiding Bearding

Bearding appears as blown-off toner at the leading edge of the image, as shown in Figure 170.

Increase the **TC Setpoint** to avoid this problem.

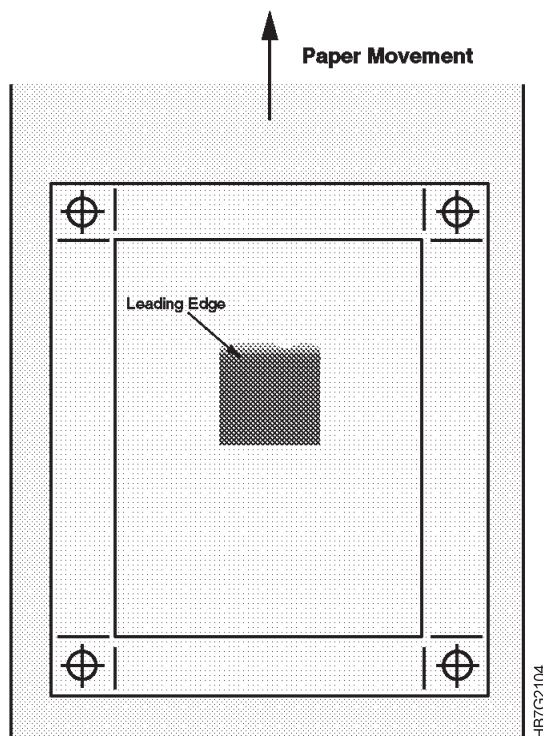


Figure 170. Example of Bearding

## Avoiding Both Dirty Background and Bearding

When both of these conditions occur, the developer may need to be replaced. Monitor developer age in the **Toner Concentration Setpoint** window (Figure 169 on page 250).

**Note:** Only a service representative can change developer.

## Avoiding Cloudiness

Several conditions can cause cloudiness, diffuse light areas, in an image. Try the following hints for avoiding cloudiness:

**Paper conditioning:** A too high or too low moisture content can cause cloudiness due to miniature tented areas or unevenness in the paper web. Check the potentials measured by the charge meters (see “Monitoring Print Medium Conditioning” on page 256).

**Toner concentration:** When the page coverage is high and not enough toner is added, cloudiness can occur. Increase the **TC Setpoint** to add more toner.

**Relative humidity:** Dry air in the print tower can cause cloudiness. Increase the relative humidity within its working range (see “Rules for Adjusting Relative Humidity” on page 248).

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## Chapter 12. Monitoring and Adjusting Processes

While jobs are being RIPed and printed, the operator needs to monitor, and sometimes adjust, different InfoColor 70 processes to ensure optimum print quality and operating conditions. These include:

- Web tension
- Engine state
- Print medium and tower conditioning
- Fusing system
- Counters.

---

### Monitoring and Adjusting Web Tension

Figure 171 is a diagram of the paper path that identifies the key parts in monitoring web tension. The tension of the paper web between the brake system and the torque motor is determined by the weight of the brake and is controlled by the speed motor.

The operator needs to monitor the web tension difference across the speed motor in the event of speed and/or torque problems. This measured value can be observed in the **Web Tension** window. If the web tension is out of range, the operator will need to make adjustments to the torque motor setting in the **Web Tension** window.

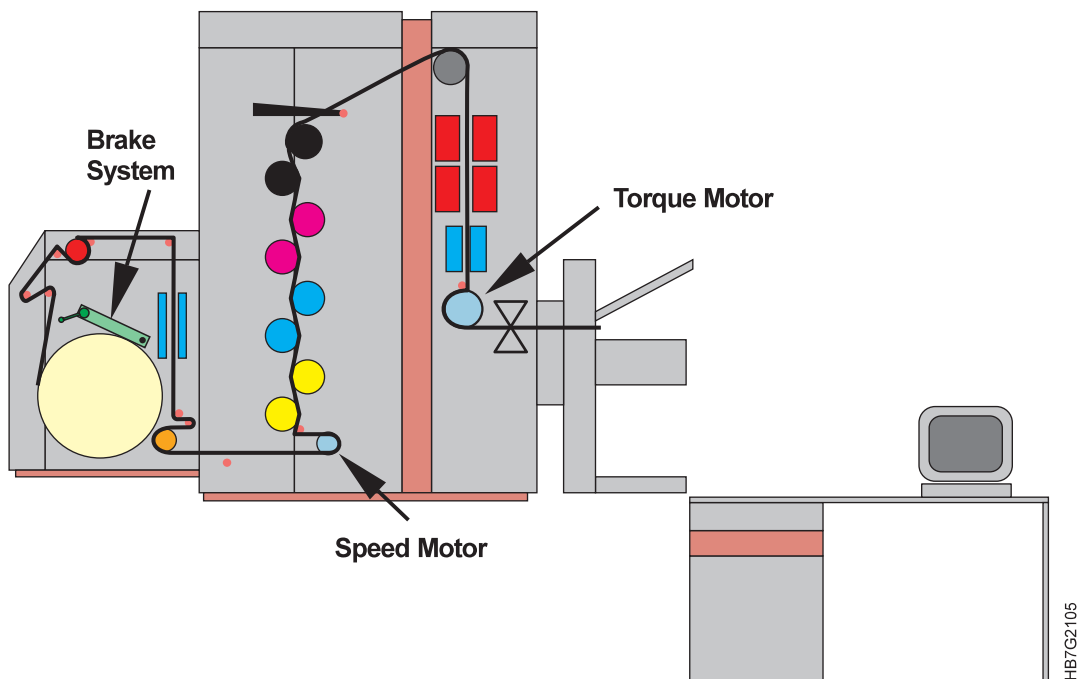


Figure 171. Paper Path Parts Used When Monitoring Web Tension

To adjust web tension, follow these steps:

- 1 Open the **Web Tension** window, as shown in Figure 172.

**Process Control** ⇒ **Web Tension**  
**Ctrl+W**

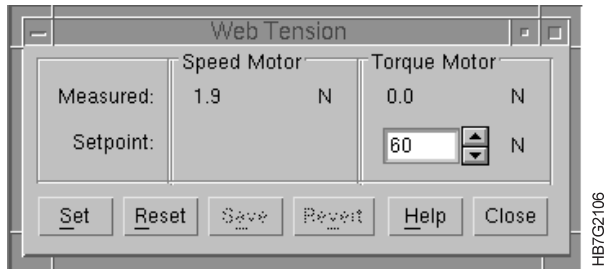


Figure 172. Web Tension Window

- 2 Use the left side of the window to monitor the tension measured by the speed motor.

The range of tension should be +15N maximum to -30N minimum.

The right side of the window shows the torque motor setpoint. When you specify the type of print medium mounted in the print engine, the torque setpoint is adjusted automatically.

During normal use, the natural weight of the brake should be sufficient for all print medium types and torque settings. However, if the tension measured by the speed motor is out of range, you will have to adjust the **Torque Motor** setpoint in the **Web Tension** window.

- 3 After you have checked the tension measured by the speed motor and the value is out of range, do one of the following:
  - a If the value is higher than 15N, increase the **Torque Motor Setpoint** in the **Web Tension** window.
  - b If the value is lower than -30N, decrease **Torque Motor Setpoint**, but ensure that no degradation of registration quality occurs.

Typical steady running should result in slightly negative tension as measured at the speed motor.

---

## Monitoring the Engine

The **Engine State** process control window lets you monitor the overall state of the engine.

Open the **Engine State** window, as shown in Figure 173 on page 255.

**Process Control** ⇒ **Engine State**



**Ctrl+E**

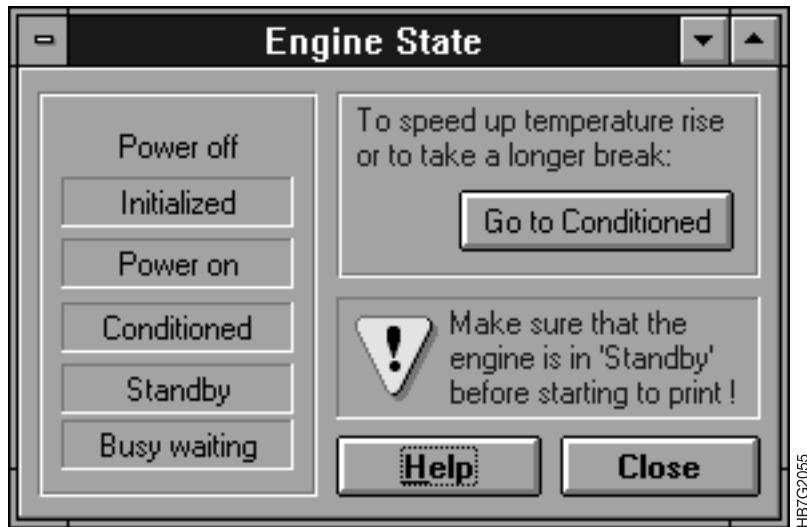


Figure 173. Engine State Window

The left side of the window lists six engine states. When you select a job to print, the bottom engine state changes to reflect what the print engine is doing during the time that you first select a job to print to the completion of the print job. What appears in the right side of the window depends on the current state of the print engine.

## Understanding Print Engine States

The print engine states are described in Table 53.

Power off:	The main power of the print engine is turned off. This is a temporary state.
Initialized:	The eight microcontrollers are initialized.
Power on:	The main power of the print engine is turned on. Power on is a temporary state. After a few seconds, the print engine automatically goes to the Standby state.
Conditioned:	The tower conditioning is turned on and the temperature is maintained at its setpoint. The paper conditioning and fusing systems are turned off. This state saves energy when there are longer breaks that do not require complete shutdown and power up.
Standby:	This is the state the print engine goes to after you have turned on the InfoColor 70 and started the software. During this engine state, the tower's relative humidity is more important.
Busy Waiting:	You have clicked the <b>Print</b> pushbutton, and the job has downloaded to bitmap and is waiting to be printed.
Busy Warming Up:	You have clicked the <b>Ok</b> pushbutton in the <b>Print Sequence</b> window or <b>Auto Print</b> is on. The print engine is waiting for the fuser to warm to its required setpoint temperature, which takes about one minute.
Busy Starting:	The print engine is starting.

<i>Table 53 (Page 2 of 2). Descriptions of Engine States</i>	
Busy Pausing:	The print engine has completely started and is pausing to wait for the operator to click the <b>Ok</b> pushbutton in the <b>Print Sequence</b> window.
Busy Quality:	The print engine is checking for quality criteria.
Busy Printing:	The imaging of the job is taking place.
Busy Stopping:	Either the job has finished printing, or you have clicked the Halt pushbutton in the <b>Print Sequence</b> window to manually stop the job.

Depending on the engine state, the pushbutton at the top right of the **Engine State** window and the messages displayed above this pushbutton will change. The message at the bottom right of the window warns you to always ensure that the engine is in Standby state before you start to print.

## Monitoring Print Medium Conditioning

The paper supply has a paper-conditioning system, as shown in Figure 174 that includes a heated roll, which dries the print medium to a specific moisture content, and two corotrons that spray charges on a measuring drum at the bottom of the print medium supply. Two charge meters located after the transfer corotron measure the potential of the print medium. The potential measured by the first charge meter is called Paper Supply U1, and the potential measured by the second charge meter is called Paper Supply U2.

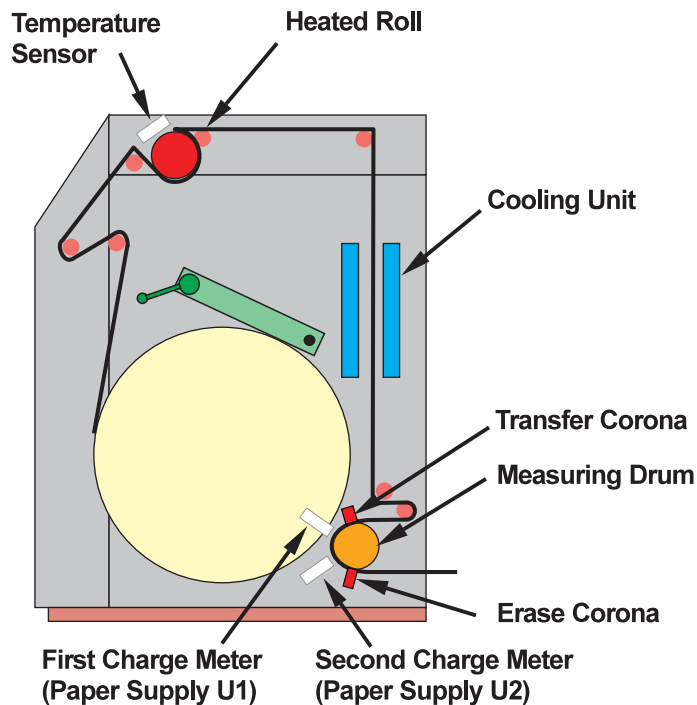


Figure 174. Print Medium Conditioning System

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## Understanding Print Medium Conditioning Parameters

Although the print medium conditioning system is completely automatic, the operator must still monitor a few parameters to know when to start the imaging process. These parameters reside in the **Print Medium and Engine Conditioning** window.

Open the **Print Medium and Engine Conditioning** window as shown in Figure 175.



Process Control ⇒ **Print Medium and Engine Conditioning**



Figure 175. *Print Medium and Engine Conditioning Window*

The parameters for print medium conditioning are shown in the left half of the **Print Medium and Engine Conditioning** window. The right half of the window shows the parameters for the tower and fusing systems, which are discussed later. The print medium conditioning parameters are:

**Paper Supply U1** The measured **Paper Supply U1** is the potential measured by the first charge meter. The setpoint of **Paper Supply U1** must be equal to 500V.

**Paper Supply U2** The measured **Paper Supply U2** is the potential measured by the second charge meter. A **Paper Supply U2** setpoint has been established for each type of IBM tested paper. This setpoint is based on the specific paper humidity that will result

in the best print quality. You may change the U2 setpoint upward for drier paper and downward for more paper moisture. For heavy papers dryness may be limited by the power of the preheating lamp.

- Paper Supply T** The measured **Paper Supply T** is the temperature of the pre-heating roll. This setpoint also depends on the type of paper loaded.
- Corona Current** The current of the transfer corotron. The control unit automatically adjusts this current to obtain **Paper Supply U1** equal to 500 V during printing.
- Heater** The duty cycle of the pre-heating lamp. During printing, the duty cycle automatically adjusts until **Paper Supply U2** is equal to its setpoint.

### Knowing What to Monitor and When

Table 54 shows the parameters you need to monitor during a print run, depending on the actual state of the print medium conditioning. The required setpoints depend on the type of print medium loaded. The paper scripts set the defaults, however the operator can change the setpoints to optimize print quality. The print medium conditioning states are displayed near the bottom of the **Print Medium and Engine Conditioning** window. The current state will be highlighted.

**Note:** If you change to a different paper type between print runs, ensure that you load the correct script file in order that the correct setpoints are used for the heated roll temperature and the paper humidity.

Print Medium Conditioning State	What to Monitor	Setpoint	What Happens Next
Warmup: the pre-heating is on and the engine is in Standby state	Paper Supply T (the temperature of the heated roll)	Default values depend on paper type.	When the measured value is at its required setpoint, you can start the paper web.
Start: Paper Supply U1 and Paper Supply U2 adjust to their required setpoints	Paper Supply U1 (after about 20 seconds) Paper Supply U2 (few minutes later)	500V (always the same) Default values depend on paper types.	When the measured values are at their required setpoints, proceed with printing in the <b>Print Sequence</b> window.
Run: the paper humidity is okay, and the print engine is in Printing state	Paper Supply U2	Adjust U2 setpoint as needed to obtain best print quality	Stop the print engine at the end of the print run. Alarms will notify the operator of loss of paper conditioning during printing.
Stop: the temperature of the heated roll is saved automatically to be used as the temperature setpoint for the next run.			In the next run, the Paper Supply U2 setpoint will be reached in about 20 seconds, rather than a few minutes.
Transient: the machine is between states.			The machine will continue to the next state.



**Attention:** The heated roll remains heated during engine Standby state, so try to not move the paper supply or pull the paper web from the cutter at this time. If you do, and you have not waited for the heated roll to cool, the paper touching the roll could become scorched. Scorched paper can cause web breaks. See “Preventing Paper Scorching” on page 293 for more information.

## Monitoring Tower Conditioning

The relative humidity and the temperature of the air in the print tower also affect print quality. Therefore, the air in the print tower is conditioned automatically day and night by a tower conditioning system.

### Day Conditioning

As shown in Figure 176, air is extracted in each print unit and is fed through two dust filters. At the exit of the dust filters, a sensor measures the temperature and relative humidity of the air. The air then passes through a blower and is fed through an ozone filter and a cooling section. If the air is too humid, condensation occurs, and the condensation collects in a reservoir. The air is then fed back into the print tower. The cooling unit provides the water for the cooling section, and the water circuit is driven by the main pump. The amount of water coming into the cooling section is adjusted by a valve that is controlled electronically.

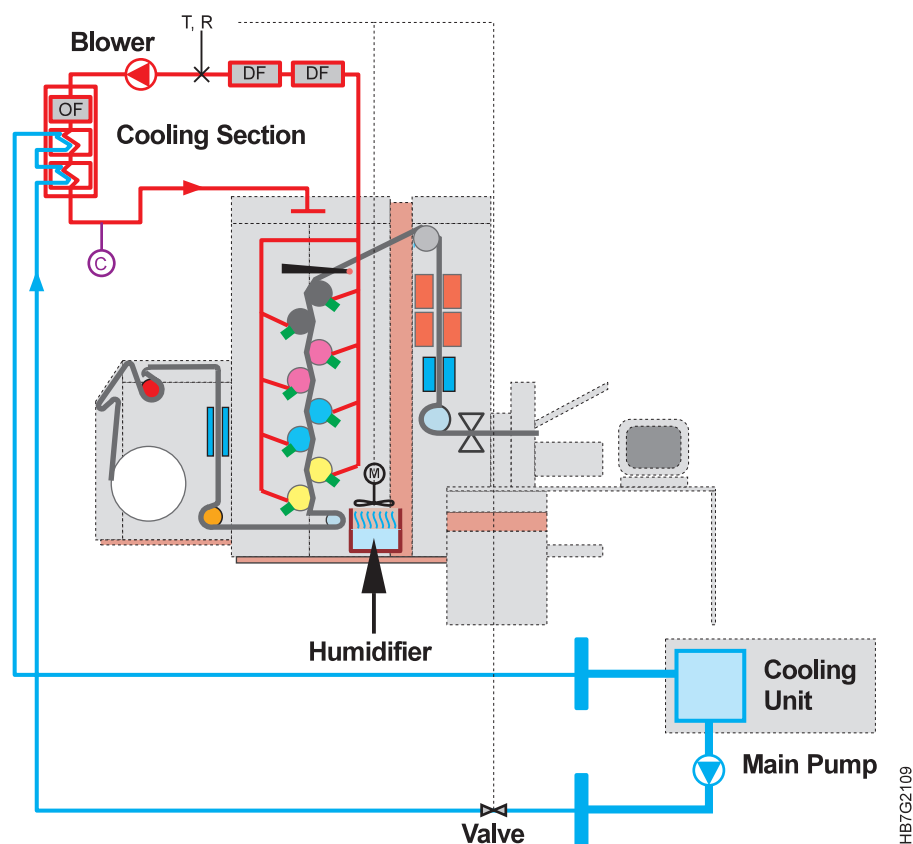


Figure 176. Tower Conditioning System

The temperature and relative humidity of the air are controlled by:

- Adjustment of the duty cycle of the valve. When the valve is closed (0), the air is heated. When the valve is opened (>0), the air is cooled.

- Adjustment of the duty cycle of the humidifier. The humidifier is activated (0) or deactivated (>0).
- The tower heater.

Conditioned state: **temperature** is the most important.

Standby or Printing states: **humidity** is the most important.

Table 55 shows some examples of possible tower conditions and how the duty cycles of the valve and humidifier are adjusted automatically to compensate for the conditions, depending on the engine state.

Example Tower Conditions	Conditioned State (Temperature Is More Important)		Standby or Busy Printing State (Humidity Is More Important)	
	Valve Duty Cycle	Humidifier Duty Cycle	Valve Duty Cycle	Humidifier Duty Cycle
Measured T < Setpoint T Measured RH > Setpoint RH (Humidity is too high)	0 = heating Valve closed	0 = activated	0 = cooling Valve opened	0 = activated
Measured T < Setpoint T Measured RH > Setpoint RH	0 = heating Valve closed	> 0 = deactivated	> 0 = cooling Valve opened	> 0 = deactivated
Measured T > Setpoint T Measured RH > Setpoint RH (Humidity is too high)	> 0 = cooling Valve opened	> 0 = deactivated	> 0 = cooling Valve opened	> 0 = deactivated
Measured T > Setpoint T Measured RH < Setpoint RH	> 0 = cooling Valve opened	0 = activated	0 = cooling Valve opened	0 = activated

**Note:** T = temperature, and RH = relative humidity

## Night Heating

When you turn off the InfoColor 70, the tower temperature control night heating is activated automatically. Relative humidity is not controlled at night. When the temperature becomes too low, a blower turns on and the cooling water circuit turns off so the air will heat. When the temperature rises again to about 30° C in summer and 26° C in winter, the blower turns off.

The advantage of night heating is that when you turn on the InfoColor 70 in the morning, you will not have to wait until the tower temperature has reached its setpoint. Night heating also prevents condensation in the print tower.

When you start the InfoColor 70 after it has been turned off all night, the night heating is automatically deactivated.

## Understanding Tower Conditioning Parameters

During printing too high or too low tower humidity will result in unsatisfactory print quality due to poor toner transfer to the paper. Although the tower conditioning system is automatic, the operator must still monitor some parameters. These parameters reside in the **Print Medium and Engine Conditioning** window, as shown in Figure 177. Open this window using the instructions under “Understanding Print Medium Conditioning Parameters” on page 257.



Figure 177. Print Medium and Engine Conditioning Window

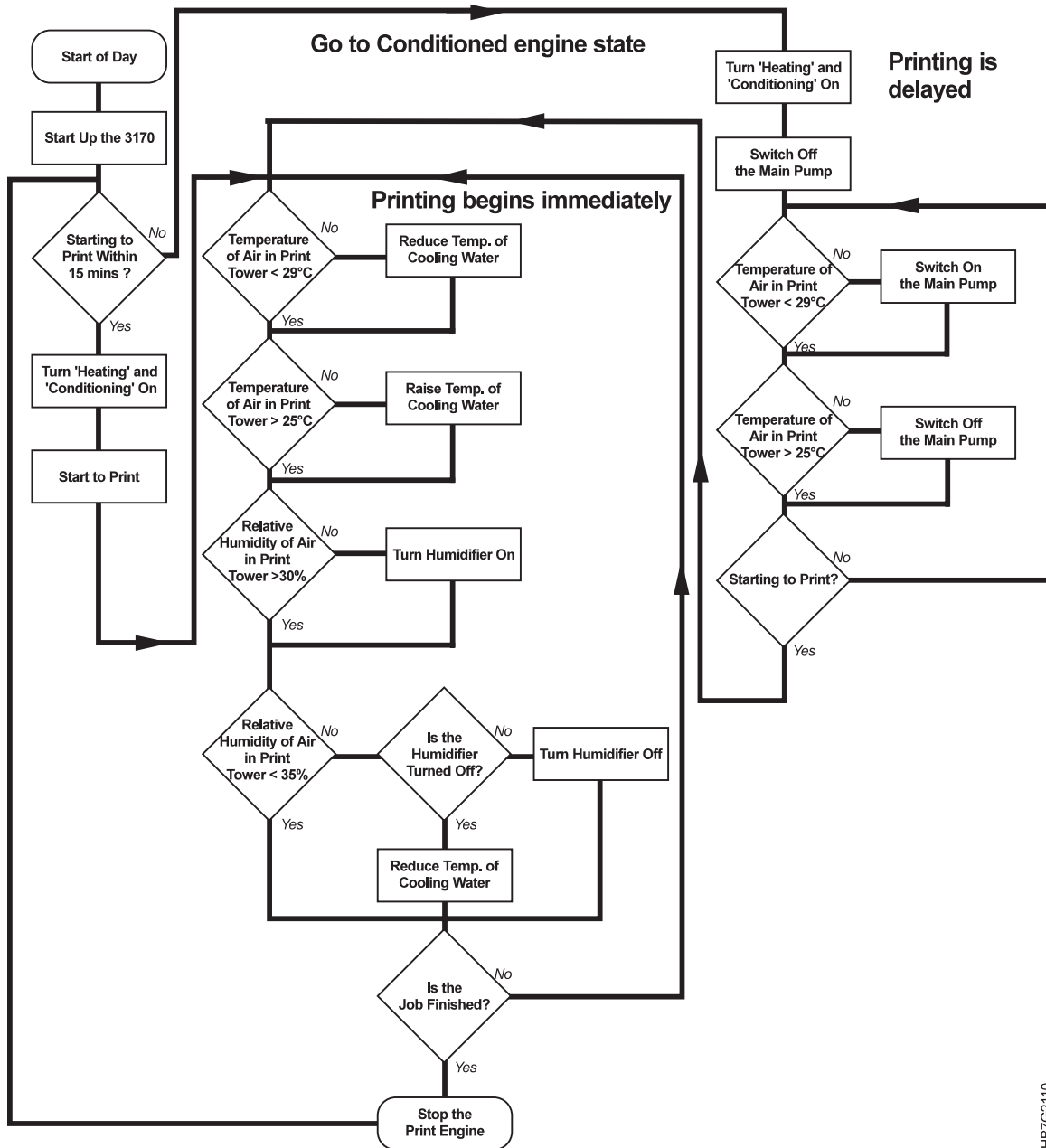
The tower conditioning parameters are:

- Tower T Measured** The actual temperature in the print tower.
- Tower T Setpoint** The value to which the temperature has to be adjusted. The recommended setpoint for tower temperature is 30°C.
- Tower RH Measured** The actual relative humidity of the print tower.
- Tower RH Setpoint** The target value to which the relative humidity will be controlled. The default setpoint for relative humidity is 32%. You can adjust the relative humidity setpoint to improve toner transfer (see “Controlling Density” on page 241).

<b>Valve</b>	The duty cycle of the valve of the cooling water of the print tower. This value depends on engine state and the measured and setpoint temperature and relative humidity.
<b>Humidifier</b>	The duty cycle of the humidifier. This value depends on engine state and the measured and setpoint temperature and relative humidity.  <b>Attention:</b> You should check the water level of the humidifier every morning, since no alarm is generated when the water is low. Ensure that the filters are wet, top to bottom. If you need to refill the humidifier, see “Refilling the Humidifier” on page 324. You should also check the humidifier pads regularly and replace them when calcification appears. If you need to replace the humidifier pads call your service representative.
<b>Control</b>	Although you can manually control tower conditioning, we recommend that you keep the control on Automatic.
<b>Heating</b>	When Heating is highlighted, the temperature is below its setpoint, so the air in the print tower is being heated.
<b>Cooling</b>	When Cooling is highlighted, either the temperature is higher than its setpoint and/or the relative humidity is higher than its setpoint.
<b>Humidifying</b>	When Humidifying is highlighted, the relative humidity is below its setpoint.

## Summarizing Tower Conditioning Flow

Figure 178 on page 263 shows the flow of the tower conditioning process during the day. The start of the day begins at the left side of the diagram. If you begin to print right away, the tower conditioning process flow is shown in the middle of the diagram. If you are not going to print right away, the flow is shown on the right side of the diagram.



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Figure 178. Tower Conditioning Process Flow

## Monitoring the Fusing System

The fusing control system controls the temperature of the fuser element and the temperature of the print medium coming out of the fuser. As shown in Table 56, the fusing control system performs specific functions during various states of the print engine. See “Understanding Print Engine States” on page 255 for the descriptions of engine states.

Print Engine State	What the Fusing Control System Does
Standby	The temperature of the fuser elements is maintained at an appropriate setpoint for this state.
Warming Up	The fuser element temperature will warm up until the temperature has reached its printing setpoint.
Printing	During printing, the fuser element temperature is adjusted to maintain a constant print medium temperature.

The operator can monitor the fusing control system in the **Print Medium and Engine Conditioning** window, as shown in Figure 179.



Figure 179. Print medium and Engine Conditioning Window

## Understanding the Fusing System Parameters

The fusing system parameters are grouped into paper temperature control and fuser element temperature control.

### Paper Temperature Control

Fuser Medium Measured	The actual temperature of the paper coming out of the fuser.
Fuser Medium Setpoint	The value to which the temperature must be adjusted. For all IBM tested paper grades, this value is 140° C. The operator can adjust this setpoint, which is limited to a minimum value of 100° C and a maximum value of 150° C.

### Fuser Element Temperature Control

Fuser Element Measured	The actual temperature of the fuser elements.
Fuser Element Setpoint	The value to which the temperature of the fuser elements is adjusted automatically in Standby state.

---

## Monitoring Counters

The InfoColor 70 is installed with counters that are used to record information about the machine through its lifetime. There are two type of counters, non-resettable general counters and resettable maintenance counters for preventive maintenance. All counter values are saved in readable format on the PES, however to prevent an operator or a service representative from changing the values, intentionally or by accident, the protected counter values are also stored in a hardware device called a counter dongle. The protected counter values are retrieved from the counter dongle when the PES is started, updated once per hour, and stored again at the end of each print session.

The PES maintains a write counter in the counter dongle's memory which indicates the number of writes performed to a specific block. As soon as the write counter of the last available alternate block reaches 9500, it will issue a warning each time the counters are updated. This allows the operator to order a new counter dongle before it reaches the end of life. If the counter dongle is not replaced within a certain period of time, 500 writes or 500 hours, the PES will issue an error message and will not allow the operator to print any more jobs.

## Understanding the Explore Counters

You can look at the counters in the **Counters** window, shown in Figure 180 on page 266, which contains **Factory** and **Custom** folders. The **Factory** folder contains the non-resettable general counters and the resettable counters for preventive maintenance. The function using the **Custom** folder is not available at this time.

Explore ⇒ Counters



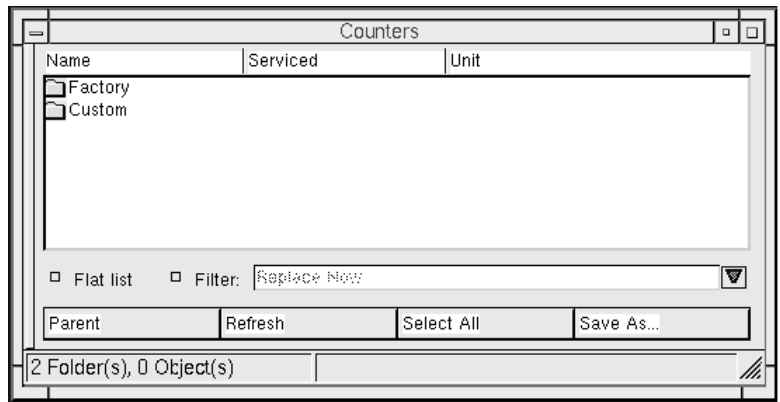


Figure 180. Counters Window

To create a list of parts that require replacement in the right side of the **Counters** window, select the **Filter** checkbox and **Replace Now** in the **Filter** drop-down list. Then select the **Flat list** checkbox to display all of the files.

### Non-Resettable General Counters

The non-resettable general counters are usage parts, machine usage, service, and replacement parts counters.

The usage parts counters are for recording information about the amount of consumables that the printing engine consumes.

- 1 To look at the usage parts counters, open the **Counters** window, as shown in Figure 181.
- 2 Click on **Factory** in the tree view or left side of **Counters** window.
- 3 Click again on **Usage parts counters** and you will see the counters in the list view or right side of the **Usage parts counters** window, as shown in Figure 181. The counters are described in Table 57 on page 267.

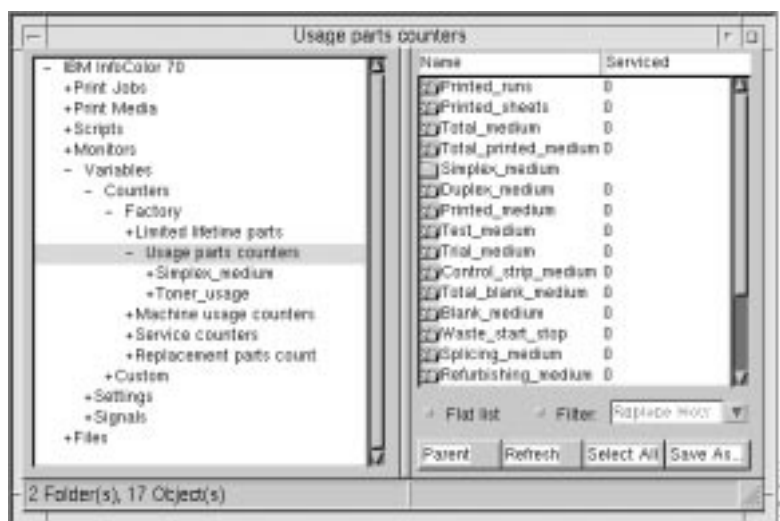


Figure 181. Usage Parts Counters Window



Counter	Description	Unit of Measure
Printed_sheets	Total number of printed sheets irrespective of their size (manual as well as automatic print sequence, including trail printing and test sheets, excluding blank sheets)	Sheets, cut
Printed_medium (protected counter)	Amount of printed medium run through (manual as well as automatic print sequence, including trial printing and test sheets, excluding waste at startup and shutdown, or blank sheets). Is the sum of sheetlength (not signaturelength) of each sheet printed.	A4 sheets (10 cm)
Total_medium (protected counter)	Total amount of medium (manual as well as automatic print sequence, blank or not) run through.	A4 sheets (10 cm)
Waste_start_stop	Amount of medium wasted at startup and shutdown of the web (manual as well as automatic print sequence).	A4 sheets (10 cm)
Controlstrip_medium	Amount of medium used for control strip printing with collation (separate sheet for control strip).	A4 sheets (10 cm)
Trial_medium	Amount of medium used for trial printing (manual as well as automatic print sequence).	A4 sheets (10 cm)
Test_medium	Amount of medium used for test sheets (manual as well as automatic print sequence).	A4 sheets (10 cm)
Blank_medium	Amount of medium used for blank sheets (manual as well as automatic print sequence, including VDF, LED intensity change and job switching, excluding startup, shutdown, splicing, and refurbishing).	A4 sheets (10 cm)
Splicing_medium	Amount of medium used for splicing.	A4 sheets (10 cm)
Refurbishing_medium	Amount of medium used for refurbishing.	A4 sheets (10 cm)
Manual_printed medium	Amount of printed medium run through (manual print sequence only, including trial prints and test sheets, excluding waste at start and shutdown and blank sheets).	A4 sheets (10 cm)
Manual_total_medium	Total amount of paper run through while manually controlling the web movement.	A4 sheets (10 cm)
Simplex_medium.s	Amount of medium run through for printing simplex jobs on each side (manual as well as automatic operation, including test sheets, and trial printing, excluding waste at startup and shutdown and blank sheets).	A4 sheets (10 cm)
Duplex_medium	Amount of medium run through for printing duplex jobs (manual as well as automatic operation, including test sheets, and trial printing, excluding waste at startup and shutdown and blank sheets).	A4 sheets
Toner_usage.c (protected counter)	Total toner consumption per color (computed from actual flow).	Kg
Printed_runs	Total number of runs printed.	run

You can also monitor the number of printed sheets and wasted sheets from the **Counters** window, as follows:

- 1 Open the **Counters** window, as shown in Figure 182 on page 268.

Maintenance ⇒ Counters  **Ctrl+C**



Figure 182. Counters Window

- 2 Scroll the **Unit** box to select the unit in which to measure the amount used: A4, cm, mm, and km.

Four values are displayed in this window:

Printed	The total amount of printed paper in designated units
Wasted	The total amount of wasted (nonprinted) paper in designated units
Total	The total amount of used (printed and nonprinted) paper in designated units
Printed	The total amount of used sheets. This number corresponds with the total number of cuts of printed sheets.

**Note:** Do not use these values to determine the age of the developer. The age of the developer is displayed in the **Toner Concentration Setpoint** window (Figure 169 on page 250).

Machine usage counters are for monitoring the amount of time that certain parts of the printing engine are active. These counters are used primarily by your service representative.

- 1 To look at the usage parts counters, open the **Counters** window, as shown in Figure 181 on page 266.
- 2 Click on **Factory** in the tree view or left side of **Counters** window.
- 3 Click again on **Machine usage** counters and you will see the counters in the list view or right side of the **Machine usage counters** window, as shown in Figure 183 on page 269. The counters are described in Table 58 on page 269.

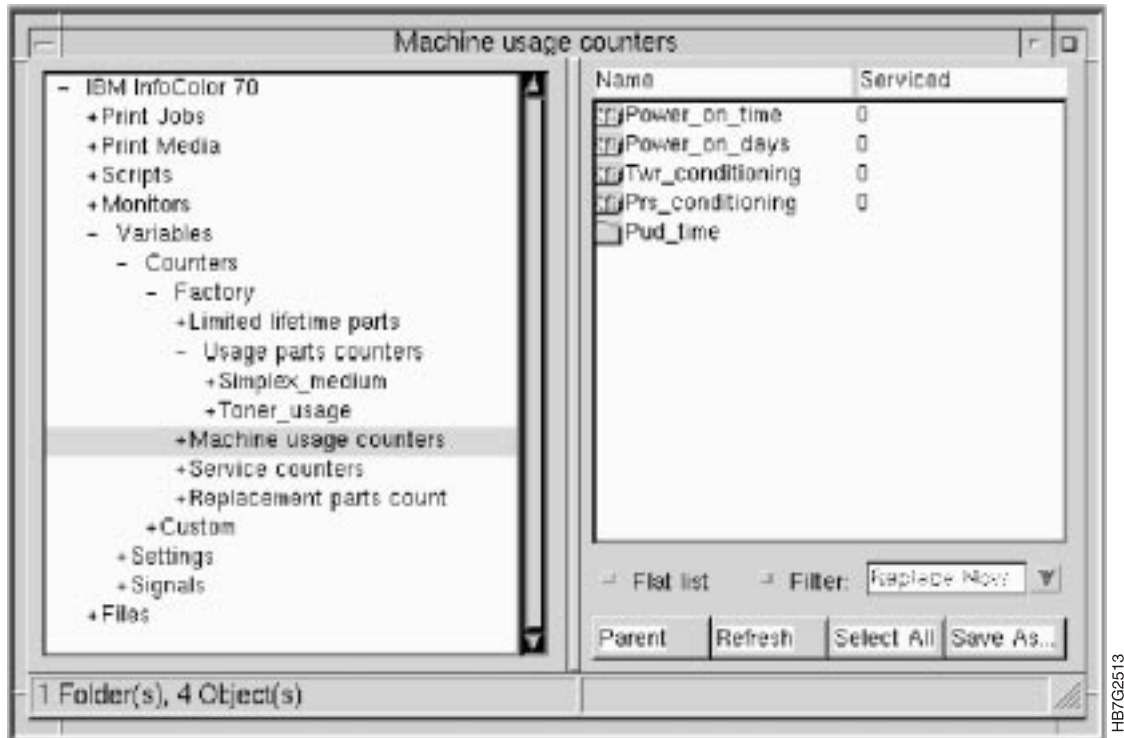


Figure 183. Machine Usage Counters Window

Table 58. Description of Machine Usage Counters

Counter	Description	Unit of measure
Power_on_time	Total print engine power-on time.	Hours, 10 seconds
Power_on_days	Number of days (partial or full) that print engine was powered-on.	Day
TWR_conditioning	Total time print engine conditioning has been active.	Hours, 10 seconds
PRS_conditioning	Total time paper engine conditioning has been active.	Hours, 10 seconds
PUD_time.sc	Total time developing units and cleaning units have been active (PUDon). Not reset when drum, CLN or DVL are serviced or replaced.	A4 sheets hours
Medium_roll_change	Number of print medium roll changes.	Medium roll changes

Service counters are for recording information about the parts that need to be serviced on a regular basis. These counters are used primarily by your service representative.

- 1 To look at the usage parts counters, open the **Counters** window, as shown in Figure 181 on page 266.
- 2 Click on **Factory** in the tree view or left side of **Counters** window.
- 3 Click again on **Service** counters and you will see the counters in the list view or right side of the **Service counters** window, as shown in Figure 184 on page 270. The counters are described in Table 59 on page 270.

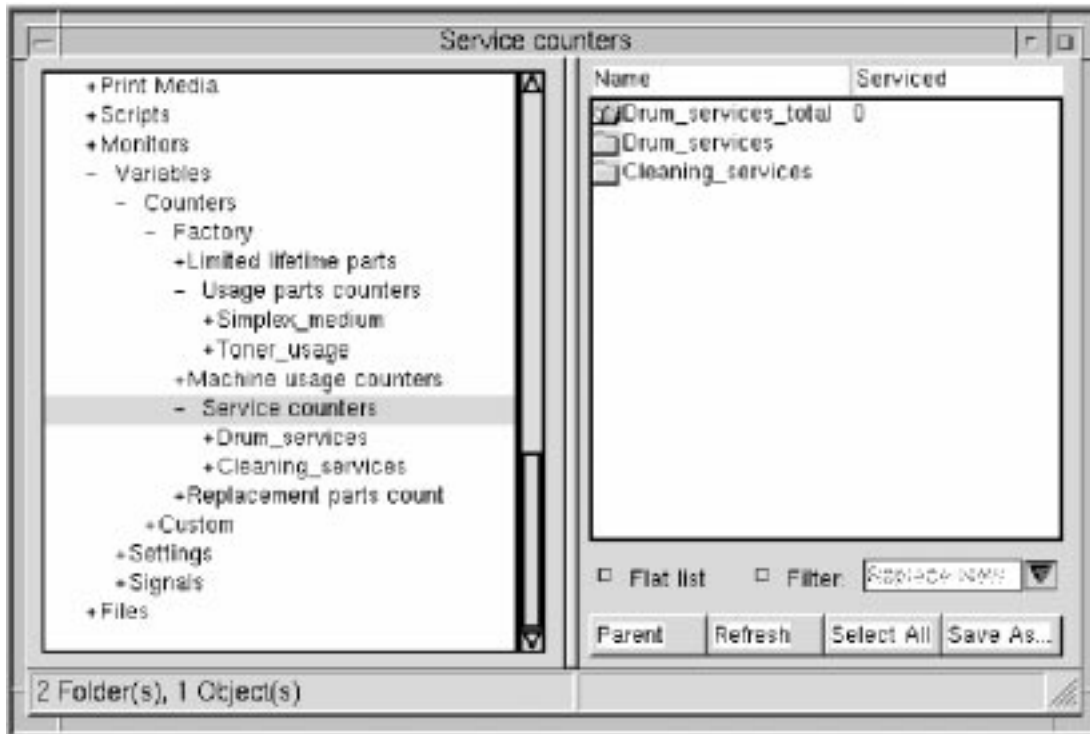


Figure 184. Service Counters Window

Table 59. Description of Service Counters	
Counter	Description
Total_Drum_service	Number of times drum refurbishing has been performed on any drum.
Drum_services.sc	Number of times drum refurbishing has been performed on each drum.
Cleaning_services	Amount of cleaning unit service interventions for each print unit. Incremented when cleaning unit services are reported by the service representative.

Replacement parts counters are for recording information about those parts that need to be replaced on a regular basis. These counters are used primarily by your service representative.

- 1 To look at the usage parts counters, open the **Counters** window, as shown in Figure 181 on page 266.
- 2 Click on **Factory** in the tree view or left side of **Counters** window.
- 3 Click again on **Replacement parts counters** counters and you will see the counters in the list view or right side of the **Replacement parts counters** window, as shown in Figure 185 on page 271. The counters are described in Table 60 on page 271.

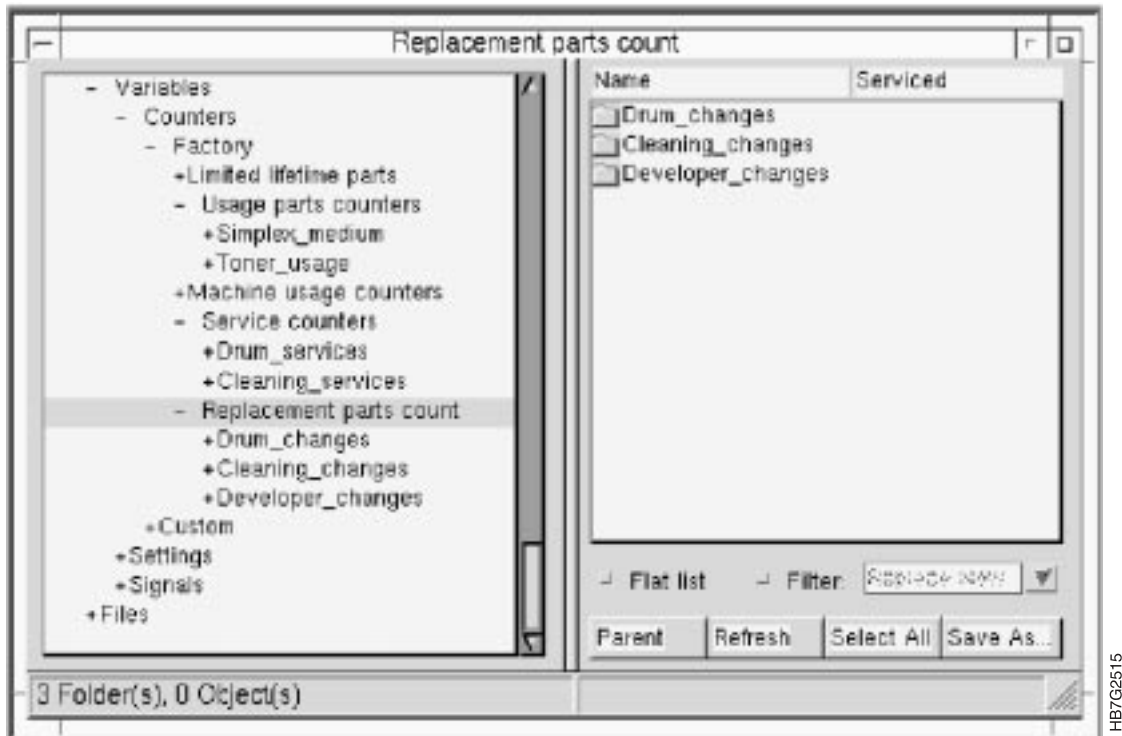


Figure 185. Replacement Parts Counters Window

Counter	Description	Unit
Counter	Description	Unit
Drum_changes.sc	Amount of print unit drums used for each print unit. Incremented when drum change is reported by the service representative.	Drum
Cleaning_changes.sc	Number of cleaning unit changes.	Cleaning unit charges
Developer_changes.sc	Amount of developer changes per print unit. Incremented when developer change is reported by the service representative.	Developer changes



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## Paper Rolls and Inserter Management

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## Chapter 13. Managing Paper Rolls and the Inserter

This chapter explains how to change paper and reload the inserter. If you have a paper jam or a paper break, see Chapter 17, “Finding and Solving Problems” on page 343.

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### Changing the Paper

When a paper roll runs out of paper, an **Almost out of Print Medium** alarm is displayed in the **Active Alarms** window, and the print engine will stop automatically. Once the print engine stops, you can mount a new paper roll.

You might also change paper rolls if you want to use a different grade of paper.

**Note:** Changing a paper roll before the current roll is empty wastes paper and results in non-productive time. Therefore, group the printing of jobs based on the type of paper needed as much as possible.

If you do remove an unfinished roll, place the roll back into the plastic bag in which it was shipped to protect against damage and to save it for future use.

**Attention:** Paper rolls should be free of dents, tears, holes, and foreign matter. The edges of the paper should be flush with the core, and the paper roll should not slide in an axial direction over the core. Store paper in the same environment as the InfoColor 70 and acclimate the paper to its environment for three days before using.

*Always* handle new paper rolls carefully. If you damage the edges of the web, the correct functioning of the print engine may be disrupted.

- Always remove outer layers of the roll that are damaged.
- Always place a roll flat on the floor and never on edge.
- Use only IBM tested papers (see “Specifying the Correct Paper Type” on page 291).

### Starting the Roll-Change Procedure

- 1 Open the **Mount Print Medium** window, as shown in Figure 186 on page 276, by doing one of the following:
  - If you are changing the paper roll because an alarm occurred, click the **Assist** pushbutton in the **Active Alarms** window to open the **Mount Print Medium** window.
  - If an alarm did not occur, first ensure that you have stopped the print engine (see “Interrupting the Printing Process” on page 215.) and then open the **Mount Print Medium**, as shown in Figure 186 on page 276.

Operations ⇒ Mount Print Medium



Ctrl+M

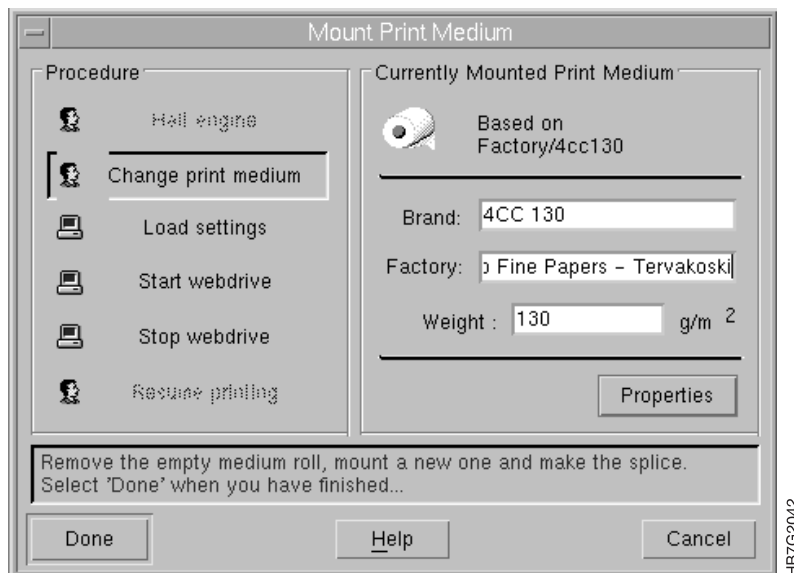


Figure 186. Mount Print Medium Window

A brief description of the steps you will take appear at the bottom of the **Mount Print Medium** window.

## Removing the Existing Paper Roll

Follow these steps to remove the paper roll:

- 1 Pull up on the paper clamp lever, as shown in Figure 187, to lock the paper web.



Figure 187. Preparing to Cut the Paper

- 2 Pull down on the splicing table, as shown in Figure 187.
- 3 Cut across the width of the paper along the cutting edge with a sharp knife, as shown in Figure 188.

**Note:** Using a sharp knife is important to ensure a clean cut.

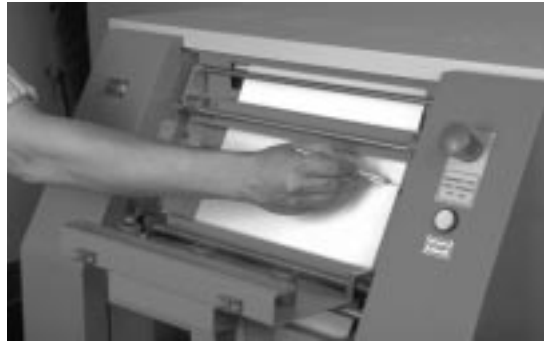


Figure 188. Cutting the Paper

- 4 Release the brake by lifting up the brake lever located near the bottom of the paper supply, as shown in Figure 189.



Figure 189. Releasing the Brake

- 5 Attach the loose end of the paper to the roll, using a small piece of tape, as shown in Figure 190.

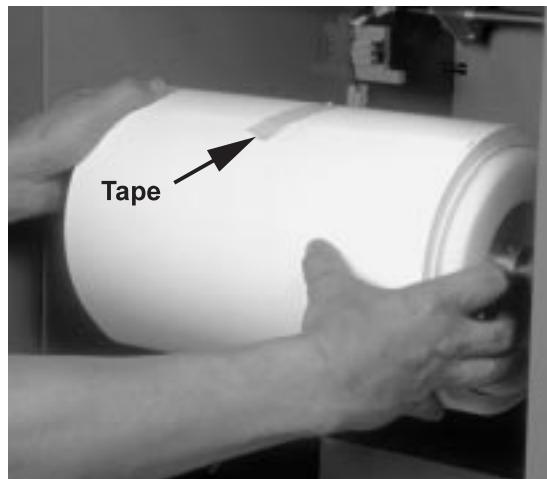


Figure 190. Taping and Removing the Paper Roll

**⚠ CAUTION:**

<30> **Keep hands and feet from beneath the paper roll. The roll can tilt and fall.**

- 6 With your hands placed at both sides of the roll, as shown in Figure 190, gently pull the roll out of its bearings and up to the notches at the front of the side guides.
- 7 Bring the hand truck over to the paper supply and place the claws of the hand truck under both ends of the paper roll axle.
- 8 Lift the paper roll and move it out of the paper supply, as shown in Figure 191.



Figure 191. Hand Truck with Paper Roll

- 9 Proceed with removing the paper roll axle.

### Removing the Paper Roll Axle

The paper roll axle, as shown in the diagram in Figure 192 on page 279, supports paper rolls of six different widths and two different core diameters. The six widths are listed below. The widths are numbered to correspond to the numbered screw positions on the diagram in Figure 192 on page 279. The flange positions can be changed by placing the screws in different holes.

- 1 320 mm
- 2 297 mm
- 3 276 mm
- 4 254 mm
- 5 232 mm
- 6 210 mm

The two different core diameters are:

- 150 mm
- 152.4 mm or 6 inches

Each flange has a side that matches one of the two diameters. The flanges are mounted with the selected core diameter on the inside. The core diameter can be changed by reversing the direction in which the flange is mounted.

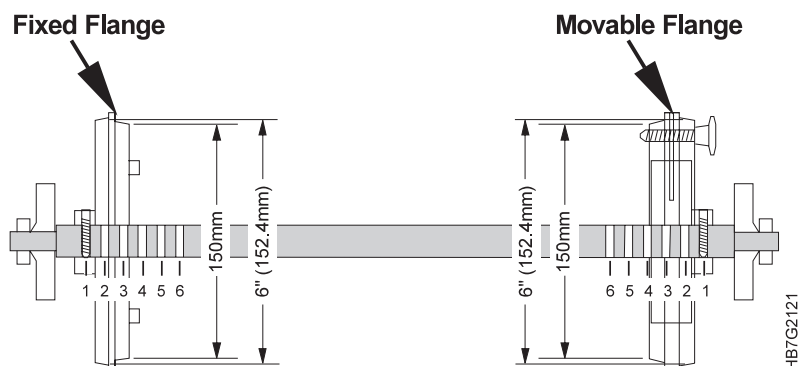


Figure 192. Paper Roll Axle

Follow these steps to remove the paper roll axle:

- 1 Loosen the black screw on the movable (plastic) flange, as shown in Figure 193. Turn the flange counterclockwise until it is loose enough to remove.

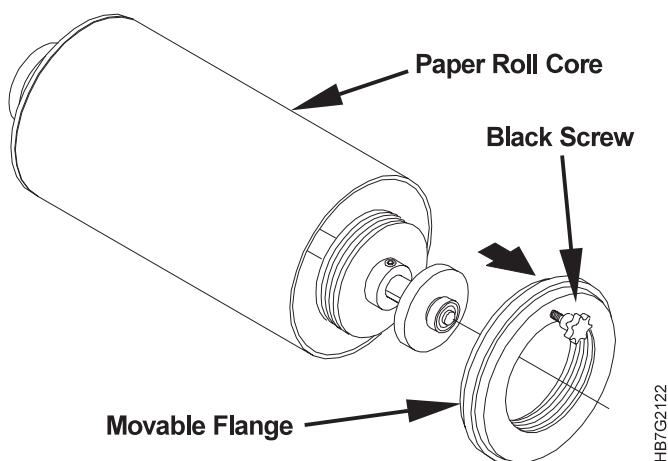


Figure 193. Removing Flange from Paper Roll Axle

- 2 After you have removed the plastic flange, remove the axle from the core of the roll, as shown in Figure 194 on page 280.

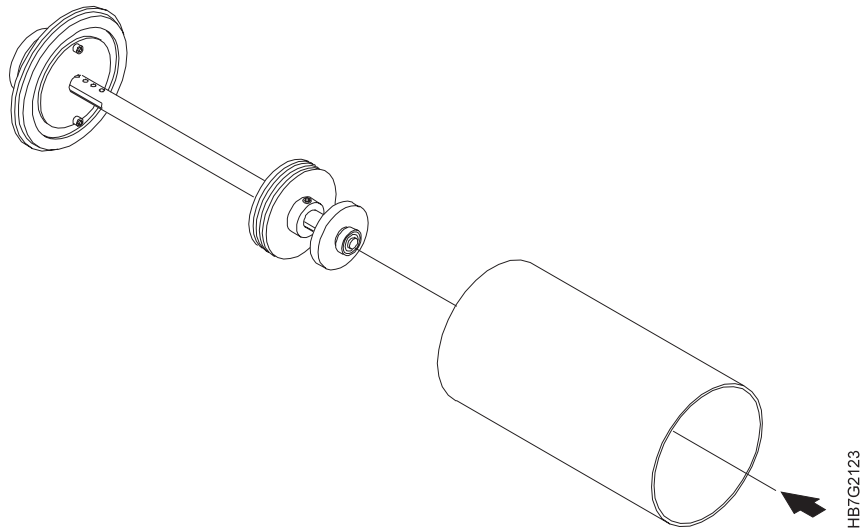


Figure 194. Removing Axle from Paper Roll Core

- 3 Proceed with placing an axle in the new paper roll.

## Placing an Axle in a New Paper Roll

By using multiple axles, you can mount an axle in a new paper roll before you need it, which will reduce the time it takes to change paper rolls.

To place an axle, as shown in Figure 195, in a new paper roll, do the following:

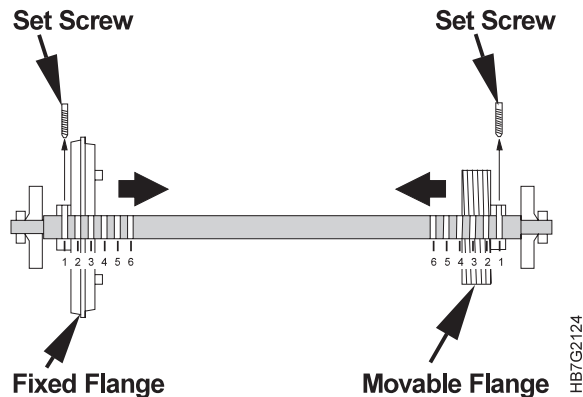


Figure 195. Paper Roll Axle

- 1 Note the width of the paper roll to be mounted. If the width is the same, proceed to Step 4 on page 281.

### Adjusting an Axle for Paper Roll Width:

If the width is different from the width of the roll used previously on this axle, remove the set screw that attaches each flange to the axle, as shown in Figure 195.

- 2 Place the flanges at the proper position according to the width of the new roll (see "Removing the Paper Roll Axle").
- 3 Remount the set screws, as shown in Figure 195.

The paper roll axle supports two different core diameters. If the paper roll you are mounting has a different core diameter than the previous roll mounted on this axle, follow these steps:

- 4 Note the core diameter of the paper roll to be mounted.

**Changing the Core Diameter of the Axle:**

- 5 If the new core diameter is the same as the old roll, proceed to Step 7. If the diameter is different from the diameter of the roll used previously on this axle, remove the two head screws that attach the fixed flange to its base, remove the fixed flange from the axle, turn the flange around and mount it again with the side with the other core diameter facing the middle of the axle. Replace and tighten the screws, as shown in Figure 196.

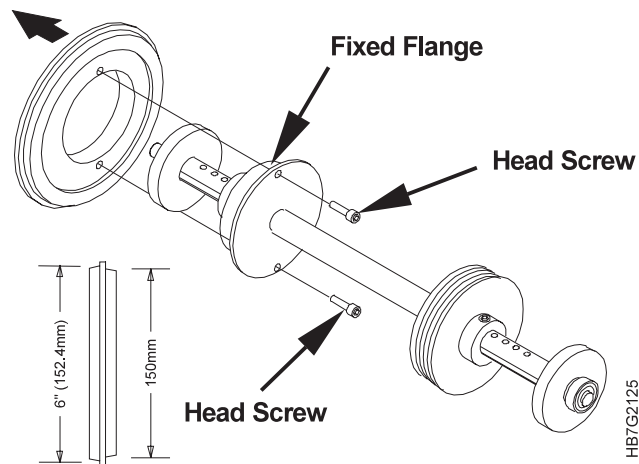


Figure 196. Removing the Fixed Flange

- 6 Replace and then tighten the two head screws.
- 7 As you face the roll at the unwinding side, insert the axle from left to right through the core of the roll, as shown in Figure 197 on page 282.

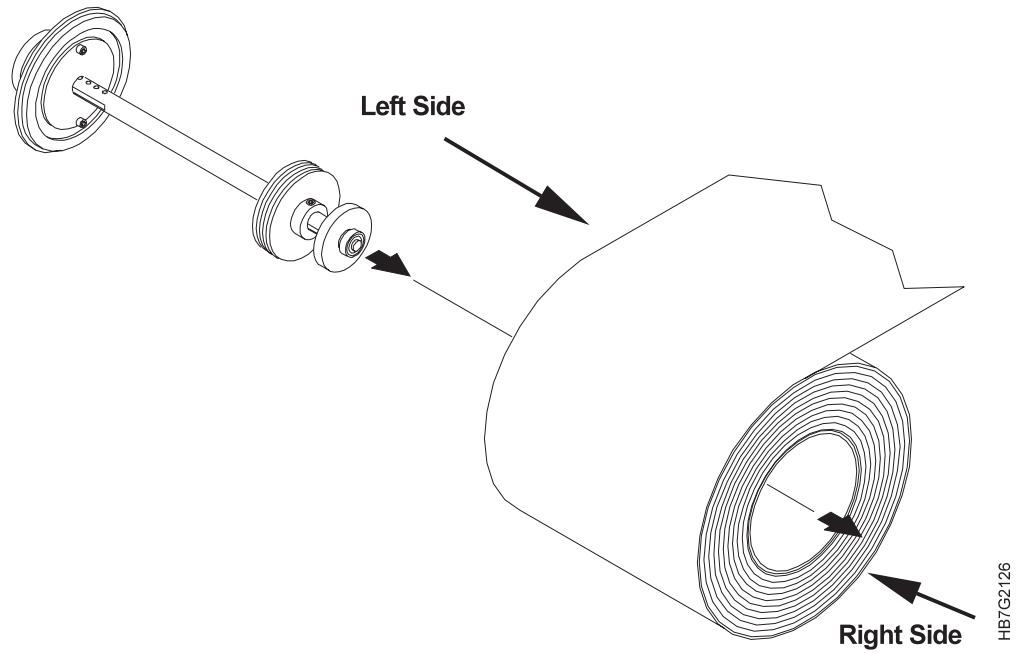


Figure 197. Inserting the Paper Roll Axle

- 8 Mount the movable plastic flange with the side matching the core diameter of the roll facing the roll, as shown in Figure 198.

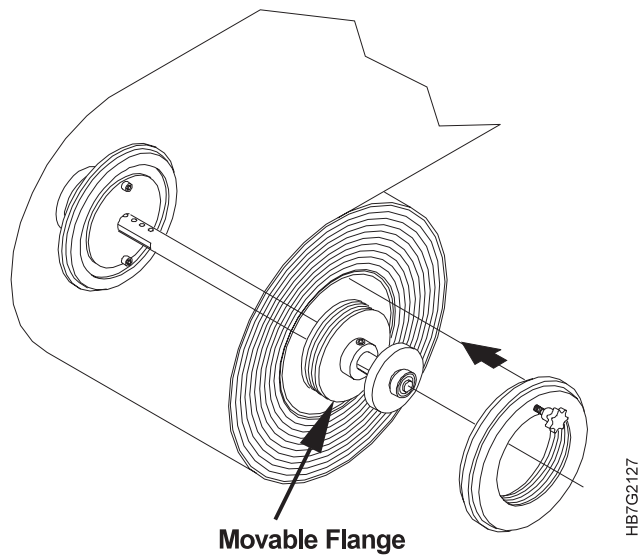
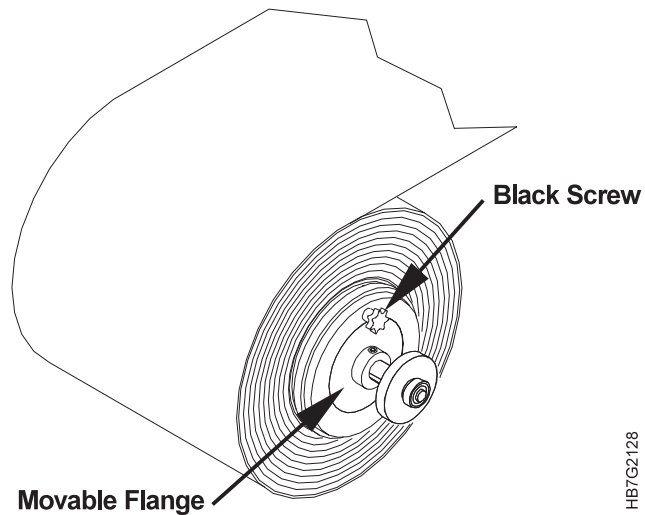


Figure 198. Mounting the Movable Flange

- 9 Tighten the black screw to secure the movable plastic flange, as shown in Figure 199 on page 283.





HB7G2128

Figure 199. Black Screw on Movable Flange

**10** Proceed with placing the new roll in the paper supply.

## Placing the New Roll in the Paper Supply

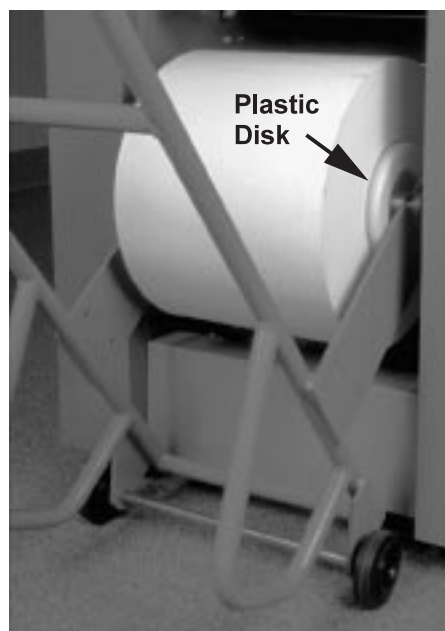
To place the new roll in the paper supply, follow these steps:

### CAUTION:

<33> The paper roll can weigh up to 40 kg (88 lbs) and requires two or more persons to lift.

\*  
\*

- 1 Place the paper roll on the hand truck, as shown in Figure 200, ensuring that the plastic disk with the black screw, is on your right.



HB7G2129

Figure 200. Paper Roll on the Hand Truck

- 2 Push the roll into the front of the paper supply, ensuring that the ends of the axle rest precisely in the notches at the front of the side guides.
- 3 Remove the hand truck.

**⚠ CAUTION:**

**<30> Keep hands and feet from beneath the paper roll. The roll can tilt and fall.**

- 4 Gently push the roll onto the paper roll mount, as shown in Figure 201, until it fits in the bearings. Ensure that you push the roll equally at both sides so the roll does not tilt.



Figure 201. Pushing Paper Roll into Place

- 5 Pull the leading edge of the roll toward you and remove the layers that are damaged.
- 6 Activate the brake by lifting the brake lever, as shown in Figure 202, to release the latch.



Figure 202. Lifting the Paper Supply Brake Lever

- 7 Lower the brake lever.
- 8 Pull the end of the paper roll over axle 1 and under axle 2 in an upward direction and insert the paper through the gap under the splicing table, as shown in Figure 203 on page 285 and Figure 204 on page 285.

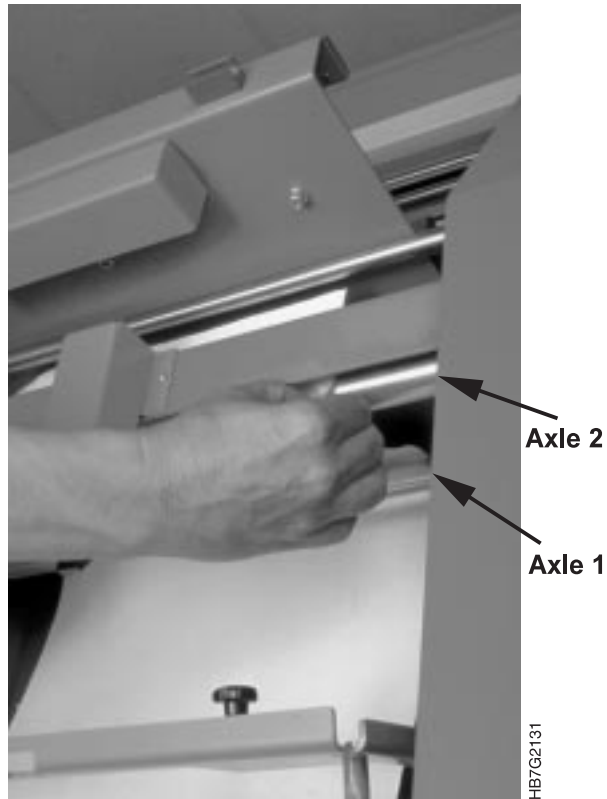


Figure 203. Threading the Paper Roll Supply

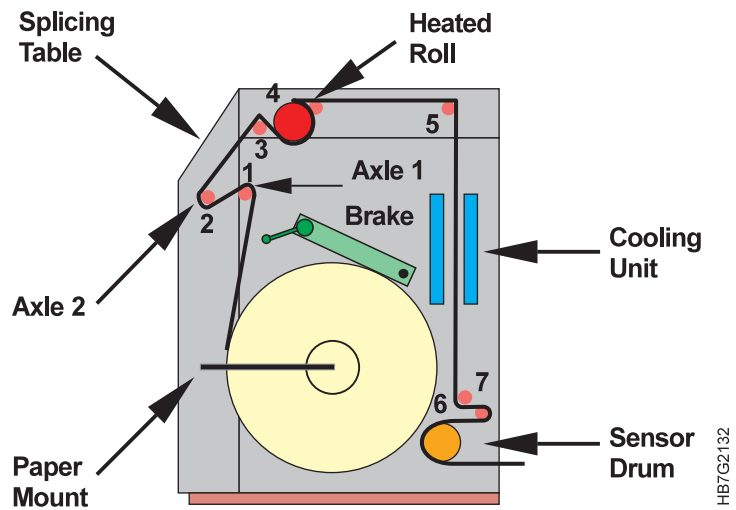


Figure 204. Paper Path in the PRS

**9** Proceed with splicing the paper.

## Splicing the Paper

Once you have placed the new paper roll in the paper supply, you need to splice the leading edge of the new paper roll to the trailing edge of the old paper roll.

### **WARNING:**

**A good splice is very important. A bad splice may cause serious damage to the print units.**

To splice the paper, follow these steps:

- 1 Attach the leading edge of the new roll to the splicing table by closing the clamping plate, as shown in Figure 205.



Figure 205. Closing the Clamping Plate

- 2 Align the paper, using either step 2a or step 2b.
  - a If the width of the new roll is the same as the paper on the web, as shown in Figure 206, align the left edge of the new paper with the left edge of the paper on the web.

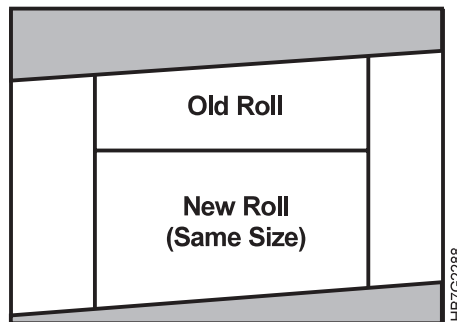


Figure 206. Width of New Paper Roll is Same as Old Paper Roll

- b If the width of the new roll is smaller or larger than the paper on the web, as shown in Figure 207, align the middle of the new paper with the middle of the paper on the web.

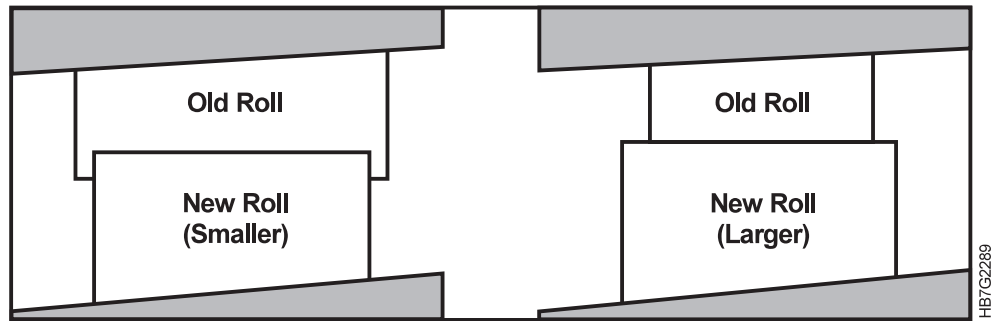


Figure 207. Width of New Paper Roll is Smaller or Larger than Old Paper Roll

**Warning:** If your length of splicing tape is longer than the width of the paper roll, trim the tape to the width of the paper to ensure that no adhesive from the splicing tape remains on the splicing table. This adhesive can damage the drums when the splice is pulled through the print engine.

- 3 Attach a length of splicing tape to the leading edge of the new roll, as shown in Figure 208, ensuring that the tape is placed about 6mm (.023 inch) beyond the cutting guide to prevent damage to the drums.



Figure 208. Attaching the Splicing Tape

- 4 Cut the paper along the cutting edge with a sharp knife, as shown in Figure 209. It is important that you cut through the tape as well as the paper.



Figure 209. Cutting the Paper

The next step is trimming the corners of the paper at an angle, as shown in Figure 210 on page 288, to reduce the risk of damage when the splice is pulled through the print tower.

How you trim the corners depends on whether the width of the new paper roll is the same as, smaller than, or wider than the width of the old paper roll.



Figure 210. Trimming the Corners

**5** To trim the corners, do one of the following:

- If the width of the new roll is the *same* as the old roll, just trim the corners of *only* the new roll, as shown in Figure 211.

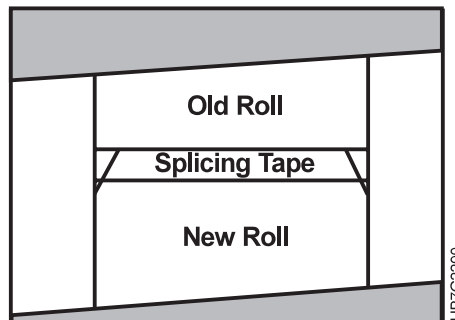


Figure 211. Width of New Roll is Same as Old Roll

- If the width of the new roll is *smaller* than the width of the old roll, trim the corners of *both* rolls, as shown in Figure 212.

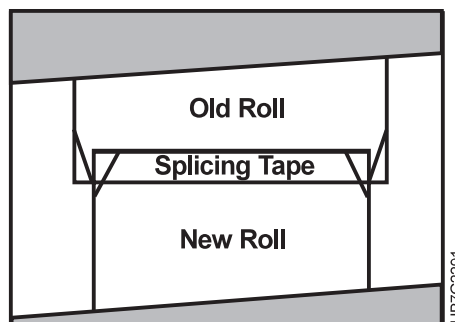


Figure 212. Width of New Roll is Smaller than Old Roll

- If the width of the new roll is *larger* than the width of the old roll, trim the corners of *only* the new roll, as shown in Figure 213 on page 289.

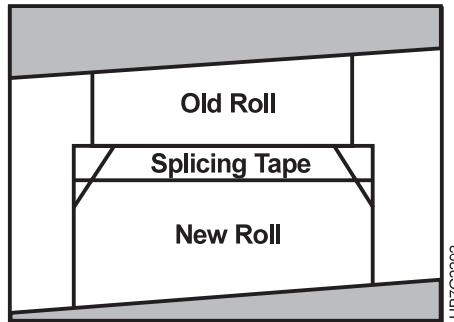


Figure 213. Width of New Roll is Larger than Old Roll

- 6 Pull the backing from the tape, as shown in Figure 214.



Figure 214. Pulling the Backing from the Splicing Tape

- 7 Close the splicing table, as shown in Figure 215, pressing firmly to ensure that both edges are secure.

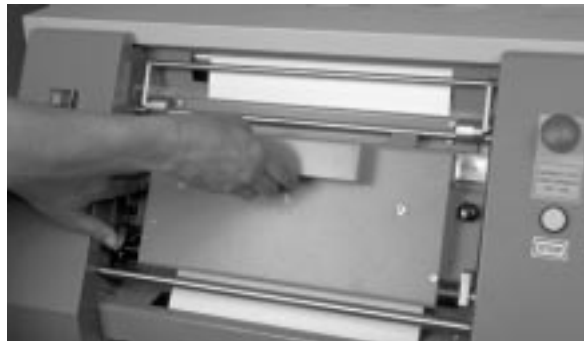


Figure 215. Closing the Splicing Table

**Warning:** Any adhesive residue from the tape may damage the InfoColor 70. Ensure that you remove all of the adhesive from the splicing table.

- 8 While holding down the plate, pull the table open again and rub the splice, as shown in Figure 216, to ensure that it cannot become loose and to remove all excess adhesive from around the tape.



*Figure 216. Rubbing the Paper Splice*

- 9** Release the paper web by pulling down the paper clamp lever.
- 10** Place the splicing table back in its original position, as shown in Figure 217.



*Figure 217. Returning Splicing Table to its Normal Position*

- 11** Click the **Done** pushbutton in the **Mount Print Medium** window.  
Load paper settings is now highlighted in the **Mount Print Medium** window.
- 12** Continue with “Specifying the Correct Paper Type” on page 291.



---

## Specifying the Correct Paper Type

When you change paper rolls, you need to load the setting before you start to print. The correct setting ensures optimal print quality.

The InfoColor 70 supports paper settings for different IBM tested papers.

You can also select your paper by selecting the **Print Media** window from the **Explore** menu. Some of the media available are paper or foil.

\*  
\*  
\*  
\*  
\*

The current list of papers and media that IBM has tested and approved is available from your IBM representative as *IBM 3170 Full Digital Color Printer/Press and InfoColor 70 Approved Media*. This list is updated from time to time as IBM continues to test and approved additional media types. Contact your marketing representative for the latest information.

Load settings is highlighted in the **Mount Print Medium** window. To load a new paper setting, do the following:

- 1 After you load the new paper and press the **Do it** pushbutton, the **Select a Print Medium File...** window opens, as shown in Figure 218.

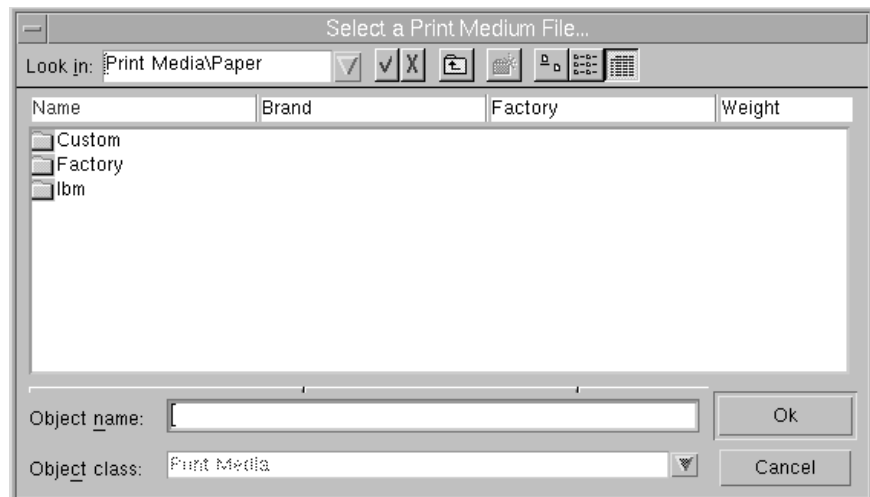


Figure 218. Select a Print Medium File... Window

- 2 Double-click **Factory**, **Custom**, or **IBM**.
- 3 Double-click on the file appropriate for the paper that is mounted.

\*  
\*

If the medium is the same, as previous, the system will ask you if it is reload the parameters.

The script file you selected displays in the **Mount Print Medium** window.

---

## Pulling the Splice through the Print Tower

**Start webdrive** will be highlighted in the **Mount Print Medium** window. To pull the splice through the print tower, follow these steps:

**1** Click the **Do it** pushbutton in the **Mount Print Medium** window.

**2** The **Stop Web Drive** will be highlighted.

After about 90 seconds, the splice will exit the print engine and the web drive will stop automatically. If you need to stop the web drive before it stops automatically, press the **Do It** pushbutton again.

**3** Manually cut the paper.

You have finished the procedure to change the paper roll. Now you can restart the printing process.

## Preventing Paper Scorching

The instructions for pulling the splice through the print tower cause the paper to be pulled away from the heated roll when the web stops. This prevents the paper from scorching.

If you ever have to *manually* pull the splice through the print tower, the paper will touch the heated roll and might become scorched and cause a paper break. Try not to use the manual method, but if you do, follow one of the two procedures to prevent paper scorching as described in “Preventing Paper Scorching” on page 315.

---

## Correcting the Alignment of the Paper Supply

After you change the paper roll, you might need to correct the alignment of the paper supply to the print tower. You can make the correction manually, or you can use the software.

To make a correction manually, do the following:

- Move the paper supply perpendicular to the web movement by manually pressing the button at the top left of the paper supply, as shown in Figure 219.

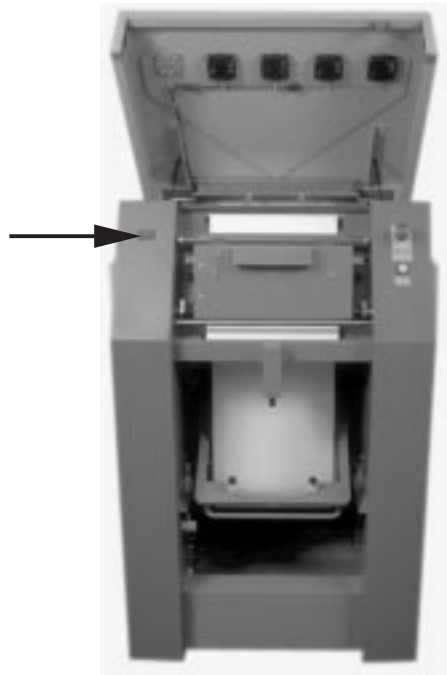


Figure 219. Top Left Button on Paper Supply

To make a correction using the software, do the following:

- 1 Open the **Scripts** window.
- 2 Run one of the script files shown in Table 61 on page 294. Each file's commands move the paper supply either left or right for a specified number of seconds.

*Table 61. Script Files for Moving the Paper Supply Left or Right*

Script File Name	Movement Direction	Number of Seconds
MPL-1.scr	Left	3
MPL-2.scr	Left	6
MPL-3.scr	Left	9
MPL-4.scr	Left	12
MPR-1.scr	Right	3
MPR-2.scr	Right	6
MPR-3.scr	Right	9
MPR-4.scr	Right	12

## Loading the Separation Strip Inserter

When a Sheet Inserter alarm occurs, you have to reload the inserter. The inserter contains the roll of pink separation strips you can insert between jobs. To load the inserter, follow these steps:

- 1 Turn off the output stacker power.
- 2 Move the stacker away from the fixed tower, as shown in Figure 220.

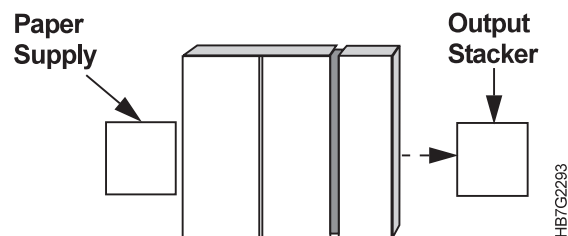


Figure 220. Moving the Output Stacker

- 3 Loosen the two black knobs on the back of the stacker door, as shown in Figure 221, by turning each knob counterclockwise.



Figure 221. Stacker Door Black Knobs

- 4 Open the door by pulling the top of the door toward you, as shown in Figure 222 on page 295.



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*Figure 222. Opening the Stacker Door*

- 5** Remove the slip-sheet inserter, as shown in Figure 223, from the output stacker.



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*Figure 223. Slip-Sheet Inserter*

- 6** Remove the flange.
- 7** Load a new roll of slip sheets.
- 8** Engage the slip sheet in the conveying system.
- 9** Place the inserter back into the stacker.
- 10** Close the door and tighten the black knobs.
- 11** Move the stacker back to its position against the fixed tower and power on the stacker.



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## Printer Power Down and Restarting Tasks

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## Chapter 14. Shutdown Procedures for InfoColor 70

This chapter explains how to prepare the InfoColor 70 for shutdown. It describes how to perform the following shutdown procedures:

- Backing up Files for the InfoColor 70
- Backing up PostScript files
- Listing files on a backup tape
- Restoring PostScript files
- Backing up system files on AIX
- Backing up PES files
- Turning off the InfoColor 70 printer
- Turning off the InfoColor 70 Printer and Collator
- Shutting down the RS/6000
- Restarting the RS/6000

---

### Backing Up Files for the InfoColor 70

It is important to maintain a backup copy of all printer files. If there is a hardware failure or the files become corrupt, they can be restored with minimal impact to your print shop.

The following printer files may be backed up.

- PostScript files. These files should be backed up daily. When the InfoColor 70 was installed the /custdisk1/psfiles directory was set up to hold your print shop's PostScript files.
- Printer system files on AIX. These files should be backed up periodically, when changes are made to the system or the system configuration.

The back up procedures for both PostScript files and system files are initiated from the desktop Front Panel.

- PES files. These files should be backed up daily.



Figure 224. Desktop Front Panel

### Backing Up PostScript Files

Creating a backup of the PostScript Files allows you to restore one or more of those files if a file or files are prematurely deleted, corrupted, or there is a hardware problem. You may want to create a backup daily. You can backup all the files in a directory or a specific file.

## Backing up all the files in a directory

Backing up all the files in a directory daily is the safest way to ensure that your PostScript files will not be permanently lost if a hardware error occurs. Use the following procedure to backup all the files in a directory.

- 1 Insert a 4 mm data cartridge into the RS/6000 tape drive. Note that this backup procedure will erase the contents of the tape.
- 2 On the desktop Front Panel, click on the **AIXTasks** button to switch to the **AIXTasks** workspace.
- 3 On the desktop Front Panel, click on the **File Manager** icon to open the **File Manager** window.
- 4 Use File Manager to display the folder that you want to back up. For example, if you want to backup the `/custdisk1/psfiles` directory, navigate to the `/custdisk1` folder in File Manager. The `/psfiles` folder is displayed.
- 5 Select the folder that you want to backup and drag it to the **Backup a Folder** icon that appears on your desktop. This opens the **Backup a Folder** window.
- 6 In the **Backup a Folder** window, press **Enter** to continue processing. The files contained in the folder are listed as they are being backed up to tape.
- 7 To close the window, double-click the upper left corner of the window.

## Backing up a single file

Backing up all the files in a directory may take a long time. If you only want to back up a single file, follow this procedure.

- 1 Insert a tape into the RS/6000 tape drive. Note that this backup procedure will erase the contents of the tape.
- 2 On the desktop Front Panel, click on the **AIXTasks** button to switch to the **AIXTasks** workspace.
- 3 On the desktop Front Panel, click on the **File Manager** icon to open the **File Manager** window.
- 4 Use File Manager to display the file that you want to back up.
- 5 Select the file that you want to backup and drag it to the **Backup File** icon that appears on your desktop. This opens the **Backup File** window.
- 6 In the **Backup File** window, press **Enter** to continue processing. The file is listed as it is being backed up to tape.
- 7 To close the window, double-click the upper left corner of the window.

## Listing the Files on a Backup Tape

Before restoring files from tape you should list the files that are contained on the back up tape.

- 1 Insert a tape into the RS/6000 tape drive.
- 2 On the desktop Front Panel, click on the **AIXTasks** button to switch to the **AIXTasks** workspace.
- 3 Double-click the **List Backup Files** icon in the **AIXTasks** workspace. This opens the **List Backup Files** window.

- 4 In the **List Backup Files** window, press **Enter**. This lists the files that were backed up to this tape.
- 5 To close the window, double-click the upper left corner of the window.

## Restoring All PostScript Files from a Backup Tape

Use the following procedure to restore all the files from a backup tape. The files will be restored to the location from which they were backed up.

- 1 Insert a tape into the RS/6000 tape drive.
- 2 On the desktop Front Panel, click on the **AIXTasks** button to switch to the **AIXTasks** workspace
- 3 Double-click the **Restore All Files** icon in the **AIXTasks** workspace. This opens the **Restore All Files** window.
- 4 In the **Restore All Files** window, press **Enter**. This restores all the files to the location from which they were backed up.
- 5 To close the window, double-click the upper left corner of the window.

## Restoring a PostScript File from a Backup Tape

Use the following procedure to restore a specific file from a backup tape. The files will be restored to the location from which it was backed up.

- 1 Do a list of files on your system.
- 2 Write down the name and the directory that the files are located.
- 3 Change to that directory.
- 4 Insert a tape into the RS/6000 tape drive.
- 5 On the desktop Front Panel, click on the **AIXTasks** button to switch to the **AIXTasks** workspace.
- 6 Double-click the **Restore Backup File** icon in the **AIXTasks** workspace. This opens the **Restore Backup File** window.
- 7 In the Action: **Restore Backup File** window, type the name of the file that you want to restore. Type the entire path and filename as it appears when you list the files on tape. Press the **OK** button.
- 8 In the **Restore Backup File** window, press **Enter**. This restores the file you specified.
- 9 To close the window, double-click the upper left corner of the window.

### \* Using a Disk to Transfer PostScript Files to the InfoColor 70

\* You can use a disk to transfer files to the InfoColor 70, but it requires special  
\* processing on the RS/6000.

\* Use the following procedure to copy files from a disk:

- \* 1 At the pre-press workstation, copy the files to the disk in PC format.
- \* 2 At the InfoColor 70, insert the disk into the RS/6000 disk drive.

- \* 3 Press the **AIXTasks** pushbutton on the desktop Front Panel to switch to the **AIXTasks** workspace.
- \* To list the files on the disk, double-click the **List Disk Files** icon in **AIXTasks** workspace.
- \* 4 Click the **File Manager** icon on the desktop Front Panel to open the **File Manager** window.
- \* 5 Navigate to the folder where you want the files to be copied.
- \* 6 Drag the folder that you want to contain the disk files to the **Copy Disk Files** icon in the **AIXTasks** workspace.
- \* This opens a window that lists the files as they are being copied.

### \* **Using a CD-ROM to Transfer PostScript Files to the InfoColor 70**

\* If you have a CD-ROM containing PostScript files, in PC format, you can copy these files to the InfoColor 70. Using the CD-ROM drive on the RS/6000 requires special processing.

\* Use the following procedure to copy files from a CD-ROM:

- \* 1 At the InfoColor 70, insert the CD-ROM into the RS/6000 CD-ROM drive.
  - \* 2 Click the **File Manager** icon on the desktop Front Panel to open the **File Manager** window.
  - \* 3 Navigate to the `/cdrom` directory.
  - \* 4 If the files on the CD are listed, you can copy them to another directory or you can RIP them directly from the CD-ROM. If the files on the CD-ROM are not listed, continue with the following steps to mount the CD-ROM.
  - \* 5 Click the **Application Manager** icon on the desktop Front Panel to open the **Application Manager** window.
  - \* 6 Click the **System\_Admin** icon to open the **System\_Admin** window.
  - \* 7 Click the **Storage Manager** icon to open the **Storage Manager** window, as shown in Figure 104 on page 144.
- \* **Application Manager** ⇒ **System\_Admin** ⇒ **Storage Manager**

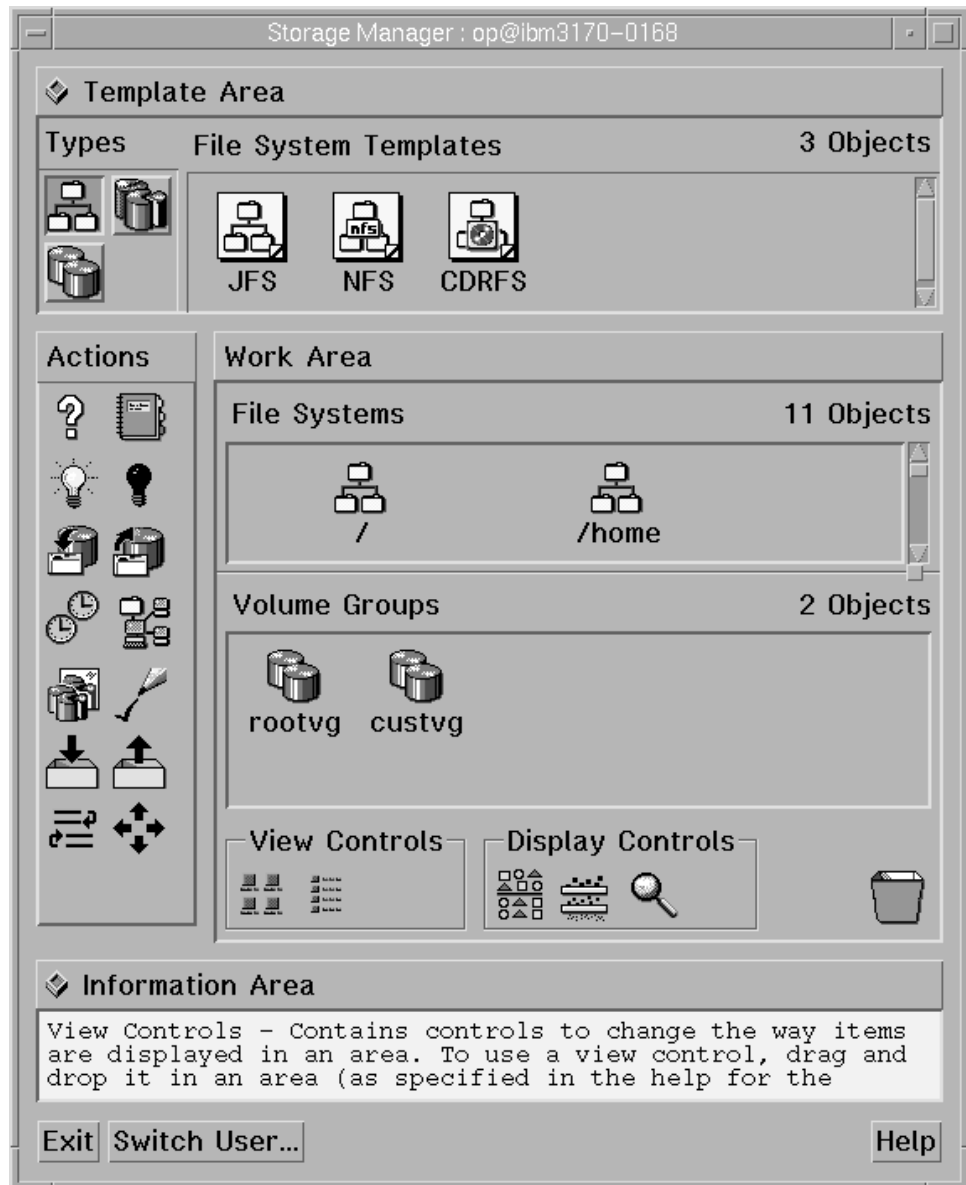


Figure 225. Storage Manager Window

- 8 In the **Storage Manager** window, press the **Switch User** pushbutton at the bottom of the window.
- 9 Type the root password, and press enter. This gives you the proper authority to perform the mount operation.
- 10 In the **Storage Manager** window, using the *middle* mouse button, click and drag the **On** action (the yellow lightbulb) to the **/cdrom** icon in the **File Systems** work area. This mounts the CD-ROM and makes it available for use. If you return to the **File Manager** window, the files will be listed.  
You can copy these files to another directory or you can RIP them directly from the CD-ROM.

To remove the CD-ROM from the drive, you must first unmount the `/cdrom` directory and make it unavailable. Use the following procedure to unmount the directory:

- \* 1 Click the **Application Manager** icon on the desktop Front Panel to open the **Application Manager** window.
  - \* 2 Click the **System\_Admin** icon to open the **System\_Admin** window.
  - \* 3 Click the **Storage Manager** icon to open the **Storage Manager** window, as shown in Figure 226.
- Application Manager** ⇒ **System\_Admin** ⇒ **Storage Manager**

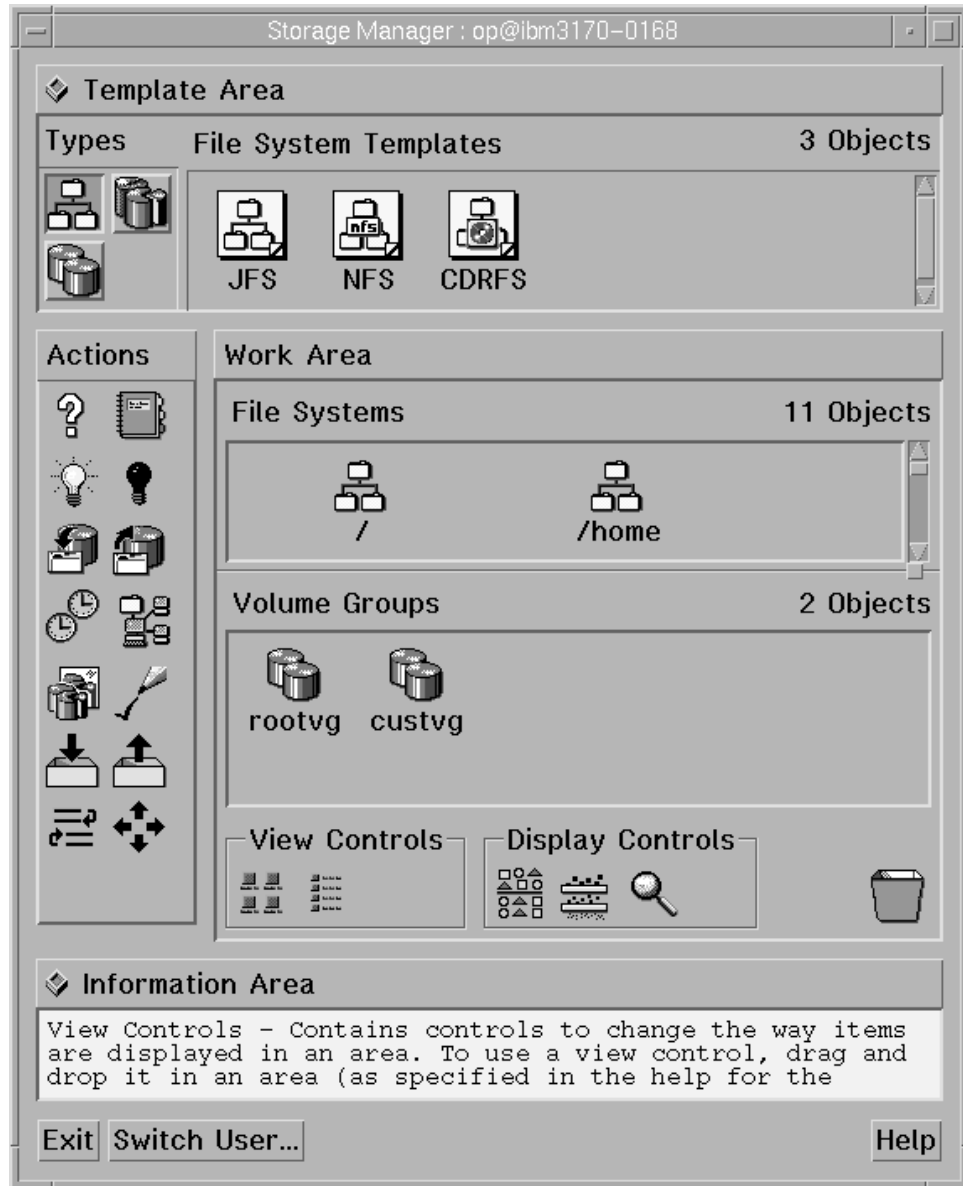


Figure 226. Storage Manager Window

- \* 4 In the **Storage Manager** window, press the **Switch User** pushbutton.
- \* 5 Type the root password. This gives you the proper authority to perform the unmount operation.
- \* 6 In the **Storage Manager** window, drag the **Off** action (the black lightbulb) to the **/cdrom** icon in the File Systems work area. This unmounts the CD-ROM. You can now remove the CD-ROM from the drive.

## Backing Up System Files on AIX

Back up system files when your system or system configuration changes.

- 1 Insert a tape into the RS/6000 tape drive. Note that this backup procedure will erase the contents of the tape.
- 2 On the desktop Front Panel, click the **AIXTasks** button to switch to the **AIXTasks** workspace.
- 3 On the desktop Front Panel, click the **Application Manager** icon to open the **Application Manager** window.
- 4 Double-click the **System\_Admin** icon to open the **System\_Admin** window.
- 5 Double-click the **Storage Manager** icon to open the **Storage Manager** window.

**AIXTasks** ⇒ **Application Manager** ⇒ **System\_Admin** ⇒ **Storage Manager**

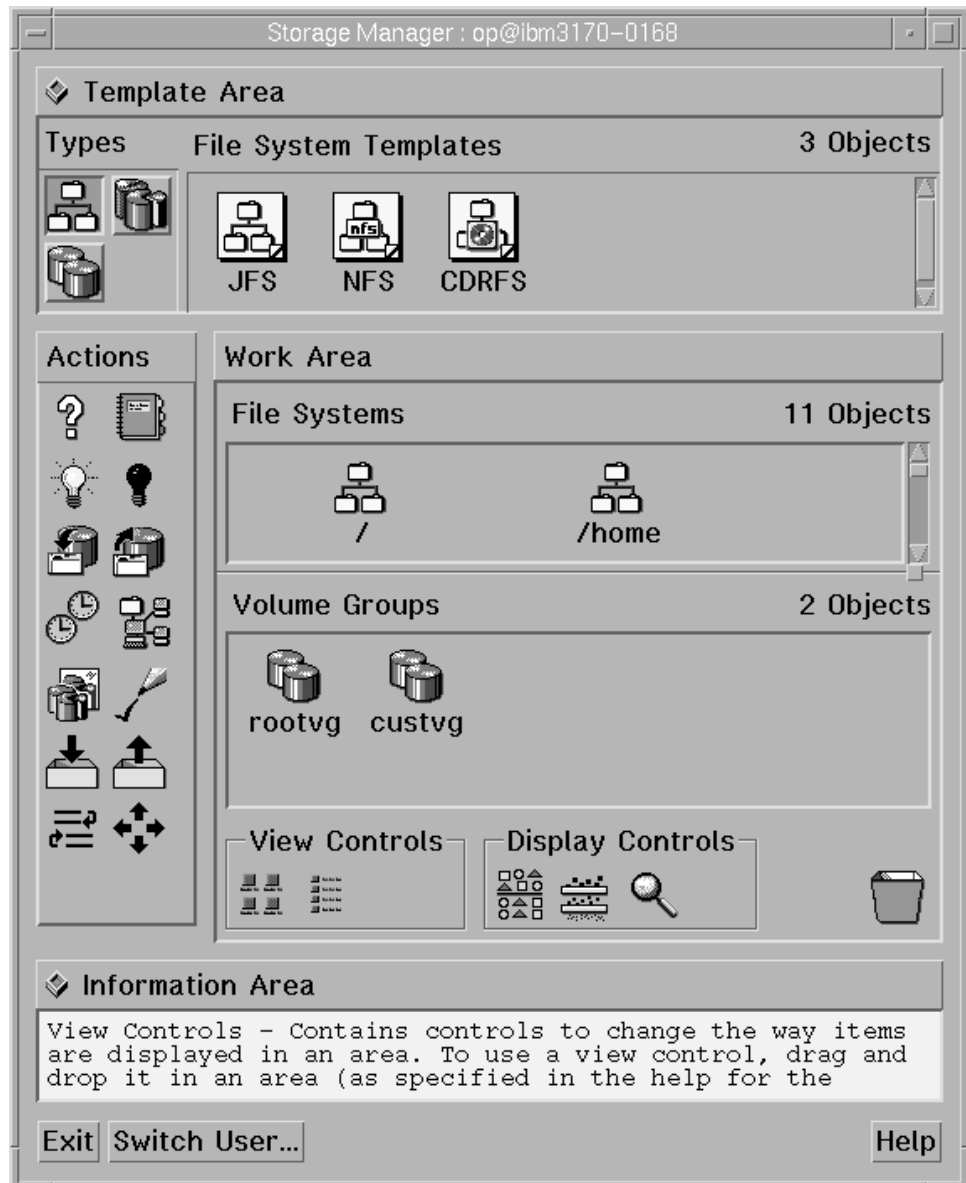


Figure 227. Storage Manager Window

- 6 Press the **Switch User** button to switch to the root user. Type the root password and press enter.
- 7 Using the middle mouse button, click on the **Back Up** action icon, the down arrow diskpack, and drop it on the icon for the rootvg Volume Group.
- 8 This opens the **Backup DEVICE or FILE** dialog that lets you specify the backup options. Select **/dev/rmt0** and use the default values for the other fields.
- 9 Click **OK**. The **Backup the System** window opens and displays the progress of the request. When the running figure at the top right stands still, the request is complete.
- 10 Press the **DONE** pushbutton.
- 11 Press the **Exit** pushbutton.



## Backing Up PES Files

Use this procedure to backup the PES files.

- 1 Insert a disk into the disk drive on the control unit (not the RS/6000 disk drive).
- 2 Flip the switch on the control unit to the PES side. The monitor now displays the PES screen. The PES must be shutdown and the **C>** prompt must be displayed.
- 3 Using the keyboard for the PES, type `f1backup`. This backs up the printer engine files to disk.


---

## Turning Off the InfoColor 70 Printer

When you are not going to be using the InfoColor 70 for a long period of time, such as overnight, you may want to logoff the system or shut down the printer, or both.

Ensure that you are finished printing. **Stopping engine** becomes highlighted when the last page of the current job prints.

- 1 Exit the software by selecting the following from the menu bar:

**File** ⇒ **Exit**  **Alt+F4**

- 2 Check the **PES** box and the **XPOSE.** box.
- \* 3 Click the **OK** pushbutton to Exit the **IBM InfoColor 70 Window**.
- 4 Ensure your PostScript Files have been backed up. See “Backing Up PostScript Files” on page 299.
- \* 5 Press the **Exit** icon on the desktop Front Panel. This will log you off of AIX.
- 6 In the **Logout Confirmation** window, press the **Continue Logout** pushbutton. Wait for the AIX login screen to reappear.
- 7 Back up your PES Files (if necessary). See “Backing Up PES Files.”
- 8 Turn off the console switch on the control unit.  
**Note:** Do not power off the RS/6000. Preparing the system so that it can be powered off involves a series of events that preserves the file integrity.
- 9 Open the fixed tower door on the left side of the machine.
- 10 Turn the main switch to the **OFF** position.
- 11 Close the fixed tower door.

---

## Turning Off the InfoColor 70 Printer and Collator

When you are not going to be using the InfoColor 70 for a long period of time, such as overnight, you may want to logoff the system or shut down the printer, or both.

If you are printing, the **Print Sequence** window will be open.

- 1 Exit the software by selecting the following from the menu bar:



File ⇒ Exit

Alt+F4

- 2 Check the **PES** box and the **XPOSE.** box.
- 3 Click the **OK** pushbutton to Exit the **IBM InfoColor 70 Window**.
- 4 Ensure your PostScript Files have been backed up. See “Backing Up PostScript Files” on page 299.
- 5 Press the **Exit** icon on the desktop Front Panel.
- 6 In the **Logout Confirmation** window, press the **Continue Logout** pushbutton. Wait for the AIX login screen to reappear.
- 7 Back up your PES Files (if necessary). See “Backing Up PES Files” on page 307.
- 8 Turn off the console switch on the control unit.  
**Note:** Do not power off the RS/6000. Preparing the system so that it can be powered off involves a series of events that preserves the file integrity.
- 9 Turn off the Collator.
- 10 Open the fixed tower door on the left side of the machine.
- 11 Turn the main switch to the **OFF** position.
- 12 Close the fixed tower door.

---

## Shutting Down the RS/6000

The RS/6000 should remain running. If it is not running other machines cannot copy files to the printer. There are times when it is necessary to shutdown the RS/6000 such as:

- When a hardware problem exists
- When your system is irrevocably frozen
- When you notice that performance is becoming severely degraded
- When you notice signs of possible file system corruption

A system shutdown properly prepares the system to be turned off or rebooted. An improper shutdown can have undesirable results on the file system.

1. Follow steps 1 through 7 of the procedure “Turning Off the InfoColor 70 Printer” on page 307.
2. At the login screen, type root as the username.
3. Type the password for root.
4. Double-click on the **AIXTERM** icon that appears in the **AIXTasks** workspace.
5. Type shutdown -F

The system begins the shutdown process. The shutdown is complete when the halt completed message appears or the screen blanks and the green power LED on the RS/6000 is blinking.

The RS/6000 is now shutdown and turned off.

---

## Restarting the RS/6000

When the RS/6000 starts, it initiates communication with the printer. Before turning on the RS/6000, follow the procedure to turn on the InfoColor 70 Printer (or the InfoColor 70 Printer and Collator). See Chapter 3, "Getting Started with the InfoColor 70" on page 81. After you turn on the control unit, wait approximately two minutes for the printer to be initialized. After the printer is initialized, turn on the RS/6000. It will take approximately 10 minutes to power on and display the login screen.



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## Maintenance and Supplies Tasks

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Maintenance Schedule . . . . .	313	Refilling the Humidifier . . . . .	324
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Finishing the Service-Intervention Procedure . . . . .	315	Checking the Toner Levels . . . . .	333
Preventing Paper Scorching . . . . .	315	Checking the Toner Units . . . . .	333
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Loosen the Paper Web . . . . .	316	Replacing Toner Waste Bottles . . . . .	338
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## Chapter 15. Performing Scheduled Operator Maintenance

To keep the InfoColor 70 operating at its maximum potential and to ensure excellent print quality, the operator must perform preventive maintenance on a scheduled basis.

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### Maintenance Schedule

Table 62 lists operator maintenance tasks and shows how often each task should be done. The maintenance intervals apply to 3170s with average monthly volumes of 150 000 A4 sheets.

Preventive Maintenance Tasks	Refer to...	Intervals
Clean the corona assemblies	Page 318	1 day
Empty the condensation water reservoir in the fixed tower	Page 323	1 day
Refill the humidifier	Page 324	At the beginning and end of each shift
Clean the main-charge and pre-charge scorotrons	Page 327	2 days unless coverage is greater than 40%, then 1 day
Replace the toner waste bottles	Page 338	At warning
Check the toner levels	Page 333	At the beginning of each shift
<b>Note:</b> One day is equivalent to approximately 10 000 sheets.		

---

### Preparing to Do Maintenance

Before you do any maintenance task, you first need to stop the printer and remove all jewelry. Most maintenance tasks cannot be performed unless you also include a service-intervention procedure. Also, some tasks require that you first take steps to prevent paper scorching during the maintenance.

**Note:** Before you perform any maintenance, first read about service intervention and paper scorching.

### Beginning the Service-Intervention Procedure

To do most maintenance tasks, you typically need to open one or more doors to the print tower. Because opening a door automatically causes the main power to turn off, the InfoColor 70 comes with a service-intervention procedure that will let you open the print tower doors and keep the main power on. Opening these doors before first completing the service-intervention procedure causes an emergency stop.

**Attention:** Using the service-intervention procedure does not apply to the top cover of the paper supply. Opening the top cover of the paper supply will always cause the main power to turn off, even when you are in service intervention mode.

Before you do any maintenance task that requires you to open any door to the print tower, follow these steps:

- 1 Open the **Service Intervention** window.

**Note:** If you forget to first stop the printer, the **Service Intervention Message** window opens. Stop the printer and click the **Ok** push button.

- 2 Open the fixed tower door on the left side of the machine, as shown in Figure 228.

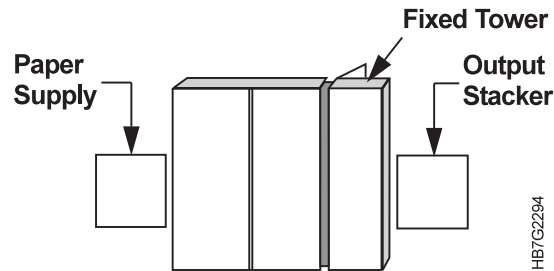


Figure 228. Right Side View of the InfoColor 70

- 3 Insert the service key into the lock located below the main switch, as shown in Figure 229.

**Note:** You can keep the service key in the lock at all times, or you can keep the key in a location outside of the printer until you need it.

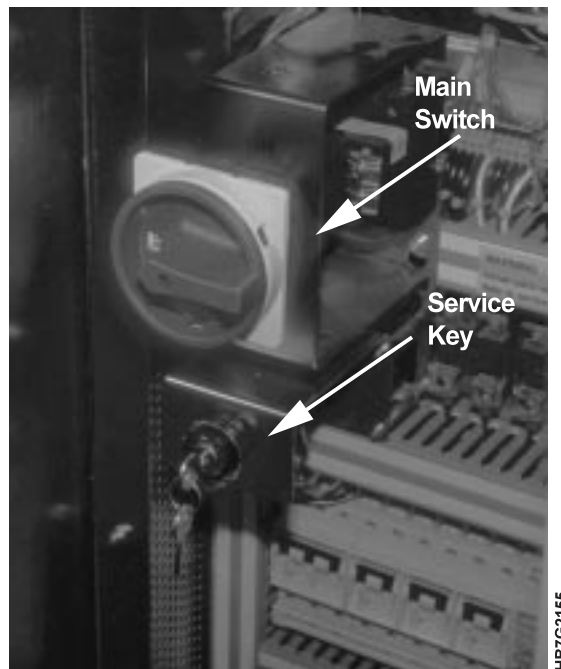


Figure 229. InfoColor 70 Main Switch and Service Key

- 4 Turn the service key clockwise 90°.

The next section explains how to finish the service-intervention procedure after you do the maintenance task.



## Finishing the Service-Intervention Procedure

After you complete the maintenance tasks, follow these steps to finish the service-intervention procedure:

- 1 Close all doors except the fixed-tower door on the left side of the machine, as shown in Figure 230.

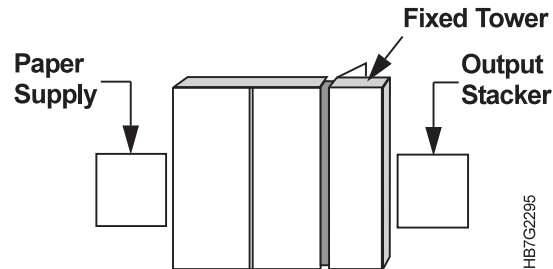


Figure 230. Right Side View of the InfoColor 70

- 2 Turn the service key counterclockwise 90°, as shown in Figure 231.

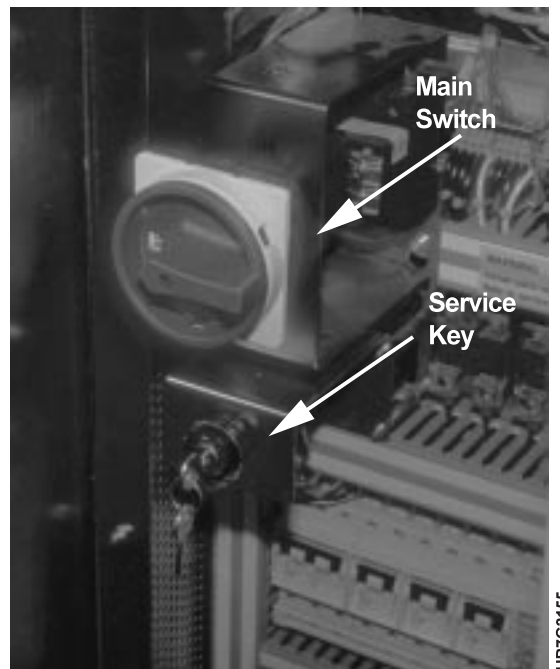


Figure 231. InfoColor 70 Main Switch and Service Key

- 3 Close the fixed-tower door.
- 4 You cannot leave service intervention until the key is turned back.

## Preventing Paper Scorching

When the paper web stops, the paper is automatically pulled away from the heated roll to prevent scorching. However, when you do some maintenance tasks, such as cleaning coronas, you need to pull the paper supply away from the print tower.

**Attention:** This causes the paper to touch the heated roll. Since the printer remains in Standby state during maintenance, which can be quite long, the paper

can become scorched. Scorched paper can cause a paper break and create a burnt paper odor.

Before you do any maintenance task that requires you to pull the paper supply away from the print tower, first follow one of the next two procedures to avoid scorching the paper.

### Changing the Engine State

One way to prevent paper scorching is to change the engine state to turn off paper conditioning. Follow these steps:

- 1 Open the **Engine State** window.
- 2 Click the **Go to Conditioned** pushbutton in the **Engine State** window to turn off the heated roll.
- 3 Wait until the roll cools, which takes about 30 minutes.

Now you can do the required maintenance.

### Loosen the Paper Web

Another way to prevent scorching the paper is to loosen the paper web. Follow these steps:

- 1 Release the brake by lifting up the brake lever located near the bottom of the paper supply, as shown in Figure 232.

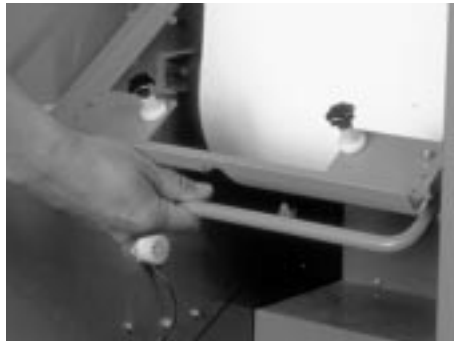


Figure 232. Releasing the Brake

- 2 Pull up on the paper clamp lever, as shown in Figure 233, to lock the paper web.



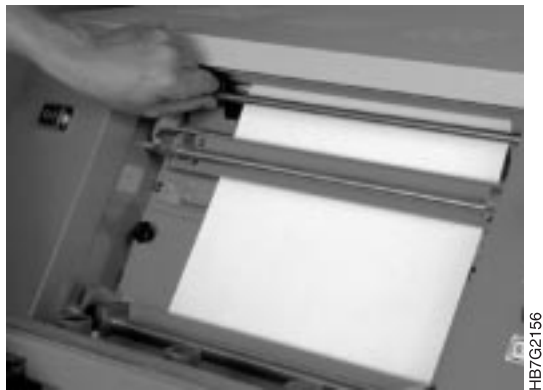
Figure 233. Preparing to Loosen the Paper Web

- 3 Pull down on the splicing table, as shown in Figure 233.
- 4 Loosen the paper roll by turning it one revolution.
- 5 Activate the brake by lifting the brake lever, as shown in Figure 234, to release the latch.



*Figure 234. Lifting the Paper Supply Brake Lever*

- 6 Lower the brake lever.
- 7 With both hands, pull the paper up and feed the extra paper under the paper clamp, as shown in Figure 235.



*Figure 235. Feeding the Extra Paper Under the Paper Clamp*

- 8 Push the paper over axle 3, as shown in Figure 236 on page 318, forming a loose loop below the heat roller

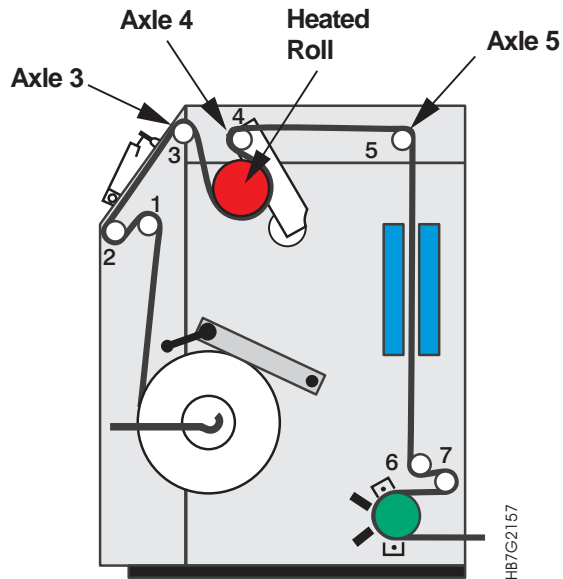


Figure 236. Paper Supply Paper Path

- 9 Release the paper web by pulling down the paper clamp lever.
- 10 Place the splicing table back in its original position, as shown in Figure 237.



Figure 237. Returning Splicing Table to its Normal Position

## Cleaning the Coronas in the Print Tower

Cleaning all the coronas in both print towers takes time and they must be allowed to dry for twenty-four hours after cleaning and before re-installing. Therefore, you might want to place your extra set of clean coronas in the InfoColor 70 after you remove the dirty coronas for cleaning. This will minimize machine down time.

You can clean all coronas in the InfoColor 70 manually, but because the manual method is so time consuming, an alternate method using an ordinary household dishwasher is suggested. For both methods, follow the instructions below through step 11 on page 320, follow the instructions of the preferred method, and then return to step 21 on page 322 to finish the cleaning process.

- If you are using the manual cleaning method, have on hand a small tray of clean, clear water; a small tray of mild, soapy water; and some clean, dry cotton swabs.

- Ensure that you have removed all jewelry.

To clean the coronas in the print tower, follow these steps:

**Begin Service Intervention:**

- 1 Begin the service-intervention procedure, described in “Beginning the Service-Intervention Procedure” on page 313.
- 2 Follow the procedure for preventing paper scorching, described in “Preventing Paper Scorching” on page 315.

**Remove the Coronas:**

- 3 Open the doors on both sides of the X tower and the Y tower.



**CAUTION:**

<31> Ensure that any small step ladder or stool used to reach latches or thread paper is level and steady.

- 4 Unlatch the tops of the X and Y towers by pulling up on the latches located at the top center between the towers, as shown in Figure 238. Do this on both sides of the towers.

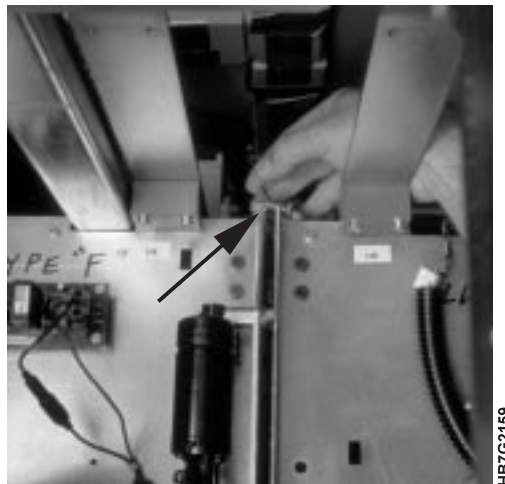


Figure 238. Top Latch between the X and Y Towers

- 5 Open the gates in front of the electronic panels.
- 6 Unlatch the bottoms of the X and Y towers by pulling out on the latches located at the bottom center between the towers. Do this on both sides of the towers.



Figure 239. Bottom Latch between the X and Y Towers

**Attention:** Ensure that you move the paper supply in a straight line out from the print tower so you do not damage the paper web.

- 7 Move the paper supply away from the access doors located between the paper supply and the print tower, as shown in Figure 240.

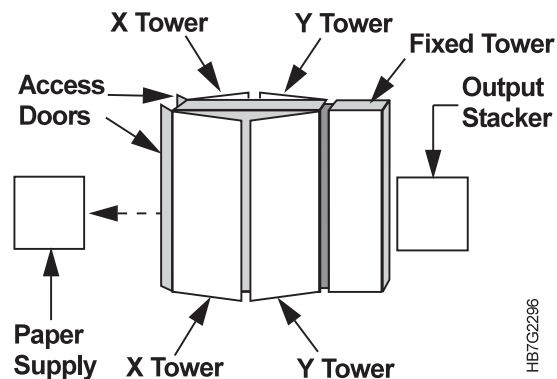


Figure 240. Right Side View of the InfoColor 70

- 8 Open the access doors behind the paper supply.
- 9 Move the X tower toward the paper supply and approximately 3 to 4 inches away from the Y tower to make it easier to remove the coronas and to not damage the drums.

The X tower now should be almost flush with the access doors.

- 10 Locate the corona assemblies. Each tower has four corona assemblies.
- 11 Remove each corona assembly by sliding it carefully out of the guide bars, as shown in Figure 241 on page 321.

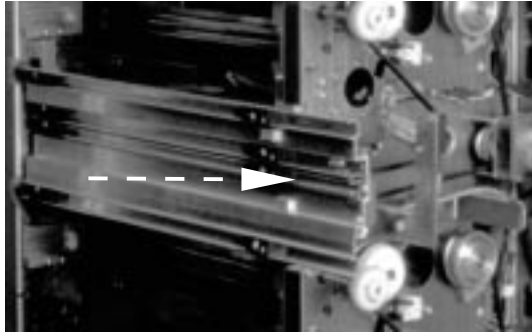


Figure 241. Removing a Corona Assembly

**12** Do one of the following:

- If you want to use a replacement set of clean coronas to minimize machine down time, go to step 21 on page 322 and continue with replacing the corona assemblies.
- If you don't want to use a replacement set of coronas, continue with step 13 for the dishwasher method or step 16 for the manual method of cleaning the coronas.

**Attention:** The coronas contain very thin wires and must be handled carefully to avoid breaking the wires.

**Dishwasher Cleaning Method:**

**Note:** The dishwasher should be hooked up to hot water to effectively clean the coronas. You should use good quality solid pellet-type cleaning agent, however use about one-third of what would be used for dish washing.

**13** Load the coronas into the dishwasher.

**Attention:** The coronas should be loaded in the bottom rack with the concave side facing the center and the connector end of the coronas facing the rear of the dishwasher. They should be placed so that the connector end is lower than the extraction handle end. This will help with draining the water at the end of the cleaning cycle. The dishwasher rack should not be modified unless the coronas will not fit. If you are using a dishwasher with a depth of less than 57.2 cm (22.5 inches), you may have load the coronas diagonally and run more than one dishwasher load to clean a complete set.

**14** Turn on the dishwasher using a normal cycle with heat dry.

**Attention:** After cleaning the coronas, they must be completely dry before reuse. Drying may take up to twenty-four hours. This is especially important if you are using a dishwasher that does not have a heated drying cycle. You can use another set to continue printing.

**Attention:** After three to four dishwasher cleanings, the wires may have some toner residue that should be dry wiped with cotton swabs.

**15** After the cycle is complete remove the coronas from the dishwasher, let them dry for twenty-four hours, and proceed to step 21 on page 322.

**Manual Cleaning Method:**

**16** Clean each corona housing by rubbing it with a cotton swab moistened with soapy water.

**17** Dry each corona housing by rubbing it with a dry cotton swab.

**Attention:** Ensure that you don't bend the corona wires.

**18** Clean each corona wire by placing it between two cotton swabs, moistened with soapy water, held in one hand. The picture in Figure 242 shows cleaning the wire in a scorotron; however, the cleaning method is the same for the wires in the corona assembly.

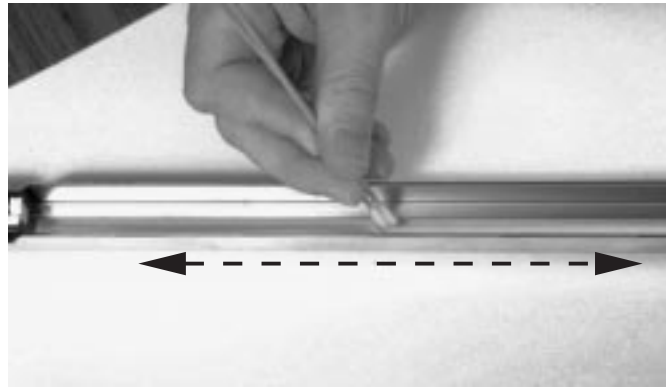


Figure 242. Cleaning a Scorotron Wire

**19** Move the cotton swabs back and forth the length of the corona wire.

**20** Repeat with a dry cotton swab.

**Replace the Coronas:**

**Attention:** After cleaning the coronas, they must be completely dry before reuse. Drying may take up to twenty-four hours. This is especially important if you are using a dishwasher that does not have a heated drying cycle. You can use another set to continue printing.

**21** After allowing them to completely dry, insert the coronas back in their guides.

**Note:** The top corona on the X tower has a larger arc than the other coronas, so ensure that you place the correct corona at the top of the X tower.

**22** Move the X tower back to its original position.

**23** Latch the top and bottom latches on each side to secure the X tower to the Y tower.

**24** Close the gates that are located in front of the coronas.

**25** Close the access doors behind the paper supply, as shown in Figure 243 on page 323.



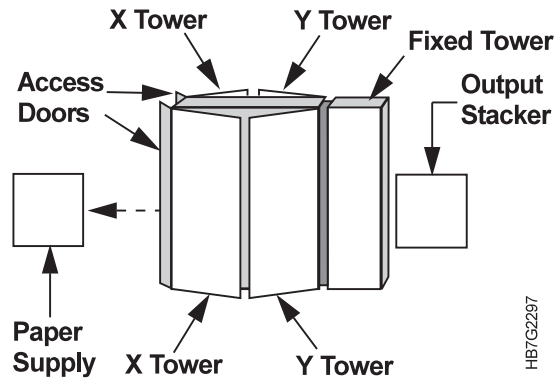


Figure 243. Right Side View of the InfoColor 70

- 26** Gradually move the paper supply back against the X tower.

**Note:** As you move the paper supply, you will need to take up the slack in the paper, as follows:

**Attention:** This causes the paper to touch the heated roll. Since the printer remains in Standby state during maintenance, which can be quite long, the paper can become scorched. Scorched paper can cause a paper break and create a burnt paper odor.

- 27** Place your hands on the underside of the paper roll, palms up. While exerting pressure on the roll, rotate the roll away from you until you can move the roll no farther and the slack is gone.
- 28** If you inserted a replacement set of coronas and still need to clean the dirty coronas, go back to step 13 on page 321 or step 16 on page 321 for cleaning instructions

**Finish Service-Intervention:**

- 29** After you insert the coronas back in the towers, finish the service-intervention procedure on 315.

---

## Emptying the Condensation Water Reservoirs

Condensation water collects in reservoirs that are located in the fixed tower. You need to check these reservoirs daily and empty any water that has collected.

To empty the two reservoirs in the fixed tower, do the following:

- 1** Begin the service-intervention procedure, described in “Beginning the Service-Intervention Procedure” on page 313.
- 2** Open the fixed tower door on the right side of the machine, as shown in Figure 244 on page 324.

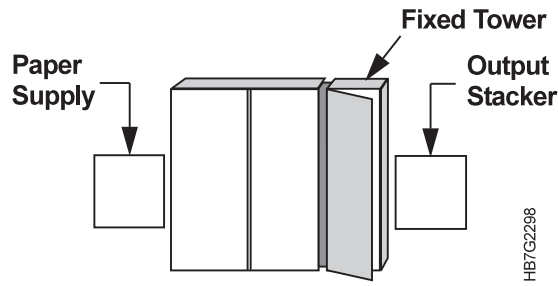


Figure 244. Right Side View of the InfoColor 70

- 3 Untwist the caps from the two reservoirs, as shown in Figure 245, remove the containers, and empty them.

**Note:** You can use this water to refill the humidifier reservoir in the Y tower (see 324).



Figure 245. Condensation Water Reservoirs

- 4 Remount the reservoirs and put the caps back on.
- 5 Close the fixed tower door on the right side of the machine.
- 6 Finish the service-intervention procedure, described in “Finishing the Service-Intervention Procedure” on page 315.

## Refilling the Humidifier

**Attention:** When the tower conditioning control is in humidifying state, but the humidity is not rising to reach its setpoint, the water reservoir of the humidifier is probably empty. The operator must check and fill the reservoir every 4 to 6 hours if running in very dry conditions. Use the Print Medium and Engine Conditioning window (see “Understanding Tower Conditioning Parameters” on page 261) to ensure that the relative humidity reaches its setpoint after you refill the humidifier.

Your InfoColor 70 has either a Mellita humidifier or a Duracraft humidifier. The photos show the Duracraft humidifier. To refill the humidifier, follow these steps:

- 1 Begin the service-intervention procedure, described in “Beginning the Service-Intervention Procedure” on page 313.
- 2 Open the Y tower door on the left side of the machine, as shown in Figure 246.

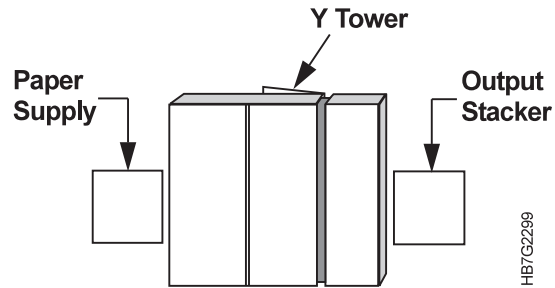


Figure 246. Right Side View of the InfoColor 70

The humidifier, as shown in Figure 247, is located at the bottom-left side of the tower.



Figure 247. Duracraft Humidifier

- 3 Remove the top of the humidifier, as shown in Figure 248 on page 326, and carefully remove the water reservoir from the tower, ensuring no water is spilled.

**Note:** If you have a Mellita humidifier, just lift the water reservoir out of the container.

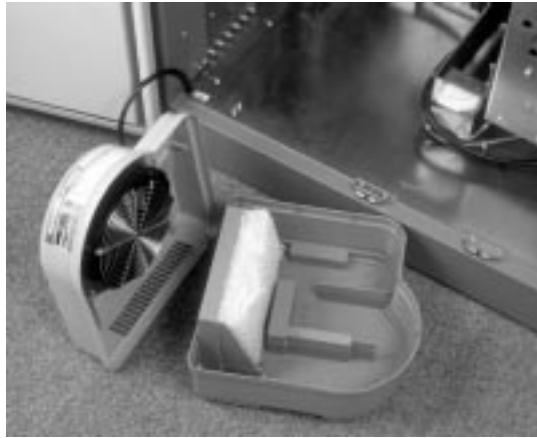


Figure 248. Humidifier Top and Water Reservoir

- 4 Fill the reservoir with clean water. Replace the water reservoir and the top of the humidifier, and place the humidifier back in the Y tower.
- 5 Close the back Y tower door.
- 6 Complete the service-intervention procedure, described in “Finishing the Service-Intervention Procedure” on page 315.
- 7 Check the **Measured humidity** in the **Print Medium and Engine Conditioning** window, as shown in Figure 249.



Figure 249. Print Medium and Engine Conditioning Window

## Cleaning the Main-Charge and Pre-Charge Scorotrons

Because it takes a while to clean all the main-charge and pre-charge scorotrons in the X and Y towers and the scorotrons must be allowed to dry for twenty-four hours after cleaning, you might want to place the replacement set of clean scorotrons in the InfoColor 70 after you remove the dirty scorotrons for cleaning. This will minimize machine down time.

You can clean all main-charge and pre-charge scorotrons in the InfoColor 70 manually, but because the manual method is so time consuming, an alternate method using an ordinary household dishwasher is suggested. For both methods follow the instructions below through step 6 on page 328, follow the instructions of the preferred method, and then return to step 16 on page 331 to finish the cleaning process.

- If you are using the manual cleaning method, have on hand a small tray of clean, clear water; a small tray of mild soapy water; and some clean, dry cotton swabs.
- Ensure that you have removed all jewelry.

To clean the scorotrons in the print tower, follow these steps:

### Remove the Scorotrons:

- 1 Begin the service-intervention procedure, described in “Beginning the Service-Intervention Procedure” on page 313.
- 2 Open the doors on both sides of the X and Y towers, as shown in Figure 250.

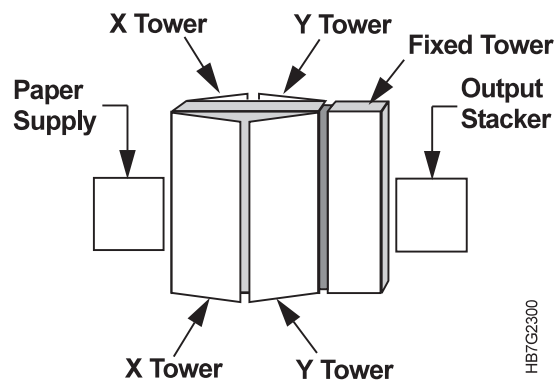


Figure 250. Right Side View of the InfoColor 70

- 3 Open the gates located in front of the electronic panels.
- 4 Locate the main-charge and pre-charge scorotrons.

Each print unit has a main-charge and a pre-charge scorotron.

Figure 251 on page 328 shows both the main-charge and the pre-charge scorotrons removed so you can see where they would be located when in place. Be careful not to allow the pre-charge scorotrons to fall against the developer gears. This would damage the fragile scorotron grid.

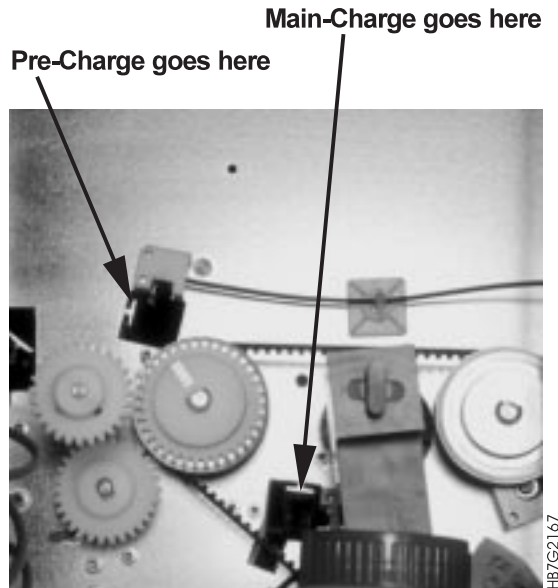


Figure 251. Openings for Pre-Charge and Main-Charge Scorotrons

**⚠ CAUTION:**

<32> **Scorotrons have sharp edges, handle carefully to avoid injury.**

- 5 Remove the scorotrons, including the top roller scorotrons, by sliding them carefully out of their guides. Figure 252 shows the removal of a main-charge scorotron.

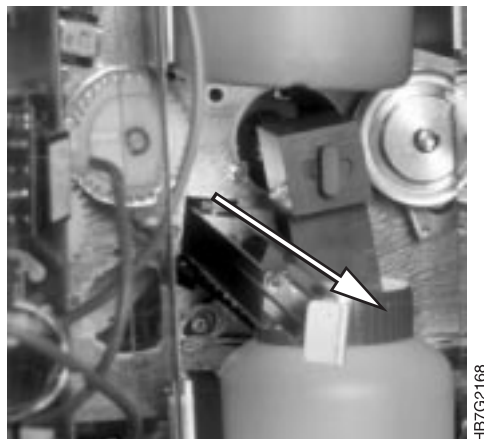


Figure 252. Removal of a Main-Charge Scorotron

- 6 Do one of the following:
  - If you want to use your replacement set of scorotrons, continue with step 17 on page 332. If you don't want to use your replacement set of scorotrons, continue with step 7 on page 329 for the dishwasher cleaning method or step 10 on page 329 for the manual cleaning method.

**Note:** Now you are ready to clean the scorotrons.

**Attention:** The scorotrons have a delicate grid covering the corona wire. The grid is easily damaged by objects bumping into it.

### **Dishwasher Cleaning Method:**

**Note:** The dishwasher should be hooked up to hot water to effectively clean the scorotrons. You should use good quality solid pellet-type cleaning agent, however use about one-third of what would be used for dish washing.

- 7 Place the scorotrons in the dishwasher.

**Note:** The scorotrons may be located in either the upper or lower tray of the dishwasher. They should be positioned with the grid side down, and at an angle to assist draining. The extraction handle may be hooked over the top edge of the wire tray, and the connector end allowed to lie in the bottom of the tray.

- 8 Turn on the dishwasher using a normal cycle with heat dry.

**Attention:** After cleaning the scorotrons, they must be completely dry before reuse. Drying may take up to twenty-four hours. This is especially important if you are using a dishwasher that does not have a heated drying cycle. You can use another set to continue printing.

**Attention:** After three to four dishwasher cleanings, the wires may have some toner residue that should be dry wiped with cotton swabs.

- 9 After the cycle is complete remove the scorotrons from the dishwasher and proceed to step 16 on page 331.

### **Manual Cleaning Method:**

- 10 Remove the grid from each scorotron, as follows:
  - a Anchor the hook end of the scorotron on the edge of a hard surface, such as a table, as shown in Figure 253 on page 330.

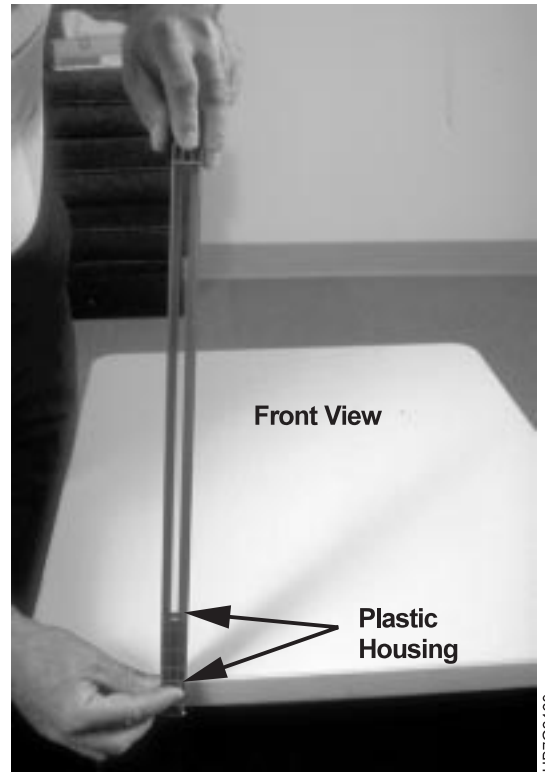
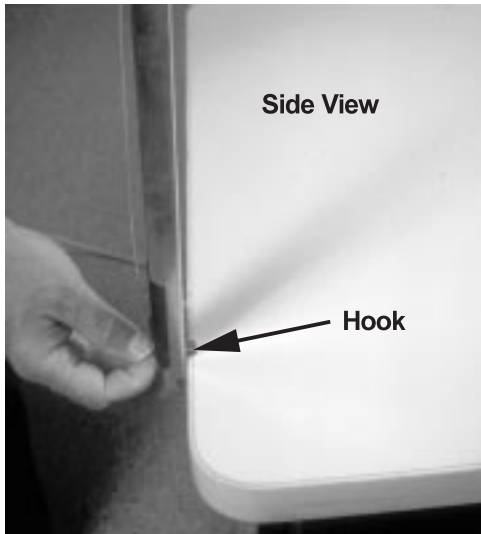


Figure 253. Side View of Removing a Grid from a Scorotron

- b** Push down against the top of the scorotron to move the smaller black plastic housing, which releases the grid.
  - c** Carefully lay the grid on a clean, smooth surface.
- 11** Clean each grid as follows:
- a** Hold an end of the grid in each hand and rotate the grid several times through the tray of soapy water, then through the tray of clear water, as shown in Figure 254.

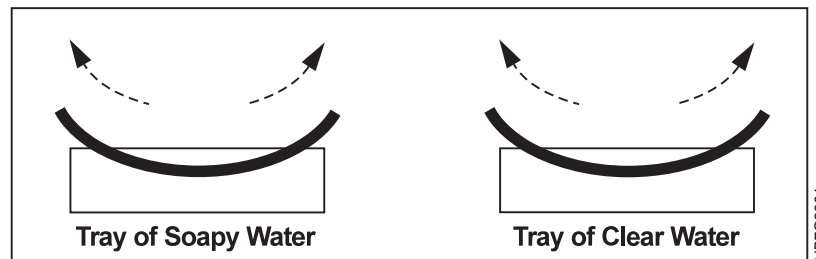


Figure 254. Cleaning a Scorotron

- b** Lay the grid flat on a lint-free cloth; fold the cloth over the grid and pat dry.
- 12** Clean the top and bottom of each housing with a cotton swab moistened with soapy water.
- 13** Clean both rails with soapy water.



**14** Dry each housing with a clean, dry cotton swab.

**Attention:** Ensure that you do not bend the scorotron wires.

**15** Clean each scorotron wire by placing it between two cotton swabs, moistened with soapy water, held in one hand. Move the swabs back and forth along the scorotron wire, as shown in Figure 255. Repeat with dry cotton swabs.

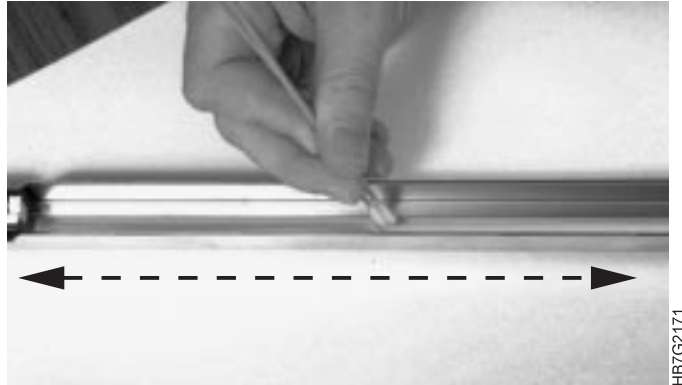


Figure 255. Cleaning a Scorotron Wire

**16** Place each grid back in its housing, as follows:

- a** Anchor the hook end of the scorotron on the edge of a hard surface, such as a table, as shown in Figure 256.

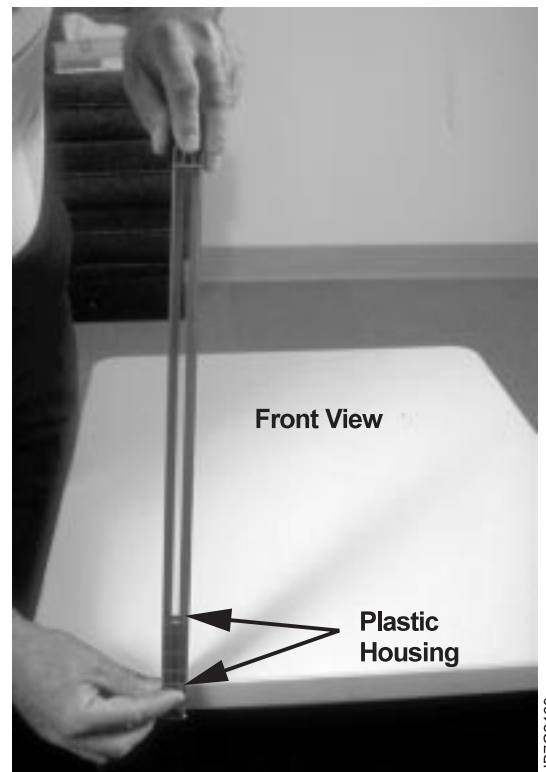
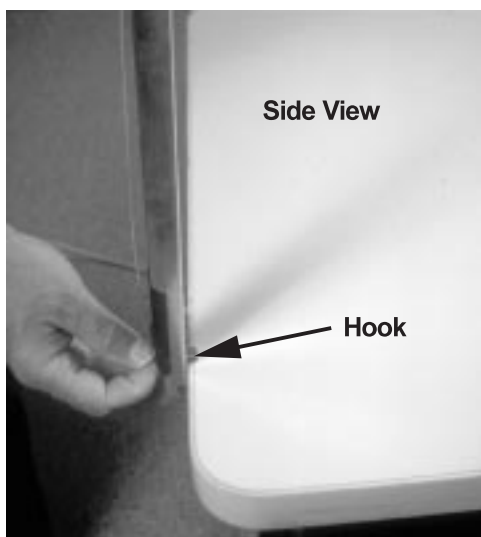


Figure 256. Side View of Removing a Grid from a Scorotron

- b** Attach the correct end of the grid to the top of the housing.

**Note:** Ensure that you align the grid back on the housing in the correct orientation. As shown in Figure 257 on page 332, the end of the grid with the large open pattern goes back on the large black plastic housing. The end of the grid with the small open pattern goes back on the small black plastic housing.

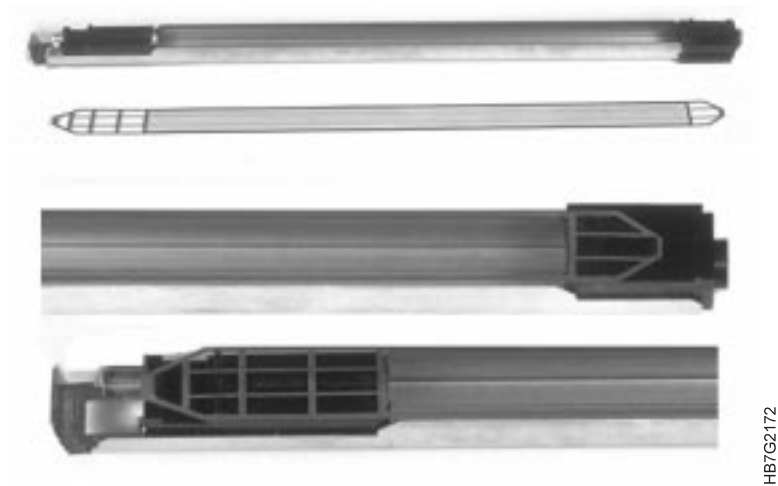


Figure 257. Aligning the Grid on a Scorotron Housing

- c** Exert pressure against the housing until you latch the grid at the end nearest the table. Ensure that you center the grid on the housing.

**Attention:** After cleaning the scorotrons, they must be completely dry before reuse. Drying may take up to 24 hours. You can use another set to continue printing.

#### Replace the Scorotrons:

- 17** Put all scorotrons back in place by inserting them in the guides.

**Attention:** Make sure the scorotrons are inserted properly in the guides or drum damage can occur.

- 18** Close the gates and the X and Y tower doors.

- 19** Finish the service-intervention procedure (see “Beginning the Service-Intervention Procedure” on page 313).

- 20** If you inserted a replacement set of scorotrons and still need to clean the dirty scorotrons, go back to step 7 on page 329 or step 10 on page 329 for cleaning instructions.

---

## Chapter 16. Checking and Refilling Toner

The operator is responsible for replenishing toner and ensuring that no toner container ever becomes empty.

**Attention:** Do not continue to print with empty toner containers. Mix without toner may be ruined.

Although an alarm is issued in the **Active Alarms** window when any toner container becomes empty, *there is no* warning is to tell you when a toner container is low. The **Toner Containers** window, as shown in Figure 258, shows only full or empty conditions.

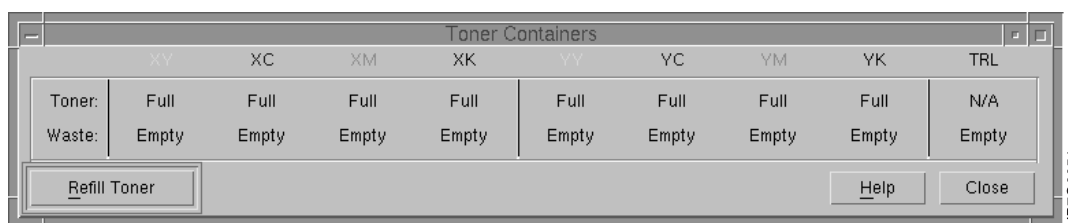


Figure 258. Toner Containers Window

---

### Checking the Toner Levels

**Note:** At the beginning of each shift, the operator should check all toner containers to ensure that each container is at least half full.

Before you check the toner containers, you need to:

- Stop the printer.
- Remove all jewelry.
- Begin the service-intervention procedure, as described in "Beginning the Service-Intervention Procedure" on page 313, before opening any doors.

After the service-intervention procedure is started follow the steps below:

- 1 Open the doors on both the left and right sides of the X tower and the Y tower.
- 2 Check the level of toner in each container.
- 3 To refill any toner container, continue with the next section.

---

### Checking the Toner Units

Sometimes a false toner level alarm might occur, or no alarm at all is given when a toner container becomes empty. To avoid this situation, check the toner containers each time you have the print-tower doors open for maintenance or problem solving.

## Refilling the Toner

Follow these steps for any toner container that needs to be refilled:

- 1 Click on the **Service Intervention** window.
- 2 Open the **Refill Toner Containers** window.
- 3 Open the **Refill Toner Containers** window, as shown in Figure 259.



**Operations** ⇒ **Refill Toner Containers**

**Note:** If you have not done the service intervention procedure, the **Refill Toner Containers** window will not open. A window will instruct you to insert the service key.

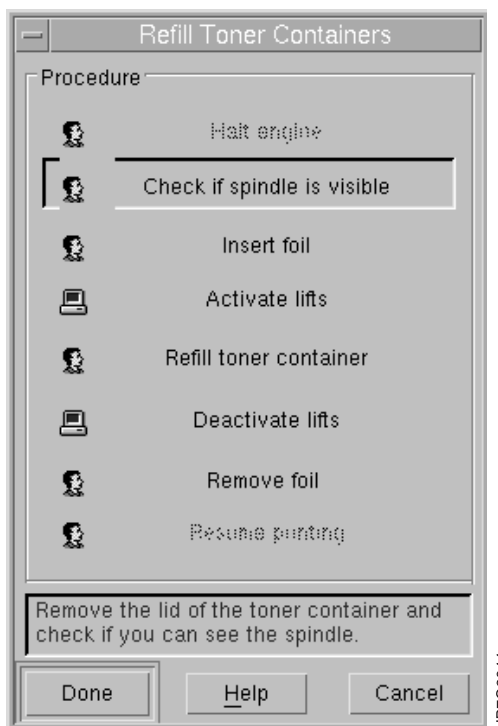


Figure 259. Refill Toner Containers Window

- 4 Remove the lid of each toner container, as shown in Figure 260 on page 335, and check whether you can see the second spindle (or auger) at the bottom of the container. The **Refill Toner Containers** window opens. Click the **Done** pushbutton.



Figure 260. Removing a Toner Container Lid

- 5 Do one of the following:
  - a If you saw the spindle, click **Yes**. Go to step 6.  
**Insert Foil** is now highlighted in the **Refill Toner Containers** window.
  - b If you did not see the spindle, click **No**. **Refill toner container** will be highlighted in the window. Go to step 9.
- 6 Place a piece of foil or paper between the dosing unit and the developing unit, as shown in Figure 261, to catch any toner that may spill out of the dosing unit.

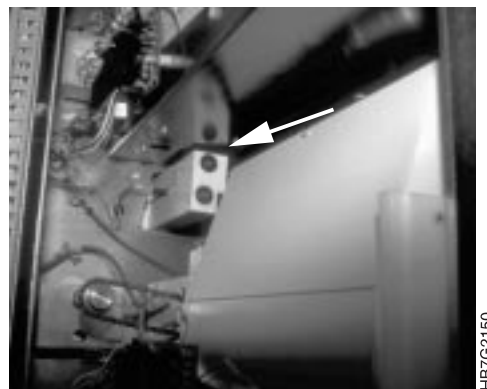
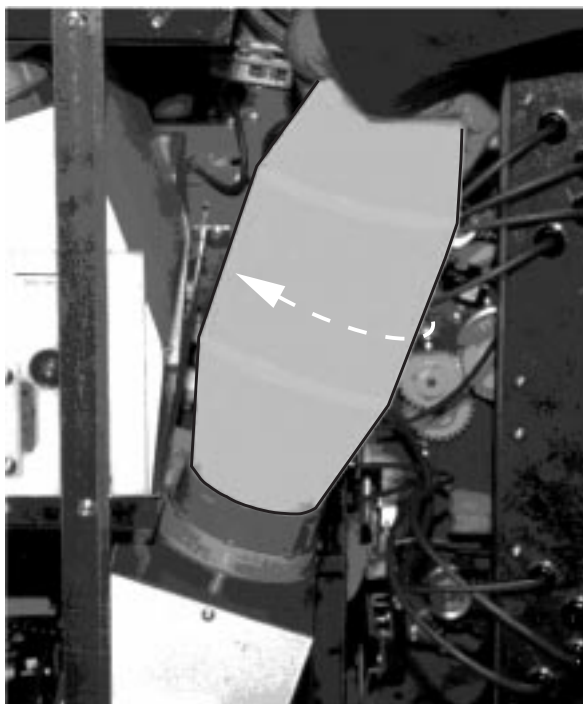


Figure 261. Placement of Foil between Dosing and Developing Units

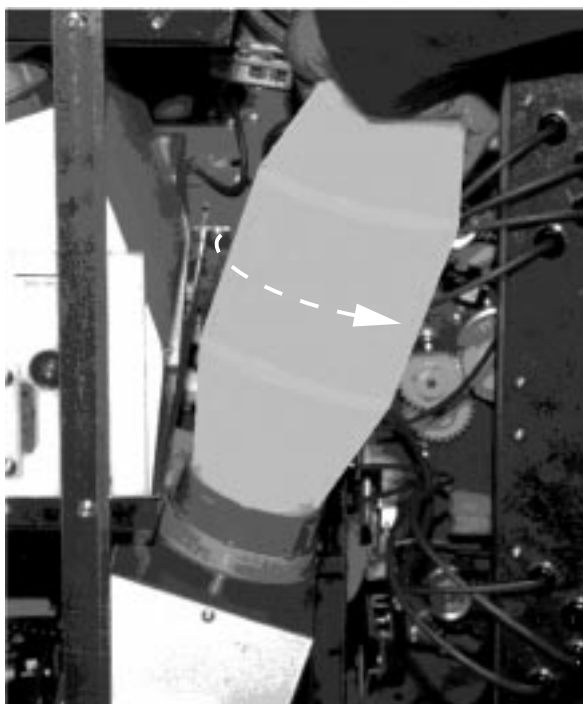
- 7 Click the **Done** pushbutton in the **Refill Toner Containers** window. **Activate Lifts** now becomes highlighted.
- 8 Click the **Do It** pushbutton to activate the lifts of both print towers. **Refill toner containers** will be highlighted in the window.
- 9 Take a toner bottle of the correct color and shake it well. Shaking the toner causes its volume to increase until it fills the bottle completely.
- 10 Remove the protective film from the bottle's cap by pulling the green plastic tab, toward the opposite side of the bottle cap.
- 11 Mount the new toner bottle, as shown in Figure 262 on page 336, on the toner container by matching the white plastic tab with the notch located 90° clockwise from the lowest part of the toner container.



HB7G2153

*Figure 262. Mounting a Toner Bottle*

- 12** Twist the bottle clockwise until it is secure. The toner will now flow into the container.
- 13** If necessary, tap the toner bottle a few times until it empties completely.
- 14** When the bottle is completely empty, twist it counterclockwise, as shown in Figure 263.



HB7G2154

*Figure 263. Removing an Empty Toner Bottle*

- 15 To avoid dust escaping, wait at least 20 seconds before removing the bottle from the container.

**Note:** Always remove the bottle from the container before you resume printing.

- 16 Place the lid back on the container and click the **Done** pushbutton in the **Refill Toner Containers** window, as shown in Figure 264.

If you have selected **No**, the window will close automatically. The **Deactivate lifts** now becomes highlighted.

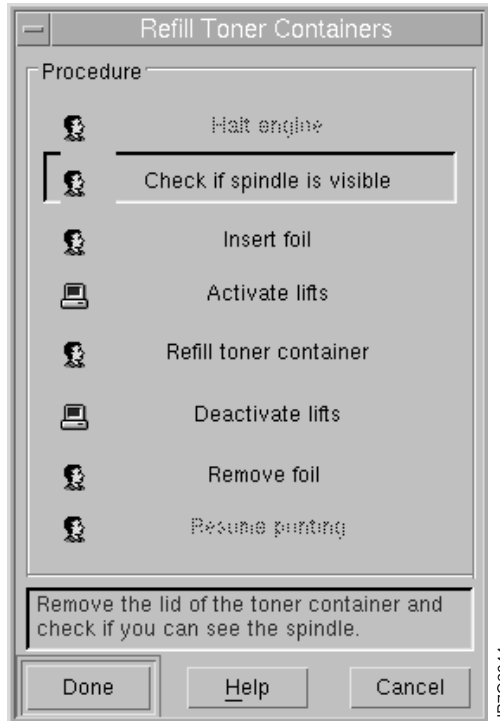


Figure 264. Refill Toner Containers Window

- 17 Deactivate the lift by clicking the **Do It** pushbutton. **Remove foil** now becomes highlighted.
- 18 Remove the foil or paper from between the dosing unit and the developing unit.
- 19 Select the **Done** pushbutton. The **Refill Toner Containers** window closes automatically.
- 20 After you refill the containers, close all doors except the fixed tower door on the left side of the machine.
- 21 Complete the service-intervention procedure, as described in “Finishing the Service-Intervention Procedure” on page 315. The toner levels are adjusted. When all levels are okay, you can restart the printing process.

## Replacing Toner Waste Bottles

When a toner waste bottle becomes full, a warning is issued in the **Active Alarms** window. If the engine is printing, you must stop the print cycle (see “Interrupting the Printing Process” on page 215) and replace the waste bottles that are full.

Check the waste bottles at the beginning of each shift. If any is three-quarters full, follow the steps below and replace it. Current status is displayed in the second row of the **Toner Containers** window.

To replace the toner waste bottles, follow these steps:

- 1 Perform the service-intervention procedure described on “Beginning the Service-Intervention Procedure” on page 313.
- 2 Open the X and Y tower doors, as shown in Figure 265, at the sides where the bottles to be replaced are located.

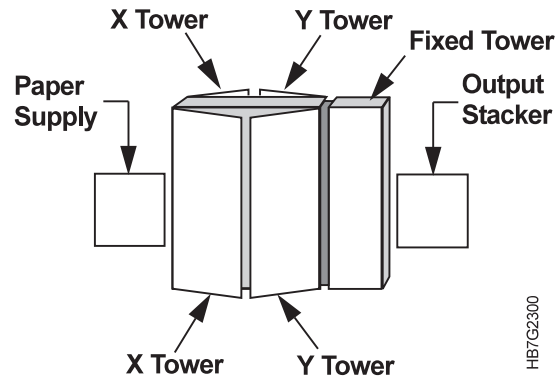


Figure 265. Right Side View of the InfoColor 70

- 3 Locate the waste bottles that need to be replaced.
- 4 Remove the waste bottle by rotating the handle on the waste outlet counterclockwise to a horizontal position, as shown in Figure 266 on page 339.





HB7C2178

Figure 266. Rotating the Waste Bottle Handle

- 5 Slide the waste bottle from the cleaning unit's waste outlet.
- 6 Remove the fixed cap from the full waste bottle and set it aside.
- 7 Remove the cap from a new, empty waste bottle and place the cap on the full bottle.  
**Attention:** Not removing the inner cover can block and then jam the cleaning station.
- 8 Remove the inner cover from the new, empty waste bottle.
- 9 Place the fixed cap on the new waste bottle.
- 10 Slide the new waste bottle onto the cleaning unit's waste outlet.  
**Attention:** Step 11 is very important. If you forget to rotate the handle back to the vertical position, all toner waste will remain in the cleaning unit. After a time, the cleaning unit will become blocked.
- 11 Rotate the handle clockwise to a vertical position.
- 12 Close the doors of the print tower.
- 13 Complete the service-intervention procedure on "Finishing the Service-Intervention Procedure" on page 315.
- 14 Check the toner waste level in the **Toner Containers** window.
- 15 If all levels indicate okay, you can continue printing.



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## Error Recovery and Problem Solving Task

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Clearing a Paper Jam in the Y Tower . . . . .	343	Interpreting and Solving Alarms and Warnings . . . . .	379
Clearing a Paper Jam in the Fixed Tower . . . . .	347	Using the Active Alarms Window . . . . .	379
Clearing a Jam in the Output Stacker . . . . .	352	Troubleshooting . . . . .	380
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## Chapter 17. Finding and Solving Problems

Before you do most problem solving, you first need to stop the print engine and remove all jewelry. Most problem solving cannot be performed unless you also include a service-intervention procedure. Also, some tasks require that you first take steps to prevent paper scorching during the problem solving.

**Note:** Before you begin to solve any problem, first read about service intervention, described on “Beginning the Service-Intervention Procedure” on page 313 and paper scorching, described on “Preventing Paper Scorching” on page 315.

---

### Finding and Clearing Paper Jams

The operator is responsible for clearing paper jams in the Y tower, the fixed tower, and the output stacker. Before clearing any paper jams, ensure that you first do the following:

#### Before Clearing any Paper Jam

- 1 Begin the service-intervention procedure, as described in “Beginning the Service-Intervention Procedure” on page 313.
- 2 Take the steps necessary to prevent paper scorching, as described in “Preventing Paper Scorching” on page 315.
- 3 Remove all jewelry.

#### Clearing a Paper Jam in the Y Tower

To clear a paper jam in the Y tower, follow these steps:

- 1 Move the paper supply away from the print tower, as shown in Figure 267.

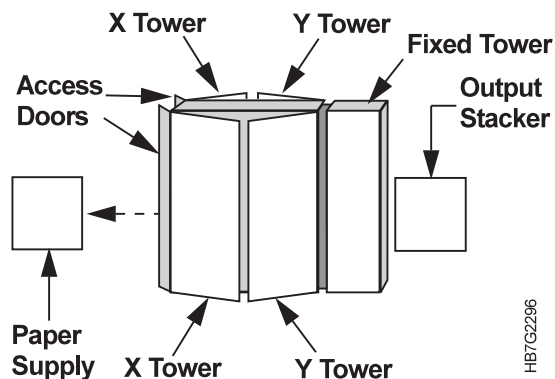


Figure 267. Right Side View of the InfoColor 70

- 2 Open the doors on both sides of the X tower and the Y tower.
- 3 Open the access doors behind the paper supply.
- 4 Unlatch the top of the print tower, as shown in Figure 268 on page 344, by pulling up on the latch located at the top center between the X and Y towers. Do this on both sides of the machine.

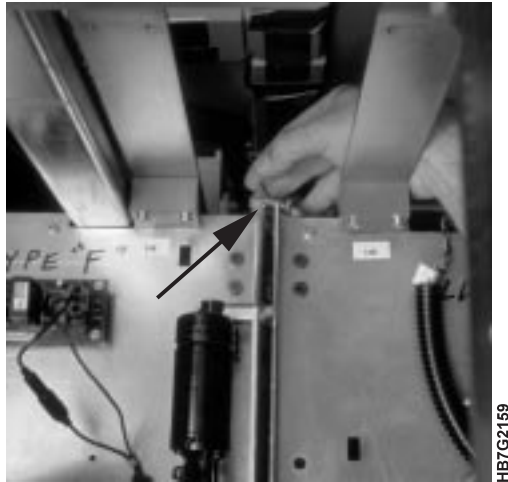


Figure 268. Unlatching the Top of the X and Y Towers

- 5 Unlatch the bottom of the print tower, as shown in Figure 269, by pulling out on the latch located at the bottom center between the X and Y towers. Do this on both sides of the machine.

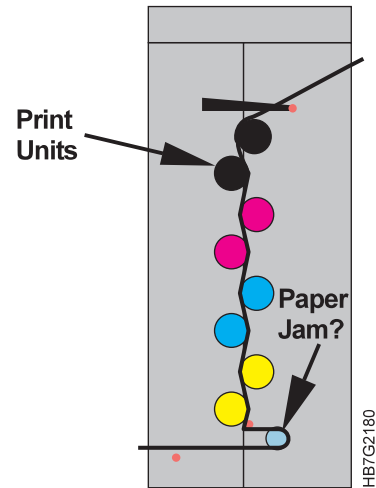


Figure 269. Unlatching Bottom of X and Y Tower

- 6 Move the X tower away from the Y tower and toward the paper supply.  
After moving the X tower, it should be almost flush with the access doors located between the X tower and the paper supply.
- 7 Check to see whether a paper jam has occurred around the web-drive speed roll at the bottom of the Y tower, as shown in Figure 270 on page 345, and then do either step 7a on page 345 or step 7b on page 345.



HB7G2181

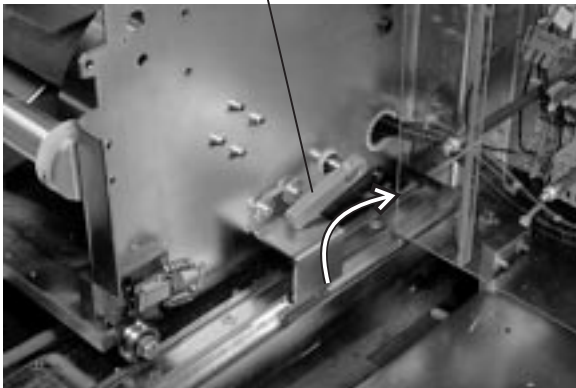


HB7G2180

Figure 270. Web-Drive Speed Roll

- a If you see no paper jam, lock the towers, close the doors, and see whether a jam has occurred in the fixed tower (see “Clearing a Paper Jam in the Fixed Tower” on page 347).
- b If you do see a paper jam, rotate the backup roll pressure handle clock wise, as shown in Figure 271, to loosen the pressure against the paper roll.

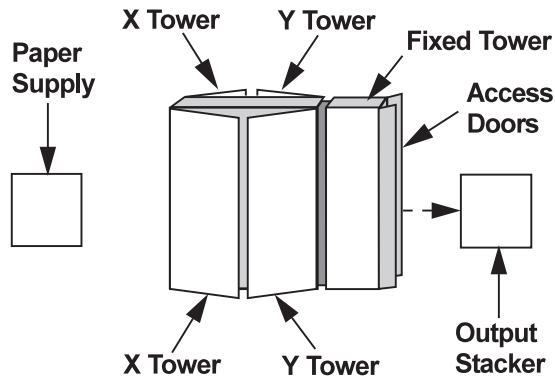
Backup Roll Pressure Handle



HB7G2182

Figure 271. Rotating the Backup Roll Pressure Handle Clockwise

- 8 Release the jammed paper.
- 9 If the paper is damaged, cut across both sides using a sharp knife.  
**Attention:** While you are cutting the paper, ensure that you do not damage the drums.
- 10 Align the cut edge of the lower paper on top of the cut edge of the upper paper and attach the edges with a firm tape.
- 11 Move the output stacker away from the fixed tower and then open the access doors of the fixed tower, as shown in Figure 272 on page 346.



HB7G2304

Figure 272. Right Side View of the InfoColor 70

- 12 Carefully pull the paper toward the output stacker until the wrinkled or taped portion of the paper has exited the tower.
- 13 Close the fixed tower access doors and return the output stacker to its correct position.
- 14 Return to the Y tower and rotate the backup roll pressure handle counterclockwise, as shown in Figure 273, to enable the speed roll drive to pull the paper.



HB7G2271

Figure 273. Rotating the Backup Roll Pressure Handle Counterclockwise

- 15 Move the X tower back to its home position.
- 16 Latch the X and Y towers together, using the top and bottom latches described in steps 4 on page 343 and 5 on page 344.
- 17 Close the access doors behind the paper supply.



- 18 Gradually move the paper supply back against the X tower.

**Attention:** As you move the paper supply, you need to take up the slack in the paper, as follows:

**Attention:** This causes the paper to touch the heated roll. Since the printer remains in Standby state during maintenance, which can be quite long, the paper can become scorched. Scorched paper can cause a paper break and create a burnt paper odor.

- 19 Place your hands on the underside of the paper roll, palms up. While exerting pressure on the roll, rotate the roll toward you until you can move the roll no farther and the slack is gone.
- 20 Finish the service-intervention procedure, as described “Finishing the Service-Intervention Procedure” on page 315.

## Clearing a Paper Jam in the Fixed Tower

**Note:** Before you clear a paper jam in the fixed tower, ensure that you have started the service-intervention procedure in “Beginning the Service-Intervention Procedure” on page 313 and have taken steps to prevent scorching the paper in “Preventing Paper Scorching” on page 315.

To clear a paper jam in the fixed tower, follow these steps:

- 1 Move the output stacker away from the fixed tower and open the access doors of the fixed tower, as shown in Figure 274.

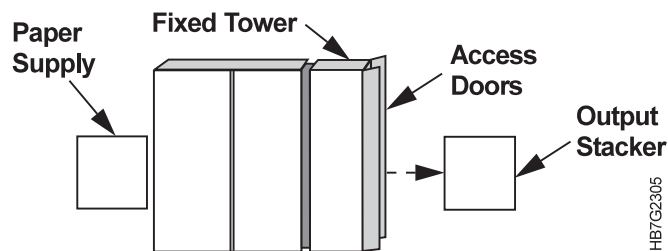


Figure 274. Right Side View of the InfoColor 70

- 2 Determine whether a paper jam has occurred around the roll located under the cooling unit, as shown in Figure 275 on page 348, and then do either step 2a on page 348 or step 2b on page 348.

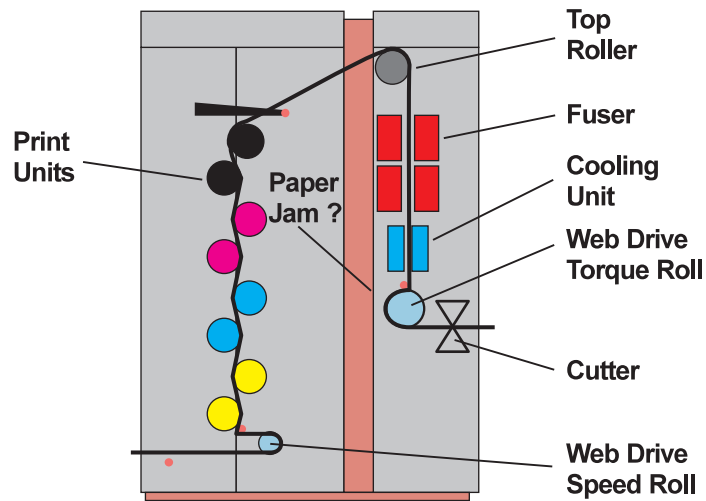


Figure 275. Fixed Tower Cooling Unit

- a If you see no paper jam, check whether a jam has occurred in the Y tower in “Clearing a Paper Jam in the Y Tower” on page 343.
- b If you do see a jam, remove the two black cutter assembly locking knobs, as shown in Figure 276, and pull the cutter assembly toward you and away from the torque roll.

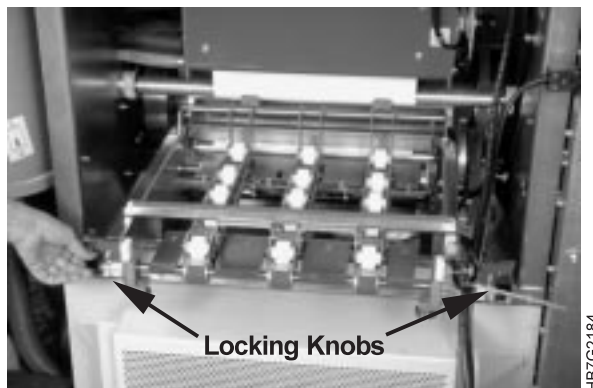


Figure 276. Cutter Assembly Locking Knobs

- 3 Open the fixed tower door on the right side of the machine, as shown in Figure 277.

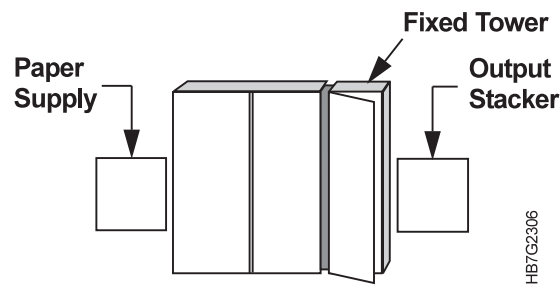


Figure 277. Right Side View of the InfoColor 70

- Find the small handle, as shown in Figure 278 on page 349, which is located at the back and right of the fixed tower, below the dust filters. There are two machine configurations. If you do not see the handle, continue with step 6 on page 349 to locate the handle in an alternate location.

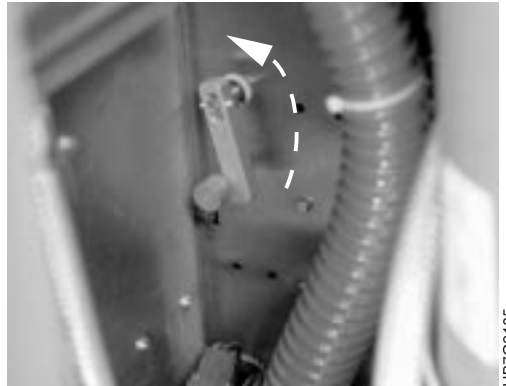


Figure 278. Torque Roll Backup Roll Pressure Handle

- Turn this handle counterclockwise.  
This releases the backup roll pressure from the torque roll. Continue with step 9 on page 350.
- Close the fixed tower door on the right side of the machine and open the fixed tower back access doors, as shown in Figure 279.

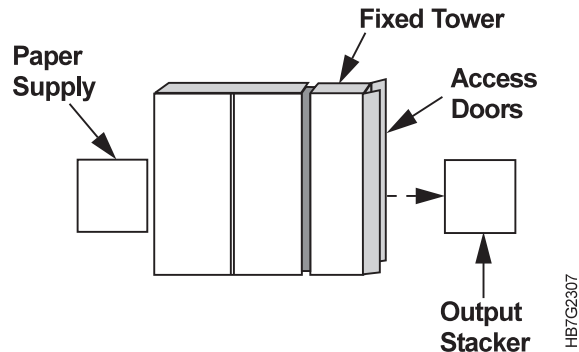


Figure 279. Right Side View of the InfoColor 70

- Find the metal lever along the left side of the cutter mechanism and under the fly wheel, as shown in Figure 280 on page 350.



Figure 280. Alternate Location of Backup Roll Pressure Handle

- 8 Turn the lever in either direction until you feel resistance. Continue to spin the lever further to latch the web drive in the open position.  
This releases the pressure against the torque roll.
- 9 Release the jammed paper.
- 10 Cut the paper using a sharp knife.
- 11 Insert the paper through the cutter, as shown in Figure 281.

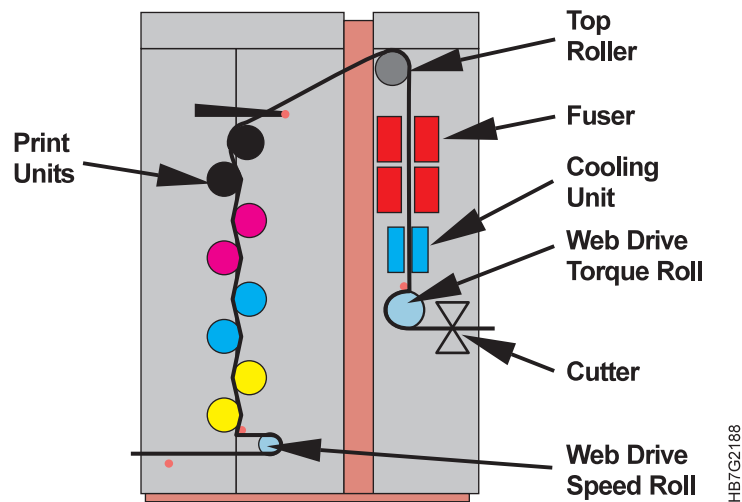


Figure 281. Inserting the Paper Through the Cutter

- 12 While holding the paper straight, push the cutter assembly back to its original position.
- 13 Replace the black cutter assembly locking knobs, as shown in Figure 282 on page 351, and cut the paper.

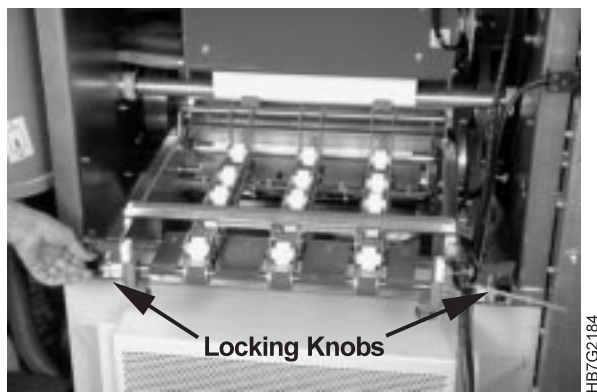


Figure 282. Cutter Assembly Locking Knobs

**Note:** You might have to pull the paper through in order to rethread the paper around the torque roll and the cutter assembly.

- 14** If you found the backup roll pressure handle inside the right fixed tower door, restore the backup roll pressure to the torque roll by rotating the handle clockwise, as shown in Figure 283. Otherwise, continue with step 15.

This restores the pressure against the torque roll. Continue with step 15.

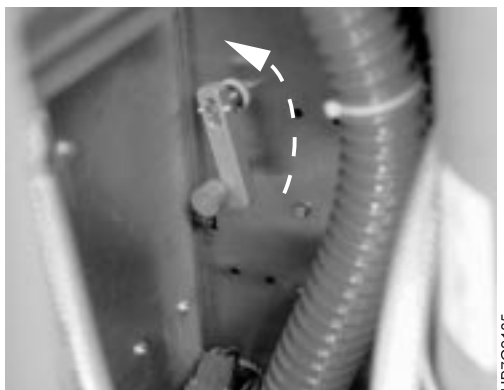


Figure 283. Rotating the Backup Roll Pressure Handle Clockwise

- 15** If you found the backup roll pressure handle inside the back access doors of the fixed tower, turn the lever, as shown in Figure 284 on page 352, until it spins freely without any resistance.

This restores the backup roll pressure to the torque roll.

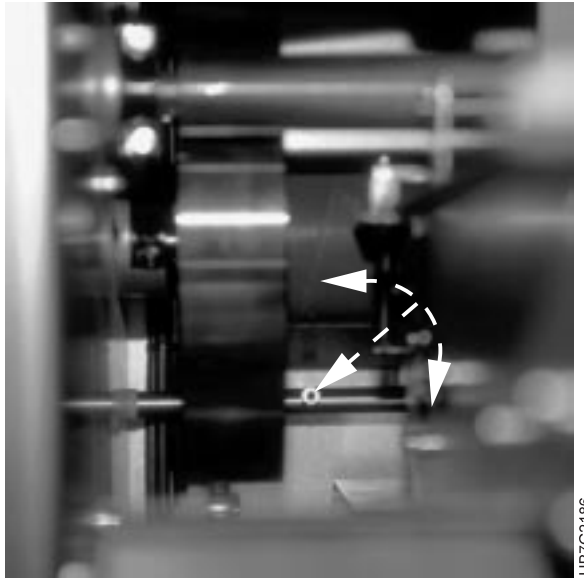


Figure 284. Alternate Location of Backup Roll Pressure Handle

- 16 Close the fixed-tower access doors and the fixed tower door on the right side of the machine.
- 17 Put the output stacker back in its correct position, as shown in Figure 285.

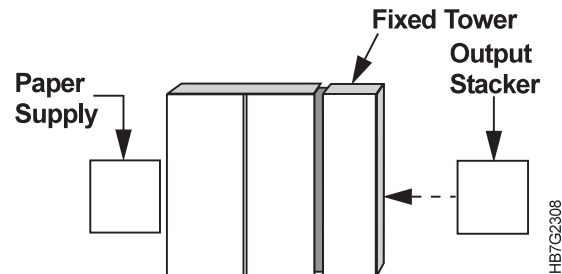


Figure 285. Right Side View of the InfoColor 70

- 18 Complete the service-intervention procedure, as described on “Finishing the Service-Intervention Procedure” on page 315.

## Clearing a Jam in the Output Stacker

To clear a jam in the output stacker, follow these steps:

- 1 Open the **Engine State** window.
- 2 Turn on the main power of the InfoColor 70 by clicking on the **Go to Standby** pushbutton in the **Engine State** window.

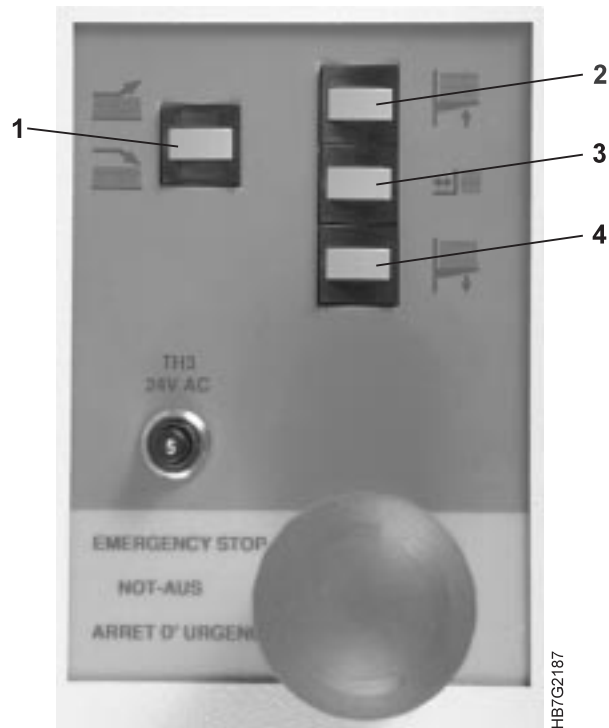


Figure 286. Output Stacker Keyboard

- 3 Press button 4 to move the main tray down.
- 4 Remove the jammed paper.
- 5 Press button 2 to return the main tray to its original position.

---

## Finding and Fixing Paper Breaks

The operator is responsible for rethreading the paper path in the paper supply, the print tower, or the fixed tower. Before rethreading paper paths, ensure that you first do the following:

- 1 Begin the service-intervention procedure, as described in “Beginning the Service-Intervention Procedure” on page 313 and take the steps necessary to prevent paper scorching, as described in “Preventing Paper Scorching” on page 315.
- 2 Remove all jewelry.
- 3 Pull the end of the broken paper web out of the print engine.
- 4 Determine whether the paper web has broken in the paper supply, the print tower, or the fixed tower and use the appropriate directions that follow. For example, if the web has broken in the print tower, start with “Rethreading the Paper Path in the Print Tower” on page 361.

The solid black line in Figure 287 on page 354 shows the path of the paper through the InfoColor 70.

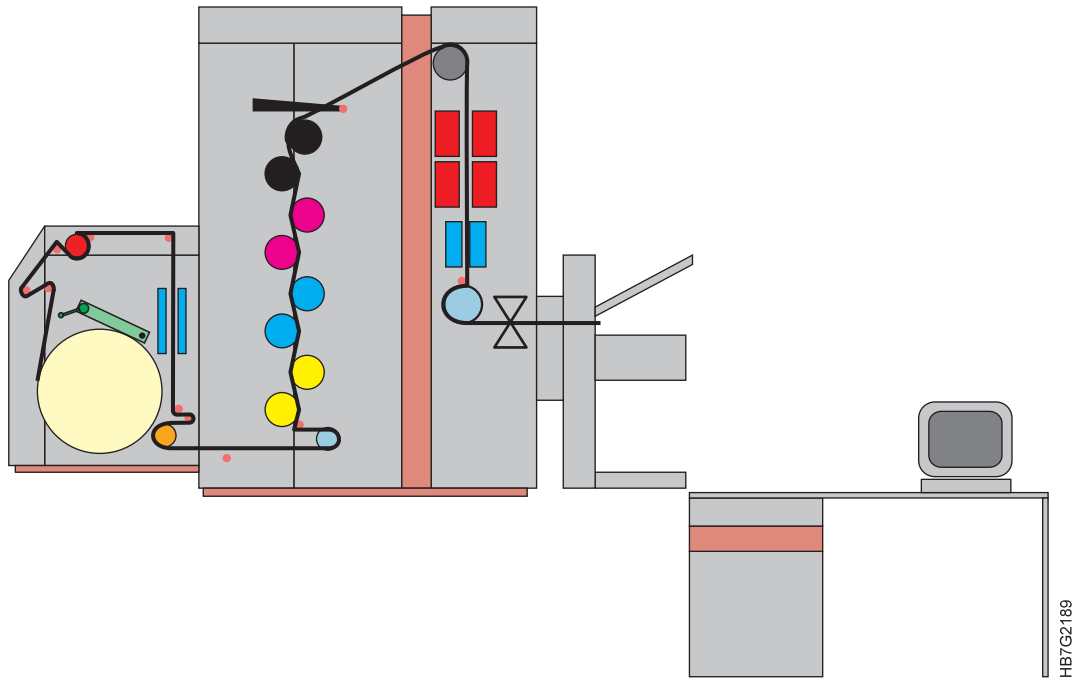


Figure 287. InfoColor 70 Paper Path

## Rethreading the Paper Path in the Paper Supply

To rethread the paper path in the paper supply, follow these steps:

- 1 Pull the paper supply away from the print tower, as shown in Figure 288.

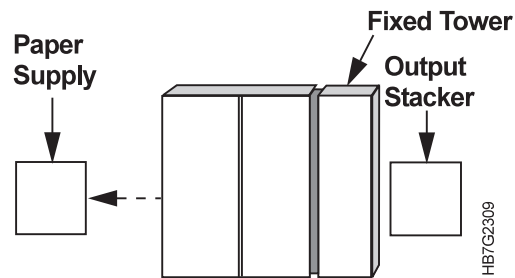


Figure 288. Right Side View of the InfoColor 70

**Attention:** A poor splice with loose flaps of paper will break the corona wires.

**CAUTION:**

**The paper roll can weigh up to 40 kg (88 lbs) and requires two or more persons to lift.**

- 2 Mount the paper roll on the hand truck, as shown in Figure 289 on page 355, ensuring that the plastic disk is at the right.





Figure 289. Paper Roll Mounted on Hand Truck

- 3 Position the hand truck in front of the paper supply.
- 4 Push the paper roll into the front of the paper supply unit, ensuring that the ends of the axle rest precisely in the notches at the front of the side guides.
- 5 Move the hand truck away from the paper supply.

 **CAUTION:**

<30> **Keep hands and feet from beneath the paper roll. The roll can tilt and fall.**

- 6 Gently push the roll onto the paper roll mount, as shown in Figure 290, until the bearings are seated. Ensure that you push the roll equally at both sides so the roll does not slant.



Figure 290. Pushing the Paper Roll

- Place the end of the paper roll behind axle 1, as shown in Figure 291 on page 356 and Figure 292 on page 356. (The axles are numbered only in the diagrams.)

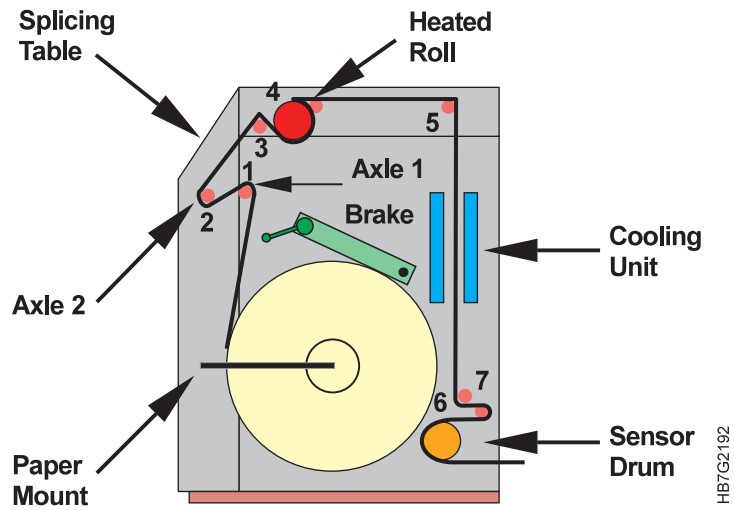


Figure 291. InfoColor 70 Paper Path

- Pull the end of the paper roll up and over axle 1, down and under axle 2, and then in an upward direction, as shown in Figure 292.

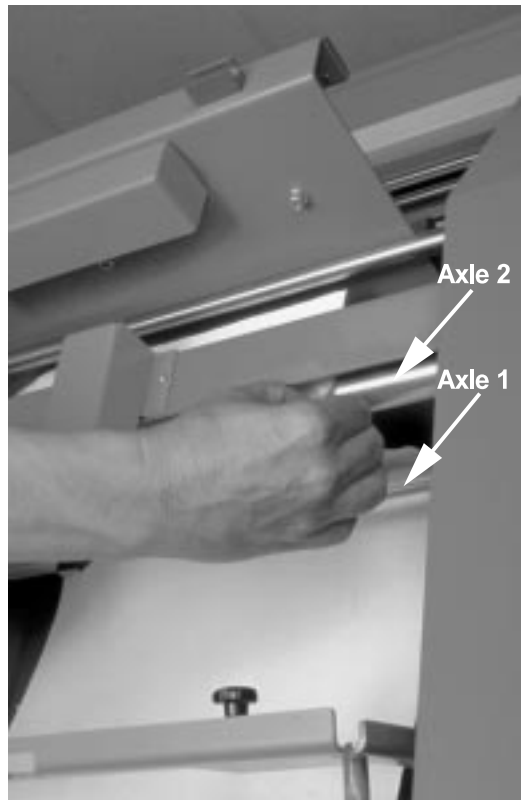


Figure 292. Threading the Paper Supply

- Insert the paper between the splicing table and the plate, as shown in Figure 293 on page 357.



Figure 293. Inserting the Paper Between the Splicing Table and the Plate

- 10 Pull the paper under the paper clamp and its lever, as shown in Figure 294.

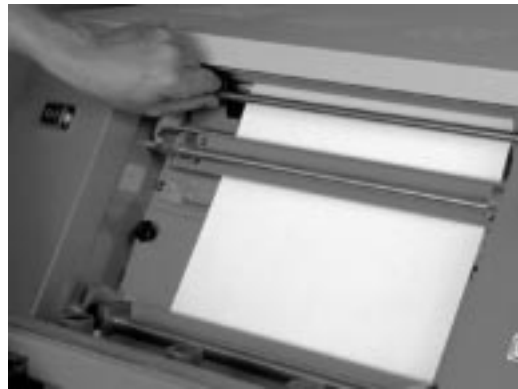


Figure 294. Pulling the Paper Under the Paper Clamp

- 11 Open the top cover of the paper supply.

**⚠ CAUTION:**

**<34> Allow at least 30 minutes before touching the heated roll.**

**Attention:** Do not do the next steps until you have put on the protective thermal gloves shipped with your InfoColor 70. Anytime you do a task that requires your hands to be near the heated roll, you should first put on the thermal gloves.

- 12 Pull the paper over axle 3, as shown in Figure 295 on page 358. (The axles are numbered only in the diagrams.)

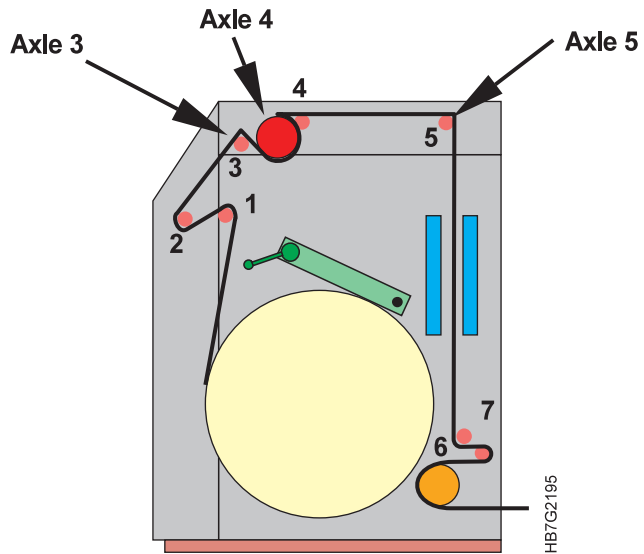


Figure 295. Paper Supply Paper Path

- 13 Place the paper under and around the heated roll, as shown in Figure 296.

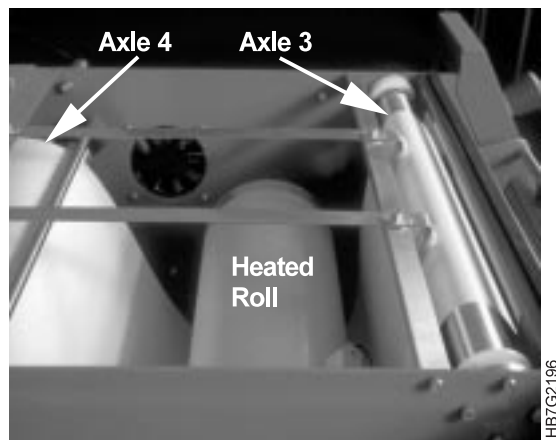


Figure 296. Paper Supply Heated Roll

- 14 Bring the paper up and over axles 4 and 5, as shown in Figure 295, and Figure 296.
- 15 Remove the four Allen screws located in the corners of the back cover of the paper supply, as shown in Figure 297 on page 359.

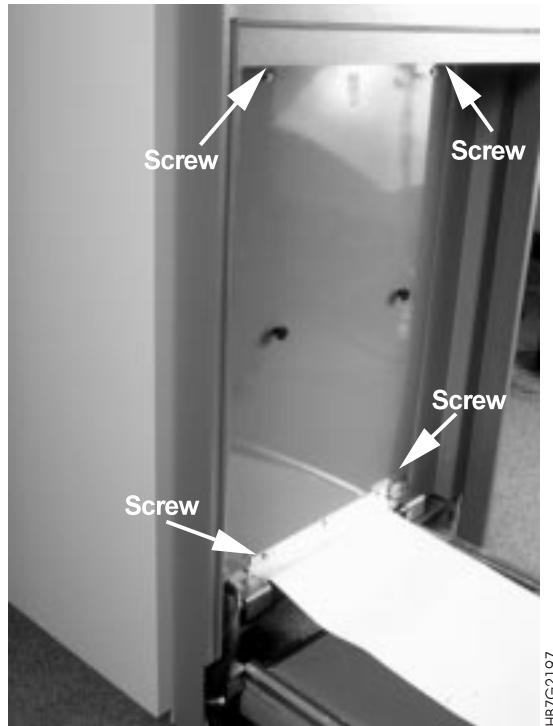


Figure 297. Paper Supply Back Cover Screws

- 16 Remove the back cover and set it aside.
- 17 Unlock the metal latch located on the right side of the cooling unit, as shown in Figure 298, and the metal latch located on the left side of the cooling unit.

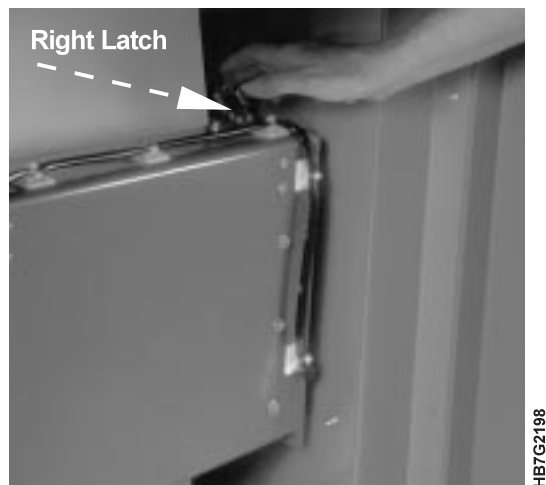


Figure 298. Cooling Unit Right Latch

- Note:** The right latch is on the top of the unit. Pull the latch toward you. The left latch is on the side of the unit. Push the latch toward the left.
- 18 Open the cooling unit by pulling the top toward you.  
**Note:** The top of the cooling unit can be pulled toward you for about 1 inch.
  - 19 Place the paper between the two parts of the cooling unit, as shown in Figure 299 on page 360.

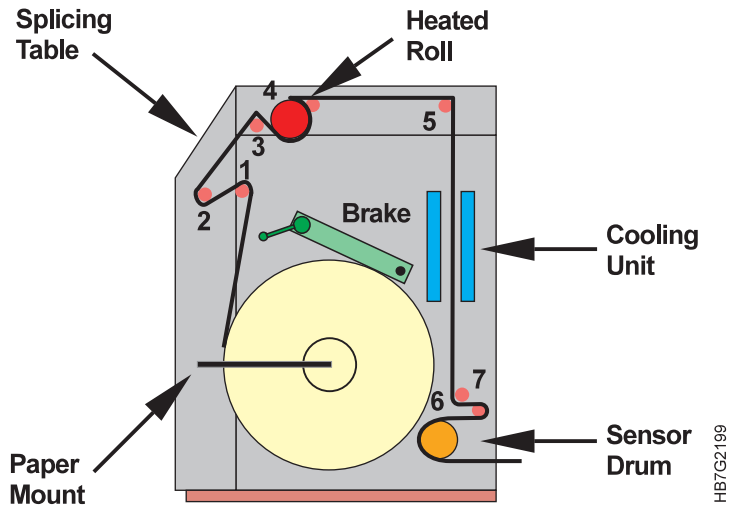


Figure 299. Paper Supply Paper Path

- 20 Close the cooling unit and lock the latch on each side.
- 21 Fold the end of the paper into a point, as shown in Figure 300.



Figure 300. Paper Folded into a Point

- 22 Bring the paper down and under axle 6 and around axle 7, as shown in Figure 301, and then tape the point of the paper to the top of the sensor drum.

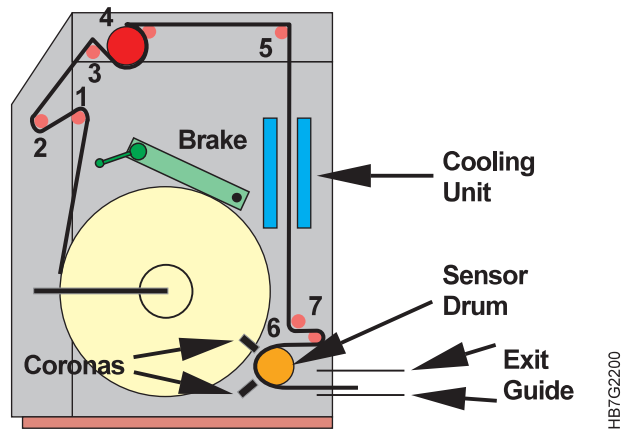


Figure 301. Paper Supply Paper Path

- 23 Gently rotate the sensor drum to feed the paper between the drum and the two coronas.
- 24 Remove the taped end of the paper from the sensor drum, but keep the folds in the paper.
- 25 Insert the folded point of the paper through the exit guide.

- 26 Put the cover back on the paper supply and replace the four Allen screws.
- 27 Close the top cover of the paper supply.
- 28 Continue with "Rethreading the Paper Path in the Print Tower."

## Rethreading the Paper Path in the Print Tower

To rethread the paper path in the print tower, follow these steps:

- 1 Perform the service-intervention procedure (see Page 313), if you have not already done so.
- 2 Open the doors on both sides of the X and Y towers, as shown in Figure 302.

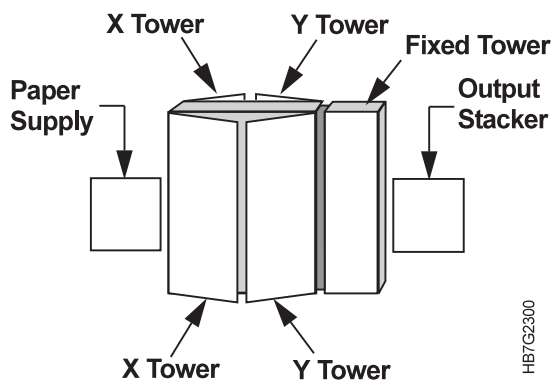


Figure 302. Right Side View of the InfoColor 70

### CAUTION:

<31> Ensure that any small step ladder or stool used to reach latches or thread paper is level and steady.

- 3 Unlatch the top of the X and Y towers by pulling up on the latch located at the top center between the towers, as shown in Figure 303. Do this on each side of the towers.

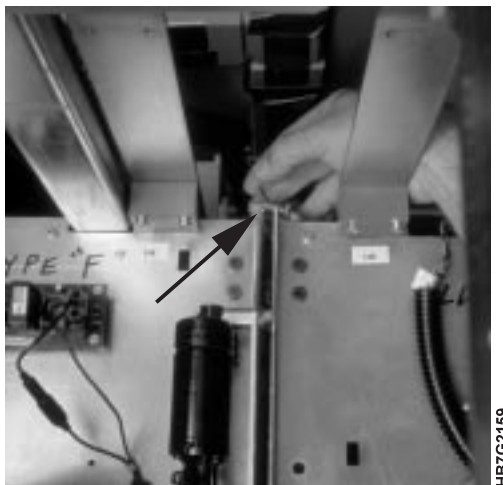


Figure 303. Top Latch Between X and Y Tower

- 4 Open the gates in front of the electronic panels.

- 5 Unlatch the bottom of the X and Y towers by pulling out on the bottom latch located at the bottom center between the towers, as shown in Figure 304 on page 362. Do this on each side of the towers.



Figure 304. Bottom Latch Between the X and Y Towers

- 6 Move the X tower away from the Y tower and toward the paper supply.  
**Note:** After moving the X tower, it should be almost flush with the access doors located between the X tower and the paper supply.
- 7 Pull the paper through the base of the X tower to the Y tower. Ensure that the paper is placed above axle 8, as shown in Figure 305.

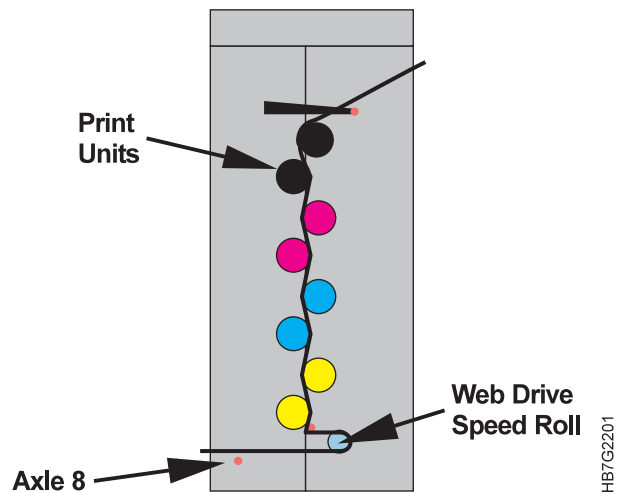


Figure 305. Print Tower Paper Path

- 8 Rotate the backup roll pressure handle, as shown in Figure 306 on page 363, clockwise to loosen the pressure against the speed roll.



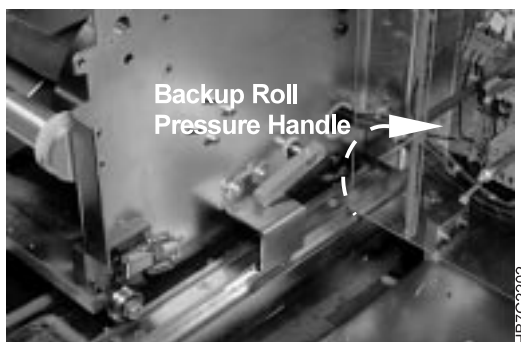


Figure 306. Backup Roll Pressure Handle

- 9 Thread the paper around the speed roll, as shown in Figure 307, in a counterclockwise direction.

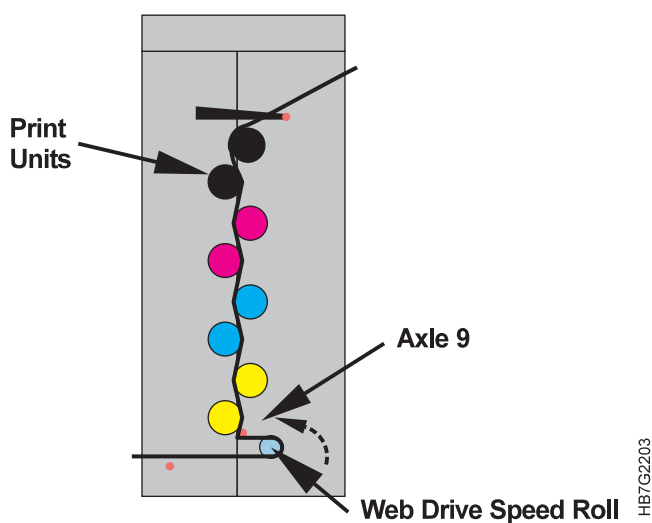


Figure 307. Print Tower Paper Path

- 10 Pull the paper under axle 9 and then up to the top of the print tower.
 

**Note:** You need a second person to help you pull the paper to the top.
- 11 Rotate the backup roll pressure handle, as shown in Figure 308, counterclockwise to enable the speed roll drive to pull the paper.



Figure 308. Backup Roll Pressure Handle

- 12 Continue with “Rethreading the Paper Path in the Fixed Tower” on page 364.

## Rethreading the Paper Path in the Fixed Tower

- 1 Perform the service-intervention procedure (“Beginning the Service-Intervention Procedure” on page 313), if you have not already done so.
- 2 Move the output stacker away from the fixed tower, as shown in Figure 309.

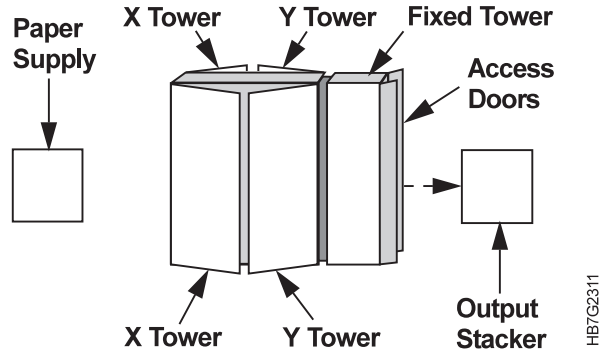


Figure 309. Right Side View of the InfoColor 70

- 3 Open the back access doors of the fixed tower.
- 4 Thread the paper over the Web Suspension Bar.
- 5 Push the paper through the slot in the frame located above the Y black print station, as shown in Figure 310.

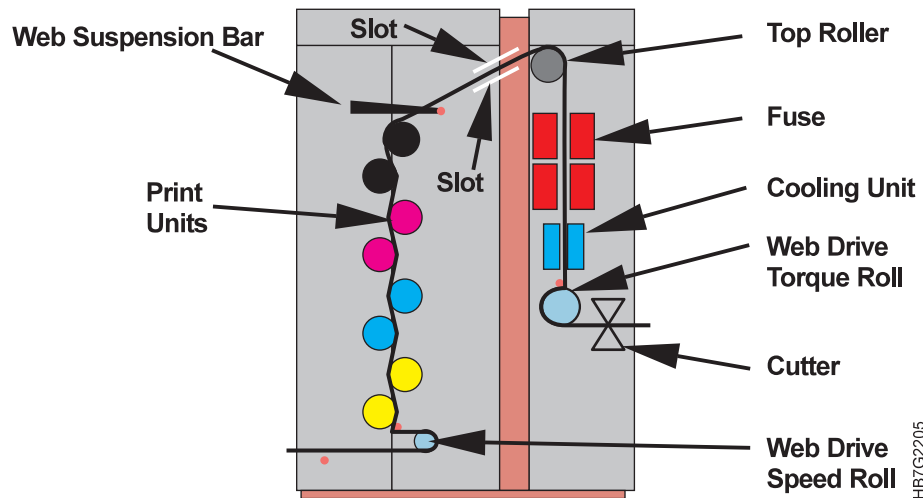


Figure 310. Print Tower and Fixed Tower Paper Path

- 6 Pull the paper around the top roller and insert the paper into the slot on top of the fuser, as shown in Figure 310 and Figure 311 on page 365.



Figure 311. Threading the Paper Around the Top Roller

**Attention:** Hold onto a black handle as you remove the screws to ensure that the cover of the fuser cabinet does not loosen all at once and fall to the floor.

- 7 Unscrew and remove the four black knobs located on the cover of the fuser cabinet, as shown in Figure 312.

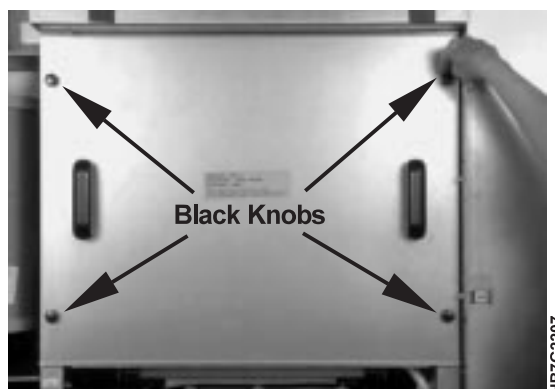


Figure 312. Fuser Cabinet Cover Black Knobs

**Note:** Performing this step will cut off power to the printer.

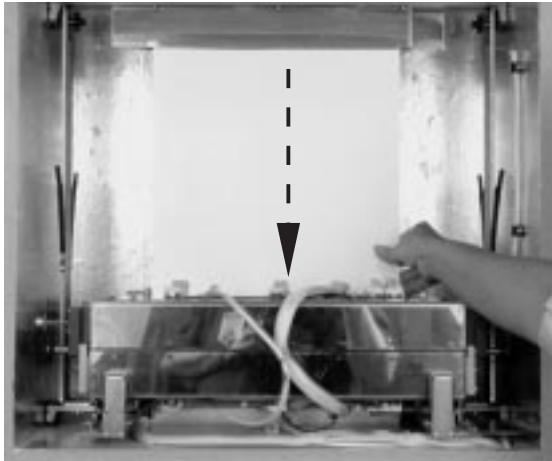
- 8 Remove the cover of the fuser cabinet.

**CAUTION:**

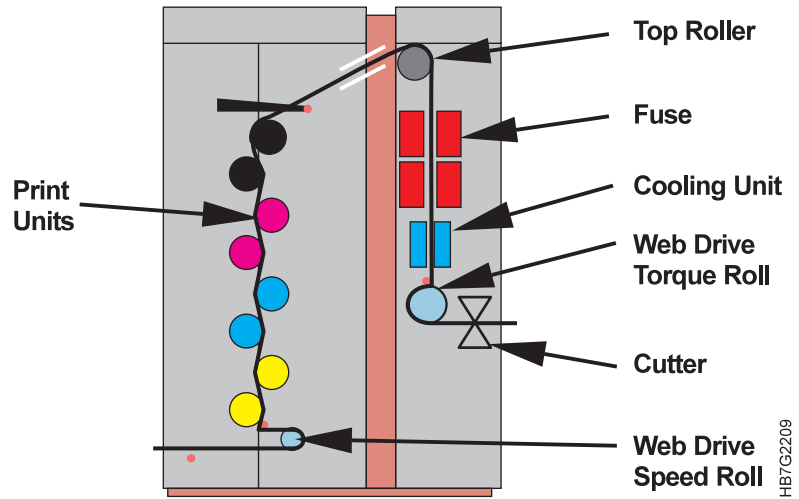
<35> **Allow at least 30 minutes before touching the fuser system.**

**Attention:** Do not do the next steps until you have put on the protective thermal gloves shipped with your InfoColor 70. Anytime you do a task that requires your hands to be near the fuser, you should first put on the thermal gloves.

- 9 Pull the paper down between the fuser elements, as shown in Figure 313 on page 366.



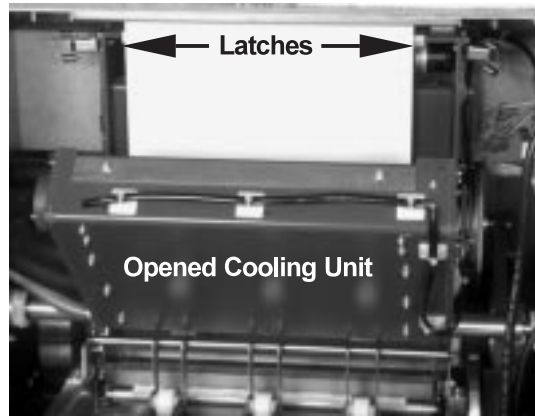
HB7G2208



HB7G2209

Figure 313. Threading Paper through the Fuser

- 10 Unlock the latch on each side of the cooling unit, as shown in Figure 314.



HB7G2210

Figure 314. Cooling Unit Latches

- 11 Open the cooling unit by pulling the unit toward you.
- 12 Place the paper between the two parts of the cooling unit, as shown in Figure 315 on page 367.

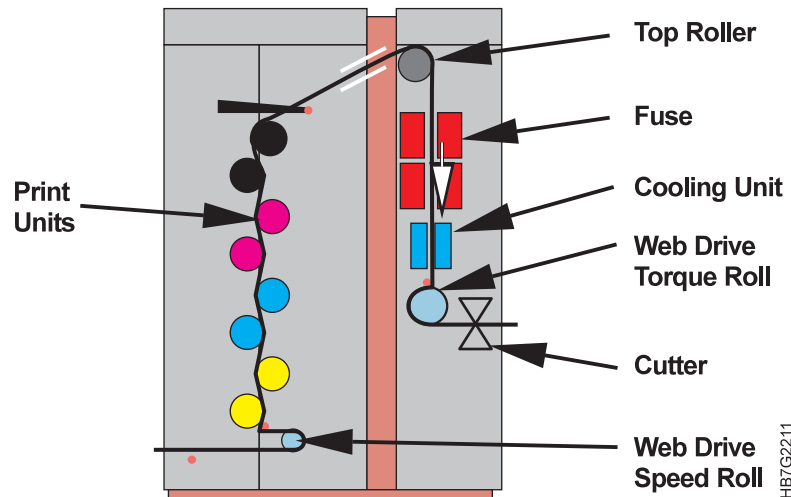


Figure 315. Print Tower and Fixed Tower Paper Path

- 13 Close the cooling unit and latch the latches.
- 14 Replace the cover of the fuser cabinet.
- 15 Remove the two black knobs located on the front of the cutter assembly, as shown in Figure 316.

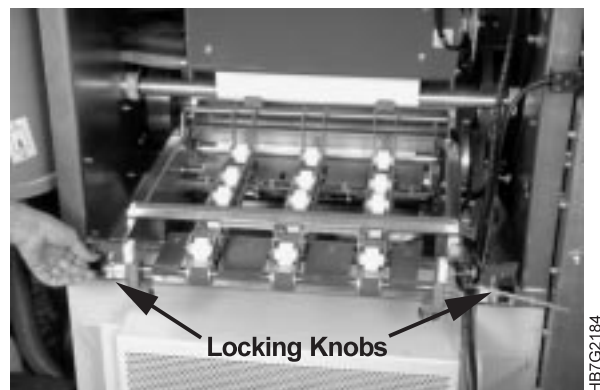


Figure 316. Cooling Unit Black Knobs

- 16 Pull out the cutter assembly so you will be able to do the next step.
- 17 Pull the paper under axle 10, as shown in Figure 317 on page 368.

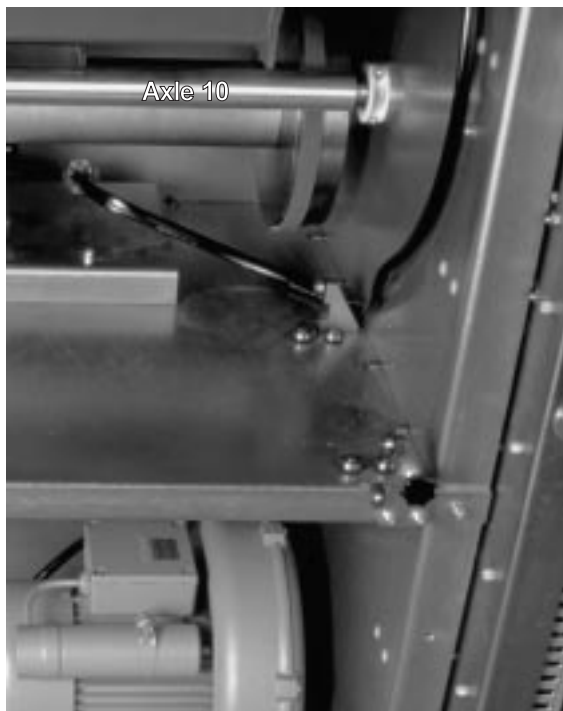
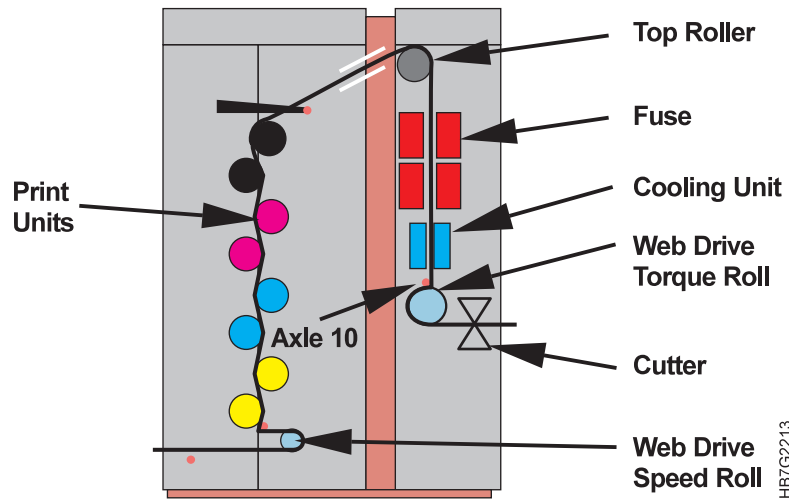


Figure 317. Axle 10

- 18 Open the fixed tower door on the right side of the machine, as shown in Figure 318.

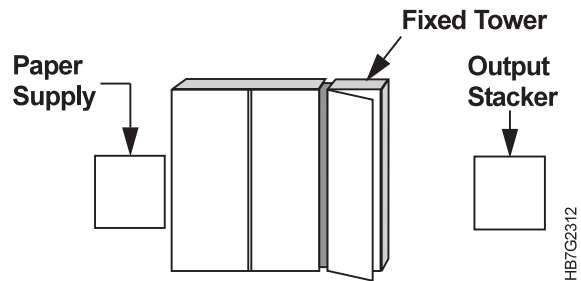


Figure 318. Right Side View of the InfoColor 70

- 19** Find the small handle located on the back and left side below the dust filters, as shown in Figure 319 on page 369. There are two machine configurations. If you do not see the handle, continue with step 21 on page 369 to locate the handle in an alternate location.

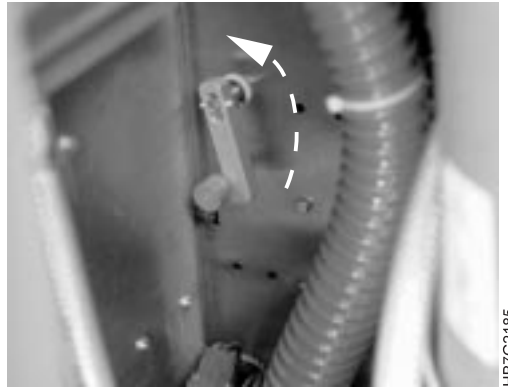


Figure 319. Backup Roll Pressure Handle

- 20** Turn this handle counterclockwise.  
This releases the backup roll pressure from the torque roll. Continue with step 21.
- 21** Close the fixed tower door on the right side of the machine and open the fixed tower back access doors, as shown in Figure 320.

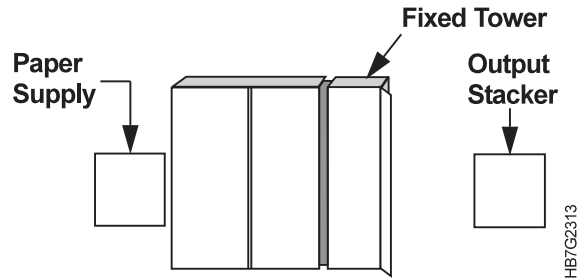
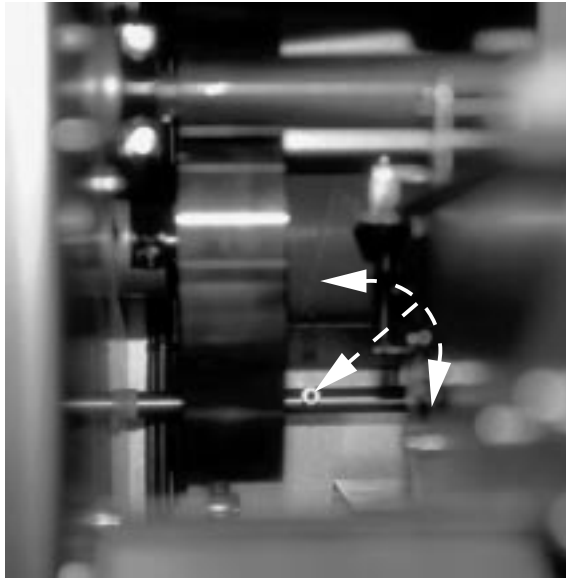


Figure 320. Right Side View of the InfoColor 70

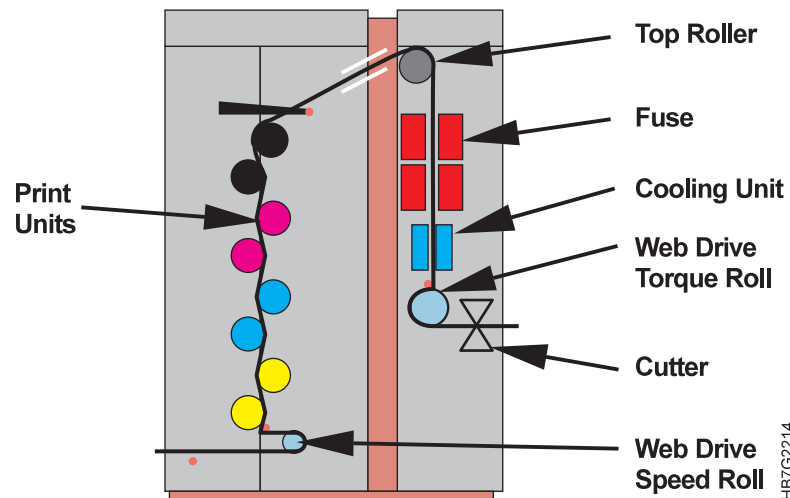
- 22** Find the metal lever along the left side of the cutter mechanism and under the fly wheel, as shown in Figure 321 on page 370.



HB7G2186

Figure 321. Alternate Location of Backup Roll Pressure Lever

- 23** Turn the lever in either direction until you feel resistance. Continue to spin the lever further to latch the web drive in the open position.  
This releases the pressure against the torque roll.
- 24** Wind the paper around the torque roll, as shown in Figure 322.



HB7G2214

Figure 322. Print Tower and Fixed Tower Paper Path

- 25** Place the paper between the guide plates located at the back of the cutter assembly, as shown in Figure 323 on page 371.



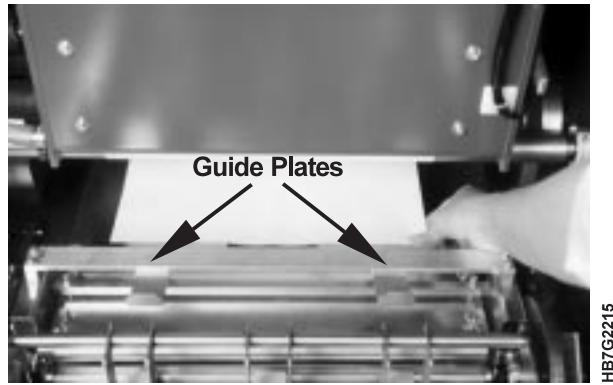


Figure 323. Cutter Assembly Guide Plates

- 26** Lift up the rollers assembly.
- 27** Pull the paper until it comes out of the cutter.
- 28** Push down the roller assembly.
- 29** If you found the backup roll pressure handle inside the right fixed tower door, turn the handle in a clockwise direction, as shown in Figure 324. Otherwise, continue with step 29.

This restores the pressure against the torque roll. Continue with step 30.

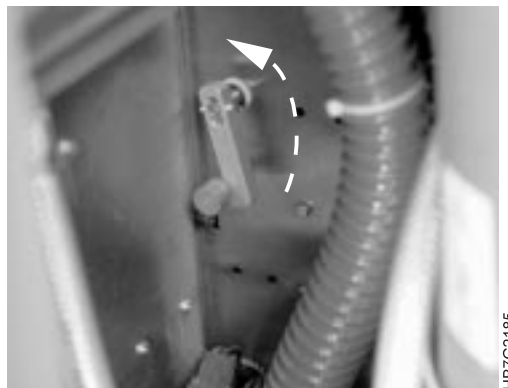


Figure 324. Backup Roll Pressure Handle

- 30** If you found the backup roll pressure lever inside the back access doors of the fixed tower, turn the lever in either direction until it spins freely without any resistance.

This restores the backup roll pressure to the torque roll.

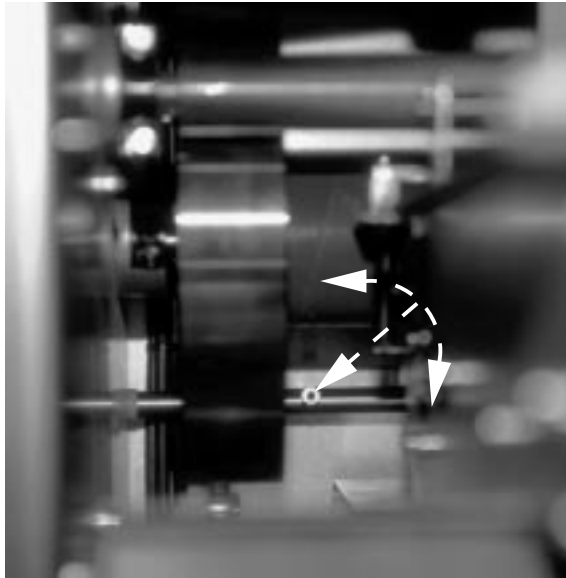


Figure 325. Alternate Location of Backup Roll Pressure Lever

- 31 While holding the paper straight, move the cutter back into place and replace the two black locking knobs, as shown in Figure 326.

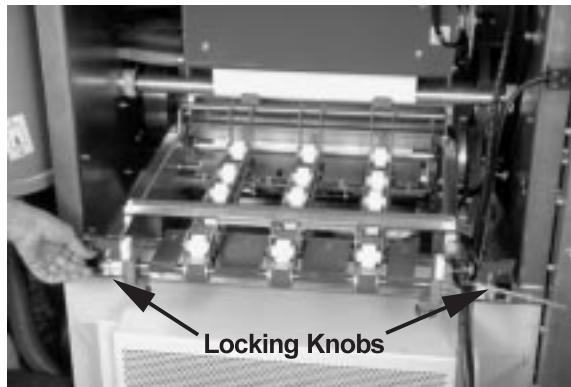


Figure 326. Cutter Assembly Black Knobs

- 32 Cut the paper, taking care not to cut the belt.
- 33 Close the doors and put the output stacker back in place.
- 34 Complete the service-intervention procedure, as described in “Finishing the Service-Intervention Procedure” on page 315.

---

## Polishing Drum Scratches and Spots (Optional)

This is an optional procedure that an operator may use to polish a drum when scratches or fused-on-toner (FOT), toner left on the drum that has not been transferred to the paper, spots appear on a test print in between service times. You may also call your service representative to do this procedure.

## Preparing to Polish a Drum

When you discover that one or more drums needs minor polishing, you must determine which drums have defects and where, and locate the polishing kit. If a scratch is a shiny aluminum color, then it cannot be removed by polishing. Call your service representative to replace the drum. If there are FOT spots on a drum, you must first polish the spot to remove the toner before you can determine whether the scratch can be removed by polishing.

Your machine was installed with special test files to help you determine which drums need to be polished. The test files, CYAN.PS, MAGENTA.PS, YELLOW.PS, and BLACK.PS, are located in the `/usr/fcdp/ce/utilities/` directory. Each test file prints a large square of that color. The prints will help you identify which drums need to be polished.

You should attach the standard control strip, CSIBMV\*\*.PS, to each one of these files. Then RIP and print each test file using the following Page Setup parameter settings:

- Screening — Sofocles
- Dot gain control — 15%
- Color correction — Disabled
- Type — Duplex
- Orientation — 0.

For printing instructions see “Defining Page Setups and Paper Sizes” on page 154, Chapter 7, “RIPing Jobs” on page 153, Chapter 8, “Printing on the Model 02C” on page 173, and Chapter 9, “Printing on the Model 002” on page 185.

After you print, examine each image carefully to determine which drums need to be polished.

Locate the following IBM-certified supplies in the polishing kit that was provided with your machine when it was installed:

- Rubber gloves
- Polishing pad
- Polishing paper (9 micron)
- Lint free cloth

## Attaching the Polishing Paper to the Polishing Pad

Open the outside and inside clamp on the polishing pad. Hold the pad in your hand with the outside clamp on the right side, as shown in Figure 327 on page 374.

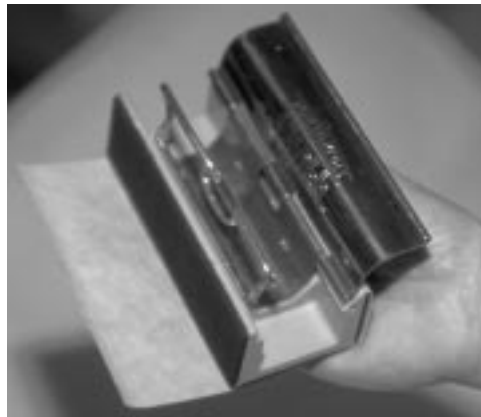


HE7G2216

*Figure 327. Polishing Pad*

To wrap the polishing paper around the polishing pad, follow these steps:

- 1** Insert one end of the paper in the right side of the open outside clamp, as shown in Figure 328.



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*Figure 328. Insert Paper in Right Side of Polishing Pad*

- 2** Close the inner clamp.
- 3** Wrap the paper tightly around the pad and fold it over the left side of the pad, as shown in Figure 329 on page 375.



Figure 329. Insert Paper in Left Side of Polishing Pad

- 4 Close the outside clamp.

**Note:** The polishing paper should be changed when all three sides are dirty.

## Polishing the Drums

To polish the drums, follow these steps:

- 1 Begin the service-intervention procedure, as described in “Beginning the Service-Intervention Procedure” on page 313.
- 2 Take the steps necessary to prevent paper scorching, as described in “Preventing Paper Scorching” on page 315.
- 3 Move the paper supply away from the print tower, as shown in Figure 330.

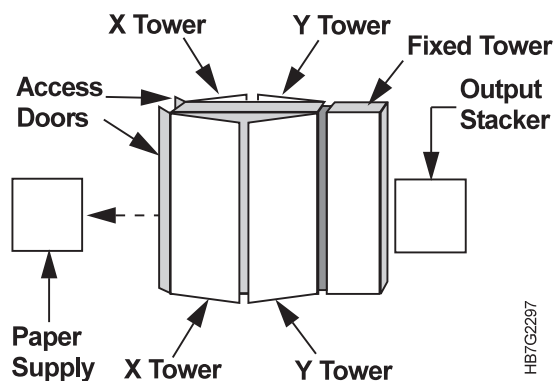
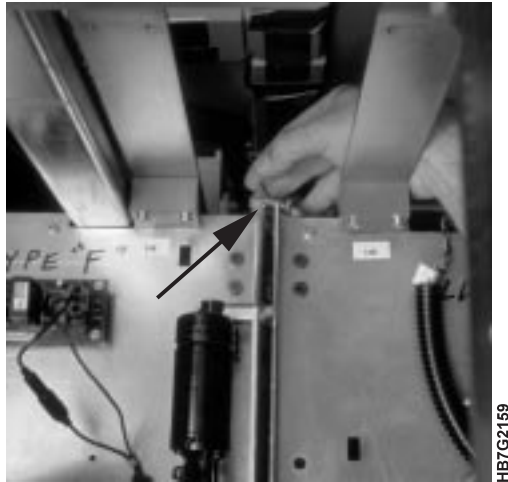


Figure 330. Right Side View of the InfoColor 70

- 4 Open the doors of the X and Y towers on both sides of the machine.
- 5 Open the access doors behind the paper supply.
- 6 Unlatch the top of the X and Y towers by pulling up on the latch located at the top center between the towers, as shown in Figure 331 on page 376. Do this on both sides of the machine.



*Figure 331. Top Latch Between the X and Y Towers*

- 7** Unlatch the bottom of the X and Y towers by pulling out on the bottom latch located at the center between the towers, as shown in Figure 332. Do this on both sides of the tower.



*Figure 332. Bottom Latch Between the X and Y Towers*

- 8** Move the X tower toward the paper supply and approximately 3 to 4 inches away from the Y tower to make it easier to remove the coronas and not damage the drums.
- 9** Locate the transfer erase duplex (TED) corona assembly, as shown in Figure 333 on page 377. Each tower has four TED corona assemblies.

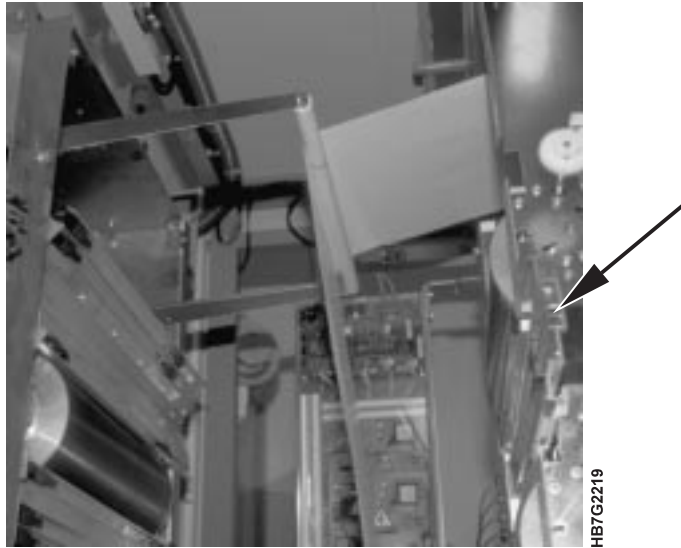


Figure 333. TED Corona Assemblies

**Attention:** The TED corona assemblies should be put in a clean place where the corona wires will not get broken.

**10** For the drums that need polishing, remove the TED corona assemblies by sliding them carefully out of the guide bars.

**11** Pull the X-tower away from the Y-tower so that there is enough space to polish the drums without your body rubbing against the machine.

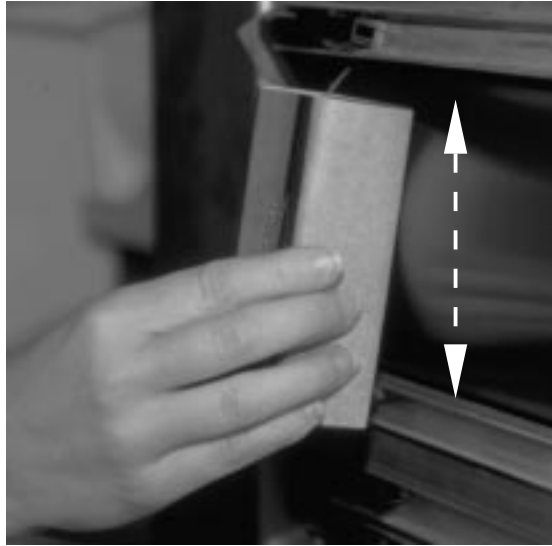
**Attention:** When rotating the X magenta drum, avoid touching the encoder so that it does not get dirty. A dirty encoder will not operate correctly.

**12** Rotate the drum by applying pressure on the metal end, not by pressing on the organic photoconductor (OPC), to find the areas that you want to polish.

**Attention:** Touching the OPC with bare hands will damage the drum.

**Attention:** Polishing with a circular or horizontal motion will damage the drum.

**13** Use the polishing pad with a vertical motion only, as shown in Figure 334 on page 378, to polish the identified areas.



HB7G2220

Figure 334. Polishing a Drum

- 14 Place a lint free cloth on the drum where you have polished and rotate the drum up and away from you by turning the end to remove any residue left from the polishing.
- 15 Move the X tower towards the Y tower leaving 3 to 4 inches to insert the TED corona assemblies.  
**Attention:** The X tower should open far enough so that when the TED corona assemblies are reinserted they will not catch on the paper web and tear it.
- 16 Reinsert the TED corona assemblies back in their guides.  
**Note:** The top TED corona assembly on the X tower has a larger arc than the other coronas, so ensure that you place the correct corona at the top of the X tower.
- 17 Move the X tower back to its home position.
- 18 Latch the X and Y towers together, using the top and bottom latches described in steps 6 on page 375 and 7 on page 329.
- 19 Close the access doors behind the paper supply.
- 20 Release the appropriate backup roll pressure handle for your configuration (see steps 19 on page 369 and 23 on page 370 in “Rethreading the Paper Path in the Fixed Tower” on page 364).
- 21 Slowly move the paper supply back against the X tower.  
**Attention:** As you move the paper supply, you need to take up the slack in the paper, as follows:  
  
Place your hands on the underside of the paper roll, palms up. While exerting pressure on the roll, rotate the roll toward you until you can move the roll no farther and the slack is gone.
- 22 Tighten the appropriate backup roll pressure handle for your configuration (see steps 29 on page 371 and 30 on page 371 in “Rethreading the Paper Path in the Fixed Tower” on page 364).



- 23 Finish the service-intervention procedure (see “Finishing the Service-Intervention Procedure” on page 315).

---

## Interpreting and Solving Alarms and Warnings

If an error occurs during the operation of the InfoColor 70, an Active Alarms window opens automatically to display either alarms or warnings. The operator is responsible for responding to alarms and warnings and for either solving the problem, or calling a service representative.

After you start the software, all errors are logged in a log file.

Log messages are overwritten by other log messages. Because these messages can help your service representative solve problems, you should save the log file if you suspect a problem, by following these steps:

- 1 Flip the **PES/RIP** switch on the operator console to **PES**.
- 2 Ensure that the **Engine Control** window is active. When it is active, the window border is red. If not, press **F1** until activated.
- 3 Press the **F5** function key to create a file in the log directory.
- 4 Flip the **PES/RIP** switch back to **RIP**.

You can manually open the **Active Alarms** window.

This window displays the following information:

- The time at which the alarm occurred

**Attention:** Sometimes the **Active Alarms** window will list more than one alarm. When this happens, you should solve the alarms according to time-stamp order.
- The error code assigned to the alarm
- A brief description of the alarm
- The severity of the alarm
  - An *alarm* appears in red text and is a sign of a severe problem that must be solved immediately. An example of a problem is a paper jam, which would require stopping the print engine immediately.
  - A *warning* appears in black text and is a sign of a situation that could eventually lead to a problem. An example of a warning is a full toner waste bottle.
- The number of times the alarm occurred

## Using the Active Alarms Window

Seven buttons are displayed at the bottom of the window. Use these buttons as follows:

- **Ack:** Click on this pushbutton to stop alarms and warnings from blinking.
- **Ack All:** Click on this pushbutton to acknowledge all blinking alarms.

**Attention:** Do not let any toner container become empty. If the developer unit runs out of toner, the mix is ruined.

\*

- **Assist:** Click on this pushbutton to open a window displaying additional information about the alarm.
- **Remove:** Click on this pushbutton to remove the warning after you solve the problem.

If you click **Remove** to remove a red alarm, the **Active Alarms Message** window opens, and you need to verify that the problem is solved.

When the problem is solved, click the **Ok** pushbutton.

- **Remove All Warnings:** Click on this pushbutton to remove all the listed warnings.

The **Active Alarms Message** window opens, and you need to verify your choice. Click **Ok**.

If any message remains in the **Active Alarms** window, click **Remove**.

- **Help:** This pushbutton is not yet available.
- **Close:** Click this pushbutton to close the window. If the alarm list is not empty, the **Close** pushbutton is disabled.

**Note:** You cannot minimize the **Active Alarms** window.

---

## Troubleshooting

This section describes symptoms and error messages that can occur on the Collator and provides recovery actions that you can take.

### Finding and Solving Collator Problems

Use this quick check as a starting point to resolving a problem.

#### — TROUBLESHOOTING QUICK CHECK —

1. Ensure that the both the InfoColor 70 Printer and Collator have been turned on.
2. Check to see that the Collator has completed self-test successfully.
3. Ensure that the control unit power switch is in the On position.
4. Check that the PES/RIP switch is in the RIP position.
5. VECS must be running for the collator and ThruPRINT to operate properly. In the AIX window, type `ps -ef | grep vecs`.
6. If you are printing and no output is produced, make sure the **Copy count** field is set to at least 1 in the **Page Setup** window.
7. If all of items in the quick check are correct and you still have a problem then select the symptom that best describes the problem you have encountered from the list below and go to the referenced section.
  - Collator self-test fails, go to “Power On and Self-test Problems” on page 381
  - VECS error message is displayed, go to “VECS Problem Solving” on page 381
  - Variable Data Job does not print as expected, go to “Finding and Solving Variable Data Printing Problems” on page 382
  - MergeDoc message is displayed, go to “MergeDoc Messages” on page 383

If you are unable to correct a problem or if a problem persists contact your service representative.

## Power On and Self-test Problems

Symptom	Action
Collator has no power	Check that the InfoColor 70 is turned on. If the problem persists, call for service
Collator fails self-test X and Y LEDs are off or flashing.	Turn power off for one minute and try again. If the self-test fails again call for service.
Waiting for pbuf # (tralia #). is displayed on the logger window of the PES PC.	Call for service.

### VECS Problem Solving

If you have just turned on the power and you get an error message in the **AIXTERM** window, find the message in following table and take the appropriate action.

Message / Problem	Causes	Action
VECS will not start.		Open the AIXTERM window. Type VECS and follow the instructions  If the problem persists, call for service.
file n should be rebuilt but maximum rebuilds (m) are performed. Type VECS /? for more information on rebuilding.	The RIP failed and the Collator files are corrupt.	Open the AIXTERM window. Type VECS and follow the instructions If the problem persists, call for service.
An IO error occurred... An ecs open failed... The system cannot find the file specified.	A cable from the Collator to the control unit is loose or disconnected.  The Collator and control unit were not started in the correct sequence.  Communication problem.	Check for any loose or disconnected cables, reseal the cables.  Repeat complete startup procedure.  Call for service if the problem persists.
An IO error occurred... An ecs open failed... The OLE service mutex already exists.	Corrupt Windows NT system.	Repeat the startup procedure.  Call for service if the problem persists.
An IO error occurred... An ecs open failed... Failed to open/close registry key \\HKEY_LOCAL_MACHINE\\Software..	Registry configuration problem.	Repeat the startup procedure.  Call for service, if the problem persists.

Table 64 (Page 2 of 2). VECS Error Messages

Message / Problem	Causes	Action
An IO error occurred... An apis open failed... The system cannot find the file specified.	The Collator and control unit were not started in the correct sequence.	Repeat complete startup procedure. Call for service if the, problem persists.
An IO occurred... An apis device control failed... The parameter is incorrect.	VECS is already running.	Call for service if this is not the problem.
An IO error occurred... A com open failed... The system cannot find the file specified.	Communication problem. Serial driver is not installed or did not start up.	Call for service.
An IO error occurred... A com open failed... Access is denied.	Serial port COM1 is locked by another user.	Call for service.
PAGEBUF XX didn't wake up after several retries.	Collator error.	Check the cables. Repeat the startup procedure. Call for service if the, problem persists.
!!! Severe errors have been noticed on at least one pagebuf. Run VECS /TRACE=3 to display encountered errors. Reset the Collator and restart VECS.	Collator error.	Check the cables. Repeat the startup procedure. Call for service if the, problem persists.

## Finding and Solving Variable Data Printing Problems

If the variable data job does not print as expected, you may have a problem with the master and variable data input file. Below are some items to check:

- ThruPRINT must be running for the collator to operate properly.
  - To determine if ThruPRINT is running press **ALT+TAB** until ThruPRINT appears.
  - If the window does not appear, ThruPRINT is not running.

### RESTARTING ThruPRINT

1. Exit the InfoColor 70 window.
2. Click on the InfoColor 70 window to restart ThruPRINT.

If the ThruPrint does not restart, call for service.

- If the variable data information does not correctly match the data in your variable input file, verify that the variable data fields are correctly delimited and defined.

- If the job contents are clipped or have unexpected print attributes, check your printer setup. The orientation should be portrait and the paper width should be calculated considering both the document width and any registration marks.
- If you increase the font size of a text variable data field this may result in clipping the variable data text.

## MergeDoc Messages

If you have a MergeDoc message displayed, find the message in following table and take the appropriate action. If your problem is not resolved call for service.

<i>Table 65 (Page 1 of 2). MergeDoc Messages</i>	
<b>Error</b>	<b>Operator Action</b>
MergeDoc internal error _____. Contact your service representative.	Contact your service representative.
MergeDoc encountered an error writing document definition information. Contact your service representative.	Contact your service representative.
MergeDoc cannot process the following line:_____	Verify that the files are not corrupt.
MergeDoc cannot process keyword _____ in the following line:_____.	Verify that the files are not corrupt.
MergeDoc cannot open file _____.	Verify that the directory exists and the file is not in use by another process.
MergeDoc can only read Document Definition Version 1.0 format. Verify that the file specified with the -d option is a valid document definition file.	Verify that the file specified with the -d option is a valid document definition file.
MergeDoc option _____ is not available in this release. Verify your document definition file is Version 1.0.	Verify your document definition file is Version 1.0.
MergeDoc encountered an I/O error reading the document definition file.	Generate the document definition file again.
MergeDoc requires a document definition file to be specified with the -d option.	Specify a valid document definition file with the -d option.
MergeDoc requires a variable data input file.	Specify a valid variable data input file.
MergeDoc encountered an I/O error reading the variable data input file.	Replace the original copy of the variable data input file.
MergeDoc detected that the variable data input file is not complete. Verify that the document definition file and the variable data input file belong to the same document. MergeDoc was processing the following line in the document definition file:_____.	Verify that the document definition file and the variable data input file belong to the same document.
MergeDoc cannot find the defined variable data field named _____. Define the variable data field and produce the document definition file again.	Define the variable data field and produce the document definition file again.
MergeDoc cannot find the variable data object named _____. Define the variable data object and produce the document definition file again.	Define the variable data object and produce the document definition file again.
MergeDoc expects the graphic data for variable data field _____ to be Encapsulated PostScript.	Convert the graphic to EPS format and update the variable data input file, if necessary.
MergeDoc will replace the variable data PostScript file _____. Enter Y to continue or N to cancel MergeDoc.	The output file name already exists. Enter Y to continue or N to cancel MergeDoc.

*Table 65 (Page 2 of 2). MergeDoc Messages*

<b>Error</b>	<b>Operator Action</b>
MergeDoc will replace the book ticket file _____.	Enter Y to continue or N to cancel MergeDoc.
MergeDoc ignored command line option _____. It is not a valid option.	This is an informational message. No action is required.
MergeDoc created _____.	No operator action required.

## \* Chapter 18. Print Quality Problem Solving

\* The descriptions here are taken off of actual InfoColor 70 print quality defects.  
 \* Actual samples, where possible, will be produced within the sections.

\* In many cases you will be able to accurately troubleshoot the problem, and correct  
 \* the problem by following one of the daily cleaning procedures or re-RIPing a job.

\* *Table 66 (Page 1 of 7). Print Quality Problem Solving*

* <b>Defect Number and Description</b>	* <b>Possible Cause of Failure</b>	* <b>Action to be taken</b>
* PQ-1 * Colors appear muddy, not * bright. For example: *     • Yellow appears *       lime-green *     • Black appears light to *       dark gray *     • Magenta appears pink *       with a gray over-tone *     • Blue appears faded *       and washed out.		Call your service representative.
* PQ-2 * Light colored CYMK * streaks across the a light * blue print area.		Call your service representative.
* PQ-3 * Background of printed * page blue with light * magenta streaks, in the * process direction. Yellow * overprint is muddy.		Call your service representative.
* PQ-4 * Printed areas light in * color, or dull.		Call your service representative.
* PQ-5 * There are print voids and * low density on one or * more print stations. There * is light print on one side * or at one print station. * For example: the cyan * station is very light in * color.		Call your service representative.
* PQ-6 * There are cloudy, or light * spots in the printed area.	* The toner concentration level is low for * that print station and print tower.	* Increase the delta for the toner * concentration to +150. to help with * clouding. Check the all toner levels in * both the X and Y towers. If necessary * add toner. See "Refilling the Toner" on * page 334. If the problem persists, call * your service representative.

*Table 66 (Page 2 of 7). Print Quality Problem Solving*

<b>Defect Number and Description</b>	<b>Possible Cause of Failure</b>	<b>Action to be taken</b>
PQ-7 There are light streaks or stripes in the printed area.		Call your service representative.
PQ-8 There are white spots appearing on the "Y" print tower.	These spots can be caused by one of the following: <ul style="list-style-type: none"> <li>• The top roll coronas are dirty</li> <li>• The top Teflon roll is contaminated by a power problem.</li> <li>• The top turn roller is dirty.</li> <li>• The wrong paper script file is loaded.</li> </ul>	Reload the paper script and re-run the job. If the problem persists, call your service representative.
PQ-9 The coronas and or the scorotrons are dirty.	One of the coronas or scorotrons are dirty.	Clean the scorotrons as explained in "Cleaning the Main-Charge and Pre-Charge Scorotrons" on page 327. If the problem persists, call your service representative.
PQ-10 A colored streak or band (about 10mm) near the edge of the paper in the web directions appears.	The MCS grid is installed backwards.	Remove the MCS grid, and reinstall it. See "Cleaning the Main-Charge and Pre-Charge Scorotrons" on page 327 for more information. If the problem persists, call for service.
PQ-11 There are narrow bands approximately every 2.8mm across the web.		Call your service representative.
PQ-12 There are white banding stripes or streaks that appear across the page.		Call your service representative.
PQ-13 There are white streaks on the prints.		Call your service representative.
PQ-14 There is a small fine colored streak across the page.	There is a foreign particle on the grid of the corona.	Remove the corona housing for the color of the streak and clean it. See "Cleaning the Coronas in the Print Tower" on page 318 for cleaning instructions. If the problem persists, call for service.
PQ-15 Registration is mis-aligned in the print direction causing blurry print.	The torque motor on the paper drive or the speed motor is defective.	Ensure that the proper paper script has been run. Check the registration. If the problem persists, call your service representative.
PQ-16 Registration is mis-aligned in the print direction causing blurry print.		Call your service representative.



<i>Table 66 (Page 3 of 7). Print Quality Problem Solving</i>		
<b>Defect Number and Description</b>	<b>Possible Cause of Failure</b>	<b>Action to be taken</b>
PQ-17 The print is mis-registered.		Call your service representative.
PQ-18 The print is mis-registered.		Call your service representative.
PQ-19 There is mis-positioned information on the printed output.	The script files that define the LDA parameters contain the wrong information.	Re-RIP the job. Ensure that you have the correct paper script loaded. If the problem persists, call your service representative.
PQ-20 There are light streaks across the printed page on one or both of the print towers.	A corona wire could be broken or the paper script that is loaded is incorrect.	Replace the corona wire. See "Cleaning the Coronas in the Print Tower" on page 318. Re-load the paper script. If the problem persists, call your service representative.
PQ-21 There are white spots and clouding on the "Y" print tower.		Call your service representative.
PQ-22 The overall print is cloudy.	The paper is not condition properly.	Ensure that the proper paper script has been run. If the problem persists, call your service representative.
PQ-23 The overall print is smeared.		Call your service representative.
PQ-24 There are white streaks on the prints.		Call your service representative.
PQ-25 There is a light streak on one color station in the web direction.		Call your service representative.
PQ-26 There are light streaks in the dark print areas, and dark streaks in the light print areas when printing.		Call your service representative.
PQ-27 The colors are streaking, or not blending well when printing.	There could be a broken or missing corona wire.	Ensure that the corona wires are not broken or missing. If necessary replace the corona wire. See "Cleaning the Coronas in the Print Tower" on page 318. If the problem persists, call your service representative.
PQ-28 The output is smearing.		Call your service representative.

*Table 66 (Page 4 of 7). Print Quality Problem Solving*

<b>Defect Number and Description</b>	<b>Possible Cause of Failure</b>	<b>Action to be taken</b>
PQ-29 The print is washed out on only one side of the print tower.		Call your service representative.
PQ-30 Background appears over the entire print area of blank pages, or behind the printed text.		Call your service representative.
PQ-31 There is a color streak or band (approximately 10mm) near the edge of the paper in the web direction.		Call your service representative.
PQ-32 There is a white or solid streak in the web direction.		Call your service representative.
PQ-33 There are white spots or clouds on the output.	The corona wires are damaged.	Remove corona assemblies and replace with the spare corona assemblies. See "Cleaning the Coronas in the Print Tower" on page 318. Call your service representative.
PQ-34 There are bands of missing print in the web direction.		Call your service representative.
PQ-35 There are white spots appearing on the "Y" side print tower.	The top roll is contaminated causing the toner to lift off the printed page. The top roll coronas may be dirty.	Replace the corona assembly with a clean corona assembly. If the problem persists, call your service representative.
PQ-36 There is mis-positioned information on the printed output.	The script files that define the LDA parameters contain the wrong information.	Re-RIP the job. Ensure that you have the correct paper script loaded. If the problem persists, call your service representative.
PQ-37 There are "flares" at the leading edge of the solid area fills, or there is a streak (white or solid color) on one color station in the web direction.	There could be fused-on-toner on the drum causing scratches.	See "Polishing the Drums" on page 375. If polishing the drum does not solve the problem, call your service representative.

Table 66 (Page 5 of 7). Print Quality Problem Solving

Defect Number and Description	Possible Cause of Failure	Action to be taken
<p>PQ-38</p> <p>There are definite repeating spots or stripes in the printed area.</p>		<p>Call your service representative.</p>
<p>PQ-39</p> <p>There are wiggly light areas or “worming” appearing in the print areas, or color streaks or bands along the edge of the paper in the web direction.</p>	<p>The erase corona is filing.</p>	<p>Check the erase corona for a broken or bent wire. Replace the erase corona assembly with the spare erase corona assembly. If the problem persists, call your service representative.</p>
<p>PQ-40</p> <p>One print station does not print or one color is missing.</p>	<p>The transfer corona wire may be broken or missing.</p>	<p>Check the transfer corona for a broken or bent wire. Replace the transfer corona assembly with the spare transfer corona assembly. If the problem persists, call your service representative.</p>
<p>PQ-41</p> <p>The overall print looks cloudy. There is offset images or ghost patterns, mottled print, or a color is missing.</p>	<p>The transfer corona wire may be broken or missing.</p>	<p>Check the transfer corona for a broken or bent wire. Replace the transfer corona assembly with the spare transfer corona assembly. If the problem persists, call your service representative.</p>
<p>PQ-42</p> <p>The print appears un-even, streaked, light, and the colors are not blending well.</p>	<p>The paper could be out of specification, or is extremely wet.</p>	<p>Load a new roll of paper, see “Changing the Paper” on page 275. Ensure that the paper has been properly conditioned for a least three days. See the <i>IBM InfoColor 70 and 3170 Full Color Digital Printer/Press: Paper Selection Guide</i> for details on paper conditioning. If the problem persists, call your service representative.</p>
<p>PQ-43</p> <p>There are random white spots, streaks or stripes appearing on the output.</p>		<p>Call your service representative.</p>
<p>PQ-44</p> <p>There are white spots on the “Y” print tower.</p>	<p>The problem can be caused by loading the wrong paper script.</p>	<p>Ensure that the correct paper script is loaded for the paper that you are printing on. See “Specifying the Correct Paper Type” on page 291.</p>
<p>PQ-45</p> <p>The control strip is missing the color bars in the “Bias” area, or there are white spots on the “Y” side of the image.</p>	<p>The control strip has been ripped incorrectly. The image appears okay.</p>	<p>Re-rip the control strip and the print job. See “Learning About Control Strips” on page 225.</p>

Table 66 (Page 6 of 7). Print Quality Problem Solving

Defect Number and Description	Possible Cause of Failure	Action to be taken
PQ-46 There is heavy background streaks in the printable areas.		Call your service representative.
PQ-47 The print registrations is off in the web direction.		Call your service representative.
PQ-48 The prints are steaking and the colors are not blending.	There is a broken, missing corona wire, or the corona housing is not correctly installed.	Check the corona wires in both print towers for dirty or bent wires. Clean and replace the corona with a spare corona assembly. See "Cleaning the Coronas in the Print Tower" on page 318. If the problem persists, call for service.
PQ-49 The print appears to be choppy, out of alignment, or the print density is low.		Call your service representative.
PQ-50 The trailing edges of the large type letters show clouding or "bearding," or there is low color density on one of the print stations.		Call your service representative.
PQ-51 There are large bands of white appearing across the print areas, or there is low color density on one of the print stations.	There may be a corona wire problem.	Either a wire is bent or broken. Check all the corona wires. If necessary replace any damaged corona assemblies. See "Cleaning the Coronas in the Print Tower" on page 318. If the problem persists, call your service representative.
PQ-52 There are large bands of white appearing across the print areas, or there is low color density on one of the print stations.	This is caused by a poorly RIPed image or job.	Re-RIP the image and then re-print the job. If the problem persist, call your service representative.
PQ-53 The printed areas look spotty, fuzzy, mottled, streaky, or the colors are not blending well.	The paper could be out of specification, or is improperly conditioned.	Load a new roll of paper, see "Changing the Paper" on page 275. Ensure that the paper has been properly conditioned for a least three days. See the <i>IBM InfoColor 70 and 3170 Full Color Digital Printer/Press: Paper Selection Guide</i> for details on paper conditioning.

* <i>Table 66 (Page 7 of 7). Print Quality Problem Solving</i>		
* <b>Defect Number and Description</b>	* <b>Possible Cause of Failure</b>	* <b>Action to be taken</b>
* PQ-54 * There is one print station that is not printing or one color is missing.		Call your service representative.
* PQ-55 * There is specific pattern of different colors in the white or background of the printed page.		Call your service representative.
* PQ-56 * There are zebra stripes or various white spots in the print area.		Call your service representative.
* PQ-57 * There are streaks or white lines on one color station in the web direction.		Call your service representative.
* PQ-58 * There are white bands in the process direction and dark outlined bands in the non-process direction.	The mag brush bias contact has a dirty point, or the corona wires are dirty.	Check and if necessary clean the corona wires. See "Cleaning the Coronas in the Print Tower" on page 318. If the problem persists, call for service.
* PQ-59 * There are scrapes on the printed output.	The paper is buckling as it is going into the fuser.	Check the paper path entering the fuser area for jammed or torn media. If the problem persists, call for service.
* PQ-60 * There are 45 degree angled marks across the printed output.		Call your service representative.









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## Appendix A. Media and Supplies

This appendix provides reference information for the InfoColor 70 operator on the following topics:

- Printing media
- Supplies ordering

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### Printing Media

The InfoColor 70 uses roll-fed paper that, after printing, is cut to the proper size for stacking in the output stacker. For the best print-quality results, use only paper that is tested by IBM. IBM has tested and continues to test a variety of paper grades that are commonly used in the pre-press industry.

The paper is heated during fusing and must be able to withstand heating to 200°C for five seconds.

You should store paper in the same environment as the InfoColor 70. Proper paper storage is very important. Follow the guidelines listed below:

- The relative humidity in the storage area should be between 30% and 60%.
- At 28% to 53% relative humidity, the maximum temperature should be 25°C.
- At 27% to 62% relative humidity, the minimum temperature should be 20°C.
- Keep rolls wrapped when not in use.
- New paper should be allowed to stabilize for three days in the same environment as the InfoColor 70.

### Tested Papers

\*  
\*  
\*  
\*  
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The current list of papers and media that IBM has tested and approved is available from your IBM representative as *IBM 3170 Full Digital Color Printer/Press and InfoColor 70 Approved Media*. This list is updated from time to time as IBM continues to test and approved additional media types. Contact your marketing representative for the latest information.

Ask your marketing representative for a complete list of tested papers.

### Physical Properties

Parameter	Value
Wire/felt smoothness	40 — 50 Sheffield
Opacity	95 minimum
Brightness	96 minimum
Sizing	Alkaline
Surface resistivity	0.5 to 100 x E10 Ohms

## Paper Roll Properties

Parameter	Dimensions
Core inner diameter	150 mm or 6 inches
Tolerance I.D.	±0.05 mm (+.020 inches)
Core outside diameter	180 mm (7.1 inches)
Roll outside diameter (maximum)	500 mm (19.7 inches)
Roll outside diameter (typical)	400 mm (15.75 inches)
Roll weight (nominal)	40 kg (88 pounds)
Roll width (minimum)	210 mm (8.27 inches)
Roll width (maximum)	320 mm (12.6 inches)

**Note:** The roll width must conform to the dimensions of the roll mounting axle. The mounting axles can be set to various widths, including the common paper widths used in the industry (see Chapter 13, "Managing Paper Rolls and the Inserter" on page 275). Special axles will be made upon request.

## Paper Basis Weights

	ANSI	ISO
Normal basis weight	16 to 52 pounds bond	60 to 200 grams
Measurement	500 sheets, 17 × 22 inches	One sheet, one meter square

**Note:** Tolerance is ±5%

## Supplies Ordering

Choosing the correct supplies for the InfoColor 70 is very important. Using IBM supplies will produce optimum print quality and the most reliable performance. Supplies are purchase-only items. IBM recommends that you keep one to two months of supplies in stock.

Lexmark International, Inc. markets IBM supplies. You can purchase supplies from Lexmark Authorized Supplies Dealers or, in the U S, from Lexmark Telemarketing Operations. Lexmark Telemarketing Operations can also provide information about the nearest Lexmark Authorized Supplies Dealer. In the US, call Lexmark Telemarketing at 1-800-438-2468. Mail orders within the US should be sent to:

Lexmark International, Inc.  
1221 Alverser Drive  
Midlothian, VA 23113

You may fax orders to: 1-800-522-3422.

Warranty for all supplies is one year from the date of purchase stated on the purchase receipt. Supply warranties are only for defects in materials and workmanship at the time of shipment and are not for normal wear and tear, nor for any usage minimum.

IBM supplies are manufactured to very high quality standards. However, if you believe you are due a warranty return, you should return the supply in its original package or a package from the replacement supply to your point of purchase. You should include an explanation of the problem, a copy of the invoice, a print sample, and the approximate number of feet run on the supply.

You may order the following supplies from Lexmark International, Inc.:

## Toner

Order toner supplies by part number, as shown below. A part number represents one carton of toner. Chapter 16, "Checking and Refilling Toner" on page 333 explains how to refill toner.

<i>Table 70. Toner Part Numbers</i>	
<b>Color</b>	<b>Part Number</b>
<b>Version 1 Toner</b>	
Black	1402700
Cyan	1402701
Magenta	1402702
Yellow	1402703
<b>Version 2 Toner</b>	
Black toner	1402813
Cyan toner	1402814
Magenta	1402815
Yellow	1402816
<b>Note: Warning:</b> Do not mix toner 2 with mix 1. Call your service representative if you have any questions.	

Description:

- Unit: 800 gram bottle
- Packing: 6 bottles of the same color per carton
- Minimum order quantity: one carton
- Average toner yield will vary depending on the percent of coverage, machine settings, paper type and size, and environmental conditions.

## Toner Waste Bottles

Order toner waste bottles by part number 1402761. A part number represents a carton. Chapter 15, "Performing Scheduled Operator Maintenance" on page 313 explains how to replace the toner waste bottles.

Description:

- Unit: one carton
- Packing: 12 waste bottles per carton
- Minimum order quantity: one carton

## Storage Conditions

Observe the following conditions for storing toner:

- The temperature should be 0°C to 35°C (32°F to 95°F).
- The relative humidity should be 15% to 80%.
- Avoid storing in areas of extreme heat or humidity.
- Store in the same environment as the InfoColor 70 for at least 24 hours.

## Splicing Tape

Order splicing tape by part number 1402721. A part number represents a carton. To ensure a good splice when you change a paper roll, you should use the IBM recommended splicing tape. Chapter 13, "Managing Paper Rolls and the Inserter" on page 275 explains how to change a paper roll and use the splicing tape.

Description:

- Unit: one carton
- Packaging: 2 rolls per carton
- Minimum order quantity: one carton
- Average yield: approximately 360 splices per carton

## Separator Strips

Ask your service representative to contact IBM/Boulder Second Level Support for assistance in obtaining separator strips.

## Counter Dongles

Contact your service representative to obtain replacements for your counter dongle.

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## Appendix B. Script Files

This appendix provides reference information for the InfoColor 70 operator on script files.

The InfoColor 70 uses script files that contain elementary commands to control the print engine and to monitor its operation. A script file may contain a large number of commands or call numerous other scripts to perform the intended functions. When you run a script, its commands are sent to the various microcontrollers in the print engine.

---

### Initiating Scripts

Scripts can be initiated from the **Explore** ⇒ **Script** window in the **IBM InfoColor 70** window or from the print engine supervisor (PES) interface.

To run a script, follow this procedure: **Explore** ⇒ **Script**

Open the window, select the script file and press the **Execute** button.

---

### Scripts Commonly Used by the Operator

Table 71 lists the script files that an InfoColor 70 you might use. Included is the directory in which each file is located, the name of the file, and the function of the file.

The InfoColor 70 software contains numerous script files. The operator should use *only* those listed here.

#### Basic System Scripts

<b>Script Name</b>	<b>Function</b>
FIXRES	Resets a fuser over temperature emergency stop.
PCCRES	Resets the paper conditioning control.
SMKRES	Resets the smoke alarm.
TCRES	Resets the toner doser controls.



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## Appendix C. Using the InfoColor 70 Window

This appendix provides reference information for the InfoColor 70 operator on using the **InfoColor 70** window which opens when InfoColor 70 is selected from the Explore menu.

You may be asked to use some of the Explore menu functions to support your service representative.

The sections of the **InfoColor 70** window, as shown in Figure 335, are:

- Title Bar
- Tree view
- List view

**Note:** The **InfoColor 70** window is minimized by both the **Close** and **Minimize** options. The **InfoColor 70** window cannot be closed.



Figure 335. InfoColor 70 Window

## Understanding the Title Bar

The Title Bar displays which folder is selected. To change the general view click with your right mouse-button on the Title Bar.

The first column in the menu indicates that the window is selected with a check mark. The menu items are described in Table 72.

Menu Items	Description
Toolbar	This allows you to hide or show the bar below the header.
Tree View	This shows you a two-part window with the tree structure on the left, and the List View on the right.
List View	This shows you only folders and objects.
Status Bar	This allows you to hide or show the bar at the bottom.
New Window	This creates a new window.
Save Properties	This saves the properties selected.
Properties	This displays the Window Properties window.

\*

The properties can be changed in the **Window Properties**, as shown in Figure 336 and described in Table 73 on page 403.

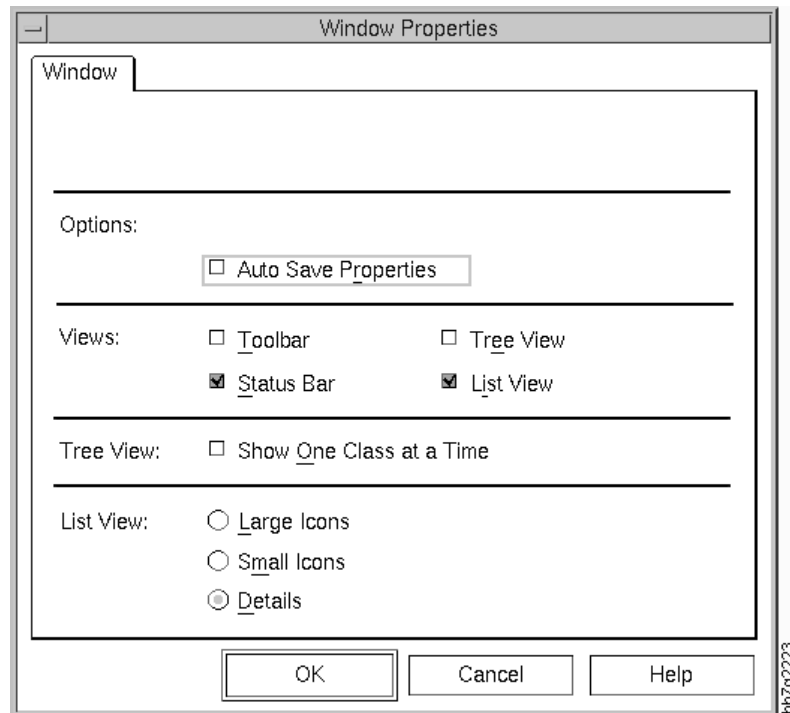


Figure 336. Window Properties Window



Table 73. Window Properties Window Descriptions	
Property	Description
Auto Save Properties	The properties will be saved automatically after changing them.
Toolbar	This allows you to hide or show the bar below the header.
Status Bar	This allows you to hide or show the bar at the bottom.
Tree View	This shows you a two-part window with the tree structure on the left, and the List View on the right.
List View	This shows you only folders and objects.
Show One Class at a Time	This displays only one folder in the left part of the window.
List View	This describes how the list will be displayed. The options are: Large Icons, Small Icons, or With Details.

## Understanding the Tree View

When **Tree View** is selected, List View is automatically deselected. This displays a two-part window with a tree structure on the left side and folders and objects on the right side. Figure 337.

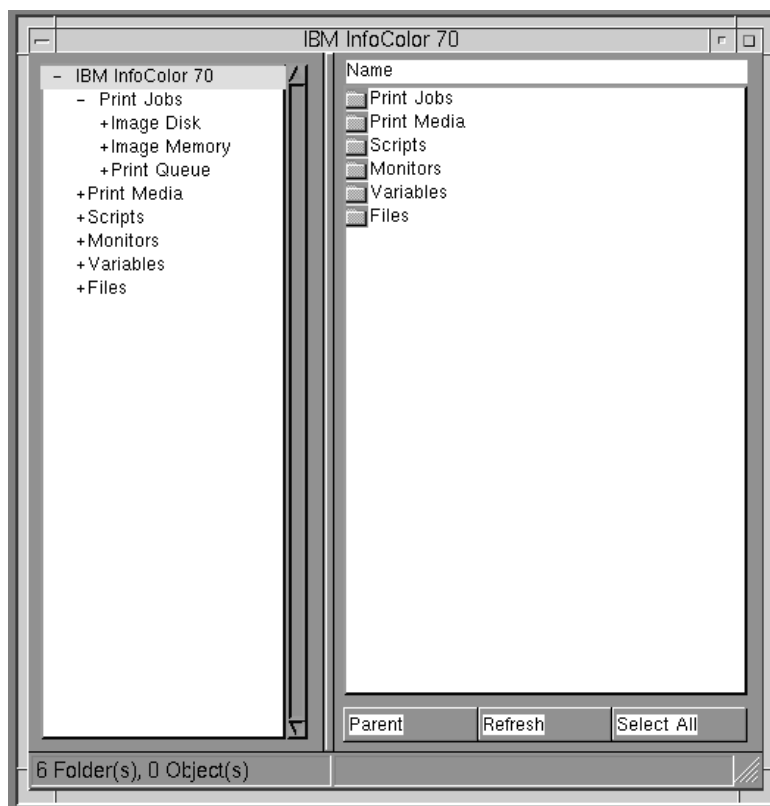


Figure 337. Tree View of InfoColor 70 Window

## Understanding the List View

When **List View** is selected from the menu, the window displays a list of the folders and objects, as shown in Figure 338.

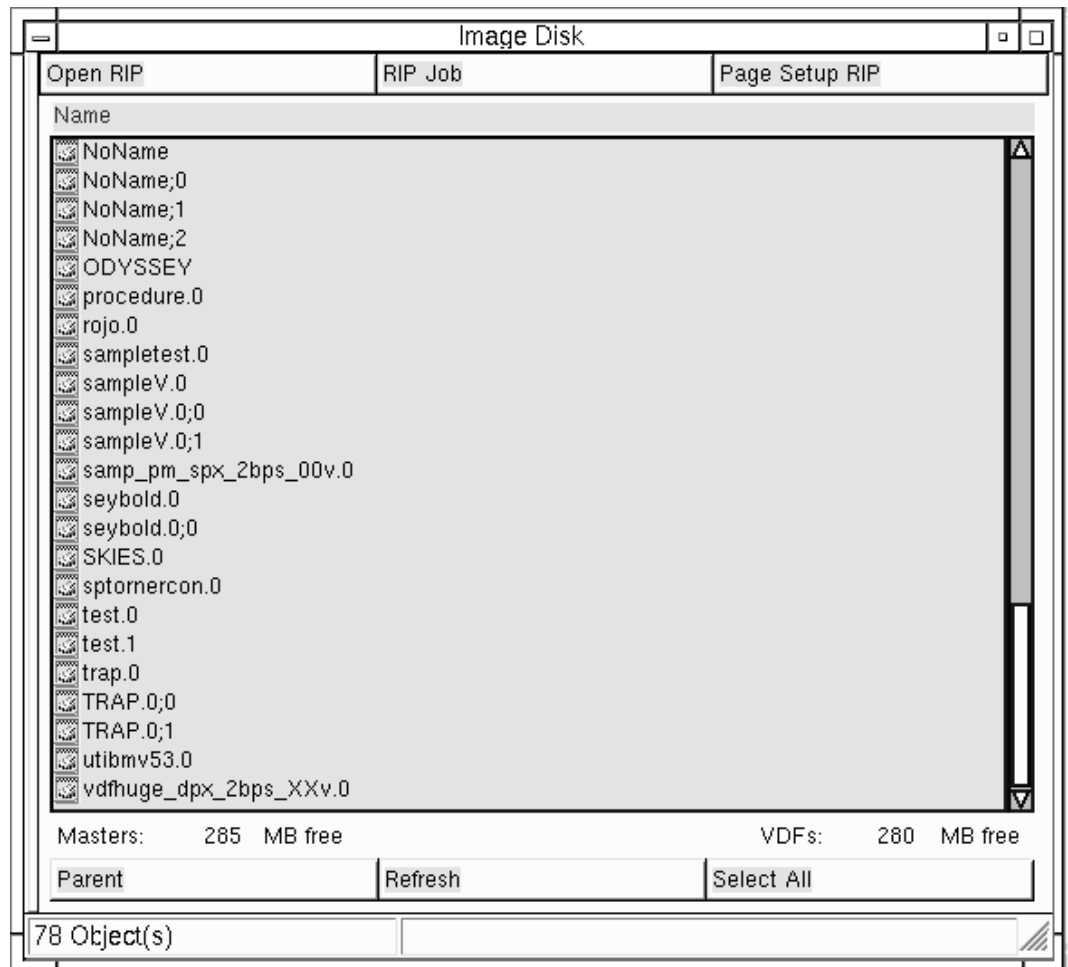













Figure 338. List View of InfoColor 70 Window

## Understanding the Tool Bar

The tool bar is displayed, as shown in Figure 339 and described in Table 74.



Figure 339. Tool Bar on the InfoColor 70 Window

Table 74. Description of Tool Bar Pushbuttons	
Button	Description
	Adds an item to the list box.
	Removes an item from the list box.
	To go back to the folder that contains the selected object or folder (=parent).
	To open the Properties window of the selected object.
	Displays large icons.
	Displays small icons.
	Displays some additional information (details).
	Displays the tree view.
	Displays the list view.
	Selects a new window.
	Recycles the opened window.

## Using the Bottom Buttons on the List View Screen

The buttons located at the bottom of the List View screen have different functions for you to use.

These buttons are called the ribbon. The properties of the ribbon can be changed by clicking the right mouse-button while selecting the ribbon. When you get the list box, select **Properties**. The **Properties** window allows you to select which buttons are displayed in the ribbon.

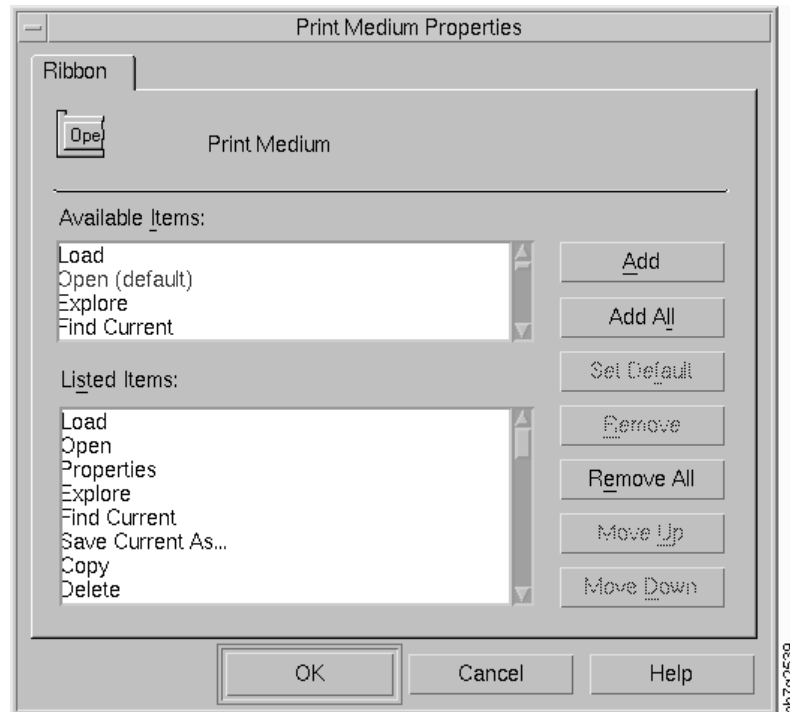


Figure 340. Ribbon Properties Window

---

## Appendix D. Common Desktop Environment

This appendix provides reference information for the InfoColor 70 operator on the following topics:

- Using a Mouse
- Using Windows
- Using the Common Desktop Environment

---

### Using the Mouse

You can do three things with a mouse: click, double-click, or drag.

**To click** Press and release mouse button 1 without moving the mouse.

**To double-click** Press and release mouse button 1 twice quickly without moving the mouse.

**To drag** Press and hold mouse button 1, drag the mouse, and release the button.

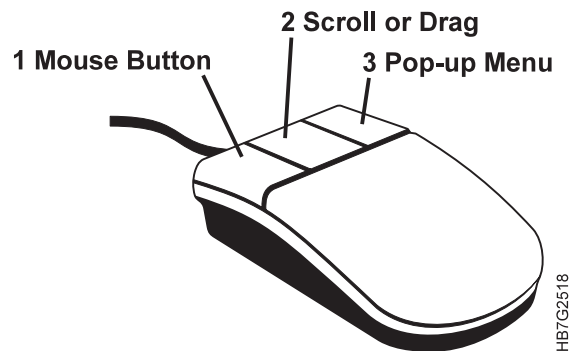


Figure 341. The Mouse

To view a menu, press and hold mouse button 3. This opens a menu for the item that cursor points to.

---

### Using Windows

This section describes how to open and close a window, minimize a window into an icon, maximize a window, and resize a window.

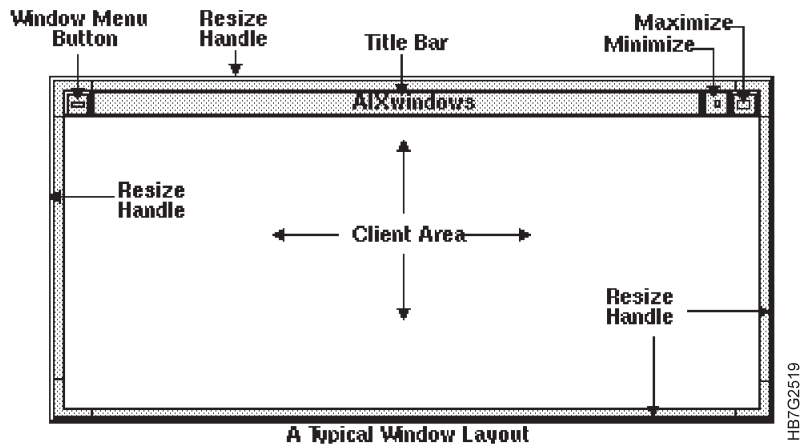


Figure 342. A Typical Window

Click on the Window menu button to open the Window menu.

To close a window and remove it from the desktop, double-click on the Window menu button, or display the Window menu and click on Close.

Click on the minimize button to turn the window into a window icon. To restore a window from its icon, double-click on the icon.

Click on the maximize button to display the window in its largest allowable size. Return the window to its former size by clicking on the maximize button again.

Drag a window's resize corner or border to resize the window.

## Using the Common Desktop Environment

After you have logged in, your system will start in the AIX Common Desktop Environment (CDE). A front panel similar to the following displays at the bottom of your screen:

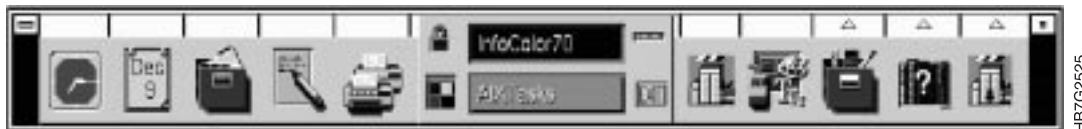


Figure 343. Desktop Front Panel

The AIX CDE lets you access networked devices and tools without knowing their location. You can exchange data across applications simply by dragging and dropping objects.

The AIX CDE displays icons that represent various items such as files, directories, and programs. You control these icons with a mouse. By opening windows on the desktop, you can simultaneously view and easily move among several activities. Whether you are a beginner or an experienced user, the AIX CDE helps you manage your work and use the operating system to perform various tasks.

To exit the CDE, click on the **Exit** button near the center of the panel. The login prompt displays.

## Overview of the Desktop

To help you organize and manage your work, the desktop provides windows, workspaces, controls, menus, and the front panel.

- Windows contain software applications and are framed with controls to enable you to move them, size them, or place them in additional workspaces.
- Workspaces are the areas where you place the windows needed for your work, arrange them, and put them away when you are done.
- Controls enable you to manipulate objects, select choices, or type information.
- Menus provide access to commands you use to manage windows and operate applications.
- The front panel is a collection of frequently used controls, available in every workspace.

Some of the windows, icons, and objects you'll find as you use the desktop are:

- Window icons
- Front panel
- Workspace switches
- File Manager
- Application Manager
- Help Manager

### Window Icons

When you minimize a window, it becomes an icon on the workspace. To minimize a window, click on the minimize button near the upper right corner of the window frame.

To restore the window, double-click on mouse button 1 on the icon. You can also restore the window by clicking on its icon to display the Window menu and then clicking on the menu's Restore button.

### Front Panel

The front panel opens a special window at the bottom of the display. It provides controls, indicators, and subpanels you use in your everyday work.

Arrow buttons over the tool bar controls identify subpanels. Click on an arrow button to open a subpanel.



Figure 344. The Front Panel

## **Workspace Switches**

A workspace in the CDE represents everything you can see on the screen at one particular time. You can use the workspace switches to move from one screen of windows and applications to another. Notice that the front panel displays in every workspace, enabling you to easily switch back to your original workspace.



# AIX Tasks Frequently Performed on the Desktop

## Editing Files

**To Open the Editor:** Click on the **Text Editor** control on the front panel.

**Closing the Editor:** Click on **Close** from the File menu or press ALT+F4.

You can create a new document or open an existing document. Opening a document displays the contents of a selected file in the Text Editor window.

Saving a document stores the edited contents into a file. You can save a document to its original file or to a new file.

### **Saving a Document to a New File:**

1. Select **Save As** from the File menu.

The **Save As** dialog box lists files and folders located in your current folder. You can store your document in the current folder, a subfolder, or a folder that you specify.

2. *Optional.* If you don't want to save the file to the current folder, select a subfolder or a different folder.
  - For a subfolder, select the subfolder in the Folders list and press **Enter**.
  - For a different folder, use the .. (go up) icon to change to a folder or type its path name in the Enter path or folder name field.
3. Type a new file name in the Enter file name field.
4. Press **Enter** or click on **OK**.

**Saving a Document to the Original File:** Select **Save** from the File menu to save your work and continue editing your document.

### **Opening an Existing Document from Text Editor:**

1. Select **Open** from the File menu.

The **Open a File** dialog box lists files and folders in your current folder. You can browse the documents listed, or change to a new folder to locate other files on your system.

2. Select the name of the document you want to open, or type the document name in the Enter file name field.
3. Press **Enter** or click on **OK**.

### **Opening an Existing Document from File Manager**

1. Display the document's file icon in a **File Manager** window.
2. Open the document in one of the following ways:
  - Double-click on the document.
  - Select the document, then select **Open** from the File Manager Selected menu.
  - Drag the document file icon to the front panel and drop the icon on the Text Editor control.



## Appendix E. Manual Method to Create Variable Data

Variable data jobs can be created manually on both the InfoColor 70 Model 002 and Model 02C. This section describes the process of creating variable data manually.

### Job Types

There are four job types that you can choose from when you are creating variable data manually.

**VDF0** Creates a knockout in the master page and replaces it with the variable data. The knockout is the exact size, shape and position of the variable data. It is not trapped. This method produces the desired effect from most variable data jobs. When using VDF0 job type, variable data text should be limited to approximately 20 characters per line. When using black text, VDF2 is recommended and VDF3 is recommended when using white text. See Figure 345.

**Note:** To print a white transparent overlay, specify 1% for the yellow color definition.

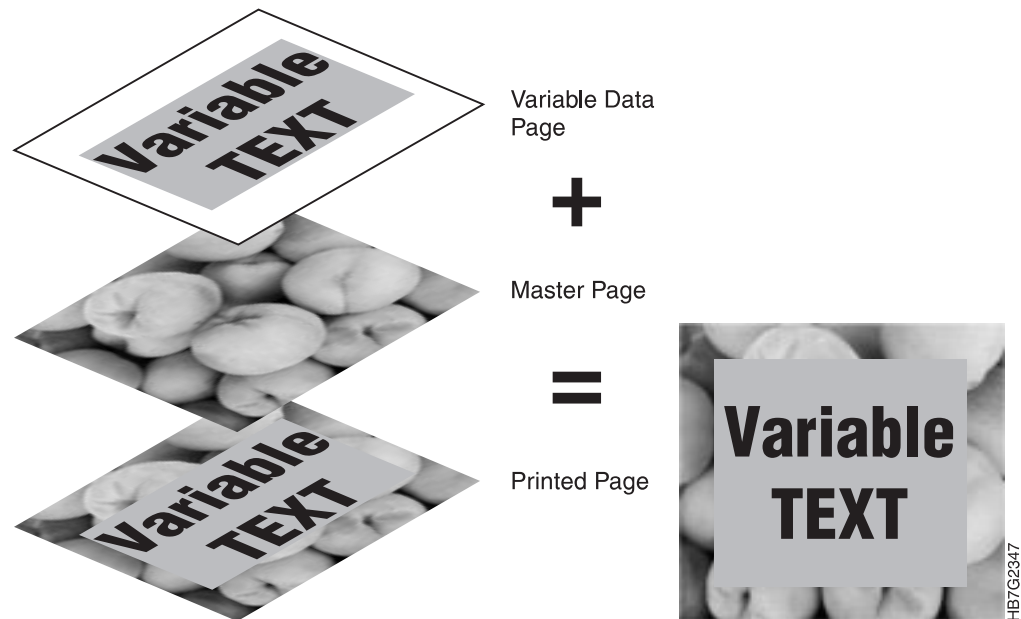


Figure 345. Sample "Knockout" Job Type (VDF0)

**VDF1** Prints the variable data pages as if they were master pages. Use this method to see the contents of your variable data pages or to replace pages in a master document without RIPing the master file again.

**VDF2** Overprints the variable data on the master page. The color of the variable data is combined with the color of the master page. Use this method when the knockout method does not produce the desired effect or when you want the colors of the variable data to be merged with the colors of the master page. See Figure 346.

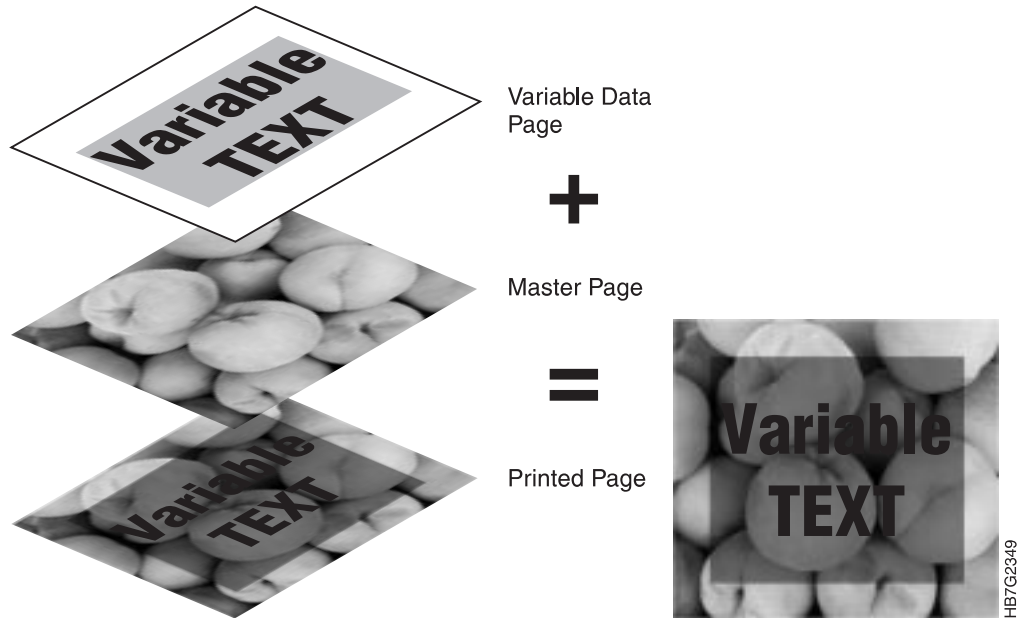


Figure 346. Sample "Overprint" Job Type (VDF2)

**VDF3** Use this method when printing white variable data text on a master page with a non-white background. The variable data pages should have a black background and white text. If other colors are used, the resulting page will not print with the colors you desire. See Figure 347.

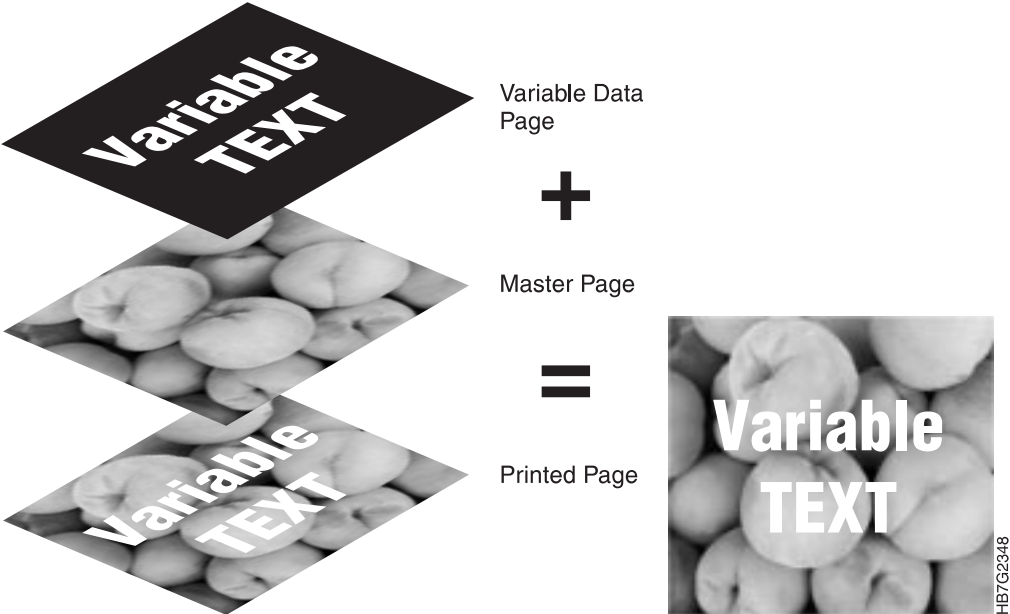


Figure 347. Sample "Reverse Out" Job Type (VDF3)

---

## Manual Method for Variable Data on the Model 02C

This section describes the manual method of creating variable data on the InfoColor 70 Printer and Collator. The following topics are covered:

- Creating variable data files manually
- Guidelines for merging variable data files
- Printing variable data files that were created manually
- RIPing and printing variable data files that were created manually.

## Manual Method Overview for the Model 02C

Do the following to manually create variable data files:

- 1 Determine whether you will be using horizontal or vertical variable data. This determines how many variable data files you will create. See “Horizontal Variable Data” on page 417 and “Vertical Variable Data” on page 418.
- 2 Use your page layout application to create the master file. This file should contain all the static elements. See “Job Types” on page 413.
- 3 Create the variable data files. These files should contain all the variable data pages. The variable data should be placed exactly where it will appear on the master page. See “Creating Variable Data Files” on page 419.
- 4 Transfer the master file and the variable data files to the InfoColor 70.
- 5 Build the Book Ticket File. See “Creating Book Ticket Files with Horizontal Variable Data” on page 420 and “Creating Book Ticket Files with Vertical Variable Data” on page 422.
- 6 RIP the master file and variable data files. See “RIPing and Printing Manually Created Variable Data Files” on page 425.
- 7 Print the Book Ticket File. See “RIPing and Printing Manually Created Variable Data Files” on page 425.

---

## Guidelines for Creating Variable Data Manually for the Model 02C

Using QuarkXPress and PageMaker makes it easy to add variable data to your documents. If you do not use these products for creating documents, you can still add variable data to your documents using a manual method.

There are two types of variable data:

- Horizontal variable data
- Vertical variable data

**Note:** Horizontal and vertical data cannot be combined in one job.

## Horizontal Variable Data

Horizontal variable data allows you to RIP the line art and graphics in a master and then RIP the text in a separate variable data file. For example, if you create a book that has the artwork in a master file and each language version of the text in a separate variable data file you can print any language of a book by selecting the master and the associated variable data. The book is the same number of pages regardless of the language it is printed in. Horizontal variable data using language selection is shown in Figure 348.

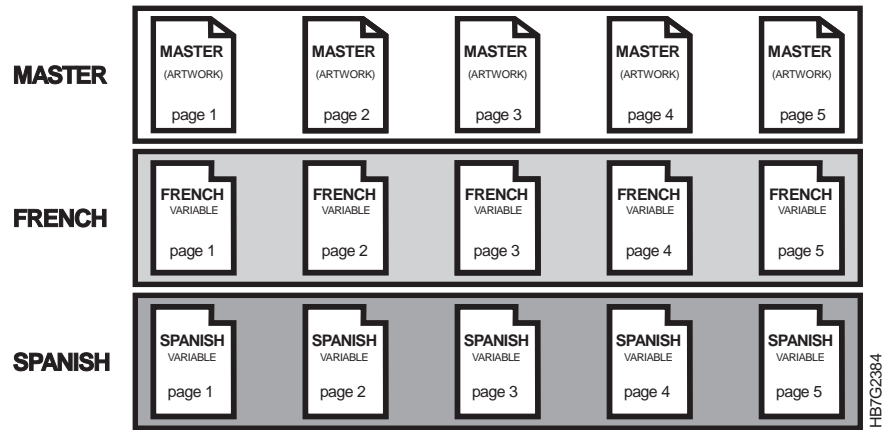


Figure 348. Horizontal Variable Data

## Vertical Variable Data

Vertical variable data allows you to RIP a master and apply multiple variable data files to overlay selected master pages. A typical application for vertical variable data is personalized mail. Each copy of the mail is printed with a page of variable data. As opposed to the horizontal method, the number of printed sheets is increased. Vertical variable data using personalized information is shown in Figure 349.

The number of pages in each variable data file should be the same. The number of pages corresponds to the number of copies.

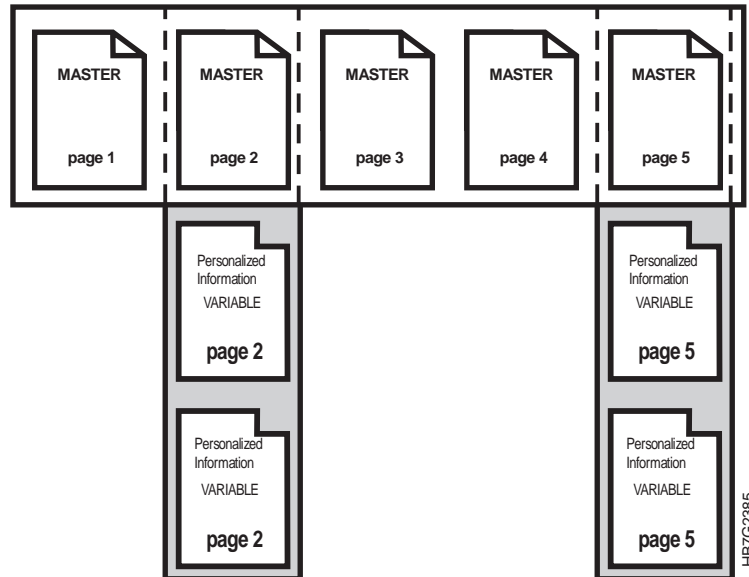


Figure 349. Vertical Variable Data



## Creating Variable Data Files

To use the Collator to print variable data, you create master pages that are to be combined with variable pages containing only the variable data.

To create a variable data job, the graphics arts professional creates a master file containing static elements and variable data files that contain pages of variable data. When the variable data job prints, the pages from the master file are combined with the corresponding pages from the variable data files. The number of pages in the master file determines the length, in pages, of the variable data job.

To use horizontal variable data, the graphic arts professional creates one variable data file for each copy of the variable data job. Each page of the variable data file will be combined with the corresponding page of the master file to create one copy of the variable data job. The number of variable data files determines the number of copies. Figure 348 on page 417. Each file must contain the same number of pages as the master file.

To use vertical variable data, the graphic arts professional creates one variable data file for each page that is to contain variable data. The data from the first page of each of the variable data files will be combined with the master file pages to create the first copy of the variable data job. The number of pages in the variable data files determines the number of copies of the variable data job. Figure 349 on page 418. All variable data files must have the same number of pages.

The IBM InfoColor 70 Printer and Collator has the four methods for merging variable data. These methods correspond to the job type that is selected in the **Page Setup** window. See “Job Types” on page 413.

## Creating Book Ticket Files with Horizontal Variable Data

**Note:** See “Horizontal Variable Data” on page 417 for more information about horizontal variable data.

To use horizontal variable data, first update the CHAPTER, BOOK, and PRINTRUN statements in the BTF. Associate each variable data file with the master file using the following syntax (see Table 75):

```
“masterfile”  
@*“horizontalfile”
```

There must be an associated horizontal data page for each master file page. Horizontal data can be added to CHAPTER, BOOK, and PRINTRUN statements to create BTFs for printing.

**Note:** The master and variable data files must have the same number of pages.

<b>Parameter</b>	<b>Description</b>
masterfilename	This is always between double quotes, is case sensitive, and refers to the master file.
horizontalfile	This is always between double quotes and refers to the horizontal data file.
@*:	This syntax is required.

**Example:** To print a file "Painting" in English, Spanish, PicassoEnglish, and EnsorEnglish and create 400, 200, 250, and 150 copies respectively, you must use the @\*: character sequence to indicate the name of the horizontal file containing the language data. The following statements will produce the desired results:

```

CHAPTER IntroEnglish
"Painting"           ;Master file
@*:"Painting_english" ;Horizontal variable data file
ENDCHAPTER
CHAPTER IntroSpanish
"Painting"           ;Master file
@*:"Painting_spanish" ;Horizontal variable data file
ENDCHAPTER
BOOK PicassoEnglish
IntroEnglish
"Picasso"            ;Master file
@*:"Picasso_english" ;Horizontal variable data file
ENDBOOK
BOOK EnsorEnglish
IntroEnglish
"Ensor"              ;Master file
@*:"Ensor_english"   ;Horizontal variable data file
ENDBOOK
BOOK PicassoSpanish
IntroSpanish
"Picasso"            ;Master file
@*:"Picasso_spanish" ;Horizontal variable data file
ENDBOOK
BOOK EnsorSpanish
IntroSpanish
"Ensor"              ;Master file
@*:"Ensor_spanish"   ;Horizontal variable data file
ENDBOOK
PRINTRUN Paint
PicassoEnglish, BCOPIES=400 ;Print 400 copies
EnsorEnglish, BCOPIES=200 ;Print 200 copies
PicassoSpanish, BCOPIES=250 ;Print 250 copies
EnsorSpanish, BCOPIES=150 ;Print 150 copies
ENDPRINTRUN

```

## Creating Book Ticket Files with Vertical Variable Data

**Note:** See “Vertical Variable Data” on page 418 for more information about vertical variable data.

If all variable data comes from one file you can use a definition with a file as you did for the masters and the horizontal method. However, if the variable data is contained in several files you must use a VSTREAM statement. The VSTREAM statement is added to the BTF. The syntax (see Table 76) is:

```
VSTREAM vstreamname
  file1
  file2
  ...
ENDVSTREAM
```

The words VSTREAM and ENDVSTREAM are required syntax.

Parameter	Description
vstreamname	This is a reference to the VSTREAM statement which can be used to associate it with a master file. It is an alphanumeric parameter and may also contain underscores, but the first digit cannot be a number.
file	<p>This is used to specify which files on the Collator are to be used. All files in a VSTREAM are simplex and of the type "v" (variable). They must all have the same page length and page width. When a VSTREAM is attached to a master page, it must have the same page width, page length, and data depth as the master page.</p> <p>The file syntax is "filename" (pagerange): repeatcount where:</p> <p>filename — This is always between double quotes and refers to a file on the Collator without its extension. The name of the file is case sensitive.</p> <p>pagerange — This is the description of the pages you want to print and the order of printing. It consists of digits, commas and dashes. The pages are numbered logically as they are RIPed starting from 1. For example, if you RIPed duplex, page 1 is on the front, page 2 is on the back. A page 0 means a blank page. If you want to print only one page the brackets may be omitted. The page range defaults to (1-n) where n is the number of pages of that file.</p> <p>repeatcount — This provides the repetition of the pagerange. It defaults to one. The ":" is mandatory when using this parameter.</p>

VSTREAM statements are also used for vertical variable data jobs. Multiple VSTREAMs can be attached to a master file, one for each master page. The syntax is:

```
"masterfile"  
  @masterpage1:vstream1  
  @masterpage2:vstream2  
  @masterpage3:vstream3  
  ...
```

You can create Book Ticket Files for vertical variable data by using BOOK, CHAPTER, PRINTRUN, or DEFINE statements. Consider a company with a chain of shops in three states. It has a list of all its shops in the US and a database of target customers for each state. It sends a 4 page mailer to those large target customers with the name and address of the customer on the front page and the closest shop address on the back. Remember that the multiplication of the number of pages is inherent with the use of VSTREAMs, so that you only have to request one copy.

**Example 1**

```
VSTREAM Customers
"CustomersCalifornia"      ;Variable data file
"CustomersArizona"        ;Variable data file
"CustomersNewMexico"      ;Variable data file
ENDVSTREAM
BOOK Mail
"Publicity" (1-4)          ;Master file pages 1, 2, 3, 4
@1:Customers               ;Reference to vstream
@4:,"Shops" (1,2,3,2,3,4,7,4,2,6,7,3,6) ;File directly used
ENDBOOK
PRINTRUN MailRun
Mail, BCOPIES=1
ENDPRINTRUN
```

**Example 2:** The following is written in page picking style where the data for each page is explicitly defined. Note that for the master file the brackets of the page range can be omitted as they are all single pages.

```
VSTREAM Customers
"CustomersCalifornia"      ;Variable data file
"CustomersArizona"        ;Variable data file
"CustomersNewMexico"      ;Variable data file
ENDVSTREAM
BOOK Mail
"Publicity"1 @ Customers | "Publicity"2
;Customer variable data file added to front of first page of Publicity
"Publicity"3 | "Publicity"4 @ "Shops"(1,2,3,2,3,4,7,4,2,6,7,3,6)
;Selected pages of Shops variable data file added to back of fourth page of Publicity
ENDBOOK
PRINTRUN MailRun
Mail, BCOPIES=1
ENDPRINTRUN
```

## RIPing and Printing Manually Created Variable Data Files

To RIP and print manually generated VDFs follow the steps below:

**1** Open the **ThruPRINT** window and click on the **Files** tab.

**2** Select the master PostScript file in the list box.

**Note:** If the file want to RIP is not listed, press the **Select files...** pushbutton and select the file from the **Select Files...** window.

**3** Select the file you want to RIP and then select **File** ⇒ **RIP**.

This opens the **Page Setup** window.

**4** Set **Job Type** to Master.

**5** Set the other page setup values appropriately for your job.

**Note:** The **Page Setup** window is described in “Defining Page Setups and Paper Sizes” on page 154.

**6** Click on the **OK** pushbutton to start the RIP.

This closes the **Page Setup** window and creates a **FastRIP** window whose icon displays on the desktop.

To monitor the RIP, double-click this icon to open the window. The status of the file that is listed in the **ThruPRINT** window will be changed from RIPing to RIPed.

After the RIP completes, close the **FastRIP** window.

**7** Select one of the variable data files in the list box.

**Note:** If the file want to RIP is not listed, press the **Select files...** pushbutton and select the file from the **Select Files...** window.

**8** Select the master PostScript file and select **File** ⇒ **RIP** from the menu bar.

This opens the **Page Setup** window.

**9** Set the **Job type** to one of the following: VDF0, VDF1, VDF2, or VDF3.

**10** Repeat steps 7 through 9 until all the variable data files are RIPed.

**11** Build a Book Ticket File (see pages 420 and 422)

**12** Select **File** ⇒ **Print** from the menu bar to print your job.

**13** A message window opens to indicated that the job has been submitted.

**14** Go to the **IBM InfoColor 70** window and look at the **Print Queue** window. You will see the name of the Book Ticket File that you are printing.

---

## Manual Method to Create Variable Data Files on the Model 002

The PostScript file for a VDS job has three parts:

- Header — defines the job parameters
  - Number of master pages
  - Number, sizes and locations of variable data fields
  - Transparency mode
  - Data depth

**Note:** The transparency mode determines whether the master color bleeds through the variable data fields.

This PostScript takes the form of a dictionary followed by the `initVDFControl` operator.

- Master Pages — contain the description of all the fixed elements in the job. The first page description must define the page size.

**Note:** There is one master page for a simplex job, two for a duplex job.

- Variable Data Fields — Each variable data field for each copy is described by a separate page. The lower left corner of each variable data field page is then aligned with the position specified in the corresponding variable data field definition of the header. The variable data field pages must be included in the order they are to be copied. See “Simplex Variable Data Job” and “Duplex Variable Data Job:” on page 427

**Note:** For a duplex job with  $p$  number of variable data fields on the front, and  $q$  variable data fields on the back, that has a run length of  $n$  sequences, there must be  $n(p+q)$  variable data field pages in addition to the master pages.

**Note:** You must ensure that the number of master pages and variable data field pages coincide with the parameters specified in the header. Otherwise variable data field pages can be misinterpreted as master pages.

### **Simplex Variable Data Job**

```
<< /XkVDFPageData [  
  << XkVDFDataDepth data_depth /XkVDFData [  
    .... VDS field definition A...  
    .... VDS field definition B...  
    etc.  
  ] >>  
>> initVDFControl  
.... PostScript for master page ...  
.... PostScript for VDS field A (copy 1)...  
.... PostScript for VDS field B (copy 1)...  
etc.  
.... PostScript for VDS field A (copy 2) ...  
.... PostScript for VDS field B (copy 2) ...  
etc.
```



### **Duplex Variable Data Job:**

```
<< /XkVDFPageData [  
  << XkVDFDataDepth data_depth /XkVDFData [  
    .... front VDS field definition A...  
    .... front VDS field definition B...  
    etc.  
  ] >>  
  << XkVDFDataDepth data_depth /XkVDFData [  
    .... back VDS field definition Q...  
    .... back VDS field definition R...  
    etc.  
  ] >>  
>> initVDFControl  
.... PostScript for front master page ...  
.... PostScript for back master page ...  
.... PostScript for front VDS field A (copy 1)...  
.... PostScript for front VDS field B (copy 1)...  
etc.  
.... PostScript for back VDS field Q (copy 1) ...  
.... PostScript for back VDS field R (copy 1) ...  
etc.  
.... PostScript for front VDS field A (copy 2)...  
.... PostScript for front VDS field B (copy 2)...  
etc.  
.... PostScript for back VDS field Q (copy 2) ...  
.... PostScript for back VDS field R (copy 2) ...  
etc.
```

Note that the XkVDFPageData array must include only one dictionary for a simplex job and must include two dictionaries for a duplex job. If a duplex job has variable data fields only on one side, the XkVDFPageData array must include an empty dictionary for the side without variable data fields.

### **VDS Field Definitions**

```
<< /XkVDFSide side      [either (F) for front or (B) for back]  
  /XkVDFXPosition x0    [x value of lower left corner in PostScript user space]  
  /XkVDFYPosition y0    [y value of lower left corner in PostScript user space]  
  /XkVDFWidth w         [width of field in PostScript user space&rb  
  
  /XkVDFHeight h        [height of field in PostScript user space]  
  /XkTransparency        [transparency mode: 0 or 1]  
>>
```

Use /XkVDFSide (F) for simplex jobs. Use /XkTransparency 0 for most jobs; this lets the master page data show through wherever the VDF data is white. Use /XkTransparency 1 when the VDF data is white text on a black background; the master page data will show through wherever the VDF data is black.

### **Sample Duplex VDF PostScript Job**

```
%!
%% Sample Duplex VDF PostScript Job
%% This sample has two variable data fields on the front,
%% one on the back, and prints three copies.
%%
<< /XkVDFPageData [
    %% Front Page Definition
    << /XkVDFDataDepth 2 /XkVDFData [
        % front VDS field definition A...
        &lt.&lt; /XkVDFSide (F)
        /XkVDFXPosition 100
        /XkVDFYPosition 400
        /XkVDFWidth 300
        /XkVDFHeight 50
        /XkTransparency 0
        &gt;&gt;
        % front VDS field definition B...
        &lt.&lt; /XkVDFSide (F)
        /XkVDFXPosition 100
        /XkVDFYPosition 400
        /XkVDFWidth 300
        /XkVDFHeight 50
        /XkTransparency 0
        &gt;&gt;
    ] >>
    %% Back Page Definition
    << /XkVDFDataDepth 2 /XkVDFData [
        % back VDS field definition Q...
        &lt;&lt; /XkVDFSide (B)
        /XkVDFXPosition 300
        /XkVDFYPosition 400
        /XkVDFWidth 300
        /XkVDFHeight 50
        /XkTransparency 0
        &gt;&gt;
    ] >>
]>> initVDFControl
%% PostScript for front master page ...
% Be sure it includes the page size
<< /PageSize [612 792] >> setpagedevice
/Helvetica findfont 24 scalefont setfont
72 300 moveto (The Front Page) show
showpage
%% PostScript for back master page ...
72 300 moveto (The Back Page) show
showpage
%% PostScript for front VDS field A (copy 1)...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Front Field A Copy 1) show
showpage
%% PostScript for front VDS field B (copy 1)...
/Helvetica findfont 18 scalefont setfont
0 0 moveto Front Field B Copy 1) show
```

```
showpage
%% PostScript for back VDS field Q (copy 1) ...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Back Field Q Copy 1) show
showpage
%% PostScript for front VDS field A (copy 2)...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Front Field A Copy 2) show
showpage
%% PostScript for front VDS field B (copy 2)...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Front Field B Copy 2) show
showpage
%% PostScript for back VDS field Q (copy 2) ...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Back Field Q Copy 2) show
showpage
%% PostScript for front VDS field A (copy 3)...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Front Field A Copy 3) show
showpage
%% PostScript for front VDS field B (copy 3)...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Front Field B Copy 3) show
showpage
%% PostScript for back VDS field Q (copy 3) ...
/Helvetica findfont 18 scalefont setfont
0 0 moveto (Back Field Q Copy 3) show
showpage
```



## Appendix F. Customizing ThruPRINT

When ThruPRINT is installed, default values are used to initialize the **Page Setup** window and the **Merge Documents** window. This default configuration can be customized to meet the needs of your print shop.

ThruPRINT uses the following configuration files. Before you modify any of these files, save a backup file containing the IBM default values.

- `thruprint.ini`

This file is in the `/home/op` directory. It identifies the files ThruPRINT will use to initialize values in the **Page Setup** window and the **Merge Documents** window. Table 77 describes the options that may be modified in this table.

Option	Description	Default Value
CurrentPageSetup	The full path and name of the initialization file used to initialize the <b>Page Setup</b> window.	<code>/custdisk1/infocolorrip/default.ini</code>
MergeDocConfigFile	The full path and name of the configuration file used to initialize the <b>Merge Documents</b> window.	<code>/usr/fcdp/vds/bin/mergedoc.cfg</code>

- `default.ini`

This file is in the `/custdisk1/infocolorrip/default.ini` directory. It contains the default values ThruPRINT will use to initialize the **Page Setup** window. For more information about the Page Setup values, see “Defining Page Setups and Paper Sizes” on page 154.

- `mergedoc.cfg`

This file is in the `/usr/fcdp/vds/bin/` directory. It contains the default values ThruPRINT will use to initialize the **Merge Documents** window. Table 78 describes the options that may be modified in this file.

Option	Description	Default Value
<code>vdata_search_path</code>	The set of directories used to initialize the Variable data search path field. When the Default button is pressed the Variable data search path value is set to the value of this option.	<code>/custdisk1/vds/masterps; /custdisk1/vds/resource; /custdisk1/vds/resouce; /custdisk1/vds/data; /custdisk1/vds/docdef</code>
<code>vdata_vdataps</code>	The directory where the Post Script files created automatically during the RIP process are placed.	<code>/custdisk1/vds/vdataps</code>
<code>vdata_btf_dir</code>	The directory where the Book Ticket Files are placed.	<code>/custdisk1/vds/btf</code>



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# Glossary

The following terms are defined as they are used in 3170 Full Color Digital Printer/Press and InfoColor 70 documentation. If you do not find the term you need, refer to the index or to the *IBM Dictionary of Computing*, SC20-1699 or the *IBM Dictionary of Printing*, G544-3973.

## A

**A3-size paper.** Paper that is 297 x 420 mm (11.69 x 16.54 in.).

**A4-size paper.** Paper that is 210 x 297 mm (8.27 x 11.69 in.).

**Active Alarms.** A window that opens automatically to display alarms or warnings.

**active window.** A window in which you can perform actions. The title bar of an active window is highlighted.

**administrator logon.** The logon used only during limited sessions for configuration changes or system maintenance.

**Age Developer.** The value, displayed in equivalent A4 sheets, used to determine the age of the developer for each of the eight print units. This value displays in the Toner Concentration Setpoint window.

**alarm.** A message in red text in the Active Alarms window, which indicates a severe problem that must be solved immediately. An example is a paper jam.

**along-web registration.** The accurate alignment of the four-color separations of an image on top of each other in the direction of the paper movement (along the web).

**APIS (automated printer interface system).** The interface protocol used to exchange image data, commands, and status information between the RIP/operator interface platform and the print engine supervisor.

**archive diskettes.** Diskettes that contain data files specific to the upgrade level of the printer. These diskettes are provided by IBM.

**Automatic Control.** A setting in the Paper and Engine Conditioning window used to specify that tower conditioning be controlled automatically. Automatic is the recommended setting.

**Auto Print.** A setting used in the Print Sequence window to cause all jobs in the print queue to print

automatically without intervention by the operator, once the engine has reached Print Quality criteria.

**Auto save settings.** A Preference window checkbox used to have any settings changed in process control windows automatically saved.

**auxiliary (test) tray.** The upper tray on the output stacker. This tray is used for print tests and blank sheets.

## B

**background noise.** A dirty background caused by toner that has adhered to non-image areas of the printed job.

**backup diskettes.** (1) Diskettes shipped with the printer to provide a backup of the software in case the hard drive crashes. (2) Diskettes prepared by the operator to provide a backup of data-file settings that the operator has modified.

**backup roll pressure handle.** Handle used to loosen the pressure against the paper roll so a paper jam can be cleared.

**basis weight.** The weight in pounds of a ream (500 sheets) of paper cut to a given size for that grade; for example, 25 x 38 in. for book papers, 17 x 22 in. for bond papers, and other sizes for other grades. The basis weight of continuous forms for computer output is based on the size for bond papers.

**bearding.** The appearance of blown-off toner at the leading edge of an image.

**bias test patches.** CMYK patches on control strips that are used to measure and control lower densities.

**bitmap.** An image formed by a rectangular grid of pixels. Each pixel is assigned a value to denote its color and the density of color.

**black overprinting.** A page-setup parameter that causes 100% black to overprint the other colors.

**blank sheets.** The white sheets that always precede and follow a printed job.

**bleed.** Extra printed area that extends off the final page trim size. Bleed ensures that no white gap is at the edge of pages. Bleed is also used as a design technique.

**bps (bits per spot).** The number of bits with which each spot's gray level is described.

**brake system.** Keeps the paper web at a certain tension between the paper reel and the first web drive motor.

**Busy pausing engine state.** During this engine state, the print engine is pausing to wait for the Ok pushbutton to be clicked.

**Busy printing engine state.** During this engine state, the imaging process is taking place.

**Busy starting engine state.** During this engine state, the print engine is starting.

**Busy stopping engine state.** During this engine state, either the job has finished printing or the Halt pushbutton has been clicked.

**Busy warming up engine state.** During this engine state, the print engine is waiting for the fuser to warm to its required setpoint temperature.

**Busy waiting engine state.** During this engine state, the job has downloaded to bitmap and is waiting to be printed.

## C

**carrier.** Solid elements that carry and disperse the toner when it is used in a dry powder form.

**Change paper roll.** A step in the Mount Paper Roll window that the operator must select to start the procedure for changing a paper roll.

**cleaning station.** Removes excess toner particles from the drum and directs these particles to a toner waste bottle.

**CMYK (cyan magenta yellow black).** The four basic colors used in offset printing, as opposed to the three basic colors of light: red, green, and blue.

**Note:** Magenta, yellow, and cyan are thought of as the 'subtractive' primaries. Black is added to give better density and to produce a true black.

**Collate.** An edit function used from the Image Disk window to combine several resident jobs into one resident job, somewhat like a small book.

**color balance.** Relative levels of cyan, magenta, and yellow needed to produce a neutral or non-cast grey. Crucial for color scanning.

**color correction.** Adjustment of the balance of CMY channels in an image to produce accurate color rendition of an original image. Many color scanners,

particularly low-end desktop models, produce only average color balance and images from these units must be adjusted using an image editor such as PhotoShop.

**color registration.** The accurate alignment of the four color separations of an image on top of each other at each side of the paper.

**Compression.** A page-setup parameter used to specify that the raster image of a RIPed job be compressed.

**condensation water reservoirs.** The two containers, located in the fixed tower, that are used to collect condensation water.

**Conditioned engine state.** During this engine state, the print tower conditioning is turned on and the paper conditioning and fusing systems are turned off. The engine is idle and no printing is taking place.

**conditioning circuit.** A circuit that controls the temperature and humidity of the air in the print tower to ensure stable print quality and to filter ozone and dust.

**console switch.** The switch used to turn on the printer's two control computers.

**control strip.** (1) A strip of information that can be attached to a print job and be used to measure registration and density. (2) A page-setup parameter used to specify the name of the control strip to be appended to a print job. (3) A Properties window Imaging field used to view a list of all resident control strips and to select a control strip to add to a job or to override the control strip specified in the Page Setup window.

**Cooling.** When highlighted in the Paper and Engine Conditioning window, indicates either the air temperature and/or the relative humidity in the print tower is higher than its setpoint and the air is being cooled.

**cooling unit.** A closed-loop refrigeration unit, physically separated from the print tower, that provides cooled water for the conditioning systems in the printer.

**Copy count.** (1) A page-setup parameter used to specify the number of copies to be printed of each signature of a job. (2) A Properties window Imaging setting used to override the number of copies specified in the Page Setup window.

**corona.** (1) The effect of ionizing air with a high voltage, creating a charge that can be used to perform various functions during printing or copying. (2) In printers, a small diameter wire (or wires, depending on the function) to which a high voltage is applied, causing ionization of the air. The ionization creates an electrical



charge to perform various functions during the printing process.

**corona wire.** A wire with high voltage that emits charged particles.

**Corona current.** A paper-conditioning parameter that displays the current of the first transfer corona. This current is adjusted automatically.

**Counters.** A window used to monitor the number of printed, wasted, and total sheets of paper. Do not use the values in this window to determine the age of the developer. See Age Developer.

**crop.** To remove unwanted areas of an image, usually indicated by crop marks on the original.

**cross-web registration.** The accurate alignment of the four-color separations of an image on top of each other in the cross direction of the paper movement (across the web).

**Cut Sheets.** A Properties window Finishing setting used to specify whether the sheets of a printed job will be cut or not cut.

**cutter.** Cuts the paper perpendicular to the paper movement before the paper leaves the print tower.

## D

**Data depth.** (1) A page-setup parameter used to specify the number of bits with which each spot's gray level is described. 4 bps (bits per spot) means a spot can have 16 levels of gray. Gray levels determine the density of color printed (C,M,Y or K). (2) A Properties window Imaging setting used to override the data depth specified in the Page Setup window.

**day conditioning.** The electronic control of temperature, relative humidity, and air filtering in the print tower during the day.

**DCS.** Desktop color separation file.

**default.ini file.** A file included with the printer software that contains default page-setup-parameter values.

**Delete.** A function in the Image Disk, Queue Manager, and Image Memory windows used to delete a resident job from the lists of jobs in these windows.

**densitometer.** An instrument used for measuring color saturation on a printed page.

**Density Control.** The window used to monitor and sometimes adjust the parameters that affect the density of the printed image.

**density test patches.** CMYK patches on control strips that are used to measure and control the higher densities.

**developer.** A mixture of toner and carrier particles.

**developer unit.** Develops the image by depositing toner particles on the drum.

**digital printing.** Filmless and plateless printing process wherein digital data for each page is transferred directly to a light sensitive drum and then, via various methods, to paper for a final image.

**DIS/RIP switch.** The switch used to switch back and forth between the PES platform and the RIP platform.

**Dmax.** The density printed when the test patch has 100% dot screen.

**dot gain.** Increase in the size of a halftone dot during printing caused by ink spreading. Generally, this value is known to a fair precision and the scanning/film production process is calibrated to compensate for it. The Cromalin proofing system simulates this effect by overexposing slightly to increase dot percentage values an amount equal to the press dot gain percentage.

**downloading.** The first step in the printing process. The selected print job is downloaded to bitmaps.

**dpi (dots per inch).** Also known as pels, and sometimes referred to as spots per inch. A measure of data density per unit distance. Typical values for desktop publishing range from 200 to 300 dpi. The 3170 Full Color Digital Printer/Press and InfoColor 70 print at 600 dpi.

**driftmargin.** The signature is positioned too far to the right or left on the paper.

**drum.** A grounded aluminum core covered with a layer of photoconductor.

**drum refurbishing.** A process used to remove fused-on toner from a drum. Fused-on toner is toner that was not removed by the cleaning station.

**dryc\_0 script file.** A script file that is run to remove paper from the heated roll to prevent paper scorching when the paper is manually pulled through the print tower.

**dryc\_1 script file.** A script file that is run to enable paper contact with the heated roll.

**DTP (desk top publishing).** Generic term for printing-related activities on PC platforms; includes, but is not limited to layout and design, photo manipulation, font creation/editing, color separation, scanning, and animation.

## E

**emergency stop.** Stops the print engine immediately when a serious error occurs. The print engine can be stopped manually by pushing down a red emergency button or clicking the emergency stop button.

**emergency stop button.** The stop-sign button located at the top right of the monitor screen. Click this button to stop the print engine during an emergency.

**Engine State.** A window used to monitor the status of the print engine at any one time. The print engine has eleven possible engine states.

**EPS (encapsulated PostScript).** Digital format for storing scanned images. A file format that the printer accepts for print jobs.

**Executable.** A Preferences window field that shows the path to the file that executes the RIP.

## F

**Face Down.** (1) A page-setup parameter used to reverse the front and back pages in duplex jobs or to print simplex jobs on the back side of the paper. (2) A Properties window Finishing setting used to override the Face Down setting specified in the Page Setup window.

**FastRIP window.** A window that opens automatically to show the progress of the interpretation and rendering phases of the RIPing process.

**File Manager.** A window used to view files and directories, move and copy files, manage disks, and so on.

**Finishing.** A Properties window option used to look at and change finishing settings, such as the output bin.

**fixed horizontal bar.** A bar on the output stacker that can be adjusted to allow the stacker to accommodate different sheet lengths.

**fixed tower.** The area of the tower where the toner is fused to the paper to produce the final image. The fixed tower is located at the end near the output stacker.

**FIX T element measured.** A fusing system parameter that displays the actual measured temperature of the fuser elements.

**FIX T element setpoint.** The value to which the temperature of the fuser elements has to be adjusted.

**FIX T paper measured.** A fusing-system parameter that displays the actual measured temperature of the paper coming out of the fuser.

**FIX T paper setpoint.** The value to which the temperature of the paper coming out of the fuser has to be adjusted. For all IBM tested papers, this value is 140.C.

**Forms.** An Image Disk properties option used to look at the forms (pages) that make up a selected resident job.

**FOT (fused on toner).** Toner left on the drum that has not been transferred to the paper.

**front-to-back registration.** The alignment of the signature position for front and back.

**fuser.** The non-contact element that affixes the eight toner layers to the paper.

**fusing control system.** A system that controls the temperature of the fuser element and the temperature of the paper coming out of the fuser.

## G

**gate.** The metal door located in front of the electronic panel in each print tower.

**GCR (grey component replacement).** Equivalent to UCR (under color removal).

**GB.** Gigabyte or 1 073 741 824 bytes (1 000 MB) of data.

## H

**halftone.** Printing method that simulates continuous-tone shading using dots of varying sizes laid out on a regular grid. Larger dots simulate darker tones and vice versa. Typical grid spacings are: 85 lpi newspaper, 133 lpi low end, 150 lpi midrange, 175 lpi+ high quality. LPI = lines (halftone dots) per inch.

**Halt.** A Print Sequence pushbutton used to stop printing when a problem that is not an emergency occurs.

**hand truck.** Device used to either mount the paper roll in the paper supply or remove the roll from the paper supply.

**HCP (Host Control Panel).** A window used primarily by the service representative to manage processes through the use of commands.

**heated roll.** The roll in the paper supply that dries the paper to a certain moisture content.

**Heating.** When highlighted in the Paper and Engine Conditioning window, indicates the air temperature in the print tower is below its setpoint and is being heated.

**high-coverage job.** A job in which the page has greater than 30% coverage.

**High Priority.** A Properties window Imaging setting used to control the printing sequence of jobs in the print queue.

**Hold Printing.** A Properties window Imaging setting used to put a print job on hold so the next job in the queue can print first.

**Humidifier.** (1) An engine-conditioning parameter that displays the duty cycle of the humidifier. (2) Part of the tower-conditioning system that adds humidity to the air in the print tower. The humidifier is located in the Y tower.

**Humidifying.** When highlighted in the Paper and Engine Conditioning window, indicates the relative humidity is below its setpoint.

## I

**ICS (imaging control system).** A system that controls the eight LED writing heads.

**Image Disk.** The window used to manage job setup, RIPping, and printing. This window displays a list of resident jobs on the printer.

**Image Memory.** The window that lists jobs that have been completely downloaded to image memory, ready to print. Displays the amount of image memory still available.

**Imaging.** A Properties window option used to change image settings, such as copy count and data depth.

**imposition.** The process of arranging pages on a press sheet to ensure proper order during final cutting/folding/binding. Electronic imposition builds press sheets automatically in the RIP and outputs film formatted for immediate use in platemaking. Electronic imposition is very machine-intensive and is used only when maximum speed and throughput are required. Also changes required rerunning an entire press sheet

**INC (instrumentation control system).** A system that controls the operation of all the electromechanical and electronic modules in the print engine.

**ini file.** A file in which page setup settings are stored.

**Initialized engine state.** During this engine state, the microcontrollers are being initialized prior to power-on state.

**Insert Separator.** A pushbutton you can use in the Print Sequence window to cause a separator strip to be inserted between each print job.

**interpretation and rendering.** The two phases of RIPping a job.

## J

**Job type.** A page-setup parameter used to specify whether a job is a master, variable data file (VDF), or test job.

## K

**KB.** Kilobyte or 1 024 bytes of data.

## L

**Layout.** A Properties window option used to specify the sheet and signature layout settings for a job.

**LDA (light emitting diode array).** The imaging device for the electrophotographic print units.

**LED (light emitting diode).** The imaging device element for the electrophotographic print units.

**Load paper settings.** A step in the Mount Paper Roll window that highlights after a new paper roll is mounted and the Done pushbutton is clicked. When the Done pushbutton is clicked again, the Run Script window opens, where the correct setting for the newly mounted paper roll can be specified.

**log file.** A file in which operational errors and messages are automatically stored. These messages can help a service representative debug problems.

**loupe.** A small magnifier used to check printed documents for correct registration.

**lpi (lines per inch).** In computer graphics some screening algorithms use equally spaced lines to print images. This is the line spacing used.

## M

**main-charge scorotron.** A type of corona that contains a grid. Charges the surface of the drum to a negative uniform potential. Each print unit has a main-charge scorotron.

**main power.** The power that runs the printer when the switch, located in the fixed tower, is turned to the ON position.

**main (stacker) tray.** The lower tray on the output stacker. This tray is used for stacking print jobs.

**main switch.** The switch, located in the fixed tower, that is used to turn on the printer.

**Make Duplex.** An edit function used from the Image Disk window to combine two simplex jobs or selected pages of two duplex jobs into a new duplex job.

**Manual Control.** A setting in the Paper and Engine Conditioning window used to specify that tower conditioning be controlled manually by the operator. Automatic control, rather than manual control, is the recommended setting.

**MSDS (Material Safety Data Sheet).** International standards describing how to handle and dispose of chemical substances.

**MB.** Megabyte or 1 048 576 bytes (1 000 KB) of data.

**menu bar.** Contains several menu items used to access the functions needed to operate the printer.

**Mount Paper Roll window.** The window used to progress through the steps to change a roll of paper.

## N

**night conditioning.** The electronic control of the temperature in the print tower during the night or during idle time. Relative humidity is not controlled during night conditioning.

## O

**Open at startup.** A Preferences window selection that opens the APIS connection with the PES automatically when the operator interface is started.

**organic photoconductor.** The light sensitive coating that holds the latent image drawn by the LED array; essentially the 'emulsion' of the printing plate.

**Orientation.** A page-setup parameter used to rotate output. Output can be rotated 0, 90, 180, or 270 degrees. The pages rotate counterclockwise relative to their orientation when the job was created.

**Output bin.** (1) A page-setup parameter used to specify the output stacker destination tray. (2) A Properties window Finishing setting used to override the output bin specified in the Page Setup window. (3) The tray of the output stacker to which jobs are sent.

## P

**page-setup parameters.** Parameters, such as page size, that describe a job for output to the printer. These parameters are specified in the Page Setup window.

**Page size.** A page-setup parameter that specifies the signature size to use when the pages of a job are RIPed.

**Paper and Engine Conditioning.** The window used to monitor and adjust parameters that affect paper conditioning, tower conditioning, and the fusing system.

**paper conditioning system.** Part of the Paper Supply that uses a heated roll and a cooling unit to dry the paper to a certain moisture content.

**paper cooling circuit.** A circuit located in the paper supply that first dries the paper with a heated roll and then blows air on the paper to lower its temperature.

**paper cooling unit.** Blows cooled air on the paper as the paper leaves the fuser.

**paper roll.** See web.

**paper roll axle.** The device inserted through the core of a paper roll to support the paper roll in the printer. A paper roll axle can be adjusted to support six different paper widths.

**paper setting.** A setting the operator changes when a different type of paper is loaded. Paper settings are changed by running script files.

**paper supply.** Holds the paper roll, maintains web tension, heats the paper, and checks paper moisture content. Splicing of paper rolls occurs here.

**paper-supply alignment.** Moving the paper supply perpendicular to the web movement to correct the alignment of the paper supply to the print tower.

**PDF (printer description file).** Defined by Quark for use only with Quark Xpress. This file contains information, such as page size, that is specific for a given output device.

**Performance Monitor.** A window used to monitor CPU usage and memory used during the RIPing process.

**PES (print engine supervisor) platform.** One of two platforms in the printer controller module. This platform controls the operation of the print engine.

**pixel.** (1) Picture element. (2) In architecture, the smallest printable or displayable unit on a physical medium. In computer graphics, the smallest element of

a physical medium that can be independently assigned color and intensity. Picture elements per inch is often used as a measurement of presentation granularity. Synonymous with pel, picture element.

**Position.** A page-setup parameter used to specify the position of the job on the physical sheet of paper.

**positioning blocks.** Blocks located on the back of the output stacked that are used to correctly place the stacker against the bearings located on the cutter unit.

**PostScript.** Adobe's page-description language that has become a standard for graphic design and layout software. PostScript files can contain both vector and raster data. Fonts are described using PostScript coding. Many desktop publishing systems output PostScript.

**Power-off engine state.** During this engine state, the main power to the print engine is turned off.

**Power-on engine state.** During this engine state, the main power of the print engine is turned on and the temperature and humidity in the print tower are adjusted to their setpoints.

**PPD (PostScript printer description file).** Defined by Adobe to streamline the process of generating PostScript. This file contains information, such as page size, that is specific for a given output device.

**pre-charge scorotron.** Preconditions the surface of the drum and any remaining toner particles for cleaning.

**Preferences.** A window used to change some of the printer default settings, such as saving your workspace.

**print engine supervisor (PES).** A unit that controls the operation of the print engine.

**print queue.** The queue that contains Ripped jobs that are ready to print. The printing of jobs from the queue is on a first-in, first-out basis.

**Print Sequence.** A window that opens automatically to let you observe the progress of printing a job and to perform other tasks, such as halting a print job.

**print tower.** The module of the printer that contains the drums, coronas, dosing and developing units. Toner deposition occurs here. Conditioning controls this area. Paper exits this area and enters the fixed tower.

**print unit.** One of four units in each print tower that prints one of the four CMYK process colors.

**print unit drives.** The electric motors that drive the clean station, developer unit, and toner dosing unit.

**process color.** Made up of CMYK inks simulating a specified color. Accepted traditional method for reproducing continuous-tone color images (color separations). Due to the nature of color inks, certain Pantone spot colors will not reproduce well.

**Progress.** An option in the Queue Manager Properties window used to view the progress of a queued job.

**Properties.** A selection used from either the Image Disk, Queue Manager, or Image Memory window to change the layout, imaging, or finishing properties of a job. When selected from Image Disk, you can also display the forms that make up a job. When selected from Queue Manager, you can monitor the progress of a queued job.

**PRS T.** A paper-conditioning parameter that displays the measured standby temperature of the pre-heating roll. The setpoint depends on the type of paper loaded in the printer.

**pushbuttons.** Buttons located in most operator-interface windows that, when clicked, either perform actions or provide access to additional functions.

**PRS U1.** A paper-conditioning parameter that displays the potential measured by the first charge meter. The setpoint must be 500V.

**PRS U2.** A paper-conditioning parameter that displays the potential measured by the second charge meter. A setpoint based on the specific paper humidity that will result in the best print quality has been established for each type of certified paper.

## Q

**Queue Manager.** A window that lets you view and manage all jobs currently in the print queue. As soon as a job prints, it disappears from the list of jobs in the queue.

**Quit PES at exit.** A Preferences window checkbox used to have the PES quit automatically when you quit the operator interface.

## R

**raster.** A pattern of dots comprised of varying data depths. Images with only black and white values are 1 bit (on/off), while greyscale images are 8 bit (256 levels). RGB images are 24 bit (three channels, 8 bits each). CMYK images are 32 bit (four channels.) Raster images are also called bitmapped images.

**raster image processor (RIP).** Converts the job from PostScript into high resolution (600 dpi) bitmaps to be

fed to the LED arrays. Images are screened and converted to halftone data here.

**Refill Toner Containers window.** The window used to progress through the steps for refilling the toner containers.

**refurbish drums.** (1) A process used to remove fused-on toner from a drum. Fused-on toner is toner that was not removed by the cleaning station. (2) The window used to step through the procedure for refurbishing the drums.

**Register Control.** The window used to adjust registration.

**registration.** (1) The accuracy of printing on paper relative to the edges of the paper. (2) the accuracy of printing a single color (cyan, magenta or yellow), relative to black. (3) The accuracy of printing on one side of a page relative to printing on the reverse side of the same page.

**relative humidity measured.** The actual measured relative humidity of the print tower.

**relative humidity setpoint.** The value to which the relative humidity in the print tower should be adjusted.

**Rename.** A function in the Image Disk, Queue Manager, and Image Memory windows used to change the name of a listed resident job.

**resident.** (1) A job that has been RIPed, but not printed. These jobs reside on the spooling disk for printing at a later time. (2) A page-setup parameter used to specify that a job is to be stored on the spooling disk after printing.

**RIPing.** The process of converting PostScript jobs into images that can be printed on the printer.

**RIP platform.** One of two platforms in the controller module of the printer. This platform runs the RIP and the operator interface.

**RIP (raster image processor).** Computer processor that renders PostScript instructions into dot patterns that are transferred to the final print medium. Most RIPs use RISC (reduced instruction set) processors to achieve extremely high throughput.

**Run paper-conditioning state.** The print engine is printing, which means the paper humidity is okay.

**RunID.** A unique number between 0 and 655535 assigned to each job in the print queue.

**Run Script.** A window used to activate script files. The operator uses script files to prevent paper

scorching, specify type of paper, and align the paper supply to the print tower.

## S

**Save workspace.** A Preferences window checkbox used to save the position of open windows in the workspace.

**scripts.** Files that contain predefined control sequences used by the instrumentation system. The operator will use some of these files for specific tasks.

**Separations.** A Properties window setting used to separate a printed image into the four CMYK colors.

**separation strip.** (1) A strip that can be inserted between two print jobs to separate them. (2) A Properties window Finishing setting used to cause separator strips to be inserted between jobs.

**sequential-action functions.** Operator-interface functions that involve a sequence of actions that are performed partly by the operator and partly by the interface. Mount Paper Roll, Refurbish Drums, and Refill Toner Containers are examples.

**service intervention.** (1) A function that allows you to open the print tower doors to do maintenance and solve problems without turning off the main power to the printer. (2) The window used to perform service-intervention steps.

**service key.** The key that must be inserted and turned clockwise before service intervention is used.

**setpoint-adjustment processes.** Processes that include parameters to monitor and setpoints to adjust to control or to optimize print quality. Density Control and Web Tension are examples of setpoint-adjustment processes.

**Sheet size.** A page-setup parameter that defines the size of the physical sheet on which the job will be printed.

**Sheffield unit.** The Sheffield unit is a measure of the smoothness of the surface of the paper. The smaller the Sheffield value, the smoother the paper.

**side jog bar.** A bar on the output stacker that can be adjusted to the width of the paper being used.

**signature.** Group of pages that will print, fold, cut and bind together. Placement of pages on the signature is determined using a folding dummy.

**signature position.** The position of the image with respect to the edge of the paper and the leading cut.

**Size.** A Properties window Imaging field that shows the compressed size of the selected resident job.

**skew.** In printers, the position of paper going through the paper path at a slight angle. Skew is a measure of how well printed lines are aligned to the edges of the paper.

**slip sheet inserter.** A device located in the back of the output stacker that contains the slip sheets used to separate print jobs in the output stacker tray.

**spindle.** A paper mounting axle or auger in the toner dosing unit.

**splicing.** Attaching the leading edge of a new paper roll to the trailing edge of the old paper roll.

**splicing tape.** The adhesive-backed tape used to splice (attach) a new paper roll to the old paper roll.

**Split.** An edit function used from the Image Disk window to either split a duplex job into two simplex jobs, or to split a collated job into uncollated jobs.

**spooling disk.** A disk array on which RIPed jobs can be temporarily stored until the bitmaps are available for printing. This disk is also used to store RIPed jobs for printing at a later time.

**spot color.** Made up of individual colored inks formulated to exactly match a specified color. Used when CMYK process color is unable to produce a reasonable facsimile of the color or when very vivid color is needed. Also used when fluorescent or metallic colors are used.

**Stacker Off Line.** A setting used in the Print Sequence window to put the output stacker offline so the keypad on the stacker can be used for manual control.

**standard test page.** A PostScript file that is printed to check overall print quality on both the X and the Y side of the page. The test-page file is provided with the printer software.

**Standby engine state.** During this engine state, the paper conditioning and fusing systems are turned on and the print engine is ready to print.

**Start paper-conditioning state.** The required setpoints for the first and second charge meters have been reached, and you can proceed with printing.

**Start web drive.** The step highlighted in the Mount Paper Roll window after the correct paper setting has been specified for the new paper roll.

**status bar.** The area at the bottom of the monitor screen that provides informational items.

**Stop paper-conditioning state.** The job has printed, and the temperature of the heated roll is saved automatically to be used as the setpoint temperature for the next print job.

**Surface Potential.** A window used to determine whether each print station is at its optimum potential for printing, which is approximately -630v.

## T

**TC measured.** A density-control parameter that displays the actual measured toner concentration (TC).

**TC d setpoint.** A density-control parameter used to manually adjust the toner concentration (TC) setpoint of toner in the developer mix.

**TC setpoint.** A density-control value to which the actual toner concentration (TC) has to be adjusted.

**TED (transfer erase duplex).** The assembly that holds the transfer, erase and duplex corona wires.

**temperature control system.** A system that regulates the temperature inside the print tower to 30°C when the print engine is turned off.

**temperature measured.** The actual measured temperature of the print tower.

**temperature setpoint.** The target value to which the temperature inside the print tower is being controlled.

**tested papers.** Papers that have been tested and approved by IBM for use in the printer.

**Test frequency.** A Properties window Imaging setting used to specify how often a test sheet should be printed during the printing of one or more jobs in the print queue.

**test (stacker) tray.** The top tray on the output stacker. This tray is used for test sheets and for blank sheets generated during the printing process.

**test sheet.** A single sheet inserted at specified intervals to check overall print quality during the uninterrupted printing of one or several jobs.

**TIFF (tagged image file format).** Digital format for storing scanned images. Also referred to as raster format, as opposed to vector format. TIFF files, when used in DTP work, place only a low-resolution FPO image; the high-resolution data remains on the hard drive.

**Toner Concentration Setpoint window.** The window used to monitor the age of the developer.

**Toner Containers window.** Window used to monitor the level of toner in each toner container and the level of toner waste in the toner waste bottles.

**toner dosing system.** A system that automatically adds toner back to the development unit.

**toner waste.** Toner that is removed from a drum by the cleaning station and deposited in a toner waste bottle.

**toner waste bottle.** Collector for toner that is automatically removed from the drum.

**tool bar.** Contains icons you can click on to quickly access the most frequently used operator interface functions.

**top roller.** Roller located at the top of the fixed tower. Directs the paper toward the fuser.

**tower-conditioning system.** The automatic conditioning of the relative humidity and temperature of the air in the print tower to enhance print quality.

**transfer corona.** Wire that imparts charge to paper to cause toner to move from the OPC drum surface to paper surface.

**transfer test patches.** Two patches each of CMYK on control strips that are used to measure and control transfer efficiency (saturation).

**Transient paper-conditioning state.** The paper is being wound around the heated roll, and the power of the heating lamp is reduced to keep the temperature stable.

**trapping.** The amount an overprinting color overlaps to prevent white paper showing through gaps caused by normal misregistration. On sheet-fed presses this is typically 0.25pt.

**Trial Print.** A Properties window Imaging setting used to fine tune and adjust print quality from a trial print before the entire job is printed.

**tumble.** A page-setup parameter used to rotate the back page 180°. Rotation is cumulative with any rotation specified for orientation.

**TWR RH measured.** The actual measured relative humidity inside the print tower. The minimum can be 25%, and the maximum can be 37%.

**TWR RH setpoint.** The target value to which the relative humidity in the print tower is being controlled. The typical setpoint is 32%.

**TWR T measured.** The actual measured temperature in the print tower. The minimum temperature can be 25°C.

**TWR T setpoint.** The target value to which the temperature in the print tower is being controlled. This value is 27–30°C.

## U

**UCR (under color removal).** Conversion of neutral color areas into black ink. Reduces the use of CMY inks, improves trapping, and reduces setup time. Generally, UCR is performed during image scanning, but some RIPs perform UCR during processing. Also known as GCR.

## W

**Warmup paper-conditioning state.** Pre-heating is on and the engine is in Standby state. When the temperature of the heated roll is at its required setpoint, the paper web can be started.

**warning.** A message in black text in the Active Alarms window, which indicates a situation that could eventually cause a problem. An example is a full toner waste bottle.

**water-cooling circuit.** A circuit that keeps the writing heads at a constant temperature to ensure stable performance.

**web.** Roll of paper used in web or rotary printing.

**web-direction markers.** Markers located on a control strip to show the moving direction of the paper web.

**web-drive speed roll.** A roll at the bottom of the Y tower.

**web-drive torque roll.** A roll in the fixed tower below the fuser cooling unit.

**web tension.** (1) The tension of the paper web between the brake system and the speed motor and between the speed motor and the torque motor. (2) The window used to monitor web tension and to adjust the torque of the torque motor.

**workspace.** The area of the monitor's operator interface screen in which you will work in various windows to perform tasks.

**writing-head cleaning tool.** A felt-tipped edge tool used to clean the lens of the writing heads.



## X

**X tower.** The area of the print tower that contains the four print stations for printing the X (front) side of a page. The X tower is located at the end near the paper supply. The side printed by the X tower is face up exiting the printer.

**xerography.** Dry printing process using corona-charged photoconductive surfaces to hold latent images that are developed with a dry toner, which is then transferred to paper and fused with heat.

## Y

**Y tower.** The area of the print tower that contains the four print stations for printing the Y (back) side of a page. The Y tower is located between the X tower and the fixed tower. The side printed by the Y tower is face down exiting the printer.

## Numerics

**3170.** The machine type of the IBM InfoColor 70 and its predecessor, the IBM 3170 Full Color Digital Printer/Press.



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Operator's Guide**

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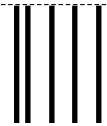


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Along Line

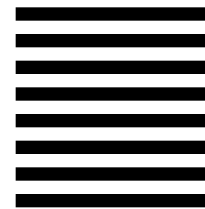
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