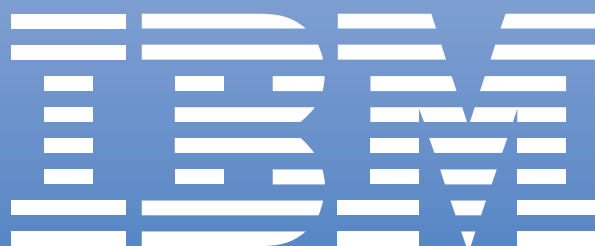


IBM InfoPrint Color 100



Operator's Guide



InfoPrint Color 100



Operator's Guide

Note!

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First Edition (October 1998)

This edition applies to Release 1.0 of the IBM InfoPrint Color 100 Operator's Guide, S544-5611-00.

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CAUTION indicates the presence of a hazard that has the potential of causing moderate or minor personal injury.

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and use only an approved plug. Your IBM marketing representative has information on the voltage requirements in your country.

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取扱説明書に従って正しい取り扱いをして下さい。

VCCI

Preface

This book explains how to operate the IBM InfoPrint Color 100 Printer. The InfoPrint Color 100 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 prepress operator, who will perform many tasks to operate and maintain the InfoPrint Color 100.

The book contains eight 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 InfoPrint Color 100. The specific tasks are:

- "Chapter 1. Understanding How the InfoPrint Color 100 Works" on page 5.
- "Chapter 2. Learning About the InfoPrint Color 100 Operator Interfaces" on page 19.
- "Chapter 3. Getting Started with the InfoPrint Color 100" on page 109.

Part 2: The operator's responsibility is to get the InfoPrint Color 100 ready to use and to set up print jobs. The specific tasks are:

- "Chapter 4. Preparing Jobs for InfoPrint Color 100 Output" on page 123.
- "Chapter 5. Using Variable Data" on page 137.
- "Chapter 6. File Transfers to the InfoPrint Color 100" on page 155.

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

- "Chapter 7. RIPing Jobs and Creating Book Ticket Files (BTFs)" on page 163.
- "Chapter 8. Printing and Managing the Printing Process" on page 183.

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

- "Chapter 9. Controlling Print Quality" on page 201.
- "Chapter 10. Monitoring and Adjusting Processes" on page 237.

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

- "Chapter 11. Managing Paper Rolls" on page 265

Part 6: The operator's responsibility is to power down and restart the InfoPrint Color 100. The specific tasks are:

- "Chapter 12. Shutdown Procedures for InfoPrint Color 100" on page 285.

Part 7: The operator's responsibility is to maintain the InfoPrint Color 100. The specific tasks are:

- "Chapter 13. Performing Scheduled Operator Maintenance" on page 289.
- "Chapter 14. Checking and Refilling Toner" on page 303.

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 15. Finding and Solving Problems" on page 313.
- "Chapter 16. Print Quality Problem Solving" on page 351.

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

Terminology

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

- Specific to the InfoPrint Color 100
- Specific to IBM
- Specific to the prepress 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 377). 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.

IBM InfoPrint Color 100 Printer Library

The following additional InfoPrint Color 100 publications are available:

- *IBM InfoPrint Color 100: Introduction and Planning Guide* , G544-5612-00, which summarizes the functions provided by the InfoPrint Color 100 and provides information to help your site prepare for installing an InfoPrint Color 100.
- *IBM InfoPrint Color 100 Print Media Guide* , G544-5386-00, which summarizes the paper supported on the InfoPrint Color 100.

Part 1. InfoPrint Color 100 Overview

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Chapter 1. Understanding How the InfoPrint Color 100 Works

This chapter provides an overview of the hardware and software components of the IBM InfoPrint Color 100 printer.

IBM InfoPrint Color 100 Printer Overview

The IBM InfoPrint Color 100 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 InfoPrint Color 100 should be used for short-run press applications, which typically consist of several hundred copies of each imaged page.

The InfoPrint Color 100 prints directly from digital data and does not require any costly intermediate steps, such as film and plate making. It is a true “direct-to-paper” solution.

The InfoPrint Color 100 produces high-quality process color jobs at a speed of 105 letter-size impressions per minute when printing 2-up duplex, or 52 letter-size impressions per minute when printing 2-up simplex. The process speed is 12.25 cm (4.82 in.) per second.

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 InfoPrint Color 100 prints at 600 dots per inch (dpi). Each dot has a grey-scale capability of up to 2 bits or 8 shades. The screening algorithms print images at a screen frequency of up to 170 lines per inch. The InfoPrint Color 100 is fully compatible with PostScript input from all standard prepress platforms.

The collator provides the user with the ability to produce a multi-page document or multiple documents as collated books. The collator can merge variable data information, consisting of text and EPS graphics in an unlimited number of variable data fields per page.

The collator includes a 64GB 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 1,000 A4 pages of a typical book with mixed images and text and a data depth of 2 bits per spot (bps). For pure text, the collator can store 10,000 to 20,000 A4 pages.

Once the files are RIPPed on the RIP controller 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.

IBM Variable Data System Feature Overview

The Variable Data System (VDS) provides the user with the ability to produce customized documents.

The InfoPrint Color 100 can merge variable data information, consisting of text and graphics, and permits an unlimited number of variable data fields per page. 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 “Appendix B. Manual Method to Create Variable Data” on page 363.

See “Chapter 5. Using Variable Data” on page 137 for more information about the Variable Data System feature.

InfoPrint Color 100 Components

The InfoPrint Color 100 consists of the following hardware and software components:

- Paper Supply
- Print Tower
- Output Jogger
- Conditioning System (not shown)
- Densitometer (not shown)
- Operator Console (Print Engine Supervisor (PES) software and PES control unit, RIP controller, and collator)

Figure 1 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.

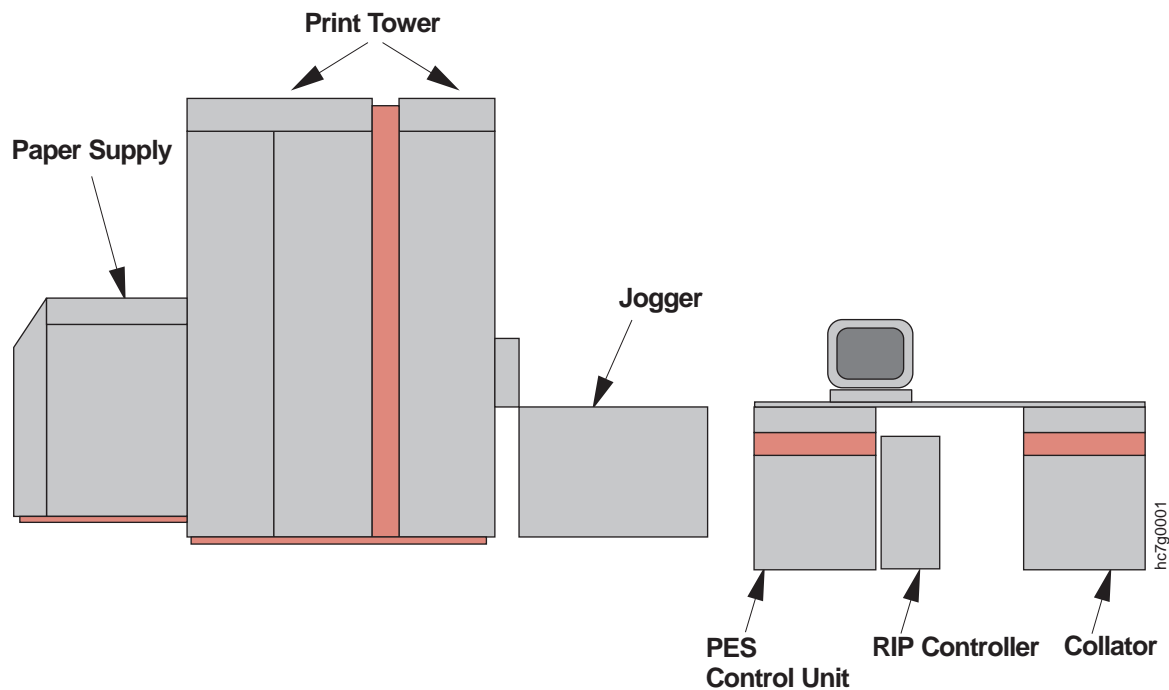


Figure 1. InfoPrint Color 100 Components

Table 1. InfoPrint Color 100 Components and Functions

Modules	Description	Refer to...
Paper Supply (PRS)	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 Jogger	Large capacity output tray.	"Output Jogger" 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 and registration control readings to the InfoPrint Color 100 interface.	"Densitometer" on page 14
PES control unit	Controls the operation of the print engine.	"PES Control Unit" on page 16
RIP controller	Consists of the InfoPrint Color 100 operator interface, the ThruPRINT interface, the interface to the prepress network, and the PostScript RIP.	"RIP Controller" on page 16
Collator	High-speed disk array and software support.	"Collator Software Support" on page 17

Paper Path

The InfoPrint Color 100 is web fed, which provides several advantages, such as higher reliability, optimal register control, and duplex printing. In addition, the InfoPrint Color 100 accepts several paper grades. The items numbered in the following list correspond to the web-drive units as numbered in Figure 2 on page 8.

1. Paper roll and paper brake system
2. Splicing table
3. Paper drying rolls
4. Paper cooling
5. Paper conductivity sensor
6. Web-drive motor #1 (speed motor)
7. Print stations (front/back)
8. Top roller
9. Fuser
10. GEM and paper cooling
11. Web-drive motor #2 (torque motor)
12. Cutter

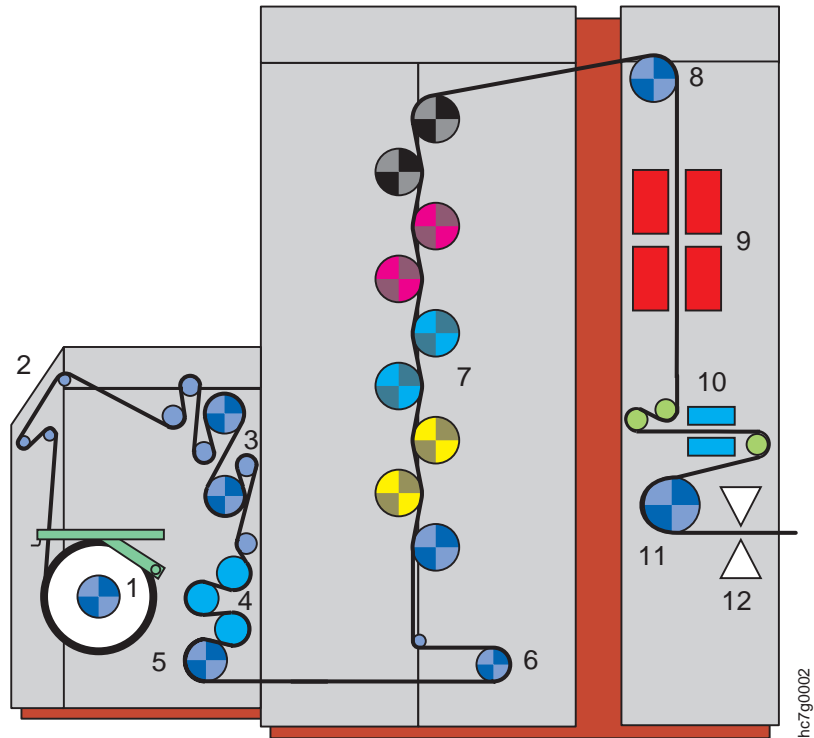


Figure 2. InfoPrint Color 100 Web-Drive Units

Paper Supply

The paper supply has the units shown in Figure 3.

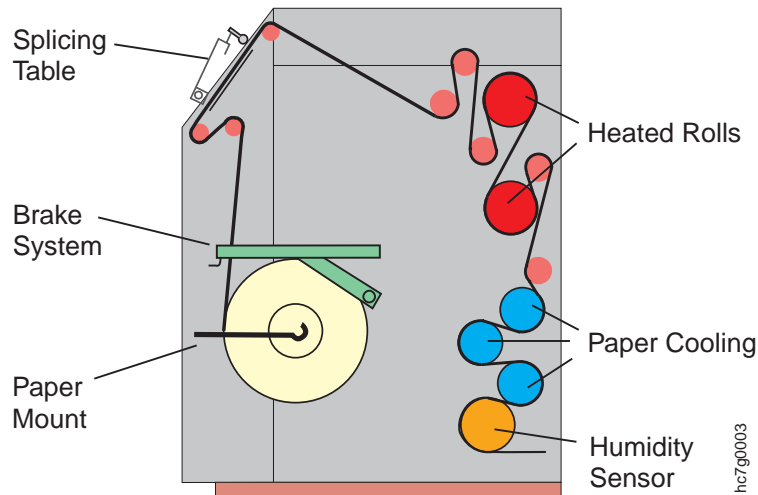


Figure 3. InfoPrint Color 100 Paper Supply Unit

The following processes take place in the paper supply:

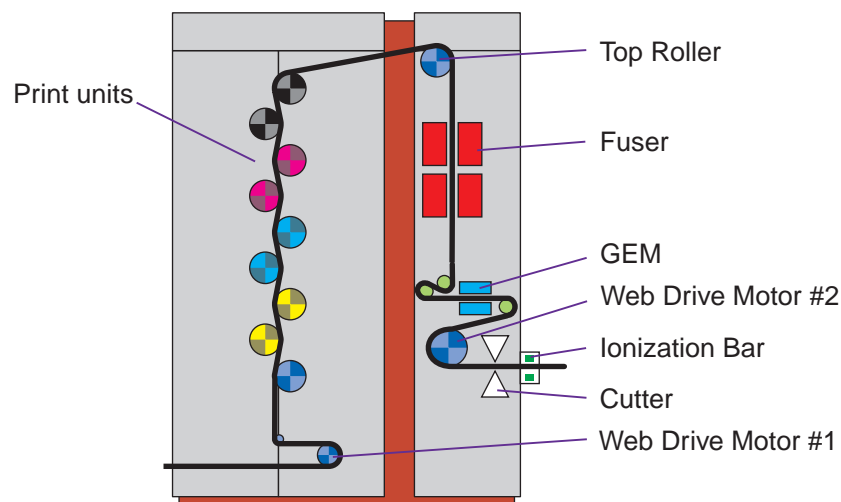
- The operator first inserts a shaft in the core of the paper roll and then places the roll in the paper supply using a small hand truck. The paper supply has no paper-driving function; instead, the web is pulled from the paper supply by the web-drive motors in the print tower. A brake system keeps the paper web at a

certain tension between the paper roll 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.
- Because the moisture content of the paper influences print quality, the paper supply includes a paper-conditioning system. The paper supply conditioning system uses a pair of heated rolls to dry the paper to a certain moisture content. After drying, three cooling drums reduce the paper temperature.

Print Tower

The print tower has the units shown in Figure 4.



hc7g0004

Figure 4. InfoPrint Color 100 Print Tower Unit

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). Go to “A Single Print Unit” on page 10 for a description of how a single print unit functions.
- The paper then passes over the top roller, which directs the paper toward the fuser.
- The non-contact fuser affixes the toner layers to the paper.
- Because the temperature of the paper is high when it leaves the fuser, the paper passes through two cooling rollers. The paper then passes through the GEM (Gloss Enhancement Module). The GEM consists of two pairs of heated nip rollers that apply pressure to the toner on the paper’s surface, providing a glossy toner finish. Finally, the paper is cooled by a cooling roller.
- 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 accurate positioning of the four color layers on top of each other and the positioning of the image on both sides).

- 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 past the ionization bar to remove static charge before the cut sheet exits the printer.

A Single Print Unit

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

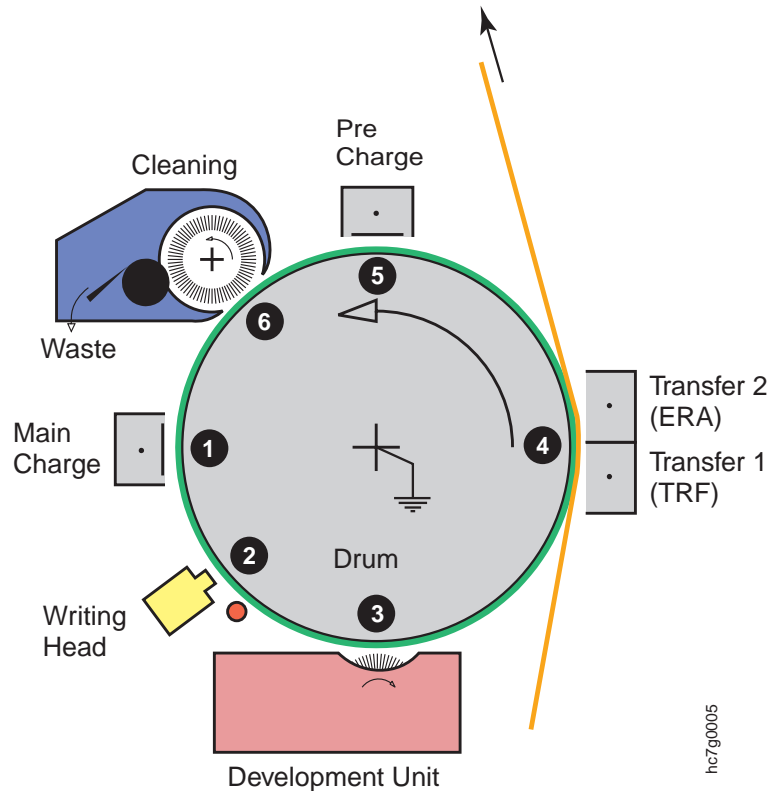


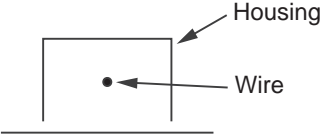
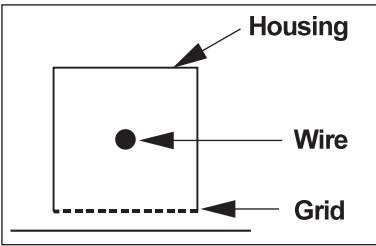
Figure 5. Parts of a Single Print Unit

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.

 <p>Labels: Housing, Wire</p> <p>hc7g0014</p>	<p>Corona:</p> <p>A corona sprays electrostatic charges on a surface. It consists of a wire within a grounded metal housing. The wire is attached to a high voltage power supply, which causes the air to break down locally around the wire and ions and/or electrons (electrical charges) to be sprayed. These charges can only leave the corona at the open side and are sprayed on the underlying surface.</p>
 <p>Labels: Housing, Wire, Grid</p> <p>HB7G2006</p>	<p>Scorotron:</p> <p>A scorotron is a special type of corona, that also contains a grid. The grid makes it possible to control the electrostatic potential of the underlying surface.</p>

- 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 6.

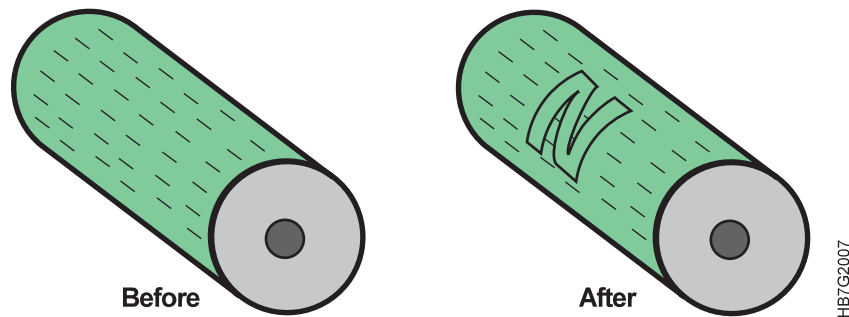


Figure 6. Image Formation

The light source that generates the image is a light emitting diode array (LDA), which contains 11520 LEDs spaced at 42.3 μm (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 μm . This forms a 600 dpi matrix of spots on the drum with each spot having a grey level resolution of up to 2 bits, depending on the configuration.

- 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 7 on page 12).

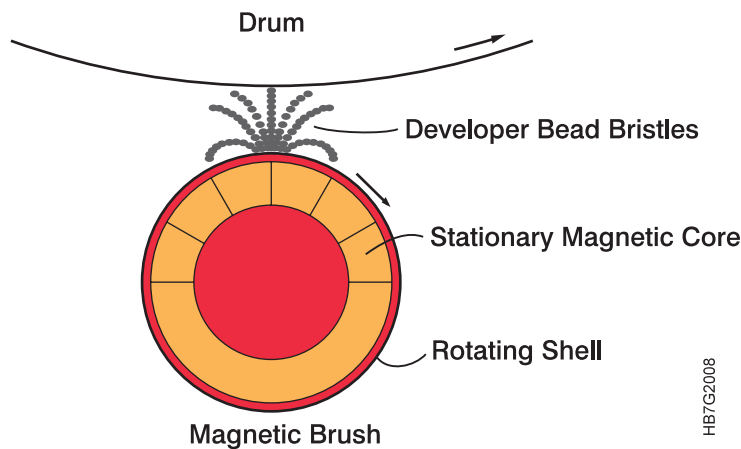


Figure 7. Attraction of Toner to the Drum

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 a set of four transfer coronas (two of which are shown in Figure 5 on page 10).
5. The precharge 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 Jogger

Cut sheets exit the printer onto the output jogger table (Figure 8 on page 13). The jogger vibrates to adjust the output into a stack that can be easily retrieved by an operator. See "Setting Up the Output Jogger" on page 115 for information about operating the jogger table.

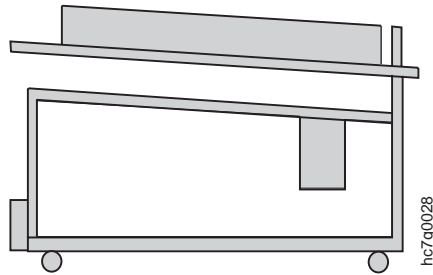


Figure 8. Output Jogger

Conditioning System

The InfoPrint Color 100 uses several conditioning circuits as shown in Figure 9 on page 14.

- A water-cooling circuit keeps the writing heads at a constant temperature to ensure stable performance. The cooling system for the writing heads uses room temperature water from a separate water supply at the bottom of the fixed tower.
- 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. This conditioning circuit uses the cooled water provided by the cooling unit. The cooling unit is a closed system; no connections to a water supply or drain are necessary. The cooling unit is physically separated from the print 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 stopped, the temperature inside the print tower is regulated to 27°C by the tower temperature-control system. During cooling, condensation occurs. The condensation is removed to a reservoir which must be emptied regularly.

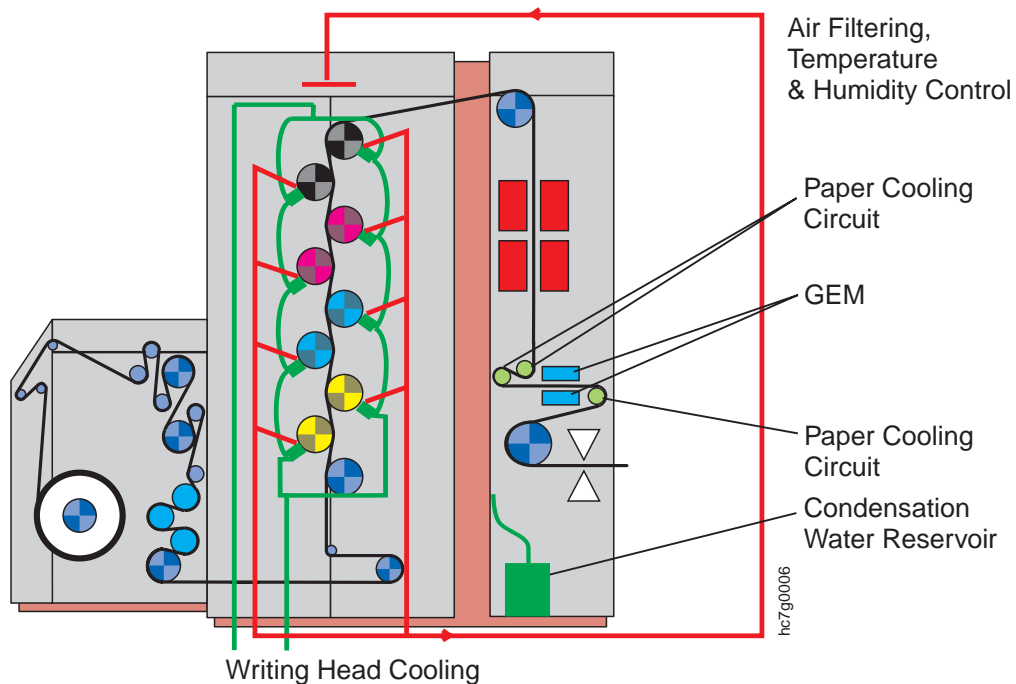


Figure 9. Conditioning Circuits

Densitometer

The Gretag D19C densitometer connects to the RIP controller and provides semi-automated density and registration control to 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 RIP controller. The other end of the cable plugs into the data interface on the densitometer. "Setting Up and Calibrating the Densitometer" on page 223 describes how to attach and configure the densitometer.

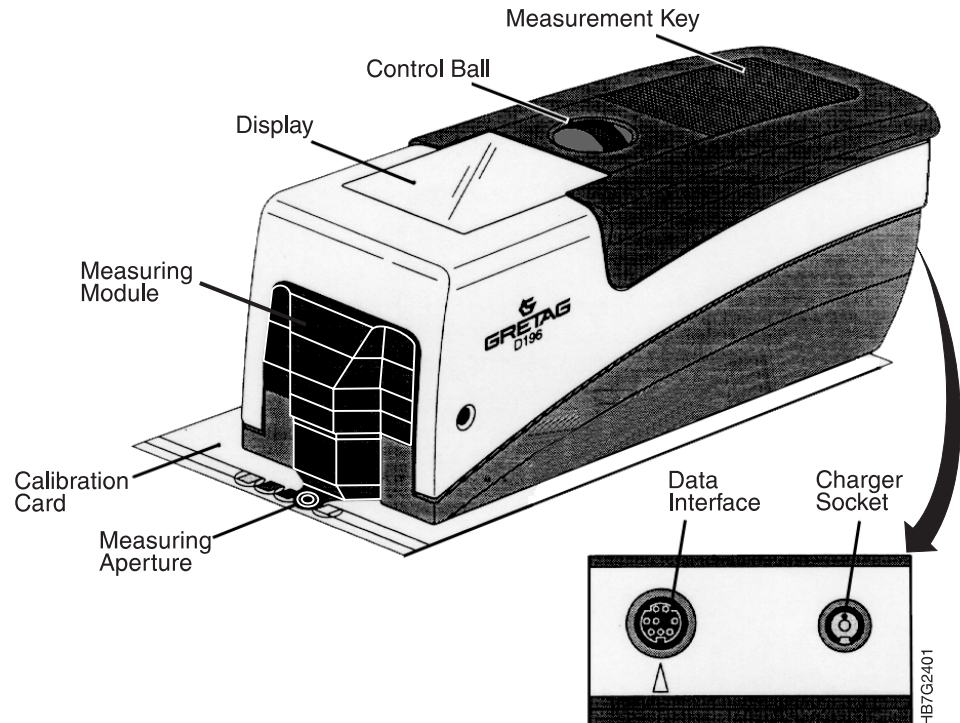


Figure 10. Gretag D19C Densitometer

Collator Hardware Components

The collator is a disk array consisting of 64GB of high-speed disk storage. 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 11.

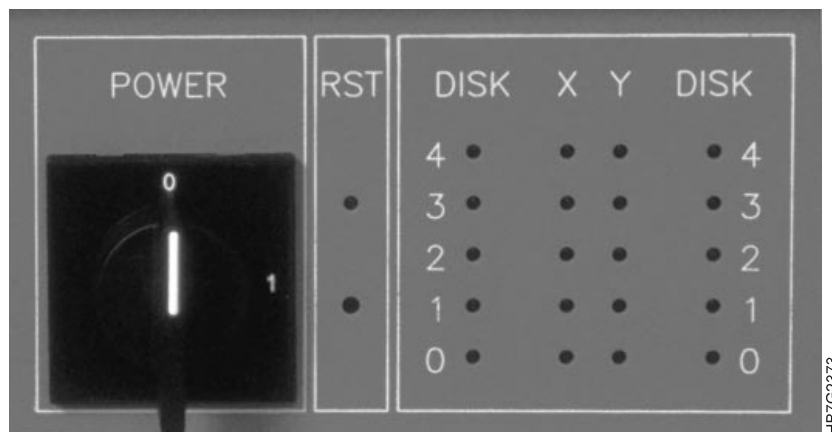


Figure 11. Collator Front Panel

The POWER section contains the power on-off switch.

The RST section contains a reset pushbutton on the bottom, and a reset light emitting diode (LED), on the top. 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. 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.

PES Control Unit

The Print Engine Supervisor (PES) control unit 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 InfoPrint Color 100 operator interface.

RIP Controller

The RIP controller contains the operating system and controlling software for the primary graphical user interface (GUI). The RIP controller supplies the interface to the operator, the LAN, the PES control unit, and the various I/O devices that support the print operation. Printer operation, monitor, and control tools are available to the operator through the RIP controller operating environment.

The RIP controller is configured with a 2 GB Jaz drive to allow users to bring PostScript files to the printer on removable storage media. PostScript files may also be brought to the printer on CD or diskette.

The operation of the InfoPrint Color 100 is controlled using the following software components:

- **Interface to the prepress network.** The RIP controller attaches to a LAN through an Ethernet or Token Ring port. PostScript jobs enter the InfoPrint Color 100 through this connection.
- **The InfoPrint Color 100 operator interface.** The operator interface (Xpose) is a graphical user interface, running on an NT 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.
- **The ThruPRINT interface.**
The ThruPRINT interface is also a graphical user interface running on an NT operating system. The operator uses this interface for RIPing and printing PostScript, and printing Book Ticket File (BTF) and MergeDocument jobs.
- **PostScript RIP.** The incoming PostScript jobs are rasterized into bitmaps (called RIPing), which the InfoPrint Color 100 print engine can print.
- **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 12 on page 17 shows the process flow.

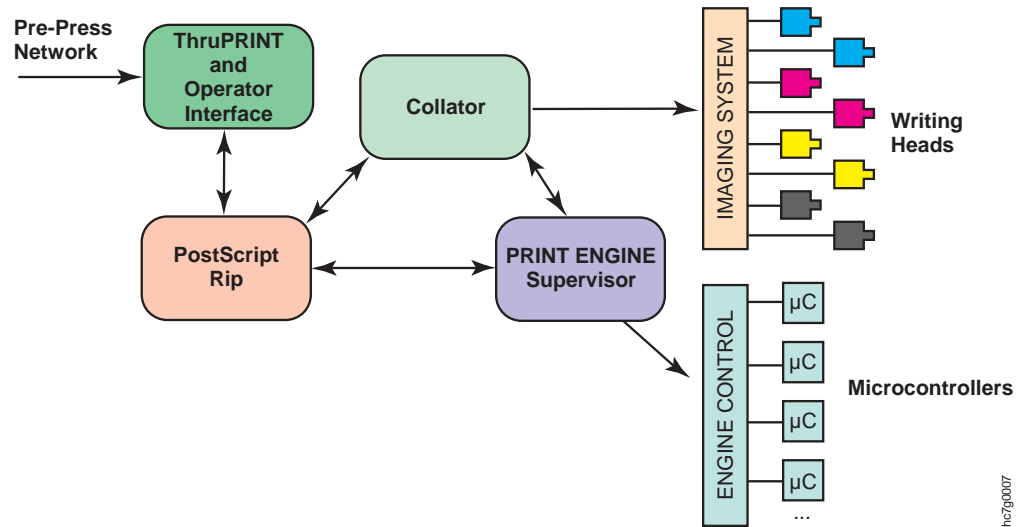


Figure 12. Digital System

Job Flow

The InfoPrint Color 100 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 13 shows a job flow diagram.

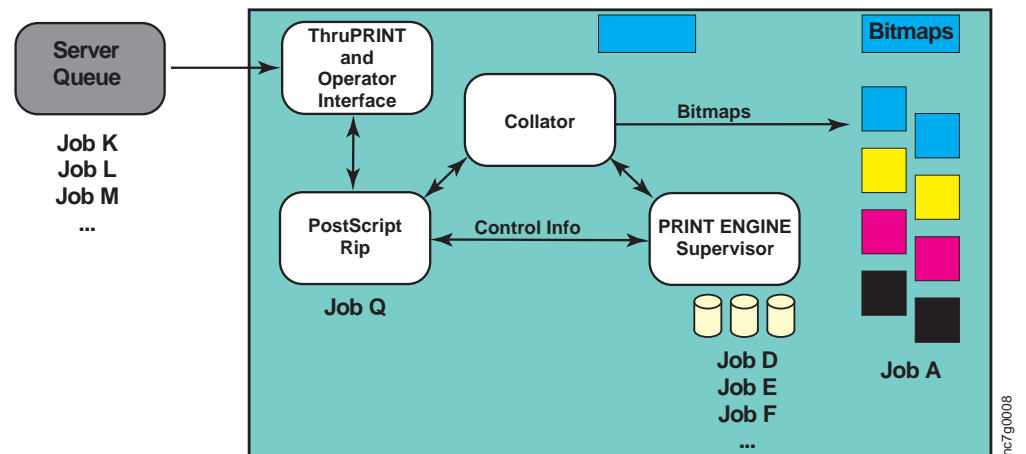


Figure 13. Job Flow

RIPed jobs are saved on the collator. 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 InfoPrint Color 100 provides the following software:

- Collator software, which is used to run the collator:
 - **IBM ThruPRINT.** This software runs on the InfoPrint Color 100 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” on page 69.

- **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 174 for more information about BTFs.

Variable Data System (VDS) Software

The VDS software provides the following:

- **IBM provided XTensions for QuarkXPress 3.32.** This software runs on a Windows 95 or Macintosh prepress 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 140.
- **IBM provided Plug-Ins for Adobe PageMaker 6.0.** This software runs on a Windows 95 prepress 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 147.
- **The MergeDocument 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 InfoPrint Color 100 Operator Interfaces

This chapter describes the following software interfaces provided with the InfoPrint Color 100, these interfaces are used for most operator tasks:

- **IBM InfoPrint Color 100-Xpose** window (see “IBM InfoPrint Color 100 Interface”)
- **ThruPRINT** window (see “IBM: ThruPRINT” on page 69)

Both interfaces are accessed through an NT operating system.

This chapter describes all primary windows accessed through the menu bar or tool bar of these interfaces. The quick reference, shown in Table 3 on page 21, refers to sections that provide more detailed information about using the windows and performing operator tasks.

See “Notation Conventions” in the Preface of this book, for conventions used in describing how to access windows from the menu bar or tool bar.

IBM InfoPrint Color 100 Interface

The InfoPrint Color 100 interface is an NT user interface that provides the functions you need to operate the InfoPrint Color 100. Figure 14 on page 20 shows the **IBM InfoPrint Color 100-Xpose** window. See “Power-On Procedure for the InfoPrint Color 100 Printer” on page 110 for information about switching on the InfoPrint Color 100.

The primary areas of the **IBM InfoPrint Color 100-Xpose** window are:

- Menu bar
- Tool bar
- Workspace
- Status bar



Figure 14. IBM InfoPrint Color 100-Xpose Window Description

The Menu Bar

The menu bar, as shown in Figure 15 on page 21, gives you access to the functions needed to operate the InfoPrint Color 100. Table 2 lists the menu bar items and where to go in this chapter for more information.

Table 2. Menu Bar Functions

Menu Bar Function	Go to ...
<u>F</u> ile	“Using the File Menu Functions” on page 24
<u>E</u> xplore	“Using the Explore Menu Functions” on page 34
<u>O</u> perations	“Using the Operations Menu Functions” on page 50
<u>P</u> rocess Control	“Using the Process Control Menu Functions” on page 55
<u>I</u> BM	“Using the IBM Menu Functions” on page 69
<u>M</u> aintenance	“Using the Maintenance Menu Functions” on page 83
<u>L</u> ogging	“Using the Logging Menu Functions” on page 85
<u>V</u> iew	“Using the View Menu Functions” on page 102
<u>W</u> indow	“Using the Window Menu Functions” on page 102
<u>H</u> elp	“Using the Help Menu Functions” on page 103

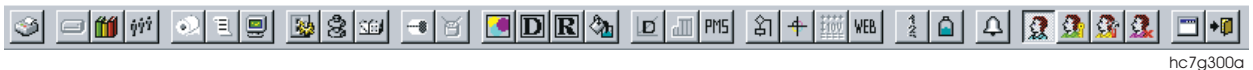
File	Explore	Operations	Process Control	IBM	Maintenance	Logging	View	Window	Help	
Open Apis	Explorer	Emergency Stop F4	Density Control Ctrl+D	ThruPRINT	Counters Ctrl+C	Activities >	Main Database	Toolbar	Cascade	Index F1
Close Apis	Image Disk	Mount Print Medium Ctrl+M	LDA Correction for Screening	Auto Density	Toner Containers Ctrl+N	Active Alarms Ctrl+A	Copy Main	Statusbar	Tile Horizontal	Tip of the Day
Enter Service Mode	Book Ticket Files	Refurbish Drums Ctrl+Q	Toner Concentration Setpoint	Auto Registration	Developer age	Open Xpose Log F12	Clean Up Main		Tile Vertical	Search for help on...
Exit Service Mode	Print Queue	Refill Toner Containers	Conditioning	Settings		Copy Pes Log F5	Close Main		Arrange Icons	How to use help
Print Sequence	Print Media	Change Developer	Print Medium Settings			Transfer Pes Log F6	Open Main		Close All	About
Host Control Panel	Scripts	Calibrate PRS Sensors	Engine State Ctrl+E			Transfer Page Buffer Log >	Open		Load Workspace >	
Make Backup	Monitors	Service Intervention	Engine State Progress Ctrl+O				Defragment		Save Workspace >	
Options Wizard	Settings	LDA Correction	Register Control Ctrl+R				Repair			
Preferences	Signals		Surface Potential Ctrl+U							
Exit ALT+F4	Counters		Web Ctrl+W							
	Speeds									

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Figure 15. Menu Bar on the IBM InfoPrint Color 100 Window

The Tool Bar

The tool bar, as shown in Figure 16, 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.



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Figure 16. Tool Bar on the IBM InfoPrint Color 100 Window

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

View ⇒ **Toolbar**

Note: Use Table 3 as a quick reference to the functions available from the tool bar.

Table 3. Tool Bar Quick Reference






























Toolbar Button	Shortcut	Command	Toolbar Button	Shortcut	Command
	—	File ⇒ Print Sequence (Page 25)		—	IBM ⇒ Auto Registration (Page 82)

Table 3. Tool Bar Quick Reference (continued)

Toolbar Button	Shortcut	Command	Toolbar Button	Shortcut	Command
	—	Explore ⇒ Image Disk (Does not apply)		Ctrl+D	Process Control ⇒ Density Control (Page 57)
	—	Explore ⇒ Book Ticket Files (Does not apply.)		—	Process Control ⇒ Conditioning (Page 59)
	—	Explorer ⇒ Print Queue (Page 43)		—	Process Control ⇒ Print Medium Settings (Page 60)
	—	Explorer ⇒ Print Media (Page 44)		Ctrl+E	Process Control ⇒ Engine State (Page 64)
	—	Explorer ⇒ Scripts (Page 44)		Ctrl+R	Process Control ⇒ Register Control (Page 65)
	—	Explorer ⇒ Monitors (Page 45)		Ctrl+U	Process Control ⇒ Surface Potential (Does not apply)
	—	Explorer ⇒ Settings (Page 46)		Ctrl+W	Process Control ⇒ Web (Page 67)
	—	Explorer ⇒ Signals (Page 46)		Ctrl+C	Maintenance ⇒ Counters (Page 83)
	—	Explorer ⇒ Counters (Page 47)		Ctrl+N	Maintenance ⇒ Toner Containers (Page 84)
	Ctrl+M	Operations ⇒ Mount Print Medium (Page 51)		Ctrl+A	Logging ⇒ Active Alarms (Page 100)
	Ctrl+O	Operations ⇒ Refurbish Drum (Does not apply)		—	Window ⇒ Load Workspace (Page 102)
	—	Operations ⇒ Refill Toner Containers (Page 52)		—	File ⇒ Host Control Panel (Page 26)
	—	IBM ⇒ ThruPRINT (Page 69)		Alt+F4	File ⇒ Exit (Page 34)
	—	IBM ⇒ Auto Density (Page 81)			

IBM InfoPrint Color 100-Xpose Window Workspace

The largest area of the **IBM InfoPrint Color 100-Xpose** window is the workspace. As you operate the InfoPrint Color 100 and do different tasks, you have one or more windows open, as shown in Figure 17. Windows that you will probably have open during printing are:

- Print Sequence
- Print Queue

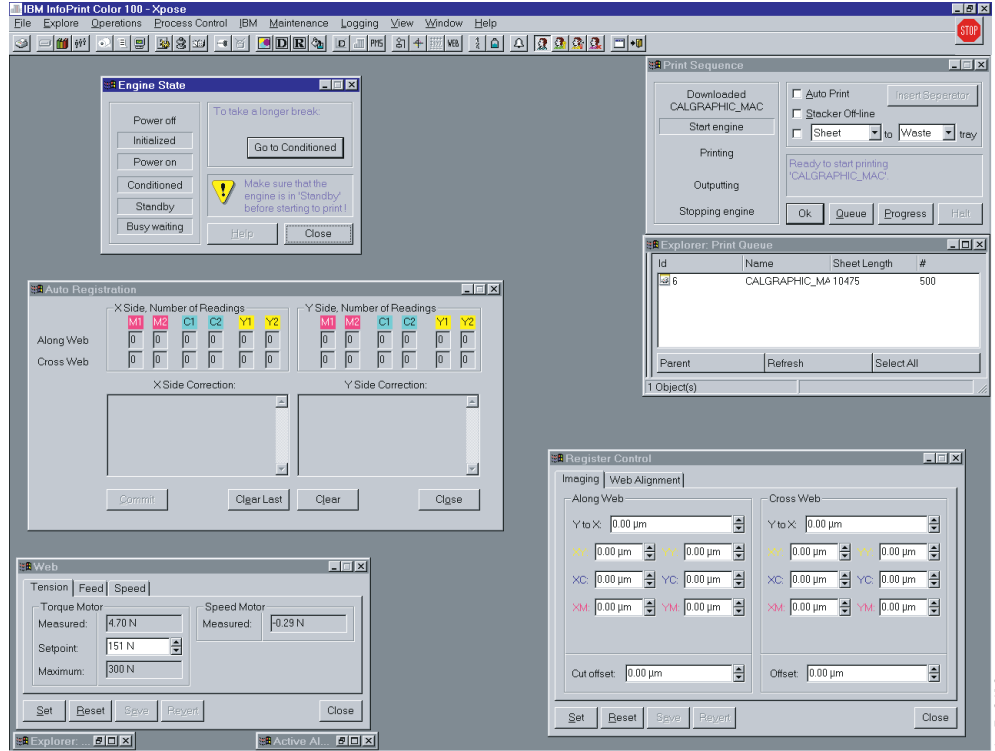


Figure 17. Workspace on the IBM InfoPrint Color 100-Xpose Window (Multiple Windows Open)

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 102 for information on how to save your workspace.

The Status Bar

The last line at the bottom of the **IBM InfoPrint Color 100-Xpose** window is the status bar, as shown in Figure 18 on page 24.

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

View ⇒ **Statusbar**



Figure 18. Status Bar on the IBM InfoPrint Color 100 Window

The status bar provides several types of information:

- General information, such as a brief description of a highlighted menu bar item
- Total amount of used print medium (A3–size)
- The engine state (for example, Standby)
- Engine state detail if the engine state is **Busy**. The different possibilities are:
 - Busy Waiting
 - Busy Warming up
 - Bust Starting
 - Busy Quality
 - Busy Pausing
 - Busy Printing
 - Busy Stopping

See “Understanding Print Engine States” on page 242, for more information.

- The number of the page currently being cut, which restarts at 1 for each new print job
- The current time

Using the File Menu Functions

When you click on **File** from the menu bar, a drop-down menu lists all the functions available. Table 4 lists the **File** menu functions and where to go in this section for more information.

Table 4. File Menu Functions

Menu Item	Go to ...
Open Apis	“File: Open/Close Apis” on page 25
Close Apis	“File: Open/Close Apis” on page 25
Enter Service Mode	“File: Enter/Exit Service Mode” on page 25
Exit Service Mode	“File: Enter/Exit Service Mode” on page 25
Print Sequence	“File: Print Sequence” on page 25
Host Control Panel	“File: Host Control Panel” on page 26
Make Backup	“File: Make Backup” on page 27
Options Wizard	“File: Options Wizard” on page 27
Preferences...	“File: Preferences” on page 27
Exit	“File: Exit” on page 34

The functions that you will use *most* often are summarized in “Summary of the Most-Used Functions” on page 103.

File: Open/Close Apis

APIS is the interface protocol used to exchange image data, commands, and status information between the **IBM InfoPrint Color 100-Xpose** window and the print engine supervisor (PES).

Before you can use the operator interface to control the InfoPrint Color 100, 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 InfoPrint Color 100 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 **InfoPrint Color 100-Xpose**, 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 close and all icons will become inoperable except for **Exit**.

File: Enter/Exit Service Mode

The service representative uses this window and the service key to perform many maintenance and service functions.

File ⇒ **Enter Service Mode**

File ⇒ **Exit Service Mode**

File: Print Sequence

The **Print Sequence** window, as shown in Figure 19 on page 26, opens when you RIP a job and specify any number other than zero as the number of copies to print (valid only from the file tab of ThruPRINT), or when you select a job to print in ThruPRINT.

File ⇒ **Print Sequence**



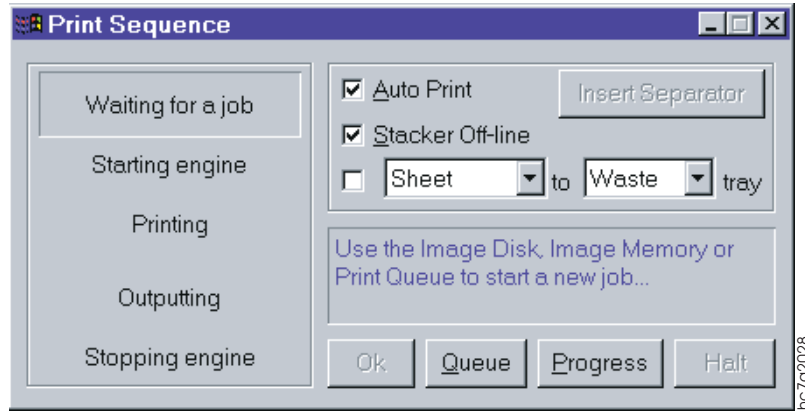


Figure 19. Print Sequence Window

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 8. Printing and Managing the Printing Process” on page 183 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 20, is used primarily by a service representative.

The service representative performs many diagnostic and service functions by entering commands in this window.

File ⇒ **Host Control** 

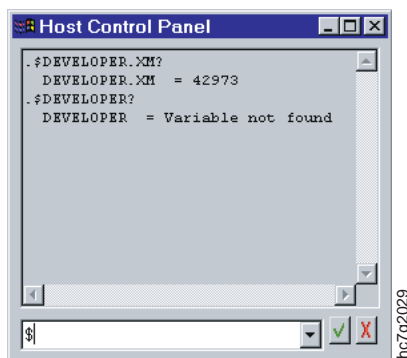


Figure 20. Host Control Panel Window

File: Make Backup

Select **Make Backup** to backup the PES files you selected in the **Preferences** ⇒ **Backup** settings. The backup files are placed in d:\Customer_data\Backup\Xpose.

File: Options Wizard

The **Options Wizard**, as shown in Figure 21, is used only by your Service Representative.

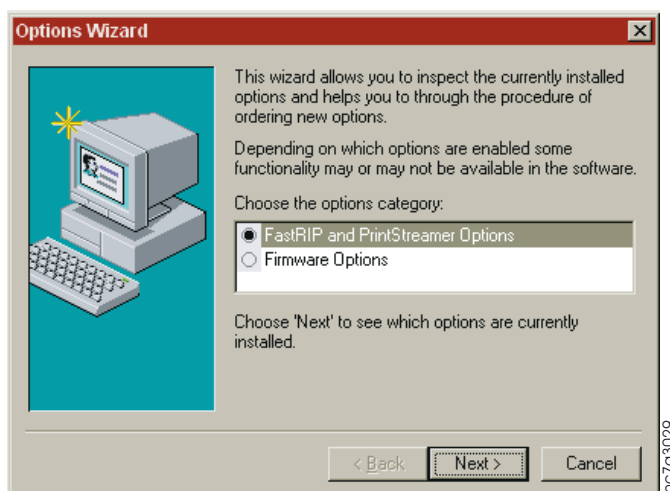


Figure 21. Options Wizard Window

File: Preferences

The **Preferences** window, as shown in Figure 22 on page 28, allows you to change some default settings.

The **Preferences** window has seven groups of settings you can access by clicking on the tabs. Table 5 lists the preference items and where to go in this section for more information.

File ⇒ Preferences

Table 5. File Menu Preferences

Preference	Go to...
General settings	"General Tab" on page 28
Apis settings	"Apis Tab" on page 28
RIP settings	"RIP Tab" on page 29
Backup settings	"Backup Tab" on page 30
Folders	"Folders Tab" on page 31
Colors	"Colors Tab" on page 32
Service Mode	"Service Mode Tab" on page 33

General Tab

Figure 22 shows the **Preferences** window **General** tab and Table 6 describes the available settings.

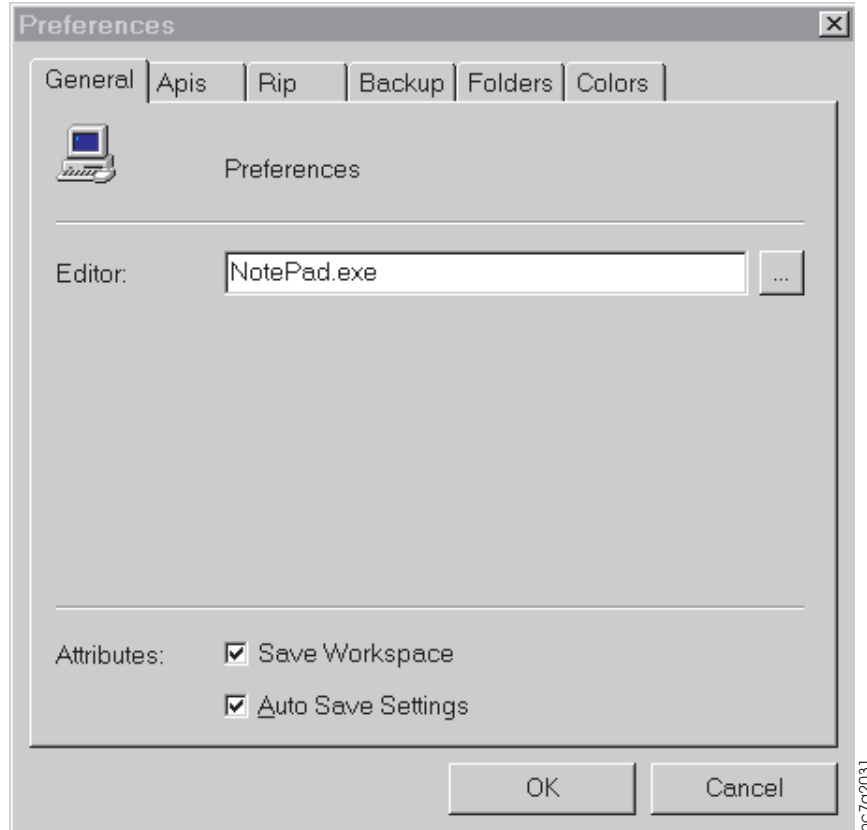


Figure 22. General Tab in the Preferences Window

Table 6. General Settings

Setting	Explanation and Operator Action
Editor	Use this to select the editor executable.
Save Workspace	Check this attribute to save the position of the windows in your workspace. Once you have saved windows workspace, they will be there all the time. Note: The Explore windows can not be saved in the windows workspace.
Auto Save Settings	If you check this attribute, the system automatically saves changes you make to any Process Control window. If you do not select this checkbox, the Save/Revert dialog window appears when you close any Process Control window that you changed.

Apis Tab

Figure 23 on page 29 shows the **Preferences** window **Apis** tab and Table 7 on page 29 describes the available settings.

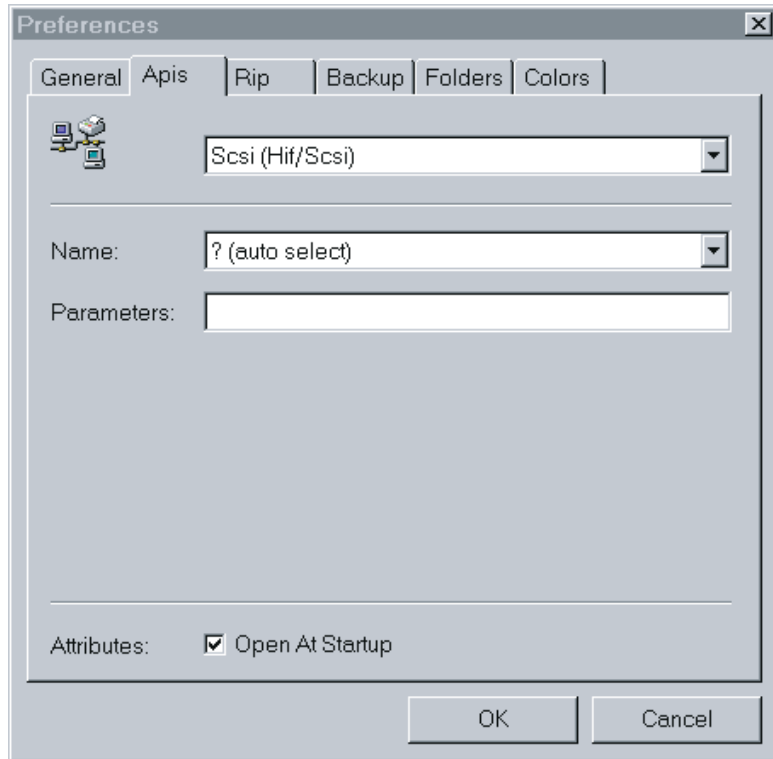


Figure 23. Apis Tab in the Preferences Window

Table 7. Apis Settings

Setting	Explanation and Operator Action
APIS device	See page 25 for an explanation of APIS. Set to Scsi Hif/Scsi (host interface).
Name	This name specifies the InfoPrint Color 100 APIS device.
Parameters	Leave this field blank.
Open at startup	The APIS connection with the PES opens automatically when you start the operator interface.
Note: The Apis settings are pre-set, do not change these settings.	

RIP Tab

Figure 24 on page 30 shows the **Preferences** window **RIP** tab and Table 8 on page 30 describes the available settings.

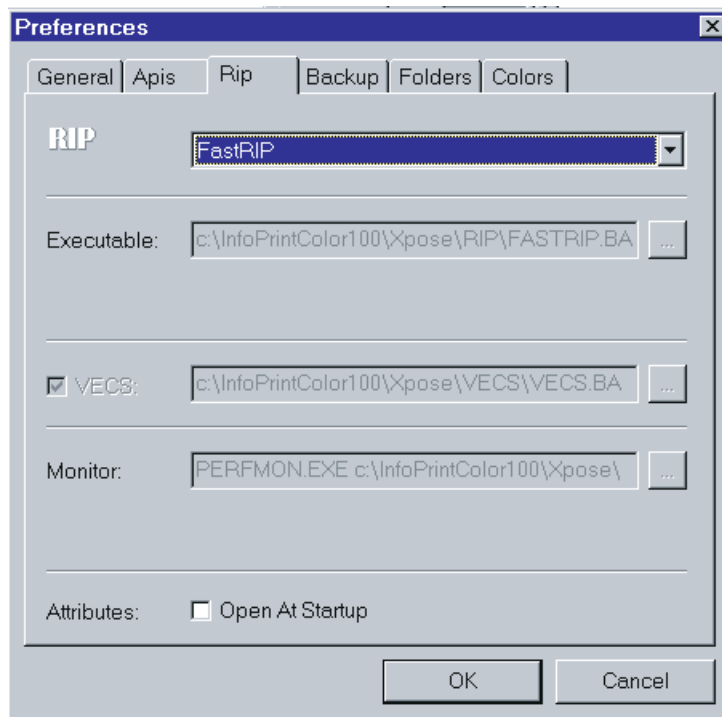


Figure 24. RIP Tab in the Preferences Window

Table 8. RIP Settings

Setting	Explanation and Operator Action
RIP	From the drop down list, select No RIP, FastRIP, Dispatcher, PrintStreamer, or ScriptWorks.
VECS	C:\InfoPrintColor100\Xpose\Vecs\Vecs.bat
Executable	This text field shows the path to the file that executes the RIP. Select the executable for the kind of RIP you selected. FastRip: C:\InfoPrintColor100\Xpose\Rip\Fastrip.cmd (The FastRip detects the PrintStreamer automatically.)
Monitor	This text field shows the path to the file that executes the monitor. Select the monitor executable for the kind of RIP you selected. FastRip: C:\WINNT\system32\PERFMON.EXE
Note: The RIP settings are pre-set; do not change these settings.	

Backup Tab

Figure 25 on page 31 shows the **Preferences** window **Backup** tab.

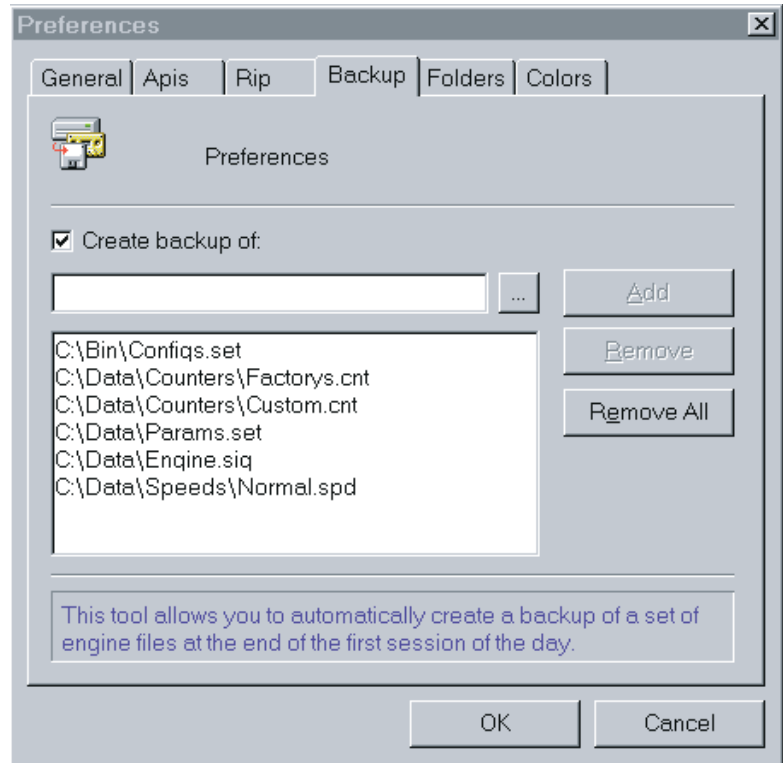


Figure 25. Backup Tab in the Preferences Window

- Select the **Create backup** checkbox to create an automatic backup of the listed PES files at the end of the first session of the day.
- To select more files to backup, click the browse (...) pushbutton and select additional files. The path on the RIP platform for storing the backup files is defined in the **Folders** window, as shown in Figure 26 on page 32.

Folders Tab

Figure 26 on page 32 shows the **Preferences** window **Folders** tab.

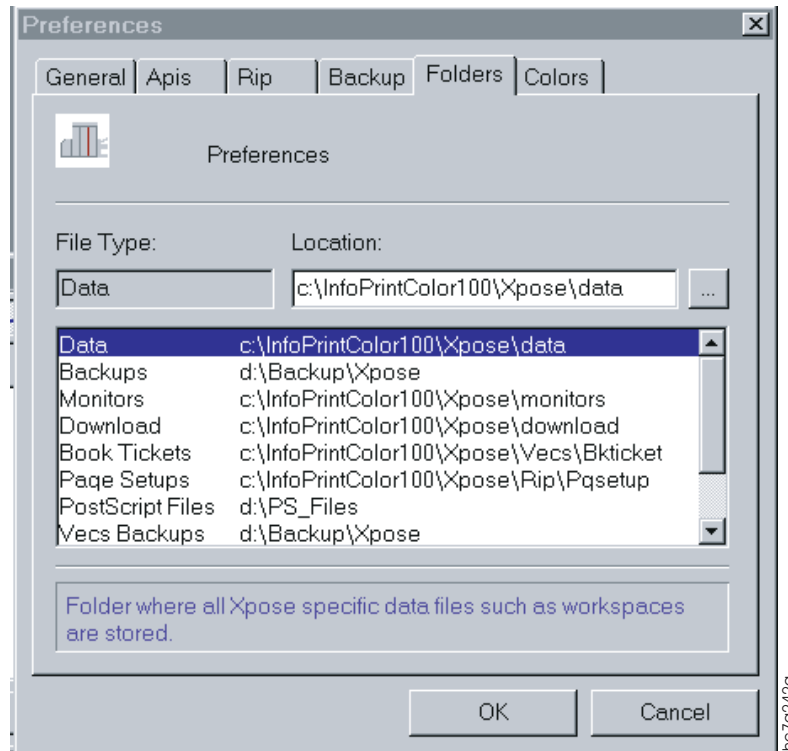


Figure 26. Folders Tab in the Preferences Window

The **Folders** tab of the **Preferences** window defines the paths of the different file types.

Colors Tab

Figure 27 on page 33 shows the **Preferences** window **Colors** tab and Table 9 on page 33 describes the available settings.

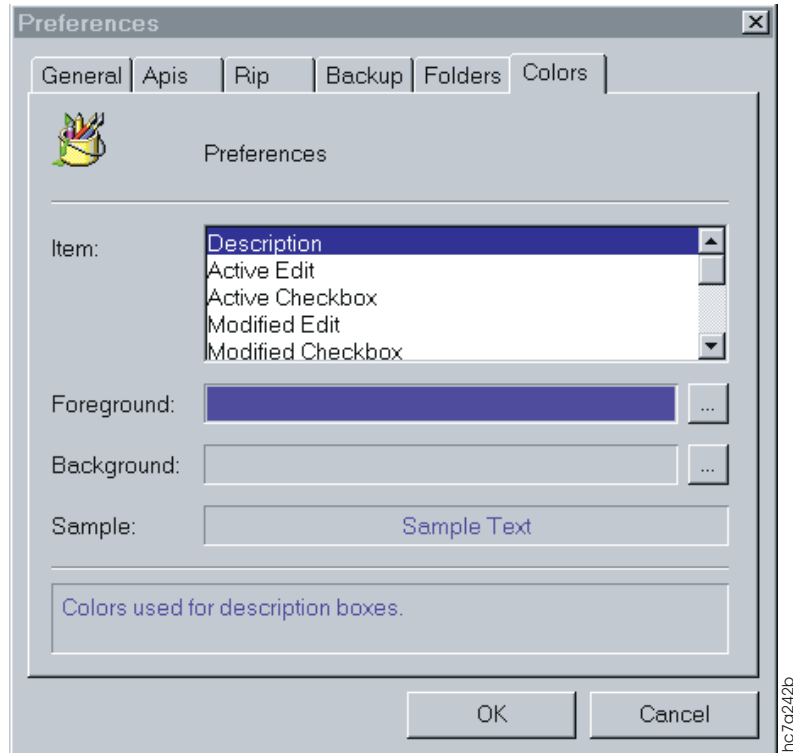


Figure 27. Colors Tab in the Preferences Window

Table 9. Colors Settings

Setting	Explanation and Operator Action
Item	Select the item you want to change.
Foreground / Background	<p>Allows you to configure the text color of the item you selected. Click the browse (...) pushbutton to define a new color. Select the proper color and click the OK button.</p> <p>If you want to define a color other than the basic colors, click the Define custom colors... pushbutton. Define the custom color using the edit boxes at the right and click the Add to Custom Colors pushbutton. The defined color appears now in the next available Custom Color box. Select this color and click the OK pushbutton.</p> <p>Close all windows and reopen for the colors to take effect.</p>
Sample	Shows the color selected.

Service Mode Tab

Figure 28 on page 34 shows the **Preferences** window **Service Mode** tab.

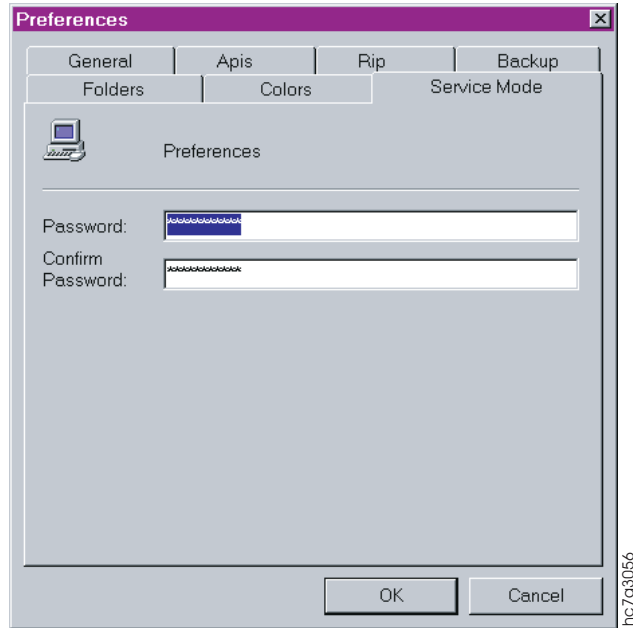


Figure 28. Service Mode Tab in the Preferences Window

During **Service Mode** the **Preferences** window has an extra tab which allows you to change the password.

File: Exit

When you want to turn off the InfoPrint Color 100, you must first exit the operator interface software. For more information about shutdown procedures, go to “Chapter 12. Shutdown Procedures for InfoPrint Color 100” on page 285. To exit, select the following:

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 drop-down menu lists all the **Explore** functions. You can also access all of the **Explore** functions from the **Explorer** window, which is how the functions are presented in this section. Table 10 lists the **Explore** menu items and where to go in this section for more information.

The functions that you will use *most* often are summarized in “Summary of the Most-Used Functions” on page 103.

Table 10. Explore Menu Functions

Menu Item	Go to...
Explorer	“Explore: Explorer” on page 35
Book Ticket Files	“Explorer: Print Jobs: Print Queue” on page 43
Print Queue	“Explorer: Print Jobs: Print Queue” on page 43

Table 10. Explore Menu Functions (continued)

Menu Item	Go to...
Print Media	"Explorer: Print Media" on page 44
Scripts	"Explorer: Scripts" on page 44
Speeds	"Explorer: Speeds" on page 48
Monitors	"Explorer: Monitors" on page 45
Settings	"Explorer: Settings" on page 46
Signals	"Explorer: Signals" on page 46
Counters	"Explorer: Counters" on page 47
Speeds	"Explorer: Speeds" on page 48

Explore: Explorer

The **Explorer** window as shown in Figure 29 on page 36, lists the seven folders under **My Digital Color Press**. You can open the Explore windows from this list, however using the Explore drop-down menu list or the tool bar may open them faster. Table 11 lists the **Explorer** folders and where to go in this section for more information.

Table 11. Explorer Menu Functions

Menu Item	Go to...
Explorer	"Explore: Explorer"
Book Ticket Files	"Explorer: Print Jobs: Print Queue" on page 43
Print Jobs\ Print Queue	"Explorer: Print Jobs: Print Queue" on page 43
Print Media	"Explorer: Print Media" on page 44
Scripts	"Explorer: Scripts" on page 44
Speeds	"Explorer: Speeds" on page 48
Monitors	"Explorer: Monitors" on page 45
Variables\Settings	"Explorer: Settings" on page 46
Variables\Signals	"Explorer: Signals" on page 46
Variables\Counters	"Explorer: Counters" on page 47
Files	"Explorer: Files: Hard Disk Pes" on page 49

Access the **Explorer** window by selecting:

Explore ⇒ **Explorer**

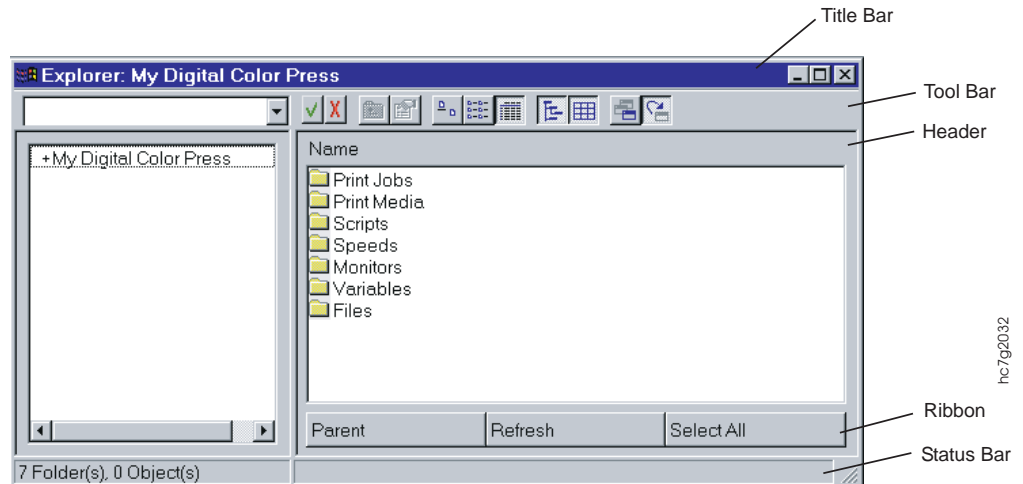


Figure 29. Explorer Window

Table 12 lists the areas of the **Explorer** window, as shown in Figure 29, and where to go in this section for more information.

Table 12. Explorer Window Areas

Area	Go to...
Title bar	"Understanding the Title Bar"
Tool bar	"Understanding the Tool Bar" on page 38
List view	"Understanding the List View" on page 40
Tree view	"Understanding the Tree View" on page 39
Header	"Understanding the Header" on page 40
Ribbon	"Understanding the Ribbon" on page 42
Status bar	Described where applicable, in the above mentioned sections.

Note: You can minimize the **Explorer** window by both the Windows **Close** and **Minimize** options. The window cannot be closed.

Understanding the Title Bar

The title bar names the displayed window and the selected folder, for example, **Explorer: Print Media\Paper**. Click the right mouse button on the title bar to display a drop-down menu as shown in Figure 30 on page 37. Table 13 on page 37 describes the drop-down menu items.

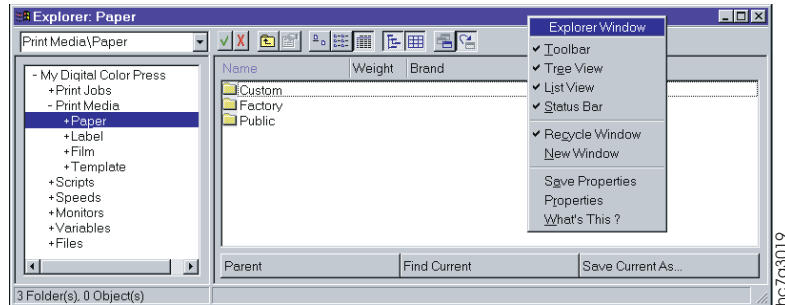


Figure 30. Title Bar Drop-Down Menu

Table 13. Title Bar Drop-Down Menu Items

Menu Item	Description
Toolbar	Allows you to hide or show the tool bar below the header.
Tree View	Allows you to view a two-part window with the tree structure on the left, and the list view on the right.
List View	Allows you to view only folders and objects.
Status Bar	Hides or shows the status bar at the bottom of the window.
Recycle Window	When you select Recycle Window and double-click on a folder, the folder's contents display in the same window. Otherwise a new Explorer window is created.
New Window	Creates a new window to display the contents of the folder you select.
Save Properties	Saves the selected properties.
Properties	Allows you to change the window properties. Go to Table 14 for a description of the properties you can select.
What's This?	Provides a description of some functions.

Table 14 describes the window properties you can select.

Table 14. Window Properties Descriptions

Property	Description
Options	
Window Recycling	If you specify Window Recycling and double-click on a folder, the folder's contents display in the same window. Otherwise a new Explorer window is created.
Auto Save Properties	Saves the properties automatically after you change them.
Views	
Toolbar	Allows you to hide or show the tool bar below the title bar.
Status Bar	Allows you to hide or show the status bar at the bottom.
Tree View	Displays a two-part window with the tree structure on the left, and the list view on the right.
List View	Displays only folders and objects.
Tree View: Show One Class at a Time	In tree view, this displays only the selected folder in the left part of the window.

Table 14. Window Properties Descriptions (continued)

Property	Description
List View	<p>Determines how the list displays. The options are: Large Icons, Small Icons, or With Details.</p> <p>With Details displays more information about the listed objects. You can define which additional information is displayed by clicking the right mouse button on the header above the list. The information you can add depends on the object that you select. Go to "Understanding the Header" on page 40 for more information.</p>

Understanding the Tool Bar

Figure 31 shows the **Explorer** window tool bar and Table 15 describes the individual pushbuttons.



Figure 31. Tool Bar on the Explorer Window

Table 15. Tool Bar Pushbuttons Description












Pushbutton	Description
	Adds an item to the list box.
	Removes an item from the list box.
	Goes back to the folder that contains the selected object or folder (=parent).
	Opens 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.

Table 15. Tool Bar Pushbuttons Description (continued)

Pushbutton	Description
	Selects a new window.
	Recycles the opened window.

Understanding the Tree View

Tree view displays a window with a tree structure on the left side listing all of the folders and subfolders, as shown in Figure 32.

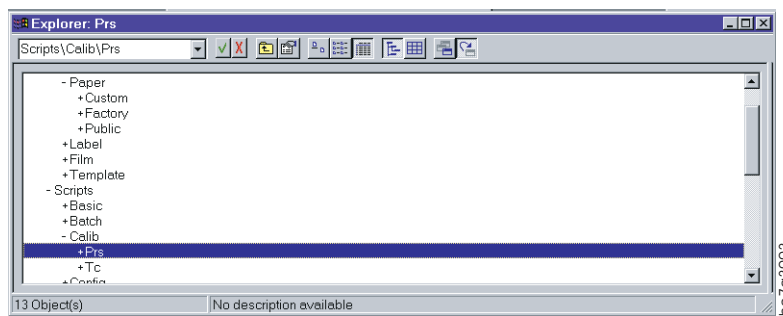


Figure 32. Tree View of Explorer Window

When you click the right-mouse button on a folder in the tree view area of the screen, a drop-down menu displays as shown in Figure 33. This menu provides functions you may need when working with the selected folder.

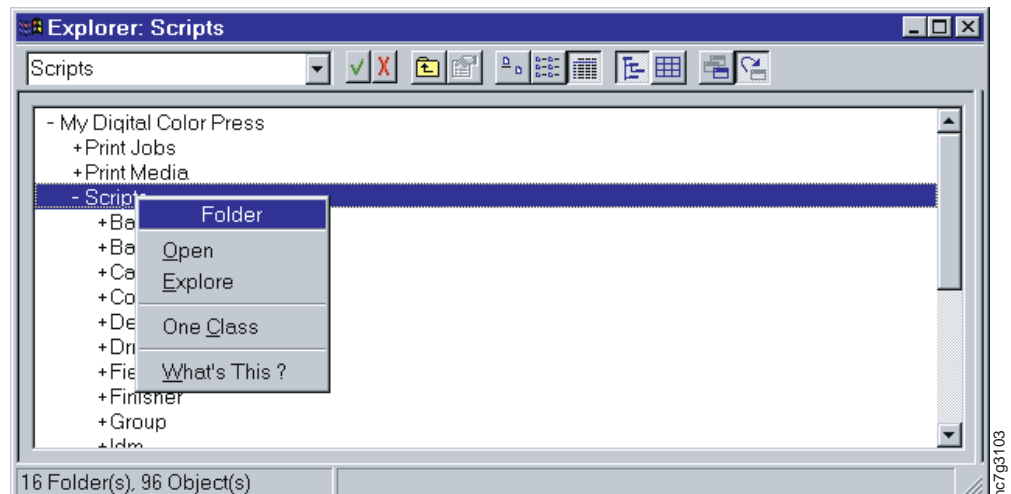


Figure 33. Tree View Drop-Down Menu

The status bar, at the bottom of the screen, indicates the number of folders and the number of objects in the selected folder.

Understanding the List View

List view displays a list of all of the folders and objects that are a part of a selected folder, in a window similar to Figure 32 on page 39.

If you choose list view in combination with tree view, the screen is a two part window, as shown in Figure 34. The left part of the window displays the tree view. The right part of the window (list view) lists all the folders and objects that are part of a folder you select in the tree view part of the window.

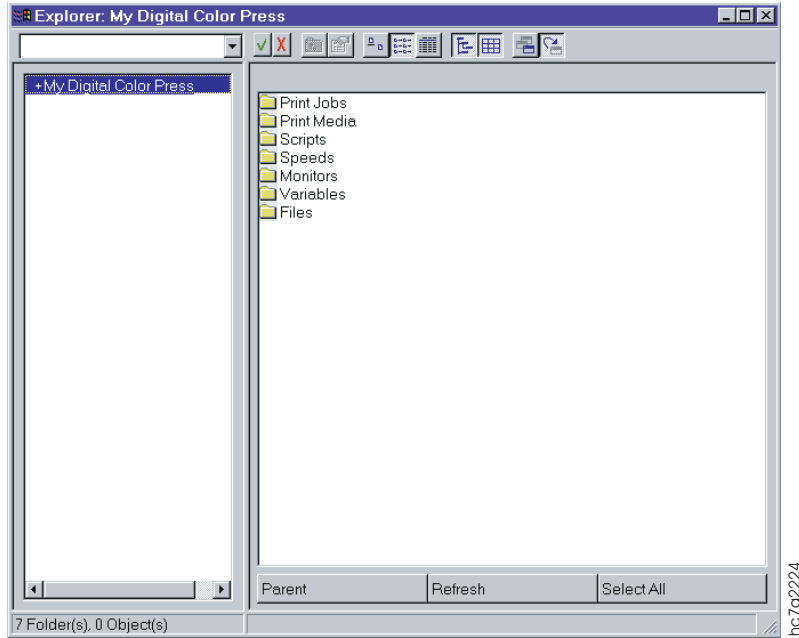


Figure 34. List View of Explorer Window

If you click the right-mouse button on a selected item in the list view part of the window, a drop-down menu displays as shown in Figure 35. This menu provides functions you may need when working with the selected folder or object.

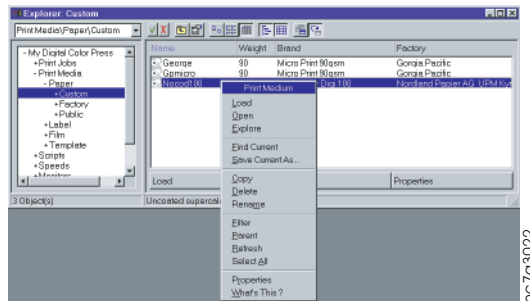


Figure 35. List View Item Drop-Down Menu

Understanding the Header

In list view, you can display different information about the listed folders and objects by changing the header properties. The information categories available for display varies according to the window. Some categories are:

- Object Class

- Description
- Size
- Time
- Date
- Compiled
- Read-only
- Archive
- Hidden
- System

Use the following procedure to change header properties

1. Click the right-mouse button on the header. The **Header** drop-down menu displays as shown in Figure 36.

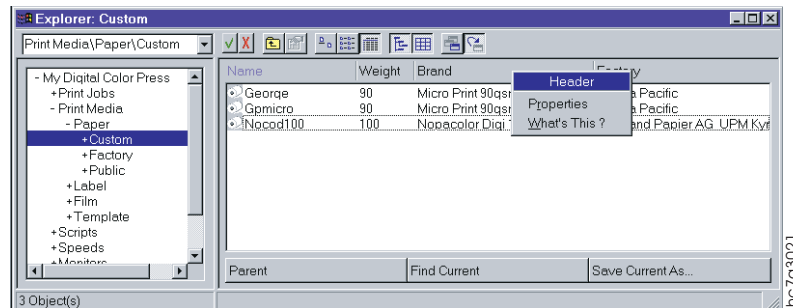


Figure 36. Header Drop-Down Menu

2. Select **Properties** from the drop-down menu. The **Header Properties** window displays, as shown in Figure 37 on page 42.

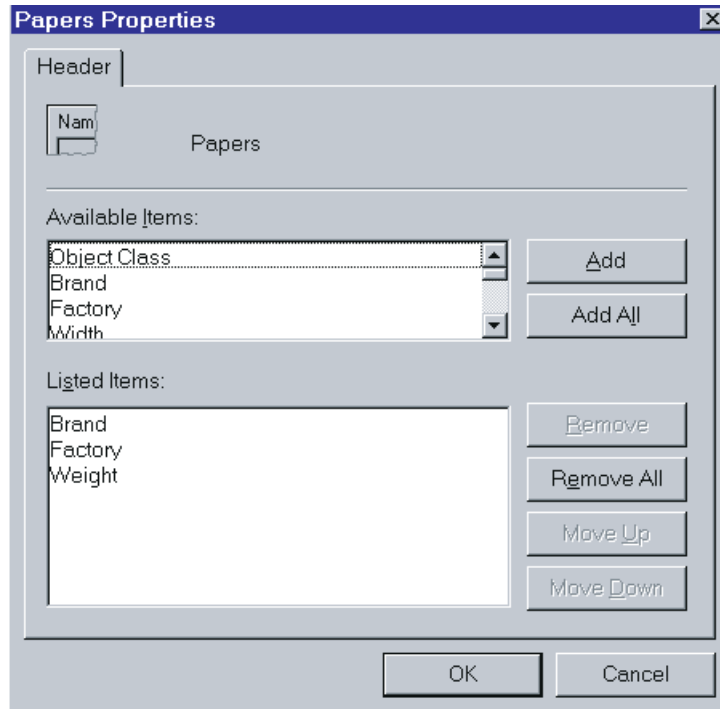


Figure 37. Header Properties Window

3. Select which properties you want to display in the list view. The **Listed Items** edit box lists all of the selections you have made.

Understanding the Ribbon

The pushbuttons on the ribbon at the bottom of the list view screen provide short cut functions.

To change the properties of the ribbon, click the right-mouse button while selecting the ribbon and a drop-down menu displays as shown in Figure 38.

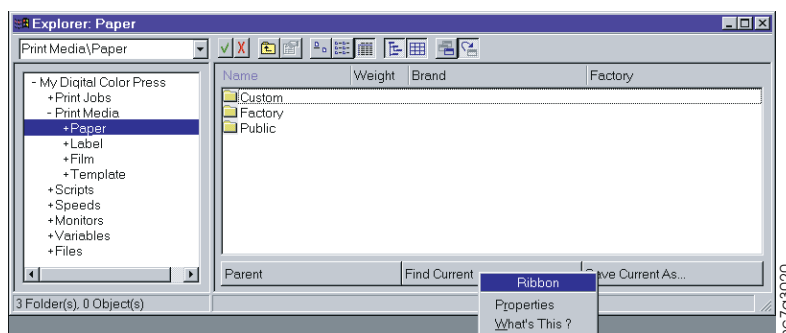


Figure 38. Ribbon Drop—Down Menu

Select **Properties**. The **Properties** window displays as shown in Figure 39 on page 43. The **Properties** window allows you to select which buttons display in the ribbon.

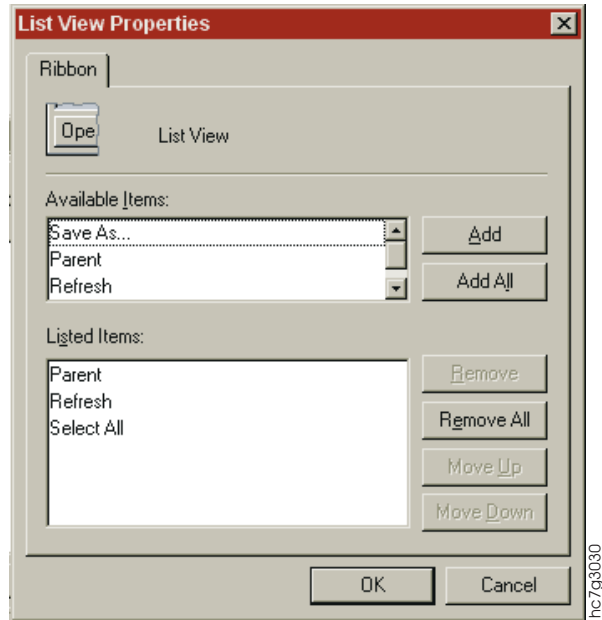


Figure 39. Ribbon Properties Window

Explorer: Print Jobs: Print Queue

The **Print Queue** window, as shown in Figure 40, allows you to view and manage all jobs that are in the print queue. The InfoPrint Color 100 has a first-in, first-out print queue.

Explore ⇒ **Print Queue** 

OR

Explore ⇒ **Explorer** ⇒ **Print Jobs** ⇒ **Print Queue** 

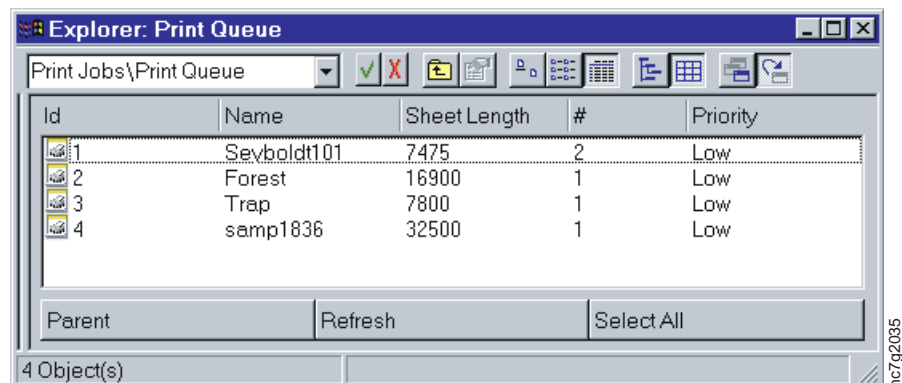


Figure 40. Print Queue Window

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

- Delete jobs from the queue

- Check and change the properties of jobs in the queue (see “Changing Job Properties” on page 186)
- Rename jobs (in the print queue only)

Refer to “Chapter 8. Printing and Managing the Printing Process” on page 183 for more information about using the **Print Queue** window to monitor and manage the print queue.

Explorer: Print Media


The **Print Media** window, as shown in Figure 41, allows you to select the type of media you want to use for printing.

See the *IBM InfoPrint Color 100 Print Media Guide* for the current list of approved media. This list is updated from time to time as IBM continues to approve additional media. You can download the *IBM InfoPrint Color 100 Print Media Guide* from the following internet address:

www.printers.ibm.com/manuals.html

Explore ⇒ **Print Media** 

OR

Explore ⇒ **Explorer** ⇒ **Print Media** 

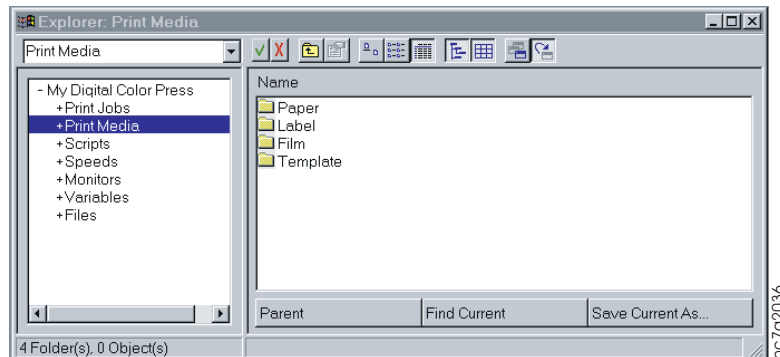




Figure 41. Print Media Window

Explorer: Scripts

The **Scripts** window, as shown in Figure 42 on page 45, allows you to activate scripts. Scripts are predefined control sequences used by the InfoPrint Color 100. These are normally used by a service representative, if necessary the service representative will show the customer which scripts to use.

Explore ⇒ **Scripts** 

OR

Explore ⇒ Explorer ⇒ Scripts 

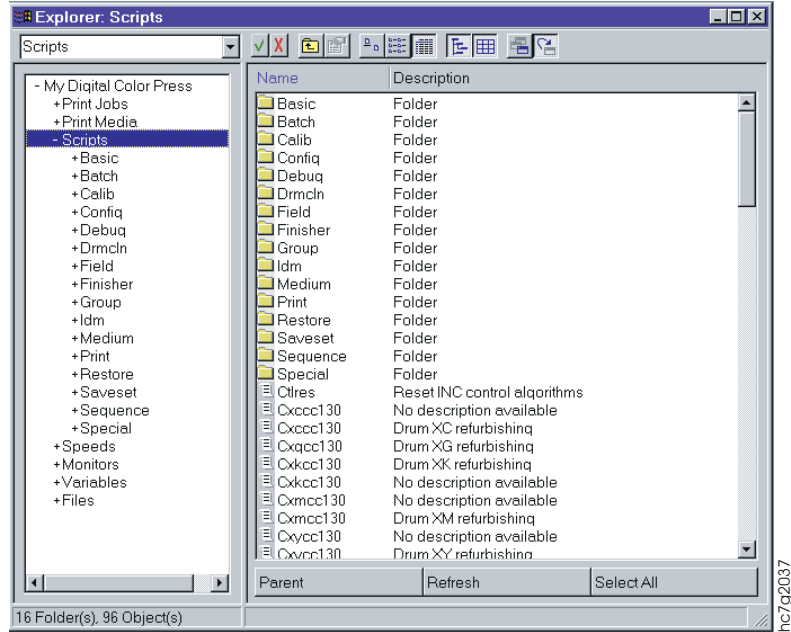



Figure 42. Scripts Window

Explorer: Monitors

The **Monitors** window, as shown in Figure 43, is used only by your service representative.

Explore ⇒ Monitors 

OR

Explore ⇒ Explorer ⇒ Monitors 

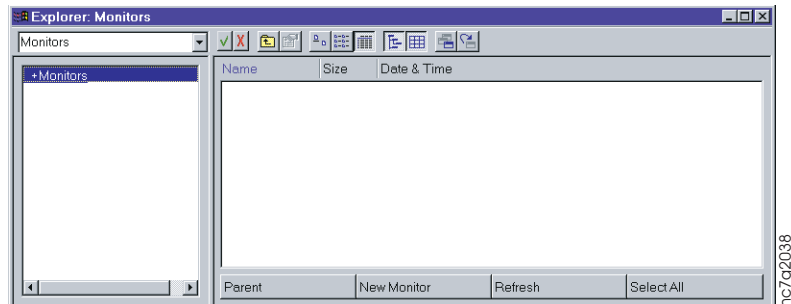



Figure 43. Monitors Window

Explorer: Settings

The **Settings** window, as shown in Figure 44, contains different folders in which engine-specific settings are stored. This window is used only by your service representative.

Explore ⇒ **Settings** 

OR

Explore ⇒ **Explorer** ⇒ **Settings** 

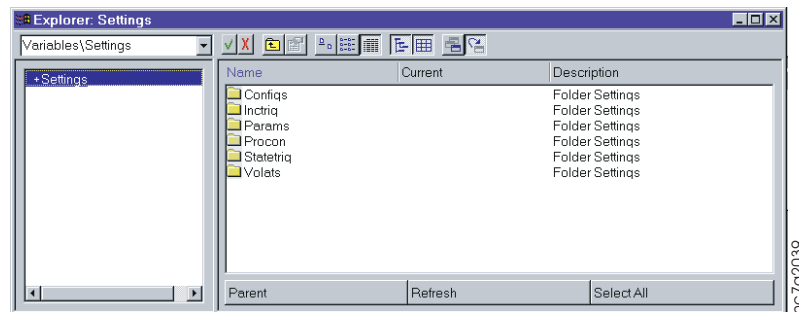



Figure 44. Settings Window

Explorer: Signals

The **Signals** window, as shown in Figure 45 on page 47, contains different folders in which all the instrumentation signals are stored. This window is used only by your service representative.

Explore ⇒ **Signals** 

OR

Explore ⇒ **Explorer** ⇒ **Signals** 

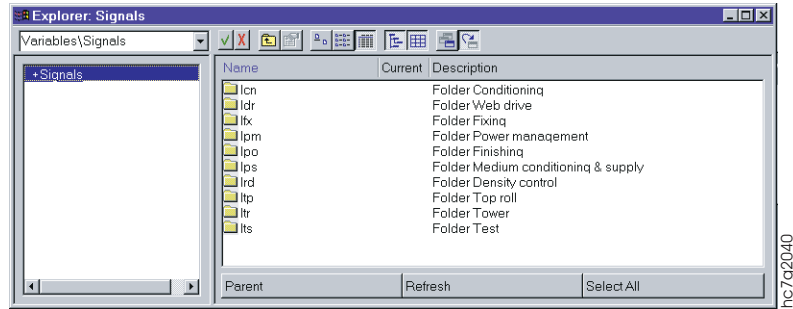


Figure 45. Signals Window

Explorer: Counters


The **Counters** window, as shown in Figure 46 on page 48, contains **Factory** and **Custom** folders. The **Factory** folder contains non-resettable general counters and resettable counters for operator maintenance and preventive service (limited lifetime parts). The counters are the same for every print engine. Non-resettable counters record information about the quantity of consumables the print engine consumes (usage parts counters), the amount of time certain parts are active (machine usage counters), parts that need to be serviced on a regular basis (service counters), and parts that need to be replaced on a regular basis (replacement parts counters). Resettable counters are used to warn the operator that preventive maintenance may be needed. These counters need to be reset when the maintenance is performed.

You can define counters yourself and save them in the **Custom** folder.

See “Understanding the Explore Counters” on page 255 for more information about counters.

Explore ⇒ Counters 

OR

Explore ⇒ Explorer ⇒ Counters 

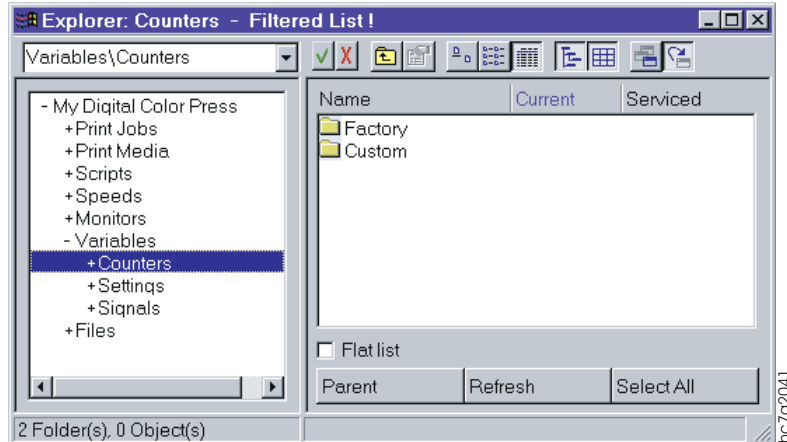


Figure 46. Counters Window

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

Explorers: Speeds

The **Speeds** window, as shown in Figure 47, allows you to monitor the web speed setpoints.

Explore ⇒ **Speeds**

OR

Explore ⇒ **Explorer** ⇒ **Speeds**

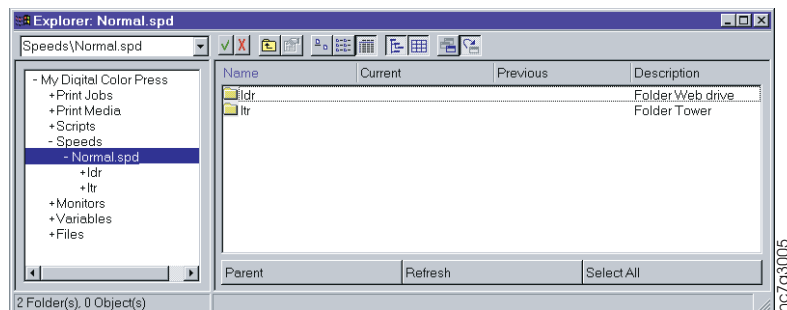


Figure 47. Speeds Window

Explorers: Files: Hard Disk RIP

The **Hard Disk RIP** window, as shown in Figure 48 on page 49, allows you to check the file structure of the RIP hard disk.

Explore ⇒ **Explorer** ⇒ **Files** ⇒ **Hard Disk RIP**

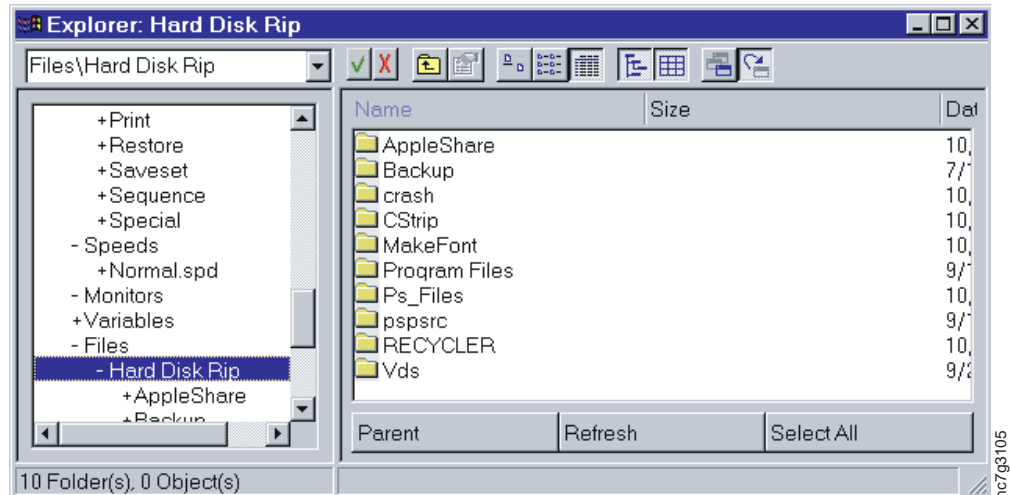


Figure 48. Hard Disk RIP Window

All the files that are transferred from the PES platform are copied to the C:\XPOSE\download folder on the RIP platform. You can open these files on the RIP platform but not on the PES platform. Also, you can copy, delete, or rename files.

Explorer: Files: Hard Disk Pes

The **Hard Disk Pes** window, as shown in Figure 49, allows you to check the file structure of the PES hard disk as well as transfer files, e.g. log files, from the PES to the RIP platform.

Explore ⇒ **Explorer** ⇒ **Files** ⇒ **Hard Disk Pes**

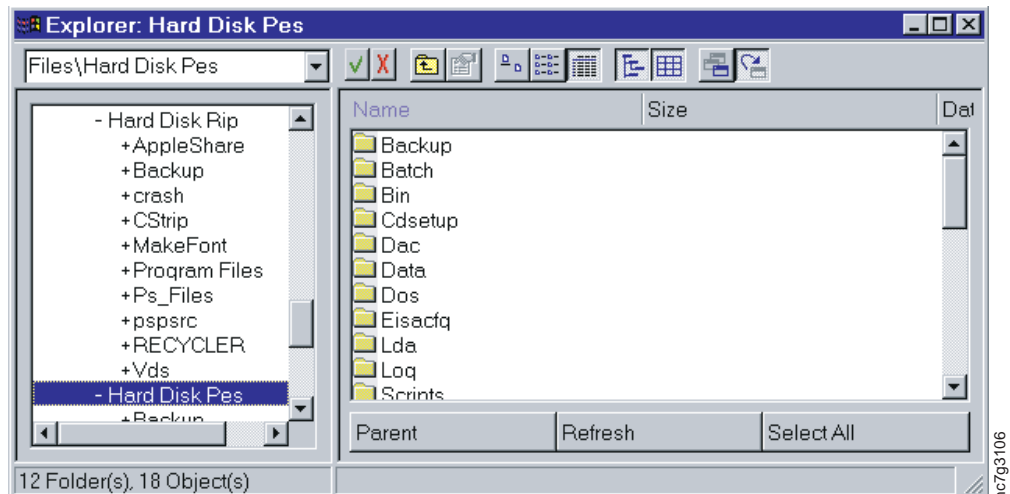


Figure 49. Hard Disk PES Window

You can also copy the log file and transfer it to the RIP platform by selecting **Logging** ⇒ **Transfer Pes Log** (See “Logging: Transfer Pes Log” on page 101 for more information.)

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 drop-down menu lists the available functions. Table 16 lists the **Operations** menu items and where to go in this section for more information.

Table 16. Operations Menu Functions

Operations Menu Item	Go to...
Emergency Stop	"Operations: Emergency Stop" on page 51
Mount Print Medium	"Operations: Mount Print Medium" on page 51
Refurbish Drums	Does not apply
Refill Toner Containers	"Operations: Refill Toner Containers" on page 52
Change Developer	For service representative only
Calibrate PRS Sensors	For service representative only
Service Intervention	For service representative only
LDA Correction	Does not apply

The functions that you will use *most* often are summarized in "Summary of the Most-Used Functions" on page 103.

The **Mount Print Medium** and **Refill Toner Containers** functions are similar in that these operations involve a sequence of actions that is performed partly by the operator and partly by the software. Before you use either of these functions, you must first stop the print engine. See "Interrupting the Printing Process" on page 196 for more information.

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 Do It 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 Do It pushbutton changes to the Done pushbutton. You must click the Done pushbutton after you finish the action. You can interrupt an action with the Cancel pushbutton, but not all operations can be interrupted.

Table 17 tells you where to find more information about these functions.

Table 17. Sequential Action Operations Menu Functions


Operational Functions	Go to...
Mount Print Medium	"Operations: Mount Print Medium" on page 51 and "Starting the Roll-Change Procedure" on page 265
Refurbish Drums	Does not apply
Refill Toner Containers	"Operations: Refill Toner Containers" on page 52 and "Refilling the Toner" on page 303
Change Developer	Only a service representative should use this function.
Calibrate PRS Sensors	Only a service representative should use this function.

Table 17. Sequential Action Operations Menu Functions (continued)

Operational Functions	Go to...
Service Intervention	“Operations: Service Intervention” on page 54 and “Preparing to Do Maintenance” on page 289
LDA Correction	Does not apply.

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 “Emergency Stop” on page 196 for all the methods you can use to stop the print engine in an emergency.

Operations: Mount Print Medium

The **Mount Print Medium** window as shown in Figure 50, is used when replacing the paper roll and to set paper conditioning for the new paper roll. See “Starting the Roll-Change Procedure” on page 265 and “Monitoring Print Medium Conditioning” on page 243 for more information.

Operations ⇒ **Mount Print Medium**  **Ctrl+M**

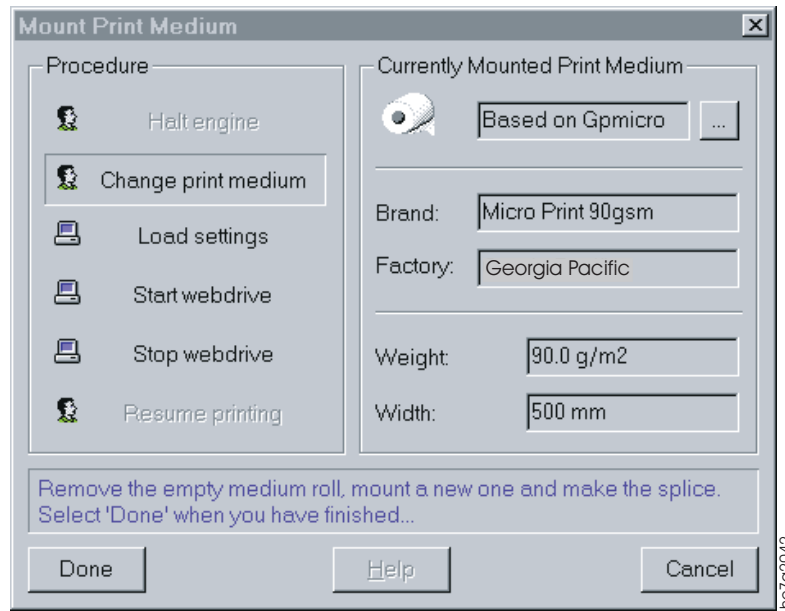


Figure 50. Mount Print Medium Window

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. See “Interrupting the Printing Process” on page 196 for more information.

Operations: Refill Toner Containers

The **Refill Toner Containers** window as shown in Figure 51, is used during the procedure to refill the toner containers when they are low or empty. Refer to “Chapter 14. Checking and Refilling Toner” on page 303 for more information about refilling toner.

Operations ⇒ Refill Toner Containers 

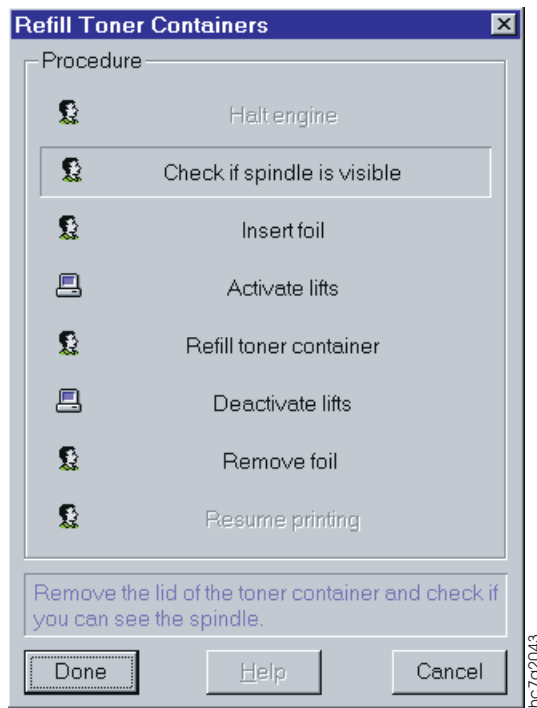


Figure 51. Refill Toner Containers Window

Attention:

This operation involves a sequence of actions that is performed partly by the operator and partly by the software. Before you use this function, you must first stop the print engine. See “Interrupting the Printing Process” on page 196 for more information.

Operations: Change Developer

The **Change Developer** window as shown in Figure 52 on page 53, is used only by the service representative.

Operations ⇒ Change Developer

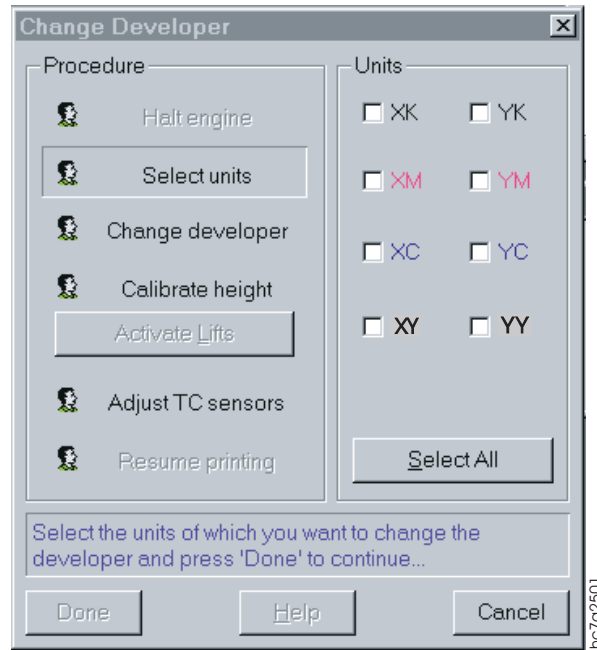


Figure 52. Change Developer Window

Operations: Calibrate PRS Sensors

The **Calibrate PRS Sensors** window as shown in Figure 53 on page 54, is used only by the service representative.

Operations ⇒ Calibrate PRS Sensors

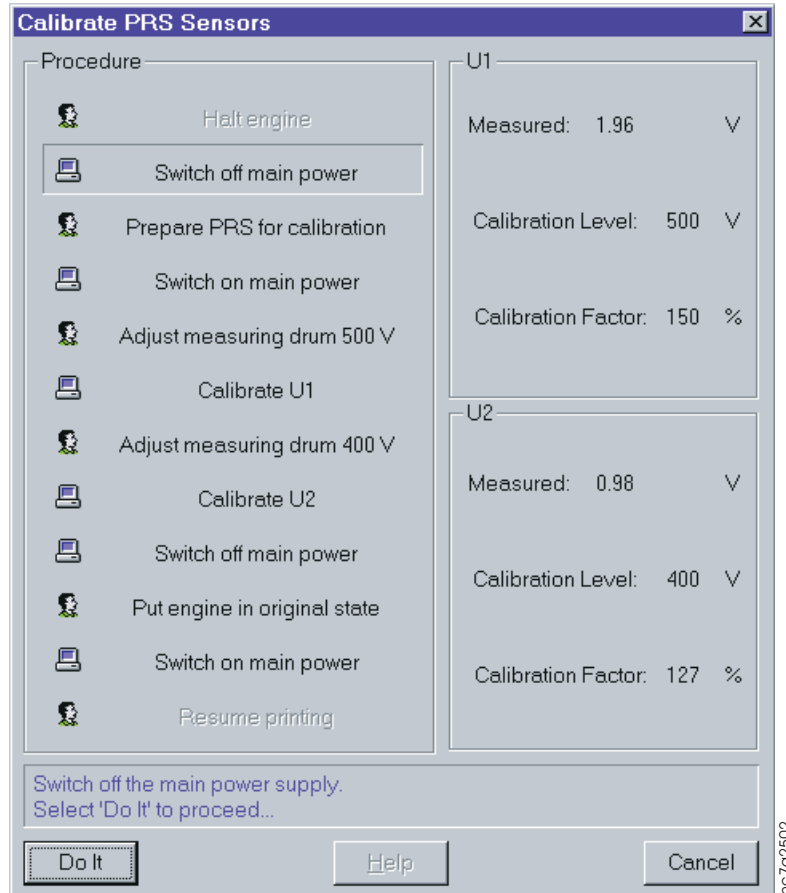


Figure 53. Calibrate PRS Sensors Window

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 InfoPrint Color 100.

The messages you see in this window, as shown in Figure 54 on page 55, take you through the steps to do a service intervention. See “Beginning the Service Intervention Procedure” on page 289 for an explanation of this procedure.

Operations ⇒ **Service Intervention**

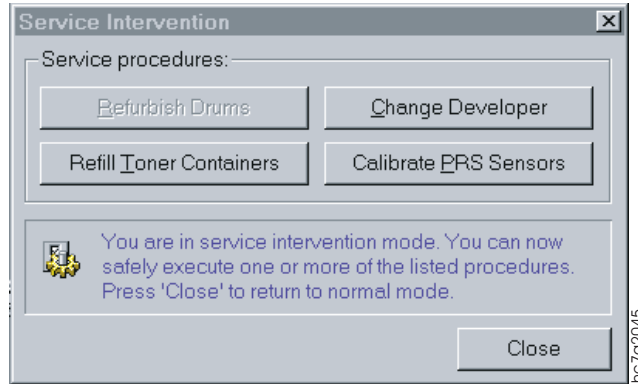


Figure 54. Service Intervention Window

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 drop-down menu lists all the functions available.

The functions that you will use most often are summarized in “Summary of the Most-Used Functions” on page 103.

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. Table 18 lists these processes and where to go in this book for more information.

Table 18. Process Control Menu Functions

Process Control Menu Item	Go to...
Density Control	“Process Control: Density Control” on page 57 and “Controlling Density” on page 221
LDA Correction for Screening	“Process Control: LDA Correction for Screening” on page 58
Toner Concentration Setpoint	“Process Control: Toner Concentration Setpoint” on page 58 and “Correcting for High-Coverage Jobs” on page 230
Conditioning	“Process Control: Conditioning” on page 59, “Monitoring Tower Conditioning” on page 245, and “Monitoring Print Medium Conditioning” on page 243
Print Medium Settings	“Process Control: Print Medium Settings” on page 60 and “Monitoring Print Medium Conditioning” on page 243
Engine State	“Process Control: Engine State” on page 64 and “Understanding Print Engine States” on page 242
Engine State Progress	“Process Control: Engine State Progress” on page 65 and “Understanding Print Engine States” on page 242
Register Control	“Process Control: Register Control” on page 65 and “Understanding Registration” on page 205
Web	“Process Control: Web” on page 67 and “Monitoring and Adjusting Web Tension” on page 237

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 in Table 18 on page 55 have windows that are similar. Figure 55 shows an example of a **Process Control** window in which you can adjust setpoints.

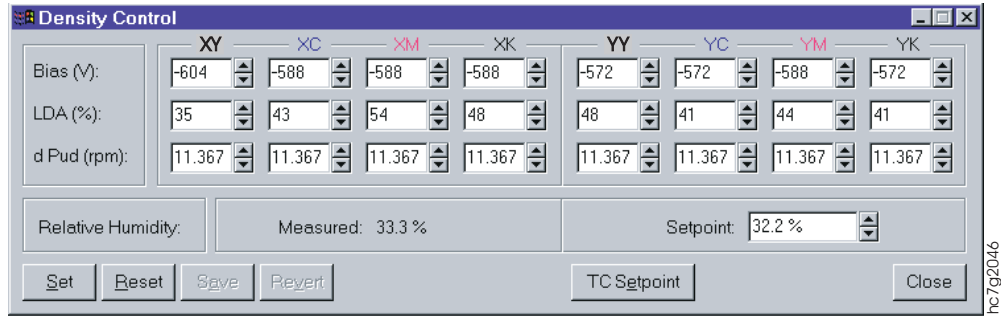


Figure 55. Example of a Process Control Window

The parameters that you can adjust are displayed in an edit box with two arrow buttons, as shown in Figure 56.



Figure 56. 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.

Notes:

1. When you change a parameter to an illegal value, you will see an **Illegal Value** prompt or message, with the high/low values displayed. The high/low value is automatically selected when you click the **OK** pushbutton.
2. If you click the right mouse button on a field in a **Process Control** window, the value, as saved in the PES, displays.

Along the bottom of most process control windows are 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 57 on page 57, to reset new entries to their actual values in the PES. You can do this only if you have not yet clicked on the **Save** pushbutton.



Figure 57. 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 58, 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.

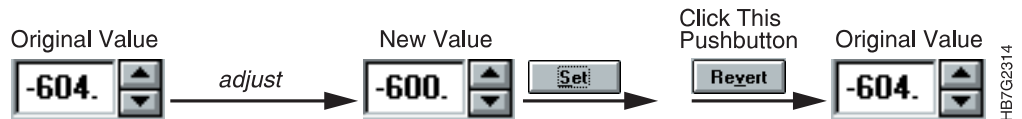


Figure 58. Revert Pushbutton

If you change a setting in a Process Control window, and Autosave has been turned on in the Preferences window, the settings are saved when the window is closed.

Process Control: Density Control

The **Density Control** window, as shown in Figure 59, is used to monitor and change the settings that affect print density. For more information about controlling density and using the densitometer see “Controlling Density” on page 221.

Process Control ⇒ Density Control  **Ctrl+D**

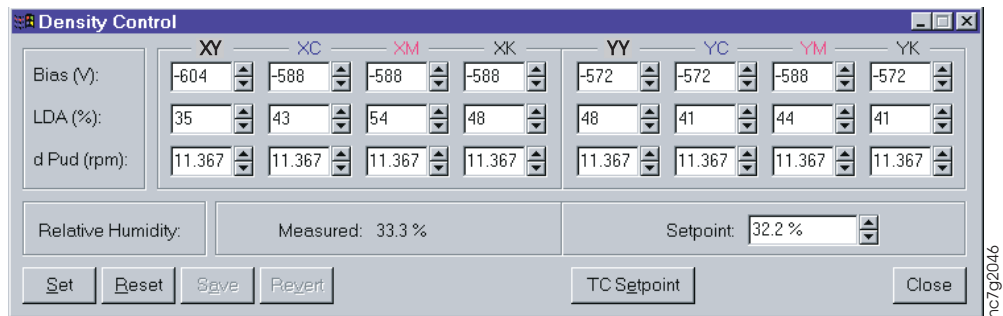


Figure 59. Density Control Window

Process Control: Toner Concentration Setpoint

The **Toner Concentration Setpoint** window, as shown in Figure 60, is used to check the age of the developer mix and other settings that affect print density. For more information, see “Correcting for High-Coverage Jobs” on page 230.

Process Control ⇒ **Toner Concentration Setpoint**

Age Developer	XY	XC	XM	XK	YY	YC	YM	YK
Used A3's:	20592	20592	20594	20594	11414	11414	11414	11414
Flow								
Predefined:	45	27	29	56	7.3	10	5.4	13
Correction:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	45	27	29	56	7.3	10	5.4	13
TC Setpoint								
Initial:	1200	1200	1200	1000	1200	1200	1200	1000
Age:	-175	-175	-175	0	-175	-175	-175	0
Flow:	0	0	0	0	0	0	0	0
RH:	0	0	0	0	0	0	0	0
TC d Setpoint:	0	0	0	0	0	0	0	0
Total:	1025	1025	1025	1000	1025	1025	1025	1000
TC Measured:	1061	1022	1025	963	986	947	937	1027

Buttons: Set, Reset, Save, Revert, Close

Figure 60. Toner Concentration Setpoint Window

Process Control: LDA Correction for Screening

The **LDA Correction for Screening** window, as shown in Figure 61 on page 59, allows you to load the correct crosscorrection setting to match the screening used when the job was RIPed. This window has nothing to do with the RIP, it only optimizes the LDA crosscorrection quality for the offered screenings (Sofocles, Classic).

For example, if you RIPed a job with classic screening, the best image quality (stripes and evenness of large colored blocks) is obtained if you print this job with classic crosscorrected LDA file information. You can change the setting in the **LDA Correction for Screening** window to the correct setting and start to print with optimal LDA file information for that RIPed job.

To open the **LDA Correction for Screening** window, select:

Process Control ⇒ **LDA Correction for Screening**

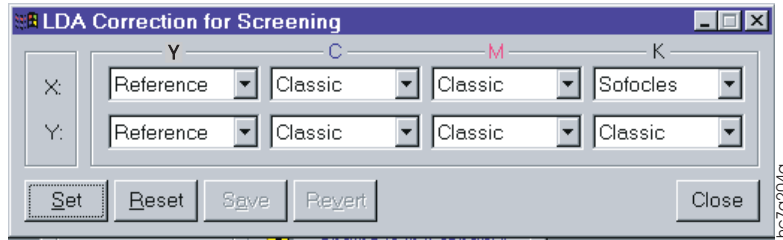


Figure 61. LDA Correction for Screening Window

Process Control: Conditioning

The **Conditioning** windows, as shown in Figure 62 through Figure 64 on page 60, are used to monitor the settings that affect the print medium conditioning and engine conditioning. See “Chapter 10. Monitoring and Adjusting Processes” on page 237 for more information about monitoring the print medium and the engine.

Process Control ⇒ Conditioning

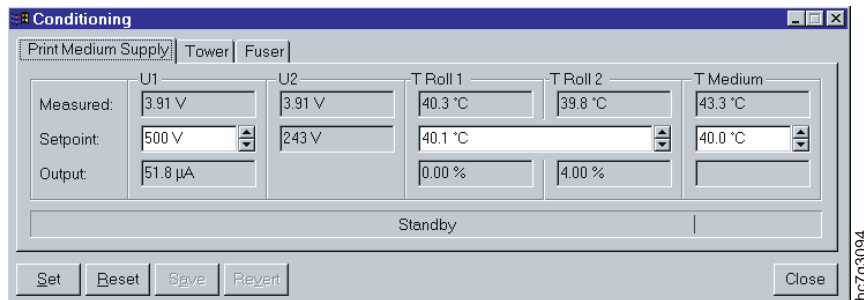


Figure 62. Conditioning — Print Medium Supply

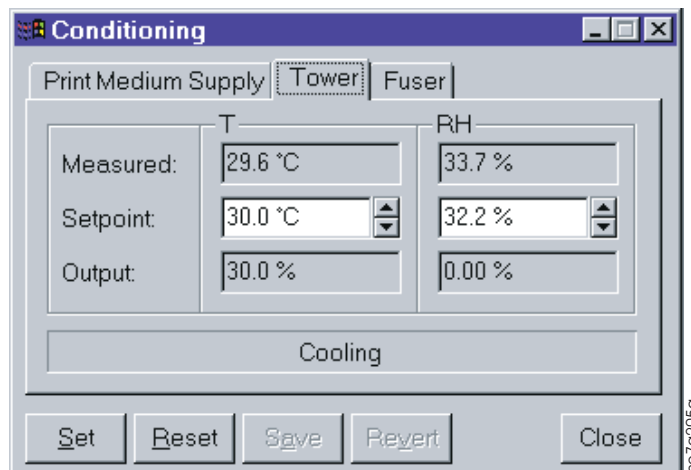


Figure 63. Conditioning — Tower

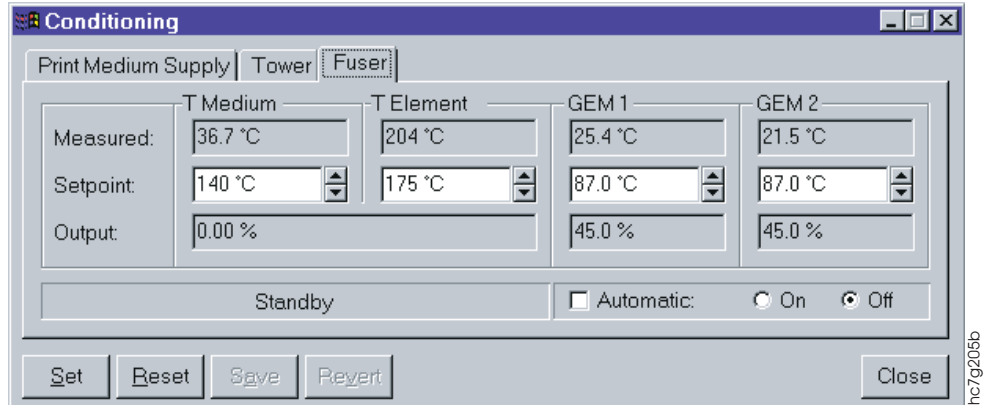


Figure 64. Conditioning — Fuser

Process Control: Print Medium Settings

The **Print Medium Settings** windows, as shown in Figure 65 through Figure 72 on page 64, are used to monitor and change settings for paper conditioning and the fuser temperature. See “Chapter 10. Monitoring and Adjusting Processes” on page 237 for more information.

Process Control ⇒ Print Medium Settings

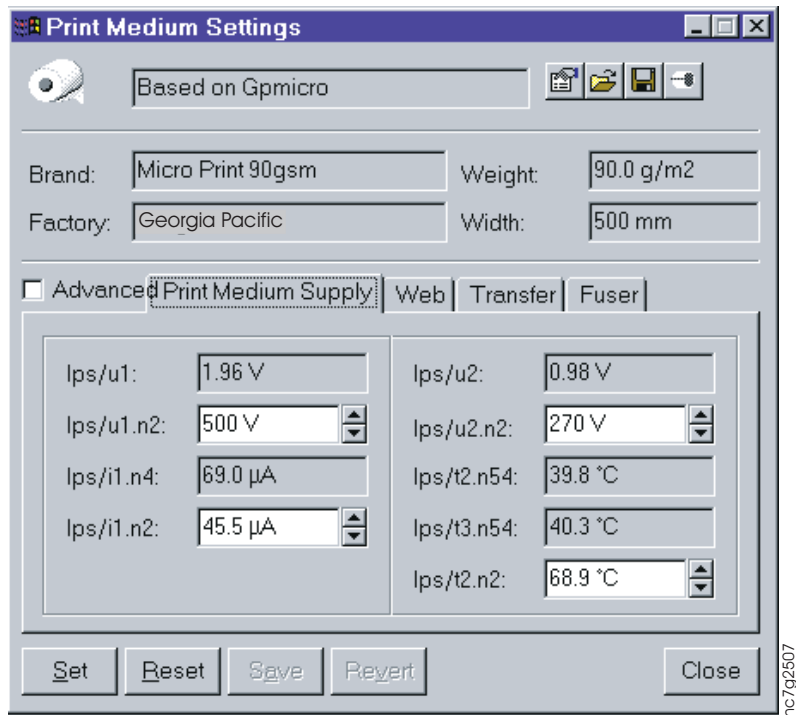


Figure 65. Print Medium Settings Window — Print Medium Supply

Note: In the **Print Medium Settings, Print Medium Supply** window, you may change the U2 setpoint upward for drier paper and downward for less-dry

paper. For heavy paper, dryness may be limited by the power of the preheating lamp.

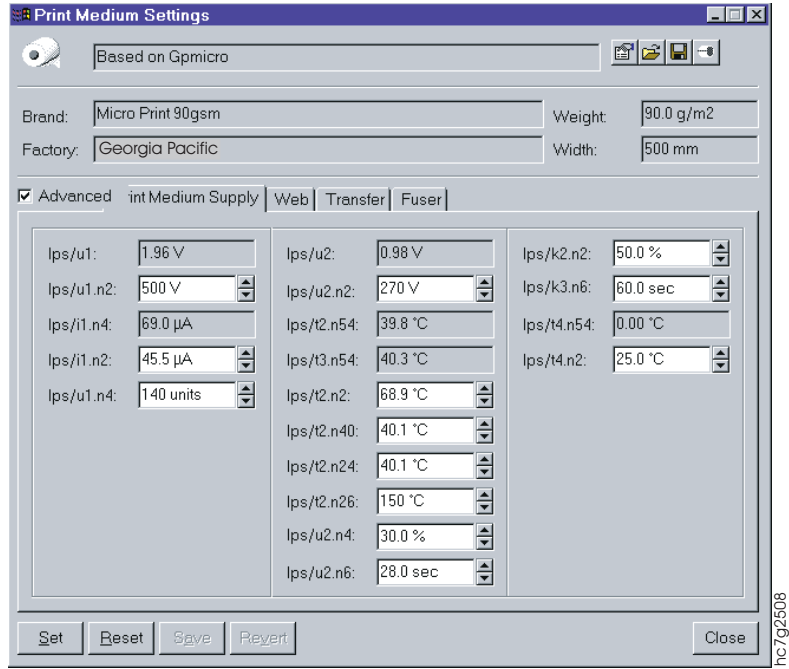


Figure 66. Print Medium Settings Window — Print Medium Supply (Advanced)

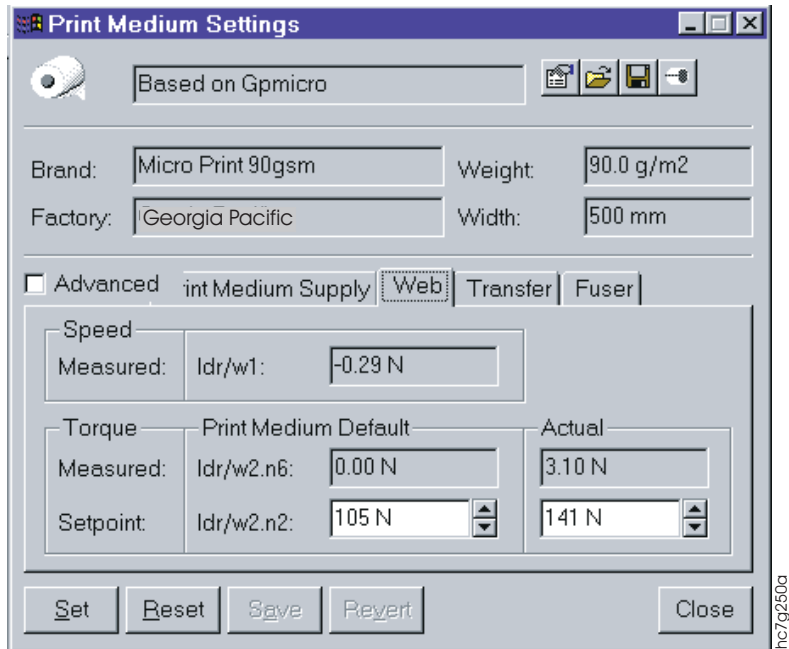


Figure 67. Print Medium Settings Window — Web

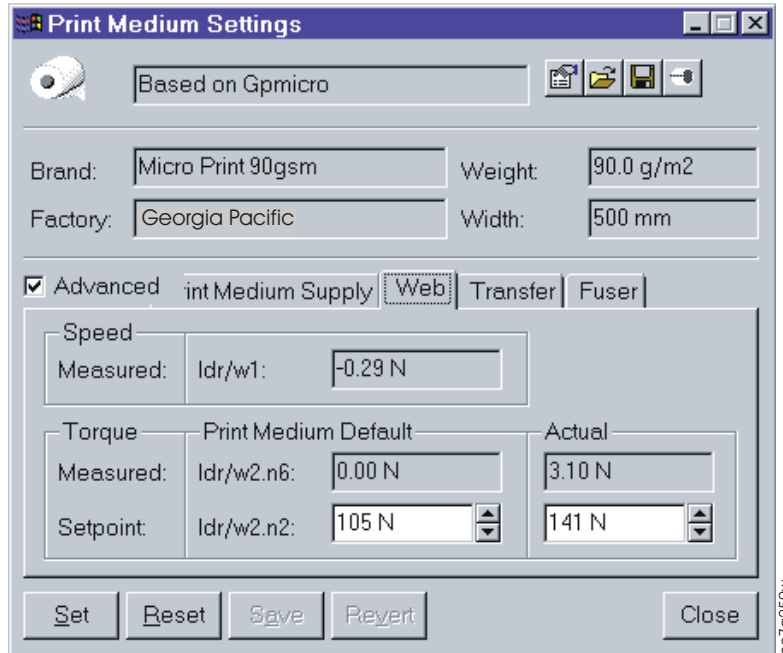


Figure 68. Print Medium Settings Window — Web (Advanced)

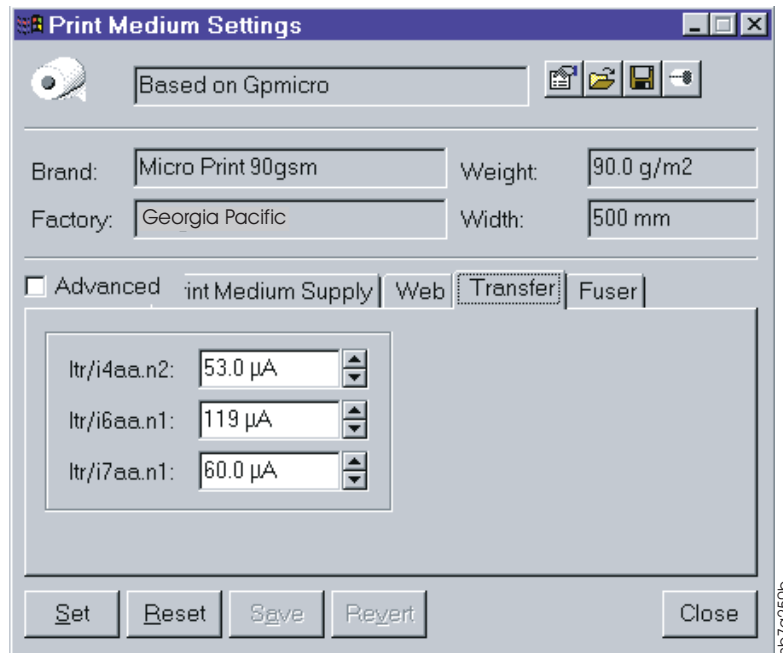


Figure 69. Print Medium Settings Window — Transfer

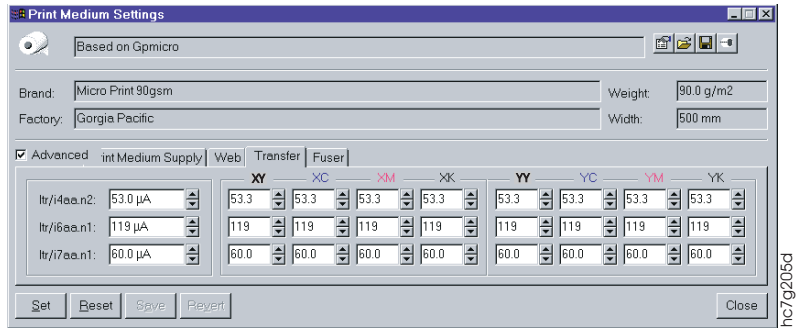


Figure 70. Print Medium Settings Window — Transfer (Advanced)

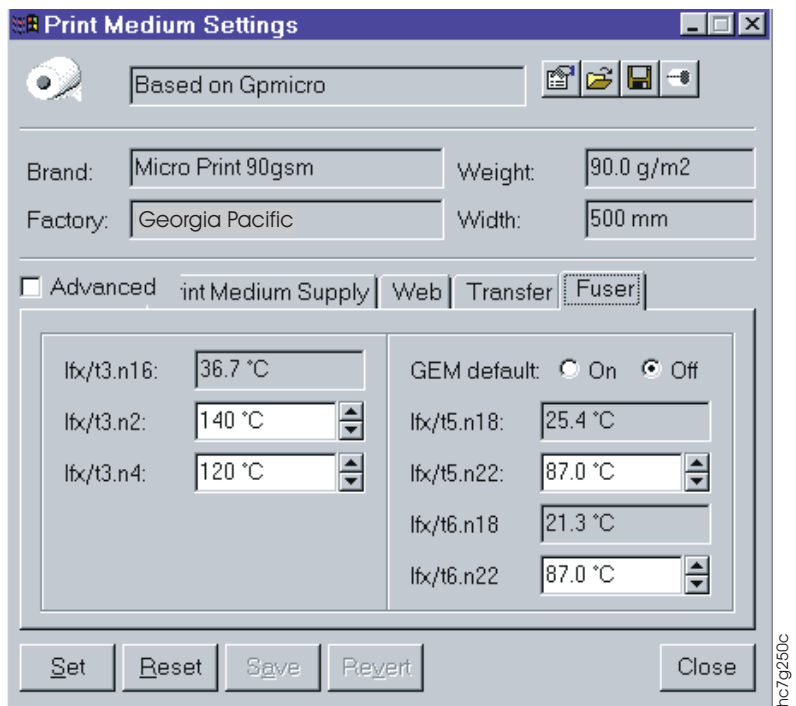


Figure 71. Print Medium Settings Window — Fuser

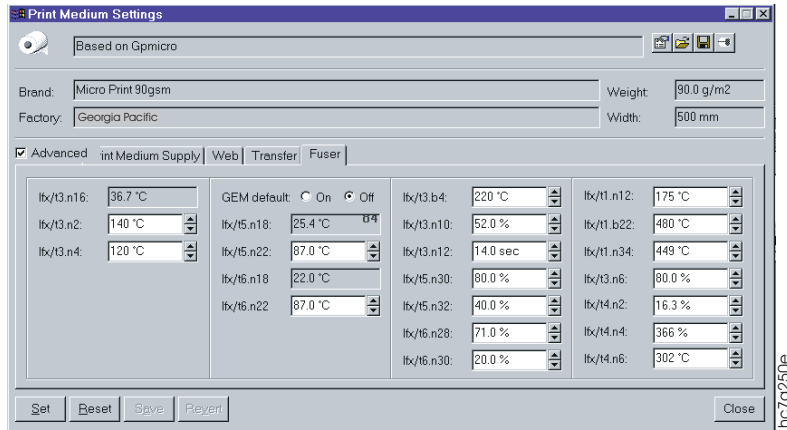


Figure 72. Print Medium Settings Window — Fuser (Advanced)

Note: There are some preset values for lfx/t4.n2. Changing the value in the **Print Medium Settings** window causes the new value to be rounded to the nearest preset. This typically causes a change of 6% to 8% from the entered value.

Process Control: Engine State

The **Engine State** window allows you to monitor the print engine. This window may be kept open during operation of the InfoPrint Color 100. The **Engine State** window changes depending on the state of the print engine. An example is shown in Figure 73.

Process Control ⇒ Engine State  **Ctrl+E**

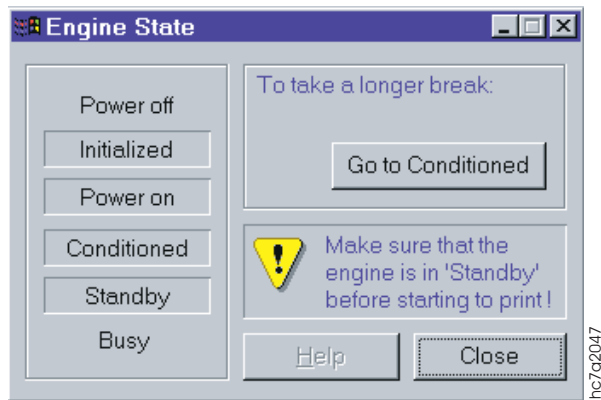


Figure 73. Engine State Window

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 241 for complete information on monitoring and interacting with the **Engine State** window.

Process Control: Engine State Progress

There are two **Engine State Progress** windows you can use to monitor the engine as it warms up. The **Engine State Progress** windows display parameters which are very important for print quality. When the parameters in the first window reach their acknowledged values the second window displays. See Figure 74 and Figure 75. See Table 19 for field descriptions.

Process Control ⇒ **Engine State Progress Ctrl+O**

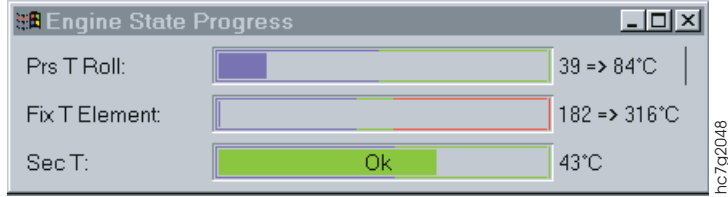


Figure 74. First Engine State Progress Window

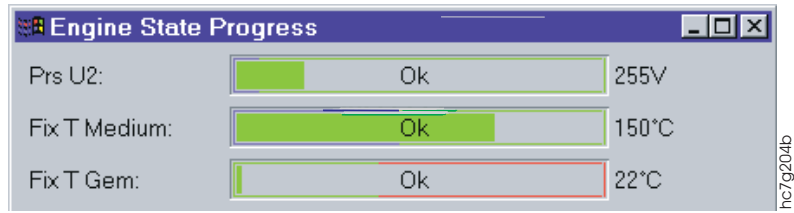


Figure 75. Second Engine State Progress Window

Table 19. Engine State Progress Window Field Descriptions

Field	Description
First Engine State Progress Window	
PRS T Roll	Preheated roll temperature.
FIX T Element	Fuser element temperature.
Second Engine State Progress Window	
PRS U2	Measure for print medium moisture content. See “Monitoring Tower Conditioning” on page 245 and “Monitoring Print Medium Conditioning” on page 243.
FIX T Medium	Print medium temperature after fuser.
FIX T Gem	Temperature of the nip rollers in the GEM.

Process Control: Register Control

The **Register Control** windows, as shown in Figure 76 on page 66 and Figure 77 on page 66, allow you to adjust registration. For more information about adjusting registration, see “Chapter 9. Controlling Print Quality” on page 201.

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

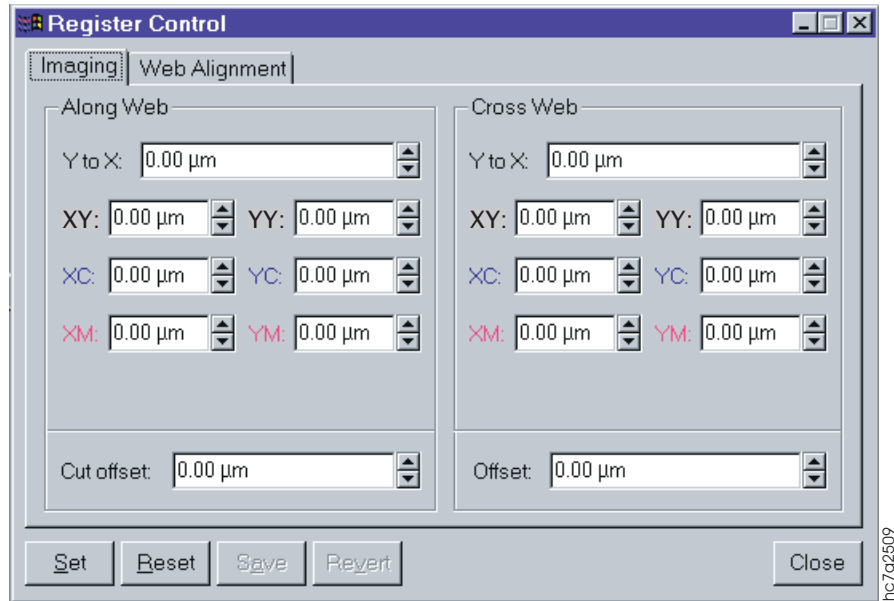


Figure 76. Register Control Window — Imaging

Table 20. Imaging Tab Field Descriptions

Field	Description
Along Web	Allows you to adjust the along web registration values to the optimal values for each of the three colors Y, M, C, in relation to K, as well as front to back registration.
Cross Web	Allows you to adjust the cross web registration values to the optimal values for each of the three colors Y, M, C, in relation to K, as well as front to back registration.
Cut offset	Allows you to adjust the cutter registration value.
Offset	Allows you to position the signature on the print medium.

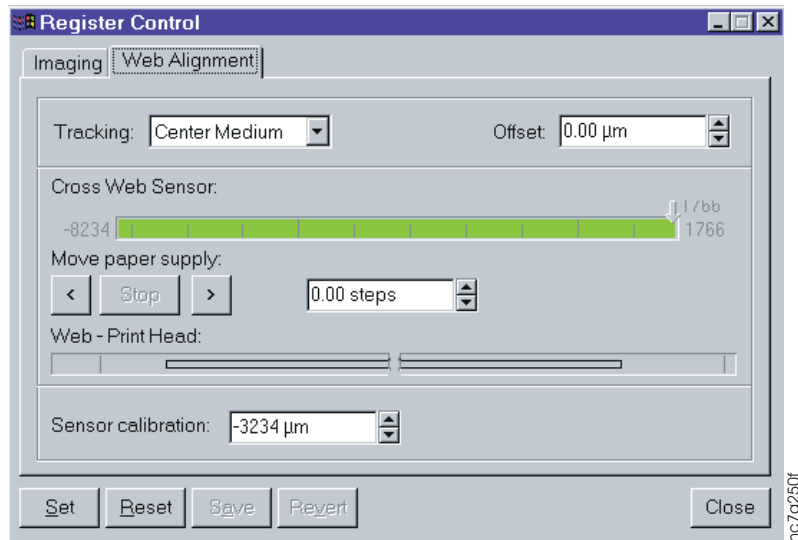


Figure 77. Register Control Window — Web Alignment

Table 21. Web Alignment Tab Field Descriptions

Field	Description
Tracking	<p>The tracking options are:</p> <p>From Job: The tracking mode selected in the Imaging part of the print queue job properties window or PES Extensions.</p> <p>On: The system corrects displacements of the web in order to obtain a left margin as requested by the operator in his design.</p> <p>Off: No cross web tracking.</p> <p>Center Head: The system positions the signature on a fixed left margin determined by the positioning the signature in the center of the head.</p> <p>Center Medium: The system positions the signature centered on the medium, regardless of the left margin.</p>
Offset	<p>This parameter allows you to shift the position of the image different from its job defined left margin. Especially, when working without Cross Web Tracking, this parameter can be used to position the image on the web that is not running exactly in the middle.</p>
Cross Web Sensor	<p>The arrow in the bar displays the position of the web as measured by the cross web sensor.</p> <ul style="list-style-type: none"> • If the arrow is in the 0-position, the web is in the middle. • If the arrow is in the green zone, the signature can be positioned on a fixed place on the print medium. • If the arrow is in the orange zone, the position of the signature will vary. In the Web — Print Head bar, the signature will be shown positioned against one of the print head's borders. • If the arrow is in the red zone, the signature would be printed beyond the print medium edge. In this case, printing stops.
Move paper supply	<p>You can use these buttons to move the paper supply instead of using the button on the paper supply itself.</p> <ul style="list-style-type: none"> • If the field shows 0, press the < or > pushbutton to move the paper supply over 5 steps to the left or the right. • If the edit box does not show 0 (for example, -13 or 13), press the Set pushbutton to move the paper supply over 13 steps to the left or the right. Pressing the < or > pushbutton always moves the paper supply to the left or right independent of the sign of the value in the edit box.
Web - Print Head	<p>Shows the position of the web with respect to the print head. The blue part in the middle of the print head represents the position of the signature on the print head.</p>
Sensor Calibration	<p>This is the distance the sensor mount is out of its ideal position. This value must be adjusted only once, to take into account mechanical errors of the sensor mount.</p>

Process Control: Web

The **Web** window, as shown in Figure 78 on page 68, through Figure 80 on page 69 allows you to monitor and adjust the torque motor setpoint, move the web over a

specified distance, and monitor the measured setpoint value of the web speed. For more information about the torque motor setpoint, see “Chapter 10. Monitoring and Adjusting Processes” on page 237.

Process Control ⇒ Web **Ctrl+W**

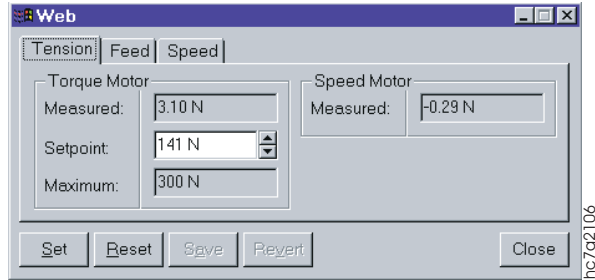


Figure 78. Web Tension Window

Web Feed

The **Feed** tab of the **Web** process control window allows you to move the web over a specified distance (expressed in cm). To start the web moving, you must specify a distance in the **Advance** field and then click **Start Web**. Click the **Stop Web** pushbutton to stop the web. In this window, you can also disable the cutter.

Note: The default measurement unit is cm; use the right mouse button if you want to change to a different unit of measurement.

Open the **Web** window and select the **Feed** tab, as shown in Figure 79.

Process Control ⇒ Web **Ctrl+W**

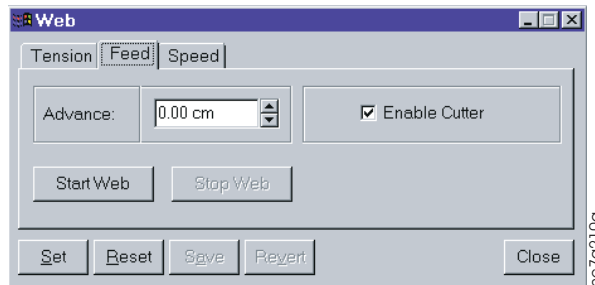



Figure 79. Web Feed Window

Web Speed

The **Speed** tab of the **Web** process control window allows you to monitor the measured and setpoint values of the web speed.

Open the **Web** window and select the **Speed** tab, as shown in Figure 80 on page 69.

Process Control ⇒ Web  Ctrl+W

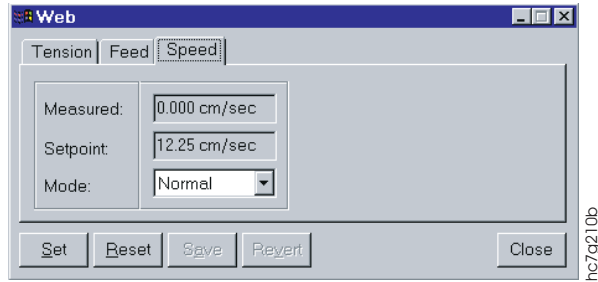


Figure 80. Web Speed Window

Using the IBM Menu Functions

This section describes the functions available from the **IBM** menu. When you click on **IBM** from the menu bar, a drop-down menu lists all the functions available. Table 22 lists the menu items and where to go in this section for more information.

Table 22. IBM Menu Functions

IBM Menu Item	Go to...
ThruPRINT	"IBM: ThruPRINT"
Auto Density	"IBM: Auto Density" on page 81
Auto Registration	"IBM: Auto Registration" on page 82
Settings	"IBM: Settings" on page 82

The functions that you will use most often are summarized in "Summary of the Most-Used Functions" on page 103.

IBM: ThruPRINT

The **IBM ThruPRINT** interface is used to RIP and print files on the collator and to manage collator space.

The **ThruPRINT** window, as shown in Figure 81 on page 70, lists the files that you may want to RIP or print. 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. From these lists you can:

- Select a file or files to RIP
- Select a Ripped file or files to print
- Select a BTF to print
- Change some properties of a Ripped file.

For more information about the Files and MergeDocument tabs, go to "Files Tab" on page 70 and "MergeDocuments Tab" on page 71.

In addition to the Files tab and the MergeDocument tab, the ThruPRINT window menu bar provides menu items to access the ThruPRINT functions you need. Table 23 on page 70 lists the menu items and where to go in this section for more

information.

Table 23. ThruPRINT Menu Functions

Menu Item	Go to...
File	“ThruPRINT File Menu Functions” on page 73
Disk	“ThruPRINT Disk Menu Functions” on page 78
View	“ThruPRINT View Menu Function” on page 81
Help	“ThruPRINT Help Menu Functions” on page 81

Access the **ThruPRINT** window by selecting:

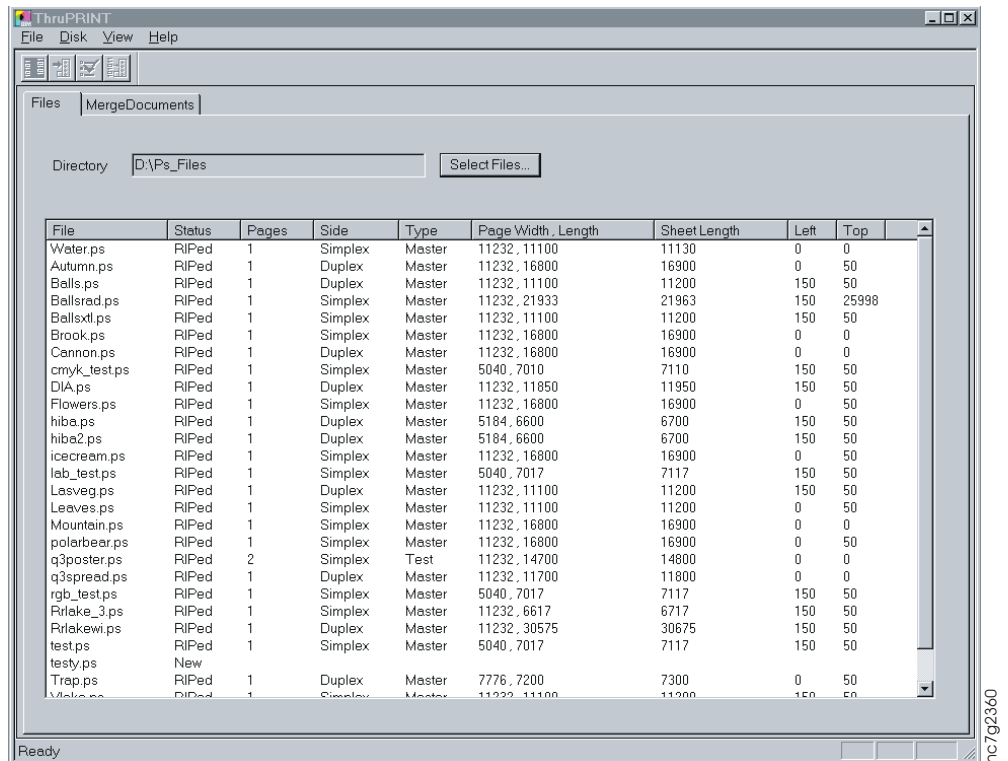


Figure 81. ThruPRINT Window

Files Tab

The **Files** tab (Figure 81) is used to RIP and print PostScript files and print BTF files.

Refer to “RIPing PostScript Files” on page 171 for information about RIPING files. Refer to “Chapter 8. Printing and Managing the Printing Process” on page 183 for information about printing collator files.

See Table 24 for Files tab field descriptions.

Table 24. Files Tab Field Descriptions

Field	Description
Directory	This field indicates the directory of the files to be displayed. The default value is D:\Ps_Files. The Select Files... pushbutton allows you to select files to display in the file list.
File	The name of the file. The files are sorted alphabetically.
Status	<p>The PostScript files that are displayed have a status of New, RIPing, RIPed, or Queued.</p> <ul style="list-style-type: none"> • A status of New means the file has not been RIPed and is not on the collator. • A status of RIPing means that the file is currently RIPing. • A status of RIPed means the RIPing has completed and the file resides on the collator. If the status is RIPed it does not necessarily mean that the file RIPed without errors. • A status of Queued means that any new jobs submitted for RIPing are held until the prior job is completed being RIPed. <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 137 for more information.
Page Width, Length	<p>Page width stated in number of pixels, as it was RIPed.</p> <p>Page length stated in number of pixels, as it was RIPed.</p>
Sheet Length	This is the sheet length, stated in number of pixels.
Left (left margin)	The number of pixels from the left side of the sheet.
Top (top margin)	The number of pixels from the top of the sheet.

MergeDocuments Tab

The **MergeDocuments** tab (Figure 82 on page 72) is used to RIP and print variable data files generated by PageMaker Plug-Ins and QuarkXPress XTensions. See Table 25 on page 72 for field descriptions.

Refer to “RIPing Variable Data Files” on page 172 for information about RIPing and printing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

Refer to “Submitting Variable Data Print Jobs” on page 184 for information about printing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

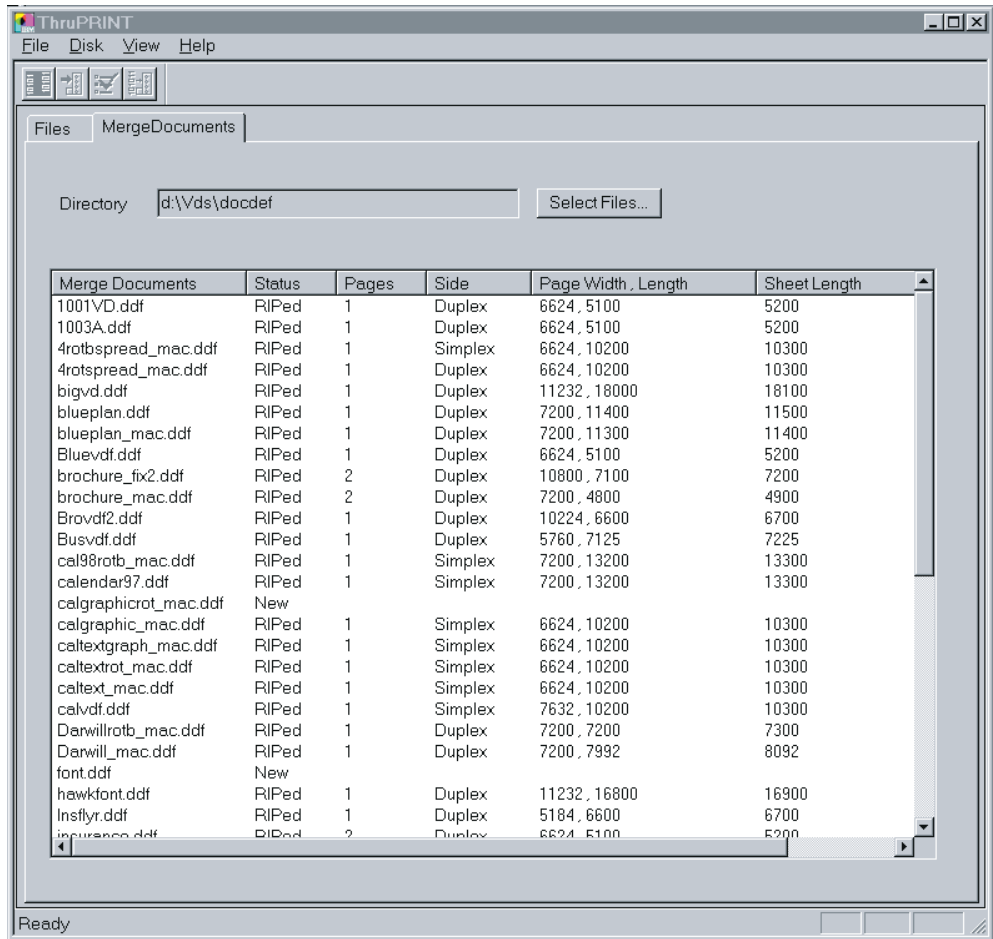


Figure 82. MergeDocuments Tab in the ThruPRINT Window

Table 25. MergeDocuments Tab Field Descriptions

Field	Description
Directory	The directory that contains document definition files. The default value is D:\Vds\Docdef. The Select Files... pushbutton allows you to select files to display in the file list below.
MergeDocuments	The name of the document definition file. The files are sorted alphabetically, but can be resorted by clicking on the File column headers.

Table 25. MergeDocuments Tab Field Descriptions (continued)

Field	Description
Status	<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 necessarily 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>
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 pixels.</p> <p>The page length of the master file, stated in the number of pixels.</p>
Sheet Length	This is the sheet length of the master file, stated in number of pixels.
Left (left margin)	The number of pixels from the left side of the sheet.
Top (top margin)	The number of pixels from the top of the sheet.

ThruPRINT File Menu Functions

This section describes the functions available from the ThruPRINT **File** menu. When you click on **File** from the menu bar, a drop-down menu lists all the functions available. Table 26 lists the menu items and where to go in this section for more information.

Table 26. ThruPRINT File Menu Functions

Menu Item	Go to...
RIP	"File: RIP"
Print	"File: Print" on page 75
Properties	"File: Properties" on page 76
Rename	"File: Rename" on page 78
Delete	"File: Delete" on page 78
Exit	

File: RIP: You may select the Files tab to define your page setup or the MergeDocuments tab to select variable data files and to set parameters.

From the **Files** tab:


1. Select a PostScript file (or files).

2. Select **File** ⇒ **RIP** 

This opens the **Page Setup** window.

For more information about defining page setups and paper sizes, see “Setting Up Your Job” on page 163. For information about RIPing PostScript files, see “RIPing PostScript Files” on page 171.

From the **MergeDocuments** tab:

1. Select the document definition file or files (*.ddf)
2. Select **File** ⇒ **RIP** 

This opens the **MergeDoc** window, as shown in Figure 83, which is used to specify the variable data input files as well as the variable data parameters. See Table 27 for field descriptions.

Refer to “RIPing Variable Data Files” on page 172 for information about RIPing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

Refer to “Submitting Variable Data Print Jobs” on page 184 for information about printing variable data files generated by either PageMaker Plug-Ins or QuarkXPress XTensions.

Table 27 describes the **MergeDoc** window fields.

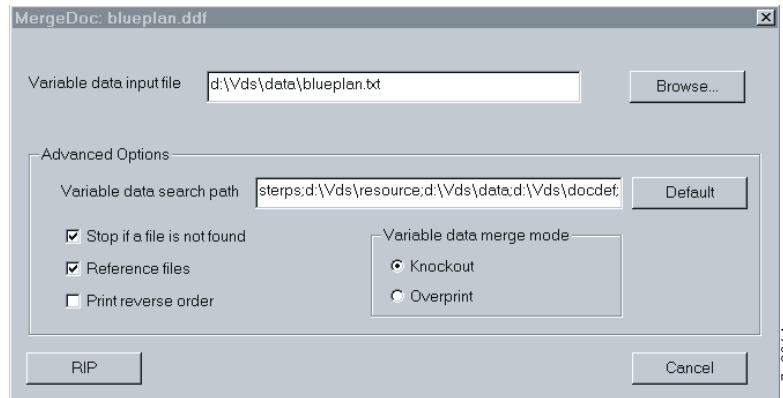


Figure 83. MergeDoc Window

Table 27. Description of MergeDoc 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.

Table 27. Description of MergeDoc Window Fields (continued)

Field	Description
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. Note: 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 Page Setup window See “Defining Page Setups and Paper Sizes” on page 163 for more information about RIPing.

File: Print: You may select the Files tab to print a PostScript file or the MergeDocuments tab to print a Variable data file.

From the **Files** tab:

1. Select a RIPed file
2. Select **File** ⇒ **Print**



This opens the **Print** window, as shown in Figure 84 on page 76. See Table 28 on page 76 for field descriptions.

See “Chapter 8. Printing and Managing the Printing Process” on page 183 for information about printing collator files without variable data.

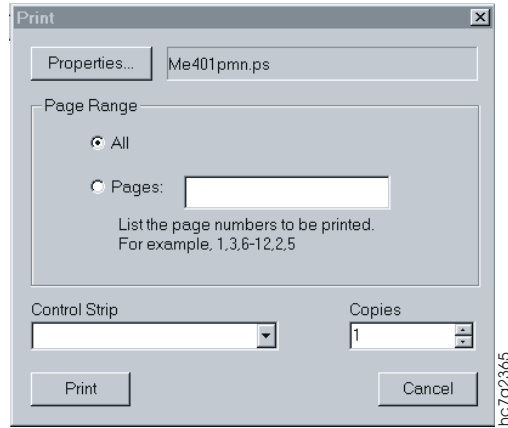


Figure 84. Print Window

Table 28. Print Window Field Descriptions

Field	Description
Page Range	Select All or indicate individual pages by selecting Pages (for PostScript files only, not available for variable data jobs).
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 opens the **Print** window.

File: Properties: You may select the Files tab to view properties for a selected file or open the desktop editor for a BTF. The MergeDocuments tab allows you to open the desktop editor for the BTF used for printing the variable data job.

From the **Files** tab:

1. Select a Ripped file
2. Select **File** ⇒ **Properties**



This opens the **Properties** window, as shown in Figure 85 on page 77.

OR

Double click on the selected file.

See Table 29 on page 77 for field descriptions.

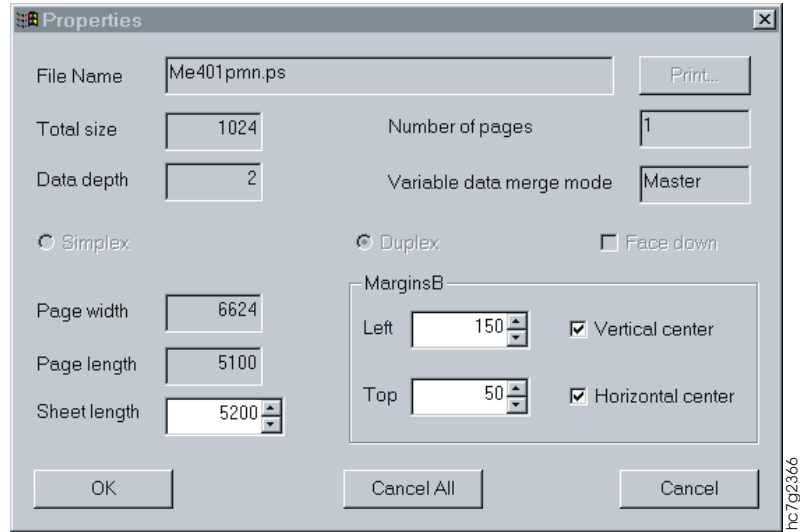


Figure 85. Properties Window

Table 29. 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 grey value is described. 1 bit per spot (bps) means that a spot can have two levels of grey (zero and maximum density). 2 bps means that a spot can have 8 levels of grey (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 InfoPrint Color 100. 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 pixels. This value cannot be changed.
Page Length	The length of the page stated in pixels. 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 pixels.
Top Margin	The size the top margin stated in pixels.
Vertical Center	If this box is checked, it enables vertical centering of the file.

Table 29. Properties Window Field Descriptions (continued)

Field	Description
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 **MergeDocuments** tab:

1. Select a RIPPed 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: To rename files:

1. From the menu bar, Select **File** ⇒ **Rename**
2. Type over the existing name of the file.
If the file is RIPPed, 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, a window opens 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 **Files** tab, you can delete the PostScript file, the RIPPed file that resides on the collator, or both files.

ThruPRINT Disk Menu Functions

This section describes the functions available from the Disk menu. When you click on **Disk** from the menu bar, a drop-down menu lists all the Disk menu functions. Table 19 on page 65 lists the menu items and where to go in this section for more information.

Table 30. ThruPRINT Disk Menu Functions

Menu Item	Go to...
Disk Summary	"Disk: Disk Summary"
Disk Report	"Disk: Disk Report" on page 79
Disk Restore	"Disk: Disk Restore" on page 80

Disk: Disk Summary: Select **Disk** ⇒ **Disk Summary** to open the **Disk Summary** window, as shown in Figure 86 on page 79. See Table 31 on page 79 for field descriptions.

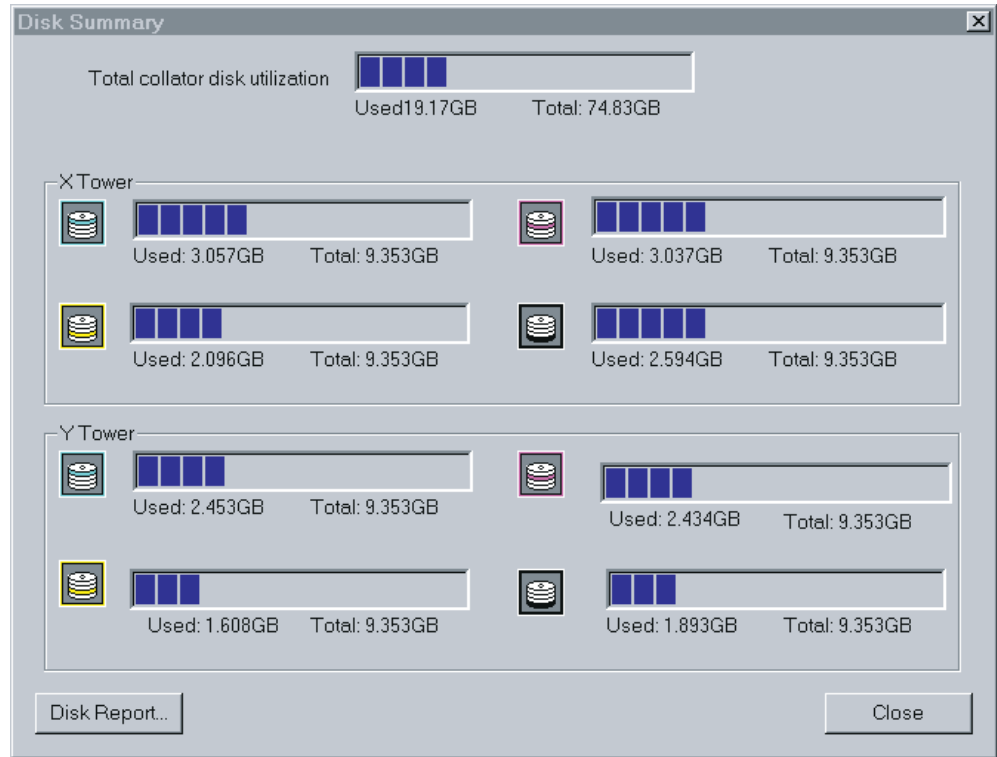


Figure 86. Disk Summary Window

Table 31. Disk Summary Window Field Descriptions

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 Disk Report window.

Disk: Disk Report: Select **Disk** ⇒ **Disk Report** to open the **Disk Report** window, as shown in Figure 87 on page 80. When you are working in the **Disk Report** window, you may select one or more files using the **CTRL** or **SHIFT** keys along with the left mouse button. Using the **CTRL** key adds one list item to the current selection list and Using the **SHIFT** key adds many list items. You can also use the **CTRL** key to deselect items.

See Table 32 on page 80 for **Disk Report** window field descriptions.

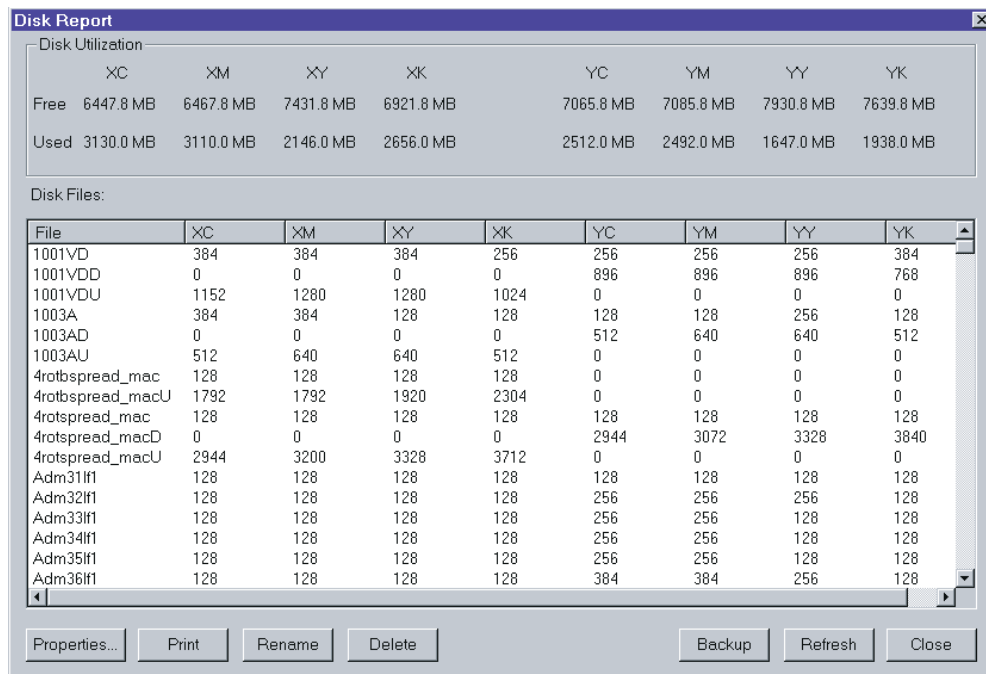


Figure 87. Disk Report Window

Table 32. Disk Report Window Field Descriptions

Field	Description
Disk Utilization	This group box shows the free and used disk space for each print station.
Disk Files	Shows a list of all files on the collator and the space used for each print unit.
Properties	Opens the Properties window for the selected file.
Print	Allows you to print the selected printer file from the Disk Report. Works the same as if selecting Print from the ThruPRINT window. Note: Files ending in D or V are not master files. You will get a warning if you select them for printing.
Rename	Allows you to rename the selected file. (Only renames the collator file.)
Delete	Displays a confirm delete message for the selected file(s).
Backup	Allows you to backup the RIPed file to another drive for transportation. Backup files to d:\Backup\Vecs. You must then copy them to the medium you want to use to transport from d:\Backup\Vecs. Works the same as RIP to Backup on the Page Setup window.
Refresh	Refreshes the window.

Disk: Disk Restore: **Disk Restore** allows you to 'restore' backed-up RIPed files to the collator. Select **Disk** ⇒ **Disk Restore** to open the **Disk Restore** window, as shown in Figure 88 on page 81.

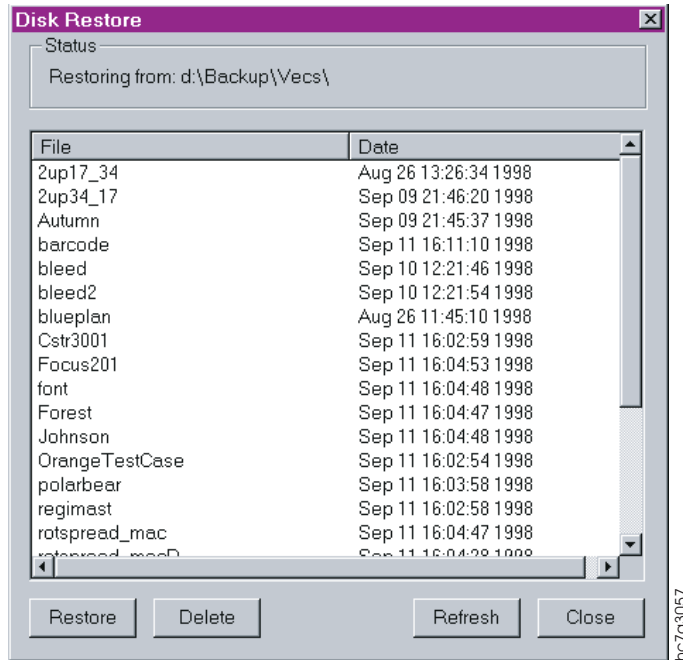


Figure 88. Disk Restore Window

Table 33. Disk Restore Window Field Descriptions

Field	Description
Status	Indicates the directory from where you are retrieving files.
Restore	Restores the selected file to the collator.
Delete	Displays a confirm delete message for the selected file.
Refresh	Refreshes the window.

Note: To restore from another medium, you must first copy the files to d:\Backup\Vecs.

ThruPRINT View Menu Function

The only View function available is Refresh.

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

ThruPRINT Help Menu Functions

The only ThruPRINT **Help** menu item is **About ThruPRINT**, which provides some copyright information and the version of this application.

IBM: Auto Density

The **Auto Density** window, as shown in Figure 89 on page 82, 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 221.

IBM ⇒ Auto Density 

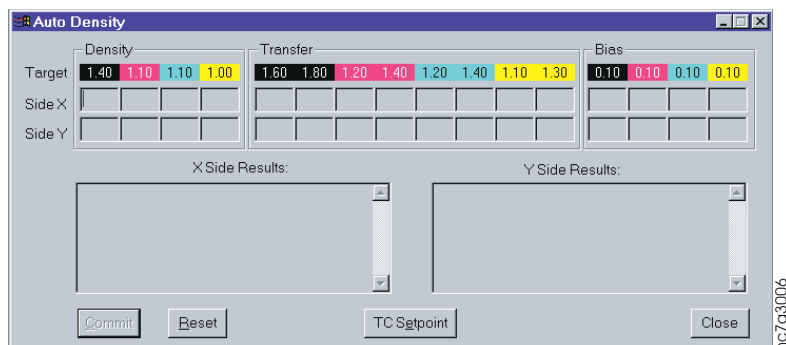


Figure 89. Auto Density Window

IBM: Auto Registration

The **Register Control** window, as shown in Figure 90, allows you to adjust registration using the densitometer. For more information about adjusting registration using the densitometer, see “Automated Color Registration Control Feature” on page 206.

IBM ⇒ Auto Registration 

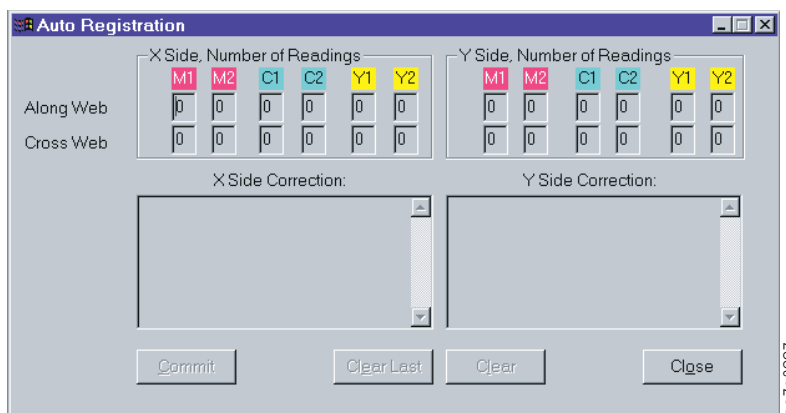


Figure 90. Auto Registration Window

IBM: Settings

The COM Port **Settings** window, as shown in Figure 91 on page 83, allows you to change ports and baud rates. These must be set to COM2 and 9600 respectively for Auto Registration and Auto Density to work using the densitometer.

IBM ⇒ Settings

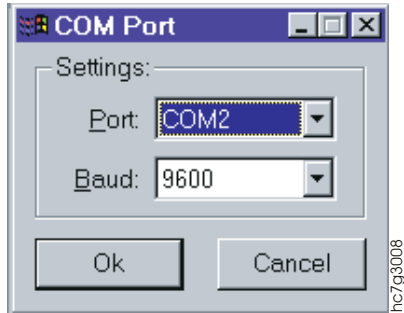


Figure 91. COM Port Settings Window

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 allow you to monitor the use of paper, confirm the level of toner after filling the containers, and to monitor the toner waste bottles. Table 34 lists the menu items and where to go in this section for more information.

Table 34. Maintenance Menu Functions

Menu Item	Go to...
Counters	"Maintenance: Counters"
Toner Containers	"Maintenance: Toner Containers" on page 84
Developer Age	"Maintenance: Developer Age" on page 84

The functions that you will use most often are summarized in "Summary of the Most-Used Functions" on page 103.

Maintenance: Counters

The **Counters** window, as shown in Figure 92, allows you to view your paper usage.

Maintenance ⇒ Counters  **Ctrl+C**

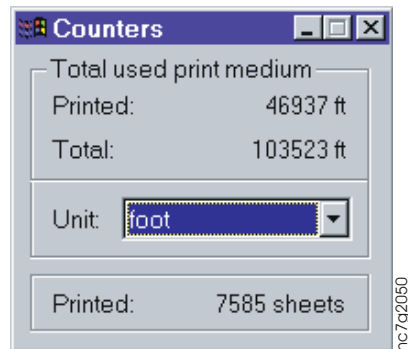


Figure 92. Counters Window

Scroll the **Unit** box to select the unit in which to measure the amount used: A4, cm, mm, km, ft, etc.

Three values are displayed in this window:

Printed

The total amount of printed paper in designated units

Total The total amount of used (printed and unprinted) paper in designated units

Printed

The total amount of printed sheets. This number corresponds with the total number of cut 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 204 on page 231) and the **Developer Age** window (Figure 94 on page 85).

Maintenance: Toner Containers

The **Toner Containers** window, as shown in Figure 93, allows you to monitor the status of your toner containers and waste bottles.

Maintenance ⇒ Toner Containers  Ctrl+N

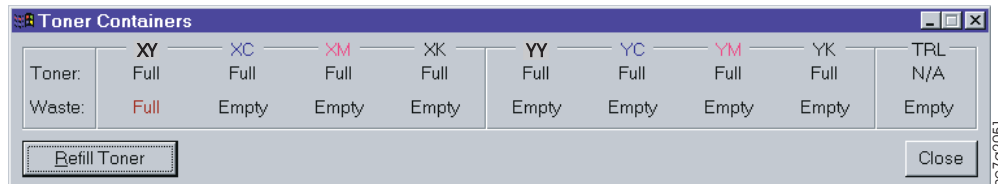


Figure 93. Toner Containers Window

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 303 describes how to refill the toner containers and “Replacing Toner Waste Bottles” on page 308 describes how to empty the toner waste containers.

See “Using the Active Alarms Window” on page 345 for a detailed description of the **Active Alarms** window.

Maintenance: Developer Age

The **Developer Age** window, as shown in Figure 94 on page 85, allows you to monitor the age of the developer as the percentage used and how many recommended A3-size sheets are left.

Maintenance ⇒ Developer age

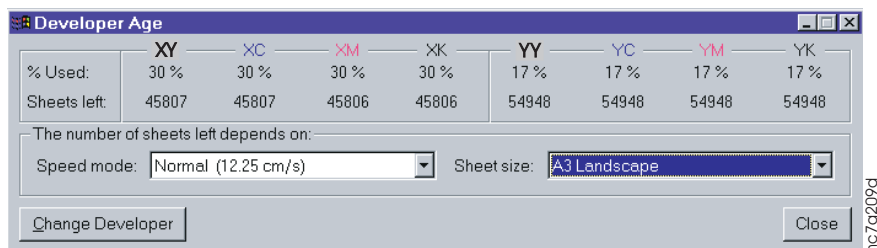


Figure 94. Developer Age Window

Using the Logging Menu Functions

This section describes the functions available from the **Logging** menu. When you click on **Logging** from the menu bar, a drop-down menu lists all the functions available. Table 35 lists the menu items and where to go in this section for more information.

Table 35. Logging Menu Functions

Menu Item	Go to...
Activities	"Logging: Activities"
Active Alarms	"Logging: Active Alarms" on page 100
Open Xpose Log	"Logging: Open Xpose Log" on page 101
Copy Pes Log	"Logging: Copy Pes Log" on page 101
Transfer Pes Log	"Logging: Transfer Pes Log" on page 101
Transfer Page Buffer Log	"Logging: Transfer Page Buffer Log" on page 102

See "Filters" on page 96 for information about filtering the properties you display in your activity logger windows.

See "Reports" on page 96 for information about generating reports.

See "Error Conditions" on page 93 for information about database error messages.

Logging: Activities

All activities that occur during a particular period can be logged via the activity logger. These activities are stored in a database. The Logging Activities menu items allow you to manage the main database. Table 36 lists the menu items and where to go in this section for more information.

Table 36. Activities Menu Functions

Menu Item	Go to...
Main Database	"Logging: Activities: Main Database" on page 94
Copy Main	"Logging: Activities: Copy Main" on page 98
Clean Up Main	"Logging: Activities: Clean Up Main" on page 99
Close Main	"Logging: Activities: Close Main" on page 99
Open Main	"Logging: Activities: Open Main" on page 99

Table 36. Activities Menu Functions (continued)

Menu Item	Go to...
Open	“Logging: Activities: Open” on page 100
Defragment	“Logging: Activities: Defragment” on page 100
Repair	“Logging: Activities: Repair” on page 100

The main database contains five categories: Alarm, Job Handling, Print Engine, Service, and Custom. The categories are further divided into subcategories. Figure 95 shows the complete hierarchy.

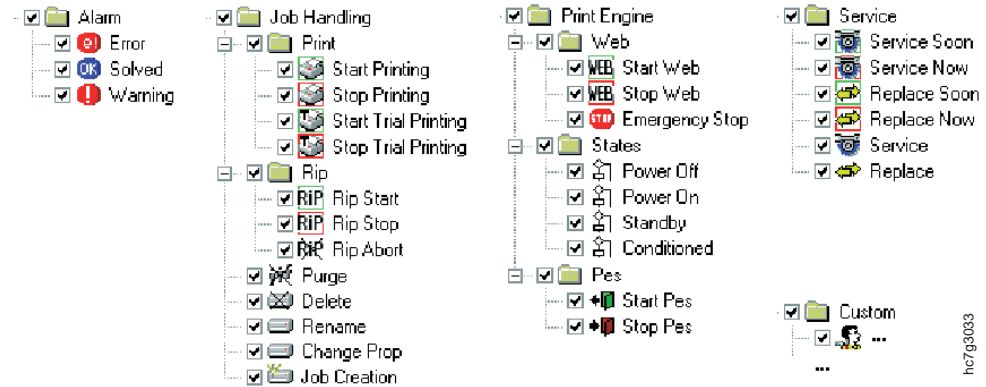


Figure 95. Main Database Category Hierarchy

The following sections describe the main database categories.

Table 37. Main Database Categories

Category	Go to...
Alarm	“The Alarm Category”
Job Handling	“The Job Handling Category” on page 87
Print Engine	“The Print Engine Category” on page 89
Service	“The Service Category” on page 91
Custom	“The Custom Category” on page 91

The Alarm Category

Table 38 shows the log activities in the Alarm category.

Table 38. Alarm Category Activities

Category	Subcategory	Log Activity	Description
Alarm	—	Error	A list of errors that occurred.
	—	Solved	A list of errors that are solved.
	—	Warning	A list of warnings that occurred.

To find information about an alarm, select the alarm and click the **Properties** pushbutton. The **Activity Properties** window displays, as shown in Figure 96 on page 87.

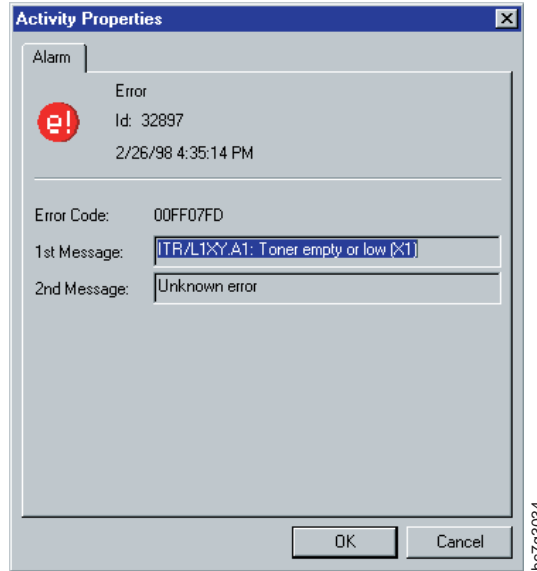


Figure 96. Alarm Activity Properties — Alarm Window

The Job Handling Category

Table 39 shows the log activities in the Job Handling category.

Table 39. Job Handling Category Activities

Category	Subcategory	Log Activity	Description
Job Handling	Print	Start Printing	Start Printing Jobname
		Stop Printing	Stop Printing Jobname
		Start Trial Printing	Start Trial Printing Jobname
		Stop Trial Printing	Stop Trial Printing Jobname
	Rip	Rip Start	Rip Start Jobname
		Rip Stop	Rip Stop Jobname
		Rip Abort	Rip Abort Jobname
	—	Purge	Purge Jobname
		Delete	Delete Jobname
		Rename	Rename Jobname
		Change Prop	Change Jobname
		Job Creation	Job Creation Jobname
	Restore		
	Print BTF		
	BTF Done		

Every job handling activity is related to a particular job. Properties of this job, which may vary during the lifetime of the job, are catalogued as properties from the **Job Handling** activity. Properties which are constant during the job's lifetime are considered as **Job** properties.

If you select a **Job Handling** activity and click the **Properties** pushbutton, the **Activity Properties** window displays. This window contains three tabs; **Job Handling** (Figure 97), **Job** (Figure 98), and **Usage** (Figure 99 on page 89).

The **Job Handling** tab shows information about the layout, sheet count and sequences (for a VDF job) of a job.

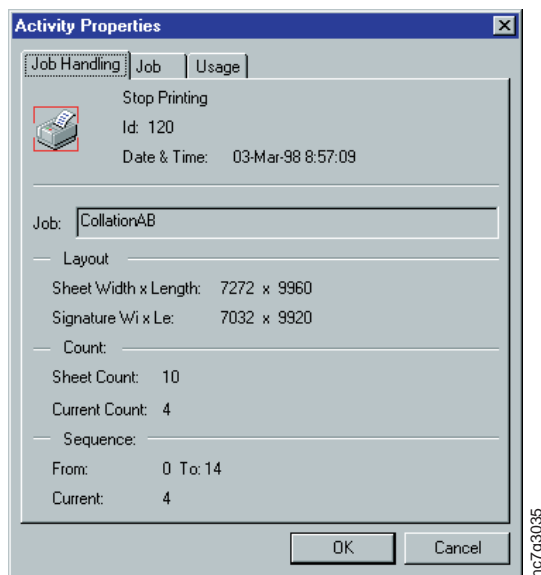


Figure 97. Job Handling Activity Properties — Job Handling Tab

The **Job** tab shows the history of the job; when and how it was created, deleted, and what name it had at the time the activity occurred. See Figure 98.

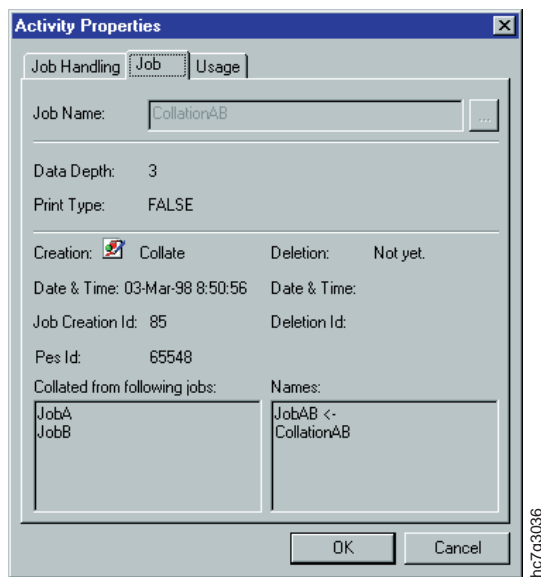


Figure 98. Job Handling Activity Properties — Job Tab

The **Usage** tab shows the total amount of medium and toner used for some activities.

Usage properties are cumulative values; i.e. they are the total amount of medium or toner used at the time the activity occurs and since the machine was used for the first time. See Figure 99.

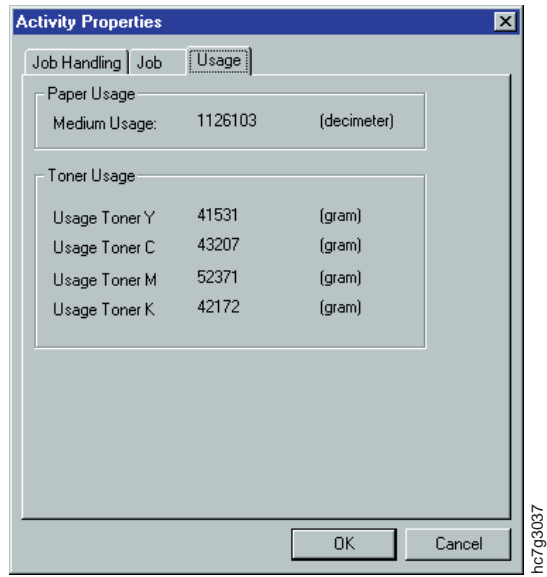


Figure 99. Job Handling Activity Properties — Usage Tab

The Print Engine Category

Table 40 shows the log activities in the Print Engine category.

Table 40. Print Engine Category Activities

Category	Subcategory	Log Activity	Description
Print Engine	Pes	Start Pes	Start-up of the PES.
		Stop Pes	Shut down of the PES.
	States	Power Off	Reached Power Off state.
		Power On	Reached Power On state.
		Standby	Reached Standby state.
		Conditioned	Reached Conditioned state.
	Web	Start Web	Start-up of the medium web.
		Stop Web	Stop of the medium web.
		Emergency Stop	Reached the emergency stop state.

If you select a **Print Engine** activity and click the **Properties** pushbutton, the **Activity Properties** window displays. This window has two tabs; **Activity** (Figure 100 on page 90) and **Usage** (Figure 101 on page 90), that contain information about the event you selected.

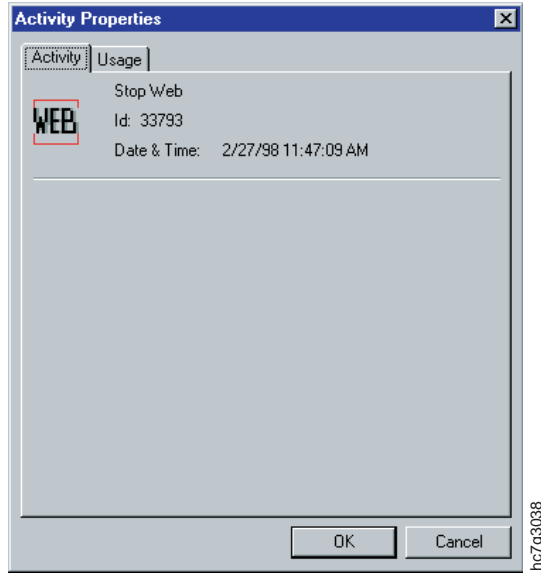


Figure 100. Print Engine Activity Properties — Activity Tab

The **Usage** tab shows the total amount of medium and toner used for some activities.

Usage properties are cumulative values, i.e. they are the total amount of medium or toner used at the time the activity occurs and since the machine was used for the first time. See Figure 101.

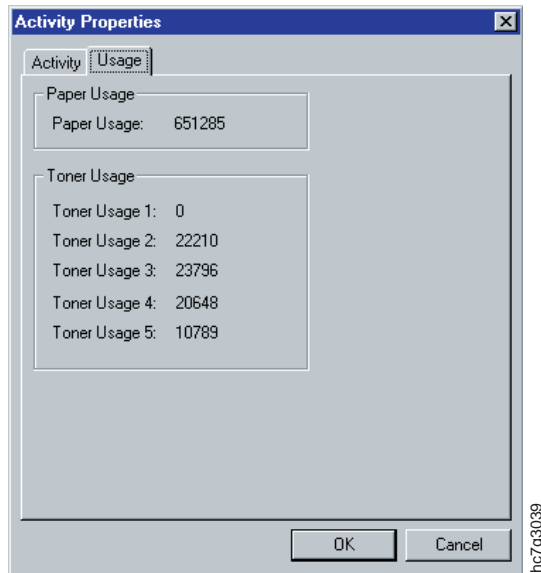


Figure 101. Print Engine Activity Properties — Usage Tab

The Service Category

Table 41 shows the log activities in the Service category.

Table 41. Service Category Activities

Category	Subcategory	Log Activity	Description
Service	—	Service Soon	Part has to be serviced in the near future.
	—	Service Now	Part has to be serviced immediately.
	—	Replace Soon	Part has to be replaced in the near future.
	—	Replace Now	Part has to be replaced immediately.
	—	Service	Service information about part.
	—	Replace	Replacement information about part.

If you select a **Service** activity and click the **Properties** pushbutton, the **Activity Properties** window displays, as shown in Figure 102. This window contains information about the alarm you selected. This alarm is related to a counter. (See “Monitoring Counters” on page 254, for more information about counters.)

Values are logged in the unit corresponding to the increment trigger of the counter.

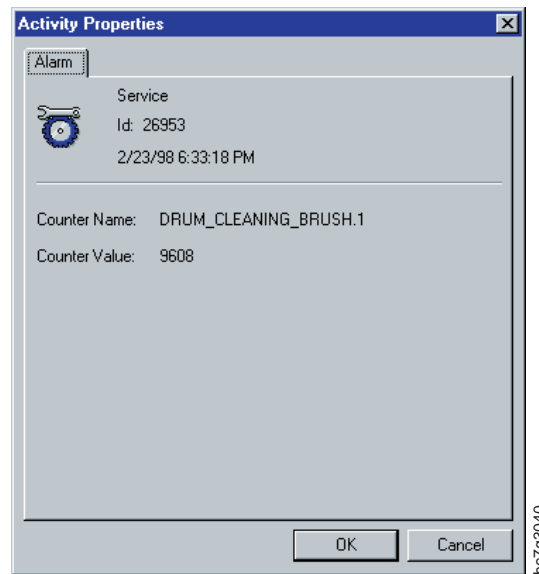


Figure 102. Service Activity Properties

The Custom Category

The Custom category collates some custom defined activities. Table 42 on page 92 shows the log activities in the Custom category.

Table 42. Custom Category Activities

Category	Subcategory	Log Activity	Description
Custom	—	Developer.xy	
	—	Developer.xc	
	—	Developer.xm	
	—	Developer.xk	

If you select a **Developer** activity and click the **Properties** pushbutton, the **Activities Properties** window displays. This window contains two tabs: Custom (Figure 103) and Job (Figure 104 on page 93).

Properties preceded with a '\$' are filled out by the PES and cannot be modified by the user.

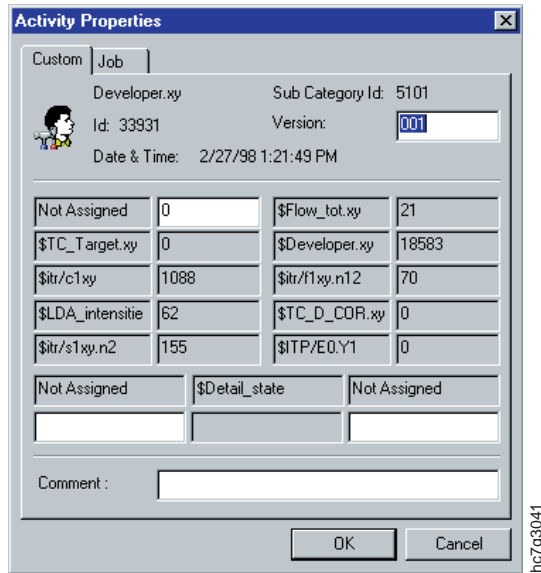


Figure 103. Custom Activity Properties — Custom Tab

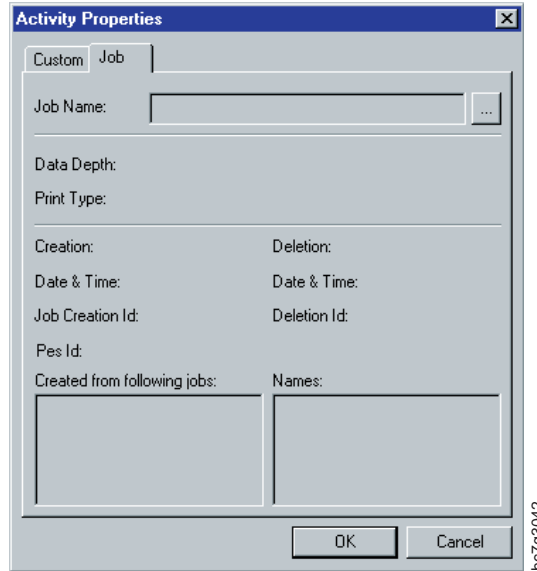


Figure 104. Custom Activity Properties — Job Tab

Activity Logger for a Print Streamer Configuration

When you have a PrintStreamer configuration, the activity logger works almost the same as described in the previous sections, except for the following:

- In the **Job Handling** activities there is no folder with Edit activities.
- With a PrintStreamer, Book Ticket Files are printed containing several sections (= single jobs). Therefore, each time a BTF enters the print queue a 'Print BTF activity' is logged. This activity serves to tell which sections constitute the BTF. When the BTF leaves the print queue, a BTF done activity is logged.

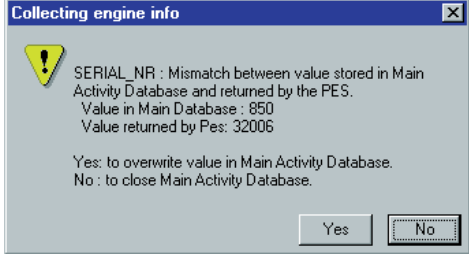
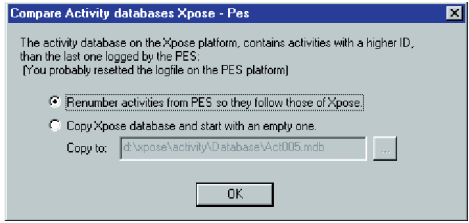
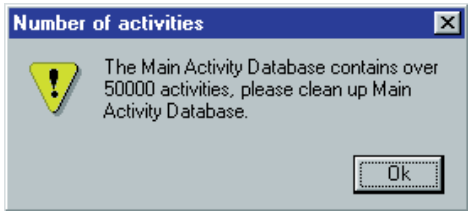
Error Conditions

Table 43 lists the most frequently occurring error dialog windows.

Table 43. Database Error Conditions

Message	Solution
<p>Unable to open Main Activity Database</p>	<p>This message appears when you try to open the main database while it is closed. Select Open Main from the Activities menu to open the main database.</p>

Table 43. Database Error Conditions (continued)

Message	Solution
<p>Engine Info Value mismatch</p>  <p>hc7g9053</p>	<p>It usually makes no sense to 'hook' an activity database to another engine: totally unrelated activities would be merged into one file. Therefore the serial number returned by the PES is compared to the one stored in the Main Activity Database. If the serial numbers do not match, you are prompted with this message.</p>
<p>Main Database contains more recent activities than PES</p>  <p>hc7g9054</p>	<p>Xpose downloads the most recent activities (highest id) from the PES. If Xpose contains activities more recent than the PES. A message appears.</p>
<p>Number of activities exceeds 50,000 activities</p>  <p>hc7g9055</p>	<p>This is a warning to avoid performance problems. You are advised to clean up the Main Database (delete old irrelevant activities).</p>

Logging: Activities: Main Database

The **Main Database** window as shown in Figure 105 on page 95, allows you to open a window to view the main activity database.

Logging ⇒ **Activities** ⇒ **Main Database**

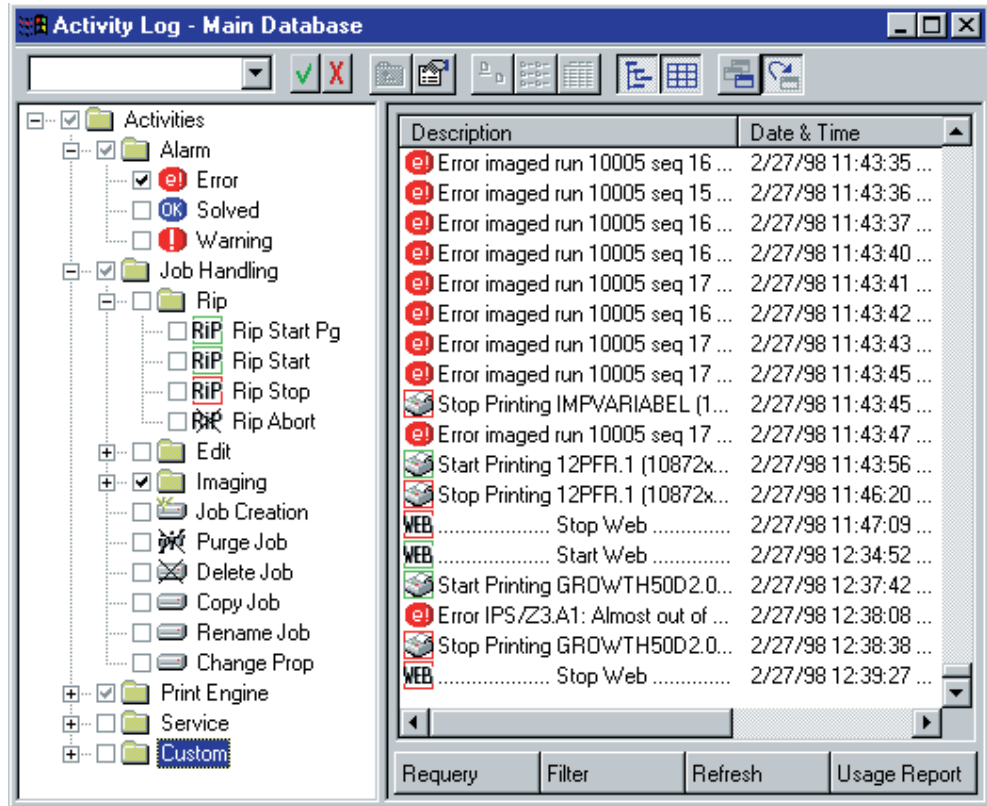


Figure 105. Main Database Window

The list view (right part of the window) shows the activities that occurred during some period in chronological order.

The tree view (left part) shows the five categories: Alarm, Job Handling, Print Engine, Service, and Custom, and allows you to select the subcategories you wish to see in the list view. There are two columns of checkboxes in the tree view. Select the + to display the subcategories, select the – to hide subcategories. To display hidden activities, select the + and click the **Requery** pushbutton, select the – and click the **Requery** pushbutton to hide activities.

The pushbuttons on the ribbon at the bottom of the list view, depend on the activity selected. The following ribbon pushbuttons are possible:

Pushbutton	Description
Requery	If you change the selection in the tree view, choose requery so the list view reflects your changes.
Filter	Displays the filter window
Refresh	Downloads the most recent activities from the PES.
Usage Report	When you select an activity that is enclosed by Web Start and Web Stop, a usage report is created.
Export Cells	Allows you to export the contents of the activity log window to a spreadsheet. The text files are saved in the directory C:\InfoPrint Color 100\XPOSE\Activity\Views.
Filter between	Generates a filter that displays only the activities between the first and last selected activity.

Pushbutton	Description
Save view	Saves settings of the activity log window. Such a file contains: <ul style="list-style-type: none"> • The selected columns and their widths • The selected (sub)categories • The applied filter The contents of the activity log window can be saved in a file with extension '.xvw'. These views are saved in the directory C:\InfoPrint Color 100\XPOSE\Activity\Views.
Load view	Loads settings of the activity log window. The saved views can be loaded by selecting a view in the directory C:\XPOSE\Activity\Views.
Properties	Shows the properties of the selected activity.

Filters: You can filter the listed activities by defining the values for the activities properties you want to display. Click the **Filter** pushbutton in the ribbon to open the **Filter Activity Log Main Database** window (Figure 106).

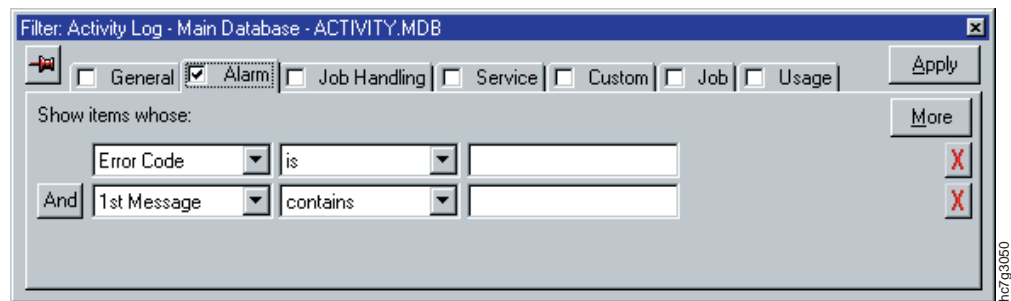


Figure 106. Filter Activity Log Main Database Window

- You can use the filter window to select or deselect activities based on some other criterion. Each filter contains 3 different fields:
 1. Name of the property
 2. Operation
 3. Value of the property
- To disable a filter, select the **X** pushbutton.
- To add a filter, select the **More** pushbutton.
- There is one filter window for all Xpose windows. The window has a thumbnail. If this is pressed, the window stays on the screen even when the filtered window disappears. Every window that can have filters and that becomes active, fills up the filter window with its own filters.
- The number of criteria per filter is not restricted.
- The window is resizable in both directions.
- You can filter on properties not shown in the filtered window (activity logger only).
- You can enable or disable filter tabs by checking or unchecking the checkbox.
- You can place and/or between two criteria of one tab (two enabled tabs always have and between them).

Reports: This section describes how to generate Usage Reports (page 97), Session Reports (page 97), and Reports per Job (page 98).

The Usage Report: If you select a Web Stop activity, you can generate a usage report. The usage report shows how the usage of print medium and toner is distributed over the printed jobs. The report contains an overall session report plus a report for each job printed during the print session.

Click the right-mouse button on the selected activity to access the **Usage Report**. See the example in Figure 107. If the data in the usage report does not line up evenly with the headers:

1. Click the right mouse button on the usage report text.
2. Select **SetFont** from the drop-down menu.
3. Select **Courier Regular 8**.
4. Click **OK**.

	Medium (meter)	Total Toner (gram)	Toner Y (gram)	Toner C (gram)	Toner M (gram)	Toner K (gram)
Session Report:						
Web started at:	02-Mar-98 2:37:16 PM					
Web stopped at:	02-Mar-98 3:31:23 PM					
Duration:	00:54:07					
Printed:	388.1	1614	340	426	490	358
Trial printed:	0.0	0	0	0	0	0
Web Start/Stop:	15.7	4	1	1	1	1
Job Blank:	0.0					
Between Jobs:	3.3	27	6	7	8	6
Total:	407.1	1645	347	434	499	365
Report per job:						
.....						
Job Name :	Utest201					
Sheet Length :	10498	(pixels)	0.444	(meter)		
Printed Sheets :	476					
Trial Sheets :	0					
Printed:	211.4	366	74	100	113	79
Trial printed:	0.0	0	0	0	0	0
Job Blank:	0.0					
Consumed:	211.4	366	74	100	113	79
Web Start/Stop:	8.6	0	0	0	0	0
Between Jobs:	1.8	6	1	2	2	1
Total:	221.7	372	75	102	115	80
.....						
Job Name :	Drump201					
Sheet Length :	10498	(pixels)	0.444	(meter)		
Printed Sheets :	50					

Figure 107. Sample Usage Report

The Session Report: A session starts with a Web Start and stops with a Web Stop activity. A session report is an overview of all consumed print media and toner. A session report contains the following information:

- Web start date and time
- Web stop date and time
- Duration of a session
- Total amount of consumed print medium during the session expressed in meters. This is divided into four categories:
 1. Printed medium: The amount of actual printed medium.
 2. Trial printed medium: The amount of printed medium consumed during trial printing.

3. Blank medium: The amount of unprinted medium consumed during the imaging of jobs. The amount of unprinted medium consumed between two successive jobs is distributed over the jobs printed during the session.
 4. Web start/stop medium: The amount of unprinted medium consumed between Start Web and Start (trial) Printing of the first job, plus the medium used between Stop (trial) Printing of the last job and Stop Web. This amount of medium will be distributed over the jobs printed during the session.
- Total amount of consumed toner during the session expressed in grams.

Report per Job: A usage report also contains a report for each job printed during the session. A job report is an overview of all consumed print media and toner for a particular job. A job report contains the following information:

- Job Name
- Printed sheets
- Trial printed sheets
- Total amount of consumed print medium during the printing of a job expressed in meters. This is divided in four categories:
 1. Printed medium: The amount of actual printed medium.
 2. Trial printed medium: The amount of printed medium consumed during trial printing.
 3. Consumed: Total printed and trial print medium.
 4. Blank medium: The amount of unprinted medium consumed during the imaging of the job.

Between jobs: The (blank) medium and toner consumed between the imaging of successive jobs. This amount of medium/toner will be distributed over the jobs printed during the session.
- 5. Web start/stop medium; The amount of unprinted medium consumed between Start Web and Start (trial) Printing of the first job, plus the medium used between Stop (trial) Printing of the last job and Stop Web. This amount of medium will be distributed over the jobs printed during the session.
- Total amount of consumed toner during the printing of a job expressed in grams. The toner usage properties of a given activity, are the integral of the total flow over the time. The amounts of used toner calculated in the report, are simply the difference in toner usage between start and stop printing. One should take into account that this is inaccurate for short runs. Also this is dependent of the order in which jobs are printed: if a job with small occupation succeeds one with large occupation, it will be imaged for a while with toner that is still in the DVL unit (from the previous job), instead of with toner that is newly input in the DVL (flow=0) for a while. In this case a portion of the cost of the second job is allocated to the first one.

Logging: Activities: Copy Main

The **Copy Main** window, as shown in Figure 108 on page 99, allows you to copy the Main Activity Database for backup purposes. The database can be saved in the directory `c:\InfoPrint Color 100\EXPOSE\Activity\Database`. The saved databases can be used in database applications, for example Access.

Logging ⇒ Activities ⇒ Copy Main

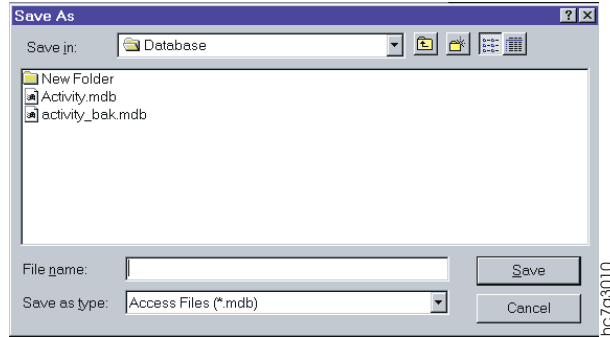


Figure 108. Copy Main Window

Logging: Activities: Clean Up Main

The **Clean Up Main** activity allows you to Clean up the Main Activity Database, for example, delete unimportant (old) activities.

Logging ⇒ Activities ⇒ Clean Up Main

You can delete the activities of the selected (sub)categories in the list tree and whose 'Date & Time' matches some criterion. The available criteria are:

1. Delete activities older than a month
2. Delete activities older than a week
3. Delete activities older than a day
4. Delete activities between...
5. Ignore Date & Time i.e. delete all of the selected activity categories.

If you select the **Reset** option, you can delete all activities. The PES restarts numbering the activities from the beginning (lowest possible id=20). There must be an APIS communication for this option to be enabled.

To avoid the `activity.mdb` getting too large, it is advisable to clean up the main database regularly, for example, every two months.

Logging: Activities: Close Main

The **Close Main** activity allows you to close the Main Activity Database and Xpose stops downloading activities from the PES.

Logging ⇒ Activities ⇒ Close Main

Logging: Activities: Open Main

The **Open Main** window, as shown in Figure 109 on page 100, allows you to reopen the Main Activity Database. Xpose will store the activities, downloaded from the PES, into the database.

Logging ⇒ Activities ⇒ Open Main

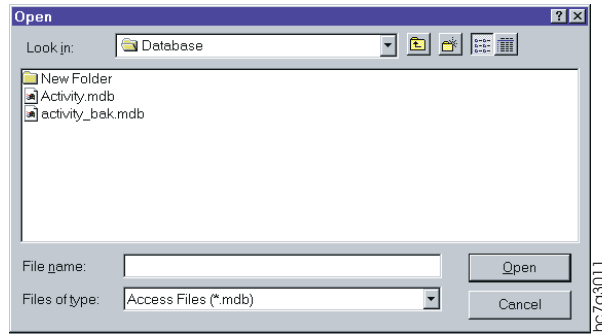


Figure 109. Open Main Window

Logging: Activities: Open

The **Open** activity allows you to open and view an external database. This database has to be previously saved with the **Copy Main** command.

Note: You can have only one external database open at a time.

Logging ⇒ Activities ⇒ Open

Logging: Activities: Defragment

The **Defragment** activity allows you to defragment a database. The main database is defragmented automatically when Xpose shuts down. If you want to explicitly defragment the main database, you have to close it first.

Logging ⇒ Activities ⇒ Defragment

Logging: Activities: Repair

The **Repair** activity allows you to repair a database. To repair the main activity database, you have to close it first.

Logging ⇒ Activities ⇒ Repair

Logging: Active Alarms

The **Active Alarms** window, as shown in Figure 110 on page 101, allows you to view the current error conditions.

Logging ⇒ Active Alarms



Ctrl+A

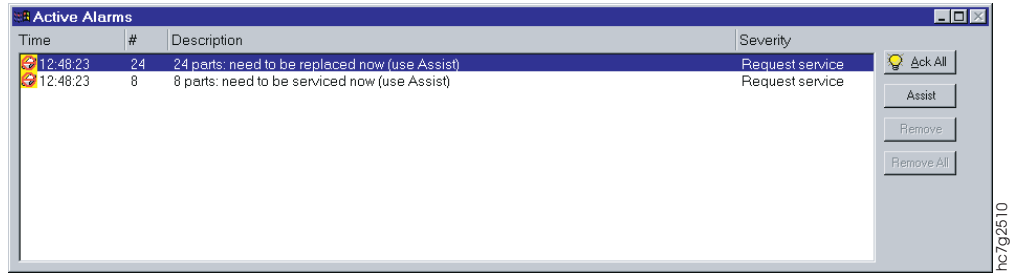


Figure 110. Active Alarms Window

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 345 for a detailed description of the **Active Alarms** window.

Logging: Open Xpose Log

Open Xpose Log allows you to view the PES logger, as shown in Figure 111.

Logging ⇒ **Open Xpose Log F12**



Figure 111. Open Xpose Log Window

Logging: Copy Pes Log

The **Copy Pes Log** function allows you to copy the PES log. When the file is copied, a window displays the directory and the log number on the PES platform, where the file was copied.

Logging ⇒ **Copy Pes Log F5**

Logging: Transfer Pes Log

The **Transfer Pes Log** window, as shown in Figure 112 on page 102, allows you to save the log file and transfer it from the PES to the RIP platform. Select the directory where you want to transfer the file. If you want the file to open automatically, select the **Open Log File** checkbox.

Logging ⇒ **Transfer Pes Log F6**

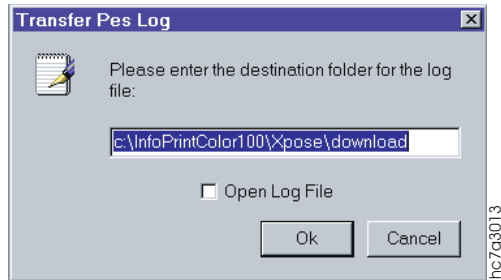


Figure 112. Transfer Pes Log Window

Logging: Transfer Page Buffer Log

The Page Buffer Log contains information about each printhead, and is used to troubleshoot the collator. The **Transfer Page Buffer Log** window, as shown in Figure 113, allows you to save the log file and transfer it to the RIP platform. Select the directory where you want to transfer the file. If you want the file to open automatically, select the **Open Log File** checkbox.

Logging ⇒ **Transfer Page Buffer Log F12**

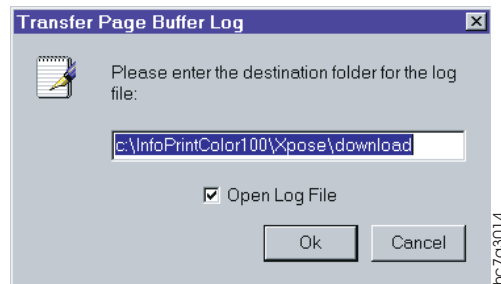


Figure 113. Transfer Page Buffer Log Window

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 23 for more information.

Using the Window Menu Functions

In addition to the traditional Window menu functions (Cascade, Tile Horizontal, Tile Vertical, Arrange Icons, and Close All), the InfoPrint Color 100 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 InfoPrint Color 100** 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 114.



Figure 114. Load and Save Workspace Functions

Note: The properties of the **Explorer** windows cannot be saved with the Windows Save command.

Using the Help Menu Functions

The following functions are available from the **Help** menu:

Table 44. Help Menu Functions

Menu Item	Description
Index	The Index menu item is not used.
Tip of the Day	Help ⇒ Tip of the Day Displays useful tips. Select the Next Tip pushbutton to display another tip.
Search for help on...	Help ⇒ Search for help on... Type or select a keyword to get information about a subject.
How to use help	Help ⇒ How to use help Provides information about how to use the Windows help system.
About	Help ⇒ About Provides some copyright information and the version of this application.

Summary of the Most-Used Functions



This section summarizes the functions the operator uses most often to operate and maintain the InfoPrint Color 100:

- After turning on the printer (See Table 45 on page 104.)
- Managing the printing process (See Table 46 on page 104.)
- Print Quality (See Table 47 on page 105.)
- Maintaining the printer (See Table 48 on page 106.)

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

To perform this task...	Use this function, and...	Go here for a description of the task
Check the state of the print engine after turning on the printer.	Process Control ⇒ Engine State  Ctrl+E	"Monitoring the Engine" on page 241
Ensure the air in the print tower is at the optimum temperature after turning on the printer.	Process Control ⇒ Conditioning 	"Checking the Air Temperature of the Print Tower" on page 114

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 46. Summary of Most-Used Functions — Managing the Printing Process









To perform this task...	Use this function, and...	Go here for a description of the task
Monitor printing from after conversion of the job to bitmaps, through the final printing.	File ⇒ Print Sequence 	"Chapter 8. Printing and Managing the Printing Process" on page 183
Stop the print engine for a problem.	File ⇒ Print Sequence 	"Interrupting Printing for a Problem" on page 197
Stop the print engine for an emergency.		"Emergency Stop" on page 196
Determine when the print engine is ready for printing.	Process Control ⇒ Engine State  Ctrl+E	"Understanding Print Engine States" on page 242
Prepare the print engine for printing after an emergency stop.	Process Control ⇒ Engine State  Ctrl+E	"Understanding Print Engine States" on page 242

Table 46. Summary of Most-Used Functions — Managing the Printing Process (continued)

To perform this task...	Use this function, and...	Go here for a description of the task
Monitor paper-conditioning parameters and adjust setpoints.	Process Control ⇒ Print Medium Settings 	“Monitoring Print Medium Conditioning” on page 243
Monitor tower-conditioning parameters and adjust setpoints.	Process Control ⇒ Conditioning 	“Monitoring Tower Conditioning” on page 245
Monitor the fusing system and adjust setpoints.	Process Control ⇒ Print Medium Settings 	“Monitoring the Fusing System” on page 250

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 47. Summary of Most-Used Functions — Print Quality









To perform this task...	Use this function, and...	Go here for a description of the task
Adjust color registration.	Process Control ⇒ Register Control  Ctrl+R OR IBM ⇒ Auto Registration 	“Manually Measuring and Adjusting Color Registration” on page 209
Adjust cutter registration.	Process Control ⇒ Register Control  Ctrl+R	“Measuring and Adjusting Cutter Registration” on page 210
Adjust front-to-back registration.	Process Control ⇒ Register Control  Ctrl+R	“Measuring and Adjusting Front-to-Back Registration” on page 212
Adjust signature position.	Process Control ⇒ Register Control  Ctrl+R	“Measuring and Adjusting Signature Position” on page 215

Table 47. Summary of Most-Used Functions — Print Quality (continued)

To perform this task...	Use this function, and...	Go here for a description of the task
Monitor density-control parameters and adjust setpoints.	Process Control ⇒ Density Control  Ctrl+D OR IBM ⇒ Auto Density 	"Controlling Density" on page 221
Check the age of the developer.	Process Control ⇒ Toner Concentration Setpoint	"Correcting for High-Coverage Jobs" on page 230
Monitor and adjust the tension of the web.	Process Control ⇒ Web  Ctrl+W	"Monitoring and Adjusting Web Tension" on page 237

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 48. Summary of Most-Used Functions — Maintaining the Printer







To perform this task...	Use this function, and...	Go here for a description of the task
Begin the procedure for changing the paper roll.	Operations ⇒ Mount Print Medium  Ctrl+M	"Starting the Roll-Change Procedure" on page 265
Specify the correct paper type after changing to a different type of paper.	Operations ⇒ Mount Print Medium  Ctrl+M	"Specifying the Correct Paper Type" on page 279
Correct the alignment of the paper supply to the print tower.	Explore ⇒ Register Control  Ctrl+R	"Correcting the Alignment of the Paper Supply" on page 280
Refill the toner containers.	Operations ⇒ Refill Toner Containers 	"Refilling the Toner" on page 303

Table 48. Summary of Most-Used Functions — Maintaining the Printer (continued)

To perform this task...	Use this function, and...	Go here for a description of the task
Know when you can continue printing after refilling the toner containers.	Maintenance ⇒ Toner Containers  Ctrl+N	“Refilling the Toner” on page 303
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.	Operations ⇒ Service Intervention	“Refilling the Toner” on page 303, “Preparing to Do Maintenance” on page 289, and “Chapter 15. Finding and Solving Problems” on page 313
Know when to replace the toner waste bottles.	Maintenance ⇒ Toner Containers  Ctrl+N	“Replacing Toner Waste Bottles” on page 308

Chapter 3. Getting Started with the InfoPrint Color 100

This chapter is divided into two sections:

- Operating Guidelines — these should be read before using the InfoPrint Color 100.
- Startup procedures — these explain how to get the InfoPrint Color 100 ready for printing. See “Startup Procedures for the InfoPrint Color 100” on page 110.

Operating Guidelines

Before you operate the InfoPrint Color 100, 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 InfoPrint Color 100

During Printing

Attention:

When the InfoPrint Color 100 is printing, observe the following guidelines so you won't damage the print engine:

- Do not shut down the RIP controller.
- 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 jogger.
- Do not leave the InfoPrint Color 100 unattended.

Heated Elements



CAUTION:

<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

CAUT0116

The InfoPrint Color 100 contains three elements that heat during printing:

- Heated rolls
- The fuser system
- The GEM

Paper Types

See the *IBM InfoPrint Color 100 Print Media Guide* for the current list of approved media. This list is updated from time to time as IBM continues to approve additional media. You can download the *IBM InfoPrint Color 100 Print Media Guide* from the following internet address:

Idle Time

Whenever the InfoPrint Color 100 is going to be idle and unattended for a time, such as overnight, you should always shut down the printer (see “Chapter 12. Shutdown Procedures for InfoPrint Color 100” on page 285).

Ozone Filtering

When the InfoPrint Color 100 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 “Emergency Stop” on page 196.

Wearing Jewelry

The InfoPrint Color 100 operator should always remove all jewelry before replacing paper and toner, doing scheduled maintenance tasks, or finding and solving problems inside the InfoPrint Color 100.



CAUTION:

<2-35> Remove all watches, rings, jewelry, and other articles (such as a necktie) that may catch on printer parts before working in this area.

hcsf0235

Startup Procedures for the InfoPrint Color 100

This section describes how to perform the following startup procedures:

- Switching on the InfoPrint Color 100 printer and collator
- Ensuring InfoPrint Color 100 readiness

The InfoPrint Color 100 must be switched on in the following order.

- The printer
- The collator
- The PES control unit
- The RIP controller

Power-On Procedure for the InfoPrint Color 100 Printer

To switch on the InfoPrint Color 100 printer and collator power, follow these steps:

1. Open the fixed tower door on the left side of the machine, as shown in Figure 115 on page 111.

Note: When describing the doors of the InfoPrint Color 100, the front of the machine is the paper supply and the back of the machine is the output jogger.

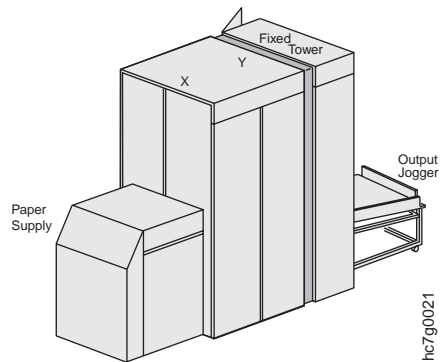


Figure 115. Right Side View of the InfoPrint Color 100

2. If night tower conditioning is not active, turn the main switch of the InfoPrint Color 100 to the **On** position, as shown in Figure 116. If night tower conditioning is active, the main switch is already in the **On** position.

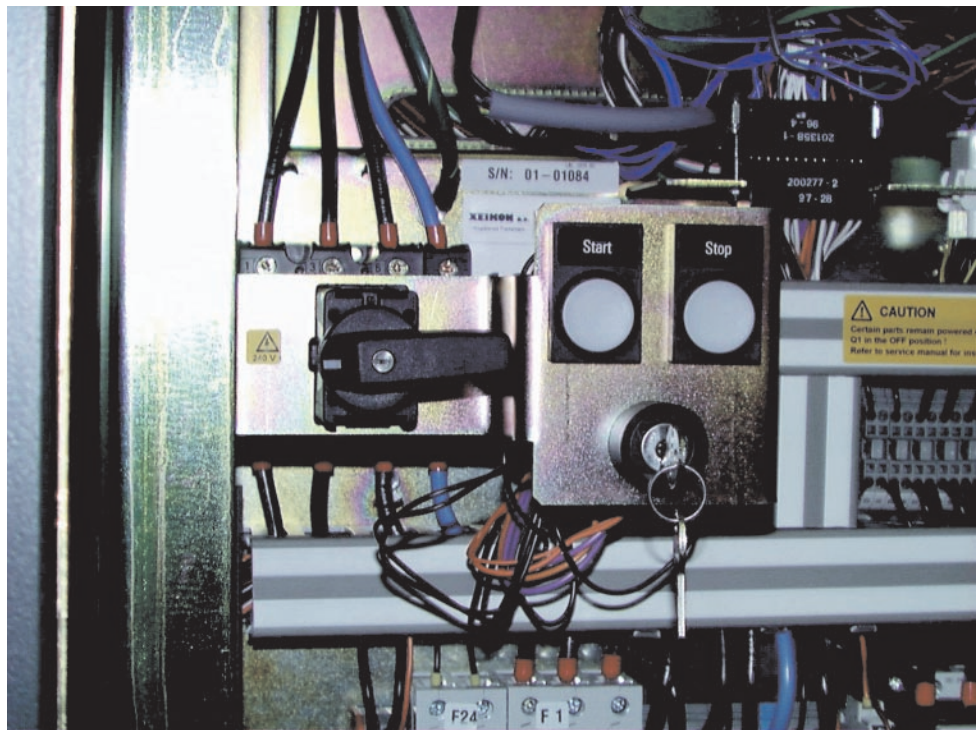


Figure 116. InfoPrint Color 100 Main Switch

3. Press the **Start** pushbutton.
4. Close the fixed tower door.
5. Turn the power switch on the front panel of the collator to the '1' position as shown in Figure 117.

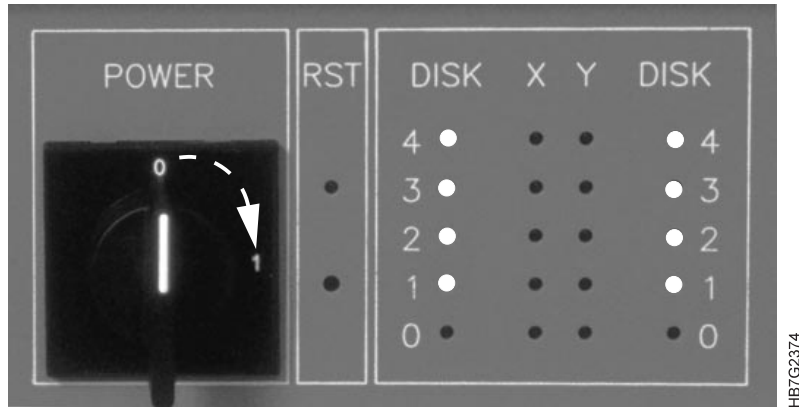


Figure 117. Collator Front Panel

6. 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.
7. Ensure that the PES/RIP switch is in the PES position. This ensures that the keyboard and the monitor are in the PES mode. See Figure 118 on page 113 for the location of the switch.

Note: The InfoPrint Color 100 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 InfoPrint Color 100. The **PES/RIP** switch allows you to switch from one platform to the other.



Figure 118. InfoPrint Color 100 Console

8. When the collator has initialized, switch on the PES control unit power. See Figure 118 for the location of the switch. The PES software loads.

Wait for the following to display:

==Engne status change==

==Engne status change==

+++Engine ready+++

to display on the PES screen in the Engine control panel.

The collator and the PES platform must be running for the RIP controller to launch **Xpose**. Since the RIP controller is the printing network server; it may be running so that others in the network can communicate (input jobs). If the RIP controller is running, in Step 9, when you switch the PES/RIP switch to RIP, the Windows desktop displays. Select the InfoPrint Color 100 icon to launch **Xpose**.

9. Switch the PES/RIP switch to the RIP position. This ensures that the keyboard and the monitor are in the RIP mode.
10. Ensure that no diskettes are in the RIP drive.
11. If the RIP controller is not running, switch on the RIP controller power. You will have to wait approximately 2 minutes for the RIP controller to initialize and Windows NT to load. The **Begin Logon** window opens.
12. Press **Ctrl+Alt+Delete** to open the **Logon Information** window, and then log on. You will need a user ID and a password.
Xpose launches automatically.

Ensuring InfoPrint Color 100 Readiness

After you power on the InfoPrint Color 100 and before you print jobs, you need to check the readiness of the following:


- Air temperature and humidity (page 114)
- Supplies (page 114)
- Output jogger (page 115)

Checking the Air Temperature of the Print Tower

After you switch on the InfoPrint Color 100, 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 245 describes how to monitor the print tower temperature and humidity.

To check the setpoint temperature after turning on the InfoPrint Color 100, follow these steps:

1. Open the **Conditioning** window, as shown in Figure 119.

Process Control ⇒ **Conditioning** 

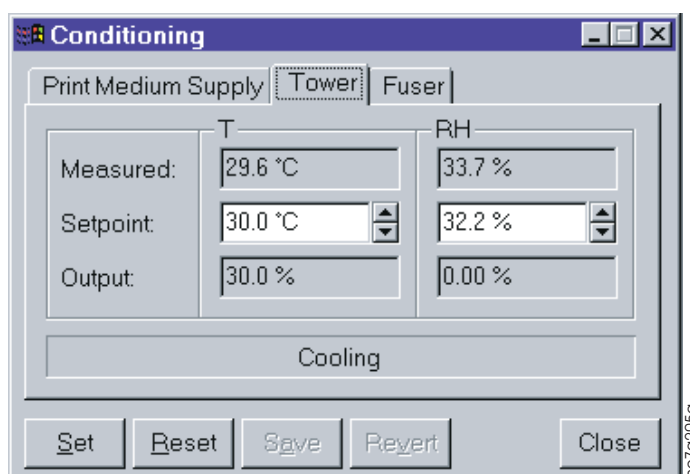


Figure 119. Tower Conditioning Window

2. Check the measured TWR T temperature.
3. If the temperature is below the range of 27–30°C, leave on tower conditioning. Tower conditioning also keeps the humidity from going too high.
4. If the measured humidity is low, check the humidifier water level.

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 11. Managing Paper Rolls” on page 265 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 14. Checking and Refilling Toner” on page 303.

Setting Up the Output Jogger

Good stacking on the output jogger can almost always be achieved by a good combination of height, side, and back-inclination of the jogger. Some experimentation may be necessary.

The output jogger can stack approximately 1000 sheets, 100 gsm (stack height of approximately 100 mm).

Note: For good stacking, it is important that the antistatic bars in the printer paper output are working properly. Therefore, check whether the high voltage transformer is working (the on/off switch of the transformer must produce a red light) and whether both bars are clean. If the bars are covered with dust and dirt, clean them with pressurized air.

Use the following procedure to set up the jogger.

1. Position the jogger so that when the print medium exits the printer it slides approximately 1 cm to the left, before stopping against the sidestop. See Figure 120 on page 116.

Note: When the jogger is too far to the left (> 1 cm), the print medium slides too far across the table before reaching the sidestop, increasing the chance of stacking problems.

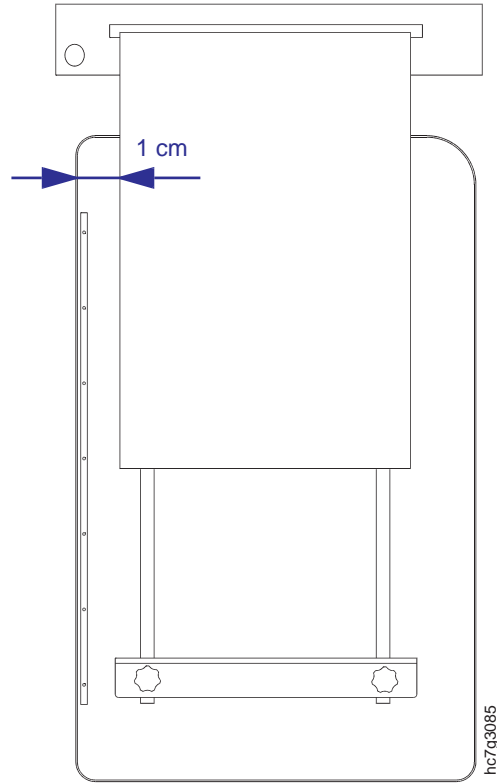


Figure 120. Position of the Jogger

2. The distance between the front edge of the table and the paper backstop must be approximately 5 cm (2 inches) larger than the length of the stacked print medium. See Figure 121 on page 117.

Note: When the distance between the backstop and the front edge of the table is too large ($>$ length print medium + 5 cm) or when the table as a whole is standing too far from the printer, the sheets must slide too far along the table, increasing the chance of stacking problems.

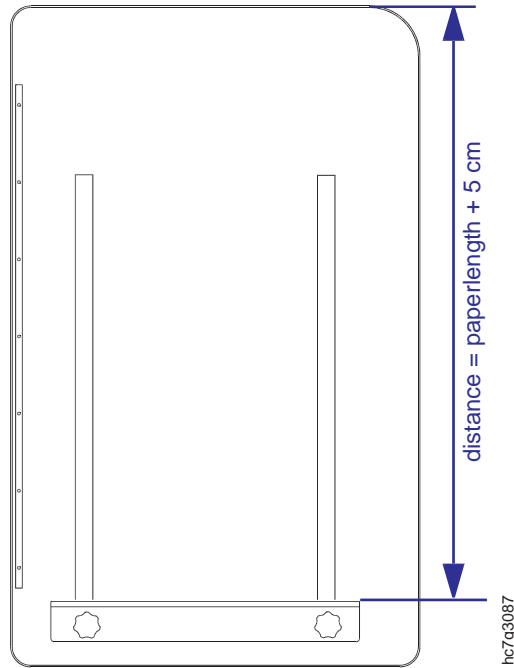


Figure 121. Position of Backstop

To adjust the position of the backstop:

- a. Turn the two knobs on the backstop half a turn counter-clockwise, as shown in Figure 122.



Figure 122. Backstop Knobs

- b. Slide the backstop to the correct position (= length of the stacked print medium + 5 cm) and tighten the two knobs to hold the backstop in place.

Adjusting the Inclination of the Output Jogger

The output jogger is supported by three adjustable legs, as shown in Figure 123 on page 118.

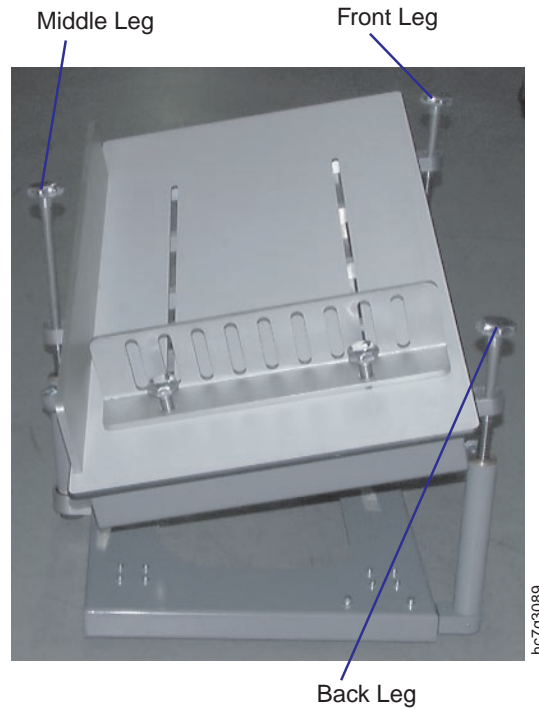


Figure 123. Output Jogger Adjustable Legs

1. Adjust the front leg on the right side of the jogger so that the front edge of the jogger is just below the air outlet of the printer paper output.
2. Adjust the middle leg on the left side of the jogger for the side-inclination. The lower this leg, the more side-inclination, the faster the print medium slides across the jogger towards the sidestop.
3. Adjust the back leg on the right side of the jogger for the back-inclination. The lower this leg, the more back-inclination, the faster the print medium slides along the jogger towards the backstop.

Do the following to adjust a leg:

1. Turn the vertical knob on the leg half a turn counter-clockwise, as shown in Figure 124.



Figure 124. Turning the Vertical Knob

2. Turn the horizontal knob on the leg clockwise to lower the jogger, or counter-clockwise to raise the jogger, as shown in Figure 125.



Figure 125. Turning the Horizontal Knob

3. Lock the leg into position by turning the vertical knob clockwise.

Controlling Engine Paper Output Air Flow

The amount of air flow produced by the printer paper output is important for obtaining good stacking results. Generally, the lighter the paper (especially for papers less than 100 gsm), the lower you need to set the air flow.

You can adjust the air flow with the black knob on the left side of the printer paper output, as shown in Figure 126 on page 120.

- Turn the knob clockwise to increase the air flow.
- Turn the knob counter-clockwise to decrease the air flow.



Figure 126. Adjusting the Air Flow

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Chapter 4. Preparing Jobs for InfoPrint Color 100 Output

The InfoPrint Color 100 is fully compatible with PostScript, the industry standard page-description language, and can print jobs coming from any prepress system that produces PostScript.

To successfully produce jobs, you need a thorough knowledge of the InfoPrint Color 100'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 prepress process.

Image Preparation for the InfoPrint Color 100

This section describes:

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

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 InfoPrint Color 100 is completely different from the halftone technique. Although you can define a screen frequency for the InfoPrint Color 100 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 49 shows how an increase in dpi can significantly increase the size of a file.

Table 49. 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

Table 49. Image Resolution versus File Size (continued)

Image Dimensions	200 dpi	175 lpi 1.5x (262 dpi)	300 dpi	175 lpi 2.0x (350 dpi)	400 dpi
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 prepress systems that exist and are widely used today are geared toward producing offset output.

The standard input-output relationship in the InfoPrint Color 100 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 InfoPrint Color 100 have a color definition based on the Euroscale standard of offset printing, the result is acceptable reproduction quality. Because the InfoPrint Color 100 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). The print engine is capable of continuous printing up to 70% coverage per cyan, magenta, yellow, and black (CMYK) color on each side of the page.

Using a higher amount of grey 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 InfoPrint Color 100 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. For example, the InfoPrint Color 100 does not use film or a chemical developer which requires periodic calibration. Because the InfoPrint Color 100 does not exhibit measurable dot gain, there is no need for traditional calibration. However, registration, density, transfer, and bias values must be maintained properly for 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 prepress process, instead of during the RIP process. Using color management software with the ICC compliant color profile for the InfoPrint Color 100, you can match screen colors to print colors as close as possible and enable color management on screen proofing or print proofing.

Note: On screen proofing requires a calibrated monitor.

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 InfoPrint Color 100 combines cyan, magenta, yellow, and black (CMYK). Color management in prepress is accomplished through the use of profiles, which contain a table of values for the transformation of colors.

To install the InfoPrint Color 100 profile on the prepress workstation, follow the profile installation procedure for your color management software. The profile is named IPC100 on the IBM InfoPrint Color 100 Macintosh Utilities diskette.

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

Note: If you adjust the color during prepress, you must disable color management during the RIP.

To disable color management during the RIP, set color correction in the **Page Setup** window (Figure 127) to disabled. See “Defining Page Setups and Paper Sizes” on page 163 and “RIP Options Parameters” on page 165 for more information on defining the page setup.

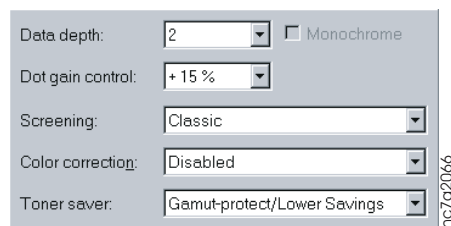


Figure 127. RIP Options Parameters in Page Setup Window

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 view file, 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 InfoPrint Color 100 prints from composite (non-separated) PostScript. Thus, when you output jobs containing DCS files to the InfoPrint Color 100, only the low-resolution view files will be present in the PostScript file. If you have no solution to this problem, then you should not use the DCS file format.¹

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.

Note: RGB images should be converted to CMYK. The InfoPrint Color 100 RIP will convert RGB to CMYK, however the results may vary when compared to a prepress conversion of RGB to CMYK, of the same image.

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

Print Preparation for the InfoPrint Color 100

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 InfoPrint Color 100 need not be very complicated. An example of a small, inexpensive utility that can be used is Build Booklet (Adobe Addition).

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

Trapping

Because the InfoPrint Color 100 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 InfoPrint Color 100 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 InfoPrint Color 100

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, use the supplied diskette to install the Microsoft and Adobe PostScript printer driver that comes with Windows 95 software.

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 InfoPrint Color 100; 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”).

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 128.

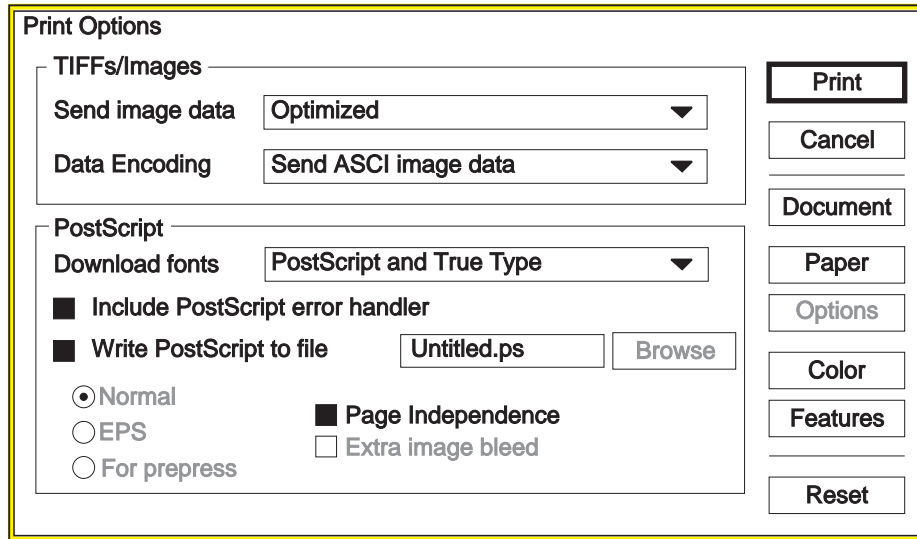


Figure 128. Sample Print Options Dialog from Adobe PageMaker 6.0

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 129 on page 129.

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

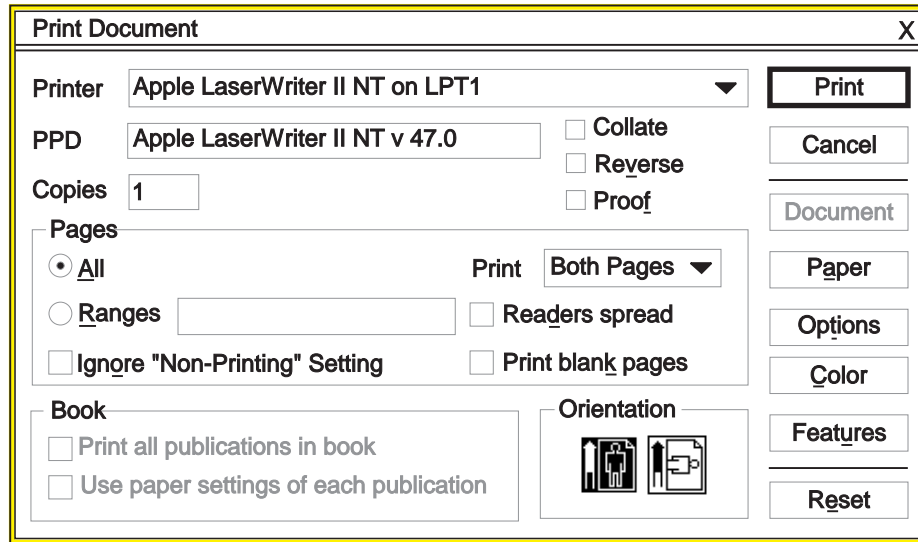


Figure 129. Sample Print Document Dialog from Adobe PageMaker 6.0

2. Select the correct paper size from the **Size** drop-down menu, as shown in Figure 130. You can select either a standard paper size, or a custom paper size.

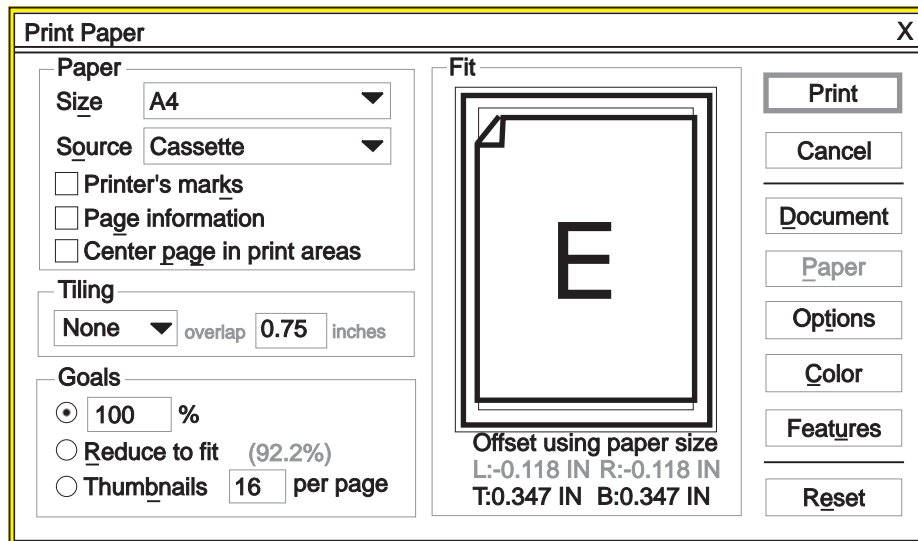


Figure 130. Sample Paper Dialog from Adobe PageMaker 6.0

If you select a custom paper size, the **Custom Paper Size Pop-up** window, as shown in Figure 131 on page 130, 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**.

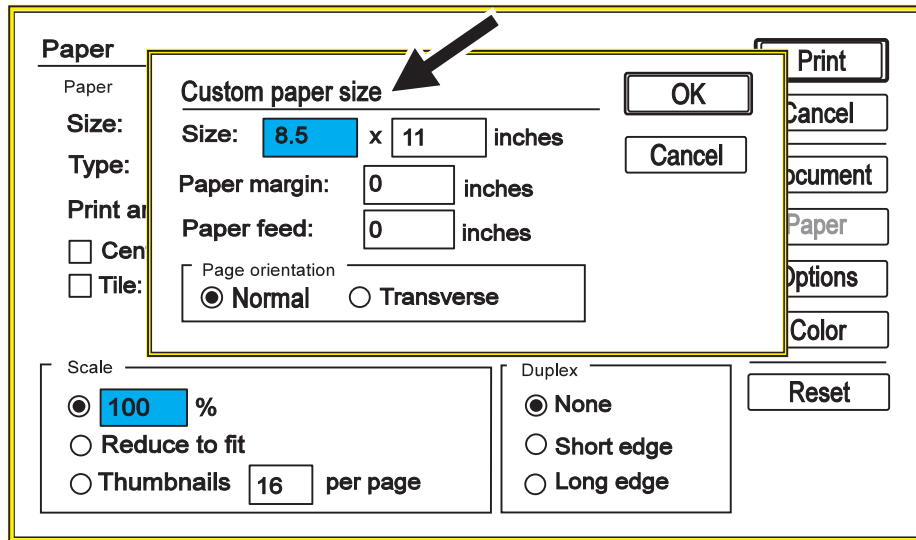


Figure 131. Sample Custom Paper Size Pop-Up Window from Adobe PageMaker 6.0

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, as shown in Figure 132 on page 131.

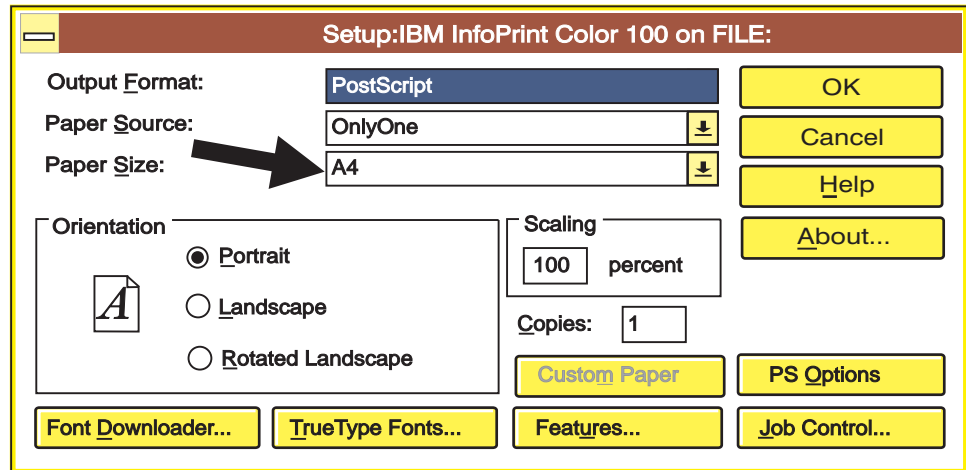


Figure 132. Sample Setup: IBM InfoPrint Color 100 on LPT1 Window from Adobe PageMaker 6.0

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 133 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 InfoPrint Color 100: 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.

Set the values in the **Page Setup** dialog, as shown in Figure 133 on page 132, following the instructions below for **Orientation**, **Printer Type**, **Halftone Screen**, **Paper Offset**, **Page Gap**, and **Paper Width**.

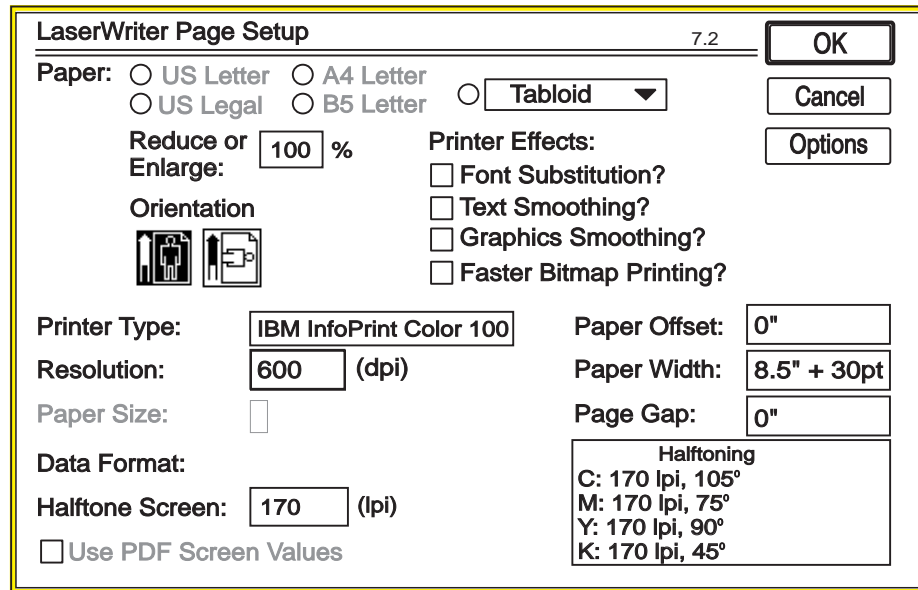


Figure 133. Sample LaserWriter Page Setup Window from QuarkXPress 3.32

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 InfoPrint Color 100 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 InfoPrint Color 100 PDF, not the InfoPrint Color 100 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 InfoPrint Color 100** in the plain style type.

Halftone Screen

Set the **Halftone Screen** edit box to 170 lpi, the fixed screen frequency of the InfoPrint Color 100.

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:

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

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. Click **OK** and 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 24 pt, if crop marks are turned on.
6. Enter this value in the **Paper Width** edit box.

For example, you can type the 8.5" + 60 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 InfoPrint Color 100, in which case the job should be rotated on the InfoPrint Color 100 console in the **Page Setup RIP...** window.

TIFF Sub-Sampling

Although the screen ruling value entered in the **Page Setup** window **Halftone Screen** edit box does not influence the screening of the InfoPrint Color 100, 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 134.

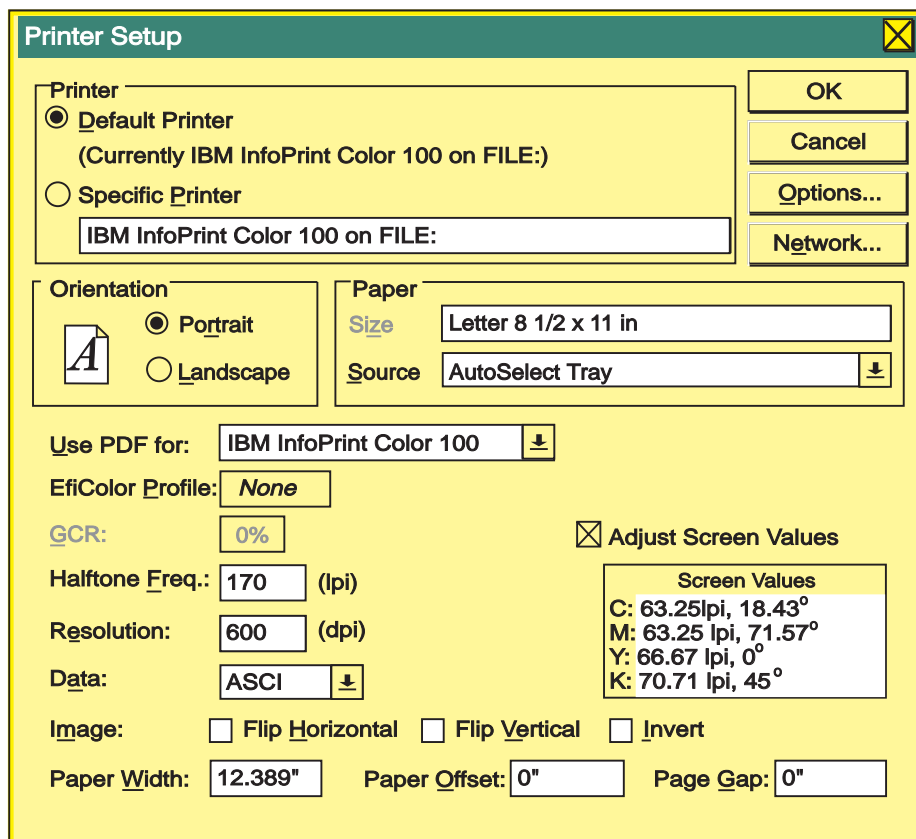


Figure 134. Sample Print Setup Window from QuarkXPress 3.32

When using this window you should use the following settings:

Specific Printer:

IBM InfoPrint Color 100 on FILE

Use PDF for:

IBM InfoPrint Color 100

Efi Color Profile:

None

Half-tone Freq:

170

Resolution:

600

Data: ASCII

Note: When making a selection in the **Use PDF for** drop-down, hold down the shift key, click the down arrow, and select **IBM InfoPrint Color 100** 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 InfoPrint Color 100.

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 135.

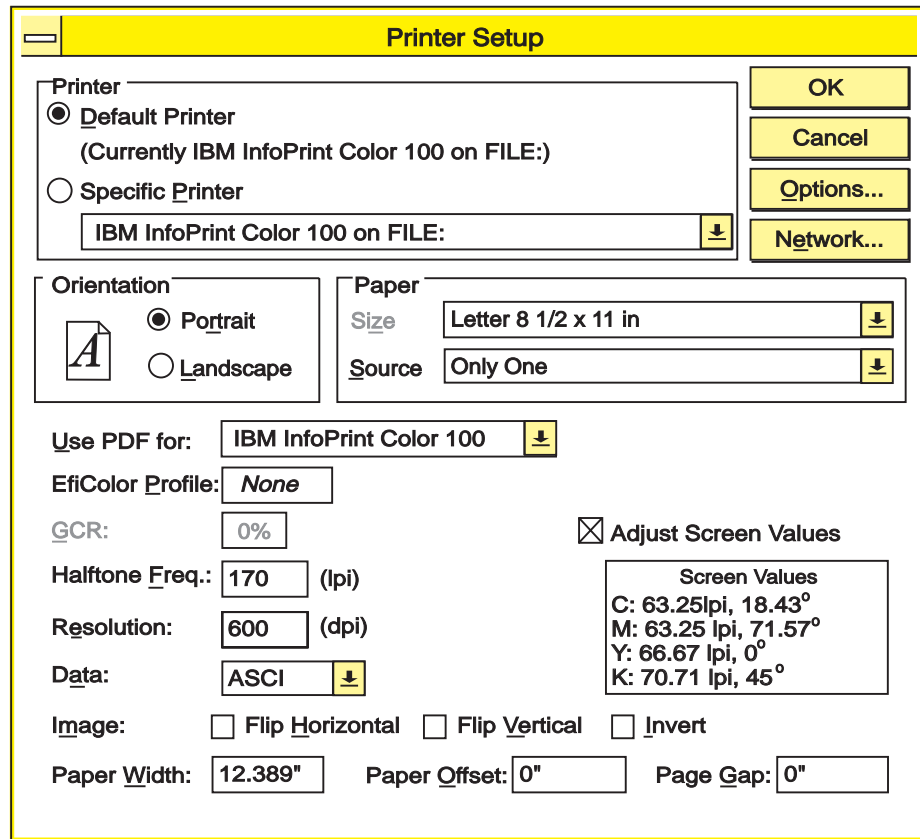


Figure 135. Sample Printer Setup Window from QuarkXPress 3.32

When using this window you should use the following settings:

Specific Printer:

IBM InfoPrint Color 100 on FILE

Use PDF for:

IBM InfoPrint Color 100

Efi Color Profile:

None

Halftone Freq:

170

Resolution:

600

Data: ASCII

Note: When making a selection in the **Use PDF for** drop-down, hold down the shift key, click the down arrow, and select **IBM InfoPrint Color 100** 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 InfoPrint Color 100.
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 InfoPrint Color 100.

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 employee's name, a business partner's name or other companies' names.

This section describes the following:

- The IBM Variable Data System
- How variable data jobs are created
- Creating variable data files with IBM's Variable Data Support Software
- Guidelines for creating variable data jobs
- Using QuarkXPress XTensions
- Using PageMaker Plug-Ins

The IBM Variable Data System

The Variable Data System (VDS) provides the user with the ability to produce customized documents.

The InfoPrint Color 100 can merge variable data information, consisting of text and graphics, and permits an unlimited number of variable data fields per page. 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 "Appendix B. Manual Method to Create Variable Data" on page 363.

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 B. Manual Method to Create Variable Data" on page 363.

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 prepress 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 prepress 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 InfoPrint Color 100 and allows you to easily combine the variable data files with the master PostScript file and print variable data jobs.

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
- Define variable data fields
- Create variable data boxes or objects
- Produce variable data jobs
- Transfer the files to the InfoPrint Color 100 (see “Transferring Variable Data Files to the InfoPrint Color 100” on page 157)

The files can then be RIPed, (“RIPing Variable Data Files” on page 172), and printed (“Submitting Variable Data Print Jobs” on page 184).

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 InfoPrint Color 100. If another font is used for the variable data text, it must be mapped to an InfoPrint Color 100 resident font in the `ibmvdata.vda` file in the `C:\PM6\RSRC\USEGLISH\PLUGINS` directory (where C: is the drive where the application resides), 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 or there may be unexpected results with special characters; for example, a bullet character in one font is a Yen character in another. For best results, create the data file with one of the supported fonts.
- 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 be rotated in QuarkXPress for Macintosh, not QuarkXPress for Windows 95 or PageMaker for Windows 95.
- Variable data objects may not be skewed.
- Variable data objects cannot be trapped.

- 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 136.

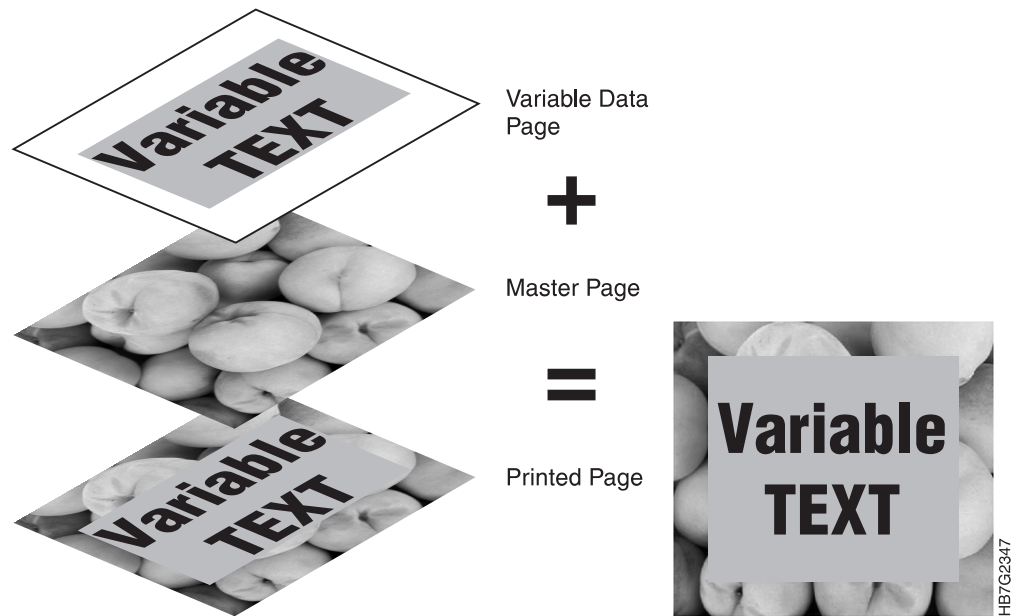


Figure 136. Sample "Knockout" Job Type

- 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 137 on page 140.

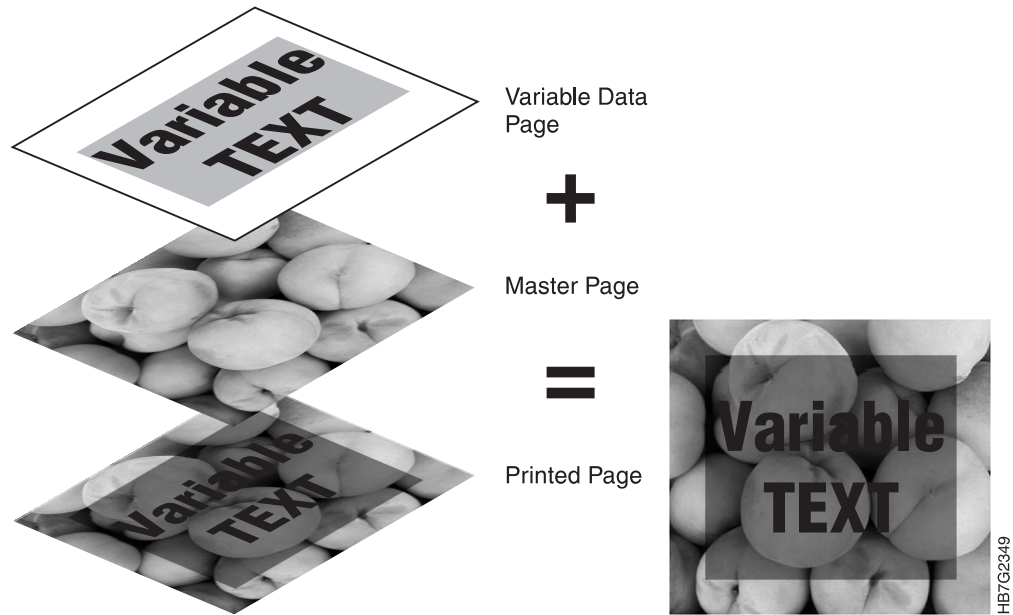


Figure 137. Sample "Overprint" Job Type

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 138 on page 141 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.

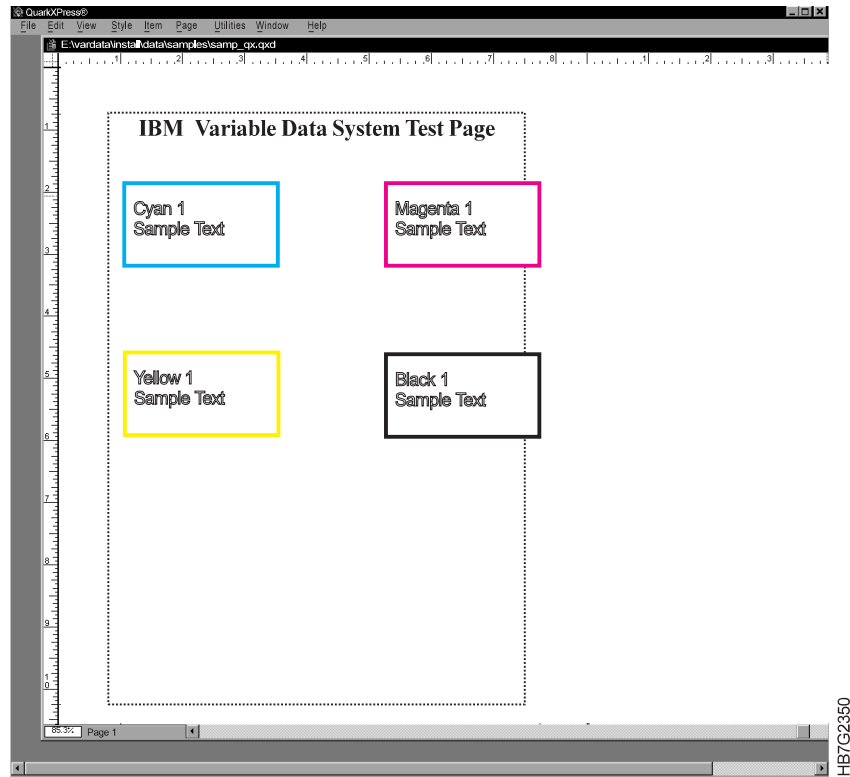


Figure 138. Sample Document of QuarkXPress release 3.32

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 139 on page 142.

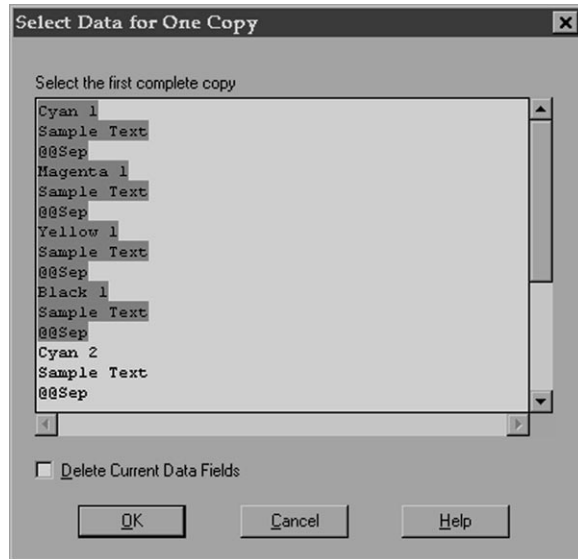


Figure 139. Select Data for One Copy Dialog

5. Click the **OK** pushbutton.

This opens the **Define Variable Data Fields** dialog, as shown in Figure 140.

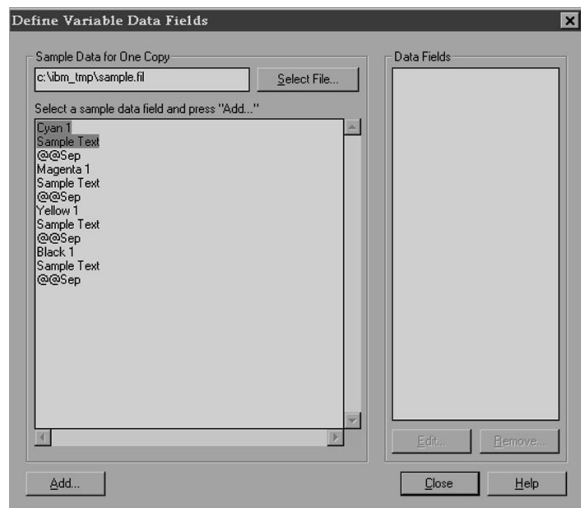


Figure 140. Define Variable Data Fields Dialog

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 140.

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

This opens the **Name Variable Data Field** dialog: as shown in Figure 141 on page 143.

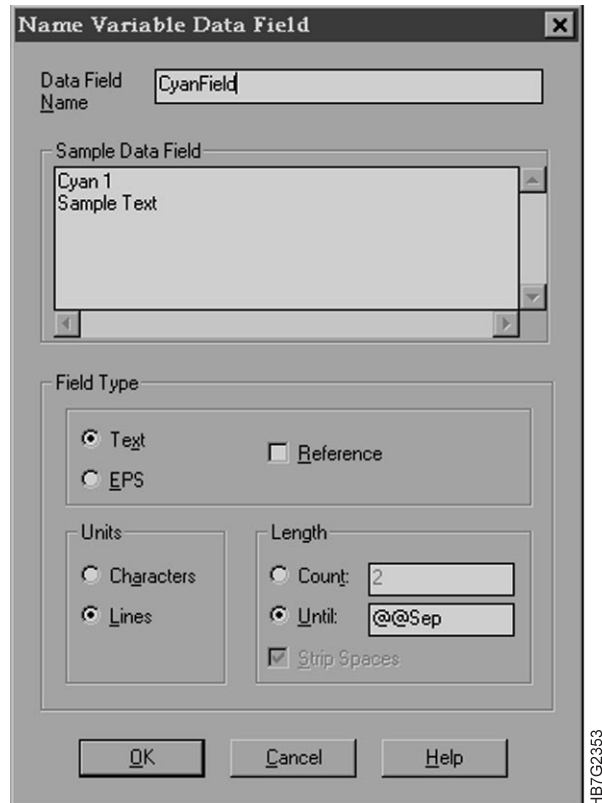


Figure 141. Name Variable Data Field Dialog

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 InfoPrint Color 100” on page 158) 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 (in Windows 95, include the drive designation) 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:

- a. Type the QuarkXPress font name in the left column, replacing blanks and commas in the name with “-”.
- b. 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 142 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 labeled with the name, as shown in Figure 143 on page 145.

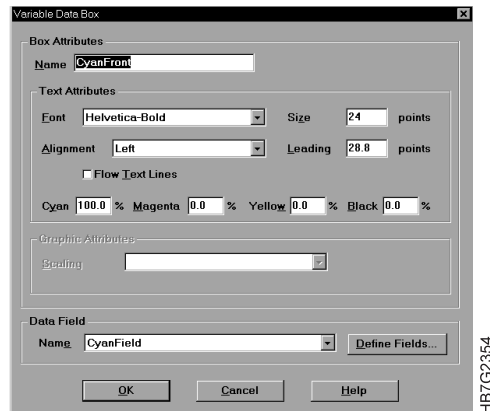


Figure 142. Variable Data Box Dialog

- Repeat steps 1 through 3 on page 143 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.

Note: If you use the drop-down menus to copy and paste variable data boxes, you must manually change the name of the variable data box, since two variable data boxes cannot have the same name. However, if you use the COMMAND-D (duplicate function) key sequence to copy the variable data box, the name changes automatically; a 1, 2, etc. is added to the end of the existing name.

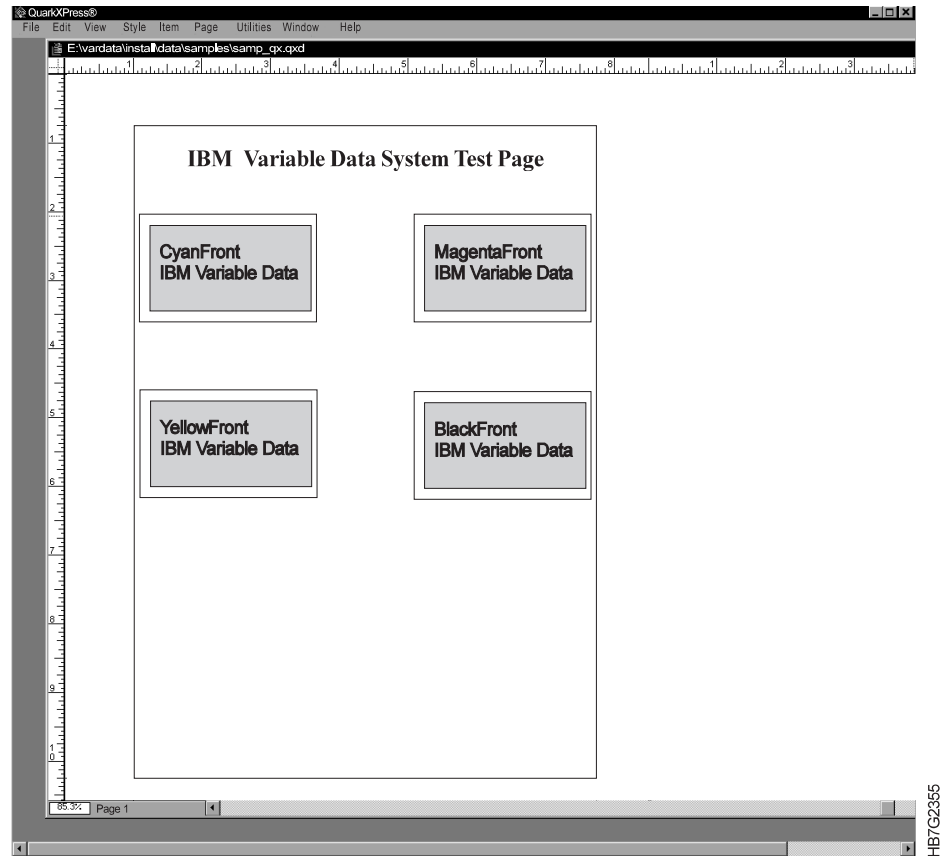


Figure 143. Final Sample QuarkXPress (Release 3.32) Document with Variable Data

- 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:

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

Field	Value
IBM InfoPrint Color 100 on FILE	
Use PDF for	IBM InfoPrint Color 100

Field	Value
Efi Color Profile	None
Halftone Freq	170
Resolution	600
Data	ASCII
Image: Flip Horizontal	Not Checked
Image: Flip Vertical	Not Checked
Image: Invert	Not Checked
Orientation	Portrait

Note: When making a selection in the **Use PDF for:** drop-down, hold down the shift key, click the down arrow, and select **InfoPrint Color 100** 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. See "Paper Width" on page 133 for information about calculating the paper width.
4. Click 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 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. Use the following field settings for the **Print** :

Field	Value
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. Click the **OK** pushbutton to save the settings and return to the document.
11. From the menu bar, select **Utilities** ⇒ **IBM Produce Variable Data Job**
This opens the **IBM Produce Variable Data** dialog.
12. Copy the name of the PostScript file to the clipboard.
13. Click the **OK** pushbutton to create the files used for printing.
14. 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** ⇒ **Page 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 InfoPrint Color 100
Halftone Screen	170
Paper Offset	0
Paper Width	see below

Note: When making a selection in the **Use PDF for:** drop-down, hold down the shift key, click the down arrow, and select **InfoPrint Color 100** 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. See “Paper Width” on page 133 for information about calculating the paper width value.
4. Click the **OK** pushbutton to save the settings and return to the document.
5. From the menu bar, select **Utilities** ⇒ **IBM Produce Variable Data Job**
This opens the **IBM Produce Variable Data** dialog.
6. Click 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 144 on page 148 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.

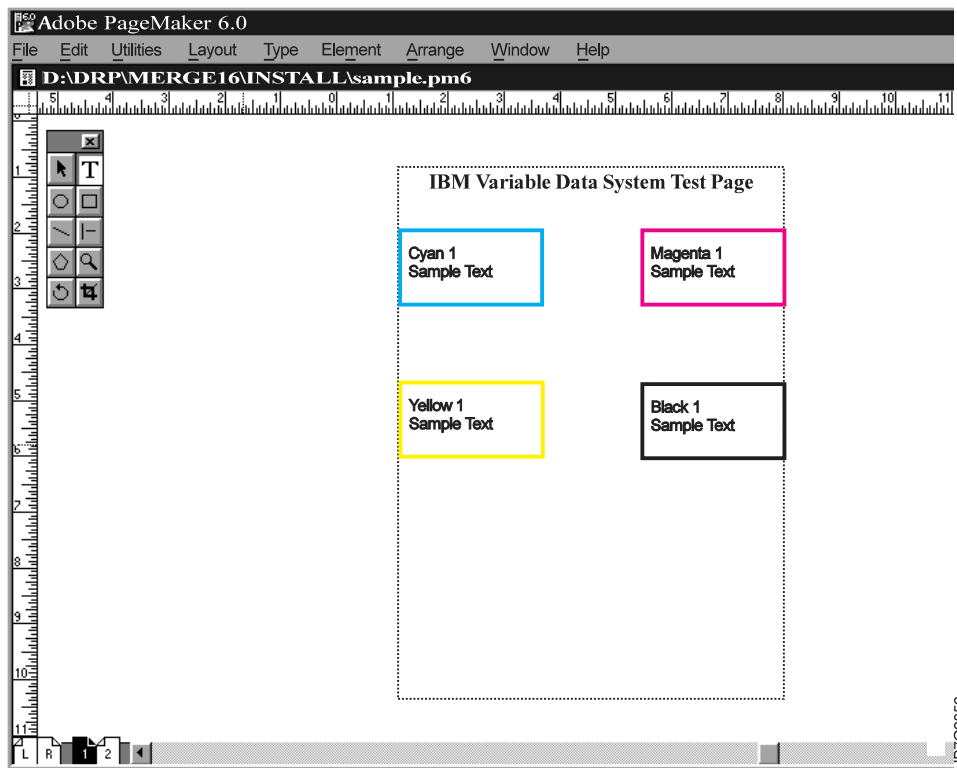


Figure 144. Sample Publication of Adobe PageMaker Release 6.0

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.

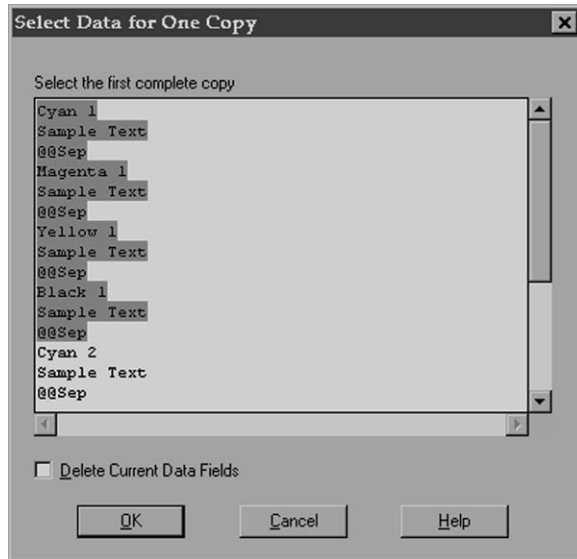


Figure 145. Select Data for One Copy Dialog

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 145.
5. Click the **OK** pushbutton.
This opens the **Define Variable Data Fields** dialog.

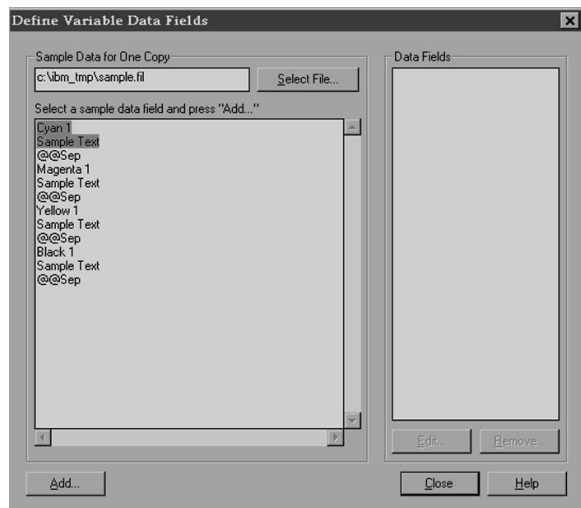


Figure 146. Define Variable Data Fields Dialog

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 146.

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

This opens the **Name Variable Data Field** dialog.

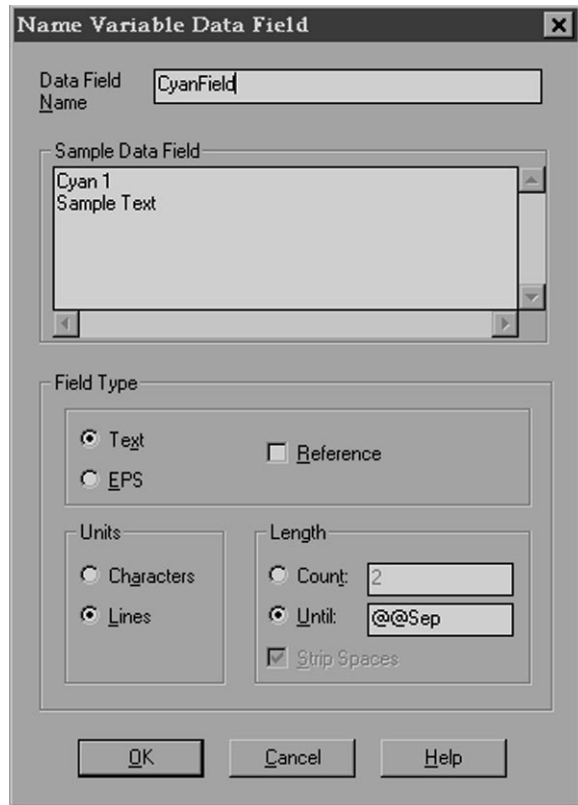


Figure 147. Name Variable Data Field Dialog

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 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 InfoPrint Color 100” on page 158) or map the font to a font that is resident at the printer.

To add a font to the list, edit the C:\pm6\rsrc\usen1sh\plugins\ibmvdta.vda file (where C: is the drive where the application resides) 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:

- a. Type the PageMaker font name in the left column, replacing blanks and commas in the name with "-".
- b. 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 148 on page 152 shows the CyanFront text object.
5. Click 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 149 on page 153.

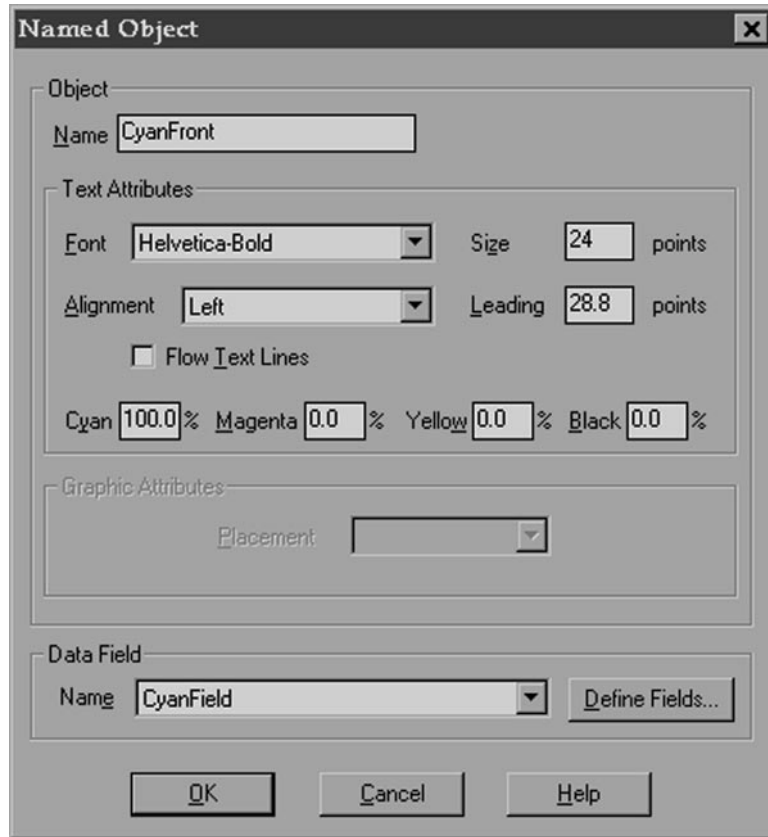


Figure 148. Named Object Dialog

6. Repeat steps 1 on page 150 through 3 on page 150 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.

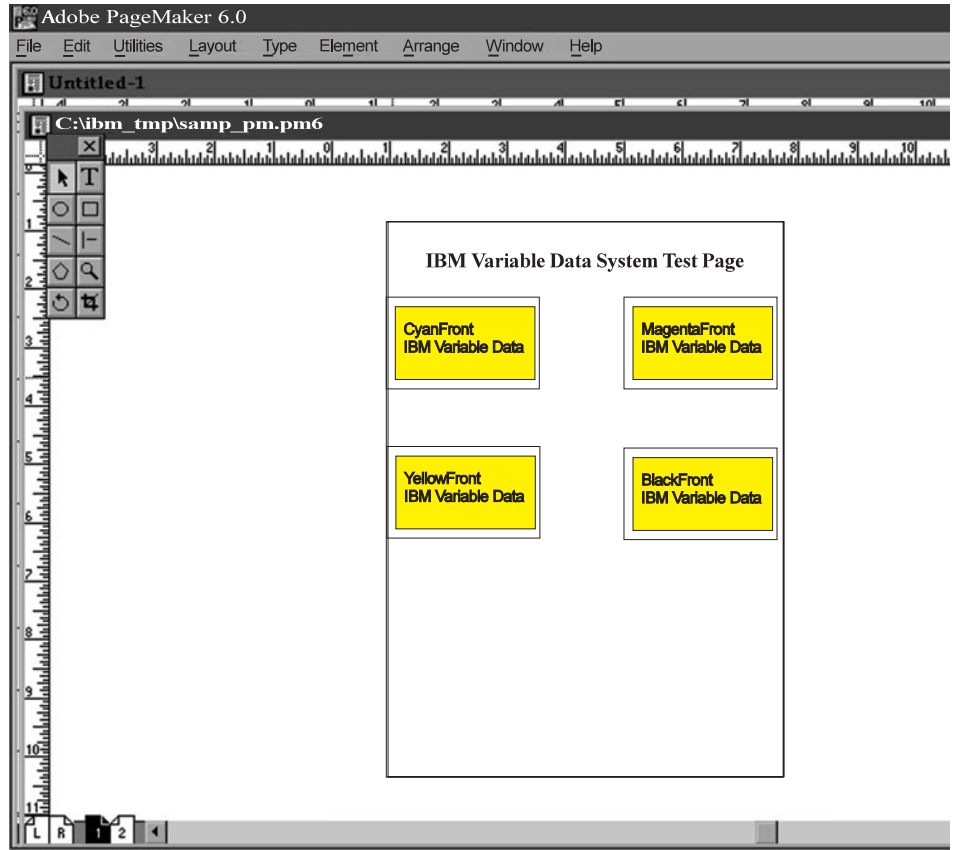


Figure 149. Final Sample Adobe PageMaker (release 6.0) with Variable Data

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
Printer	IBM InfoPrint Color 100 on FILE
PPD	IBM InfoPrint Color 100

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

Field	Setting
Copies	1
Collate	Not Checked
Reverse	Not Checked
Proof	Not Checked
Orientation	Portrait

Field	Setting
Print	Both Pages
Pages	All
Ignore Non-Printing Setting	Not Checked

3. Click 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 **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

7. Click the **Paper** pushbutton.
This closes the **Print Color** dialog and opens the **Print Paper** dialog.
8. The following fields in the **Print Paper** dialog are already set and cannot be overridden.

Field	Setting
Tiling	None
Scale	100 %

9. Click the **Size** pull down, and select the paper size.
10. Click the **Save** pushbutton to save the settings.
11. From the menu bar select,
Utilities ⇒ **PageMaker Plug-Ins** ⇒ **IBM Produce Variable Data Job**.
This opens the **IBM Produce Variable Data** dialog.
12. Verify the name of the document definition file and PostScript files, which should have the same name as your publication.
13. Click the **OK** pushbutton.
This creates the files used for printing.

Note: If you are printing a variable data document and the width is greater than the height, the IBM Variable Data plug-in requires that you use portrait orientation. An error message occurs when you select **IBM Produce Variable Data** unless you set the page orientation as follows:

- Set the page orientation to **Portrait** in the **Print Document** window.
- Set the page orientation to **Normal** in the **Print Paper** ⇒ **Custom Paper Size** window and enter the page size. For example, 17 inches wide and 11 inches tall.

Chapter 6. File Transfers to the InfoPrint Color 100

This section describes how you can transfer files to the InfoPrint Color 100 for RIPing or printing using any of the following platforms:

- Macintosh
- Personal Computer (PC)
- Diskette, CDROM, or Jaz disk

You can also transfer variable data files and access postscript files on the prepress workstation.

This section also includes information about downloading fonts to the InfoPrint Color 100.

Transferring Files to the InfoPrint Color 100 Using the Macintosh

You can transfer files to the InfoPrint Color 100 for RIPing or printing using the Macintosh.

This section describes the following Macintosh unique features:

- Submitting a print request
- Sending PostScript files
- Downloading fonts

Submitting a Print Request Directly from a Macintosh

You can connect to the InfoPrint Color 100 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 InfoPrint Color 100.

Before you can connect a LaserWriter driver to the InfoPrint Color 100 you need to start the dispatcher application. Use the following procedure to start Dispatcher:

1. Open the Windows Explorer and go to C:\FastRip\Bin.
2. Double click dispatcher.exe.

Use the following procedure to set up the InfoPrint Color 100 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 InfoPrint Color 100.
3. In the **Select a PostScript Printer** list, select **Fast Rip**.
4. Click the **Setup** pushbutton to open a new window.
5. Click the **Select PPD** pushbutton to open a new window.
6. From the **System Folder**, select **Extension**, then select **Printer Descriptions**.
7. Select the **IBM InfoPrint Color 100 PPD** from the list and click the **Select** pushbutton to select this as the current printer.

Once the IBM InfoPrint Color 100 is set up as your current printer, you can select **Print** from your application and the print request will be sent directly to the InfoPrint Color 100.

When the print request is received by the InfoPrint Color 100, the file is RIPed using one of the following files containing the Page Setup RIP values:

- C:\fastrrip_v4\data\ini_pap_foc.ini

After RIPing, the file is saved in d:\PS_Files\appleshare. 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.

Sending PostScript Files from a Macintosh to the InfoPrint Color 100

You can connect to the InfoPrint Color 100 from any Macintosh running System Software 6.03 or later and AppleTalk. Once you have connected, you can copy files to the InfoPrint Color 100.

Note: When viewing InfoPrint Color 100 windows from a Macintosh, the available drive space displayed in the window may be incorrect. You can transfer a file even when the free space is smaller than the file to be sent. However, you must first verify the actual space on the drive from the InfoPrint Color 100 windows NT interface.

Use the following procedure to connect to the InfoPrint Color 100:

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 InfoPrint Color 100.
3. In the **Select a file server** list, select the InfoPrint Color 100 you want to connect to and click the **OK** pushbutton to open the login window.
4. Enter the user name and password for your InfoPrint Color 100.
5. Click the **OK** pushbutton to close this window and open the **IBM InfoPrint Color 100** window.
6. In the **Select the items you want to use** list, select the **PS_Files\appleshare** folder.
7. Press the **OK** pushbutton to connect to the InfoPrint Color 100 and add the **shared** icon to your desktop.

After you have a **shared** 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 InfoPrint Color 100 in the D:\PS_Files\appleshare directory. Once the file is in this directory you can RIP the file using ThruPRINT.

Transferring Files to the InfoPrint Color 100 using the PC

This section covers the following PC unique information:

- Copying the PostScript Files
- Downloading Fonts

Sending PostScript Files from a PC to the InfoPrint Color 100

You can connect to the InfoPrint Color 100 from any PC with Windows 95 or Windows for Workgroups. Connect to the D:\PS_Files directory on the InfoPrint Color 100 that you want to use.

- For Windows 95, select **Network Neighborhood** from your desktop and then select the printer from the resulting list.
- For Windows for Workgroups, you may have to type the path to the shared directory. Set the path to \\servername\PS_Files where servername is the name of the InfoPrint Color 100 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.

Transferring PostScript Files using a Diskette, CDROM, or Jaz Disk

You can use a diskette, a CDROM, or a Jaz drive to transfer PostScript files to the InfoPrint Color 100.

Using a Diskette to Transfer PostScript Files to the InfoPrint Color 100

Use the following procedure to transfer PostScript files to the InfoPrint Color 100.

1. Insert the disk.
2. Open the Windows Explorer.
3. Open drive A:
4. Drag your PostScript files to drive D:\PS_Files.

Using a Jaz Drive to Transfer PostScript Files to the InfoPrint Color 100

Use the following procedure to transfer PostScript files to the InfoPrint Color 100.

1. Insert the Jaz disk.
2. Open the Windows Explorer.
3. Open the Removable Disk drive.
4. Drag your PostScript files to drive D:\PS_Files.

Using a CDROM to Transfer PostScript Files to the InfoPrint Color 100

Use the following procedure to transfer PostScript files to the InfoPrint Color 100.

1. Insert the CD.
2. Open the Windows Explorer.
3. Open the CDROM drive.
4. Drag your PostScript files to drive D:\PS_Files.

Transferring Variable Data Files to the InfoPrint Color 100

After the variable data job is produced, the files are ready to be transferred to the InfoPrint Color 100. 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 the previous sections of this chapter can be used to transfer the variable data files to the InfoPrint Color 100.

The files should be copied to the appropriate IBM InfoPrint Color 100 directory:
D:\VDS.

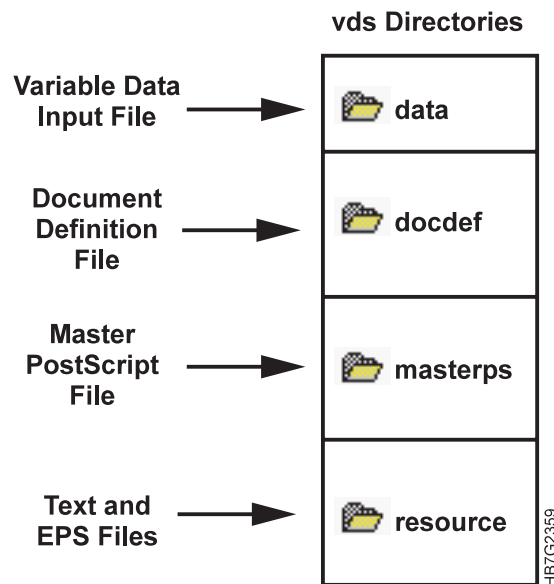


Figure 150. InfoPrint Color 100 Variable Data System Directories and Files

Note: If the variable data job, was created on a different InfoPrint Color 100, the variable data input file and all the files it references must be copied and restored on the printer from which you are transferring the files.

Downloading Fonts to the InfoPrint Color 100

Use the following criteria to decide whether or not you need to download fonts to your InfoPrint Color 100:

- If the jobs you print on your InfoPrint Color 100 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, and 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, your Macintosh computer needs to be connected to the network.

Setting up the InfoPrint Color 100

Log in as an operator and perform the following actions:

1. From the **Start** menu, go to **Programs/Fastrip Version 4.0** and select **Dispatcher**.
2. From the **Start** menu, go to **Programs/Fastrip Version 4.0** and select **Monitor**.
3. Wait until the **Status** field in the **Monitor** window is empty.

At this point the InfoPrint Color 100 is available on the network as a PostScript Level2 device.

Setting up the Macintosh

Use this section to set up your Macintosh for downloading.

1. Select the InfoPrint Color 100 as your printer.
2. Open the **Chooser** desktop utility from the Apple menu.
3. In the **Chooser** window, click on the **LaserWriter8** printer driver icon.
4. If your network has zones, select the zone in which your InfoPrint Color 100 resides.
5. Choose the InfoPrint Color 100 to which you intend to download fonts.
6. Do one of the following:
 - If the printer is already set up (the correct PPD is selected) close the **Chooser** and continue to "Downloading Fonts from the Macintosh".
 - If the InfoPrint Color 100 PPD file has not been installed:
 - a. Click the **Setup** pushbutton. This displays the **Setup** window.
 - b. Click the **Select PPD** pushbutton. This displays the **Select PPD** window.
 - c. Choose the IBM InfoPrint Color 100 PPD and click the **Select** pushbutton. The **Setup** window displays again, showing your choice of PPD.
 - d. Click the **OK** pushbutton to close the **Setup** window.
 - e. Click the close box to close the **Chooser**.
 - f. To download fonts, continue to "Downloading Fonts from the Macintosh".

Downloading Fonts from the Macintosh

In order to download fonts to the printer, use the Apple LaserWriter Utility Version 7.7 or the Apple Printer Utility Version 2.0. Both of these applications come with different versions of the LaserWriter 8.x print driver. Follow the font download instructions of the font download application. After you are done, close both the **Dispatcher** and **Monitor** windows.

Downloading DBCS Fonts

You can download DBCS fonts, such as Morisawa Japanese fonts, to the InfoPrint Color 100 using the same procedure described above. The only difference is, instead of using the LaserWriter Utility and the Apple Printer Utility, use a custom font downloader that usually comes with fonts. It should be noted that the InfoPrint Color 100 does not support every custom downloader available on the market.

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Chapter 7. RIPing Jobs and Creating Book Ticket Files (BTFs)

All jobs must be RIPed before they can be printed. The following sections explain what the RIPing and Book Ticket Files (BTFs).

- Understanding RIPing (page 163)
- Setting Up Your Job (page 163)
- RIPing Files (page 171)
- Monitoring the RIPing process (page 174)

After the files are RIPed, complex print runs can be created using a Book Ticket File (BTF). See “Creating Book Ticket Files (BTFs)” on page 174 for information about BTFs.

Understanding RIPing

The purpose of the RIP is to convert PostScript files into bitmap files that are printable. The RIPed files are stored on the collator’s high-speed disk array.

Note: 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. If you receive a RIP error, choose **Rip Log to File** on the **Page Setup** window (Figure 151 on page 164) to create a file you can use to research the error and then reRIP the 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”, 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 InfoPrint Color 100 provides a DEFAULT.INI file in C:\InfoPrintColor100\Xpose\Rip\Pgsetup.

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 170. It describes how to use a page setup you have already defined.

Defining Page Setups and Paper Sizes

The InfoPrint Color 100 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**



This opens the **Page Setup** window, shown in Figure 151.

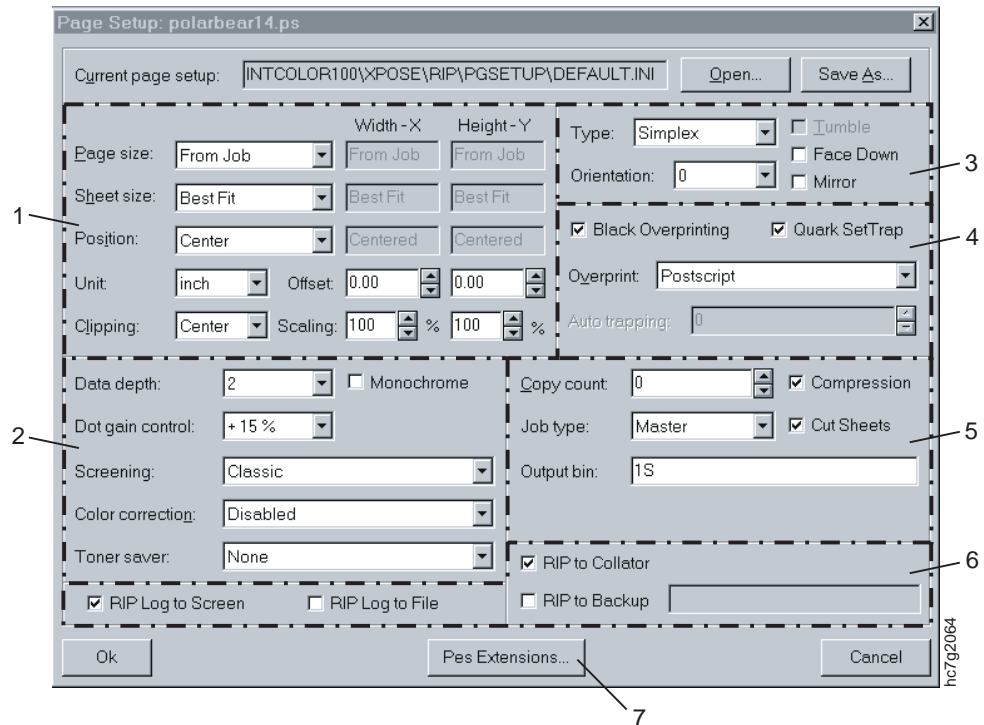


Figure 151. Page Setup Window

The **Page Setup** window consists of areas that define the following parameters:

- Size and position
- RIP options
- Image orientation
- Trapping
- Job setup
- RIP to ...
- PES Extensions

Detailed descriptions of each area are shown in Table 50. The label number corresponds to the labels in Figure 151.

Table 50. Page Setup Window Parameter Descriptions

Label	Parameters	See this section...
1	Size and Position	“Size and Position Parameters” on page 165
2	RIP Option	“RIP Options Parameters” on page 165
3	Image Orientation	“Image Orientation Parameters” on page 166

Table 50. Page Setup Window Parameter Descriptions (continued)

Label	Parameters	See this section...
4	Trap Option	“Trapping Parameters” on page 167
5	Job Setup	“Job Setup Parameters” on page 168
6	RIP to ...	“RIP to ...” on page 168
7	PES Extension	“PES Extensions” on page 169

Understanding the Page Setup Parameters

Size and Position Parameters

The size and position parameters shown in Figure 152, are described in detail in Table 51.

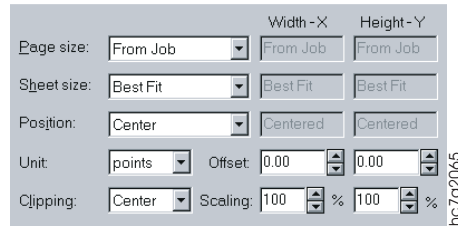


Figure 152. Size and Position Parameters in Page Setup Window

Table 51. Size and Position Parameter Descriptions

Setting	Explanation
Page size	The signature size to be used when the pages of a job are RIPed. 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.
Sheet size	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.
Position	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).
Unit	The units that can be selected are pixels, mm, inch, points, mil.
Offset	Shifting the image on the web in the X or Y direction or both.
Clipping	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).
Scaling	This allows you to change the size of the document. 100% is 1 to 1.

RIP Options Parameters

The RIP Options parameters shown in Figure 153 on page 166 are described in Table 52 on page 166.

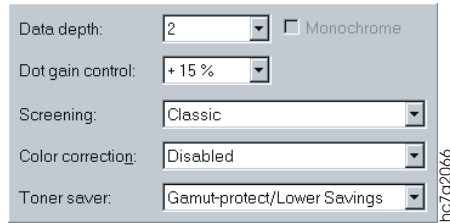


Figure 153. RIP Options Parameters in Page Setup Window

Table 52. RIP Options Parameter Descriptions

Setting	Explanation
Data depth	The number of bits with which each spot's gray value is described. 2 bps means that a spot can have 8 levels of gray (between 0 and maximum density).
Dot gain control	You can select from -5% to +35% in 5% increments.
Screening	Screening or No screening. The screening choices are Classic, Sofocles, Sofocles not calibrated, Monet, and Combined.
Color correction	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 InfoPrint Color 100.
Monochrome	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.
Toner Saver	<ul style="list-style-type: none"> None. This option disables the Toner Saver. Gamut Protect/Lower Savings: The new color will be the same as the original color. When selected, Toner Saver uses an algorithm that examines the color on all areas of each image and dynamically determines the amount CMY replacement. Lower Gamut/Maximum Savings: The new color may or may not be the same color. When selected, the maximum amount of the gray component will be replaced with black for the highest toner savings. When possible, the most similar in-gamut color is used.

Image Orientation Parameters

The Image Orientation parameters shown in Figure 154 are described in Table 53 on page 167.



Figure 154. Image Orientation Parameters in Page Setup Window

Table 53. Image Orientation Parameter Descriptions

Setting	Explanation
Type	Simplex or Duplex. When a job is RIPed 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. Note: Simplex jobs that are RIPed as duplex, are identified as Duplex in ThruPRINT, but are identified as Simplex in the print queue.
Orientation	Rotates output. You can specify 0, 90, 180, or 270 degrees. The pages are rotated counter-clockwise 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 counter-clockwise, and the back side rotates clockwise.
Tumble	Rotate the back page 180°. This rotation is cumulative with any rotation you specify in the Orientation field.
Face Down	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 InfoPrint Color 100. Simplex jobs will be printed on the back side of the paper.
Mirror	Allows for the creation of mirror images.

Trapping Parameters

The Trapping parameters shown in Figure 155 are described in Table 54.

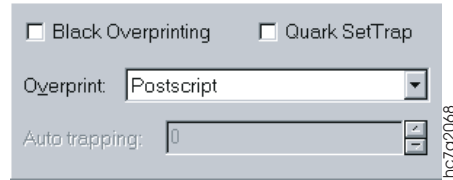


Figure 155. Trapping Parameters in Page Setup Window

Table 54. Trapping Parameter Descriptions

Setting	Explanation
Black Overprinting	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 InfoPrint Color 100 PDF in Quark XPress. To control Black Overprinting, use the Overprint setting (see below). Select True for black overprinting or either False or PostScript for no overprinting.

Table 54. Trapping Parameter Descriptions (continued)

Setting	Explanation
Overprint	<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>
Quark SetTrap	<p>This setting is used to indicate whether trapping should be turned ON or OFF for QuarkXPress jobs. The InfoPrint Color 100 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>

Job Setup Parameters

The Job Setup parameters shown in Figure 156 are described in Table 55.

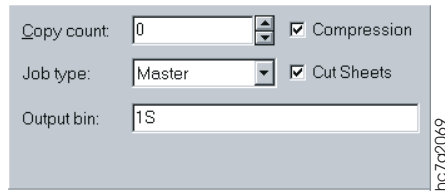


Figure 156. Job Setup Parameters in Page Setup Window

Table 55. Job Setup Parameter Descriptions

Setting	Explanation
Copy count	Specify a copy count greater than 0. If this file is a PostScript job, specify the number of copies you want to print. If this is a variable data job, the value is not used.
Job type	Master, VDF (variable data field), or a Test job.
Output bin	This field is ignored.
Compression	Enable compression of the output raster image. Compression should always be on.
Cut sheets	Sheets will be cut when exiting.

RIP to ...

The job setup parameters shown in Figure 157 and Figure 158 on page 169 are described in Table 56 on page 169.



Figure 157. RIP to...



Figure 158. Rip Log to..

Table 56. Job Setup Parameter Descriptions

Setting	Explanation
RIP to Collator	Places the RIPed file into the collator.
RIP to Backup	Places the RIPed file in d:\backup\vecs.
RIP Log to Screen	Normal setting, displays RIP log in Fastrip window.
RIP Log to File	Places the RIP log in a file. Allows you to research a RIP error.

PES Extensions

When you press the **PES Extensions** pushbutton the **PES Extensions** window displays, as shown in Figure 159. Table 57 describes the **PES Extensions** parameters.

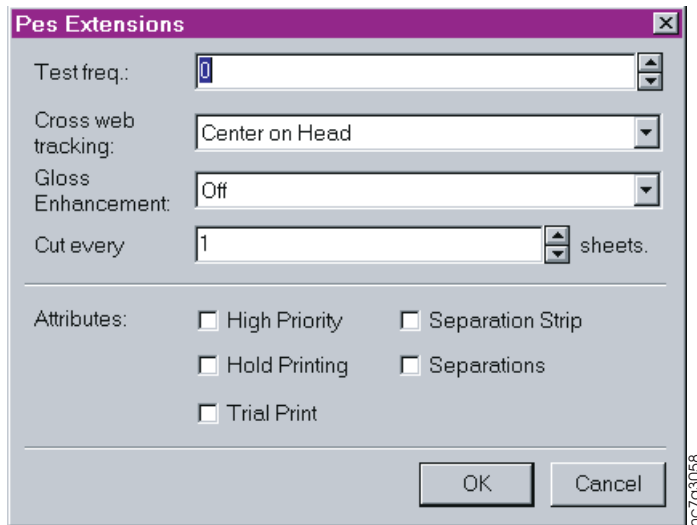


Figure 159. PES Extensions Window

Table 57. PES Extensions Descriptions

Setting	Explanation
Test freq	The frequency at which test pages are to be printed (see “Inserting Test Sheets” on page 192).

Table 57. PES Extensions Descriptions (continued)

Setting	Explanation
Cross web tracking	<ol style="list-style-type: none"> For systems with sensor, this box has following choices: <ul style="list-style-type: none"> On: The system corrects displacements of the web in order to obtain a left margin as requested by the operator in his design. Off: No cross web tracking. Center Head: The system positions the signature on a fixed left margin, determined by positioning signature in the center of the head.. This is especially advised for signatures with a large signature width. The signature will be printed centered on the head. For systems without sensor, the box shows 'Off' and is not editable.
Gloss Enhancement	Select either 'On', 'Off', or 'Default'.
Cut every	Allows you to indicate the frequency of sheets cut.
Attributes	<p>High Priority: Click this checkbox to use quick proofing (see "Changing Job Priority" on page 192).</p> <p>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 Hold, again, to release the job. See "Holding and Resuming Printing" on page 193 for more information.</p> <p>Trial Print: Click this checkbox to enable trial printing (see "Doing Trial Printing to Improve Print Quality" on page 193).</p> <p>Separation Strip: Does not apply</p> <p>Separations: Click this checkbox to separate the printing of your image into the four CMYK colors.</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 `c:\Infoprintcolor100\Xpose\rip\pgsetup`.

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:

- Click the **Save As** pushbutton in the **Page Setup** window.
The **Enter a page setup filename** window opens.
- 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

- Name of the file.
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 **OPEN** 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 **OPEN** pushbutton.
Now when you RIP a job, the page-setup values in the file you just loaded are used.

RIPing Files

RIPing PostScript Files

To RIP PostScript files, 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, click the **Select Files** pushbutton and then select the file or files you want to work with. If you choose the append option, the selected file or files are appended to your current list of files; otherwise, the newly selected files replace the existing list of files. If you change directories, the newly selected file or files replace the existing list of files.

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 165.

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 174 for more information about RIPing jobs.

Note: You can stop the RIPing process at any time by pressing **CTRL+C** or clicking the **X** in the upper right corner of the **RIP** window.

4. After the RIP is complete, the **RIP** window closes unless you selected **RIP Log to File**.

RIPing Variable Data Files

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 InfoPrint Color 100” on page 157 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 the **Select Files** pushbutton and then select the file or files you want to work with. If you choose the append option, the selected file or files are appended to your current list of files; otherwise, the newly selected files replace the existing list of files. If you change directories, the newly selected file or files replace the existing list of files.

2. Select the document definition file (*.ddf) you want to RIP.
3. Select **File** ⇒ **RIP** from the menu bar.

This opens the **Merge Doc** window. (The **Merge Doc** window is shown in Figure 83 on page 74.)

4. In the **Merge Doc** window, specify the variable data input file.
5. Click 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 165 for information about the **Page Setup** window.

These options will be used for RIPing the master and variable data PostScript files.

7. Click 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.

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.

See “Monitoring the RIPing Process” on page 174 for more information about RIPing jobs.

Note: You can stop the RIPing process at any time by pressing **CTRL+C** or clicking the **X** in the upper right corner of the **RIP** window.

After the RIP is complete, the **RIP** window closes unless you selected **RIP Log to File**.

RIPing Control Strips

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, click the **Select Files** pushbutton and then select the file or files you want to work with. If you choose the append option, the selected file or files are appended to your current list of files; otherwise, the newly selected files replace the existing list of files. If you change directories, the newly selected file or files replace the existing list of files.

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 58.

Table 58. Page Setup Parameters for RIPing Control Strips

Setting	Explanation
Scaling	100
Data depth	2
Dot gain control	+15%
Screening	Sofocles
Color correction	Disabled
Type	Duplex
Orientation	0°
Black overprinting	checked
Quark SetTrap	checked
Overprint	PostScript
Job type	Test
Copy count	0

The **Page Setup** window is described in “Understanding the Page Setup Parameters” on page 165.

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 174 for more information about RIPing jobs.

Note: You can stop the RIPing process at any time by pressing **CTRL+C** or clicking the **X** in the upper right corner of the **RIP** window.

5. After the RIP is complete, the **RIP** window closes unless you selected **RIP Log to File**.

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.

Note: If you happen to be moving windows around on your screen and the **RIP** window disappears, press **Alt+ESC** to step through the windows until the **RIP** window displays, or **Alt+Tab** to display the settings.

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.

Creating Book Ticket Files (BTFs)

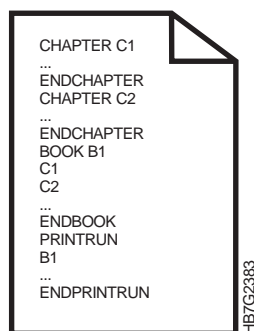
When PostScript files are rasterized by the RIP processor, the images are stored on the collator. These image files can be combined and sequenced for printing in collated order. A Book Ticket File (BTF) describes the way the image files are combined to form a book.

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.

Book Ticket Files (BTFs) should be placed in D:\Vds\bt f directory.

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
```

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Figure 160. 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 369. 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 BTF 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                ;1 copy of Act1
  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 59 on page 176, is:

```

BOOK bookname      file,[bookprintoptions]
                   file,[bookprintoptions]    ...      ENDBOOK

```

The words BOOK and ENDBOOK are required syntax.

Table 59. Book Statement Parameter Descriptions

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 Print Queue window when the book ticket is in the queue.
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 RIPPed 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 RIPPed starting from 1. For example, if you RIPPed 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 parentheses may be omitted. The page range defaults to, 1 to n (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.
bookprintoptions	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 does not apply.

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 370).

Example 2

To create a book called Macbeth composed of three files, use the following lines:

```
BOOK Macbeth
  Act1
  Act2(1,4-6,2)
  "Act3":3
ENDBOOK
```

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                 ;1 copy of Act1
  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".

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 60 on page 177, is:

```
DEFINE newname string
```

The word DEFINE is required syntax.

Table 60. Define Parameter Descriptions

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                ;1 copy of Act1
  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 61 on page 178, using Files is:

```

PRINTRUN printrunname
  file,[printrunoptions]
  file,[printrunoptions]
  ...
ENDPRINTRUN

```

The words PRINTRUN and ENDPRINTRUN are required syntax.

Table 61. Printrun Parameter Descriptions

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 61. Prinrun Parameter Descriptions (continued)

Parameters	Description
prinrunoptions	<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"> – null (no control strip), – decimal (reference to control strip ID), or – “file” (Reference by name. Name is always wildcarded, even if no wildcard asterisk was added.) <p>A control strip is chosen by the system with the following limits:</p> <ul style="list-style-type: none"> – Type must be “T” (test file). – Data depth must be the same data depth of all files in the book. – Width is as large as possible, but smaller than the width of each file in the book.

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 prinrunname 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 prinrunoptions 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                ;1 copy of Act1
  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

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, click the **Select Files** pushbutton and then select the file or files you want to work with. If you choose the append option, the selected file or files are appended to your current list of files; otherwise, the newly selected files replace the existing list of files. If you change directories, the newly selected file or files replace the existing list of files.

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

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.

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**.

Note: If you get the error **ThruPRINT Error: cannot delete file**, check the attributes in NT Exploring to see if it is listed as a read-only file.

3. A **Confirm Delete** dialog box is displayed. Click **Yes** or **Cancel**.

Chapter 8. Printing and Managing the Printing Process

After files are RIPed 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). See “Creating Book Ticket Files (BTFs)” on page 174.

This chapter describes:

- Submitting print jobs
- The printing process
- Interrupting the printing process

Printing Jobs

Before you submit any print jobs, ensure that:

- The jogger table is positioned correctly. See “Setting Up the Output Jogger” on page 115 for more information.
- The print engine is in **Standby** state and the InfoPrint Color 100 is ready (see “Chapter 3. Getting Started with the InfoPrint Color 100” on page 109)
- The jobs have been set up correctly (see “Defining Page Setups and Paper Sizes” on page 163).
- The jobs have been RIPed (see “Chapter 7. RIPing Jobs and Creating Book Ticket Files (BTFs)” on page 163).


ThruPRINT allows you to print different types of files. Refer to the following table to find where to go for information about submitting different types of files.

Table 62. Printing Files

File Type	Refer to...
PostScript files	Page 183
Book Ticket Files	Page 184
PageMaker Plug-Ins or Quark XTensions	Page 184
Manually created variable data files	Page 370

Submitting PostScript Files for Printing

To print PostScript collator files, do the following:

1. Open the **ThruPRINT** window. **IBM** ⇒ **ThruPRINT** 
2. Click on the **Files** tab.

Note: If the file you want to print is not listed, click the **Select Files** pushbutton and then select the file or files you want to work with.

- If you choose the append option, the selected file or files are appended to your current file list.
- If you do not choose the append option, the newly selected files replace the existing file list.

- If you change directories, the newly selected file or files replace the existing file list.
3. Select the file you want to print.
 4. Select **File** ⇒ **Print**.



This opens the **Print** window.

The **Print** window is described in “File: Print” on page 75.

5. In the **Print** window, specify the pages of the file you want to print and the number of copies. You may also select **Control Strip**. Press the **Print** pushbutton.

This sends the print request to the InfoPrint Color 100.

Submitting Book Ticket Files for Printing

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 174. 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. **IBM** ⇒ **ThruPRINT**



2. Click on the **Files** tab.

Note: If the Book Ticket File you want to print is not listed, click the **Select Files** pushbutton and then select the file or files you want to work with.

- If you choose the append option, the selected file or files are appended to your current file list.
- If you do not choose the append option, the newly selected files replace the existing file list.
- If you change directories, the newly selected file or files replace the existing file list.

To view the BTF and verify that it is correct, double-click the file to open the editor. Once you have verified the BTF, save the file.

3. Select the BTF you want to print and select **File** ⇒ **Print**.

This submits the BTF for printing.

Submitting Variable Data Print Jobs

To print a RIPed variable data job, do the following:

1. Open the **ThruPRINT** window. **IBM** ⇒ **ThruPRINT**



2. Click on the **MergeDocuments** tab

Note: If the document definition file you want to print is not listed, click the **Select Files** pushbutton and then select the file or files you want to work with.

- If you choose the append option, the selected file or files are appended to your current file list.
 - If you do not choose the append option, the newly selected files replace the existing file list.
 - If you change directories, the newly selected file or files replace the existing file list.
3. Select the document definition file (*.ddf) you want to print.
 4. From the menu bar, select **File** ⇒ **Print** .



This opens the **Print** window.

The **Print** window is described in “File: Print” on page 75.

5. In the **Print** window, specify the pages of the file you want to print and the number of copies. You may also select **Control Strip**. Press the **Print** pushbutton.

This sends the print request to the InfoPrint Color 100.

The Printing Process

When you submit a print job for printing:

1. The **Print Sequence** window opens automatically. The **Print Sequence** window contains printing controls, a status area, and a message area. See Figure 161.

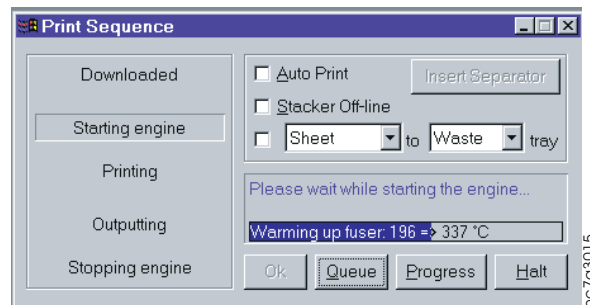


Figure 161. Print Sequence Window

2. The message **Downloaded...** displays in the window.
3. When the downloading finishes, **Starting engine** is highlighted. The message Fuser temp ok displays for 10 seconds before the web begins to move.
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 **PRS T Roll**, **FIX T Medium**, **FIX T Element** and **FIX T GEM** display the temperature of the paper, fuser, and GEM respectively.
4. A message indicating that the engine is starting displays in the message area.
 - If you selected **Auto Print**, the print engine starts when the downloading is finished.
 - If you did not select **Auto Print**, you may receive the following message: Use the Image Disk, Image Memory or Print Queue to start a new job. Image Disk and Image Memory do not apply to the InfoPrint Color 100, therefore, you must use the ThruPRINT to start a new job.

Notes:

- a. Occasionally the **Print Sequence** window displays incorrect messages due to timing conflicts between jobs. For example, the message may describe the previous job rather than the current job.
 - b. The **Stacker Offline** and the **tray** fields do not apply to the InfoPrint Color 100.
5. When you submit a job to print, it is not listed in the **Print Queue window**, click the **Refresh** pushbutton. This window displays up to 64 jobs. As soon as a job is printed, it disappears from the print queue list of jobs.

Notes:

- a. The **Print Queue window** displays 64 jobs, therefore, it is recommended that you send no more than 64 jobs at a time. If there are more than 64 jobs in the queue, the additional jobs are stored in VECS and appear in the queue as jobs are printed.
- b. If you exit Xpose and there are jobs remaining in the print queue, those jobs will be erased from the queue. Whenever Xpose is closed, VECS cleans out the queue to insure minimum SCSI failures.

To open the **Print Queue** window, as shown in Figure 162, click the **Queue** pushbutton in the **Print Sequence** window or

Explore ⇒ **Print Queue** 

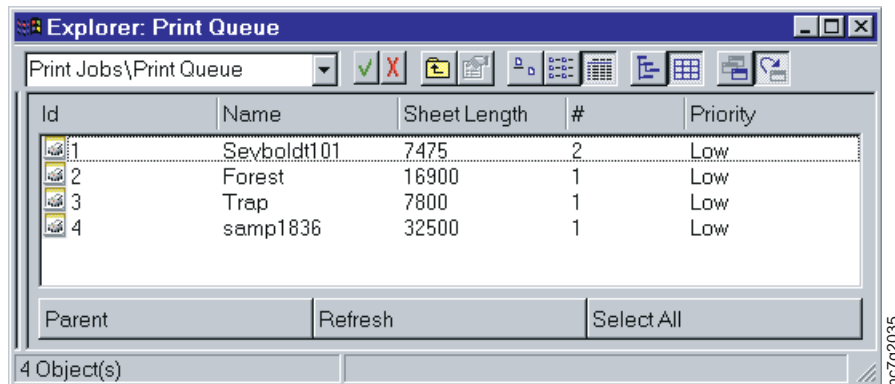


Figure 162. Print Queue Window

Changing Job Properties

You can look at the properties of jobs and you can change all or some of a job's properties in the **Print Queue** window.

To change a job's properties, follow these steps:

1. Select the job you want to change from the **Print Queue** 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 163 on page 187, the **General** tab is active.

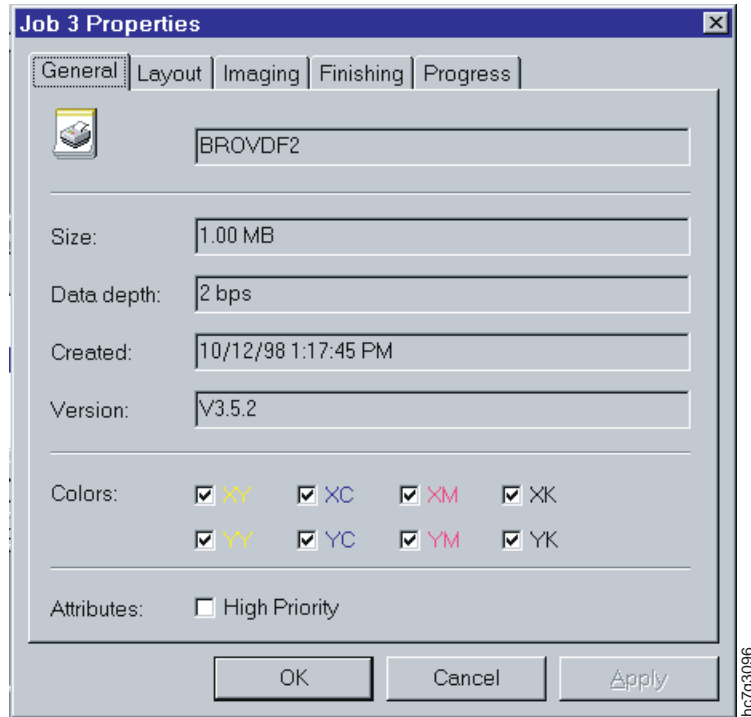


Figure 163. Properties Window

Attention:

As a job progresses from RIPing to the print queue, to printing, and then exits the print queue, the number of that job's properties you can edit decreases along the way.

The Properties tabs available from the **Print Queue** window are:

- General (See Page 187.)
 - Layout (See Page 188.)
 - Imaging (See Page 190.)
 - Finishing (See Page 194.)
 - Progress (See Page 195.)
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** 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 164 on page 188, lets you look at the properties, such as size and data depth, and allows you to deselect the colors you do not want to print, and select priority.

When you select the **General** tab in the **Properties** window, the settings shown in Figure 164 are displayed. Table 63 describes the terms used in the **Properties** window.

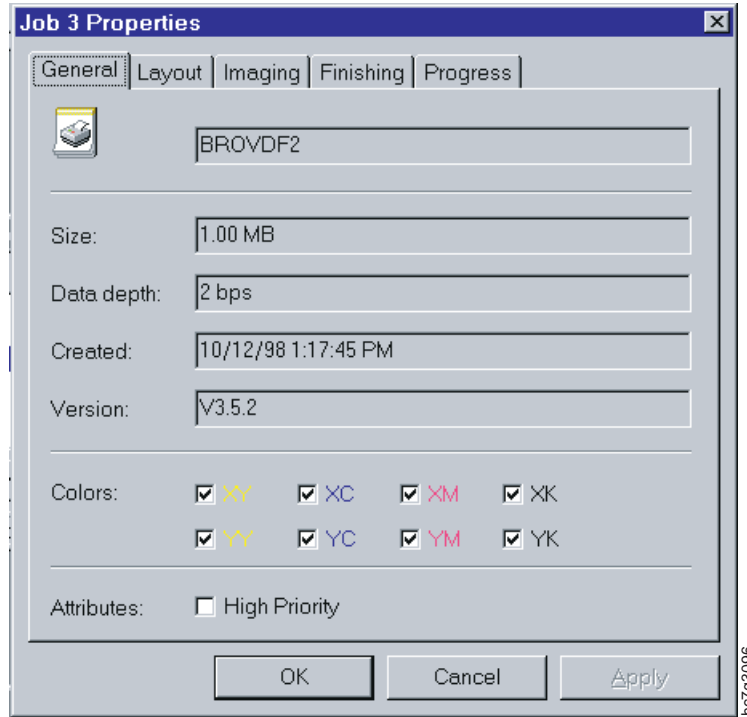


Figure 164. General Tab in the Properties Window

Table 63. General Tab Terminology

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. Note: No matter what the actual size of the job, the job size is listed at 1.00 MB.
Data Depth	The number of bits per spot. The maximum data depth is 2 bps.
Created	This indicates the date and time the job was RIPed.
Version	This indicated the version of IBM InfoPrint Color 100 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.
Attributes	High Priority: Click this checkbox to use quick proofing (see “Changing Job Priority” on page 192).

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 size and margin settings.

When you select the **Layout** tab in the **Properties** window, the settings shown in Figure 165 on page 189 are displayed. Table 64 on page 189 describes the terms used in the **Properties** window. Figure 166 on page 190 shows an example.

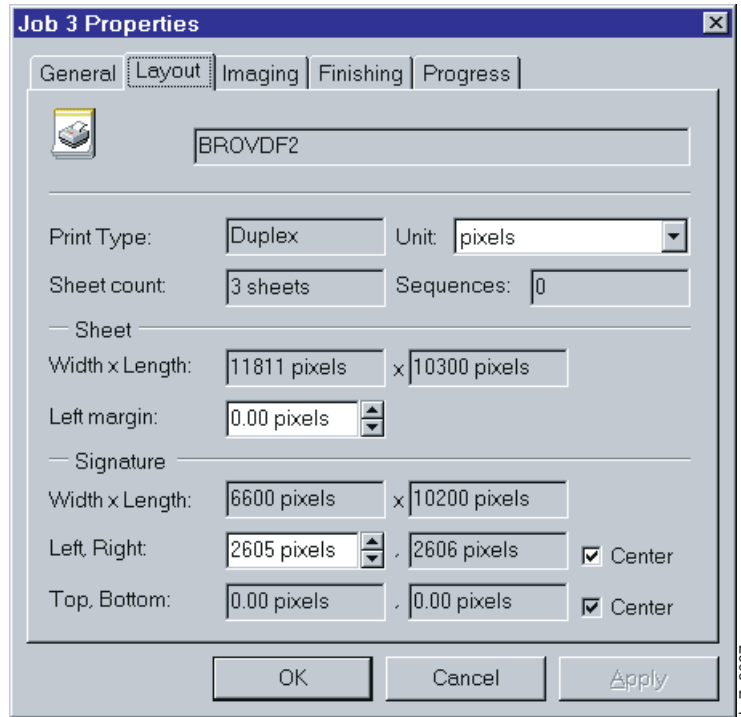


Figure 165. Layout Tab in the Properties Window

Table 64. Layout Tab Terminology

Parameter	Explanation
Print Type	Simplex or duplex.
Sheet count	This indicates the number of sheets in a job.
Unit	Select a unit of measure.
Sequences	The number of variable signatures for variable data jobs, which indicates the number of variable data files.
Sheet Parameters	
Width x Length	This allows you to edit only the sheet length.
Left margin	This is the margin between the left edge of the sheet and the near edge of the paper roll.
Signature Parameters	
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.

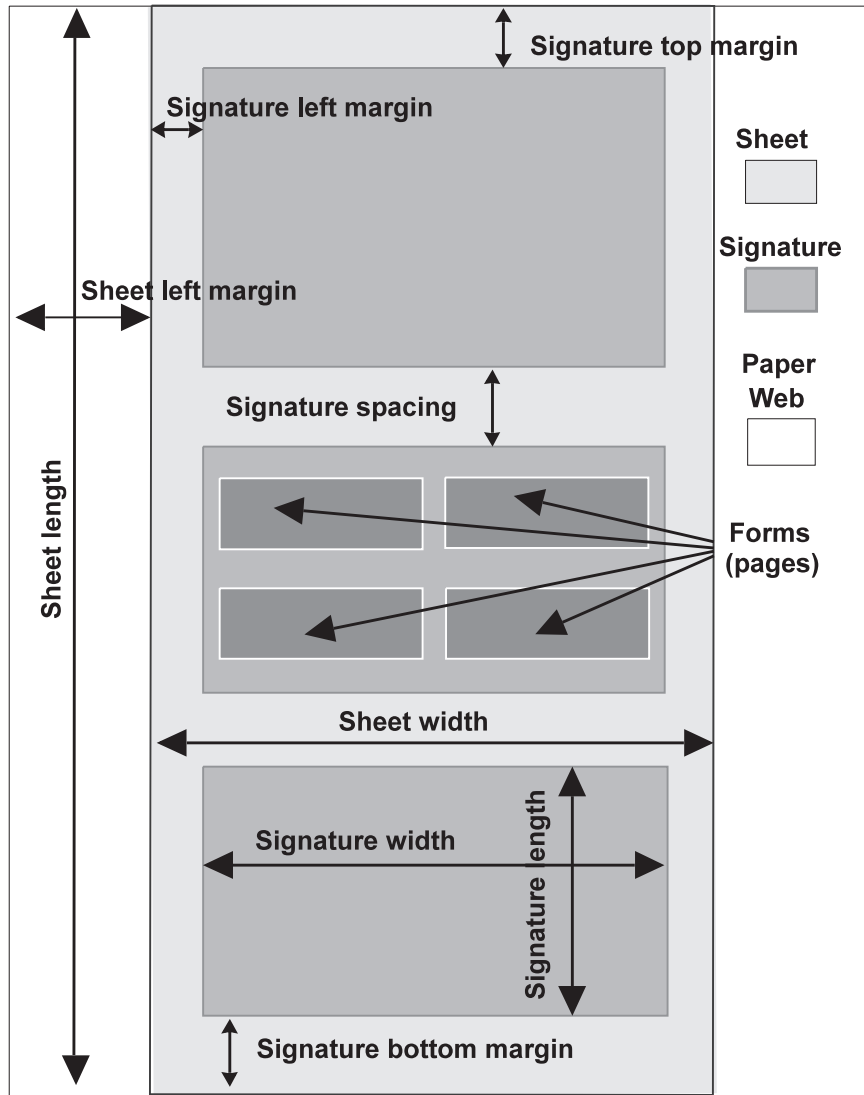


Figure 166. Sheet and Signature Layout Terminology

Using the Imaging Tab in the Properties Window

The **Imaging** tab in the **Properties** window lets you look at and change imaging properties.

When you select the **Imaging** tab in the **Properties** window, the settings shown in Figure 167 on page 191 are displayed. Table 65 on page 191 describes the terms used in the **Properties** window.

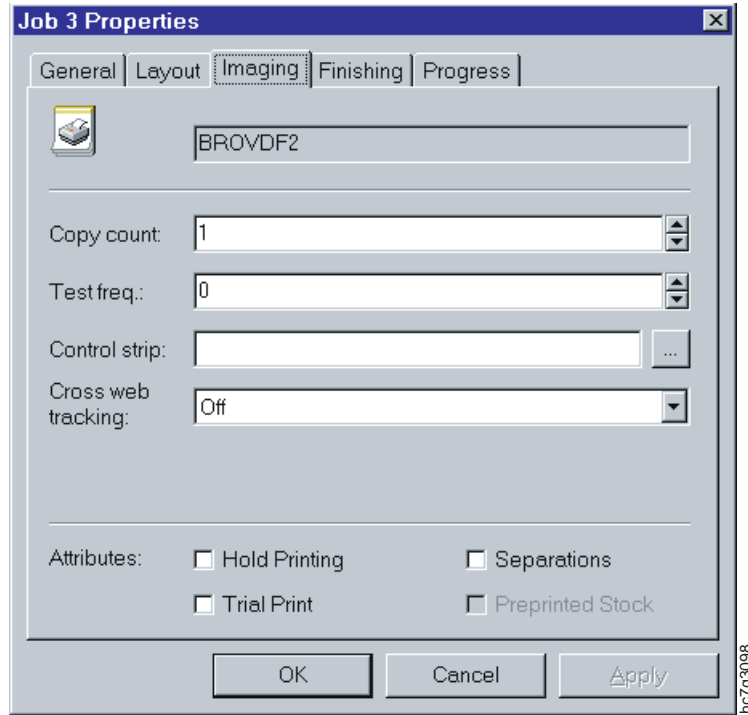


Figure 167. Imaging Tab in the Properties Window

Table 65. Properties Window Imaging Tab Terminology

Setting	Explanation
Copy count	The number of copies to be printed
Test freq	The frequency at which test pages are to be printed (see “Inserting Test Sheets” on page 192).
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.
Cross web tracking	Select from the following options: <ul style="list-style-type: none"> • On: The system corrects displacements of the web in order to obtain a left margin as requested by the operator’s design. • Off: no cross web tracking. • Center head: The system positions the signature on a fixed left margin, determined by positioning the signature in the center of the head. • Center medium: The system positions the signature centered on the medium, regardless of the left margin.
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 Hold , again, to release the job.
Trial Print	Click this checkbox to enable trial printing (see “Doing Trial Printing to Improve Print Quality” on page 193).
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 **Print Queue** 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 (Figure 167 on page 191).
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”).

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 193).
7. To stop inserting test sheets, delete the test sheet job from the print queue.

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 **Print Queue** window.
- 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 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. Select the **High Priority** checkbox.
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.

To use the **Trial Print** setting, follow these steps:

1. From 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. Select the **Trial Print** checkbox.
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 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.
- 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 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. Select the **Hold Printing** checkbox.
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 168 on page 195 are displayed. Table 66 on page 195 describes the terms used in the **Properties** window.

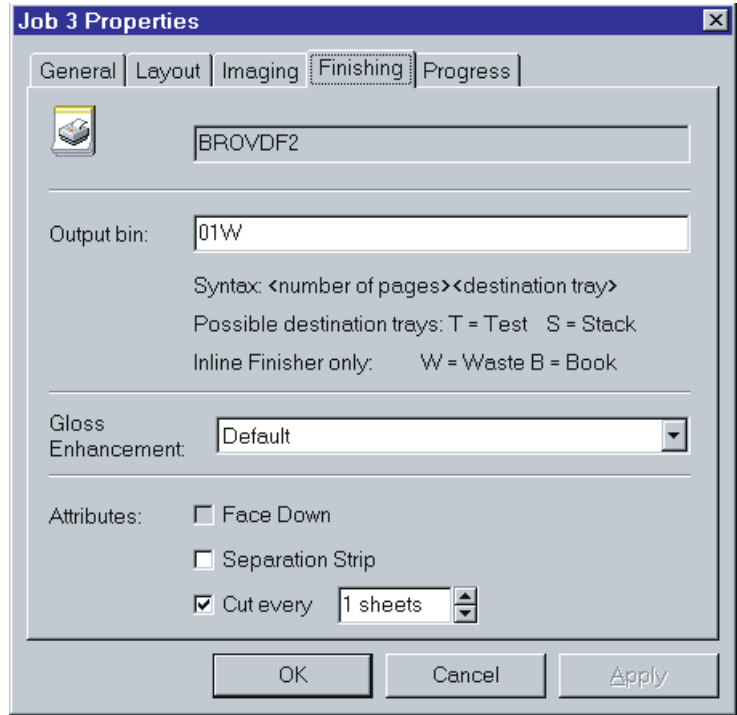


Figure 168. Finishing Tab in the Properties Window

Table 66. Properties Window Finishing Tab Terminology

Setting	Explanation
Output bin	Does not apply.
Gloss Enhancement	Specify On, Off, or default.
Attributes:	<p>Face Down: If selected, for duplex jobs the front and back side are reversed and simplex jobs are printed on the back side of the print medium.</p> <p>Separation Strip: Does not apply</p> <p>Cut every...sheets: If not selected, the sheets will not be cut. Otherwise, select and specify the frequency of cuts desired.</p>
	Does not apply.

Using the Progress Tab in the Properties Window

The **Progress** tab is available from the **Print Queue Properties** window. This tab lets you look at the actual progress of a queued job, as shown in Figure 169 on page 196.

When you select the **Progress** tab in the **Properties** window, the settings shown in Figure 169 on page 196 are displayed. Table 67 on page 196 describes the terms used in the **Properties** window.

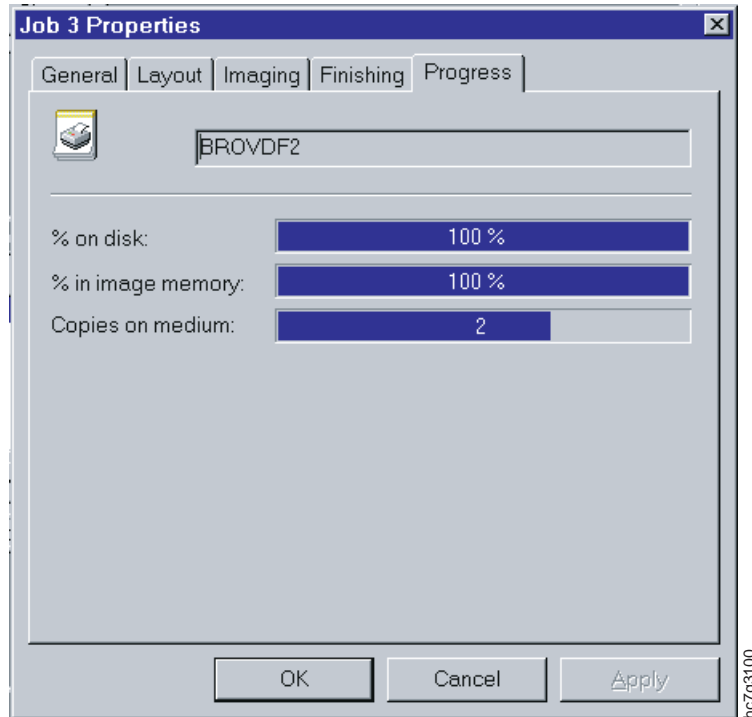


Figure 169. Progress Tab in the Properties Window

Table 67. Properties Window Progress Tab Terminology

Information	Explanation
% 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.

Interrupting the Printing Process

Sometimes you need to interrupt printing or 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 less severe problem.

Emergency Stop

When an emergency occurs and the printer does not stop, you can stop the print engine immediately by doing one of the following actions:

- Push one of the large, red emergency buttons mounted on the front of the paper supply or on the door above the output jogger.

- Click the emergency stop button  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** pushbutton. The print engine stops immediately.

Emergency Stop: Reset and Resume Printing

Do the following to reset the emergency stop button and return the print engine to **Standby** state:

1. To reset the emergency stop button, turn counter clockwise and pull up on the red knob.
2. When an emergency stop has occurred or the emergency circuit is activated automatically; e.g., by accidentally opening a door while printing, the **Engine State** control window opens as shown in Figure 170. The print engine goes first to the **Power off** state and then to **Initialized**. When

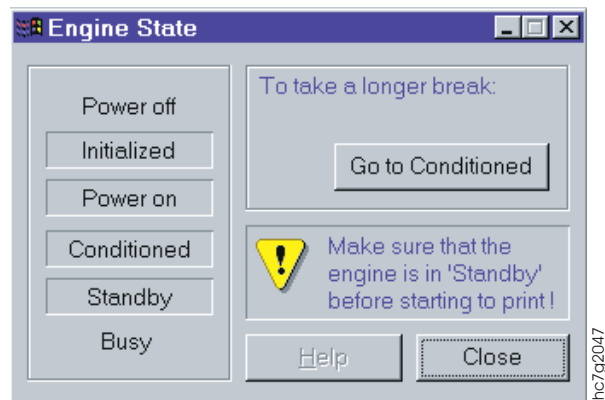


Figure 170. Engine State Control Window

the error that caused the emergency stop is solved, click **Go to Standby** at the right top of the window. The print engine goes first to the temporary **Power on** state, the **Conditioned** state, and then to **Standby**.

Interrupting Printing for a Problem

When a problem occurs and 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 jogger before the print engine stops.

- The print engine stops until you click the **Ok** button in the **Print Sequence** window, then the job continues from where it was when it halted.

After you interrupt printing and the print engine stops, the engine then goes to Busy Waiting, ready to print again.

Part 4. Quality Control and Process Monitoring Tasks

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Chapter 9. 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 and monitoring registration are:

- Use horizontal control strip Cs_v5_6 with jobs at least as wide as 8.26 inches. See Figure 171.



Figure 171. Horizontal Control Strip: Cs_v5_6

- Use narrow control strip Cs_v5_6n with jobs at least as wide as 2.79 inches. See Figure 172.

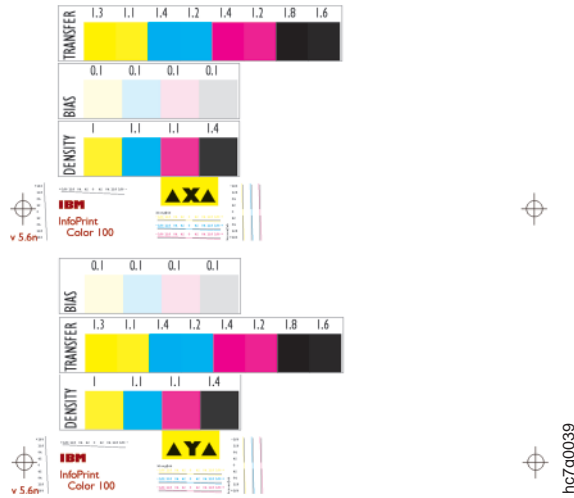


Figure 172. Narrow Control Strip: Cs_v5_6n

- Use auto-registration control strip Csregita with auto-registration, jobs at least as wide as 8.26 inches, and when translucent media is used for printing. See Figure 173 on page 202.



Figure 173. Auto-Registration Control Strip: Csregita

- Use auto-registration control strip Csregiwi with auto-registration, jobs at least as wide as 8.26 inches, and when opaque media is used for printing. See Figure 174.



Figure 174. Auto-Registration Control Strip: Csregiwi

- Use auto-registration control strip Csregvwi with auto-registration and jobs at least as wide as 14.31 inches. See Figure 175.

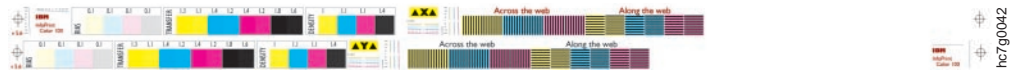


Figure 175. Auto-Registration Control Strip: Csregvwi

The control strips are in the C:\InfoPrintColor100\Xpose\TestFiles\CStrip directory. RIP the control strip, as described in “RIPing Control Strips” on page 173. To add a control strip to a signature at print time, first ensure that the control strip has been RIPPed as test, then attach the control strip to your job in the **Print** window.

Registration

You must adjust registration after you mount a new paper roll.



To adjust registration, you must know in which direction a printed sheet has exited the print engine. The direction of movement 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.

Color registration can be measured and corrected using the vertical and horizontal lines to the right side and underneath the X and Y.



Use the registration patches when using automated registration.

The operator must learn how to measure and adjust color registration, cutter registration, front-to-back registration, and signature position.

Density

The control strips have three sets of test patches described below. See “Learning About Control Strips” on page 201 for examples of control strips. Figure 176 shows the three sets of test patches.



Figure 176. Density Test Patches

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 228).

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.

Learning About the Universal Test Page

The Universal Test Page is called UTEST202.PS. Figure 177 on page 204 shows the X-side of the test page.

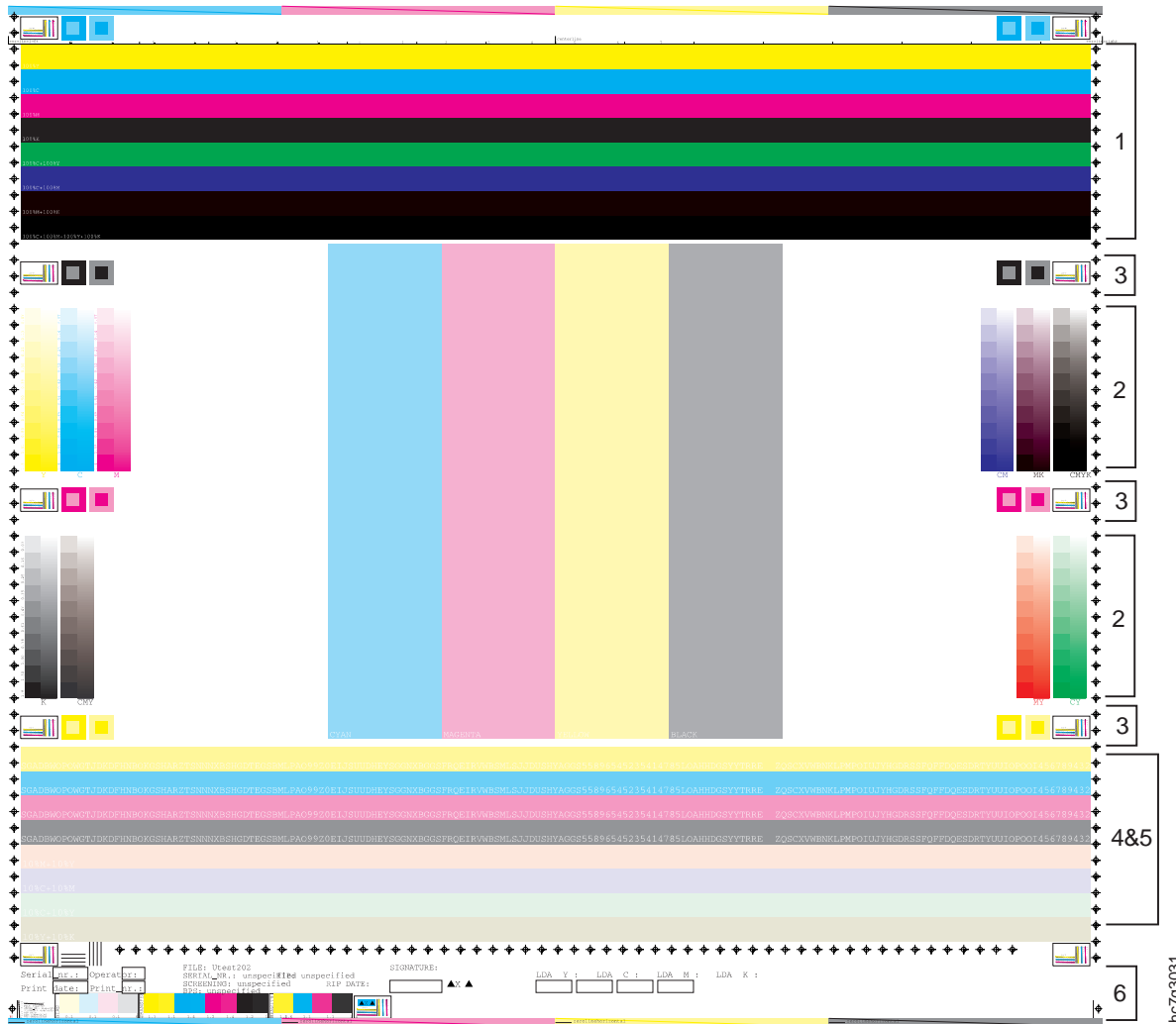


Figure 177. X-Side of the Universal Test Page

You can use the Universal Test Page found in the C:\InfoPrintColor100\Xpose\TestFiles\ directory, other IBM images, or images you have created to check the overall print quality of the InfoPrint Color 100 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 192 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 177).

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 # : InfoPrint Color 100 number on which the test page is printed

Operator: The operator who has printed the test page

LDA: The LDA values for manual density adjustment.

There are other print quality test pages that the operator can use to determine how the individual colors perform. These test pages can be found in the C:\InfoPrintColor100\Xpose\TestFiles\ directory.

Understanding Registration

Generally speaking, registration is the positioning of colors and image on the paper. The operator is responsible for measuring and adjusting four types of registration, as listed below and shown in Figure 178 on page 206.

- Color registration
- Cutter registration
- Front-to-back registration
- Signature position

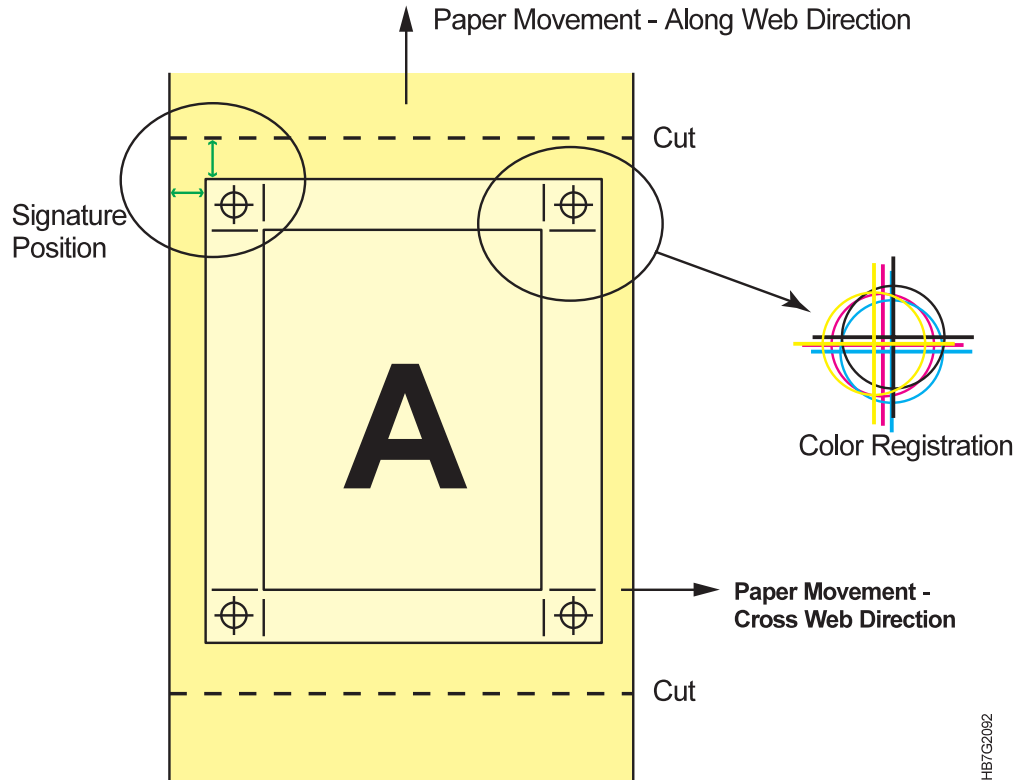


Figure 178. Types of Registration

Color registration is read in microns. The other three types of registration may be measured in inches or millimeters. The values may be entered in the **Register Control** window in any unit of measurement by using the right mouse button to change to the appropriate unit of measurement.

Automated Color Registration Control Feature

Overview

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.

Automated registration control provides the operator with an easier method to adjust color registration on the InfoPrint Color 100. Without automated registration control the operator reads the registration condition using a loupe and manually changes the settings. Automated registration control uses the densitometer and a special control strip to read and change color registration.

Information from the densitometer is translated into registration correction values, then automatically entered into the **Auto Registration** window. If registration is $>\pm 168$ it must be brought in manually before using automated registration.

Using the Densitometer to Adjust Color Registration

Use the densitometer to read a specific control strip and enter a correction value for each color in the **Auto Registration** window. The **Auto Registration** window displays the number of "Along Web" and "Cross Web" readings taken for each color station on both X and Y-sides.

Measure registration error using an auto-registration control strip. See "Learning About Control Strips" on page 201.

Note: See "Setting Up and Calibrating the Densitometer" on page 223 for information about attaching the densitometer to the InfoPrint Color 100.

To measure and correct registration errors follow these steps:

1. Open the **Auto Registration** window.

IBM ⇒ Auto Registration

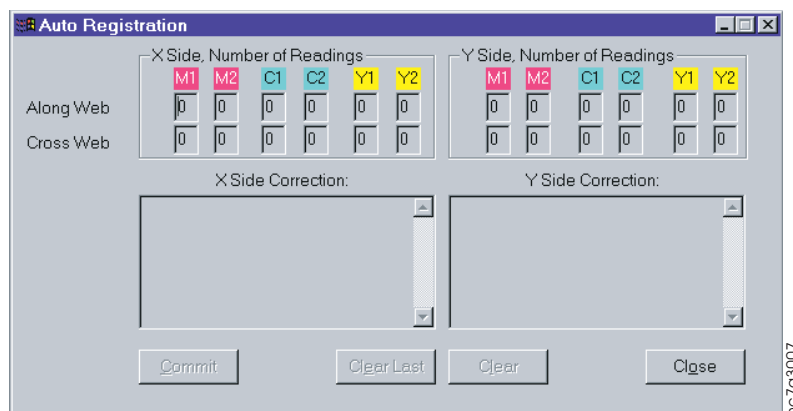


Figure 179. Auto Registration Window

Note: You may have both the **Auto Density** and **Auto Registration** windows open at the same time, but the active window will have access to the densitometer.

The **Auto Registration** window displays the electronic (densitometer) input fields for automated register control. Input can also be made manually by selecting:

Process Control ⇒ Register Control



Ctrl+R

See "Manually Measuring and Adjusting Color Registration" on page 209 for information about changing registration manually.

Note: A change made manually will always override the corresponding electronic (densitometer) input.

2. Include one of the auto-registration control strips in your job.
 - Csregita (Figure 173 on page 202)
 - Csregiwi (Figure 174 on page 202)

Csregvwi (Figure 175 on page 202)

3. Using the second printed image, locate the registration test patch on the control strip for the X-side.
4. Center the measuring aperture of the densitometer on first color box (Magenta) and press the measurement key. You will see the number in the X-side, Along Web, M1 field change to "1".
5. Move the measuring aperture to the second color box (the second Magenta) and press the measurement key. The number in the X-side, Along Web, M2 field changes to "1" and a correction statement, if needed, appears in the **X Side Correction** area. The statement contains the registration error value that the control system will use to correct the color station registration. The **Commit** pushbutton becomes active as well.

If you make a mistake while reading the registration control strip, select the **Clear Last** pushbutton in the **Auto Registration** window, or **ALT+E** on the keyboard, to remove the last entry. To remove all of your entries in the **Auto Registration** window select the **Clear** pushbutton, or press **ALT+L**.

6. Continue moving the measurement aperture from right to left, taking a reading in each color box under the "Along the web" and "Across the web" titles. Verify that each reading puts a number in the window.
7. After all readings have been performed for the X-side control strip, locate the control strip on the Y-side of the same print and repeat Step 4 through Step6 for the Y-side.

After all entries are complete, additional measurements may begin again at the X-side, Along Web, M1 point. Each new measurement will cause the corresponding color counter to increment by 1.

8. To apply the registration corrections listed in the **X Side Correction** and **Y Side Correction** portions of the **Auto Registration** window, select the **Commit** pushbutton. After 10 minutes, repeat Step 3 through Step 8 while continuing to run the job.

Note: The **Commit** pushbutton applies the values entered electronically with the densitometer, but entries made manually will always override the corresponding electronic (densitometer) input.

Saving the Registration Values

Selecting **Commit** for registration changes does not "save" the changes. The values are applied to the printer's control system, but they are not saved in memory. If another set of corrections is entered into the **Auto Registration** or **Register Control** window, the previous values will be replaced by the new values.

To save the last set of entries applied using the **Commit** or **Set** button, select the **Save** button in the **Register Control** window or type **ALT+A** on the keyboard. Once saved, the settings become permanent in the printer control system.

Select the **Revert** button or type **Alt+V**, before selecting the **Save** button, to return the printer control system to the last saved registration settings. This allows you to take readings or make manual entries, select **Commit** or **Set**, check a printed image for registration, and then return the printer registration to its previous state.

Manually Measuring and Adjusting Color Registration

Measure color registration in the registration area of a standard control strip (see “Learning About Control Strips” on page 201) or the Universal Test Page (see Figure 177 on page 204), using a standard loupe (8x or 10x). Black is the color used as the reference.

Note: When you measure and adjust yellow, place a piece of pink or light blue tissue paper under your loupe.

Figure 180 is an example of the horizontal and vertical lines used to measure color registration.

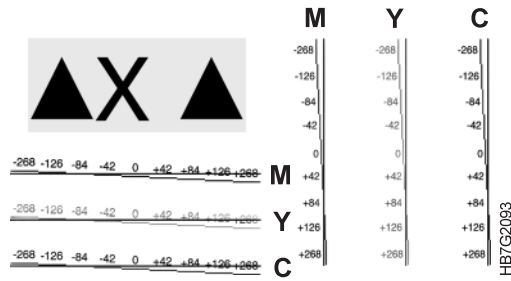


Figure 180. Horizontal and Vertical Lines for Measuring Registration

1. Along Web Measurements

Use the horizontal lines to read Along Web registration errors for each of the three colors M, Y, and C in relation to K. The registration error is the value in μ (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.

2. Cross Web Measurements

Use the vertical lines to read Cross Web registration errors for each of the three colors M, Y, and C in relation to K. The registration error is the value in μ (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 181 on page 210.

Process Control \Rightarrow Register Control  Ctrl+R

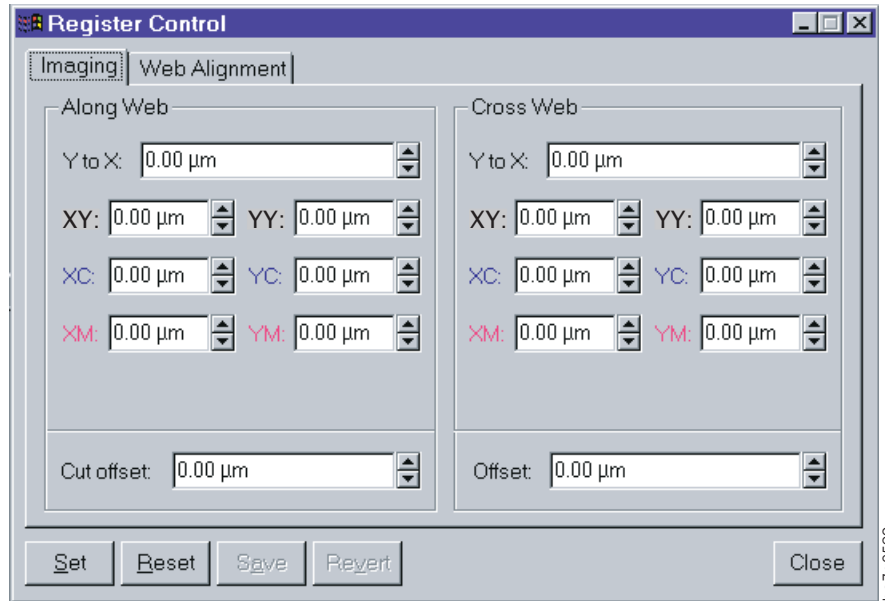


Figure 181. Register Control Window

4. While printing, adjust the registration values in the **Register Control** window as shown in Figure 181.
 - a. Along Web Adjustments
Use the scroll arrows to scroll to the measured values in the boxes on the left side of the **Register Control** window.
 - b. Cross Web Adjustments
Use the scroll arrows to scroll to the measured values in the boxes on the right side of the **Register Control** window.
- Note:** If the registration has to be adjusted with more than 1000μm, the first digit is not visible. Use the cursor keys to scroll back.
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. You can click on the value with the right mouse button to change the measurement units to match the actual. Follow these steps measure and adjust cutter registration:

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 182 on page 211, the result of the calculation will be a positive value. To move the image toward the bottom edge, you will enter a **negative** value in the **Registration Control** window. Follow the instructions in Step 3 on page 211. Be sure to include the minus (-) sign.

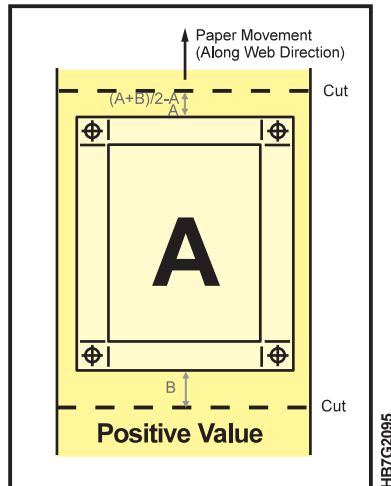


Figure 182. Cutter Registration with a Positive Value

When the image is closer to the bottom edge, as shown in Figure 183, the result of the calculation will be a negative value. To move the image toward the top edge, you will enter a **positive** value in the **Registration Control** window. Follow the instructions in Step 3.

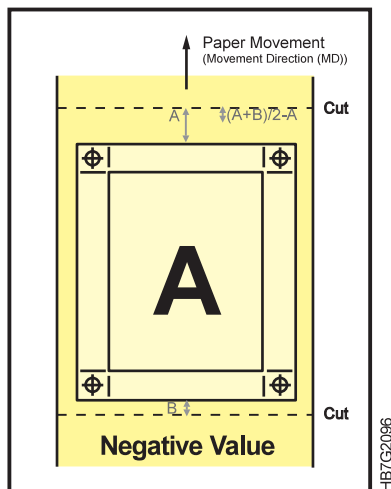


Figure 183. Cutter Registration with a Negative Value

- Adjust the cutter registration value in the **Cut Offset** box in the **Register Control** window, as shown in Figure 184 on page 212.

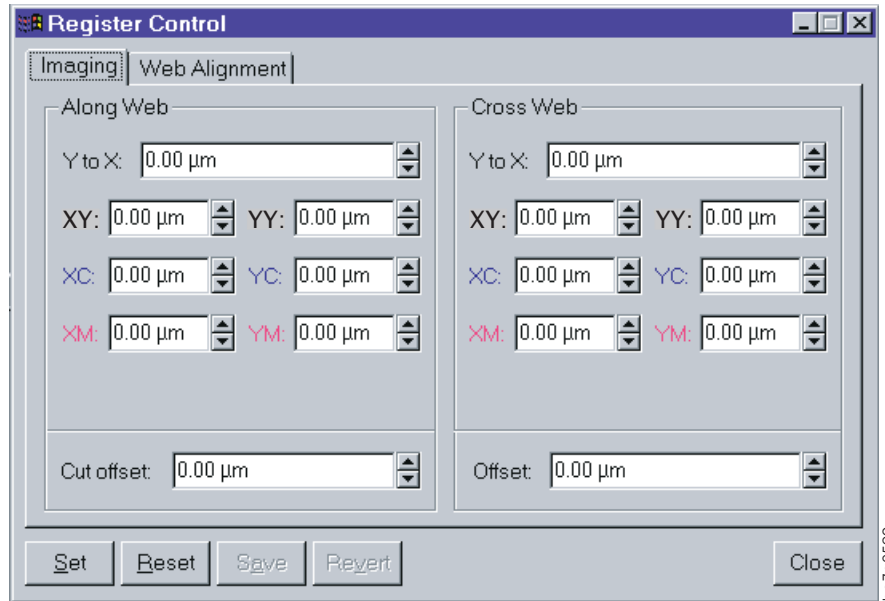


Figure 184. Register Control Window

To set the cutter registration, either enter the opposite value of the numbers obtained in the calculation you made in step 2 on page 210, or click the up or down arrows until the correct value displays.

- If your calculation result was a positive value, enter a negative value. Be sure to include the minus (–) sign.
- If your calculation result was a negative value, enter a positive value.

Cutter registration values may be adjusted in your choice of measurement. Round the value to the nearest increment.

Note: If the registration has to be adjusted with more than 1000 μ m, the first digit is not visible. Use the cursor keys to scroll back.

Measuring and Adjusting Front-to-Back Registration

Front-to-back registration is the result of comparing the signature position for front to 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 133). 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.

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 185, is on top of the word “IBM”.

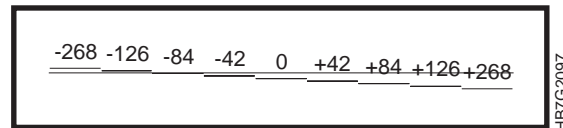


Figure 185. Horizontal Control

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 186, is to the left of the word “IBM”.

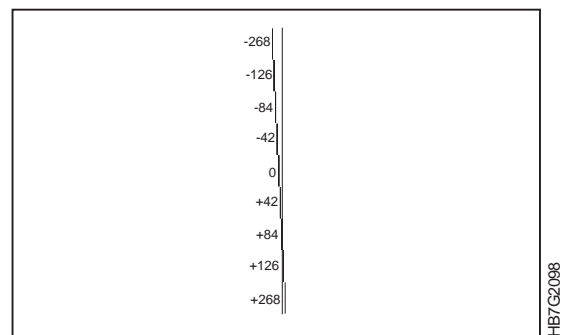


Figure 186. Vertical Control

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 187 on page 214 and described below.

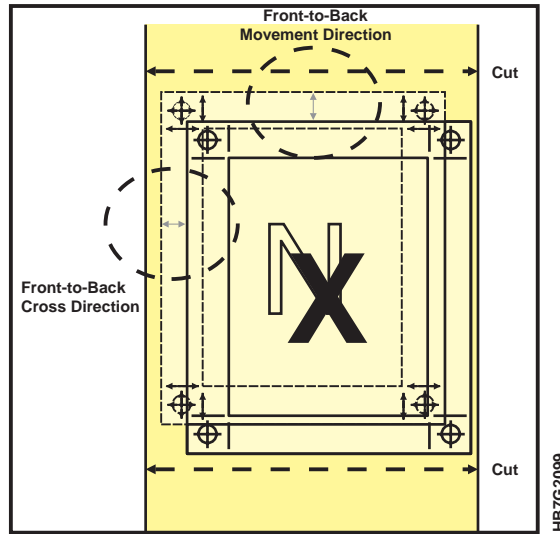


Figure 187. Measuring Front-to-Back Registration Using the Image

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. 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. 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 188 on page 215.

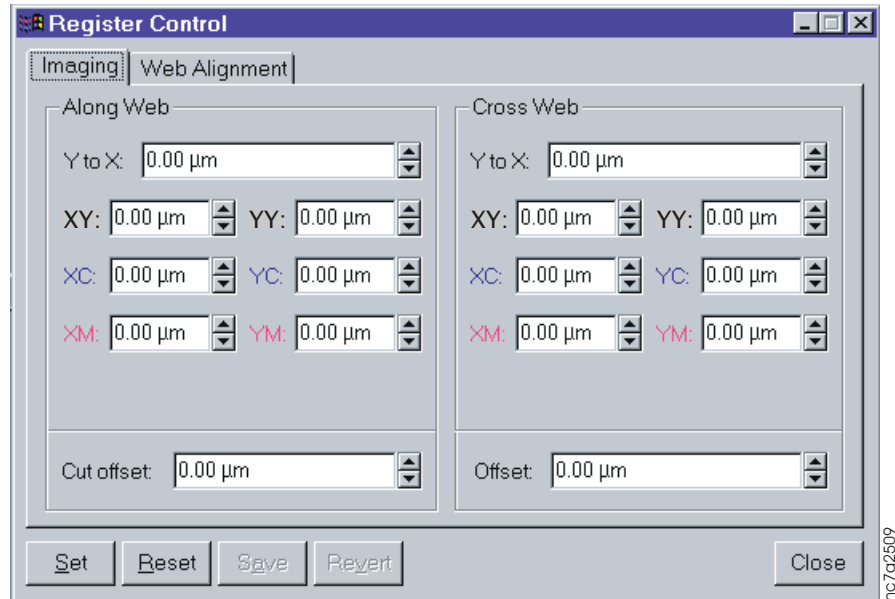


Figure 188. Register Control Window

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.

Note: If the registration has to be adjusted with more than 1000μm, the first digit is not visible. Use the cursor keys to scroll back.

4. Click the **Set** pushbutton.
5. Check the next print after 10 minutes. Check the registration again. If the registration is correct, click the **Save** pushbutton to save the values.

Measuring and Adjusting Signature Position

Without Cross Web Tracking

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 210). 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 189 on page 216:

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

This value should be positive.

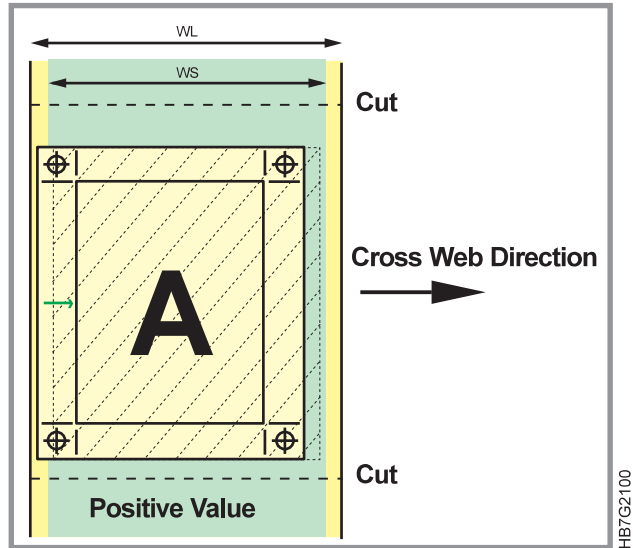


Figure 189. Signature Positioned at Far Left

If the signature is positioned at the far right, as shown in Figure 190:

Calculate the distance the signature has to be moved using the formula:

- $(WS-WL)/2$

This value should be negative.

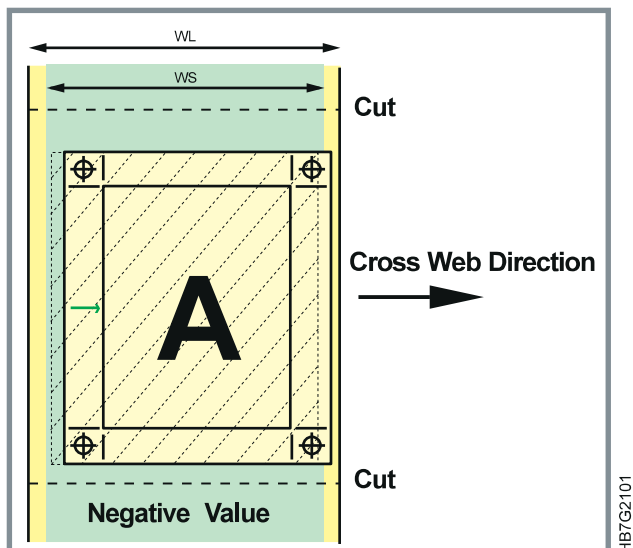


Figure 190. Signature Positioned at Far Right

Adjusting the Values: To adjust the values, follow these steps:

1. Open the **Register Control** window, as shown in Figure 191.

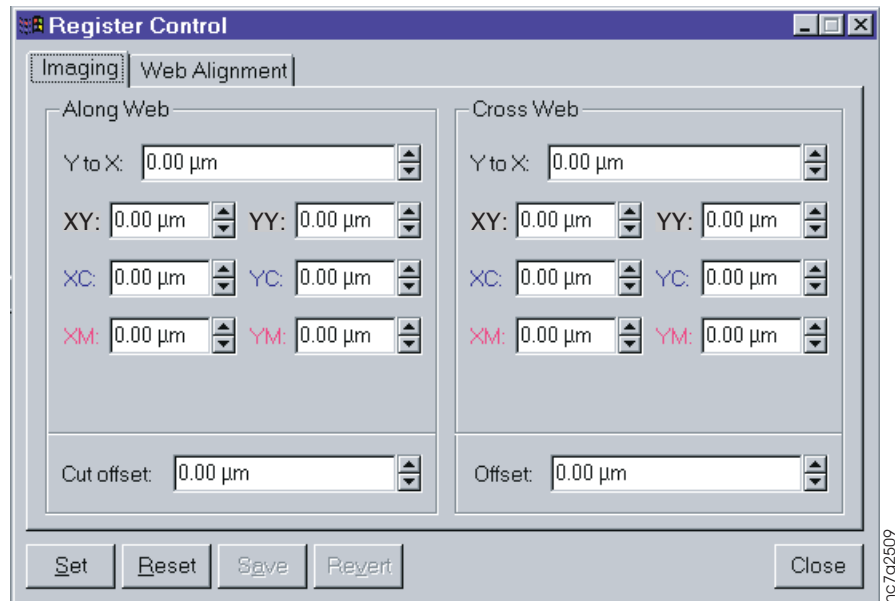


Figure 191. Register Control Window

2. Select the measured value in the **Offset** box.

Note: If the registration has to be adjusted with more than 1000 μm , the first digit is not visible. Use the cursor keys to scroll back.

3. Click the **Set** pushbutton.
4. Check the next print after 10 minutes. 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 printed image is lost.

Check the value in the **Offset** box, adjust it if possible, or do one of the following:

- If the value in the **Offset** 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 280).
- If the value in the **Offset** 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. 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 280).

With Cross Web Tracking (Part of the WebSynC)

Perform the following procedure to set the web alignment sensor in the proper position for the width of the print medium. The sensor can be put in two positions: 500 and 508 mm (19.7" and 20"). This sensor is located at the top of the Y tower.

Adjust the Web Alignment Sensor

1. Begin the service intervention procedure, described in "Beginning the Service Intervention Procedure" on page 289.
2. Open the doors on both sides of the X tower and the Y tower.
3. Move the paper supply away from the front doors located between the paper supply and the print tower, as shown in Figure 192.

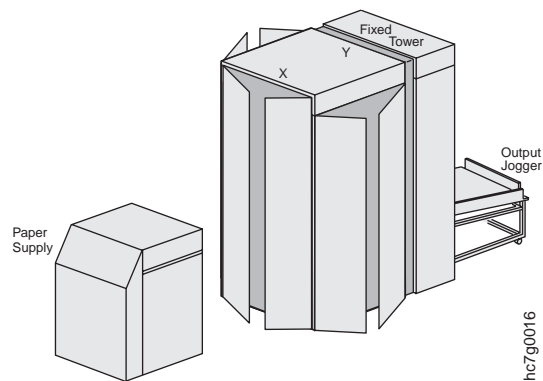


Figure 192. Right Side View of the InfoPrint Color 100

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.

4. Open the front doors on the X tower.
5. Unlatch the X tower from the Y tower by pulling up on the handle located on the X tower, as shown in Figure 193.

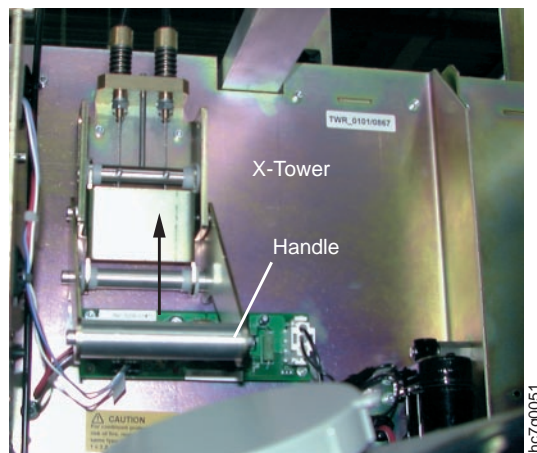


Figure 193. Latch between the X and Y Towers

6. Loosen the thumb screw at the top of the white mounting block, as shown in Figure 194.

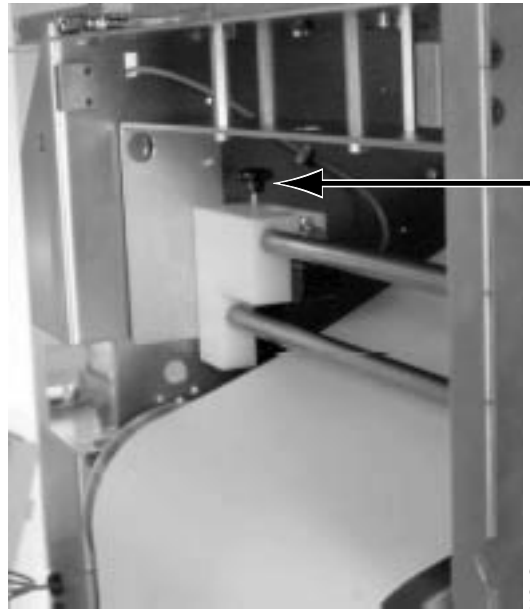


Figure 194. Web Alignment Sensor

7. Move the sensor, which is located in the back of the white mounting block, gently to the proper position (you will feel a click).
Use the outer-most position for the wider print medium and the slot to the right of it for the narrower print medium.
8. Tighten the thumb screw.
9. Ensure the print medium is centered through the web and over the top roller.
10. Move the X tower back to its original position.
11. Latch the X tower to the Y tower by pulling down on the latch handle. (See Figure 193 on page 218 for the location of the handle.)
12. Close the front doors on the tower.
13. 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:

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.

Fine-Tune the Web Sensor Alignment

14. Open the **Register Control** window, as shown in Figure 195 on page 220.

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

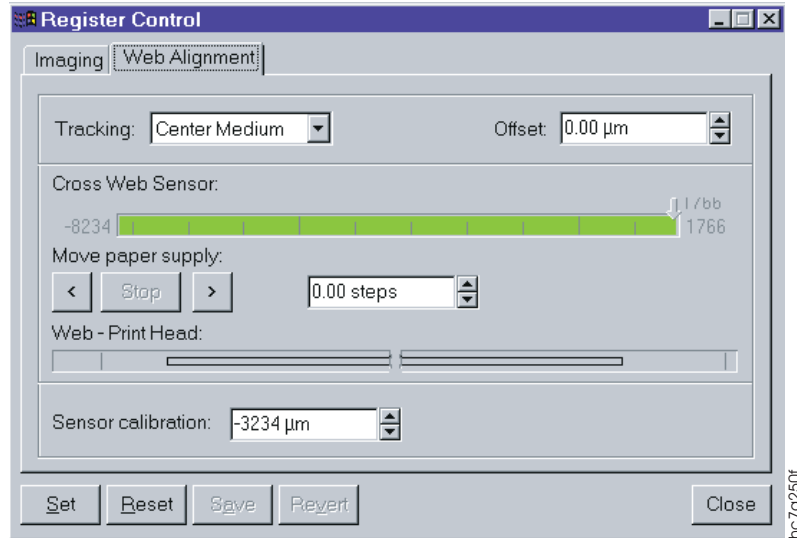


Figure 195. Register Control Window

1. Set the following parameters:

Table 68. Web Alignment Parameters

Parameter	Setting
Tracking	Set to On
Offset	Set to 0
Sensor Calibration	Set to 0

2. Click the **Set** pushbutton.
3. Print a sample with a known left margin. Compare the actually printed left margin with the known one.
4. If the difference between the known and printed left margin exceeds a few hundred μm , adjust the sensor's position mechanically with this value (Figure 196 on page 221) and set the **Sensor Calibration** value to **0**.
For a positive value, rotate clockwise (0.7 mm per revolution). When the sensor is not mounted in the middle, the adjustment range is limited.



Figure 196. Web Alignment Sensor Label

5. Print the sample again and measure the left margin.
6. For fine-tuning, use the following parameters:
 - a. Enter the correction value in the **Sensor Calibration** box (positive value to move the image to the right).
 - b. Change the job's left margin in the **Offset** box.
 - c. Print again and repeat the previous procedure, if necessary.
7. When adjusting the cross registration parameters, the **Sensor Calibration** value should also be adjusted because changing the cross registration parameters can change the width and position of the effective head.
8. Finish the service intervention procedure, as described on Page 291.

Controlling Density

Density control involves two types of operator responsibility:

- Obtaining correct densities and stable tone scales, which should be done every 20 to 40 A3 sheets for the first 1000 pages printed and every 250 A4 sheets after the first 1000 pages (see “Monitoring Counters” on page 254 to verify the number of A3 sheets printed).
- Optimizing the xerographic process for quality and minimum toner waste, which should be done every 2500 A3 sheets.

Attention:

RIPing the control strip correctly is essential for proper density control (see “RIPing Control Strips” on page 173).

Several process parameters influence density:

- LED-array exposure (**LDA%**) of the photoconductor drums
- Bias voltage
- Toner concentration in the developer unit
- Relative humidity in the print tower

- Toner charge
- Print media resistivity
- Print unit speed (PUD speed)

You can monitor and adjust these parameters. You can monitor the age of the developer and the page coverage, but cannot adjust the parameters.

How Process Parameters Influence Density

You are responsible to observe and maintain acceptable print density and print quality. This is accomplished by measuring the density of each C,M,Y,K color on both sides of a control strip printed at the leading edge of each page using a densitometer. The most effective and immediate method to adjust density is to change the LED array exposure level for that print unit (%LDA). This changes the discharge level of the image on the photoconductor drum. An increase in %LDA for X-side cyan increases density of X-side cyan on the next page printed. If the LDA% is adjusted to its limits and print density is not within 0.1 of its control strip target then there may be something wrong with the print station or the developer mix may need to be replaced.

The print engine supervisor maintains toner concentration and toner charge in each developer unit at nearly constant levels. Some adjustments are automatically made as the developer ages. The operator can modify toner concentration (Tcd) up or down up to 15%. Changing toner concentration is a slow process. It may take 100 prints or more to raise toner concentration.

You can change PUD speed. This is the speed at which the developer unit turns. Increasing the developer unit PUD speed will cause the magnetic roll to present more toner to the photoconductor drum thereby increasing density. This method of changing density is not as effective as changing %LDA.

You can adjust bias voltages from nominal values. Adjusting bias voltages affects the density of very light areas of color (densities of 0.1). This adjustment maintains the clarity of nearly white areas in images.

Increasing tower humidity can also increase print density for some print media. The default setpoint of tower humidity (32%) is optimum for most print media.

Figure 197, Figure 198, and Figure 199 show graphs that display the relation of density to different process parameters.

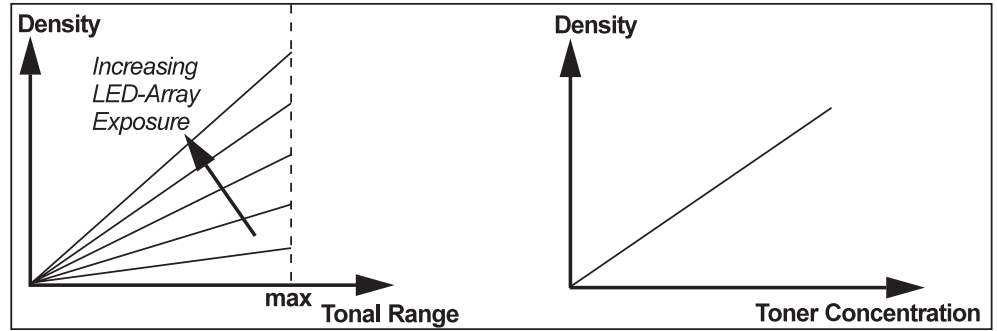


Figure 197. Density in Relation to LED-Array Exposure and Toner Concentration

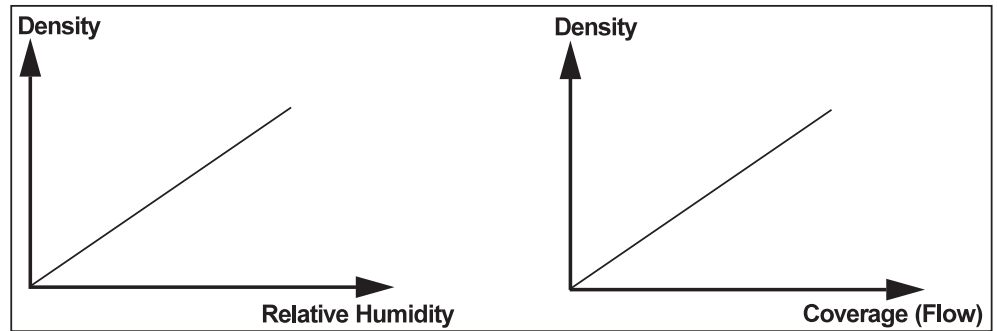


Figure 198. Density in Relation to Relative Humidity and Page Coverage

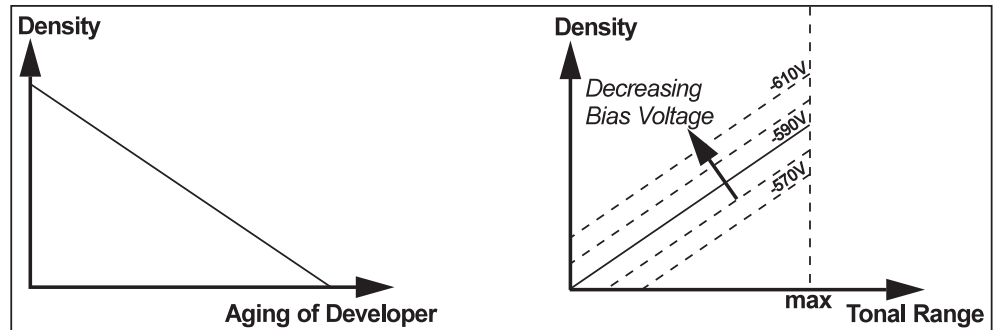


Figure 199. Density in Relation to Age of Developer and Bias Voltage

Setting Up and Calibrating the Densitometer

Included with your InfoPrint Color 100 is a Gretag D19C densitometer to measure density. It can be used as a stand-alone piece of equipment or attached directly to the InfoPrint Color 100. 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 InfoPrint Color 100

- 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 NT 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 200.

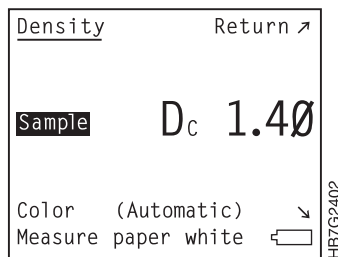


Figure 200. Gretag Density Display

4. Turn on the densitometer by pressing the measurement key again.
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** or **Registration** 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.

Automated Density Control Feature

Automated density control provides the operator with an easier method to adjust density settings on the InfoPrint Color 100. Without automated density control the operator reads the densities on the control strips, using the densitometer, writes down the values, performs correction calculations, and manually changes the settings in the **Density Control** window.

Using the Densitometer for Automated Density Control

Note: It is recommended that you take only the density patch readings until the density is in spec. Then you may take the transfer patch and bias patch readings.

The **Auto Density** window displays values from densitometer readings of test patches on a control strip. After each density reading is recorded, the InfoPrint Color 100 calculates the change, if any, that should be made to the density controls to adjust density.

Before using the densitometer, ensure that it is set up and configured properly (see “Setting Up and Calibrating the Densitometer” on page 223).

Note: At least ten meters of paper must go through the printer between density corrections. If not, a message window will ask you if you want to continue.

Follow these steps to measure density:

1. Open the **Auto Density** window, as shown in Figure 201.

IBM ⇒ Auto Density 

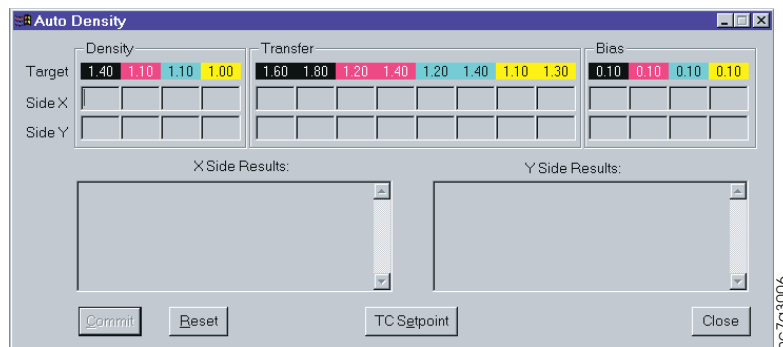


Figure 201. Auto Density Window

When you open the **Auto Density** 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:

2. Ensure the densitometer is setup for density readings and has been calibrated today. See “Setting Up and Calibrating the Densitometer” on page 223.
3. Press the measurement key to activate the display, move the graphics bar to **Measure unprinted paper white**, and press the measurement key again to do a white measurement.
4. Using the control ball move the graphics bar to **Sample**.
5. Locate the X-side of the control strip on your sheet.
6. 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.

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, if needed, will appear in the **Results** box.

7. Continue taking X-side readings.
8. 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.

9. Press the **Commit** pushbutton to make the changes displayed in the **Results** boxes.

Manually Taking Density Measurements

If you are not using the automated density feature, use the densitometer to measure densities on the density patches on the control strip. See Figure 202.



Figure 202. Example of Density Patches on a Control Strip

Before using the densitometer, ensure that it is set up, configured, and calibrated properly (see “Setting Up and Calibrating the Densitometer” on page 223).

Note: At least ten meters of paper must go through the printer between changes in density. If not, a message window will ask you if you want to continue.

Follow these steps to measure density:

1. Ensure the densitometer is setup for density readings and has been calibrated today. See “Setting Up and Calibrating the Densitometer” on page 223.
2. Press the measurement key to activate the display, move the graphics bar to **Measure unprinted paper white** and press the measurement key again to do a white measurement.
3. Locate the X-side control strip on your sheet.
4. Place the measuring aperture of the densitometer on the black density patch in the control strip and press down on the measurement key.
5. Write down the measurement value.
6. Measure and write down the densitometer values for each density patch on the X-side of the sheet and then continue to do the same to the density patches on the Y-side of the sheet.
7. Perform the corrections to these values as described in “Correcting Densities Manually and Optimizing Process Conditions” on page 228.
8. Open the **Density Control** window.
Process Control ⇒ **Density Control**



9. Enter the adjusted values in the LDA% fields in the **Density Control** window. See “Understanding the Density Control Window” for more information.

Understanding the Density Control Window

To monitor and adjust density control, open the **Density Control** window, as shown in Figure 203.

Process Control ⇒ Density Control

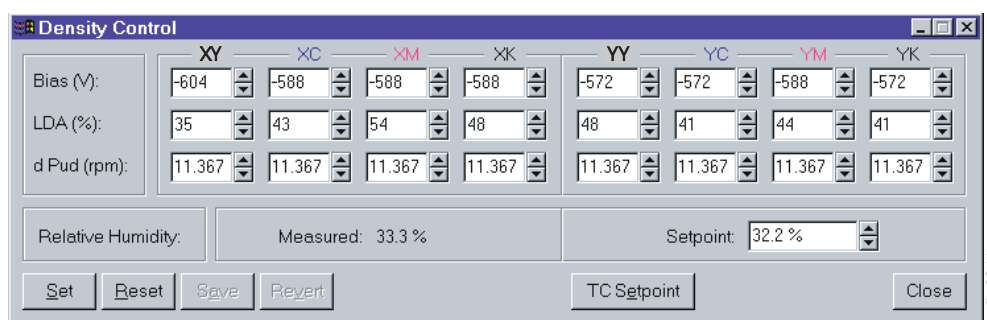


Figure 203. Manual Density Control Window

The **Density Control** window monitors the following parameters for each print station and allows adjustment of these values.

Bias The value of the bias voltage.

% LDA

The value of the LED array exposure.

After changing an LDA value, click the **Set** pushbutton. Wait 10 seconds before you change a second time or before you revert. You have to wait until a blank sheet has passed.

Notes:

1. If you wish to revert to an original value, wait 10 seconds (until the item changes back to white), before clicking the **Revert** pushbutton. If you click the **Revert** pushbutton too soon, both the **Save** and **Revert** pushbuttons grey out and the value is not saved or reverted. If you want to revert after the pushbutton is greyed out, place the cursor on the field and click the right mouse button; a pop-up windows displays which allows you to revert.
2. If you attempt to change another LDA value soon after changing the first, the following message may display: Already changing LDA intensity for other units, please wait: No error. This message may display even though the new LDA value appears that it has already changed.

dPUD (RPM)

The value of the variation of the PUD. By increasing the PUD speed the density can also be increased. Use this parameter to adjust the densities

instead of the % LDA parameter when you want to avoid white sheets during a run (as a result of LDA adjustment). The reference value is 155 rpm. The normal PUD speed is 166 rpm, so the default dPUD value is 11.3. When you adjust the dPUD value, the resulting absolute value must be between 110 and 190 rpm, so the dPUD value must be between -45 and 35 rpm. An adjustment of 20 rpm is equal to 5% LDA.

After changing an dPUD value, click the **Set** pushbutton. Wait 10 seconds before you change a second time or before you revert.

Notes:

1. If you wish to revert to an original value, wait 10 seconds (until the item changes back to white), before clicking the **Revert** pushbutton. If you click the **Revert** pushbutton too soon, both the **Save** and **Revert** pushbuttons grey out and the value is not saved or reverted. If you want to revert after the pushbutton is greyed out, place the cursor on the field and click the right mouse button; a pop-up windows displays which allows you to revert.
2. If you attempt to change another dPUD value soon after changing the first, the following message may display: Already changing LDA intensity for other units, please wait: No error. This message may display even though the new dPUD value appears that it has already changed.

You can also monitor the measured and setpoint relative humidity in the print tower.

Tower Conditioning Parameters

Relative Humidity Measured

The actual relative humidity of the print tower.

Relative Humidity Setpoint

The value to which the relative humidity should be adjusted.

The TC Setpoint pushbutton opens the **Toner Concentration Setpoint** window, as shown in Figure 204 on page 231. The following density controls are shown:

TC Measured

The actual toner concentration value measured by the sensor.

TC Setpoint

The value to which the actual toner concentration is adjusted.

TC d Setpoint

The parameter you can use to manually adjust **TC setpoint**.

Correcting Densities Manually and Optimizing Process Conditions

This section explains how to 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 69 on page 229. These test patches should have density values of about 80% Dmax, which is the maximum density the printer was designed to print.

Table 69. Density Test Patch Values

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 69, 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 current exposure reading.
- An **LDA %** higher than 60% may actually decrease density.
- Therefore, the following working ranges of **LDA %** have been established:
 Allowed range: 20% < LDA < 75%
 Preferred range: 40% < 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 < TC d Setpoint < 150
 650 < 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 **TC Setpoint** 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% <RH <37%

Note: When adjusting relative humidity, you may have a negative affect on transfer.

Correcting for Transfer Test Patch Measurements

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 204.

Process Control ⇒ **Toner Concentration Setpoint**

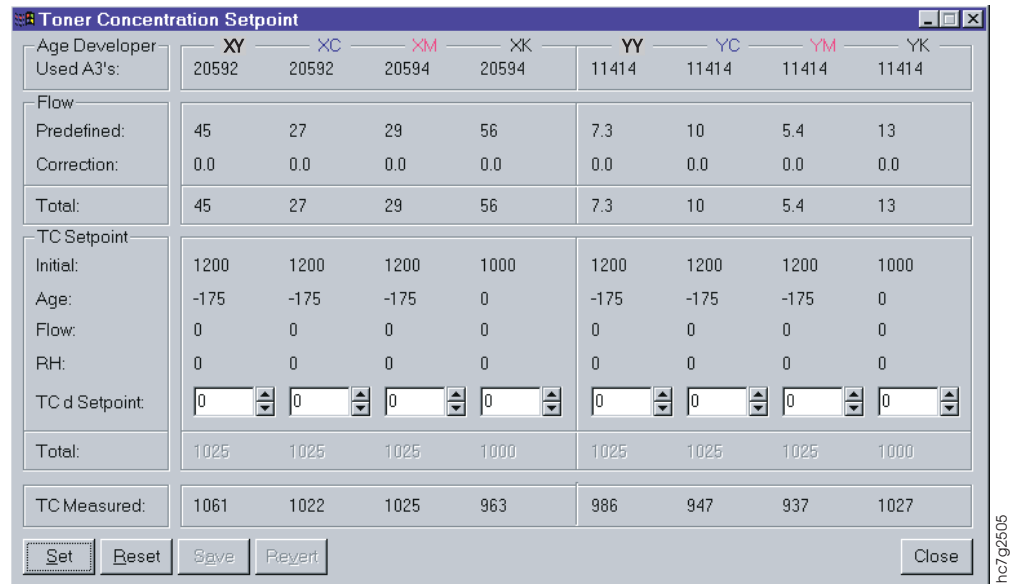


Figure 204. Toner Concentration Setpoint Window

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 optimally should not be easily visible to the eye.

The causes of dirty background are:

- Page coverage: the heavier the page coverage, the more dirty the background
- Toner concentration: the higher the TC, the more dirty the background
- Moisture: the higher the relative humidity, the more dirty the 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 230) 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 230).

LED-Array Exposure: Ensure that **LDA %** is within the working range of 40% to 60%.

Tower 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, cooling unit, and humidifier water level.

Avoiding Bearding

Bearding appears as blown-off toner at the leading edge of the image, as shown in Figure 205 on page 233.

Increase the **TC Setpoint** to avoid this problem.

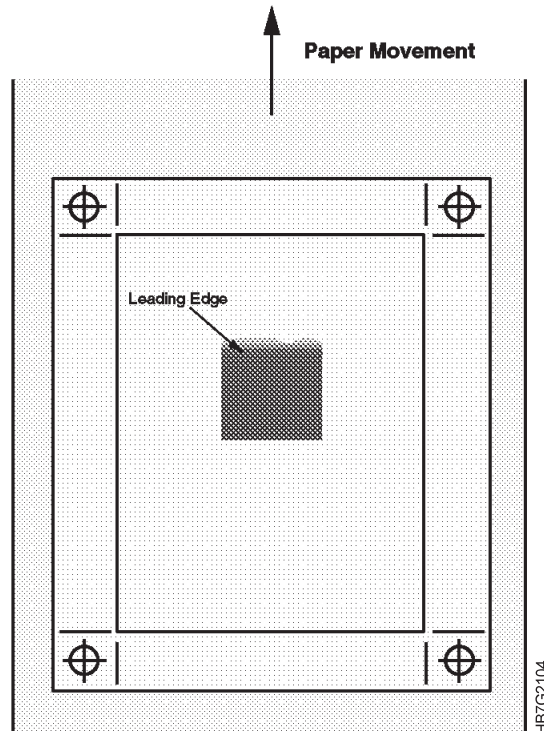


Figure 205. Example of Bearding

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 204 on page 231).

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 243).

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 230).

Toner Saver Feature

Overview

Toner Saver allows the Operator to reduce toner usage while maintaining the same color gamut (integrity), or minimize toner usage with possible changes to color gamut.

A combination of equal percentages of cyan, magenta, and yellow theoretically produces the single color black (K). Therefore, for mixed percentages of cyan, magenta, and yellow, removing an equal percentage from each (the gray component) and substituting an equivalent amount of black should give the same result. Due to ink (toner) impurities and limitations of the printing press, additional CMY inks must be added to mixture to try and match the original result.

Toner savings is accomplished by replacing all of the gray component (equal percentages of CMY) with black (K). Then a predetermined amount of each cyan, magenta, and yellow is returned to the proportions to restore the hues. This method yields the same, or nearly the same color results as the original job, depending on the Toner Saver setting. Toner usage for cyan, magenta, and yellow is reduced while black toner usage is increased.

Example:

- A color requires 20% cyan, 30% magenta, 50% yellow, and 0% black. The common CMY component (the gray component) is 20%. A new color mix could be 0% cyan, 10% magenta, 30% yellow, and 20% black.
- The toner usage before replacing the gray component was 100 units. After the change, it was reduced to 60 units.

Using Toner Saver can reduce toner use for CMY by as much as 40%.

Some prepress software applications present black text as RGB (red, green, and blue) colors. When used, Toner Saver will automatically transform the RGB components for black into levels of black rather than CMY.

Using Toner Saver

There are three settings for the Toner Saver feature — None, Gamut Protect, and Lower Gamut.

Table 70. Toner Saver Settings

Setting	Description
None	This option disables the Toner Saver.
Gamut Protect/Lower Savings	The new color will be the same as the original color. When selected, Toner Saver uses an algorithm that examines the color on all areas of each image and dynamically determines the amount CMY replacement.
Lower Gamut/Maximum Savings	The new color may or may not be the same color. When selected, the maximum amount of the gray component will be replaced with black for the highest toner savings. When possible, the most similar in-gamut color is used.

To set the Toner Saver:

1. Open the **ThruPRINT Page Setup** window.

2. Locate the **Toner Saver** field in the window (bottom left).
3. Click the arrow to open the drop-down menu.
4. Select the Toner Saver setting for your print job.
5. Verify or change all other Rip settings for the job.

Note: You may also use the Job-Setting Saver feature to save the Toner Saver setting for the job.

6. Run the print job.

Chapter 10. Monitoring and Adjusting Processes

While jobs are being RIPed and printed, the operator needs to monitor, and sometimes adjust, different InfoPrint Color 100 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 206 identifies the key parts used to monitor web tension. The tension of the paper web between the speed motor and the brake system is determined by the weight of the brake. This tension can be derived from the torque of the speed motor. The web tension between the speed and torque motor is determined by the torque setpoint of the torque motor.

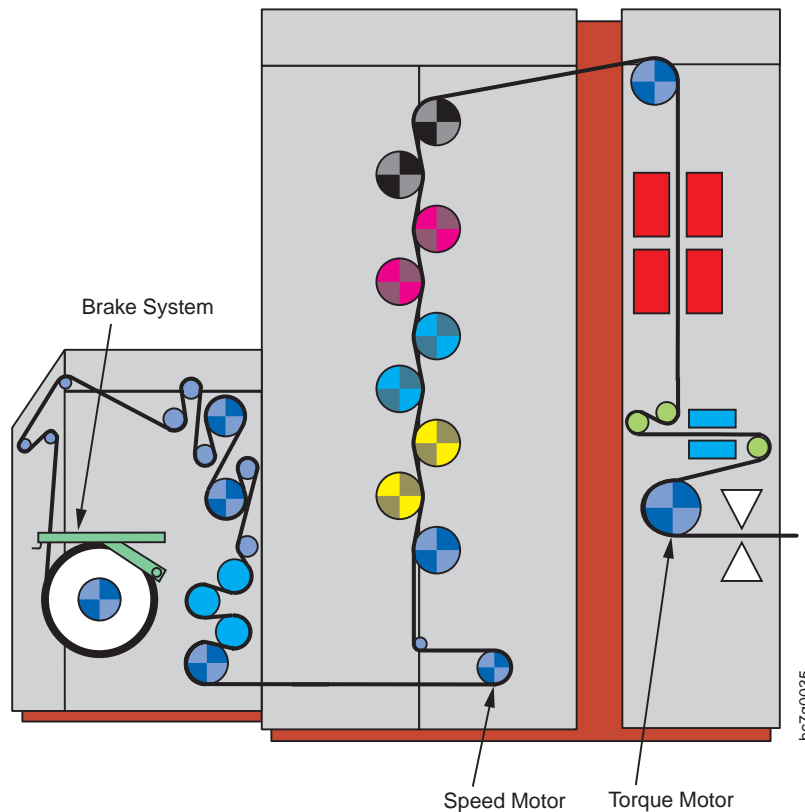


Figure 206. Parts Contributing to Web Tension

You can adjust the web tension between the brake and speed motor by increasing or decreasing the weight of the brake system. See "Adding Weights to the Paper Supply Brake" on page 239 for more information.

You can adjust the web tension between the speed and torque motors by adjusting the torque of the torque motor in the **Web** window. The web tension between the speed and torque motor is the most important one and directly determines print quality (e.g. color registration).

You can monitor the web tension difference across the speed motor in the **Web** window (Figure 207). If the web tension is out of range, you need to make adjustments to the torque motor setting.

To adjust web tension, follow these steps:

1. Open the **Web** window and select the **Tension** tab, as shown in Figure 207.

Process Control ⇒ **Web** **Ctrl+W**

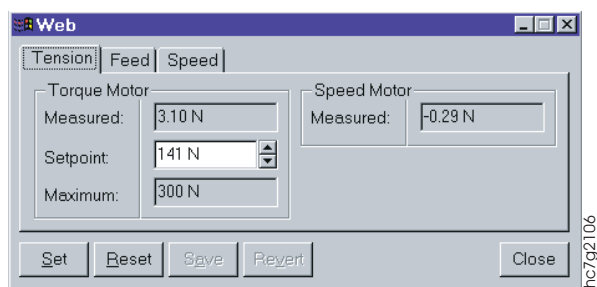


Figure 207. Web Tension Window

The following parameters are displayed in this window:

- **Torque Motor**

The left side of the window displays the tension measured at the torque motor, the torque setpoint of the torque motor, and the maximum permitted tension. The torque motor setpoint can be adjusted. When you specify the type of paper mounted in the print engine the torque setpoint is automatically adjusted. Note that, due to the tension loss caused by the GEM, this setpoint is increased with 20N.

Another 10N is added to compensate the loss of the drum cleaning brushes. Also, the maximum permitted tension is displayed.

- **Speed Motor**

The right side of the window displays the tension measured at the speed motor. The range of tension should be +15N maximum to -30N minimum.

- If the torque is higher than +15N, increase the torque setpoint at the torque motor.
- If the torque is lower than -30N, decrease the torque setpoint at the torque motor, if possible, without degradation of registration quality. Otherwise, add additional weight to the brake.

If the torque of the speed motor is lower than -30N or higher than +15N, one of the following messages displays:

- < -30N: 'IDR/S1.A2:Speedmotor out of torquerange'
- < +15N: 'IDR/S1.A2:Speedmotor out of torquerange'

2. Use the right side of the window to monitor the tension measured by the speed motor.

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

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.

Adding Weights to the Paper Supply Brake

In the unlikely event that you should need to add weights to the paper supply brake, follow these instructions:

1. Remove the two black screws from the paper supply brake, as shown in Figure 208.

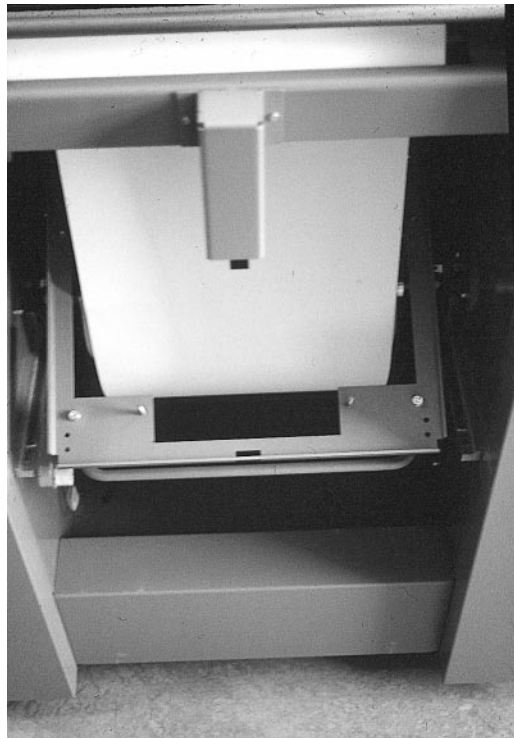


Figure 208. Two Black Screws

2. Mount the two white bushings, as shown in Figure 209 on page 240.

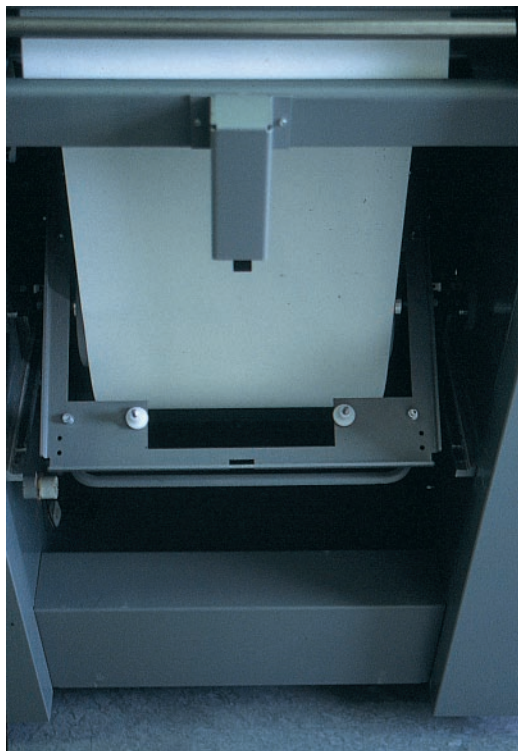


Figure 209. Two White Brushes

3. Mount the proper weights, as shown in Figure 210.

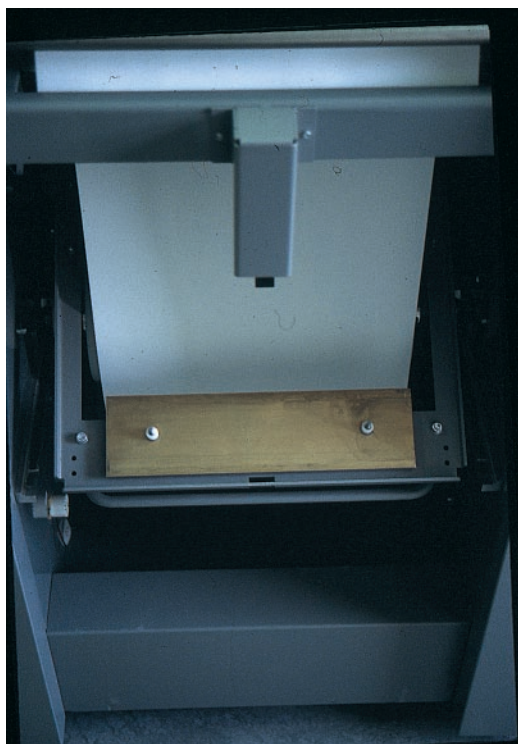


Figure 210. Mount the Weights

4. Replace the two black screws, as shown in Figure 211.

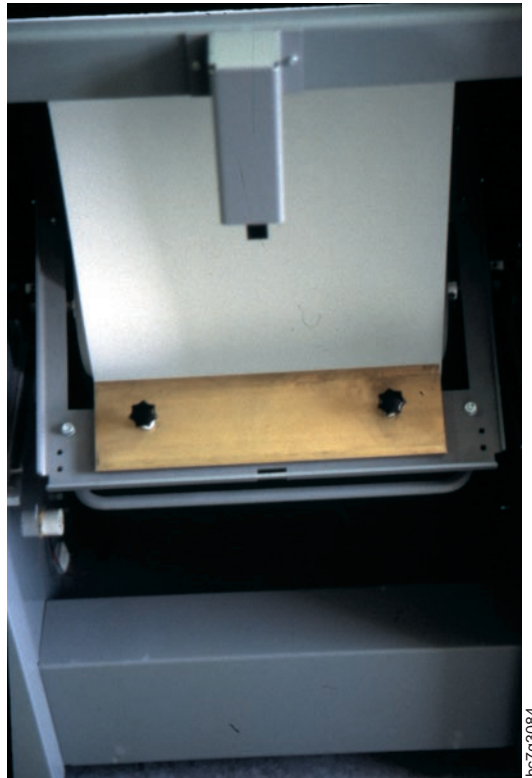


Figure 211. Replace the Two Black Screws

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 212.

Process Control ⇒ **Engine State**  **Ctrl+E**

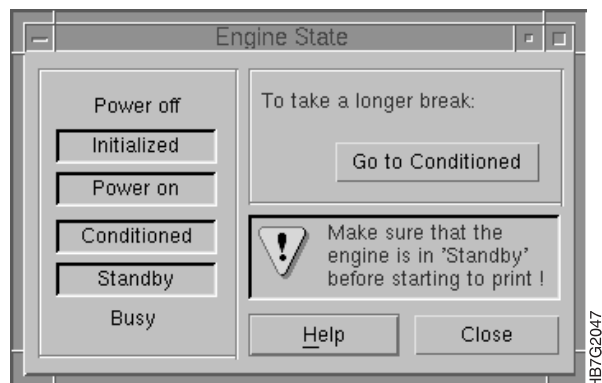


Figure 212. Engine State Window

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 through completion. 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 71.

Table 71. Descriptions of Engine States

Power off:	The main power of the print engine is turned off. This is a temporary state.
Initialized:	The nine 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 Conditioned state.
Conditioned:	The tower conditioning is turned on and the temperature and relative humidity are adjusted to their setpoints. Temperature control has priority. 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 InfoPrint Color 100 and started the software. During this engine state, the tower's conditioning is turned on and the temperature and relative humidity are adjusted to their setpoints. Relative humidity control has priority. The pre-heating lamp and fusing system are activated.
Busy Waiting:	You have clicked the Print pushbutton, the job has downloaded and is waiting to be printed. If you print in Auto-print mode, the print engine skips Busy waiting and goes automatically from the Standby state to the Busy starting state.
Busy Warming Up:	You have clicked the Ok pushbutton in the Print Sequence window or Auto-print is on. The print engine is waiting for the fuser to warm to its required setpoint temperature, which takes about one minute. When the fuser reaches its setpoint temperature the print engine starts. If the warming up time-out is passed, a warning is given and the print engine returns to the Busy waiting state.
Busy Starting:	The print engine is starting.
Busy Quality:	The print engine is checking for quality criteria. The print engine has completely started but one or more of the five parameters in the Engine State Progress window has not reached its setpoint yet (see "Process Control: Engine State Progress" on page 65). If you click Ok in the Print Sequence window, the print process continues but the print quality will be affected negatively.
Busy Pausing:	The print engine has completely started, all five parameters in the Engine State Progress window have reached their setpoint, and the engine is waiting for the operator to click the Ok pushbutton in the Print Sequence window. Busy Pausing is skipped if you print in Auto-print mode.
Busy Printing:	The imaging of the job is taking place. When the job is finished the print engine goes to Standby state.
Busy Stopping:	Either the job has finished printing, or you have clicked the Halt pushbutton in the Print Sequence 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 213 that includes two heated rolls, which dry the print medium to a specific moisture content, two paper cooling rolls, and a system for measuring the resulting conductivity. This system uses two coronas that spray charges on a measuring drum at the bottom of the print medium supply. Two charge meters located after the transfer corona, measure the potential of the print medium. The potential measured by the first charge meter is called Paper Supply U1 (PRS U1), and the potential measured by the second charge meter is called Paper Supply U2 (PRS U2).

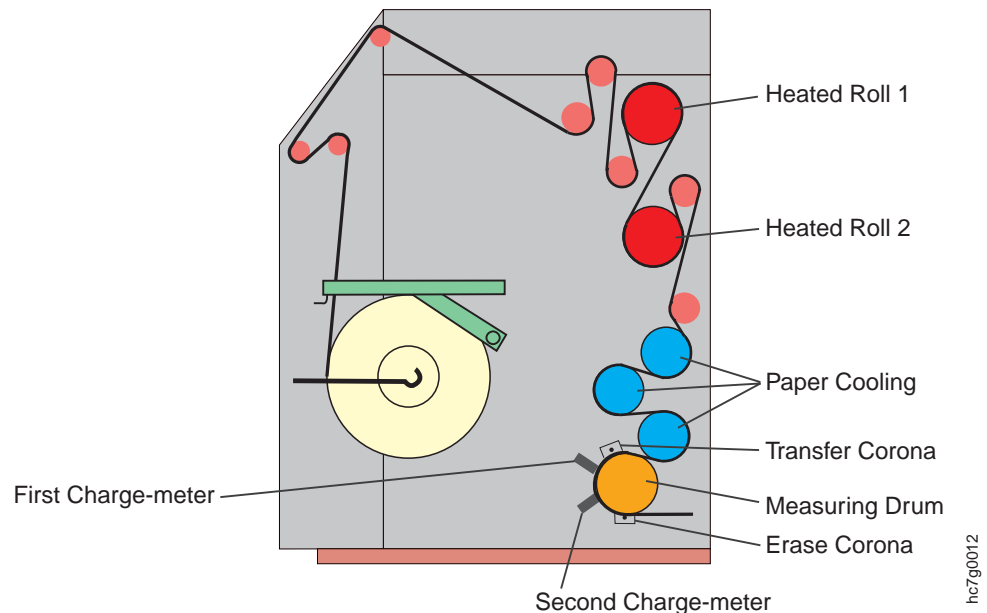



Figure 213. Print Medium Conditioning System

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 Supply** tab in the **Conditioning** window.

Open the **Conditioning** window as shown in Figure 214 on page 244.

Process Control ⇒ Conditioning 

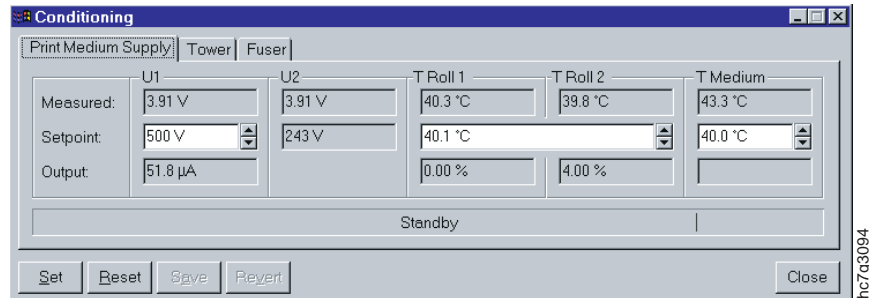


Figure 214. Print Medium Supply Tab, Conditioning Window

Select the **Print Medium Supply** tab. The following voltage and temperature control parameters display:

- Voltage control input parameters

PRS U1 Measured

This is the actual potential measured by the first charge-meter.

PRS U1 Setpoint

The setpoint of U1 is equal to 500V.

PRS U2 Measured

This is the actual potential measured by the second charge-meter.

PRS U2 Setpoint

The setpoint of U2 is paper dependent. A U2 setpoint has been established for each type of IBM recommended paper. This setpoint is based on the specific paper humidity that will result in the best print quality.

- Voltage control output parameter

Corona current

This is the current of the first (transfer) corona. The control unit automatically adjusts the current so PRS U1 is equal to 500V during printing.

- Temperature control input parameters

T Roll 1 Measured

The measured value T1 is the standby temperature of heater roll 1.

T Roll 2 Measured

The measured value T2 is the standby temperature of heater roll 2.

T Roll 1/Roll 2 Setpoints

The setpoints for both rolls are the same. The setpoints are paper dependent.

- Temperature control output parameters

Heater T Roll 1

This is the duty cycle setpoint for heated roll 1. When printing, the duty cycle will be adjusted until PRS U2 is equal to its setpoint.

Heater T Roll 2

This is the duty cycle setpoint for heated roll 2. When printing, the duty cycle will be adjusted until PRS U2 is equal to its setpoint.

T Roll 1/Roll 2 Setpoints

The setpoints for both rolls are the same. The setpoints are paper dependent.

Knowing What to Monitor and When

Table 72 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 engine state is displayed at the bottom of the window. Monitor the parameters corresponding to the engine state.

Note: If you change to a different paper type between print runs, ensure that you load the correct script file so that the correct setpoints are used for the heated roll temperature and the paper humidity.

Table 72. Print Medium Conditioning States

Engine State	What to Monitor	Setpoint	What Happens Next
Warmup: the temperature of the two heated rolls is controlled.	Heater T Roll 1 and Heater T Roll 2 (the temperature of the heated rolls)	Default values depend on paper type.	When the measured value is at its required setpoint, you can start the paper web.
Start: PRS U1 adjusts to its required setpoint	PRS U1 adjusts to 500V. PRS U2 comes up slowly	500V (always the same) Default values depend on paper types.	The engine state progresses to Run.
Run: PRS U2 adjusts to its required setpoint	PRS U2	Default values depend on paper types.	When the measured values are at their required setpoints, proceed with printing in the Print Sequence window. 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 PRS U2 setpoint will be reached in about 20 seconds, rather than a few minutes.
Standby: The web is not running.		A lower temperature setpoint is automatically applied so that the print medium will not scorch while in contact with the two heater rolls.	Waiting for the next job.

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 215, 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.

Additionally, there are two heaters with a thermostat to quickly increase the air temperature.

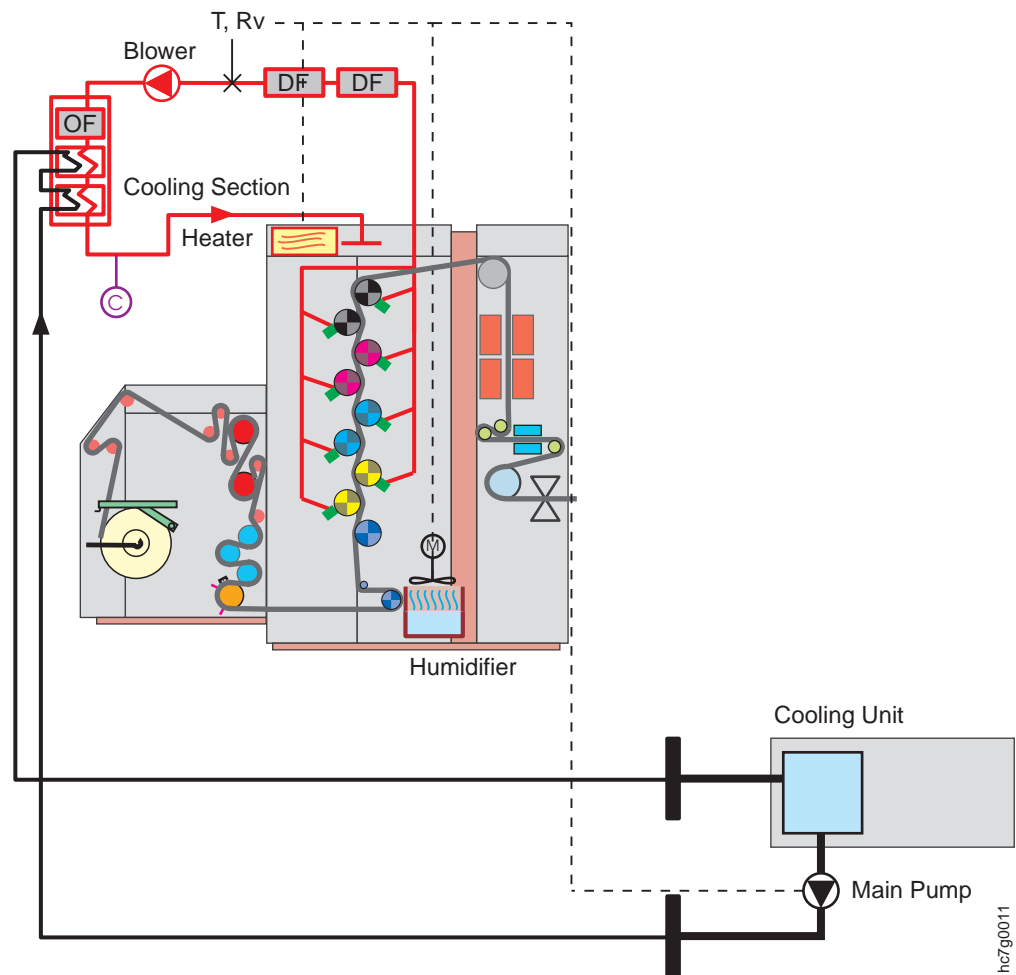


Figure 215. Tower Conditioning System

There are three ways to control the temperature and relative humidity of the print tower:

1. Main pump: Adjusting the duty cycle of the main pump controls air cooling and drying. The relative humidity has priority when there is a conflict.
2. Humidifier: Adjusting the humidifier duty cycle humidifies the air.

3. Heater: Switching the heater on and off controls air heating

Table 73 shows some examples of possible tower conditions and how the duty cycles of the main pump and humidifier are adjusted automatically to compensate for the conditions, depending on the engine state.

Table 73. Examples of Automatic Tower Conditioning


Example Tower Conditions	Main Pump Duty Cycle	Humidifier Duty Cycle	Heater Duty Cycle
T Measured < T Setpoint RH Measured < RH Setpoint According to the T the air has to be heated. Therefore the main pump is turned off and the heater is turned on. As the RH drops below the setpoint, the humidifier is activated.	0	>0	>0
T Measured < T Setpoint RH Measured ≥ RH Setpoint According to the T, the air has to be heated but, according to the RH the air has to be cooled. Because RH is prior, the main pump is turned off. The T will be raised by turning on the heater. The humidifier is not activated.	>0	0	>0
T Measured ≥ T Setpoint RH Measured < RH Setpoint According to the T, the air has to be cooled so the main pump is turned on and the heater turned off. As the RH drops below the setpoint, the humidifier is activated.	>0	>0	0
T Measured ≥ T Setpoint RH Measured ≥ RH Setpoint According to the T as well as the RH, the air has to be cooled so the main pump is turned on and the heater turned off. As the RH rises above the setpoint, the humidifier is not activated.	>0	0	0
Note: T = temperature, and RH = relative humidity			

Tower Conditioning at Night

When you press the **Stop** pushbutton and do not turn off the main power switch, the InfoPrint Color 100 night tower conditioning is active. During night tower conditioning, the door heaters are active and the humidifier is inactive. The advantages of night tower conditioning are; condensation is prevented in the print tower, and when you turn on the InfoPrint Color 100 in the morning, you will not have to wait until the tower temperature reaches its setpoint.

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 **Tower** tab in **Conditioning** window, as shown in Figure 216 on page 248. To open the **Conditioning** window, select:

Process Control ⇒ Conditioning 

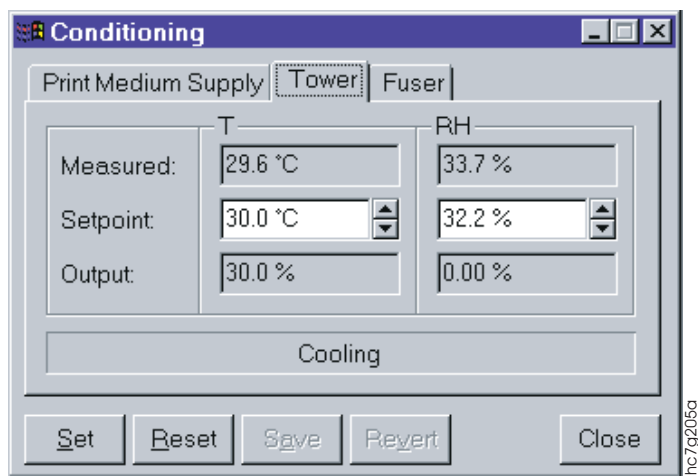


Figure 216. Tower Tab, Conditioning Window

Select the **Tower** tab and the following temperature and relative humidity control parameters for tower conditioning display:

- Temperature control input parameters

Twr T Measured

The actual temperature in the print tower.

Twr T Setpoint

The value to which the temperature has to be adjusted. The value should be between 27 and 30°C.

- Temperature control output parameter

Main pump

The duty cycle of the cooling water main pump. This value depends on engine state, the measured and setpoint temperature, and relative humidity.

- Relative humidity control input parameters

Twr RH Measured

The actual relative humidity of the print tower.

Twr 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 221).

- Relative Humidity control output parameter

Humidifier

The duty cycle of the humidifier. This value depends on engine state and the measured and setpoint temperature and relative humidity.

Attention:

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 300. 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.

- **Control:** Although you can manually control tower conditioning, we recommend that you keep the control on Automatic.
- **State:** The state of the tower conditioning control is displayed in the field near the bottom of the window. There are three possibilities:

Heating

When Heating is highlighted, the temperature is below its setpoint, so the air in the print tower is being heated.

Cooling

When Cooling is highlighted, either the temperature is higher than its setpoint and/or the relative humidity is higher than its setpoint.

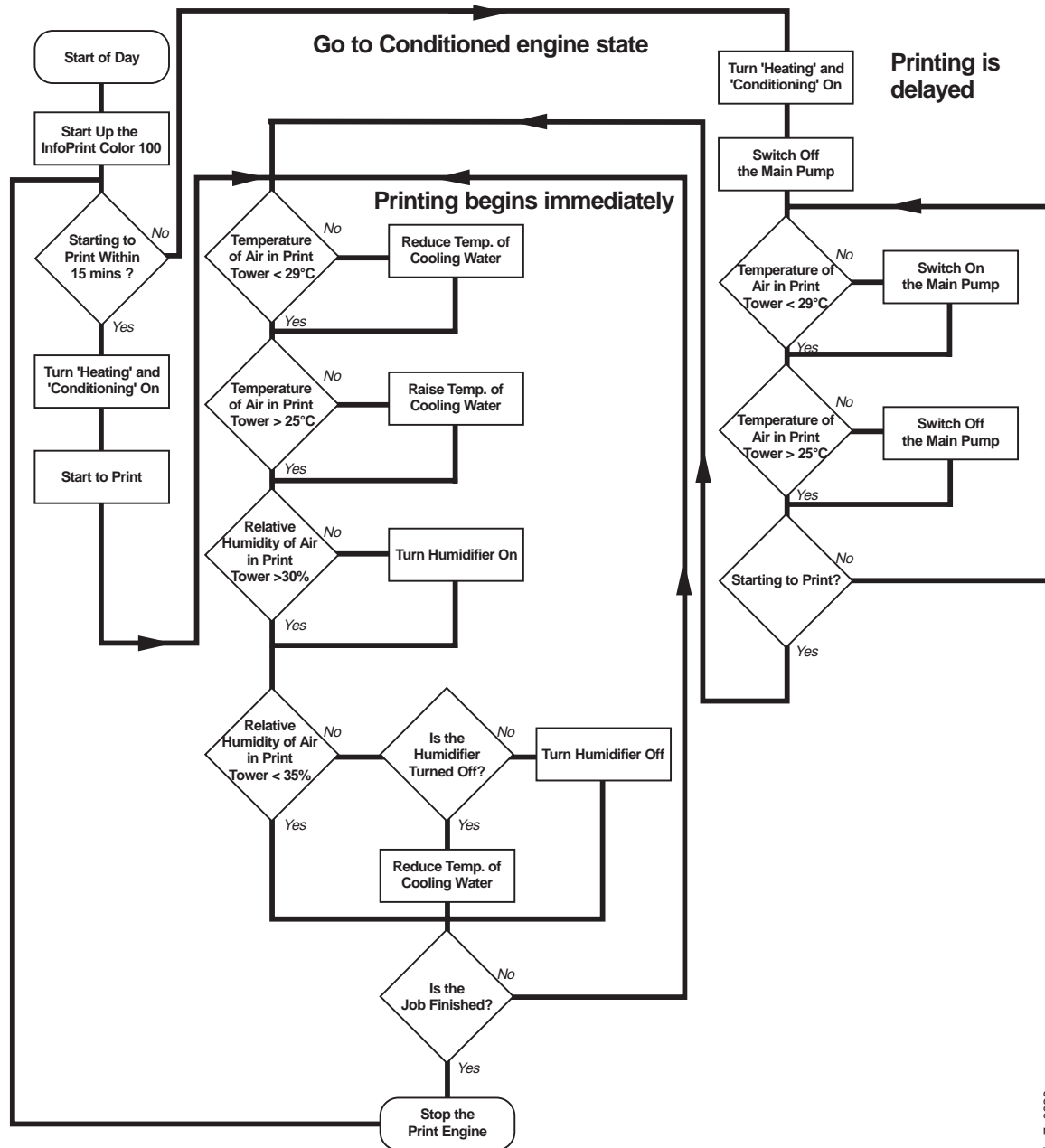
Humidifying

When Humidifying is highlighted, the relative humidity is below its setpoint.

It is possible that two states are active; e.g., heating and humidifying.

Summarizing Tower Conditioning Flow

Figure 217 on page 250 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 217. 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 74 on page 251, the fusing control system performs specific functions during various states of the print engine. See “Understanding Print Engine States” on page 242 for the descriptions of engine states.

Table 74. Fusing System Controls

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 **Fuser** tab of **Conditioning** window, as shown in Figure 218. Open this window using the instructions under “Understanding Print Medium Conditioning Parameters” on page 243 and select the **Fuser** tab.

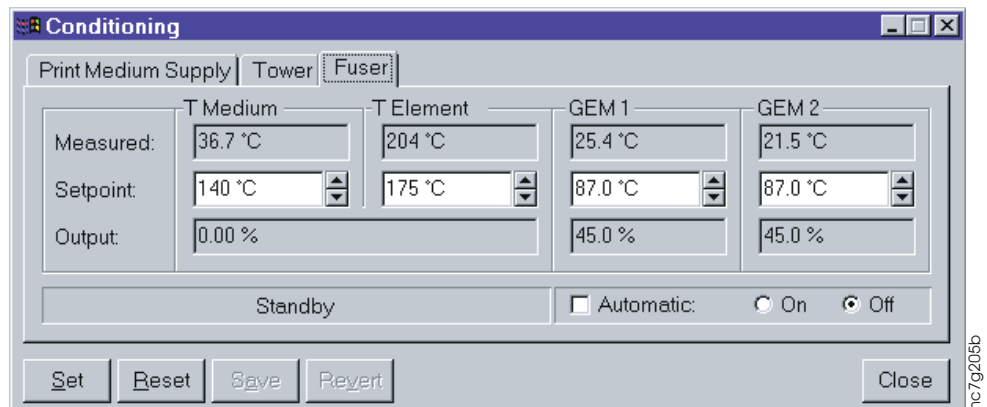


Figure 218. Fuser Tab, Conditioning Window

Understanding the Fusing System Parameters

The fusing system parameters are grouped into paper temperature control and fuser element temperature control.

- Paper temperature control input parameters

T Medium Measured

The actual temperature of the paper coming out of the fuser.

T Medium Setpoint

The value to which the temperature of the print medium is adjusted automatically when the web is running. For all IBM recommended paper grades, this value is 140° C. The operator can adjust this setpoint.

- If you are using the **Fuser** tab of the **Print Medium Settings** window, the setpoint is limited to a minimum value of 90° C and a maximum value of 155° C.
- If you are using the **Fuser** tab of the **Conditioning** window, the setpoint is limited to a minimum value of 80° C and a maximum value of 150° C.

- Paper temperature control output parameter

Heater

The heater duty cycle.

- Fuser element temperature control input parameters

T Element Measured

The actual temperature of the fuser elements.

T Element Setpoint

The value to which the temperature of the fuser elements is adjusted automatically in Standby state.

- Fuser element temperature control output parameter

Heater

The heater duty cycle.

Paper Temperature Control

Fuser Element Temperature Control

Monitoring the Gloss Enhancement Module (GEM)

To increase the image gloss and overall fusing quality (surface smoothing and toner adhesion), two pairs of heated nip rollers act on the printed web. The higher the surface temperature of these rollers, the higher the gloss of the printed image. Above a certain temperature level, hot offset will occur. In normal condition cold offset is never possible.

Before the fused print medium enters the GEM the paper is cooled by blowing fresh air into the cooling drums (to avoid the print medium sticking). After the GEM the print medium is cooled again. See Figure 219.

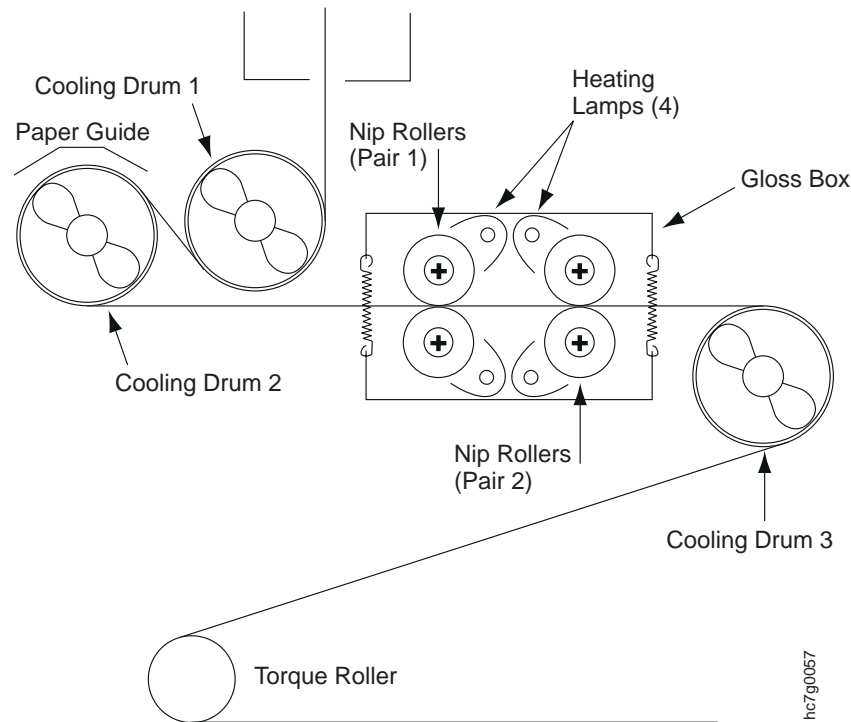


Figure 219. GEM System

The operator may monitor the parameters of the gloss rollers in the **Fuser** tab of the **Conditioning** window, as shown in Figure 220 on page 253. Open this window

using the instructions under “Understanding Print Medium Conditioning Parameters” on page 243 and select the **Fuser** tab.

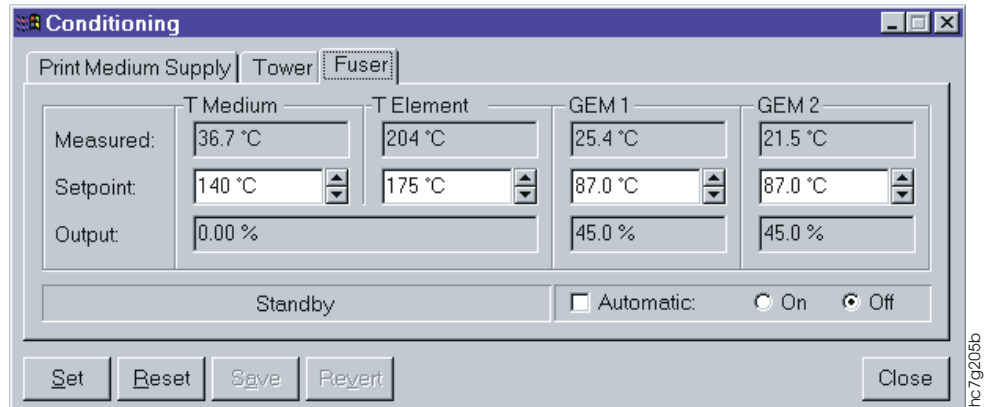


Figure 220. Fuser Tab, Conditioning Window

Understanding the GEM Parameters

The measured and setpoint temperature parameters of the gloss rollers are:

1. Gloss roller temperature control input parameters

GEM1 and GEM2 Measured

The actual temperature of the gloss rollers.

GEM1 and GEM2 Setpoint

The values to which the nip rollers temperature is automatically adjusted. GEM1 is the first pair of nip rollers and GEM2 the second. The value of these setpoints depend on the kind of print medium that is mounted in the print engine. In general, the higher the weight of the print medium, the higher the temperature of the nip rollers can be without creating hot offset.

2. Gloss roller temperature control output parameters

Heater GEM1

Heating lamp 1 duty cycle.

Heater GEM2

Heating lamp 2 duty cycle.

Control

In the bottom of the **Fuser** tab of the **Conditioning** process control window, you can select: On, Off, or Automatic.

If you select Automatic, the GEM will be switched on or off depending on what is selected in the **Finishing** properties window of the job.

If you select **Default** in the **Print Queue Finishing** properties window, the GEM switches on or off depending on what is selected in the **Print Medium Settings** window.

How to Achieve Maximum Gloss

During the first 7K of A3-size images of the developer life the gloss is limited, even at an elevated nip roll temperature. When the first 7K A3 images are past, there is a significant increment of the gloss. When the developer gets older, a consistent glossy perception is achieved. From then on, the purpose of the GEM is to give the image an offset look.

Nip Roller Temperature

You can adjust the gloss of the images yourself by varying the GEM1 and GEM2 temperature setpoints. Increase the temperature setpoints to obtain higher gloss. If, at a certain temperature level hot offset occurs, reduce the temperature setpoint by 2-3°C.

These setpoints depend on the fuser temperature parameter. It is possible that print media of the same weight but different type, may have a different print media fuser temperature setpoint. If maximum gloss is required, increase the nip roller setpoint with 1°C for every increment with 10°C of the print media fuser temperature setpoint. This is only necessary for print media that do not yet have a parameter for the temperature setpoint for the first and the latter nip rolls.

Fusing Temperature

When you increase the fusing temperature, the image will become more glossy. You have to take care that no 'blisters' arise. Blisters are minuscule moist eruptions that cause the image to look like sand paper. Blisters appear when:

- the print medium temperature becomes higher than its setpoint
- coated paper (especially heavy paper stock) is used
- U2 is too low (below its setpoint)

Blisters are especially visible in high coverage images.

When you want to increase the gloss by increasing the fusing temperature (you might want to do this especially when the developer is rather young), increase the U2 setpoint. In most cases you also need to decrease the transfer currents to avoid a spotty image.

Monitoring Counters


The InfoPrint Color 100 is installed with counters that are used to record information about the machine through its lifetime. There are two types 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 221, 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 

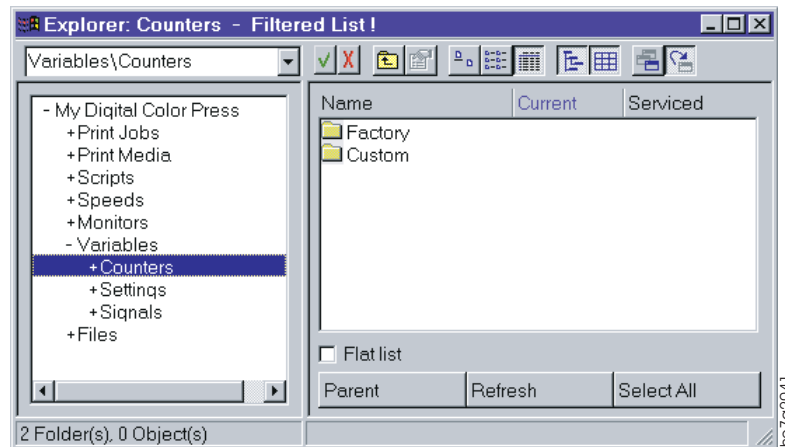


Figure 221. Explorer: Counters Window

To create a list of parts that require replacement in the right side of the **Counters** window, select **Assist** in the **Active Alarms** window. 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.

Usage Parts Counters: The usage parts counters record information about the amount of consumables that the print engine consumes.

1. To look at the usage parts counters, open the **Counters** window, as shown in Figure 222 on page 256.
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 222 on page 256. The counters are described in Table 75 on page 256.

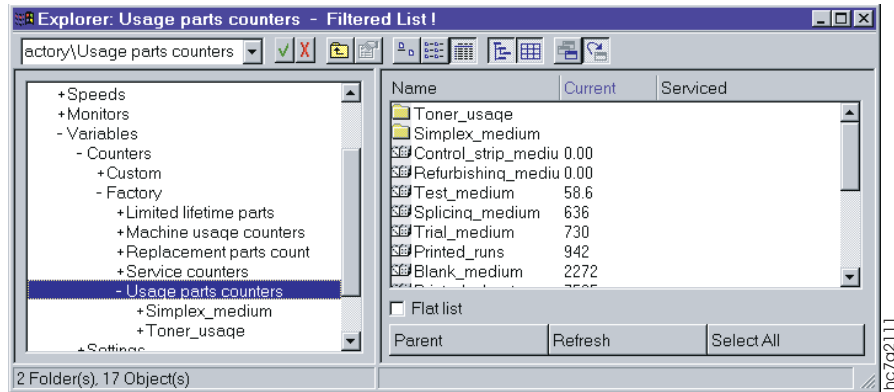


Figure 222. Usage Parts Counters Window

Table 75. Description Usage Parts Counters

Counter	Description	Counter on	Unit of Measure
Printed_runs	Total number of runs printed.	ST_PES	run
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).	ST_PRINT	Sheets
Total_medium (protected counter, see note)	Total amount of medium (manual as well as automatic print sequence, blank or not) run through.	ST_WEB	10 cm
Total_Printed_medium (protected counter, see note)	Amount of printed medium run through (manual as well as automatic print sequence, including trial printing, test sheets and control strip sheets, excluding waste at startup and shutdown, blank sheets, and splicing). Is the sum of sheet length (not signature length) of each sheet printed.	ST_PRINT	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).	ST_SIMPLEX	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).	ST_DUPLEX	10 cm
Printed_medium	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 sheet length (not signature length) of each sheet printed.	ST_JOB	10 cm
Test_medium	Amount of medium used for test sheets (manual as well as automatic print sequence).	ST_TEST	10 cm
Trial_medium	Amount of medium used for trial printing (manual as well as automatic print sequence).	ST_TRIAL	10 cm
Controlstrip_medium	Amount of medium used for control strip printing with collation (separate sheet for control strip).	ST_CTRL	10 cm
Manual_total_blank_medium	Total amount of manually blank print medium.	ST_MAN_NOPRINT	10 cm

Table 75. Description Usage Parts Counters (continued)

Counter	Description	Counter on	Unit of Measure
Total_Blank_medium	Amount of medium used for blank sheets (manual as well as automatic print sequence, including waste, blanks, and splicing).	ST_NOPRINT	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, and splicing).	ST_BLANK	10 cm
Waste_start_stop	Amount of medium wasted at startup and shutdown of the web (manual as well as automatic print sequence).	ST_WASTE	10 cm
Splicing_medium	Amount of medium used for splicing.	ST_SPLICE	10 cm
Manual_total_printed_medium	Total amount of manually printed medium.	ST_MAN_PRINT	10 cm
Manual_total_medium	Total amount of paper run through while manually controlling the web movement.	ST_MAN_WEB	10 cm
Toner_usage.c (protected counter, see note)	Total toner consumption per color (computed from actual flow).	ST_PES	gram

Note: The value of the counter will be stored in a hardware dongle in a scrambled format. The value will be retrieved from the dongle when the PES is started and will be saved to the dongle at regular intervals during each session.

You can also monitor the number of printed sheets, printed print medium, and total print medium used from the **Counters** window, as follows:

1. Open the **Counters** window, as shown in Figure 223.

Maintenance ⇒ **Counters**  **Ctrl+C**

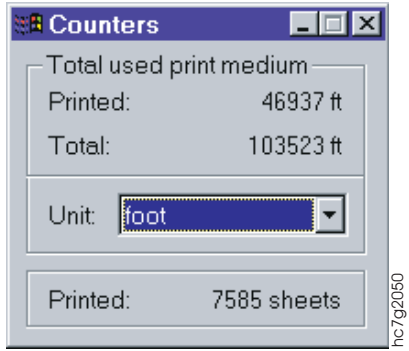


Figure 223. Counters Window

2. Scroll the **Unit** box to select the unit in which to measure the amount used: A4, cm, mm, , km, ft, etc..

Three values are displayed in this window:

- Printed** The total amount of printed paper in designated units
- Total** The total amount of used (printed and nonprinted) paper in designated units

Printed

The total amount of printed 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 204 on page 231).

Machine Usage Counters: Machine usage counters monitor 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 222 on page 256.
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 224. The counters are described in Table 76.

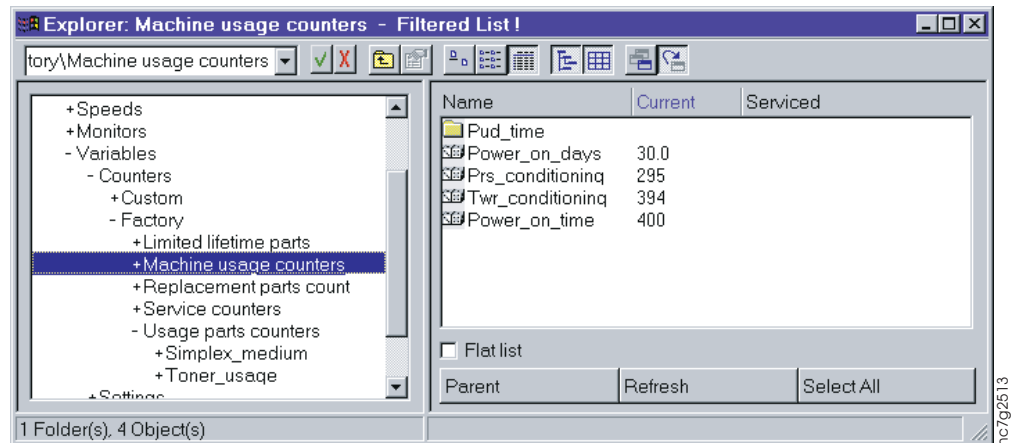


Figure 224. Machine Usage Counters Window

Table 76. Description of Machine Usage Counters

Counter	Description	Counter on	Unit of measure
Power_on_time	Total print engine power-on time.	ST_PES	10 seconds
Power_on_days	Number of days (partial or full) that print engine was powered-on.	ST_PES	Day
TWR_conditioning	Total time print engine conditioning has been active.	ST_TWR_CND	10 seconds
PRS_conditioning	Total time paper engine conditioning has been active.	ST_PRS_CND	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.	ST_PUD	10 seconds

Service Counters: 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 222 on page 256.

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 225. The counters are described in Table 77.

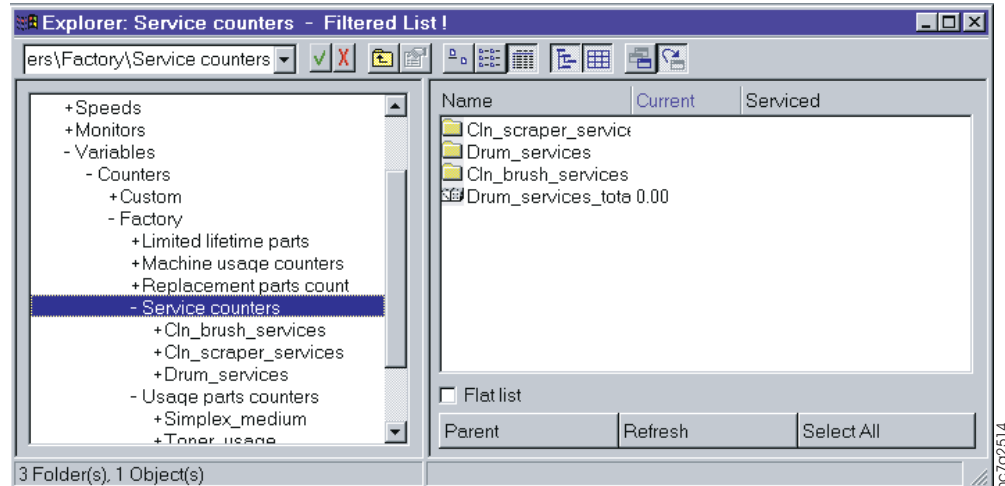


Figure 225. Service Counters Window

Table 77. Description of Service Counters

Counter	Description	Counter on
Total_Drum_service	Number of times drum refurbishing has been performed on any drum.	ST_PES
Drum_services.sc	Number of times drum refurbishing has been performed on each drum.	ST_PES
Cln_brush_services.n	Number of services for cleaning brush of unit n. Incremented when cleaning unit services are reported by the service representative.	ST_PES
Cln_scraper_services.n	Number of services for cleaning scraper of unit n. Incremented when cleaning unit services are reported by the service representative.	ST_PES

Replacement Parts Counters: 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 replacement parts counters, open the **Counters** window, as shown in Figure 222 on page 256.
2. Click on **Factory** in the tree view or left side of **Counters** window.
3. Click again on **Replacement parts counters** and you will see the counters in the list view or right side of the **Replacement parts counters** window, as shown in Figure 226 on page 260. The counters are described in Table 78 on page 260.

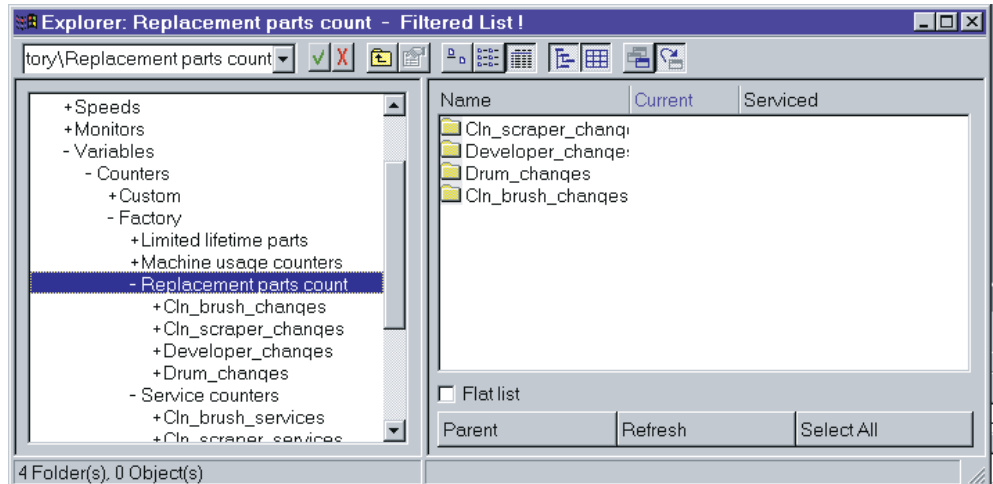


Figure 226. Replacement Parts Counters Window

Table 78. Description of Replacement Parts Counters

Counter	Description	Counter on	Unit
Drum _changes.sc	Amount of print unit drums used for each print unit. Incremented when drum change is recorded.	ST_PES	drum
Developer_changes.sc	Amount of developer changes per print unit. Incremented when developer change is recorded.	ST_PES	developer changes
Cln_brush_changes.n	Number of cleaning brush changes for unit n. Incremented when cleaning brush changes are recorded by the service representative.	ST_PES	cleaning brush changes
Cln_scraper_changes.n	Number of cleaning scraper changes for unit n. Incremented when cleaning scraper changes are recorded by the service representative.	ST_PES	cleaning scraper changes

Resettable Counters for Operator Maintenance and Preventive Service (Limited Lifetime Parts)

The resettable counters are used to warn the operator that preventive maintenance may be needed. Each counter displays a current value and tracks the maintenance on respective parts. The current value is reset to zero when the part is replaced. The current value is copied to the **Last service** value field when the part is serviced. Parts that have a predictable limited lifetime have a **Limited life** field. The **Service interval** value indicates the frequency which a part needs to be serviced.

1. To look at the limited lifetime parts counters, open the **Counters** window, as shown in Figure 222 on page 256.
2. Click on **Factory** in the tree view or left side of **Counters** window.
3. Click again on **Limited lifetime parts** and you will see the counters in the list view or right side of the **Limited lifetime parts** window, as shown in Figure 227 on page 261. The counters are described in Table 79 on page 261.

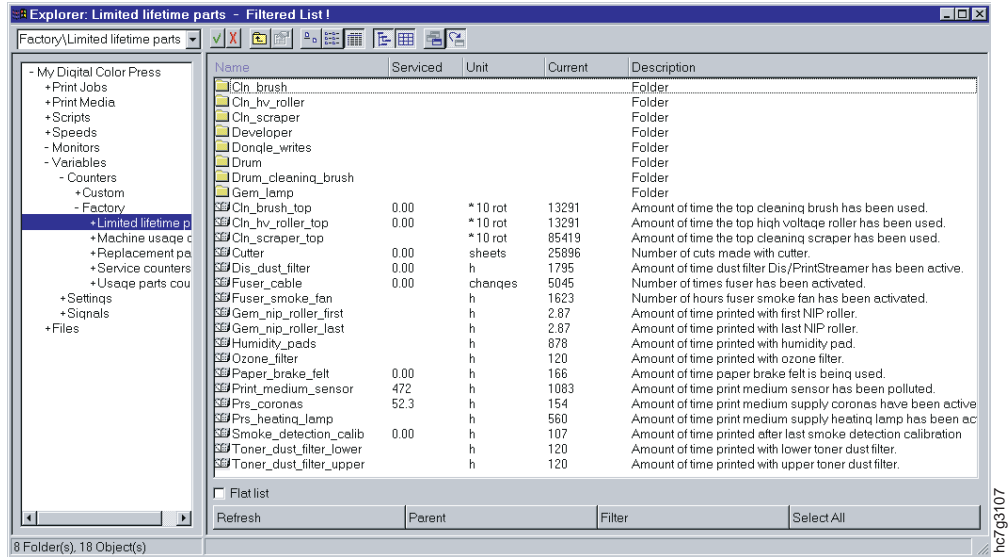


Figure 227. Limited Lifetime Parts Counters Window

Table 79. Description Limited Lifetime Parts Counters

Counter	Description	Service Interval	Limited Life	Counter on	Unit of Measure
Paper_brake_felt	Amount of time print medium brake felt is used.	25 714		ST_WEB	10 sec
Prs_coronas	Amount of time coronas have been active.	18 000	48 150	IPS_11.Y1	10 sec
Cln_brush	Amount of time cleaning brush of unit n has been used.	65 634	193 920	ST_PUD	10 rot
Cln_scraper	Amount of time the cleaning scraper of unit n has been used.		65 634	ST_PUD	10 rot
Cln_hv_roller	Amount of time the high voltage roller of unit n has been used.	65 634	193 920	ST_PUD	10 rot
Drum_cleaning_brush.n	Amount of time the drum cleaning brush of unit n has been used.	3 428	48 150	ST_WEB	10 sec
Cln_brush_top	Amount of time the top roller cleaning brush has been used.	65 634	193 920	ST_PUD	10 rot
Cln_hv_roller_top	Amount of time the top high voltage roller has been used.	65 634	193 920	ST_PUD	10 rot
Cln_scraper_top	Amount of time the top cleaning scraper has been used.		65 634	ST_PUD	10 rot
Print_medium_sensor	Amount of time print medium sensor has been polluted.	74 630		ST_PRS_CND	10 sec
Fuser cable	Number of times fuser has been activated.	74 630 (1)	3 085 714	ST_PES	10 sec
Gem_lamps	Amount of time the GEM lamps have been active.		1 800 000 (2)	GLOSSY_STATE	10 sec
Drum.sc	Amount of pages printed on each currently mounted drum. Time counted that each drum has rotated with PUD on since drum was mounted.	315 000	630 000	ST_PUD	10 cm

Table 79. Description Limited Lifetime Parts Counters (continued)

Counter	Description	Service Interval	Limited Life	Counter on	Unit of Measure
Developer.sc	Total number of pages printed with current developer. Time counted that each PUD has been on since developer was renewed.		44 750	ST_PUD	10 rot
Cutter	Number of cuts made with current cutter.	150 000	500 000	ST_PES	cuts
Dongle_writes	Number of times the last available counter block of the dongle has been written.		10 555	ST_PES	1 h
Gem_NIP_roller_first	Amount of time printed with the first NIP roller.		22 470	GLOSSY_STATE	10 sec
Gem_NIP_roller_last	Amount of time printed with last NIP roller.		22 470	GLOSSY_STATE	10 sec
Toner_dust_filter_upper	Amount of time printed with upper toner dust filter.		48 150	ST_PUD	10 sec
Toner_dust_filter_lower	Amount of time printed with lower toner dust filter.		48 150	ST_PUD	10 sec
Ozone_filter	Amount of time printed with ozone filter.		48 150	ST_PUD	10 sec
Humidity_pads	Amount of time printed with humidity pad.		86 400	ST_TWR_CND	10 sec
Smoke_detection_calib	Amount of time printed after last calibration of smoke detection.	74 630		ST_PRINT	10 sec
Prs_heating_lamp	Amount of time PRS heating lamp has been active.		1 800 000	ST_HEATING	10 sec
Dis_dust_filter	Amount of time dust filter Dis/PrintStreamer has been active.	4 680 000		ST_PES	10 sec
fuser_smoke_fan	Amount of time the fuser smoke fan has been active.				1 h
Notes:					
1. Auto check serviced at end of calibrate PRS procedure.					
2. No warning should be generated.					

Part 5. Paper Roll Management

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Chapter 11. Managing Paper Rolls

This chapter explains how to change paper and reload the paper roll shaft. If you have a paper jam or a paper break, see “Chapter 15. Finding and Solving Problems” on page 313.

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 InfoPrint Color 100 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 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 approved papers (see “Specifying the Correct Paper Type” on page 279).

Starting the Roll-Change Procedure

1. Open the **Mount Print Medium** window, as shown in Figure 228 on page 266, 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 196) and then open the **Mount Print Medium**, as shown in Figure 228 on page 266.

Operations ⇒ **Mount Print Medium** **Ctrl+M**



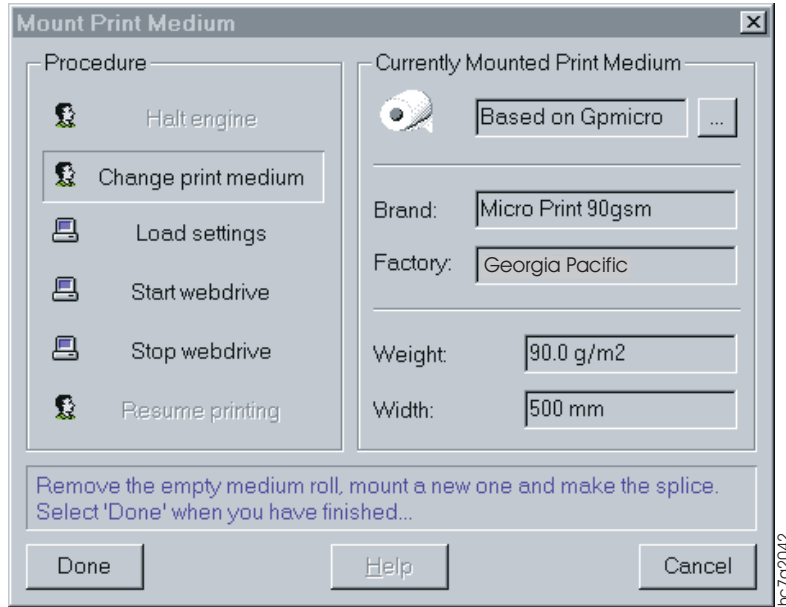


Figure 228. Mount Print Medium Window

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 229, to lock the paper web.



Figure 229. Preparing to Cut the Paper

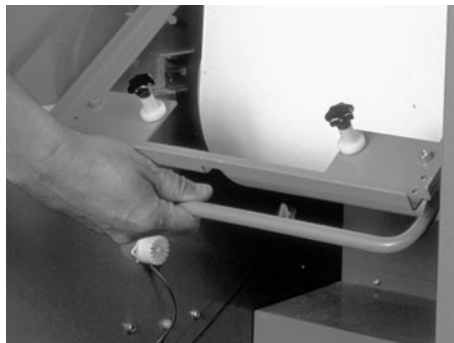
2. Pull down on the splicing table, as shown in Figure 229.
3. Cut across the width of the paper along the cutting edge, as shown in Figure 230.



HB7G2117

Figure 230. Cutting the Paper

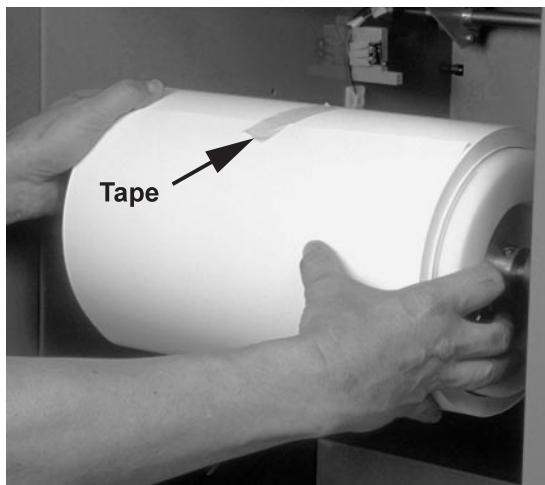
4. Release the brake by lifting up the brake lever located near the bottom of the paper supply, as shown in Figure 231.



HB7G2118

Figure 231. Releasing the Brake

5. Attach the loose end of the paper to the roll, using a small piece of tape, as shown in Figure 232.



HB7G2119

Figure 232. Taping and Removing the Paper Roll



CAUTION:

<2-009> The paper roll is heavy. Keep hands and feet from beneath the paper roll. Use only the paper cart specifically designed for your machine when installing a new paper roll or removing an unfinished roll.

CAUT0902

6. With your hands placed at both sides of the roll, as shown in Figure 232 on page 267, 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 shaft.
8. Lift the paper roll and move it out of the paper supply, as shown in Figure 233.



HB7G2120

Figure 233. Hand Truck with Paper Roll

9. Proceed with removing the paper roll shaft.

Removing the Paper Roll Shaft

The printer's two paper roll shafts support paper rolls with three different core diameters. The three core diameters are:

- 75 mm or 3 inches
- 150 mm
- 152.4 mm or 6 inches

One paper roll shaft supports paper rolls with a core diameter of 75 mm and the other supports either 150 mm or 152.4 mm paper roll cores.

The paper roll shaft, as shown in the diagram in Figure 234, supports paper rolls with two different core diameters: 150 mm and 152.4 mm or 6 inches. On this shaft, 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.

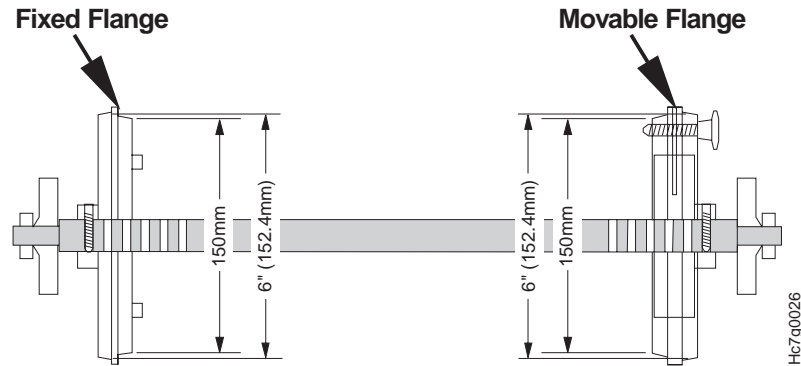


Figure 234. Paper Roll Shaft

Follow these steps to remove the paper roll shaft:

1. Loosen the black screw on the movable (plastic) flange, as shown in Figure 235. Turn the flange counterclockwise until it is loose enough to remove.

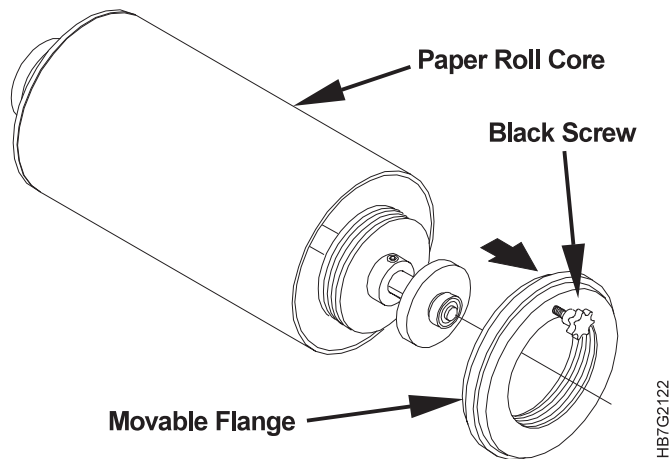


Figure 235. Removing Flange from Paper Roll Shaft

2. After you have removed the plastic flange, remove the shaft from the core of the roll, as shown in Figure 236 on page 270.

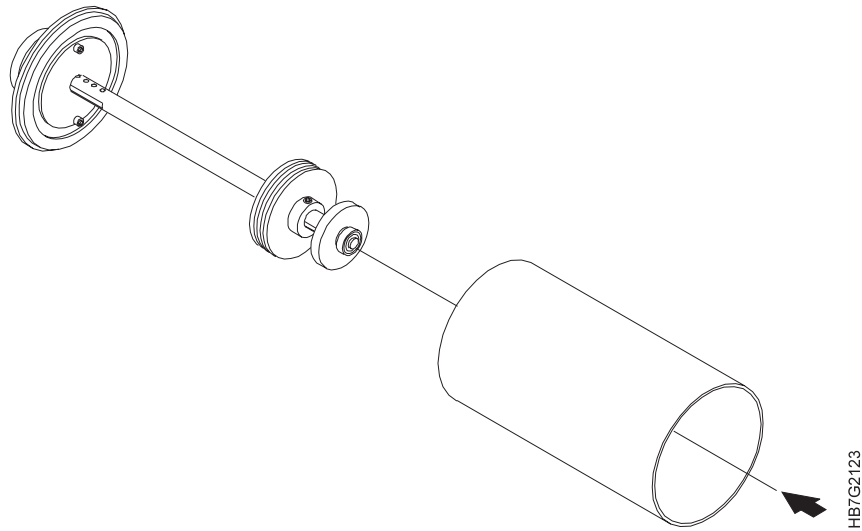


Figure 236. Removing Shaft from Paper Roll Core

3. Proceed with placing a shaft in the new paper roll.

Placing a Shaft in a New Paper Roll

By using multiple shafts, you can mount a shaft in a new paper roll before you need it, which will reduce the time it takes to change paper rolls.

- If you are changing the roll on the 75 mm paper roll shaft, proceed to Step 3 on page 271.
 - If you are using the paper roll shaft that supports 150 mm or 152.4 mm core diameters and the paper roll you are mounting has the same core diameter as the old roll, proceed to Step 3 on page 271.
 - If you are using the paper roll shaft that supports 150 mm or 152.4 mm core diameters and the paper roll you are mounting has a different core diameter than the previous roll mounted on this shaft, start at Step 1.
1. Remove the two head screws that attach the fixed flange to its base, remove the fixed flange from the shaft, turn the flange around and mount it again with the side with the other core diameter facing the middle of the shaft. Replace and tighten the screws, as shown in Figure 237 on page 271.

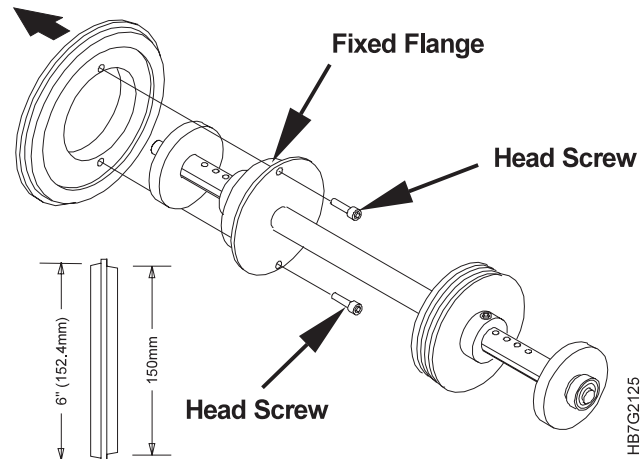


Figure 237. Removing the Fixed Flange

2. Replace and then tighten the two head screws.
3. As you face the roll at the unwinding side, insert the shaft from left to right through the core of the roll, as shown in Figure 238.

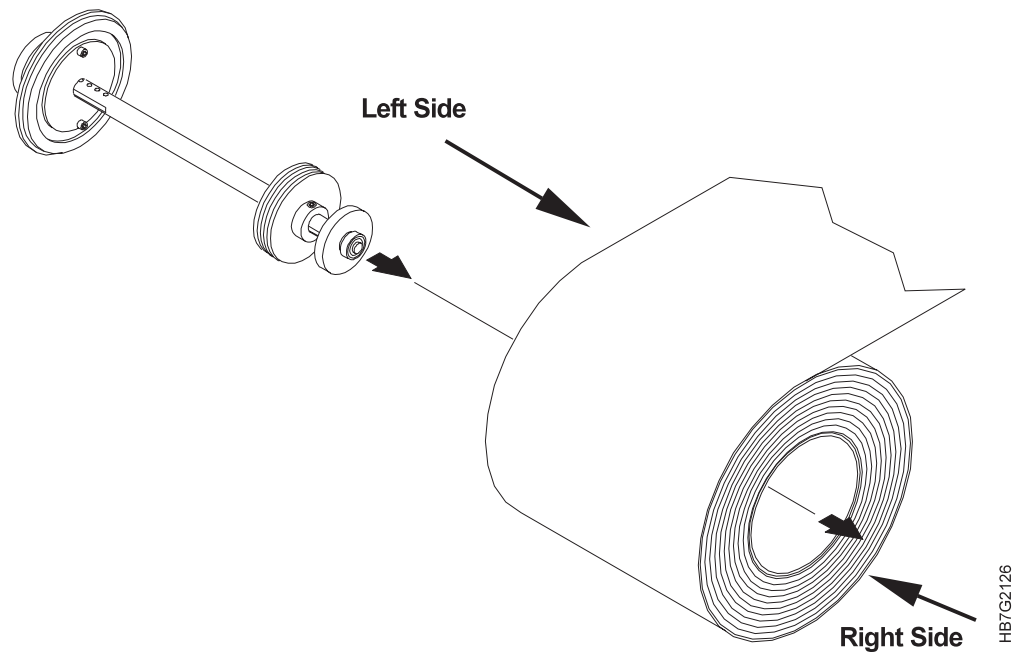


Figure 238. Inserting the Paper Roll Shaft

4. Mount the movable plastic flange with the side matching the core diameter of the roll facing the roll, as shown in Figure 239 on page 272.

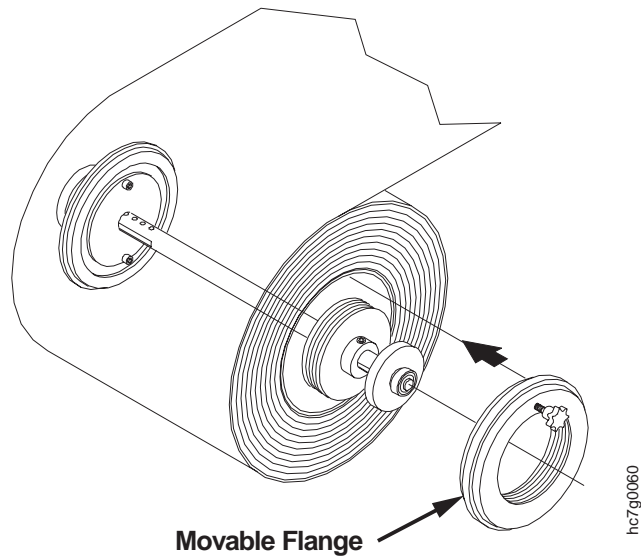


Figure 239. Mounting the Movable Flange

5. Tighten the black screw to secure the movable plastic flange, as shown in Figure 240.

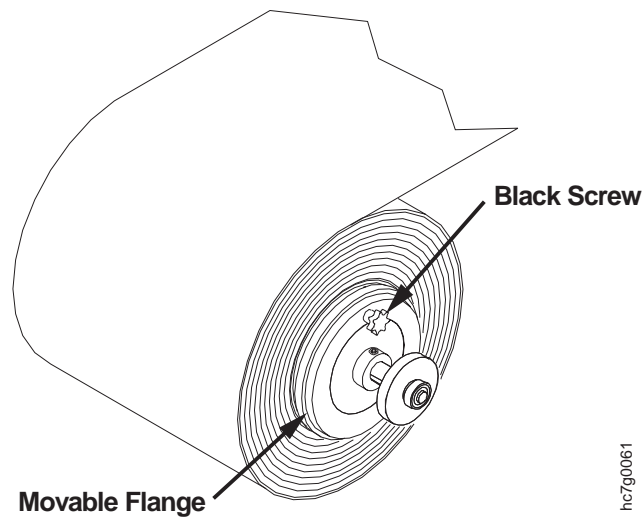


Figure 240. Black Screw on Movable Flange

6. 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:

<2-010> A new paper roll typically weighs more than 55 kg (121.2 lbs). Material handling systems, such as levers, slings, lifts, etc., must be used. When this is not practicable, specially trained persons or services must be used (for instance, riggers or movers).

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1. Place the paper roll on the hand truck, as shown in Figure 241, ensuring that the plastic disk with the black screw, is on your right.



HB7G2129

Figure 241. Paper Roll on the Hand Truck

2. Push the roll into the front of the paper supply, ensuring that the ends of the shaft rest precisely in the notches at the front of the side guides.
3. Remove the hand truck.



CAUTION:

<2-009> The paper roll is heavy. Keep hands and feet from beneath the paper roll. Use only the paper cart specifically designed for your machine when installing a new paper roll or removing an unfinished roll.

CAUT0902

4. Gently push the roll onto the paper roll mount, as shown in Figure 242 on page 274, until it fits in the bearings. Ensure that you push the roll equally at both sides so the roll does not tilt.



Figure 242. 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 243, to release the latch.

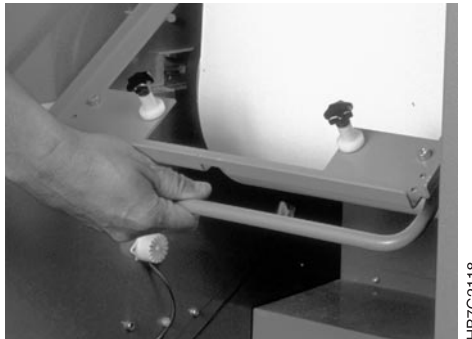


Figure 243. Lifting the Paper Supply Brake Lever

7. Lower the brake lever.
8. Pull the end of the paper roll over roller 1 and under roller 2 in an upward direction and insert the paper through the gap under the splicing table, as shown in Figure 244 on page 275 and Figure 245 on page 275.



Figure 244. Threading the Paper Roll Supply

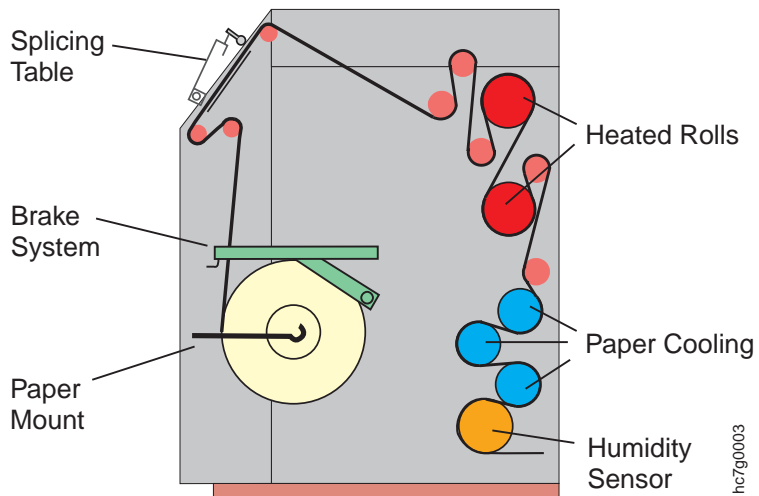


Figure 245. Paper Path in the PRS

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.

Attention: A good splice is very important. A bad splice may cause serious damage to the print units and may cause broken corona wires.

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 246.



Figure 246. Closing the Clamping Plate

2. Align the left edge of the new paper with the left edge of the paper on the web, as shown in Figure 247.

Attention: If your length of splicing tape is longer than the width of the paper

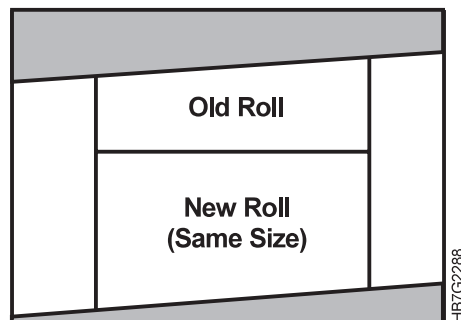


Figure 247. Aligning New Paper Roll with Old Paper Roll

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 248, ensuring that the tape is placed about 6 mm (.023 inch) beyond the cutting guide to prevent damage to the drums.

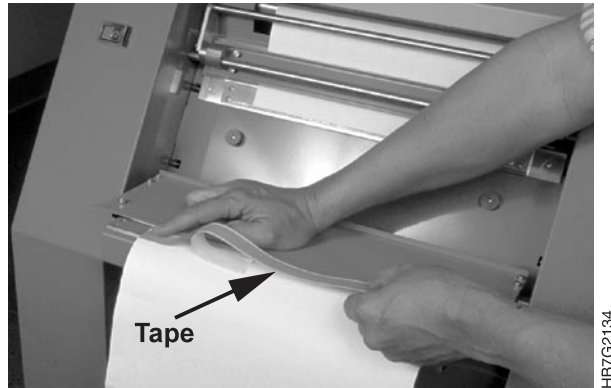


Figure 248. Attaching the Splicing Tape

4. Cut the paper along the cutting edge, as shown in Figure 249. It is important that you cut through the tape as well as the paper.



Figure 249. Cutting the Paper

5. Trim the corners of the paper at an angle, as shown in Figure 250 and Figure 251, to reduce the risk of damage when the splice is pulled through the print tower. Trim the corners on *only* the new roll.



Figure 250. Trimming the Corners

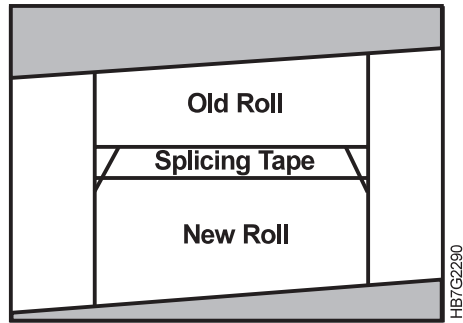


Figure 251. Trimming the Corners

6. Pull the backing from the tape, as shown in Figure 252.



Figure 252. Pulling the Backing from the Splicing Tape

7. Close the splicing table, as shown in Figure 253, pressing firmly to ensure that both edges are secure.

Attention:

Any adhesive residue from the tape may damage the InfoPrint Color 100. Ensure that you remove all of the adhesive from the splicing table.

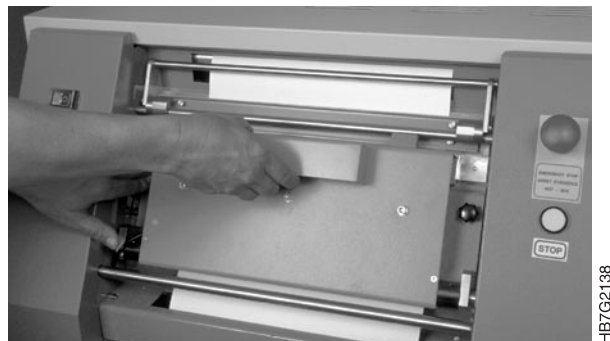


Figure 253. Closing the Splicing Table

8. While holding down the plate, pull the table open again and rub the splice, as shown in Figure 254, to ensure that it cannot become loose and to remove all excess adhesive from around the tape.



Figure 254. 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 255.



Figure 255. 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”.

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 InfoPrint Color 100 supports paper settings for different IBM recommended media.

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 approved is available at: You can access the guide at the following internet address:

www.printers.ibm.com/manuals.html

This list is updated from time to time as IBM continues approve additional media types.

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 256.

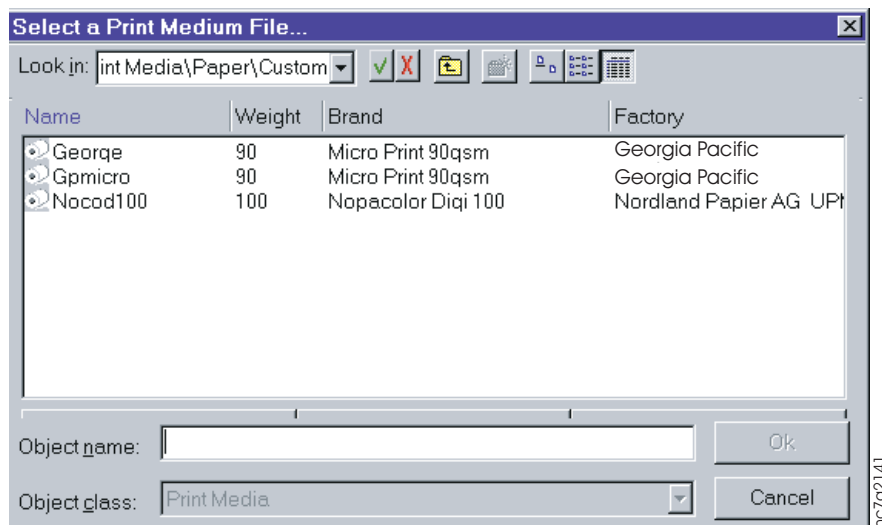


Figure 256. Select a Print Medium File... Window

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 to 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.

You have finished the procedure to change the paper roll. Now you can restart the printing process.

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 257.

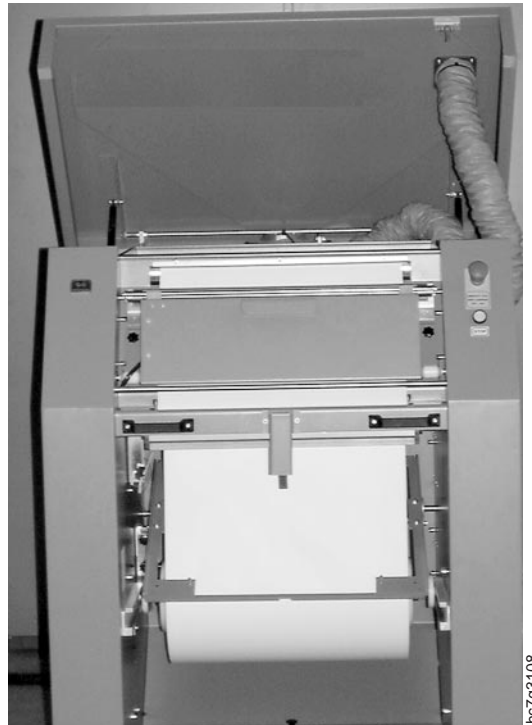


Figure 257. Top Left Button on Paper Supply

To make a correction using the software, do the following:


1. Open the **Scripts** window. **Explore** ⇒ **Scripts** 
2. Run one of the script files shown in Table 80. Each file's commands move the paper supply either left or right for a specified number of steps.

Table 80. Script Files for Moving the Paper Supply Left or Right

Script File Name	Movement Direction	Number of Steps
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

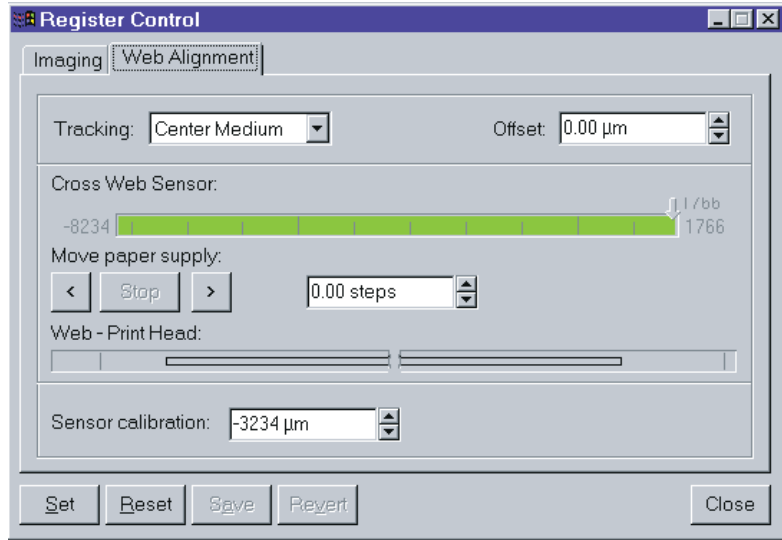


Figure 258. Web Alignment Window.

Part 6. Printer Power Down Tasks

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Chapter 12. Shutdown Procedures for InfoPrint Color 100

This chapter explains how to prepare the InfoPrint Color 100 for shutdown. It describes how to perform the following shutdown procedures:

- Backing up PES files
- Shutting down the InfoPrint Color 100 printer

Backing Up Files for the InfoPrint Color 100

It is important to maintain a backup copy of the PES (engine-specific) printer files. If there is a hardware failure or the files become corrupt, recovery will be easier if key files are available. The PES files should be backed up daily.

You can choose from two methods to backup the PES files:

1. Back up PES files from Xpose by selecting: **File** ⇒ **Make Backup**. The backup files will be placed in d:\Customer_data\Backup\Xpose. From that directory, you can transfer the files to diskette.
2. Backup PES files directly to diskette.
 - a. Insert a diskette into the disk drive on the PES control unit.
 - b. Flip the switch on the control unit to the PES side. The monitor now displays the PES screen.
 - c. Quit the PES software, if not already done.
 - d. When the DOS prompt (**C:**) displays, type `f1backup` and press **Enter**. This backs up the printer engine files to diskette.

Shutting Down the InfoPrint Color 100 Printer and Collator

When you are not going to be using the InfoPrint Color 100 for a long period of time, such as overnight, you may want to log off the system or shut down the printer, or both.



CAUTION:

<2-013> To ensure the conditioning system filters the ozone from the air exiting the printer, allow a few minutes after the printing cycle completes before opening a tower door.

CAUTION06

Attention: Switching off power in any sequence other than that described in this section can result in **lost** or **corrupted data requiring reformatting of one or more collator hard drives**.

Attention: Wait approximately 10 minutes after printing stops before initiating the power-off sequence. This minimizes toner fusing on to the cooling drums of the GEM and the top roller.

If you are printing, the **Print Sequence** window will be open.

1. Back up the PES files (if necessary). See “Backing Up Files for the InfoPrint Color 100” on page 285.
2. Ensure the PES/RIP switch is in the RIP position.
3. Exit the software by selecting the following from the menu bar:

File ⇒ **Exit**  **Alt+F4**

4. In the **Exit Xpose** window, check the **PES** box and the **Xpose** box. This shuts down the PES platform, the printer, and closes the **Xpose** window. Go to step 5 to continue.

Attention: If you check the **Windows** box, the RIP controller shuts down. You may want to leave the RIP controller powered on and Windows running to accept print files for RIPing. If you decide to select **Windows** and then click the **OK** pushbutton, the following occurs:

- a. The **Shutdown PES** window displays the message: **Shutting down PES, please wait...**
 - b. The **EXIT** window displays the message: **Don't forget to make your daily backup of the engine specific files on floppy!!**
 - c. Select **Ok**, and the **Shutdown in progress** window displays.
 - d. The **Shutdown Computer** window displays the message: **It is now safe to turn off your computer.** The **Restart** option also displays.
 - e. Continue to Step 6.
5. Click the **OK** pushbutton. The Windows desktop displays.
 6. Switch the PES/RIP switch to PES. This ensures the keyboard and the monitor are in the PES mode. The C: prompt displays on the PES platform.
 7. Switch off the PES controller and the collator.
 8. Switch off the RIP controller, if desired.
 9. Open the fixed tower door on the left side of the machine and press **STOP**. The tower conditioning automatically switches on.
 10. Switch off the main power switch, if desired.
 - If you switch off the main power switch (switch points to the 9 o'clock position), there is no tower conditioning.
 - If you leave the main power switch on (switch points straight up), tower conditioning is on.
 11. Close the fixed tower door.

Part 7. Maintenance and Supplies Tasks

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Chapter 13. Performing Scheduled Operator Maintenance

To keep the InfoPrint Color 100 operating at its maximum potential and to ensure excellent print quality, the operator must perform preventive maintenance on a scheduled basis.

Maintenance Schedule

Table 81 lists operator maintenance tasks and shows how often each task should be done. The maintenance intervals apply to InfoPrint Color 100s with average monthly volumes of 150,000 A4 sheets.

Table 81. Operator Maintenance Tasks

Preventive Maintenance Tasks	Refer to...	Intervals
Clean the TED corona assemblies	Page 292	1 day
Empty the condensation water reservoir in the fixed tower	Page 298	1 day
Refill the humidifier	Page 300	At the beginning and end of each shift
Clean the scorotrons	Page 295	2 days unless coverage is greater than 40%, then 1 day
Replace the toner waste bottles	Page 308	At warning
Check the toner levels	Page 303	At the beginning of each shift
Note: 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.

Note: Before you perform any maintenance, first read about service intervention.

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 InfoPrint Color 100 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.
Operations ⇒ **Service Intervention**

Note: If you forget to first stop the printer, the **Service Intervention Message** window opens. Stop the printer and click the **Ok** pushbutton.

2. Open the fixed tower door on the left side of the machine, as shown in Figure 259.

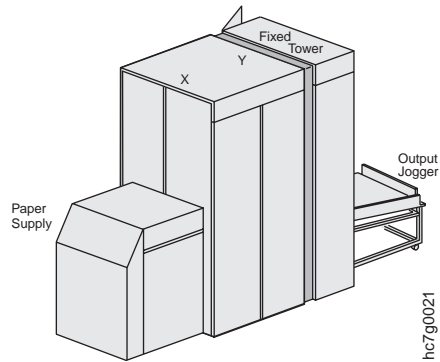


Figure 259. Right Side View of the InfoPrint Color 100

3. Insert the maintenance key into the lock located below the Start and Stop pushbuttons, as shown in Figure 260.

Note: You can keep the maintenance key in the lock at all times, or you can keep the key in a location outside of the printer until you need it.

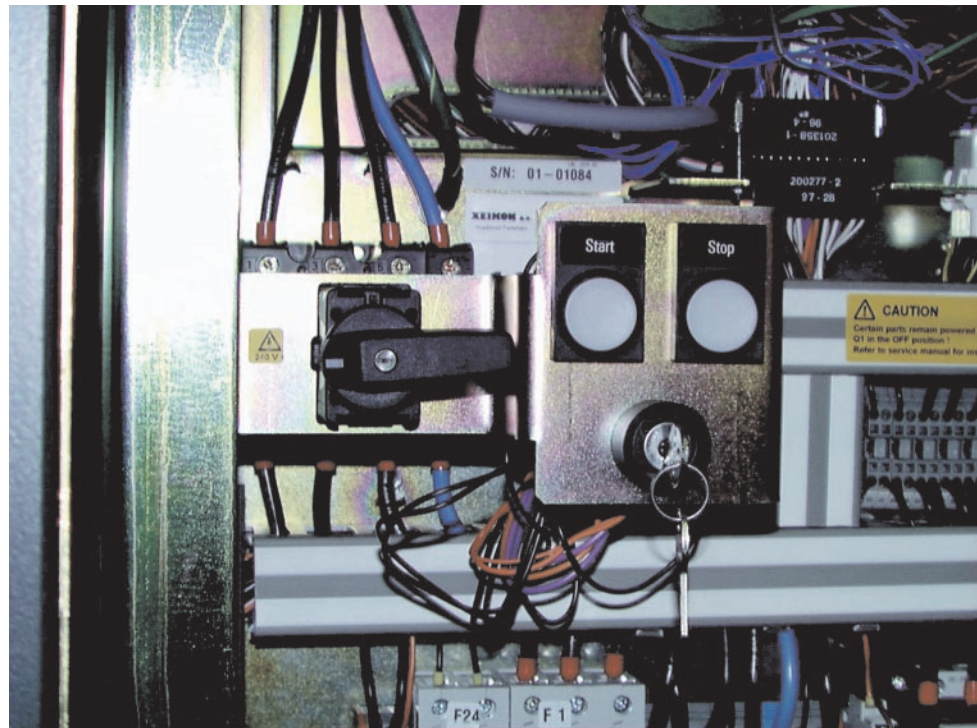


Figure 260. InfoPrint Color 100 Main Switch and Maintenance Key

4. Turn the maintenance 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 261.

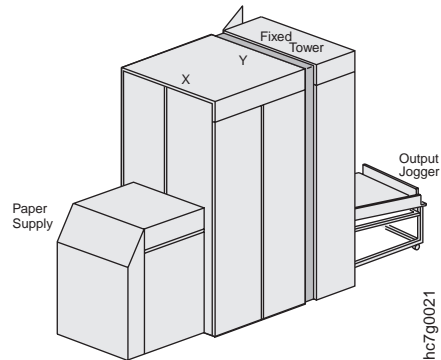


Figure 261. Right Side View of the InfoPrint Color 100

2. Turn the maintenance key counter-clockwise 90°, as shown in Figure 262.

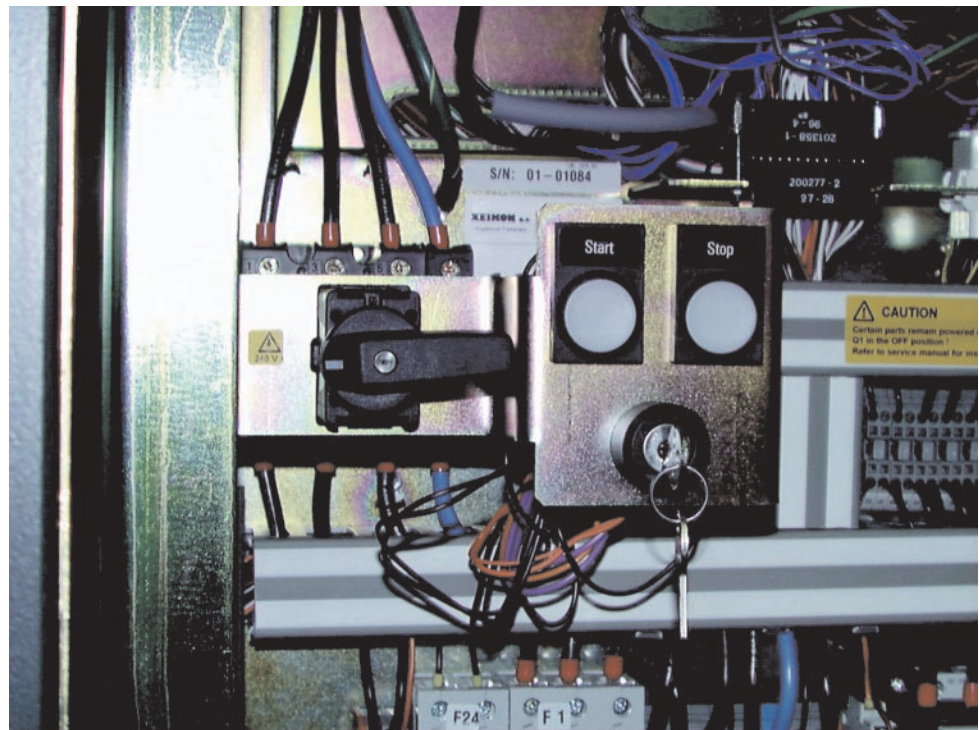


Figure 262. InfoPrint Color 100 Main Switch and Maintenance Key

3. Close the fixed-tower door.

4. You cannot leave service intervention until the key is turned back.

Cleaning the TED Assemblies in the Print Tower

Cleaning the TED assemblies 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 TED assemblies in the InfoPrint Color 100 after you remove the dirty TED assemblies for cleaning. This will minimize machine down time.

To clean the TED assemblies in the print tower, follow these steps:

- 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.

Begin Service Intervention:

1. Begin the service intervention procedure, described in “Beginning the Service Intervention Procedure” on page 289.

Removing the TED assemblies:

2. Open the doors on both sides of the X tower and the Y tower.



CAUTION:

<2-008> Before using any step ladder or stool, ensure it is level and steady.

3. Unlatch the X tower from the Y tower by pulling up on the handle located on the X tower, as shown in Figure 263.

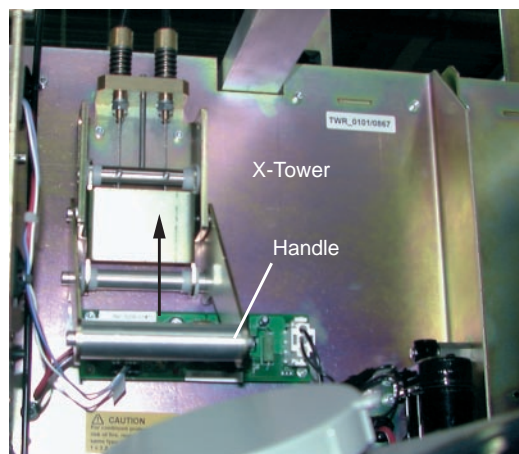


Figure 263. Latch between the X and Y Towers

4. Move the paper supply away from the access doors located between the paper supply and the print tower, as shown in Figure 264 on page 293.

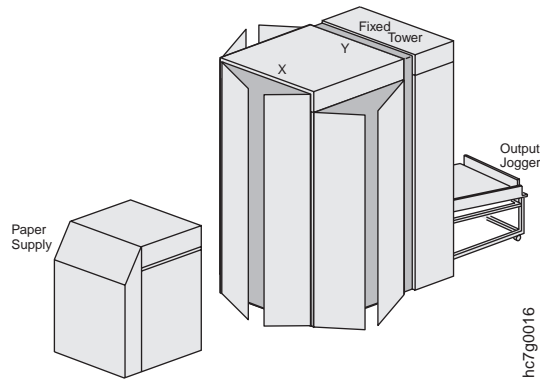


Figure 264. Right Side View of the InfoPrint Color 100

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.

5. Open the access doors behind the paper supply.
6. 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 TED assemblies and to not damage the drums.
7. Each tower has four TED assemblies. Remove each TED assembly by sliding it carefully out of the guide bars, as shown in Figure 265.

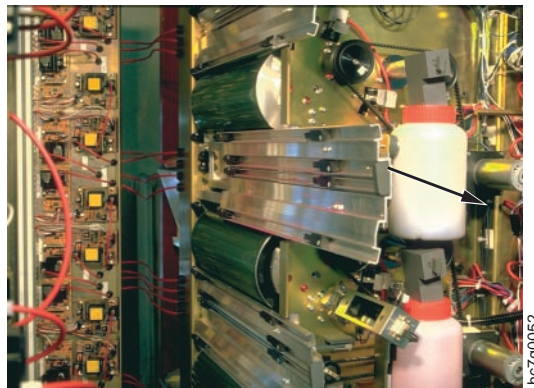


Figure 265. Removing a TED Assembly

8. Do one of the following:
 - If you want to use a replacement set of clean TED assemblies to minimize machine down time, go to step 14 on page 294.
 - Continue to step 9 to clean the TED assemblies.

Attention:

The TED assemblies contain very thin corona wires and must be handled carefully to avoid breaking the wires.

9. Clean each TED assembly housing by rubbing it with a cotton swab moistened with soapy water.

10. Dry each TED assembly housing by rubbing it with a dry cotton swab.

Attention:

Ensure that you don't bend the corona wires.

11. Clean each corona wire by placing it between two cotton swabs, moistened with soapy water, held in one hand. The picture in Figure 266 shows cleaning the wire in a scorotron; however, the cleaning method is the same for the wires in the TED assembly.

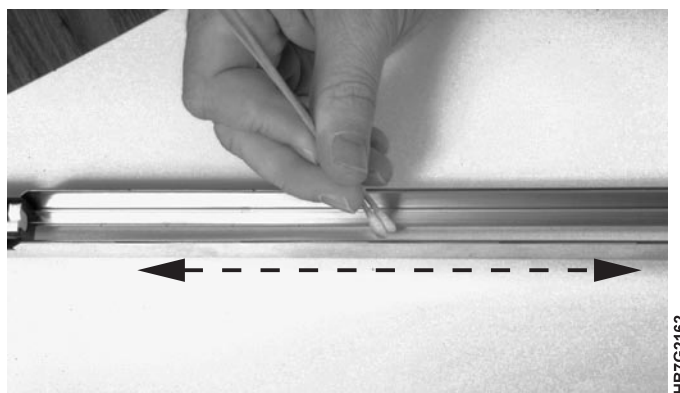


Figure 266. Cleaning a Scorotron Wire

12. Move the cotton swabs back and forth the length of the corona wire.

13. Repeat with a dry cotton swab.

Replacing the TED assemblies:

Attention:

After cleaning the TED assemblies, they must be completely dry before reuse.

14. Insert the TED assemblies back in their guides.

Note: The top TED assembly on the X tower has a larger arc than the other TED assemblies, so ensure that you place the correct corona at the top of the X tower.

15. Move the X tower back to its original position.

16. Latch the X tower to the Y tower by pulling down on the latch handle. (See Figure 263 on page 292 for the location of the handle.)

17. Close the access doors behind the paper supply.

18. 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:

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.

19. If you inserted a replacement set of TED assemblies and still need to clean dirty TED assemblies, go back to step 9 on page 293.

Finish Service Intervention:

20. After you replace the TED assemblies, finish the service intervention procedure on Page 291.

Cleaning the Scorotrons

Cleaning the scorotrons 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 scorotrons in the InfoPrint Color 100 after you remove the dirty scorotrons for cleaning. This will minimize machine down time.

To clean the scorotrons in the print tower, follow these steps:

- 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.

Begin Service Intervention:

1. Begin the service intervention procedure, described in “Beginning the Service Intervention Procedure” on page 289.

Removing the Scorotrons:

2. Open the doors on both sides of the X tower and the Y tower.
3. Move the paper supply away from the access doors located between the paper supply and the print tower, as shown in Figure 267.

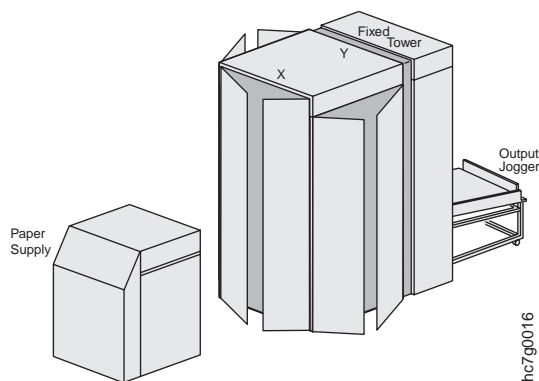


Figure 267. Right Side View of the InfoPrint Color 100

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.

4. Open the access doors behind the paper supply.



CAUTION:

<2-008> Before using any step ladder or stool, ensure it is level and steady.

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5. Each print tower has eight scorotrons (1 above and below each drum), and there is one located by the top roller in the fixed tower, for a total of seventeen. Remove each scorotron by sliding it carefully out of the guide bars, as shown in Figure 268.

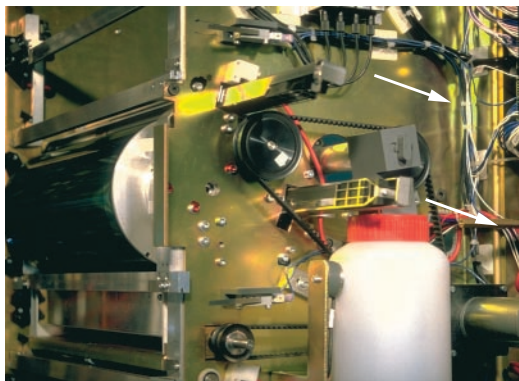


Figure 268. Removing a Scorotron

6. Do one of the following:
 - If you want to use a replacement set of clean scorotron to minimize machine down time, go to step 14 on page 298.
 - Continue to step 7 to clean the scorotrons.

Attention:

The scorotrons contain a very thin corona wire and must be handled carefully to avoid breaking the wire.

7. Remove and clean the grid of each scorotron by doing the following:
 - a. Place the grid removal tool under the hook at the right side of the scorotron housing, as shown in Figure 269.

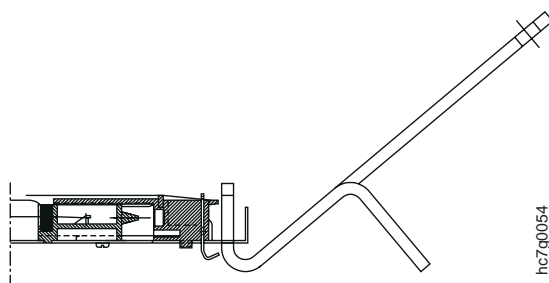


Figure 269. Grid Removal Tool

- b. Pivot the tool upwards to release the spring tension, as shown in Figure 270 on page 297.

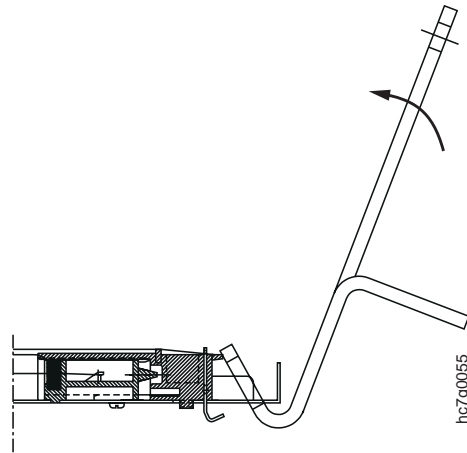


Figure 270. Pivoting the Grid Removal Tool

- c. Remove the grid from the scorotron housing.
 - d. Lay the grid on a piece of clean paper.
 - e. Clean each side of the grid by carefully wiping it with a sponge moistened with tap water.
 - f. Dry the grid by placing it between two pieces of clean paper.
8. Clean each scorotron housing by rubbing it with a cotton swab moistened with soapy water.
 9. Dry each scorotron housing by rubbing it with a dry cotton swab.

Attention:

Ensure that you don't bend the corona wire.

10. Clean the corona wire by placing it between two cotton swabs, moistened with soapy water, held in one hand. See Figure 271.

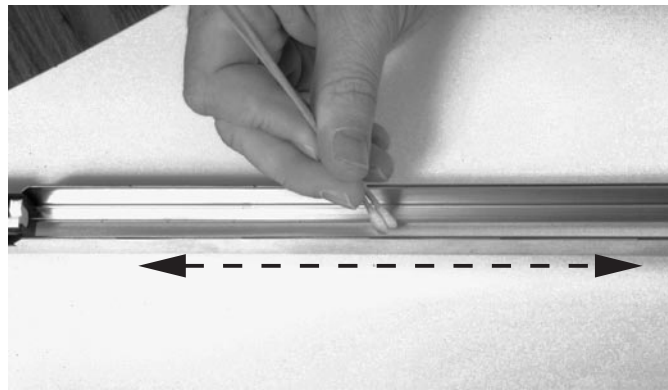


Figure 271. Cleaning a Scorotron Wire

11. Move the cotton swabs back and forth the length of the corona wire.
12. Repeat with a dry cotton swab.
13. Replace the grid on the scorotron housing by doing the following:
 - a. Place the grid in the scorotron housing.
 - b. Place the grid removal tool under the hook at the right side of the scorotron housing.

- c. Pivot the tool upwards to release the spring tension.
- d. Place the grid on the scorotron housing.
- e. Pivot the tool downward to restore the spring tension to the grid.
- f. Remove the grid tool from the scorotron housing.

Replacing the Scorotrons:

Attention:

After cleaning the scorotrons, they must be completely dry before reuse.

14. Insert the scorotrons back in their guides.
15. Close the access doors behind the paper supply.
16. Slowly 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:

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.

17. If you inserted a replacement set of scorotrons and still need to clean dirty scorotrons, go back to step 7 on page 296.

Finish Service Intervention:

18. After you replace the scorotrons, finish the service intervention procedure on 291.

Emptying the Condensation Water Reservoir

Condensation water collects in the reservoir in the fixed tower. You need to check this reservoir daily and empty any water that has collected.

To empty the reservoir in the fixed tower, do the following:

1. Begin the service intervention procedure, described in “Beginning the Service Intervention Procedure” on page 289.
2. Open the fixed tower door on the right side of the machine, as shown in Figure 272 on page 299.

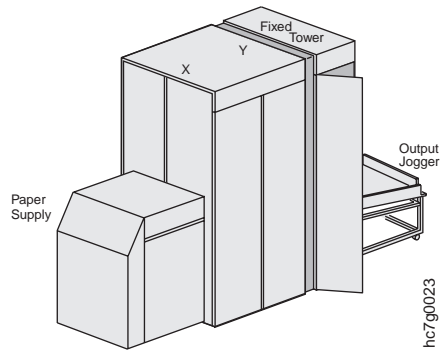


Figure 272. Right Side View of the InfoPrint Color 100

3. Untwist the cap from the reservoir, as shown in Figure 273, remove the container, and empty it.

Note: You can use this water to refill the humidifier reservoir in the Y tower (see 300).



Figure 273. Condensation Water Reservoir

4. Remount the reservoir and put the cap 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 291.

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 247) to ensure that the relative humidity reaches its setpoint after you refill the humidifier.

Your InfoPrint Color 100 has either a Mellita 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 289.
2. Open the Y tower door on the left side of the machine, as shown in Figure 274.

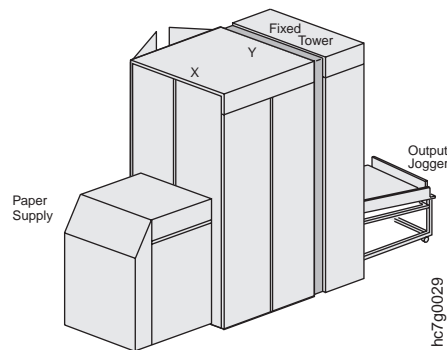


Figure 274. Right Side View of the InfoPrint Color 100

The humidifier, as shown in Figure 275, is located at the bottom-left side of the tower.



Figure 275. Duracraft Humidifier

3. Unplug the humidifier and carefully remove the water reservoir from the tower, ensuring no water is spilled.
4. Remove the top of the humidifier, as shown in Figure 276 on page 301.



Figure 276. Humidifier Top and Water Reservoir

5. Fill the reservoir with clean water. Replace the top of the humidifier, and place the humidifier back in the Y tower.
6. Plug in the humidifier.
7. Close the back Y-tower door.
8. Complete the service intervention procedure, described in “Finishing the Service Intervention Procedure” on page 291.
9. Check the **Measured humidity** in the **Print Medium and Engine Conditioning** window, as shown in Figure 277.

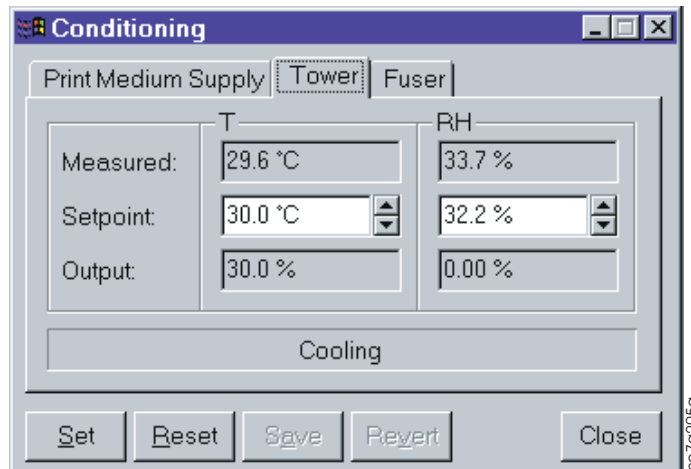


Figure 277. Conditioning Window

Chapter 14. 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 278, shows only full or empty conditions.

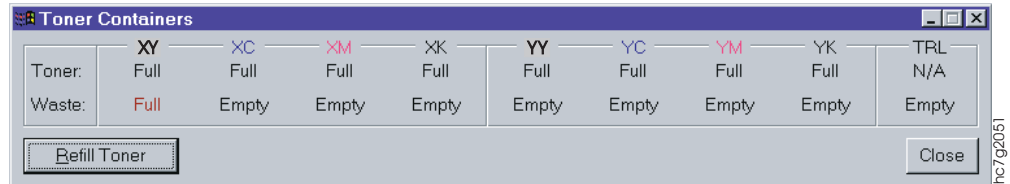


Figure 278. Toner Containers Window

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 289, 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. Open the **Refill Toner Containers** window, as shown in Figure 279 on page 304.

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 maintenance key.

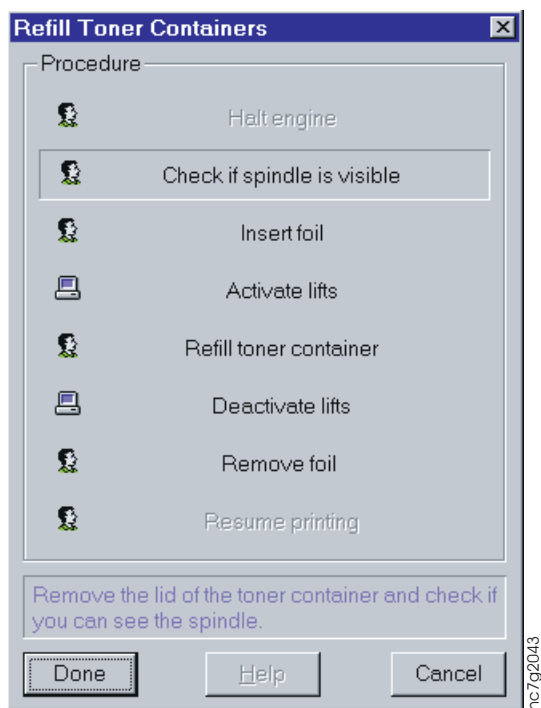


Figure 279. Refill Toner Containers Window

2. Remove the lid of each toner container, as shown in Figure 280, 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.

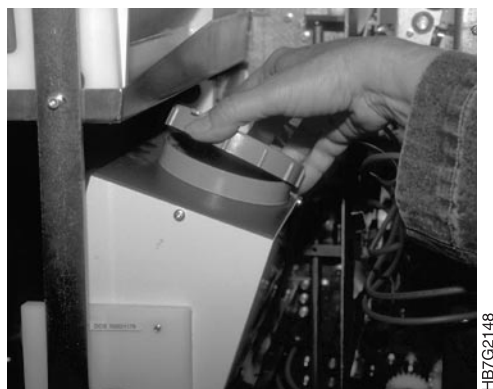


Figure 280. Removing a Toner Container Lid

3. Do one of the following:
 - a. If you saw the spindle, click **Yes**.

Insert Foil is now highlighted in the **Refill Toner Containers** window.

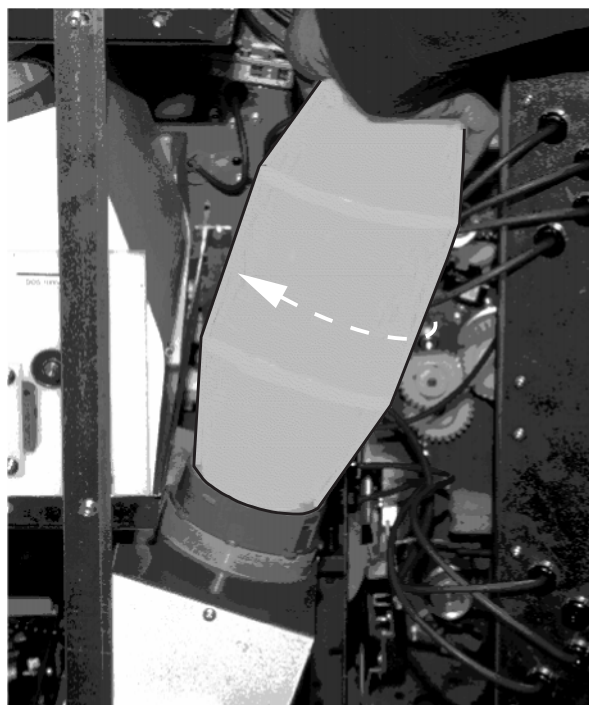
Go to step 4.

- b. If you did not see the spindle, click **No. Refill toner container** will be highlighted in the window. Go to step 7.
4. Place a piece of foil or paper between the dosing unit and the developing unit, as shown in Figure 281, to catch any toner that may spill out of the dosing unit.



Figure 281. Placement of Foil between Dosing and Developing Units

5. Click the **Done** pushbutton in the **Refill Toner Containers** window. **Activate Lifts** now becomes highlighted.
6. Click the **Do It** pushbutton to activate the lifts of both print towers. **Refill toner containers** will be highlighted in the window.
7. 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.
8. Remove the protective film from the bottle's cap by pulling the green plastic tab, toward the opposite side of the bottle cap.
9. Mount the new toner bottle, as shown in Figure 282 on page 306, on the toner container by matching the white plastic tab with the notch located 90° clockwise from the lowest part of the toner container.



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Figure 282. Mounting a Toner Bottle

10. Twist the bottle clockwise until it is secure. The toner will now flow into the container.
11. If necessary, tap the toner bottle a few times until it empties completely.
12. When the bottle is completely empty, twist it counter-clockwise, as shown in Figure 283 on page 307.

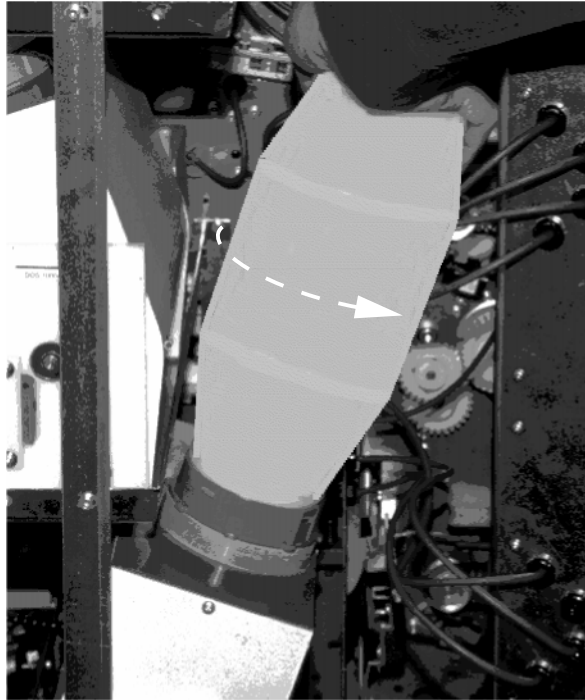


Figure 283. Removing an Empty Toner Bottle

13. 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.

14. Place the lid back on the container and click the **Done** pushbutton in the **Refill Toner Containers** window, as shown in Figure 284 on page 308.

If you have selected **No**, the window will close automatically. The **Deactivate lifts** now becomes highlighted.

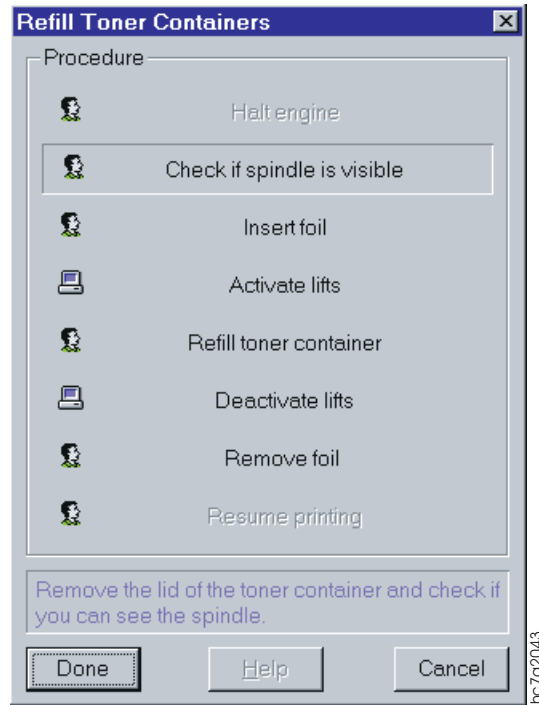


Figure 284. Refill Toner Containers Window

15. Deactivate the lift by clicking the **Do It** pushbutton. **Remove foil** now becomes highlighted.
16. Remove the foil or paper from between the dosing unit and the developing unit.
17. Select the **Done** pushbutton. The **Refill Toner Containers** window closes automatically.
18. After you refill the containers, close all doors except the fixed tower door on the left side of the machine.
19. Complete the service intervention procedure, as described in “Finishing the Service Intervention Procedure” on page 291.

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 196) and replace the waste bottles that are full.

There are nine toner waste bottles, four each in the X and Y towers for the print stations, and one in the fixed tower for the top roller.

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 289.

- Open the doors of the X and Y tower and the fixed tower, as shown in Figure 285, at the sides where the bottles to be replaced are located.

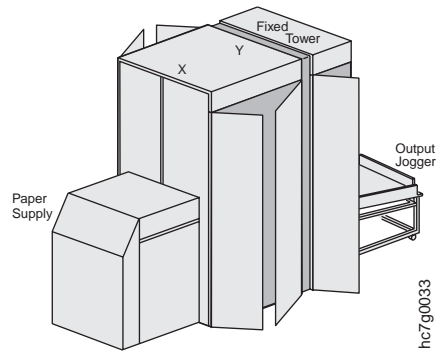


Figure 285. Right Side View of the InfoPrint Color 100

- Locate the waste bottles that need to be replaced.
- Remove the waste bottle by rotating the handle on the waste outlet counter-clockwise to a horizontal position, as shown in Figure 286.

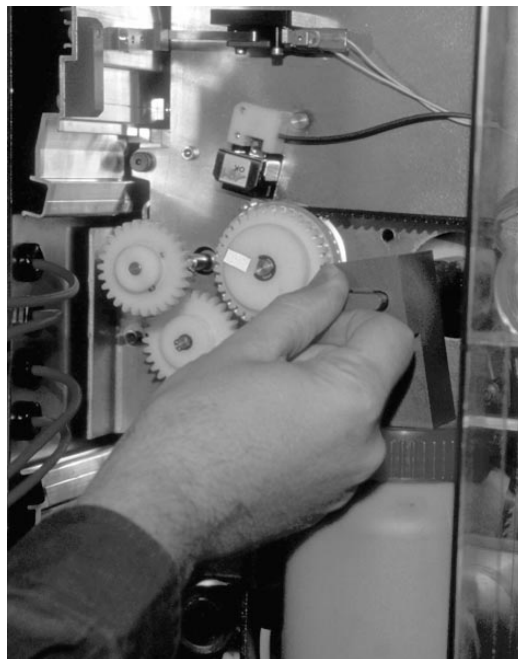


Figure 286. Rotating the Waste Bottle Handle

- Slide the waste bottle from the cleaning unit's waste outlet.
- Remove the fixed cap from the full waste bottle and set it aside.
- 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.

- 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 291.
14. Check the toner waste level in the **Toner Containers** window.

Part 8. Error Recovery and Problem Solving Tasks

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Chapter 15. 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.

Note: Before you begin to solve any problem, first read about service intervention, described on “Beginning the Service Intervention Procedure” on page 289.

Finding and Clearing Paper Jams

The operator is responsible for clearing paper jams in the Y tower, and the fixed tower. Before clearing any paper jams, ensure that you first do the following:

Before Clearing Paper Jams

1. Begin the service intervention procedure, as described in “Beginning the Service Intervention Procedure” on page 289.
2. 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 287.

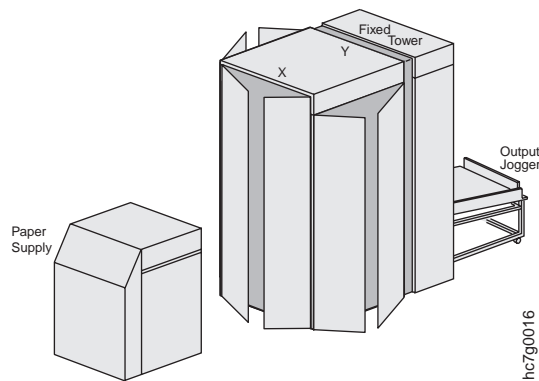


Figure 287. Right Side View of the InfoPrint Color 100

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 X tower from the Y tower by pulling up on the handle located on the X tower, as shown in Figure 288 on page 314.

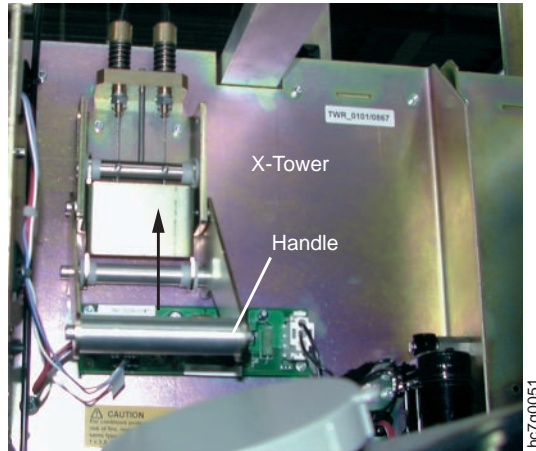


Figure 288. Unlatching the X and Y Towers

5. 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.
6. 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 289, and then do either step 6.a or step 6.b.

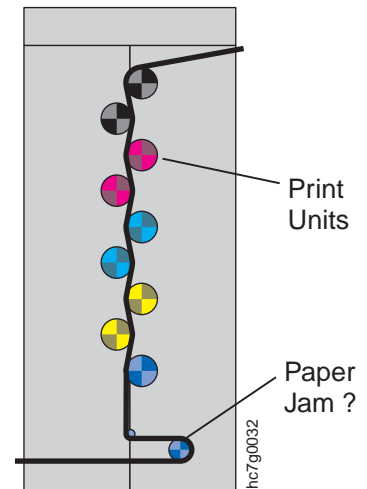
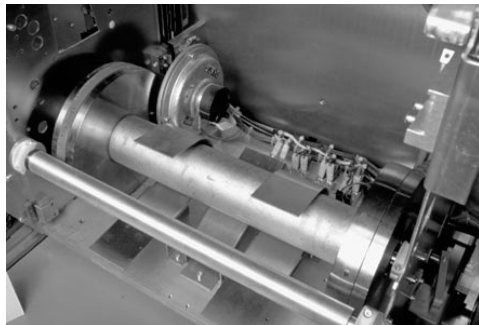


Figure 289. Web-Drive Speed Roll

- a. If you do not see a 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 316).
- b. If you see a paper jam, rotate the backup roll pressure handle clockwise, as shown in Figure 290 on page 315, to loosen the pressure against the paper roll.

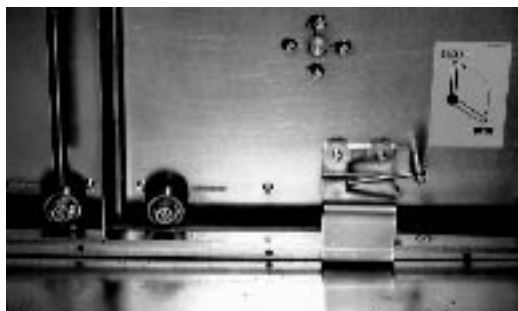


Figure 290. Backup Roll Pressure Handle

7. Release the jammed paper.
8. If the paper is damaged, cut across both sides.
Attention: While you are cutting the paper, ensure that you do not damage the drums.
9. 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.
10. Move the output jogger away from the fixed tower and then open the access doors of the fixed tower, as shown in Figure 291.

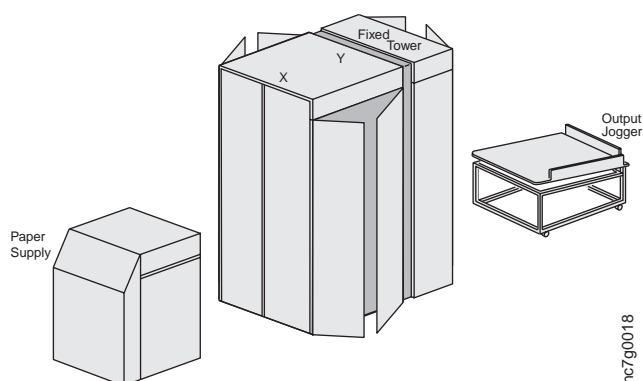


Figure 291. Right Side View of the InfoPrint Color 100

11. Carefully pull the paper toward the output jogger until the wrinkled or taped portion of the paper has exited the tower.
12. Close the fixed tower access doors and return the output jogger to its correct position.
13. Return to the Y tower and rotate the backup roll pressure handle counter-clockwise, to enable the speed roll drive to pull the paper.
14. Move the X tower back to its home position.
15. Latch the X tower to the Y tower by pulling down on the latch handle. (See Figure 263 on page 292 for the location of the handle.)
16. Close the access doors behind the paper supply.

17. 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:

18. 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.
19. Finish the service intervention procedure, as described “Finishing the Service Intervention Procedure” on page 291.

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 289.

To clear a paper jam in the fixed tower, follow these steps:

1. Move the output jogger away from the fixed tower and open the access doors of the fixed tower, as shown in Figure 292.

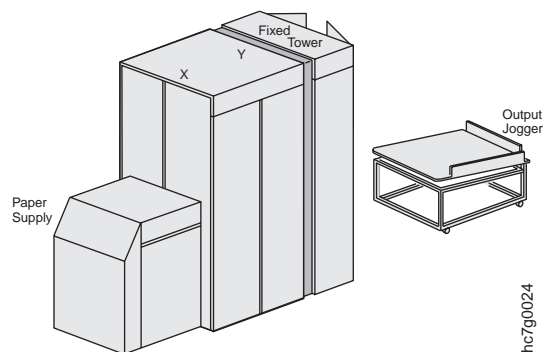
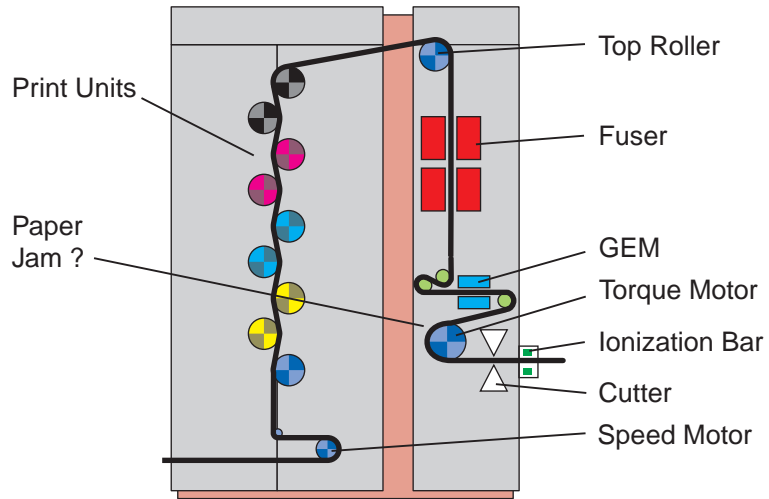


Figure 292. Right Side View of the InfoPrint Color 100

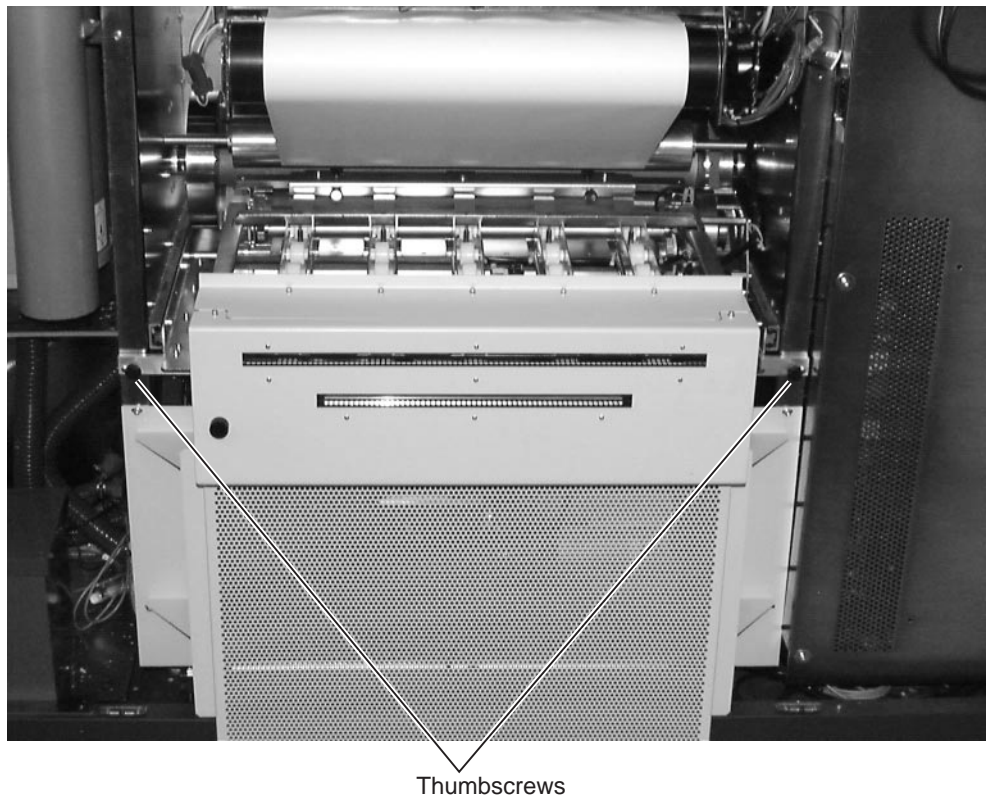
2. Determine whether a paper jam has occurred around the web drive torque roll located under the GEM, as shown in Figure 293 on page 317, and then do either step 2.a on page 317 or step 2.b on page 317.



hc7g0031

Figure 293. Fixed Tower Web Drive Torque Roll

- a. If you do not see a paper jam, check whether a jam has occurred in the Y tower in “Clearing a Paper Jam in the Y Tower” on page 313.
- b. If you see a jam, remove the two black cutter assembly thumbscrews, as shown in Figure 294, and pull the cutter assembly toward you and away from the torque roll.



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Figure 294. Cutter Assembly Thumbscrews

- Open the fixed tower door on the right side of the machine, as shown in Figure 295.

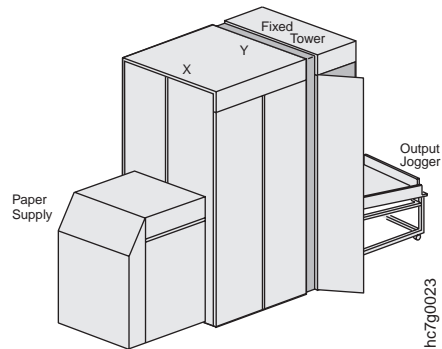


Figure 295. Right Side View of the InfoPrint Color 100

- Release the latches, one on each side, of the GEM upper nip roller assembly.
 - Disconnect the brown connectors on the left and right sides of the GEM nip roller assembly.
 - Carefully lift the upper nip roller assembly, using the handles, and remove it from the GEM.
- Attention:** Be careful not to scratch the nip rollers.
- Release the jammed paper.
 - Cut the paper.
 - Insert the paper through the cutter, as shown in Figure 296.

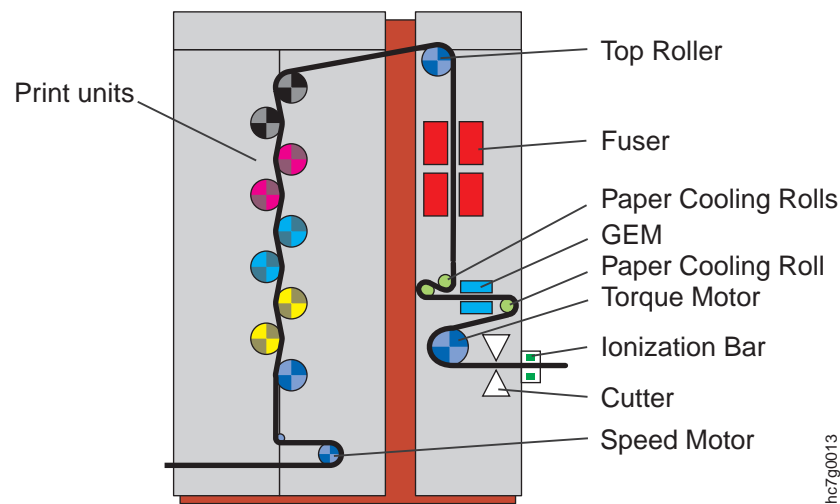


Figure 296. Inserting the Paper Through the Cutter

- While holding the paper straight, push the cutter assembly back to its original position.
- Replace the black cutter assembly thumbscrews, as shown in Figure 297 on page 319, and cut the paper.

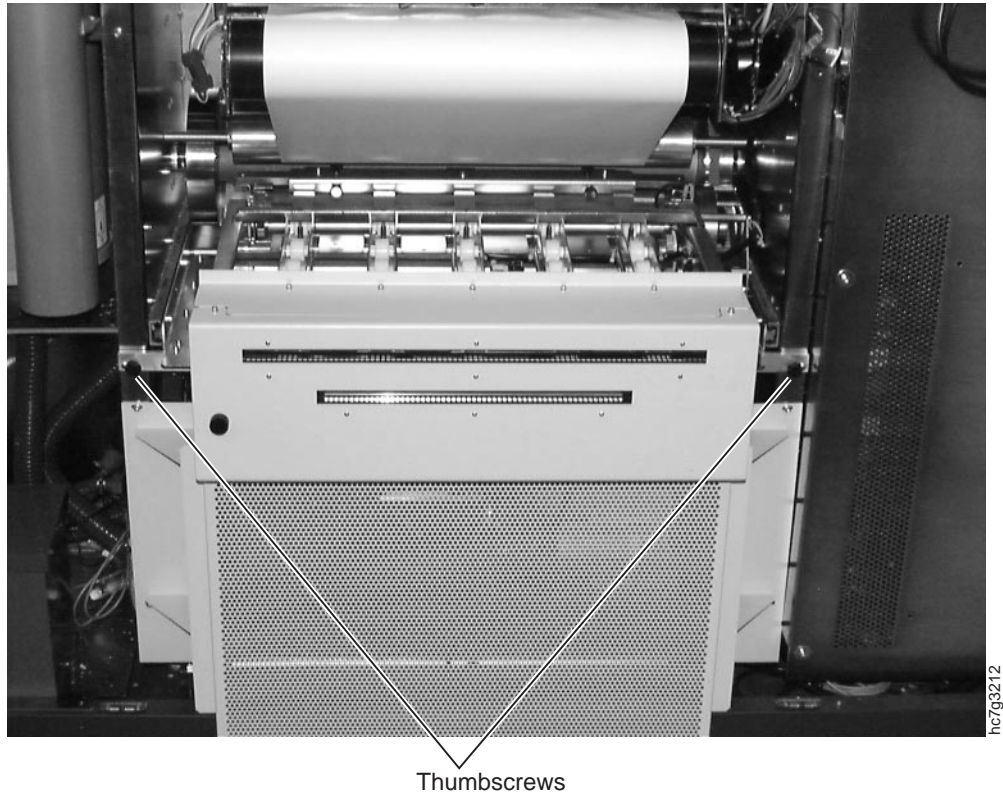


Figure 297. Cutter Assembly Thumbscrews

Note: You might have to pull the paper through in order to rethread the paper around the torque roll and the cutter assembly.

12. Replace the upper half of the GEM unit.
13. Close the fixed-tower access doors and the fixed-tower door on the right side of the machine.
14. Put the output jogger back in place.
15. Complete the service intervention procedure, as described on “Finishing the Service Intervention Procedure” on page 291.

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 289.
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.
 - “Rethreading the Paper Path in the Paper Supply” on page 320
 - “Rethreading the Paper Path in the Print Tower” on page 331

- “Rethreading the Paper Path in the Fixed Tower” on page 334

The solid black line in Figure 298 shows the path of the paper through the InfoPrint Color 100.

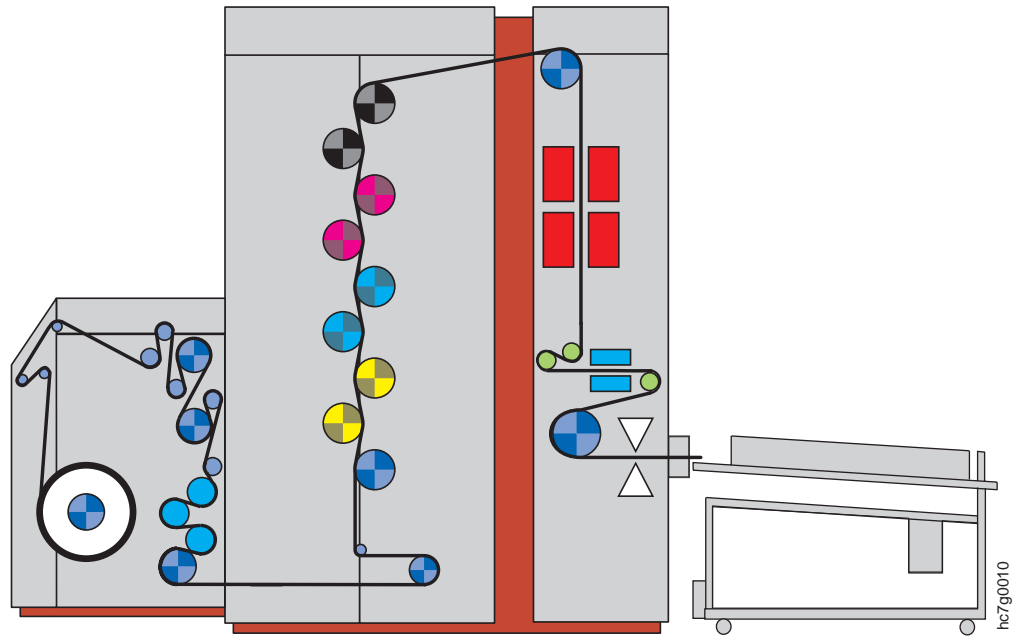


Figure 298. InfoPrint Color 100 Paper Path

Rethreading the Paper Path in the Paper Supply

Figure 299 shows the paper path in the paper supply. The following instructions refer to the rollers as numbered in this diagram. The rollers are not numbered in the paper supply.

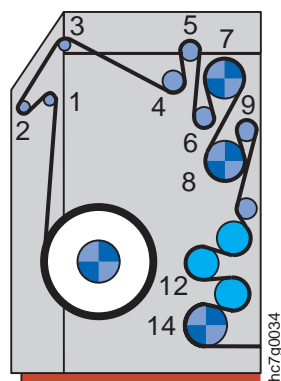


Figure 299. InfoPrint Color 100 Paper Supply Paper Path

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 300 on page 321.



Figure 300. Moving the Paper Supply

2. Open the top cover of the paper supply, as shown in Figure 301.



Figure 301. Opening the Top Cover

3. Find the cover at the back of the paper roll cavity and remove the cover by unscrewing the two black screws, as shown in Figure 302.

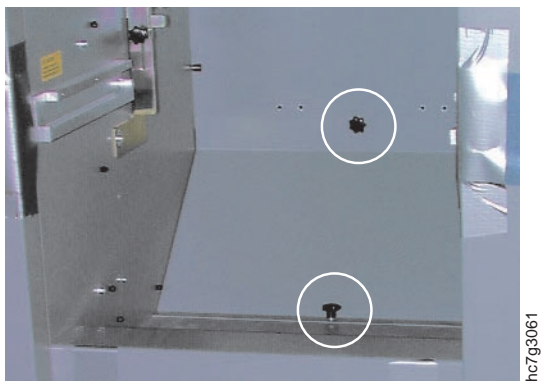


Figure 302. Removing the Two Black Screws

4. Cut a strip of print medium (150 - 200 gsm) with measurements: ± 100 cm x 15 cm, as shown in Figure 303 on page 322.

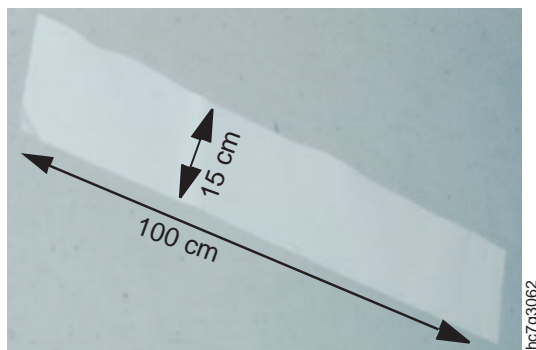


Figure 303. Cutting a Strip of Print Medium



CAUTION:

<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

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5. Go to the front of the paper supply and place the strip of paper around the bottom paper roll (roller 14) to the left side of the sensor assembly, as shown in Figure 304 on page 323.

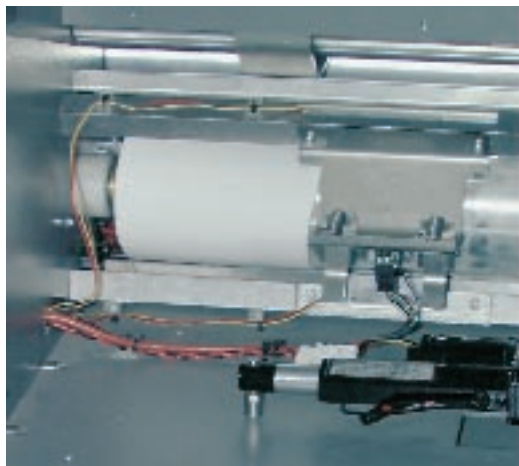
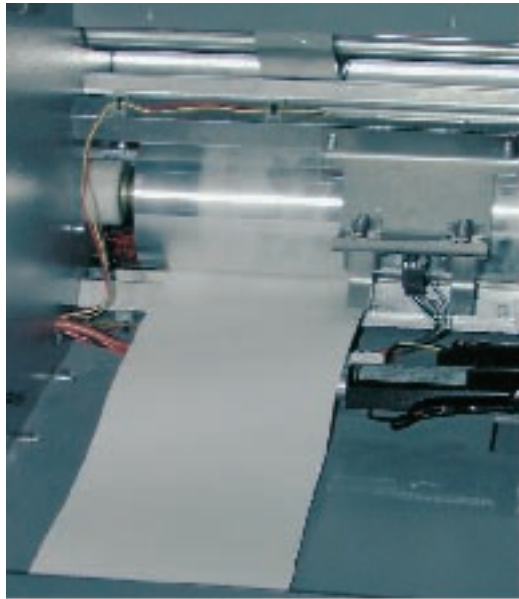


Figure 304. Placing the Strip

6. Remove the paper supply rear cover, as shown in Figure 305 on page 324.
 - a. Unscrew the two black thumb screws at the top of the cover.
 - b. Lift up on the cover to release the interlock.
 - c. Swing the lower edge of the cover away from the paper supply and remove the cover.



Figure 305. Back Cover of the Paper Supply

7. At the back side of the paper supply, ensure that both ends of the paper strip extend beyond the bottom roll, as shown in Figure 306.



Figure 306. Paper Strip Extending Around the Bottom Roll

8. Replace the front inside cover using the two black screws.
9. On right side of the leading edge of the print medium, cut off a triangular section so that the remaining point is on the left side of the print medium as it is pulled from the paper roll. See Figure 307 on page 325.



Figure 307. *Trimming the Leading Edge of the Print Medium*

10. Mount the print medium roll in the paper supply. See “Placing the New Roll in the Paper Supply” on page 272 for information about mounting a paper roll.
11. Pull up and thread the leading edge of the print medium, behind and over roller 1 and then under roller 2, as shown in Figure 308.

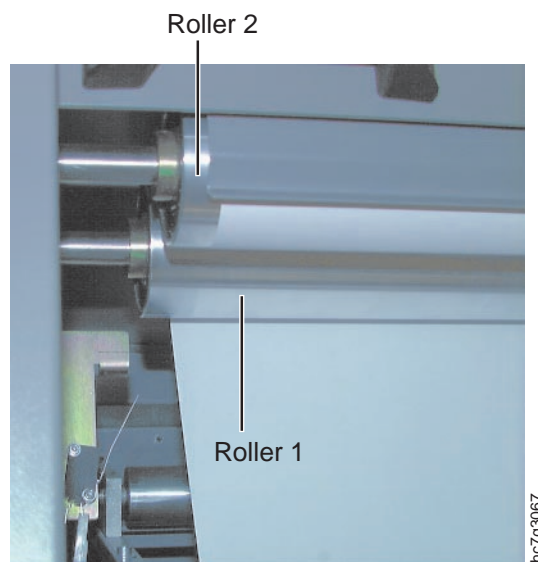


Figure 308. *Threading Around Rollers 1 and 2*

12. Lower the splicing table and thread the print medium between the guide plate and the splicing table, as shown in Figure 309 on page 326.



Figure 309. Threading Along the Guide Plate

13. Thread the print medium between the guide plate and the paper clamp, as shown in Figure 310.

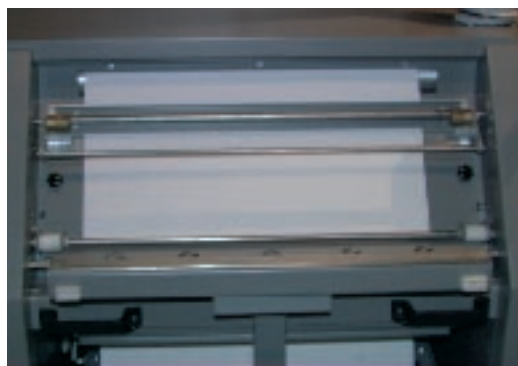


Figure 310. Threading Along the Guide Plate

14. Hold the leading edge of the paper and then close the splicing table.
15. Thread the print medium over roller 3, under roller 4, and around roller 5, as shown in Figure 311 on page 327.

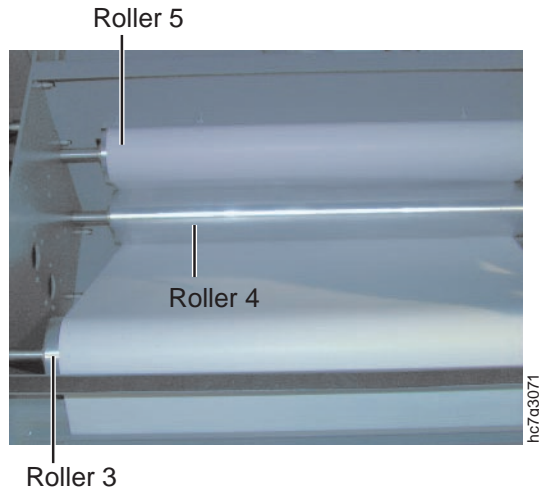


Figure 311. Threading Through Rollers 3, 4, and 5

16. At the back of the paper supply, thread the print medium behind the bar below roller 5, and then around roller 6, as shown in Figure 312.

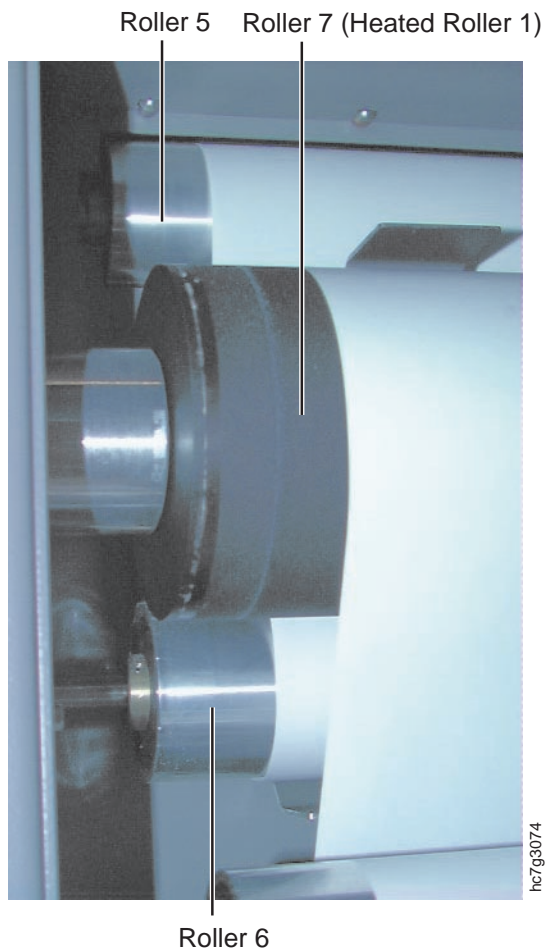


Figure 312. Threading Around Roller 6

17. Thread the print medium over roller 7 (heated roller 1) and under roller 8 (heated roller 2), as shown in Figure 313.

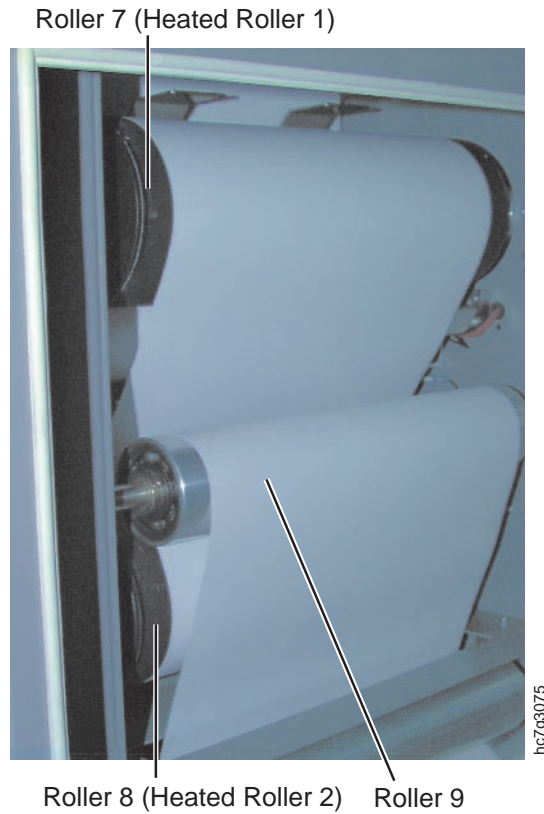


Figure 313. Threading Around Rollers 7 and 8

18. Thread the print medium around roller 9, through the plate, and behind roller 10, as shown in Figure 314.

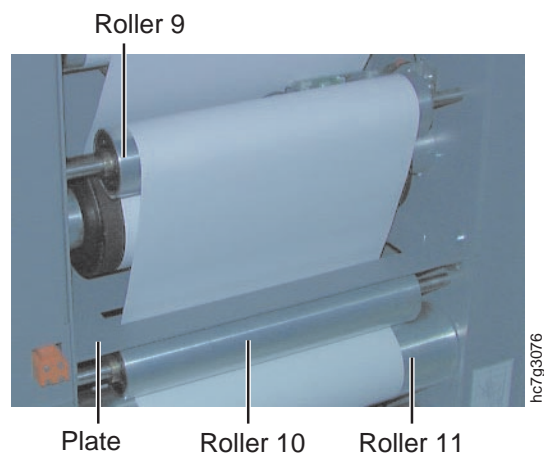


Figure 314. Threading Around Rollers 9 and 10

19. Perform the following procedure to thread the print medium through the print medium cooling rollers: roller 11 (cooling drum 1), roller 12 (cooling drum 2), and roller 13 (cooling drum 3), as shown in Figure 315 on page 329.

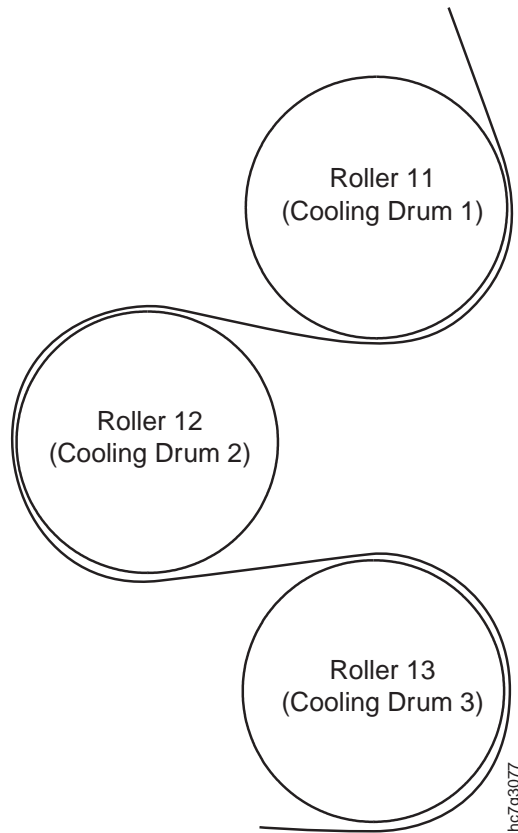
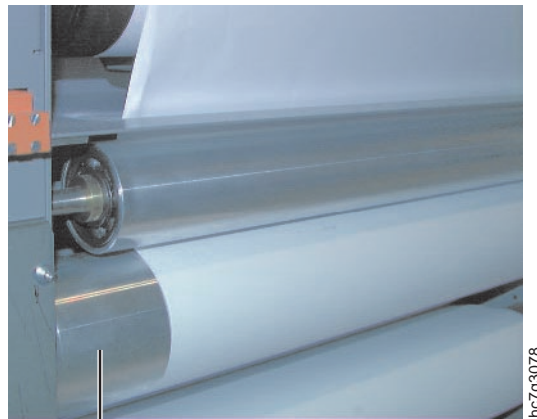


Figure 315. Threading Through the Cooling Drums

- a. Thread the print medium around roller 11 (cooling drum 1), as shown in Figure 316.



Roller 11 (Cooling Drum 1)

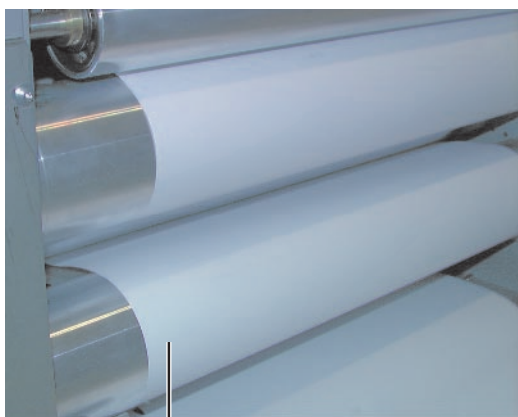
Figure 316. Threading Around Roller 11

- b. Put a piece of tape on the leading edge of the print medium and tape it to roller 12 (cooling drum 2). Rotate roller 12 to wind the print medium around the roller, as shown in Figure 317 on page 330.



Figure 317. Tape Placement

- c. Remove the tape and thread the print medium around roller 3 (cooling drum 3), as shown in Figure 318.



Roller 13 (Cooling Drum 3)

Figure 318. Threading Around Roller 3

20. Thread the print medium around roller 14 by taping the print medium under the upper end of the strip you inserted in Step 5 on page 322. See Figure 319 on page 331. Pull the strip, along with the print medium around the roller and out of the paper supply.



Figure 319. Threading Around Roller 14

21. Replace the back cover on the paper supply by replacing the two black screws.
22. Close the top cover of the paper supply.
23. 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 289), if you have not already done so.
2. Open the doors on both sides of the X and Y towers, as shown in Figure 320.

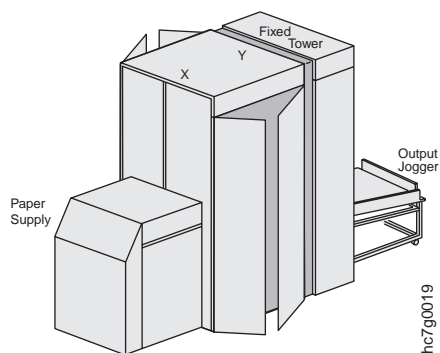


Figure 320. Right Side View of the InfoPrint Color 100



CAUTION:

<2-008> Before using any step ladder or stool, ensure it is level and steady.

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- Unlatch the X and Y towers by pulling up on the handle located on the X tower, as shown in Figure 321.

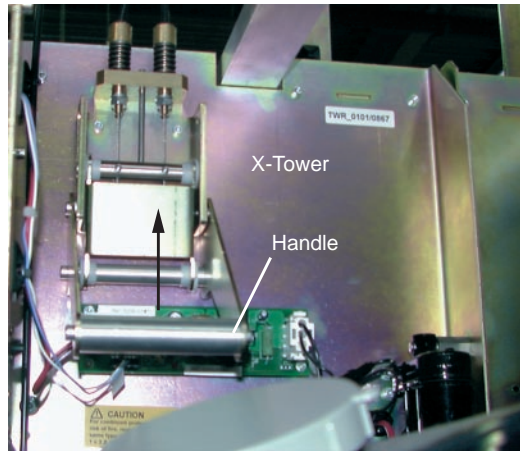


Figure 321. Unlatching the X and Y Tower

- Open the gates in front of the electronic panels.
- 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.

- Pull the paper through the base of the X tower to the Y tower. Ensure that the paper is placed above roller 15, as shown in Figure 322.

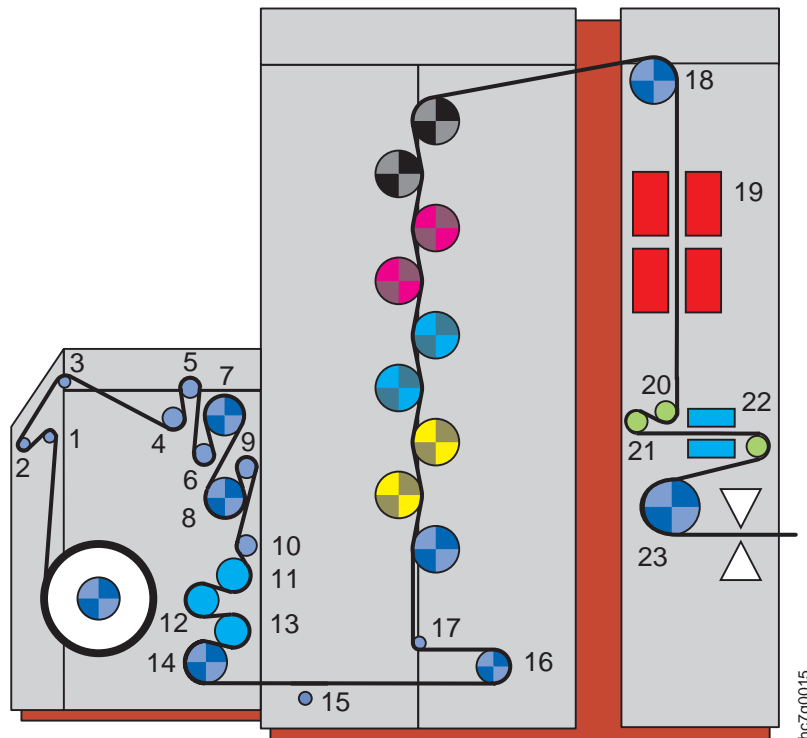


Figure 322. Print Tower Paper Path

7. Rotate the backup roll pressure handle, as shown in Figure 323, clockwise to loosen the pressure against the speed roll.

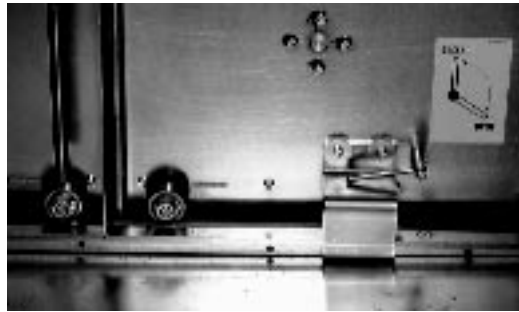


Figure 323. Backup Roll Pressure Handle

8. Thread the paper around the speed roll (roller 16), as shown in Figure 324, in a counter-clockwise direction.

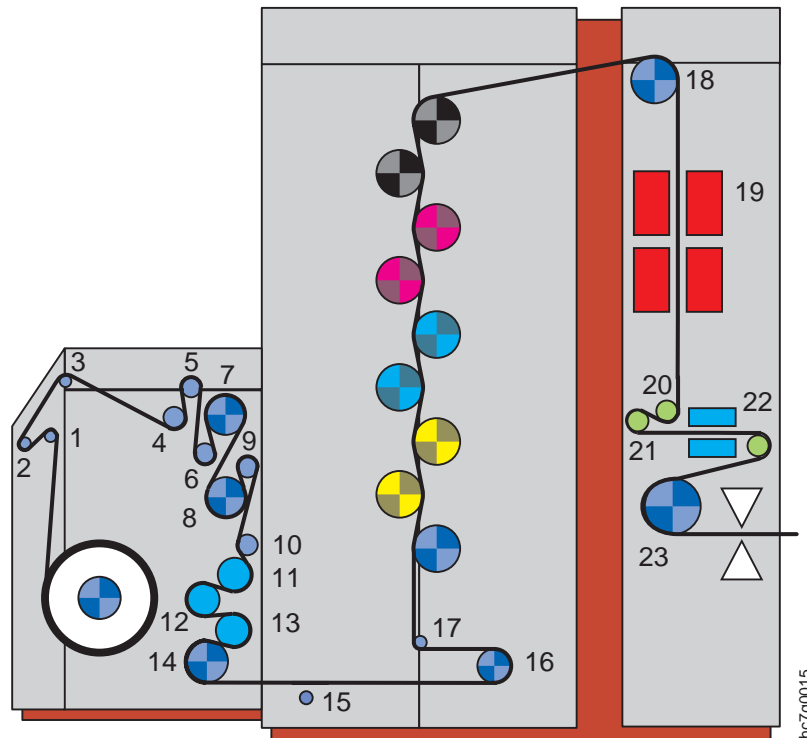


Figure 324. Print Tower Paper Path

9. Pull the paper under roller 17 to the top of the print tower.

Note: You need a second person to help you pull the paper to the top.

10. Rotate the backup roll pressure handle, as shown in Figure 325 on page 334, counter-clockwise to enable the speed roll drive to pull the paper.

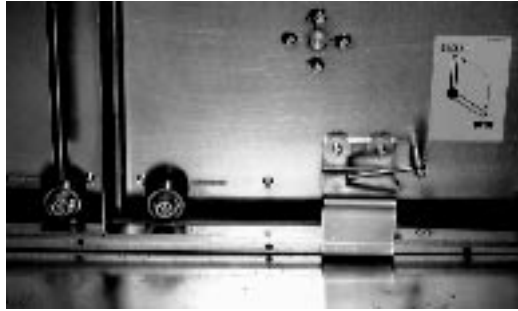


Figure 325. Backup Roll Pressure Handle

11. Continue with “Rethreading the Paper Path in the Fixed Tower”.

Rethreading the Paper Path in the Fixed Tower

1. Perform the service intervention procedure (“Beginning the Service Intervention Procedure” on page 289), if you have not already done so.
2. Move the output jogger away from the fixed tower.
3. Open the rear access doors of the fixed tower, as shown in Figure 326.

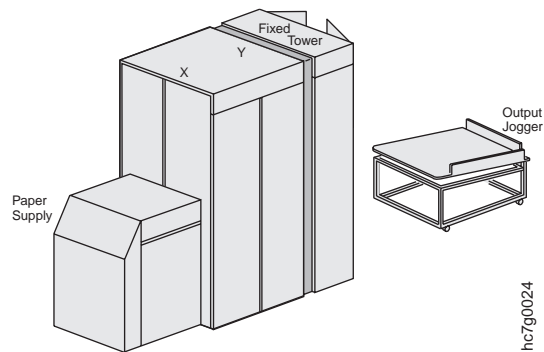


Figure 326. Right Side View of the InfoPrint Color 100

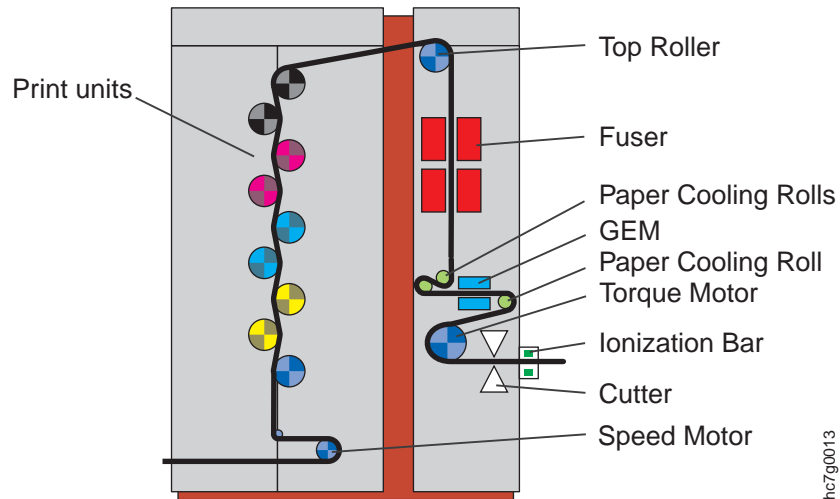


Figure 327. Print Tower and Fixed Tower Paper Path

4. Thread the paper over the top roller.
5. Unscrew and remove the four black knobs located on the cover of the fuser cabinet, as shown in Figure 328.

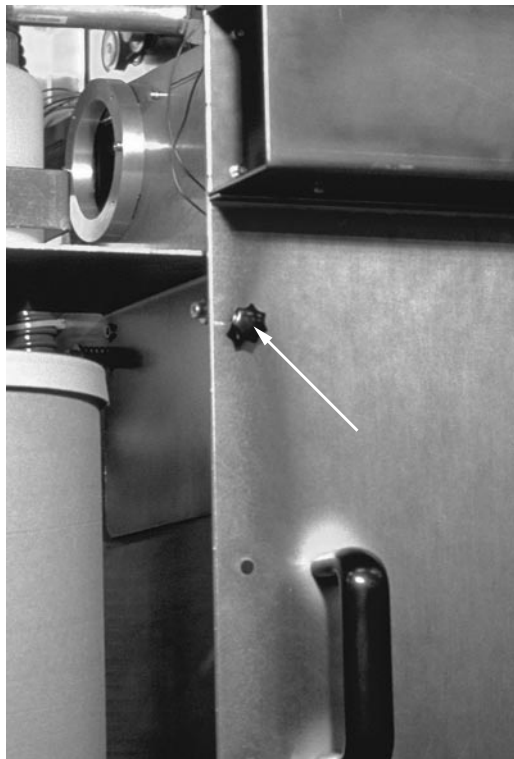


Figure 328. Fuser Cabinet Cover Black Knob

Note: Performing this step will cut off power to the printer.



CAUTION:

<60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

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6. Remove the cover of the fuser cabinet.
7. Pull the paper down between the fuser elements, as shown in Figure 329.

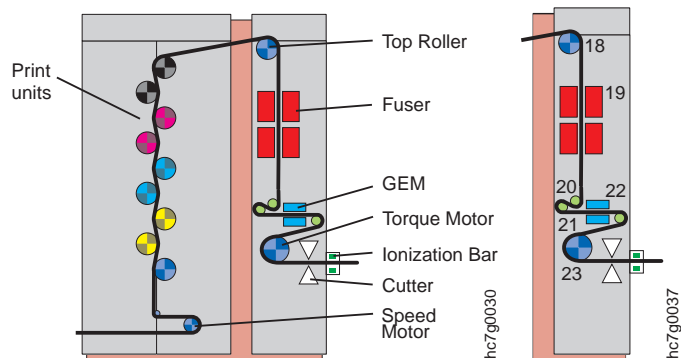
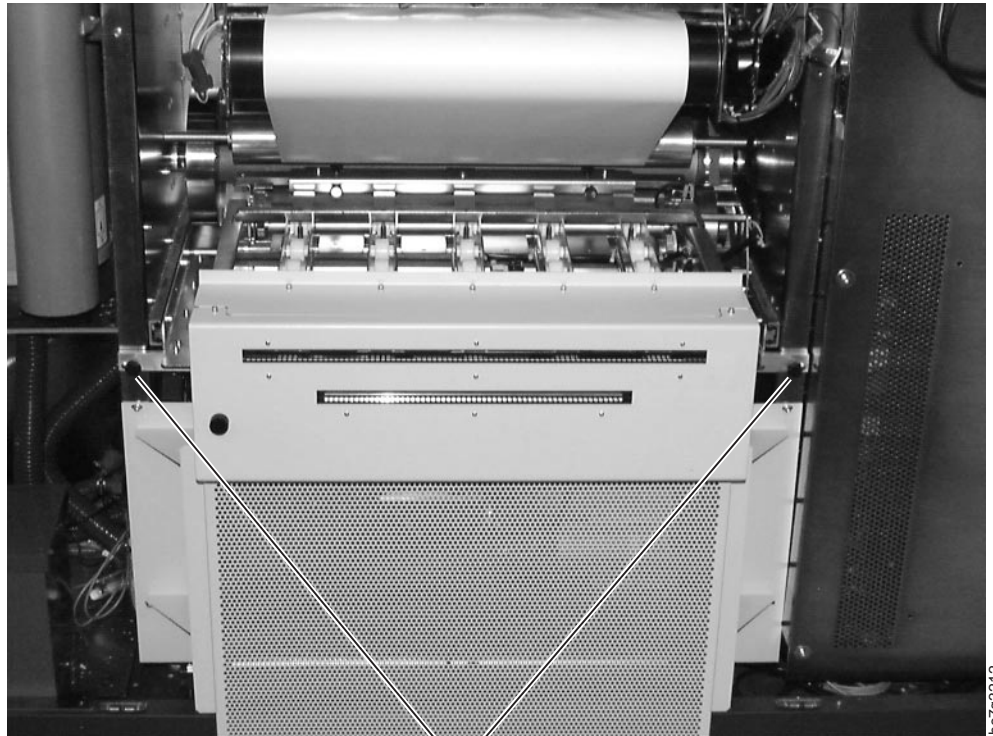


Figure 329. Threading Paper through the Fuser

8. Release the latches, one on each side, of the GEM upper nip roller assembly.
9. Disconnect the brown connectors on the left and right sides of the GEM nip roller assembly.
10. Carefully lift the upper nip roller assembly, using the handles, and remove it from the GEM.

Attention: Be careful not to scratch the nip rollers.

11. Put the paper below the cooling drum 20. See Figure 329.
12. Put the paper above and around cooling drum 21 under the paper guide.
13. Pull the paper further over the nip rollers and wind it over cooling drum (22).
14. Put the paper below the cooling drum (22) and around the torque roller (23).
15. Remove the two thumbscrews located on the front of the cutter assembly, as shown in Figure 330 on page 337.



Thumbscrews

Figure 330. Cutter Assembly Thumbscrews

16. Pull out the cutter assembly and thus release the torque roller pressing rolls.
17. Wind the paper around the torque roll.
18. Put the upper shell of the gloss box on the lower shell and lock it using the brackets.
19. Place the paper between the guide plates located at the back of the cutter assembly, as shown in Figure 331.

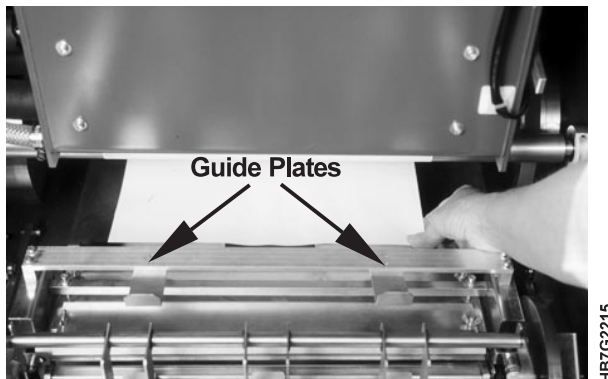


Figure 331. Cutter Assembly Guide Plates

20. Lift up the roller assembly, as shown in Figure 332 on page 338.

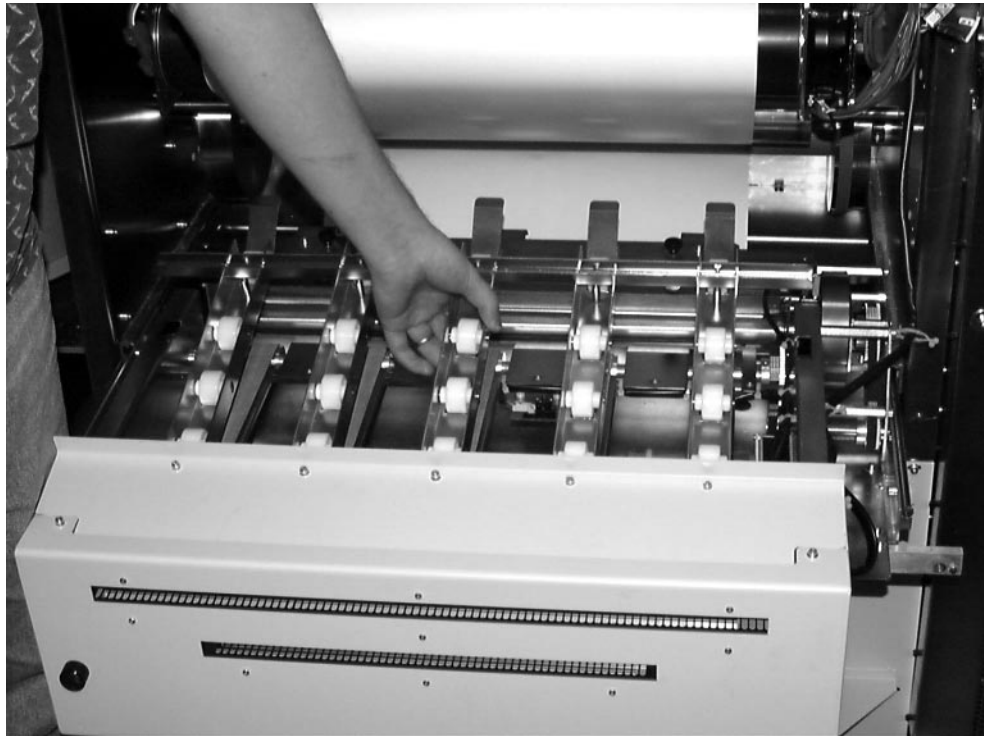


Figure 332. Cutter Assembly Roller Assembly

21. Put the paper through the ionization bar.
22. Pull the paper until it comes out of the cutter unit.
23. Put down the roller assembly.
24. While holding the paper straight, move the cutter back into place and replace the two black thumbscrews, as shown in Figure 333.

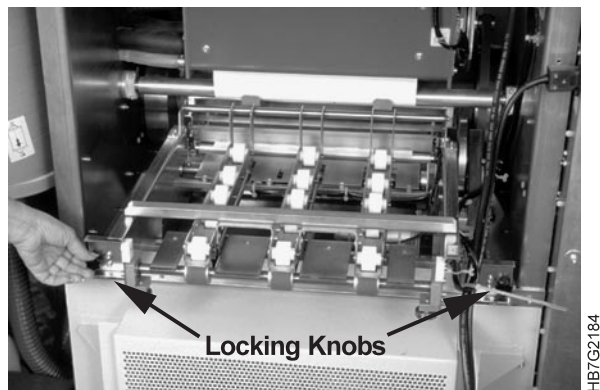


Figure 333. Cutter Assembly Thumbscrews

Now the torque roller pressing rolls are activated again.

25. Cut the paper.
26. Replace the cover of the fuser cabinet.
27. Close the fixed tower access doors and return the output jogger to its correct position.

28. Return to the Y tower and rotate the backup roll pressure handle counter-clockwise, to enable the speed roll drive to pull the paper.
29. Move the X tower back to its home position.
30. Latch the X tower to the Y tower by pulling down on the latch handle.
31. Close the access doors behind the paper supply.
32. 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:

33. 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.
34. Finish the service intervention procedure, as described “Finishing the Service Intervention Procedure” on page 291.

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 c:\Infoprintcolor100\Xpose\testfiles 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 163, “Chapter 7. RIPing Jobs and Creating Book Ticket Files (BTFs)” on page 163, and “Chapter 8. Printing and Managing the Printing Process” on page 183.

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 334.



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Figure 334. 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 335 on page 341.



Figure 335. 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 336.



Figure 336. 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 289.
2. Move the paper supply away from the print tower.
3. Open the doors of the X and Y towers on both sides of the machine and the front access doors (behind the paper supply), as shown in Figure 337 on page 342.

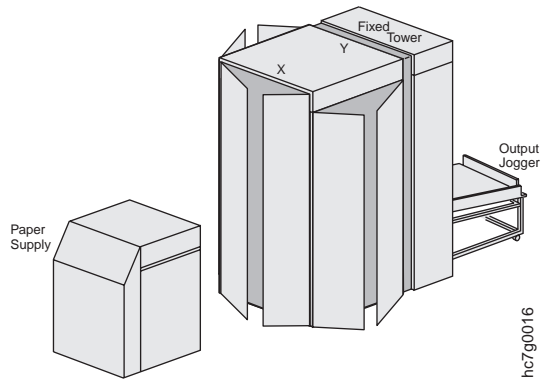


Figure 337. Right Side View of the InfoPrint Color 100

4. Unlatch the X and Y towers by pulling up on the handle located on the X tower, as shown in Figure 338.

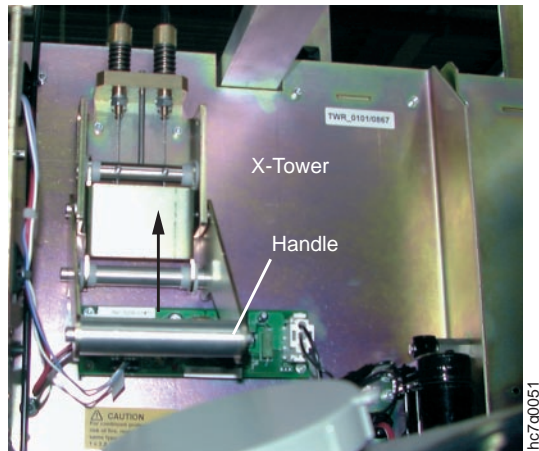


Figure 338. Unlatching the X and Y Towers

5. 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.
6. Locate the transfer erase duplex (TED) corona assembly, as shown in Figure 339 on page 343. Each tower has four TED corona assemblies.

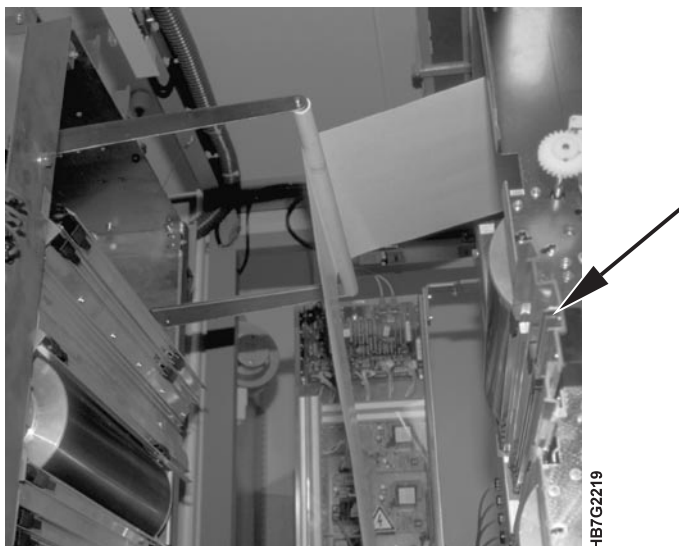


Figure 339. TED Corona Assemblies

Attention:

The TED corona assemblies should be put in a clean place where the corona wires will not get broken.

7. For the drums that need polishing, remove the TED corona assemblies by sliding them carefully out of the guide bars.
8. 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.

9. 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.

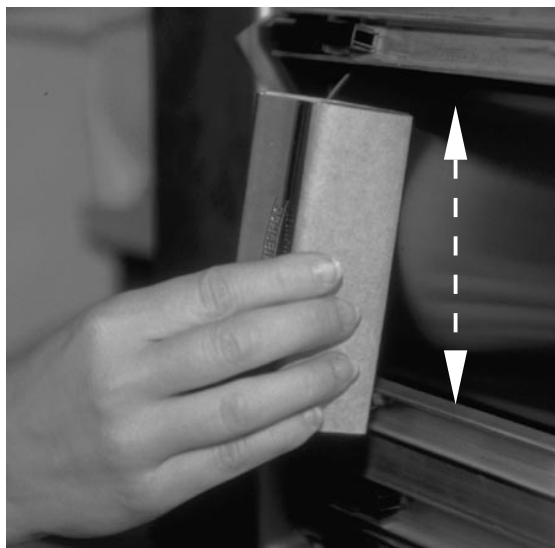
Attention:

Touching the OPC with bare hands will damage the drum.

Attention:

Polishing with a circular or horizontal motion will damage the drum.

10. Use the polishing pad with a vertical motion only, as shown in Figure 340 on page 344, to polish the identified areas.



HB7G2220

Figure 340. Polishing a Drum

11. 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.
12. 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.

13. 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.

14. Move the X tower back to its home position.
15. Latch the X and Y towers by pulling down on the latch handle. (See Figure 338 on page 342 for the location of the latch.)
16. Close the access doors behind the paper supply.
17. 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.

18. Finish the service intervention procedure (see “Finishing the Service Intervention Procedure” on page 291).

Interpreting and Solving Alarms and Warnings

If an error occurs during the operation of the InfoPrint Color 100, 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 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 this pushbutton to open a window displaying additional information about the alarm.
- **Remove:** Click 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 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.

Networking Problems

Consult your local LAN administrator.

If you need to perform any NT administrator related tasks at the console, you will need a password. Consult your service representative. You will need to provide the 8-digit hardware address in c:\winnt\repair\secure.log.

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 InfoPrint Color 100 and collator have been switched 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.
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, 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”
 - VECS error message is displayed, go to “VECS Problem Solving”
 - Variable Data Job does not print as expected, go to “Finding and Solving Variable Data Printing Problems” on page 349
 - MergeDoc message is displayed, go to “MergeDoc Messages” on page 349

If you are unable to correct a problem or if a problem persists contact your service representative.

Power On and Self-test Problems

Table 82. Power On and Self-test Problems

Symptom	Action
Collator has no power	Check that the InfoPrint Color 100 is switched on. If the problem persists, call for service
Collator fails self-test	Turn power off for one minute and try again.
X and Y LEDs are off or flashing.	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 switched on the power and you get an error message, find the message in following table and take the appropriate action.

Table 83. VECS Error Messages

Message / Problem	Causes	Action
VECS will not start.		Open a DOS prompt window. Go to c:\fastrip_v4\dcp 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 a DOS prompt window. Go to c:\fastrip_v4\dcp 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 PES 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.
An IO error occurred... An apis open failed... The system cannot find the file specified.	The collator and PES 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.

Table 83. VECS Error Messages (continued)

Message / Problem	Causes	Action
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

Click the tool bar ThruPRINT icon.



If 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.

Table 84. MergeDoc Messages

Error	Operator Action
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.

Table 84. MergeDoc Messages (continued)

Error	Operator Action
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.
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 16. Print Quality Problem Solving

The descriptions here are taken from actual InfoPrint Color 100 print quality artifacts. See the *IBM InfoPrint Color 100 Print Media Guide* for some examples of print quality artifacts. You can download the *IBM InfoPrint Color 100 Print Media Guide* from the following internet address:

www.printers.ibm.com/manuals.html

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 85. Print Quality Problem Solving

Defect Number and Description	Possible Cause of Failure	Action to be taken
<p>PQ-1</p> <p>Colors appear muddy, not bright. For example:</p> <ul style="list-style-type: none"> • 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.
<p>PQ-2</p> <p>Light colored CYMK streaks across the a light blue print area.</p>		Call your service representative.
<p>PQ-3</p> <p>Background of printed page blue with light magenta streaks, in the process direction. Yellow overprint is muddy.</p>		Call your service representative.
<p>PQ-4</p> <p>Printed areas light in color, or dull.</p>		Call your service representative.
<p>PQ-5</p> <p>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.</p>		Call your service representative.
<p>PQ-6</p> <p>There are cloudy, or light spots in the printed area.</p>	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 303. If the problem persists, call your service representative.
<p>PQ-7</p> <p>There are light streaks or stripes in the printed area.</p>		Call your service representative.

Table 85. Print Quality Problem Solving (continued)

Defect Number and Description	Possible Cause of Failure	Action to be taken
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"> • The top roll coronas are dirty • The top Teflon roll is contaminated by a power problem. • The top turn roller is dirty. • The wrong paper script file is loaded. 	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 Scorotrons” on page 295. 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 Scorotrons” on page 295 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 TED Assemblies in the Print Tower” on page 292 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.
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.

Table 85. Print Quality Problem Solving (continued)

Defect Number and Description	Possible Cause of Failure	Action to be taken
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.	If it is necessary to replace the corona wire, or the wrong paper script is loaded, 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 conditioned 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 it is necessary to replace the corona wire, call your service representative.
PQ-28 The output is smearing.		Call your service representative.
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.

Table 85. Print Quality Problem Solving (continued)

Defect Number and Description	Possible Cause of Failure	Action to be taken
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 TED Assemblies in the Print Tower" on page 292. 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 persist, 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 341. If polishing the drum does not solve the problem, call your service representative.
PQ-38 There are definite repeating spots or stripes in the printed area.		Call your service representative.
PQ-39 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.	The erase corona is failing.	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.
PQ-40 One print station does not print or one color is missing.	The transfer corona wire may be broken or missing.	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.
PQ-41 The overall print looks cloudy. There are offset images or ghost patterns, mottled print, or a color is missing.	The transfer corona wire may be broken or missing.	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.

Table 85. Print Quality Problem Solving (continued)

Defect Number and Description	Possible Cause of Failure	Action to be taken
PQ-42 The print appears uneven, streaked, light, and the colors are not blending well.	The paper could be out of specification, or is extremely wet.	Load a new roll of paper, see "Changing the Paper" on page 265. Ensure that the paper has been properly conditioned for a least three days. See the <i>IBM InfoPrint Color 100 Print Media Guide</i> for details on paper conditioning. If the problem persists, call your service representative.
PQ-43 There are random white spots, streaks or stripes appearing on the output.		Call your service representative.
PQ-44 There are white spots on the "Y" print tower.	The problem can be caused by loading the wrong paper script.	Ensure that the correct paper script is loaded for the paper that you are printing on. See "Specifying the Correct Paper Type" on page 279.
PQ-45 The control strip is missing the color bars in the "Bias" area, or there are white spots on the "Y" side of the image.	The control strip has been ripped incorrectly. The image appears okay.	Re-RIP the control strip and the print job. See "Learning About Control Strips" on page 201.
PQ-46 There are heavy background streaks in the printable areas.		Call your service representative.
PQ-47 The print registration is off in the web direction.		Call your service representative.
PQ-48 The prints are streaking 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 TED Assemblies in the Print Tower" on page 292. 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.

Table 85. Print Quality Problem Solving (continued)

Defect Number and Description	Possible Cause of Failure	Action to be taken
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 TED Assemblies in the Print Tower" on page 292. 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 reprint 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 265. Ensure that the paper has been properly conditioned for a least three days. See the <i>IBM InfoPrint Color 100 Print Media Guide</i> for details on paper conditioning.
PQ-54 There is one print station that is not printing or one color is missing.		Call your service representative.
PQ-55 There is a 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 TED Assemblies in the Print Tower" on page 292. 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.

Part 9. Appendixes

Appendix A. Media and Supplies

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This appendix provides reference information on the following topics:

- Printing media
- Supplies ordering

Printing Media

The InfoPrint Color 100 uses roll-fed paper that, after printing, is cut to the proper size for stacking in the output jogger. For the best print-quality results, use only media that is recommended by IBM.

The paper is heated during fusing and must be able to withstand heating to 200°C for five seconds.

You should store paper at the same temperature as the InfoPrint Color 100. Proper paper storage is very important. Follow the guidelines listed below:

- The relative humidity in the storage area should be between 30% and 60%.
- Keep rolls sealed and wrapped when not in use.
- New paper should be allowed to stabilize for three days in the same environment as the InfoPrint Color 100.

IBM Recommended Media

The current list of papers and media that IBM recommends is available in the *IBM InfoPrint Color 100 Print Media Guide*. This list is updated as IBM continues to test and approved additional media types. You can access the guide at the following internet address:

www.printers.ibm.com/manuals.html

Physical Properties

Table 86. Physical Properties of Paper

Parameter	Value
Wire/felt smoothness	40 — 50 Sheffield
Opacity	95 minimum
Brightness	96 minimum
Sizing	Alkaline

Table 86. Physical Properties of Paper (continued)

Parameter	Value
Surface resistivity	0.5 to 100 x E10 Ohms

Paper Roll Properties

Table 87. Paper Roll Properties

Parameter	Dimensions
Core inner diameter	75mm (3 inches), 150 mm, or 152.4 (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)	85 kg (187 pounds)
Roll width (minimum)	500 mm (19.7 inches)
Roll width (maximum)	508 mm (20 inches)
Note: The roll width must conform to the dimensions of the roll mounting shaft. The mounting shafts can be set to various widths, including the common paper widths used in the industry (see "Chapter 11. Managing Paper Rolls" on page 265). Special shafts will be made upon request.	

Paper Basis Weights

Table 88. Paper Basis Weights Range

	ANSI	ISO
Normal basis weight	16 to 66 pounds bond	60 to 250 grams per square meter
Measurement	500 sheets, 17 x 22 inches	One sheet, one meter square
Note: Tolerance is ±5%		

Supplies Ordering

Choosing the correct supplies for the InfoPrint Color 100 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.

To order supplies for the InfoPrint Color 100 printer in the United States, use any of the following methods:

- Call Lexmark Order Management Center at (800) 292–5885 from 8:00 a.m. to 8:00 p.m. Eastern Standard Time.
- Write Lexmark Order Management Center at:

Lexmark International, Inc.
 Order Management Center
 P.O. Box 11427
 Lexington, KY 40575-1427

- Fax a completed order form to (800) 232–9539.

- Outside the United States contact Lexmark International, Inc. directly. Lexmark dealers do not sell InfoPrint Color 100 supplies.

Toner

Order toner supplies by part number, as shown below. A part number represents one carton of toner. “Chapter 14. Checking and Refilling Toner” on page 303 explains how to refill toner.

Table 89. Toner Part Numbers

Color	Part Number
Black toner	1402813
Cyan toner	1402814
Magenta	1402815
Yellow	1402816

Description:

- Unit: 800 gram bottle
- Packing: 6 bottles of the same color per carton
- Minimum order quantity: one carton
- An approximate average yield established for each toner supply based upon printing at a coverage of 17% per color is typically 13 700 letter-size or A4-size images per bottle; 82 200 letter or A4-size images per carton. You may get up to a maximum of 15 000 letter-size or A4-size images per bottle; 90 000 letter or A4-size images per carton.

Toner Waste Bottles

Order toner waste bottles by part number 1402761. A part number represents a carton. “Chapter 13. Performing Scheduled Operator Maintenance” on page 289 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 InfoPrint Color 100 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 11. Managing Paper Rolls” on page 265 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 240 splices per carton

Counter Dongles

Contact your service representative to obtain replacements for your counter dongle.

Appendix B. Manual Method to Create Variable Data

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Variable data jobs can be created manually on both the InfoPrint Color 100. 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 for 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 341 on page 364.

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

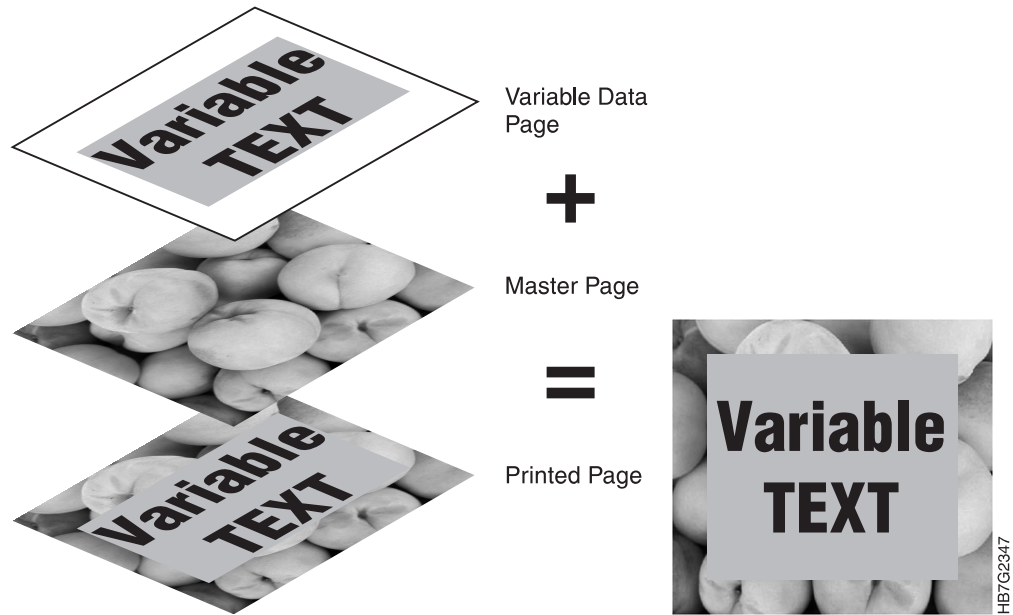


Figure 341. Sample "Knockout" Job Type (VDF0)

- 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 RIPping 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 342.

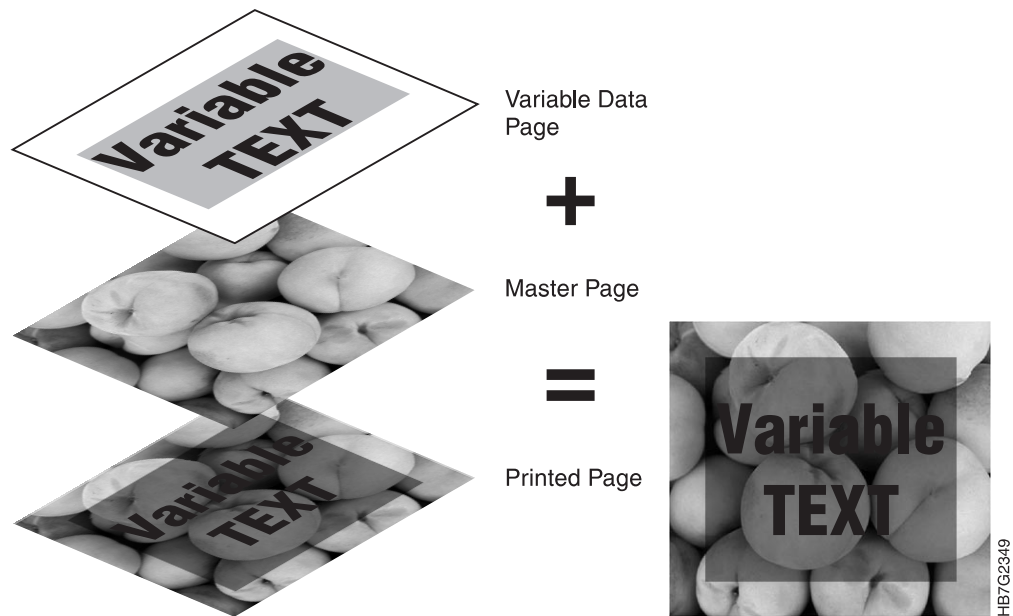


Figure 342. Sample "Overprint" Job Type (VDF2)

- 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 343.

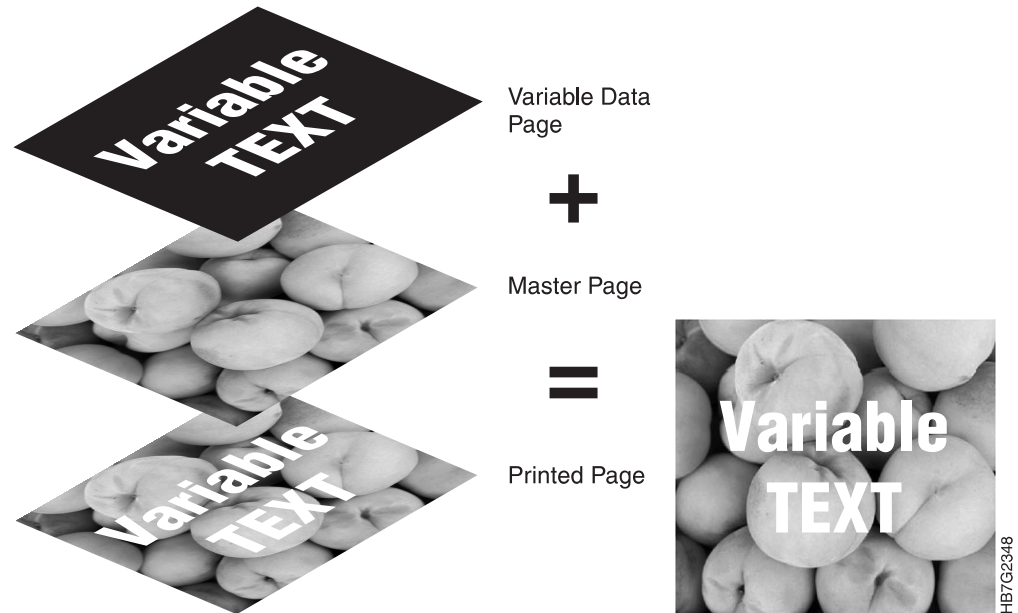


Figure 343. Sample "Reverse Out" Job Type (VDF3)

Manual Method for Variable Data

This section describes the manual method of creating variable data on the InfoPrint Color 100 Printer. 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

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 366 and "Vertical Variable Data" on page 366.
2. Use your page layout application to create the master file. This file should contain all the static elements. See "Job Types" on page 363.
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 367.
4. Transfer the master file and the variable data files to the InfoPrint Color 100.
5. Build the Book Ticket File. See "Creating Book Ticket Files with Horizontal Variable Data" on page 368 and "Creating Book Ticket Files with Vertical Variable Data" on page 369.

6. RIP the master file and variable data files. See “RIPing and Printing Manually Created Variable Data Files” on page 370.
7. Print the Book Ticket File. See “RIPing and Printing Manually Created Variable Data Files” on page 370.

Guidelines for Creating Variable Data Manually

Using Quark XPress 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 344.

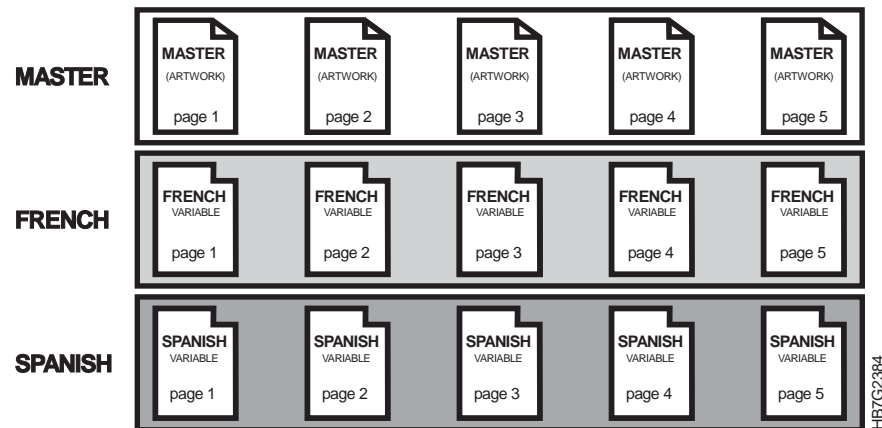


Figure 344. Horizontal Variable Data

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 345 on page 367.

The number of pages in each variable data file should be the same. The number of pages corresponds to the number of copies.

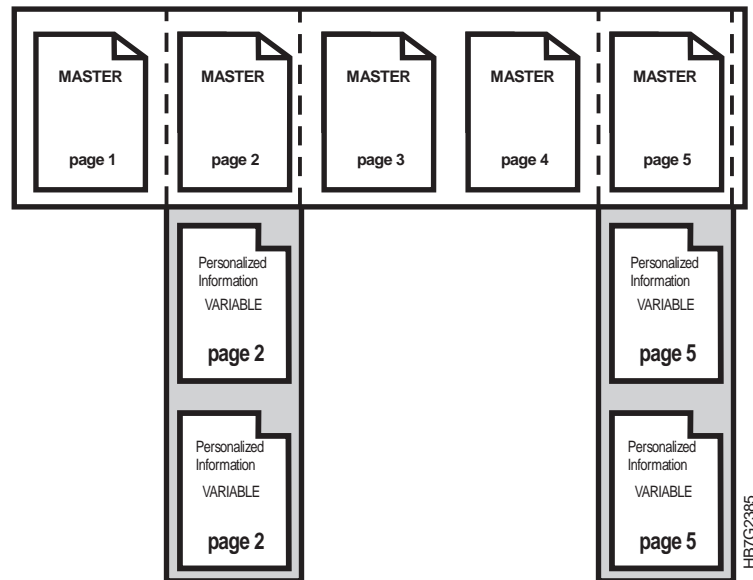


Figure 345. Vertical Variable Data

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 344 on page 366. 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 345. All variable data files must have the same number of pages.

The InfoPrint Color 100 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 363.

Creating Book Ticket Files with Horizontal Variable Data

Note: See “Horizontal Variable Data” on page 366 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 90):

```
"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.

Table 90. Horizontal Variable Data Parameter Descriptions

Parameter	Description
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 366 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 91) is:

```

VSTREAM vstreamname
    file1
    file2
    ...
ENDVSTREAM

```

The words VSTREAM and ENDVSTREAM are required syntax.

Table 91. Vertical Parameter Descriptions

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 163.

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 368 and 369)
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 InfoPrint Color 100** 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

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” on page 372 and “Duplex Variable Data Job:” on page 372

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

    /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 C. 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.

- preprint.ini

This file is in the c:\Infoprintcolor100\xpose\bin directory. It identifies the files ThruPRINT will use to initialize values in the **Page Setup** window and the **Merge Documents** window. Table 92 describes the options that may be modified in this table.

Table 92. preprint.ini Modifiable Fields

Option	Description	Default Value
CurrentPageSetup	The full path and name of the initialization file used to initialize the Page Setup window.	c:\Infoprintcolor100\xpose\rip\pgsetup\default.ini
MergeDocConfigFile	The full path and name of the configuration file used to initialize the Merge Documents window.	c:\Infoprintcolor100\xpose\vds\bin\mergedoc.cfg

- default.ini

This file is in the c:\Infoprintcolor100\xpose\rip\pgsetup\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 163.

- mergedoc.cfg

This file is in the c:\Infoprintcolor100\xpose\vds\bin\mergedoc.cfg directory. It contains the default values ThruPRINT will use to initialize the **Merge Documents** window. Table 93 describes the options that may be modified in this file.

Table 93. Mergedoc.cfc Modifiable Fields

Option	Description	Default Value
vdata_search_path	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.	c:\Infoprintcolor100\xpose\vds\masterps; c:\Infoprintcolor100\xpose\vds\resource; c:\Infoprintcolor100\xpose\vds\data; c:\Infoprintcolor100\xpose\vds\docdef
vdata_vdataps	The directory where the Post Script files created automatically during the RIP process are placed.	c:\Infoprintcolor100\xpose\vds\vdataps
vdata_btf_dir	The directory where the Book Ticket Files are placed.	c:\Infoprintcolor100\xpose\vds\vds\btf

Glossary

The following terms are defined as they are used in the InfoPrint Color 100 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 A3 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.

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.

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 reservoir. The containers, located in the fixed tower, that is 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 amount of printed print medium used, total print medium used, and the number of printed sheets. 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. 2 bps (bits per spot) means a spot can have 8 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 Print Queue window used to delete a job from the list of jobs in the window.

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.

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 InfoPrint Color 100 prints 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.

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 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 jogger.

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.

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.

GEM. Gloss Enhancement Module

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 rolls. The rolls in the paper supply that dry 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.

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 plate MAKING. 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.

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 switch. The switch, located in the fixed tower, that is used to turn on the printer.

maintenance key. The key that must be inserted and turned clockwise before service intervention is used.

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.

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 heated rolls and cooling rolls to dry the paper to a certain moisture content.

paper roll. See web.

paper roll shaft. The device inserted through the core of a paper roll to support the paper roll in the printer. A paper roll shaft 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.

PES (print engine supervisor) platform. One of two platforms in the printer controller module. This platform controls the operation of the print engine.

PES/RIP switch. The switch used to switch back and forth between the PES platform and the RIP platform.

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.

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 Print Queue Properties window used to view the progress of a queued job.

Properties. A selection used from the Print Queue window to 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

Print Queue. 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.

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 Print Queue window used to change the name of a listed job.

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 CYMK colors.

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, 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.

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.

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.

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.

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.

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 engine is ready to print except for warming up the paper conditioning, fuser, and the GEM.

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.

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 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.

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