IBM

IBM InfoColor 70
Introduction and Planning Guide

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Fifth Edition (January 1997)

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Preface

This publication introduces the IBM InfoColor 70 and provides a summary of its functions. This publication also contains information to help you prepare for installing and using the InfoColor 70.

This publication is for executives who are considering purchasing the InfoColor 70 and the planning team responsible for installing and preparing the printer for regular operation.

About this Publication

This publication contains the following topics:

- Printer description and information

- How to prepare the physical environment

- How to plan the physical layout

- Operator tasks and training

- Supply requirements

- Communicating with your printer

- System Assurance Checklist

Related Publications

The following additional InfoColor 70 publications are available:

- *IBM InfoColor 70: Operator's Guide*, S544-5334, which contains the procedures required to operate the printer. This book also describes the collator model and the variable data feature and how to use them to produce customized documents.

- *IBM InfoColor 70: Maintenance Library*, which contains installation and service information for the service representative.

- *3170 Full Color Digital Printer/Press: Safety Information*, G544-5335, which contains a collection of English and translated safety statements that apply to both the InfoColor 70 Printer and the 3170 Full Color Digital Printer/Press.

- *IBM InfoColor 70 and 3170 Full Color Digital Printer/Press: Paper Selection Guide*, G544-5386, which contains information about forms and special-purpose media that can be used with the printers.

Printer Description

The IBM InfoColor 70 Printer (Model 002) and IBM InfoColor 70 Printer and Collator (Model 02C) are designed for short-run, high-quality, full-color applications. The innovative, entirely digital, printing technology of the InfoColor 70 brings the advantages of electronic publishing to color printing.

Key advantages of the InfoColor 70 include the following:

* Provides fast turnaround for full-color documents

* Produces competitive cost-effective full-color output

* Produces data stream compatible with SWOP and Euroscale standards

* Provides a ColorSyncII profile for Macintosh workstations

* Makes possible new printing applications with digital information, and provides the ability to customize documents, brochures, hand-outs, and other printed material that are now produced in black and white

* Prints directly from digital data to eliminate costly intermediate steps, such as film and plate making

* Provides automated density control

* Uses improved consumables that last longer

* Optional autotrapping

* Provides a true "direct-to-paper" solution.

The InfoColor 70 produces high-quality process color jobs at a speed of 70 A4-size impressions per minute (up to 4200 per hour) when printing duplex, or 35 A4 impressions per minute when printing in simplex. In either simplex or duplex, the print speed is 35 A4 sheets per minute.

The web-fed continuous-form printing engine contains a set of cyan, magenta, yellow, and black (CMYK) printing units for each side of the paper. This allows full color duplex printing in a single pass. Each of the electrophotographic printing units is directly fed by digital data, and uses a light-emitting diode (LED) array as the imaging device.

The InfoColor 70 prints at 600 pel resolution with up to 16 gray levels per dot for each of the four basic colors. Proprietary screening allows images to be printed at a screen frequency of 170 lines per inch.

The printer is compatible with PostScript data streams from standard pre-press platforms and attaches to a network with Ethernet or Token Ring.

The environment within the print tower is temperature and humidity controlled, and paper is conditioned within the paper feed mechanism, to ensure high-quality printing.

The InfoColor 70 provides several advantages, including high reliability, optimal registration, and integrated duplex printing.

The InfoColor 70 requires a high degree of operator involvement in the processing of the short-run press jobs. The operator, among other tasks, is required to adjust

print station registration and color balancing, take densitometer measurements, enter job data, add toner, and perform daily cleaning.

The InfoColor 70 is not capable of printing on pre-printed forms or pre-die-cut labels.

Model 02C

The InfoColor 70 Printer and Collator (Model 02C) consists of an InfoColor 70 high-speed, full color, duplex printer/press equipped with an electronic Collator. The Collator consists of a high-speed disk array that can store individual page images, which allows printing of large collated documents. Collated documents, with each page entirely different, can be printed at the very high InfoColor 70 print speeds. Multiple copies of a book can be printed so that the pages of each copy are printed in collated order. The first collated set is available before the second is started.

The Collator provides the capability of storing up to 32GB of compressed, rasterized data. This is equivalent to about 500 pages of a typical magazine with a data depth of 4 bits per spot (BPS), or 1 000 pages at 2 BPS. For pure text, the Collator can store from 5 000 to 10 000 pages.

The Collator extends variable data capacity to the entire page, providing unlimited flexibility for variable data. It provides the capability to merge fixed and variable data onto pages as jobs are printed.

Electronic page-picking is another capability of the Collator. Electronic page-picking allows custom book generation through the selection of different page images for each book. Page images are stored on the Collator, and printed as a customized book on demand. This provides a significant time savings because the page images do not have to be rasterized again.

The Collator can be used for a wide range of print-on-demand (POD) applications, including targeted advertising and brochures, textbooks, custom classroom materials, and many other similar applications.

The Collator:

- Provides fast turnaround for electronically collated, full-color documents

- Allows virtually unlimited variable data

- Reduces post-processing steps through collated printing

- Provides the ability to customize collated, full-color documents, brochures, hand-outs, and other similar documents through electronic page-picking

- Prints directly from digital data to eliminate costly intermediate steps, such as film and plate making

- Allows multiple copies to be printed in collated order

- Facilitates automation of daily runs through book ticket files

- Provides 32GB of DASD (disk) storage

- Provides 2 or 4 bits per spot capability

- Provides data compression

- Allows electronically collated printing of up to 500 typical magazine pages at 4 BPS

- Provides failure monitoring and diagnostics

The Collator enhances the capacity and functionality of the InfoColor 70. With the collator rasterized image data for all colors on both sides of the page (8 sets total), are stored on a single disk array that is typically 4GB in size. Large amounts of volatile DRAM are required to support the high sustained data rates that must be supplied to the LED printheads of the InfoColor 70 print engine. Figure 1 on page 4 portrays the functional elements of an InfoColor 70 Model 002.

Adding a Collator to an InfoColor 70 extends the InfoColor 70 functionality so that these performance barriers are removed. A separate 4GB disk array is provided for each of the 8 image data sets. Each of these arrays is controlled and managed by its own high performance RS/6000 computer and DRAM image data buffers. This distributed design, coupled with the high speed data paths of the Rs/6000 computer, enables the use of smaller DRAM buffers to maintain the necessary data bandwidth to the LED printheads. The increased 32GB of the DASD (disk) storage allows virtually unlimited variable data. This increase also makes possible the retention of Rasterized Image Processor (RIP) images. The rasterized image data stored on the Collator can be quickly directed to the print engine an unlimited number of times. A functional description of the Collator system is shown in Figure 2 on page 4.

Table 1 on page 5 shows the features and functionality of the InfoColor 70 Printer (Model 002) and InfoColor 70 Printer and Collator (Model 02C) respectively.
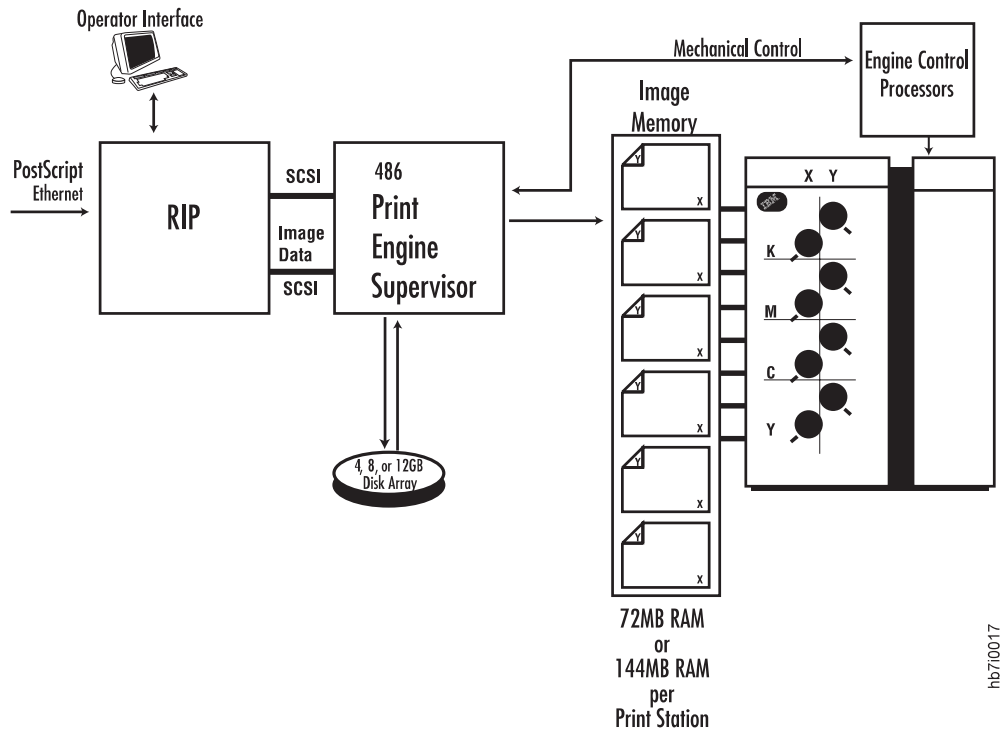
Figure 1. IBM InfoColor 70 Printer (Model 002)
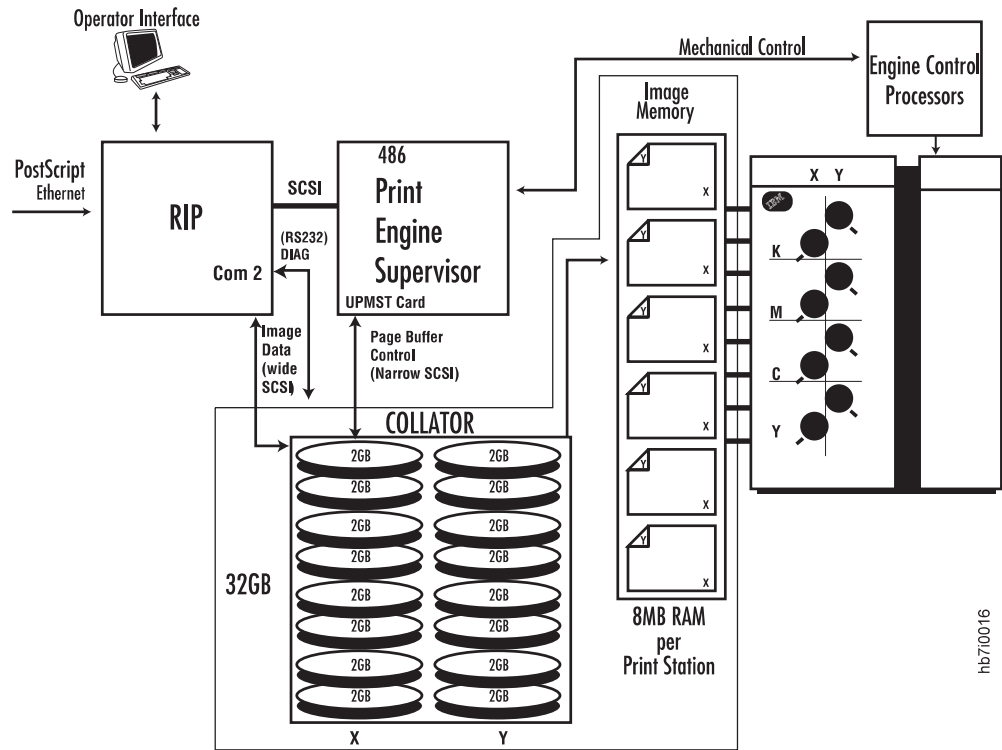
Figure 2. IBM InfoColor 70 Printer and Collator (Model 02C)

Table 1. Features of the InfoColor 70 Models 002 and 02C

Feature	Model 002	Model 02C
Image Memory (ISMT)	72–144MB/printhead	8MB/printhead
Image DASD	4–12GB image DASD	32GB Collator DASD
Variable Data	Optional	Standard
Multipage Support	Standard	Not Applicable
Color Depth	2 bits/pixel = 256 colors/pixel or 4 bits/pixel = 65 536 colors/pixel	2 bits/pixel = 256 colors/pixel or 4 bits/pixel = 65 536 colors/pixel

Printer Components

Following is a description of the four major components of the printer.

Print Tower

The print tower is the largest component of the InfoColor 70. It houses the web-fed continuous-form printing engine that contains a set of cyan, magenta, yellow, and black (CMYK) printing units for each side of the paper. This allows full-color duplex printing in a single pass. Each of the electrophotographic printing units is directly fed by digital data, and uses a light-emitting diode (LED) array as the imaging device.

The print tower is temperature and humidity controlled within the covers to assure a stable printing environment.

The printer fuses toner to the paper using a non-contacting radiant fusing station. After the paper exits the fuser, the printer cuts the paper to specified lengths before the paper exits the print tower.

Paper Supply

A paper supply unit attached to the input side of the print tower contains a paper supply roll and a manual splicing station. The paper supply unit preconditions the paper before it enters the print tower.

Output Stacker

The output stacker unit attached to the output side of the print tower contains an auxiliary paper stacker and a job output stacker. The printer directs test prints to the auxiliary stacker for operator inspection anytime during a job run.

Cooling Unit

The cooling unit supplies coolant, consisting of water and antifreeze, for:

- Maintaining temperature and humidity control in the print tower
- Cooling the paper after fusing
- Cooling the paper after conditioning

In addition, room temperature water cools the LED printheads to maintain
consistent light output from these LED assemblies.

Operator Console

The operator console comprises the printer controller and the Collator (Model 02C
only). The printer controller supplies the interface to the operator, the LAN, the
printer engine controller, and the various I/O devices that support the print
operation. Elements associated with the operator console are:

- Printer controller

  The printer controller incorporates a keyboard, mouse, monitor, and control
  units, which the operator uses to control the printer through a graphical user
  interface (GUI).

- Control Unit LAN attachment

  The control unit attaches to a LAN through an Ethernet or Token Ring port.

- Controller software

  The high-level operator interface is a graphical user interface (GUI). The
  Raster Image Processor (RIP) accepts PostScript files as input and produces
  output to send to the InfoColor 70. The operating system allows for
  asynchronous print data transfer and RIPing of incoming jobs.

- Screening technology

  Because screening enhances print quality, the following features are standard
  in the InfoColor 70:

  - Gray scales of 2 or 4 bits/dot
  - Screening for 170 line per inch ruling
  - Elimination of moire patterns between cyan, magenta and black
  - Optimizing of rosette patterns

Local Area Network (LAN) Configuration

To ensure that the InfoColor 70 is properly used, review the network configuration
that will be used with the printer. Printer controller hardware, network hardware,
application software, and network software must be reviewed to ensure that your
expectations will be satisfied.

For LAN features and options, contact your IBM representative for details.

Note: The InfoColor 70 printer is shipped with Ethernet or Token Ring. If the
InfoColor 70 is to be attached to your LAN by other means or your Ethernet
requires non-standard protocol support, be sure to inform the service
representative before installation so that the appropriate hardware and
software are available when the InfoColor 70 is installed. Also, be sure
someone familiar with your LAN configuration is available when the
InfoColor 70 is installed to assist the systems engineer and service
representative. This will help prevent any delays in the installation of the
InfoColor 70. Configuration information can be found in the *IBM InfoColor
70: Maintenace Library*.

Service Interface

The service representative uses the same GUI interface to service the printer. The service representative also uses the interface to run several diagnostic aids.

The diagnostics package and the operator console's service mode capabilities are described the *IBM InfoColor 70: Maintenance Library*.

General Performance Specifications

This section lists the general performance specifications of the InfoColor 70.

Process speed	12.25 cm (4.82 in.) per second
8.5 x 11" sheets per minute	34 simplex or duplex
A4-size sheets per minute	35 simplex or duplex
Dot density	600 x 600 dpi
Printed line width (maximum)	308 mm (12.12 in.) Model 002** 305 mm (12.0 in.) Model 02C**
Paper width (maximum)	320 mm (12.6 in.)
Paper length as cut	210–2770 mm (8.3–109.1 in.)
Paper roll diameter*	500 mm (19.7 in.) maximum
Paper input capacity*	40 kg (88 lb) roll
Stacker capacity	431 mm (17 in.) (maximum height)
Stacked paper sizes (length)	210–470 mm (8.3–18.5 in.)
Blank paper at job start-up	6–9 m (20–29 ft)
Blank paper (between jobs)	None***
Blank paper (at roll change)	15 m (50 ft)
Manual splicing station	Standard feature

*   A high capacity unwinder is available. Contact your IBM representative for details.

**   Maximum that printhead can print. See "Print Area" on page 8 for more information.

***   When using multi-page support. If not multi-page support, same as blank paper at job start-up.

Print Quality and Registration Specifications

The following print specifications apply when the operating environment is within optimum operating ranges. (See "Environmental Requirements" on page 9 and "Paper" on page 33.)

Job Setup

You may need to print 25 or more impressions to adjust registration and density.

Maximum Percentage of Coverage

The recommended maximum coverage per color is 60%. This percentage may decrease with mix usage. Print quality may degrade or printer alarms may occur if you exceed this coverage.

Paper

These print quality specifications apply only when using the IBM-approved papers.

Print Area

The InfoColor 70 prints to within 5 mm (0.2 in.) of the edge of the paper roll, except when using the maximum 320 mm (12.6 in.) width. In this case, the InfoColor 70 prints to within 6 mm (0.24 in.), because 308 mm (12.12 in.) is the maximum the printhead can print for Model 002 and 305 mm (12.0 in.) for Model 02C. Maintain at least 5 mm (0.2 in.) space between printed signatures.

Registration

Color Registration: Use the operator console to adjust the registration of print unit stations relative to each other. The *IBM InfoColor 70: Operator's Guide* describes this procedure. Usually, registration is adjusted at the start of a new paper roll or after an idle period of more than two hours.

Image Registration: The InfoColor 70 image registration is within ±0.50 mm (0.02 in.) in the paper movement direction, and within ±1 mm (0.04 in.) across the web. Back to front image registration is within 0.2 mm (0.008 in.).

Signature Skew

Signature skew and distortion have an accuracy of ±0.02°.

Sheet Cutting Accuracy

The accuracy of the cut length is ±0.5 mm (0.02 in.). The cut is perpendicular to within 0.2°.

Optical Density

Hold optical density as close as possible to specifications to ensure full process color reproduction and consistency of color throughout any particular job. The *IBM InfoColor 70: Operator's Guide* describes optical density adjustments. A densitometer is shipped with the printer to check optical density.

Preparing the Physical Environment

This chapter describes the environmental, physical, and space requirements that are needed before installing the InfoColor 70.

Environmental Requirements

For optimal print quality the environment must be closely controlled. See the following table for optimum environmental conditions.

Table 2. Environmental Requirements		
Mode	**Air Temperature**	**Relative Humidity**
Shipment	-40 to +50°C -40 to +122°F	05 to 95%
Storage	0 to 35°C +32 to +95°F	05 to 95%
Nonoperating	+10 to 35°C +50 to +95°F	10 to 90%

Optimal Operating Range
 	
     Minimum
     Maximum
	
	20°C (68°F)
	25°C (77°F)
		
		27 to 62%
		27 to 50%

Acceptable Operating Range
 	
     Minimum
     Maximum
	
	15°C (59°F)
	30°C (86°F)
		
		16 to 65%
		27 to 50%

Ventilation

Provide appropriate ventilation to conform to health, safety, and environment standards. The American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHREA) recommends a minimum of 34.2 cubic meters per hour (20 cubic feet per minute) per person of outdoor air make-up during human occupancy. With this amount of ventilation, all airborne chemicals detected will be below their respective American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLV), where TLVs are available.

To comply with the most stringent state EPA Guidelines (California), ensure that the printer area meets the following ventilation requirements:

1. If the printer room has a volume greater than 1 000 cubic meters (35 315 cubic feet) for each InfoColor 70 installed, a minimum outdoor air exchange of 1 000 cmh (589 cfm) per printer is required.

2. If the printer room has a volume smaller than 1 000 cubic meters (35 315 cubic feet) for each InfoColor 70 installed, active local exhaust from the machine to the outside of the building must be provided. This exhaust should be attached directly to the two cooling fans at the top of the printer. A fan/blower should be provided in the exhaust duct so that machine cooling air is not impeded. It must provide an air flow rate of 385 to 510 cmh (225 to 300 cfm) for each InfoColor 70. IBM recommends that 6-inch flexible tubing be attached to the two exhaust fans at the top of the printer. Refer to Figure 5 on page 13 or position 3 in Figure 11 on page 19.

Heat Dissipation and Cooling

Table 3. Heating and Cooling Specifications		
Description	**50–60Hz**	
Printer	**Idle**	**Printing**
	11.9 kBTU per hour	34.1 kBTU per hour
Cooling Unit	6.8 kBTU per hour	6.8 kBTU per hour
Collator (Model 02C only)	2.4 kBTU per hour	2.4 kBTU per hour
Totals	18.7 kBTU per hour (Model 002) 21.1 kBTU per hour (Model 02C)	40.9 kBTU per hour (Model 002) 43.3 kBTU per hour (Model 02C)

Acoustic Levels

The InfoColor 70 acoustic levels do not exceed 70 dB sound pressure.

Lighting

Avoid intensive ultraviolet (UV) sources such as direct sunlight. Fluorescent lighting at normal levels is permitted. Excessive amounts of UV may cause premature failure of the printer drums.

Planning your Physical Layout

This section presents the physical planning information to ensure a smooth installation. Information includes:

- Space requirements
- Physical dimensions and weights of the shipping crates
- Weights and dimensions of the printer components
- Electrical requirements
- The best location for installing the printer

This book also contains a checklist to ensure a successful installation (see "Checklist" on page 45).

Physical Layout

As you plan the physical layout, be sure to:

- Install the printer away from the main traffic pattern. Allow space for operators and service representatives to perform their tasks. This space should not extend into walkways.

- Install the printer in a location that is convenient for the operator. For example, consider whether the planned location is close to printer supply storage areas and to output distribution areas.

- Allow 2489 mm (98 in.) between the floor and the lowest permanently attached object above the printer, such as a light or a cable rail. This layout gives printer operators and service representative space in which to work. See Figure 6 on page 15.

- Ensure that doorways are at least 1829 mm (72 in.) wide and 2286 mm (90 in.) high.

Installation Area

The operator console (which includes the PES control unit, the RS/6000 E30, the Collator and table top) and the cooling unit can be placed in several positions. However, consider the following lengths:

- The control unit cables are 2 m (6.6 ft) long.

- The cooling unit hoses are 10 m (32.8 ft) long.

- Cabling between the PES control unit, Collator and RS/6000 E30 restrict the placement of the E30. If you have a Collator, the E30 may have to be placed under the table top.

- Two walkovers are provided to protect cables from traffic. The walkovers are 1 m (39.3 in.) long.

Figure 3 shows possible positions for the operator console. IBM recommends that you place the operator console near the stacker so the operator can monitor print output quality. Configuration C or D in Figure 3 allows the longest cable to work with.

Figure 4 on page 12 shows possible positions for the cooling unit.

Consider clearances for paper loading, servicing and normal cleaning and maintenance on all sides of the printer. Maintain at least 2 m (80 in.) for paper loading and servicing of the printer and at least 1.5 m (60 in.) for paper unloading.
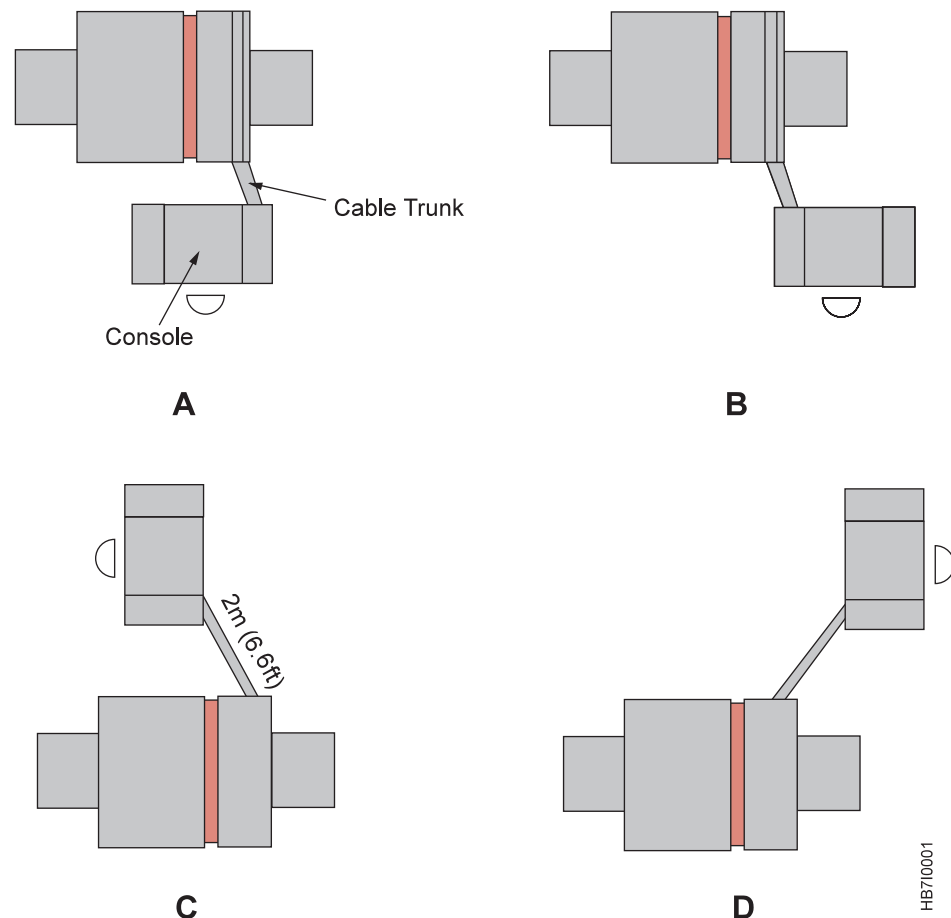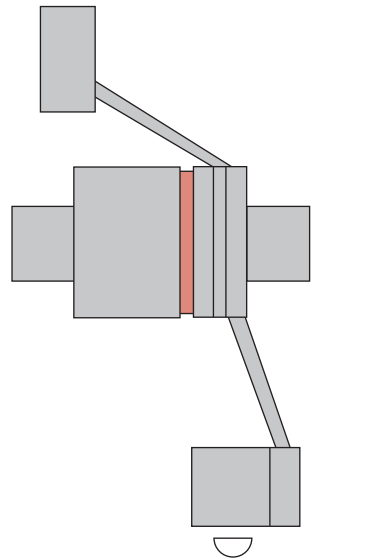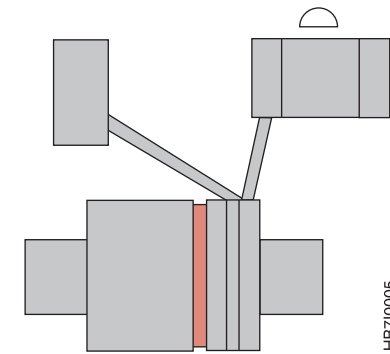

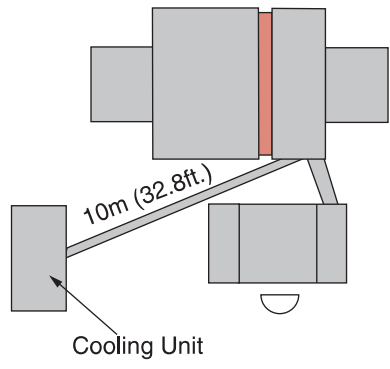*Figure 3. Possible Positions for the Operator Console*

Cooling Unit

Figure 4. Possible Positions for the Cooling Unit
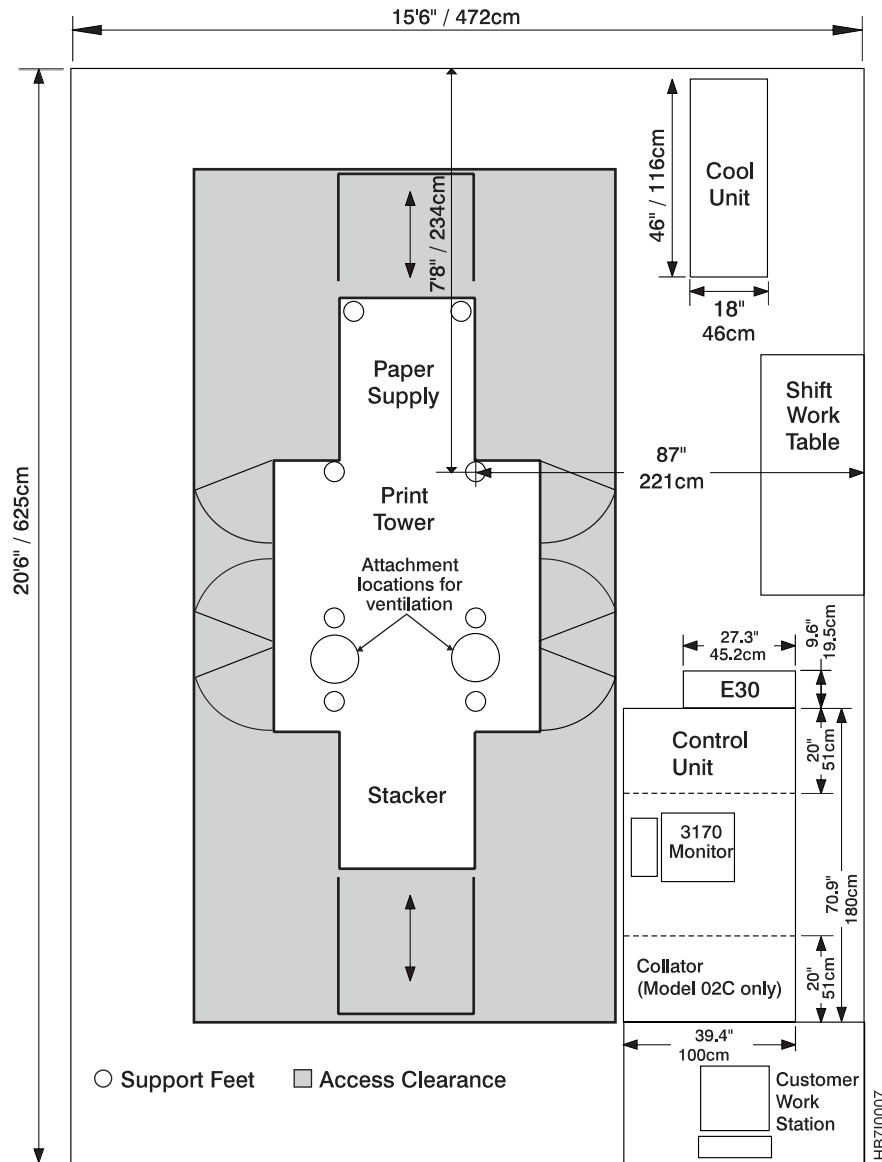
Figure 5. A Typical Space Installation

Minimum Space Requirements

Minimum space requirements are shown in Figure 6 on page 15 and Figure 7 on page 15. Additional dimensions for the printer, operator console, and cooling unit are shown in Figure 5, Figure 8 on page 16, Figure 9 on page 17, and Figure 10 on page 18.

Positioning the Operator Console

You can position the operator console in several ways. See Figure 3 on page 11. The cable between the tower and control unit is about 2 m (6.56 ft). Approximately 305 mm (12 in.) of the cable is used in internal routing in the control unit. If you use configurations A or B in Figure 3 on page 11, cable length equal to the width of the print tower is lost, approximately 156 cm (61 in.). Using configuration A or B in Figure 3 on page 11 places the operator console within 44 cm (17 in.) of the print tower. Depending on how you route the cable in these configurations, you

may need to cut the walkover to make it fit between the operator console and the print tower. Ensure that you can open and close the print tower doors when positioning the operator console.

PES Control Unit Connections

The PES control unit connects to the print tower at position 2 of Figure 11 on page 19. The InfoColor 70 has image data cables, several optical control lines, and a power cord. The print tower provides power for the PES control unit. The power receptacle on the InfoColor 70 is located at position 1 of Figure 11 on page 19. The RS/6000 E30 is plugged into a wall outlet. The Collator may be plugged into either the PES control unit or a wall outlet, depending on your specific installation. The network connection is at the back of the RS/6000 E30. The densitometer is connected to the RS/6000 via a data cable and powered from a wall outlet.

Positioning the Monitor

The monitor is usually placed at the operator console, near the PES control unit. The power cord and video cables for the monitor are connected to the PES control unit.

Positioning the Collator (Model 02C only)

The Collator is usually placed at one end of the operator console, with the control unit at the other end and enough space between them for the operator to sit and work at the InfoColor 70 PES control unit monitor and keyboard. The table top that is used with the Collator and the control unit is approximately 180 cm (71 in.) wide; the control unit and Collator are each approximately 51 cm (20 in.) wide. Using the control unit and Collator as the "legs" of the table allows approximately 78 cm (31 in.) between them for the operator.

The Collator can be placed either to the right or the left of the PES control unit. See Figure 9 on page 17 for an illustration of the control unit and Collator. If you have a Collator, the RS/6000 E30 may have to be placed under the table top.

Positioning the Cooling Unit

You can install the cooling unit on either side of the print tower. See Figure 4 on page 12. If possible, install the cooling unit in another room. This must be a non-condensing room with a minimum temperature of 10°C (50°F) and a maximum temperature of 32°C (89.6°F). Position the cooling unit level with or higher than the print tower, a maximum of 3 m (9.84 ft). Do not place it lower than the print tower.

Cooling Unit Connections

Two insulated flexible hoses provide coolant to the print tower. The cooling hoses from the cooling unit connect to the right rear corner of the print tower at position 2 in Figure 11 on page 19. An externally grounded single phase connection (World Trade: 230 V 10 A; United States: 208–240 V 10 A) provides power to the cooling unit.
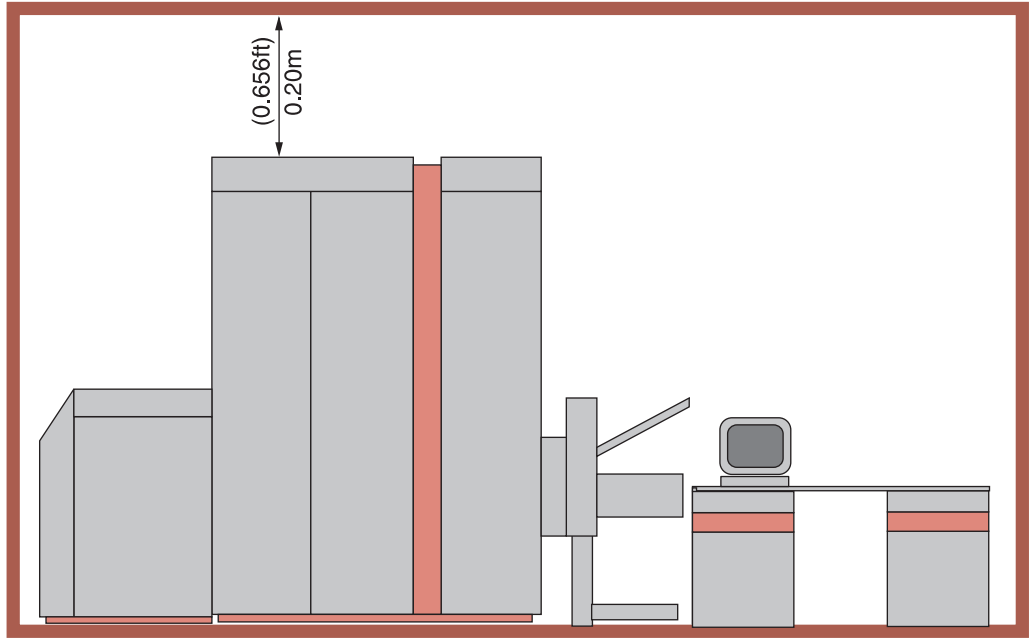
Figure 6. Minimum Space Above The Printer Tower
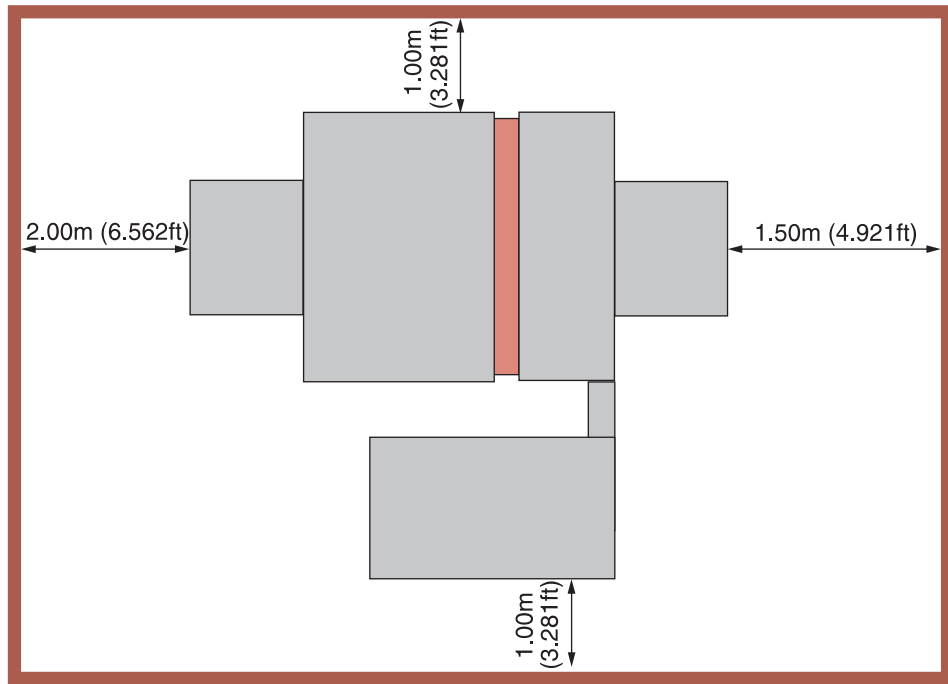
Figure 7. Minimum Area Around The Printer
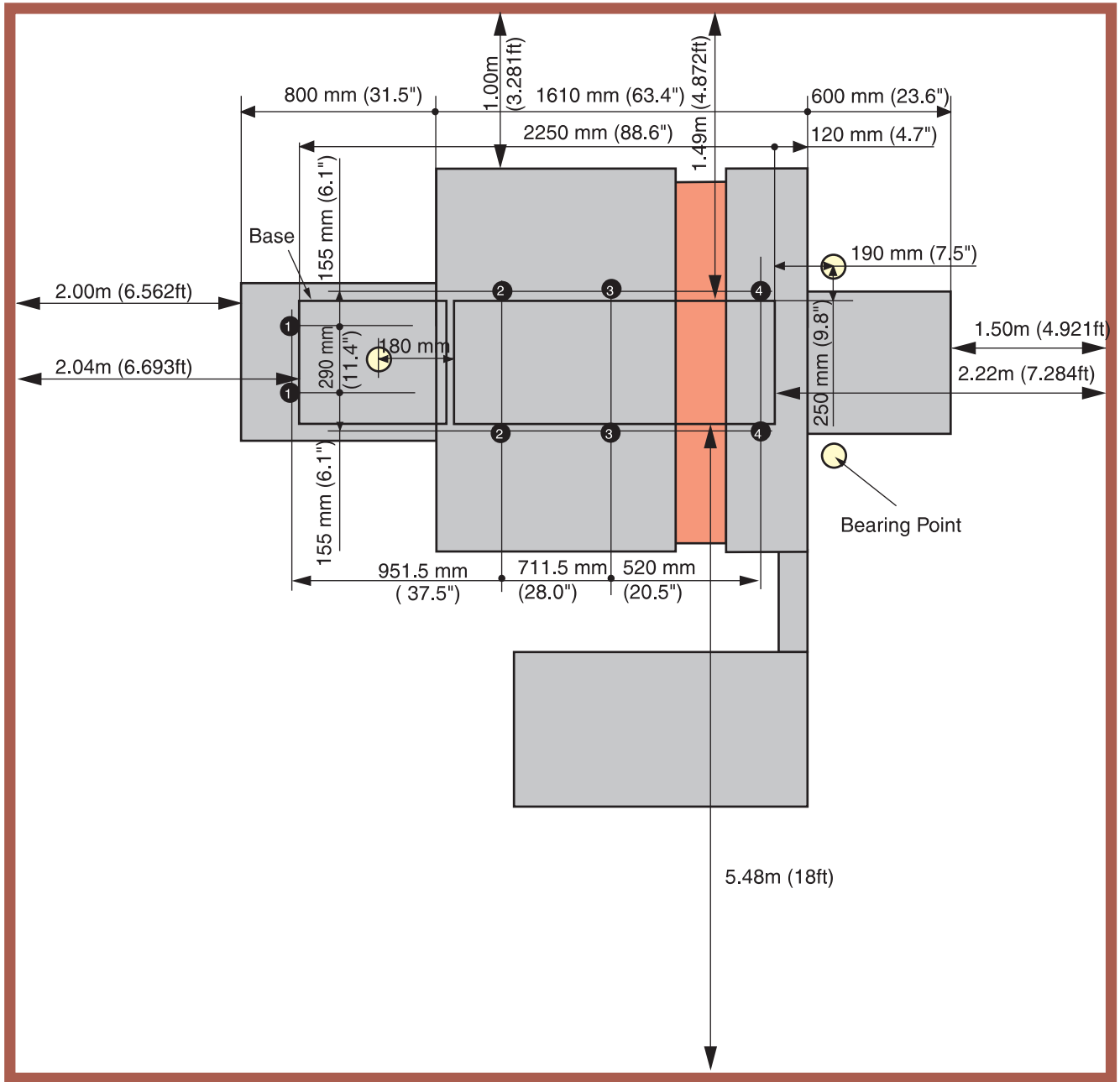
Figure 8. Minimum Flooring Requirements
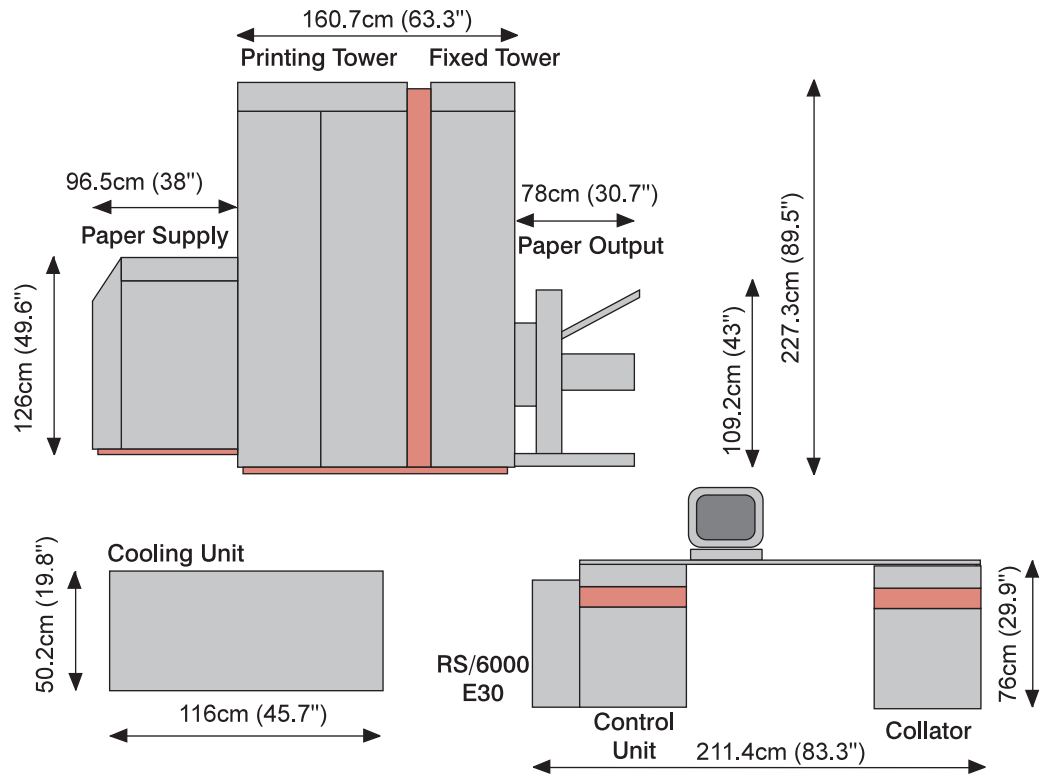
Figure 9. Front View Of The System
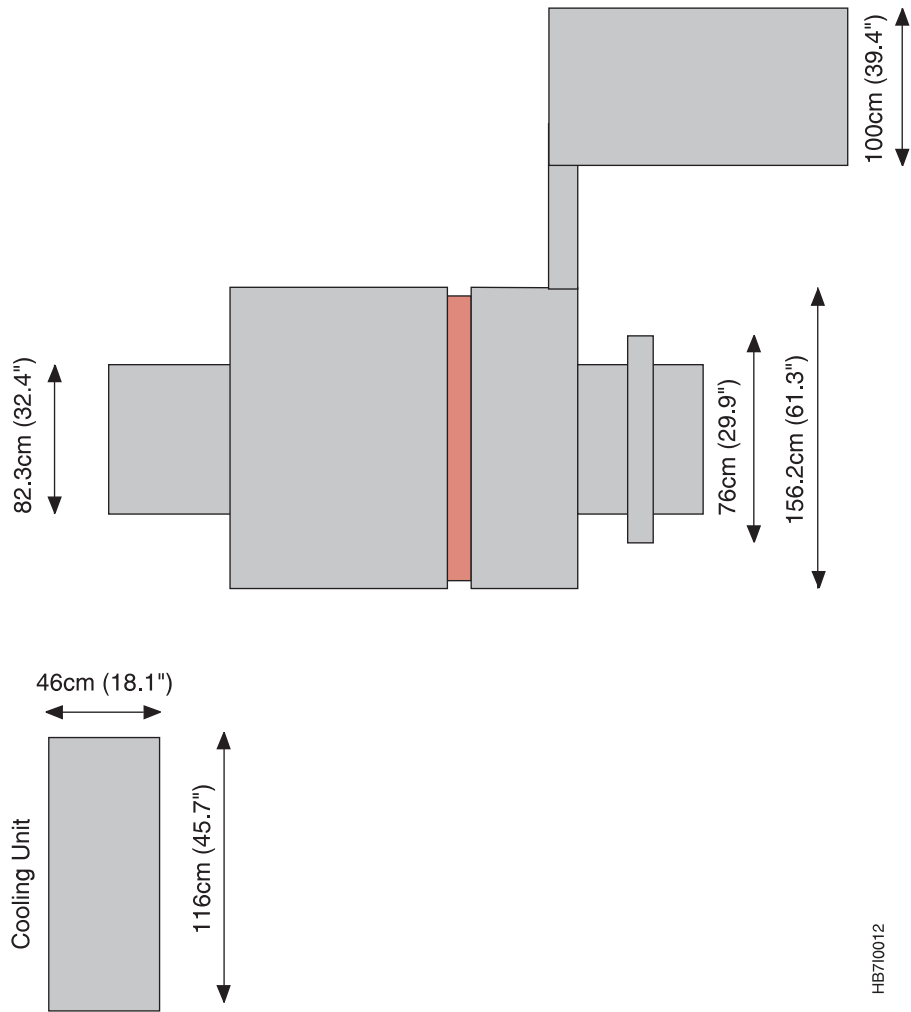
Figure 10. Top View Of The System

82.3cm (32.4")

100cm (39.4")

76cm (29.9")

156.2cm (61.3")

46cm (18.1")

Cooling Unit

116cm (45.7")

HB7I0012

Paper Supply

Paper Output

❶

❷

❸

❶

Paper Output

Paper Supply

❷

HB7I0013
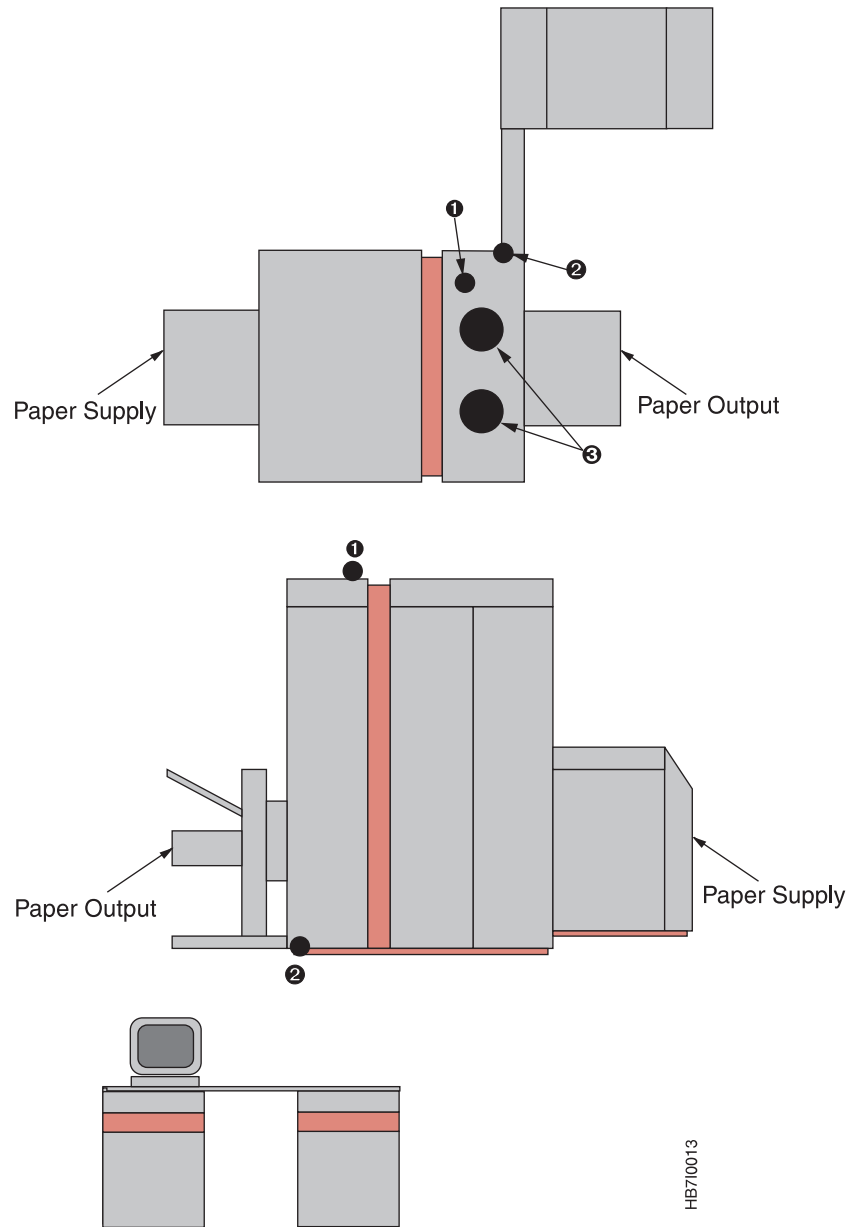
Figure 11. Locations for Power and Electrical

Flooring Requirements

The flooring system at the site must be able to support the weight of the printing system:

2688 kg (5927 lb) for Model 002
2768 kg (6103 lb) for Model 02C.

The floor should be free of static, and not subject to vibration from other sources. It must be within 12.7 mm (0.5 in.) of level for the entire length of the printer.

Note: IBM strongly recommends that the floor be concrete with no carpeting. Contact your IBM representative for further information.

Eight feet support the print tower. Each foot is 5.11 mm² (2.0 in.²). At any time, six of the eight feet support the entire weight of the print tower. Each pair of feet is numbered in Table 4. The numbers for the feet correspond to numbers in Figure 8 on page 16.

Table 4. Weight Loading for Print Tower Feet

Feet	Maximum Weight	
	kg	lb
1	200	442
2	300	663
3	400	884
4	400	884

Shipping Crate Weights and Dimensions

The InfoColor 70 Model 002 is shipped in nine or ten crates. Model 02C is shipped in ten or eleven crates. The size and weight of each crate, including contents, are shown in Table 5.

Note: The shipping containers must be returned to IBM for reuse.

1. In the U.S., contact the National Support Center at (919) 713-1714 or (800) 456-5329.

2. In Canada, contact the Canadian Distribution Center at (416) 490-5324.

3. In all other countries, contact your IBM representative for container return shipping instructions.

Table 5. Shipping Crate Specifications				
Contents	**Height**	**Width**	**Depth**	**Weight**
Paper Supply	151 cm (60 in.)	93 cm (37 in.)	108 cm (43 in.)	301 kg (664 lb)
Print Tower (largest crate)	216 cm (85 in.)	155 cm (61 in.)	167 cm (66 in.)	1292 kg (2849 lb)
Paper Stacker	145 cm (57 in.)	93 cm (37 in.)	93 cm (37 in.)	168 kg (370 lb)
Operator Console	96 cm (38 in.)	75 cm (30 in.)	123 cm (48 in.)	105 kg (232 lb)
Cooling Unit	72 cm (29 in.)	52 cm (21 in.)	121 cm (48 in.)	124 kg (273 lb)
Cover Set	127 cm (50 in.)	174 cm (69 in.)	233 cm (92 in.)	712 kg (1570 lb)
Collator (Model 02C only)	152 cm (60 in.)	127 cm (50 in.)	78 cm (31 in.)	100 kg (221 lb)
Set of Mechanical Assemblies	175 cm (69 in.)	108 cm (43 in.)	193 cm (76 in.)	611 kg (1347 lb)
Heating Assembly	40 cm (16 in.)	41 cm (16 in.)	186 cm (74 in.)	50 kg (111 lb)
Note: These weights are approximations and are subject to change.				

Transportation Notes

Use forklifts or suitable pallet jacks capable of moving 1292 kg (2849 lb), the approximate weight of the heaviest crate, to transport the crates to the installation site. If this is not possible, use specially trained persons (or services) such as movers or riggers.

Move the print tower crate (the tallest crate), to the exact spot and orient it for installation. During installation, the service representative will lift the printer from the pallet using special jacks, remove the pallet, and lower the printer to the floor.

Movers or riggers remove the paper supply, output stacker, operator console, cooling unit, and Collator (Model 02C only) from the shipping pallets. Place the operator console and cooling unit close to the intended location.

Printer Weights and Dimensions

Table 6. Printer Weight and Dimensions				
Content	**Height**	**Width**	**Depth**	**Weight**
Paper Supply	126 cm (49.6 in.)	82.3 cm (32.4 in.)	96.5 cm (38 in.)	241 kg (532 lb)
Print Tower, Cover Set, Mechanical Assemblies, Heating Assembly	227.3 cm (89.5 in.)	156.2 cm (61.3 in.)	160.7 cm (63.3 in.)	2185 kg (4818 lb)
Paper Stacker	109.2 cm (43 in.)	78 cm (30.7 in.)	80 cm (31.5 in.)	113 kg (249 lb)
Operator Console	76.2 cm (30 in.)	180 cm (70.9 in.)	1000 mm (39.4 in.)	50 kg (110 lb)
Collator	73.7 cm (29 in.)	51 cm (20 in.)	100 cm (39.4 in.)	80 kg (177 lb)
Cooling Unit	50.2 cm (19.8 in.)	460 mm (18.1 in.)	116 cm (45.7 in.)	99 kg (221 lb) with coolant
RS/6000 E30	64.8 cm (24.3 in.)	19.5 cm (9.6 in.) 31.4 cm (12.4 in.) with pedestal	45.2 cm (27.3 in.)	
Note: These weights are approximations and are subject to change.				

Site Power Connections and Consumption

The InfoColor 70 requires 3-phase power. Always provide a dedicated power connection that has:

- The ability to isolate the InfoColor 70 printer from the power source
- At least 3 mm (0.12 in.) of space between open switch contacts
- The ability to interrupt all phases when the switch is open

The print tower, cooling unit, RS/6000 E30, and possibly the Collator require separate electrical sources.

Power Consumption

Table 7 on page 23 shows power consumption for the InfoColor 70.

Table 7. Power Consumption

Description	Power (kVA)
Printer and control unit	10.0
Cooling unit	2.0
Collator	1.5
RS/6000 E30	.5
Total	14.0

Electrical Requirements

Provide electrical outlets that support 14.0 kVA and meet the power requirements listed in Table 7. Supply the following:

- Compatible receptacles that are installed near each printer. See "Print Unit Cable" on page 24.

- A circuit breaker that breaks all poles for each printer. Ensure that this circuit breaker is dedicated to the printer and is within easy reach.

Dedicated Main Power Connection Requirements

Provide a dedicated main power connection within 3.5 m (11.5 ft) of the print unit.

The power cable attaches to the top of the printer. The preferred location for the power receptacle is above the printer, or on the wall at approximately the same height as the printer.

Location	Power	Requirements
Europe	380/400/415 V - 3 phase with neutral 50 Hz 35 ampere main	Direct connection or through wall outlet. Provide an insulated ground.
United States Canada	208 - 240 V - 3 phase 60 Hz 60 ampere main	Direct connection or through wall outlet. Provide an insulated ground.
Japan	220 V - 3 phase 60 Hz 60 ampere main	Direct connection or through wall outlet. Provide an insulated ground.
	OR 200 V - 3 phase 60 Hz 60 ampere	Provide a special transformer to meet these specifications: 3 phase, double winding, galvanic separated rated at 12 kVA Primary: 3 x 200 V delta power system Secondary: 3 x 230 V delta with ground power system (see note below).
	OR 200 V - 3 phase 50 Hz 60 ampere main	Provide a special transformer with the following specifications: 3 phase, double winding, galvanic separated rated at 12 kVA Primary: 3 x 200 V delta power system Secondary: 400 V - 3 phase with neutral, star, with grounded star point (see note below).
	OR 220 V - 3 phase 50 Hz 60 ampere main	Provide a special transformer with the following specifications: 3 phase, double winding, galvanic separated rated at 12 kVA Primary: 3 x 220 V delta power system Secondary: 400 V - 3 phase with neutral, star, with grounded star point (see note below).

Note: The transformer output to the InfoColor 70 requires a circuit breaker. The circuit breaker must be 35 A for 50 Hz and 60 A for 60 Hz. The circuit breaker must open all phases and neutral (if present).

Print Unit Cable

IBM supplies 427 cm (14 ft) AC power cables with all printers.

Note: IBM modifies cables on printers installed in Chicago, USA, during installation.

The power cable attaches to the top of the printer. The preferred location for the power receptacle is above the printer, or on the wall at approximately the same height as the printer.

Print Unit Cable Connector – U.S. and Canada (60 Hz): For the U.S. and Canada (60 Hz), the print unit cable comes with a plug. These printers require a Hubbell receptacle 460-R9V0 or equivalent:

- 460R9V0 or 460R9W wall-mounted receptacle

- 460C9V05 or 460C9W cord-mounted receptacle

This receptacle and plug conform to IEC 309 standards. They are common in the United States and are used with the IBM 3900 Advanced Function printers.

Provide the appropriate compatible electrical receptacle for the print tower plug.

Print Unit Cable Connector – All Other Countries (50 Hz): The print-tower power cable does not have a plug. Provide the appropriate plug and receptacle.

Understand the electrical standards for your country, and use only an approved plug. Your marketing representative has information on the voltage requirements in your country.

Cooling Unit Connection Requirements

The cooling unit assembly requires a 10 A circuit breaker for 50 Hz units and a 15 A circuit breaker for 60 Hz units. Ensure that the wall receptacle connector isolates the cooling unit from the power source.

Location	Cooling Unit Power
Europe	230 V, 50 Hz, single phase
United States	208-240 V, 60 Hz, single phase
Japan	50 Hz unit: may attach to 220 V, 50 Hz, single phase 60 Hz unit: may attach to 220 V, 60 Hz, single phase - or may connect to secondary of transformer provided for the printer.

Cooling Unit Connector

The 60 Hz cooling units have a NEMA 6-15P plug. This plug fits 208–240 volt grounded wall outlets commonly available in the United States and Canada.

The 50 Hz cooling units have a standard CEE7 VII plug. This plug fits 230 volt grounded outlets commonly available in Europe. If these plugs do not match the available outlet, install the appropriate outlet. For power and phase requirements, refer to "Cooling Unit Connection Requirements."

Additional Connection Requirements

Densitometer Charger Cable – World Trade: The densitometer charger has a standard CEE7 XVI (2) Euro plug and fits 200–260 V, 400 mA outlets commonly available in Europe. If these plugs do not match the available outlet, then install the appropriate adapter.

RS/6000: The RS/6000 must be plugged into a wall outlet.

Collator: It may be necessary to power the Collator from a wall outlet. For EMEA, the Collator must be powered from the control unit.

Pre-press Environment

Figure 12 illustrates a typical pre-press environment. A typical pre-press system includes items such as:

- Scanner
- Desktop publishing workstations
- File server
- File archive system
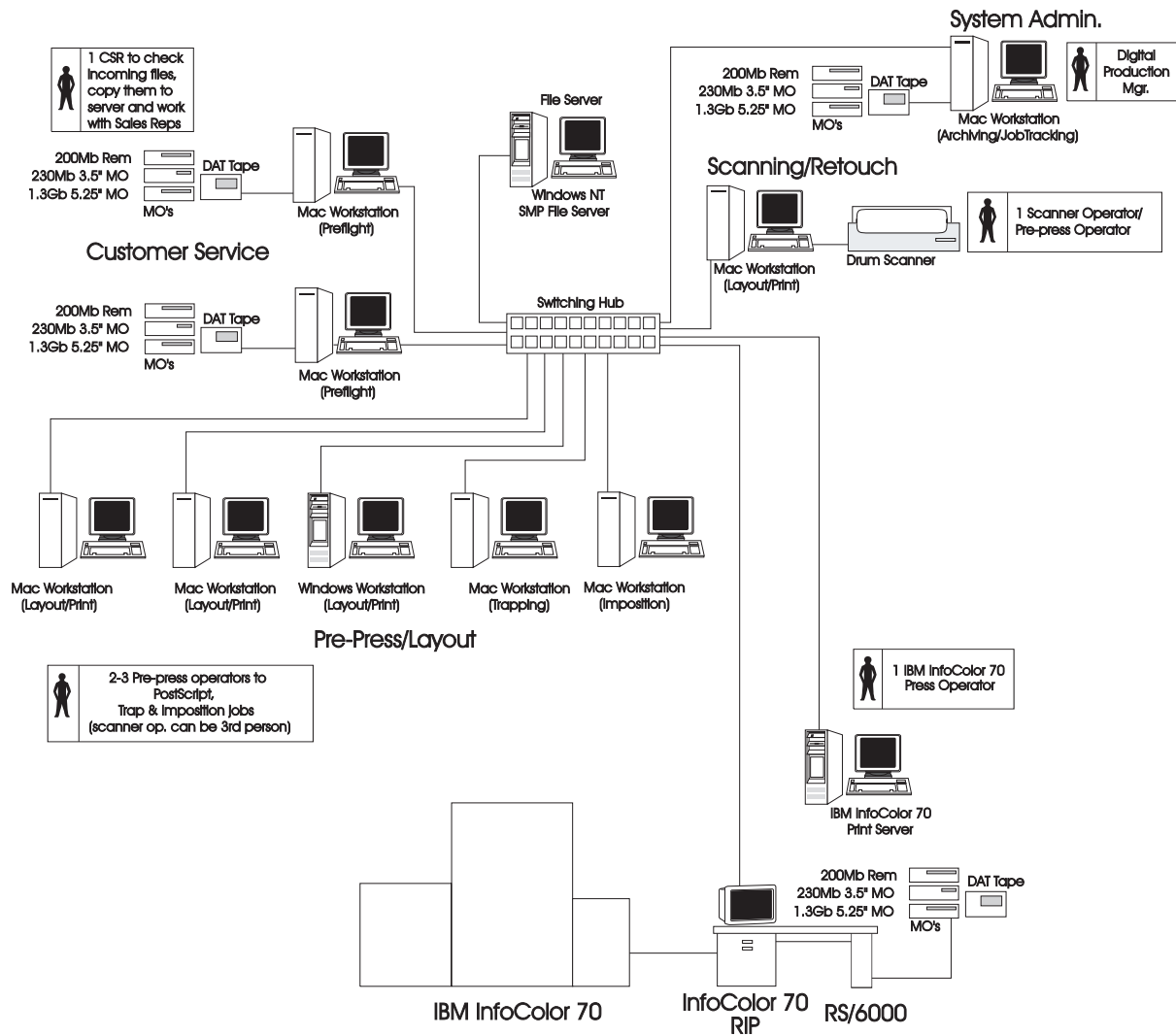- Portable file media, such as removable hard drives

Figure 12. Typical System Configuration

Installation Planning Overview

Consider the following items for an easier installation.

- Ensure that the environmental, electrical, and space requirements have been met. Work with your marketing representative to ensure that a forklift and forklift operator are available at time of delivery to move the shipping crates to the installation site.

- Ensure that adequate space is available to unpack the crates at the installation site.

  Note: IBM recommends that you move the crates to the area where the printer will be installed before unpacking the crates. This lessens the possibility of damage.

- Do not unpack the crates until the service representative is present.

- Inspect the receiving area and the areas through which the printer must be moved. Consider the following:

  – The forklift needs space in which to operate.

  – Check the route that the printer will travel from the loading dock to the installation site to ensure that crates fit through all doorways and halls.

  – The printer is shipped in eight separate crates, which have the dimensions shown in "Shipping Crate Weights and Dimensions" on page 21.

  – Ensure that flooring along the moving route is capable of supporting the loads of the crates and the moving equipment.

  – Ensure that hall corners and angles are large enough to permit the forklift and crate to negotiate turns safely.

  – Ensure that elevators and elevator doorways are able to accommodate the size and weight of the printer, moving equipment, and the people who are moving it.

  – Direct all moving questions to your IBM representative.

- Ensure that the installation site flooring is capable of supporting the loads of the crates and the moving equipment. IBM strongly recommends that the printer be installed on a concrete floor and that you avoid wooden floors, raised computer room floors, and carpeting.

- Ensure that approved electrical outlets with correct power are reserved for the printer and are within reach of the power cables. The power receptacle must be within 3.5 m (11.5 ft) of the print unit. The receptacle should be either above the printer location or, if it is mounted on the wall, it should be approximately the same height as the printer: 228 cm (90 in.).

  Note: In Chicago, the power cable cannot be longer than 6 ft.

- Ensure that the service representative is aware of the LAN configuration and attachment protocol you intend to use for the InfoColor 70. Also, ensure that someone familiar with the LAN configuration is assigned to assist the service representative during the installation process.

Upgrading Model 002 to Model 02C

If you are upgrading an existing Model 002 to Model 02C (adding a Collator), consider the following items:

- Ensure that adequate space is available to:

  - Remove the existing table from the control unit

  - Unpack the Collator and the other items included in the upgrade package

  - Install the Collator and new cards, cables, and control unit panel

  - Replace existing table with new, larger table

  - Relocate existing cables

  - Provide access to a wall outlet for the Collator, if required.

- Ensure that the installation site floor can support the additional weight of the Collator, 80 kg (177 lb).

Installation Procedure Overview

⚠ CAUTION:

When transporting crates for the InfoColor 70, use material handling systems such as levers, slings, or lifts. When this is not possible, use specially trained personnel or services (for example, riggers or movers).

The accessibility of the site is of key importance during installation. The major phases of a normal installation are:

1. Moving the largest crate (the print tower) to the spot where the system is to be installed.

2. Removing the top and sides of the crate and lifting the system up with special jacks to remove the bottom of the crate. There should at least be 1.50 m (4.9 ft) of free space at one side. At this time, 3 bearing areas of 50 cm² (0.05 ft²) support the machine. (See Table 4 on page 20).

3. Unpacking the crate with the frame. Do this as close as possible to the installation site. For unpacking this crate, an area of at least 2.30 x 3.50 m (7.5 x 11.5 ft) is needed, because the panels are removed sideways.

4. Unpacking the crates with the paper supply, paper output, console, and cooling unit. Place the units in the proper locations.

Select a path free from inclinations or thresholds for moving the crates from the unloading dock to the site. Be sure that elevators are large enough. On the entire path, the floor should be able to support 1292 kg (2849 lb), the weight of the heaviest crate, plus the pallet truck.

Operator Tasks and Training Requirements

Operators of the InfoColor 70 printer should have some digital pre-press and/or press experience. One or a combination of both of these experience levels is an excellent background for operating the InfoColor 70.

IBM provides complete operator training. Contact your IBM representative for scheduling. The operator should be trained the week before or the same week that the InfoColor 70 is installed.

The training consists of hands-on instruction at Boulder, Colorado and follow-up training at your location. The system engineer will conduct training for upgrades at your location.

Operators are responsible for the quality of all printed material. This requires general knowledge of concepts such as: color density, trapping, and registration.

In addition, operators perform other tasks such as:

- Cleaning

    - and replacing coronas
    - of photoconductors
    - of printheads
    - of the paper transport

- Supplies

    - adding toner
    - changing and splicing paper
    - changing toner waste bottles
    - filling the humidifier with water
    - emptying the water condensate bottles

- Operations

    - printing test masters and interpreting results
    - adjusting image position
    - aligning paper
    - setting registration
    - measuring and adjusting optical density
    - monitoring and adjusting paper surface potential
    - monitoring and adjusting print tower humidity and temperature
    - adjusting paper conditioning parameters
    - selecting jobs for printing
    - processing variable data files
    - building book ticket files
    - backing up customer-specific data

Supplies, Equipment, and Tools

Printer Supplies

The two rolls of paper and two containers of each color of toner that are shipped with the printer are used in installation and setup. Ensure that you have ordered supplies for your immediate production needs. The InfoColor 70 Models 002 and 02C use Version 2 Toner and Mix.

Ordering Supplies

To order supplies for the InfoColor 70 printer in the United States, use any of the following methods:

- Call Lexmark Order Management Center at (800) 292-5885 from 8 a.m. to 8 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 InfoColor 70 supplies.

Toner

The InfoColor 70 requires four toner colors for printing: cyan, magenta, yellow, and black (CMYK). Order more black toner because black is used more than any other color. Each carton contains six bottles with 800 grams per bottle (4 800 grams total for each carton).

Toner yield depends on page coverage. For a job using A4-size paper wit a coverage of 17% per simplex page of each color (CMYK), approximately 72K to 82.3K impressions would be produced with one carton of each color (four total cartons of toner). For duplex printing, eight cartons of toner would be required for the same coverage.

These yields are not a guarantee of minimum life and are not covered under warranty, but are provided to assist in supplies planning. Actual usage should be used to establish the life of the toner. Many factors, such as print coverage per page, optical density adjustment, paper size and type, and environmental conditions, can affect toner life.

Two bottles of each color toner are shipped with the printer for installation and setup use. Be sure you order enough toner and toner waste bottles for your immediate production needs.

Note: The InfoColor 70 requires Version 2 Toner.

Contact your Lexmark representative at (800) 438-2468 for ordering toner. Table 8 on page 32 shows the toner part numbers.

Table 8. Toner Part Numbers		
Toner Color	**Version 1 Part Number**	**Version 2 Part Number**
Cyan	1402801	1402814
Magenta	1402802	1402815
Yellow	1402803	1402816
Black	1402800	1402813

Developer Mix

The InfoColor 70 requires Version 2 Mix.

Table 9 shows the Version 1 and Version 2 mix part numbers.

Table 9. Developer 2 Mix Part Numbers		
Mix Color	**Version 1 Mix Number**	**Version 2 Mix Number**
Cyan	30H5288	30H5815
Magenta	30H5289	30H5816
Yellow	30H5290	30H5817
Black	30H5291	30H5818

Toner Waste Bottles

Toner waste bottles collect toner not consumed in the electrophotographic process. Replace the toner waste bottles as they become full; order them to fit your needs. Approximately one carton of toner waste bottles is used for every ten cartons of toner. Contact your Lexmark representative for ordering information.

- Toner waste bottle (twelve waste bottles per carton): part number 1402761

Splicing Tape

Splicing tape is required when loading and changing paper rolls. A roll of splicing tape yields approximately 180 splices. One roll of splicing tape is shipped with the printer. Some of this roll may be consumed during printer installation and setup.

- Splicing tape (two rolls per carton): part number 1402721

Separation Strips

A separation strip is inserted between print jobs in the output stacker. One roll of separation strips comes with the InfoColor 70. Usually, this roll is good for approximately 500 jobs. Contact your service representative to order replacement rolls.

- Separation strip roll: part number 30H5530

Paper

The IBM Digital Color Printer uses pinless roll-fed paper as input. It feeds through the printer as a web. Paper without pinfeed holes is less expensive and has less waste because less trimming is required.

The current list of papers and media that IBM has tested and approved is contained in the document *IBM 3170/InfoColor 70 Approved Media*, available from your IBM representative. This list is updated from time to time as IBM tests and approves additional media. See your IBM representative for the latest list.

When these papers are used in the InfoColor 70 in conjunction with IBM's ventilation recommendations, the printer complies with current safety, environmental, and performance standards, with the following qualification:

IBM does not encourage the use of media rated "B" ("Best print quality may be difficult to achieve"), or any media over 200 gsm, although a few such media are included in the list. A customer can expect these media to be extra sensitive and probably require fine-tuning of various machine adjustments to obtain acceptable print quality. Some customers may have difficulty running media over 200 gsm at all. These media are included in the list for the convenience of customers willing to accept these limitations and accept the responsibility for "tuning" the machine as needed. This tends to require a high level of operator expertise.

When IBM tests with small sample sizes, results are not as conclusive as with larger sample sizes. With small sample sizes, IBM is not able to control the specifications of the stock, and cannot guarantee that you will obtain satisfactory results from these stocks. Remember that IBM Maintenance Agreements state that you are responsible for any increased repair activity resulting from using non-IBM recommended supplies.

IBM will evaluate all samples from customers on an ongoing basis, and will negotiate schedules to do so based on printer availability for testing.

Before ordering large quantities of paper, ensure that one of the suggested papers works well for your applications.

Paper Roll Properties

Roll-fed paper for use on the InfoColor 70 has the following properties:

Table 10. Paper Roll Properties	
Parameter	**Dimensions**
Core inner diameter (two sizes)	150 ±0.05 mm (European) 6 ±0.020 in. (U.S.)
Core outside diameter	180 mm (7.1 in.)
Roll outside diameter (maximum)	500 mm (19.7 in.)
Roll outside diameter (typical)	400 mm (15.75 in.)
Roll Weight (nominal)	40 kg (88 lb)
Roll width (minimum)	210 mm (8.27 in.)
Roll width (maximum)	320 mm (12.6 in.)
Roll width must conform to the dimensions of the roll mounting axle. Mounting axles can be set at various widths including common paper widths used in the industry.	
Note: Larger paper rolls are also available with special pre-process equipment.	

Basis Weight – Xerographic-Bond Paper

The *IBM InfoColor 70: Guide to Paper Selection* lists basis weights for other types of paper.

Table 11. Paper Basis Weights		
	ANSI	**ISO**
Normal Basis Weight	16 to 52 lb	61 to 200 gram
Measurement	500 sheets (17 x 22 in.)	One sheet (1 meter square)
Tolerance is ±5%.		

Storing Paper and Supplies

Store paper at the proper temperature and humidity as described in this section. Also, refer to the *IBM InfoColor 70: Guide to Paper Selection* for more information.

Paper that is too dry may cause poor image transfer or static buildup. Paper that is too moist can also have poor image transfer, fusing problems, curling, or can cause paper jams.

Store paper supplies in an area where the temperature and humidity are similar to the environment where you will use them. Do not exceed the following requirements:

- Maximum temperature and humidity: 25°C (77°F) at 28–53% humidity
- Minimum temperature and humidity: 20°C (59°F) at 27–62% humidity.

Avoid areas with extreme heat or humidity.

Store paper and supplies that you intend to use soon near the printer. This is an advantage both for convenience and to ensure that the paper is properly conditioned. Store new paper in a controlled environment for at least three days before using.

Condition supplies in the same environment as the printer for at least 24 hours before you use them.

Store the remaining paper and supplies:

- In their original wrappers away from heat or dampness
- On a flat surface such as a shelf, but not on the floor
- In a closable cabinet for protection and monitoring.

Pre-Processing Equipment

An optional paper unwinder is available that works in conjunction with 40-inch diameter paper from certified suppliers. For further information contact your IBM representative.

Maintenance Parts and Supplies

Maintenance Parts

IBM supplies a special set of maintenance parts for proper maintenance of the InfoColor 70. These parts are the property of IBM.

Second Set of Corona Wire Assemblies

A second set of corona wire assemblies allows you to use one set of corona wire assemblies while the second set is being cleaned.

Other Supplies and Equipment

Cleaning Supplies

Cleaning supplies used by the operator, such as cotton swabs, lint-free wipes, and soapy water are needed for cleaning the printer on a regular basis.

Dishwasher

Cleaning coronas is an important part of maintaining high print quality. Clean the coronas periodically, depending on the print usage, usually once a day. Because the manual method of corona cleaning, using cotton tipped swabs and water, can be time consuming, IBM recommends an alternative method. You can clean the coronas effectively in an ordinary household dishwasher.

You can use a portable dishwasher that may need simple modifications to the racks. The dishwasher must have adequate interior depth of 57 cm (22.5 in.) to accommodate the corona assembly. A model with an extra dry cycle capability helps reduce manual drying of the coronas. Several models work well, such as the GE GSC 1200, or a similar machine.

Note: Hot water is necessary for the dish washer to perform effectively.

In some countries, a dishwasher with an interior depth of 57 cm (22.5 in.) may not be readily available. You can use a smaller dishwasher by placing coronas diagonally in the basket. You may have to run more than one load to clean a complete set of coronas.

For dishwashers without a drying cycle, coronas can be air dried.

Discuss tips and techniques for using a dishwasher to clean coronas with your service representative.

Water for the Cooling System, Humidifier, and the Dishwasher

The cooling system may need additional cool water periodically. Supply the humidifier in the print tower with cool water daily. If you choose to use a portable dishwasher to clean coronas, the dishwasher needs hot water.

Storage Locker

IBM recommends that you provide a storage locker for the various supplies and tools associated with the InfoColor 70.

Plugs for the Printer–World Trade

The 50 Hz print tower power cable does not have a plug. Provide the appropriate plug and receptacle.

The cooling unit cable does not have a plug outside the United States and Canada. The customer must provide the appropriate plug and receptacle.

The RS/6000 E30 must be powered from the wall. Provide the appropriate plug and receptacle.

Tools

IBM-Supplied

Densitometer

A densitometer is required to optimize control of colors printed by the InfoColor 70. The InfoColor 70 uses a Gretag 19C densitometer, provided with the printer, to recommend and execute printer color station setpoint changes to optimize color density. This function is called semi-automatic density control. The densitometer measures optical density of printer output. This task can be accomplished either by using semi-automatic density control function or by manual adjustments to color station controls.

Installation Tools

Installers use a variety of special tools to set up the InfoColor 70. These tools are the property of IBM.

Customer-Supplied

Vacuum Cleaner

Ensure that the vacuum cleaner used to clean the printer meets the following requirements:

- The vacuum cleaner motor cooling must be separate from the vacuum line. This prevents paper dust, toner, or developer mix that is drawn through the vacuum from contacting the electrical brushes of the vacuum cleaner motor. Filtering the vacuum line and allowing the filtered vacuum to cool the motor is not safe.

- All attachments or tools that are connected to the vacuum cleaner are nonconductive.

- The vacuum cleaner must filter particles 6 microns or smaller.

Stepladder

Use a stepladder for installation and maintenance. The ladder should be approximately 2 m (6 ft) tall. Because of the dangerous voltages present in the InfoColor 70, IBM recommends a fiberglass ladder.

Loupe

A loupe must be available for viewing printed documents to perform registration adjustments.

Communicating with the Printer

InfoColor 70 Network Connectivity

The InfoColor 70 Printer (Model 002) and InfoColor 70 Printer and Collator (Model 02C) attach to a network through one or more PCI adapters. These adapter cards may be Ethernet or Token Ring.

The AIX system provides connectivity through TCP/IP and NFS. A software package called **AIX Connections** is installed in the InfoColor 70 and provides network connectivity for Novell's LAN protocols Netware, NetBIOS and Appletalk. TCP/IP must be running for AIX Connections to function properly.

The protocols supported by Token Ring and Ethernet are explained in the following topics.

Token Ring

The Token Ring card is a 4/16 Mbps card which can be configured for either 4 Mbps or 16 Mbps, depending on the customer ring speed. This card supports TCP/IP, NFS and NetBIOS.

TCP/IP

TCP/IP is commonly known as Internet protocol and is based on open system interconnection (OSI). The three most common TCP/IP applications are E-mail, telnet (remote login), and FTP (file transfer).

On the InfoColor 70 the application of interest is FTP, where PostScript files can be copied from workstation to printer. The files should always be copied in binary, to avoid different ASCII encodings. These files can then be RIPed and printed.

NFS (Network File System)

NFS is a protocol developed by Sun Microsystems that uses IP to allow a set of cooperating computers to access each other's file systems as if they were local. The key advantage of the NFS over conventional FTPs is that NFS hides the differences between local and remote files by placing them in the same name space.

NetBIOS (Network Basic Input Output System)

NetBIOS is the standard interface to networks of IBM PCs and PC-compatibles. The AIX Connection software supports NetBIOS on Token Ring cards. PCs with Token Ring can send files from the PC to the InfoColor 70 to be RIPed.

Ethernet

The Ethernet adapter **only** supports the 10 Mbps network speed. It might work with a 10/100 Mbps network.

The physical media connections can be Twisted Pair, Thin COAX, Thick COAX, or Fiber optic wires.

- 10BaseT - Twisted Pair - connects directly to the card with an RJ45 modular connector or with an AUI transceiver
- 10Base2 - Thin COAX - connects with an AUI transceiver
- 10Base5 - Thick COAX - connects with an AUI transceiver
- 10BaseF - Fiber - connects with an AUI transceiver

Transceivers can be bought off the shelf.

The AIX system supports both the standard and IEEE802.3 versions of Ethernet. However, the AIX Connection software requires the IEEE802.3 version.

- On a **standard** Ethernet system, only TCP/IP and NFS are available.
- On an **IEEE802.3** Ethernet system, AIX Connections can be configured for the NetBIOS, Appletalk and Netware protocols.

NetBIOS

NetBIOS is the standard interface to networks on IBM PCs and PC-compatibles.

Netware

Netware is a LAN protocol developed by Novell Corporation and is primarily used to connect PCs on small LANs.

Appletalk

Appletalk is a protocol developed by Apple Computers and is used for connecting Macintoshes. The connecton to Macs is available both in printer (Laserwriter) mode and file transfer mode. In addition, it provides a facility to download fonts and make them resident in the InfoColor 70 in file transfer mode. The customer must transfer the fonts in MacBinary format.

TCP/IP Minimum Configuration and Startup Worksheet

Use the worksheet on the following page to assemble specific information about your network that will be needed during the installation and configuration of your InfoColor 70.

TCP/IP Minimum Configuration and Startup Worksheet

System Name:_____ Date: _____

Network Administrator:_____

A. Network interface:_____
Standard Ethernet, IEEE 802.3 Ethernet, or Token Ring

B. Host name: InfoColor70_xxxx _____
Where xxxx are the last 4 digits of the print tower serial number (the XPS number)

C. Internet address:_____
Address on the Internet. Do not write in leading zeroes.
(For example, do not write 002.020.12.010; instead write 2.20.120.10.)
The **default address is 127.20.20.10.**

D. Network Mask:_____
Network mask if your network uses mask addresses.
The **default mask address is 255.255.255.0.**

E. Name server Internet address:_____
Required if your network uses a name server

F. Name server domain name:_____
Required if your network uses a name server

G. Default gateway Internet address:_____
Required if your network uses a gateway

H. Ring speed: (4 or 16):_____
Required for Token Ring

I. Cable type: (bnc or dix):_____
Required for Ethernet

J. AppleTalk local zone:_____
Required for connecting to Macintosh

K. AppleTalk default zone:_____
Required for connecting to Macintosh

L. Domain name:_____
Required for connecting to PC

M. Service name:_____
Required for connecting to PC. Alias for printer name; similar to host name.

N. All PC user IDs to be added to the configuration:_____
Required for connecting to a PC

Fonts

Thirty-five Adobe Type Manager (ATM) Type-1 fonts are resident on the controller. The PostScript Page Description Language (PDL) allows you to download fonts, such as Adobe Type-3 fonts. You can also purchase additional True Type and Adobe Type-1 fonts to install on your printer to RIP jobs. The following table lists the resident fonts:

Avant Garde – Book
Avant Garde – Book Oblique
Avant Garde – Demi
Avant Garde – Demi Oblique
Bookman – Demi
Bookman – Demi Italic
Bookman – Light
Bookman – Light Italic
Courier
Courier – Bold
Courier – Bold Oblique
Courier – Oblique
Helvetica
Helvetica – Bold
Helvetica – Bold Oblique
Helvetica – Narrow
Helvetica – Narrow – Bold
Helvetica – Narrow – Bold Oblique
Helvetica – Narrow – Oblique
Helvetica Oblique
NewCenturySchlbk – Bold
NewCenturySchlbk – Bold Italic
NewCenturySchlbk – Italic
NewCenturySchlbk – Roman
Palatino – Bold
Palatino – Bold Italic
Palatino – Italic
Palatino – Roman
Times – Bold
Times – Bold Italic
Times – Italic
Times – Roman
ZapfChancery – Medium Italic
ZapfDingbats
Symbol

Features and Attachments

Image Memory per Print Unit (Model 002 Only)

The InfoColor 70 is shipped with 72MB of image memory per print unit (576MB total). Memory requirements for your jobs depend on the image size and depth. Image depth is the number of gray shades at each spot. For instance, two duplex full-bleed B-size (or A3-size) images with 600 x 600 dpi resolution and 4-bit color at each spot (65 536 colors per pixel) can be printed with the standard memory.

An additional 72MB of image memory per printhead is available to enhance your printing capabilities. The 144MB image memory per printhead (1150 MB total) allows the user to make additional trade-offs between image size and print image quality. The number of pages for a given size and grey level is doubled when the image memory is increased from 72MB to 144MB.

See Table 12 on page 44 for the relationship between bitmap configuration and image memory.

Variable Data System

The Variable Data System (VDS) optional feature provides you with the ability to produce customized documents. With VDS, printed jobs can have certain areas of an imaged signature change with each print. Variable information can be text and Encapsulated PostScript (EPS) graphics. VDS comes in black-only or in full color, and requires both hardware and software changes. A single duplex page can contain up to 16 variable data fields per side.

VDS Coverage: The maximum variable data coverage is different for black-only and for color jobs, and also depends on the data depth, measured in bits-per-spot (BPS), as shown in the following table:

Variable Data Field (VDF)		
BPS	Black	Color
2	140%	50%
3	80%	30%

MergeDoc: MergeDoc converts the variable data, PostScript master, and document definition files into a single PostScript file for printing. *MergeDoc* is software supplied with the Variable Data System feature.

PageMaker: Adobe PageMaker 6.0 for Windows 95 runs on a pre-press workstation and, with IBM-provided plug-ins, allows you to define variable areas on a page.

QuarkXpress: QuarkXpress Xtensions for Macintosh allows you to define variable areas on a page.

Bitmap Memory (Model 002 Only)

The InfoColor 70 comes with 72MB of bitmap memory standard for each print unit station. This allows full bleed B-size prints with 600 x 600 dpi resolution. The printer can be upgraded to 144MB of memory for each print unit station.

| Table 12. Bitmap Configurations (Model 002 only) | | | | | | | | | | | | | | |

Bitmap Configurations in Millimeters					Bitmap Configurations in Inches					Bitmap Configurations in Spots				
	72 MB		144 MB			72 MB		144 MB			72 MB		144 MB	
Width	4 BPS	2 BPS	4 BPS	2 BPS	Width	4 BPS	2 BPS	4 BPS	2 BPS	Width	4 BPS	2 BPS	4 BPS	2 BPS
307.6	874.8	1749.7	1749.7	2772.1	12.11	34.44	68.89	68.89	109.14	7272	20682	41365	41365	65535
307	874.8	1749.7	1749.7	2772.1	12.09	34.44	68.89	68.89	109.14	7258	20682	41365	41365	65535
305	881.4	1758.5	1762.9	2772.1	12.01	34.7	69.23	69.4	109.14	7210	20837	41571	41675	65535
300	897.1	1794.2	1794.2	2772.1	11.81	35.32	70.64	70.64	109.14	7092	21207	42415	42415	65535
297	904	1803.3	1807.9	2772.1	11.69	35.59	71	71.18	109.14	7021	21370	42631	42740	65535
295	910.9	1821.9	1821.9	2772.1	11.61	35.86	71.73	71.73	109.14	6974	21535	43071	43071	65535
290	927.7	1850.5	1855.4	2772.1	11.42	36.52	72.85	73.05	109.14	6856	21931	43747	43862	65535
285	942.5	1880	1885.1	2772.1	11.22	37.11	74.02	74.21	109.14	6738	22282	44445	44564	65535
280	960.5	1920.9	1920.9	2772.1	11.02	37.81	75.63	75.63	109.14	6619	22706	45412	45412	65535
279.4	963	1920.9	1926.1	2772.1	11	37.92	75.63	75.83	109.14	6605	22767	45412	45535	65535
275	976.4	1952.7	1952.7	2772.1	10.83	38.44	76.88	76.88	109.14	6501	23082	46164	46164	65535
270	995.6	1985.6	1991.3	2772.1	10.63	39.2	78.18	78.4	109.14	6383	23537	46942	47075	65535
265	1015.7	2031.3	2031.3	2772.1	10.43	39.99	79.97	79.97	109.14	6265	24011	48022	48022	65535
260	1033.5	2066.9	2066.9	2772.1	10.24	40.69	81.38	81.38	109.14	6147	24432	48864	48864	65535
255	1055	2103.9	2110.1	2772.1	10.04	41.54	82.83	83.08	109.14	6028	24942	49737	49885	65535
250	1074.3	2142.1	2148.6	2772.1	9.84	42.3	84.34	84.59	109.14	5910	25397	50641	50795	65535
245	1097.6	2195.3	2195.3	2772.1	9.65	43.21	86.43	86.43	109.14	5792	25949	51899	51899	65535
240	1118.5	2237	2237	2772.1	9.45	44.04	88.07	88.07	109.14	5674	26442	52885	52885	65535
235	1143.8	2280.3	2287.7	2772.1	9.25	45.03	89.78	90.07	109.14	5556	27041	53908	54083	65535
230	1166.5	2325.3	2333	2772.1	9.06	45.93	91.55	91.85	109.14	5437	27577	54972	55154	65535
225	1194.1	2388.2	2388.2	2772.1	8.86	47.01	94.02	94.02	109.14	5319	28229	56458	56458	65535
220	1223	2437.6	2446	2772.1	8.66	48.15	95.97	96.3	109.14	5201	28912	57626	57825	65535
215.9	1244.5	2489.1	2489.1	2772.1	8.5	49	97.99	97.99	109.14	5104	29421	58843	58843	65535
215	1248.9	2489.1	2497.9	2772.1	8.46	49.17	97.99	98.34	109.14	5083	29525	58843	59051	65535
210	1280.6	2561.2	2561.2	2772.1	8.27	50.42	100.84	100.84	109.14	4965	30274	60549	60549	65535
205	1309.1	2618.2	2618.2	2772.1	8.07	51.54	103.08	103.08	109.14	4846	30947	61895	61895	65535
200	1343.9	2677.6	2687.8	2772.1	7.87	52.91	105.42	105.82	109.14	4728	31771	63301	63542	65535
195	1375.3	2739.9	2750.6	2772.1	7.68	54.14	107.87	108.29	109.14	4610	32512	64773	65025	65535
190	1413.8	2772.1	2772.1	2772.1	7.48	55.66	109.14	109.14	109.14	4492	33423	65535	65535	65535
185	1454.5	2772.1	2772.1	2772.1	7.28	57.26	109.14	109.14	109.14	4374	34386	65535	65535	65535
180	1491.3	2772.1	2772.1	2772.1	7.09	58.71	109.14	109.14	109.14	4255	35256	65535	65535	65535
175	1536.7	2772.1	2772.1	2772.1	6.89	60.5	109.14	109.14	109.14	4137	36329	65535	65535	65535
170	1577.9	2772.1	2772.1	2772.1	6.69	62.12	109.14	109.14	109.14	4019	37302	65535	65535	65535
165	1628.8	2772.1	2772.1	2772.1	6.5	64.13	109.14	109.14	109.14	3901	38506	65535	65535	65535
160	1675.1	2772.1	2772.1	2772.1	6.3	65.95	109.14	109.14	109.14	3783	39601	65535	65535	65535
155	1732.6	2772.1	2772.1	2772.1	6.1	68.21	109.14	109.14	109.14	3664	40960	65535	65535	65535
150	1794.2	2772.1	2772.1	2772.1	5.91	70.64	109.14	109.14	109.14	3546	42415	65535	65535	65535
145	1850.5	2772.1	2772.1	2772.1	5.71	72.85	109.14	109.14	109.14	3428	43747	65535	65535	65535
140	1920.9	2772.1	2772.1	2772.1	5.51	75.63	109.14	109.14	109.14	3310	45412	65535	65535	65535
135	1985.6	2772.1	2772.1	2772.1	5.31	78.18	109.14	109.14	109.14	3191	46942	65535	65535	65535
130	2066.9	2772.1	2772.1	2772.1	5.12	81.38	109.14	109.14	109.14	3073	48864	65535	65535	65535
125	2142.1	2772.1	2772.1	2772.1	4.92	84.34	109.14	109.14	109.14	2955	50641	65535	65535	65535
120	2237	2772.1	2772.1	2772.1	4.72	88.07	109.14	109.14	109.14	2837	52885	65535	65535	65535
115	2340.7	2772.1	2772.1	2772.1	4.53	92.15	109.14	109.14	109.14	2719	55336	65535	65535	65535
110	2437.6	2772.1	2772.1	2772.1	4.33	95.97	109.14	109.14	109.14	2600	57626	65535	65535	65535
105	2561.2	2772.1	2772.1	2772.1	4.13	100.84	109.14	109.14	109.14	2482	60549	65535	65535	65535

Checklist

Use the following checklist to plan for the installation of the InfoColor 70. The checklist should be started when the printer is ordered. The first column of the checklist shows the number of weeks before installation to accomplish the tasks.

The checklist is intended for use by the customer and IBM.

Table 13 (Page 1 of 4). Systems Assurance Checklist

Weeks Before Install	Task	Task Owner	Yes No	Due Date	Date Done
8-12	Have you reviewed with the customer, and covered the following points? • Temperature and humidity requirements • Ventilation • Heat dissipation and cooling • Acoustic levels				
8-12	Check the flooring at the installation site. See "Flooring Requirements" on page 20.				
8-12	Have all spaces and clearances been verified for moving the crates between the loading dock and the printer installation site? See "Shipping Crate Weights and Dimensions" on page 21.				
8-12	Is training for service representative scheduled?				
8-12	Is operator training scheduled?				
4-6	Is a system engineer assigned for support?				
4-6	Is training for a system engineer scheduled?				
4-6	Have you reviewed supply requirements with the customer?				

Table 13 (Page 2 of 4). Systems Assurance Checklist

Weeks Before Install	Task	Task Owner	Yes No	Due Date	Date Done

4-6	Has the customer ordered and obtained supplies?
	
	1. Paper
	  • Correct paper size
	  • IBM tested
	  • Quantity
	2. Toner
	
	  See "Toner" on page 31 for approximate yields.
	3. Toner waste bottles
	4. Splicing tape
	
	  (Approximately 180 splices per roll)
	
	Two rolls of paper and two bottles of each color toner are shipped with the printer. One roll of splicing tape is shipped with the printer. Some of these supplies will be consumed during installation and setup.				

4-6	Does the customer have an appropriate electrical supply and power receptacle? • Print unit electrical supply • Print unit electrical connector (and plug if required), for print unit. (Hubbell receptacle 460-R9V0–United States only.) • Cooling unit electrical supply • Cooling unit electrical connector (and plug if required). • RS/6000 electrical supply				

4-6	Have all cables, connectors, and adapters required for this installation been ordered?
	Customer Supplied
	
	• AUI adapter for workstation
	  – Twisted pair (10 Base T)
	  – Thin coax (10 Base 2) (suggested and recommended)
	  – Thick coax (10 Base 5)
	• Hubbell receptacle 460-R9V0–United States only
	• LAN cabling if required
	• If necessary, adapter and/or outlet for CEE7 VII plug used with the cooling unit–World Trade only				

Table 13 (Page 3 of 4). Systems Assurance Checklist

Weeks Before Install	Task	Task Owner	Yes No	Due Date	Date Done
4-6	Has Service ordered the onsite maintenance parts? The CE RETAIN system has this information.				
4-6	Has an vacuum cleaner been ordered?				
4-6	Has a stepladder been ordered? A 2 m (6 ft) fiberglass ladder is recommended.				
2-4	Complete the TCP/IP Configuration and Start-up worksheet with the customer, to be available at installation time.				
2-4	Verify that operator training has been scheduled.				
2-4	Have the service representatives been trained?				
2-4	Is there workspace and storage space for the service representative?				
2-4	Is the customer-ordered hardware on site? (Vacuum cleaner, loupe, ladder).				
2-4	Has the service representative arranged for the installation tools to be available?				
2-4	Have arrangements been made for movers or riggers to move the printer to the installation site?				
2-4	Is the system ready for the printer? LAN, cabling, configuration?				
2-4	Is the pre-press hardware and software, with appropriate levels of application software, available? See "Pre-press Environment" on page 26.				

Table 13 (Page 4 of 4). Systems Assurance Checklist

Weeks Before Install	Task	Task Owner	Yes No	Due Date	Date Done
1-2	Final walk through.				
	1. Walk the path from the delivery point to the point of installation. Check that the crates will clear all doors, hanging signs, sprinkler heads, and other items. Ensure that there is adequate clearance to maneuver the crates around all corners.				
	2. Ensure that "Flooring Requirements" on page 20 are met.				
	3. Check for space to unpack crates when they are in place at the installation site.				
	4. Check that all electrical receptacles are in place and have the correct power.				
	5. Ensure all tools and supplies are on site: • Toner • Paper • Splicing Tape • Waste bottles				
	6. Check for all hardware items: • Vacuum cleaner • Stepladder • Installation tools • Onsite maintenance parts • Storage locker • Dishwasher (optional)				
	7. Verify that the pre-press hardware and software, with appropriate levels of application software, are available.				
	8. Use tape to define the location of the main print tower on the floor of the customers site.				

Acronyms and Abbreviations

This list explains the acronyms and abbreviations used in this manual, and in the other manuals that are part of the printer documentation library.

Acronym	Description
ANSI	American National Standards Institute.
ATM	Adobe Type Manager.
AUI	Attachment Unit Interface.
BPS	Bits Per Spot.
BTU	British Thermal Unit.
CE	Customer Engineer (IBM).
CEE	International Commission for Conformity Certification of Electrical Equipment.
CFM	Cubic Feet per Minute.
CMH	Cubic Meters per Hour.
CMYK	Cyan, Magenta, Yellow, and Black.
DASD	Direct Access Storage Device (hard disk drive).
dB	Decibel.
DIN	Deutsches Institute fur Normung (German Institute for Standardization).
DRAM	Dynamic Random Access Memory.
EPA	Environmental Protection Agency.
EPS	Encapsulated PostScript.
GB	Gigabyte (1GB = 1 073 741 824 bytes).
GUI	Graphical User Interface.
GSM	Grams per Square Meter.
IEC	International Electrotechnical Commission.
IPX	Internet Packet Exchange.
ISO	International Organization for Standardization.
KB	Kilobyte (1KB = 1 024 bytes).
kVA	Kilovolt Ampere.
LAN	Local Area Network.
LED	Light Emitting Diode.
MB	Megabyte (1MB = 1 048 576 bytes).
NEMA	National Electrical Manufacturers Association (USA).
PES	Print Engine Supervisor.
PDL	Page Description Language.
POD	Print On Demand.
RIP	Raster Image Processing.

Acronym	Description
RISC	Reduced Instruction Set Computer.
SCSI	Small Computer System Interface.
SWOP	Specifications for Web Offset Publications
TCP/IP	Transmission Control Protocol/Internet Protocol.
TLV	Threshold Limit Value.
UV	Ultraviolet light.
VDS	Variable Data System.

Glossary

The following terms are defined as they are used in 3170 Full Color Digital Printer/Press and InfoColor 70 documentation. If you do not find the term you need, refer to the index or to the *IBM Dictionary of Computing*, SC20-1699 or the *IBM Dictionary of Printing*, G544-3973.

A

A3-size paper. Paper that is 297 x 420 mm (11.69 x 16.54 in.).

A4-size paper. Paper that is 210 x 297 mm (8.27 x 11.69 in.).

Active Alarms. A window that opens automatically to display alarms or warnings.

active window. A window in which you can perform actions. The title bar of an active window is highlighted.

administrator logon. The logon used only during limited sessions for configuration changes or system maintenance.

Age Developer. The value, displayed in equivalent A4 sheets, used to determine the age of the developer for each of the eight print units. This value displays in the Toner Concentration Setpoint window.

alarm. A message in red text in the Active Alarms window, which indicates a severe problem that must be solved immediately. An example is a paper jam.

along-web registration. The accurate alignment of the four-color separations of an image on top of each other in the direction of the paper movement (along the web).

APIS (automated printer interface system). The interface protocol used to exchange image data, commands, and status information between the RIP/operator interface platform and the print engine supervisor.

archive diskettes. Diskettes that contain data files specific to the upgrade level of the printer. These diskettes are provided by IBM.

Automatic Control. A setting in the Paper and Engine Conditioning window used to specify that tower conditioning be controlled automatically. Automatic is the recommended setting.

Auto Print. A setting used in the Print Sequence window to cause all jobs in the print queue to print

automatically without intervention by the operator, once the engine has reached Print Quality criteria.

Auto save settings. A Preference window checkbox used to have any settings changed in process control windows automatically saved.

auxiliary (test) tray. The upper tray on the output stacker. This tray is used for print tests and blank sheets.

B

background noise. A dirty background caused by toner that has adhered to non-image areas of the printed job.

backup diskettes. (1) Diskettes shipped with the printer to provide a backup of the software in case the hard drive crashes. (2) Diskettes prepared by the operator to provide a backup of data-file settings that the operator has modified.

backup roll pressure handle. Handle used to loosen the pressure against the paper roll so a paper jam can be cleared.

basis weight. The weight in pounds of a ream (500 sheets) of paper cut to a given size for that grade; for example, 25 x 38 in. for book papers, 17 x 22 in. for bond papers, and other sizes for other grades. The basis weight of continuous forms for computer output is based on the size for bond papers.

bearding. The appearance of blown-off toner at the leading edge of an image.

bias test patches. CMYK patches on control strips that are used to measure and control lower densities.

bitmap. An image formed by a rectangular grid of pixels. Each pixel is assigned a value to denote its color and the density of color.

black overprinting. A page-setup parameter that causes 100% black to overprint the other colors.

blank sheets. The white sheets that always precede and follow a printed job.

bleed. Extra printed area that extends off the final page trim size. Bleed ensures that no white gap is at the edge of pages. Bleed is also used as a design technique.

bps (bits per spot). The number of bits with which each spot's gray level is described.

brake system. Keeps the paper web at a certain tension between the paper reel and the first web drive motor.

Busy pausing engine state. During this engine state, the print engine is pausing to wait for the Ok pushbutton to be clicked.

Busy printing engine state. During this engine state, the imaging process is taking place.

Busy starting engine state. During this engine state, the print engine is starting.

Busy stopping engine state. During this engine state, either the job has finished printing or the Halt pushbutton has been clicked.

Busy warming up engine state. During this engine state, the print engine is waiting for the fuser to warm to its required setpoint temperature.

Busy waiting engine state. During this engine state, the job has downloaded to bitmap and is waiting to be printed.

C

carrier. Solid elements that carry and disperse the toner when it is used in a dry powder form.

Change paper roll. A step in the Mount Paper Roll window that the operator must select to start the procedure for changing a paper roll.

cleaning station. Removes excess toner particles from the drum and directs these particles to a toner waste bottle.

CMYK (cyan magenta yellow black). The four basic colors used in offset printing, as opposed to the three basic colors of light: red, green, and blue.

Note: Magenta, yellow, and cyan are thought of as the 'subtractive' primaries. Black is added to give better density and to produce a true black.

Collate. An edit function used from the Image Disk window to combine several resident jobs into one resident job, somewhat like a small book.

color balance. Relative levels of cyan, magenta, and yellow needed to produce a neutral or non-cast grey. Crucial for color scanning.

color correction. Adjustment of the balance of CMY channels in an image to produce accurate color rendition of an original image. Many color scanners,

particularly low-end desktop models, produce only average color balance and images from these units must be adjusted using an image editor such as PhotoShop.

color registration. The accurate alignment of the four color separations of an image on top of each other at each side of the paper.

Compression. A page-setup parameter used to specify that the raster image of a RIPed job be compressed.

condensation water reservoirs. The two containers, located in the fixed tower, that are used to collect condensation water.

Conditioned engine state. During this engine state, the print tower conditioning is turned on and the paper conditioning and fusing systems are turned off The engine is idle and no printing is taking place.

conditioning circuit. A circuit that controls the temperature and humidity of the air in the print tower to ensure stable print quality and to filter ozone and dust.

console switch. The switch used to turn on the printer's two control computers.

control strip. (1) A strip of information that can be attached to a print job and be used to measure registration and density. (2) A page-setup parameter used to specify the name of the control strip to be appended to a print job. (3) A Properties window Imaging field used to view a list of all resident control strips and to select a control strip to add to a job or to override the control strip specified in the Page Setup window.

Cooling. When highlighted in the Paper and Engine Conditioning window, indicates either the air temperature and/or the relative humidity in the print tower is higher than its setpoint and the air is being cooled.

cooling unit. A closed-loop refrigeration unit, physically separated from the print tower, that provides cooled water for the conditioning systems in the printer.

Copy count. (1) A page-setup parameter used to specify the number of copies to be printed of each signature of a job. (2) A Properties window Imaging setting used to override the number of copies specified in the Page Setup window.

corona. (1) The effect of ionizing air with a high voltage, creating a charge that can be used to perform various functions during printing or copying. (2) In printers, a small diameter wire (or wires, depending on the function) to which a high voltage is applied, causing ionization of the air. The ionization creates an electrical

charge to perform various functions during the printing process.

corona wire. A wire with high voltage that emits charged particles.

Corona current. A paper-conditioning parameter that displays the current of the first transfer corona. This current is adjusted automatically.

Counters. A window used to monitor the number of printed, wasted, and total sheets of paper. Do not use the values in this window to determine the age of the developer. See Age Developer.

crop. To remove unwanted areas of an image, usually indicated by crop marks on the original.

cross-web registration. The accurate alignment of the four-color separations of an image on top of each other in the cross direction of the paper movement (across the web).

Cut Sheets. A Properties window Finishing setting used to specify whether the sheets of a printed job will be cut or not cut.

cutter. Cuts the paper perpendicular to the paper movement before the paper leaves the print tower.

D

Data depth. (1) A page-setup parameter used to specify the number of bits with which each spot's gray level is described. 4 bps (bits per spot) means a spot can have 16 levels of gray. Gray levels determine the density of color printed (C,M,Y or K). (2) A Properties window Imaging setting used to override the data depth specified in the Page Setup window.

day conditioning. The electronic control of temperature, relative humidity, and air filtering in the print tower during the day.

DCS. Desktop color separation file.

default.ini file. A file included with the printer software that contains default page-setup-parameter values.

Delete. A function in the Image Disk, Queue Manager, and Image Memory windows used to delete a resident job from the lists of jobs in these windows.

densitometer. An instrument used for measuring color saturation on a printed page.

Density Control. The window used to monitor and sometimes adjust the parameters that affect the density of the printed image.

density test patches. CMYK patches on control strips that are used to measure and control the higher densities.

developer. A mixture of toner and carrier particles.

developer unit. Develops the image by depositing toner particles on the drum.

digital printing. Filmless and plateless printing process wherein digital data for each page is transferred directly to a light sensitive drum and then, via various methods, to paper for a final image.

DIS/RIP switch. The switch used to switch back and forth between the PES platform and the RIP platform.

Dmax. The density printed when the test patch has 100% dot screen.

dot gain. Increase in the size of a halftone dot during printing caused by ink spreading. Generally, this value is known to a fair precis ion and the scanning/film production process is calibrated to compensate for it. The Cromalin proofing system simulates this effect by overexposing slightly to increase dot percentage values an amount equal to the press dot gain percentage.

downloading. The first step in the printing process. The selected print job is downloaded to bitmaps.

dpi (dots per inch). Also known as pels, and sometimes referred to as spots per inch. A measure of data density per unit distance. Typical values for desktop publishing range from 200 to 300 dpi. The 3170 Full Color Digital Printer/Press and InfoColor 70 print at 600 dpi.

driftmargin. The signature is positioned too far to the right or left on the paper.

drum. A grounded aluminum core covered with a layer of photoconductor.

drum refurbishing. A process used to remove fused-on toner from a drum. Fused-on toner is toner that was not removed by the cleaning station.

dryc_0 script file. A script file that is run to remove paper from the heated roll to prevent paper scorching when the paper is manually pulled through the print tower.

dryc_1 script file. A script file that is run to enable paper contact with the heated roll.

DTP (desk top publishing). Generic term for printing-related activities on PC platforms; includes, but is not limited to layout and design, photo manipulation, font creation/editing, color separation, scanning, and animation.

E

emergency stop.   Stops the print engine immediately when a serious error occurs. The print engine can be stopped manually by pushing down a red emergency button or clicking the emergency stop button.

emergency stop button.   The stop-sign button located at the top right of the monitor screen. Click this button to stop the print engine during an emergency.

Engine State.   A window used to monitor the status of the print engine at any one time. The print engine has eleven possible engine states.

EPS (encapsulated PostScript).   Digital format for storing scanned images. A file format that the printer accepts for print jobs.

Executable.   A Preferences window field that shows the path to the file that executes the RIP.

F

Face Down.   (1)   A page-setup parameter used to reverse the front and back pages in duplex jobs or to print simplex jobs on the back side of the paper. (2) A Properties window Finishing setting used to override the Face Down setting specified in the Page Setup window.

FastRIP window.   A window that opens automatically to show the progress of the interpretation and rendering phases of the RIPing process.

File Manager.   A window used to view files and directories, move and copy files, manage disks, and so on.

Finishing.   A Properties window option used to look at and change finishing settings, such as the output bin.

fixed horizontal bar.   A bar on the output stacker that can be adjusted to allow the stacker to accommodate different sheet lengths.

fixed tower.   The area of the tower where the toner is fused to the paper to produce the final image. The fixed tower is located at the end near the output stacker.

FIX T element measured.   A fusing system parameter that displays the actual measured temperature of the fuser elements.

FIX T element setpoint.   The value to which the temperature of the fuser elements has to be adjusted.

FIX T paper measured.   A fusing-system parameter that displays the actual measured temperature of the paper coming out of the fuser.

FIX T paper setpoint.   The value to which the temperature of the paper coming out of the fuser has to be adjusted. For all IBM tested papers, this value is 140.C.

Forms.   An Image Disk properties option used to look at the forms (pages) that make up a selected resident job.

FOT (fused on toner).   Toner left on the drum that has not been transferred to the paper.

front-to-back registration.   The alignment of the signature position for front and back.

fuser.   The non-contact element that affixes the eight toner layers to the paper.

fusing control system.   A system that controls the temperature of the fuser element and the temperature of the paper coming out of the fuser.

G

gate.   The metal door located in front of the electronic panel in each print tower.

GCR (grey component replacement).   Equivalent to UCR (under color removal).

GB.   Gigabyte or 1 073 741 824 bytes (1 000 MB) of data.

H

halftone.   Printing method that simulates continuous-tone shading using dots of varying sizes laid out on a regular grid. Larger dots simulate darker tones and vice versa. Typical grid spacings are: 85 lpi newspaper, 133 lpi low end, 150 lpi midrange, 175 lpi+ high quality. LPI = lines (halftone dots) per inch.

Halt.   A Print Sequence pushbutton used to stop printing when a problem that is not an emergency occurs.

hand truck.   Device used to either mount the paper roll in the paper supply or remove the roll from the paper supply.

HCP (Host Control Panel).   A window used primarily by the service representative to manage processes through the use of commands.

heated roll.   The roll in the paper supply that dries the paper to a certain moisture content.

Heating.   When highlighted in the Paper and Engine Conditioning window, indicates the air temperature in the print tower is below its setpoint and is being heated.

high-coverage job.   A job in which the page has greater than 30% coverage.

High Priority.   A Properties window Imaging setting used to control the printing sequence of jobs in the print queue.

Hold Printing.   A Properties window Imaging setting used to put a print job on hold so the next job in the queue can print first.

Humidifier.   (1) An engine-conditioning parameter that displays the duty cycle of the humidifier. (2) Part of the tower-conditioning system that adds humidity to the air in the print tower. The humidifier is located in the Y tower.

Humidifying.   When highlighted in the Paper and Engine Conditioning window, indicates the relative humidity is below its setpoint.

I

ICS (imaging control system).   A system that controls the eight LED writing heads.

Image Disk.   The window used to manage job setup, RIPing, and printing. This window displays a list of resident jobs on the printer.

Image Memory.   The window that lists jobs that have been completely downloaded to image memory, ready to print. Displays the amount of image memory still available.

Imaging.   A Properties window option used to change image settings, such as copy count and data depth.

imposition.   The process of arranging pages on a press sheet to ensure proper order during final cutting/folding/binding. Electronic imposition builds press sheets automatically in the RIP and outputs film formatted for immediate use in platemaking. Electronic imposition is very machine-intensive and is used only when maximum speed and throughput are required. Also changes required rerunning an entire press sheet

INC (instrumentation control system).   A system that controls the operation of all the electromechanical and electronic modules in the print engine.

ini file.   A file in which page setup settings are stored.

Initialized engine state.   During this engine state, the microcontrollers are being initialized prior to power-on state.

Insert Separator.   A pushbutton you can use in the Print Sequence window to cause a separator strip to be inserted between each print job.

interpretation and rendering.   The two phases of RIPing a job.

J

Job type.   A page-setup parameter used to specify whether a job is a master, variable data file (VDF), or test job.

K

KB.   Kilobyte or 1 024 bytes of data.

L

Layout.   A Properties window option used to specify the sheet and signature layout settings for a job.

LDA (light emitting diode array).   The imaging device for the electrophotographic print units.

LED (light emitting diode).   The imaging device element for the electrophotographic print units.

Load paper settings.   A step in the Mount Paper Roll window that highlights after a new paper roll is mounted and the Done pushbutton is clicked. When the Done pushbutton is clicked again, the Run Script window opens, where the correct setting for the newly mounted paper roll can be specified.

log file.   A file in which operational errors and messages are automatically stored. These messages can help a service representative debug problems.

loupe.   A small magnifier used to check printed documents for correct registration.

lpi (lines per inch).   In computer graphics some screening algorithms use equally spaced lines to print images. This is the line spacing used.

M

main-charge scorotron.   A type of corona that contains a grid. Charges the surface of the drum to a negative uniform potential. Each print unit has a main-charge scorotron.

main power.   The power that runs the printer when the switch, located in the fixed tower, is turned to the ON position.

main (stacker) tray.   The lower tray on the output stacker. This tray is used for stacking print jobs.

main switch.   The switch, located in the fixed tower, that is used to turn on the printer.

Make Duplex.   An edit function used from the Image Disk window to combine two simplex jobs or selected pages of two duplex jobs into a new duplex job.

Manual Control.   A setting in the Paper and Engine Conditioning window used to specify that tower conditioning be controlled manually by the operator. Automatic control, rather than manual control, is the recommended setting.

MSDS (Material Safety Data Sheet).   International standards describing how to handle and dispose of chemical substances.

MB.   Megabyte or 1 048 576 bytes (1 000 KB) of data.

menu bar.   Contains several menu items used to access the functions needed to operate the printer.

Mount Paper Roll window.   The window used to progress through the steps to change a roll of paper.

N

night conditioning.   The electronic control of the temperature in the print tower during the night or during idle time. Relative humidity is not controlled during night conditioning.

O

Open at startup.   A Preferences window selection that opens the APIS connection with the PES automatically when the operator interface is started.

organic photoconductor.   The light sensitive coating that holds the latent image drawn by the LED array; essentially the 'emulsion' of the printing plate.

Orientation.   A page-setup parameter used to rotate output. Output can be rotated 0, 90, 180, or 270 degrees. The pages rotate counterclockwise relative to their orientation when the job was created.

Output bin.   (1) A page-setup parameter used to specify the output stacker destination tray. (2) A Properties window Finishing setting used to override the output bin specified in the Page Setup window. (3) The tray of the output stacker to which jobs are sent.

P

page-setup parameters.   Parameters, such as page size, that describe a job for output to the printer. These parameters are specified in the Page Setup window.

Page size.   A page-setup parameter that specifies the signature size to use when the pages of a job are RIPed.

Paper and Engine Conditioning.   The window used to monitor and adjust parameters that affect paper conditioning, tower conditioning, and the fusing system.

paper conditioning system.   Part of the Paper Supply that uses a heated roll and a cooling unit to dry the paper to a certain moisture content.

paper cooling circuit.   A circuit located in the paper supply that first dries the paper with a heated roll and then blows air on the paper to lower its temperature.

paper cooling unit.   Blows cooled air on the paper as the paper leaves the fuser.

paper roll.   See web.

paper roll axle.   The device inserted through the core of a paper roll to support the paper roll in the printer. A paper roll axle can be adjusted to support six different paper widths.

paper setting.   A setting the operator changes when a different type of paper is loaded. Paper settings are changed by running script files.

paper supply.   Holds the paper roll, maintains web tension, heats the paper, and checks paper moisture content. Splicing of paper rolls occurs here.

paper-supply alignment.   Moving the paper supply perpendicular to the web movement to correct the alignment of the paper supply to the print tower.

PDF (printer description file).   Defined by Quark for use only with Quark Xpress. This file contains information, such as page size, that is specific for a given output device.

Performance Monitor.   A window used to monitor CPU usage and memory used during the RIPing process.

PES (print engine supervisor) platform.   One of two platforms in the printer controller module. This platform controls the operation of the print engine.

pixel.   (1) Picture element. (2) In architecture, the smallest printable or displayable unit on a physical medium. In computer graphics, the smallest element of

a physical medium that can be independently assigned color and intensity. Picture elements per inch is often used as a measurement of presentation granularity. Synonymous with pel, picture element.

Position. A page-setup parameter used to specify the position of the job on the physical sheet of paper.

positioning blocks. Blocks located on the back of the output stacked that are used to correctly place the stacker against the bearings located on the cutter unit.

PostScript. Adobe's page-description language that has become a standard for graphic design and layout software. PostScript files can contain both vector and raster data. Fonts are described using PostScript coding. Many desktop publishing systems output PostScript.

Power-off engine state. During this engine state, the main power to the print engine is turned off.

Power-on engine state. During this engine state, the main power of the print engine is turned on and the temperature and humidity in the print tower are adjusted to their setpoints.

PPD (PostScript printer description file).. Defined by Adobe to streamline the process of generating PostScript. This file contains information, such as page size, that is specific for a given output device.

pre-charge scorotron. Preconditions the surface of the drum and any remaining toner particles for cleaning.

Preferences. A window used to change some of the printer default settings, such as saving your workspace.

print engine supervisor (PES). A unit that controls the operation of the print engine.

print queue. The queue that contains RIPed jobs that are ready to print. The printing of jobs from the queue is on a first-in, first-out basis.

Print Sequence. A window that opens automatically to let you observe the progress of printing a job and to perform other tasks, such as halting a print job.

print tower. The module of the printer that contains the drums, coronas, dosing and developing units. Toner deposition occurs here. Conditioning controls this area. Paper exits this area and enters the fixed tower.

print unit. One of four units in each print tower that prints one of the four CMYK process colors.

print unit drives. The electric motors that drive the clean station, developer unit, and toner dosing unit.

process color. Made up of CMYK inks simulating a specified color. Accepted traditional method for reproducing continuous-tone color images (color separations). Due to the nature of color inks, certain Pantone spot colors will not reproduce well.

Progress. An option in the Queue Manager Properties window used to view the progress of a queued job.

Properties. A selection used from either the Image Disk, Queue Manager, or Image Memory window to change the layout, imaging, or finishing properties of a job. When selected from Image Disk, you can also display the forms that make up a job. When selected from Queue Manager, you can monitor the progress of a queued job.

PRS T. A paper-conditioning parameter that displays the measured standby temperature of the pre-heating roll. The setpoint depends on the type of paper loaded in the printer.

pushbuttons. Buttons located in most operator-interface windows that, when clicked, either perform actions or provide access to additional functions.

PRS U1. A paper-conditioning parameter that displays the potential measured by the first charge meter. The setpoint must be 500V.

PRS U2. A paper-conditioning parameter that displays the potential measured by the second charge meter. A setpoint based on the specific paper humidity that will result in the best print quality has been established for each type of certified paper.

Q

Queue Manager. A window that lets you view and manage all jobs currently in the print queue. As soon as a job prints, it disappears from the list of jobs in the queue.

Quit PES at exit. A Preferences window checkbox used to have the PES quit automatically when you quit the operator interface.

R

raster. A pattern of dots comprised of varying data depths. Images with only black and white values are 1 bit (on/off), while greyscale images are 8 bit (256 levels). RGB images are 24 bit (three channels, 8 bits each). CMYK images are 32 bit (four channels.) Raster images are also called bitmapped images.

raster image processor (RIP). Converts the job from PostScript into high resolution (600 dpi) bitmaps to be

fed to the LED arrays. Images are screened and converted to halftone data here.

Refill Toner Containers window. The window used to progress through the steps for refilling the toner containers.

refurbish drums. (1) A process used to remove fused-on toner from a drum. Fused-on toner is toner that was not removed by the cleaning station. (2) The window used to step through the procedure for refurbishing the drums.

Register Control. The window used to adjust registration.

registration. (1) The accuracy of printing on paper relative to the edges of the paper. (2) the accuracy of printing a single color (cyan, magenta or yellow), relative to black. (3) The accuracy of printing on one side of a page relative to printing on the reverse side of the same page.

relative humidity measured. The actual measured relative humidity of the print tower.

relative humidity setpoint. The value to which the relative humidity in the print tower should be adjusted.

Rename. A function in the Image Disk, Queue Manager, and Image Memory windows used to change the name of a listed resident job.

resident. (1) A job that has been RIPed, but not printed. These jobs reside on the spooling disk for printing at a later time. (2) A page-setup parameter used to specify that a job is to be stored on the spooling disk after printing.

RIPing. The process of converting PostScript jobs into images that can be printed on the printer.

RIP platform. One of two platforms in the controller module of the printer. This platform runs the RIP and the operator interface.

RIP (raster image processor). Computer processor that renders PostScript instructions into dot patterns that are transferred to the final print medium. Most RIPs use RISC (reduced instruction set) processors to achieve extremely high throughput.

Run paper-conditioning state. The print engine is printing, which means the paper humidity is okay.

RunID. A unique number between 0 and 655535 assigned to each job in the print queue.

Run Script. A window used to activate script files. The operator uses script files to prevent paper

scorching, specify type of paper, and align the paper supply to the print tower.

S

Save workspace. A Preferences window checkbox used to save the position of open windows in the workspace.

scripts. Files that contain predefined control sequences used by the instrumentation system. The operator will use some of these files for specific tasks.

Separations. A Properties window setting used to separate a printed image into the four CYMK colors.

separation strip. (1) A strip that can be inserted between two print jobs to separate them. (2) A Properties window Finishing setting used to cause separator strips to be inserted between jobs.

sequential-action functions. Operator-interface functions that involve a sequence of actions that are performed partly by the operator and partly by the interface. Mount Paper Roll, Refurbish Drums, and Refill Toner Containers are examples.

service intervention. (1) A function that allows you to open the print tower doors to do maintenance and solve problems without turning off the main power to the printer. (2) The window used to perform service-intervention steps.

service key. The key that must be inserted and turned clockwise before service intervention is used.

setpoint-adjustment processes. Processes that include parameters to monitor and setpoints to adjust to control or to optimize print quality. Density Control and Web Tension are examples of setpoint-adjustment processes.

Sheet size. A page-setup parameter that defines the size of the physical sheet on which the job will be printed.

Sheffield unit. The Sheffield unit is a measure of the smoothness of the surface of the paper. The smaller the Sheffield value, the smoother the paper.

side jog bar. A bar on the output stacker that can be adjusted to the width of the paper being used.

signature. Group of pages that will print, fold, cut and bind together. Placement of pages on the signature is determined using a folding dummy.

signature position. The position of the image with respect to the edge of the paper and the leading cut.

Size.   A Properties window Imaging field that shows the compressed size of the selected resident job.

skew.   In printers, the position of paper going through the paper path at a slight angle. Skew is a measure of how well printed lines are aligned to the edges of the paper.

slip sheet inserter.   A device located in the back of the output stacker that contains the slip sheets used to separate print jobs in the output stacker tray.

spindle.   A paper mounting axle or auger in the toner dosing unit.

splicing.   Attaching the leading edge of a new paper roll to the trailing edge of the old paper roll.

splicing tape.   The adhesive-backed tape used to splice (attach) a new paper roll to the old paper roll.

Split.   An edit function used from the Image Disk window to either split a duplex job into two simplex jobs, or to split a collated job into uncollated jobs.

spooling disk.   A disk array on which RIPed jobs can be temporarily stored until the bitmaps are available for printing. This disk is also used to stored RIPed jobs for printing at a later time.

spot color.   Made up of individual colored inks formulated to exactly match a specified color. Used when CMYK process color is unable to produce a reasonable facsimile of the color or when very vivid color is needed. Also used when fluorescent or metallic colors are used.

Stacker Off Line.   A setting used in the Print Sequence window to put the output stacker offline so the keypad on the stacker can be used for manual control.

standard test page.   A PostScript file that is printed to check overall print quality on both the X and the Y side of the page. The test-page file is provided with the printer software.

Standby engine state.   During this engine state, the paper conditioning and fusing systems are turned on and the print engine is ready to print.

Start paper-conditioning state.   The required setpoints for the first and second charge meters have been reached, and you can proceed with printing.

Start web drive.   The step highlighted in the Mount Paper Roll window after the correct paper setting has been specified for the new paper roll.

status bar.   The area at the bottom of the monitor screen that provides informational items.

Stop paper-conditioning state.   The job has printed, and the temperature of the heated roll is saved automatically to be used as the setpoint temperature for the next print job.

Surface Potential.   A window used to determine whether each print station is at its optimum potential for printing, which is approximately -630v.

T

TC measured.   A density-control parameter that displays the actual measured toner concentration (TC).

TC d setpoint.   A density-control parameter used to manually adjust the toner concentration (TC) setpoint of toner in the developer mix.

TC setpoint.   A density-control value to which the actual toner concentration (TC) has to be adjusted.

TED (transfer erase duplex).   The assembly that holds the transfer, erase and duplex corona wires.

temperature control system.   A system that regulates the temperature inside the print tower to 30°C when the print engine is turned off.

temperature measured.   The actual measured temperature of the print tower.

temperature setpoint.   The target value to which the temperature inside the print tower is being controlled.

tested papers.   Papers that have been tested and approved by IBM for use in the printer.

Test frequency.   A Properties window Imaging setting used to specify how often a test sheet should be printed during the printing of one or more jobs in the print queue.

test (stacker) tray.   The top tray on the output stacker. This tray is used for test sheets and for blank sheets generated during the printing process.

test sheet.   A single sheet inserted at specified intervals to check overall print quality during the uninterrupted printing of one or several jobs.

TIFF (tagged image file format).   Digital format for storing scanned images. Also referred to as raster format, as opposed to vector format. TIFF files, when used in DTP work, place only a low-resolution FPO image; the high-resolution data remains on the hard drive.

Toner Concentration Setpoint window.   The window used to monitor the age of the developer.

Toner Containers window. Window used to monitor the level of toner in each toner container and the level of toner waste in the toner waste bottles.

toner dosing system. A system that automatically adds toner back to the development unit.

toner waste. Toner that is removed from a drum by the cleaning station and deposited in a toner waste bottle.

toner waste bottle. Collector for toner that is automatically removed from the drum.

tool bar. Contains icons you can click on to quickly access the most frequently used operator interface functions.

top roller. Roller located at the top of the fixed tower. Directs the paper toward the fuser.

tower-conditioning system. The automatic conditioning of the relative humidity and temperature of the air in the print tower to enhance print quality.

transfer corona. Wire that imparts charge to paper to cause toner to move from the OPC drum surface to paper surface.

transfer test patches. Two patches each of CMYK on control strips that are used to measure and control transfer efficiency (saturation).

Transient paper-conditioning state. The paper is being wound around the heated roll, and the power of the heating lamp is reduced to keep the temperature stable.

trapping. The amount an overprinting color overlaps to prevent white paper showing through gaps caused by normal misregistration. On sheet-fed presses this is typically 0.25pt.

Trial Print. A Properties window Imaging setting used to fine tune and adjust print quality from a trial print before the entire job is printed.

tumble. A page-setup parameter used to rotate the back page 180°. Rotation is cumulative with any rotation specified for orientation.

TWR RH measured. The actual measured relative humidity inside the print tower. The minimum can be 25%, and the maximum can be 37%.

TWR RH setpoint. The target value to which the relative humidity in the print tower is being controlled. The typical setpoint is 32%.

TWR T measured. The actual measured temperature in the print tower. The minimum temperature can be 25°C.

TWR T setpoint. The target value to which the temperature in the print tower is being controlled. This value is 27–30°C.

U

UCR (under color removal). Conversion of neutral color areas into black ink. Reduces the use of CMY inks, improves trapping, and reduces setup time. Generally, UCR is performed during image scanning, but some RIPs perform UCR during processing. Also known as GCR.

W

Warmup paper-conditioning state. Pre-heating is on and the engine is in Standby state. When the temperature of the heated roll is at its required setpoint, the paper web can be started.

warning. A message in black text in the Active Alarms window, which indicates a situation that could eventually cause a problem. An example is a full toner waste bottle.

water-cooling circuit. A circuit that keeps the writing heads at a constant temperature to ensure stable performance.

web. Roll of paper used in web or rotary printing.

web-direction markers. Markers located on a control strip to show the moving direction of the paper web.

web-drive speed roll. A roll at the bottom of the Y tower.

web-drive torque roll. A roll in the fixed tower below the fuser cooling unit.

web tension. (1) The tension of the paper web between the brake system and the speed motor and between the speed motor and the torque motor. (2) The window used to monitor web tension and to adjust the torque of the torque motor.

workspace. The area of the monitor's operator interface screen in which you will work in various windows to perform tasks.

writing-head cleaning tool. A felt-tipped edge tool used to clean the lens of the writing heads.

X

X tower.   The area of the print tower that contains the four print stations for printing the X (front) side of a page. The X tower is located at the end near the paper supply. The side printed by the X tower is face up exiting the printer.

xerography.   Dry printing process using corona-charged photoconductive surfaces to hold latent images that are developed with a dry toner, which is then transferred to paper and fused with heat.

Y

Y tower.   The area of the print tower that contains the four print stations for printing the Y (back) side of a page. The Y tower is located between the X tower and the fixed tower. The side printed by the Y tower is face down exiting the printer.

Numerics

3170.   The machine type of the IBM InfoColor 70 and its predecessor, the IBM 3170 Full Color Digital Printer/Press.

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Readers' Comments — We'd Like to Hear from You

IBM InfoColor 70
Introduction and Planning Guide

Publication No. S544-5333-04

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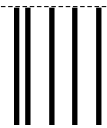Name

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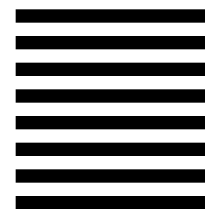S544-5333-04

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