

Infoprint 3000



# Operator's Guide



Infoprint 3000



# Operator's Guide

**Note!**

Before using this information and the product it supports, read the information in "Notices" on page 339.

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## Safety

This publication contains safety notices that warn users of situations that could cause them harm.

Caution notices make users aware of hazards that can cause minor or moderate personal injuries, such as cuts or burns.

Danger notices make users aware of hazards that can cause serious injury or death.



**CAUTION:**

<70> The oiler belt, oiler wick roll, and their environments are *high-temperature* areas. Be very careful when working in these areas.

CAUT0100



**CAUTION:**

<72> As you load forms, be careful to avoid injuries:

The tractor covers are spring-loaded and can pinch if they snap shut unexpectedly.

Moving forms, especially between the transfer station and the fuser entry area, can cause severe paper cuts.

CAUT0102



**DANGER**

<5> High-voltage is present. Use care while working in this area.

DANG0104



**DANGER**

<9> Laser radiation is present. Do not remove this cover when printer power is on.

DANG0108

## Electrical Safety

The printers are inspected and listed by recognized national testing laboratories: Underwriters Laboratories (UL) Inc. in the U.S.A., Canadian Standards Association (CSA) in Canada, and TUV Rheinland. Listing of a product by a national testing laboratory indicates that the product is designed and manufactured in accordance with national requirements intended to minimize safety hazards. Remember, however, that this product operates under conditions of high electrical potentials and heat generation, both of which are functionally necessary.

**Note:** In the U.S.A. and Canada, this product is equipped with a required, country approved plug for the user's safety. Use it in conjunction with a correctly grounded receptacle. In all other countries, the power cable is supplied without a plug. Provide the appropriate plug and compatible receptacle. Understand the electrical standards for your country, and use only an approved plug. Your IBM marketing representative has information on the voltage requirements in your country.

SAFE00ES

## Fire Safety

Because the forms and toner used in the printer can burn, you should take normal precautions to prevent fire. These precautions include common-sense measures, such as keeping potentially combustible materials (for example, curtains and chemicals) away from the printer, providing adequate ventilation and cooling, limiting unattended operation, and having trained personnel available and assigned to the printer.

SAFE00FS

## Lightning Safety

To avoid personal risk, do not install or reconfigure a communication port or a teleport during a lightning storm.

SAFE00LS

## LASER SAFETY

The printers comply with the performance standards set by the U.S. Food and Drug Administration for a Class 1 Laser Product. This means that these printers belong to a class of laser products that does not produce hazardous laser radiation in customer access areas. This classification was accomplished by providing the necessary protective housings and scanning safeguards to ensure that laser radiation is inaccessible or within Class 1 limits.

There are various tool-operated machine covers that should be moved, removed, or replaced only by trained service personnel. There are no operator controls or adjustments associated with the laser.

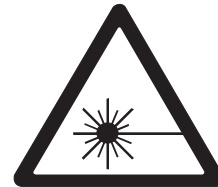


<23> Using controls, making adjustments, or performing procedures other than those specified herein may result in hazardous radiation exposure.

No operator maintenance is required to keep the product in compliance as a Class 1 Laser Product. No adjustments that affect laser operation or power are accessible to the operator.

The following label is located within the front cover of the printer:

**Caution!**  
Laser radiation when open.  
Avoid exposure to beam.



For World Trade printers, the following label is applied next to the above label:

CLASS 1 LASER PRODUCT  
LASER KLASSE 1  
LUOKAN 1 LASERLAITE  
APPAREIL A LASER DE CLASSE1

SAFE00LX

The laser used in the Infoprint 3000 complies with IEC 825-1 and EN 60825. The printer is a Class 1 Laser Product that contains five enclosed Class IIIb InGaAsP lasers with peak power of 10 milliwatts and a wavelength of 635 nanometers. Contained within the printhead, the lasers form scanning beams focused at the photoconductor.

## ENVIRONMENTAL INFORMATION

IBM has established a procedure by which used photoconductor drums can be returned to IBM. Specific instructions and a mailing label appear in the box in which the photoconductor drum is shipped. Third-party servicing companies and customers who are not using IBM service are encouraged to use those procedures. Postage is paid by IBM. Customers using IBM service should have their drums returned by the service representative.

The photoconductor drum may be subject to special disposal requirements in your area. Customers should consult local disposal regulations if they elect not to use the return procedure offered by IBM.

SAFE00EI



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## Preface

This publication is for the Infoprint 3000 Type 3300 Model ES1 and Infoprint 3000 Models ED1/ED2 Advanced Function Printers. You will find the terms Infoprint 3000, Model ES1, and Models ED1/ED2 used throughout this document.

This publication explains how to operate and maintain the Infoprint 3000 printers, including the following models:

- ES1
- ED1/ED2

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## About This Book

This publication contains the following sections:

- “Chapter 1. Introducing the Infoprint 3000” on page 1 contains an overview of the printer.
- “Chapter 2. Operator’s Overview” on page 29 describes the operator’s role in using and maintaining the printer.
- “Chapter 3. Using the Display/Touch Screen” on page 35 describes how to use the Display/Touch Screen and the pull-down menus.
- “Chapter 4. Operating the Printer” on page 61 describes how to operate the printer.
- “Chapter 5. Working With Forms” on page 83 describes loading, threading, and aligning forms as well as adjusting form characteristics.
- “Chapter 6. Taking Care of Problems” on page 143 describes correcting problems related to jams, print quality and intervention messages.
- “Chapter 7. Maintaining the Printer” on page 187 contains step-by-step instructions for maintaining the printer.
- “Chapter 8. Configuring the System” on page 245 contains information and instructions for configuring for the printer.
- “Configuring Host Attachments” on page 261 contains information and instructions for configuring the host attachments.
- “Configuring Preprocessing/Postprocessing Devices/Interfaces” on page 273 contains information and instructions for configuring Preprocessing/Postprocessing Devices/Interfaces.
- “Configuration Work Sheets” on page 277 contains the configuration work sheets.
- “Defining Forms” on page 289 contains information and instructions on defining forms as well as the forms work sheet.
- “Appendix A. Valid Form Lengths in Inches” on page 305 lists the valid forms lengths.
- “Appendix B. Physical System Layouts” on page 307 illustrates the space requirements for each model of the Infoprint 3000.
- “Appendix C. Special Features” on page 311 describes special features available on the Infoprint 3000.
- “Glossary” on page 345 defines terms and acronyms used in the Infoprint 3000 library.

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## How to Use This Book

Depending on your level of knowledge about the printers, you may need to use some chapters more than others:

- **New Operators**

If you have little experience with the printers, begin with the following chapters:

- “Chapter 2. Operator’s Overview” on page 29, which describes the operator’s role in using and maintaining the printers.
- “Functional Areas” on page 9, which describes the parts of the printer, including its switches, controls, and Display/Touch Screens.
- “Chapter 3. Using the Display/Touch Screen” on page 35, which describes and how to use the Display/Touch Screen.
- “Menu Summary” on page 38, which summarizes the functions available from the pull-down menus.

- **All Operators**

If you are experienced with the printers, you probably will not need to refer to this guide for routine procedures. However, this guide may be helpful when you are handling unusual tasks or problems.

The following chapters are organized for easy reference:

- “Chapter 3. Using the Display/Touch Screen” on page 35
- “Chapter 4. Operating the Printer” on page 61
- “Chapter 5. Working With Forms” on page 83
- “Chapter 6. Taking Care of Problems” on page 143
- “Chapter 7. Maintaining the Printer” on page 187

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## Terminology

For definitions of terms used in this publication, as well as other publications in the printer library, see the “Glossary” on page 345.

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## Notation Conventions

The following notation conventions are used throughout this publication:

- Words that appear in messages on a Display/Touch Screen window are shown in COMPUTER print. For example:  
CHANGE DEVELOPER MIX
- The words **SELECT** and **SELECTING** (all capital, bold print) refer to the act of touching the touch sensitive Display/Touch Screen as though you were pressing a switch, choosing an option, or entering data.
- Words that identify switches, indicators, levers, and Display/Touch Screen window names that you will use are shown in **bold** print. For example:  
Press the **Ready** switch.  
**SELECT** the **Configure Printer** procedure window on the Display/Touch Screen.
- New terms are *italicized* where the term is first defined in the publication. For example:  
The term *forms path* refers to the entire route that the forms travel.

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## Pictorial Conventions

Most artwork in this publication shows an Infoprint 3000 Model ES1 printer.

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## Infoprint 3000 Library

The following additional Infoprint 3000 publications are available:

- *Infoprint 3000 Introduction and Planning Guide*, G544-5563, summarizes the Infoprint 3000 functions and describes how to plan for a successful installation.
- *Forms Design Reference for Continuous Forms Advanced Function Printers*, G544-3921, describes the characteristics of forms and special-use media, and describes their effects on printer's performance
- *IPDS Handbook for Printers That Use the Advanced Function Common Control Unit*, G544-3895, which contains technical information about the host-to-printer data stream, and exception reporting.
- *Infoprint 3000 Maintenance Information Manuals*, IBM Part Number 24L4856, which contain technical information about maintaining and repairing the printers.

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## Related Publications

An extensive listing of available publications is included in *Advanced Function Presentation: Printer Information*, G544-3290. For more information about Advanced Function Presentation, refer to *Guide to Advanced Function Presentation*, G544-3876.

Contact your IBM marketing representative for information concerning either the printer, its manuals, or its associated licensed programs.



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## Summary of Changes

The following list is a summary of the changes made in this edition:

- The sections on threading and aligning forms and dealing with jams have been reorganized and rewritten.
- The Infoprint 3000 Printer Specification Summary table has been split into two tables, one for printer specifications and the second for forms specifications.
- The “u” physical system layout has been removed.
- Miscellaneous editorial and nontechnical changes were made throughout the document.



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## Chapter 1. Introducing the Infoprint 3000

### Chapter Overview

This chapter describes the Infoprint 3000 family of printing systems, their components, and their functional areas:

- “Printer Characteristics”
- “Printer Specifications” on page 2
- “System Components” on page 4
- “Duplex Printing Applications” on page 5
- “Simplex and Dual Simplex Printing Applications” on page 8
- “Functional Areas” on page 9

---

## Printer Characteristics

The Infoprint 3000 printers are nonimpact, all-points-addressable printers. The printers each use a laser, electrophotographic print technology, and Advanced Function Presentation (AFP) licensed programs to create high-quality text and graphic printer output.

The printers use continuous-forms in a variety of sizes, styles, and weights, including preprinted forms and some adhesive labels.

**Note: Duplex mode does not support printing on adhesive labels.**

After printing, the forms may be stacked in the printer stacker or processed by an optional postprocessing device.

Nonimpact printing, when combined with all-points addressability, allows graphics and many different type sizes and styles to appear on a single page. The printers can be used for text, image, graphic, optical character recognition (OCR), and bar-code printing. Text, images, and electronic overlays can be placed at any defined point on the page areas on which the printers can print.

## Printer Specifications

Table 1 on page 2 summarizes the specifications for the various printers in the Infoprint 3000 family.

Table 1. Infoprint 3000 Printer Specification Summary

Model	Mode	Resolution (DPI)	Print Speed (IPM)
ES1	Simplex	480 <sup>1</sup> , 600 <sup>1</sup> 480/600 <sup>2</sup>	112/172 <sup>3</sup>
ED1/ED2	Duplex <sup>4</sup>	480 <sup>1</sup> , 600 <sup>1</sup> 480/600 <sup>2</sup>	224/344 <sup>3</sup>
	Dual Simplex <sup>4</sup>	480 <sup>1</sup> , 600 <sup>1</sup> 480/600 <sup>2</sup>	112/172 <sup>3</sup>

**Notes:**

1. Standard resolution (specify feature).
2. Optional feature.
3. Print Speed stated in 1-up mode/2-up mode. (See notes 5 and 6 for more information.)
4. The Print speed for Duplex is the total system speed (2 printers). The Print speed for dual simplex lists individual printer speed (either Printer 1 or Printer 2).
5. 1-up mode (assuming an 8½-inch length page, measured in the forms process direction).
6. 2-up mode (assuming an 11-inch length page, measured in the forms process direction).

**Note:** The Infoprint 3000 operates in simplex and duplex mode, depending on the model selected. (Model ES1 operates only in simplex mode.)

An Advanced Function Common Control Unit (AFCCU) controls the printing system and is attached to each Model ES1 and to the second printer engine in a duplex printing system. The AFCCU is based on the IBM RS/6000 technology and includes an Extended Graphics Adaptor (XGA) touch-screen monitor that is used as a Display/Touch Screen.

Two preprocessing/postprocessing device interfaces (one in each printer), are provided on Models ES1 and ED1. This allows input capabilities and output capabilities beyond the standard forms input source and output stacker in the system printers. All other models are equipped with one preprocessing/postprocessing device interface as standard equipment. Your company can purchase additional interfaces.



## Form Specifications

Table 2. Infoprint 3000 Form Specification Summary

Model	Mode	Basis Paper Weights		Forms Width		Forms Length	
		g/m <sup>2</sup>	lbs	Min. mm (in.)	Max. mm (in.)	Min. mm (in.)	Max. mm (in.)
ES1	Simplex	60-160	16-42	204 (8)	457 (18) <sup>2</sup>	76.2 ± 0.3 (3.0 ± 0.013) <sub>3</sub>	356 ± 0.3 (14.0 ± 0.013) <sub>4, 5</sub>
ED1/ED2	Duplex	60-105	16-28	229 (9)	457 (18) <sup>2</sup>	76.2 ± 0.3 (3.0 ± 0.013) <sub>3</sub>	356 ± 0.3 (14.0 ± 0.013) <sub>4, 5</sub>
	Dual Simplex	60-160	16-42 <sup>1</sup>	204 (8)	457 (18) <sup>2</sup>		

### Notes:

1. The maximum paper weight for duplex printers running in simplex mode should be 160 g/m<sup>2</sup> (42 lb).
2. The maximum print width is 432 mm (17 in.).
3. Forms that are less than 178 mm (7 in.) in length are folded in multiples of 7 in. or greater (that is, forms that are 3.5 in. are folded every 7 in.; forms that are 3 in. are folded every 9 in.). For more information about forms lengths, see “Forms Length and Width Controls” in Chapter 3 and Appendix A “Valid Form Length in Inches” in the *Infoprint 3000 Operator's Guide*.
4. Maximum form length is 356 ± 0.3 mm (14 ± 0.013 in.) when used with the on-board stacker.
5. Maximum form length is 711 ± 0.3 mm (28 ± 0.013 in.) when used with preprocessing and postprocessing devices. To use forms longer than 711 mm (17 in.), the forms length must be enabled under the Special Features option of the Options pull-down menu. Be aware that when longer forms are in use, there can be an impact on performance, especially on more complex printing jobs that can result in printer back-hitching. Additional memory can help minimize this impact. When longer forms are no longer in use, the feature should be disabled for more efficient printer operation. For more information, see Appendix C “Special Features” in the *Infoprint 3000 Operator's Guide*.

---

## System Components

### ***Model ED1***

This model includes:

- Printer engine
- Printer Utility Module (PUM). This unit includes:
  - Operator alert assembly
  - Power control panel
  - System interconnection electronics
  - Preprocessing/postprocessing device interfaces

### ***Models ES1 and ED2***

These models include:

- Printer engine
- Advanced Function Common Control Unit (AFCCU), which includes:
  - Operator alert assembly
  - Power control panel
  - IBM RS/6000 technology processor
  - XGA touch-screen Display/Touch Screen
  - System interconnection electronics and cables
  - Preprocessing/postprocessing device interfaces

### ***Model ED2***

This model also includes:

- Buffer/Flipper Unit.

This unit guides the paper path from the first printer to the second printer in this dual printer configuration. The unit allows the forms to take the following paths from the first printer to the second printer:

- Straight through path (inline) with 180° inversion
  - Left 90° path with 180° inversion
- Urge unit

This power-driven roller assembly is on the floor in the forms input area of the second printer of the system; the continuous forms are threaded through it. It assists in feeding forms from the Buffer/Flipper Unit under the printer into the tractor feed area of the printer.

---

## Duplex Printing Applications

The following configurations support *Duplex* (double-sided) printing.

Duplex printing is achieved by arranging both a Model ED1 and a Model ED2 in series, separated by a Buffer/Flipper Unit. The first printer in the paper path prints one side of a form. The forms then exit the printer through a Buffer/Flipper Unit, which inverts them before threading them through the second printer. The second printer in the paper path prints the other side of the form.

This publication calls the first printer Printer 1 and the second printer Printer 2. Allowable printer system configurations are:

- Inline (see “Inline Configuration for Duplex” on page 6)
- Left 90° angle (see “Left Angle Configuration for Duplex” on page 6)
- ‘h’ with both printers facing the same direction (see “‘h’ Configuration for Duplex” on page 7)

With the inline and left-angle configurations, only a Buffer/Flipper Unit may be between Printer 1 and Printer 2, but no preprocessing or postprocessing devices.

The forms path can be:

- From the forms input area of Printer 1 through to the output stacker of Printer 2
- From the forms input area to a postprocessing device at the output of Printer 2
- From a preprocessing device ahead of Printer 1 through to a postprocessing device at the output of Printer 2.

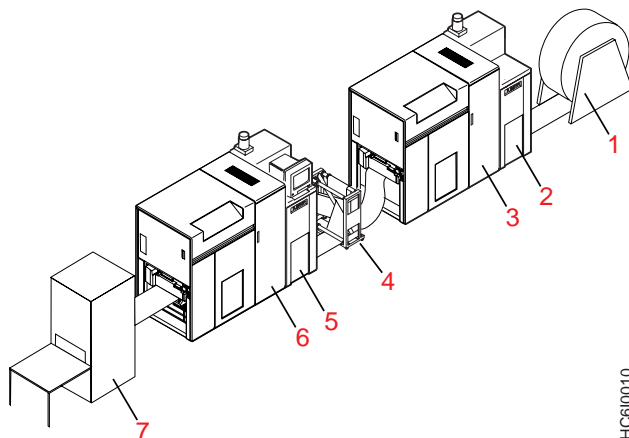
Both printers attach to a host system through the AFCCU. The AFCCU controls both printers simultaneously and is physically attached to Printer 2 in the configuration.

When the Side 2 Verify feature is not enabled, the operator may choose to print verification marks that allow visual confirmation that pages are printed properly back-to-back. See the table item “Verification Marks” on page 253 for more information.

**Note:** In printers with code version 9.608 or higher, the Side 2 Verify feature is enabled at the factory. The operator must have the CE disable the factory-set feature. However, once the factory-set feature has been disabled by the CE, the operator can enable and disable Side 2 Verify as needed.

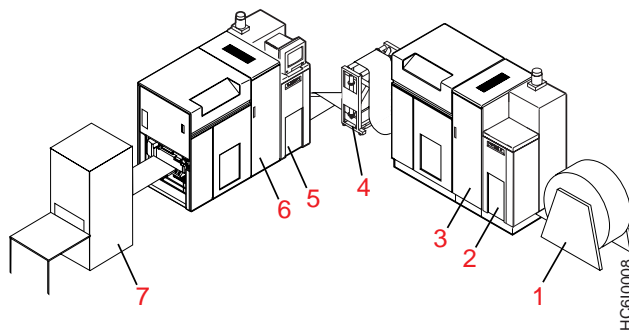
When the Side 2 Verify feature is enabled, Model ED2 automatically checks to ensure that the duplex printing system is properly aligned. Model ED2 also verifies that the printing on both sides of the forms is synchronized. If the data that is printed on Side 2 is not aligned or synchronized with the data that is printed on Side 1, printing stops. An error message also appears on the Display/Touch Screen.

## Inline Configuration for Duplex



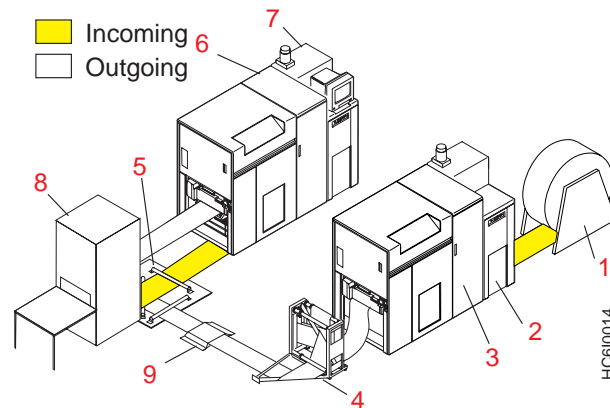
- 1 Optional preprocessing device
- 2 Printer Utility Module (PUM) attached to Printer 1
- 3 Printer 1
- 4 Buffer/Flipper Unit
- 5 AFCCU attached to Printer 2
- 6 Printer 2
- 7 Optional postprocessing device

## Left Angle Configuration for Duplex



- 1 Optional preprocessing device
- 2 Printer Utility Module (PUM) attached to Printer 1
- 3 Printer 1
- 4 Buffer/Flipper Unit
- 5 AFCCU attached to Printer 2
- 6 Printer 2
- 7 Optional postprocessing device

## 'h' Configuration for Duplex



- 1 Optional preprocessing device
- 2 Printer Utility Module (PUM) attached to Printer 1
- 3 Printer 1
- 4 IBM-supplied Buffer/Flipper Unit
- 5 Customer-supplied turnbar/flipper device
- 6 Printer 2
- 7 AFCCU attached to Printer 2
- 8 Optional postprocessing device
- 9 Optional walk-over

---

## Simplex and Dual Simplex Printing Applications

The configuration that is shown in “Left Angle Configuration for Dual Simplex” supports *simplex* (single-sided) printing in the Dual Simplex mode on selected models (see Table 1 on page 2). Both printers in the configuration can run independent simplex applications. The forms path would start at the forms input area or preprocessing device and proceed through to either the printer output stacker or to a postprocessing device.

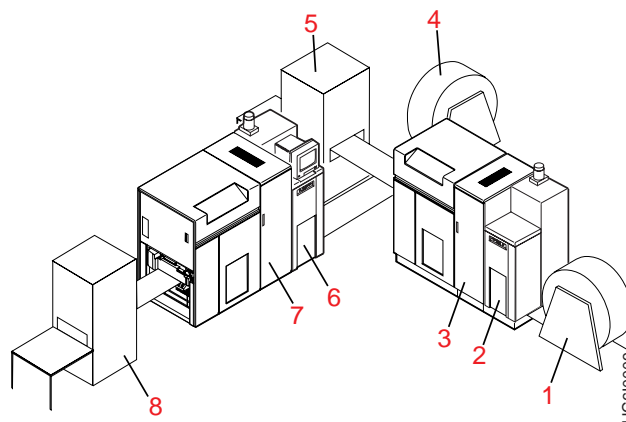
When the printing system is configured as dual simplex and one of the printers is inoperable, the remaining printer can run independently so long as power and connection to the control unit are maintained.

Alternatively, forms can remain threaded continuously through both printers in a duplex physical configuration, but with printing occurring in simplex mode. Printing occurs on only one printer, while the other printer processes blank pages.

**Note:** Each printer can have its own set of preprocessing and postprocessing devices.

Both printers in the configuration attach to a host system through the AFCCU. The AFCCU controls both printers independently and is physically attached to Printer 2 in the configuration.

### Left Angle Configuration for Dual Simplex



- 1 Optional preprocessing device for Printer 1
- 2 Printer Utility Module (PUM) attached to Printer 1
- 3 Printer 1
- 4 Optional preprocessing device for Printer 2
- 5 Optional postprocessing device for Printer 1
- 6 AFCCU attached to Printer 2
- 7 Printer 2
- 8 Optional postprocessing device for Printer 2

---

## Functional Areas

This chapter describes the forms path of the printer. It also provides a graphic overview of the functional areas of the printer, which include:

- Advanced Function Common Control (AFCCU) area
  - Operator alert area
  - Power control panel
  - Display/Touch Screen

### Keep In Mind:

1. The AFCCU is physically attached to a simplex printer or Printer 2 in a duplex or dual simplex configuration.
  2. The Printer Utility Module (PUM) is physically attached to Printer 1 in a duplex or dual simplex configuration. Except for a Display/Touch Screen, the PUM is identical to an AFCCU frame from your perspective.
- Developer area
  - Forms input and transfer station area
  - Printer control panel
  - Transfer station control lever
  - Puller control lever
  - Fuser entry area
  - Stacker area, stacker control panel, and forms length and width controls
  - Rear service area.

## Forms and the Forms Path

*Form* refers to pages on which the printer can print. Forms can be blank paper, preprinted paper, adhesive labels, cards, or any other printable material that meets the required specifications. *Paper* is a specific fiber-based material that is used for forms.

The term *forms path* refers to the entire route that forms travel while they are being processed. The forms path begins in the forms input area and ends in the stacker area. Figure 1 on page 10 shows the forms path for a simplex printer and the major elements within the printer engine. Note that the path looks a bit different if you use preprocessing or postprocessing devices attached to your printer.

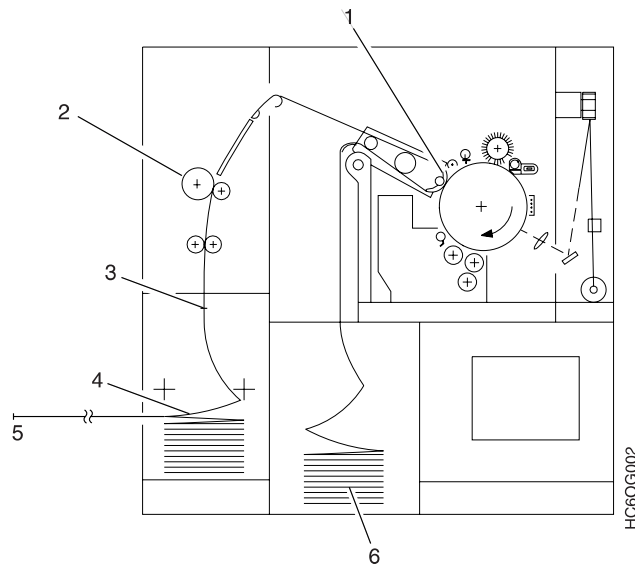


Figure 1. Forms Path Through a Printer Engine

For simplicity, Figure 1 shows a generalized forms path when a printer is being used for simplex printing and is using boxed fan-fold forms.

- 1** Transfer Station
- 2** Fuser
- 3** Stacker Pendulum
- 4** Output Stacker Area
- 5** Postprocessor
- 6** Input Forms Area

- Note the following differences when a printer runs in dual simplex mode, uses forms from a preprocessing device, and has a postprocessing device installed and enabled:

- Forms enter from the right *under* the printer to the urge unit and then move up through the Forms Input area (**6**).
- The stacker is disabled, and forms exit the printer to the left directly to the postprocessing device (**5**).

- Note the following differences when you use a printer for duplex or simplex printing:

- If the printer is Printer 1 in the configuration, the stacker is disabled. The forms exit the printer to the left from the Output Stacker Area (**4**) directly to the Buffer/Flipper Unit.

If a preprocessing device is installed, the forms enter from the right under the printer to the urge unit and then move up through the Forms Input area (**6**).

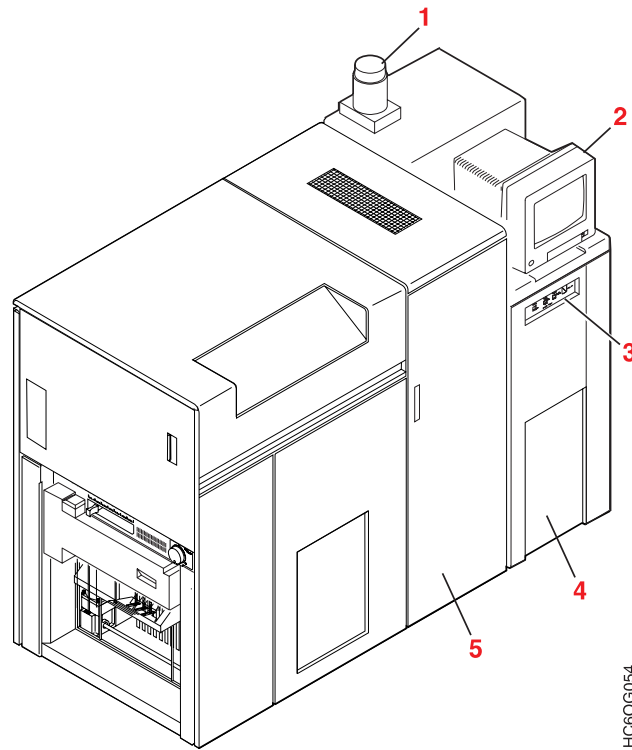
- If the printer is Printer 2, the forms enter from the right under the printer through an Urge Unit that is placed on the floor in the Forms Input area (**6**). The forms then move up through the Forms Input area.

If a postprocessing device is installed and enabled, the stacker is disabled, and the forms exit the printer to the left directly to the postprocessing device (**5**).



## Control Unit Area

The Display/Touch Screen, power control panel, and the operator alert assembly are in the control unit area.

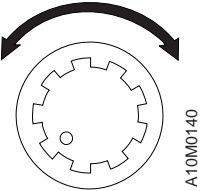
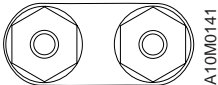


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- 1 Operator Alert Assembly
- 2 Display/Touch Screen
- 3 Power Control Panel
- 4 AFCCU Frame in a simplex printer or in Printer 2 of a duplex configuration or Printer Utility Module (PUM) Frame in Printer 1
- 5 Printer Engine Frame

Operator Alert Area

The following figure shows the controls on the Operator Alert Area, which is on the base of the Operator Alert Assembly.

Using This Control:	Does This:
<div>Operator Alert Assembly Volume Control</div> <div></div>	Adjusts the volume of the operator alert assembly.
<div>External Connections for Customers</div> <div></div>	Provides customers with a set of external contacts to allow the hook-up of an alert signal of the customer's choice.

Display/Touch Screen

The Display/Touch Screen provides you with a touch-sensitive interface to the printer. “Chapter 3. Using the Display/Touch Screen” on page 35 describes it in detail.

Power Control Panel

On Printer 1 of a duplex system, the Power Control Panel provides power control for the Printer Utility Module (PUM) frame and the printer engine. On Printer 2 of a duplex system and on a simplex printer, the Power Control Panel provides *direct* power control for the AFCCU frame and the printer engine. The Power Control Panel also provides *remote* power control for Printer 1 in a duplex printing system.

Control Unit Power	<div><input type="checkbox"/> Remote</div> <div><input type="checkbox"/> Local</div>	<div><input type="checkbox"/> Power On</div>	<div><input type="checkbox"/> Power Off If In Local</div>	<div><input type="checkbox"/> Unit Emergency</div> <div><input checked="" type="checkbox"/> Power Enable</div> <div><input type="checkbox"/> Power Off</div>
Printer Power	<div><input type="checkbox"/> Remote</div> <div><input type="checkbox"/> Local</div>	<div><input type="checkbox"/> Power On</div>	<div><input type="checkbox"/> Power Off If In Local</div>	

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**Note:** Although the switches are labeled “Control Unit” on this panel in the PUM frame of Printer 1, these switches control the power in the PUM frame, not the AFCCU frame attached to Printer 2.

Using This Control:	Does This:
<b>Control Unit Local/Remote Switch</b>	<p>Establishes where control unit power is controlled.</p> <p><b>On Printer 1</b> - When this switch is in the Local position, the PUM is powered on and off by the <b>Control Unit Power On</b> and the <b>Control Unit Power Off if in Local</b> switches. In the Remote position, the PUM is powered on and off by Printer 2 control unit power controls.</p> <p><b>On simplex printers and Printer 2 of a duplex configuration</b> - When this switch is in the Local position, the AFCCU is powered on and off by the <b>Control Unit Power On</b> and the <b>Control Unit Power Off if in Local</b> switches. In the Remote position, the AFCCU is powered on and off by the controlling computer system.</p>
<b>Printer Local/Remote Switch</b>	<p>Establishes where printer power is controlled. When this switch is in the Local position, the printer is powered on and off by the <b>Printer Power On</b> and the <b>Printer Power Off if in Local</b> switches. In the Remote position, the printer is powered on and off by the <b>Control Unit Power On</b> and <b>Control Unit Power Off If In Local</b> switches on this panel.</p>
<b>Control Unit Power On Switch</b>	Powers on the AFCCU frame or the PUM frame when the <b>Control Unit Local/Remote</b> switch is set to Local.
<b>Printer Power On Switch</b>	Powers on the printer when the <b>Printer Local/Remote</b> switch is set to Local.
<b>Control Unit Power Off If In Local Switch</b>	Powers off the AFCCU when the <b>Control Unit Local/Remote</b> switch is set to Local.
<b>Printer Power Off If In Local Switch</b>	Powers off the printer when the <b>Printer Local/Remote</b> switch is set to Local.
<b>Emergency Power Off Switch</b>	<p><b>On Printer 1</b> - When set to Power Enable, the PUM and printer engine can be powered on by Local or Remote control. Power Off does an emergency shutdown.</p> <p><b>On simplex printers and Printer 2 of a duplex configuration</b> - When set to Power Enable, the AFCCU and printer engine can be powered on by Local or Remote control. Power Off does an emergency shutdown. All power is removed from the system.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p><b>Attention!</b> Using the <b>Unit Emergency Power Off</b> switch can cause loss of data and hardware problems; therefore, you should use it <b>only in an emergency</b>.</p> </div>

## Developer Area

You add toner and developer mix to the printer in the developer area. Table 3 on page 15 describes the controls.

You add toner by placing a new toner cartridge (1) in the developer area next to the Printer Control Panel.

You add developer mix through the developer mix inlet (2). The developer drain lever (3), which is marked with a **B** label, opens and closes the developer drain. The developer run push-button (4), which is marked with an **A** label, causes new developer mix to move from the developer mix inlet into the developer.

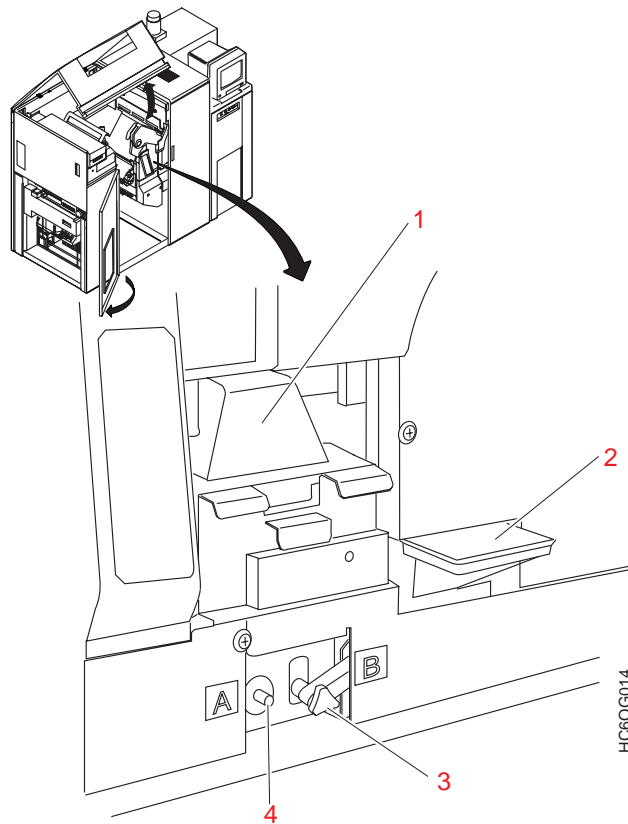


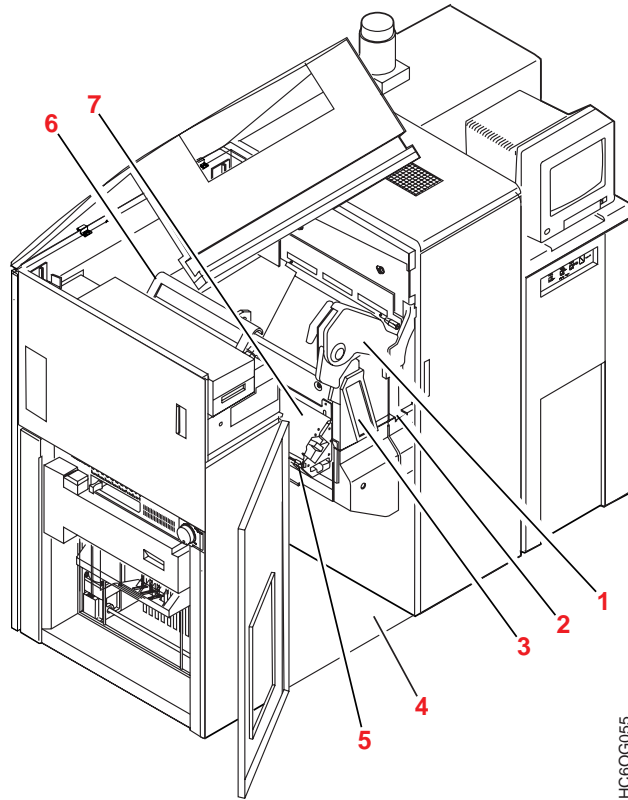
Table 3. Developer Area Controls

Using This Control:	Does This:
<b>Toner Cartridge</b> <b>1</b>	Contains toner for the toner hopper.
<b>Developer Mix Inlet</b> <b>2</b>	Supply opening for adding developer mix to the developer.
<b>Developer Drain Lever</b> <b>3</b>	Starts the developer mix drain process to move developer mix from the developer into an external container for disposal.
<b>Developer Run push-button</b> <b>4</b>	Starts the developer mix load process to move developer mix from the developer inlet into the developer; also aids in removing used developer mix from the developer.

## Forms Input and Transfer Station Area

You load forms that are ready for processing into the printer at the forms input area. The developer mix bottle and drain hose are also in the forms input area.

In the transfer station area, print images are transferred from the photoconductor drum to the forms that are traveling through the printer. “Printer Control Panel” on page 17 describes the printer control panel in detail.



- 1 Transfer station
- 2 Developer area
- 3 Printer control panel
- 4 Forms input area
- 5 Static brushes
- 6 Tension arm
- 7 Splicing table

## Printer Control Panel

The printer control panel is just below the transfer station. Table 4 describes its controls.

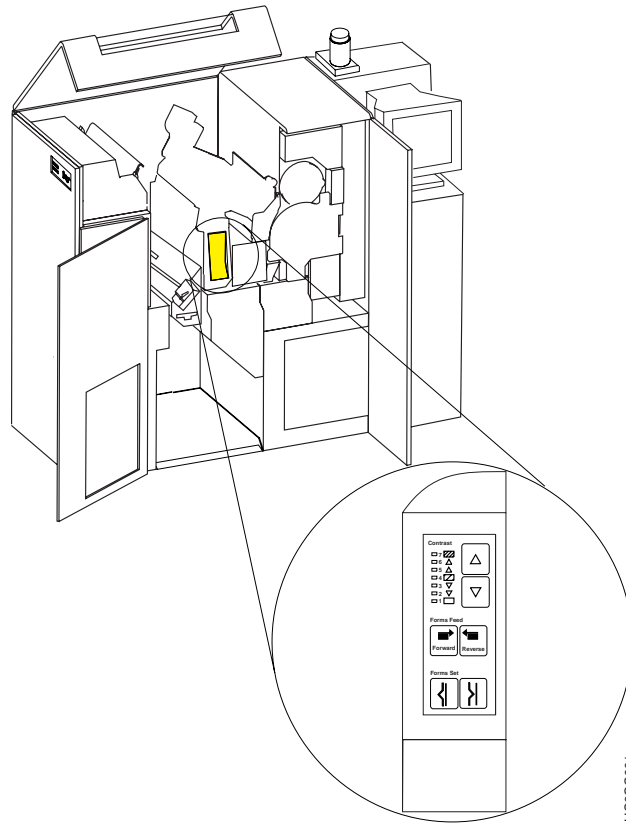


Table 4. Printer Control Panel

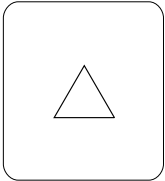
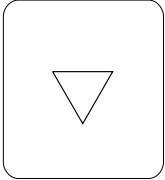
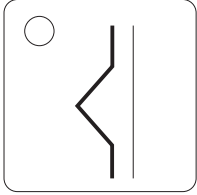
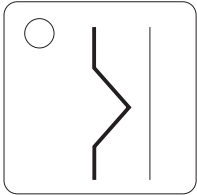
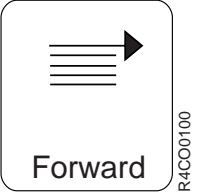
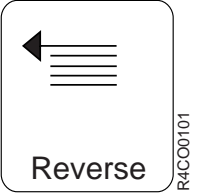
Using This Control:	Does This:
<p><b>Darker Contrast Control Key</b></p>  <p>A23O0051</p>	<p>Adjusts print contrast from lighter (1) to darker (7). The current setting is marked by an LED.</p> <p>Using this key <u>temporarily</u> overrides the contrast value that was set when the form was loaded. The value set when the form was defined appears on the control panel LED unless it is overridden.</p>
<p><b>Lighter Contrast Control Key</b></p>  <p>A23O0052</p>	<p>Adjusts print contrast from darker (7) to lighter (1). The current setting is marked by an LED.</p> <p>Using this key <u>temporarily</u> overrides the contrast value that was set when the form was loaded. The value set when the form was defined appears on the control panel LED unless it is overridden.</p>

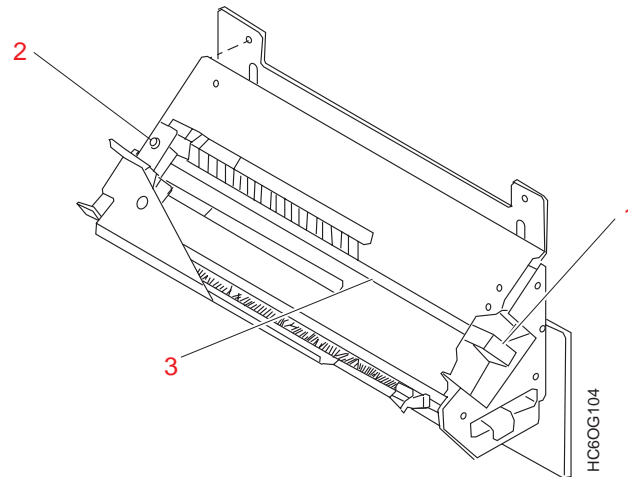
Table 4. Printer Control Panel (continued)

Using This Control:	Does This:
<p><b>Forms Set Left Fold</b></p> 	<p>Indicates that the first fold perforation below the slots on the input forms guide is a left fold. If the indicator displays the opposite fold direction or no fold direction, press the appropriate key to change the setting.</p> <p><b>Note:</b> Use this control only for fan-fold forms that are stacked at the printer stacker. If the control is not set correctly, the stacker jams.</p>
<p><b>Forms Set Right Fold</b></p> 	<p>Indicates that the first fold perforation below the slots on the input forms guide is a right fold. If the indicator displays the opposite fold direction or no fold direction, press the appropriate key to change the setting.</p> <p><b>Note:</b> This control is used only for fan-fold forms that are stacked at the printer stacker. If the control is not set correctly, the stacker jams.</p>
<p><b>Forms Feed Forward</b></p> 	<p>Moves the forms toward the transfer station and stacker area. Forms in the forms path between the transfer station and the fuser are not fused.</p>
<p><b>Forms Feed Reverse</b></p> 	<p>Moves the forms away from the transfer station into the input bin.</p> <p><b>Note:</b> When you use this function, it may be necessary to press the Puller Control Lever to release pressure on the forms in the fuser area. This can prevent a down condition of the tension arm and tearing or damage of the forms.</p>



## Splicing Table

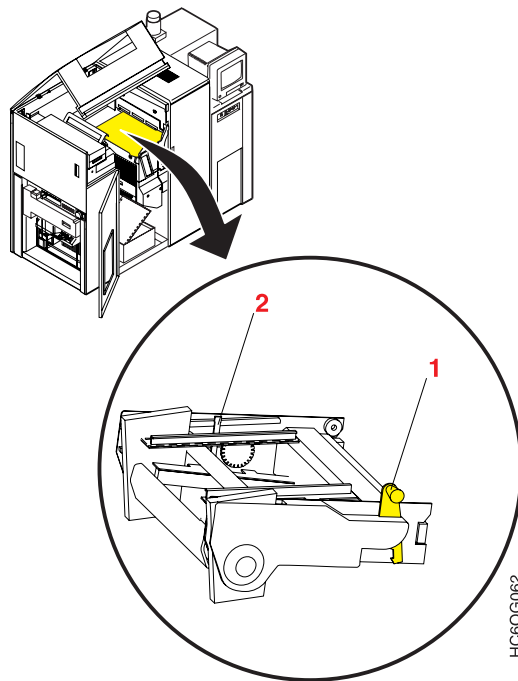
The splice lever and the moveable rear guide pins are on the splicing table in the input area. Splicing forms together allows a job to continue with a new supply of the same type forms.



Using This Control:	Does This:
<b>Splice Lever (Vacuum Control)</b>  <b>1</b>	Activates the splicing table vacuum. When the splice lever is set to <b>Splice</b> , vacuum is present. The vacuum holds the splicing tape and forms on the splicing table. When the splice lever is set to <b>Run</b> , no vacuum is present on the splicing table.
<b>Moveable Rear Guide Pins</b>  <b>2</b>	Holds the rear tractor holes of forms during splicing. You can change the position of these guide pins to match the form size, as indicated by the form-width measurements marked on the splicing table.
<b>Tape Slot</b>  <b>3</b>	Holds the splicing tape in place during splicing. When the splice lever is set to <b>Splice</b> , the splicing table vacuum holds the splicing tape on the slot.

## Transfer Station Control Lever and Tractor Control Levers

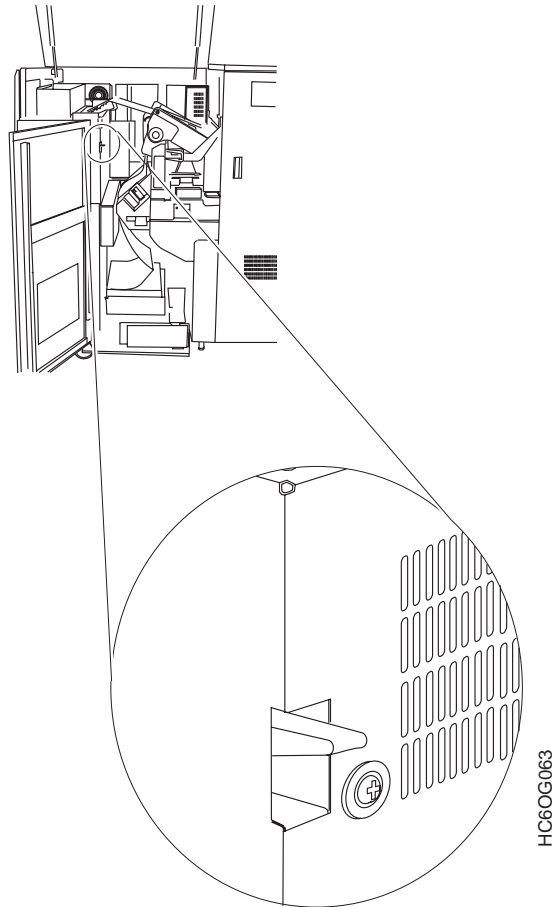
The transfer station control lever and the tractor control knob are on the transfer station frame.



Using This Control:	Does This:
<b>Transfer Station Control Lever</b>  <b>1</b>	<p>Releases the transfer station latch and opens the transfer station.</p> <p>To open the transfer station, you move the lever to the <i>left</i> and lift the transfer station in a <i>counterclockwise</i> direction.</p> <p>To close the transfer station, you lower the transfer station in a <i>clockwise</i> direction. You then move the lever to the left and press down on the transfer station to latch it in place.</p> <p>During printing, the transfer station should be firmly latched in the closed position.</p>
<b>Tractor Control Levers</b>  <b>2</b>	<p>Allow you to change the distance between the front and rear tractors. When you move the levers to the left, the tractors are free to move forward or backward to the required form width. Release the lever when you have reached the correct distance.</p> <p>A scale to the right of the tractors allows you to preset the tractors to the closest approximate setting before you load the forms.</p>

## Puller Control Lever

The puller lever is on the left side of the input area. When you press the lever, pressure is released on the scuff and backup rollers inside the fuser area. The lever is spring-loaded, so pressure returns to the scuff and backup rollers when you release the puller lever.



## Fuser Entry Area

After they receive print images, the forms pass through the fuser entry area toward the fuser.

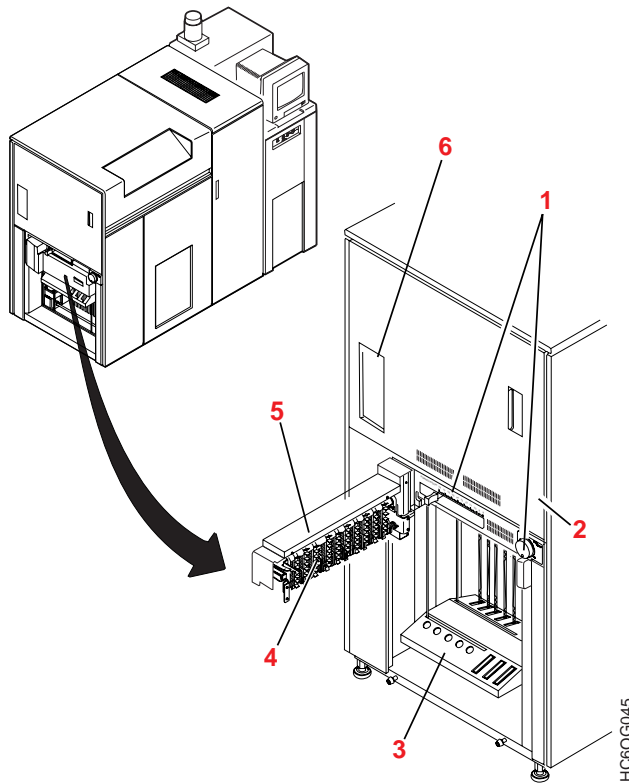
In the fuser area, heat and pressure from the fuser heat-roll bond the print images onto the forms.

## Stacker Area

Printed and fused fan-fold forms leave the fuser area and are refolded in the stacker area. “Stacker Control Panel” on page 23 and “Forms Length and Width Controls” on page 25 describe the stacker area controls in detail.

**Note:** Roll-feed forms do not use the stacker area. They require a postprocessor.

The pendulum is inside the stacker area, above the stacker table. The swinging of the pendulum helps the forms to refold correctly.



- 1 Forms length and width controls
- 2 Stacker end cover
- 3 Stacker table
- 4 Finger belts
- 5 Stacker gate (open)
- 6 Stacker control panel

Stacker Control Panel

The stacker control panel is just above the stacker. The controls allow you to raise and lower the stacker table, stop the movement of the stacker table, advance the forms, and select the type of form being used. The panel also indicates with lights the length of the forms being used, which is set by the Forms Length Control (see “Forms Length and Width Controls” on page 25).

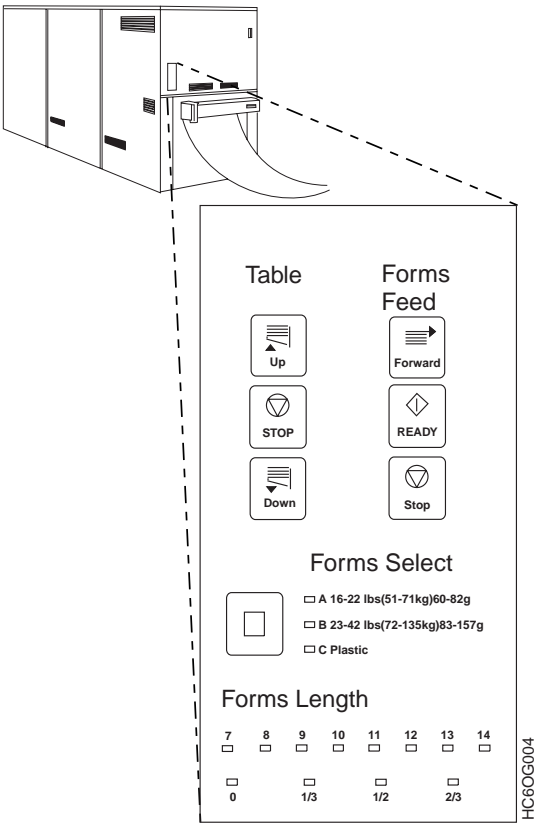


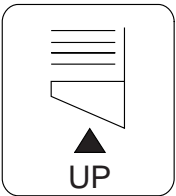
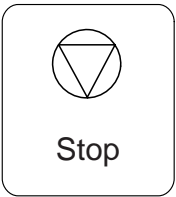
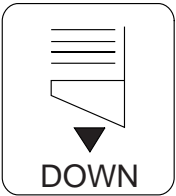
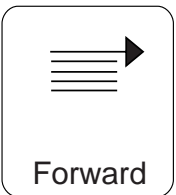
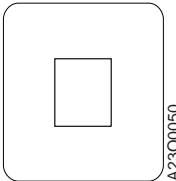
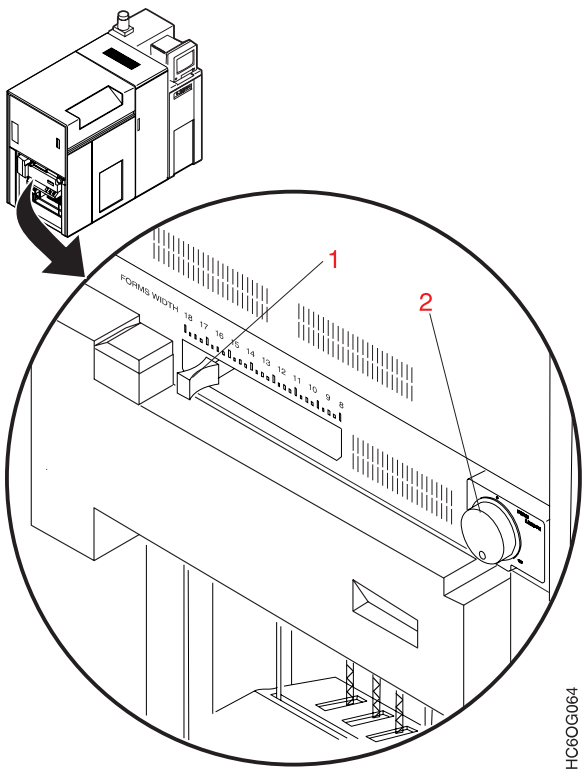


Figure 2. Stacker Control Panel

Using This Control:	Does This:
<div> READY</div> <div>A09M0332</div>	Makes the complete system (both printers) Ready when the printing system is in duplex mode, or makes the individual printer Ready when the system is in dual simplex mode. If pages are waiting to be printed and the system or printer is online to the host, printing begins.
<div> Stop</div> <div>R44C00108</div>	Finishes the page that is currently being printed and makes the printing system (both printers) Not Ready in duplex mode or the individual printer Not Ready in simplex mode.

Using This Control:	Does This:
 <p>R4CO0104</p>	Moves the stacker table up.
 <p>R4CO0108</p>	Stops the movement of the stacker table.
 <p>R4CO0105</p>	Moves the stacker table down.
<b>Forms Feed</b>  <p>R4CO0100</p>	<p>Advances the forms to allow them to stack with the original folds at the perforations.</p> <p><b>Note:</b> You use the NPRO (non-process run-out) push-button on the Display/Touch Screen to advance the forms for separation.</p>
<b>Forms Select</b>  <p>A23O0050</p>	<p>This push-button is inactive. Use “Changing the Forms-Based Printer Adjustments” on page 134 to adjust the fusing temperature and the amount of fuser oil used during printing.</p>

# Forms Length and Width Controls



Using This Control:	Does This:
<b>FORMS WIDTH</b> 1	Increases or decreases the stacker width setting. You can set this lever from 8 to 18 inches in increments of $\frac{1}{4}$ inch.
<b>FORMS LENGTH</b> 2	<p>Increases or decreases the stacker length setting. You can set the forms length from 7 to 14 inches. The length increases or decreases in increments of one-third and one-half inch. You turn the knob <i>clockwise</i> to increase the forms length. You turn the knob <i>counterclockwise</i> to decrease the forms length.</p> <p>The length you set with the FORMS LENGTH knob is indicated by the LEDs on the Stacker Control Panel.</p>

## Stacker Height Control

The stacker height control is behind the front left cover. This control allows you to control the height (and weight) of the printed output stack. Raising the stacker height shortens the height of the output stack. While this reduces the weight of the output stack, it also requires you to empty the stacker more often. For more information on using this control, see “Adjusting the Stacker Table Height” on page 135.

**Note:** Use this control only for fan-fold forms, not for roll-feed forms.

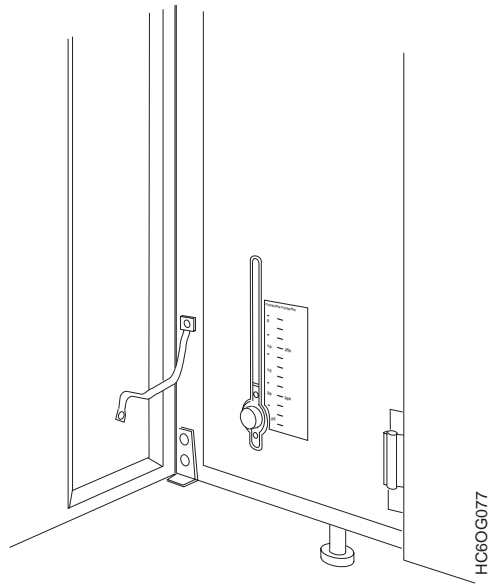


Figure 3. Stacker Height Control

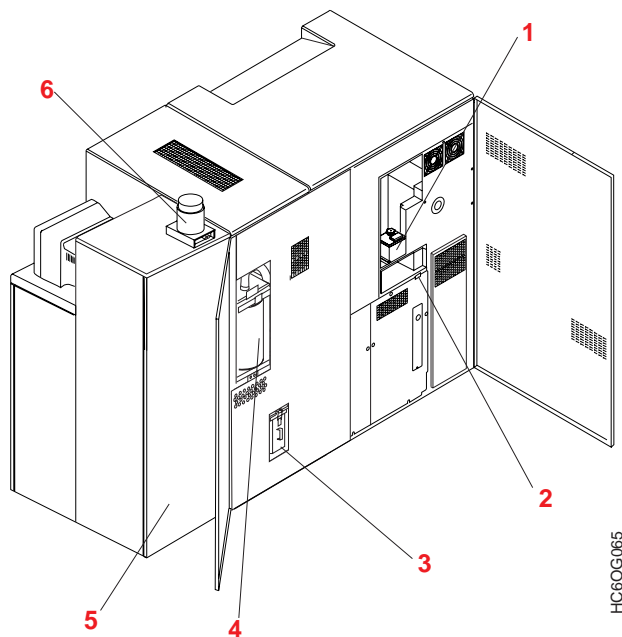


## Rear Service Area

The toner collector, fine filter, usage meter, and fuser oil reservoir are in the rear service area. The preprocessing/postprocessing device interface cable connection area is located behind the rear cover of either the AFCCU frame or the PUM frame.

Note that the preprocessing/postprocessing device interface cable connection area is the same on the AFCCU frame of the following:

- A simplex printer
- Printer 2 of a duplex or dual simplex configuration
- Or the PUM frame on Printer 1.



- |          |  |
|----------|--|
| <b>1</b> | Fuser oil reservoir  |
| <b>2</b> | Usage meter  |
| <b>3</b> | Toner collector  |
| <b>4</b> | Fine filter  |
| <b>5</b> | Pre/Postprocessor device cable connection area (behind rear cover) |
| <b>6</b> | Operator alert assembly  |



---

## Chapter 2. Operator's Overview

### Chapter Overview

This chapter provides an overview of the operator's responsibilities and tasks.

- "Operator Responsibilities"
- "Normal Operation (Ready Status)" on page 31
- "Operator Intervention (Not Ready Status)" on page 32
- "Service Call Procedure" on page 33

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## Operator Responsibilities

Table 5 summarizes the responsibilities of the operator.

*Table 5. Operator Responsibilities*

What to Do:	When to Do It:	Where to Find More Information:
Power on/off the printer and enable/disable attachments	As necessary	"Controlling the System Power" on page 61 "Enabling and Disabling Attachments" on page 70
Clean all functional areas of the printer	<ul style="list-style-type: none"><li>• Once per day</li><li>• Before and after printing adhesive labels</li></ul>	"Cleaning the Printer" on page 192
Define and load forms	As necessary	"Defining Forms" on page 289 "Loading Forms (Simplex or Dual Simplex Mode)" on page 83 "Loading Forms (Duplex Mode)" on page 97
Thread forms (duplex mode), ensure proper form alignment, and verify side 2 printing	When loading new forms, after a power on or restart, and after any machine-detected errors	"Threading and Aligning Forms" on page 106. Also see "Verification Marks" on page 253.
Change mode from duplex to dual simplex, or dual simplex to duplex  Requires a key operator	As necessary	Change the "Printer Mode" using "Switching Printer Modes (Dual Simplex/Duplex)" on page 80
Empty stacker	As necessary	"Unloading the Stacker" on page 136
Check print quality and print samples	<ul style="list-style-type: none"><li>• At the start of every shift</li><li>• Before and during any important jobs</li></ul>	"Checking Print Quality" on page 133
Adjust the print position	As necessary	"Adjusting the Print Position" on page 120

Table 5. Operator Responsibilities (continued)

What to Do:	When to Do It:	Where to Find More Information:
Replenish and check supplies	As indicated by messages on the Display/Touch Screen of the affected printer	"Adding Fuser Oil" on page 205 "Changing the Toner Cartridge" on page 208 "Checking the Toner Collector" on page 212 "Changing the Toner Collector" on page 214 "Changing the Developer Mix" on page 217 "Checking the Fine Filter" on page 226 "Changing the Fine Filter" on page 227
Clear forms jams and errors	As indicated by messages on the Display/Touch Screen	"Recovering from a Forms Jam" on page 172 "Responding to Messages" on page 143 "Chapter 6. Taking Care of Problems" on page 143
Run traces Requires a key operator	As requested by the system programmer or service representative	"Running Traces" on page 177
Change printer configuration Requires a key operator	As requested by the system programmer or service representative	"Changing the Language of Messages" on page 246 "Configuring the Printer" on page 246 "Configuring Host Attachments" on page 261 "Configuring Preprocessing/Postprocessing Devices/Interfaces" on page 273
Clean the oil belt	Once each week	"Cleaning the Oil Belt" on page 230
Order supplies	As necessary	"Ordering Supplies" on page 190
Report printer usage	End of every month	"Reporting Printer Usage" on page 78
Switch print resolution	As requested by system operator, depending on the type of job being submitted <b>Note:</b> Not all Infoprint 3000 models have this capability.	"Switching Print Resolution" on page 82

---

## Normal Operation (Ready Status)

Before the printer can begin printing, it must be in *Ready status*. The printer is in Ready status when all of the following conditions have been met:

- The printer is powered on and ready.
- The fuser is warmed up and the printhead is ready.
- The initial microcode load (IML) sequence is complete on the system control unit.
- The Thread/Align procedure has been successfully completed for duplex mode operation.
- The transfer station and all gates are closed and latched.
- All supplies are loaded.
- No errors are present.
- Host attachments are enabled.
- All enabled preprocessing and postprocessing devices are powered on and ready.
- The **Ready** push-button on the Display/Touch Screen main window has been selected.

When the printer is operating normally, the following happens:

- In simplex mode, forms move:
  1. From the preprocessor or forms input area
  2. Through the transfer station and fuser
  3. Into the stacker or postprocessor area.
- In duplex mode, forms continue:
  1. Past the stacker area of Printer 1 through the Buffer/Flipper Unit
  2. Into the Urge Unit in the forms input area of Printer 2, through the transfer station and fuser
  3. Into the stacker or postprocessor area of Printer 2.
- If you are using the on-board stacker, the stacker table slowly lowers as it fills.
- The word **Receiving** appears on the Display/Touch Screen. When **Receiving** is on the screen, data is being received from the controlling computer system.
- The Display/Touch Screen windows present messages.

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## Operator Intervention (Not Ready Status)

When normal operation is interrupted, the printer goes into a *Not Ready* status. **SELECTING** the **Stop** push-button on the Display/Touch Screen window can cause a Not Ready status.

In addition, whenever the printer detects an Out of Supplies, Intervention Required, or Printer Error condition, it places itself in Not Ready status. A message also appears on the Display/Touch Screen.

- **Out of Supplies** messages indicate that the printer needs basic supplies service. For some supplies, you can temporarily bypass this message and continue processing; other supplies require you to replace them immediately.
- **Intervention Required** messages indicate that the printer needs basic service that involves handling forms or checking on mechanical conditions, such as an open gate. You must handle all messages of this type before printing can continue.
- **Printer Error** messages indicate that the printer or the control unit has a hardware problem, such as a forms jam or a component failure. Processing stops so that you can correct the problem, or, if necessary, call for service. You can postpone action for some messages of this type; others you must handle immediately. Some printed pages may be lost or damaged because of printer errors.

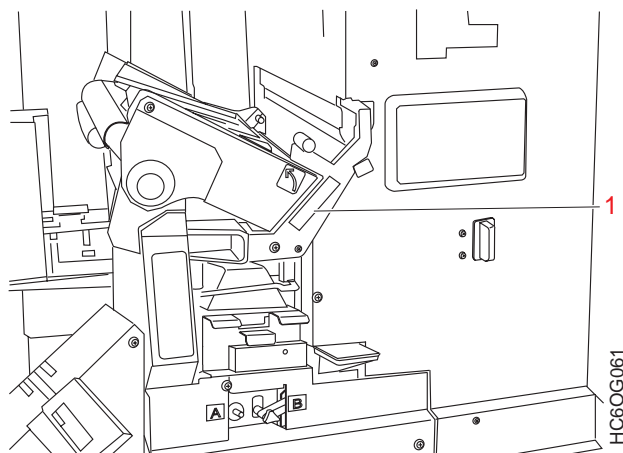
See “Responding to Messages” on page 143 for more information about handling messages. See “Chapter 6. Taking Care of Problems” on page 143 and “Chapter 7. Maintaining the Printer” on page 187 for more information about specific recovery procedures.

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## Service Call Procedure

Use this procedure only when you have tried all of the operator actions that are described in the error message or listed in this book.

1. Collect information about the printer system, including the machine type, model number, and serial number. This information is on a label (1) behind the center front cover, above the toner cartridge, on the diagonal frame of the transfer station. You will be asked for this information when you place the service call.



2. Collect information that is related to the problem. The service representative always needs the following information:
  - The number and exact text of each message listed in the order of their appearance on the Display/Touch Screen
  - A description of the forms that are used (size, weight, adhesive labels, and preprinted forms).

Also, the following optional information may be useful:

- A description of the application that was running
  - A description of the operating environment
  - A summary of all the operator actions that were taken
  - Print samples.
3. Follow your site procedures for reporting problems. For example, you may need to notify the shift supervisor or the system programmer before you request a service call.





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## Chapter 3. Using the Display/Touch Screen

### Chapter Overview

This chapter describes the Display/Touch Screen windows, their associated components, and the Infoprint 3000 menu selections:

- “Using the Display/Touch Screen in Duplex and Dual Simplex Modes”
- “Display/Touch Screen Windows” on page 36
- “Menu Summary” on page 38
- “Keypad, Keyboard, and Hexpad Windows” on page 49
- “Symbols and Visual Cues” on page 51
- “Selection Devices on the Display/Touch Screen Windows” on page 53
- “Control Procedures” on page 55
- “Adjusting the Display/Touch Screen Monitor” on page 58

These windows are similar to those that are used in OS/2 and other graphical environments.

The Display/Touch Screen is touch-sensitive. To interact with it, you touch the screen as though you were pressing a push-button switch, making a selection from a list, or entering data on a keyboard.

The graphics in this book that depict the Display/Touch Screen do not match the actual windows in every detail. The windows on your Display/Touch Screen have a title bar at the top that is not shown in this book.

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### Using the Display/Touch Screen in Duplex and Dual Simplex Modes

In duplex mode, the two printers work as one logical printer and are controlled from a single Display/Touch Screen.

In dual simplex mode, each physical printer works independently of the other. The monitor has two logical Display/Touch Screens, one for controlling each printer. To switch from one printer to the other, select the **Next Printer** push-button on the Main Window.

**Note:** Although most of the artwork in this book shows a Display/Touch Screen that is in duplex mode, the simplex mode Display/Touch Screen looks virtually the same.

## Display/Touch Screen Windows

Figure 4 shows a sample Display/Touch Screen window and its components.

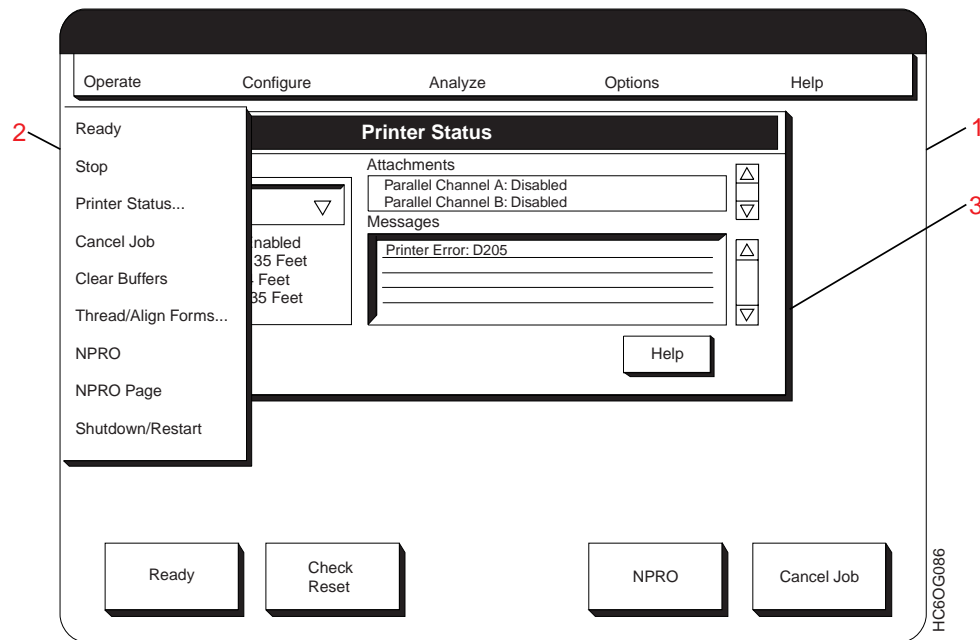


Figure 4. Display/Touch Screen Window Components

### (1) Main Window

The Main Window always appears on the Display/Touch Screen. All of the other pull-down menus, procedure windows, keyboard and keypad windows, and pop-up windows appear on top of it.

The Main Window contains the following:

- A Title Bar, which lists the name of the printer and the current authorization level of Key Operator or Customer Engineer.
- A Menu Bar, which lists the five pull-down menus you can use (**Operate**, **Configure**, **Analyze**, **Options**, and **Help**).
- Push-buttons, which let you access frequently-used procedures.

**Ready/Stop** Acts as a toggle between **Ready** and **Stop**, depending on the current state of the printer or printing system. **Ready** makes the complete system (both printers) Ready when it is in duplex mode, or makes the individual printer Ready when the system is in dual simplex mode. If pages are waiting to be printed and the system or printer is online to the host, printing begins.

**Stop** finishes the page that is currently printing. It then makes the complete system (both printers) Not Ready in duplex mode, or the individual printer Not Ready in simplex mode.

**Check Reset** Informs the system that the error has been corrected and can return to the Ready status. This push-button is not active when the printer or printing system is in Ready mode.

<b>Next Printer</b>	Switches from one simplex printer main window to the other simplex printer main window. This push-button is available only in dual simplex mode.
<b>Cancel Job</b>	Lets you cancel the job currently being printed. In duplex mode, both system printers must be in a Not Ready state to cancel a job. In simplex mode, only the individual printer must be in a Not Ready state. See “Canceling a Job” on page 73 for more information.
<b>NPRO</b>	Moves forms forward through the forms path. See “Using the NPRO and NPRO Page Functions to Advance Forms” on page 126 for more information about the NPRO function.

## (2) Pull-Down Menu

A pull-down menu appears when you select a choice on the Main Window Menu Bar. The menu contains a list of functionally-grouped procedures. Figure 4 on page 36 shows the pull-down menu that you see if you **SELECT Operate** from the Main Window Menu Bar.

## (3) Procedure Window

A procedure window appears when you select a procedure from a pull-down menu. A procedure window provides you with all of the lists, options, and push-buttons you need to accomplish a defined procedure.

Figure 4 on page 36 shows the procedure window you see when you select the **Printer Status...** procedure from the **Operate** pull-down menu.

Figure 5 on page 39 shows all pull-down menu procedures. It also shows which pull-down menu you use to access each procedure. Shading indicates the user authorization level that is required of each procedure. “Menu Summary” on page 38 summarizes all of the functions available from the pull-down menus.

---

## Menu Summary

The following sections summarize the functions available from the printer pull-down menus.

Figure 5 on page 39 shows all pull-down menu procedures. It also shows which pull-down menu you use to access each procedure. Shading indicates the user authorization level that is required of each procedure.

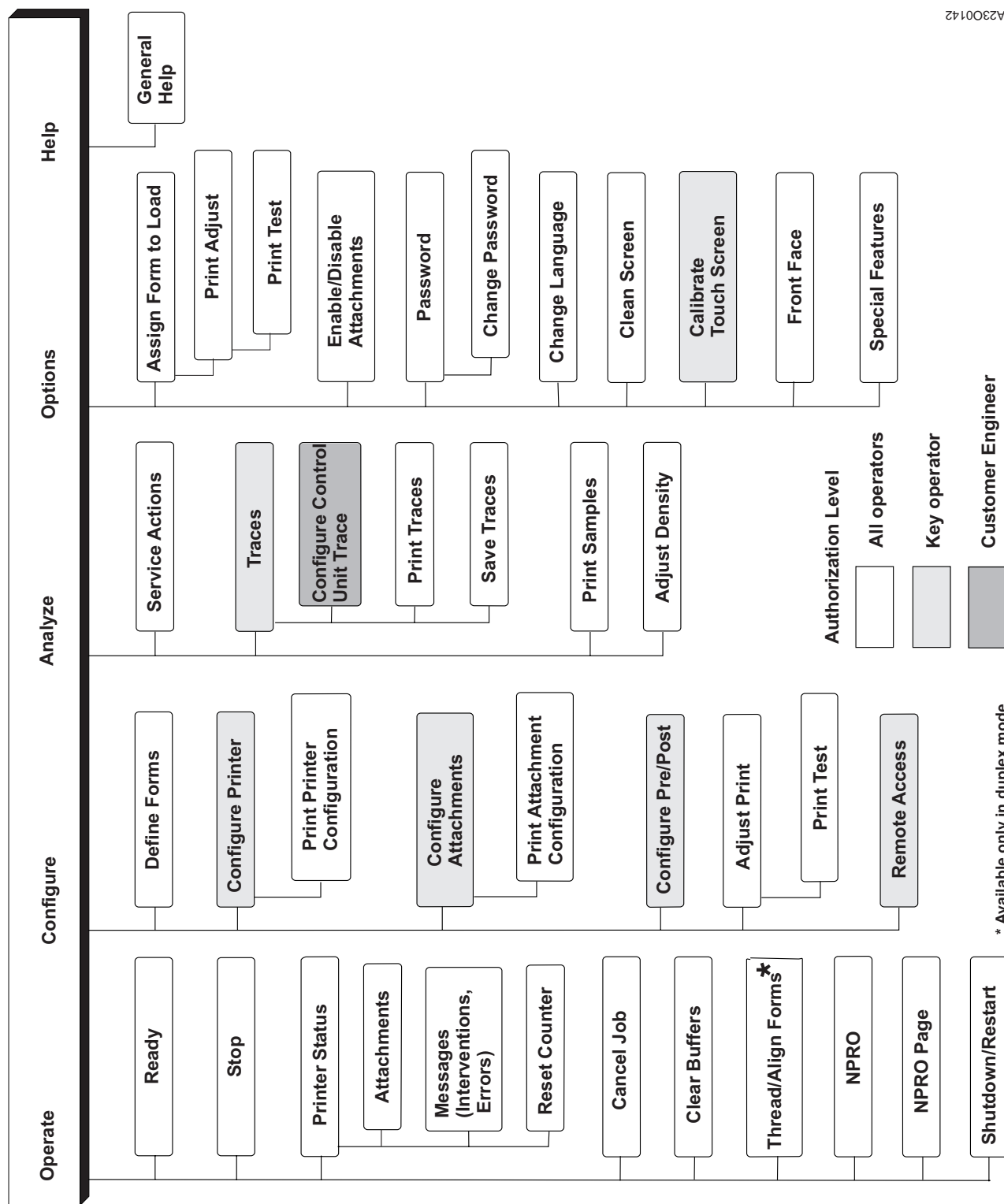


Figure 5. Procedure Access Chart

## Operate Pull-Down Menu

Figure 6 shows the selections available on the Operate pull-down menu.

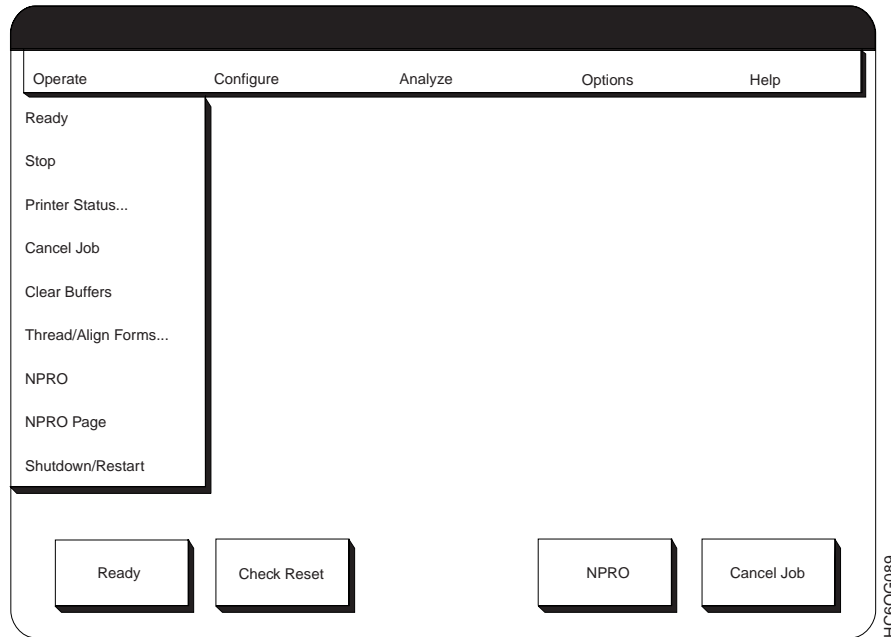


Figure 6. Operate Pull-Down Menu

**Ready** Makes the complete system (both printers) Ready when it is in duplex mode. It also makes the individual printer Ready when it is in simplex or dual simplex mode. If pages are waiting to be printed and the system or printer is online to the host, printing begins.

**Stop** Finishes the page that is currently printing. It then makes the complete system (both printers) Not Ready in duplex mode or the individual printer Not Ready in simplex or dual simplex mode.

**Printer Status...**  
Displays status information about the system or printer. See “Status Messages” on page 153 for more information.

**Cancel Job**  
Lets you cancel the job that is currently printing. In simplex or dual simplex mode, only the individual printer must be in a Not Ready state. See “Canceling a Job” on page 73 for more information.

**Clear Buffers**  
Clears the print buffers. (You must make the printer Not Ready before you select Clear Buffers.) This procedure allows the host to use PSF Forward and Backward commands.

**Thread/Align Forms...**  
Establishes the front-to-back synchronization in a two-printer system. This procedure is available only in duplex mode. See “Threading and Aligning Forms” on page 106 for more information.

## **NPRO**

Non-process runout (NPRO) moves forms forward through the forms path. See “Using the NPRO and NPRO Page Functions to Advance Forms” on page 126 for more information.

## **NPRO Page**

Moves the forms forward to the next top-of-form position. See “Using the NPRO and NPRO Page Functions to Advance Forms” on page 126 for more information.

## **Shutdown/Restart**

Lets you shutdown or restart the printers.

- **Shutdown** closes all of the active procedures, disables host attachments, and safely prepares the system so that you can power off the control unit. In duplex mode, Shutdown affects the complete system. In simplex or dual simplex mode, Shutdown applies to just the printer for which the procedure was selected. You can still use the other printer.
- **Restart** unloads and then reloads the control unit internal code. This resets pointers, counters, and other controls. In duplex mode, the complete system (both printers) undergoes a Restart. In simplex or dual simplex mode, the Restart applies only to the printer you are restarting. You can still use the other printer.

See “Shutting Down and Restarting the System” on page 68 for more information.

## Configure Pull-Down Menu

Figure 7 shows the selections available on the Configure pull-down menu.

**Note:** If the printer is not stopped, some items are “grayed out or the proper authority level has not been invoked.”

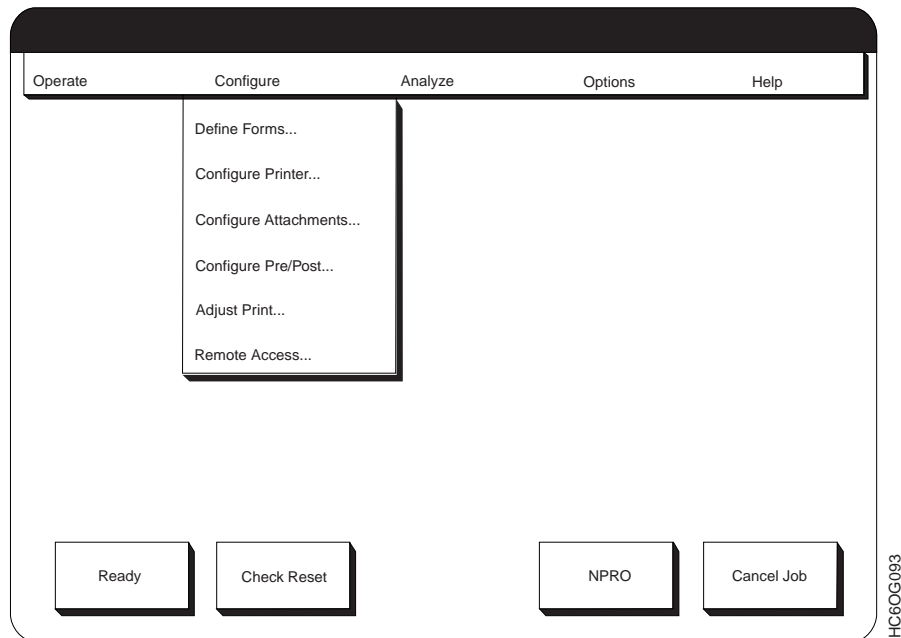


Figure 7. Configure Pull-Down Menu

### Define Forms...

Lets you change, add, and delete form definitions. You must define a form before you can assign and load it on a printer. See “Defining Forms” on page 289 for more information.

### Configure Printer...

Lets you display, update, or print out a copy of the printer configuration. See “Configuring the Printer” on page 246 for more information.

### Configure Attachments...

Lets you display, update, or print the configuration settings of all installed attachments. See “Configuring Host Attachments” on page 261 for more information.

### Configure Pre/Post...

Lets you add, delete, or change the specifications of preprocessing or postprocessing device interfaces. See “Configuring Preprocessing/Postprocessing Devices/Interfaces” on page 273 for more information.



**Adjust Print...**

Shifts the logical page on a form when you are using preprinted forms or other forms that require precise alignment. See “Adjusting the Print Position” on page 120 for more information.

**Remote Access...**

Lets you enable and configure remote access to the printer via Simple Network Management Protocol (SNMP), Remote Management Interface (RMI), and Modem. See “Configuring Remote Access” on page 259 for more information.

## Analyze Pull-Down Menu

Figure 8 shows the selections available on the Analyze pull-down menu.

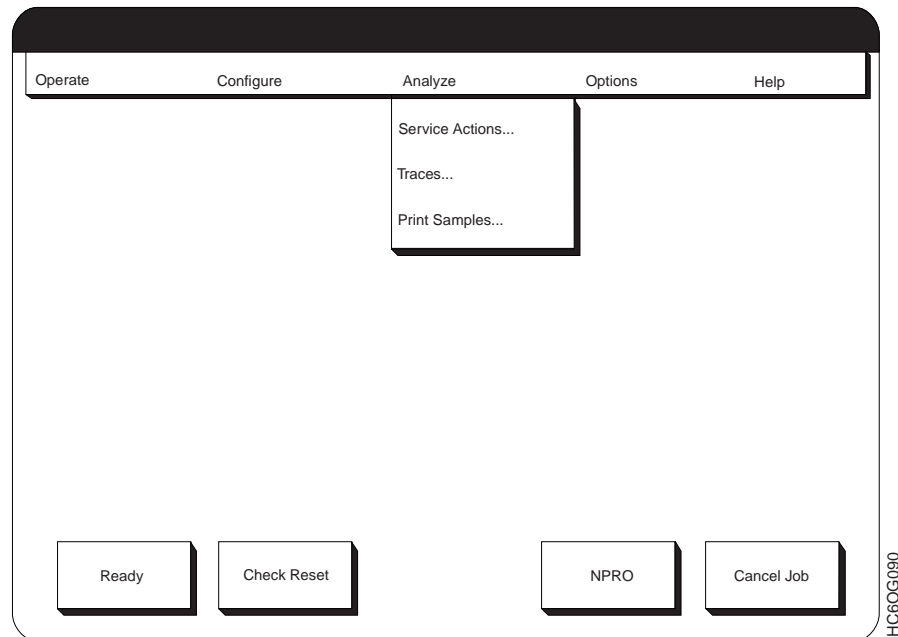


Figure 8. Analyze Pull-Down Menu

### Service Actions...

Used only by a service representative and protected by a **Customer Engineer** user authorization level password.

### Traces...

Lets you select a trace to run, start the trace, stop the trace, save a trace to diskette, and print selected traces. See "Running Traces" on page 177 for more information.

### Print Samples...

Lets you print a variety of sample pages. See "Checking Print Quality" on page 133 for more information.

## Options Pull-Down Menu

Figure 9 shows the selections available on the Options pull-down menu.

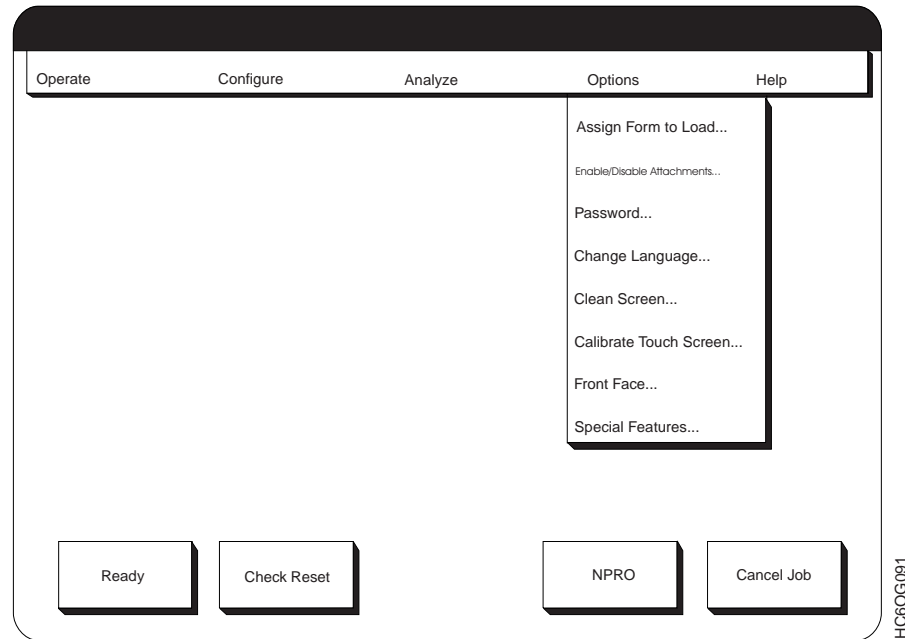


Figure 9. Options Pull-Down Menu

### Assign Form to Load...

Assigns the defined name of the form you are loading. (A form does not appear on the list until you define it.) From within this procedure, you can also invoke the **Adjust Print** and **Print Test** procedures. See “Loading Forms (Simplex or Dual Simplex Mode)” on page 83 or “Loading Forms (Duplex Mode)” on page 97 for more information.

### Enable/Disable Attachments...

Lets you enable and disable the host system attachments that are installed on the system. See “Enabling and Disabling Attachments” on page 70 for more information.

### Password...

Lets you set the authorization level of the person who is working on the printer. It also allows you to change the user authorization password. Access to higher user authorization levels is password protected. See “Changing the Password or Authorization Level” on page 74 for more information.

### Change Language...

Lets you change the language that is used for all text within Display/Touch Screen windows. See “Changing the Language of Messages” on page 246 for more information.

### Clean Screen

Gives you 30 seconds to clean the face of the monitor. If one 30 second interval is not long enough, you can repeat this procedure as many times as necessary.

**Calibrate Touch Screen**

Removes the displacement between where you touch the screen surface and the small (+) symbol that appears on the screen when you touch it.

**Front Face**

Lets you place a blank page between jobs that have an odd number of pages. It also ensures that jobs that require a certain folding pattern are printed correctly. See “Checking for a Front-Facing Page” on page 129 for more information.

**Special Features**

Lets you enable, disable, install, and uninstall special features (customer-requested features that are also known as RPQs). You can install special features from a diskette or from the printer hard disk drive. You must both install and enable the feature before it becomes functional.

## Help Pull-Down Menu

The **Help** pull-down menu has only one choice, **General Help**. **SELECTING General Help** displays general information about the Display/Touch Screen.

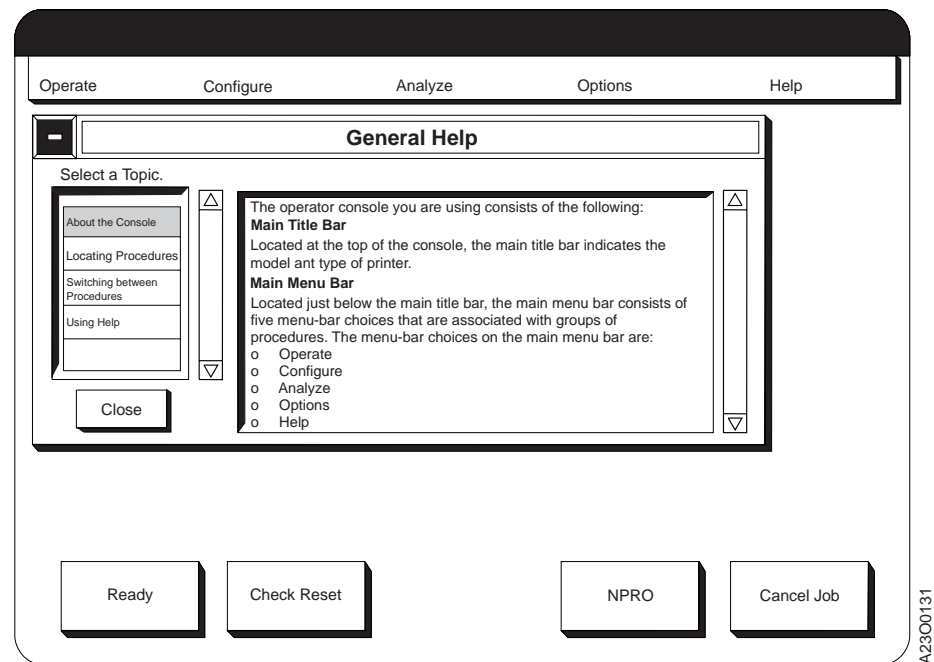


Figure 10. General Help Window

## Additional Help

All procedure windows contain a **Help** push-button, which displays information about performing the procedure. This information usually includes a summary of the procedure, directions for performing the procedure, and an explanation of each push-button in the procedure window. For example, selecting the **Help** push-button when you are defining forms causes the following window to appear.

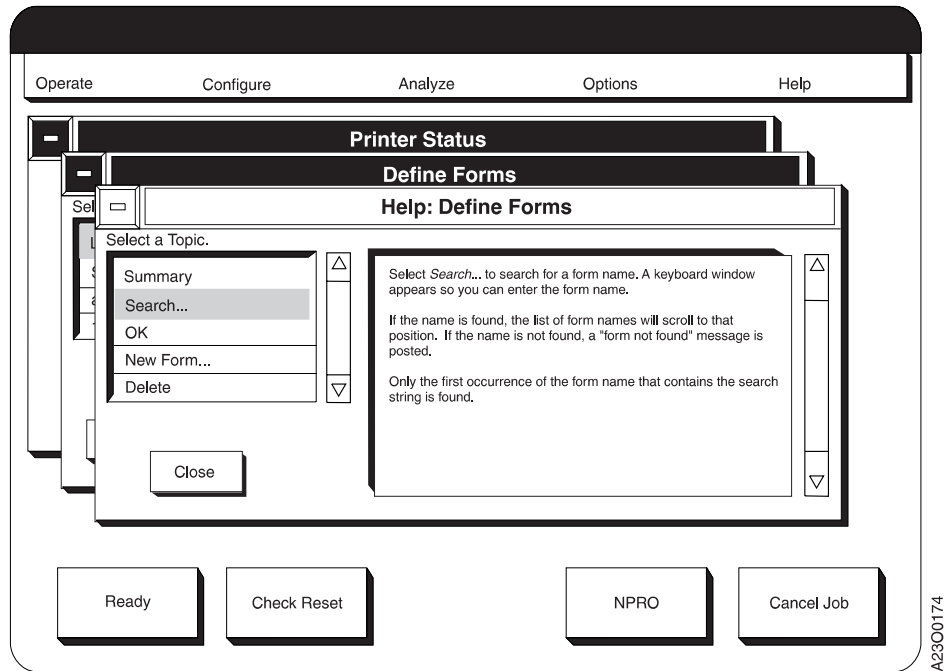


Figure 11. Define Forms Help Window

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## Keypad, Keyboard, and Hexpad Windows

You see a keypad (Figure 12 on page 50), keyboard, (Figure 13 on page 50), or hexpad window when a procedure requires you to enter numeric or alphanumeric data. The title bar on these windows contains the same title as the procedure window.

The following function and cursor control keys are on each type of keyboard or keypad:

<b>OK</b>	Removes the keyboard or keypad window and displays the new value that you entered in the procedure window-selectable field item that called it.
<b>Clear</b>	Clears the input from the entry field if you make a mistake, and allows you to start over.
<b>Cancel</b>	Cancels any entries you have made and removes the window.
<b>Help</b>	Displays a help window that describes how the keyboard window works.
<b>Insert</b>	<p>Acts as a toggle switch between <i>Insert</i> and <i>Overwrite</i> modes. Either the word “Insert”, or “Overwrite” appears at the right side of the entry field.</p> <p>In Insert mode, characters you select are inserted at the cursor position, moving any existing characters to the right. In Overwrite mode, characters you select are “typed” at the cursor position directly over existing characters.</p>
<b>Delete</b>	Erases an existing character at the cursor position.
<b>Home</b>	Moves the cursor to the beginning (the left side) of the entry field.
<b>End</b>	Moves the cursor to the end (right side) of the entry field.
<b>Left</b>	Moves the cursor one character space to the left.
<b>Right</b>	Moves the cursor one character space to the right.
<b>Backspace</b>	Erases an existing character to the left of the cursor.
<b>Caps</b>	(Alphanumeric Keyboard Only) Acts as a switch to change keyboard entries from lowercase to uppercase, or uppercase to lowercase.
<b>Shift</b>	(Alphanumeric Keyboard Only) Affects only the next character you enter by changing the case (upper or lower) set by the “Caps” key to the opposite case.
<b>Lock</b>	(Alphanumeric Keyboard Only) Acts as a switch between locked and unlocked mode for uppercase characters, which is set by the “Caps” key.

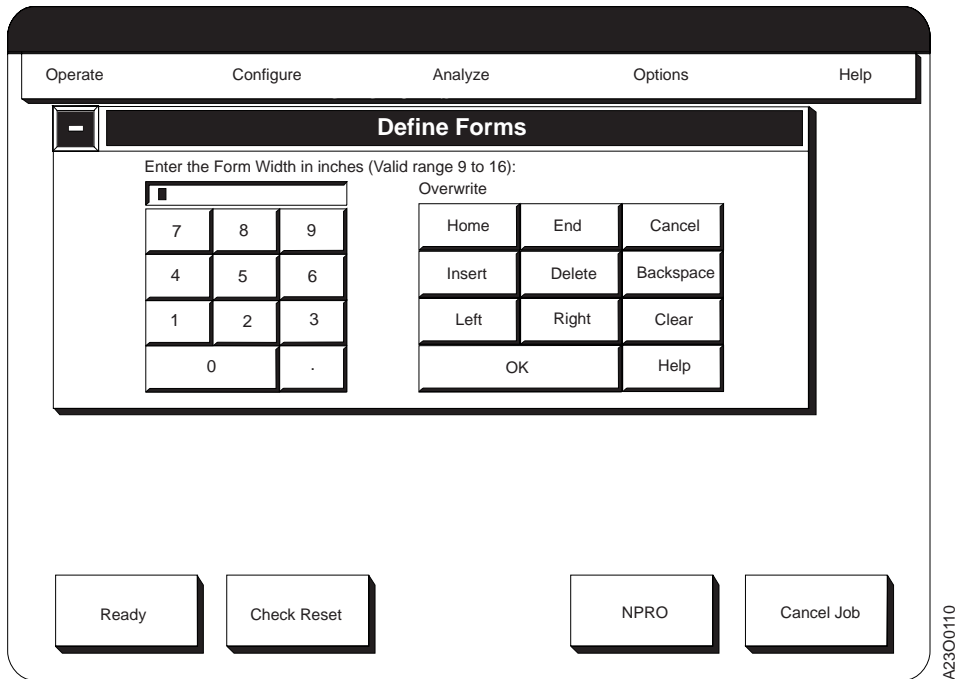


Figure 12. Numeric Keypad Window

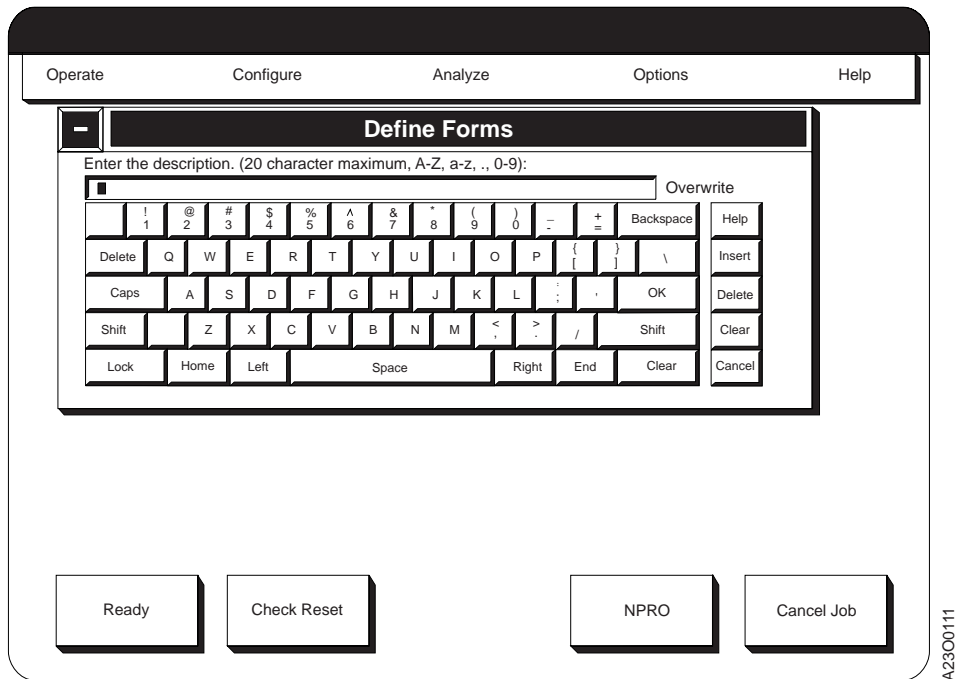


Figure 13. Alphanumeric Keyboard Window



## Symbols and Visual Cues

The Display/Touch Screen windows contain several symbols that act as visual cues. These symbols represent conditions or actions. They can help you understand and use the windows. Table 6 shows and explains the symbols that are used on the windows.

Table 6. Symbols and Visual Cues






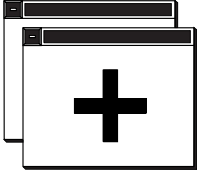
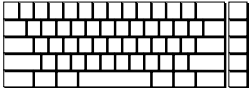
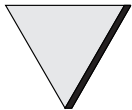



Visual Cue	Explanation
+	The plus sign appears under your finger when you touch the monitor screen surface. It moves with your finger if you move your finger across the screen surface. The + sign is used to point to items to select them (by removing your finger from the screen surface).
 A26O0023	This is the system menu symbol. Every procedure window contains a system menu symbol. When you select this symbol, a pull-down menu appears allowing you to close the window, print the screen, or switch to other active windows.
 A26O0026	Information often appears on the procedure windows in boxed areas called fields. This three-dimensional outline signifies a selectable field. You can select any field with this three-dimensional outline. A pop-up window, a keyboard, or a keypad window appears when you select a field that you can change.
 A26O0027	This two-dimensional outline signifies a field that you cannot change. You cannot select any field with this two-dimensional outline. Text in the two-dimensional box is for your information only.
 A26O0018	This is the scroll bar. It appears next to some fields that you can change. Use the scroll bar to view additional information that cannot fit in a field. You can scroll up and down in the field by selecting the up and down arrows of the scroll bar.
 A26O0019	This is the scroll box. The scroll box varies in size and location within the scroll bar, which indicate how much more information is available in the corresponding field. If the scroll box fills the entire space between the scroll bar arrows, then all text is currently displayed and the scroll bar is not active. If it does not fill the scroll bar, scrolling up or down reveals more information. The scroll box moves down within the scroll bar as you scroll down within the information.
Grayed out text	Text that is grayed out signifies that the procedure or push-button is inactive. You cannot select a grayed-out item.
 A26O0020	This symbol indicates that there are active procedure windows that are not displayed on the Display/Touch Screen. You must use the "Switch to" procedure in the system menu to view active procedure windows that are not displayed.
 A26O0028	This symbol appears within some field boxes that you can change. When you select a field containing this symbol, a keyboard, keypad, or hexpad window appears for you to make an entry.

Table 6. Symbols and Visual Cues (continued)

Visual Cue	Explanation
 A26O0021	<p>This symbol appears within some field boxes. It indicates that this field contains more choices than are currently displayed. When you select this field, a pop-up window appears containing a selection list box with the additional choices.</p>
 A26O0022	<p>Push-button or menu item text that is followed by an ellipsis indicates that when you select that item, another window appears that requires you to make further selections.</p>
 A26O0024	<p>This symbol indicates the presence of a <i>Caution</i> or <i>Warning</i> message.</p>
 A26O0017	<p>This symbol indicates that the printer is processing your selection. Please wait.</p>

---

## Selection Devices on the Display/Touch Screen Windows

The following sections summarize the controls you use to interact with the printers.

### Fingertip Control

When you touch the surface of the Display/Touch Screen with your finger, a small plus symbol (+) appears directly under your finger tip. Moving your finger across the surface moves the (+) symbol. Removing your finger from the surface of the monitor selects the action or item on which the (+) symbol rests.

### Push-buttons

Push-buttons look like three-dimensional push-button switches. They allow you to select a particular action, which occurs immediately. An ellipsis (...) that follows a push-button name means that selecting the push-button causes a another procedure window or a pop-up window to appear.

### Selectable Field

A *selectable* field on a procedure window or a pop-up window displays the current setting of an item that you can change. To change the setting, **SELECT** the field. A pop-up window appears containing one of the following:

- Two or more choices from which you can select.
- A selection list box with many items from which you can select. See **(4)** in Figure 16 on page 56 for an example of a pop-up window with a selection list box.
- A keypad or keyboard window in which you can enter a new value.

The new value you select or enter appears in the selectable field on the procedure window.

### Radio Buttons

A radio button on the Display/Touch Screen consists of a diamond and some associated text. Radio buttons allow you to choose between two or more responses or actions. The diamond is highlighted for the active choice. You are allowed only one choice within any set of radio buttons.

### Scroll Bar

Some procedure windows and pop-up windows contain a selection list box that has multiple selections. Many selection list boxes have a vertical scroll bar on the right side of the box. This bar allows you to view additional unseen information in the box.

## Inactive Items

All push-button text, selection list items, and pull-down menu procedures appear regardless of whether they are currently selectable. Not all items are available on all printer models. Items that you cannot select are *grayed out*, which means the text is faint but readable.

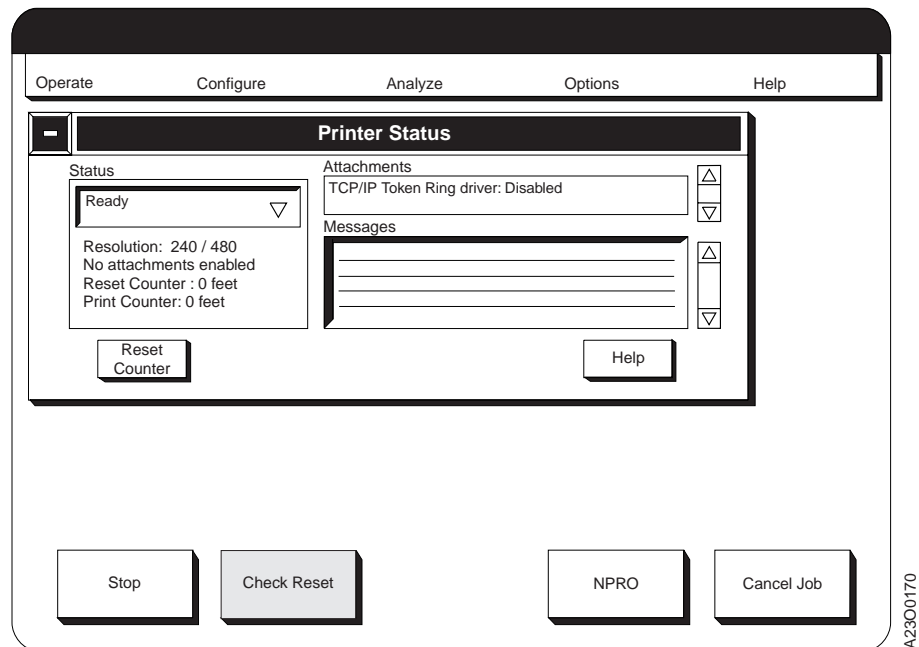


Figure 14. Grayed Out Check Reset Push-button

For example, when a printer is in the Ready state, the **Check Reset** push-button is grayed out, but it is not grayed out when a printer is in the Not Ready state.

**Note:** Except for the figure above, none of the selection items, pull-down menu procedures, or push-buttons that would normally be grayed out on a pull-down menu or procedure window are shown that way in any of the window figures in this publication.

## Control Procedures

### System Menu

The System Menu Symbol (1) is a horizontal line within a push-button on the left side of the Title Bar on all procedure windows (2). When you select this symbol, a pull-down menu (3) appears directly under the symbol.

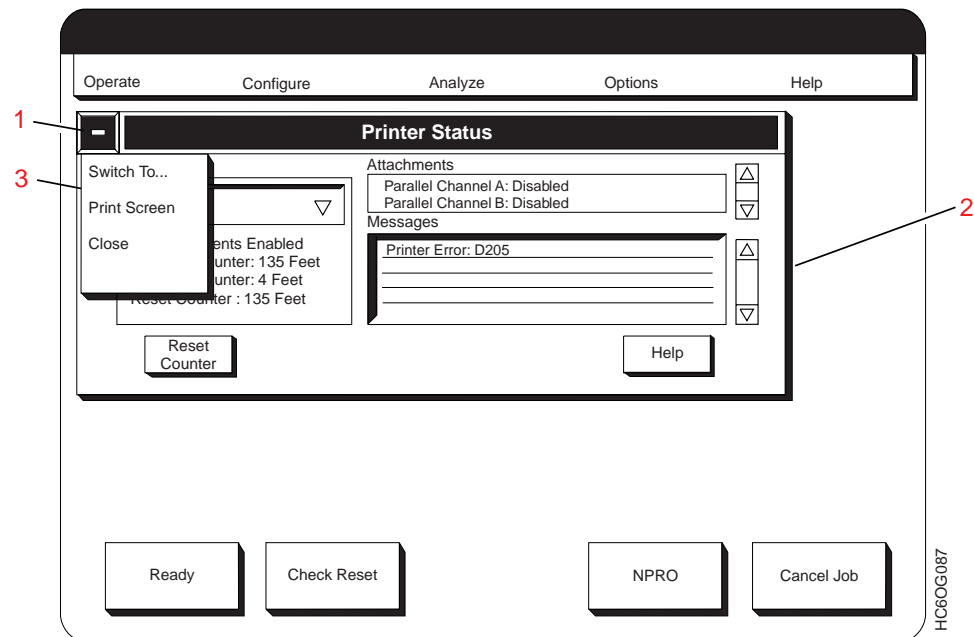


Figure 15. System Menu Symbol - Pull-Down Menu

There are three actions on the pull-down menu from which you can choose:

#### Switch to...

Displays a pop-up window that lists all of the procedures that are currently open (for example, see (4) on Figure 16 on page 56). Selecting any procedure name from the list moves the window for the procedure to the front.

#### Print Screen

Prints the screen if all installed host attachments are disabled.

**Close** Closes the procedure (the same as if you had selected the **Close** on the procedure window).

## Multiple Procedures

You can have any number of procedures active at one time. However, only five procedures can *appear* on the Display/Touch Screen at one time. To switch back and forth between the procedures on the Display/Touch Screen, select the title bar of the procedure you want. If there are more than five procedures that are active, you can still use the procedures that have been pushed off the display. Do this by selecting the **Switch to...** option from the System Menu pull-down menu.

In duplex or simplex mode, multiple copies of the same procedure cannot run at the same time. Once a procedure is started, the menu bar item that started the procedure will not start another procedure of the same type. The window will display the procedure window at the front of the cascade. However, in dual simplex mode the same procedure can be open and active on both Printer 1 and Printer 2 Display/Touch Screen windows.

Figure 16 shows:

- (1) The Main Window
- (2) Four of the five maximum procedure windows
- (3) The System Menu pull-down menu
- (4) The **Switch to** pop-up window, which lists all open procedures
- (5) A symbol that indicates that more than five procedures are open.

Use the scroll bar to the right of the **Switch to** pop-up window to view the names of additional open procedures. When you select a procedure, the procedure window appears at the front of the cascade.

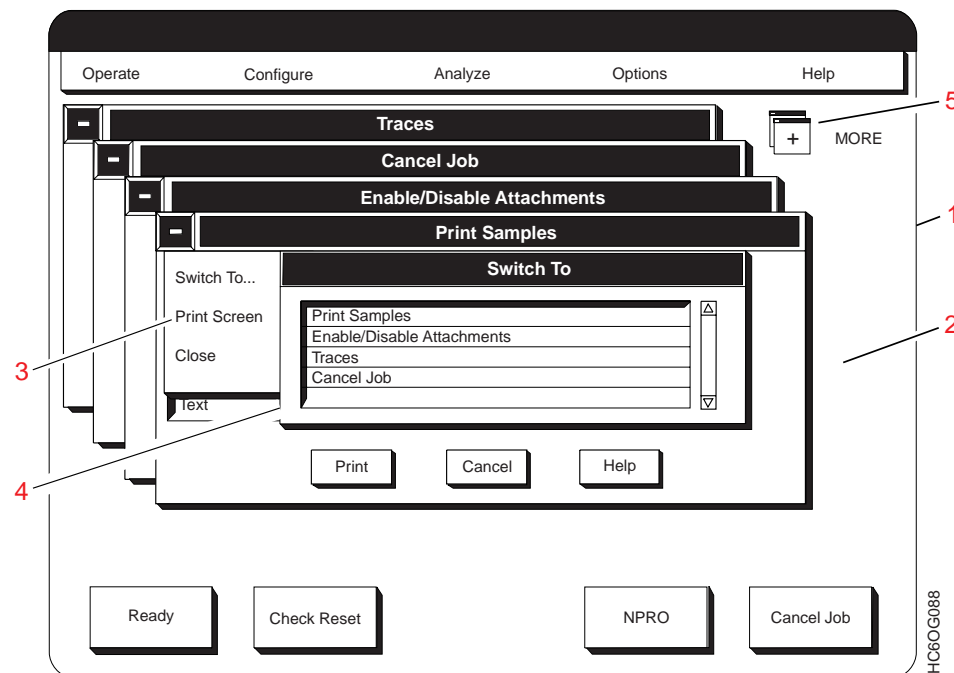


Figure 16. Procedure Windows in Cascade Format

## Screen Saver Timeout

When there is no user interaction or error condition on the operator console for a period of time, the console goes blank. Only a “floating” logo (screen saver) appears.

To return to the normal display, simply touch the screen.

The screen saver timeout period (length of time without user interaction before the screen saver comes on) is set under the **Configure Printer** procedure. The timeout period ranges from 0 to 60 minutes. You may set different timeout periods for each printer in duplex mode and for both Printer 1 and Printer 2 in simplex mode. In dual simplex mode, if you make different settings for Printer 1 and Printer 2, the shortest of the two settings is used by both printers.

## Adjusting the Display/Touch Screen Monitor

You may decide that some physical aspect of the information image that is displayed on the face of the monitor needs adjusting. You can adjust the image with the user controls at the bottom of the monitor and the On-Screen-Display (OSD) icons.

### User Controls

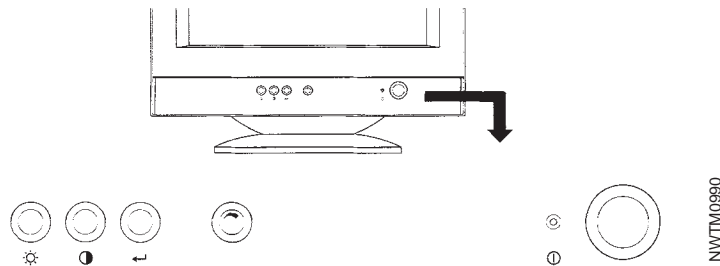


Figure 17. Operator Console User Controls

The controls at the bottom of the monitor are for the following tasks:

- Switching the monitor on and off
- Adjusting contrast and brightness
- Activating and adjusting the On-Screen-Display (OSD) control icons.

Table 7 describes the controls and how to use them.

Table 7. User Controls on the Monitor

Using This Control:	Does This:
<b>Power Switch</b> 	Switches the monitor on and off.
<b>OSD/Select</b> 	Activates the On-Screen-Display and selects a control icon.
<b>Highlight/Adjust</b> 	Pops out when pushed. Rotates to highlight OSD icons and adjusts setting after an icon has been selected.
<b>Contrast</b> 	Adjusts contrast between foreground and background.
<b>Brightness</b> 	Adjusts background brightness.



## On-Screen-Display Controls

In addition to brightness and contrast, the On-Screen-Display (OSD) controls allow you to make further adjustments to the image on the monitor. When you push in the **OSD/Select** button, the OSD main menu appears on the screen.

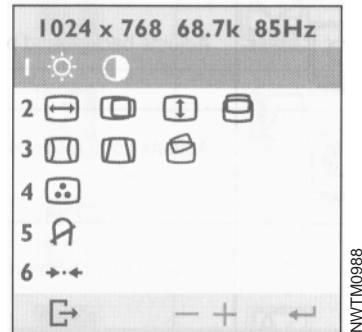


Figure 18. On-Screen-Display Main Menu

**Note:** If you do not make a selection within 6 seconds, the OSD menu disappears.

In Figure 18, the first row (brightness and contrast) is selected (highlighted). To select another row, use the **Highlight/Adjust** control to scroll to the one you want and then press the **OSD/Select** button. A submenu appears for the row you selected.

The image control rows are for the following:




Row / Submenu	Function
1	Adjusts brightness and contrast, similar to the buttons on the bottom of the monitor.
2	Adjusts horizontal size and position and vertical size and position of the image.
3	Rotates and adjusts the shape of the image.
4	Adjusts the color or the color intensity of the image.
5	Degausses the monitor when selected. Do not use this feature more than once in any 30-minute period.
6	Recalls saved settings. Highlight the required group of functions and press the <b>OSD/Select</b> button.

Use the **Highlight/Adjust** button to scroll to the adjustment icon you want to use and then press the **OSD/Select** button. Use the **Highlight/Adjust** button to adjust the setting. When the setting is correct, press the **OSD/Select** button to accept the new setting.

Several icons appear on the submenus that allow you to save adjusted settings, exit the menu, or cancel the changes and return to the main menu.

Table 8 on page 60 describes the icons you use after you have adjusted a setting.

Table 8. Submenu Icons

Using This Control:	Does This:
<b>Save</b> 	Saves the adjustments you selected and returns to the main menu.
<b>Cancel</b> 	Cancels any adjustments you made and returns to the main menu.
<b>Exit OSD</b> 	Exits the OSD main menu after you press the <b>OSD/Select</b> button.

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## Chapter 4. Operating the Printer

### Chapter Overview

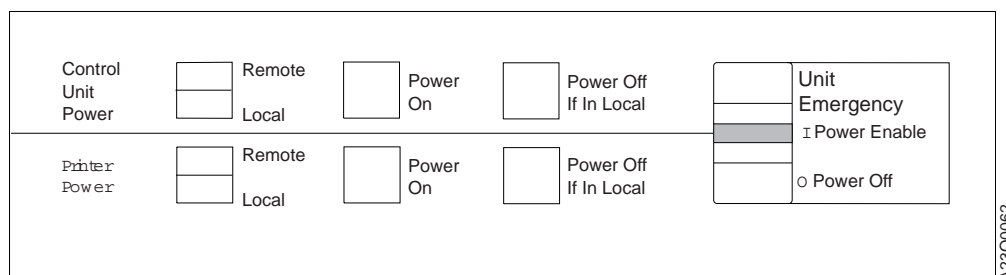
This chapter describes the general operation of the printer:

- “Controlling the System Power”
- “Shutting Down and Restarting the System” on page 68
- “Enabling and Disabling Attachments” on page 70
- “Enabling/Disabling Pre/Post Interfaces” on page 72
- “Canceling a Job” on page 73
- “Changing the Password or Authorization Level” on page 74
- “Adjusting the Volume of the Operator Alert Assembly” on page 76
- “Connecting an Accessory to the Operator Alert Contacts” on page 77
- “Reporting Printer Usage” on page 78
- “Switching Printer Modes (Dual Simplex/Duplex)” on page 80
- “Switching Print Resolution” on page 82

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## Controlling the System Power

The following figure shows a Power Control Panel.



Printer 1 in a duplex or dual simplex printing system has two sets of power controls. One is for the Printer Utility Module (PUM) frame, which is labeled Control Unit on the Power Control Panel. The other is for the printer that is attached to the PUM frame.

Printer 2 in a duplex system and a simplex-only printer also has two sets of power controls. One is for the Advanced Function Common Control Unit (AFCCU) frame, which is labeled Control Unit on the Power Control Panel. The other is for the printer that is attached to the AFCCU frame. Each element in the system (Printer 1 frame, Printer 2 frame, the AFCCU frame, and the PUM frame) has the following:

- A **Local/Remote** switch
- A **Power On** switch
- A **Power Off if in Local** switch.

These switches allow many combinations of Local/Remote power control and power on/off control. Each Power Control Panel in the system also contains a **Unit Emergency** switch.

**Attention!**

The **Unit Emergency** switch lets you turn off *all* power to the system in the case of an emergency.

**Do not use the Unit Emergency Power Off switch to power off the system unless you have an emergency. Doing so can cause loss of data and hardware problems in the AFCCU.**

## Local/Remote Power Control

You can press the **Remote** and **Local** switches on the Power Control Panel to change power control from local to remote at any time. Local power control means that you can turn power on and off using the switches on the Power Control Panel. Remote power control means that you turn power on and off from another source, as shown in Table 9.

*Table 9. Remote Power Control*

Element:	Remote Power Controlled From:
Control Unit Power (AFCCU Frame)	Host System Console
Printer Power (Printer 1 and Simplex)	AFCCU Frame
Control Unit Power (PUM Frame)	AFCCU Frame
Printer Power (Printer 2)	AFCCU Frame

## Powering On the System

You can switch power on for the complete system for duplex or simplex mode use. You can also switch power on for only one printer and its associated control unit in simplex mode when one of the two system printers is not operable and needs repair. In either mode and with the use of either printer, you must switch the AFCCU power on.

How you switch power on for the system depends on whether power control is set to **Local** or **Remote**.

**Notes:**

1. To switch power on for Printer 1 with Printer 2 powered-off, the AFCCU frame must still have power on.
2. The **Unit Emergency** switch in each printer must be in the **Power Enable** position before you can switch power on to that printer.
3. If a D208 error occurs after you switch power on for the system, do the following:
  - a. Switch power off for the system.
  - b. Wait two minutes.
  - c. Switch power on for the system again.

If you are operating the system in dual simplex mode and leave one printer powered-off, the D208 error remains on the powered-off printer window.

## In Host-Controlled Remote Mode

**For duplex systems:** When the system master power control is from the host system console, set the Local/Remote switches as shown in Table 10 for the various combinations of elements you want to be powered-on.

*Table 10. Remote System Power Control - Duplex Models*

Elements To Be Powered-On	Local/Remote Switch Setting			
	AFCCU Frame	Printer 2 Frame	PUM Frame	Printer 1 Frame
AFCCU, Printer 1, PUM, Printer 2	Remote	Remote	Remote	Remote
AFCCU, Printer 2	Remote	Remote	Local	Local
AFCCU, PUM, Printer 1	Remote	Local	Remote	Remote

**For simplex systems:** When the system master power is from the host system console, set the Local/Remote switches to Remote.

When the Local/Remote switch is set to Remote, do the following:

1. Ensure that both printers in a duplex system are connected to a three-phase electrical outlet that is reserved for the printers.
2. Ensure that the printer in a simplex system is connected to a three-phase electrical outlet that is reserved for the printer.
3. Inform the host system console operator that the system is ready to be powered-on.
4. Respond to any error or intervention messages that appear on the Display/Touch Screen during the power-on sequence.

At the completion of the power-on sequence, the Display/Touch Screen displays a **Printer Status** window. In duplex mode, the **Printer Status** window is overlaid with a **Thread/Align Forms** procedure window.

5. Load forms. See “Loading Forms (Simplex or Dual Simplex Mode)” on page 83 or “Loading Forms (Duplex Mode)” on page 97 for details.
6. If you are printing in duplex mode, do the **Thread/Align Forms** procedure. See “Threading and Aligning Forms” on page 106 for details.
7. Enable host attachments, as required. See “Enabling and Disabling Attachments” on page 70 for details.
8. Make the system ready.
  - If you are printing in duplex mode, **SELECT** the **Ready** push-button on the main Display/Touch Screen window.
  - If you are printing in simplex or dual simplex mode, **SELECT** the **Ready** push-button on the main Display/Touch Screen window for one or both printers.

## In Local-Controlled Mode

**For duplex systems:** When the system master power control is to be controlled locally, set the Local/Remote switches as shown in Table 11 for the various combination of elements for which you want power on.

Table 11. Local System Power Control - Duplex Models

Elements To Be Powered-On	Local/Remote Switch Setting			
	AFCCU Frame	Printer 2 Frame	PUM Frame	Printer 1 Frame
AFCCU, Printer 1, PUM, Printer 2	Local	Remote	Remote	Remote
AFCCU, Printer 2	Local	Remote	Local	Local
AFCCU, PUM, Printer 1	Local	Local	Remote	Remote

**For simplex systems:** When the system master power is to be controlled locally, set the Local/Remote switches to Local.

When the Local/Remote switch is set to Local, do the following:

1. Ensure that both printers in a duplex system are connected to a three-phase electrical outlet that is reserved for the printers.
2. Ensure that the printer in a simplex system is connected to a three-phase electrical outlet that is reserved for the printer.
3. Press the AFCCU frame **Control Unit Power On** switch for any of the preceding combinations of elements listed.
4. Respond to any error or intervention messages that appear on the Display/Touch Screen during the power-on sequence.
5. At the completion of the power-on sequence, the Display/Touch Screen displays a **Printer Status** window. In duplex mode, the **Printer Status** window is overlaid with a **Thread/Align Forms** procedure window.
6. Load forms. See “Loading Forms (Simplex or Dual Simplex Mode)” on page 83 or “Loading Forms (Duplex Mode)” on page 97 for details.
7. If you are printing in duplex mode, do the **Thread/Align Forms** procedure. See “Threading and Aligning Forms” on page 106 for details.
8. Enable host attachments, as required. See “Enabling and Disabling Attachments” on page 70 for details.
9. Make the system ready.
  - If you are printing in duplex mode, **SELECT** the **Ready** push-button on the main Display/Touch Screen window.
  - If you are printing in simplex or dual simplex mode, **SELECT** the **Ready** push-button on the main Display/Touch Screen window for one or both printers.

## Powering Off the System

For duplex systems operating in duplex mode and for simplex systems, you must switch power off to the complete system whenever you want to switch power off to any single element. However, for duplex systems operating in dual simplex mode, you do not have to switch power off to the complete system to power off any single element.

### In Host-Controlled Remote Mode

1. On the Display/Touch Screen, from the **Operate** pull-down menu **SELECT** the **Shutdown/Restart** procedure.
2. On the **Shutdown/Restart** window, **SELECT** the **Shutdown** push-button.  
(In dual simplex mode, on the **Shutdown/Restart** window **SELECT** the **Shutdown** push-button, for the other printer if desired.)  
Wait for a Shutdown Complete message to appear on the Display/Touch Screen.  
(In dual simplex mode, this message appears only if both printers are shutdown.)
3. Inform the host system console operator that you want to switch power off to the system.
4. The host console operator will inform you when both printers have been switched offline at the host.
5. The host system console operator switches power off to the system remotely.

### In Local-Controlled Mode

1. On the Display/Touch Screen from the **Operate** pull-down menu, **SELECT** the **Shutdown/Restart** procedure.
2. On the **Shutdown/Restart** window, **SELECT** the **Shutdown** push-button.  
(In dual simplex mode on the **Shutdown/Restart** window, **SELECT** the **Shutdown** push-button for the other printer if desired.)  
Wait for a Shutdown Complete message to appear on the Display/Touch Screen.  
(In dual simplex mode, this message appears only if both printers are shutdown.)
3. Press the AFCCU **Power Off** if in **Local** switch for any combination of powered-on elements.

### Emergency Power Off

In case of an emergency, you can set the **Unit Emergency** to **Power Off** to remove all power from the frame (PUM or AFCCU) in which the switch is installed and from the attached printer engine. This action on one of the system printers does not effect power on the other printer in the system, but causes the other printer to be functionally inoperable.

#### Attention!

**Do not use Unit Emergency Power Off switch to switch power off to the system unless you have an emergency. Doing so can cause loss of data and hardware problems in the AFCCU.**



## Powering On and Off Pre/Post Devices

The following procedures may be necessary for the protection of the operator and the equipment.

The printers recognize electronically attached devices only if those devices are powered-on.

### **Attention!**

To avoid damage to the printer stacker table, switch power on to any postprocessing device before you switch power on to the printer to which it is attached. For the same reason, switch power off to the postprocessing device last.

If a preprocessing or postprocessing device stops before the printer becomes Ready, the printer cannot detect that the device is stopped. A forms jam results when printing begins.

## Shutting Down and Restarting the System

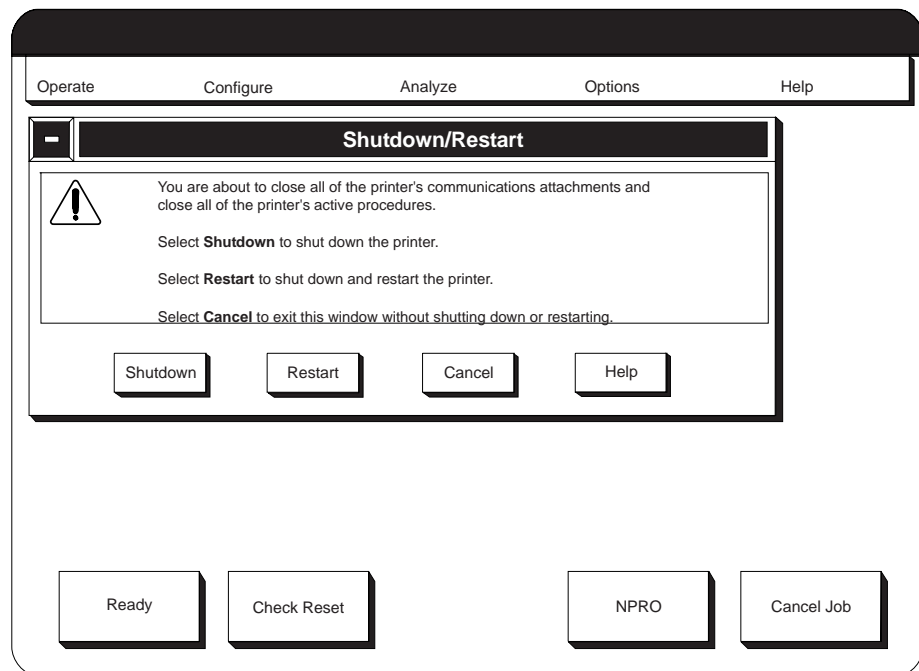
Use this procedure when:

- A recovery action procedure instructs you to either **Shutdown** or **Restart** the system
- You are changing the Configure Printer **Printer Mode** setting from dual simplex to duplex
- You want to do a general shutdown and power off the system.

You must use the **Shutdown** procedure to do the following:

- Close all active procedures
- Disable all enabled host system attachments
- Safely prepare the system so that the AFCCU may be powered-off.

**Note:** You should always do this procedure before you switch off power to the AFCCU, regardless of whether a recovery action procedure instructed you to switch power off to the system or you are doing it on your own.



## Shutting Down the System

**Note:** With a duplex configuration in duplex mode or with a simplex printer, this procedure shuts down the complete system (both printers in a duplex configuration). In dual simplex mode, this procedure shuts down only the target printer. The other printer remains active and usable. If you are shutting down the last active dual simplex printer, the complete system is shutdown.

Note that once you have shutdown a dual simplex printer using this procedure, the only way to get it back to active use is to shutdown the other dual simplex printer also.

1. From the **Operate** pull-down menu, **SELECT** the **Shutdown/Restart** procedure.
2. On the **Shutdown/Restart** procedure window, **SELECT** the **Shutdown** push-button.

If you decide that you do not want to shutdown or restart the system, **SELECT** the **Cancel** push-button.

If the printers are in duplex mode, or if the printers are in dual simplex mode and the final simplex printer is being shutdown, the following messages appear:

- The message Shutdown in Progress appears after you select the **Shutdown** push-button.
  - Shutdown Complete appears when the shutdown process is complete.
3. If necessary, switch power off to the system or the individual printer. See “Controlling the System Power” on page 61 for details.

As required, correct the problem that caused you to initiate the procedure.

## Restarting the System

**Note:** In duplex mode, this procedure applies to the complete system (both printers). In dual simplex mode, this procedure applies to the target printer only.

1. From the **Operate** pull-down menu, **SELECT Shutdown/Restart**.
2. On the **Shutdown/Restart** procedure window, **SELECT** the **Restart** push-button.
3. Enable the host attachments, if necessary. See “Enabling and Disabling Attachments” on page 70 for details.
4. Try the operation that was in progress when the **Restart** was requested again.

---

## Enabling and Disabling Attachments

Do this task whenever you need to *enable* (functionally connect) or *disable* (disconnect) the printer from the controlling computer system channel. Note that enabling and disabling an attachment is not the same as physically attaching or detaching the attachment.

To accept commands and data from the system, a controlling computer system channel must be enabled, and the printer must be Ready.

You need to enable attachments whenever you do the following:

- Switch power on to the system in duplex
- Switch power on to the system in dual simplex
- Switch power on to the system in simplex mode without using Auto Start
- Whenever you need to enable a disabled attachment.

The enable/disable status of installed host attachments may be set differently between duplex and dual simplex modes and between Printer 1 and Printer 2 in dual simplex.

### Remote Channel Enable/Disable

If your installation uses two System/370 Parallel Channels, a “Remote Channel Enable/Disable” feature may be installed (contact your service representative if you are not sure). If the “Remote Channel Enable/Disable” feature is installed, you must notify the remote operator whenever you require the Parallel channels to be enabled or disabled.

**Note:** Although there is nothing to prohibit the use of the **Enable/Disable Attachments** procedure, you should **not** use it when the “Remote Channel Enable/Disable” feature is installed.

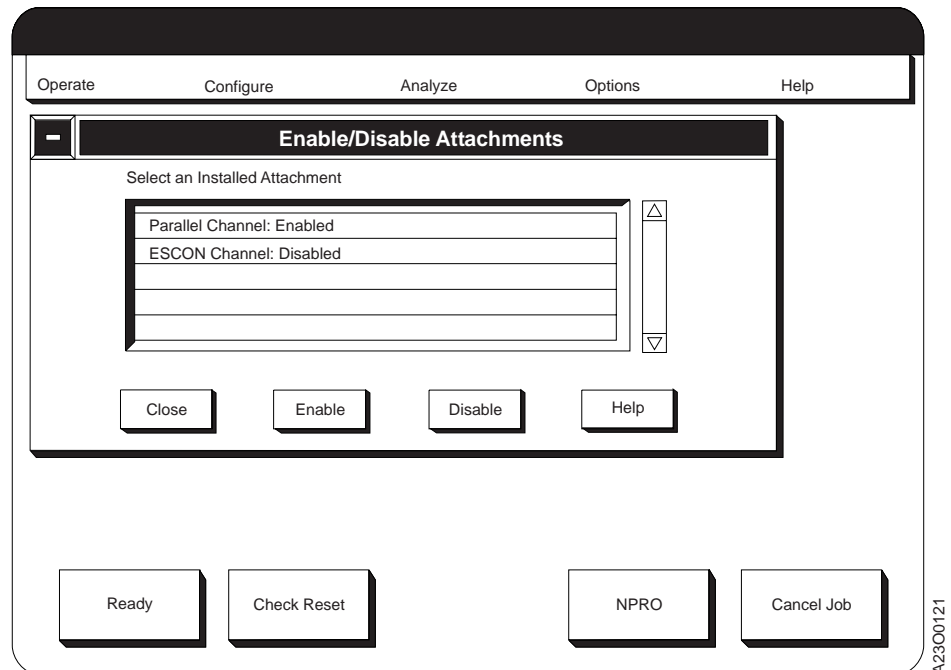
### Local Channel Enable/Disable

**Note:** Do not use this procedure if the “Remote Channel Enable/Disable” feature is installed.

The enable/disable status of host attachments cannot be changed for an individual printer or for the complete two-printer system unless the printers are in the Not Ready state.

You may make the printers Not Ready at either the printer Display/Touch Screen window or the stacker control panel. You must use that same panel or window to make the printers Ready.

- In duplex mode, **SELECT** the **Stop** push-button on the Display/Touch Screen main window.
- In dual simplex mode, **SELECT** the **Stop** push-button on the Display/Touch Screen window for the target printer.
- In simplex mode, **SELECT** the **Stop** push-button on the Display/Touch Screen window for the printer.



### Enabling a Host Attachment

1. From the **Options** pull-down menu, **SELECT** the **Enable/Disable Attachments** procedure.
2. From the list of currently installed attachments, **SELECT** the attachment you want to enable, then **SELECT** the **Enable** push-button.
3. Make the printers Ready.
  - In duplex mode, **SELECT** the **Ready** push-button on the Display/Touch Screen main window.
  - In dual simplex mode, **SELECT** the **Ready** push-button on the target printer Display/Touch Screen window.
  - In simplex mode, **SELECT** the **Ready** push-button on the Display/Touch Screen window.

### Disabling a Host Attachment

1. From the **Options** pull-down menu, **SELECT** the **Enable/Disable Attachments** procedure.
2. From the list of currently installed attachments, **SELECT** the attachment you want to disable, then **SELECT** the **Disable** push-button.
3. If you want the printer active for attachments that are not disabled, choose one of the following methods:
  - In duplex mode, **SELECT** the **Ready** push-button on the Display/Touch Screen main window.
  - In dual simplex mode, **SELECT** the **Ready** push-button on the target printer Display/Touch Screen window.
  - In simplex mode, **SELECT** the **Ready** push-button on the Display/Touch Screen window.

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## Enabling/Disabling Pre/Post Interfaces

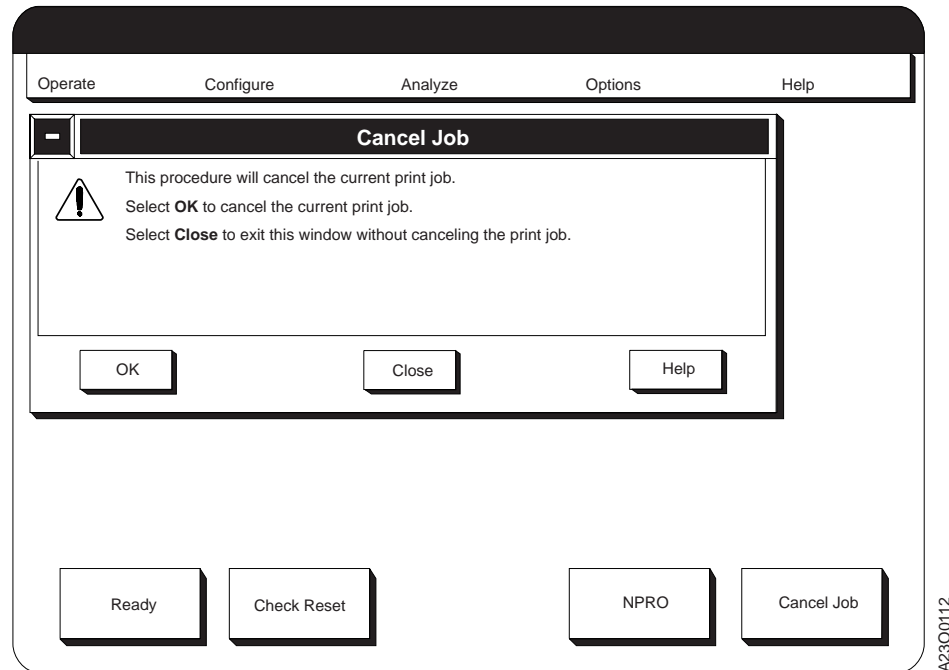
The service representative configures attached preprocessing and postprocessing devices at time of their installation and sets the state of each device to Enabled or Disabled. As configurations change from time to time, you may have to change the preprocessing/postprocessing device interface configurations and to enable or disable the devices. Make these changes from the Display/Touch Screen windows.

If a burster/trimmer/stacker (BTS) or an offsetter postprocessing device is to have its enabled status changed, you must make configuration changes in both the **Configure Printer** procedure (see “Configuring the Printer” on page 246) and in the **Configure Pre/Postprocessor** procedure (see “Configuring Preprocessing/Postprocessing Devices/Interfaces” on page 273).

For all other types of postprocessing devices and for all preprocessing devices, you have to make enabled status changes in only the **Configure Pre/Post** procedure.

## Canceling a Job

Do this task when you need to stop a print job and delete the print data.



1. Stop the printers.
  - In duplex mode, you must stop both printers. To do this, **SELECT** the **Stop** push-button on the main Display/Touch Screen window.
  - With a simplex printer or a duplex configuration in dual simplex mode, you must stop only the printer that is running the job you want to cancel. To do this, **SELECT** the **Stop** push-button on the main Display/Touch Screen window of a simplex printer.
2. On the Display/Touch Screen main window **SELECT** the **Cancel Job** push-button.
3. On the **Cancel Job** procedure window, **SELECT** the **OK** push-button.
4. Notify the host system console operator whenever you cancel a print job. If necessary, request that the job be resubmitted.

---

## Changing the Password or Authorization Level

This procedure lets you set the authorization level of the person that is working on the printer. It also allows you to change the user-authorization password. Access to higher user-authorization levels is password protected. If you do not know the current password, access to the requested user authorization level is denied.

The different levels of authorization are:

- **Operator:** No password is required for access to Operator procedures.
- **Key Operator:** The Key Operator has access to all functions except those that are related to the service and repair of the printer. The following tasks require at least a Key Operator level of authorization:
  - Configure Printer
  - Configure Attachments
  - Configure Pre/Postprocessor
  - Traces
  - Calibrate Touch Sensitive Screen
- **Customer Engineer:** The service representative has access to all functions of the printer. The following tasks require Customer Engineer authorization:
  - Service Actions
  - Configure Control Unit Trace within Traces

### Initial Operation

When the printers are shipped from the factory, they are set for the **Key Operator** user authorization level, which makes all procedures except service-related activities available. The factory-set password is “all blanks”. That is, if you change the user level to the **Operator** level and then want to go back to the **Key Operator** level, simply **SELECT** the **OK** push-button on the keyboard window when it appears without entering any data.

If you want to maintain a **Key Operator** authorization level, IBM recommends that you establish a new password for the **Key Operator** when the installation is complete. If you treat all operators as key operators, then leave the current “all blanks” password as it is.

If you forget or lose the current **Key Operator** password, the system accepts a fixed, alternate password for that level. Obtain this alternate password from your system administrator.



To Change the Password or Authorization Level, do the following:

1. From the **Options** pull-down menu, **SELECT Password**.

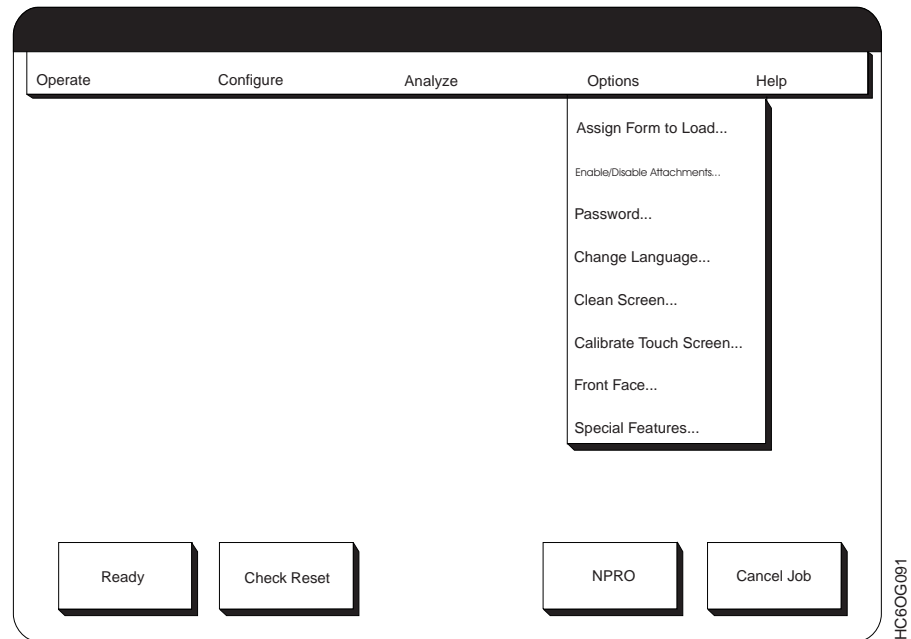


Figure 19. Options Pull-Down Menu

2. To change the Authorization Level, **SELECT** the Authorization Level to which you wish to change.

If you are not changing to the **Operator** level, then the **Password Keypad** window appears. Enter the password, and **SELECT** the **OK** push-button.

3. To change a password, first **SELECT** the Authorization Level you wish to change. Then do the following:

- a. If you select a level that the system is not currently in, the **Password Keypad** window appears. Enter the password, and **SELECT** the **OK** push-button.
- b. When the **Password** window returns, **SELECT** the **Change** push-button. The **Password Keypad** window appears.
- c. Enter the new password and **SELECT** the **OK** push-button to change the password.

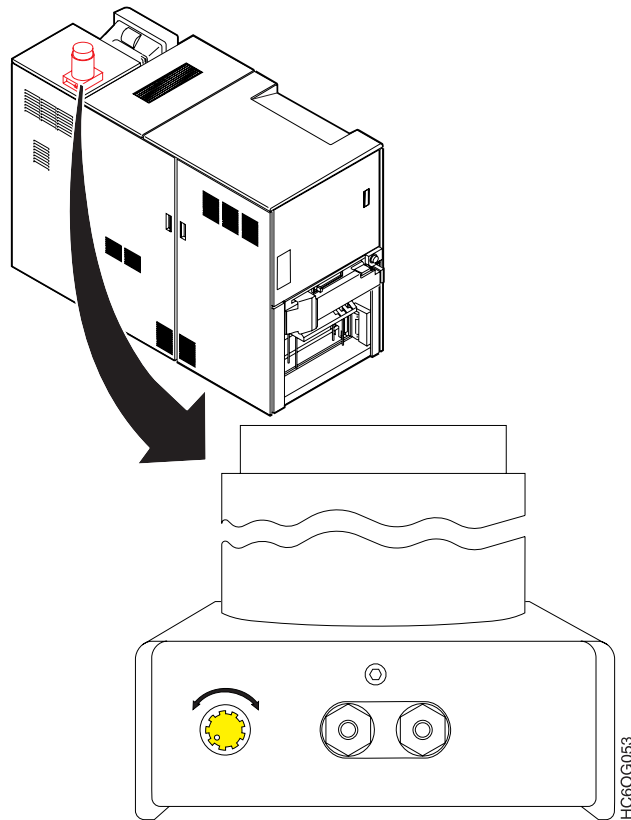
If you decide not to change the password, **SELECT** the **Cancel** push-button.

---

## Adjusting the Volume of the Operator Alert Assembly

The operator alert assembly has the following main parts:

- Built-in operator alert light and buzzer
- Volume control
- External contacts that allow you to connect an alert signal of your choice. See “Connecting an Accessory to the Operator Alert Contacts” on page 77 for details.

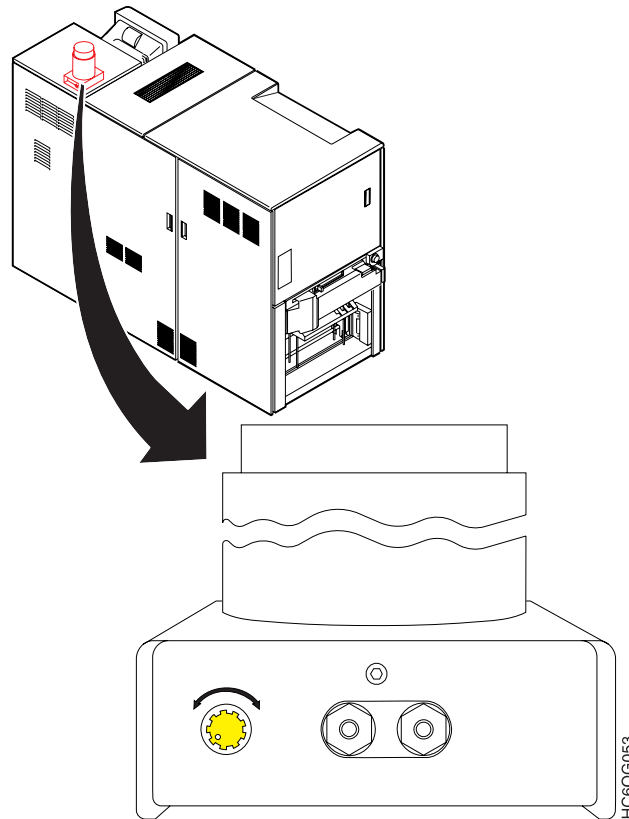


To change the volume on the printer operator alert assembly, do the following:

1. Locate the knob at the base of the operator alert assembly.
2. To *increase* the volume, turn the knob *clockwise*.
3. To *decrease* the volume, turn the knob *counterclockwise*.
4. Test the alarm volume by opening the transfer assembly.
5. Repeat steps 2 and 3 until you have adjusted the volume to the desired level.

---

## Connecting an Accessory to the Operator Alert Contacts



This function provides you with a set of external contacts that allow the hook-up of an alert signal of your choice.

The post accepts the following:

- Standard dual or single banana plugs
- Leads that are terminated with spade lugs
- Stripped, bare wire leads.

The recommended voltage for the posts is 12 V dc, at a maximum current of 5 amps.

**Note:** There is an internal 5-amp fuse.

Voltage is not present at the binding post. You are responsible for supplying power to run any external device. The two contacts of the binding post are connected together with the closing of a relay contact. The relay turns on only when the operator alert lamp is operating during an error condition. To reset or turn off the relay, press the **Check Reset** switch on the Display/Touch Screen window for the affected printer.

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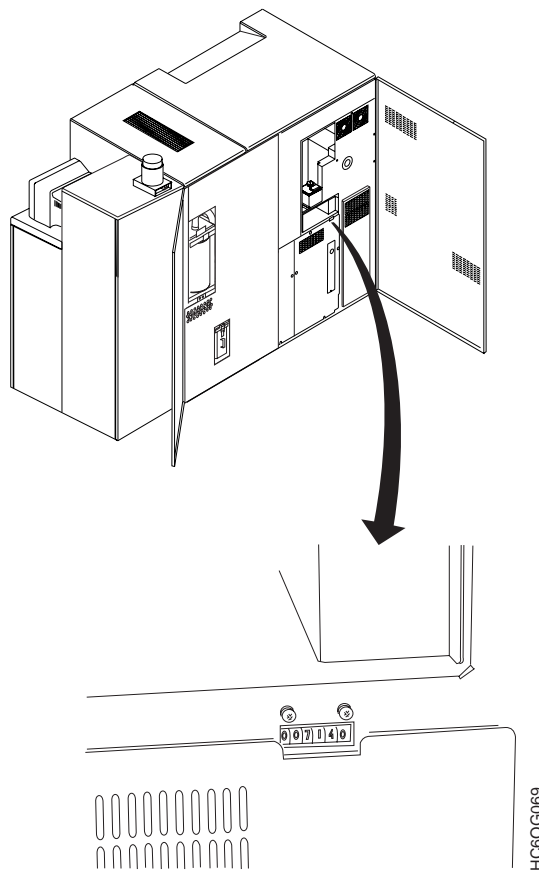
## Reporting Printer Usage

Each printer has a usage meter:

- **In simplex mode:** The usage meter counts only the feet of forms that are processed while printing takes place.
- **In duplex mode:** The usage meter in each printer counts feet of forms anytime paper is moved through the printers.

The meter advances one position for every 30.48 meters (100 feet) of forms that are processed through the transfer station. The meter reading is used for customer billing.

**Note:** The counts that are shown on these printer usage meters may not match the counts shown in “Printer 1 Counter” and “Printer 2 Counter” areas on the **Printer Status** window on the Display/Touch Screen.



Do this task on the last working day of each month.

You need an IBM Printer Usage Sheet to report printer usage. See Figure 20 on page 79.


 <b>METER READING REMINDER</b>		REFERENCE: PLEASE RETURN BY:	
PLEASE RETURN TO: IBM CORPORATION		ALL INQUIRIES SHOULD BE DIRECTED TO IBM AT:	
TYPE/SERIAL	PRIOR METER READING	METER READING DATE	CURRENT METER READING
REMARKS			
SIGNATURE		DATE	
Z125-4383-01			
R4CO111			

Figure 20. Printer Usage Sheet

A new Printer Usage Sheet is sent to every customer every month.

1. Open the rear right cover.
2. Locate the label **Page Counter X 100**.
3. Write the numbers on the Printer Usage Sheet *exactly* as they appear in the printer usage meter:
  - Right-justify the numbers.
  - Do not add leading or trailing zeros.
  - Write one number in each box.
  - Keep each number inside its box.
  - Use large, simple shapes.
  - Close loops and connect lines.
  - Do not use fancy loops or curls.
4. Fill in the printer serial number, which is on a label below the transfer station at the front of the machine. This label also has the printer model number.
5. Fill in the machine type and the date.
6. Sign the card.
7. Mail the completed sheet to IBM.

---

## Switching Printer Modes (Dual Simplex/Duplex)

Use these procedures to switch between duplex and dual simplex modes on Models ED1/ED2.

**Note:** Do not change the print mode in combination with any other configuration changes. You must do it separately. Make other configuration changes *after* the printer is in the correct print mode.

### Switching from Duplex to Dual Simplex Mode

1. To stop the printer, **SELECT** the **Stop** push-button on the Display/Touch Screen.
2. **SELECT** the **Configure** pull-down menu on the main Display/Touch Screen window.
3. **SELECT** the **Configure Printer** procedure. The **Configure Printer** window appears.
4. Find and **SELECT** the **Printer Mode** item.
5. **SELECT** the **Simplex** item.
6. **SELECT** the **OK** push-button.
7. **SELECT Restart** when this prompt appears.
8. A window appears that informs you that an automatic **Shutdown** procedure has started. This is followed by a window that states that the system is being “rebooted” (reloading AFCCU microcode). At the completion of the microcode reload, the Printer Mode change is in effect (one of the main simplex printer Display/Touch Screen windows appears).

**Note:** No system power-off and power-on procedure is required.

9. To remove any forms still in the printer, see “Clearing the Forms Path” on page 164.
10. Load paper and assign forms in both printers for dual simplex operation (see “Loading Forms (Simplex or Dual Simplex Mode)” on page 83).
11. **SELECT** the **Ready** push-button.

For additional information, see “Chapter 8. Configuring the System” on page 245.

## Switching from Dual Simplex to Duplex Mode

1. To stop the printer, **SELECT** the **Stop** push-button on the Display/Touch Screen.
2. **SELECT** the **Configure** pull-down menu on the Display/Touch Screen window.
3. **SELECT** the **Configure Printer** procedure. The **Configure Printer** window appears.
4. Find and **SELECT** the **Printer Mode** item.
5. **SELECT** the **Duplex** item.
6. **SELECT** the **OK** push-button.
7. **SELECT** **Restart** when this prompt appears.
8. **SELECT** the **OK** push-button.
9. The Second Simplex window appears. You must select the **Shutdown/Restart** procedure from the **Operate** pull-down menu on that Display/Touch Screen, and then execute the **Shutdown** routine. A window appears stating that the system is shutting down. A second window appears stating that the system is being “rebooted”. At the completion of the reboot, the Printer Mode change is in effect (the Duplex main Display/Touch Screen window appears).

**Note:** No system power-off and power-on procedure is required.

10. To remove any forms still in the printer, see “Clearing the Forms Path” on page 164.
11. Load paper and assign the form for duplex operation (see “Loading Forms (Duplex Mode)” on page 97).
12. Perform the Threading and Aligning Forms procedure (see page 106).
13. **SELECT** the **Ready** push-button.

For additional information, see “Chapter 8. Configuring the System” on page 245.

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## Switching Print Resolution

Use this procedure to select the print resolution for a print job when it requires a different print resolution than is currently in use.

**Note:** Do not change the print resolution in combination with any other configuration changes. You must do it separately.

1. **SELECT** the **Configure** pull-down menu on the Display/Touch Screen window.
2. **SELECT** the **Configure Printer** procedure. The **Configure Printer** window appears.
3. **SELECT** the **Printhead Resolution: XXX** item, where XXX is the current print resolution configuration. The **Printhead Resolution** window appears listing the valid dots-per-inch (DPI) resolution numbers.
4. **SELECT** the appropriate resolution number.  
If you select 600 DPI, another window appears. This window shows the current IPDS resolution. **Select** the desired IPDS resolution.
5. If you select 480 DPI (or 600 DPI in combination with 240, 300, 600, or Auto IPDS resolution), the **Enhanced Fonts** window appears. You must select Yes or No for Single-byte and Double-byte Font Enhancements.
6. **SELECT** the **OK** push-button on the **Configure Printer** window. The print resolution is now at the number you selected.



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## Chapter 5. Working With Forms

### Chapter Overview

This chapter describes loading, unloading, aligning, adjusting, and checking the forms for the best print quality:

- “Loading Forms (Simplex or Dual Simplex Mode)”
- “Loading Forms (Duplex Mode)” on page 97
- “Splicing Forms” on page 99
- “Threading and Aligning Forms” on page 106
- “Threading the Buffer/Flipper Unit” on page 118
- “Adjusting the Print Position” on page 120
- “Using the NPRO and NPRO Page Functions to Advance Forms” on page 126
- “Checking for a Front-Facing Page” on page 129
- “Checking the Forms Alignment” on page 132
- “Checking Print Quality” on page 133
- “Changing the Forms-Based Printer Adjustments” on page 134
- “Adjusting the Stacker Table Height” on page 135
- “Unloading the Stacker” on page 136
- “Using the Printer Stacker with a Postprocessing Device” on page 139
- “Verifying Synchronized Duplex Printing” on page 140

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### Loading Forms (Simplex or Dual Simplex Mode)

Do this task when any of the following situations occur:

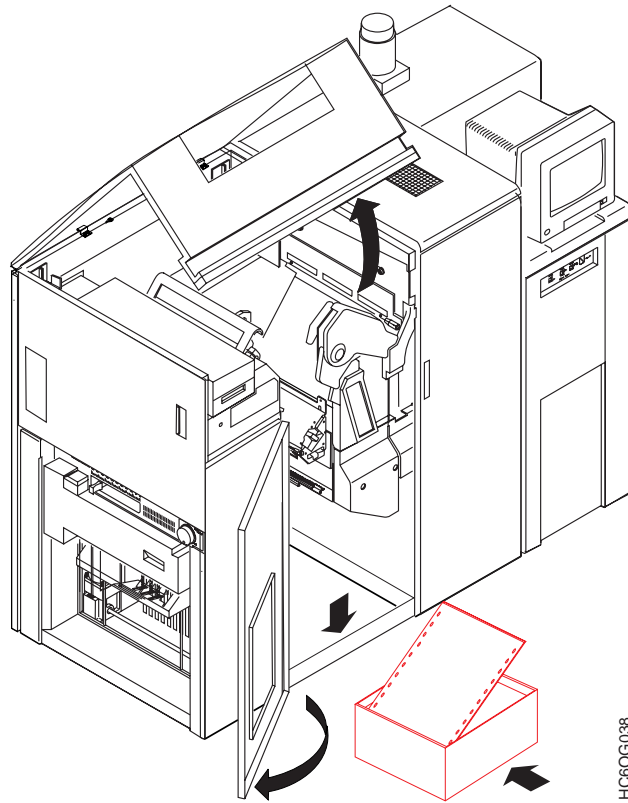
- When you see the END OF FORMS 078A message

**Note:** If you need to splice forms together, see “Splicing Forms” on page 99.

- You need to change forms
- When you are prompted by a forms jam recovery procedure step.

This section provides step-by-step instructions for loading forms in a Model ES1 printer or Models ED1/ED2 in dual simplex mode. “Loading Forms (Duplex Mode)” on page 97 contains instructions for loading form in an ED1/ED2 printing system in duplex mode. These instructions are for loading boxed, continuous forms that are loaded at the forms input area.

If preprocessing or postprocessing devices, or both, are used with the printing system, steps involving the continuous forms source or the final destination are different from the instructions given here. Because each preprocessing or postprocessing device is unique, you should use the specific instructions for the initial loading from a preprocessing device to the printer or forms handling in a postprocessing device following the printer that accompany the preprocessing or postprocessing device.



**CAUTION:**

<72> As you load forms, be careful to avoid injuries:

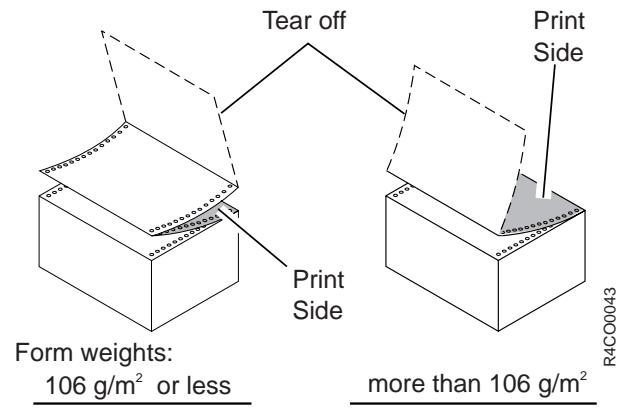
The tractor covers are spring-loaded and can pinch if they snap shut unexpectedly.

Moving forms, especially between the transfer station and the fuser entry area, can cause severe paper cuts.

CAUT0102

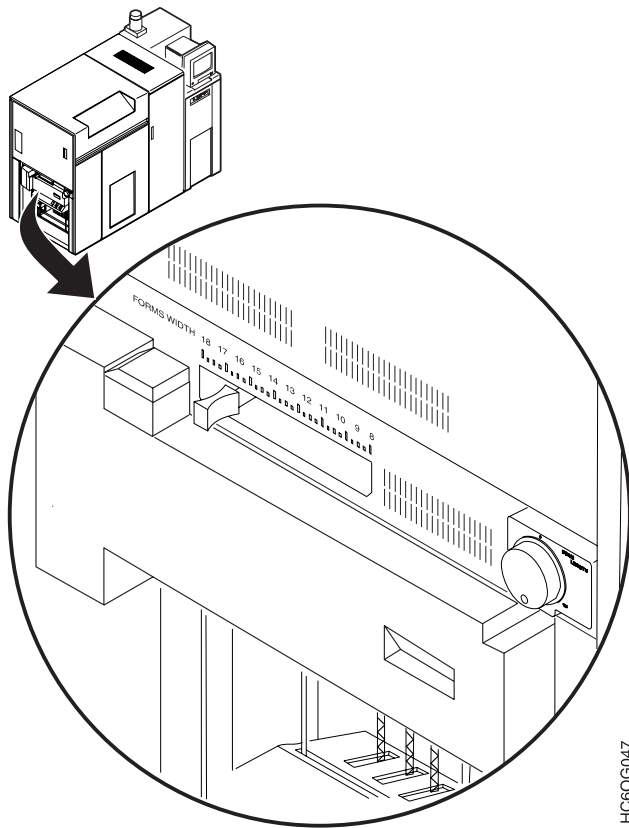
To load forms, do the following:

1. Open the top and center front covers if they are not already open.



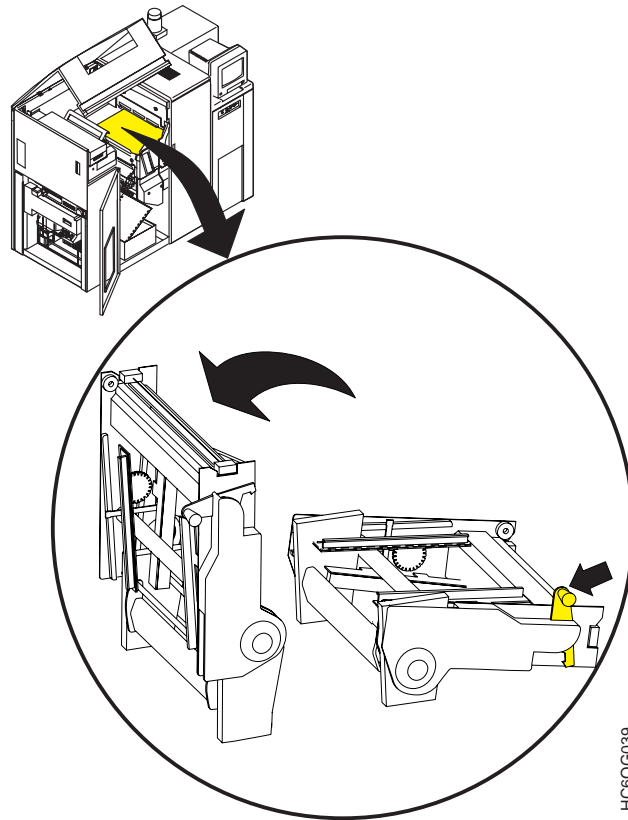
2. Open a box of forms and place the box in the input bin against the front edge.

## AT THE STACKER:

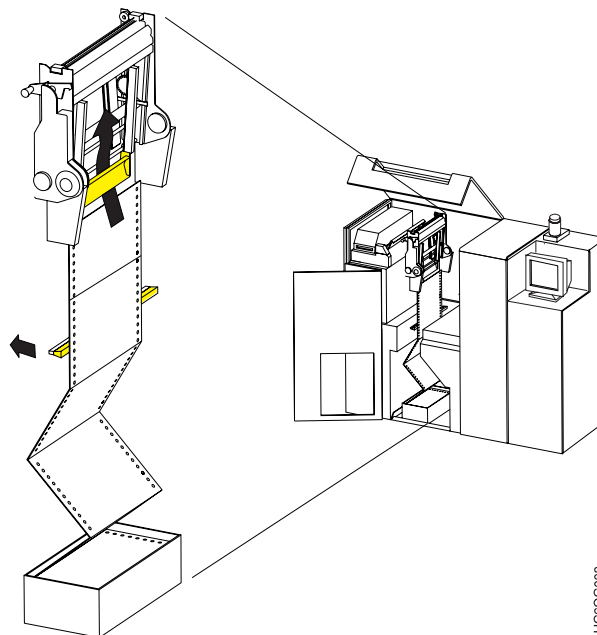


3. Slide the form width handle to the farthest left position (18 on the scale).
4. Turn the form length knob until two lights on the form length display indicate the correct length of the forms you are loading. For example, for 11½-inch-long forms, the light for 11 inches and the light for ½ inch are on.

**Note:** Forms that are greater than 14 inches long require postprocessing equipment.

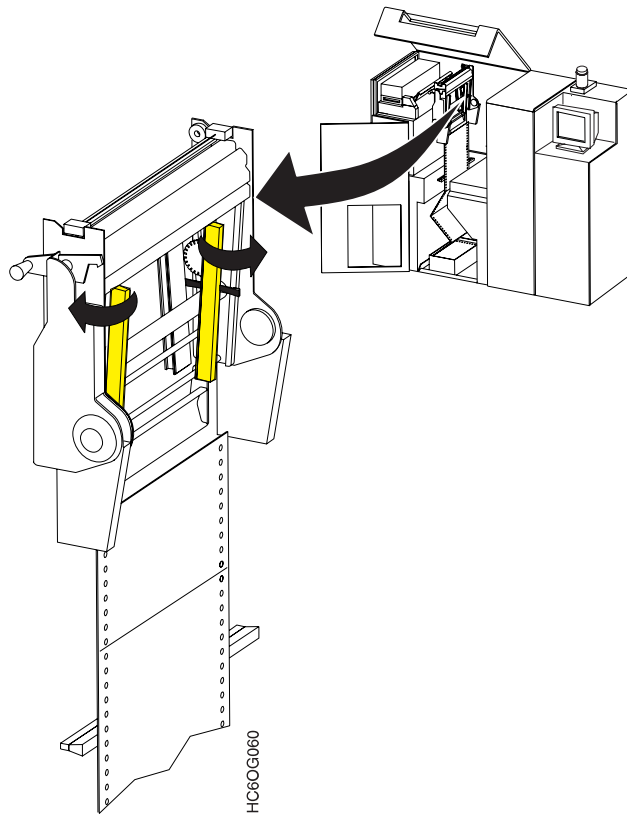


5. Release the transfer station latch and raise the transfer station to its upright position.



6. Swing the lower static discharge brush to the left.
7. Pull the forms to the right of the static discharge brush up to the transfer station.

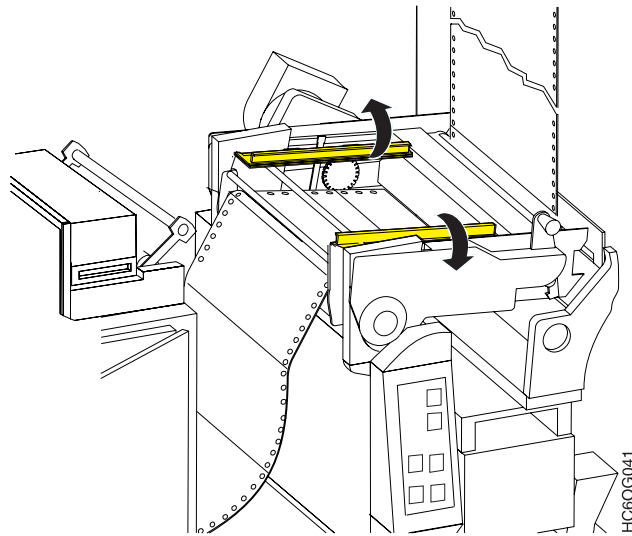
8. Pull the forms over the forms guides.



9. Open the two lower tractor covers.
10. Guide the forms under the transfer station brushes and up to the tractor area.
11. Place the forms on the front tractor pins and close the tractor cover.
12. Slide the blue rear lever on the adjustable tractor assembly until the rear tractor is approximately the width of the forms.
13. Place the forms on the rear tractor pins and close the rear tractor cover.

**Note:** Verify that the holes are aligned correctly.

14. Slide the rear blue lever on the adjustable tractor assembly until the forms are smooth and taut between the front and rear tractors.
15. Press down firmly on the blue lever to ensure the rear tractor assembly is locked in place.
16. Press and hold the **Forms Feed** button to feed approximately 1.3 meters (4 feet) of forms, enough to reach the tension arm.
17. Lower the transfer station and latch it.



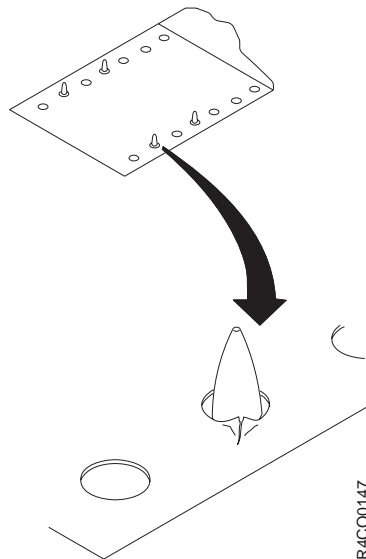
18. Open the two upper tractor covers.
19. Pull the forms tightly over the transfer station.

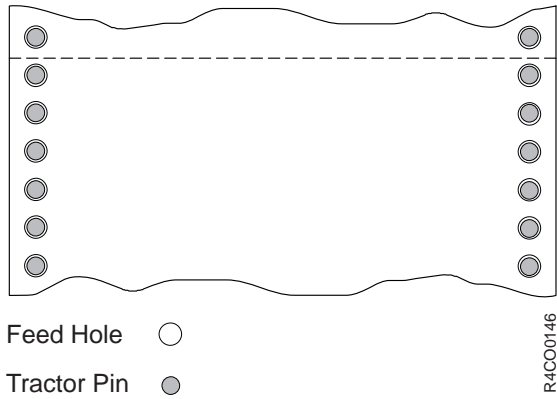
**Attention!**

If the forms are not pulled tightly over the transfer station, the photoconductor drum may be scratched. It is easily damaged and is *very* expensive to replace.

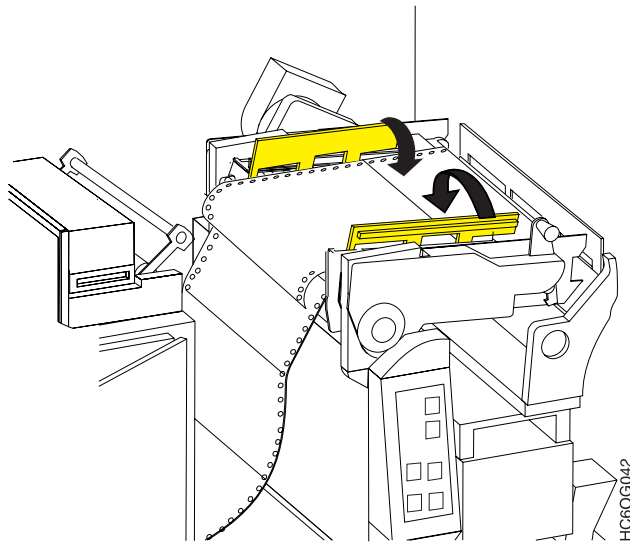
When the transfer station is in its full upright position, the drum is automatically covered to prevent damage to the drum.

20. Place the holes of the forms on the top tractor pins.



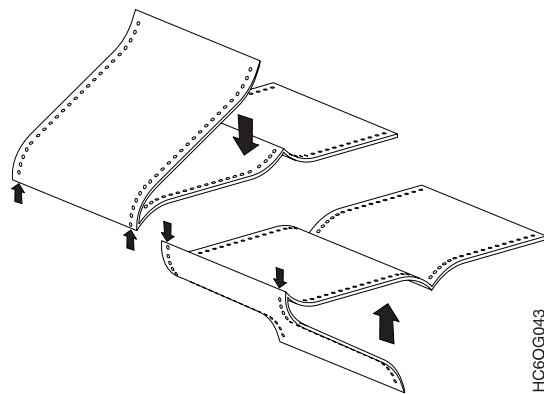


21. Ensure that the feed holes on the forms are centered on the tractor pins and not beginning to tear. If tearing is evident, adjust the rear tractor assembly until the feed holes are centered on the tractor pins.



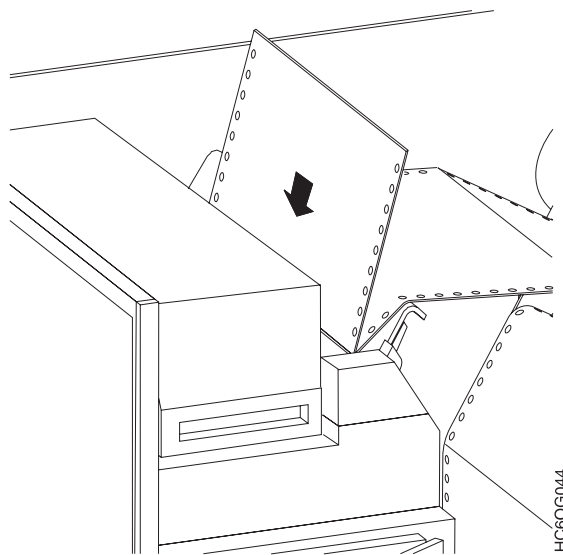
22. Carefully close the tractor covers.





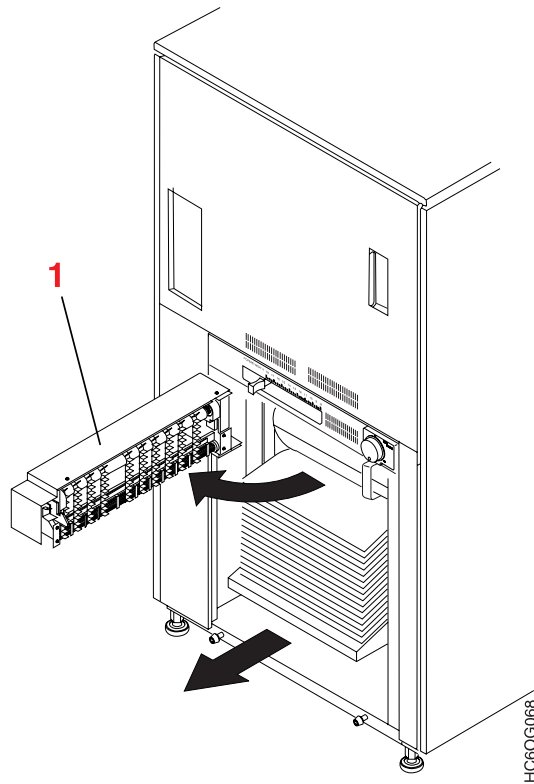
23. Fold the forms at the first perforation to make a double thickness.

**Note:** Use the original fold of the form. Do not fold the forms opposite to the original fold.

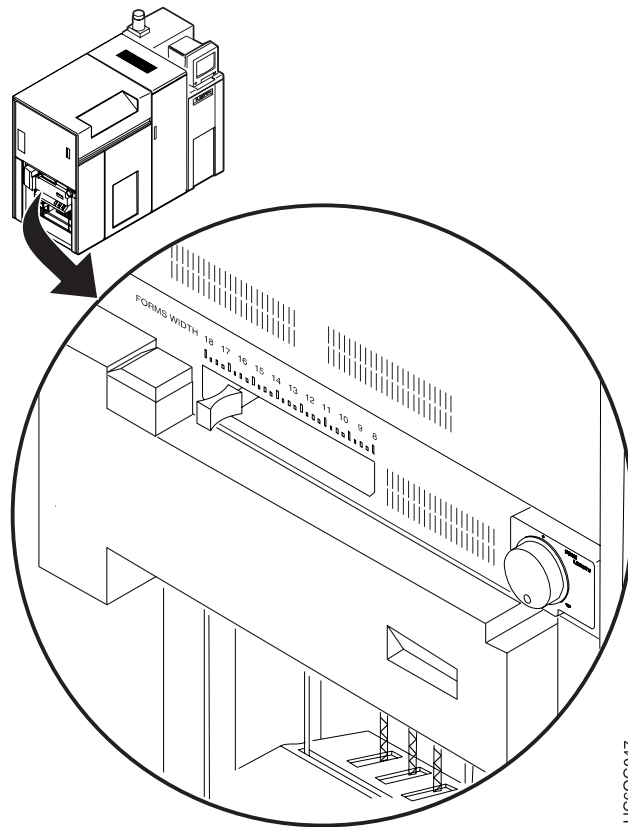


24. Pull the forms over the tension arm and feed the double thickness into the fuser.
25. Press and hold the **Forms Feed** button to feed several feet of forms into the stacker.

**Note:** If forms do not feed straight into the fuser, release the tension on the stacker feed rollers and straighten the forms.



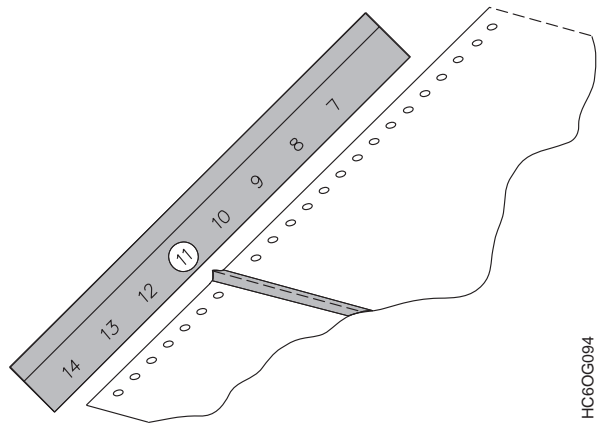
26. Open the stacker gate (1). Check that the forms are folding correctly (on their original folds). Press the **Forms Feed** button to feed additional forms into the stacker if necessary.



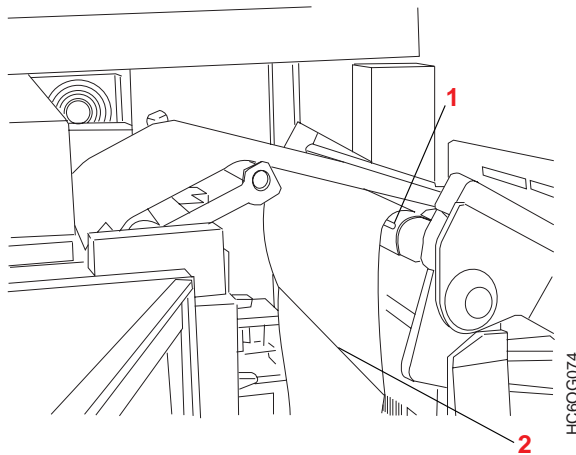
HC6OG047

27. Slide the stacker forms width handle close to the edge of the forms without wrinkling the forms.
28. Close the stacker gate.

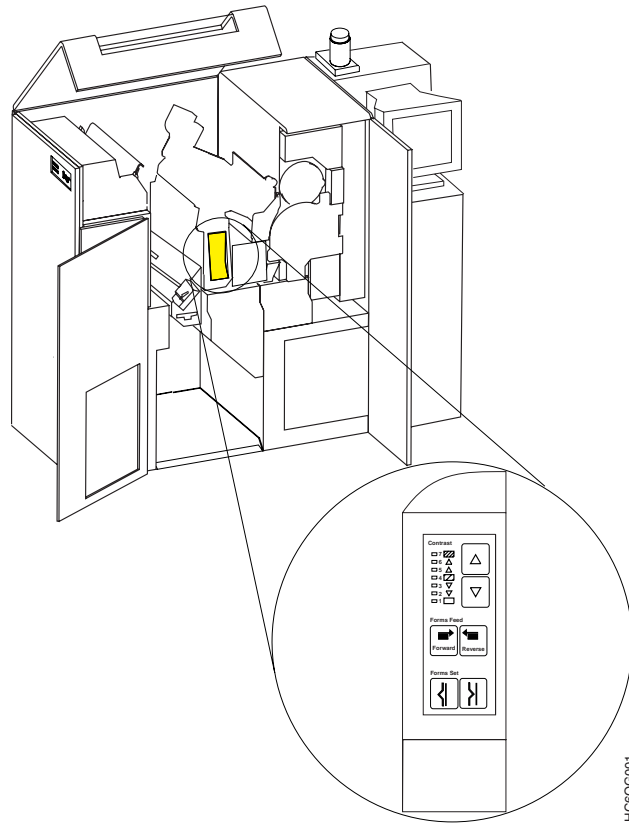
**AT THE TRANSFER STATION:**



29. Press the **Forms Feed** push-button to line up a page perforation with the forms scale on the rear tractor cover until the perforation is aligned with the correct number for the length of the form you are loading.



30. Determine the folding direction of the first perforation (2) below the slots (1) on the input forms guide.



- If the fold is pointing to the left, press the forms set on the left.
  - If the fold is pointing to the right, press the forms set on the right.
31. Close the top and front covers.

## At the Display/Touch Screen:

Operate    Configure    Analyze    Options    Help

**Printer Status**

**Assign Form to Load**

Select a Form Name.

Letter

Description:  
8.5 x 12 in. Form

Size: 12.000 by 8.500 inch

OK

Letter  
Standard  
a  
12x18  
b  
e  
f  
g

OK  
Cancel  
Search...

Ready    Check Reset    NPRO    Cancel Job

A23O0171

32. If you have changed to a different-size form, **SELECT** the **Assign Form to Load...** procedure from the **Options** pull-down menu.
33. If the form name in the **Select a Form Name** box is the form you are loading, **SELECT** the **Cancel** push-button. If the form name is not in the **Select a Form Name** box, **SELECT** the **Search** push-button.

A keyboard appears so you can enter the name of the form you are loading.

**Note:** The search function is case sensitive. That is, you must enter the form name *exactly*, including any capital letters, as it was originally defined.

34. When you have found the correct form name, **SELECT** the **OK** push-button.
35. If you have changed to preprinted forms or labels, check the forms alignment and the location of the print on the page. See “Adjusting the Print Position” on page 120.
36. If necessary, enable the host attachment.
37. **SELECT** the **Ready** push-button to continue.

---

## Loading Forms (Duplex Mode)

The ED1/ED2 duplex printing system is designed to have forms loaded through Printer 1, the Buffer/Flipper Unit, and Printer 2 for duplex printing.

This section provides step-by-step instructions for threading forms in duplex printing applications. “Loading Forms (Simplex or Dual Simplex Mode)” on page 83 contains instructions for loading forms for an ES1 printer or ED1/ED2 printers in dual simplex mode. These instructions are for loading boxed, continuous forms that are loaded at the forms input area of Printer 1, through the Buffer/Flipper Unit, Urge Unit, and Printer 2, to the output stacker of Printer 2.

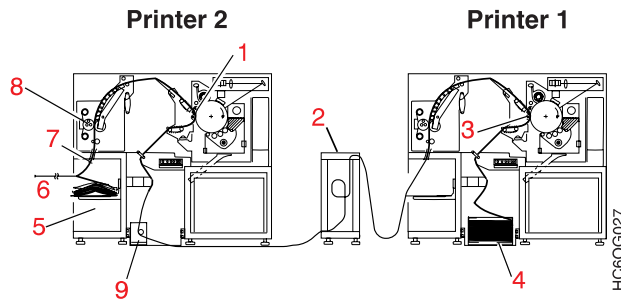
If preprocessing or postprocessing devices are used with the printing system, steps involving the continuous forms source and the final destination are different from the instructions given here. Because each preprocessing and postprocessing device is unique, you should use the specific instructions for the initial loading from a preprocessing device to Printer 1 or forms handling in a postprocessing device following Printer 2 that accompany the preprocessing or postprocessing device.

Do this task when any of the following situations occur:

- You see the END OF FORMS 078A message

**Note:** If you need to splice forms together, see “Splicing Forms” on page 99.

- You need to change forms
- You are prompted by a forms jam recovery procedure step.



### CAUTION:

<72> As you load forms, be careful to avoid injuries:

The tractor covers are spring-loaded and can pinch if they snap shut unexpectedly.

Moving forms, especially between the transfer station and the fuser entry area, can cause severe paper cuts.

CAUT0102

To load forms, do the following:

1. Ensure that both Printer 1 and Printer 2 are in the Not Ready state before you begin this task.
2. Ensure that the Urge Unit is not running.
3. Do step 1 on page 84 through step 26 on page 92 under “Loading Forms (Simplex or Dual Simplex Mode)” and return here.  
You now have forms in the stacker of Printer 1.
4. Use the Forms Feed push-button on the Stacker Control Panel as necessary to advance enough forms to thread the Buffer/Flipper Unit, the Urge Unit, and Printer 2.
5. Thread the forms through the Buffer/Flipper Unit (2) (see “Threading the Buffer/Flipper Unit” on page 118).
6. Bring the forms under the control unit of Printer 2 to the Urge Unit (9).
7. Thread the Urge Unit.
8. Thread the forms through Printer 2 using steps 1 on page 84 through 37 on page 96 of Loading Forms (Simplex or Dual Simplex Mode).
9. Ensure that the paper in Printer 1 is aligned with the forms scale on the rear tractor cover.
10. Go to the Thread to Align menu to ensure proper alignment. See “Threading and Aligning Forms” on page 106.



## Splicing Forms

Do this task when you need to splice a new supply of forms to the last page of the previous supply of forms without reloading forms.

The controls you need to accomplish this task are available on the Display/Touch Screen of the affected printer.

You need the following items when you splice forms:

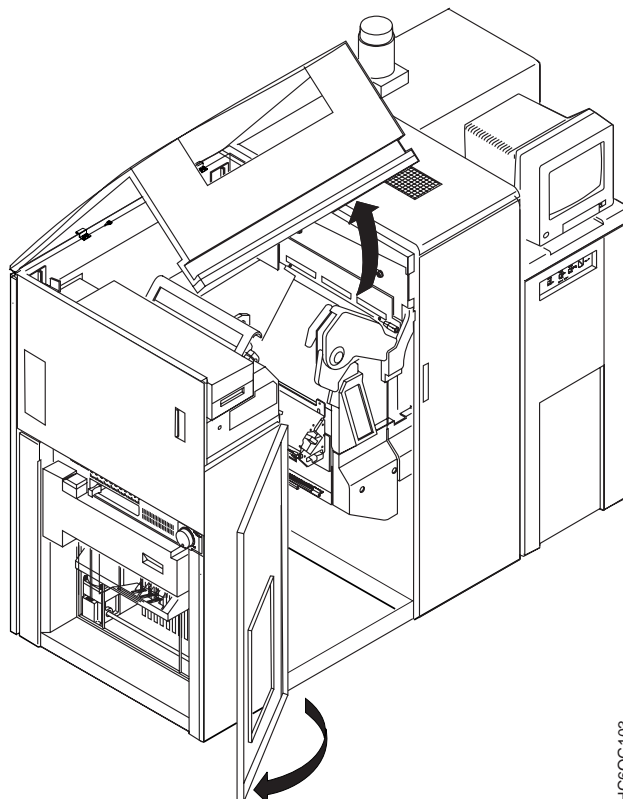
- A supply of the same type of forms as those that are currently loaded
- Splicing tape.

### Operator Tips

1. Splicing tape that has been exposed to air for more than 24 hours tends to lose its adhesive quality. If the tape does not seem sticky, discard the roll and use a new one.
2. You *must* splice forms at a perforation that is centered between tractor holes. In forms with  $\frac{1}{3}$ -inch or  $\frac{2}{3}$ -inch length increments, this occurs *only every third form*. Therefore, you may have to discard several blank forms to achieve tractor-hole alignment on both the currently-loaded forms and the new forms.

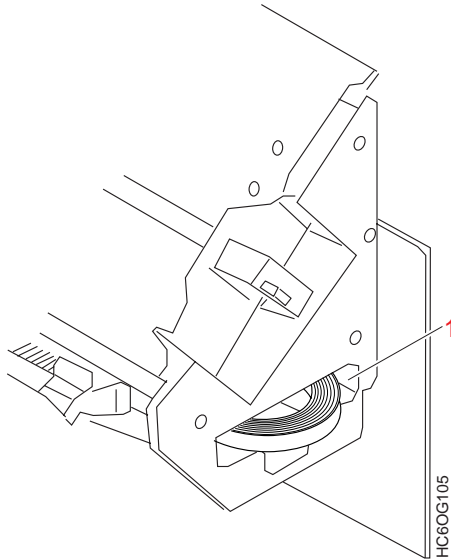
1. **SELECT** the **Stop** push-button on the Display/Touch Screen window for the affected printer.

**Note:** Do *not* switch power to the printer off during this process.

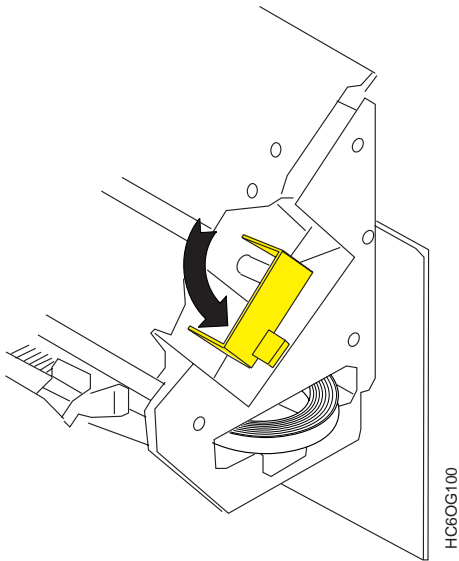


HC6OG103

2. Open the center front and center top covers of the printer.
3. Locate a new supply of forms (either roll-feed or fan fold). Ensure that the new forms are exactly the same kind as the forms that are already loaded.
4. Make the new supply of forms available in the forms input area.



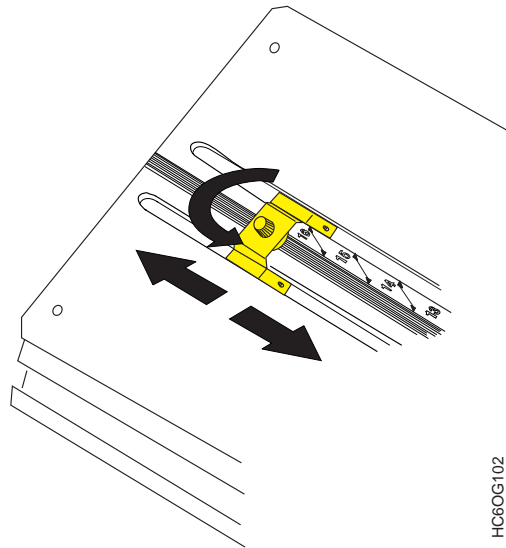
5. Locate a fresh roll of splicing tape. Splicing tape can be kept in the small storage area on the splicing table (1).



6. Move the **Splice Lever** to **Splice** to turn on the splicing table vacuum. You see the following message: **SPLICE LEVER DOWN 0782**

#### Operator Tip

When the splicing table vacuum is on, you should hear a hissing sound and feel suction if you put your finger on the tape slot.

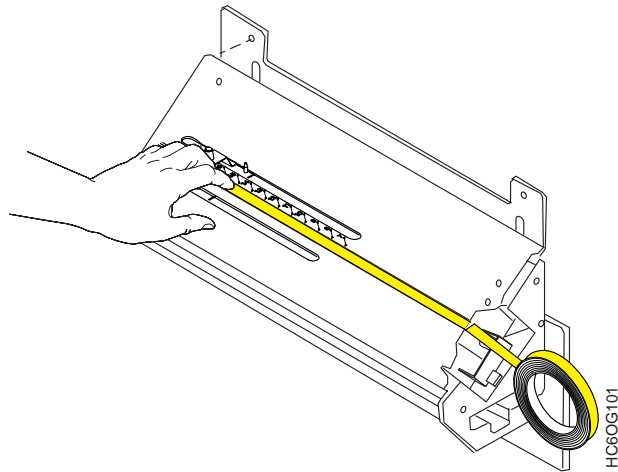


7. Position the moveable rear guide pins by doing the following:
  - a. Turn the knurled knob *counterclockwise* to loosen the moveable pins.
  - b. Slide the moveable pins so that their front edge is aligned with the width mark that corresponds to the width of the forms you are splicing.
  - c. Turn the knurled knob *clockwise* to lock the moveable pins in place.

#### Operator Tips

- a. When the printer senses the end-of-forms condition, there are usually several pages of forms between the input stack area and the transfer station.
- b. You *must* splice forms at a perforation that is centered between tractor holes. In forms with  $\frac{1}{3}$ -inch or  $\frac{2}{3}$ -inch length increments, this occurs *only every third form*. Therefore, you may have to discard several blank forms to achieve tractor-hole alignment on both the currently-loaded forms and the new forms.

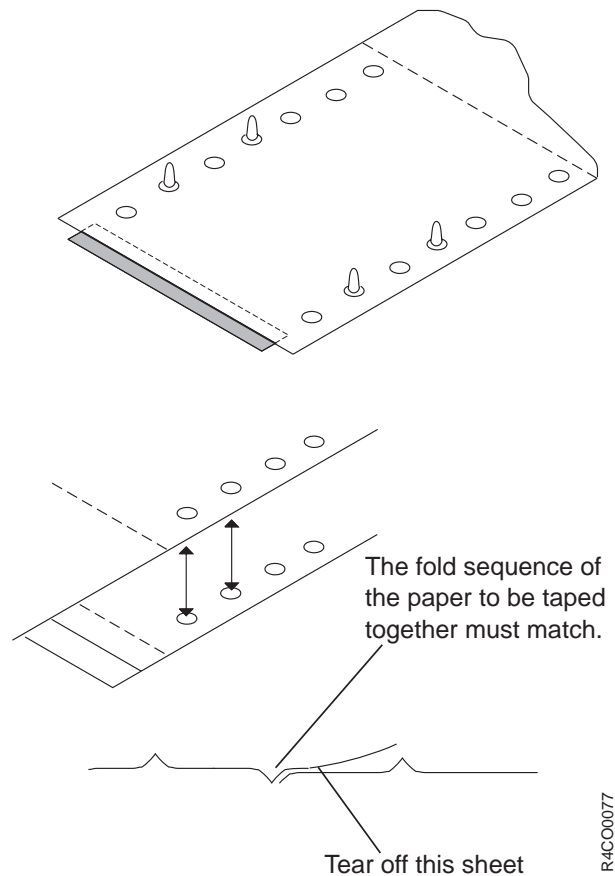
8. Unroll some of the splicing tape.



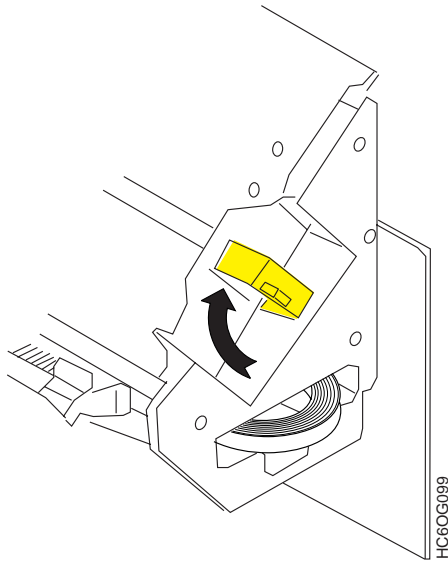
9. **With the adhesive side up**, put the free end of the tape on the splicing table tape slot, aligned with the width mark that corresponds to the width of the forms you are splicing.
10. Continue unrolling tape on the tape slot. The vacuum holds the tape in place on the splicing table.
11. Cut the tape by using the serrated blade at the front edge of the splicing table. Ensure that the tape is aligned squarely on the tape slot, and that the edge of the tape does not extend beyond the rear form-width mark.
12. Put the splicing tape back into the storage area under the splicing table vacuum.

**Operator Tip**

Splicing tape tends to lose its adhesive quality when it is touched. Avoid touching the adhesive with your hands. Also, keep tape away from the forms until you are ready to actually attach them to the tape.



13. Move the last page of the currently-loaded forms into position. Align the tractor holes with the front and rear guide pins to the right of the tape slot. The edge of the form is at the center of the splicing tape.
14. If you are using fan-fold forms, ensure that the fold direction of the new forms is coordinated with the fold direction of the currently-loaded forms (see the figure above). If necessary, tear off a page of the new forms (see Operator Tips on page 101).
15. Fold back the first page of the new forms. Ensure that the print surface of the folded page faces up, and the print surface of the bottom page faces down.
16. Move the new forms into position. Align the tractor holes with the guide pins to the left of the tape slot. The folded perforation is at the center of the tape, against the edge of the currently-loaded forms.
17. Unfold the first page of the new forms, and align its tractor holes on the guide pins to the right of the tape slot. Be sure that the first page of the new forms *overlaps* the currently-threaded forms, as shown in the illustration.
18. Press firmly on the forms and tape along the tape slot to ensure that the print surfaces of both forms are securely attached to the splicing tape.
19. With the first page of the new forms unfolded, carefully tear off the overlapping new forms page.

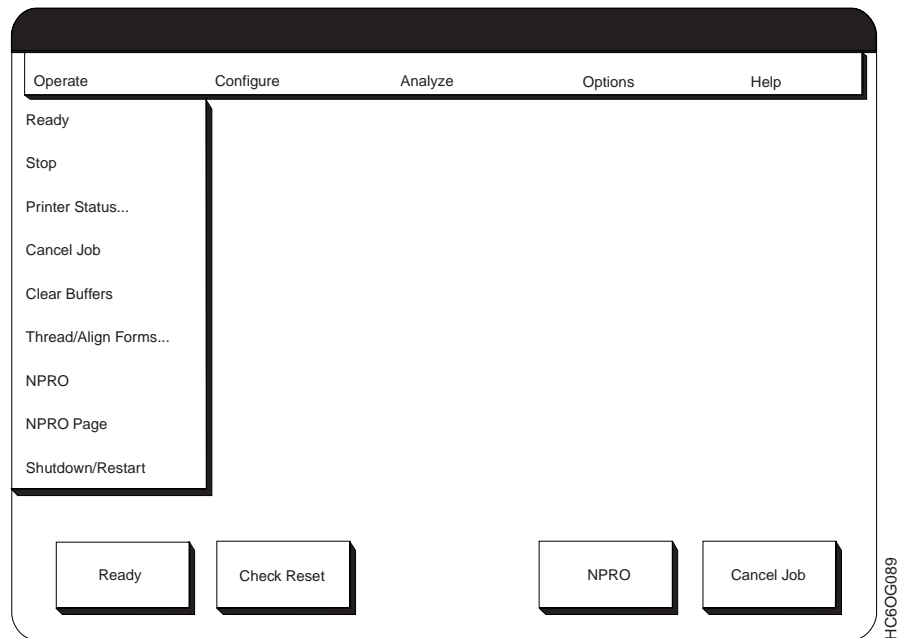


20. To turn off the splicing table vacuum, move the **Splice Lever** to the **Run** position.
21. Lift the spliced forms off the guide pins.

**Important**

The spliced forms jam if you do not lift the forms off the guide pins.

22. Ensure that the splicing tape does not cover the tractor holes.
23. Ensure that the splicing table is clear of debris.
24. Ensure that the new forms are correctly loaded. They should pass from the input area, over the forms guide, and under the static brush on the left side of the splicing table.



25. To advance the spliced area through the transfer station, **SELECT** the **NPRO Page** option on the **Operate** pull-down menu on the Display/Touch Screen as many times as necessary until you see the splice on the upper tractors.
26. Check forms alignment at the lower tractors. See “Checking the Forms Alignment” on page 132.
27. Close the center front and center top covers of the printer.
28. If you are splicing forms for a duplex printing system, go to “Threading and Aligning Forms” on page 106.
29. To continue printing, **SELECT** the **Ready** push-button for the affected printer.

## Threading and Aligning Forms

Select this task when you load forms in duplex mode. This procedure is also automatically called up when the system is powered-on in duplex mode and during some error and jam recovery procedures.

All of the controls you need to accomplish this procedure are available on the Display/Touch Screen windows.

This procedure initially displays a **Thread/Align Forms** window (see Figure 21).

**Note:** Proper completion of this task is important to ensure that Printer 2 prints side 2 pages correctly opposite the side 1 pages previously printed by Printer 1.

You can print verification marks on both sides of the pages using the **Verification marks** Printer Configuration Item. You can then visually inspect these marks to ensure that sides 1 and 2 of the forms are properly synchronized. See “Verification Marks” on page 253 for more information.

The dashed line is used to align the forms in the printers. The solid line is used to align postprocessing equipment if any is attached.

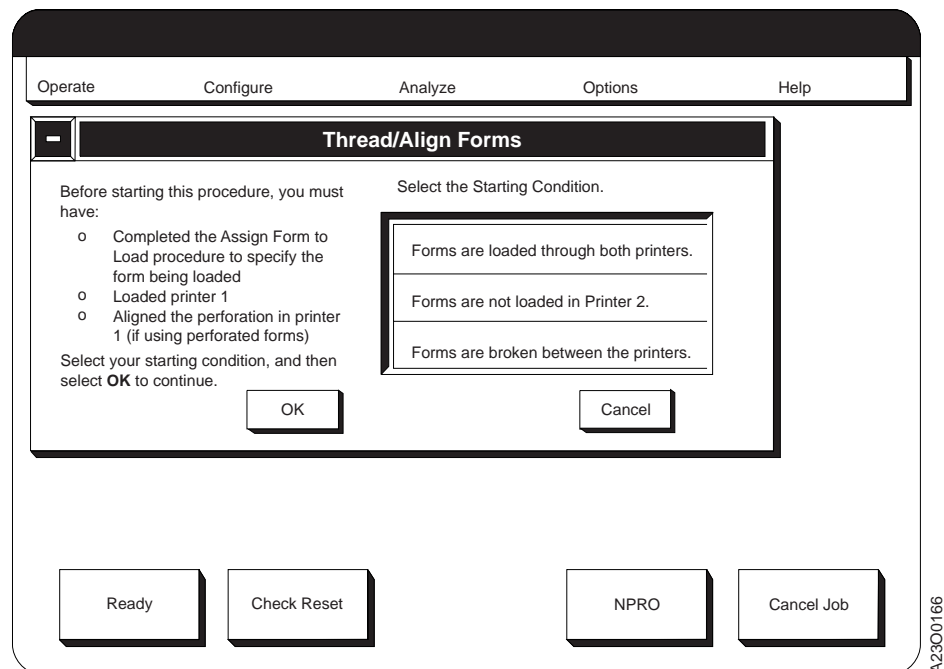


Figure 21. Setup Window for Thread/Align Forms



1. **SELECT** one of the three conditions you want from the **Select a Starting Condition** box. Your choice is highlighted.

The three selectable conditions on this window are:

- **Forms are threaded through both printers.**

Select this when you need to verify that the existing front-to-back printing synchronization distance is still accurate:

- The system has gone through a "Restart" procedure with forms loaded through both printers.
- You are in a recovery procedure for an error condition or a forms jam that you have determined did not tear, damage, or separate the forms anywhere in the forms path through both printers.
- The system power has been switched off then switched back on with unseparated forms threaded through both printers.

- **Forms are not loaded in printer 2.**

Select this when you need to set the front-to-back printing synchronization distance:

- You are loading a new type of form with different characteristics from the last form used in the system.
- You are loading the same type of form previously used in the system that was allowed to run out to end-of-forms and was flushed out of the printer so that a new supply of forms could not be spliced to the trailing edge of the old supply.
- You are in a forms jam recovery procedure that separated the forms path in a manner that you could not rejoin by splicing.

- **Forms are broken between the printers.**

Select this when you are recovering from a condition that separated the forms between Printer 1 and Printer 2 that you can rejoin by splicing.

2. If you **SELECT** the **Cancel** push-button on the window, the following actions occur:

- If you selected this procedure from the **Operate** pull-down menu, the **Thread/Align Forms** procedure closes with no actions taken.
- If this procedure appeared automatically, the **Thread/Align Forms** procedure closes; however, any later attempt to make the printer Ready displays an **Intervention Required** Display/Touch Screen window containing a **0206** Error Code. This requires **SELECTING** the **Thread/Align Forms** procedure and executing it before any printing actions can resume.

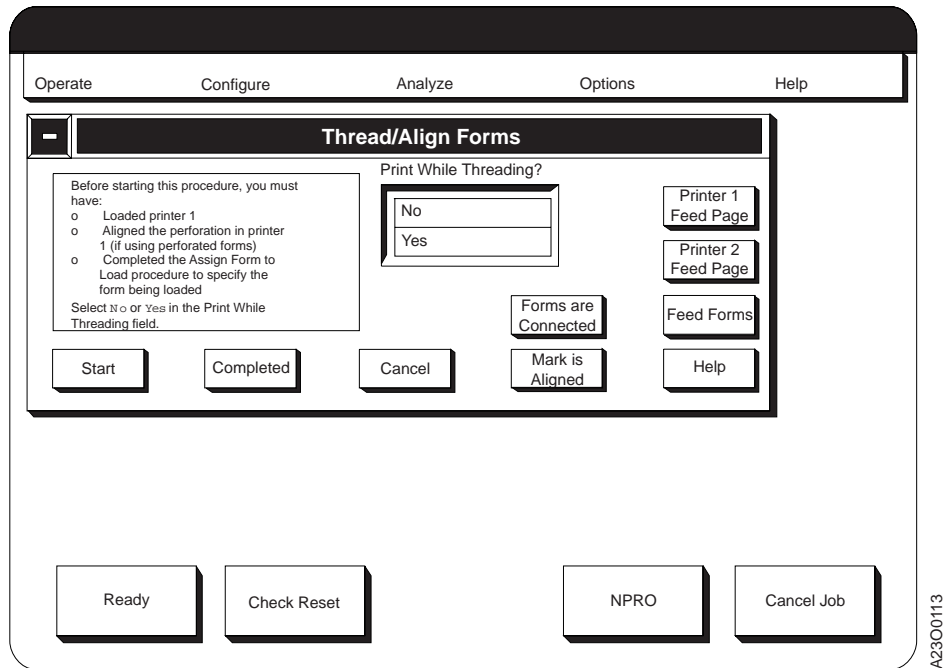


Figure 22. Main Thread/Align Forms Window

3. **SELECT** the **OK** push-button on the window. The main **Thread/Align Forms** procedure window (Figure 22) appears.

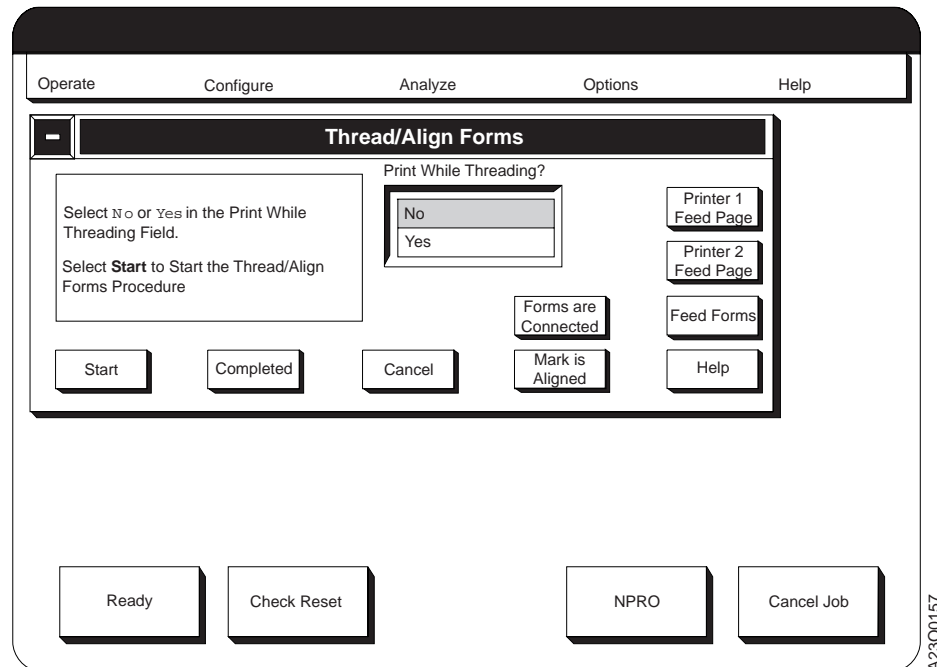
Find the condition you selected to start from and go tot the referenced page:

Condition	Reference Page
Forms are threaded through both printers	109
Forms are not loaded in printer 2	112
Forms are broken between the printers	115

## Forms Are Loaded Through Both Printers

These procedures assume that:

- You have visually checked the entire forms path and found that the forms are not separated.
- If you intend to “Print While Threading” - a print job is queued and host attachments are enabled.



1. **SELECT** the **No** or **Yes** option within the **Print While Threading?** field.
2. **SELECT** the **Start** push-button.
3. **SELECT** the **Forms are Connected** push-button.
4. **SELECT** the **Feed to Align** push-button on the **Thread/Align Forms** window or press the **Feed** key on either the Printer 1 or Printer 2 operator panel.
  - a. This prints an alignment mark on a page in Printer 1, designated as an alignment page.

If you are using perforated forms, the alignment mark are printed on the leading perforation of the page.

A one-bar or two-bar pattern is also printed on the alignment page to show whether Side 1 or Side 2 of the form is being printed on Printer 1.
  - b. This feeds a fixed length of forms through both Printer 1 and Printer 2.

The fixed length is based on the “Length of Forms Between Transfer Points” configuration item length shown on the **Configure Printer** window under the **Configure** pull-down menu, and is a multiple of the current loaded Form Name page length that is closest to the “Length of Forms Between Transfer Points” length without exceeding it.
5. If you choose **No** to **Print While Threading** - go to step 8 on page 110.

If you choose **Yes** to **Print While Threading** - Pages for the queued job are printed on Printer 1 starting on the page following the alignment page. Printer 2 processes blank pages.

6. If the queued job is too short to print all pages on Printer 1 for the complete "Length of Forms Between Transfer Points", the printing process ceases, the printers stop forward movement of the forms, and a message appears in the non-selectable **Information** field on the window informing you that there is No Data to Print.

In this case you may either:

- **SELECT** the **No** option in the **Print While Threading** field, and then **SELECT** the **Feed to Align** push-button to finish moving the alignment mark printed on Printer 1 to Printer 2.
  - Request the host system operator to send more print jobs to the system. Periodically **SELECT** the **Feed to Align** push-button. When more data is available, forward movement of the forms while printing resumes until the "Length of Forms Between Printers" distance is achieved.
7. When the queued and requested print jobs have satisfied the fixed length forward forms movement, go to step 8.
  8. Visually verify that the alignment mark printed on Printer 1 is aligned to the appropriate form length mark on the input station alignment scale on Printer 2.
    - a. If the alignment mark is aligned at Printer 2, check to see if there is a sufficient buffer loop of forms between Printer 1 and the Buffer/Flipper Unit. If the buffer loop needs to be increased, change the "Length of Forms Between Transfer Points" printer configuration item. See the table item on page 253 for more information.
    - b. If the Printer 1 alignment mark is short of the appropriate forms length scale mark in Printer 2, **SELECT** the **Printer 2 Feed Page** push-button as many times as necessary until the Printer 1 alignment mark is aligned at Printer 2.
    - c. If the Printer 1 alignment mark is past the forms length scale mark in Printer 2, first add some more buffer loop between Printer 1 and the Buffer/Flipper Unit by **SELECTING** the **Printer 1 Feed Page** push-button several times several times, and then **SELECT** the **Cancel** push-button on the window.

You must now restart this **Thread/Align Forms** procedure.

9. After you have visually verified that the Printer 1 alignment mark is aligned correctly on Printer 2, **SELECT** the **Mark is Aligned** push-button on the window.

At the **Verification** window, **SELECT** the **OK** push-button.

This informs the control unit that the alignment is complete.

**Important**

If your visual verification of alignment is incorrect, all the following duplex print jobs are printed with incorrect alignment between the front and back of the pages.

10. If a postprocessing device is installed and not threaded, **SELECT** the **Feed Forms** push-button on the window as many times as necessary to advance the forms sufficient distance to thread the postprocessing device.  
If you choose **Yes** to **Print While Threading** - Printer 2 prints Side 2 pages starting on the page following the alignment page during these forms forward movements. If the queued job is long enough, Printer 1 continues printing Side 1 pages.
11. **SELECT** the **Completed** push-button on the window that closes this window.  
This completes this type of Thread/Align Forms procedure.
12. **SELECT** the **Ready** push-button on the main Display/Touch Screen window.

## Forms Are Not Loaded In Printer 2

These procedures assume that:

- You have visually checked that forms have been auto loaded in Printer 1, and forms are not loaded in Printer 2.
- The main **Thread/Align Forms** procedure window appears on the Display/Touch Screen.
- A customer print job is queued if you intend to select the "Print While Threading" option.

The screenshot shows a touch screen interface with a menu bar at the top containing 'Operate', 'Configure', 'Analyze', 'Options', and 'Help'. The main window is titled 'Thread/Align Forms'. Inside this window, there is a text box on the left that says 'Select No or Yes in the Print While Threading Field. Select **Start** to Start the Thread/Align Forms Procedure'. To the right of this text box is a 'Print While Threading?' field with 'No' and 'Yes' options. Below this field are buttons for 'Start', 'Completed', and 'Cancel'. To the right of these buttons are status indicators: 'Forms are Connected' and 'Mark is Aligned'. On the far right of the window are buttons for 'Printer 1 Feed Page', 'Printer 2 Feed Page', 'Feed Forms', and 'Help'. At the bottom of the screen, outside the main window, are four buttons: 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. A vertical label 'A2300157' is visible on the right edge of the screen.

1. **SELECT** the **No** or **Yes** option within the **Print While Threading?** field.
2. **SELECT** the **Start** push-button.
3. **SELECT** the **Feed Forms** push-button on the **Thread/Align Forms** window or press the **Feed** key on the Printer 1 operator panel.
  - a. This prints an alignment mark on a page in Printer 1, designated as an alignment page.  
If you are using perforated forms, the alignment mark is printed on the leading perforation of the page.  
A one-bar or two-bar pattern is also printed on the alignment page to show whether Side 1 or Side 2 of the form is being printed on Printer 1.
  - b. This feeds a fixed length of forms through Printer 1.  
The fixed length is based on the "Form Feed Length" configuration item shown on the **Configure Printer** window under the **Configure** pull-down menu, and is a multiple of the current loaded Form Name page length that is closest to the "Form Feed Length" without exceeding it.
4. If you choose **No** to **Print While Threading** - go to step 5 on page 113.  
If you choose **Yes** to **Print While Threading** - Pages for the queued job are printed on Printer 1 starting on the page following the alignment page. Printer 2 processes blank pages.

5. Continue **SELECTING** the **Feed Forms** push-button on the window for Printer 1 until selecting does not advance the forms any further.

Enough forms should have moved through Printer 1 to manually thread the Buffer/Flipper Unit (see "Threading the Buffer/Flipper Unit" on page 118 for details). Advance the forms under Printer 2 into the input area of Printer 2 and load Printer 2.

The **Feed Forms** push-button on the window becomes inoperable when a multiple of the current loaded Form Name page length that is closest to but not exceeding the length in the "Length of Forms Between transfer Points" configuration item shown on the **Configure Printer** window under the **Configure** pull-down menu has moved through Printer 1.

When the **Feed Forms** push-button is inoperable and additional length is needed to supply enough forms to thread Printer 2, **SELECT** the **Printer 1 Feed Page** push-button on the window.

If you choose **No** to **Print While Threading** - go to step 7.

6. If the queued job is too short to print all pages on Printer 1 for the complete "Length of Forms Between Transfer Points", the **Feed Forms** window push-button becomes inoperable before the "Length of Forms Between Transfer Points" is achieved, and a message appears in the non-selectable **Information** field on the window informing you that there is **No Data to Print**.

In this case you may either:

- **SELECT** the **No** option in the **Print While Threading** field, which restores use of the **Feed Forms** push-button so that you may continue with the threading process.

- Request the host system operator to send more print jobs to the system, which when received, resumes printing operations on Printer 1.

Periodically **SELECT** the **Feed Forms** push-button. When more data is available, forward movement of the forms while printing resumes until the "Length of Forms Between Printers" distance is achieved.

7. Once enough forms have moved through Printer 1 and the Buffer/Flipper Unit and created a buffer big enough between the Buffer/Flipper Unit and Printer 2 to allow you to thread Printer 2, do the following:
  - a. Remove power from the Urge Unit in the Forms Input area of Printer 2. The Urge Unit cannot be threaded with the roller moving.
  - b. Thread forms through the Urge Unit.
  - c. Restore power to the Urge Unit.
8. Follow the steps in the "Loading Forms (Duplex Mode)" on page 97 to thread Printer 2.
9. Visually verify that the alignment mark printed on Printer 1 is aligned to the appropriate form length mark on the input station on Printer 2.
  - a. If the alignment mark is aligned at Printer 2, check to see if there is a sufficient buffer loop of forms between Printer 1 and the Buffer/Flipper Unit. If you need to increase the buffer loop, change the "Length of Forms Between Transfer Points" printer configuration item. See the table item on page 253 for more information.
  - b. If the Printer 1 alignment mark is short of the appropriate forms length scale mark in Printer 2, **SELECT** the **Printer 2 Feed Page** push-button as many times as necessary until the Printer 1 alignment mark is aligned at Printer 2.
  - c. If the Printer 1 alignment mark is past the forms length scale mark in printer 2, first add some more buffer loop between Printer 1 and the

Buffer/Flipper Unit by **SELECTING** the **Printer 1 Feed Page** push-button several times, and then **SELECT** the **Cancel** push-button on the window.

You must now restart this **Thread/Align Forms** procedure.

10. After you have visually verified that the Printer 1 alignment mark is aligned correctly on Printer 2, **SELECT** the **Mark is Aligned** push-button on the window.

At the **Verification** window, **SELECT** the **OK** push-button.

This informs the control unit that the alignment is complete.

**Important**

If your visual verification of alignment is incorrect, all following duplex customer print jobs are printed with incorrect alignment between the front and back of the pages.

11. If a postprocessing device is installed and not threaded, **SELECT** the **Feed Forms** push-button on the window as necessary to advance the forms sufficient distance to thread the postprocessing device.  
If you choose **Yes** to **Print While Threading** - Printer 2 prints Side 2 pages starting on the page following the alignment page during these forms forward movements. If the queued job is long enough, Printer 1 continues printing Side 1 pages.
12. **SELECT** the **Completed** push-button on the window that removes this window.  
This completes this type of Thread/Align Forms procedure.
13. **SELECT** the **Ready** push-button on the main Display/Touch Screen window to begin printing.



## Forms Are Broken Between the Printers

A jam occurring between Printer 1 and Printer 2 normally causes the forms to tear and separate. Printer 1 continues to print and dump forms out on the floor between Printer 1 and Printer 2. Printer 2 feeds forms and print until an **END OF FORMS 078A Intervention Required** Display/Touch Screen window appears, at which time both printers stop feeding forms.

The following procedure gives you a method of splicing the separated forms back together between Printer 1 and Printer 2, so that rethreading of Printer 2 and a postprocessing device (if installed) is not required.

These procedures assume that:

- You have visually checked the forms path and found it separated between Printer 1 and Printer 2.
- The main **Thread/Align Forms** procedure window appears on the Display/Touch Screen.
- A customer print job is queued and host attachments are enabled if the "Print While Threading" option is selected.

The screenshot shows a touch screen interface with a menu bar at the top containing 'Operate', 'Configure', 'Analyze', 'Options', and 'Help'. A window titled 'Thread/Align Forms' is open. Inside this window, there is a text box on the left that says 'Select No or Yes in the Print While Threading Field.' and 'Select Start to Start the Thread/Align Forms Procedure'. To the right of this text box is a 'Print While Threading?' field with 'No' and 'Yes' options. Below this field are buttons for 'Start', 'Completed', and 'Cancel'. To the right of these buttons are status indicators: 'Forms are Connected' and 'Mark is Aligned'. On the far right, there are buttons for 'Printer 1 Feed Page', 'Printer 2 Feed Page', 'Feed Forms', and 'Help'. At the bottom of the screen, there are four buttons: 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. A vertical label 'A2300157' is on the right side of the screen.

1. **SELECT** the **No** or **Yes** option within the **Print While Threading?** field.
2. **SELECT** the **Start** push-button.
3. If no forms were damaged by the separation and there is sufficient slack in the forms, splice the forms back together at the Printer 2 splicing table. See "Splicing Forms" on page 99 for details.  
Go to step 5 on page 116.

4. If forms were damaged by the separation and must be removed or there is not enough slack to splice the forms back together, use either the **Feed Forms** or **Printer 1 Feed Page** push-buttons to advance the forms through Printer 1 a sufficient distance to splice the forms at the Splicing Table of Printer 2. The first selection of either the **Feed Forms** or the **Printer 1 Feed Page** push-button:
  - a. Prints an alignment mark on a page in Printer 1, designated as an alignment page.

If you are using perforated forms, the alignment mark is printed on the leading perforation of the page.

Print a one-or two-bar pattern on the alignment page to show whether Side 1 or Side 2 of the form is printed on Printer 1.
  - b. Feeds a fixed length of forms through Printer 1, either the length set in the **Form Feed Length** printer configuration item if you select the **Feed Forms** push-button or the length of one page according to the page length definition for the Form Name currently loaded if you select the **Printer 1 Feed Page** push-button.
  - c. If you choose **Yes to Print While Threading** - Pages for the queued customer job are printed on Printer 1 starting on the page following the alignment page. Printer 2 process blank pages.
5. **SELECT** the **Forms are Connected** push-button.
6. **SELECT** the **Feed to Align** push-button on the **Thread/Align Forms** window. This essentially restarts the procedure.
  - a. This prints an alignment mark on a page in Printer 1, designated as an alignment page.

If you are using perforated forms, the alignment mark is printed on the leading perforation of the page.

A one-bar or two-bar pattern is also printed on the alignment page to show whether side 1 or side 2 of the form is printed on Printer 1.
  - b. This feeds a fixed length of forms through Printer 1.

The fixed length is based on the "Length of Forms Between Transfer Points" configuration item length shown on the **Configure Printer** window under the **Configure** pull-down menu, and is a multiple of the current loaded Form Name page length that is closest to the "Length of Forms Between Transfer Points" length without exceeding it.
  - c. If you choose **Yes to Print While Threading** - Pages for the queued job are printed on Printer 1 starting on the page following the alignment page. Printer 2 processes blank pages.

If you choose **No to Print While Threading** - go to step 8 on page 117.

7. If the queued job is long enough and the fixed-length forms forward movement completes, go to step 8. If the queued job is too short to print all pages on Printer 1 for the complete "Length of Forms Between Transfer Points", the printing process ceases, the printers stop forward movement of the forms, and a message appears in the non-selectable **Information** field on window informing you that there is **No Data to Print**.

In this case you may either:

- **SELECT** the **No** option in the **Print While Threading** field or **SELECT** the **Start** push-button and restart this procedure, because printing while threading cannot be accomplished with the current queued job.
  - Periodically **SELECT** the **Feed to Align** push-button. When more data is available, forward movement of the forms while printing resumes until the "Length of Forms Between Printers" distance is achieved.
8. Visually verify that the alignment mark printed on Printer 1 is aligned to the appropriate form length mark on the input station alignment scale on Printer 2.
    - a. If the alignment mark is aligned at Printer 2, check to see if there is a sufficient buffer loop of forms between Printer 1 and the Buffer/Flipper Unit. If you need to increase the buffer loop, change the "Length of Forms Between Transfer Points" printer configuration item. See the table item on page 253 for more information.
    - b. If the Printer 1 alignment mark is short of the appropriate forms length scale mark in Printer 2, **SELECT** the **Printer 2 Feed Page** push-button on the window as many times as necessary until the Printer 1 alignment mark is aligned at Printer 2.
    - c. If the Printer 1 alignment mark is past the forms length scale mark in printer 2, first add some more buffer loop between Printer 1 and the Buffer/Flipper Unit by **SELECTING** the **Printer 1 Feed Page** push-button several times. Then **SELECT** the **Cancel** push-button on the window.

You must now restart this **Thread/Align Forms** procedure.

9. After you have visually verified that the Printer 1 alignment mark is aligned correctly on Printer 2, **SELECT** the **Mark is Aligned** push-button on the window.

At the **Verification** window, **SELECT** the **OK** push-button.

This informs the control unit that the alignment is complete.

#### **Important**

If your visual verification of alignment is incorrect, all following duplex customer print jobs are printed with incorrect alignment between the front and back of the pages.

10. If a postprocessing device is installed and not threaded, **SELECT** the **Feed Forms** push-button on the window as many times as necessary to advance the forms sufficient distance to thread the postprocessing device.
11. **SELECT** the **Completed** push-button on the window that removes this window.

This completes this type of Thread/Align Forms procedure.
12. **SELECT** the **Ready** push-button on the main Display/Touch Screen window to resume printing.

---

## Threading the Buffer/Flipper Unit

### Straight Line Configuration

Figure 23 shows the Buffer/Flipper Unit viewed from the front. The darker shaded side of the forms in Figure 23 is the side that is printed on Printer 1. The lighter shaded side of the forms is the side that is printed on Printer 2.

Use Figure 23 to thread the forms through the Buffer/Flipper Unit using the arrows as a guide from Printer 1 at the top of the figure to Printer 2 at the bottom of the figure. The result is that the forms are inverted 180° between Printer 1 and Printer 2.

The guide collars (A) through (F) on the roller bars were adjusted properly when the system was initially installed. Adjustments by you are probably not necessary, even if you are threading a form through the system with a different width than you previously threaded. When the forms are under tension and moving through the Buffer/Flipper Unit, they run up against the guide collars that are shown.

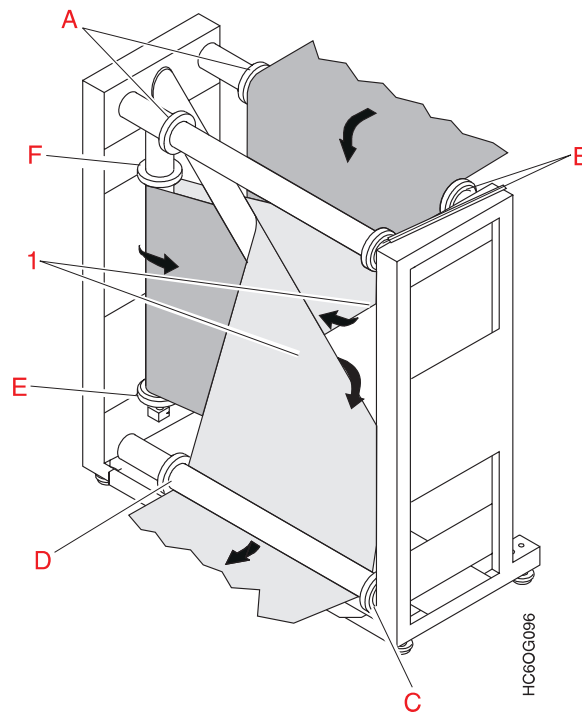


Figure 23. Inline Configuration

## Left Angle Configuration

Figure 24 shows the Buffer/Flipper Unit viewed from the front. The darker shaded side of the forms in Figure 24 is the side that is printed on Printer 1. The lighter shaded side of the forms is the side that is printed on Printer 2.

The longer of the two cross bars (1) is removed from its normal position. It is then installed at the lower back of the Buffer/Flipper Unit with the support bar (2).

Use Figure 24 to thread the forms through the Buffer/Flipper Unit using the arrows as a guide from Printer 1 at the top of the figure to Printer 2 at the bottom of the figure. The result is that the forms are inverted 180° between Printer 1 and Printer 2.

The guide collars (A) through (F) on the roller bars were adjusted properly when the system was initially installed. Adjustments by you are probably not necessary, even if you are threading a form through the system with a different width than you previously threaded. When the forms are under tension and moving through the Buffer/Flipper Unit, they run up against the guide collars that are shown.

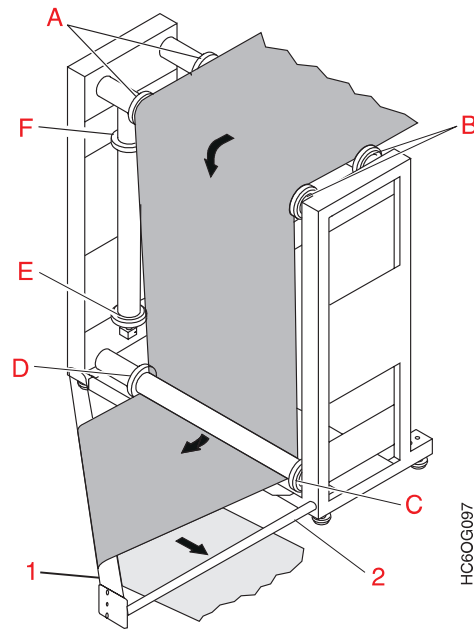


Figure 24. Left Angle Configuration

---

## Adjusting the Print Position

Do this task when you load preprinted forms, adhesive labels, or other forms that require a precise registration that is not satisfied by the factory-set default registration.

### Requirement For This Procedure

You must have a print job queued so that print data is available to print test pages during this procedure. You cannot complete this procedure without queued print data available.

In printing, the term *registration* refers to the relative print positions of images that are printed at different times. For example, when you process preprinted forms, the registration is good if the new image printed by the system printer aligns correctly with the preprinted image (as shown in Figure 25).

Kuhlly Conditioning			
Name	Quantity	Item #	Date
Smithson, R.T.	14	714562	05/29/90
Barckley, Wm.	03	518329	06/02/90
Martins, S.J.	08	487641	06/03/90
Balons, G.E.	21	894265	06/03/90
A-1 Towing	11	462894	06/03/90
Jones, S.W.	02	783466	06/04/90
Kelly, J.M.	16	186435	06/06/90
Fischer, G.M.	45	087462	06/07/90
Adams, T.A.	14	812576	06/07/90
Mark IV Prop.	19	428967	06/08/90
Hill, W.A.	05	932465	06/11/90
Cullen, E.T.	22	943251	06/26/90
Hertler, D.E.	10	147563	06/27/90
R4CO0037			

Figure 25. Good Registration

Print that extends beyond preprinted box edges and text that overlaps other preprinted text are examples of poor registration (as shown in Figure 26).

Kuhly Conditioning			
Name	Quantity	Item #	Date
Smithson, R.T.	14	714562	05/29/90
Barckley, Wm.	03	518329	06/02/90
Martins, S.J.	08	487641	06/03/90
Balons, G.E.	21	894265	06/03/90
A-1 Towing	11	462894	06/03/90
Jones, S.W.	02	783466	06/04/90
Kelly, J.M.	16	186435	06/06/90
Fischer, G.M.	45	087462	06/07/90
Adams, T.A.	14	812576	06/07/90
Mark IV Prop.	19	428967	06/08/90
Hill, W.A.	05	932465	06/11/90
Cullen, E.T.	22	943251	06/26/90
Hertler, D.E.	10	147563	06/27/90

R4CO0038

Figure 26. Poor Registration

#### Note on Point of Origin:

When you adjust the print position of a defined forms identification name, the printer automatically stores the new *point of origin* as part of the current stored definition of that form. The point of origin remains in effect (even when the printer is powered off) until you change it later with the **Adjust Print** procedure or load another form.

1. Ensure that the form loaded in the printer is the form selected at the **Assign Form to Load** window.

2. If the form name in the **Assign Form to Load** window is not correct, **SELECT** the **Search...** push-button to find the form name you want. When you have found the correct form name, **SELECT** the **OK** push-button twice to continue the **Adjust Print** procedure.
3. If the target printer is Ready, stop the printer by **SELECTING** the **Stop** push-button on the main Display/Touch Screen window of the target printer.
4. Display the **Adjust Print** window by doing one of the following:
  - **SELECT** the **Configure** pull-down menu, and then **SELECT Adjust Print**.  
OR
  - **SELECT** the **Options** pull-down menu, **SELECT Assign Forms to Load**, and then **SELECT Adjust Print**.
5. In duplex mode, if the side that is displayed in the **Side to Adjust** field is not the side you want to adjust, do the following:
  - a. **SELECT** the **Side to Adjust** field.
  - b. **SELECT** the side you want to adjust. The choices are:
    - 1) Normal Duplex Side 1
    - 2) Normal Duplex Side 2
    - 3) Tumble Duplex Side 1
    - 4) Tumble Duplex Side 2

**Notes to the Operator:**

- a. For dual simplex, you have to go through this procedure twice if you want both printers to have identical forms. Do the procedure once to adjust the Form Name on Printer 1 and again to adjust the Form Name on Printer 2.
- b. The **Front Sheet Sequence** printer configuration value informs you which side of the duplex form is being printed on each printer in the system:
  - “Front First” Value - Printer 1 prints Side 1 (front side of form), and Printer 2 prints Side 2 (back side of form)
  - “Front Second” Value - Printer 1 prints Side 2 (back side of form), and Printer 2 prints Side 1 (front side of form)

(See “Configuring the Printer” on page 246 for details.)
6. To print sample pages with the current registration values, do the following from the Display/Touch Screen:

**Requirement For This Procedure**

You cannot accomplish this step and the remainder of the procedure if a queued print job is not available.

- a. On the **Adjust Print** window, **SELECT** the **Print Test** push-button. This displays the **Print Test** window.
- b. If necessary, do the following to update the value in the **Number of Pages** box:
  - **SELECT** the **Number of Pages** box.
  - Use the keypad to type the correct value.
  - On the keypad window, **SELECT** the **OK** push-button.
- c. On the **Print Test** window, **SELECT** the **OK** push-button.
7. Look at the pages just printed (located above the transfer station) to determine how much to adjust the print position.



### Things To Keep In Mind When You Adjust the Print Position:

Print jobs with data closer than 20 mm (about 1 inch) to the fold perforation or from the edges of the forms do not have the full adjustment range. For example, if the job has data that prints 10 mm (about  $\frac{1}{2}$  inch) from the fold perforation, the maximum amount that image can be shifted is 10 mm ( $\frac{1}{2}$  inch) toward the page perforation. If you attempt a larger vertical adjustment, Print Error Marker (PEMs), which the host system turns on or off, can occur.

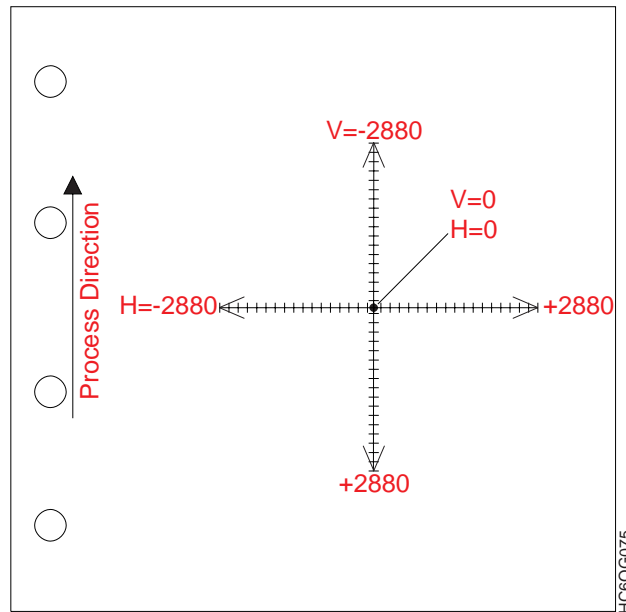


Figure 27. Factory Set Default Registration

**Note:** The horizontal (H) and vertical (V) values vary depending on the print resolution (PEL) that you selected for the printer.

#### How This Procedure Works:

Doing this procedure lets you change the point of origin on a page by adding to or subtracting from the vertical and horizontal starting positions.

Figure 27 illustrates the default point of origin (vertical=0, horizontal=0). It also shows the range of possible adjustments, which are not drawn to scale, when the print resolution is set to 480 DPI. The maximum adjustment in any direction from this position is about 6 inches.

**Note:** The Infoprint 3000 printers show a range of either  $\pm 2880$  for 480 DPI or  $\pm 3600$  for 600 DPI.

#### What To Do If the Adjustment Required Is Out of Range:

If more than 20 mm adjustment (from 0) is required, refer the application owner to the *Forms Design Reference for Continuous Forms Advanced Function Printers*.

The vertical and horizontal adjustment directions are always relative to the process direction (the direction that forms are moving through the printer). The vertical adjustment moves the point of origin on a line *parallel* to the forms

tractor feed holes (the process direction). The horizontal adjustment moves the point of origin on a line that is at 90° (*perpendicular*) to the forms tractor feed holes. See Figure 27 on page 123.

Be aware that the printed output can be rotated when printed.

Imagine that your sample page shows that the text is printing too high and too far to the left in relation to the preprinted form. To correct this situation, increase the vertical and horizontal positions (to move the point of origin down and to the right). Figure 28 shows the result of changing the vertical position to +7 and the horizontal position to +6. (The figure is not drawn to scale.)

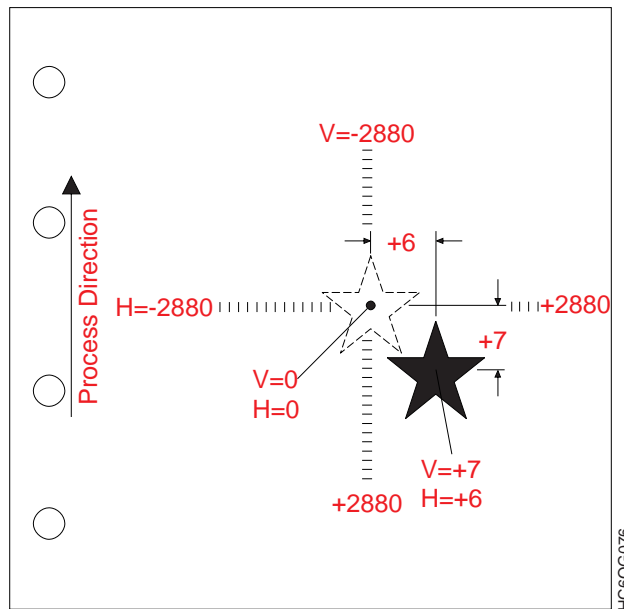


Figure 28. Sample Field Adjusted Registration

**Note:** The horizontal (H) and vertical (V) values vary depending on the print resolution (PEL) that you selected for the printer.

#### Operator Tips

- Once you have determined the adjustments for a particular form, you can make a note of the adjustment values on the “Form Identification Work Sheet” on page 303.
- Be aware that occasionally some maintenance procedures can affect print position adjustment. If this happens, adjust the print position as needed.

8. To make a horizontal adjustment, do the following:
  - a. **SELECT** the **Horizontal Adjust Amount** field. This displays a keypad window.
  - b. Use the +/- push-button on the keypad window to set the sign of the change you will make.
  - c. Enter the new value, then **SELECT** the **OK** push-button to return to the **Adjust Print** window.

#### Operator Tips

- When you *increase* the horizontal value by one, you move the origin toward the *right* side of the form by one pel.
- When you *decrease* the horizontal value by one, you move the origin toward the *left* side of the form by one pel.

9. To make a vertical adjustment, do the following:
  - a. **SELECT** the **Vertical Adjust Amount** field. This displays a keypad window.
  - b. Use the +/- push-button on the keypad window to set the sign of the change you will make.
  - c. Enter the new value, then **SELECT** the **OK** push-button to return to the **Adjust Print** window.

#### Operator Tips

- When you *increase* the vertical value by one, you move the origin *down* toward the trailing page perforation by one pel.
- When you *decrease* the vertical value by one, you move the origin *up* toward the leading page perforation by one pel.

10. To print a sample to test the new values, do step 6 again.
11. If the registration is still not correct, repeat steps 7 through 10.
12. If the registration is satisfactory, **SELECT** the **OK** push-button on the **Adjust Print** window.
13. Make the printer Ready by **SELECTING** the **Ready** push-button on the Display/Touch Screen window for the affected printer.

#### Operator Tips

- After the printer has run for a few seconds, **SELECT** the **Stop** push-button on the Display/Touch Screen window for the affected printer. Then look at the output to ensure that the print position is still correct. Sometimes the print position changes slightly when forms move at full speed.
- Most applications generate a few sample pages at the beginning of each job so that you can adjust the forms without losing any output. If you need more sample pages to test, ask the host system console operator to restart the job.

---

## Using the NPRO and NPRO Page Functions to Advance Forms

NPRO (NonProcess RunOut) moves forms forward through the forms path.

- In simplex mode, NPRO moves the forms forward to the stacker area. Forms are fused as they move toward the stacker area.
- In duplex mode, NPRO moves forms forward through the forms path of Printer 1, the Buffer/Flipper Unit, and Printer 2. Pages that were printed on Printer 1 are printed on Printer 2, and Printer 1 processes blank pages. After all pages are printed on Printer 2, the forms move forward through the forms path of both printers without printing until all pages printed on Printer 2 are in the stacker area. Pages already printed on Printer 1 at the start of this procedure and pages printed on Printer 2 during this procedure are fused as they move toward their respective stacker areas.

The distance NPRO moves forms depends on your printer configuration. There is a fixed NPRO length that you can increase with two different configuration items. You may want to increase the fixed length, for example, if you are using a postprocessing device.

Two configuration parameters let you extend the NPRO length when END OF FORMS 078A is not indicated:

- The “Pre/postprocessor Extended NPRO” parameter in the **Configure Pre/postprocessor** procedure. See “Configuring Preprocessing/Postprocessing Devices/Interfaces” on page 273 and the “Extended NPRO” table item on page “Extended NPRO” on page 275 for more information.
- The “NPRO Length” parameter in the **Configure Printer** procedure. See “Configuring the Printer” on page 246 and the “NPRO Length” table item on page “NPRO Length” on page 252 for more information.

**Note:** If you set the “Pre/postprocessor Extended NPRO” item of an **enabled** pre/postprocessor to a non-zero value, it takes precedence over the **Configure Printer** “NPRO Length” item, regardless of the particular values specified.

## NPRO Procedure

NPRO is usable only under certain conditions, which balance safety considerations with operator convenience.

### Requirements For NPRO To Function

The following conditions must be met before NPRO can function:

- The printer is in a Not Ready state
- Forms are loaded
- The following printer conditions are **not** present:
  - Program Check
  - Out of Supplies
  - Printer Error
  - Intervention Required (except END OF FORMS 078A)
- A Thread/Align Window does not appear
- There are no errors or intervention conditions present on any preprocessing or postprocessing devices except END OF FORMS 078A.

You may do the following steps at the main Display/Touch Screen window. Consistently perform all required steps at the same window.

### Simplex Mode

- Once you have ensured that the preceding conditions have been met, under the **Operate** pull-down menu **SELECT** the **Stop** push-button; then **SELECT** the **NPRO** push-button on the main Display/Touch Screen window of the printer.
- Forms, starting with the page at the transfer station, move through the printer to the stacker area. The distance they move is the fixed NPRO length plus an additional length if either the “NPRO Length” or the “Pre/postprocessor Extended NPRO” values are set to a non-zero value.

### Duplex Mode

- Once you have ensured that the preceding conditions have been met, under the **Operate** pull-down menu **SELECT** the **Stop** push button; then **SELECT** the **NPRO** push-button on the main Display/Touch Screen window of the target printer.
- Forms, starting with the page at the transfer station of Printer 1, move through both printers to the stacker area of Printer 2. The distance they move is the fixed NPRO length plus an additional length if either the “NPRO Length” or the “Pre/postprocessor Extended NPRO” values are set to a non-zero value.

## NPRO Page Procedure

NPRO Page is a single-page advance function. NPRO Page moves the forms forward to the next top-of-form position, one page at a time.

NPRO Page is active under the same conditions that allow NPRO to function. See “NPRO Procedure” on page 127.

In duplex mode, NPRO Page moves forms forward through the forms path of Printer 1 one page at a time, the Buffer/Flipper Unit, and Printer 2 toward the stacker area to the next top-of-form position. A page that is already printed on Printer 1 is printed on Printer 2, and Printer 1 processes a blank page. A page already printed in Printer 1 at the start of this procedure and a page printed in Printer 2 during this procedure are fused as they move toward their respective stacker areas.

### Simplex Mode

- When the printer is stopped, under the **Operate** pull-down menu **SELECT** the **NPRO Page** push-button on Display/Touch Screen window.
- Forms advance through the printer to the next top-of-page position.

### Duplex Mode

- When both printers are stopped, under the **Operate** pull-down menu **SELECT** the **NPRO Page** push-button on Display/Touch Screen window.
- Forms, starting with the page at the transfer station of Printer 1, move through both printers to the next top-of-page position.

## Pre/Postprocessing Nonprocess Runout (NPRO)

The Nonprocess Runout (NPRO) function lets you move forms from the transfer station to the stacker. To add an extended length to the standard NPRO length (for example, if you use a postprocessing device), you can do the following:

- Increase the “NPRO Length” configuration item under the **Configure Printer** procedure. See “Configuring the Printer” on page 246 and “NPRO Length” on page 252 for more information.
- Increase an enabled preprocessing or postprocessing device “Pre/postprocessor Extended NPRO” characteristics item under the **Configure Pre/Post** procedure. See “Configuring Preprocessing/Postprocessing Devices/Interfaces” on page 273 and “Extended NPRO” on page 275 for more information.

See “Using the NPRO and NPRO Page Functions to Advance Forms” on page 126 for detailed information and instructions about NPRO and NPRO Page.

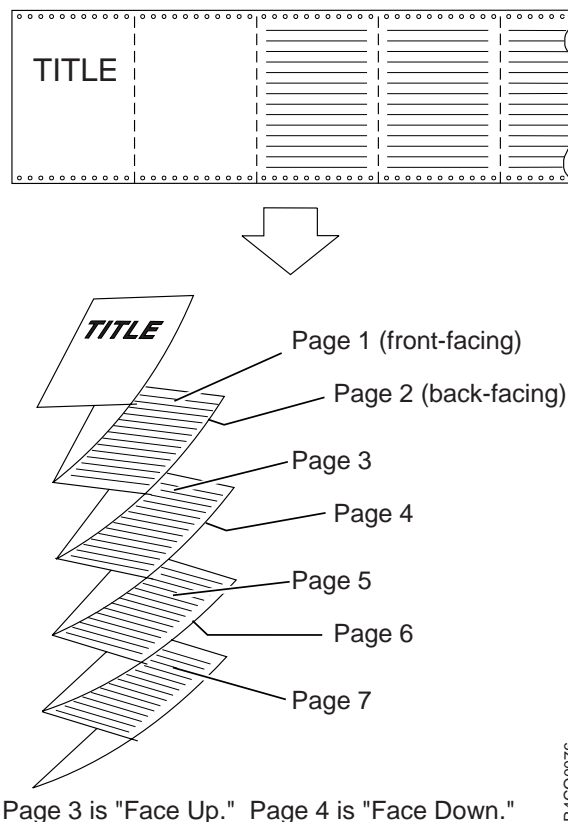
## Checking for a Front-Facing Page

Do this task when your system uses the eject-to-front-facing-page facility or it is configured on the printer. Also, do this when you need to tell the printer that the next page to be printed is a front-facing or a back-facing page.

For example, the following situations might require you to perform this task:

- Loading a new form name in the printer
- Reloading forms after you clear a forms jam
- Restarting printing operations in the middle of a job.

The eject-to-front-facing-page facility places a blank page between jobs that have an odd number of pages. This ensures that a job that requires a certain folding pattern are printed correctly. A good example is a print job that is to be folded like a book, where the cover and all odd-numbered pages are to be printed on front-facing pages.



The printers do not count pages. However, after you inform the printer what the orientation (front facing or back facing) of the first page of a job will be, the printer simply switches a pointer back and forth in its memory to remember the page orientation. Therefore the printer is able to determine, at the end of a job, that the job contained an even or odd number of pages.

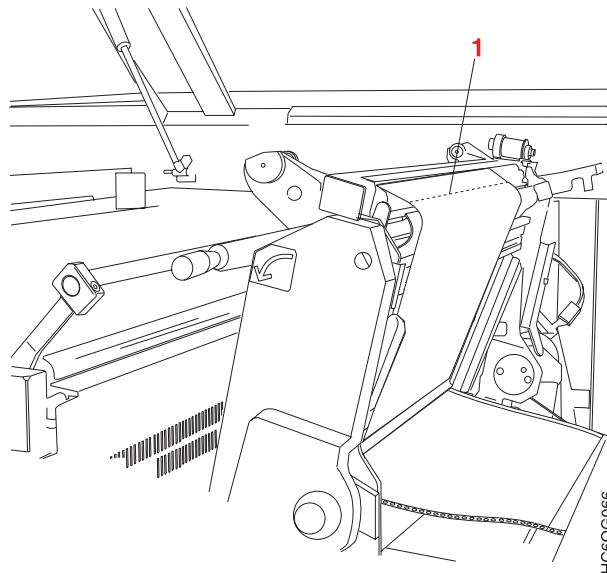
**Next Page is Front Facing** is the power-on default condition. If you do not use the **Front Face** procedure, all print jobs are started or restarted using that default, which may not be aligned with the fold direction. The determination of whether to insert a blank page is still made even if the fold direction is incorrect.

### Notes to the Operator:

1. To use the eject-to-front-facing-page facility, you must set the printer configuration item “Eject to Front Facing” to **Yes** (use the **Configure Printer** procedure on the **Configure** pull-down menu).
2. Perform this task only for fan-fold forms that are to be stacked in the printer stacker or re-folded in a postprocessing device. This task has no benefit if the forms are processed by a postprocessing device that separates each page, either by bursting or cutting processes the forms.
3. In duplex mode use this procedure only on Printer 1.

#### This procedure assumes the following:

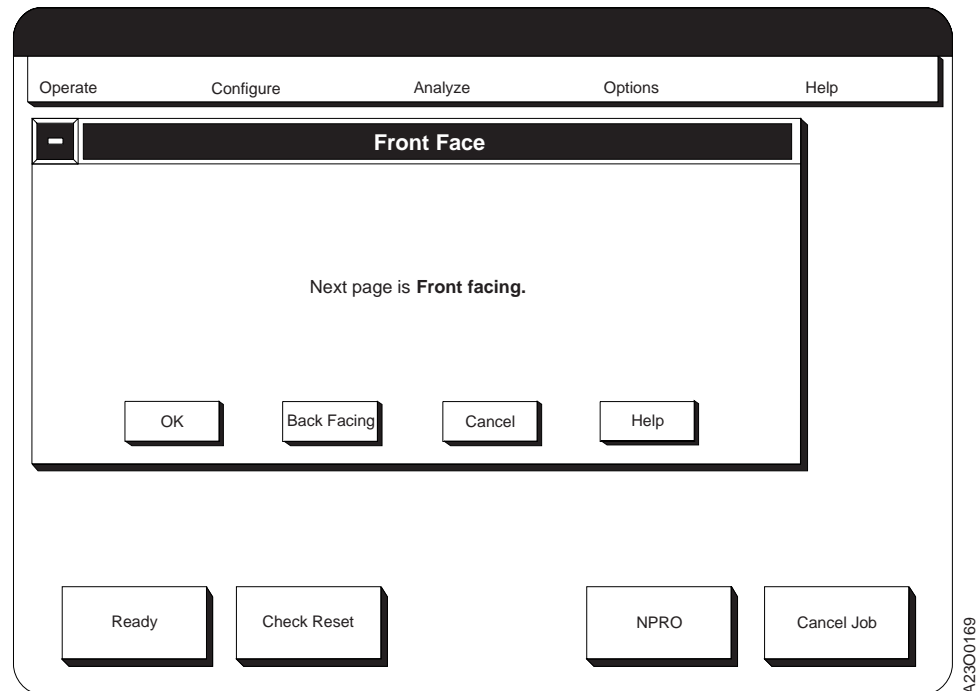
- The **Front Face Display/Touch Screen** window appears with the text message Next Page is Front Facing.
- The **Check Forms Alignment** procedure has been completed (see “Checking the Forms Alignment” on page 132).



To check for a front-facing page, do the following:

1. Ensure that the forms perforation is aligned with the correct forms length (see “Checking the Forms Alignment” on page 132).
2. Look at the direction of the forms fold at the first fold (1) *before* the forms perforation at the length alignment mark. If you cannot see the perforation, raise the transfer station; the perforation should be near the top of the raised transfer station.
  - If the fold is an *up* fold, the next page printed is a back-facing page.
  - If the fold is a *down* fold, the next page printed is a front-facing page.



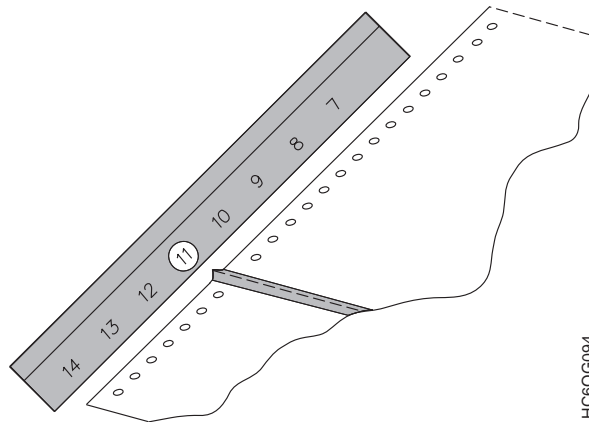


3. If the fold direction is the way you want, do the following to start or continue a print job:
  - a. If necessary, **SELECT** the **Back Facing** push-button.  
 The message text on the window changes to Next Page is Back Facing and the **Back Facing** push-button text changes to **Front Facing** text. **SELECTING** that push-button again changes the message and push-button text back to where it was originally.
  - b. **SELECT** the **OK** push-button.  
 This sets the front/back pointer in the printer memory.
4. If the fold direction is *not* the way you want, do the following to start or continue a print job:
  - a. Advance the forms one page by **SELECTING** the **NPRO Page** procedure from the Display/Touch Screen **Operate** pull-down menu.
  - b. If necessary, **SELECT** the **Back Facing** push-button to set the window message text to agree with the fold direction.  
 The message text on the window changes to Next Page is Back Facing. The **Back Facing** push-button text changes to **Front Facing** text.  
  
**Note:** Selecting that push-button again changes the message and push-button text back to where it was originally.
  - c. **SELECT** the **OK** push-button.

---

## Checking the Forms Alignment

Do this task when you see a CHECK FORMS ALIGNMENT message or whenever you load, splice, or adjust forms.



1. At the upper rear transfer station tractor cover plate, ensure that the forms perforation is aligned with the correct forms length.
2. If the forms perforation is not aligned correctly, do the following:
  - a. Use the **Forms Feed** key on the Printer Control Panel to adjust the position of the perforation.
3. If you are using the on-board stacker, ensure that the **Forms Set** indicator on the Printer Control Panel is set to match the fold direction of the first fold perforation *below* the perforations on the forms guide.
4. If you are doing this procedure as a step in a **Printer Error** or **Intervention Required** procedure, continue with the steps in that procedure.
5. If you are doing this when you load, splice, or adjust forms, **SELECT** the **Ready** push-button on the Display/Touch Screen window for the affected printer to continue processing.

---

## Checking Print Quality

Print quality problems are commonly caused by:

- Paper chads in the transfer corona
- Dirty corona wires
- Photoconductor scratches
- Adhesive labels in the forms path or on the photoconductor drum.

**Note:** Adhesive labels are supported only in simplex mode.

Check print quality at least once each shift, and also when you do any of the following:

- Print on labels or preprinted forms
  - Change from one kind of form to another
  - Print bar codes.
1. Inspect a sampling of printed output. To print a variety of samples, do the following:
    - a. From the **Options** pull-down menu, disable attachments by using **Enable/Disable Attachments**.
    - b. From the **Analyze** pull-down menu on the Display/Touch Screen, **SELECT** the **Print Samples** procedure. The **Print Samples** window appears.
    - c. **SELECT** the type and number of samples you wish to print, and **SELECT** the **Print** push-button.
  2. In the printed output, check for the following:
    - Is the print dark enough?
    - Is the printing clear and easy to read, especially close to edges, perforations, holes, and cuts?
    - Is print quality uniform across the page?
    - Are spots or blank areas on every page, or on every other page?

### **Important:**

Many print quality problems are directly related to the kind of forms that are being used and the application that is being processed. If a particular form or application regularly produces unsatisfactory output, refer the application owner to the *Forms Design Reference for Continuous Forms Advanced Function Printers*. This publication contains detailed information about selecting forms and designing applications for use with continuous-forms printers.

3. If the output shows any of the problems that are mentioned above, see Table 18 on page 179, and perform the actions that are detailed there.

---

## Changing the Forms-Based Printer Adjustments

Once a form has been defined, you may want to adjust some of the printer settings for the form for optimum print quality. If you have a specific print quality problem, go to “Print Quality Problems” on page 179 first. To enhance print quality, you can change the values for the following:

- Contrast - page 293
- Preheat Temperature - page 295
- Hot Roll Temperature - page 297
- Oil Rate - page 299
- Oil Belt Speed - page 301
- Paper Weight - page “Setting/Adjusting the Paper Weight” on page 303.

**Note:** The following items on the **Form Characteristics** are grayed out (not active) and cannot be changed:

- Pinless
- Pinless mark
- Printable width

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## Adjusting the Stacker Table Height

When you change forms on the printer, it may be necessary to change the height of the stacker table. For example, going from very narrow to very wide forms could make it necessary to shorten the height of the output stack and thus reduce the weight of the stack you have to unload.

Raising the height of the stacker table reduces the height (and weight) of the output stack that causes the STACKER FULL message to appear on the Display/Touch Screen. The shorter height of the output stack means you have to unload the stacker more often, but a short output stack weighs less than a taller stack.

Conversely, lowering the stacker table increases the height of the output stack and the STACKER FULL message appears on the Display/Touch Screen less often.

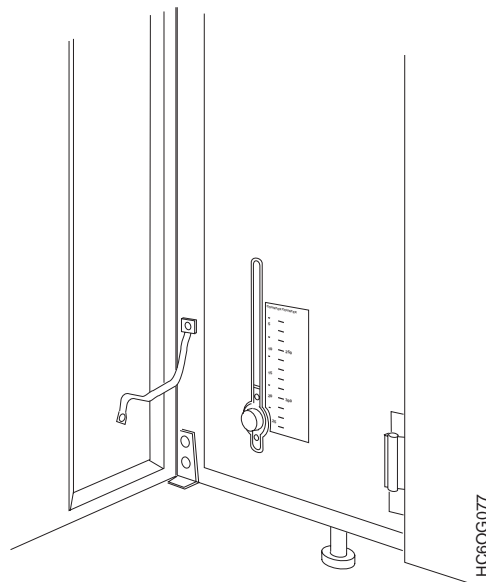


Figure 29. Stacker Height Control

To adjust the output stack height, do the following:

1. Remove any output on the stacker table.
2. Open the front left cover.
3. Loosen the knob by turning it *counterclockwise*.
4. Raise or lower the knob to the desired stack height.
5. Tighten the knob by turning it *clockwise*.
6. Close the front left cover.

## Unloading the Stacker

Do this task when you need to remove printed forms from the stacker or when you see the following message:

STACKER FULL 0796

Some controls you need to use to accomplish this task are available only on the stacker control panel, and some are available on the Display/Touch Screen window.

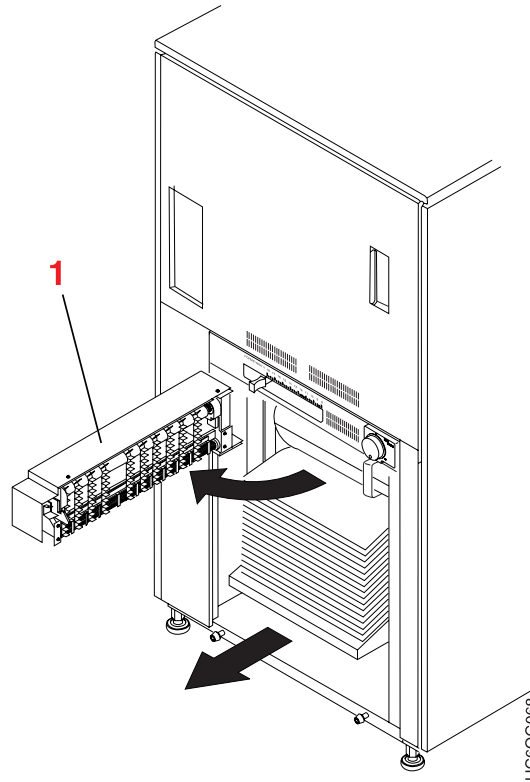
1. If you need to stop the printer, **SELECT** the **Stop** push-button on the Display/Touch Screen window.
2. If you need to remove all the current forms from the forms path, separate the forms at a perforation below the transfer station. Ensure that the end-of-forms sensors are uncovered. Open the static brush so the forms fall back into the box or input area.
3. If you need to move forms to the stacker, **SELECT** the **NPRO** push-button on the Display/Touch Screen window.  
If END OF FORMS appears, repeat this step again.

The diagram shows a control panel with the following sections:

- Table**: Three buttons labeled 'Up', 'STOP', and 'Down'.
- Forms Feed**: Three buttons labeled 'Forward', 'READY', and 'Stop'.
- Forms Select**: A square selection box and three radio button options:
  - ☐ A 16-22 lbs(51-71kg)60-82g
  - ☐ B 23-42 lbs(72-135kg)83-157g
  - ☐ C Plastic
- Forms Length**: Two rows of radio button options for length settings:
  - Row 1: 7, 8, 9, 10, 11, 12, 13, 14
  - Row 2: 0, 1/3, 1/2, 2/3

HC60G026

4. On the stacker control panel, press the stacker table **Down** switch and wait for the stacker table to stop moving.



5. Open the stacker gate (1).
6. If you did not do an NPRO, leave four to five pages of blank forms attached to the end of the job. This ensures correct folding when you resume printing.



**CAUTION:**

<74> The weight of the paper in the stacker can be very heavy.

CAUT0104

### Operator Tips on Removing Forms From The Stacker

***Do not attempt to remove a full stack from the stacker.***

- Limit the maximum weight of the stack by breaking the output into small stacks (start with 150 mm (6 in.) high) by separating the forms at convenient perforations.
- Use a ruler, knife, or letter opener to break hard-to-reach perforations when you separate forms.
- Follow these guidelines when you lift forms out of the stacker:
  - a. Ensure that you can stand safely without slipping.
  - b. Try to keep your back straight and balance the weight of the forms between your feet.
  - c. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
  - d. Lift by standing or by pushing up with your leg muscles. This action removes the strain from the muscles in your back.

7. Remove the output from the stacker.
8. On the stacker control panel, press the stacker table **UP** switch.
9. Close the stacker gate.
10. To continue, **SELECT** the **Ready** push-button on the Display/Touch Screen window.

**Note on Adjusting the Height of the Output Stack**

You can adjust the stacker table to limit the output stack height and weight. Raising the stacker table lessens the height and weight of the stack, but causes the STACKER FULL message to appear more frequently. To adjust the stacker table height, see “Adjusting the Stacker Table Height” on page 135.



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## Using the Printer Stacker with a Postprocessing Device

If a postprocessing device is disabled or not yet configured, you may continue to use boxed forms and the printer stacker. If the postprocessing device includes any rollers, sensors, or any other hardware that would interfere with the operation of the stacker, you must remove those interferences before you attempt to use the stacker.

If the “Stacker Enabled” configuration item under the **Configure Printer** procedure is set to **Yes** and there are no postprocessing devices installed and enabled on the printer, the stacker table automatically rises when printing begins. To raise the stacker table manually, press the stacker table **UP** key on the stacker control panel.

If a postprocessing device is installed on a printer and is enabled, the stacker table is lowered and is prevented from moving upward. The pendulum and other devices in the stacker are also prevented from operating.

In duplex mode, the stacker in Printer 1 is always disabled as if a postprocessing device were installed and enabled.

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## Verifying Synchronized Duplex Printing

The Side 1/Side 2 Verify feature of Models ED1/ED2 automatically checks to make sure that the duplex printing system is properly aligned and the printing on both sides of the forms is synchronized. If the verification system detects that the data to be printed on Side 2 does not align with the data printed on Side 1, it stops the printer and displays an error on the Display/Touch Screen.

### Enabling Verification Checking

**Note:** In printers with code version 9.608 or higher, the Side 2 Verify feature is enabled at the factory. You must have the CE disable the factory-set feature. However, once the factory-set feature has been disabled by the CE, you can enable and disable Side 2 Verify as needed.

Verification checking is valid only in duplex mode.

1. **SELECT** the **Configure** pull-down menu on the Display/Touch Screen window.
2. **SELECT** the **Configure Pre/Postprocessors...** procedure.
3. **SELECT** the **Side2Verify** option.
4. Change the configuration information:
  - a. If necessary, set **PORT** to port number 3 where the control card is connected to the Mechanism Interface Card (MIC). (This would have been set by your service representative and would not normally be changed.)
  - b. **SET** the **Enabled** field to **Yes**.

**Note:** You cannot change the **Printer**, **Characteristics**, and **Pre/Postprocessor Type** fields.

5. **SELECT** the **OK** push-button to exit the menu.

The detailed status area on the Printer Status window on the Display/Touch Screen indicates "Side 2 Verify" when this feature is enabled.

### Disabling Verification Checking

**Note:** In printers with code version 9.608 or higher, the Side 2 Verify feature is enabled at the factory. You must have the CE disable the factory-set feature. However, once the factory-set feature has been disabled by the CE, you can enable and disable Side 2 Verify as needed.

#### Important

Certain forms that are colored or that have preprinted marks within the carrier strip can cause the verification checking to post nuisance errors. When this happens, you may need to disable verification checking temporarily while you use those types of forms. You can continue to have verification page numbers printed on the front and back of the forms by enabling the **Verification Marks** item under the **Configure/Configure Printer...** menus.

1. **SELECT** the **Configure** pull-down menu on the Display/Touch Screen window.
2. **SELECT** the **Configure Pre/Postprocessors...** procedure.
3. **SELECT** the **Side2Verify** option.
4. **SET** the **Enabled** field to **No**.
5. **SELECT** the **OK** push-button to exit the menu.

## Recovery Procedures

Table 12. Verification System Error Recovery Procedures

Error Message SRC Code (in numeric order)	Recovery Actions
Side 1/Side 2 Mismatch D71F	<p>The data on side 1 does not align with the data on side 2. The data is off by at least one full page.</p> <ol style="list-style-type: none"> <li>1. Perform the Thread/Align Forms procedure. See “Threading and Aligning Forms” on page 106.</li> <li>2. Check the print quality of the verification marks. Look for light or smeared print. Fix any print quality problems.</li> </ol> <p>If the problem continues, call for service.</p>
Verification Mark Position Incorrect D720	<p>The printing alignment from side 1 to side 2 is off by at least 4.2 mm (<math>\frac{1}{6}</math> inch).</p> <p>Ensure that the forms are aligned correctly.</p> <p>Examine the forms being used. Preprinted marks within the carrier strip can cause this error. Also, some colored forms can cause the error. If you are using one of these types of forms, disable verification checking (see “Disabling Verification Checking” on page 140).</p> <p>If the forms are not the problem, call for service.</p>
Hardware Error: Verification Mark Sensor D721	<p>There is a problem with the sensor that reads the verification marks.</p> <p>Check the print quality of the verification marks. Look for light or smeared print. Fix any print quality problems.</p> <p>If the problem continues, call for service.</p>
Side 2 Verify Has Been Disabled D724	<ul style="list-style-type: none"> <li>• If the Side 2 Verify function is required, see “Enabling Verification Checking” on page 140.</li> <li>• If the Side 2 Verify function is not required, <b>SELECT</b> the <b>Completed</b> push-button.</li> </ul>



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## Chapter 6. Taking Care of Problems

### Chapter Overview

This chapter describes problems that can occur when the printer is running and the actions required to fix the problem and to prevent further problems:

- “Responding to Messages”
- “Recovering from a Forms Jam” on page 172
- “Forms Jam In the Postprocessing Device” on page 163
- “Clearing the Forms Path” on page 164
- “Preventing Jams” on page 175
- “Running Traces” on page 177
- “Print Quality Problems” on page 179
- “Sudden Failures” on page 183
- “Problem Solving Tips and Suggested Actions” on page 184

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## Responding to Messages

This section lists the messages and codes that the printer displays, and gives information about how to interpret and respond to them. The error types in their order of precedence are:

- “Program Check Messages” on page 144
- “Printer Error Messages” on page 146
- “Out Of Supplies Messages” on page 148
- “Intervention Required Messages” on page 150
- “Status Messages” on page 153.

## Program Check Messages

Program Check messages show that the internal control unit microcode has detected a problem that may not allow the code to keep running. Program Check messages appear on the Display/Touch Screen.

### Soft Program Check

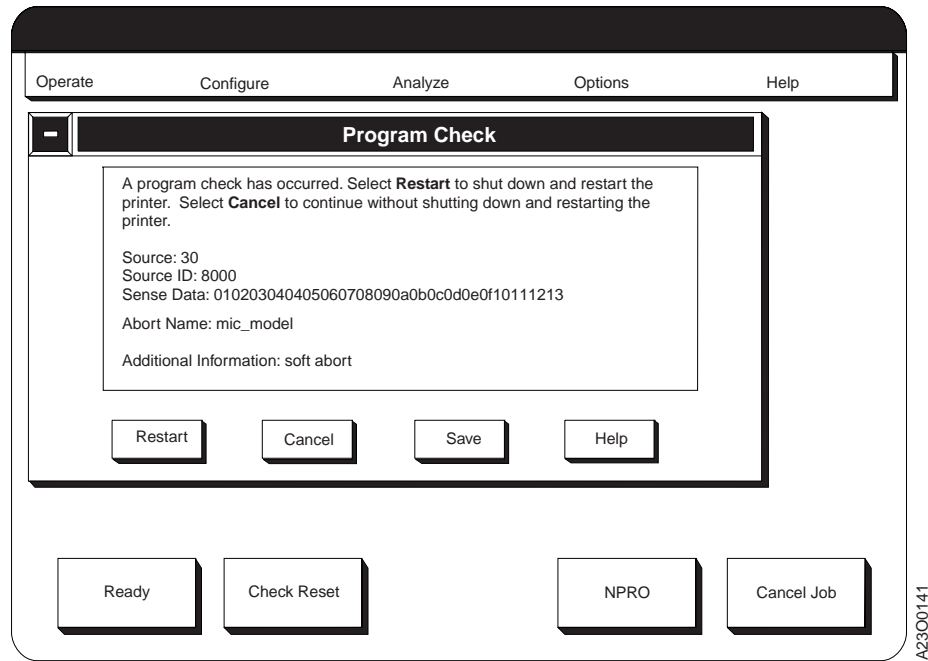


Figure 30. Soft Program Check Window

- **SELECT** the **Save** push-button to save all existing trace data to diskette, if desired.
- **SELECT** the **Cancel** push-button. If the window is removed, retry the operation in progress when the Program Check condition occurred.
- If the window reappears, **SELECT** the **Restart** push-button.
- At the completion of the Restart procedure, retry the operation in progress when the Program Check condition occurred.
- Call for service if the problem continues.

## Hard Program Checks

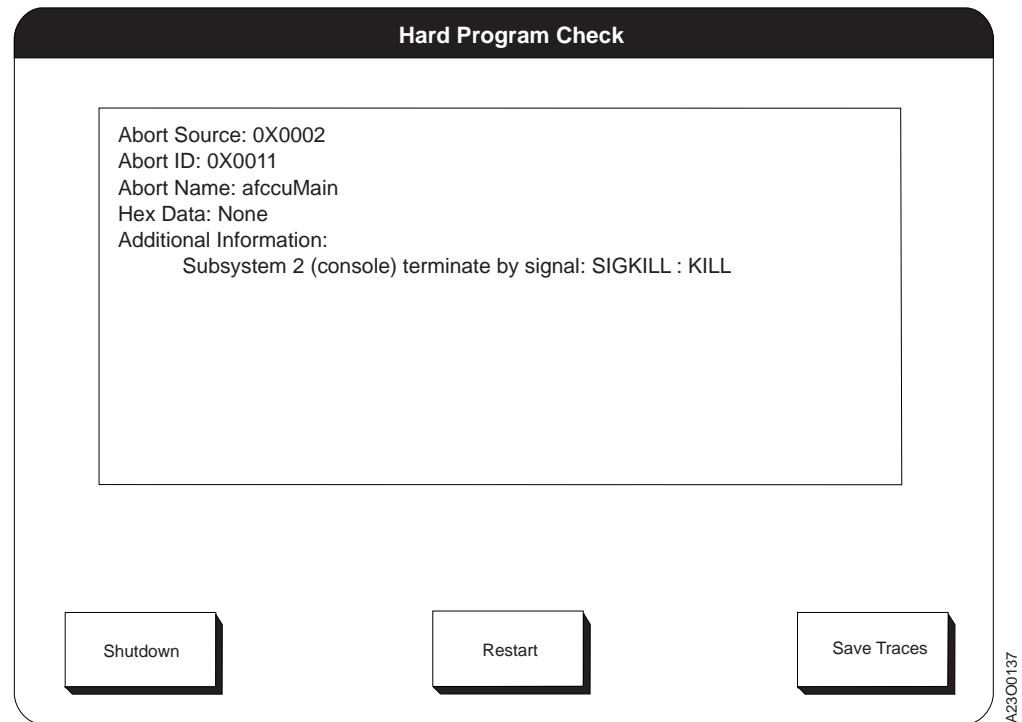


Figure 31. Hard Program Check Window - Normal Operations

- For a Hard Program Check that occurs during either a power on/bring up sequence or normal operations, do the following:
  - **SELECT** the **Save Traces** push-button to save all existing trace data to diskette, if desired.
  - **SELECT** the **Restart** push-button. If the window does not reappear after the completion of the Restart procedure, retry the operation in progress when the Program Check condition occurred.
  - If the window reappears after the completion of the Restart procedure, **SELECT** the **Shutdown** push-button.
  - At the completion of the Shutdown procedure, power off the system.
  - Switch power on to the system.
  - At the completion of the power on sequence, retry the operation in progress when the Program Check condition occurred.
  - Call for service if the problem continues.
- For a Master Program Check occurring during a power on/bring up sequence, do the following:
  - **SELECT** the **Save Traces** push-button to save trace data to diskette, if desired.
  - **SELECT** the **Continue** push-button.
  - If the window reappears, call for service.

## Printer Error Messages

Printer Error messages show that a hardware, microcode, or host interface problem has been detected in a printer or in the control unit. An operator can sometimes, but not always, recover from these types of problems.

Follow the procedure given in the **Directions** field of the **Printer Error** window to perform error recovery. Table 13 on page 147 lists the printer error messages for which there is additional information contained in this manual to aid in your error recovery procedures.

Figure 32 shows a sample **Printer Error** window.

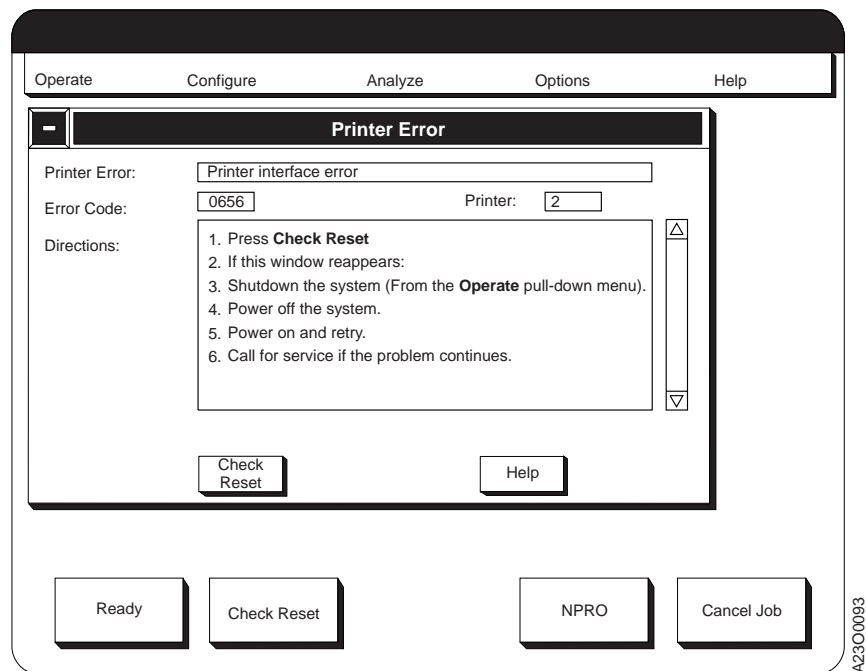


Figure 32. Printer Error Window

The Fields in this window are:

- **Printer Error:** A short description of the detected error condition.
- **Error Code:** The four-character System Reference Code (SRC), which is used for logging of error conditions.
- **Printer:** An indication of which printer the error occurred on. If the error message is for the control unit, this field is not included on the window.
- **Directions:** A step-by-step recovery procedure, or directions to another source of procedures.



The Function push-buttons in this window are as follows:

**Completed**

This push-button is included only for error conditions that may be postponed. Select it when you complete all recovery actions.

**Postpone**

This push-button is included only for error conditions that may be postponed. Select it when you want to postpone error recovery. The message is then listed in the Messages selection list box on the **Printer Status** window, which you can select from the **Operate** pull-down menu.

**Check Reset**

This push-button is included only for error conditions that you must handle immediately. Select it when you complete all recovery actions.

**Help** Select it to display help information for the panel.

Table 13. Printer Error Messages

Code	Description	Reference
0119	Upper tractor forms jam	"Forms Jams" on page 157
0131	Tension arm down	
0132	Tension arm up	
0133	Skew error	
0134	Fuser wrap	
0161	Stacker forms jam	
0164	Stacker forms jam	

## Out Of Supplies Messages

Out of Supplies messages specify an operator task that needs to be done involving printer supplies.

Follow the procedure given in the **Directions** field of the **Out of Supplies** window to complete the task. Table 14 on page 149 lists the Out of Supplies messages for which there is additional information contained in this manual to aid in completion of the task.

Figure 33 show a sample **Out of Supplies** window.

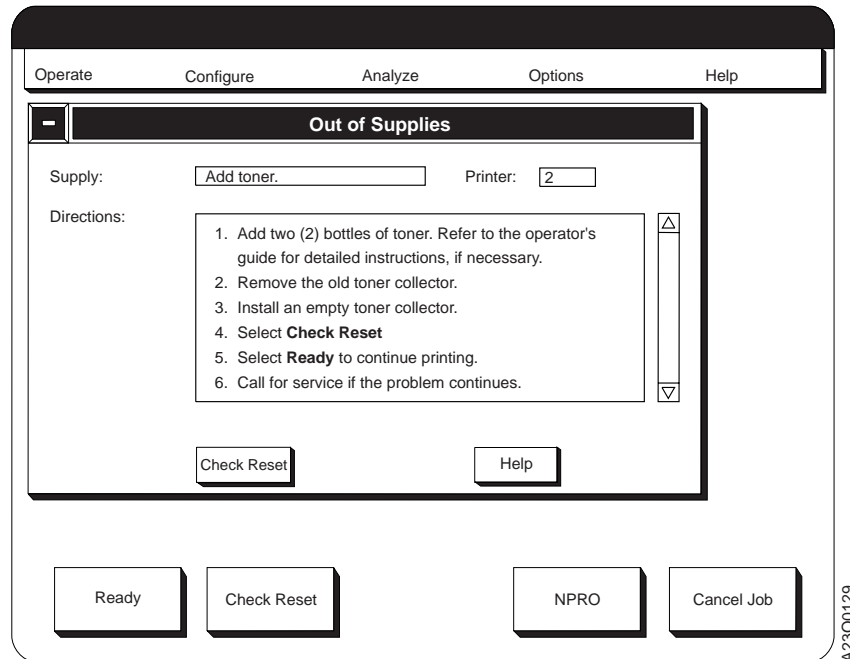


Figure 33. Out of Supplies Window

The Fields in this window are:

- **Supply:** The name of the supply and the action required.
- **Printer:** An indication of which printer needs attention.
- **Directions:** A step-by-step procedure to follow.

The Function Push-buttons in this window are as follows:

**Check Reset**

Informs the control unit that you have completed all actions necessary to replenish the supply item.

For supply actions that may be postponed, this push-button allows you to postpone the action and place the printer back into Ready status.

**Help** Displays help information.

**Note:** You may be able to temporarily postpone replacing some of the supplies (such as the fuser oil, developer mix, and fine filter). You must replace toner and the toner collector as soon as the out-of-supplies condition occurs. However, if the printer has Enhanced Toner Loading Feature installed, an additional 800 feet of printing is allowed. See “Changing the Toner Cartridge” on page 208 for more information.

*Table 14. Out of Supplies Messages*

Code	Description	Reference page
0785	Change toner collector	214
0786	Add toner	208
0788	Change developer mix	217
0791	Change fine filter	227
0792	Add fuser oil	205
0793	Change oiler belt	232
079B	Install a toner cartridge	208
079C	Toner Supply Low	208

## Intervention Required Messages

Intervention Required messages specify an operator task that you need to perform.

Follow the procedure given in the **Directions** field of the **Intervention Required** window to complete the task. Table 15 on page 151 lists the Intervention Required messages for which there is additional information contained in this manual to aid in completion of the task.

Figure 34 shows a sample **Intervention Required** window.

**Note:** Intervention required messages also appear on the printer operator panel.

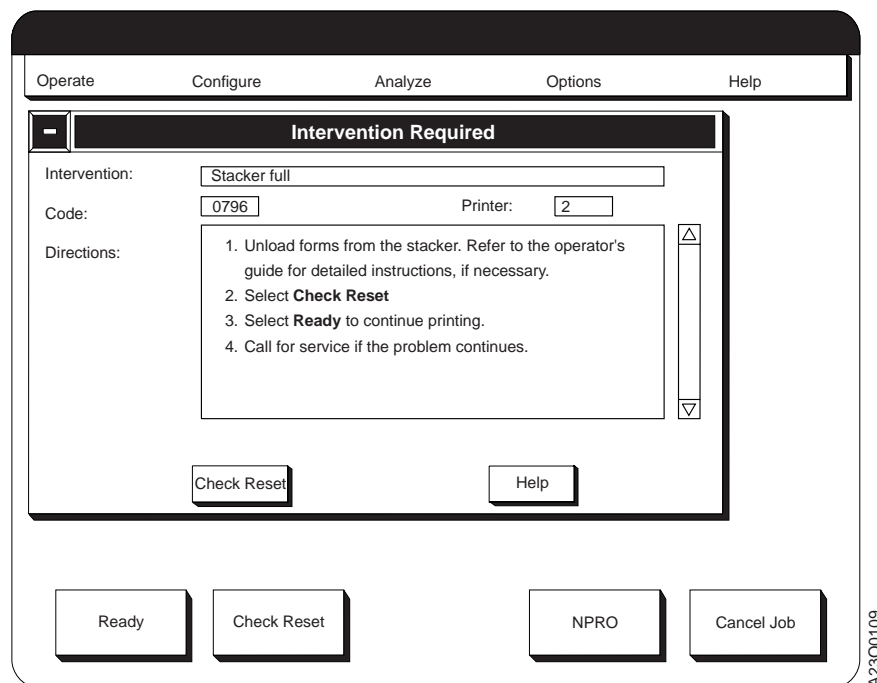


Figure 34. Intervention Required Window

The Fields in this window are:

- **Intervention:** A short description of the detected condition.
- **Code:** A four-character System Reference Code (SRC), which is used for logging intervention conditions.
- **Printer:** An indication of which printer the condition applies to.
- **Directions:** A step-by-step procedure to follow.

The Function Push-buttons in this window are as follows:

**Check Reset**

Informs the control unit that you have completed all actions necessary to correct this interruption.

**Help** Displays help information.

**Note:** You must handle all intervention required conditions, except Code D206, immediately. You can postpone a Code D206, although you must eventually execute the **Thread/Align Forms** procedure before you can make the system Ready.

Table 15. Intervention Required Messages

Code	Description	Reference
0782	Splice lever down	<ul style="list-style-type: none"> <li>• Ensure that the Splice lever is in the run position.</li> <li>• See page 19.</li> </ul>
0783	Transfer station open	<ul style="list-style-type: none"> <li>• Ensure that the Transfer Station is latched.</li> <li>• See page 20.</li> </ul>
0787	Check toner collector	<ul style="list-style-type: none"> <li>• Check that the Toner Collector is properly positioned.</li> <li>• See page 212.</li> </ul>
0789	Developer drain open	<ul style="list-style-type: none"> <li>• Ensure that the developer drain is closed.</li> <li>• See page 14.</li> </ul>
078A	End of Forms	<ol style="list-style-type: none"> <li>1. Simplex operations -see “Loading Forms (Simplex or Dual Simplex Mode)” on page 83.</li> <li>2. Duplex operations -see “Loading Forms (Duplex Mode)” on page 97.</li> </ol>
0794	Oiler gate open	<ul style="list-style-type: none"> <li>• Ensure that the oiler gate is closed.</li> <li>• See page 231.</li> </ul>
0795	Set forms direction	See page 17.
0796	Stacker full	See page 136.
0797	Stacker gate open	<ul style="list-style-type: none"> <li>• Ensure that the stacker gate is closed.</li> <li>• See page 22.</li> </ul>
0799	Check fine filter	See page 226.
D204	Pre/postprocessor NOT READY line became active.	See page 163 or 162.
D71F	Side1/Side2 mismatch	<ul style="list-style-type: none"> <li>• Perform the “Threading and Aligning Forms” on page 106.</li> <li>• Check the print quality of the verification marks. Look for light or smeared print.</li> <li>• Fix any print quality problems. See page 179.</li> </ul>
D720	Verification mark position incorrect	<ul style="list-style-type: none"> <li>• Ensure that the forms are aligned correctly. See page 132.</li> <li>• Examine your forms. Preprinted marks within the carrier strip as well as some colored forms can cause this error. If you are using any of these forms, disable verification checking. See page 140.</li> </ul>
D721	Hardware error: verification mark sensor	<ul style="list-style-type: none"> <li>• Check the print quality of the verification marks. Look for light or smeared print.</li> <li>• Fix any print quality problems. See page 179.</li> </ul>

Table 15. Intervention Required Messages (continued)

Code	Description	Reference
D724	Side 2 verify has been disabled	<ul style="list-style-type: none"> <li>• If the Side 2 Verify function is required see “Enabling Verification Checking” on page 140.</li> <li>• If the Side 2 Verify function is not required, <b>SELECT</b> the <b>Completed</b> push-button.</li> </ul>

## Status Messages

Status messages describe the condition of a printer or the system. Sometimes they are a response to operator action.

Status messages are given only for your information and do not necessarily mean that something is wrong. However, if a printer is not performing the way you think it should, a status message can give you a clue about what to do.

Figure 35 shows a sample **Printer Status** window. The **Printer Status** window automatically appears when the system is powered-on. If you have closed the window, you can see it again by **SELECTING Printer Status** from the **Operate** pull-down.

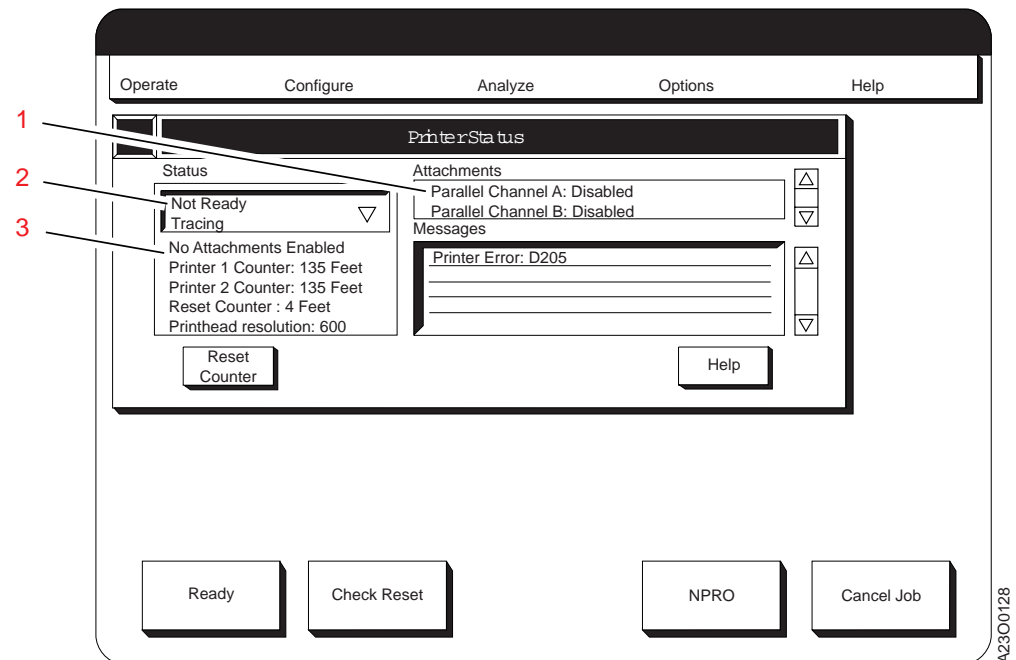


Figure 35. Printer Status Window

The window contains:

- **Printer Status (2)**
  - In duplex mode, this field displays a 2-line overall system status. **SELECTING** this field displays more detailed information about both printers and their pre/post-processing device interfaces.
  - In simplex mode, this field displays a 2-line status for the individual printer. **SELECTING** this field displays more detailed information about the printer and its pre/post-processing device interfaces.

The status messages that may appear in each line in this field are shown in Table 16 on page 155.

- **Attachments Status (1)**

This field contains a line of status for each installed host system interface.



- **System Status (3)**

This field contains:

- An overall system attachments status.
- Counters showing the total number of feet of forms run through the printers since they were originally manufactured.
- A reset counter showing the number of feet of forms processed through the system or printer since the last time the counter was reset. You can press the **Reset Counter** push-button to reset the counter.

- **Messages**

This field displays any postponed **Printer Error** messages, and any active (no action taken at this time) **Out of Supplies** or **Intervention Required** messages.

To act on a postponed message, select the message from the list.

## Status Message Summary

Table 16. Printer Status Window - Status Field Messages

Message	Description
<b>LINE 1</b>	
<b>READY</b>	In duplex mode, the complete system is ready to accept print jobs from the host system.  In simplex mode, only the individual printer is ready.
<b>NOT READY</b>	In duplex mode, the complete system is not ready to accept print jobs from the host system.  In simplex mode, only the individual printer is not ready.
<b>NOT READY AT PRINTER 1</b>	In duplex mode, the system is not ready to accept print jobs from the host system because someone has pressed the <b>Stop</b> key on the Printer 1 stacker control panel. The printer can be made ready only by pressing the <b>Ready</b> key on the Printer 1 stacker control panel (not by <b>SELECTING</b> the <b>Ready</b> push-button on the Display/Touch Screen).  This message is not displayed in simplex mode.
<b>NOT READY AT PRINTER 2</b>	In duplex mode, the system is not ready to accept print jobs from the host system because someone has pressed the <b>Stop</b> key on the Printer 2 stacker control panel. The printer can be made ready only by pressing the <b>Ready</b> key on the Printer 2 stacker control panel (not by <b>SELECTING</b> the <b>Ready</b> push-button on the Display/Touch Screen).  This message is not displayed in simplex mode.
<b>NOT READY AT PRINTER</b> (Dual Simplex and Simplex)	This message is displayed for duplex systems in dual-simplex mode and for simplex printers. The message indicates that someone has pressed the <b>Stop</b> key on the printer stacker control panel. The printer can be made ready only by pressing the <b>Ready</b> key on the stacker control panel (not by <b>SELECTING</b> the <b>Ready</b> push-button on the Display/Touch Screen).
<b>NOT READY AT PRINTER</b> (Simplex)	Someone has pressed the <b>Stop</b> key on the stacker control panel. The printer can be made ready only by pressing the <b>Ready</b> key on the stacker control panel (not by <b>SELECTING</b> the <b>Ready</b> push-button on the Display/Touch Screen).
<b>RECEIVING</b>	In duplex mode, the system is receiving print job data from the host system.  In simplex mode, the individual printer is receiving host system data.
<b>LINE 2</b>	

Table 16. Printer Status Window - Status Field Messages (continued)

Message	Description
<b>WARMING UP</b>	In duplex mode, the fuser in one or both system printers is warming up so that print jobs can begin.  In simplex mode, the individual printer fuser is warming.
<b>SLEEPING</b>	In duplex mode, the Printer Configuration "Fuser Inactivity Timer" in one or both system printers has timed out and the fuser has been turned off.  In simplex mode, only the fuser in the individual printer has been turned off.
<b>NOT AVAILABLE</b>	In duplex mode, the Display/Touch Screen cannot communicate with either or both of the system printers.  In simplex mode, the Display/Touch Screen cannot communicate with the individual printer.  In either duplex or simplex modes, when an enabled preprocessing or postprocessing device has been powered off.
<b>PRINTING</b>	In duplex mode, the system is printing.  In simplex mode, only the individual printer is printing.
<b>TRACING</b>	In either duplex or simplex modes this indicates that a trace operation is running.
<b>PRE/POSTPROCESSOR BUSY</b>	In either duplex or simplex modes this indicates that an enabled preprocessing or postprocessing device is showing "Busy" status on its interface.
<b>PRE/POSTPROCESSOR NOT READY</b>	In either duplex or simplex modes this indicates that an enabled preprocessing or postprocessing device is showing "Not Ready" status on its interface.
<b>PRE/POSTPROCESSOR EOF</b>	In either duplex or simplex modes this indicates that an enabled preprocessing or postprocessing device is showing "End-of-File" status on its interface.
<b>PRE/POSTPROCESSOR PAUSED</b>	In either duplex or simplex modes this indicates that an enabled pre-processing or post-processing device is showing "Paused" status on its interface.
"Blank"	No secondary status message to display.

## Forms Jams

The term *affected printer* means the printer on which the jam has occurred.

Some of the steps within these procedures only apply to duplex operations. Those steps begin with the phrase "For Duplex Operations". If you are operating in simplex mode, skip these steps and continue with the next step of the procedure.

If the printer power is turned off while the jam message is displayed, the message reappears when power is restored. This ensures that the jam is cleared and that no damage is done to the printer if jammed forms are present during the power-on procedure.

Find the **Printer Error** or **Error Code** that is displayed on the Display/Touch Screen in Table 17 and then go to the reference page.

Table 17. Forms Jam Errors

Printer Error	Error Code	Page Reference
Forms are visibly jammed, torn, or separated and one of the following errors is present		
Upper Tractor Forms Jam	0119	158
Tension Arm Down	0131	
Tension Arm Up	0132	
Skew Error	0133	
Fuser Wrap	0134	
Forms are <u>NOT</u> visibly jammed, torn, or separated and one of the following errors is present		
Upper Tractor Forms Jam	0119	159
Tension Arm Down	0131	
Tension Arm Up	0132	
Skew Error	0133	
Fuser Wrap	0134	
Stacker Forms Jam	0161 0164	160
Jam Between Printer 1 and Printer 2		161
Jams Between the Printer and a Postprocessing Device	D204	162 or 163

## Forms Jam is Visible

Printer Error	Error Code
Upper Tractor Forms Jam	0119
Tension Arm Down	0131
Tension Arm Up	0132
Skew Error	0133
Fuser Wrap	0134

1. Clear the forms path. See “Clearing the Forms Path” on page 164.
2. If any of the **Printer Error** messages are still displayed, **SELECT** the **Check Reset** push-button on the **Printer Error** Display/Touch Screen window.
3. Check for and resolve or postpone any other error or intervention message appearing on the Display/Touch Screen windows.
4. For Simplex Operations - Reload the forms. See “Loading Forms (Simplex or Dual Simplex Mode)” on page 83.
5. For Duplex Operations - if the jam was within Printer 1, reload the forms. See “Loading Forms (Duplex Mode)” on page 97.
6. For Duplex Operations - Enter the **Thread/Align Forms** procedure (see “Forms Are Broken Between the Printers” on page 115).
  - a. **SELECT** the **Feed Forms** push-button once; this provides enough forms beyond Printer 1 to splice (on the floor between Printer 1 and Printer 2) the forms just loaded on Printer 1 to the forms remaining in the path. Use the generalized splicing procedures found in “Splicing Forms” on page 99.
  - b. Complete the **Thread/Align Forms** procedure.
  - c. Do all the steps in “Checking the Forms Alignment” on page 132 for both Printer 1 and Printer 2.
7. **SELECT** the **Ready** push-button on the Display/Touch Screen window for the affected printer.
8. See “Recovering from a Forms Jam” on page 172.
9. See “Preventing Jams” on page 175 if the error recurs frequently.

## Forms Jam is Not Visible

Printer Error	Error Code
Upper Tractor Forms Jam	0119
Tension Arm Down	0131
Tension Arm Up	0132
Skew Error	0133
Fuser Wrap	0134

### Notes:

1. Be aware that dark-colored backing on the forms can cause the printer to display these messages.
2. The message **Upper Tractor Forms Jam 0119** may appear if the printer engine top cover is open and allowing light to affect an optical sensor. Ensure that the top cover is closed.
1. Clean the upper tractor jam sensor. See step 16 on page 197.
2. Open the upper tractor covers and ensure that the tractor holes align with the tractor pins.
3. Use the **Forms Feed** switches on the printer control panel to align the form perforation of the first full page with the correct length alignment mark on the lower tractors. See Figure 36 for details.
4. If any of the **Printer Error** messages are still displayed, **SELECT** the **Check Reset** push-button on the **Printer Error Display/Touch Screen** window.
5. Check for and resolve or postpone any other error or intervention message appearing on the Display/Touch Screen windows.
6. For Duplex Operations -
  - a. If necessary, enter the **Thread/Align Forms** procedure (see “Forms Are Broken Between the Printers” on page 115).
  - b. Complete the **Thread/Align Forms** procedure.
7. **SELECT** the **Ready** push-button on the Display/Touch Screen window.
8. See “Recovering from a Forms Jam” on page 172.
9. See “Preventing Jams” on page 175 if the error recurs frequently.

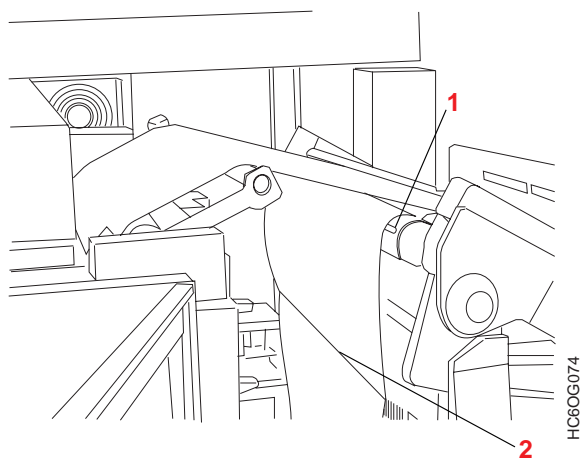


Figure 36. Reestablishing Forms Alignment

## Stacker Forms Jam

Printer Error	Error Code
Stacker Forms Jam	0161 or 0164

**Note:** These errors are not set when a Postprocessing Device Interface feature is installed and enabled, which disables the stacker mechanism.

1. Visually check to see if a forms jam is actually present.
2. Open the stacker gate.
3. If you do not find a jam, clean the stacker jam sensors. See step 31 on page 202 under “Cleaning the Printer.”  
Go to step 5.
4. If you find a jam, clear forms from the “Stacker and Pendulum Area” on page 171.

**Note:** When you remove the forms from the stacker, leave 4 to 5 pages attached to the end of the job running in the stacker to ensure correct forms folding when printing resumes.

5. Close the stacker gate.
6. If either stacker jam message is still displayed, **SELECT** the **Check Reset** push-button on the **Printer Error** Display/Touch Screen window.
7. Check for and resolve/postpone any other error or intervention message appearing on the Display/Touch Screen window.
8. For Duplex Operations - If necessary, enter the **Thread/Align Forms** procedure (see “Forms Are Broken Between the Printers” on page 115).
  - a. **SELECT** the **Feed Forms** push-button twice; this provides enough forms beyond Printer 1 to Auto Load Printer 2.
  - b. Complete the **Thread/Align Forms** procedure by adding enough forms beyond Printer 2 to splice (on the floor between Printer 2 and a postprocessing device) forms just loaded on Printer 2 to the forms remaining threaded in a postprocessing device. Use the generalized splicing procedures found in “Splicing Forms” on page 99.
  - c. Do all the steps in “Checking the Forms Alignment” on page 132 on both Printer 1 and Printer 2.
9. Ensure that the **Forms Set** indicator on the printer control panel displays the same fold direction as the first fold below the perforations on the forms guide.
10. **SELECT** the **Ready** push-button on the Display/Touch Screen window for the affected printer.
11. See “Recovering from a Forms Jam” on page 172.
12. See “Preventing Jams” on page 175 if the error recurs frequently.

## Jam Between Printer 1 and Printer 2

A jam occurring between Printer 1 and Printer 2 normally causes the forms to tear and separate. Both Printer 1 and Printer 2 continue to feed forms and print until an error condition is detected and displayed. A large supply of forms may be present on the floor at the output of Printer 1.

1. **SELECT** the **Check Reset** push-button on the **Intervention Required** Display/Touch Screen window.
2. Do not flush any forms out of either printer.
3. Manually pull the forms through the Buffer/Flipper Unit under Printer 2 and up into forms input area of Printer 2.
4. Begin the **Thread/Align Forms** Display/Touch Screen procedure (see “Forms Are Broken Between the Printers” on page 115). If necessary, use the **Printer 1 Feed Page** push-button on the **Thread/Align Forms** window to feed enough forms to splice, at the Splicing Station of Printer 2, the forms from the Buffer/Flipper Unit to the forms remaining in the Printer 2 path.
5. Complete the **Thread/Align Forms** procedure.
6. **SELECT** the **Ready** push-button on the main Display/Touch Screen window.

## Jams Between the Printer and a Postprocessing Device

A jam or separated form occurring between the postprocessing device and the printer is not detected and presented as a form jam. The usual error condition presented is a **PRE/POST NOT READY LINE BECAME ACTIVE D204** message on a **Printer Error** Display/Touch Screen window or **PRINTER ERROR D204** message. This error message occurs when the “Pre/postprocessor Busy Timer” (see “Configuring Preprocessing/Postprocessing Devices/Interfaces” on page 273 for details) included in the characteristics section of an installed and enabled postprocessing device has timed out.

1. Clear the forms path of any jam, or clear any forms feeding problem between the postprocessing device and the printer.
2. **SELECT** the **Check Reset** push-button on the **Printer Error** Display/Touch Screen window.
3. If you must remove damaged or separated forms in the forms path between the postprocessing device and the printer, advance the forms through the printer a sufficient distance to enable splicing. On the floor between the printer and the postprocessing device, splice the forms exiting the printer to the forms remaining in the postprocessing device.
4. Make the postprocessing device Ready.
5. **SELECT** the **Ready** push-button on the Display/Touch Screen for the affected printer.

For jams in a postprocessing device, see “Forms Jam In the Postprocessing Device” on page 163.



## Forms Jam In the Postprocessing Device

When a paper jam occurs in a postprocessing device that causes the device to go to a Not Ready condition, the **Intervention Required** window provides an additional push-button, **Jam Recovery**, which causes a number of pages to be reprinted. The number of pages reprinted is determined by the distance from the printer to the farthest postprocessing device attached to the printer.

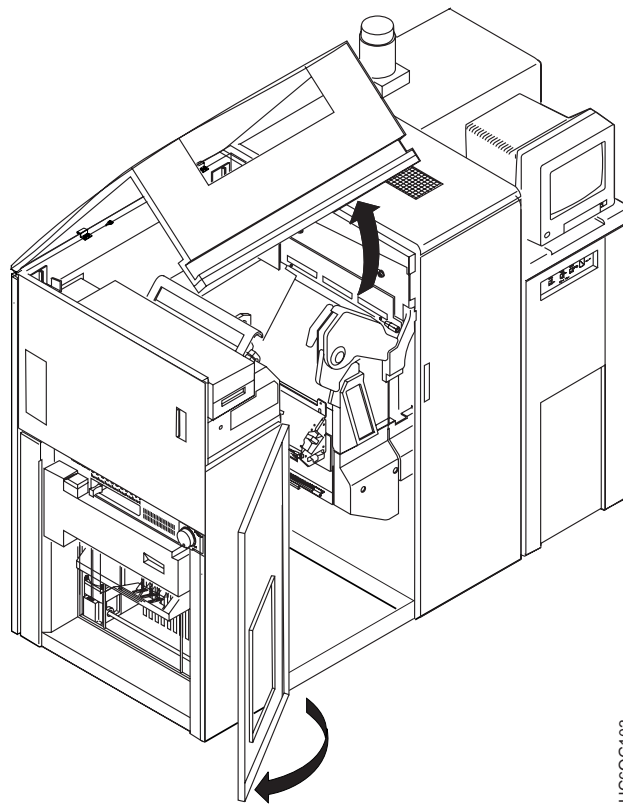
If a paper jam occurs in the postprocessing device causing a Not Ready condition, the **Intervention Required** window appears on the Display/Touch Screen. The Error code **D204** appears on the window.

The screenshot shows a touch screen interface with a top navigation bar containing 'Operate', 'Configure', 'Analyze', 'Options', and 'Help'. A central window titled 'Intervention Required' is displayed. Inside this window, the 'Intervention:' field shows 'Pre/postprocessor NOT READY line became active.' and the 'Code:' field shows 'D204'. The 'Directions:' section lists four steps: 1. Check the pre/postprocessor for errors. 2. Make the pre/postprocessor ready. 3. Select **Ready** and retry operation. 4. Call for service if the problem continues. At the bottom of the window are four buttons: 'Completed', 'Postpone', 'Jam Recovery', and 'Help'. Below the window, on the main screen, are four more buttons: 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. A vertical label 'NWTM0930' is on the right side of the screen.

1. Remove the jammed paper from the postprocessing device.
2. If you want to reprint pages, **SELECT** the **Jam Recovery** push-button on the **Intervention Required** window.
3. **SELECT** the **Completed** push-button on the **Intervention Required** window. (You do not have to wait between **SELECTING** the **Jam Recovery** and **Completed** push-buttons.)
4. **SELECT** the **Ready** push-button on the Display/Touch Screen.

---

## Clearing the Forms Path



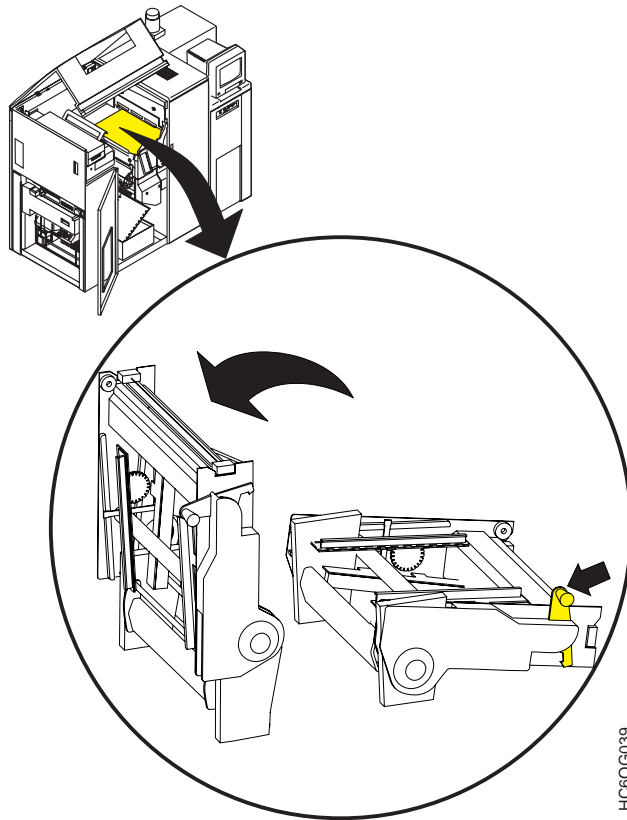
### Transfer Station Area

1. Open the top left and front left center covers.

**Attention!**

Do *not* use the **Forms Feed** push-button on the printer Display/Touch Screen if forms are jammed in the transfer station.

2. Break the forms at a perforation in the input area below the transfer station.
3. Break the forms at a perforation between the tension arm area and the fuser entry area.



4. Raise the transfer station away from the photoconductor drum.

**Attention!**

The photoconductor drum is easily damaged, and it is *very* expensive to replace.

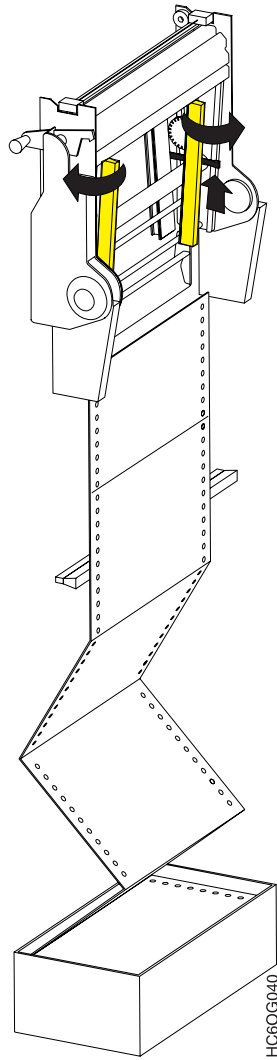
When the transfer station is open, the photoconductor drum is automatically covered to prevent damage to the drum.



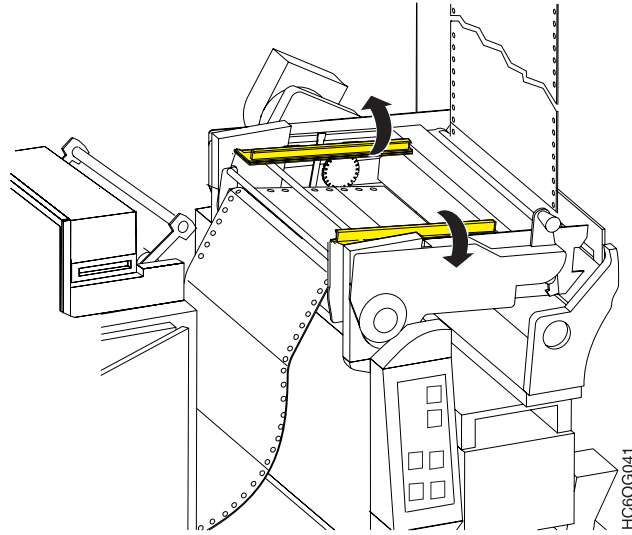
**CAUTION:**

<73> Do not wear jewelry (rings, watches, or bracelets) when working in this area.

CAUT0103

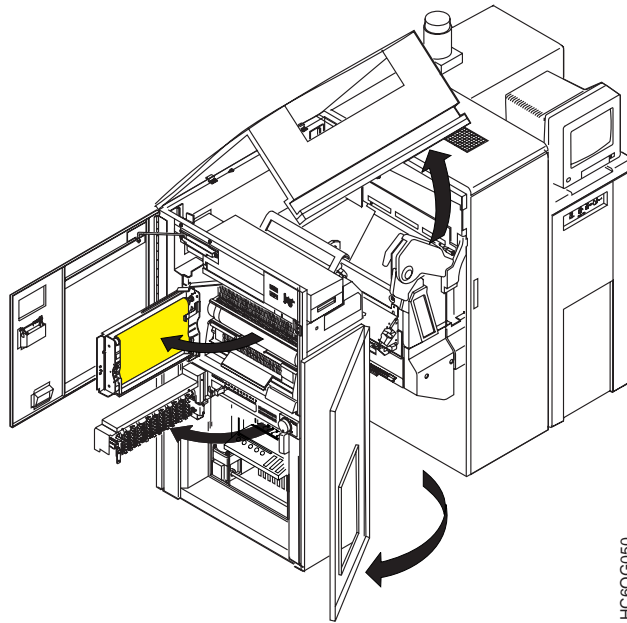


5. Open the lower transfer station tractor covers.
6. Check for torn carrier strips, oversized carrier holes, and torn paper.
7. Remove any torn forms, carrier strips, and paper chads from the lower tractor area.
8. Close the lower tractor covers.
9. Lower the transfer station and latch it securely into position.

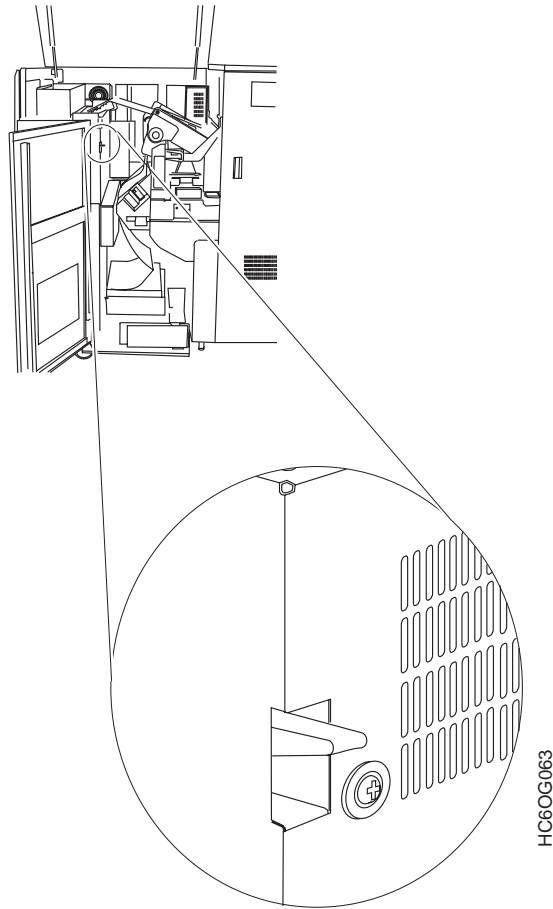


10. Open the upper transfer station tractor covers.
11. Check for torn carrier strips, oversized carrier holes, and torn paper.
12. Remove any torn forms, carrier strips, and paper chads from the transfer station area, the transfer corona, and the retractors.
13. Close the upper tractor covers.
14. Press the **Forms Feed - Forward** push-button to clear the forms from the fuser area.

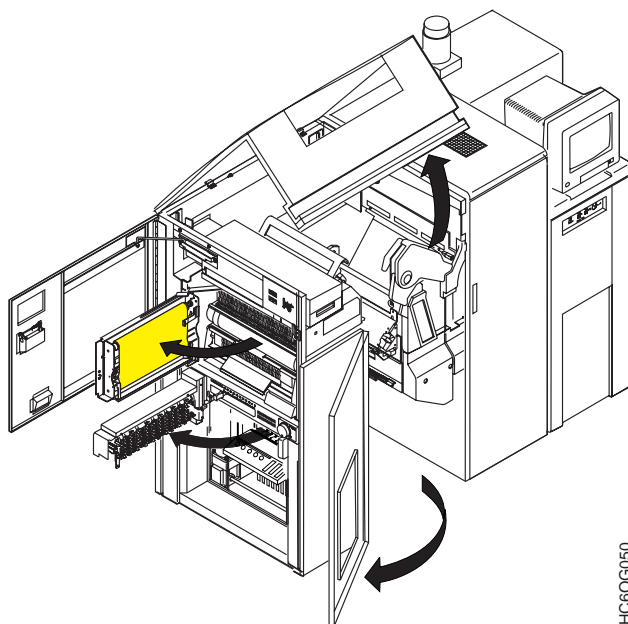
## Fuser and Stacker Areas



1. Open the top and front left cover and the stacker gate.
2. Break the forms at a perforation near the pendulum.
3. Unload forms from the stacker. See "Unloading the Stacker" on page 136.
4. Close the stacker gate.



5. Press and hold the puller lever down.
6. Grasping the forms near the fuser entry area, pull them up and out of the fuser. (This moves the forms in the opposite direction from their usual path.)
7. If the forms will not pull up, or if some forms remain in the pendulum, do the following:
  - a. Lower the stacker table.
  - b. Open the stacker gate.
  - c. Grasp both sides of the forms and pull down evenly.
  - d. Close the stacker gate.
  - e. Raise the stacker table.



**CAUTION:**

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

CAUT0116



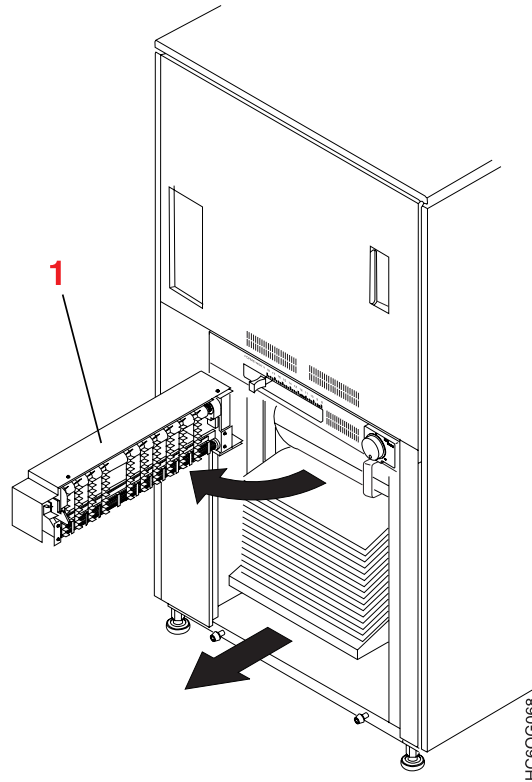
**CAUTION:**

<70> The oiler belt, oiler wick roll, and their environments are *high-temperature* areas. Be very careful when working in these areas.

CAUT0100

8. If forms remain in the fuser, do the following:
  - a. Open the oiler-belt gate.
  - b. Lower the hot roll shield.
  - c. Remove any forms you see.
  - d. Raise the hot roll shield.
  - e. Close the oiler-belt gate.
9. Return to the appropriate jam message listed in “Forms Jams” on page 157.





## Stacker and Pendulum Area

1. Open the stacker gate (1).
2. Ensure that the forms are folding correctly; that is, the forms stack lies flat (without bowing between forms).
3. Ensure that the **Forms Set** indicator on the Printer Control Panel is set to match the direction of the first fold perforation that is below the red mark on the forms guide.
4. Separate the forms at the perforation near the top of the stacker. Save as much of the output as possible. Work with the host system console operator to recover any lost pages.
5. Unload forms from the stacker.

**Note:** When you remove the forms from the stacker, leave 4 to 5 pages attached to the end of the job running in the stacker. This ensures that the forms folding is correct when printing resumes. See “Unloading the Stacker” on page 136.

6. Ensure that the correct forms length and width are selected at the Stacker Control Panel.
7. If you receive a message when no forms appear jammed, clean the six stacker jam sensors and two mirrors with a soft dry cloth. See step 31 on page 202 under “Cleaning the Printer.”

---

## Recovering from a Forms Jam

After some jams occurring within the printer engine, the printer automatically reprints certain pages as part of its recovery process. This occurs only if the printer is configured to allow reprinting.

You must set the following **Configure Printer** configuration items to allow automatic reprinting following a forms jam recovery:

- **Jam Recovery Type** - Must be set to either:
  - “Use Normal Jam Repositioning”
  - “Suppress MICR Jam Repositioning”, and MICR postprocessing printing is not being requested
- **Direct Attach** - Must be set to “No”

Automatic reprinting will reprint the number of pages of data, based on the current in-effect page length.

- During simplex operation - that includes, all the pages that can fit in the forms path between the transfer station and the top of the stacker at the time the jam was detected.
- During Duplex operation - that includes, all of the pages that can fit in the forms path between the transfer station in Printer 1 and the top of the stacker in Printer 2 at the time the jam was detected.

If a postprocessing device is used, an extra number of pages can be added to the normal number of reprinted pages by setting the **Jam Recovery Point Distance** configuration item under the **Configure Printer** procedure to a non-zero value. This extra number of pages is the physically configured distance from the top of the stacker to/through the postprocessing device.

For Simplex Operations – Figure 37 on page 173 shows the normal reprint path length from the transfer station (Point A) to the stacker (Point B), and the additional Jam Recovery Point Distance from the stacker (Point B) to/through the postprocessing device (Point C).

For Duplex Operations – Figure 38 on page 173 shows the normal reprint path length from the transfer station (Point A) in Printer 1 to the stacker in Printer 2 (Point B), and the additional Jam Recovery Point Distance from the stacker in Printer 2 (Point B) to/through the postprocessing device (Point C).

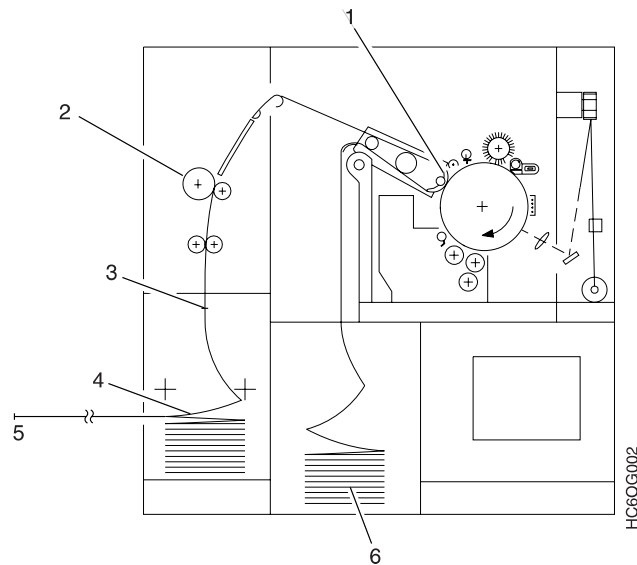


Figure 37. Reprint Path Length

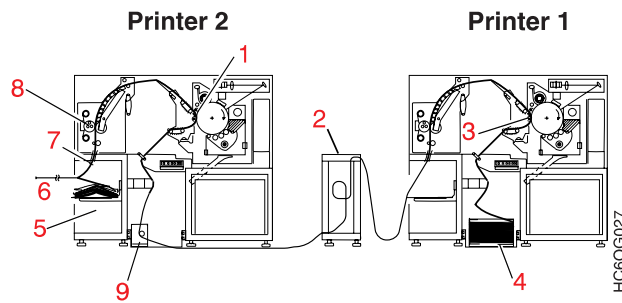


Figure 38. Reprint Path Length

Following the automatic reprinting of pages, you must check for and discard any duplicate pages that may have been printed. Locate the first reprinted page, and attempt to find that same page in the stacker or a postprocessing device. If you find it, discard all pages starting with that page.

In all cases but one, the automatic reprinting of pages recovers all pages that might have been lost or damaged as the result of the jam. The exception occurs the jam is caused by a **Fuser Wrap** error. A jam of this type can backup (accordion-pleat) the forms until the error is detected and the forward movement of the forms stopped. If this occurs, a few lost pages are not automatically reprinted. You need to work with the host system console operator to take action to recover those lost pages.

If the printer is not configured to recover lost pages, you may need to ask the host system console operator to do one of the following:

- Restart the job at the point where the output was lost
- Restart the entire job.

You must rethread the printer with the jam.

For Duplex Operations – in addition to rethreading the printer with the jam, you may also have to rethread the other printer (if the jam occurred in Printer 1). Whenever rethreading is required, the **Thread/Align Forms** Display/Touch Screen procedure window automatically appears and requires you to execute and complete that procedure (see “Threading and Aligning Forms” on page 106).

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## Preventing Jams

The best way to prevent jams is to use forms and applications that were designed for use with the printers. Form and application problems cannot be corrected by adjusting or repairing the printer.

If a particular form jams frequently, refer the application owner to the *Forms Design Reference for Continuous Forms Advanced Function Printers*. This book contains detailed information about selecting forms and designing applications for use with continuous-forms printers.

It is also important to ensure that the forms are loaded correctly. To prevent jams from happening, do the following:

- Ensure that the forms are not being damaged in one of the following areas:
  - Forms input area
  - Before they reach the transfer corona within the printer engine
  - In the Buffer/Flipper Unit between the printers when they are in duplex mode.
- Ensure that the perforations have ties at the ends, not cuts.
- Ensure that the back sides of the forms do not have dark colors or markings when you use simplex mode. Also ensure that both sides of the forms do not have dark colors or markings when the printers are in duplex mode.
- If you are using fan-fold forms, ensure that the folded or leading edge is not wrinkled or torn.
- If you are using fan-fold forms and the first page is folded under, ensure that the tractor holes line up *exactly*. This is especially important if you are using forms with a  $\frac{1}{3}$ -inch or  $\frac{2}{3}$ -inch length.
- Ensure that the tractor holes are aligned correctly on the tractor pins.
- Ensure that the forms are positioned correctly in the forms input area. The forms must not twist or tear when they travel around the forms guide and through the transfer station.
- If the forms are in a box, ensure that the box does not interfere with form movement.
- If you are using fan-fold forms and the stack of forms seems to curve (dishing), roll the first form in the opposite direction of the curve. Then unroll it before you put the form on the transfer station lower tractors.
- Load different forms, or if you are using fan-fold forms, a new box of the same forms. Ensure that the forms are loaded correctly.
- If the jam occurs only with one kind of form, especially one that has not been used before on the printers, the problem may be form-related. Forms that are unusually heavy or light, forms that have holes or cuts, and adhesive-label forms are all likely to cause jams.

Forms orientation may have an effect on stacking and jam frequency. On non-preprinted forms:

- If you are using fan-fold forms, rotating the box 180° can change the frequency of jams.
- Remove damaged sections.

- If you are using fan-fold forms and you folded back the first page of the form, try loading the form *without* folding. Conversely, if you did *not* fold the form, try doing so.
- If you have been running labels, print a test job on plain paper forms to remove any adhesive residue that the labels may have left in the printer.
- If you are using fan-fold forms, ensure that you leave four to five blank forms correctly folded in the stacker when you resume printing.

## Running Traces

The Traces procedure lets you select, start, stop, and print traces.

### Note

- Trace affects both printers when you are printing in duplex mode. In simplex mode, all trace actions (Start, Stop, Save, and Print) apply to only to that printer.
- Tracing may affect performance.
- The **Configure...** action requires Customer Engineer authorization.

1. **SELECT** the **Analyze** pull-down menu on the main Display/Touch Screen window.
2. **SELECT** the **Traces** procedure. The **Traces** window appears with a list of the available traces and the current status of each.

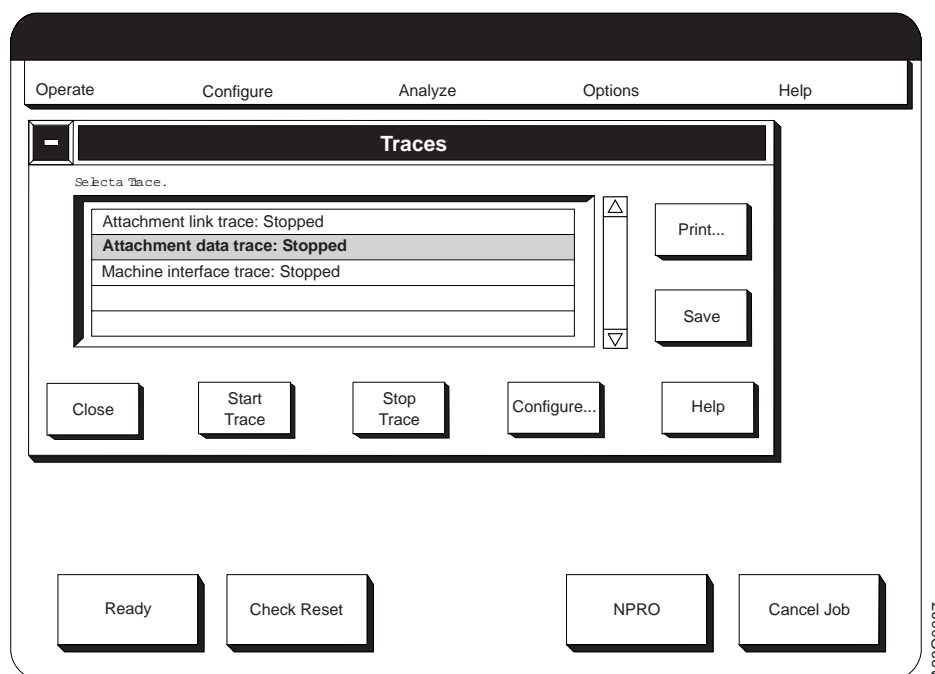


Figure 39. Traces Window

3. To start a trace:
  - a. **SELECT** the trace you want to run from the **Select a Trace** box.
  - b. **SELECT** the **Start Trace** push-button.
4. To stop a trace:
  - a. **SELECT** the trace you want to stop from the **Select a Trace** box.
  - b. **SELECT** the **Stop Trace** push-button.
5. To save trace data:
  - a. Stop all traces.
  - b. **SELECT** the **Save** push-button.
  - c. Insert a diskette in the diskette drive, and **SELECT Save** on the verification window that appears.

6. To print a trace:
  - a. You must stop the trace before you can print it. Do step 4 on page 177.
  - b. Disable all host attachments before you print a trace. See “Enabling and Disabling Attachments” on page 70 for details.
  - c. **SELECT** the **Print...** push-button on the **Traces** window. You see the **Print Trace** window.
  - d. **SELECT** the trace you want to print from the **Select a Print File** box.
  - e. To change the number of copies you print, do the following:
    - 1) **SELECT** the **How Many?** field.
    - 2) Type the number of copies you want to print.
    - 3) **SELECT** the **OK** push-button.
  - f. **SELECT** the **Print** push-button on the **Print Trace** window.



## Print Quality Problems

Many print quality problems are directly related to the kind of forms that are being used and the application that is being processed. If a particular form or application regularly produces unsatisfactory output, refer the application owner to the *Forms Design Reference for Continuous Forms Advanced Function Printers*, G544-3921. This publication contains detailed information about selecting forms and designing applications for use with continuous forms printers.

Table 18 describes possible print quality problems and suggests actions that may correct the symptoms.

Table 18. Print Quality Symptom Table

Symptom	Action
Poor fusing	<p>If poor fusing occurs on labels or heavy forms, increase the <u>preheat temperature</u> (see “Setting/Adjusting the Preheat Platen Temperature” on page 295) until the fusing is acceptable. Run several hundred feet of forms to stabilize the temperature. Check the fusing to see if it is acceptable.</p> <p>Continue to increase the preheat temperature value and try printing again until fusing is acceptable.</p> <p>If adequate fusing does not occur, set the preheat temperature value to the default value of <b>0</b> (zero). Increase the <u>hot roll temperature</u> (see “Setting/Adjusting the Hot Roll Temperature” on page 297) and try printing again until the fusing is acceptable.</p> <p>If adequate fusing does not occur, the form may be unacceptable for use on the printers.</p> <p>Examine the printed forms in the stacker to verify that the sheets are not sticking together, or that toner is not being pulled off adjacent sheets. If either condition exists, the form may be unacceptable for use on the printers. Evaluate the condition of the printed forms and consider the following:</p> <ul style="list-style-type: none"><li>• How long it took to print the job</li><li>• How long the forms were left in the stacker</li><li>• How much pressure was applied to the stack</li><li>• The type of application for which the forms are used, for example, bar-code readability.</li></ul>

Table 18. Print Quality Symptom Table (continued)

Symptom	Action
Forms stick together	<ul style="list-style-type: none"> <li>• If forms stick together or toner is pulled off the forms in the stacker, decrease the <u>preheat temperature</u> (see “Setting/Adjusting the Preheat Platen Temperature” on page 295). Run several hundred feet of forms to stabilize the temperature. Check the fusing to see if it is acceptable.</li> <li>• If the fusing is acceptable but forms stick together in the stacker, decrease the preheat temperature value and try printing again. If adequate fusing does not occur without forms sticking together, the forms may be unacceptable for use on the printers.</li> <li>• Adjust the Contrast value using the <b>Forms Characteristics</b> box (see “Setting/Adjusting the Contrast” on page 293) to the <u>lowest</u> possible setting that produces acceptable print quality. If this is a duplex printing system, remember to adjust the contrast setting on <u>both</u> printers so that the contrast is balanced between the front and back side of the forms.</li> <li>• Increase the <u>Oil Rate</u> (see “Setting/Adjusting the Oil Rate” on page 299). (If the oil rate value is currently set to the default value 0, determine the actual default value by looking at Oil Rate in <b>Printer Configuration</b>. Print several hundred feet of forms and check the forms in the stacker. If the forms still stick together, increase the oil rate again and try printing. Check the fusing to see if it is acceptable; if it is not acceptable, return the Oil Rate to the previous setting. Increasing the print <u>contrast</u> may also improve fusing of solid areas and bar codes.</li> </ul>
Heat damage with the printer running	If heat damage (melting or curling) occurs to forms or labels while the printer is running, set both the <u>Preheat</u> and <u>Hot Roll</u> temperatures to <u>lower</u> values and try printing again. Always use the <u>lowest</u> preheat and hot roll temperature values that produce acceptable fusing.
Repeating spot patterns	<ul style="list-style-type: none"> <li>• Clean the printer and the oil belt. See “Cleaning the Printer” on page 192 and “Cleaning the Oil Belt” on page 230.</li> <li>• If the oil belt is excessively dirty with toner, increase the speed of the oil belt for that specific form (see “Setting/Adjusting the Oil Belt Speed” on page 301).</li> <li>• If you have been running labels, print a test job on plain paper forms to remove any adhesive residue that the labels may have left in the printer.</li> </ul>
Print is too dark or characters appear too wide.	<p>Press the <b>Lighter Contrast Control</b> key on the printer control panel.</p> <p>To save the new contrast setting for this form, see “Setting/Adjusting the Contrast” on page 293.</p>
In duplex printing mode, there is a noticeable difference in the printing contrast between the front and back sides of the form, even though the Contrast Switch setting is set the same on both printers.	<p>It is normal for printing contrast to vary between printers. Adjust the Contrast setting on the printer control panel of both printers to balance the contrast between the printers.</p> <p>To save the new contrast setting for this form, see “Setting/Adjusting the Contrast” on page 293.</p>

Table 18. Print Quality Symptom Table (continued)

Symptom	Action
Blank spots (voids) or light areas appear near perforations.	<p>This problem is usually related to forms design, and it cannot be corrected by adjusting the printer.</p> <p>The following restrictions, copied from the <i>Forms Design Reference for Continuous Forms Advanced Function Printers</i>, G544-3921 must be maintained.</p> <p>Print quality may be poor near fold perforations, an internal perforation, or any cut in the form. To ensure correct operation and print quality, maintain the following distances:</p> <ul style="list-style-type: none"> <li>• From non-folding and internal perforations: 1.27 mm (0.05 in.)</li> <li>• From folding perforations: 1.27 mm (0.05 in.)</li> <li>• From binder holes and cuts: 2.54 mm (0.1 in.)</li> </ul> <p>If the specified distance from the page perforations is not being maintained, refer the application owner to the <i>Forms Design Reference for Continuous Forms Advanced Function Printers</i>, G544-3921.</p>
Loss of edge definition or lighter print contrast (boldness) at the trailing edge of bar codes, shaded or solid fill areas, or formatted bold text characters.	<p>The problem can be reduced or eliminated by increasing the <b>Contrast</b> switch setting on the printer control panel. Remember to adjust the contrast setting on both printers when they are in duplex mode This balances the contrast between the front and back of the forms.</p> <p>To save the new contrast setting for this form, see “Setting/Adjusting the Contrast” on page 293.</p>
Blank spots (voids) or light areas not near perforations	<ul style="list-style-type: none"> <li>• Ensure that the forms are smooth and flat. Feel the forms, especially near the perforation. If you find lumps, bumps, or wrinkles, load another box of forms. This kind of problem can be caused by storing forms in a poor environment (for example, high humidity).</li> <li>• If you have been running labels, print a test job on plain paper forms to remove any adhesive residue that the labels may have left in the printer.</li> <li>• Clean the coronas. See step 24 on page 200 in “Cleaning the Printer”.</li> <li>• Press the <b>Darker Contrast Control</b> key on the printer control panel. To save the new contrast setting for this form, see “Setting/Adjusting the Contrast” on page 293.</li> <li>• If the void or light area is in the shape of an adhesive label, call your service representative. See “Service Call Procedure” on page 33.</li> </ul>
Print has white streaks.	<ul style="list-style-type: none"> <li>• Clean the coronas. See step 24 on page 200 in “Cleaning the Printer”.</li> </ul> <p>If necessary, remove the coronas and look for forms chads in the wire or corona housing. Be careful not to touch the wire with your hands. See “Cleaning the Printer” on page 192.</p>
Print is too light.	<ul style="list-style-type: none"> <li>• Press the <b>Darker Contrast Control</b> key on the printer control panel. To save the new contrast setting for this form, see “Setting/Adjusting the Contrast” on page 293.</li> <li>• Clean the coronas. See step 24 on page 200 in “Cleaning the Printer” and step 10 on page 194 in “Cleaning the Printer”.</li> <li>• If you opened and closed the developer drain <u>without</u> replacing the developer mix, replace the developer mix now. Opening the drain resets the developer mix usage timer; this could result in the developer mix being used beyond its normal life and result in immediate print quality problems. See “Changing the Developer Mix” on page 217.</li> </ul>

Table 18. Print Quality Symptom Table (continued)

Symptom	Action
Print rubs off easily.	<ul style="list-style-type: none"> <li>• Ensure that the forms were fused. For example, did you use <b>Forms Feed</b> when you should have used <b>NPRO</b>?</li> <li>• If print rubs off solid fill areas (logos, bar codes) on the form, press the <b>Lighter Contrast Control</b> key setting on the printer control panel until fuse grade is acceptable. Remember to adjust the contrast setting on both printers, when they are in duplex mode. This balances the contrast between the front and back of the forms. To save the new contrast setting for this form, see “Setting/Adjusting the Contrast” on page 293.</li> <li>• Increase the Preheat and/or Hot Roll temperatures (see “Setting/Adjusting the Preheat Platen Temperature” on page 295 and “Setting/Adjusting the Hot Roll Temperature” on page 297).</li> <li>• Clean the oil belt. See “Cleaning the Oil Belt” on page 230.</li> <li>• Ensure that the hot roll shield is up.</li> <li>• Load a different box of forms. The forms you are running may be too heavy (more than 160 g/m<sup>2</sup> (42 lb) when running simplex mode, or more than 105 g/m<sup>2</sup> (28 lb) when running duplex mode), or too moist, or have too rough a surface.</li> <li>• Ensure that no adhesive labels are on the hot roll.</li> </ul>
Print is offset (double images).	<ul style="list-style-type: none"> <li>• If you are printing on labels, reduce the Preheat and Hot Roll temperatures (see “Setting/Adjusting the Preheat Platen Temperature” on page 295 and “Setting/Adjusting the Hot Roll Temperature” on page 297).</li> <li>• Increase the Oil Rate (see “Setting/Adjusting the Oil Rate” on page 299).</li> <li>• Clean the oil belt. See “Cleaning the Oil Belt” on page 230.</li> <li>• If the oil belt is excessively dirty with toner, increase the speed of the oil belt for that specific form (see “Setting/Adjusting the Oil Belt Speed” on page 301).</li> <li>• Ensure that the hot roll shield is up.</li> </ul>
Print is not correctly registered.	<ul style="list-style-type: none"> <li>• Ensure that the print position is adjusted correctly. See “Adjusting the Print Position” on page 120 for more information.</li> <li>• Check forms alignment. See “Checking the Forms Alignment” on page 132.</li> </ul>
Dark background or dirty prints	<ul style="list-style-type: none"> <li>• Clean the printer, particularly the coronas and the oil belt. See “Cleaning the Oil Belt” on page 230 and “Cleaning the Printer” on page 192.</li> <li>• If the oil belt is excessively dirty with toner, increase the speed of the oil belt for that specific form (see “Setting/Adjusting the Oil Belt Speed” on page 301).</li> </ul>
Dark streaks	<ul style="list-style-type: none"> <li>• Clean the printer, particularly the coronas and the oil belt. See “Cleaning the Oil Belt” on page 230 and “Cleaning the Printer” on page 192.</li> <li>• If the oil belt is excessively dirty with toner, increase the speed of the oil belt for that specific form (see “Setting/Adjusting the Oil Belt Speed” on page 301).</li> </ul>
Dark or fuzzy 12 mm (0.5 inch) wide band across width of page (print bloom); characters appear bolder or slightly larger than normal.	This problem may occur at the point where pages stop in the fuser. The problem may also be application-related, and if so, cannot be corrected by adjusting the printer.
Any other print quality problem or any of the above problems that persist after you have followed all of the corrective steps.	Call your service representative. See “Service Call Procedure” on page 33.

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## Sudden Failures

If your printer has been operating satisfactorily for a reasonable period and then suddenly fails, consider the following questions:

- Is the printer processing a new application?
- Is the printer using new forms?
- Are forms or other supplies being obtained from a new supplier?
- Have the IBM Advanced Function Printing licensed programs been updated?
- Have any changes occurred in the operating system environment?
- Has the printer been recabled or moved?
- Have any configuration items been changed recently?

If the answer to any of these questions is “yes”, you may have found the cause of the problem. Work with your system programmer, service representative, or application owner to resolve the situation.

## Problem Solving Tips and Suggested Actions

Table 19 is a summary of some hard-to-classify symptoms, a discussion of the probable cause, and some actions for you to try.

Table 19. Miscellaneous Problems

Symptom	Discussion	Suggested Action
The printer frequently jams during loading.	<p>Loading problems are usually caused by the forms that are being loaded.</p> <p>If a particular form jams frequently, refer the application owner to the <i>Forms Design Reference for Continuous Forms Advanced Function Printers</i>, G544-3921. This book contains detailed information about selecting forms and designing applications for use with a continuous forms printer.</p>	<ul style="list-style-type: none"> <li>• Ensure that the folded or leading edge of the form is not wrinkled or torn.</li> <li>• If the first page is folded under, ensure that the tractor holes line up <i>exactly</i>. If you are using forms with a <math>\frac{1}{3}</math>-inch or <math>\frac{2}{3}</math>-inch increment, ensure that the fold is on a perforation that is centered between tractor holes. This occurs only once every three pages.</li> <li>• If the stack of forms seems to curve (dishing), roll the first form in the opposite direction of the curve, and then unroll it before you put the form on the transfer station lower tractors.</li> </ul>
A message appears repeatedly on the Display/Touch Screen window.	None	<ul style="list-style-type: none"> <li>• See “Responding to Messages” on page 143. Ensure that you have tried all of the actions described in the message.</li> <li>• If the message continues, call your service representative. See “Service Call Procedure” on page 33.</li> </ul>
A status message is displayed for a long time without changing.	Some messages give status about operations that really <i>do</i> take a long time. For example, during a Restart operation the control unit is transferring programs from the hard disk into the control unit memory; it cannot display a new message until those programs are up and running.	<ul style="list-style-type: none"> <li>• Wait at least five minutes before you attempt any recovery action.</li> <li>• If the message does not change and recovery actions fail, use the “Service Call Procedure” on page 33 to contact your service representative.</li> </ul>
The Display/Touch Screen monitor is blank, all indicators are off, and the printer is silent.	The printer is not getting any electrical power.	Determine if some or all of your building is experiencing a power outage. If not, use the “Service Call Procedure” on page 33 to contact your service representative.
Some function switches do not respond when pressed.	The printers keep only potentially valid controls (hardware switches and Display/Touch Screen push-buttons) active while operating. For example, when the Display/Touch Screen shows READY, only the <b>Stop</b> function is active. You must stop the printer before using any other functions.	If a function key <i>should</i> be active but is not, use the “Service Call Procedure” on page 33 to contact your service representative.
The alarm is sounding.	The audible alarm tone should sound whenever an interruption message appears in a Display/Touch Screen window. The intervention light on top of the printer comes on at the same time.	<ul style="list-style-type: none"> <li>• <b>SELECT</b> the <b>Check Reset</b> push-button on the interruption window.</li> <li>• If the alarm continues, use the “Service Call Procedure” on page 33 to contact your service representative.</li> </ul>
The intervention light on top of the printer comes on, but the alarm does not sound.	The alarm volume may be set to a low volume or alarm suppression may be set to Yes in the printer configuration.	Adjust the alarm volume control; see “Adjusting the Volume of the Operator Alert Assembly” on page 76.

Table 19. Miscellaneous Problems (continued)

Symptom	Discussion	Suggested Action
Labels stick together in the stacker. Toner from one page sticks to the facing page.	Labels must be processed in simplex mode.	<ul style="list-style-type: none"> <li>Decrease the <u>Preheat</u> temperature (see “Setting/Adjusting the Preheat Platen Temperature” on page 295).</li> <li>Reduce the contrast by pressing the <b>Lighter Contrast Control</b> key on the printer control panel. To save the new contrast setting for this form, see “Setting/Adjusting the Contrast” on page 293.</li> <li>Print a stack of forms and check to ensure that the problem is resolved.</li> </ul>
The Display/Touch Screen <b>Printer Status</b> window shows READY, but the printer does not respond when the host system console operator directs a job to it.	There is probably a problem with the attachment hardware connecting the printer to the controlling computer system, such as the channel is not enabled or cables are not connected.	Work with the system console operator and the system programmer to resolve the problem. Review the questions in “Sudden Failures” on page 183 to see if there have been any changes in the environment that might affect attachment hardware.
The printer starts and stops repeatedly, or the forms move at an irregular speed.	This problem may be related to the application that is being processed, or to the printer configuration. If the printed pages are complex to format; if many transmission errors occur; or if the buffered data commands are issued by the host, the printers must pause while those pages are created in memory.	Work with the system engineer or system programmer to resolve the problem. The <i>Forms Design Reference for Continuous Forms Advanced Function Printers</i> , G544-3921, contains detailed information about selecting forms and designing applications, and may be of use in resolving the problem.
The Display/Touch Screen shows END OF FORMS, but forms are present.	Something is preventing the printer from sensing that forms are available. Narrow forms sometimes slide sideways, away from the paper sensor.	<ul style="list-style-type: none"> <li>Inspect the forms in the forms input area for holes in the printable area.</li> </ul>
Missing data at the rear of the forms (printer right-hand side).	The rear tractor could be out of adjustment.	<ul style="list-style-type: none"> <li>Ensure that you are using the correct form width for the form ID that was entered.</li> <li>Ensure that the correct form ID was entered for that form.</li> </ul>





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## Chapter 7. Maintaining the Printer

### Chapter Overview

This chapter describes ordering and replenishing printer supplies and routing cleaning of the printer:

- “Supplies” on page 188
- “IBM Supplies Worksheet” on page 188
- “Ordering Supplies” on page 190
- “Storing Supplies” on page 191
- “Cleaning the Printer” on page 192
- “Adding Fuser Oil” on page 205
- “Changing the Toner Cartridge” on page 208
- “Checking the Toner Collector” on page 212
- “Changing the Toner Collector” on page 214
- “Changing the Developer Mix” on page 217
- “Checking the Fine Filter” on page 226
- “Changing the Fine Filter” on page 227
- “Cleaning the Oil Belt” on page 230
- “Changing the Oil Belt” on page 232
- “Checking the Oil Pan” on page 239
- “Adding Supplies to Pre/Postprocessing Devices” on page 243

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## Supplies

For optimum reliability and print quality use IBM supplies, which are engineered specifically for IBM printers. Use the “IBM Supplies Worksheet” to help you order supplies for the printer before the system is delivered, and to maintain a stock of supplies for continuous operation.

When a printer runs low on a supply item, it displays a status message on the Display/Touch Screen screen, sounds an alarm, and turns on an operator intervention light on top of the printer.

IBM recommends that you keep the following quantities on hand per print engine:

Item	Suggested Quantity
Toner	30 cartridges
Developer mix	4 bottles
Fuser oil	4 bottles
Oil belt	2 belts
Fine filter	2 filters
Splicing tape	72 rolls

The estimated quantities are approximations for planning purposes only, and do not represent a warranty, a guarantee, or a minimum. The actual consumption depends on variables such as machine toner settings, job-stream percent toner coverage, form characteristics, temperature, and humidity.

Also ensure that a toner-certified vacuum cleaner is available for printer operators to use when they clean the printer.

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## IBM Supplies Worksheet

### Important Notes Concerning Supplies:

- Make sure to use the correct part numbers when you order new supplies. Using the wrong developer or toner, for example, can cause serious print quality problems and force a service call.
- Do not reuse waste toner or developer mix.
- The yields listed in Table 20 on page 189 are approximations. They are not a warranty or guarantee of minimum life; they are provided only to assist in supplies planning. Analyze your actual usage figures to determine how much of each supply item to stock.
- Toner yield is affected by several factors, including print coverage, contrast setting, form type, and environment. Yields provided by the following formulas are approximate averages only. Toner yield is expressed in impressions per cartridge

$$\text{Yield in impressions per cartridge} = (18\ 020\ 000 \times A) \div (W \times L \times C)$$

$$A = 1.25 \text{ for contrast setting 1}$$

$$A = 1.00 \text{ for contrast setting 4}$$

$$A = 0.85 \text{ for contrast setting 7}$$

$$W = \text{Width of impression in inches}$$

$$L = \text{Length of impression in inches}$$

$$C = \text{Coverage on impression expressed as a percentage}$$

For example, on an 8.5 x 11-inch form with a contrast setting of 1 and a coverage of 4%:

Yield =  $(18\,020\,000 \times 1.25) \div (8.5 \times 11 \times 4) = 60\,228$  impressions

- The Fine Filter processing yield is based on 4 square inches of toner coverage per foot of forms with the printer control panel Contrast switch in the center (4) position. More dense applications, such as extensive bar codes, images, solid area fill, or printing with a higher Contrast setting can expect to achieve yields lower than those achieved with the average text page.
- Table 20 is a work sheet that lists IBM supplies and their part numbers. Make copies of this work sheet to use when you order supplies.

Table 20. IBM Supplies Worksheet

IBM Supply Item	Approximate Forms Processed (In Feet)	Part Number	Minimum Order Quantity	Quantity Needed
Toner cartridge <sup>1</sup>	30 000 to 72 000 per cartridge <sup>3</sup>	1402828	1 carton (6 toner cartridges and 3 toner collector bags per carton)	_____
Toner cartridge (version 2) <sup>1 4</sup>	30 000 to 72 000 per cartridge <sup>3</sup>	1402717	1 carton (6 toner cartridges and 3 toner collector bags per carton)	_____
Developer Mix <sup>1</sup>	850 000 per bottle	1402829	1 carton (2 bottles per carton)	_____
Developer Mix (version 2) <sup>1 4</sup>	1 000 000 per bottle	1402718	1 carton (2 bottles per carton)	_____
Splicing Tape <sup>1</sup>	45 feet of tape per roll	4165880	1 carton (72 rolls per carton)	_____
Fuser Oil: 1-kilogram (2.2-lb) bottle <sup>2</sup>	800 000 per bottle	1372463	1 carton (1 bottle per carton)	_____
Oil Belt - <sup>2</sup>	1 200 000 per belt	1402827	1 carton (1 belt per carton)	_____
Oil Belt - Teflon <sup>2</sup>	1 200 000 per belt	69G7313	1 carton (1 belt per carton)	_____
Fine Filter <sup>2</sup>	1 200 000 per filter	1402826	1 carton (1 filter per carton)	_____
<b>Notes:</b> 1. This is a customer-replaceable supply item. 2. This is a maintenance supply item. 3. Yield depends on the contrast setting, print coverage, form type, and environment. 4. Use this item only if the printer has a white label with orange printing below the toner cartridge entry area.				

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## Ordering Supplies

You order supplies directly from IBM or from your Lexmark representative. The maintenance supply items you order are paid for under the maintenance contract; customer-replaceable supplies are billed directly to your company. Your IBM representative can assist you in the procedure for placing your first order of supplies.

### Maintenance Supply Items

In the U.S.A., Latin America, and EMEA, the IBM Monthly Maintenance Charge includes the fuser oil, oil belt, and fine filter. Approximately a 90-day stock of these items are supplied with each printer.

In the U.S.A., you can order these maintenance items by calling 1-800-346-3939 if you have an IBM Maintenance Contract.

### Customer-Replaceable Supply Items

You have these options for ordering supplies:

- You can purchase toner, developer, and other supplies through Lexmark. You can contact Lexmark at 1-800-438-2468 or through any Lexmark International authorized supply dealer.
- You can fax a completed order to Lexmark at 1-800-522-3422.

### Warranty Returns

If the supplies you receive are defective, return them to the place of purchase during the warranty period for a free replacement.

Include the following with the supplies you are returning:

- A copy of your invoice
- A description of the problem
- Print-quality samples
- An estimate of the amount of printing already done with that supply

This information applies only to supplies purchased in the U.S.A. In other countries, contact your point of purchase for returns information.

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## Storing Supplies

Store printer supplies in the printer operating environment for at least one day before using them. At other times, you can store supplies in an environment that does not exceed the following requirements:

**Temperature**

–25° to 40°C (–13° to 104°F)

**Relative Humidity**

5% to 90%

Forms have different storage requirements. Store forms in an area where temperature and humidity are similar to the environment in which they will be used. If forms do not adapt to moisture changes, wrinkles and voids can occur during printing.

Avoid areas of extreme heat or humidity. Extended exposure to these extremes can damage the materials permanently. Relative humidity levels above 65% may reduce print quality.

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## Cleaning the Printer

Clean the following areas of both printers once each day:

- Developer area
- Forms input area
- Transfer station area
- Stacker area
- Rear service area.

Clean the following area at least once each week:

- Oil belt. See “Cleaning the Oil Belt” on page 230 for instructions.

### Recommendations for Cleaning the Printer

- You may need to clean the printer more often, especially before and after printing labels.
- The following procedure specifies that you unload forms from the printer before you clean.
  - Unloading forms before you clean requires that you reload forms after you finish cleaning.
  - Loading forms is a time-consuming activity and requires flushing forms out of the entire forms path, then reloading and threading the entire forms path.
  - IBM recommends that for normal, once-per-day cleaning of the printer you leave forms loaded on the printer, and do the best job you can working around the forms to follow all of the cleaning steps. IBM also recommends that you do an additional cleaning when you load a new form type or when you have cleared the forms path.
- You should clean the printer only with a vacuum cleaner that is approved for toner applications.
- You need the following items to clean the printer:
  - Toner-certified vacuum cleaner
  - Cloth or paper towels.

To clean the printer, do the following:

1. Disable the host attachments. See “Enabling and Disabling Attachments” on page 70 for details.
2. Separate the forms at a perforation below the forms guide on the transfer station.
3. Move the static brush to the left with your hand so that the forms fall back into the input area. Ensure that forms do not cover the end-of-forms sensor in the input area.
4. Advance the forms by **SELECTING** the **NPRO** push-button on the Display/Touch Screen main window.

The **END OF FORMS 078A** message appears on the Display/Touch Screen.

**Note:** NPRO is not operable if the **Thread/Align Forms** procedure window appears.

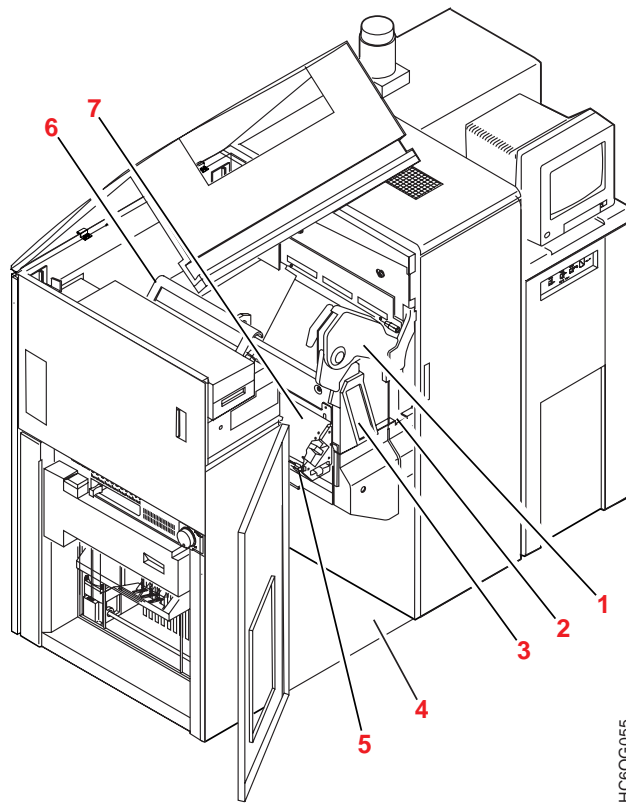
5. **SELECT** the **NPRO** push-button again.  
In duplex mode, the forms move through both Printer 1 and Printer 2 to either the stacker on Printer 2 or to a postprocessing device behind Printer 2. In simplex mode, the forms move through the printer to the stacker or to a postprocessing device behind the printer.  
If forms have moved to a printer stacker, go to step 6.  
If forms have moved to a postprocessing device, go to step 7.
6. Unload the stacker. See “Unloading the Stacker” on page 136.  
Perform the **Shutdown** procedure.
7. Switch off power to the printer. See “Controlling the System Power” on page 61 for details.

**Attention!**

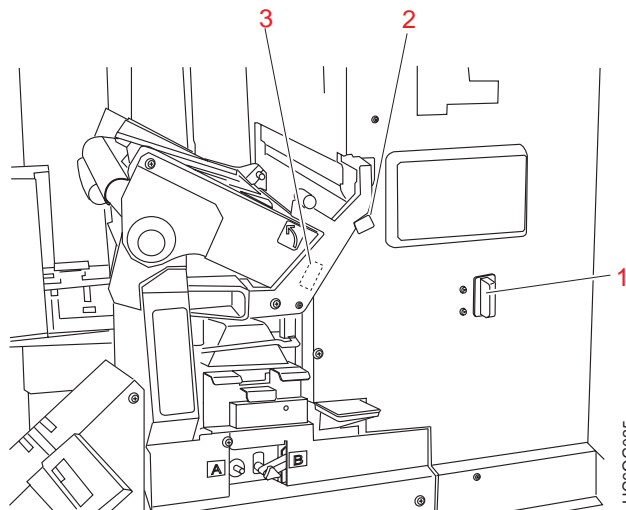
Damage to the printer can occur if you do not turn printer power off before you use the vacuum cleaner.

8. Plug a toner-certified vacuum cleaner into an outlet near the printer.

## DEVELOPER AREA:



9. Open the left top and front center left covers of the printer.



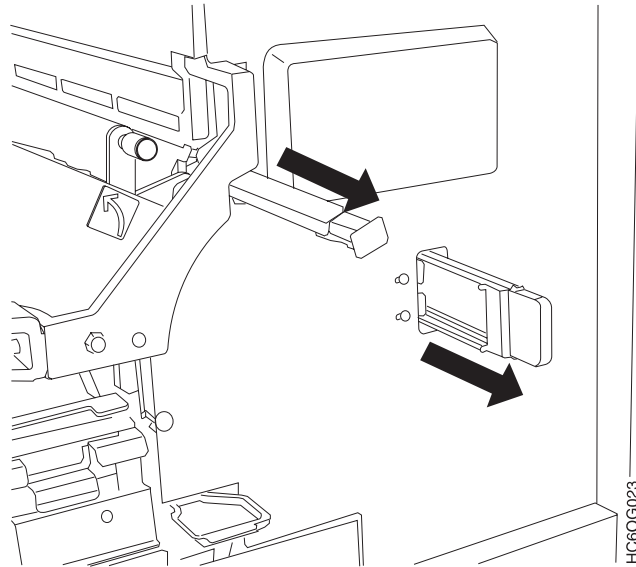
10. The printer has three coronas that you need to clean. The charge corona (1) and the pre-clean corona (2) are in the developer area; the transfer corona (3) is in the transfer station area.

To clean the charge (1) and preclean (2) coronas, do the following:



#### Important Note About the Coronas

There is no device to prevent you from pulling out the corona wires. Be careful not to break the thin wires and tiny retractor springs inside the corona.

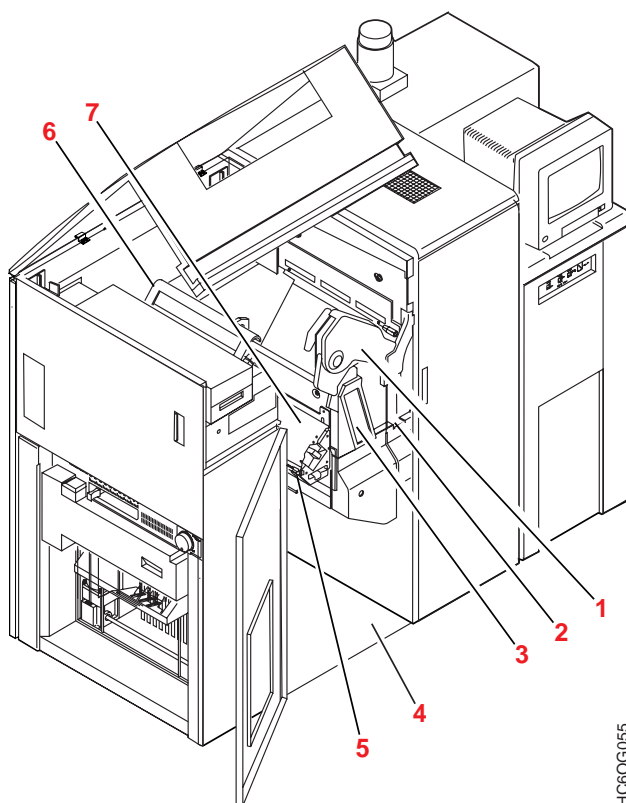


- a. Pull each white corona toward you until it is *almost* out of its track. A brush inside the corona housing cleans the corona as you pull it out and then push it back in.
  - b. Gently push each corona back into place. Ensure that you have pushed the corona in completely.
11. Use a cloth or paper towel to wipe away any paper dust, toner, or other debris from the developer area.
  12. Close the front center right cover of the printer.

#### Important

The front center right cover *must* be completely closed whenever the printer is running. Light entering the printer can significantly reduce print quality.

## FORMS INPUT AREA:

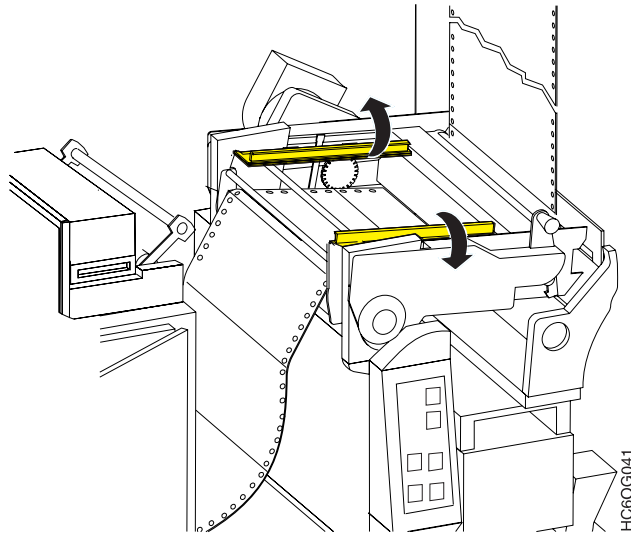


13. Open the top left and front left center covers of the printer, if they are not already open.
14. Use a toner-certified vacuum cleaner to clean the:
  - Input area, including the static discharge brushes (4)
  - End-of-forms sensor (5)
  - Tension arm (6).

## TRANSFER STATION AREA:

### Attention!

Use care when you clean behind the transfer station. Open the transfer station to its full upright position to ensure that the drum is completely covered.

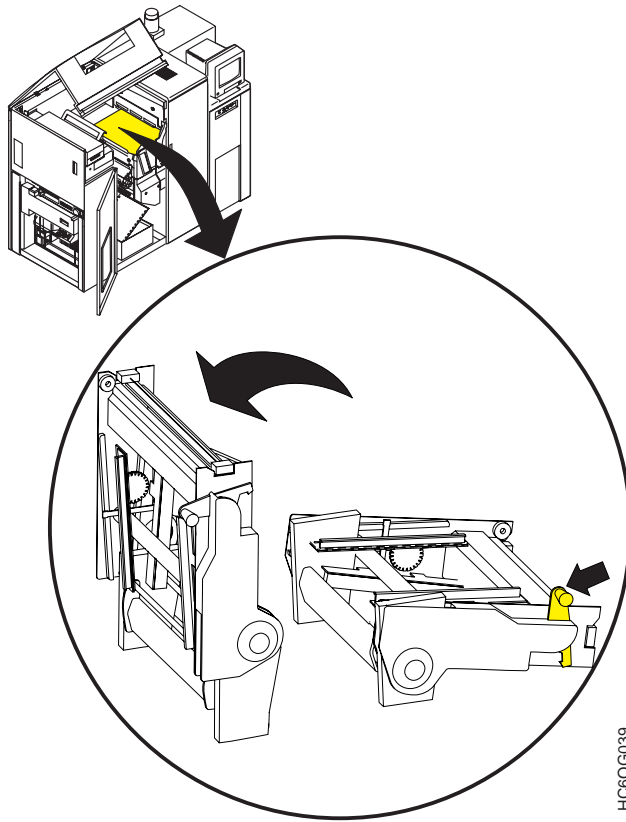


### CAUTION:

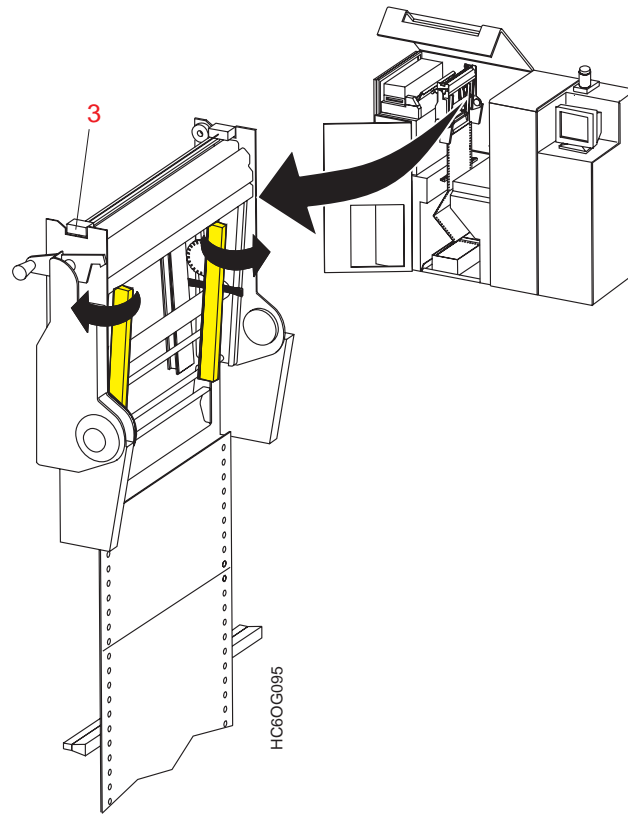
<71> The tractor covers are spring-loaded and can pinch if they snap shut unexpectedly.

CAUT0101

15. Open the upper tractor covers.
16. Use a soft cloth to clean the upper tractor jam sensor (the glass window under the upper front tractor cover). If necessary, use a pencil eraser to remove forms residue.
17. Use a vacuum cleaner to remove dust and debris around the upper tractor pins.
18. Close the upper tractor covers.
19. Clean the static discharge brush on the transfer station.



20. Raise the transfer station.

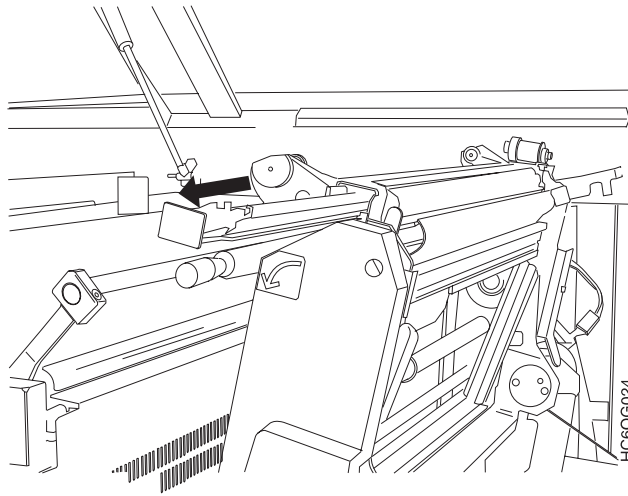


21. Open the lower tractor covers.
22. Vacuum the lower tractor pins to remove forms dust and debris.
23. Close the lower tractor covers.

24. To clean the transfer corona (3), do the following:

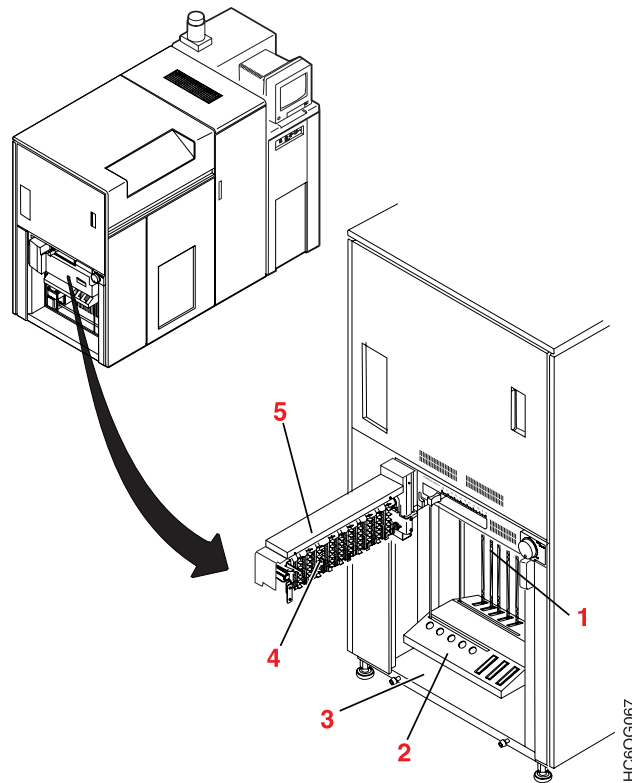
**Important Note About Cleaning the Coronas**

There is no device to prevent you from pulling out the coronas. Be careful not to break the thin wires and tiny retractor springs inside the corona assemblies.



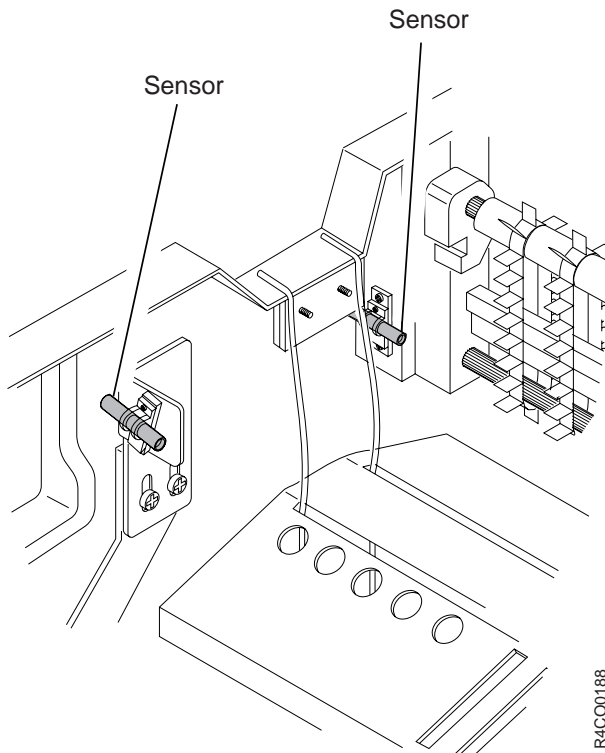
- a. Gently pull the white corona toward you until it is *almost* out of its track. A brush inside the corona housing cleans the corona.
  - b. Gently push the corona back into place. Ensure that you have pushed the corona in completely.
25. Clean the brushes below the transfer station.
26. Vacuum the paper dust from the area below the transfer station.
27. Gently lower the transfer station toward the photoconductor drum and latch it using the Transfer Station Control Lever. See “Transfer Station Control Lever and Tractor Control Levers” on page 20 for details.
28. Close the top left and front center left covers of the printer.

## STACKER AREA:

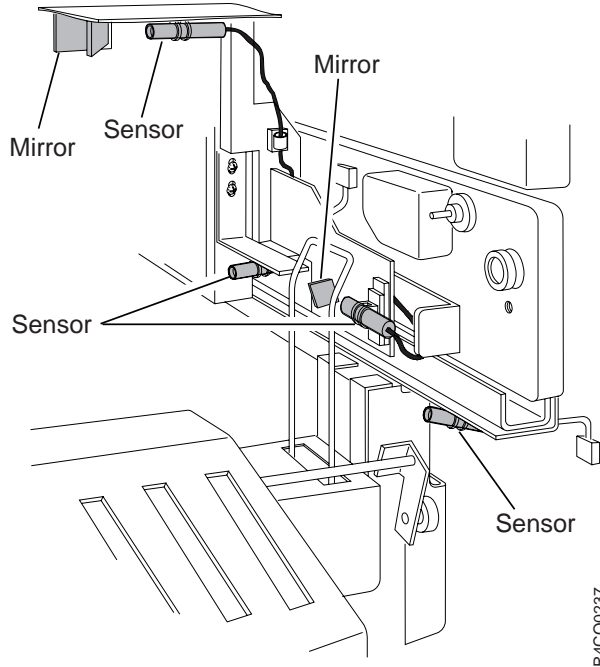


29. Open the stacker gate (5) if the buffer/flipper unit or an installed postprocessing device does not interfere.
30. Use a toner-certified vacuum cleaner to clean paper dust, chads, and other debris from the following:
  - Pendulum (1)
  - Stacker table (2)
  - Stacker floor (3)
  - Finger belts (4).

If you cannot open the stacker gate completely because of interference from the buffer/flipper unit or an installed postprocessing device, open the gate as wide as you can. Clean as much of the area as you can reach.



31. Use a soft cloth to clean the six stacker jam sensors and two mirrors.



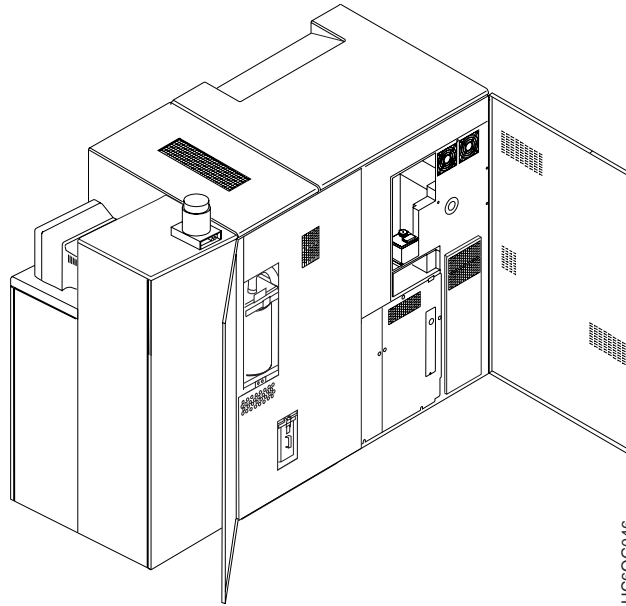
32. Close the stacker gate.



**FUSER AREA:**

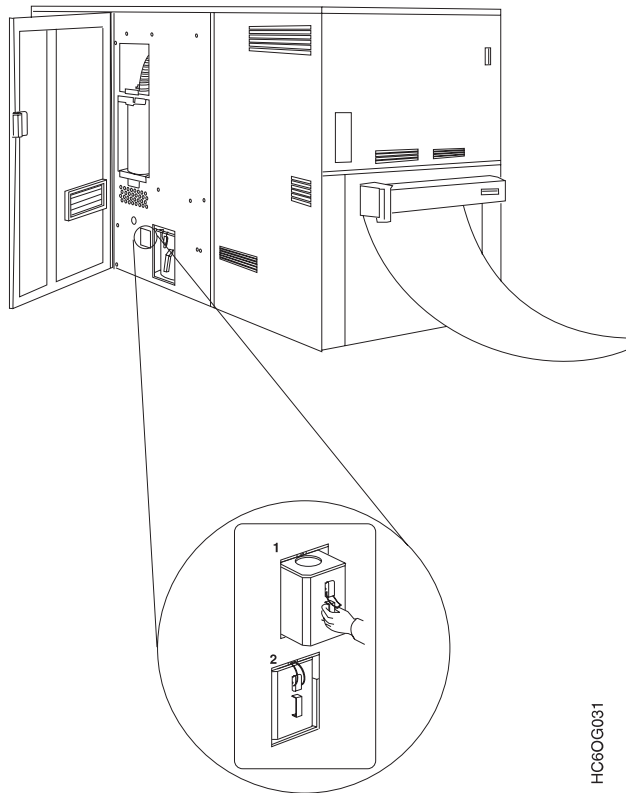
33. Open the front left cover.
34. Use a soft cloth or paper towel to wipe up excess fuser oil on any surfaces.
35. Use a vacuum cleaner to remove chads, paper, or debris from the area.
36. Close the front left cover.

**REAR SERVICE AREA:**



HC80G046

37. Open the rear center and right covers of the printer.



HC60G031

38. Remove the Toner Collector Case.
39. Vacuum any spilled toner from around and under the Toner Collector Case.
40. Use a soft cloth to clean the *inside* cover surfaces in the rear service area.
41. Vacuum any paper dust, chads, and other debris from the fuser oil reservoir area.
42. Close all covers securely.
43. Use a soft cloth that is moistened with water to clean the covers and panels.

#### **Important Note About Cleaners**

Do not use commercial cleaners that might contain ammonia, solvents, or other volatile chemicals. The vapors from these cleaners can cause chemical reactions that result in reduced print quality.

44. Power on the printer. See “Controlling the System Power” on page 61.
45. Load forms into the printer, if necessary. See “Loading Forms (Simplex or Dual Simplex Mode)” on page 83 or “Loading Forms (Duplex Mode)” on page 97 for details.  
This step is not required if you did not unload forms before starting this procedure.
46. Enable the host attachments, if necessary. See “Enabling and Disabling Attachments” on page 70 for details.

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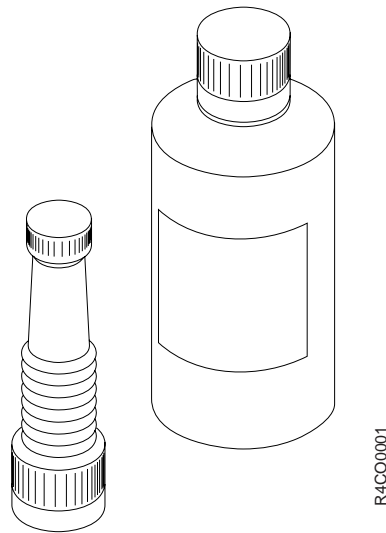
## Adding Fuser Oil

### Attention!

You may leave printer power on while you perform this task, but the printer should not be printing.

Using the wrong fuser oil can cause print quality problems. See Table 20 on page 189 for the correct part number.

Do this task when you see the following message: **ADD FUSER OIL**

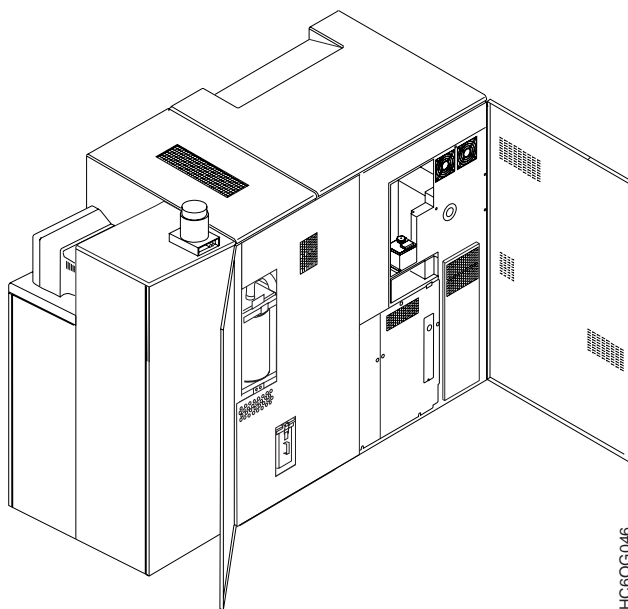


You need the following items when you add fuser oil:

- Fuser oil bottle
- Plastic spout (which is packaged with the oil)
- Paper towels.

**Note:** You do not have to replace fuser oil the first time you see the **ADD FUSER OIL** message. To bypass the message, **SELECT** the **Ready** push-button on the main Display/Touch Screen.

The **ADD FUSER OIL** message reappears each time end-of-forms is reached, or every 4 000 feet of forms thereafter. When 50 000 additional feet of forms have been processed since the message originally appeared, you *must* add fuser oil before you can return the printer to Ready status.



HC8OG046



**CAUTION:**

<75> When adding fuser oil:

Avoid contact with eyes.  
Wash hands with soap and water after use.  
Flush eyes thoroughly in case of accidental contact.  
Keep sealed to reduce possibility of leakage.  
Wipe up spillage completely to prevent slipping.

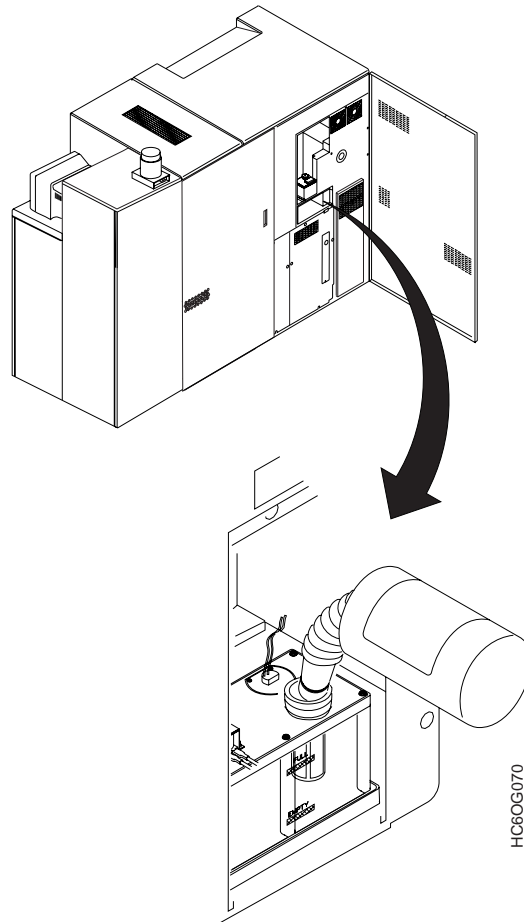
CAUT0105

1. Open the rear center and rear right covers of the printer.
2. Remove the cap from the oil reservoir. Put the cap in a safe place.
3. Locate a bottle of fuser oil and a plastic spout. (Every new package should contain a bottle of fuser oil and a plastic spout.)
4. Ensure that the spout is clean.
5. Remove the bottle lid and the inner seal.
6. Screw the spout onto the bottle of fuser oil.
7. Bend the spout and carefully place it into the oil reservoir opening.

**Operator Tip**

When you add fuser oil, be careful to pour *slowly*. A filter in the reservoir restricts the flow of fuser oil.

8. Tip the fuser oil bottle to let the fuser oil drain into the oil reservoir.



9. Remove the spout and put the lid on the bottle. If the bottle is empty, discard the bottle and the spout. If some oil remains, store the bottle and spout in a clean, dark place.
10. Ensure that the oil reservoir cap is clean.
11. Put the oil reservoir cap back in place.
12. Close the rear center and rear right covers of the printer.
13. To resume processing, **SELECT** the **Ready** push-button on the main Display/Touch Screen.

## Changing the Toner Cartridge

### Attention!

Do *not* switch power off to the printer during this procedure.

If the printer has the Enhanced Toner Loading feature (the printer will have a white label with orange printing below the toner cartridge entry area), you may change the toner cartridge while the printer is running.

Using the wrong toner can cause serious print quality problems; this can force a service call. See Table 20 on page 189 for the correct cartridge part number.

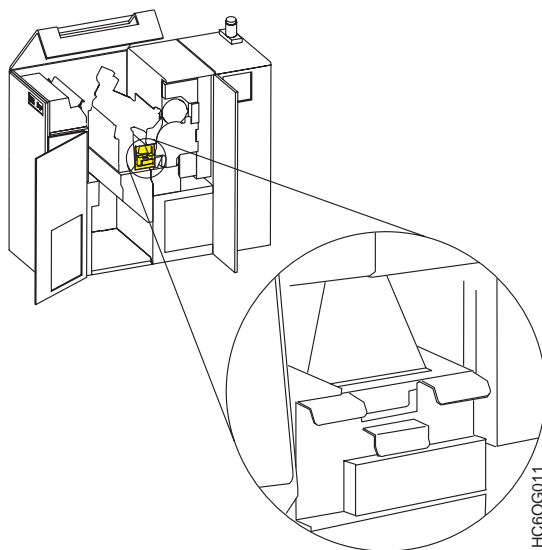
Do this task when you see this message: **ADD TONER 0786**

You need the following items when you add toner:

- One cartridge of toner
- Cloth or paper towels.

To add toner, do the following:

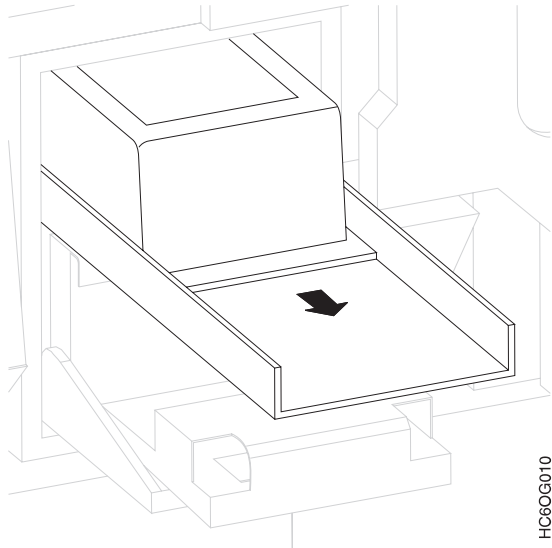
1. Open the front right cover of the printer.



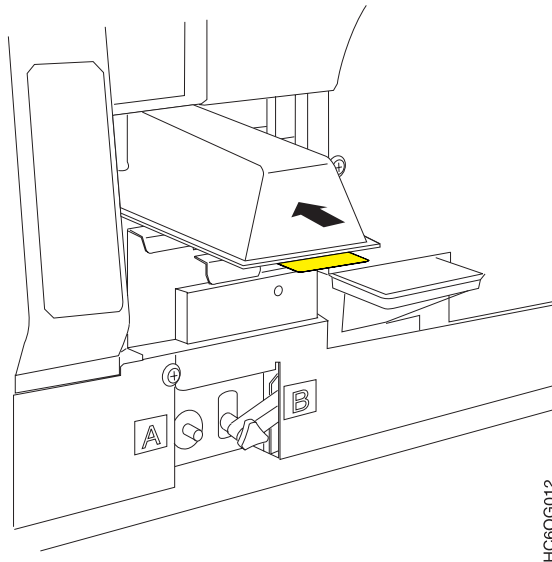
### Operator Tips

- Working with toner can be messy. You may want to spread papers on the floor under the developer inlet to catch spills.
- If you get toner on your hands, gently brush or blow it off, and avoid touching your eyes or mouth.
- If you get toner on your clothes, gently brush or blow it off. If that does not remove all of the toner, wash the clothes with *cold* water. Hot water or hot-process dry cleaning will fuse the toner to the fabric.



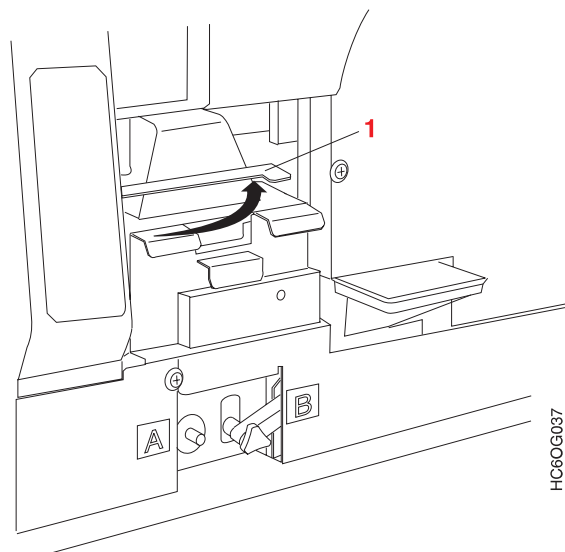


6. Line up the cardboard tray against the front edge of the toner hopper.
7. Pull the old cartridge out onto the cardboard tray *carefully* to prevent toner from spilling.
8. Place the old cartridge and cardboard tray into the carton. Set aside for disposal.

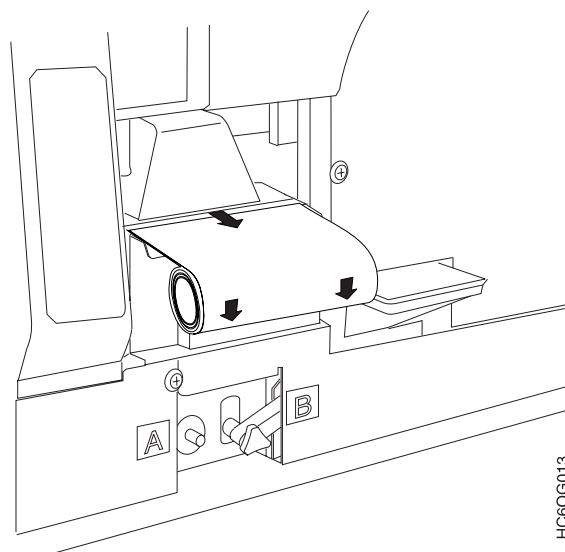


9. Insert the new toner cartridge, with the tab of the seal facing you, into the hopper.
10. Fold the tab down.





11. Close the toner cartridge latch (1).
12. Place the carton lid on the lower lip of the toner hopper with the edge of the carton lid under the upper lips of the toner hopper.
13. Remove the cartridge seal from the toner cartridge by firmly pulling on the tab and rolling it under the seal until the seal is completely removed. Place the rolled seal in the carton lid.



14. Remove the carton lid from the toner hopper. Discard the carton lid, the cartridge seal, and the carton with the used toner cartridge.
15. Clean any spilled toner.
16. If the message **CHANGE TONER COLLECTOR** appears, go to “Changing the Toner Collector” on page 214 to change the toner collector. (This message does not appear every time you change the toner cartridge.)

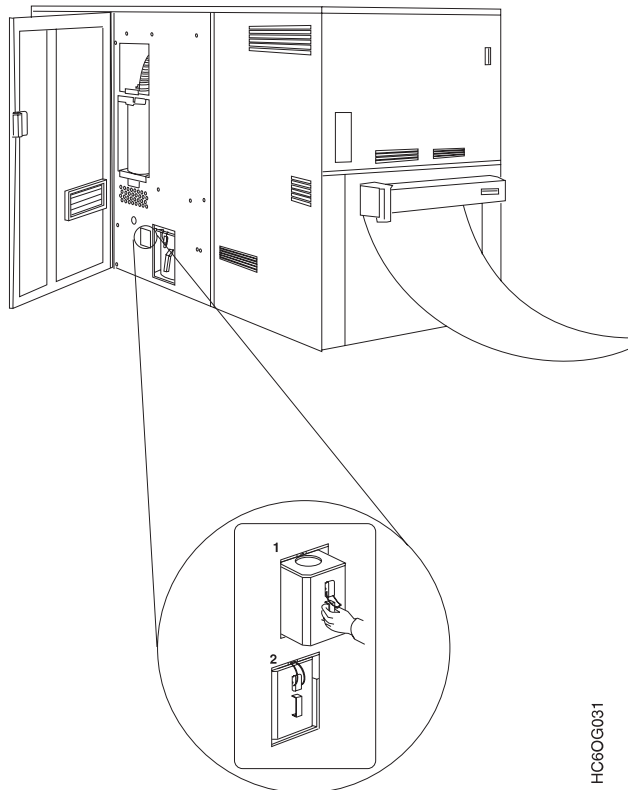
## Checking the Toner Collector

### Attention!

You must do this task *immediately*.

Do *not* switch power off to the printer during this procedure.

Do this task when you see the following message: **CHECK TONER COLLECTOR 0787**



HC60G031

1. From the rear of the printer, open the rear center cover.
2. Ensure that the toner collector is pushed firmly to the rear of the toner-collector recess.
3. If you had just replaced the toner collector bag when this message appeared, try reinstalling the toner collector case.
4. If you have not replaced the toner collector bag, replace it now. Use care when you remove the toner collector in case it is over filled. See "Changing the Toner Collector" on page 214.

**Note:** If you remove the toner collector case *without* replacing the bag, the printer resets its counter and may cause an overflow of toner in the collector bag.

5. Ensure that the toner collector case is latched correctly.
6. Close the rear center cover of the printer.
7. To resume processing, **SELECT** the **Ready** push-button on the main Display/Touch Screen.
8. If the **CHECK TONER COLLECTOR** message appears again, repeat steps 1 on page 212 through 6. If that still does not correct the problem, contact your service representative. See “Service Call Procedure” on page 33 for instructions.

---

## Changing the Toner Collector

### Attention!

You must do this task *immediately*. You cannot delay it as you can for some other **Out of Supplies** conditions.

You may leave printer power on while you do this procedure, but the printer should not be printing.

Never reuse waste toner. Doing so severely reduces print quality and may require repair of the printer.

Do this task when you finish adding toner and the following message appears with the ADD TONER message, or when this message appears alone: **CHANGE TONER COLLECTOR 0785**

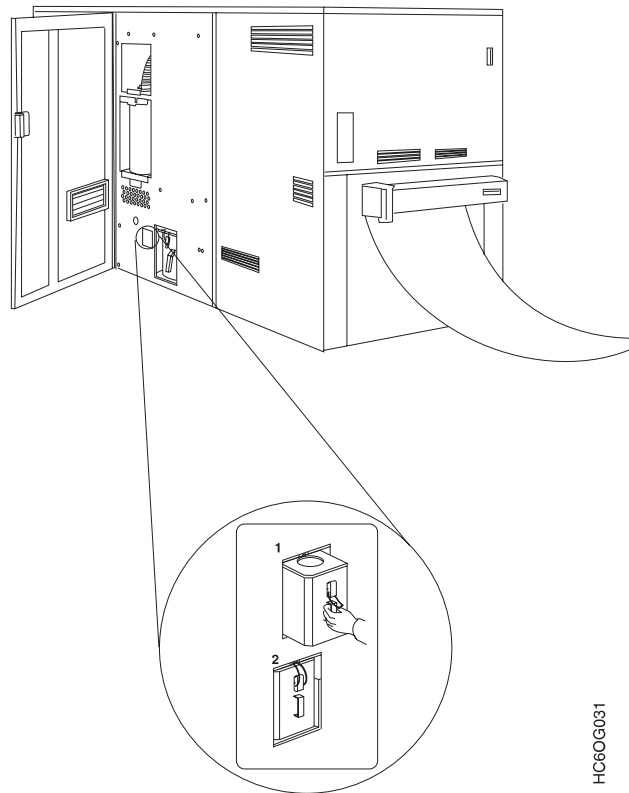
You need the following items when you change the toner collector:

- New toner collector bag
- Paper towels.

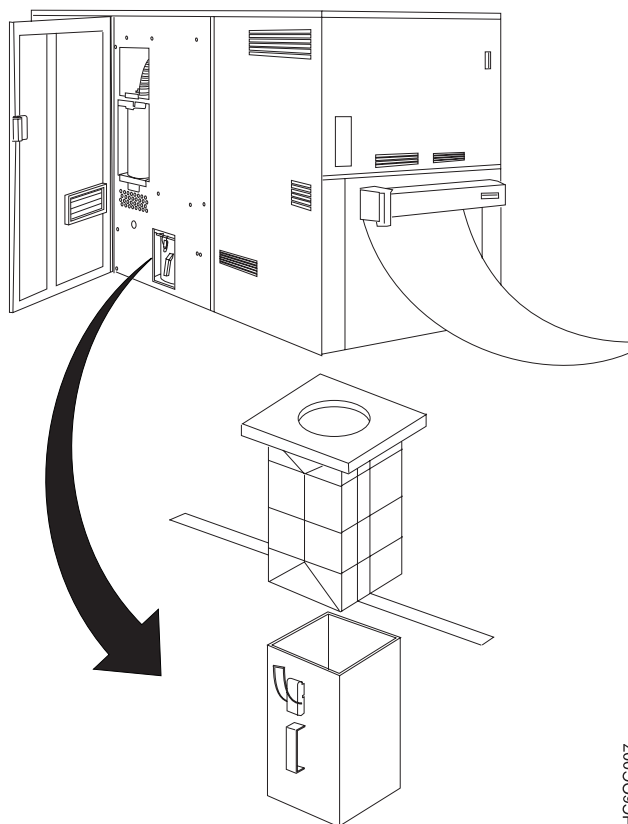
### Operator Tips

- You may want to spread papers on the floor near the toner collector to catch spills.
- If you get toner on your hands, gently brush or blow it off, and avoid touching your eyes or mouth.
- If you get toner on your clothes, gently brush or blow it off. If that does not remove all of the toner, wash the clothes with *cold* water. Hot water and hot-process dry cleaning will cause the toner to fuse to the fabric.

1. Press the **Stop** push-button on the Display/Touch Screen.



2. Open the rear center cover.
3. Lift the latch and remove the ring from the hook on the handle of the toner collector case.
4. Pull the toner collector case straight out.
5. Apply the adhesive seal that is supplied with the toner over the opening of the used toner collector bag.
6. Remove the bag from the toner collector case carefully to avoid spilling the waste toner. Discard the bag.
7. Grasp the bottom of a new toner collector bag and expand it. Insert the tabs under the lip at the top of the bag.



HC6OG007

8. Place the new toner collector bag in the toner collector case.
9. Return the toner collector case to the printer.

**Note:** Be sure to insert the toner collector case firmly enough to depress the spring-loaded sensor tab in the rear of the cavity.

10. Attach the ring to the hook and push down the latch on the toner collector case.
11. Close the rear center cover.
12. Press **Ready** push-button on the Display/Touch Screen to continue.

---

## Changing the Developer Mix

### Attention!

You must leave printer power on while you do this task, but the printer should not be printing.

Using the wrong developer mix can cause serious print quality problems; this can force a service call. See Table 20 on page 189 for the correct developer mix part number.

Do this task when you see the following message: **CHANGE DEVELOPER MIX 0788**

**Note:** You do not have to replace developer mix the first time you see the CHANGE DEVELOPER MIX message. To bypass the message, **SELECT** the **Ready** push-button on the main Display/Touch Screen.

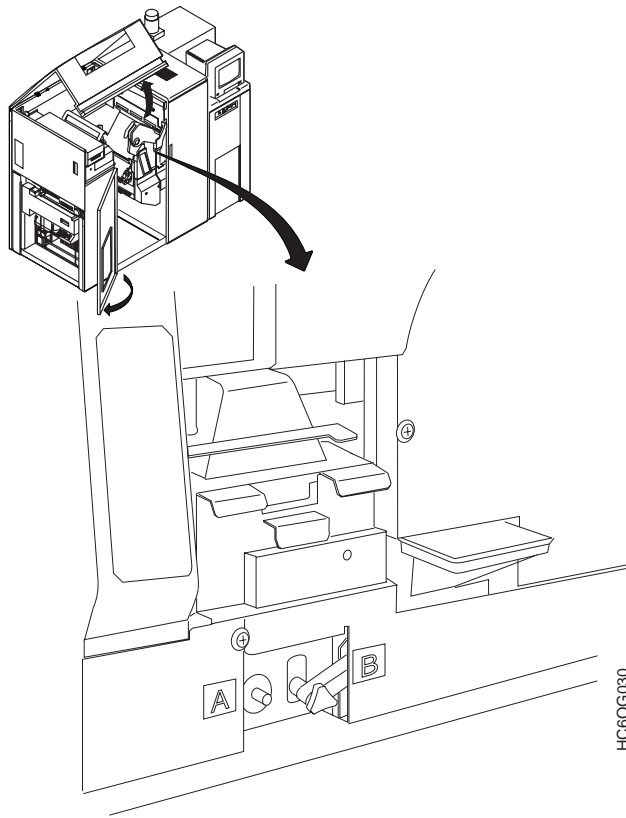
The CHANGE DEVELOPER MIX message reappears each time end-of-forms is reached, or every 4 000 feet of forms thereafter. When 50 000 additional feet of forms have been processed since the message originally appeared, you *must* change developer mix before you can return the printer to Ready status.

### Operator Tips

- Developer mix is slippery, and working with it can be messy. You may want to spread papers on the floor under the developer drain hose and under the developer mix inlet to catch spills.
- If you get developer mix on your hands, wipe it off as soon as possible.

You need the following items when you change the developer mix:

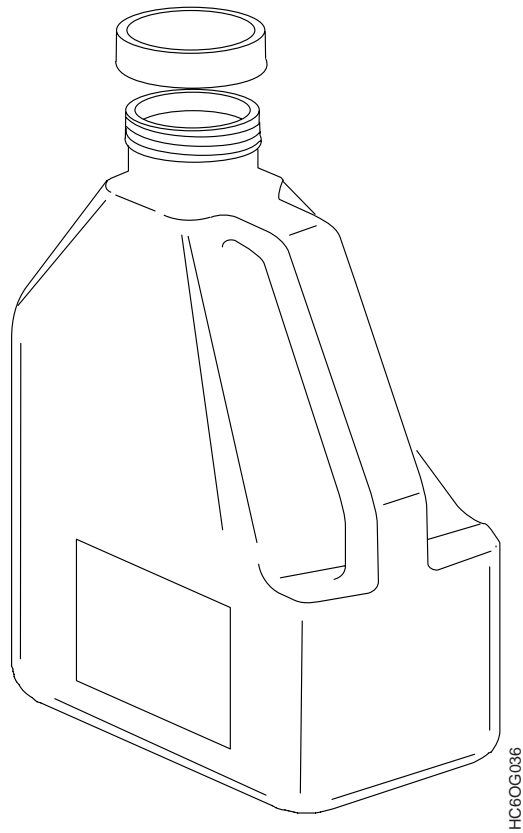
- Developer mix
- An empty developer mix bottle
- Soft cloth or paper towels.



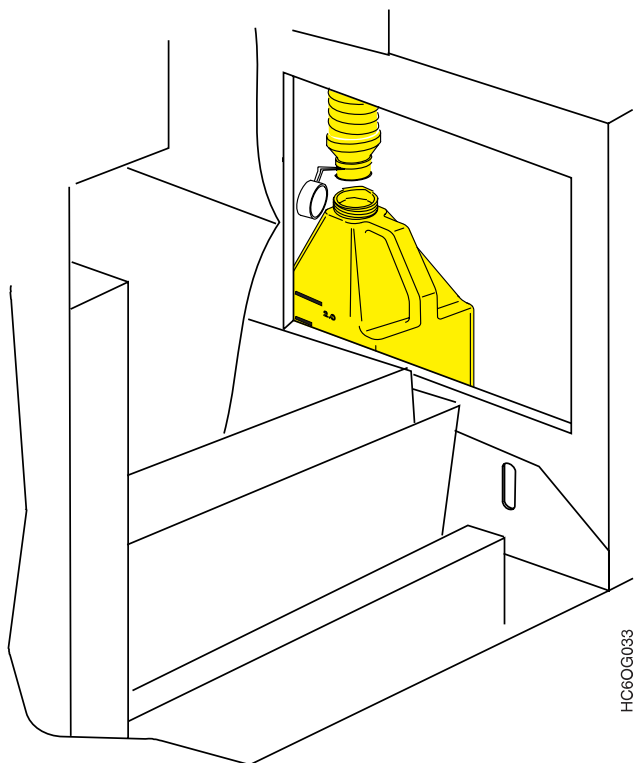
1. Open the front center left and right covers and the top left cover.
2. Clear the forms, if possible, from the forms input area. If you cannot remove the forms from the input area, do the following:
  - If you are using boxed fan-fold forms, slide the box of forms as far to the left (stacker end of the printer) of the forms input area as possible.
  - If you are using a preprocessing device supplying forms under the printer up into the forms input area, create enough slack in the forms supply so that you can move the forms to the far left side of the forms input area.

Spread paper towels on top of the forms and on the floor of the forms input area.
3. Remove the *empty* developer mix bottle from its storage slot at the right of the forms input area.

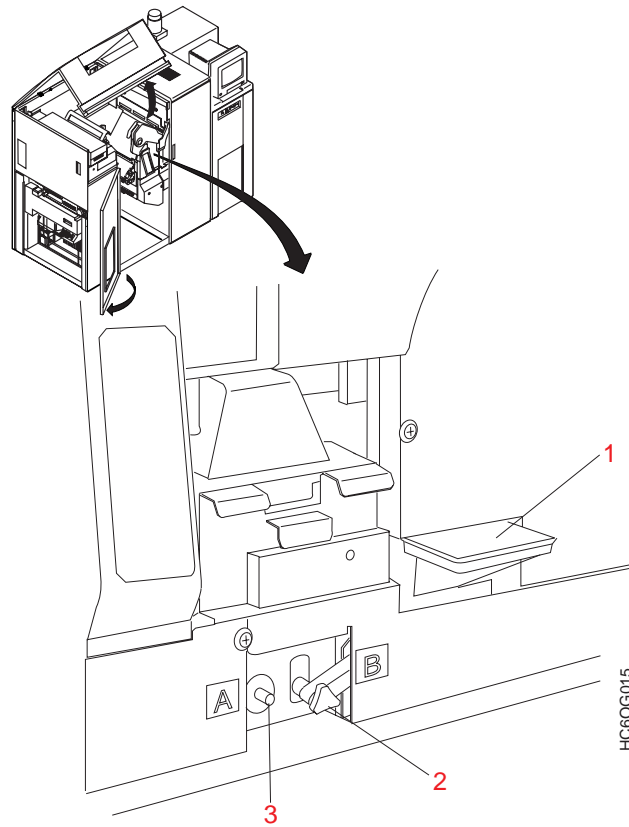




4. Remove the cap from the empty bottle. Put the bottle back in the slot, directly under the developer mix drain hose.
5. Grasp the drain hose and turn the capped end up upward (so that any developer mix in the hose from the last change does not spill). Remove the cap from the hose.



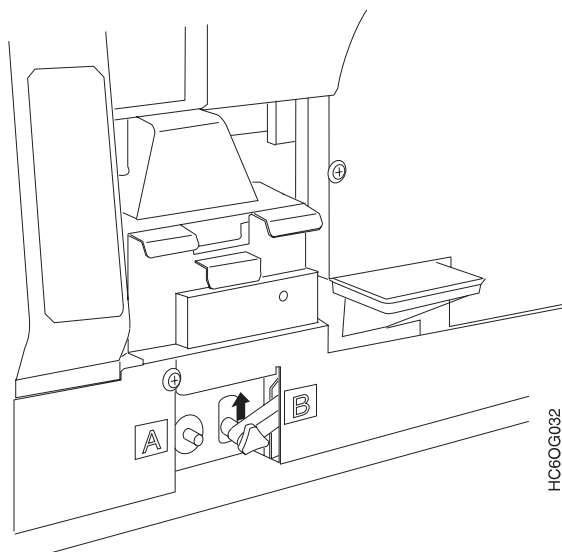
6. Carefully insert the end of the hose into the empty developer mix bottle. Ensure that the hose is inserted securely and that no sharp bends obstruct the hose.



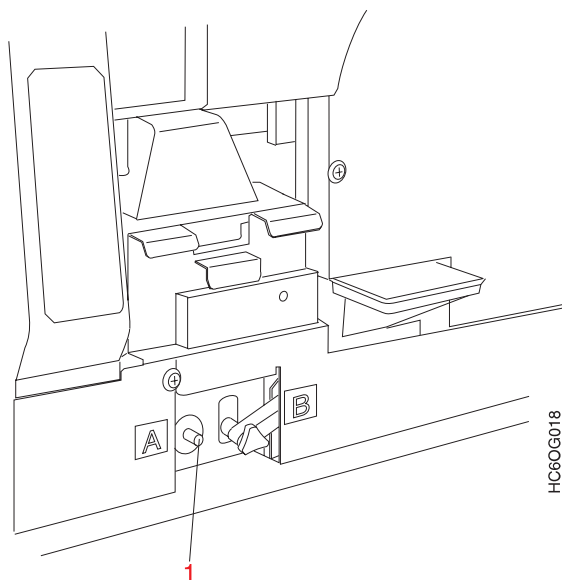
7. Locate the Developer Mix Inlet (1), the Developer Drain Lever B (2), and the Developer Run Push-button A (3) in the developer area.

**Important**

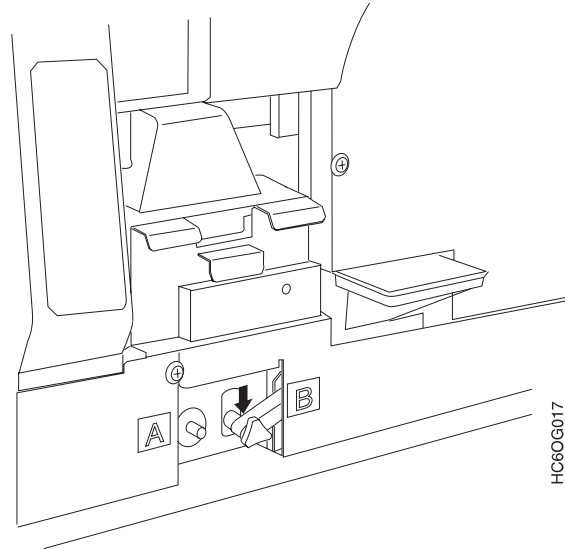
- a. Never open the developer drain unless the developer drain hose is inserted into an empty developer mix bottle.
- b. After you have opened and closed the developer drain, you *must* replace the developer mix. Opening the drain resets the developer mix usage timer. Resetting the timer without changing the developer mix could result in severe print quality problems that are caused by the developer mix being used beyond its normal life.



8. Open the Developer Drain Lever **B** by pulling out the lever and then lifting it upward.
9. The developer mix starts draining immediately. Hold the drain hose so that it does not come out of the empty mix bottle. Shake the hose several times while the mix is draining to ensure that no developer mix remains in the hose.



10. Press the Developer Run Push-button **A (1)** one time to ensure that all of the developer mix is drained. There should be about 1.8 liters of used developer mix in the bottle.

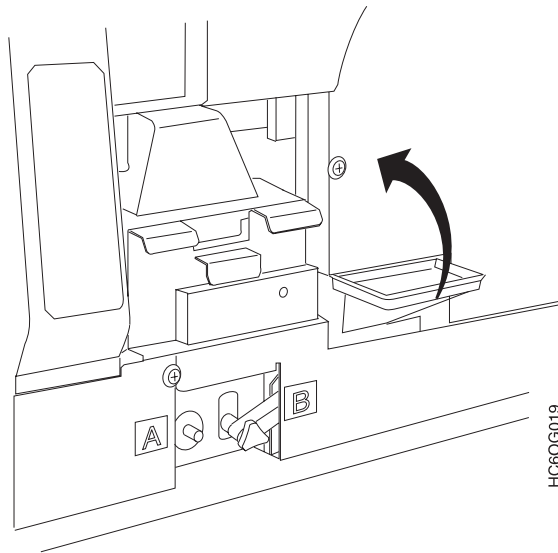


11. When the developer stops running, close the developer drain by pushing the Developer Drain Lever **B** downward and then pushing it in.
12. Once the developer mix has finished draining, ensure that no developer mix remains in the drain hose. Do this by shaking the hose vigorously while you hold the hose as vertical as possible.
13. Remove the developer drain hose from the bottle. Put the cap on the developer drain hose, and return the hose to its recessed storage area.
14. Put the cap on the bottle. Discard the bottle and its contents.

**Attention!**

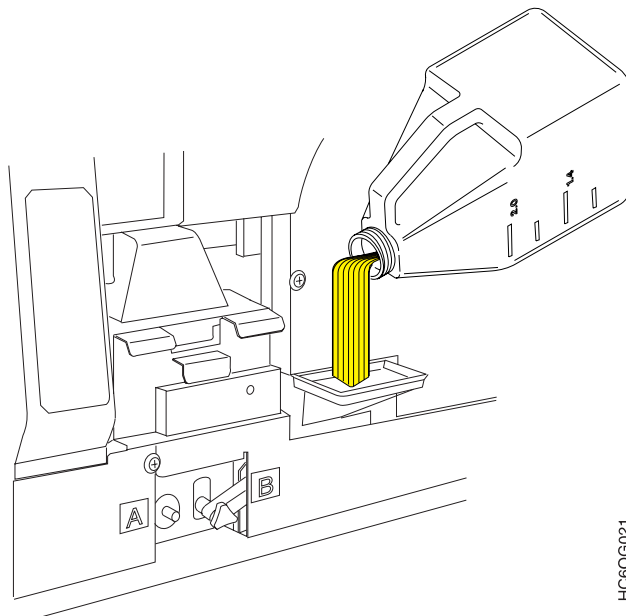
To prevent print quality problems, never reuse waste developer mix. Never put anything other than new developer mix into the developer mix inlet.

15. Remove the cap from the new developer mix bottle.



16. Remove the developer inlet cover.  
17. Clean the cover to remove any excess developer mix, and put it in a safe place.

**Important**  
Ensure that the developer drain is **closed**.

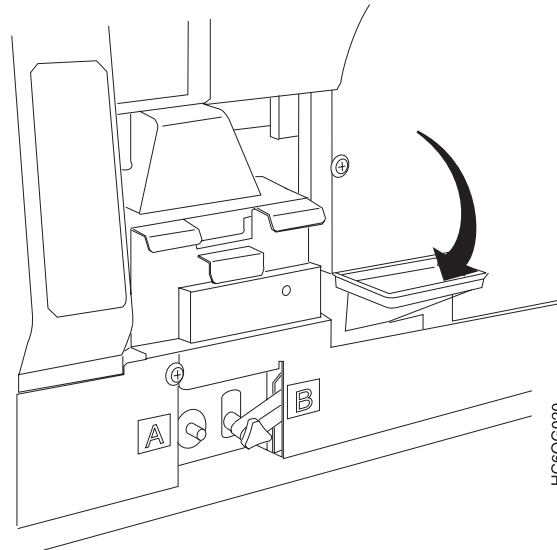


18. Press the Developer Run Push-button A and slowly pour the developer mix into the inlet.  
If the developer stops running before the new developer mix bottle is empty, press the Developer Run Push-button A again.

19. Clean the empty developer mix bottle with a cloth or paper towel to remove any excess developer mix. Store the bottle in the recess at the right of the forms input area in front of the drain hose for the next time you change developer mix.

**Operator Tip**

If you already have several empty developer mix bottles in storage, you may discard the extra bottle.



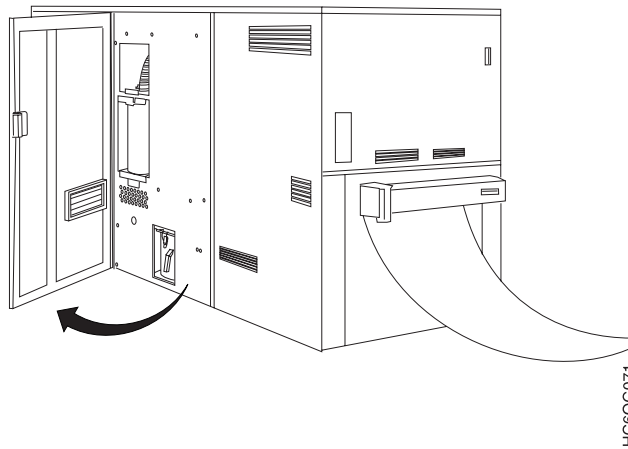
**Attention!**

Never operate the printer when the developer inlet cover is removed.

20. Put the developer inlet cover back in place.
21. Clean the developer area with a cloth or paper towel to remove any spilled developer mix.
22. Replace the forms in the forms input area so that printing may continue.
23. Close the covers of the printer.
24. To resume processing, **SELECT** the **Ready** push-button on the main Display/Touch Screen.

---

## Checking the Fine Filter



Do this task when you see the following message: **CHECK FINE FILTER 0799**

**Note:** You must do this task immediately. You cannot delay it as you can with some **Out of Supplies** conditions.

1. From the rear of the printer, open the rear center cover.
2. Ensure that the filter container is upright in the recessed filter area.
3. Ensure that the filter cover is firmly latched in place.
4. Ensure that the filter hose is attached to the filter cover.
5. Close the rear center cover of the printer.
6. To resume processing, **SELECT** the **Ready** push-button on the main Display/Touch Screen.
7. If the **CHECK FINE FILTER** message appears again, repeat steps 2 through 6. If that still does not correct the problem, contact your service representative. See "Service Call Procedure" on page 33 for instructions.



---

## Changing the Fine Filter

### Attention!

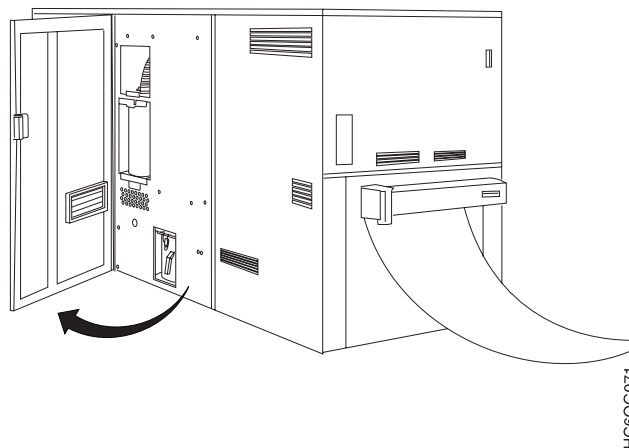
You may leave printer power on while you perform this task, but the printer should not be printing.

To clear this action message, the printer power *must* be on while you replace the fine filter.

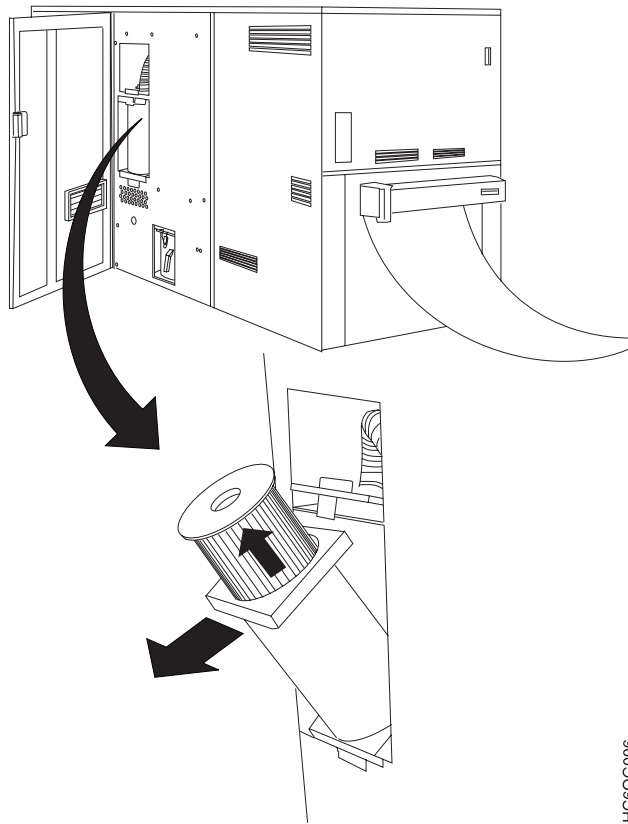
Do this task when you see the following message: **CHANGE FINE FILTER 0791**

**Note:** You do not have to replace the fine filter the first time you see the **CHANGE FINE FILTER** message. To bypass the message, **SELECT** the **Ready** push-button on the main Display/Touch Screen.

The **CHANGE FINE FILTER** message reappears each time end-of-forms is reached, an error condition occurs, or every 4 000 feet of forms thereafter. When 100 000 additional feet of forms have been processed since the message originally appeared, you *must* change the fine filter before you can return the printer to Ready status.

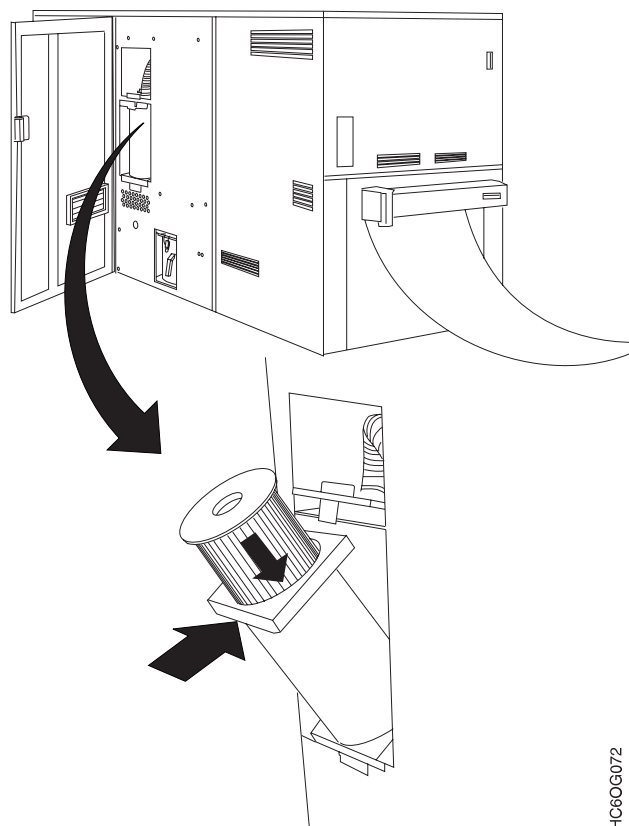


1. Locate a new fine filter.
2. From the rear of the printer, open the rear center cover.



HC6OG006

3. Locate the latch on the filter cover and pull the latch up to open the filter housing.
4. Pull the filter housing out until it is tilting toward you about 30°.
5. Remove the plastic bag from the new fine filter and place the fine filter on the floor.
6. Slowly pull the old fine filter out of the filter housing and place it in the plastic bag from the new fine filter.
7. Discard the used fine filter.
8. Wipe the filter housing with a soft cloth to remove any debris.



HC6OG072

9. Put the fine filter in the filter housing. Ensure that the fine filter is completely in the filter housing.
10. Return the fine filter housing to its upright position in the recess.
11. Lower the filter cover and secure the latch.
12. Close the right rear cover of the printer.
13. To resume processing, **SELECT** the **Ready** push-button on the Display/Touch Screen.
14. If the **CHECK FINE FILTER** message appears, the fine filter may not be pushed all the way into the filter housing. Adjust the fine filter, then repeat step 13. If that does not correct the problem, contact your service representative. See "Service Call Procedure" on page 33 for instructions.

## Cleaning the Oil Belt

### Notes to the Operator On Cleaning the Oil Belt

- For reliable printer performance, clean the oil belt at least once each week.
- You need the following items to clean the oil belt:
  - Lightweight cardboard (scraps)
  - Cloth or paper towels.
- It is not necessary to switch the printer power off during this procedure, but the printer should be disabled.

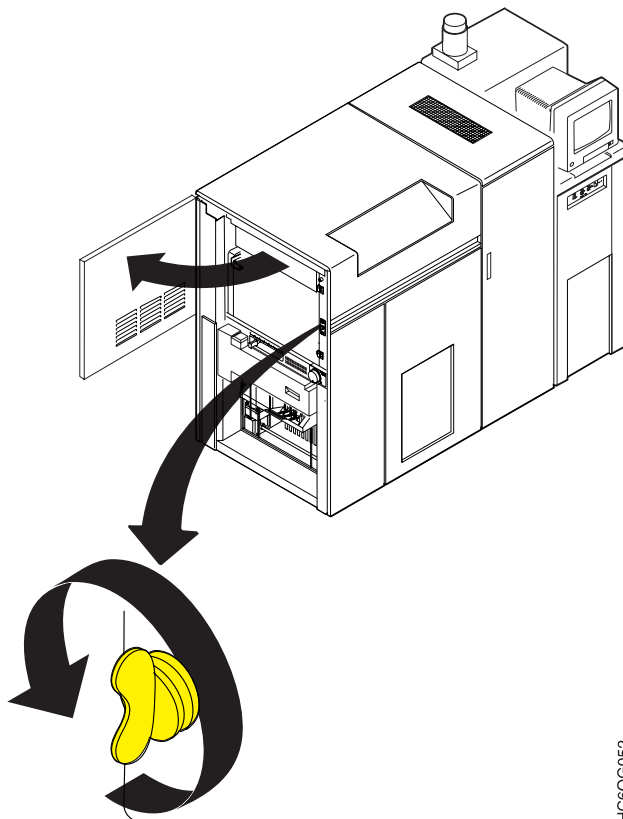


### CAUTION:

<70> The oiler belt, oiler wick roll, and their environments are *high-temperature* areas. Be very careful when working in these areas.

CAUT0100

1. **SELECT** the **Stop** push-button on the Display/Touch Screen window for the affected printer.
2. Open the stacker end cover.



HC6OG052

3. To release the oil-belt gate, turn the wing nut *counterclockwise*.

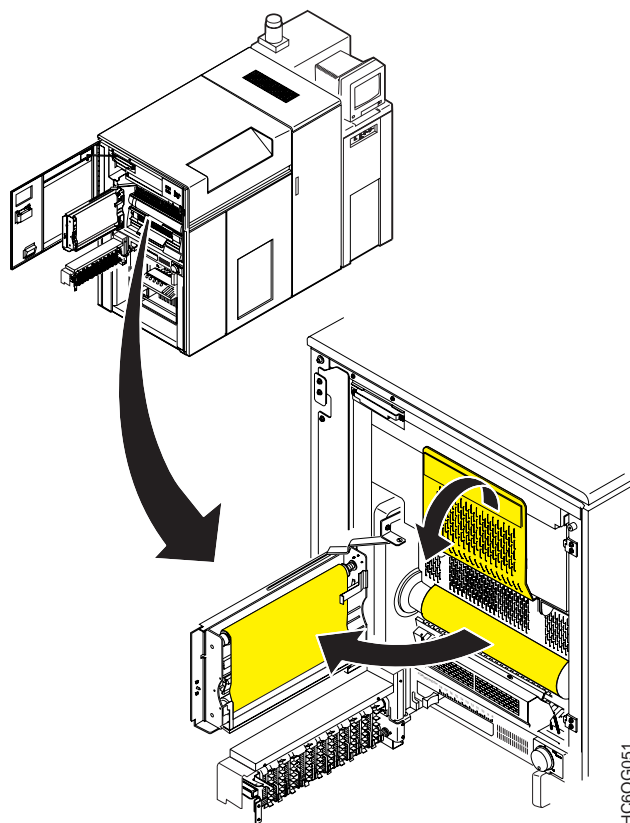


<60>

**CAUTION:**

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

CAUT0116



HC6OG051

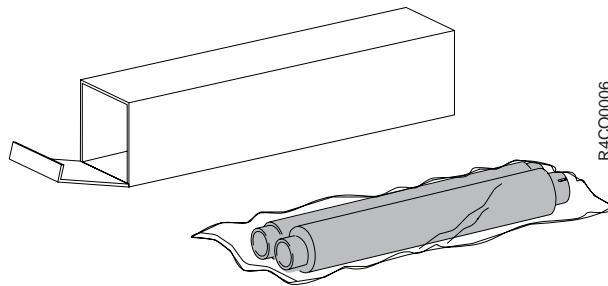
4. Open the oil-belt gate.
5. Allow the oil belt to cool for at least **10 minutes**.
6. Lower the hot roll shield.
7. Spread papers on the floor or place a wastebasket under the oiler belt.
8. Use a piece of lightweight cardboard to scrape paper dust and paper chads from the oil belt.
9. Raise the hot roll shield.
10. Close the oil-belt gate.
11. Turn the wing nut *clockwise* to latch the gate. Ensure that the gate is firmly latched.
12. Close the stacker end cover.
13. The fuser begins a warm-up cycle. To make the printer ready, **SELECT** the **Ready** push-button on the Display/Touch Screen window.  
Printing resumes when the fuser completes its warm-up cycle.

---

## Changing the Oil Belt

### Attention!

You may leave printer power on while you perform this task, but the printer should not be printing.

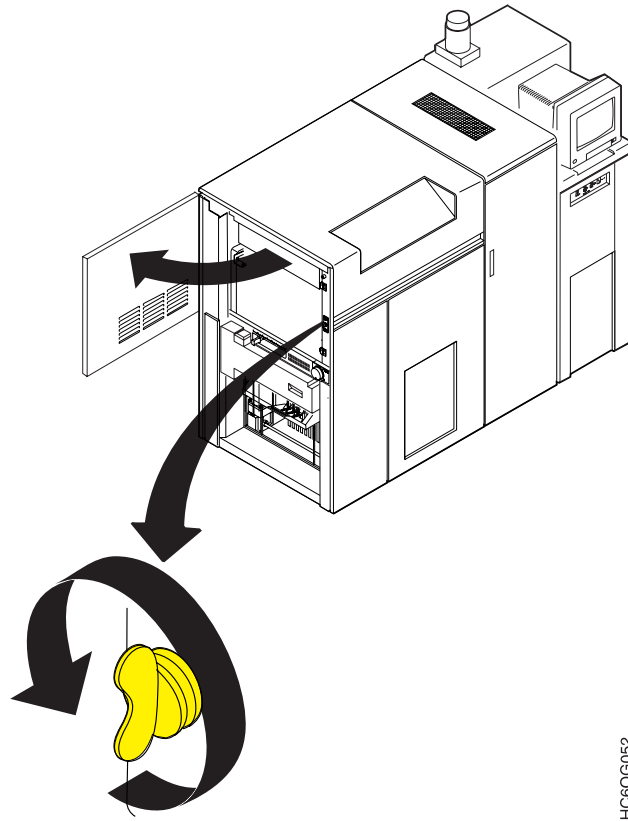


Do this task when you see the following message: **CHANGE OILER BELT 0793**

**Note:** You do not have to replace the oil belt the first time you see the **CHANGE OILER BELT** message. To bypass the message, **SELECT** the **Ready** push-button on the main Display/Touch Screen. The message reappears each time end-of-forms is reached or every 4 000 feet of forms thereafter. When 10 000 additional feet of forms have been processed since the message originally appeared, you *must* change the oil belt before you can return the printer to Ready status.

You need the following items when you change the oil belt:

- New oil belt
- Paper towels.



HC6OG052



**CAUTION:**

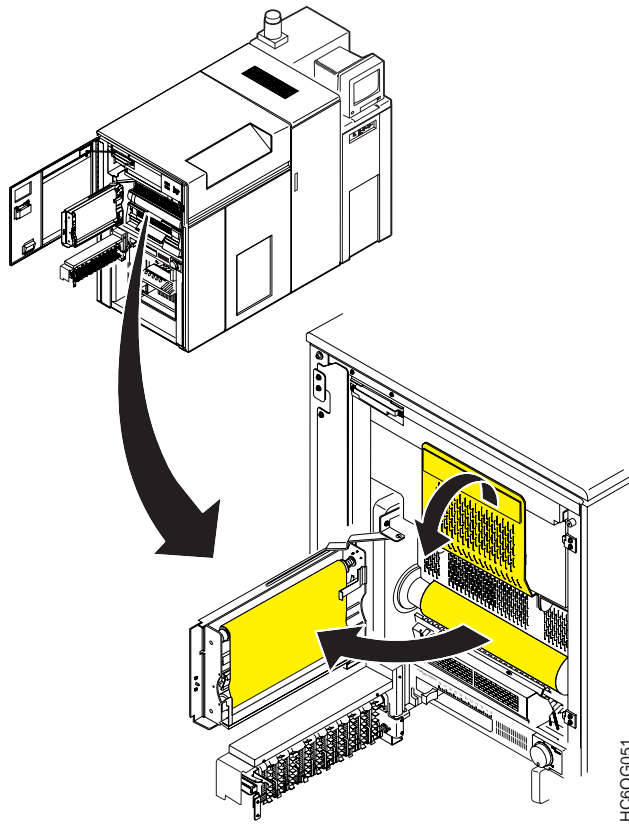
<70> The oiler belt, oiler wick roll, and their environments are *high-temperature* areas. Be very careful when working in these areas.

CAUT0100

1. Open the stacker end cover.

**Note:** When the oil-belt gate is opened, the fuser begins to cool down immediately, and the message changes to **OILER GATE OPEN**.

2. Turn the wing nut *counterclockwise* to release the oil-belt gate.
3. Place several layers of absorbent material, such as paper towels, on the floor beneath the oil-belt gate.



4. Open the oil-belt gate.



<60>

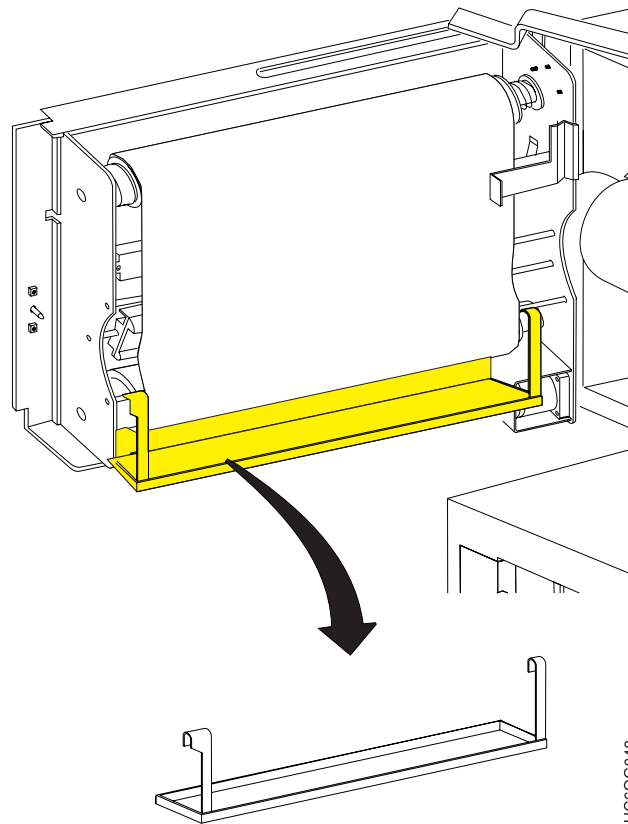
**CAUTION:**

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

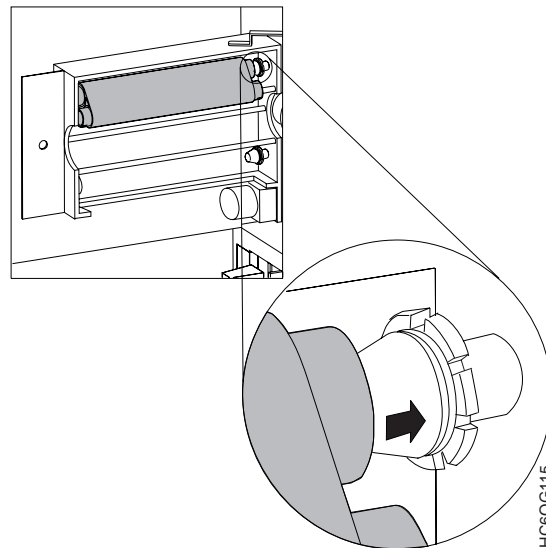
5. Lower the hot roll shield.

CAUT0116

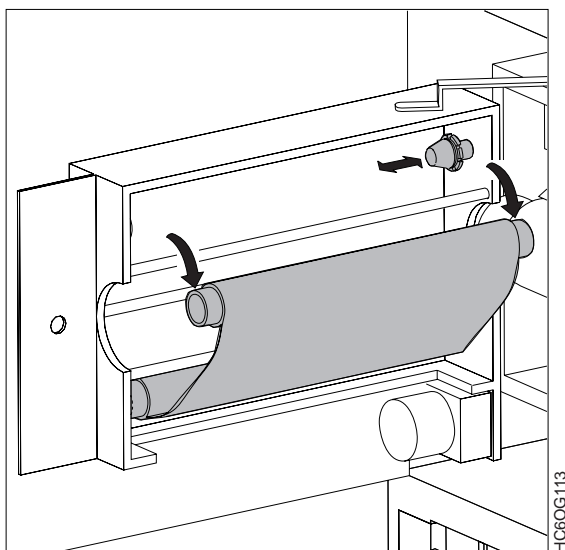




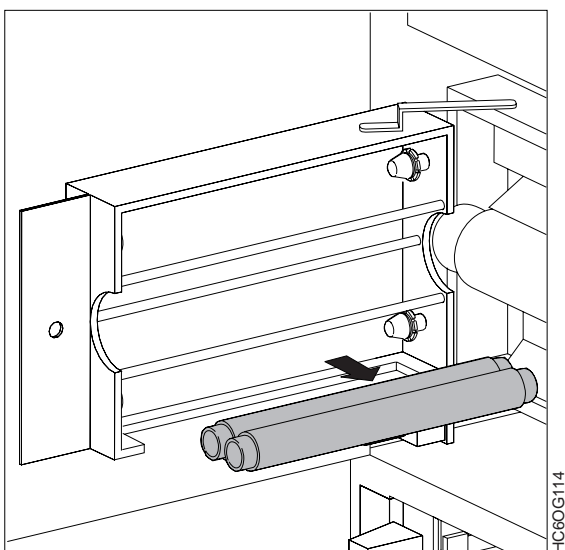
6. If you are changing the oil belt and the oil pan that is shown above is present, do the following. Otherwise, go to step 7.
- Remove the oil pan by lifting the pan until the hooked portion is disengaged from the lower oil belt support shaft.



7. Grasp both ends of the upper oil-belt roll, and move it to the right against the spring.



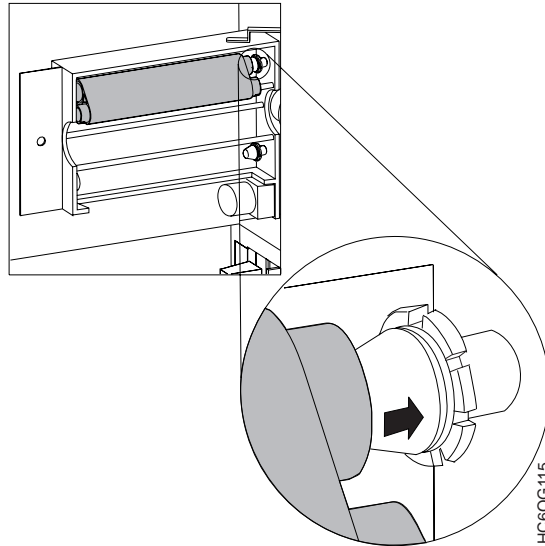
8. Pull out the upper oil-belt roll, left end first.



9. Roll the upper roll down against the lower roll.
10. Holding both rolls, press the lower oil-belt roll to the right against the spring.
11. Remove the lower oil-belt roll by removing the left end first.
12. Place the old oil belt on several thicknesses of absorbent material, such as paper towels.
13. Remove the new oil belt from its carton, saving the plastic bag for the old oil belt.

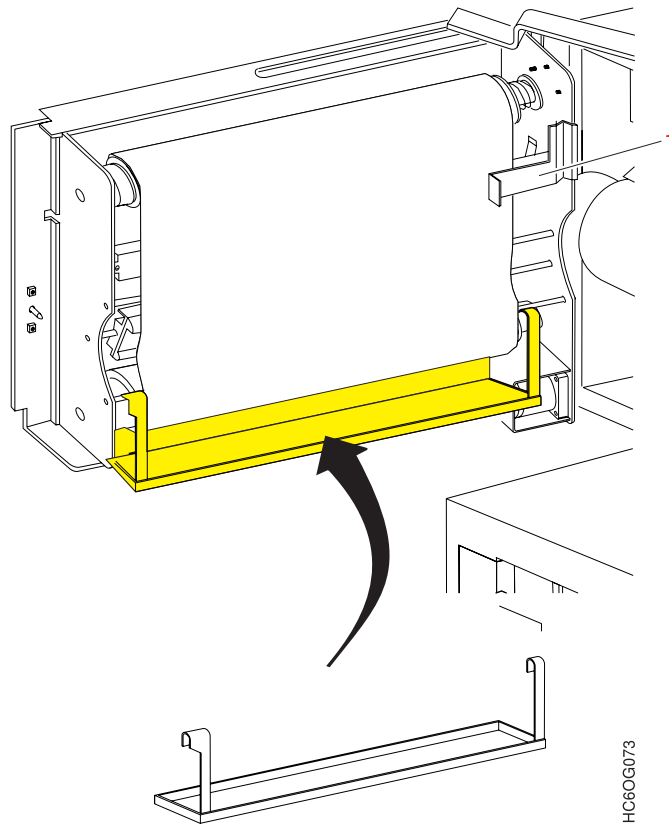
**Operator Tip**

The oil-belt roll with the unused belt material is the *upper* roll. The end of the roll with the tab in the core is the *right* side (nearest the printer).

**Important**

When you install the oil-belt rolls, you *must* line up the tab in the roll with a slot on the sprocket. If you do not do this, the oil belt does not advance correctly. This causes reduced print quality.

14. While you hold the upper roll with the unused oil belt against the lower roll, do the following:
  - a. Place the right end of the upper roll on the sprocket, lining up the tab in the roll to a slot on the sprocket. Press the upper roll to the right, against the spring.
  - b. Place the left end of the upper roll on the sprocket, and let the right spring-loaded sprocket hold the roll in place.



15. Working with the lower take-up roll, repeat step 14 on page 237.

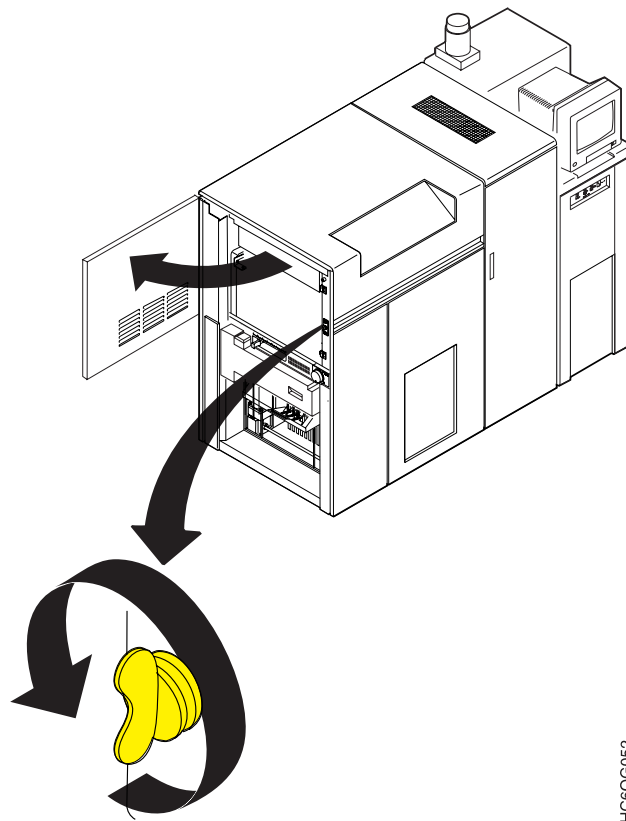
**Note:** The oil belt must be under the tab (1).

16. Rotate the upper oil-belt roll to remove slack in the belt.
17. If you are changing the oil belt and you removed the oil pan that is shown above in step 6 on page 235, reinstall the pan now.
18. Raise the hot roll shield.
19. Close the oil-belt gate.
20. Turn the wing nut *clockwise* to latch the gate. Ensure that the gate is firmly latched.
21. Close the stacker end cover.
22. The message may change to **WARMING UP** or **PLEASE STAND BY**.
23. To resume processing, **SELECT** the **Ready** push-button on the main Display/Touch Screen.
24. Place the old oil belt inside the plastic bag and discard it.

## Checking the Oil Pan

### Attention!

You may leave printer power on while you perform this task, but the printer should not be printing.



HC6OG052



### CAUTION:

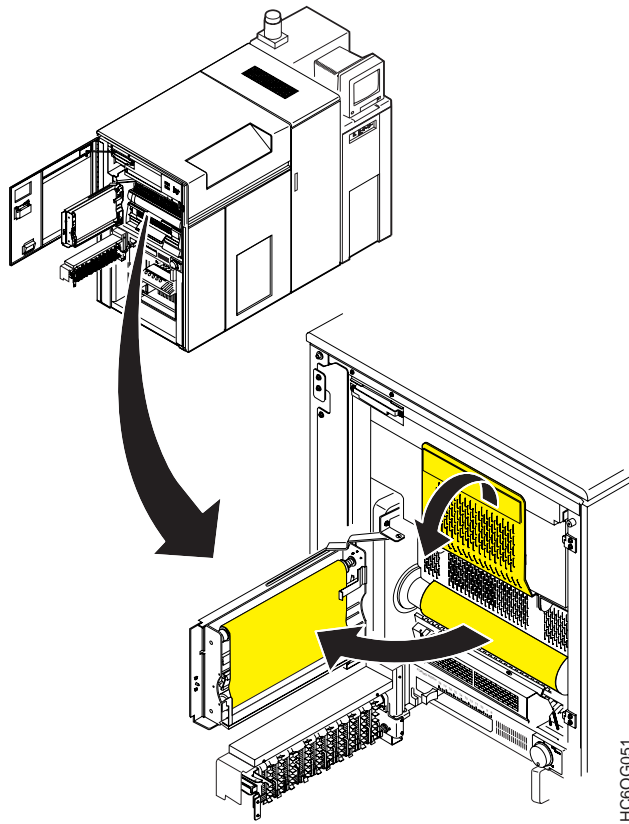
<70> The oiler belt, oiler wick roll, and their environments are *high-temperature* areas. Be very careful when working in these areas.

1. Open the stacker end cover.

**Note:** When the oil-belt gate is opened, the fuser begins to cool down immediately, and the message changes to **OILER GATE OPEN**.

2. Turn the wing nut *counterclockwise* to release the oil-belt gate.
3. Place several layers of absorbent material, such as paper towels on the floor beneath the oil-belt gate.
4. Open the oil-belt gate.

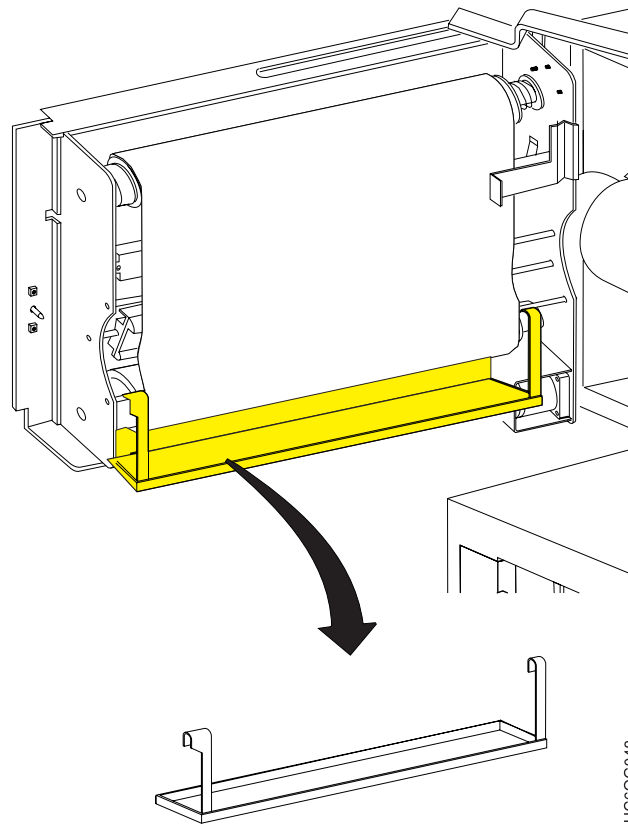
CAUT0100



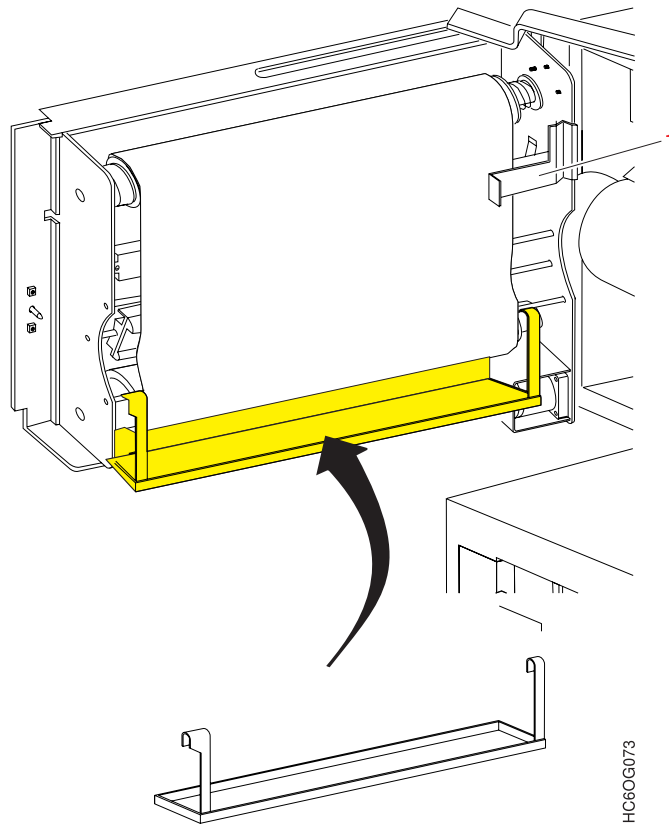
**CAUTION:**  
 <60> High-temperature. Let parts cool at least 30 minutes in this area before handling.

5. Lower the hot roll shield.

CAUT0116



6. Carefully remove the oil pan by lifting the pan until the hooked portion of the pan is disengaged from the lower oil-belt support shaft and clean it.



7. Install the oil pan onto the lower oil-belt support shaft.
8. Raise the hot roll shield.
9. Close the oil-belt gate.
10. Turn the wing nut *clockwise* to latch the gate. Ensure that the gate is firmly latched.
11. Close the stacker end cover.
12. The message may change to **WARMING UP** or **PLEASE STAND BY**.
13. To resume processing, **SELECT** the **Ready** push-button on the main Display/Touch Screen.



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## Adding Supplies to Pre/Postprocessing Devices

The printers normally display “Out of Supplies” messages when an internal usage counter reaches a fixed threshold. You can defer taking action on most “Out of Supplies” messages for some amount of additional usage. During that additional usage time, the “Out of Supplies” message reappears each time an error condition is detected or an end-of-forms is detected. When you use a roll-feed preprocessing device, the printer checks the level of the supplies every 4000 feet after an initial deferred “Out of Supplies” message was presented. The printer also displays an “Out of Supplies” message at that time, if no end-of-forms or error condition is detected.



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## Chapter 8. Configuring the System

### Chapter Overview

This chapter describes how to update the printer configuration and define forms. Work sheets for changing the printer configuration and defining forms are also included.

- “Configuring the Printer” on page 246
- “Configuring Host Attachments” on page 261
- “Configuring Preprocessing/Postprocessing Devices/Interfaces” on page 273
- “Configuration Work Sheets” on page 277
- “Defining Forms” on page 289

## Configuring the Printer

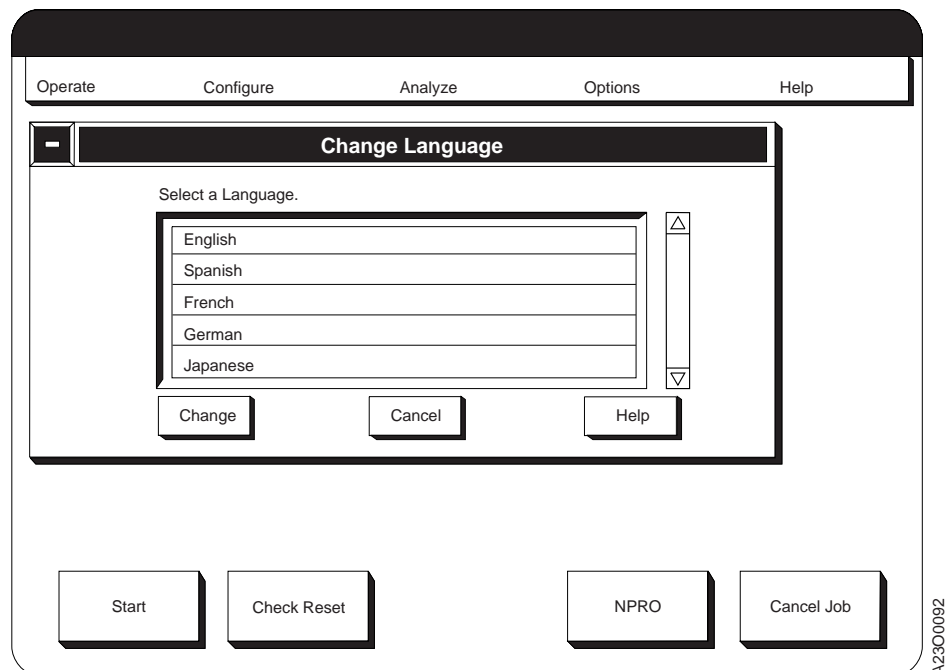
### Important

This chapter assumes that the person changing the configuration is familiar with the various settings, and understands the impact that changes may have on the system.

## Changing the Language of Messages

This procedure lets you change the language that is used for all text within the Display/Touch Screen windows.

1. **SELECT** the **Options** pull-down menu on the main Display/Touch Screen window.
2. **SELECT** the **Change Language** procedure. You see the **Change Language** window, which lists the languages you can select. Each language has its native spelling and accent marks.



3. **SELECT** a new language from the list. In dual simplex mode, the language applies to the Display/Touch Screen windows for both printers.
4. **SELECT** the **Change** push-button. You see a **Language Change Warning** prompting window. Some language changes automatically shutdown and restart the system.
5. **SELECT** the **OK** push-button to change the language.

## The Configuration Procedure

This procedure lets you view, update, or print a copy of the printer configuration.

**Note:** The printer can have multiple sets of configuration data: one for each mode in which the printer can operate. To update a configuration for a particular mode, the printer must be running in that mode.

1. Before you *print* the printer configuration, ensure that all attachments are disabled. See “Enabling and Disabling Attachments” on page 70 for more information. You do not need to disable attachments if you are viewing or changing the configuration.
2. To access the configuration settings, do one of the following:
  - In simplex or duplex mode, **SELECT** the **Configure** pull-down menu.
  - In dual simplex mode, **SELECT** the **Configure** pull-down menu on the Display/Touch Screen window of the printer with which you want to work.
3. **SELECT** the **Configure Printer** procedure. The **Configure Printer** window appears. Use the scroll bar to scroll through the list of configuration items. For information about configuration items, see Table 21 on page 250 or **SELECT** the **Help** push-button on the **Configure Printer** window.

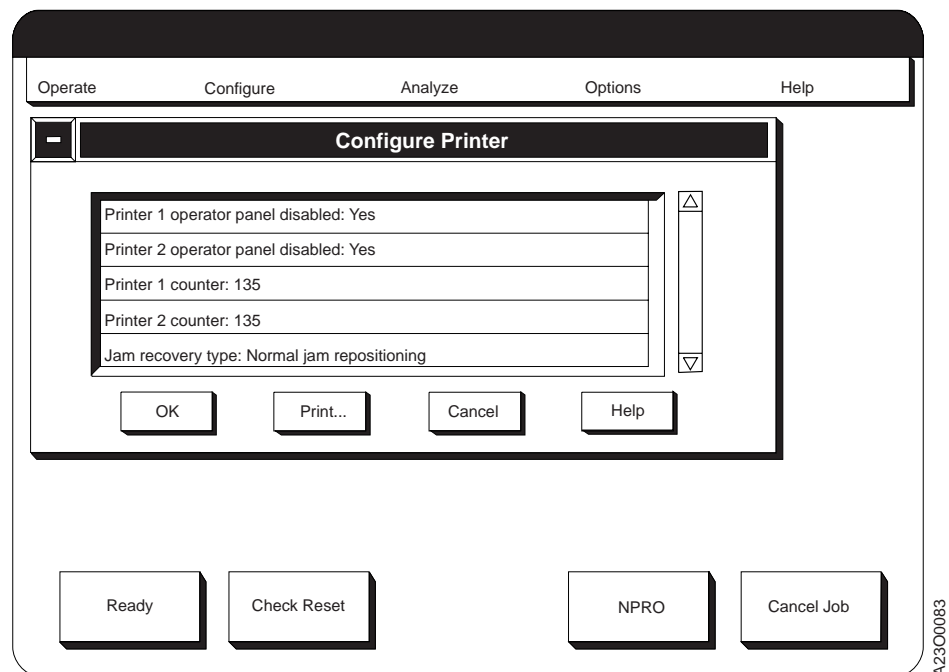


Figure 40. Configure Printer Window

4. To print a copy of the configuration, do the following:
  - a. **SELECT** the **Print...** push-button. You see the **Print Configuration** window.
  - b. To change the number of copies you print, do the following:
    - 1) **SELECT** the **How Many?** field.
    - 2) Type the number of copies you want to print.
    - 3) **SELECT** the **OK** push-button.

**Note:** The printer does not collate multiple copies. This has to be done by hand.

- c. **SELECT** the **Print** push-button on the **Print Configuration** window.

**Important**

The configuration data is always printed in U.S. English.

5. To change an item:
  - a. **SELECT** it from the list. You see either a pop-up window or a keypad window.
  - b. **SELECT** the value you want from the pop-up window, or enter data on the keypad window. Then **SELECT** the **OK** push-button.  
Repeat this step for as many items as you want to change.

**Note:** If you are changing **Printer Mode** or **Printhead Resolution**, any other configuration items you may be changing will change *only* for the mode you are switching *from*. The mode you are switching *to* will not have any changed configuration items.

- c. When you have made all the changes, **SELECT** the **OK** push-button. You see the **Restart** prompting window.
  - d. If you have other configuration changes to make, you can make them before you restart the system. If your configuration changes are complete, **SELECT** the **Restart** push-button on the **Restart** window to make them effective.

## Printer Configuration Information

Table 21 on page 250 describes all configuration items, what each is used for, and the allowable value options for each item. The factory-set default value options are underlined or separately specified.

**Important!** Table 21 on page 250 lists all configuration items for all models of the printers. Some items may be greyed out or not shown for your particular model of printer:

- Configuration items that are marked **(D)** appear only for Duplex systems.
- Configuration items that are marked **(S)** appear only for Simplex systems.
- All unmarked items appear for both Duplex and Simplex systems.

Table 21. Printer Configuration Items

Configuration Item	Description	Value Options
Printer Mode (D)	<p>This entry allows setting whether the duplex system is to be operated in duplex or simplex (dual-simplex) mode. (This item applies to Models ED1/ED2.)</p> <p>If you change the Printer Mode, the <b>Restart</b> procedure automatically executes a Shutdown procedure.</p>	<u>Duplex</u> or Simplex
Auto Start	If Yes, all current attachment interface status (enable/disable) is saved during a <b>Shutdown</b> procedure, and automatically restored at the next power on of the system. Simplex and dual simplex printers are also automatically made Ready at the completion of the power on sequence. The Thread/Align forms procedure must be performed on duplex printers before the system can be made Ready.	Yes or <u>No</u>
PQE boldness for printer 1	<p>This item must not be changed.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. If this value is changed accidentally, set the value to 85 and inform the CE during the next visit.</li> <li>2. On printers with code version 9.6 or higher, this item is “grayed out” and cannot be changed.</li> </ol>	100%
PQE boldness for printer 2 (D)	See entry for Printer 1.	See entry for Printer 1.
Printer 1 Counter	(CE Change Only) The Print Usage Count from the mechanical counter at the rear of the printer may be transferred to this counter, which will then become a new base count in the running “Printer 1 Counter” displayed in the <b>Printer Status</b> Display/Touch Screen window.	0 to 2 000 000 000
Printer 2 Counter (D)	(CE Change Only) The Print Usage Count from the mechanical counter at the rear of the printer may be transferred to this counter, which will then become a new base count in the running “Printer 2 Counter” displayed in the <b>Printer Status</b> Display/Touch Screen window.	0 to 2 000 000 000
Printhead Resolution	This parameter changes the resolution that the printhead in this printer uses. Not all values are supported on all printers.	Valid values are 480 or 600 DPI. The value you select depends on what features are installed on the printer.
IPDS Resolution	This parameter can be set only when a printhead resolution of 600 DPI is selected.	Automatic, 240 DPI, 300 DPI, or 600 DPI
Font Enhancement	This parameter appears when 480 or 600 DPI is selected for Printhead Resolution and 600 DPI is <u>not</u> selected for IDPS Resolution. This parameter is used to activate or deactivate the edge smoothing algorithm for raster fonts. Set to No if edge smoothing is not desired.	<p>Single Byte: <u>Yes</u> or No</p> <p>Double Byte: <u>Yes</u> or No</p>
Jam Recovery Type	<p>This entry controls under what conditions the host system will automatically retransmit pages after a forms jam has been cleared.</p> <ul style="list-style-type: none"> <li>• Normal Jam Repositioning - All lost pages are automatically retransmitted and reprinted.</li> <li>• Suppress MICR Repositioning - Lost pages printed with a MICR printer will not be retransmitted.</li> <li>• Suppress All Jam Repositioning - No lost pages will be retransmitted. Any missing or damaged pages must be manually recovered.</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Use Normal Jam Repositioning</u></li> <li>• Suppress MICR Jam Repositioning</li> <li>• Suppress All Jam Repositioning</li> </ul>



Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
Font Usage	<p>Font usage allows you to select the amount of memory that the printer control unit (computer) will use for font management. Select the font usage according to the type of print jobs you run.</p> <p>Select Low font usage for jobs using a normal number of fonts with normal point sizes, but not double-byte fonts. Medium font usage indicates an abnormal single-byte character set (SBCS) printing mode; select it for jobs using a large number of fonts or very large point sizes, but not double-byte fonts. High font usage is primarily for double-byte font jobs.</p>	<u>Low</u> , Medium, or High
Page Segment Usage	This is used to allocate space for IPDS source for page segments and overlays. Set to Low if the size or number of page segments and overlays is a small. Set to High if the size or number of page segments and overlays is large.	Low, <u>Medium</u> , or High
Overlay Usage	This parameter is used to allocate space for a cache of ready-to-print overlays. Set to Low if a few small overlays are used. Set to High if many or large overlays are used.	Low, <u>Medium</u> , or High
Overlay Cache	This parameter is used to activate or deactivate overlay caching. Set to No if overlays are not reused multiple times or if overlays are not reused in the same location on subsequent pages.	<u>Yes</u> or No
Input Buffer Size	This parameter is used to allocate space for the IPDS data that was just received from the server before being processed by the control unit. Set to Low if pages contain little data or if printing from PSF/MVS on a System/370 channel or an ESCON channel (this is because of the frequent IPDS acknowledgment rate). Set to High if printing pages with large amounts of data (such as large images).	Low, <u>Medium</u> , or High
Output Buffer Size	<p>This parameter is used to allocate space for ready-to-print pages, including pages between the transfer points of a continuous-forms, duplex printer. Set the value to Low if these conditions are met:</p> <ul style="list-style-type: none"> <li>• The pages contain little data</li> <li>• This is a simplex printer</li> <li>• This is a duplex printer with a distance between transfer points of less than 400 inches.</li> </ul> <p>Set the value to High if these conditions are met:</p> <ul style="list-style-type: none"> <li>• The pages contain large amounts of data, especially shaded areas</li> <li>• This is a duplex printer with a distance between transfer points of over 400 inches.</li> </ul>	Low, <u>Medium</u> , or High
Direct Attach	<p>This entry shows if printing is to occur in direct-printing mode when connected to an MVS or OS/390 operating system, with no host-assisted recovery procedures such as retransmission of pages after a forms jam.</p> <p>The host system programmer will inform you whether this entry should be set to <b>Yes</b>.</p>	Yes or <u>No</u>

Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
NPRO Length	<p>This entry sets an <i>extra</i> length that is added to the fixed NPRO length to create a total distance that forms are moved through the printer.</p> <p>This entry can be used when an uncoupled (not functionally attached) postprocessing device is installed and it is necessary to extend the NPRO length to be able to easily remove forms at the postprocessing device output.</p> <p>If any installed and enabled preprocessing/postprocessing devices have the “Pre/postprocessor Extended NPRO” distance of an enabled pre/postprocessor set to greater than zero, then that distance will take precedence over the “NPRO Length”, even if the “NPRO Length” is longer. The “Pre/postprocessor Extended NPRO” distance is set in the <b>Configure Pre/Post</b> procedure. If several “Pre/postprocessor Extended NPRO” distances are set, then the longest one takes precedence.</p>	Range of <u>0</u> to 1200 inches.
Auto NPRO at End of Forms	This entry indicates whether an automatic NPRO is performed when an End of Forms is detected.	Yes or <u>No</u>
Line mode enabled (S)	Allows the printer to enter the 3800 compatibility mode (line mode). Whenever you change this setting, you must restart the printer. (This item applies only to Model ES1, and only when the IPDS resolution is set to 240 DPI and printhead resolution is set to 480 DPL.)	Yes or <u>No</u>
Jam Recovery Point Distance	<p>This entry sets a distance past the printer fuser sufficient for forms to reach an installed postprocessing device, so that those forms will be reprinted following a forms jam recovery.</p> <p>In duplex mode, this distance is measured past the fuser of Printer 2. In dual simplex mode, it is a distance past either Printer 1 or Printer 2.</p> <p>A non-zero value setting assumes that: a postprocessing device is installed and enabled, the “Jam Recovery Type” configuration item setting above allows reprinting of pages, and the “Direct Attach” configuration item setting above is <b>No</b>.</p>	Range of <u>0</u> to 500 inches.
Form Feed Length (D)	This entry sets the length, in inches, that forms are to be moved forward through Printer 1 when the <b>Feed Forms</b> push-button is selected during execution of the <b>Thread/Align Forms</b> procedure in duplex mode.	Range of 17 to 250 inches. Default is 60 inches.

Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
Length of Forms Between Transfer Points (D)	<p>This entry sets the length, in inches, of the forms path length from the alignment mark on the transfer station tractors of Printer 1, through Printer 1, across the floor to the Buffer/Flipper Unit, through the Buffer/Flipper Unit, across the floor to Printer 2, under Printer 2 up to the alignment mark on the transfer station tractors of Printer 2. This is used during the duplex mode procedure <b>Thread/Align Forms</b>. If you are continually feeding paper at either printer in order to get the forms aligned, this configuration item may have to be changed.</p> <p>See "Appendix B. Physical System Layouts" on page 307 for physical layout details and dimensions.</p>	Range of 150 to 800 inches. Default is 315 inches.
Front Sheet Sequence (D)	<p>This entry sets whether the front side of the forms will be printed on Printer 1 or Printer 2 in duplex mode.</p> <p>Front First means that the odd pages (1st, 3rd, 5th,...) of a customer job will print on Printer 1, and the even pages (2nd, 4th, 6th, ...) pages will print on Printer 2. Front Second means just the opposite of Front First.</p> <p>When a postprocessing device is being used that bursts and stacks the output, the "Front Second" setting will deliver output with the odd number pages facing to the front.</p>	<u>Front First</u> or Front Second
Verification Marks (D)	<p>Indicates if verification marks (numbers) are to be printed on the edge (tractor hole area) of each side of forms. When these marks are printed, it is possible to verify that the forms are synchronized or aligned (the two sides of the form coincide).</p> <p>The verification numbers can be read by the operator. If the number on side 1 of a form matches that on side 2, then the forms are properly synchronized. Multiple copies of the same page will have the same verification mark numbers.</p>	Yes or <u>No</u>
Logical Page Increment	<p>This entry allows expansion of the logical page size for cases where the printed page is larger than the valid Infoprint 3000 printable area, without errors being set. This case may be encountered when a print job created for a 3800 prints too close to the page edge.</p> <p>The value entered will increase the valid printable area by that number of pels in all directions. Please review your applications to ensure that this setting does not cause loss of data, such as printing on the tractor hole carrier strip that will be trimmed off.</p>	Range of <u>0</u> to 20 pels.
Clear Memory for Security	This entry allows setting of whether residual print data is to be cleared from memory. Clearing memory can result in a delay of up to two minutes before a print job starts. Select <b>Yes</b> if a high level of security is required.	Yes or <u>No</u>

Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
Screen Saver Timeout	<p>This entry allows specifying, in minutes, the idle time before the Display/Touch Screen monitor screen is blanked out. This extends the life of the monitor screen. A value of 0 means the screen saver is not used.</p> <p>In dual simplex mode, if Printer 1 and Printer 2 are set with different values, the shortest setting time is used even if the associated printer console is not being used.</p> <p>Touching a blank screen caused by this timeout restores the display.</p>	0 to 60 minutes. Default is 10 minutes.
Alarm Suppression	This entry allows suppression of the Operator Alert alarm tone for error and supply-item actions.	Yes or <u>No</u>
Fuser Inactivity Timer	This entry sets the time, in hours, of printer inactivity before the fuser is turned off. This saves electrical power costs and extends the life of the printer. The fuser automatically turns on when printing resumes, with a delay until the fuser has reached operating temperature. A value of 0 means that the timer is not used.	0 to 9 hours. Default is 1 hour.
Eject to Front Facing	<p>This entry allows accepting or rejecting the Eject to Front Facing (EFF) signals sent by the host. A No value will suppress EFFs. If Yes, the EFF signal from the host will cause a blank page to be inserted between print jobs if the prior job contained an odd number of pages.</p> <p>This option should be set to <b>No</b> if either a postprocessing device is installed that bursts and stacks output pages, or if Direct Attach is set to Yes.</p>	Yes or <u>No</u>
Form Definition Order	When <b>Yes</b> is selected, the form definitions are listed in the order that they are used, with the current form at the top of the list. When <b>No</b> is selected, the forms are listed in the order in which they are defined, with the last form defined at the bottom of the list.	<u>Yes</u> or No
Stacker Enabled	<p>This entry allows setting of whether or not the stacker is to be used. A setting of <b>Yes</b> implies that a postprocessing device is not being used and that fanfold forms (not roll-feed forms) are being used.</p> <p>However, if a postprocessing device is installed and enabled, a <b>Yes</b> value is ignored.</p> <p>In duplex mode, it refers only to the Printer 2 stacker. In dual simplex mode, it may refer to either Printer 1 or Printer 2.</p>	<u>Yes</u> or No

Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
Cut Sheet Emulation	<p>Sheets are divided in half using an imaginary line that is parallel to the tractor strips. Each resulting "half sheet" is treated as if it were a whole sheet running through a cut-sheet printer.</p> <p>None implies the cut-sheet emulation is not enabled.</p> <p>Normal Left-to-Right allows the print data to be placed on the left half-sheet first and then the right half-sheet. The left half-sheet is closest to the operator. The physical orientation of the data is based on the lower-left corner of the paper as viewed from the operator's viewpoint.</p> <p>Normal Right-to-Left allows the print data to be placed on the right half-sheet first and then the left half-sheet. The right half-sheet is furthest from the operator. The physical orientation of the data is based on the lower-left corner of the paper as viewed from the operator's viewpoint.</p> <p>Inverted Left-to-Right allows the print data to be placed on the left half-sheet first and then the right half-sheet. The left half-sheet is furthest from the operator. The physical orientation of the data is based on the upper-right corner of the paper as viewed from the operator's viewpoint. This mode is the "upside down" version of the Normal Left-to-Right mode.</p> <p>Inverted Right-to-Left allows the print data to be placed on the right half-sheet first and then the left half-sheet. The right half-sheet is closest to the operator. The physical orientation of the data is based on the upper-right corner of the paper as viewed from the operator's viewpoint. This mode is the "upside down" version of the Normal Right-to-Left mode.</p>	<p>None, Normal Left-to-Right, Normal Right-to-Left, Inverted Left-to-Right, Inverted Right-to-Left</p>
BTS Installed	This entry allows setting whether a Burster/Trimmer/Stacker postprocessing device is installed. It does not show whether it is being used.	Yes or <u>No</u>
BTS Enabled	This entry allows setting whether an installed Burster/Trimmer/Stacker postprocessing device is being used. The host system will not send eject-to-front-facing commands if the BTS is enabled.	Yes or <u>No</u>
Offsetter Installed	This entry allows setting whether an Offsetter postprocessing device is installed. It does not show whether it is being used.	Yes or <u>No</u>
Offsetter Enabled	This entry allows setting whether an installed Offsetter postprocessing device is being used. The host system will send "Alternate Offset Stacker" commands if the offsetter is enabled and the print job contains these commands.	Yes or <u>No</u>
Offset on Mark Forms	If <b>Yes</b> is specified, offset commands are sent to an enabled postprocessor only for pages that contain Mark Forms. Any "Alternate Offset Stacker" commands sent from the host are ignored.	Yes or <u>No</u>
3130 Bar Code Compatibility	This entry defines whether bar codes are printed in the standard format or in the format printed by a 3130 printer.	Yes or <u>No</u>

Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
Printer 1 Contrast	(CE Change Only) This is used by service personnel to adjust the contrast (toner density) of print on the forms.  This value is used only when no other value is set during the Define Forms procedure for a specific form.	Range of 1 to 7  Default is 4
Printer 2 Contrast	(CE Change Only) See entry for Printer 1.  This value is used only when no other value is set during the Defined Forms procedure for a specific form.	See entry for Printer 1.
Printer 1 Preheat (Platen Temperature)	(CE Change Only) This is used by service personnel to adjust the preheat platen temperature. The value entered is a relative number, not a measure of degrees, with 1 being the coolest and 100 being the hottest.  This value is used only when no other value is set during the Defined Forms procedure for a specific form.	Range of 1 to 100  Default is 50
Printer 2 Preheat (Platen Temperature)	(CE Change Only) See entry for Printer 1.  This value is used only when no other value is set during the Defined Forms procedure for a specific form.	See entry for Printer 1.
Printer 1 Hot Roll (Temperature)	(CE Change Only) This is used by service personnel to adjust the hot roll temperature. The value entered is a relative number, not a measure of degrees, with 1 being the coolest and 100 being the hottest.  This value is used only when no other value is set during the Define Forms procedure for a specific form.	Range of 1 to 100  Default is 50
Printer 2 Hot Roll (Temperature)	(CE Change Only) See entry for Printer 1.  This value is used only when no other value is set during the Define Forms procedure for a specific form.	See entry for Printer 1.
Printer 1 Oil Rate	(CE Change Only) This is used by service personnel to adjust the amount of oil fed to the oil belt. The value entered is a relative number, not a measure of quantity, with 1 being the lowest rate and 100 being the highest rate.  This value is used only when no other value is set during the Define Forms procedure for a specific form.	Range of 1 to 100  Default is 50
Printer 2 Oil Rate	(CE Change Only) See entry for Printer 1.  This value is used only when no other value is set during the Define Forms procedure for a specific form.	See entry for Printer 1.
Printer 1 Oil Belt (Speed)	(CE Change Only) This is used by service personnel to adjust the speed at which the oil belt moves. The value entered is a relative number, not a measure of speed, with 1 being the slowest speed and 100 being the fastest speed.  This value is used only when no other value is set during the Define Forms procedure for a specific form.	Range of 1 to 100  Default is 50
Printer 2 Oil Belt (Speed)	(CE Change Only) See entry for Printer 1.  This value is used only when no other value is set during the Define Forms procedure for a specific form.	See entry for Printer 1.

Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
Scan Factory Adjust for Printer 1	(CE Change Only) This is used by service personnel to adjust the scan direction printing registration.	Range of 0 to 100 units Default is 40 units Unit = 2 pels
Process Factory Adjust for Printer 1	(CE Change Only) This is used by service personnel to adjust the process direction printing registration.	Range of 0 to 60 units Default is 15 units Unit = 1 pel
Scan Factory Adjust for Printer 2 (D)	(CE Change Only) This is used by service personnel to adjust the scan direction printing registration.	Range of 0 to 100 units Default is 40 units Unit = 2 pels
Process Factory Adjust for Printer 2 (D)	(CE Change Only) This is used by service personnel to adjust the process direction printing registration.	Range of 0 to 60 units Default is 15 units Unit = 1 pel
Beam 1 offset adjustment	(CE Change Only). This is used by maintenance personnel to control the vertical alignment or horizontal adjustment of the separate beams of a multi-beam printer.	Range of 0.0 to 15.9 Default is 8.0 units Unit = .1 pel
Beam 2 offset adjustment	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 3 offset adjustment	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 4 offset adjustment	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 5 offset adjustment	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 1 offset adjustment for Printer 2 (D)	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 2 offset adjustment for Printer 2 (D)	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 3 offset adjustment for Printer 2 (D)	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 4 offset adjustment for Printer 2 (D)	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Beam 5 offset adjustment for Printer 2 (D)	(See information in <i>Beam 1 offset adjustment</i> )	(See information in <i>Beam 1 offset adjustment</i> )
Machine Sequence for Printer 1	(CE Change on Initial Configuration Only) This is the serial number for Printer 1 (7 numeric only characters). Each time the AFCCU hard disk is replaced, this data is lost; the CE must enter the serial number found on the rear inside of the AFCCU frame again.	N/A

Table 21. Printer Configuration Items (continued)

Configuration Item	Description	Value Options
Manufacturing Plant for Printer 1	(CE Change on Initial Configuration Only) This is the code for plant of manufacture of Printer 1 (2 numeric only characters). Each time the AFCCU hard disk is replaced this data is lost; the CE must enter this code again from information saved from the last time Printer Configurations were changed.	N/A
Machine Sequence for Printer 2	(CE Change on Initial Configuration Only) This is the serial number for Printer 1 (7 numeric only characters). Each time the AFCCU hard disk is replaced, this data is lost; the CE must enter the serial number found on the rear inside of the AFCCU frame again.	N/A
Manufacturing Plant for Printer 2	(CE Change on Initial Configuration Only) This is the code for the plant of manufacture of Printer 2 (2 numeric only characters). Each time the AFCCU hard disk is replaced, this data is lost; the CE must enter this code again from information saved from the last time Printer Configurations were changed.	N/A
Date and Time	(CE Change Only). This is in the form of mmddHHMM.ssyy. mm=month dd=day HH=hour MM=minute ss=second yy=year	N/A



## Configuring Remote Access

This procedure lets you enable and configure remote access to the printer. You can use these methods:

- SNMP (Simple Network Management Protocol)
- RMI (Remote Management Interface)
- Modem.

To configure remote access, do the following:

1. **SELECT** the **Configure** pull-down menu on the main Display/Touch Screen window.
2. **SELECT** the **Remote Access** procedure.

Operate Configure Analyze Options Help

**Remote Access**

Select a Remote Access.

SNMP  
RMI  
Modem

Enabled:

☐ Yes  
☐ No

Allow to Configure:

☐ Yes  
☐ No

Community Name

OK Cancel Help

Ready Check Reset NPRO Cancel Job

NWT00168

3. **SELECT** the type of remote access that is to be used.
4. Enable or disable remote access for the type of remote access that you chose in the previous step.

**Note:** If **Allow to Configure** is set to **Yes** for SNMP or RMI, that interface is allowed to remotely change selected printer configuration items.

5. **SELECT** the **Community Name** procedure to configure additional SNMP parameters:

The screenshot shows a software interface with a menu bar at the top containing 'Operate', 'Configure', 'Analyze', 'Options', and 'Help'. The 'Configure' menu is active, displaying a sub-window titled 'Remote Access SNMP'. Inside this sub-window, there is a section 'Select a community Access.' with a list box containing 'public' and four empty slots. To the right of the list box are up and down arrow buttons. Further right is an 'Access:' section with three radio buttons: 'Read', 'Write', and 'None'. To the right of these is an 'IP Address' text field. Below the 'Access:' section is a 'Trap Manager:' section with two radio buttons: 'Yes' and 'No'. To the right of these is a 'Netmask' text field. At the bottom of the sub-window are five buttons: 'OK', 'Add...', 'Delete', 'Cancel', and 'Help'. Below the sub-window, in the main window area, are four buttons: 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. On the far right edge of the window, the text 'NWTO0169' is visible vertically.

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## Configuring Host Attachments

This procedure lets you view, print, or change the configuration settings of an installed attachment.

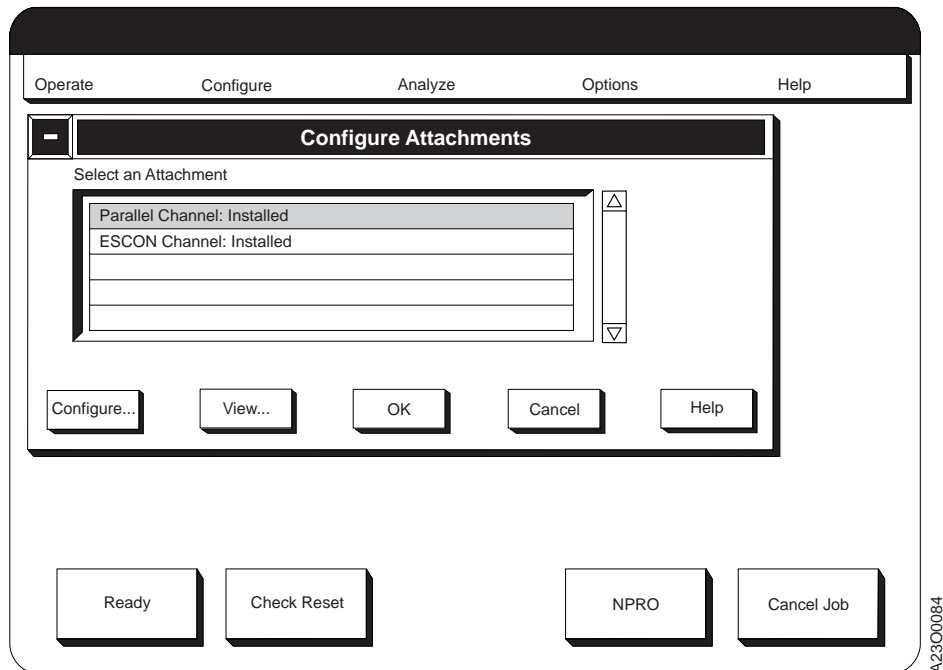
**Note:** The printer can have multiple sets of configuration data: one for each mode in which the printer can operate. To update a configuration for a particular mode, the printer must be running in that mode (for example, Duplex mode).

The following host attachments are available:

- Parallel Channel
- ESCON Channel
- Token Ring TCP/IP
- Ethernet TCP/IP
- FDDI TCP/IP (for Models ED1/ED2 only)

Before you change a configuration value, please review the configuration information table for the attachment configuration you are changing:

- “Parallel Channel Configuration Information” on page 264
  - “ESCON Channel Configuration Information” on page 266
  - “Token ring TCP/IP Attachment Information” on page 267
  - “Ethernet TCP/IP Attachment Information” on page 269
  - “FDDI TCP/IP Attachment Information” on page 271
1. Before you *print* the attachment configuration, ensure that all attachments are disabled. See “Enabling and Disabling Attachments” on page 70 for more information. You do not need to disable attachments if you are viewing or changing the configuration.
  2. To access the configuration settings, do one of the following:
    - In duplex mode, **SELECT** the **Configure** pull-down menu on the main Display/Touch Screen window.
    - In dual simplex mode, **SELECT** the **Configure** pull-down menu on the Display/Touch Screen window of the printer with which you want to work.
  3. **SELECT** the **Configure Attachments** procedure. You see the **Configure Attachments** window. This window lists the attachments that are currently installed. It also lists the attachments that are not installed but are present in the control unit and could be installed.



4. To **view** configuration information for an attachment, do the following:
  - a. **SELECT** an attachment type from the list.
  - b. **SELECT** the **View...** push-button. You see the **View Configuration** window.
5. To **print** a copy of the configuration information for an attachment, do the following:
  - a. **SELECT** an attachment type from the list.
  - b. **SELECT** the **View...** or **Configure...** push-button.
  - c. On the resulting window, **SELECT** the **Print...** push-button. You see the **Print Configuration** window.
  - d. To change the number of copies you print, do the following:
    - 1) **SELECT** the **How Many?** field.
    - 2) Type the number of copies you want to print.
    - 3) **SELECT** the **OK** push-button.
  - e. **SELECT** the **Print** push-button on the **Print Configuration** window.

#### Important

The configuration data is always printed in U.S. English.

6. To **change** configuration information for an attachment, do the following:
  - a. **SELECT** an attachment type.
  - b. **SELECT** the **Configure...** push-button. You see a list of configuration items for the attachment.
  - c. To change an item:
    - 1) **SELECT** it from the list. You see either a pop-up window or a keypad window.
    - 2) **SELECT** the value you want from the pop-up window, or enter data on the keypad window. Then **SELECT** the **OK** push-button.

Repeat this step for as many items as you want to change.

- d. When you have made all the changes, **SELECT** the **OK** push-button. You see the **Configure Attachments** window. If you want to change configuration information for other attachments, repeat the previous steps as necessary.
- e. When you have made all attachment changes, **SELECT** the **OK** push-button on the **Configure Attachments** window. You see the **Restart** prompting window.
- f. If you have other configuration changes to make, you can make them before you restart the system. If your configuration changes are complete, **SELECT** the **Restart** push-button to make them effective.

**Note**

**SELECTING Restart** does the following:

- If you are making this change in duplex or simplex mode, a window appears that informs you that an automatic **Shutdown** procedure has started. This window is followed by a window stating that the system is being *rebooted* (AFCCU microcode is being reloaded). At the completion of the microcode reload, the attachment changes are in effect. You do not have to power off the system and then power it on.
- If you are making this change in dual simplex mode, the Display/Touch Screen screen goes blank while an internal **Shutdown** procedure is executed on the printer on which you are working. The system then displays a message that indicates that the other printer must be shutdown for the changes to take affect. This message is followed by the Display/Touch Screen window for the other printer. You must select the **Shutdown/Restart** procedure from the **Operate** pull-down menu on that Display/Touch Screen window, and then execute the **Shutdown** routine. A window appears stating that the system is being “rebooted”. At the completion of the reboot, the attachment changes are in effect with no system power-off and power-on procedure required.

## Parallel Channel Configuration Information

Table 22 lists all configuration items, the purpose of each item, and the allowable value options for each item. The factory-set default values are underlined.

Table 22. Parallel Channel Attachment Items

Configuration Item	Description	Value Options
Parallel Link A Installed	Specifies if Parallel Channel Link A is installed.	Yes or <u>No</u>
Parallel Link B Installed	Specifies if Parallel Channel Link B is installed.	Yes or <u>No</u>
Device Address	<p>Specifies the 2-digit hexadecimal channel address which includes the device address.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. In simplex mode, only one device address is required. In dual simplex mode, each printer requires a unique device address. Printer 1 requires an even number (for example, X'30'); Printer 2 requires the next consecutive number (for example, X'31').</li> <li>2. The duplex system does not require a unique number. It can use either of the addresses used for dual simplex Printer 1 or dual simplex Printer 2. However, it is often easier from an operational viewpoint to assign duplex a separate address (so the duplex and simplex printers look like unique devices to the operating system). The general convention in this case is to assign the duplex system the next consecutive address (even) after the address for simplex Printer 2. For example, if you define Printer 1 in dual simplex as X'30', you should then define Printer 2 in dual simplex as X'31', and, optionally, define the complete system in duplex as X'32'.</li> <li>3. The device addresses specified above must match the device addresses defined to the host PSF software, and in the case of S/390 hosts, the I/O device definitions.</li> </ol>	00 to FF (Hexadecimal notation). Default is X'00'
Second Channel	<p>Specifies the switching mode of the Two-Channel Switch: Static or Dynamic Mode. When a second Parallel Channel is installed, a Two-Channel Switch facility is provided.</p> <ul style="list-style-type: none"> <li>• <b>Static:</b> You can enable only one channel at a time. You can connect two interfaces to two channels on the same processing unit, on tightly coupled processing units (units controlled by the same operating system), or on independent (uncoupled) processing units.</li> <li>• <b>Dynamic:</b> You can enable both channels at the same time with the two-Channel Switch used as a dynamic interface switch. Connect the two interfaces to two channels either on the same processing unit or on tightly-coupled processing units (units controlled by the same operating system).</li> </ul> <p>You cannot select this item unless two channels are installed.</p>	<u>Static</u> or Dynamic

Table 22. Parallel Channel Attachment Items (continued)

Configuration Item	Description	Value Options
Data Transfer Protocol	Specifies the data transfer mode to be used: DC Interlocked or Data-Streaming.  If two channels are installed, both channels use the same protocol.	<u>Interlocked</u> or Data Streaming
Data Streaming Rate	Specifies the data rate being used if you select the Data-Streaming Data Transfer Protocol. Use the highest rate that is supported by your system.  If two channels are installed, both channels use the same data rate.	<ul style="list-style-type: none"> <li>• 3.0MB/sec</li> <li>• 4.5MB/sec</li> </ul>
Card 1 Slot Position	The printer sets this entry automatically at power on time if the system senses the presence of a Parallel Channel card. This item is not selectable.	<ul style="list-style-type: none"> <li>• 2 or 4 or Not Installed (for Model ES1)</li> <li>• 6 or 8 or Not Installed (for Models ED1/ED2)</li> </ul>
Card 2 Slot Position	The printer sets this entry automatically at power on time if the system senses the presence of a Parallel Channel card. This item is not selectable.	<ul style="list-style-type: none"> <li>• 2 or 4 or Not Installed (for Model ES1)</li> <li>• 6 or 8 or Not Installed (for Models ED1/ED2)</li> </ul>

## ESCON Channel Configuration Information

Table 23 lists all configuration items, what each item is used for, and the allowable value options for each item. The factory-set default values are underlined.

Table 23. ESCON Channel Attachment Items

Configuration Item	Description	Value Options
ESCON Link A Installed	Specifies if ESCON Channel Link A is installed.	Yes or <u>No</u>
ESCON Link B Installed	Specifies if ESCON Channel Link B is installed.	Yes or <u>No</u>
Device Address	<p>Specifies the 2-digit hexadecimal channel address which includes the device address.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. In simplex mode, only one device address is required.</li> <li>2. In dual simplex mode, each printer requires a unique device address. Printer 1 requires an even number (for example, X'30'); Printer 2 requires the next consecutive number (for example, X'31').</li> <li>3. The duplex system does not require a unique number. It can use either of the addresses used for dual simplex Printer 1 or dual simplex Printer 2. However, it is often easier from an operational viewpoint to assign duplex a separate address (so the duplex and simplex printers look like unique devices to the operating system). The general convention in this case is to assign the duplex system the next consecutive address (even) after the address for simplex Printer 2. For example, if you define Printer 1 in dual simplex as X'30', you should then define Printer 2 in dual simplex as X'31', and, optionally, define the complete system in duplex as X'32'.</li> <li>4. The device addresses specified above must match the device addresses defined to the host PSF software, and in the case of S/390 hosts, the I/O device definitions.</li> </ol>	00 to FF (Hexadecimal notation). Default is X'00'
Multi-host environment flag	<p>Shows whether a multiple host printer-sharing system exists. If this environment flag is set, all hosts are required to use the assign/unassign protocols of the attachment architecture.</p> <p>Do not enable this flag unless <u>all</u> the hosts sharing the printer have the following:</p> <ul style="list-style-type: none"> <li>• OS/390 V1 Release 3.0 or higher</li> <li>• PSF ASSIGN/UNASSIGN support (PSF 3.1.0 for OS/390 or APAR OW29992 to PSF/MVS 2.2)</li> </ul>	True or <u>False</u>
Card 1 Slot Position	The printer sets this entry automatically at power on time if the system senses the presence of an ESCON Channel card. This item is not selectable.	<ul style="list-style-type: none"> <li>• 2 or 4 or Not Installed (for Model ES1)</li> <li>• 6 or 8 or Not Installed (for Models ED1/ED2)</li> </ul>
Card 2 Slot Position	The printer sets this entry automatically at power on time if the system senses the presence of an ESCON Channel card. This item is not selectable.	<ul style="list-style-type: none"> <li>• 2 or 4 or Not Installed (for Model ES1)</li> <li>• 6 or 8 or Not Installed (for Models ED1/ED2)</li> </ul>



## Token ring TCP/IP Attachment Information

Table 24 lists all configuration items, what each item is used for, and the allowable value options for each item. The factory-set default values are underlined.

Table 24. Token Ring TCP/IP Attachment Items

Configuration Item	Description	Value Options
Token Ring TCP/IP Installed	Specifies if the Token Ring adapter is installed.	Yes or <u>No</u>
TCP Port	<p>Specifies the TCP socket address of the attachment.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>Only one address is required for operating a simplex system.</li> <li>If your installation runs in dual simplex and duplex mode, specify the same TCP Port value for duplex mode as you do for Printer 1 in dual simplex mode. (IBM recommends using the default value of 5001.) Also, make sure you specify a unique value for Printer 2 in simplex mode; Printer 1 and Printer 2 cannot use the same value. (If you use the default value of 5001, for Printer 1, IBM recommends using 5002 as the value for Printer 2.)</li> <li>The TCP Port numbers specified in the printer configuration must match the PORT numbers assigned in the host PSF system.</li> <li>Because Printer 1 in a dual simplex system and the complete system in duplex system share a common port number, operational procedures must be defined to distinguish between duplex and dual simplex printing. The easiest way to manage this is to assign separate queues for duplex versus dual simplex output (for PSF/2 and PSF/6000), and to assign at least a unique job class for duplex jobs (for S/390 host PSF systems).</li> </ol>	5001 to 65536.
IP Address	<p>Specifies the Internet protocol (IP) address of the printer in dotted decimal format. Get this value from your LAN administrator. This value must match the IP address value in the host PSF configuration.</p> <p>This value is unique to a duplex system, and is the same regardless of whether the printer is in duplex or dual-simplex mode.</p>	X.X.X.X where X ≤ 255.
Subnet Mask	Specifies the mask that identifies the local subnet in dotted decimal format. Get this value from your LAN administrator. If you do not have a local subnet, leave this field blank.	X.X.X.X where X ≤ 255
Default Gateway Address	Specifies the IP address of the default gateway in dotted decimal format. Get this value from your LAN administrator.	X.X.X.X where X ≤ 255
MTU Size	Specifies the Maximum Transmission Unit (MTU) – maximum allowable length of IP packets.	60 to 4096
Hardware address	Specifies the TCP/IP Token Ring adapter ROM address.	This address cannot be changed.

Table 24. Token Ring TCP/IP Attachment Items (continued)

Configuration Item	Description	Value Options
Alternate address (Local adapter address)	Sets the unique LAN adapter address for the network. The address must be different from other addresses on the LAN. <b>Note:</b> New cards are restricted to values from X'4000 0000 0000' to X'FFFF FFFF FFFF'.	X'0' to X'FFFF FFFF FFFF'
Ring Speed	Specifies the ring speed of the network to which the adapter attaches. The value must match the speed of the network or the network may stop operating.	4 or 16
Confine Broadcast	Specifies if broadcast packets (that is, Address Resolution Protocol packets) are enabled to cross bridges to other rings.	Yes or <u>No</u>

## Ethernet TCP/IP Attachment Information

Table 25 lists all configuration items, what each item is used for, and the allowable value options for each item. The factory-set default values are underlined.

Table 25. Ethernet TCP/IP Attachment Items

Configuration Item	Description	Value Options
Ethernet TCP/IP Installed	Specifies if the Ethernet adapter is installed.	Yes or <u>No</u>
TCP Port	<p>Specifies the TCP socket address of the attachment.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>Only one address is required for operating a simplex system.</li> <li>If your installation runs in dual simplex and duplex mode, specify the same TCP Port value for duplex mode as you do for Printer 1 in dual simplex mode. (IBM recommends using the default value of 5001.) Also, make sure you specify a unique value for Printer 2 in simplex mode; Printer 1 and Printer 2 cannot use the same value. (If you use the default value of 5001, for Printer 1, IBM recommends using 5002 as the value for Printer 2.)</li> <li>The TCP Port numbers specified in the printer configuration must match the PORT numbers assigned in the host PSF system.</li> <li>Because Printer 1 in a dual simplex system and the complete system in duplex system share a common port number, operational procedures must be defined to distinguish between duplex and dual simplex printing. The easiest way to manage this is to assign separate queues for duplex versus dual simplex output (for PSF/2 and PSF/6000), and to assign at least a unique job class for duplex jobs (for S/390 host PSF systems).</li> </ol>	5001 to 65536
IP Address	<p>Specifies the Internet Protocol (IP) address of the printer in dotted decimal format. Get this value from your LAN administrator. This value must match the IP address value in the host PSF configuration.</p> <p>This value is unique to a duplex system, and is the same regardless of whether the printer is in duplex or dual-simplex mode.</p>	X.X.X.X where X ≤ 255.
Subnet Mask	Specifies the mask that identifies the local subnet in dotted decimal format. Get this value from your LAN administrator. If you do not have a local subnet, leave this field blank.	X.X.X.X where X ≤ 255
Default Gateway Address	Specifies the IP address of the default gateway in dotted decimal format. Get this value from your LAN administrator.	X.X.X.X where X ≤ 255
Standard MTU Size	Specifies the Maximum Transmission Unit (MTU) size. The MTU size for Standard Ethernet type ranges from 60 to 1500.	60 to 1500
IEEE802.3 MTU Size	Specifies the MTU size for IEEE802.3 Ethernet type. The range is from 60 to 1492.	60 to 1492

Table 25. Ethernet TCP/IP Attachment Items (continued)

Configuration Item	Description	Value Options
Ethernet Type	Specifies either the Standard or the IEEE802.3 Ethernet type.	Standard or IEEE802.3
Hardware address	Specifies the TCP/IP Token Ring adapter ROM address.	This address cannot be changed.
Alternate address (Local adapter address)	Sets the unique LAN adapter address for the network. The address must be different from other addresses on the LAN. <b>Note:</b> New cards are restricted to values from X'4000 0000 0000' to X'FFFF FFFF FFFF'.	X'0' to X'FFFF FFFF FFFF'
Media Speed	<p>This parameter is used only when the Ethernet adapter supports configuration of the media speed. Specific media mode and speed setting can be used if:</p> <ul style="list-style-type: none"> <li>• There is very slow Ethernet throughput</li> <li>• The LED indicators are incorrect</li> <li>• The printer cannot be contacted using the Ping command.</li> </ul> <p>Because of different Auto Sensing standards used by manufacturers of 10/100 Ethernet adapters, this may cause adapters to not work correctly in all combinations. The quick way to determine this type of problem is to see if the Duplex and 10/100 indicators are inconsistent between the printer and the switch.</p> <p>Check the LEDs on the printer 10/100 Ethernet adapter card when it is enabled. Note the values for each of the indicators on the adapter.</p> <ul style="list-style-type: none"> <li>• The FDX (Full Duplex) indicator is on when operating in Full Duplex Mode and off when operating in Half Duplex.</li> <li>• The 100 indicator is on when operating at 100Mbps and off when operating at 10Mbps.</li> <li>• The RCV (Receive) indicator is on when receiving packets from the network.</li> <li>• The ACT (Activity) or LNK (LINK) indicators are on when packets are being receive or transmitted over the network.</li> </ul> <p>There should be similar indicators on the switch or system that the printer is connected to, and you should note their values. The Full/Half Duplex and 10/100 indicator values must agree between the printer and the switch to which the printer is connected.</p> <p>To resolve this, take the switch out of auto negotiation mode an explicitly set the mode and speed at the switch. On the printer, the media mode can be either Half or Full Duplex and the speed can be 10 or 100Mbps. These setting must match those of the switch.</p> <p><b>Note:</b> If the Ethernet adapter does not support media speed configuration, this item is ignored.</p>	<ul style="list-style-type: none"> <li>• Auto Negotiation</li> <li>• 100BaseT – Full Duplex</li> <li>• 100BaseT – Half Duplex</li> <li>• 10BaseT – Full Duplex</li> <li>• 10BaseT – Half Duplex</li> </ul>

## FDDI TCP/IP Attachment Information

Table 26 lists all configuration items, what each item is used for, and the allowable value options for each item. The factory-set default values are underlined.

Table 26. FDDI TCP/IP Attachment Items

Configuration Item	Description	Value Options
FDDI TCP/IP Installed	Specifies if the FDDI adapter is installed.	Yes or <u>No</u>
TCP Port	<p>Specifies the TCP socket address of the attachment.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>Only one address is required for operating a simplex system.</li> <li>If your installation runs in dual simplex and duplex mode, specify the same TCP Port value for duplex mode as you do for Printer 1 in dual simplex mode. (IBM recommends using the default value of 5001.) Also, make sure you specify a unique value for Printer 2 in simplex mode; Printer 1 and Printer 2 cannot use the same value. (If you use the default value of 5001, for Printer 1, IBM recommends using 5002 as the value for Printer 2.)</li> <li>The TCP Port numbers specified in the printer configuration must match the PORT numbers assigned in the host PSF system.</li> <li>Because Printer 1 in a dual simplex system and the complete system in duplex system share a common port number, operational procedures must be defined to distinguish between duplex and dual simplex printing. The easiest way to manage this is to assign separate queues for duplex versus dual simplex output (for PSF/2 and PSF/6000), and to assign at least a unique job class for duplex jobs (for S/390 host PSF systems).</li> </ol>	5001 to 65536.
IP Address	<p>Specifies the Internet protocol (IP) address of the printer in dotted decimal format. Get this value from your LAN administrator. This value must match the IP address value in the host PSF configuration.</p> <p>This value is unique to a duplex system, and is the same regardless of whether the printer is in duplex or dual-simplex mode.</p>	X.X.X.X where X ≤ 255.
Subnet Mask	Specifies the mask that identifies the local subnet in dotted decimal format. Get this value from your LAN administrator. If you do not have a local subnet, leave this field blank.	X.X.X.X where X ≤ 255
Default Gateway Address	Specifies the IP address of the default gateway in dotted decimal format. Get this value from your LAN administrator.	X.X.X.X where X ≤ 255
MTU Size	Specifies the Maximum Transmission Unit (MTU) – maximum allowable length of IP packets.	256 to <u>4352</u>
Hardware address	Specifies the FDDI adapter ROM address.	This address cannot be changed.

Table 26. FDDI TCP/IP Attachment Items (continued)

Configuration Item	Description	Value Options
Alternate address (Local adapter address)	Sets the unique LAN adapter address for the network. The address must be different from other addresses on the LAN. <b>Note:</b> New cards are restricted to values from X'4000 0000 0000' to X'FFFF FFFF FFFF'.	X'0' to X'FFFF FFFF FFFF'
Confine Broadcast	Specifies if broadcast packets (that is, Address Resolution Protocol packets) are enabled to cross bridges to other rings.	Yes or <u>No</u>

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## Configuring Preprocessing/Postprocessing Devices/Interfaces

This procedure lets you add, delete, or change specifications for preprocessing and postprocessing device interface features. You may configure and store up to ten defined preprocessing/postprocessing devices, each configured for either Printer 1 or Printer 2. But only three devices may be enabled for each printer. The printers have three interface ports. These ports may be equipped with Preprocessing/Postprocessing (Pre/Post) or Advanced Function Postprocessing (AF Post) interfaces as shown in Table 27. Port 1 comes standard with a Pre/Post device interface adaptor, and the following table assumes that adaptor is installed.

Table 27. Preprocessing/Postprocessing Interface Options

Port	Configuration Options					
1	Pre/Post	Pre/Post	Pre/Post	Pre/Post	Pre/Post	Pre/Post
2	—	Pre/Post	Pre/Post	AF Post	Pre/Post	AF Post
3 <sup>1</sup>	—	—	Pre/Post	—	AF Post	Pre/Post

<sup>1</sup> Port 3 is not available on Model ED2.

The procedure for changing your pre/postprocessor configuration follows:

1. Do one of the following:
  - In duplex or simplex mode, **SELECT** the **Configure** pull-down menu on the main Display/Touch Screen window. You can work with all configured preprocessing and postprocessing devices.
  - In dual simplex mode, **SELECT** the **Configure** pull-down menu on the Display/Touch Screen window of the printer with which you want to work. You can work with only the preprocessing and postprocessing devices that are configured for that printer.
2. **SELECT** the **Configure Pre/postprocessors** procedure. You see the **Configure Pre/postprocessors** window, which lists the device interfaces that are currently defined and installed.

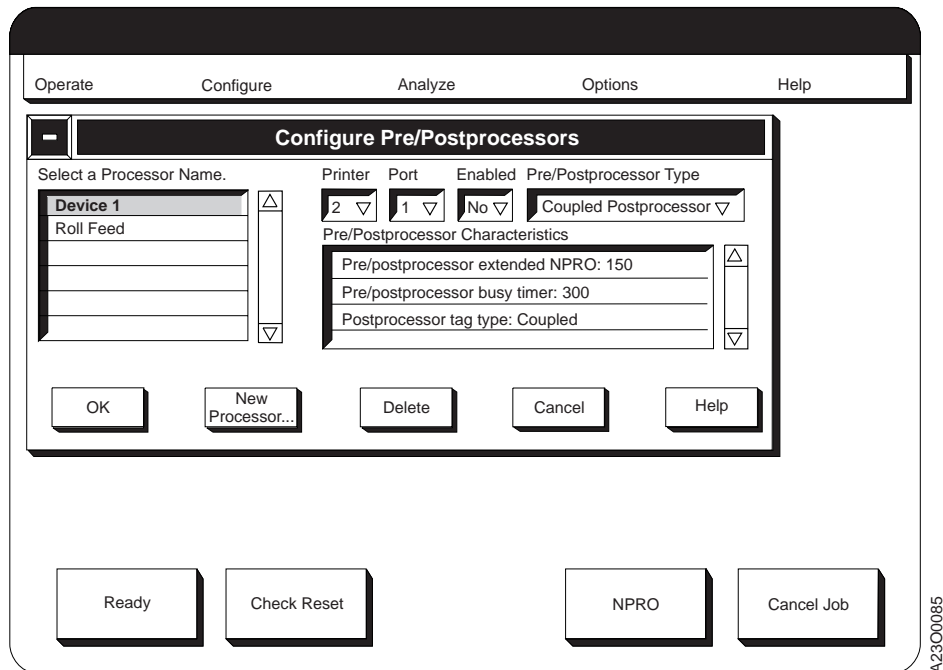


Figure 41. Configure Pre/Postprocessors Window - Duplex Mode

3. To **add** a new interface, do the following:
  - a. **SELECT** the **New Processor...** push-button.
  - b. Use the keyboard to enter the name of the interface you are adding.
  - c. **SELECT** the keyboard **OK** push-button.
  - d. Change the configuration information for the new interface (see the next step).
4. To **change** the values that are assigned to an interface, do the following:
  - a. **SELECT** from the **Select a Processor Name** selection list box the name of the device interface you want to change. The window shows the current values for the device.
  - b. **SELECT** the field you want to change.
  - c. **SELECT** the new value you want from the pop-up window, or enter data on the keypad window and **SELECT** the **OK** push-button.  
Repeat this step for as many items and devices as you want to change.
5. To **delete** a device, do the following:
  - a. **SELECT** from the **Select a Processor Name** box the name of the device you want to delete from the configured list.
  - b. **SELECT** the **Delete** push-button.
6. **SELECT** the **OK** push-button on the **Configure Pre/Postprocessors** window when you have finished making all changes to the pre/postprocessor configuration.



## Pre/Postprocessor Configuration Values

Table 28 lists all configuration items, what each item is used for, and the allowable value options for each item. The factory-set default values are underlined.

Table 28. Pre/Postprocessor Device Configuration Items

Selectable Field/Item	Description	Value Options
Printer (This item does not appear for simplex models.)	When the Configure Printer <b>Printer Mode</b> configuration item is set to <b>Simplex</b> mode, this <b>Printer</b> selectable field is grayed out in the <b>Configure Pre/Postprocessors</b> window. All devices configured while in <b>Simplex</b> mode are automatically configured for the printer associated with Display/Touch Screen you are currently using.	1 or 2
Port	The physical connection between the printer and the preprocessing/postprocessing device.	1 or 2 or 3
Enabled	<p>Enables a device for a port. If a device is already enabled for a specific port number when you select a device that is also configured for that port number, the <b>Yes</b> is grayed out so that you cannot attempt to enable a second device for the same port.</p> <p>An error window appears when the restart procedure to activate this change is complete and either of the following conditions exist:</p> <ul style="list-style-type: none"> <li>You attempted to enable a device for a port number that does not have an interface adaptor installed or</li> <li>The adapter has a different type (Pre/Post versus AF Post) adaptor installed than the device type you are enabling.</li> </ul>	Yes or No
Pre/Postprocessor Type	<p>Specify a <b>Coupled</b> type when the port to be used has a <b>Pre/Post</b> type adaptor installed.</p> <p>Specify an <b>Advanced Postprocessor</b> type when the port to be used has a <b>AF Post</b> type adaptor installed.</p> <p>Different types have different <b>Pre/Postprocessor Characteristics</b> configuration items listed.</p>	<p>Options Include:</p> <ul style="list-style-type: none"> <li>Coupled Preprocessor</li> <li>Coupled Postprocessor</li> <li>Advanced Postprocessor - MICR</li> <li>Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>
<b>Pre/Postprocessor Characteristics:</b>		
Pre/Postprocessor Extended NPRO (non-process runout)	<p>Listed for all Pre/Postprocessor Types.</p> <p>Extends the NPRO. Enter a non-zero value to extend the fixed NPRO length because of preprocessing or postprocessing device usage.</p> <p>Setting the "NPRO Length" configuration item under the <b>Configure Printer</b> also sets this function. The "Pre/Postprocessor Extended NPRO" value overrides the "Configure Printer NPRO Length" value if both are set to non-zero values.</p>	0 to 800 inches. Default is <u>150</u> .

Table 28. Pre/Postprocessor Device Configuration Items (continued)

Selectable Field/Item	Description	Value Options
Pre/Postprocessor Busy Timer	<p>Listed only for “Coupled” Pre/Postprocessor Types.</p> <p>Specifies the length of time in seconds that follows a Preprocessing or Postprocessing device going to “Busy” status before the status automatically changes to “Not Ready.” The printer does not report “Busy” status to the host system, but does report “Not Ready” status.</p> <p>This time must be set to less than the Missing Interrupt Handler timer at the Host Channel interface.</p>	1 to 999 seconds. Default is <u>300</u> .
Postprocessor Tag Type	<p>Listed only for “Coupled” Pre/Postprocessor Types.</p> <p>Specify a <b>Coupled</b> tag type for all Postprocessing devices not manufactured by Roll System, Inc.</p> <p>Specify an <b>RSI Compatible</b> tag type for all Postprocessing devices manufactured by Roll System, Inc..</p>	<ul style="list-style-type: none"> <li>• <u>Coupled</u></li> <li>• <u>RSI Compatible</u></li> </ul> <p>This item is ignored if you are configuring a preprocessing device interface.</p>
Distance to Postprocessor	<p>Listed only for “Advanced Postprocessor” Pre/Postprocessor Types.</p> <p>If two AF postprocessors are installed, the distance of the second postprocessor must exceed that of the first.</p> <ul style="list-style-type: none"> <li>• If the first postprocessor is a Troy MICR 3900, add an extra 102 inches to the actual measured distance from the printer to the second postprocessor.</li> <li>• If the first postprocessor is a Troy MICR 3900 High Speed, add an extra 148 inches to the actual measured distance from the printer to the second postprocessor.</li> <li>• If the first postprocessor is a Troy MICR 3835, add an extra 99 inches to the actual measured distance from the printer to the second postprocessor.</li> </ul> <p>For more information, see <i>Using the IBM 3835 Page Printers and the IBM 3900 Advanced Function Printers with the Troy MICR Printers</i>, GA32-0261.</p>	<ul style="list-style-type: none"> <li>• 24 to 800 inches. Default is <u>99</u>.</li> <li>• 24 to 1200 inches. Default is <u>99</u>.</li> </ul>
Postprocessor Error Page Stop	Listed only for “Advanced Postprocessor - MICR” Pre/Postprocessor Type.	<u>0</u> to 50 pages
Postprocessor Verify Alignment Page Stop	Listed only for “Advanced Postprocessor - MICR” Pre/Postprocessor Type.	<u>0</u> to 5000 pages
Pre/Postprocessor Baud Rate in Kbps	Listed only for “Advanced Postprocessor” Pre/Postprocessor Types.	19.2 or <u>62.5</u>
Side 2 Verify	<p>Indicates if the Side 2 Verify feature is enabled. Available in duplex only.</p> <p><b>Note:</b> In printers with code version 9.608 or higher, the Side 2 Verify feature is enabled at the factory. The operator must have the CE disable the factory-set feature. However, once the factory-set feature has been disabled by the CE, the operator can enable and disable Side 2 Verify as needed.</p>	<u>Yes</u> or No

## Configuration Work Sheets

### Duplex Configuration Work Sheet

Table 29. Configuration Work Sheet – Duplex Models

Item	Available Values	Selected Values		
		Duplex	Dual Simplex	
			Printer 1	Printer 2
<b>MESSAGE DISPLAY LANGUAGE:</b>	<ul style="list-style-type: none"> <li>• US English</li> <li>• Spanish</li> <li>• French</li> <li>• German</li> <li>• Japanese</li> <li>• Italian</li> <li>• Brazilian Portuguese</li> <li>• Chinese Simplified</li> <li>• Chinese Traditional</li> </ul>			
<b>PRINTER CONFIGURATION:</b>				
Printer Mode	Duplex / Simplex			
Auto Start	Yes / No			
PQE boldness for printer 1	100% <b>Note:</b> This value must not be changed.	N/A	N/A	N/A
PQE boldness for printer 2	100% <b>Note:</b> This value must not be changed.	N/A	N/A	N/A
Printer 1 Counter	(CE Change Only) 0 to 2 000 000 000	N/A	N/A	N/A
Printer 2 Counter	(CE Change Only) 0 to 2 000 000 000	N/A	N/A	N/A
Printhead resolution (not all values are supported on all printers)	<ul style="list-style-type: none"> <li>• 480 DPI</li> <li>• 600 DPI</li> <li>• 480/600 DPI</li> </ul>			
IPDS Resolution	<ul style="list-style-type: none"> <li>• Automatic</li> <li>• 240 DPI</li> <li>• 300 DPI</li> <li>• 600 DPI</li> </ul>			
Font Enhancement	<ul style="list-style-type: none"> <li>• Single Byte: Yes / No</li> <li>• Double Byte: Yes / No</li> </ul> Yes / No			
Jam Recovery Type	<ul style="list-style-type: none"> <li>• Use Normal Jam Repositioning</li> <li>• Suppress MICR Jam Repositioning</li> <li>• Suppress All Jam Repositioning</li> </ul>			
Font Usage	Low / Medium / High			
Page Segment Usage	Low / Medium / High			
Overlay Usage	Low / Medium / High			

Table 29. Configuration Work Sheet – Duplex Models (continued)

Item	Available Values	Selected Values		
		Duplex	Dual Simplex	
			Printer 1	Printer 2
Overlay Cache	Yes / No			
Input Buffer Size	Low / Medium / High			
Output Buffer Size	Low / Medium / High			
Direct Attach	Yes / No			
NPRO Length	0 to 1200 inches			
Auto NPRO at EOF	Yes / No			
Jam Recovery Point Distance	0 to 500 inches			
Form Feed Length (Duplex Mode Only)	17 to 250 inches		N/A	N/A
Length of Forms Between Transfer Points (Duplex Mode Only)	150 to 800 inches		N/A	N/A
Front Sheet Sequence (Duplex Mode Only)	Front First / Front Second		N/A	N/A
Verification Marks (Duplex Mode Only)	Yes / No		N/A	N/A
Logical Page Increment	0 to 20 pels			
Clear Memory for Security	Yes / No			
Screen Saver Timeout	0 to 60 minutes			
Alarm Suppression	Yes / No			
Fuser Inactivity Timer	0 to 9 hours			
Eject to Front Facing	Yes / No			
Form Definition Order	Yes / No			
Stacker Enabled	Yes / No			
Cut Sheet Emulation	<ul style="list-style-type: none"> <li>• None</li> <li>• Normal Left-to-Right</li> <li>• Normal Right-to-Left</li> <li>• Inverted Left-to-Right</li> <li>• Inverted Right-to-Left</li> </ul>			
BTS Installed	Yes / No			
BTS Enabled	Yes / No			
Offsetter Installed	Yes / No			
Offsetter Enabled	Yes / No			
Offset on Mark Forms	Yes / No			
3130 Bar Code Compatibility	Yes / No			
Printer 1 Contrast	(CE Change Only) 1 to 7	N/A	N/A	N/A
Printer 2 Contrast	(CE Change Only) 1 to 7	N/A	N/A	N/A
Printer 1 Preheat (Platen Temperature)	(CE Change Only) 1 to 100	N/A	N/A	N/A
Printer 2 Preheat (Platen Temperature)	(CE Change Only) 1 to 100	N/A	N/A	N/A

Table 29. Configuration Work Sheet – Duplex Models (continued)

Item	Available Values	Selected Values		
		Duplex	Dual Simplex	
			Printer 1	Printer 2
Printer 1 Hot Roll (Temperature)	(CE Change Only) 1 to 100	N/A	N/A	N/A
Printer 2 Hot Roll (Temperature)	(CE Change Only) 1 to 100	N/A	N/A	N/A
Printer 1 Oil Rate	(CE Change Only) 1 to 100	N/A	N/A	N/A
Printer 2 Oil Rate	(CE Change Only) 1 to 100	N/A	N/A	N/A
Printer 1 Oil Belt (Speed)	(CE Change Only) 1 to 100	N/A	N/A	N/A
Printer 2 Oil Belt (Speed)	(CE Change Only) 1 to 100	N/A	N/A	N/A
Scan Factory Adjust for Printer 1	(CE Change Only)	N/A	N/A	N/A
Process Factory Adjust for Printer 1	(CE Change Only)	N/A	N/A	N/A
Scan Factory Adjust for Printer 2	(CE Change Only)	N/A	N/A	N/A
Process Factory Adjust for Printer 2	(CE Change Only)	N/A	N/A	N/A
Beam 1 Offset Adjustment for Printer 1	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 2 Offset Adjustment for Printer 1	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 3 Offset Adjustment for Printer 1	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 4 Offset Adjustment for Printer 1	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 5 Offset Adjustment for Printer 1	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 1 Offset Adjustment for Printer 2	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 2 Offset Adjustment for Printer 2	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 3 Offset Adjustment for Printer 2	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 4 Offset Adjustment for Printer 2	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Beam 5 Offset Adjustment for Printer 2	(CE Change Only) 0.0 to 15.9	N/A	N/A	N/A
Machine Sequence for Printer 1	(CE change on initial configuration only)	N/A	N/A	N/A
Manufacturing Plant for Printer 1	(CE change on initial configuration only)	N/A	N/A	N/A
Machine Sequence for Printer 2	(CE change on initial configuration only)	N/A	N/A	N/A
Manufacturing Plant for Printer 2	(CE change on initial configuration only)	N/A	N/A	N/A
Date and Time	(CE Change Only)	N/A	N/A	N/A

Table 29. Configuration Work Sheet – Duplex Models (continued)

Item	Available Values	Selected Values				
		Duplex	Dual Simplex			
			Printer 1	Printer 2		
<b>HOST ATTACHMENTS CONFIGURATION:</b>						
<b>Parallel Channel Attachment:</b>						
Parallel Link A Installed	Yes / No					
Parallel Link B Installed	Yes / No					
Device Address	00 to FF					
Second Channel	Static / Dynamic					
Data Transfer Protocol	Interlocked / Data Streaming					
Data Streaming Rate	3.0 / 4.5 MB/sec					
Card 1 Slot Position	6 / 8 / Not Installed	N/A	N/A	N/A		
Card 2 Slot Position	6 / 8 / Not Installed	N/A	N/A	N/A		
<b>ESCON Channel:</b>						
ESCON Link A Installed	Yes / No					
ESCON Link B Installed	Yes / No					
Device Address	00 to FF					
Multi-host Environmental Flag	True / False					
Card 1 Slot Position	6 / 8 / Not Installed	N/A	N/A	N/A		
Card 2 Slot Position	6 / 8 / Not Installed	N/A	N/A	N/A		
<b>Token Ring TCP/IP Configuration:</b>						
Installed	Yes/ No					
TCP Port	5001 to 65536					
IP Address	X.X.X.X where X ≤ 255					
Subnet Mask	X.X.X.X where X ≤ 255					
Default Gateway Address	X.X.X.X where X ≤ 255					
MTU Size	60 to 4096					
Hardware address	Cannot be changed	N/A	N/A	N/A		
Alternate address	X'0' to X'FFFFFFFFFFFF'					
Ring Speed	4 or 16					
Confine Broadcast	Yes/ No					
<b>Ethernet TCP/IP Configuration:</b>						
Installed	Yes/ No					
TCP Port	5001 to 65536					
IP Address	X.X.X.X where X ≤ 255					
Subnet Mask	X.X.X.X where X ≤ 255					
Default Gateway Address	X.X.X.X where X ≤ 255					
Standard MTU Size	60 to 1500					
IEEE8023 MTU Size	60 to 1492					
Ethernet Type	Standard or IEEE8023					
Hardware address	Cannot be changed	N/A	N/A	N/A		

Table 29. Configuration Work Sheet – Duplex Models (continued)

Item	Available Values	Selected Values		
		Duplex	Dual Simplex	
			Printer 1	Printer 2
Alternate address	X'0' to X'FFFFFFFFFFFF'			
Media Speed	<ul style="list-style-type: none"> <li>• Auto Negotiation</li> <li>• 100BaseT – Full Duplex</li> <li>• 100BaseT – Half Duplex</li> <li>• 10BaseT – Full Duplex</li> <li>• 10BaseT – Half Duplex</li> </ul>			
<b>FDDI TCP/IP Configuration:</b>				
Installed	Yes / No			
TCP Port	5001 to 65536			
IP Address	X.X.X.X where X ≤ 255			
Subnet Mask	X.X.X.X where X ≤ 255			
Default Gateway Address	X.X.X.X where X ≤ 255			
MTU Size	256 to 4352			
Hardware address	Cannot be changed	N/A	N/A	N/A
Alternate address	X'0' to X'FFFFFFFFFFFF'			
Confine Broadcast	Yes / No			
<b>PREPROCESSING/POSTPROCESSING INTERFACE CONFIGURATIONS:</b>				
<b>DEVICE Number</b> _____				
Printer Number	1 / 2		N/A	N/A
Port Number	1 / 2 / 3			
Enabled	Yes / No			
Name	1 to 12 alphanumeric characters (including spaces)			
Type	<ul style="list-style-type: none"> <li>• Coupled Preprocessor</li> <li>• Coupled Postprocessor</li> <li>• Advanced Postprocessor - MICR</li> <li>• Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>			
<b>Characteristics:</b>				
Pre/Postprocessor Extended NPRO:	0 to 800 inches			
Pre/Postprocessor Busy Timer:	1 to 999 seconds			
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>• Coupled</li> <li>• RSI Compatible</li> </ul>			
Distance to Postprocessor	<ul style="list-style-type: none"> <li>• 24 to 800 inches</li> <li>• 24 to 1200 inches</li> </ul>			
Postprocessor Error Page Stop	0 to 50 pages			
Postprocessor Verify Alignment Page Stop	0 to 5000 pages			
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5			

Table 29. Configuration Work Sheet – Duplex Models (continued)

Item	Available Values	Selected Values		
		Duplex	Dual Simplex	
			Printer 1	Printer 2
<b>DEVICE Number</b> _____				
Printer Number	1 / 2		N/A	N/A
Port Number	1 / 2 / 3			
Enabled	Yes / No			
Name	1 to 12 alphanumeric characters (including spaces)			
Type	<ul style="list-style-type: none"> <li>• Coupled Preprocessor</li> <li>• Coupled Postprocessor</li> <li>• Advanced Postprocessor - MICR</li> <li>• Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>			
<b>Characteristics:</b>				
Pre/Postprocessor Extended NPRO:	0 to 800 inches			
Pre/Postprocessor Busy Timer:	1 to 999 seconds			
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>• Coupled</li> <li>• RSI Compatible</li> <li>• Advanced</li> </ul>			
Distance to Postprocessor	<ul style="list-style-type: none"> <li>• 24 to 800 inches</li> <li>• 24 to 1200 inches</li> </ul>			
Postprocessor Error Page Stop	0 to 50 pages			
Postprocessor Verify Alignment Page Stop	0 to 5000 pages			
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5			
<b>DEVICE Number</b> _____				
Printer Number	1 / 2		N/A	N/A
Port Number	1 / 2 / 3			
Enabled	Yes / No			
Name	1 to 12 alphanumeric characters (including spaces)			
Type	<ul style="list-style-type: none"> <li>• Coupled Preprocessor</li> <li>• Coupled Postprocessor</li> <li>• Advanced Postprocessor - MICR</li> <li>• Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>			



Table 29. Configuration Work Sheet – Duplex Models (continued)

Item	Available Values	Selected Values		
		Duplex	Dual Simplex	
			Printer 1	Printer 2
<b>Characteristics:</b>				
Pre/Postprocessor Extended NPRO:	0 to 800 inches			
Pre/Postprocessor Busy Timer:	1 to 999 seconds			
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>Coupled</li> <li>RSI Compatible</li> <li>Advanced</li> </ul>			
Distance to Postprocessor	<ul style="list-style-type: none"> <li>24 to 800 inches</li> <li>24 to 1200 inches</li> </ul>			
Postprocessor Error Page Stop	0 to 50 pages			
Postprocessor Verify Alignment Page Stop	0 to 5000 pages			
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5			
<b>DEVICE Number</b> _____				
Printer Number	1 / 2		N/A	N/A
Port Number	1 / 2 / 3			
Enabled	Yes / No			
Name	1 to 12 alphanumeric characters (including spaces)			
Type	<ul style="list-style-type: none"> <li>Coupled Preprocessor</li> <li>Coupled Postprocessor</li> <li>Advanced Postprocessor - MICR</li> <li>Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>			
<b>Characteristics:</b>				
Pre/Postprocessor Extended NPRO:	0 to 800 inches			
Pre/Postprocessor Busy Timer:	1 to 999 seconds			
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>Coupled</li> <li>RSI Compatible</li> <li>Advanced</li> </ul>			
Distance to Postprocessor	<ul style="list-style-type: none"> <li>24 to 800 inches</li> <li>24 to 1200 inches</li> </ul>			
Postprocessor Error Page Stop	0 to 50 pages			
Postprocessor Verify Alignment Page Stop	0 to 5000 pages			
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5			

## Simplex Configuration Work Sheet

Table 30. Configuration Work Sheet – Simplex Model

Item	Available Values	Selected Value
<b>MESSAGE DISPLAY LANGUAGE:</b>	<ul style="list-style-type: none"> <li>• US English</li> <li>• Spanish</li> <li>• French</li> <li>• German</li> <li>• Japanese</li> <li>• Italian</li> <li>• Brazilian Portuguese</li> <li>• Chinese Simplified</li> <li>• Chinese Traditional</li> </ul>	
<b>CONFIGURE PRINTER:</b>		
Auto Start	Yes / No	
PQE boldness	100%	This value must not be changed.
Printer Counter	(CE Change Only) 0 to 2 000 000 000	N/A
Printhead resolution (not all values are supported on all printers)	<ul style="list-style-type: none"> <li>• 480 DPI</li> <li>• 600 DPI</li> <li>• 480/600 DPI</li> </ul>	
IPDS Resolution	<ul style="list-style-type: none"> <li>• Automatic</li> <li>• 240 DPI</li> <li>• 300 DPI</li> <li>• 600 DPI</li> </ul>	
Font Enhancement	<ul style="list-style-type: none"> <li>• Single Byte: Yes / No</li> <li>• Double Byte: Yes / No</li> </ul>	
Jam Recovery Type	<ul style="list-style-type: none"> <li>• Use Normal Jam Repositioning</li> <li>• Suppress MICR Jam Repositioning</li> <li>• Suppress All Jam Repositioning</li> </ul>	
Font Usage	Low / Medium / High	
Page Segment Usage	Low / Medium / High	
Overlay Usage	Low / Medium / High	
Overlay Cache	Yes / No	
Input Buffer Size	Low / Medium / High	
Output Buffer Size	Low / Medium / High	
Direct Attach	Yes / No	
NPRO Length	0 to 1200 inches	
Auto NPRO at EOF	Yes / No	
Line mode enabled (In 480 DPI mode only)	Yes / No	
Jam Recovery Point Distance	0 to 500 inches	
Logical Page Increment	0 to 20 pels	
Clear Memory for Security	Yes / No	
Screen Saver Timeout	0 to 60 minutes	
Alarm Suppression	Yes / No	
Fuser Inactivity Timer	0 to 9 hours	

Table 30. Configuration Work Sheet – Simplex Model (continued)

Item	Available Values	Selected Value
Eject to Front Facing	Yes / No	
Form definition order	Yes / No	
Stacker Enabled	Yes / No	
Cut sheet emulation	<ul style="list-style-type: none"> <li>• None</li> <li>• Normal Left-to-Right</li> <li>• Normal Right-to-Left</li> <li>• Inverted Left-to-Right</li> <li>• Inverted Right-to-Left</li> </ul>	
BTS Installed	Yes / No	
BTS Enabled	Yes / No	
Offsetter Installed	Yes / No	
Offsetter Enabled	Yes / No	
Offset on Mark Forms	Yes / No	
3130 Bar Code Compatibility	Yes / No	
Contrast	(CE Change Only) 1 to 7	N/A
Preheat (Platen Temperature)	(CE Change Only) 1 to 100	N/A
Hot Roll (Temperature)	(CE Change Only) 1 to 100	N/A
Oil Rate	(CE Change Only) 1 to 100	N/A
Oil Belt (Speed)	(CE Change Only) 1 to 100	N/A
Scan Factory Adjust	(CE Change Only)	N/A
Process Factory Adjust	(CE Change Only)	N/A
Beam 1 Offset	(CE Change Only) 0.0 to 15.9	N/A
Beam 2 Offset	(CE Change Only) 0.0 to 15.9	N/A
Beam 3 Offset	(CE Change Only) 0.0 to 15.9	N/A
Beam 4 Offset	(CE Change Only) 0.0 to 15.9	N/A
Beam 5 Offset	(CE Change Only) 0.0 to 15.9	N/A
Machine Sequence	(CE Change Only)	N/A
Manufacturing Plant	(CE Change Only)	N/A
Date and Time	(CE Change Only)	N/A
<b>HOST ATTACHMENTS CONFIGURATION:</b>		
<b>Parallel Channel:</b>		
Parallel Link A Installed	Yes / No	
Parallel Link B Installed	Yes / No	
Device Address	00 to FF (hexadecimal)	
Second Channel	Static / Dynamic	
Data Transfer Protocol	Interlocked / Data Streaming	
Data Streaming Rate	3.0 / 4.5MB /sec	
Card 1 Slot Position	2 / 4 / Not Installed	Automatically set at power on, cannot be changed.
Card 2 Slot Position	2 / 4 / Not Installed	Automatically set at power on, cannot be changed.

Table 30. Configuration Work Sheet – Simplex Model (continued)

Item	Available Values	Selected Value
<b>ESCON Channel:</b>		
ESCON Link A Installed	Yes / No	
ESCON Link B Installed	Yes / No	
Device Address	00 to FF (Hexadecimal)	
Multi-host Environmental Flag	True / False	
Card 1 Slot Position	2 / 4 / Not Installed	Automatically set at power on, cannot be changed.
Card 2 Slot Position	2 / 4 / Not Installed	Automatically set at power on, cannot be changed.
<b>Token Ring TCP/IP Configuration:</b>		
Installed	Yes / No	
TCP Port	5001 to 65536	
IP Address	X.X.X.X where X ≤ 255	
Subnet Mask	X.X.X.X where X ≤ 255	
Default Gateway Address	X.X.X.X where X ≤ 255	
MTU Size	60 to 4096	
Hardware address	Cannot be changed	
Alternate address	X'0' to X'FFFFFFFFFFFF'	
Ring Speed	4 or 16	
Confine Broadcast	Yes / No	
<b>Ethernet TCP/IP Configuration:</b>		
Installed	Yes / No	
TCP Port	5001 to 65536	
IP Address	X.X.X.X where X ≤ 255	
Subnet Mask	X.X.X.X where X ≤ 255	
Default Gateway Address	X.X.X.X where X ≤ 255	
Standard MTU Size	60 to 1500	
IEEE8023 MTU Size	60 to 1492	
Ethernet Type	Standard or IEEE8023	
Hardware address	Cannot be changed	
Alternate address	X'0' to X'FFFFFFFFFFFF'	
Media Speed	<ul style="list-style-type: none"> <li>• Auto Negotiation</li> <li>• 100BaseT – Full Duplex</li> <li>• 100BaseT – Half Duplex</li> <li>• 10BaseT – Full Duplex</li> <li>• 10BaseT – Half Duplex</li> </ul>	

Table 30. Configuration Work Sheet – Simplex Model (continued)

Item	Available Values	Selected Value
<b>PREPROCESSING/POSTPROCESSING INTERFACE CONFIGURATIONS:</b>		
<b>DEVICE Number</b> _____		
Port Number	1 / 2 / 3	
Enabled	Yes / No	
Name	1 to 12 alphanumeric characters (including spaces)	
Type	<ul style="list-style-type: none"> <li>Coupled Preprocessor</li> <li>Coupled Postprocessor</li> <li>Advanced Postprocessor - MICR</li> <li>Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>	
<b>Characteristics:</b>		
Pre/Postprocessor Extended NPRO:	0 to 800 inches	
Pre/Postprocessor Busy Timer:	1 to 999 seconds	
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>Coupled</li> <li>RSI Compatible</li> </ul>	
Distance to Postprocessor	<ul style="list-style-type: none"> <li>24 to 800 inches</li> <li>24 to 1200 inches</li> </ul>	
Postprocessor Error Page Stop	0 to 50 pages	
Postprocessor Verify Alignment Page Stop	0 to 5000 pages	
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5	
<b>DEVICE Number</b> _____		
Port Number	1 / 2 / 3	
Enabled	Yes / No	
Name	1 to 12 alphanumeric characters (including spaces)	
Type	<ul style="list-style-type: none"> <li>Coupled Preprocessor</li> <li>Coupled Postprocessor</li> <li>Advanced Postprocessor - MICR</li> <li>Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>	
<b>Characteristics:</b>		
Pre/Postprocessor Extended NPRO:	0 to 800 inches	
Pre/Postprocessor Busy Timer:	1 to 999 seconds	
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>Coupled</li> <li>RSI Compatible</li> <li>Advanced</li> </ul>	
Distance to Postprocessor	<ul style="list-style-type: none"> <li>24 to 800 inches</li> <li>24 to 1200 inches</li> </ul>	
Postprocessor Error Page Stop	0 to 50 pages	
Postprocessor Verify Alignment Page Stop	0 to 5000 pages	
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5	

Table 30. Configuration Work Sheet – Simplex Model (continued)

Item	Available Values	Selected Value
<b>DEVICE Number</b> _____		
Port Number	1 / 2 / 3	
Enabled	Yes / No	
Name	1 to 12 alphanumeric characters (including spaces)	
Type	<ul style="list-style-type: none"> <li>• Coupled Preprocessor</li> <li>• Coupled Postprocessor</li> <li>• Advanced Postprocessor - MICR</li> <li>• Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>	
<b>Characteristics:</b>		
Pre/Postprocessor Extended NPRO:	0 to 800 inches	
Pre/Postprocessor Busy Timer:	1 to 999 seconds	
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>• Coupled</li> <li>• RSI Compatible</li> </ul>	
Distance to Postprocessor	<ul style="list-style-type: none"> <li>• 24 to 800 inches</li> <li>• 24 to 1200 inches</li> </ul>	
Postprocessor Error Page Stop	0 to 50 pages	
Postprocessor Verify Alignment Page Stop	0 to 5000 pages	
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5	
<b>DEVICE Number</b> _____		
Port Number	1 / 2 / 3	
Enabled	Yes / No	
Name	1 to 12 alphanumeric characters (including spaces)	
Type	<ul style="list-style-type: none"> <li>• Coupled Preprocessor</li> <li>• Coupled Postprocessor</li> <li>• Advanced Postprocessor - MICR</li> <li>• Advanced Postprocessor - SMM (Select Medium Modification)</li> </ul>	
<b>Characteristics:</b>		
Pre/Postprocessor Extended NPRO:	0 to 800 inches	
Pre/Postprocessor Busy Timer:	1 to 999 seconds	
Postprocessor Tag Type:	<ul style="list-style-type: none"> <li>• Coupled</li> <li>• RSI Compatible</li> </ul>	
Distance to Postprocessor	<ul style="list-style-type: none"> <li>• 24 to 800 inches</li> <li>• 24 to 1200 inches</li> </ul>	
Postprocessor Error Page Stop	0 to 50 pages	
Postprocessor Verify Alignment Page Stop	0 to 5000 pages	
Pre/Postprocessor Baud Rate in Kbps	19.2 or 62.5	

---

## Defining Forms

Use this procedure to define forms. You can add, change, or delete form definitions.

You must define forms to the printer before you can load them. You can define forms in advance as a separate procedure. You can also define forms while you are actually loading the forms.

The printer can store 1024 form name definitions in duplex and simplex modes, and 1024 additional form name definitions for each printer in dual simplex mode for a total of 3072 form name definitions for the complete system. Five form names come standard with each system and appear on the **Define Forms** panel on the Display/Touch Screen.

Use the “Form Identification Work Sheet” on page 303 before installation of the printer to define the forms your installation is planning to use. Continue using the forms during the life of the system to add additional forms definitions.

Form names that are defined and stored while the printer is in duplex mode are listed and available for assignment/change/deletion only in duplex mode. Likewise, a form name that is defined and stored in either Printer 1 dual simplex or Printer 2 dual simplex mode are listed and available for assignment/change/deletion only when the printer is in simplex mode.

To define new forms or delete existing forms, do the following:

1. Ensure that the printer is in Not Ready status.
2. **SELECT** the **Configure** pull-down menu on the main Display/Touch Screen window.
3. **SELECT** the **Define Forms** procedure. You see the **Define Forms** window, which lists the forms that are currently defined and information about the form name that is highlighted in the list.

**Note:** The **Define Forms** function is not available if the **Assign Forms to Load** or **Print Adjust** screen is displayed. Only one of these three screens appears at any time.

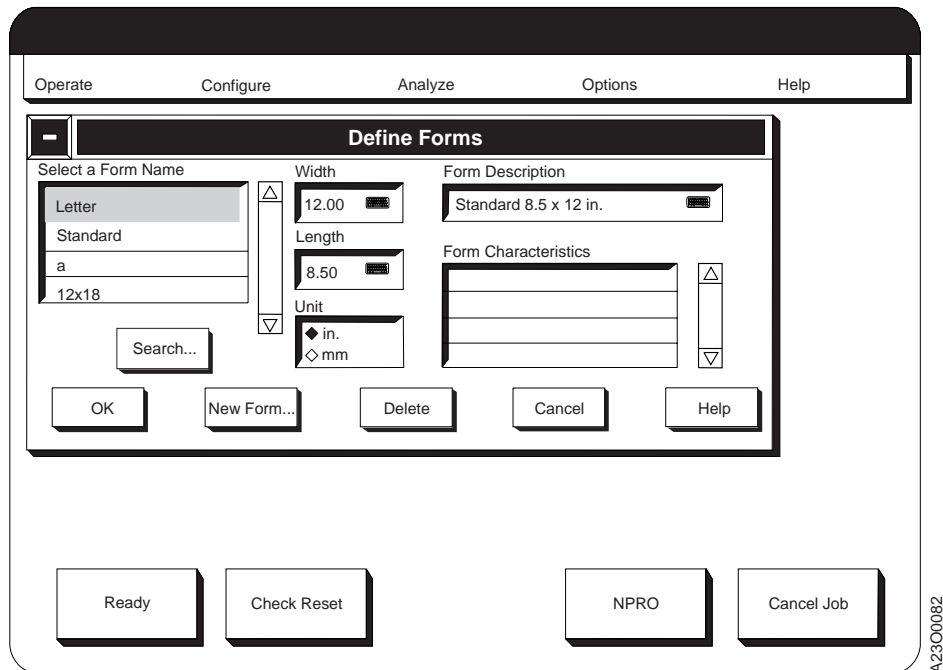


Figure 42. Define Forms Window - Duplex Mode

4. To find a particular form name, **SELECT** the **Search** push-button. A keyboard appears so you can enter the form name.

**Note:** Use care when you define a form name. Searching for form names is case sensitive; that is, if capitol letters are used to define the form, you must use them to enter the form name for a search.

5. With the form name selected, do one of the following:

- **To delete a form, do the following:**

- a. **SELECT** the form you want to delete from the list.
- b. **SELECT** the **Delete** push-button.

**Note:** You cannot delete the last remaining Form Name or the loaded Form Name. To rename the last defined form, you must use the **New Form...** push-button to add a new Form Name, and then delete the old Form Name.

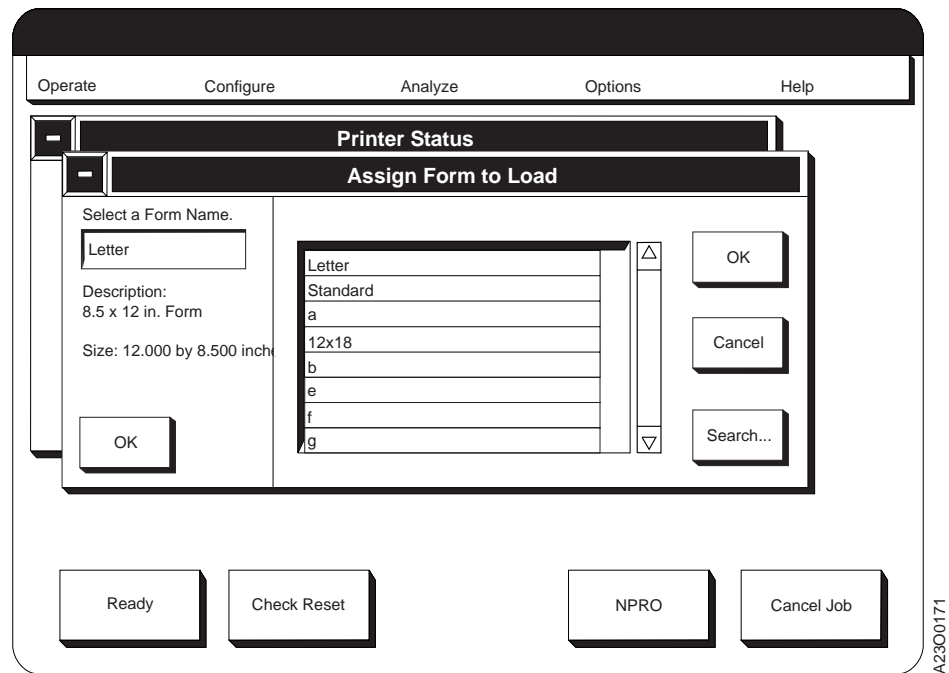
- **To define a new form, do the following:**

- a. **SELECT** the **New Form...** push-button.
- b. Use the keyboard to enter the name you choose for the new form.
- c. **SELECT** the keyboard **OK** push-button.
- d. The new form is added to the list and is initially assigned the same values as the previous form.
- e. To change these values, see the next step.

- **To change a form definition, do the following:**

- a. **SELECT** the form you want to change. The current definition appears.
- b. **SELECT** the field you want to change. You see either a pop-up window or a keypad window.
- c. **SELECT** the new value you want from the pop-up window, or enter data on the keypad window and **SELECT** the **OK** push-button.





The forms are then available for the **Assign Forms to Load** window.

**Notes:**

1. The following items on the **Form Characteristics** pop-up window are grayed out and cannot be changed:
  - Pinless
  - Pinless mark
  - Printable width

2. For form width, specify the total physical width by including the 0.5-inch tractor hole carrier strips on both sides of the form.

For Models ED1/ED2, the following form widths are allowed:

- Dual Simplex Mode: 204 to 457 mm (8.0 to 18.0 in.)
- Duplex Mode: 229 to 457 mm (9.0 to 18.0 in.).

For Model ES1, the following form widths are allowed: 204 to 457 mm (8.0 to 18.0 in.).

Specify the width in millimeters or inches. If you use millimeters, do not use a decimal point. If you use inches, fractions must use a decimal point (enter 13½ as 13.5).

3. For length, specify the length of the form in the process direction (parallel to the tractor holes). You can specify length in millimeters or inches and in lengths from 77 to 432 mm (3 to 17 in.).

**For 25- or 28-inch Forms:**

You can define the forms length up to 28 in. by using the **Special Features** option on the **Options** pull-down menu.

For 25-in. forms length, **SELECT Feature 8B2929.**

For 28-in. forms length, **SELECT Feature 8B2930.**

After you have selected the feature you want, **SELECT** the **Install** push-button, then **SELECT** the **Enable** push-button.

**Note:** Using either of these features can cause an impact on performance.

Specify the length either in inches to two decimal places or in millimeters as a whole number. The printer rounds the length you enter to the nearest one-sixth inch, and displays it on the screen.

For related information, see “Appendix A. Valid Form Lengths in Inches” on page 305.

280-3030F

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2. Enter a number between 1 and 7 where 1 is lightest and 7 is darkest.  
**or**
3. To use the *default* contrast value, enter **0** (zero) on the keypad. To determine the default value, look at **Contrast** in **Printer Configuration**.
4. **SELECT** the **OK** push-button on the keypad.
5. When you finish making all changes to forms, **SELECT** the **OK** push-button on the **Define Forms** window.

## Setting/Adjusting the Preheat Platen Temperature

The **Preheat** selection in the **Forms Characteristics** box allows you to adjust the temperature of the preheat platen for optimum fusing. The number you enter is a relative number, not a temperature measurement in degrees. A default value is set during printer configuration. This default value is used if you enter **0** (zero) or leave the field blank.

Operate Configure Analyze Options Help

**Printer Status**

**Define Forms**

Select a Form Name

Letter  
Standard  
2UpLetter  
12x18

Search...

Width: 12.00

Length: 8.50

Unit:  
☒ in.  
☐ mm

Form Description: Standard 8.5 x 12 in.

Form Characteristics

Contrast: 0  
Preheat: 0  
Hot Roll: 0  
Oil Rate: 0

OK New Form... Delete Cancel Help

Ready Check Reset NPRO Cancel Job

HC6OG082

To set or change the preheat platen temperature, do the following:

1. **SELECT** the **Preheat** field. A keypad window appears.

Operate Configure Analyze Options Help

**Printer Status**

**Define Forms**

Enter preheat temperature. (Range: 1 to 100, where 1 is the coolest and 100 is the hottest or enter 0 for default)

7 8 9  
4 5 6  
1 2 3  
0

Overwrite

Home End Cancel  
Insert Delete Backspace  
Left Right Clear  
OK Help

Ready Check Reset NPRO Cancel Job

HC6OG109

2. Enter a number between **1** and **100** where 1 is for the coolest temperature and 100 is for the hottest temperature.

**Note:** The number you enter is ***not*** a temperature measurement in degrees.  
**or**

3. To use the *default* temperature value, enter **0** (zero) on the keypad. To determine the default value, look at **Preheat Platen** in **Printer Configuration**.
4. **SELECT** the **OK** push-button on the keypad.
5. When you finish making all changes to forms, **SELECT** the **OK** push-button on the **Define Forms** window.

## Setting/Adjusting the Hot Roll Temperature

The **Hot Roll** selection in the **Forms Characteristics** box allows you to adjust the temperature of the hot roll for optimum fusing. The number you enter is a relative number, not a temperature measurement in degrees. A default value is set during printer configuration. This default value is used if you enter **0** (zero) or leave the field blank.

The screenshot shows the HP printer configuration window with the 'Define Forms' dialog box open. The dialog box has a 'Select a Form Name' list with options: Letter, Standard, 2UpLetter, and 12x18. The 'Width' field is set to 12.00, 'Length' is 8.50, and 'Unit' is set to 'in.'. The 'Form Description' field is 'Standard 8.5 x 12 in.'. The 'Form Characteristics' section has fields for Contrast: 0, Preheat: 0, Hot Roll: 0, and Oil Rate: 0. The 'Hot Roll' field is highlighted. The 'OK' button is visible. Below the dialog box, there are buttons for 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'.

HC6OG082

To set or change the hot roll temperature, do the following:

1. **SELECT** the **Hot Roll** field. A keypad window appears.

The screenshot shows the HP printer configuration window with the 'Define Forms' dialog box open. The 'Hot Roll' field is selected, and a keypad window appears. The keypad has a numeric keypad (0-9) and an 'Enter' button. The 'Overwrite' section has buttons for Home, End, Cancel, Insert, Delete, Backspace, Left, Right, Clear, OK, and Help. The 'OK' button is highlighted. Below the keypad, there are buttons for 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'.

HC6OG110

2. Enter a number between **1** and **100** where 1 is for the coolest temperature and 100 is for the hottest temperature.

**Note:** The number you enter is ***not*** a temperature measurement in degrees.  
**or**

3. To use the *default* temperature value, enter **0** (zero) on the keypad. To determine the default value, look at **Hot Roll** in **Printer Configuration**.
4. **SELECT** the **OK** push-button on the keypad.
5. When you finish making all changes to forms, **SELECT** the **OK** push-button on the **Define Forms** window.



## Setting/Adjusting the Oil Rate

The **Oil Rate** selection in the **Forms Characteristics** box allows you to adjust the flow of oil to the oil belt. The number you enter is a relative number, not a measurement of amount. A default value is set during printer configuration. This default value is used if you enter **0** (zero) or leave the field blank.

The screenshot shows the 'Define Forms' dialog box within a larger software interface. The top menu bar includes 'Operate', 'Configure', 'Analyze', 'Options', and 'Help'. Below this is a 'Printer Status' section. The 'Define Forms' section contains a 'Select a Form Name' list with options: Letter, Standard, 2UpLetter, and 12x18. A 'Search...' button is below the list. To the right are input fields for 'Width' (12.00), 'Length' (8.50), and 'Unit' (radio buttons for 'in.' and 'mm'). Further right is a 'Form Description' field with 'Standard 8.5 x 12 in.' and a 'Form Characteristics' section with fields for 'Contrast: 0', 'Preheat: 0', 'Hot Roll: 0', and 'Oil Rate: 0'. At the bottom of the dialog are buttons for 'OK', 'New Form...', 'Delete', 'Cancel', and 'Help'. Below the dialog, in the main window, are buttons for 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. The text 'HC6OG082' is visible on the right side.

To set or change the oil flow rate, do the following:

1. **SELECT** the **Oil Rate** field. A keypad window appears.

The screenshot shows a keypad window for entering the oil rate. The top menu bar is the same as the previous screenshot. Below the 'Define Forms' section, there is a text prompt: 'Enter oil rate. (Range: 1 to 100, where 1 is the lowest rate and 100 is the highest rate or enter 0 for default)'. Below this prompt is a numeric keypad with buttons for digits 0-9 and a '0' button. To the right of the numeric keypad is an 'Overwrite' section with buttons for 'Home', 'End', 'Cancel', 'Insert', 'Delete', 'Backspace', 'Left', 'Right', 'Clear', 'OK', and 'Help'. At the bottom of the window are buttons for 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. The text 'HC6OG111' is visible on the right side.

2. Enter a number between **1** and **100** where 1 is for the lowest flow rate and 100 is for the greatest flow rate.

**Note:** The number you enter is ***not*** a measurement of amount.

**or**

3. To use the *default* rate value, enter **0** (zero) on the keypad. To determine the default value, look at **Oil Rate** in **Printer Configuration**.
4. **SELECT** the **OK** push-button on the keypad.
5. When you finish making all changes to forms, **SELECT** the **OK** push-button on the **Define Forms** window.

## Setting/Adjusting the Oil Belt Speed

The **Oil Belt** selection in the **Forms Characteristics** box allows you to adjust the speed of the oil belt. The number you enter is a relative number, not a measurement of speed. A default value is set during printer configuration. This default value is used if you enter **0** (zero) or leave the field blank.

The screenshot shows the 'Define Forms' dialog box within a larger application window. The application window has tabs for 'Operate', 'Configure', 'Analyze', 'Options', and 'Help'. The 'Define Forms' dialog has a 'Select a Form Name' list with 'Letter', 'Standard', '2UpLetter', and '12x18'. It also has fields for 'Width' (12.00), 'Length' (8.50), and 'Unit' (in./mm). The 'Form Description' field shows 'Standard 8.5 x 12 in.'. The 'Form Characteristics' section includes 'Contrast: 0', 'Preheat: 0', 'Hot Roll: 0', and 'Oil Rate: 0'. At the bottom of the dialog are buttons for 'OK', 'New Form...', 'Delete', 'Cancel', and 'Help'. Below the dialog, in the main application window, are buttons for 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. The document code 'HC6OG082' is visible on the right side.

To set or change the oil belt speed, do the following:

1. **SELECT** the **Oil Belt** field. A keypad window appears.

The screenshot shows the keypad window that appears when the 'Oil Belt' field is selected. The window has a title bar with 'Operate', 'Configure', 'Analyze', 'Options', and 'Help' tabs. The main area contains a text input field with the instruction 'Enter oil belt. (Range: 1 to 100, where 1 is the slowest rate and 100 is the fastest rate or enter 0 for default)'. Below the input field is a numeric keypad with buttons for digits 0-9. To the right of the numeric keypad is an 'Overwrite' section with buttons for 'Home', 'End', 'Cancel', 'Insert', 'Delete', 'Backspace', 'Left', 'Right', 'Clear', 'OK', and 'Help'. At the bottom of the window are buttons for 'Ready', 'Check Reset', 'NPRO', and 'Cancel Job'. The document code 'HC6OG112' is visible on the right side.

2. Enter a number between **1** and **100** where 1 is for the slowest speed and 100 is for the fastest speed.

**Note:** The number you enter is ***not*** a measurement of speed.

**or**

3. To use the *default* speed value, enter **0** (zero) on the keypad. To determine the default value, look at **Oil Belt** in **Printer Configuration**.
4. **SELECT** the **OK** push-button on the keypad.
5. When you finish making all changes to forms, **SELECT** the **OK** push-button on the **Define Forms** window.

## Setting/Adjusting the Paper Weight

The **Paper Weight** selection in the **Forms Characteristics** box allows you to select a paper weight for the type of form being defined. This enables the printer to compensate for the paper weight during printing. The choices are **Normal** for 16–22 pound (51–71 kg or 60–80 g) forms or **Heavy** for 23–42 pound (61–135 kg or 83–157 g) forms.

To set or change the paper weight, do the following:

1. **SELECT** the **Paper Weight** field. A window appears with the choices.
2. **SELECT** the correct value (**Normal** or **Heavy**) and then **SELECT** the **OK** pushbutton.
3. When you finish making all the changes to the forms, **SELECT** the **OK** pushbutton on the **Define Forms** window.

## Form Identification Work Sheet

Use the “Form Identification Work Sheet” on page 304 to record form identification names with their associated lengths, widths, description, and characteristics. You can define up to 1024 different forms for duplex and simplex modes and 1024 additional forms for each printer in dual simplex mode, for a total of 3072 form definitions for the complete system. Make copies of the work sheets as necessary.

You may also find it helpful to make notes about loading techniques, adjusting print values, or other information that may be particular to certain forms.

## Form Identification Work Sheet

Table 31. Form Identification Work Sheet

Form Number:	Definition	With This Value:	Notes:
	<b>Name</b> <b>Width (in millimeters or inches)</b> <b>Length (in millimeters or inches)</b> <b>Description</b> <b>Contrast</b> <b>Preheat (platen temperature)</b> <b>Hot Roll (temperature)</b> <b>Oil Rate</b> <b>Oil Belt (speed)</b> <b>Paper Weight</b>	         	
	<b>Name</b> <b>Width (in millimeters or inches)</b> <b>Length (in millimeters or inches)</b> <b>Description</b> <b>Contrast</b> <b>Preheat (platen temperature)</b> <b>Hot Roll (temperature)</b> <b>Oil Rate</b> <b>Oil Belt (speed)</b> <b>Paper Weight</b>	         	
	<b>Name</b> <b>Width (in millimeters or inches)</b> <b>Length (in millimeters or inches)</b> <b>Description</b> <b>Contrast</b> <b>Preheat (platen temperature)</b> <b>Hot Roll (temperature)</b> <b>Oil Rate</b> <b>Oil Belt (speed)</b> <b>Paper Weight</b>	         	
	<b>Name</b> <b>Width (in millimeters or inches)</b> <b>Length (in millimeters or inches)</b> <b>Description</b> <b>Contrast</b> <b>Preheat (platen temperature)</b> <b>Hot Roll (temperature)</b> <b>Oil Rate</b> <b>Oil Belt (speed)</b> <b>Paper Weight</b>	         	
	<b>Name</b> <b>Width (in millimeters or inches)</b> <b>Length (in millimeters or inches)</b> <b>Description</b> <b>Contrast</b> <b>Preheat (platen temperature)</b> <b>Hot Roll (temperature)</b> <b>Oil Rate</b> <b>Oil Belt (speed)</b> <b>Paper Weight</b>	         	

## Appendix A. Valid Form Lengths in Inches

Table 32. Examples of Some Valid Form Lengths in Inches

If the Form Length is:	Use this value at the Display/Touch Screen:	Use this value at the Stacker Control Panel:
3.0	3.0	See note 2
3½	3.5	See note 2
4.0	4.0	See note 2
4½	4.5	See note 2
5.0	5.0	See note 2
5½	5.5	See note 2
6.0	6.0	See note 2
6½	6.5	See note 2
7.0	7.0	7.0
7½	7.5	7½
8.0	8.0	8.0
8⅙ See note 1	8.1	See note 1
8⅓	8.3	8⅓
8½	8.5	8½
8⅔	8.6	8⅔
8⅝ See note 1	8.8	See note 1
9.0	9.0	9.0
9½	9.5	9½
10.0	10.0	10.0
10½	10.5	10½
11.0	11.0	11.0
11½	11.5	11½
12.0	12.0	12.0
12½	12.5	12½
13.0	13.0	13.0
13½	13.5	13½
14.0	14.0	14.0

**Notes:**

1. You can define form lengths in one-sixth of an inch increments at the Display/Touch Screen. For reference, see 8⅓ and 8⅔ above.  
The stacker control panel does not allow form lengths in one-sixth of an inch. The smallest increment allowed on the stacker control panel is one-third of an inch.
2. Setting equals forms length *as measured from fold perforation to fold perforation*.
3. Form lengths as prefolded greater than 14.0 inches are permissible if the stacker is disabled and a postprocessing device is installed and enabled.





## Appendix B. Physical System Layouts

### Simplex Models

The dimensions of the Infoprint 3000 simplex printers, the service clearance around the allowable configurations of these units, and the power cable and channel cable locations are shown in Figure 43.

**Note:** The minimum size of the Channel Cable Access opening is 200 x 200 mm (8 x 8 in.).

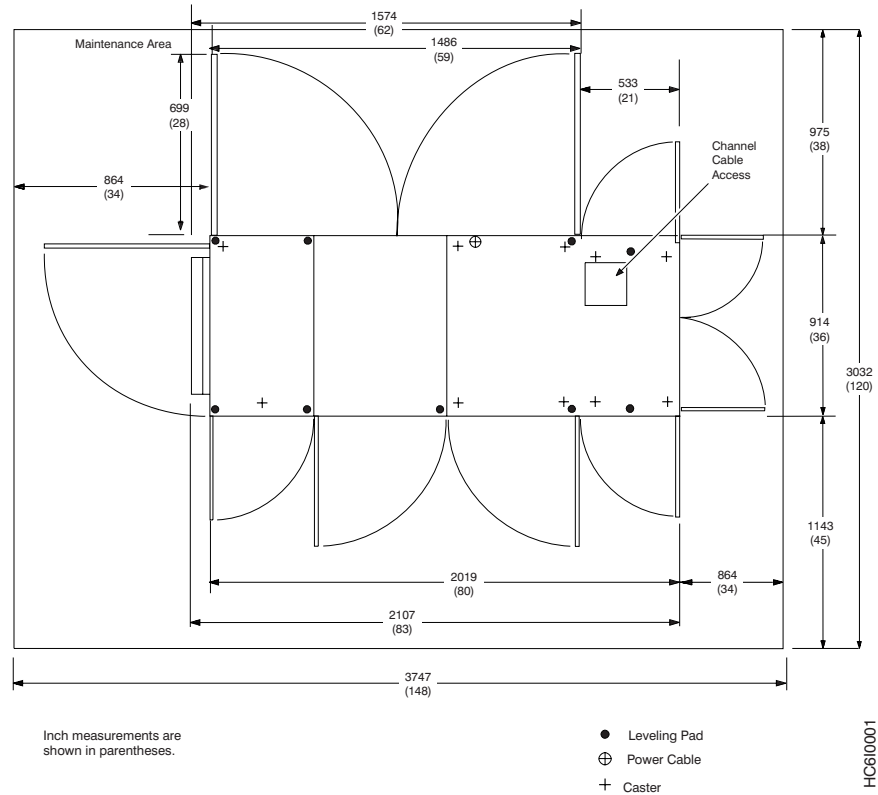


Figure 43. Simplex Configuration

## Duplex Models

The dimensions of the Infoprint 3000 duplex printers, and the Buffer/Flipper Unit **1**, the optimum separation of the units, the service clearance around the allowable configurations of these units, and the power cable and channel cable locations are shown in Figure 44, Figure 45 on page 309, and Figure 46 on page 310.

**Note:** The minimum size for Channel Cable Access opening is 200 x 200 mm (8 x 8 in.).

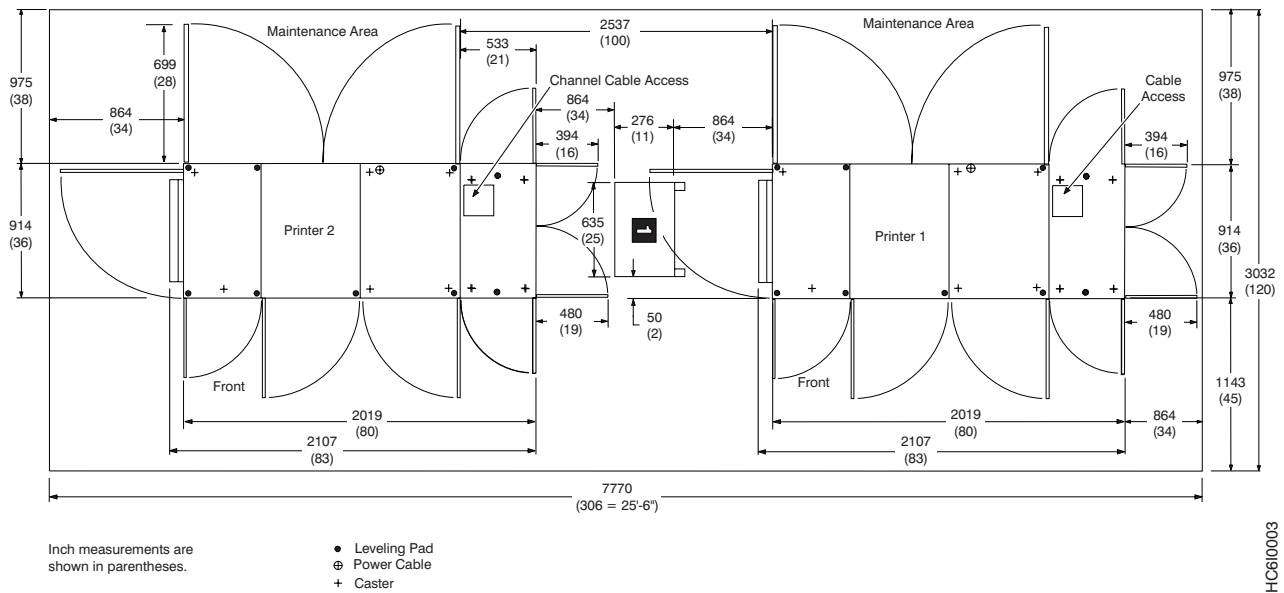


Figure 44. Duplex Inline Configuration

Appendix B. Physical System Layouts **309**

For the 'h' configuration, in which the printers are parallel, the IBM-supplied Buffer/Flipper Unit is placed next to Printer 1. The turnbar/flipper device supplied by your company is placed next to Printer 2.

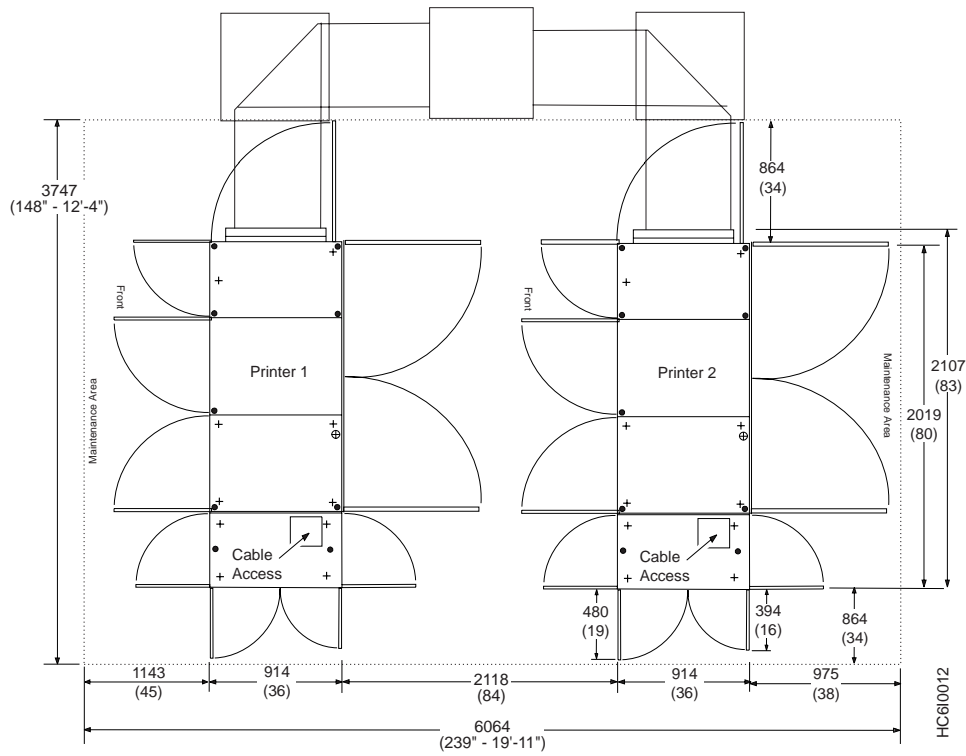


Figure 46. Duplex 'h' Configuration (Both Printers Facing the Same Direction)

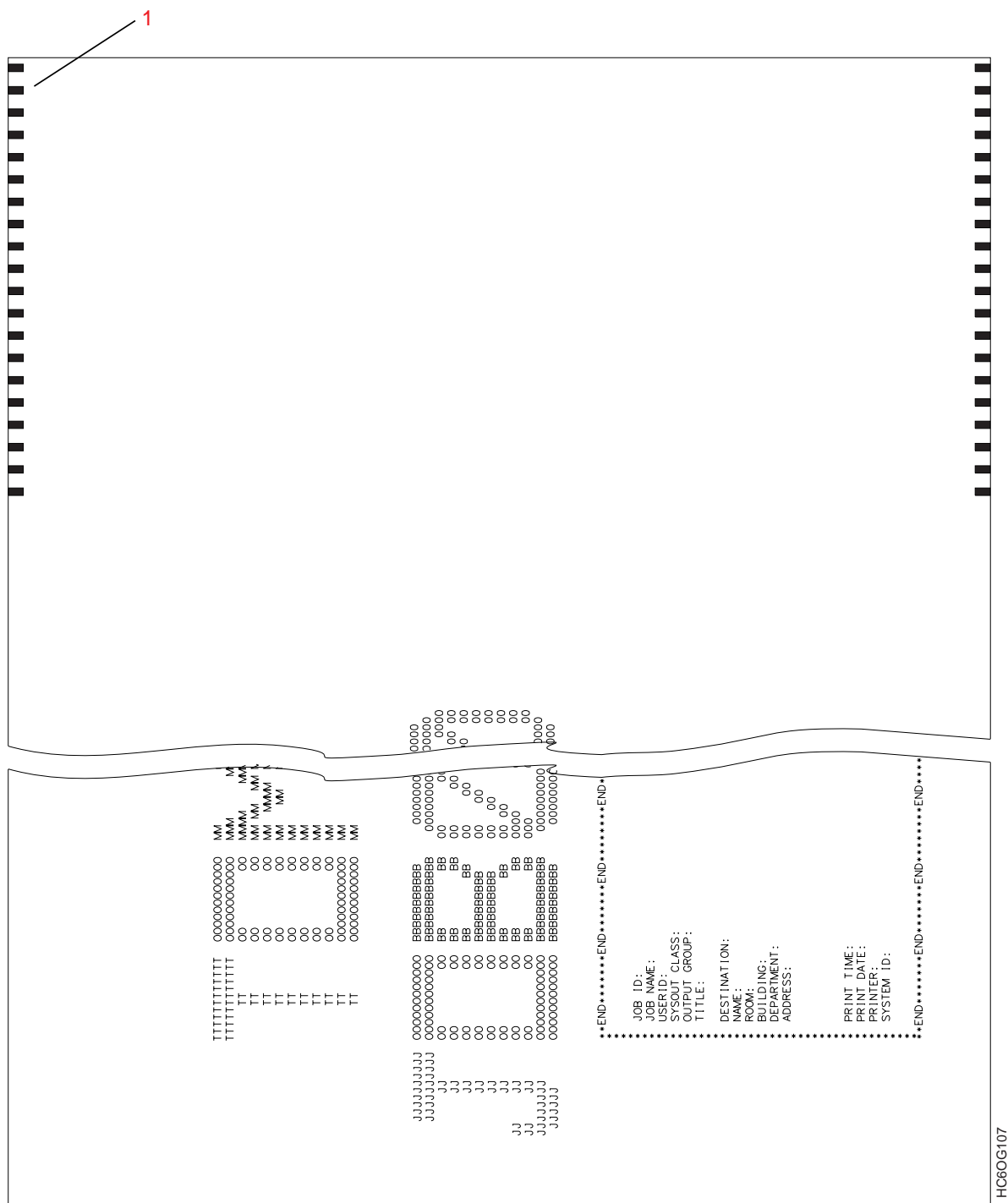
---

## Appendix C. Special Features

## Move Mark Forms

When you enable this feature, any job that prints with mark forms has a new mark forms pattern on the header and trailer pages. The new pattern is longer and is printed on the side of the page **(1)** rather than in the center.

This feature is enabled or disabled by the key operator.



To enable or disable this feature, do the following:

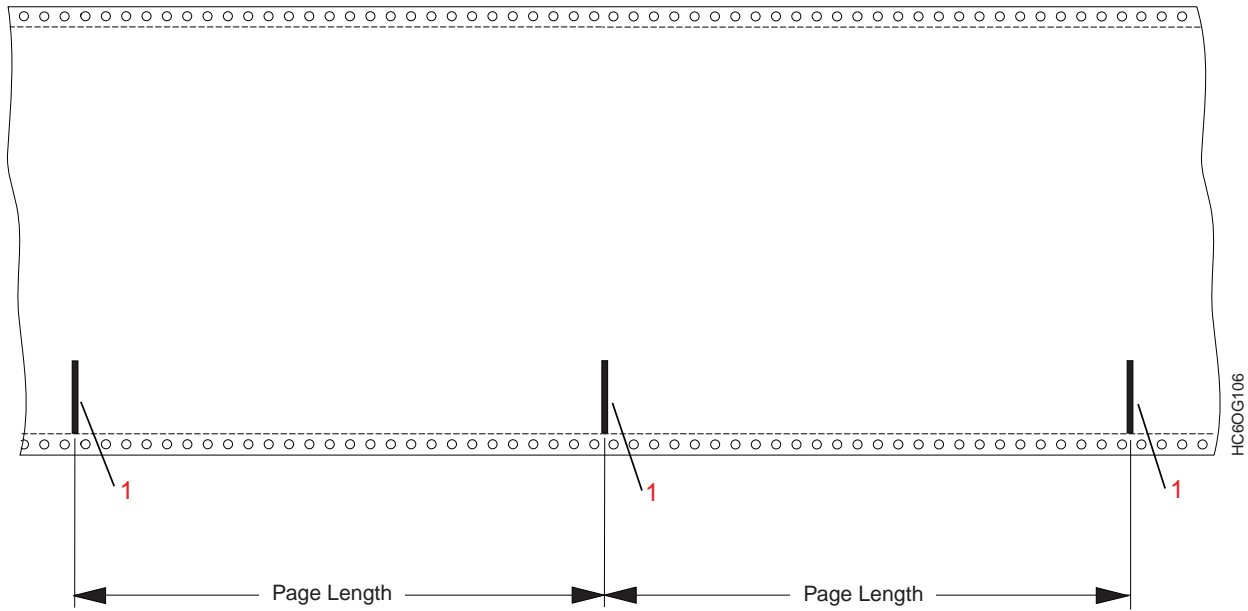
1. From the **Options** pull-down menu, **SELECT Special Features**.
2. **SELECT** the **8B3964** feature.
3. **SELECT** either **Enable** or **Disable**.
4. **SELECT** the **Close** push-button.
5. A restart occurs automatically. Do not attempt any other task until the restart completes.

---

## Mark Perforation on Perfless Paper

When this feature is enabled, a short line (1) is printed on the front edge of the form to indicate the leading edge on perfless paper. Use this line to align the paper in a post processor.

This feature is enabled or disabled by the key operator.



To enable or disable this feature, do the following:

1. From the **Options** pull-down menu, **SELECT Special Features**.
2. **SELECT** the **8B3965** feature.
3. **SELECT** either **Enable** or **Disable**.
4. **SELECT** the **Close** push-button.
5. A restart occurs automatically. Do not attempt any other task until the restart completes.



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## Long Forms

To enable this feature, do the following:

1. From the **Options** pull-down menu, **SELECT Special Features**.
2. For 25-inch length forms, **SELECT** the **8B2929** feature.

**or**

For 28-inch length forms, **SELECT** the **8B2930** feature.

3. **SELECT** the **Install** push-button.
4. **SELECT** the **Enable** push-button.
5. **SELECT** the **Close** push-button.
6. A restart occurs automatically. Do not attempt any other task until the restart completes.



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## Warranty Statements

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## Statement of Warranty - Z1255697-01 11/97

This statement of warranty is valid in all countries with the exception of:

- United States of America (see page 332)
- Canada (see page 332)
- Puerto Rico (see page 332)
- Turkiye (see page 325)

### Part 1 - General Terms

*This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1*

*The warranties provided by IBM in this Statement of Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.*

**Machine** - Infoprint 3000

**Warranty Period\*** - 3 months

*\*Contact your place of purchase for warranty service information. Some IBM Machines are eligible for On-site warranty service depending on the country where service is performed.*

### The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

### Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

### **Items Not Covered by Warranty**

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND**.

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND**.

### **Warranty Service**

To obtain warranty service for the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. Ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. Obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and

3. Where applicable, before service is provided
  - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
  - b. secure all programs, data, and funds contained in a Machine,
  - c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations, and
  - d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

### **Production Status**

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

### **Limitation of Liability**

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than:

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

**UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

## **Statement of Warranty Part 2 - Country-unique Terms**

### **ASIA PACIFIC**

**AUSTRALIA: The IBM Warranty for Machines:** The following paragraph is added to this Section: The warranties specified in this Section are in addition to

any rights you may have under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

**Extent of Warranty:** The following replaces the first and second sentences of this Section: The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

**Limitation of Liability:** The following is added to this Section: Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

**PEOPLE'S REPUBLIC OF CHINA: Governing Law:** The following is added to this Statement: The laws of the State of New York govern this Statement.

**INDIA: Limitation of Liability:** The following replaces items 1 and 2 of this Section: 1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence; 2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

**NEW ZEALAND: The IBM Warranty for Machines:** The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

**Limitation of Liability:** The following is added to this Section: Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

## **EUROPE, MIDDLE EAST, AFRICA (EMEA)**

**The following terms apply to all EMEA countries.**

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

**Warranty Service:** If you purchased an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchased an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

**The following terms apply to the country specified:**

**EGYPT: Limitation of Liability:** The following replaces item 2 in this Section: 2. as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

**FRANCE: Limitation of Liability:** The following replaces the second sentence of the first paragraph of this Section: In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

**GERMANY: The IBM Warranty for Machines:** The following replaces the first sentence of the first paragraph of this Section: The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section: The minimum warranty period for Machines is six months.

In case IBM or your reseller are unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

**Extent of Warranty:** The second paragraph does not apply.

**Warranty Service:** The following is added to this Section: During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

**Production Status:** The following paragraph replaces this Section: Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

**Limitation of Liability:** The following is added to this Section: The limitations and exclusions specified in the Statement of Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.



In item 2, replace "U.S. \$100,000" with "1.000.000 DEM."

The following sentence is added to the end of the first paragraph of item 2: IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

**IRELAND: Extent of Warranty:** The following is added to this Section: Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

**Limitation of Liability:** The following replaces items one and two of the first paragraph of this Section: 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to the greater of Irish Pounds 75,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

**ITALY: Limitation of Liability:** The following replaces the second sentence in the first paragraph: In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: (item 1 unchanged) 2) as to any other actual damage arising in all situations involving non-performance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the second paragraph of this Section:

Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

**SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND:**

**Limitation of Liability:** The following is added to this Section: IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

**TURKIYE: Production Status:** The following replaces this Section: IBM fulfills customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

**UNITED KINGDOM: Limitation of Liability:** The following replaces items 1 and 2 of the first paragraph of this Section: 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; 2. the amount of any other actual direct damages or loss, up to the greater of Pounds Sterling

150,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

The following item is added to this paragraph: 3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default will be limited to damages.

## **NORTH AMERICA**

**CANADA: Warranty Service:** The following is added to this Section: To obtain warranty service from IBM, call **1-800-465-6666**.

**UNITED STATES OF AMERICA: Warranty Service:** The following is added to this Section: To obtain warranty service from IBM, call **1-800-IBM-SERV**.

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## Statement of Warranty - Z1255698-01 11/97

This statement of warranty is valid in Türkiye.

### Part 1 - General Terms

*This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1*

*The warranties provided by IBM in this Statement of Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.*

**Machine** - Infoprint 3000

**Warranty Period\*** - 3 months

*\*Contact your place of purchase for warranty service information. Some IBM Machines are eligible for On-site warranty service depending on the country where service is performed.*

### The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

### Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

**THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM**

**JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.**

### **Items Not Covered by Warranty**

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

### **Warranty Service**

To obtain warranty service for the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. Ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. Obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. Where applicable, before service is provided
  - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
  - b. secure all programs, data, and funds contained in a Machine,

- c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations, and
- d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

### **Production Status**

IBM fulfills customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

### **Limitation of Liability**

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than:

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

**UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

## **Statement of Warranty Part 2 - Country-unique Terms**

### **Production Status**

The following applies to all countries except Germany and Türkiye:

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

## **ASIA PACIFIC**

**AUSTRALIA: The IBM Warranty for Machines:** The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

**Extent of Warranty:** The following replaces the first and second sentences of this Section: The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

**Limitation of Liability:** The following is added to this Section: Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

**PEOPLE'S REPUBLIC OF CHINA: Governing Law:** The following is added to this Statement: The laws of the State of New York govern this Statement.

**INDIA: Limitation of Liability:** The following replaces items 1 and 2 of this Section: 1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence; 2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

**NEW ZEALAND: The IBM Warranty for Machines:** The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

**Limitation of Liability:** The following is added to this Section: Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

## **EUROPE, MIDDLE EAST, AFRICA (EMEA)**

**The following terms apply to all EMEA countries.**

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

**Warranty Service:** If you purchased an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that

Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchased an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

**The following terms apply to the country specified:**

**EGYPT: Limitation of Liability:** The following replaces item 2 in this Section: 2. as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

**FRANCE: Limitation of Liability:** The following replaces the second sentence of the first paragraph of this Section: In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

**GERMANY: The IBM Warranty for Machines:** The following replaces the first sentence of the first paragraph of this Section: The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section: The minimum warranty period for Machines is six months.

In case IBM or your reseller are unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

**Extent of Warranty:** The second paragraph does not apply.

**Warranty Service:** The following is added to this Section: During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

**Production Status:** The following paragraph replaces this Section: Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.



**Limitation of Liability:** The following is added to this Section: The limitations and exclusions specified in the Statement of Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

In item 2, replace "U.S. \$100,000" with "1.000.000 DEM."

The following sentence is added to the end of the first paragraph of item 2: IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

**IRELAND: Extent of Warranty:** The following is added to this Section: Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

**Limitation of Liability:** The following replaces items one and two of the first paragraph of this Section: 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to the greater of Irish Pounds 75,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

**ITALY: Limitation of Liability:** The following replaces the second sentence in the first paragraph: In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: (item 1 unchanged) 2) as to any other actual damage arising in all situations involving non-performance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the second paragraph of this Section:

Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

**SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND:**

**Limitation of Liability:** The following is added to this Section: IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

**UNITED KINGDOM: Limitation of Liability:** The following replaces items 1 and 2 of the first paragraph of this Section: 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; 2. the amount of any other actual direct damages or loss, up to the greater of Pounds Sterling



150,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

The following item is added to this paragraph: 3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default will be limited to damages.

## **NORTH AMERICA**

**CANADA: Warranty Service:** The following is added to this Section: To obtain warranty service from IBM, call **1-800-465-6666**.

**UNITED STATES OF AMERICA: Warranty Service:** The following is added to this Section: To obtain warranty service from IBM, call **1-800-IBM-SERV**.

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## Statement of Limited Warranty - Z1254753-01 11/97

This statement of warranty is valid in the following countries:

- United States of America
- Canada
- Puerto Rico

### Part 1 - General Terms

*This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1*

*The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.*

**Machine** - Infoprint 3000

**Warranty Period\*** - 3 months

*\*Contact your place of purchase for warranty service information. Some IBM Machines are eligible for On-site warranty service depending on the country where service is performed.*

### The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

### Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

**THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED,**

INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

### **Items Not Covered by Warranty**

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND**.

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND**.

### **Warranty Service**

To obtain warranty service for the Machine, contact your reseller or IBM. In the United States call IBM at 1-800-IBM-SERV (426-7378). In Canada call IBM at 1-800-465-6666. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. Ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. Obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. Where applicable, before service is provided

- a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
- b. secure all programs, data, and funds contained in a Machine,
- c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations, and
- d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

### **Production Status**

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

### **Limitation of Liability**

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than:

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

**UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

## **Statement of Warranty Part 2 - Country-unique Terms**

### **ASIA PACIFIC**

**AUSTRALIA:** The IBM Warranty for Machines: The following paragraph is added to this Section: The warranties specified in this Section are in addition to

any rights you may have under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

**Extent of Warranty:** The following replaces the first and second sentences of this Section: The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

**Limitation of Liability:** The following is added to this Section: Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

**PEOPLE'S REPUBLIC OF CHINA: Governing Law:** The following is added to this Statement: The laws of the State of New York govern this Statement.

**INDIA: Limitation of Liability:** The following replaces items 1 and 2 of this Section: 1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence; 2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

**NEW ZEALAND: The IBM Warranty for Machines:** The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

**Limitation of Liability:** The following is added to this Section: Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

## **EUROPE, MIDDLE EAST, AFRICA (EMEA)**

**The following terms apply to all EMEA countries.**

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

**Warranty Service:** If you purchased an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchased an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

**The following terms apply to the country specified:**

**EGYPT: Limitation of Liability:** The following replaces item 2 in this Section: 2. as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

**FRANCE: Limitation of Liability:** The following replaces the second sentence of the first paragraph of this Section: In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

**GERMANY: The IBM Warranty for Machines:** The following replaces the first sentence of the first paragraph of this Section: The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section: The minimum warranty period for Machines is six months.

In case IBM or your reseller are unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

**Extent of Warranty:** The second paragraph does not apply.

**Warranty Service:** The following is added to this Section: During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

**Production Status:** The following paragraph replaces this Section: Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

**Limitation of Liability:** The following is added to this Section: The limitations and exclusions specified in the Statement of Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

In item 2, replace "U.S. \$100,000" with "1.000.000 DEM."

The following sentence is added to the end of the first paragraph of item 2: IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

**IRELAND: Extent of Warranty:** The following is added to this Section: Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

**Limitation of Liability:** The following replaces items one and two of the first paragraph of this Section: 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to the greater of Irish Pounds 75,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

**ITALY: Limitation of Liability:** The following replaces the second sentence in the first paragraph: In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: (item 1 unchanged) 2) as to any other actual damage arising in all situations involving non-performance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the second paragraph of this Section:

Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

**SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND:**

**Limitation of Liability:** The following is added to this Section: IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

**TURKIYE: Production Status:** The following replaces this Section: IBM fulfills customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

**UNITED KINGDOM: Limitation of Liability:** The following replaces items 1 and 2 of the first paragraph of this Section: 1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; 2. the amount of any other actual direct damages or loss, up to the greater of Pounds Sterling



150,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

The following item is added to this paragraph: 3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default will be limited to damages.



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International Business Machines Corporation  
New Orchard Road  
Armonk, NY 10504  
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This Class A digital apparatus complies with Canadian ICES-003.

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### Zulassungsbescheinigung Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen das EG-Konformitätszeichen — CE — zu führen.

Der Außsteller der Konformitätserklärung ist die IBM .....(1)

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 50082-1 und EN 55022 Klasse A.

EN 55022 Klasse A Geräte bedürfen folgender Hinweise:

Nach dem EMVG: "Geräte dürfen an Orten, für die sie nicht ausreichend entstört sind, nur mit besonderer Genehmigung des Bundesministers für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind." (Auszug aus dem EMVG, Paragraph 3, Abs. 4) Dieses Genehmigungsverfahren ist nach Paragraph 9 EMVG in Verbindung mit der entsprechenden Kostenverordnung (Amtsblatt 14/93) kostenpflichtig.

Nach der EN 55022: "Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen."

Anmerkung: Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den Handbüchern angegeben, zu installieren und zu betreiben.

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**Attention:** This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

**CAUTION:**

**This product is equipped with a 3-wire power cord and plug for the user's safety. Use this power cord in conjunction with a properly grounded electrical outlet to avoid electrical shock.**

The following statement applies to this IBM product. The statement for other IBM products intended for use with this product will appear in their accompanying manuals.

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## Glossary

The following terms are defined as they are used in Infoprint 3000 documentation. If you do not find the term you need, refer to the index or to the *IBM Dictionary of Computing*, SC20-1699.

The following cross-references are used in this glossary:

- **Contrast with.** This refers to a term that has an opposed or substantively different meaning.
- **Synonym for.** This indicates that the term has the same meaning as another term, which is defined.
- **Synonymous with.** This identifies terms that are synonyms for the term that is defined.
- **See.** This refers to multiple-word terms that have the same last word.
- **See also.** This refers to related terms that have a similar, but not synonymous, meaning.

### A

**ABIC.** Adaptive Bilevel Image Compression.

**adhesive label.** Special-application material; typically consists of paper labels coated on one side with an adhesive mixture temporarily affixed to backing material. See also *carrier*.

**Advanced Function Common Control Unit (AFCCU).** An IBM RS/6000-based control unit with code common to all printers that use the AFCCU.

**Advanced Function Image and Graphics RPQ.** An optional feature for adding the capability for the Infoprint 3000 to directly process IO1 image and **DR2** vector graphics data streams.

**AEA.** Alternate exception action.

**AFCCU.**

**AFIG.** Advanced Function Image and Graphics.

**AFP.** (1) Advanced Function Printing. (2) Advanced Function Presentation.

**AFPE.** Advanced Function Print Finishing.

**all-points addressability (APA).** The capability to address, reference, and position text, overlays, and images at any defined point on the printable area of a page.

**ANSI.** American National Standards Institute.

**APA.** All-points addressable.

**application.** The use to which an information processing system is put; for example, a payroll application, an airline reservation application, a network application.

**application program.** A program written for or by a user that applies to the user's work, such as a program that does inventory control or payroll.

**application programmer.** A person who develops application programs. Contrast with *system programmer*.

**ARQ.** Active record queue.

**ASCII.** American National Standard Code for Information Interchange.

**ASHRAE.** American Society of Heating, Refrigeration, and Air Conditioning Engineers.

### B

**bar code.** A code representing characters by sets of parallel bars of varying thickness and separation that are read optically by transverse scanning.

**basis weight.** The weight in pounds of a ream (500 sheets) of paper cut to a given standard size for that grade; for example, 25 x 38 inches for book papers, 17 x 22 inches 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.

**BCOCA.** Bar Code Object Content Architecture.

**binder holes.** A series of holes or slots punched at set intervals that allows the form to be inserted in a loose-leaf or ring binder.

**bond (paper).** Paper formulated with at least 80% wood pulp. Bond-paper forms work best in the Infoprint 3000.

**BTS.** Burster/Trimmer/Stacker.

### C

**calender.** A process to make paper smooth or glossy by passing it through a series of metal rollers during the last steps of a paper-making machine.

**calender cut.** Slits, glazed lines, or discolored lines across the paper caused when wrinkles pass through the calender rollers.



**caliper.** The thickness of forms. This is usually expressed in thousandths of an inch.

**carrier.** The backing material for labels. Labels consist of the printable material, the adhesive, and the carrier.

**carrier holes.** The holes in the side margins on continuous-forms paper. When placed on the tractor pins, the holes maintain paper alignment and registration, and control the movement of the paper. Synonymous with *tractor holes*.

**CCITT.** Comité Consultatif International Telegraphique et Telephonique.

**CCW.** Channel command word.

**CE.** Customer Engineer (IBM).

**CGPC.** Canadian Grocery Product Code.

**chad.** (1) The material separated from a data medium when punching a hole. (2) The residue separated from the carrier holes in continuous forms.

**change.** As used in Infoprint 3000 action messages, instructs the printer operator to remove and discard a used component and then install a new one. For example, the CHANGE TONER COLLECTOR message indicates that the operator should take out the toner-collector bottle, throw it away, and put in a new one.

**channel command.** An instruction directing a data channel, control unit, or device to perform an operation or set of operations.

**character.** A letter, number, punctuation mark, or special graphic used for the production of text.

**character set.** (1) A finite set of different characters that is complete for a given purpose; for example, the character set in ISO Standard 646, "7-bit Coded Character Set of Information Processing Interchange." (2) A group of characters used for a specific reason; for example, the set of characters a printer can print.

**check.** As used in Infoprint 3000 action messages, instructs the printer operator to inspect a component. For example, the CHECK TONER COLLECTOR message indicates that the operator should look at the toner-collector bottle and ensure that it is physically present, in the proper place, and correctly installed.

**clear.** As used in Infoprint 3000 action messages, instructs the printer operator to remove crumpled forms, paper scraps, and other debris from the printer. For example, the CLEAR UPPER TRACTOR message indicates that forms are wedged in the transfer station area, and the operator must remove them before the printer can operate.

**coated paper.** Paper that has had a surface coating applied to produce smoothness.

**configuration.** (1) The arrangement of a computer system or network as defined by the nature, the number, and the chief characteristics of its functional units. More specifically, the term configuration may refer to a hardware configuration or a software configuration. (2) The devices and programs that make up a system, subsystem, or network.

**configure.** The procedure used to customize the Infoprint 3000 to a specific operating and communication environment.

**connector.** A means of establishing electrical flow.

**constant data.** Data that does not change; for example, the company letterhead and standard text in form letters, or the headings and boxes on a preprinted form.

**continuous forms.** A series of connected forms that feed continuously through a printing device. The connection between the forms is perforated to allow the user to tear them apart.

**controlled-access area.** An area where access is limited to authorized personnel.

**controlling computer.** The processing unit to which the Infoprint 3000 are attached through a channel interface.

**controlling computer system.** The data-processing system to which a network is connected and with which the system can communicate.

**corner cut.** In a form, a cut or opening of any size containing one or more right angles.

**corona.** 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.

**CSW.** Channel status word.

**cure.** The process of drying ink sufficiently for minimum transfer of the ink to any parts of the printer it contacts.

**cut.** The severed part of a perforation. Cuts are separated by ties.

**cutout.** A part of the form that has been eliminated or perforated for subsequent removal; for example, corner cuts and binder holes.

## D

**DASD.** Direct access storage device.

**data streaming.** A noninterlocked method of data transfer used by the printer channel to decrease data transfer time during write operations.



**DBCS.** Double-byte character set.

**DCF.** Document Composition Facility.

**developed image.** The image that has been exposed onto the photoconductor and covered with toner by the developer.

**developer mix.** A combination of carrier beads and toner in which the beads electrically charge the toner.

**diagnostic.** Pertaining to the detection and isolation of errors in programs and faults in equipment.

**diagnostic mode.** The operational mode in which the printer can check itself in case of a malfunction. When the Infoprint 3000 is in diagnostic mode, it is not accepting information from the attached controlling computer system. In the Infoprint 3000, only service representatives can use diagnostic mode. Contrast with *print mode* and *test mode*.

**direct attach.** The environment in which an application program directly allocates the Infoprint 3000 printing subsystem.

**dishing.** The curve a stack of forms takes when folded or refolded at the fold perforation.

**diskette.** A thin, flexible, magnetic disk enclosed in a protective jacket.

**Document Composition Facility (DCF).** An IBM licensed program that provides text formatting for the Infoprint 3000.

**double-byte character set (DBCS).** A set of characters in which each character is represented by a 2-byte code. Languages such as Japanese, Chinese, and Korean, which contain more symbols that can be represented by 256 code points, require double-byte character sets. Because each character requires 2 bytes, the typing, display and printing of DBCS characters requires hardware and programs that support DBCS.

**down fold.** Fanfold forms are alternately folded. When fanfold forms are unfolded and held horizontally, a fold is a down fold if it points down from the horizontal surface.

**DPE.** Decompression Performance Enhancement.

**drag.** The resistance to forms feeding freely into the printer; for example, the form rubbing against the carton.

**duplex printing.** A mode of printing on both sides of a form. Contrast with *simplex printing*.

## E

**EBCDIC.** Extended Binary-Coded Decimal Interchange Code.

**EC.** Engineering change.

**electronic overlay.** A collection of constant data electronically composed in the controlling computer. Can be merged with variable data on a page during printing. An electronic overlay defines its own environment. It can be in coded form or raster pattern form. See also *preprinted form*.

**electrophotographic process.** The creation of an image on forms by uniformly charging the photoconductor, creating an electrostatic image on the photoconductor, attracting negatively charged toner to the discharged areas of the photoconductor, and transferring and fusing the toner to forms.

**emboss.** To press and raise the surface of paper into a design. Embossed paper appears thicker than nonembossed paper, can increase printer wear, and can degrade print quality.

**end-of-forms sensor.** A sensor that detects when the last sheet of a form enters the printer.

**error log.** (1) A data set or file in a product or system where error information is stored for later access. (2) A record of machine checks, device errors, and volume statistical data.

**ESCON.** Enterprise System Connection.

**ESCON channel.** A channel having an Enterprise Systems Connection channel-to-control-unit I/O interface that uses optical cable as a transmission medium.

**ESMM.** End Select Medium Modification.

**Ethernet.** A local area network that allows attachments to transmit on the network without prior coordination.

## F

**fanfold.** Continuous forms that are alternately folded at regular intervals, usually on a perforation.

**Fiber Distributed Data Interface (FDDI).** An ANSI standard for a 100 Mbps LAN using optical fiber cables.

**FLSE.** Font Library Service Facility.

**fold memory.** The ability of a form to refold at the fold perforation after exposure to heat during the fusing process.

**fold perforation.** The perforation on which a form is folded during manufacture and refolded after printing. See also *page perforation*.

**Font Library Service Facility (FLSF).** A licensed program that provides a way to make changes to a font

while retaining its correct format, as defined by the architecture and as required by Print Services Facility.

**format.** (1) The arrangement or layout of data on a data medium. (2) The size, style, type of page, margins, printing requirements, and so on, of a printed page.

**FORMDEF.** Form definition.

**forms.** The material on which output data is printed, such as paper or adhesive labels. The area between perforations on continuous printer forms. See *electronic overlay* and *preprinted form*.

**forms path.** The entire route that forms travel during processing. The forms path usually begins where the forms are loaded and ends at the stacker. Synonym for *paper path*.

**form definition (FORMDEF).** A statement that specifies the attributes of a physical page, such as the number of copies and one-sided or two-sided printing.

**fuse.** To use heat and pressure to blend toner onto forms to make a permanent bond.

## G

**GCGID.** Graphic Character Global Identifier.

**GCSGID.** Graphic Character Set Global Identifier.

**GDDM.** Graphical Data Display Manager.

**GOCA.** Graphics Object Content Architecture.

**graphic.** A symbol produced by a process such as handwriting, drawing, or printing. See also *vector graphics*.

**grayed out.** Indicates that a Display/Touch Screen selection is not active and cannot be selected. For example, the Check Reset push-button is grayed out when the printer is in Ready status.

**Graphical Data Display Manager (GDDM).** An IBM licensed program that allows pictures to be defined and displayed through function routines.

## I

**IBM branch office.** The local IBM sales office.

**IBM Customer Engineer (CE).** An IBM service representative who performs maintenance services for IBM hardware.

**IBM Installation Planning Representative.** An IBM representative who assists customers in planning and meeting the requirements for installing hardware.

**IBM Marketing Representative.** An IBM representative who takes product orders.

**IBM MMR.** Similar to MMR 2-dimensional image compression algorithm.

**IBM Service Representative.** An IBM representative who services IBM products in the field.

**IBM World Trade Corporation.** A subsidiary of IBM that manufactures and markets IBM products outside of the United States of America.

**IHF.** Image Handling Facility.

**IML.** Initial microcode load.

**impact printer.** A printer in which printing is the result of mechanical impacts. Contrast with *nonimpact printer*.

**installation.** (1) In system development, preparing and placing a functional unit in position for use. (2) A particular computing system, including the work it does and the people who manage it, operate it, apply it to problems, service it, and use the results it produces.

**installation verification procedure.** A procedure distributed with IBM licensed programs that tests the newly installed IBM programs to verify that the basic facilities of the programs are functioning correctly.

**Intelligent Printer Data Stream (IPDS).** Information the system sends to printers that contains decision-making capability. Generally, this information contains basic formatting, error recovery, and character data.

**I/O.** Input/Output.

**IOCA.** Image Object Content Architecture.

**IPDS.** Intelligent Printer Data Stream.

**IPL.** Initial program load.

**IPM.** Impressions per minute.

**ISO sizes.** Pertaining to a set of paper sizes selected from those standardized by the International Organization for Standardization (ISO) for use in data processing.

## J

**jam.** In a printer, a condition where forms have become blocked or wedged in the forms path so the printer cannot operate.

**JES2.** An MVS subsystem that receives jobs into the system, converts them to internal format, selects them for running, processes their output, and purges them from the system. In an installation with more than one processor, each JES2 processor independently controls its job input, scheduling, and output processing.

**JES3.** An MVS subsystem that receives jobs into the system, converts them to internal format, selects them for running, processes their output, and purges them from the system. In complexes that have several loosely coupled processing units, the JES3 program manages processors so that the global processor exercises centralized control over the local processors and distributes jobs to them via a common job queue.

## K

**KB.** Kilobyte (1KB=1 024 bytes).

## L

**LAN.** Local area network.

**landscape orientation.** Text and images that are printed parallel to the longer side of the forms.

**laser (light amplification by stimulated emission of radiation).** A device that emits a beam of coherent light.

**latent image.** In a printer, the invisible image that exists in the sensitized material after exposure but before development.

**layout plan.** A list of requirements, such as electrical and space, that must be considered before installing the IBM Infoprint 3000.

**library.** A collection of related files. For example, one line of an invoice may form an item, a complete invoice may form a file, and the collection of inventory control files may form a library. The libraries used by an organization are known as the data bank.

**licensed program.** A separately priced program that bears an IBM copyright and is offered to customers under the terms and conditions of the Agreement for IBM Licensed Programs.

**line printer.** A printer that prints a line of characters as a unit. Contrast with *page printer*.

**logical page.** The print on the page, such as composed text, graphics, and fonts within defined margins.

**logo.** An identifying emblem, statement, or motto of a company.

## M

**MB.** Megabyte (1MB=1 048 576 bytes).

**MICR.** Magnetic ink character recognition.

**microcode.** In the Infoprint 3000, refers to the microprogramming stored on the microcode (or EC)

diskette. Microcode is used by the control unit to manage the printer and its functions.

**microperforation.** Extremely small perforations. After forms are separated, those with microperforations typically have smoother edges than those with regular perforations.

**MIH.** Missing interruption handler.

**MMR.** Modified-Modified READ; 2-dimensional image compression algorithm. Also referred to as CCITT Group 4.

**MR.** Modified READ; (READ=Relative Element Address Designate) 2-dimensional image compression algorithm. Also referred to as CCITT Group 3.

**Multiple Virtual Storage/System Product (MVS/SP).** Consisting of MVS/System Product Version 1 and the MVS/370 Data Facility Product operating on a System/370 processor.

## N

**nonimpact printer.** A printer in which printing is not the result of mechanical impacts. Contrast with *impact printer*.

**nonprocess runout (NPRO).** An operation that moves forms through the forms path without printing.

## O

**OCR.** Optical character recognition.

**offset paper.** A grade of paper to which sizing is added to resist moisture and surface during printing by ink presses.

**OGL.** Overlay Generation Language.

**operating environment.** The physical environment; for example, temperature, humidity, layout, or power requirements.

**operating requirements.** A list of requirements, such as environmental, electrical, and space, that must be satisfied before the IBM Infoprint 3000 can be installed.

**Operating System/Virtual Storage (OS/VS).** A compatible extension of the IBM System/360 Operating System that supports hardware and the extended control facilities of System/370

**optical character recognition (OCR).** Character recognition that uses optical means to identify graphic characters.

**orientation.** The number of degrees an object is rotated relative to a reference; for example, the

orientation of an overlay relative to the page point of origin. See also *text orientation*.

**OS/VS.**

**overlay.** See *electronic overlay*.

**Overlay Generation Language/370 (OGL/370).** The licensed program that is used to create electronic overlays.

## P

**page.** A printed form. See also *logical page* and *physical page*.

**page definition (PAGEDEF).** A statement that specifies attributes of a logical page, such as the width of its margins and the orientation of text.

**page perforation.** The perforation that defines the page of a form. It may or may not be at a fold in the form. A form may have several pages between each fold. See also *fold perforation*.

**page printer.** A device that prints one page as a unit. Contrast with *line printer*.

**Page Printer Formatting Aid (PPFA).** A licensed program that creates form definitions (FORMDEFs) and page definitions (PAGEDEFs).

**pallet.** A portable platform for handling, storing, or moving materials.

**paper break.** A separation, either at a perforation or from a tear, of the continuous-forms paper.

**paper path.** The entire route that forms travel while they are being processed. The paper path usually begins where the forms are loaded and ends at the stacker. Because not all forms are paper, the term *forms path* is preferred.

**parallel channel.** A channel having a System/360 or System/370 channel-to-control unit interface that uses bus-and-tag cables as a transmission medium. Contrast with *ESCON channel*.

**parameter.** A variable that is given a constant value for a specified application and that may denote the application.

**PC.** Photoconductor.

**PC drum.** A hollow cylinder that is covered with photoconductive material.

**pel (picture element).** (1) An element of a raster pattern; a point where a toned area on the photoconductor may appear. (2) On an all-points-addressable output medium, each pel is an

addressable unit. On a row-column addressable output medium, the only pel addressable is the beginning of a character cell.

**PEM.** Print-error marker.

**perforation.** A linear series of unconnected cuts in the continuous-forms paper. The interval between cuts is referred to as a tie. The perforation defines either a fold or page boundary. See also *cut*, *fold perforation*, *microperforation*, and *page perforation*.

**photoconductor.** The material that is wrapped about the drum. The medium for transferring images to paper.

**physical page.** The form on which the printer is printing, such as an 8½ x 11-inch sheet of paper.

**physical planner.** The person in an organization who plans the environmental, electrical, and space requirements for your facility.

**planning coordinator.** The person in your organization who is responsible for coordinating all the planning and installation activities for the Infoprint 3000.

**plant.** A manufacturing location.

**PMF.** Print Management Facility.

**point of origin.** The location of the first print position on a logical page. The point of origin is usually stated in terms of X and Y coordinates. The point of origin used by a printer can be affected by factors such as printable area and forms orientation.

**portrait orientation.** Pertaining to a display or hard copy with greater height than width.

**PPFA.** Page Printer Formatting Aid.

**preprinted form.** A sheet of forms containing a preprinted design of constant data with which variable data can be combined. See also *electronic overlay*.

**Print Management Facility (PMF).** An interactive menu-driven program that can be used to create and modify fonts and to define output formatting for data printed on the IBM Infoprint 3000.

**print mode.** The operational mode in which information is received from the attached controlling computer system and printed output is produced. Contrast with *test mode* and *diagnostic mode*.

**print position.** The physical positions of the characters constituting a print line relative to the form.

**print quality.** The quality of printed output relative to existing standards and in comparison with jobs printed earlier.

**Print Quality Enhancement (PQE).** A printer facility that provides edge smoothing along diagonal lines, fine fidelity protection, and independent boldness control.

**Print Services Access Facility (PSAF).** A menu-driven, print-parameter selection program for page printers controlled by PSF.

**print surface.** The side of a form that receives the printed image.

**printer utility module (PUM).** A section of Printer 1 in a duplex configuration. It includes:

- Operator alert assembly
- Power control panel
- System interconnection electronics
- Preprocessing/postprocessing device interfaces

**PSF.** Print Services Facility.

## R

**RAM.** Random access memory.

**raster.** (1) In computer graphics, a predetermined pattern of lines that provides uniform coverage of a display space. (2) The coordinate grid that divides the display area of a display device. (3) In the Infoprint 3000 Printer Subsystem, an on/off pattern of electrostatic images produced by the laser print head under control of the character generator.

**raster pattern.** A series of picture elements (pels) arranged in scan lines to form an image.

**registration.** In printing, refers to the relative print positions of images that are printed at different times. For example, when you process preprinted forms, the registration is good if the new image printed by the Infoprint 3000 aligns correctly with the preprinted image. Print that extends beyond box edges and text that overlaps other text are examples of poor registration.

**resource.** (1) People, equipment, or material used to perform a task or a project. (2) Any facility of a computing system or operating system required by a job or task, including main storage, input/output (I/O) devices, processing units, data sets, and controller processing programs; for example, page printers use resources such as form definitions, page definitions, and fonts.

**reverse heading.** A heading where each character is highlighted by reversing the color of the character with its background; for example, changing a black character on a white background to a white character on a black background.

**RPQ.** Request for price quotation.

## S

**SBCS.** Single-byte character set.

**scanner.** A device that examines OCR, graphics, MICR, or bar-code patterns and generates electrical signals corresponding to the pattern. It sends the signals to a computing device for processing.

**screen or screening.** In document printing, a sheet of material, usually film, carrying a regular pattern of small dots. When printing, ink adheres only to the dots, and many dots close together appear solid. This method prints large areas of ink on paper but uses much less ink than printing the same area with solid ink.

**SCSW.** Subchannel status word.

**SDLC.** Synchronous Data Link Control.

**security paper.** Specially formulated paper used for negotiable documents, such as checks, which improves the anti-fraud characteristics of the document.

**shift.** A scheduled work period. For example, a 24-hour day is often divided into three 8-hour shifts.

**simplex printing.** Pertaining to printing on only one side of a form. Contrast with *duplex printing*.

**single-byte character set (SBCS).** A character set in which each character is represented by a 1-byte code.

**sizing.** A process where paper is treated to give it resistance against penetration of liquids.

**SMM.** Select Medium Modification.

**SNA.** System Network Architecture.

**special-purpose materials.** Printable items other than blank forms; for example, adhesive labels and preprinted forms.

**stack lean.** A measurable slope from the vertical of a stack of forms. Excessive stack lean can cause failures when feeding and refolding forms.

**Synchronous Data Link Control (SDLC).** For managing synchronous, code-transparent, serial-by-bit, information transfer over a link connection.

**system reference code (SRC).** A code that contains information, such as a failing field-replaceable unit, for a customer engineer.

**system programmer.** A programmer who plans, generates, maintains, extends, and controls the use of an operating system, with the aim of improving overall productivity of an installation. Contrast with *application programmer*.



**System/370.** An upward-compatible extension of the IBM System/360. A large collection of computing system devices that can be combined to produce a wide range of computing systems that share many characteristics, including a common machine language.

## T

**task.** A basic unit of work to be accomplished by a device or an operator.

**TCP/IP.** Transmission Control Protocol/Internet Protocol. A set of communication protocols that support peer-to-peer connectivity functions for both local and wide area networks.

**TCS.** Two-channel switch.

**tensile strength.** A measure of the force that the paper forms can withstand without tearing.

**test mode.** The operational mode in which the printer can produce print samples, accept configuration changes, and control traces. When the Infoprint 3000 are in test mode, they are not accepting information from the attached controlling computer system. Contrast with *print mode* and *diagnostic mode*.

**text orientation.** The position of text as a combination of print direction and baseline direction.

**tie.** The interval between cuts of a perforation.

**token.** In a local area network, a particular message or bit pattern passed successively from one attaching device to another to indicate which attachment has permission to transmit.

**token ring.** A network with a ring topology that passes tokens from one attaching device to another.

**toner.** The material that forms the image on the paper.

**trace.** (1) A record of the running of a computer program. It exhibits the sequences in which the instructions were executed. (2) To record a series of events as they occur. (3) In the Infoprint 3000, a customer engineer and customer analysis procedure.

**tractor.** The mechanism that controls movement of continuous forms by way of holes.

**tractor holes.** The holes in the side margins on continuous forms. When placed on the tractor pins, the holes maintain printer alignment and registration, and control the movement of the paper.

**Two-channel switch (TCS).** A hardware facility that allows an input or output device to be attached to two channels. In a **3900** Advanced Function Printing System, this facility is automatically supplied when two System/370 Parallel channels are installed.

## U

**up fold.** Fanfold forms are alternately folded. When fanfold forms are unfolded and held horizontally, a fold is an up fold if it points up from the horizontal surface.

## V

**variable data.** The data that can vary; for example, the names and addresses in form letters.

**vector graphics.** Computer graphics in which display images are generated from display commands and coordinate data. Contrast with *raster pattern*.

**Virtual Storage Extended (VSE).** An operating system that is an extension of Disk Operating System/Virtual Storage (OS/VS).

**Virtual Storage Extended/Advanced Functions (VSE/AF).** The minimum operating system support for a VSE-controlled installation.

**VSE/SP.** Virtual Storage Extended/System Product.

**void.** (1) A missing part of the printed character. (2) A missing piece of a continuous form.

## X

**X-axis.** In printing, the axis perpendicular to the direction in which the paper moves through the printer.

## Y

**Y-axis.** In printing, the axis parallel with the direction in which the paper moves through the printer.

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