
Xerox DocuPrint Network Printer Series Troubleshooting Guide for Models 4850/4890 NPS

**THE DOCUMENT COMPANY
XEROX**

Version 7.1
August 2000
721P86741

Xerox Corporation
701 S. Aviation Boulevard
El Segundo, CA 90245

©1997, 1998, 1999, 2000 by Xerox Corporation. All rights reserved.

Copyright protection claimed includes all forms and matters of copyrightable material and information now allowed by statutory or judicial law or hereinafter granted, including without limitation, material generated from the software programs which are displayed on the screen, such as icons, screen displays, looks, etc.

Printed in the United States of America.

Publication number: 721P86741

Xerox® and all Xerox products mentioned in this publication are trademarks of Xerox Corporation. Products and trademarks of other companies are also acknowledged.

Changes are periodically made to this document. Changes, technical inaccuracies, and typographic errors will be corrected in subsequent editions.

Laser safety



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

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

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

Ozone information

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

Operation safety

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

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



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

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

-
- Always place equipment on a solid support surface with adequate strength for its weight.
 - Always use materials and supplies specifically designed for your Xerox equipment. Use of unsuitable materials may result in poor performance and may create a hazardous situation.
 - Never move either the printer or the Printer Controller without first contacting Xerox for approval.
 - Never attempt any maintenance that is not specifically described in this documentation.
 - Never remove any covers or guards that are fastened with screws. There are no operator-serviceable areas within these covers.
 - Never override electrical or mechanical interlocks.
 - Never use supplies or cleaning materials for other than their intended purposes. Keep all materials out of the reach of children.
 - Never operate the equipment if you notice unusual noises or odors. Disconnect the power cord from the electrical outlet and call service to correct the problem.

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

1-800-828-6571

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

Table of contents

Laser safety	iii
Ozone information	iii
Operation safety	iii
Introduction	vii
About this guide	vii
Contents	vii
Conventions	viii
Related publications	ix
1. Calling for service	1-1
Information to have on hand when calling for service	1-1
Enabling and disabling the modem for remote service	1-2
2. Troubleshooting Xerox Client Software installation	2-1
3. Troubleshooting a Novell implementation	3-1
4. Clearing paper misfeeds and jams	4-1
Clearing a feeder tray fault	4-1
Frequent misfeeds	4-3
Clearing paper jams	4-4
Job recovery	4-6
Printer jam clearance areas	4-7
Clearing paper jams from areas 1 and 1A	4-8
Clearing paper jams from areas 2 and 2A	4-9
Clearing paper jams from area 3	4-12
Clearing paper jams from area 4	4-13
Clearing paper jams from area 5	4-15
Clearing paper jams from areas 6 and 6A	4-16
Clearing paper jams from area 7	4-18
Clearing paper jams from area 8	4-20
Clearing paper jams from area 9	4-21
Clearing stitcher/stacker paper jams (areas A and B)	4-22
Clearing bypass transport paper jams (4890 only)	4-23
Adjusting dual stacker tray scuffer arms	4-24

5. Using sample documents	5-1
Listing and printing sample documents	5-1
List Sample Documents	5-1
Print Sample Document	5-2
6. Adjusting print quality and speed	6-1
Adjusting print quality on DocuPrint Models 4890 NPS and 4850 NPS	6-1
Measuring performance	6-2
Calculating throughput	6-4
Minimizing the start-up latency	6-6
Setting page order	6-9
Product features that affect print quality	6-9
Proprietary PostScript extensions	6-9
Device-dependent operators	6-10
Gray shading—setscreen and setcolorscreen	6-10
Gray shading—settransfer and transfer function	6-10
Smooth curves—setflat	6-11
Invisible strokes—0 setlinewidth	6-11
Scan conversion—fill, eofill, and stroke	6-11
7. Correcting stacking problems	7-1
8. System unresponsive	8-1
Index	INDEX-1

This *Xerox DocuPrint Network Printer Series Troubleshooting Guide* describes how to solve some specific problems that may occur when you are using the Xerox DocuPrint 4850 and 4890 Network Printing System (NPS).

About this guide

This guide is designed for Xerox DocuPrint 4850 and 4890 NPS operators whose job consists of the routine operation of one of these systems.

Users should have an understanding of Printer Controller operations.

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

Contents

This section lists the contents of this guide:

- Chapter 1, “Calling for service,” describes the information to have on hand when calling for support service.
- Chapter 2, “Troubleshooting Xerox Client Software installation,” provides solutions to common problems with software installation.
- Chapter 3, “Troubleshooting a Novell implementation,” describes some ways to troubleshoot a Novell implementation by viewing log messages.
- Chapter 4, “Clearing paper misfeeds and jams,” illustrates how to clear paper misfeeds and jams from various parts of the paper path.
- Chapter 5, “Using sample documents,” describes how you can print sample documents to test the printing capability of your system.
- Chapter 6, “Adjusting print quality and speed,” provides various methods for optimizing print quality and speed.
- Chapter 7, “Correcting stacker problems,” provides solutions to common stacker problems.
- Chapter 8, “System unresponsive,” provides solutions to specific printer problems.

Conventions

This guide uses the following conventions:

- All caps and angle brackets—Within procedures, the names of keys are shown in all caps within angle brackets (for example, press <RETURN>).
- Angle brackets—Variable information, or the position of a specified argument in the command syntax, appears in angle brackets (for example, List Fonts <Pattern>).
- **Bold**—Within procedures, text and numbers that you enter are shown in bold (for example, enter **privilege operator**).
- “Enter”—Within procedures, the two-step process of keying in data and pressing <RETURN> (for example, enter y).
- *Italics*—Document and library names are shown in italics (for example, the *Xerox DocuPrint Network Printer Series Troubleshooting Guide*).
- Quotes—Keywords you can enter as arguments appear in quotes (for example, “USLetter”).
- Vertical bars—Alternatives to specified arguments are separated by vertical bars (for example, Set Time <Time | Remote Host Name | IP Address>).



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



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



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

Related publications

The Xerox DocuPrint Network Printer Series includes the following documents:

Decomposition Service and Tools Guide

Guide to Configuring and Managing the System

Guide to Managing Print Jobs

Guide to Performing Routine Maintenance

Guide to Submitting Jobs from the Client

Guide to Using Page Description Language

Installation Planning Guide

Messages Guide

System Overview Guide

Troubleshooting Guide

Glossary

Master Index

Customer Information Quick Reference Card

Printer Controller Commands Quick Reference Card

Submitting your Jobs from Macintosh Quick Reference Card

Submitting your Jobs from UNIX & DOS Quick Reference Card

Submitting your Jobs from Windows NT 4.0 (QuickPrint) Quick Reference Card

Submitting your Jobs Using Windows NT 4.0 Drivers Quick Reference Card

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

1. Calling for service

Before calling your customer service support center, make sure you have read this chapter and have tried the corrective actions described here. If the problem persists, gather the necessary information and call the customer support center.

Information to have on hand when calling for service

To report DocuPrint hardware or software problems in the United States, call the following number:

1-800-822-2979

For customers outside the United States, call your local service representative.



Note: A model-specific phone number is attached to your printer at installation time.

Before calling, make note of the following:

- Status code numbers and messages that appear on the controller screen and the printer console
- Indicator lights that are lit
- Name of your printer: DocuPrint 4850/4890 NPS
- Serial number for your printing system.
- Problems you are having with the system.

Additional information you may wish to note prior to calling includes:

- An explanation of how output differs from what was expected.
- An assessment of whether the symptoms follow a pattern or occur randomly.
- A list of special conditions that may be related to the problems:
 - New applications
 - Changes made to the software
 - Recent service performed
 - Previous conditions under which the application has printed properly.

Give this information to a customer service representative, who will discuss the information and give you an estimated time of arrival or assist you over the phone to resolve the problem.

Enabling and disabling the modem for remote service

Your system may be set up to use Sixth Sense Technology—a remote communication capability. Sixth Sense Technology is a suite of tools that allow service personnel to connect with a system and evaluate its performance. The service person can troubleshoot problems remotely, transfer, apply, and remove patches remotely, and, if an on-site call is required, arrive with the solution to fix the problem.

An external modem allows your system to be accessed by remote service technicians.

You may be instructed to enable the modem so that the technician can dial into your system. Prior to enabling the modem, be sure to use the Stop All command so that printing and queueing are stopped during the remote service session.

When the remote service session is complete, disable the modem and enter the Start All command to resume printing and queueing.

Refer to the *Guide to Configuring and Managing the System* chapter “Using utility commands” for more information on the commands used for remote service.

If security is a concern, you can turn off the modem, or you can physically disconnect the cable from the system when it is not being used.



Caution: Depending on the commands used by the technician, the printer may start up during the remote service session. You should not attempt to operate the system or perform any tasks at the printer during the remote service session.

2. Troubleshooting Xerox Client Software installation

If you are unable to install the Xerox Client Software, or if you install it and all requests submitted fail, try the following:

- Make sure the Xerox Client print command does not clash with the local print command on the client system. To verify this, at the prompt (or on a new shell window prompt, for Sun clients), enter `print`. You should see the usage message for the Xerox Client print command.

If not, make sure the environment variable `path` includes the subdirectory `/usr/xerox/nps/client/bin` and `/usr/bin` before the subdirectory containing the local print command. Also, resolve any print command aliases that might be set in the `.cshrc` file.

If you see the message “Server or Directory Unreachable” after executing a print command, perform the following steps:

1. If the Printer Controller software is newly installed, verify that job processing has been started at the Printer Controller.
 2. At the client, verify the host file exists and contains the Printer Controller name and TCP/IP address.
 3. Verify the network connections between the Printer Controller and the client. Enter **ping <Printer Controller name>**; if that fails, **enter ping <Printer Controller name TCP/IP address>**. Verify that the TCP/IP address of the Printer Controller is the same as the one in the host file on the client.
 4. Check for hardware problems.
- Verify that the `cconf` file (`/usr/xerox/nps/client/cconf`) contains the default Printer Controller name that most recently performed the client installation. Try submitting requests to another Printer Controller by using the server override switch in the print command.
 - If you are unable to install the software, make sure the client hard disk meets the minimum requirements. Otherwise, you may run out of disk space during the installation, and you may get misleading error messages.

The following table, “*Xerox Client Software installation error messages*” provides a reference to error messages that may display during installation of Xerox Client Software.

Table 2-1. **Xerox Client Software installation error messages**

Error message	Description
Installation not complete. Problems may have occurred during the transfer of files. Please verify that all files have been transferred and contact your system administrator for assistance.	Appears if any of the client files are missing at the end of installation.
Usage: <Printer__Controller__Name> or Usage: instsun4 <Printer__Controller__Name> or Usage: instsun3 <Printer__Controller__Name> or Usage: instult <Printer__Controller__Name>	Appears when the Printer Controller Name is not used as the argument to the installation commands. The <Printer__Controller__Name> is the name of the Printer Controller that the installation commands use to install the Client Software.
The attempt to communicate to the <Print__Controller__Name> has failed. Make sure the name <Print__Controller__Name> is correct. Make sure your /etc/hosts file contains correct information. Make sure the machine is operational and is in the network mode.	UNIX clients only. Indicates that the installation script's attempt to communicate with the Printer Controller has failed.
Problems may have occurred in ftp to the Print Server. Verify disk space. If the problem still exists, contact your system administrator for assistance.	UNIX clients only. Indicates problems occurred while using ftp to the Printer Controller to retrieve client files.
Problems may have occurred in setting permissions for the executables. You have to be at the super user level to install. Please contact your system administrator for assistance.	UNIX clients only. Indicates that the installation script's attempt to set permissions for the executables in /usr/xerox/client/nps/bin has failed.
Problems may have occurred in making the commands available. Please contact your system administrator.	UNIX clients only. Indicates that the installation script's attempt to copy the executables in /usr/xerox/client/nps/bin to /usr/bin has failed.
Unable to set permission for dir <path>. You have to be at the super user level to install. Contact your system administrator for assistance.	UNIX clients only. Indicates that the installation script's attempt to set permission for the client directory structure has failed. Make sure that you are executing the installation script at the super user level.

3. Troubleshooting a Novell implementation

The following tables describe some ways to troubleshoot a Novell implementation from the log messages that appear in the DocuPrint NPS log /varnag/DocuPrint.

Table 3-1. PSERVER problems

Problem	Probable Cause	Resolution
Log message says there is a problem locating a NetWare server.	<p>DocuPrint is not getting SAP packets for the server.</p> <ul style="list-style-type: none"> • There is a basic connectivity or routing problem. • The framing type has been set incorrectly during installation. • The file server name has been set incorrectly during installation. 	<p>If there is an external connectivity problem:</p> <ul style="list-style-type: none"> • Check Novell file server console screen for messages. • Check that the server is running and connected to the network. <p>If it is an incorrect framing type or server name, your Xerox service representative must change the configuration on the DocuPrint NPS Printer Controller.</p>
Log message says there is an error in connecting to the file server.	<p>DocuPrint NPS is getting SAP packets with information about the server, but cannot communicate with it.</p> <ul style="list-style-type: none"> • There is a basic connectivity or routing problem. • DocuPrint NPS has an incorrect network number. 	<p>If there is an external connectivity problem:</p> <ul style="list-style-type: none"> • Check Novell file server console screen for messages. • Check that the server is running and connected to the network. <p>If it is an incorrect network number, your Xerox service representative must change the configuration on the DocuPrint NPS Printer Controller</p>
Log message says there is a failure to log in.	<p>Password problem.</p> <ul style="list-style-type: none"> • Server does not accept unencrypted logins • DocuPrint NPS does not have the correct password. 	<p>If the server is not properly configured, enter SET ALLOW UNENCRYPTED PASSWORDS=ON at the server console.</p> <p>If DocuPrint has the wrong password, your Xerox service representative must change the password.</p>

Table 3-1. **PSERVER** problems (continued)

Problem	Probable Cause	Resolution
Log message indicates failure to login and password settings are correct.	A PSERVER with DocuPrint's PSERVER name is running on the file server or on another machine (this could even be another DocuPrint configured to use the same PSERVER name). The file server should only have a PSERVER defined with the same name as the DocuPrint PSERVER, there should not be an instance of PSERVER running under that PSERVER definition.	Stop the PSERVER instance.
Log message says "Error finding queue."	Queue not created.	At the file server, create the queue, set up the printer for the PSERVER and be sure it will service the appropriate queue.
Log message says "Netware PServer <name> not found."	The PSERVER has not been defined on the file server.	Define a PSERVER with the correct name on the file server and restart the system.
Log message says that there was an error attaching to the queue.	DocuPrint does not have access to the queue.	Ensure that there is a printer defined for the PSERVER on the file server and that the printer is defined to service the desired queue.

The following table describes troubleshooting RPRINTER problems.

Table 3-2. **RPRINTER** problems

Problem	Probable Cause	Resolution
<p>Log message says:</p> <ul style="list-style-type: none"> • "Cannot locate any Netware print server from the net." • "Requested server <name> not responding." 	<p>DocuPrint NPS is not getting SAP packets advertising the print server.</p> <ul style="list-style-type: none"> • There is a basic connectivity or routing problem. • The incorrect framing type has been set. • The print server is not running. For RPRINTER, there must be a PSERVER running on the file server with the name specified to DocuPrint NPS at installation time. 	<p>If there is an external connectivity problem: PSERVER should work when it is repaired.</p> <p>If it is an incorrect framing type, your Xerox service representative must change the configuration on the DocuPrint NPS Printer Controller.</p> <p>If print server is not running, start one.</p>

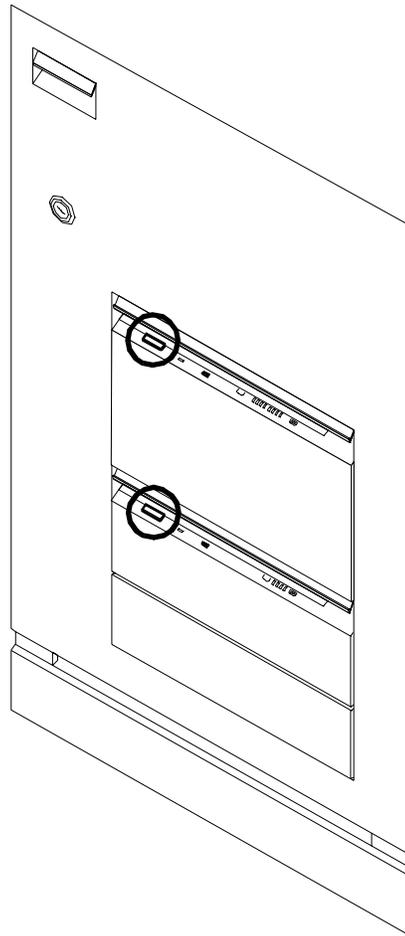
4. Clearing paper misfeeds and jams

Paper jams and misfeeds can be greatly reduced or eliminated if you use the correct type of paper under the right conditions. Refer to *Helpful Facts About Paper* for information on paper selection and care.

Clearing a feeder tray fault

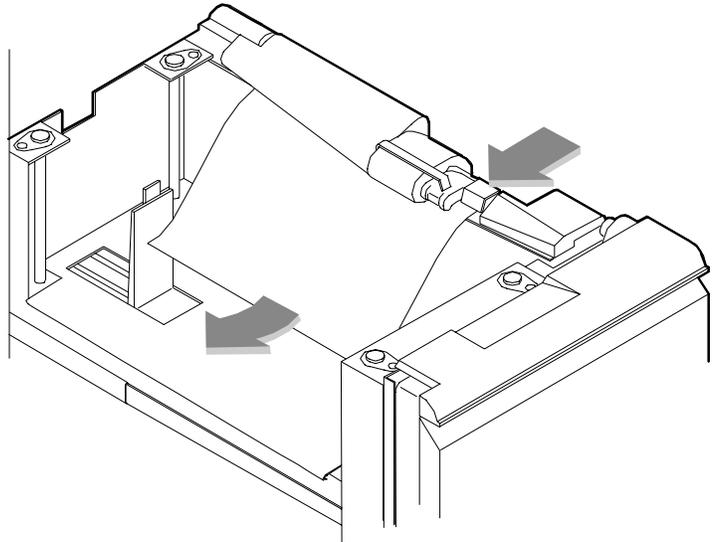
When paper is misfed from the paper trays, complete the following steps:

1. Go to the paper tray indicated by the message and graphic displays of the printer control console.
2. Press the Tray Unlock button on the front left of the paper tray.

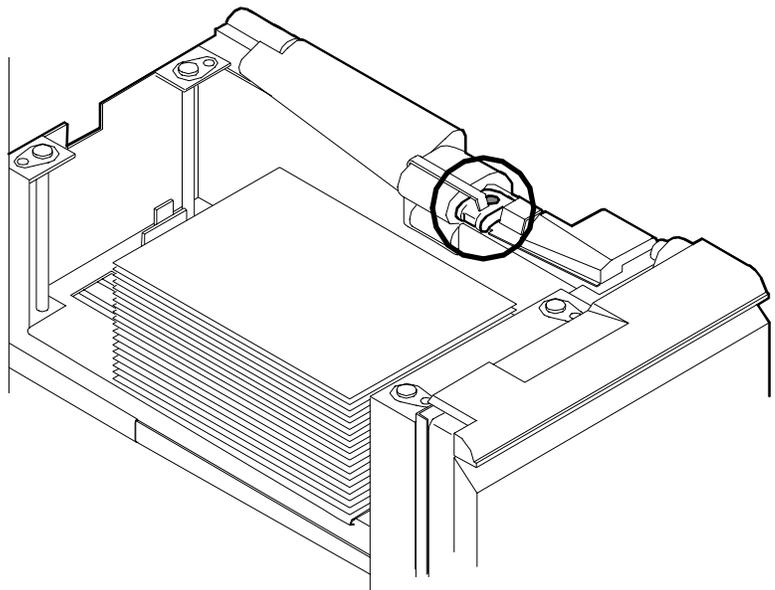


3. When the Ready To Open indicator is lit, pull the bar up and out to open the tray. Pull the tray all the way out for best results.

4. Press the green lever to unlatch the paper feeder assembly.



5. Remove and discard any partially fed paper. Make sure the paper supply is neatly stacked and the stack is not higher than the MAX line on the length guide. Make sure the length guide is firmly touching the back edge of the stack.
6. Latch the paper feeder assembly by pressing the green dot until the assembly clicks into place.



7. Slide the tray back into the printer until the tray latches and press the Continue button to resume printing.
8. Discard any pages sent to the sample tray or unused stacker tray when the paper jam was detected.

Frequent misfeeds

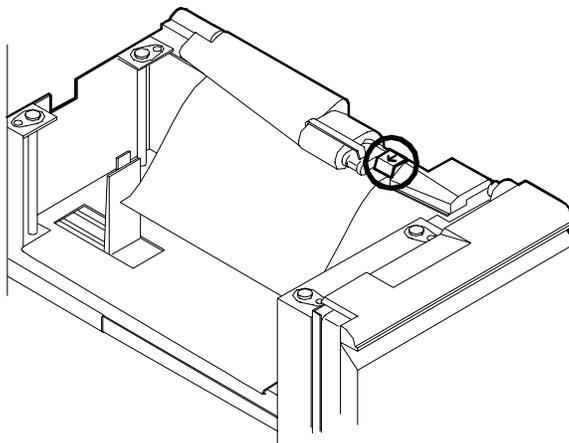
Frequent misfeeds may be caused by a glazed feed belt, especially if one tray feeds the same kind of paper better than another tray does. (Glazing is caused by a buildup of the chemicals found on most papers.)

If you suspect that the belt is glazed, try cleaning it with film remover obtained from your service representative.

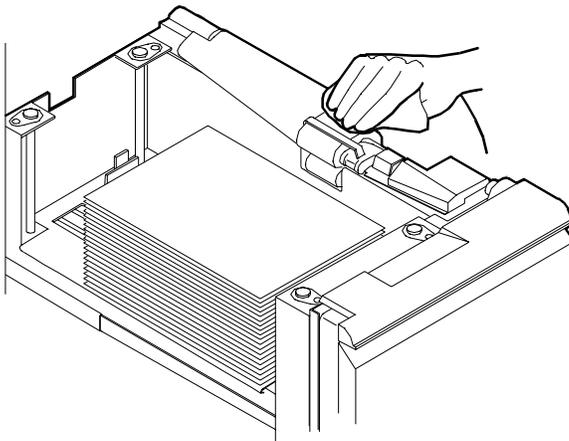


Caution: Clean the feed belt only to correct misfeeds, not as routine maintenance. Because the belt is rubber, frequent cleaning dries it out and makes it fail prematurely. 

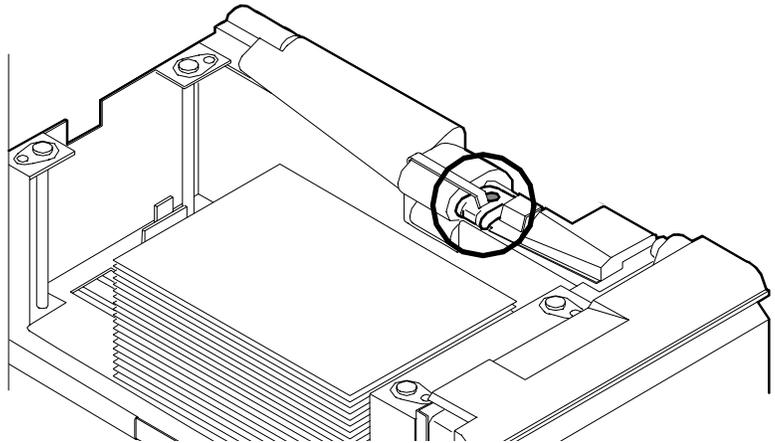
1. Clear any misfeeds that have occurred, but do not latch the paper feeder assembly. If necessary, unlatch it by pressing down on the bright green lever on the right side of the paper tray.



2. Lightly moisten a lint-free towel with film remover and thoroughly wipe the outside surface of the feed belt in the same direction as the ribs on the belt. (Wiping from side to side might pull the belt off its track.) Allow a few seconds for the film remover to evaporate.



3. Latch the paper feeder assembly by pressing down on the bright green dot. Slide the paper tray completely back into the printer



Operate the system as usual. If you continue to experience misfeeds, place a service call.

Clearing paper jams

Paper sometimes jams as it leaves the feeder trays or moves through the paper path. You must clear the paper jam before you can continue to print. The two illustrations below show the areas along the paper path in which jams may occur.

Figure 4-1. **Areas along the simplex paper path**

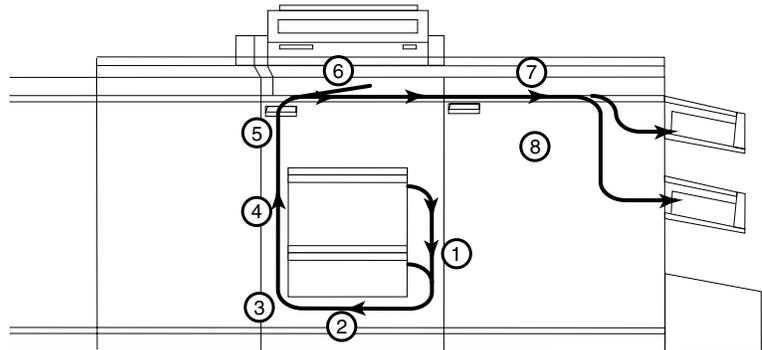
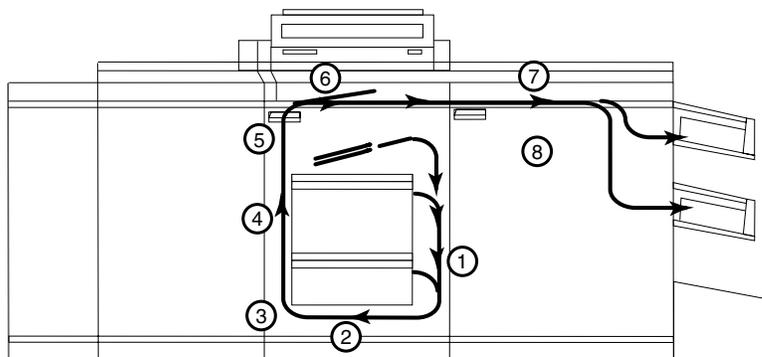


Figure 4-2. Areas along the duplex paper path

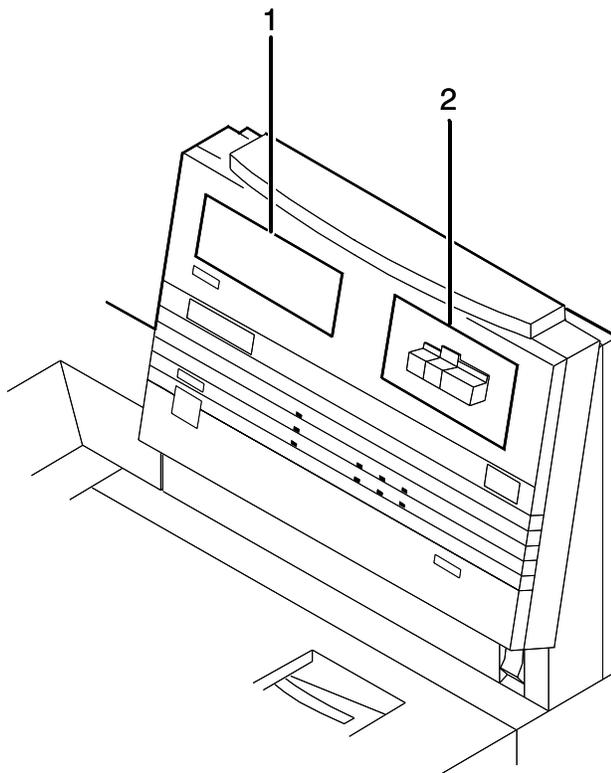


Jam display on printer console

In the event of a jam, the printer control console displays the following information:

- The message display describes the areas of the printer you must check and clear.
- The graphic display shows the location of the jams and the doors you open to access them.

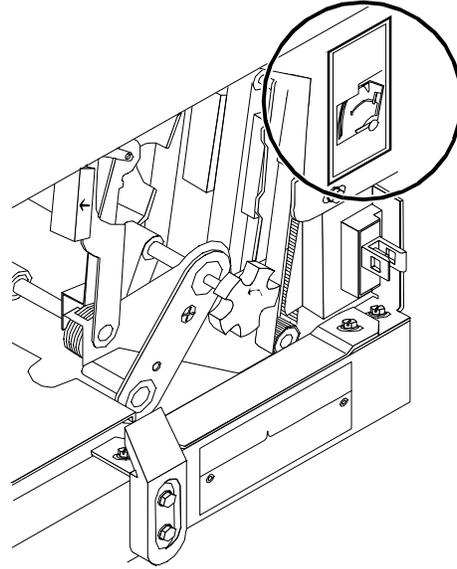
Figure 4-3. Message and graphic displays on printer control console



- 1 Message display
- 2 Graphic display

Interior labels Message labels are located inside the printer at the point of need.

Figure 4-4. **Message labels inside the printer**



Each handle, lever, or knob you use to clear a paper jam is bright green and marked with an arrow indicating the direction it moves.

When a paper jam occurs in the printer, clear only the area or areas indicated by the message and graphic displays.

Job recovery

Checking job integrity following a paper jam

When printing resumes following a paper jam, there is a slight possibility that duplicate sheets may be printed or sheets may be missing from a job. For that reason, you should check job integrity once the job has been printed.

Follow this procedure:

1. The printer offsets the first sheet printed following a paper jam. Locate that sheet.
2. Check the sheets immediately before and after the offset sheet to see if there are any missing or duplicated sheets in the job.
3. Check the output for data missing from the pages.

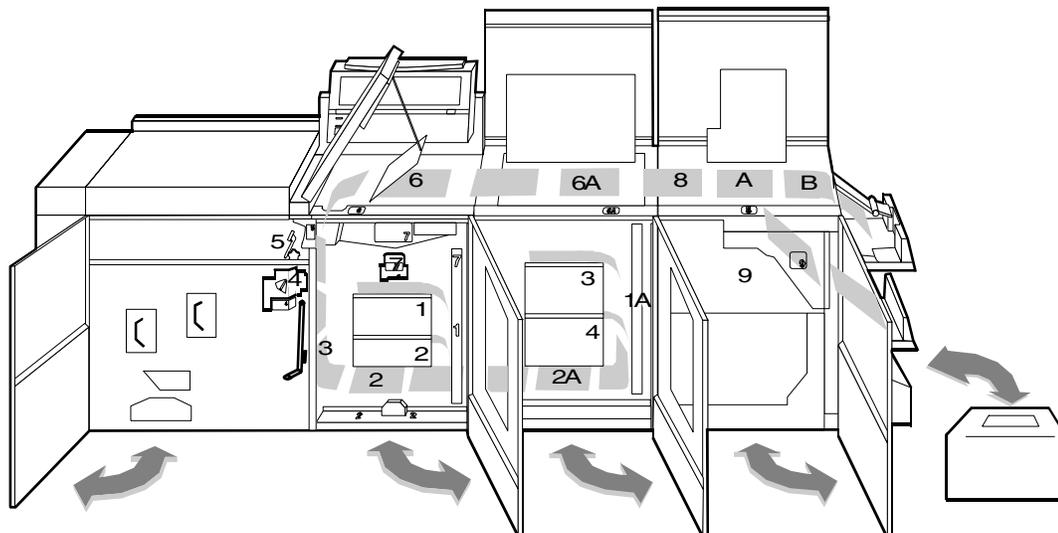
Printer jam clearance areas

The following figure shows all areas in which printer jams can occur.



Note: This diagram contains the jam clearance areas for both the dual stacker (areas 8, 8A, and 9) and the stitcher/stacker (areas A and B). The purpose of the diagram is to give you an overall perspective of the locations of all the printer areas relative to each other. Note that an actual printer cannot have both a dual stacker and a stitcher/stacker. □

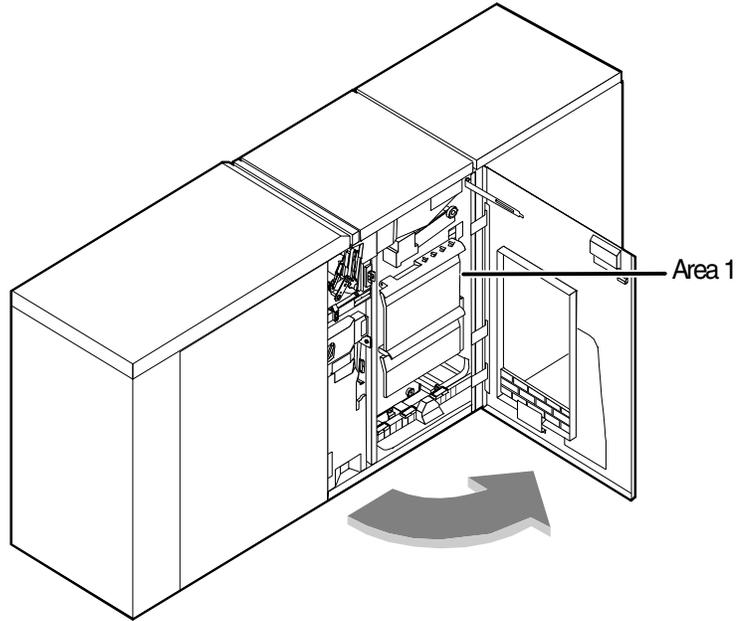
Figure 4-5. Overview of all printer jam areas



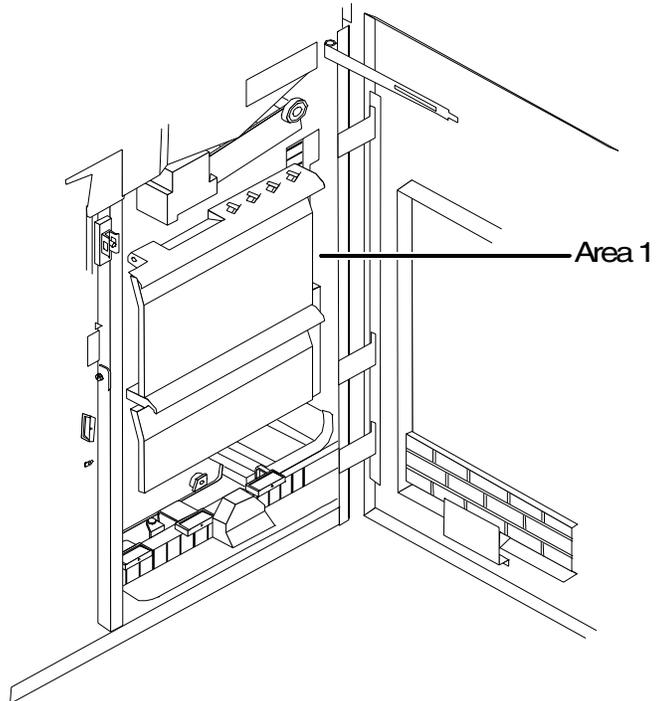
Clearing paper jams from areas 1 and 1A

To clear paper jams from areas 1 and 1A:

1. Open the middle door and locate area 1.

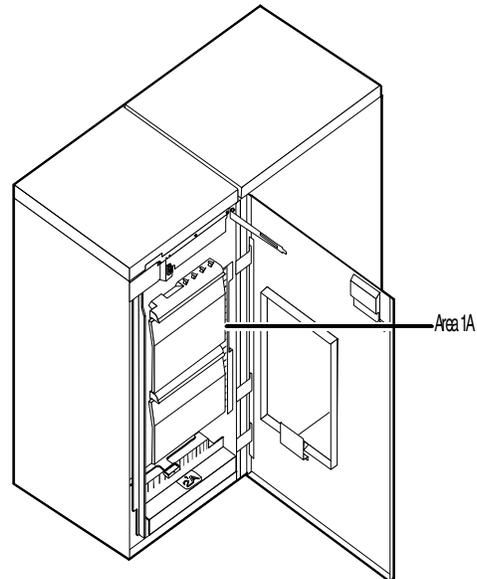


2. Remove and discard any paper you find in the areas indicated.



3. Close the door.

4. Open the high-capacity feeder front door and locate area 1A.

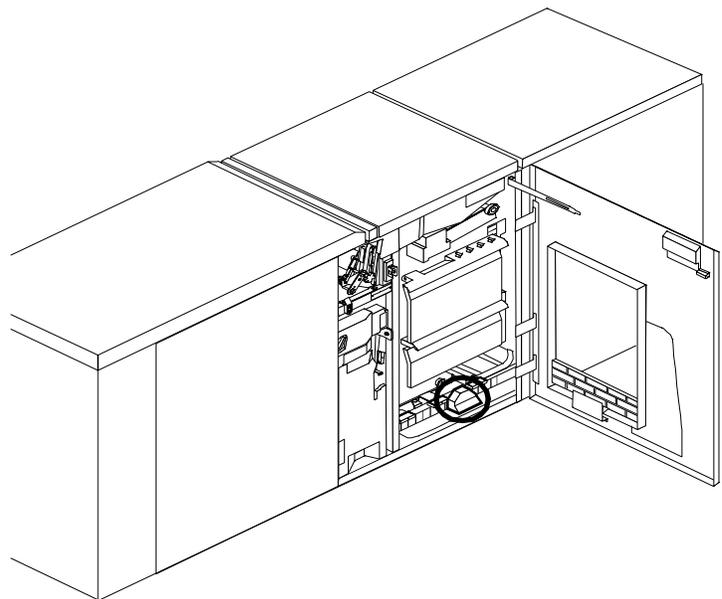


5. Remove and discard any paper you find in the area 1A.
6. Close the door and press the Continue button to resume printing.

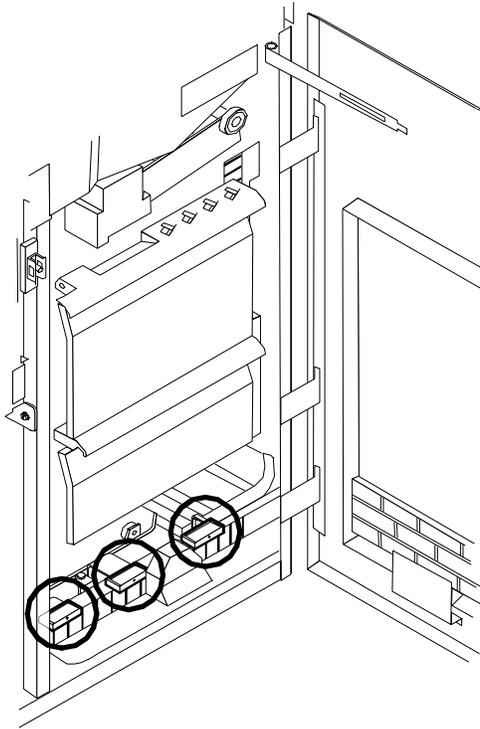
Clearing paper jams from areas 2 and 2A

To clear paper jams from areas 2 and 2A:

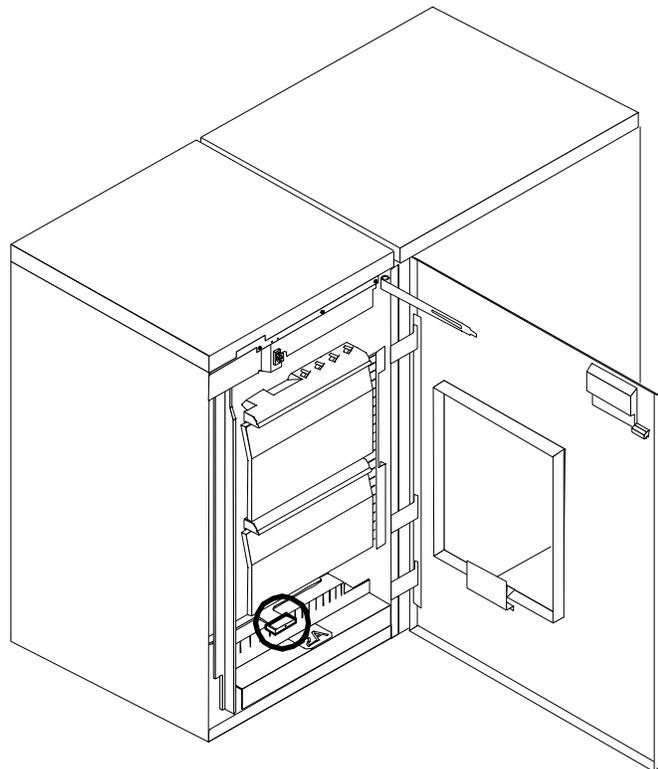
1. Open the middle door and locate area 2.



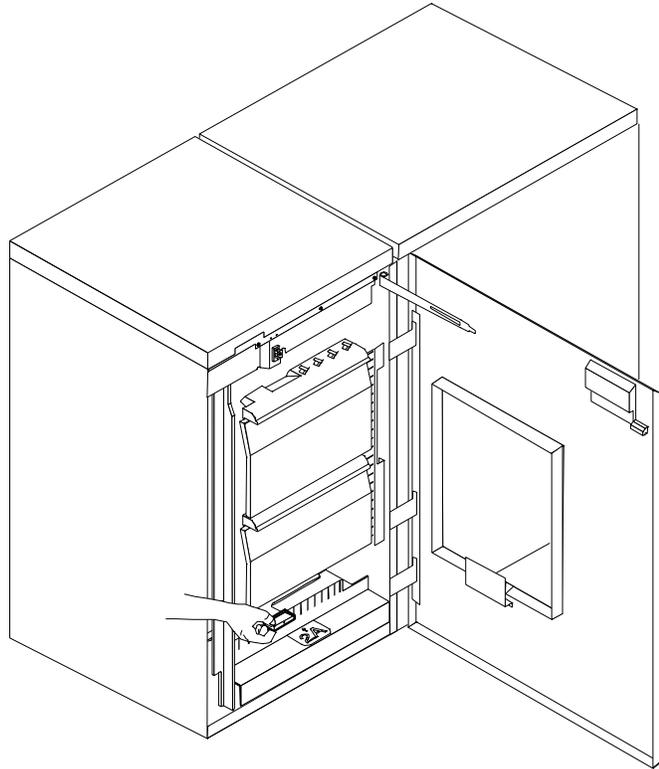
2. Lift the three green handles one by one. Each time you lift a handle, remove and discard any paper you find beneath the open section.



3. Lower the handles and close the door.
4. Open the high-capacity feeder front door and locate area 2A.



5. Lift the green handle. Remove and discard any paper you find in this area.

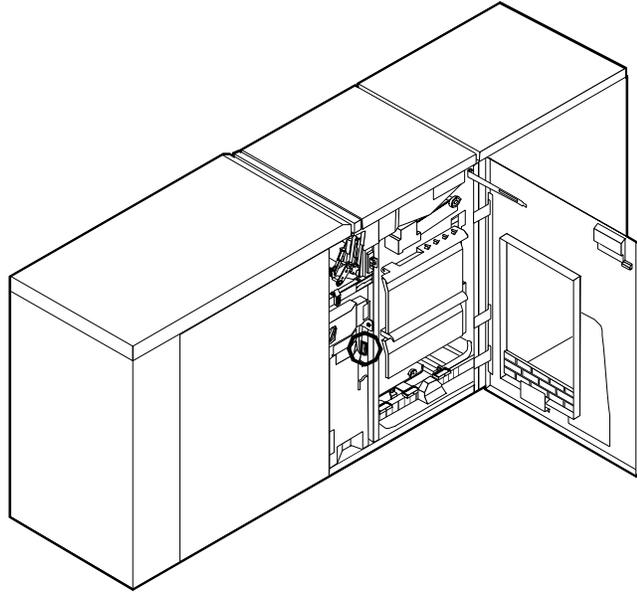


6. Lower the handle, close the door, and press the Continue button to resume printing.

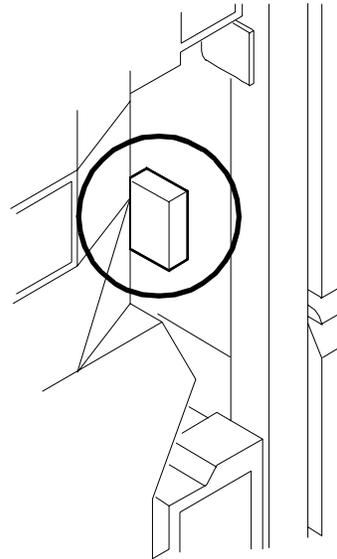
Clearing paper jams from area 3

Follow these steps to clear jams in area 3.

1. Open the middle door and locate area 3.



2. Push and hold the green handle to the right (in the direction of the arrow marked on it).



3. Remove and discard any paper you find in this area.
4. Release the handle, close the door, and press the Continue button to resume printing.

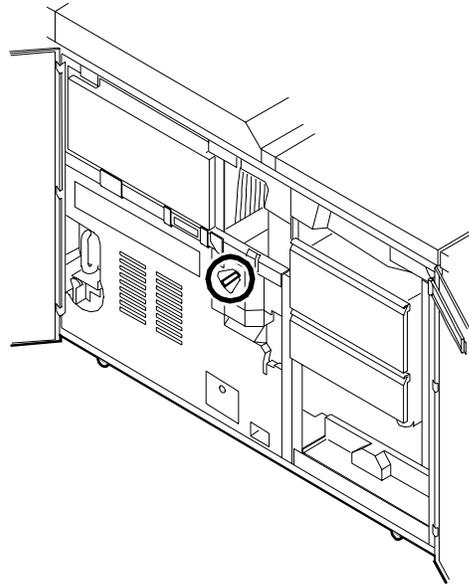


Note: When paper jams occur in areas 3 through 5, three extra blank sheets are sent through the printer to ensure that the fuser is clean. These sheets are sent to the top tray and should be discarded. You are not charged for these sheets. □

Clearing paper jams from area 4

Follow these steps to clear jams from area 4.

1. Open the middle and left doors and locate area 4. Remember to clear the jam in area 5 first, if you are directed to clear both areas.



Warning: The laser safety label located on the inside left front door of the printer advises you that the panel below it must not be removed, except by a service representative. ⚠

DANGER

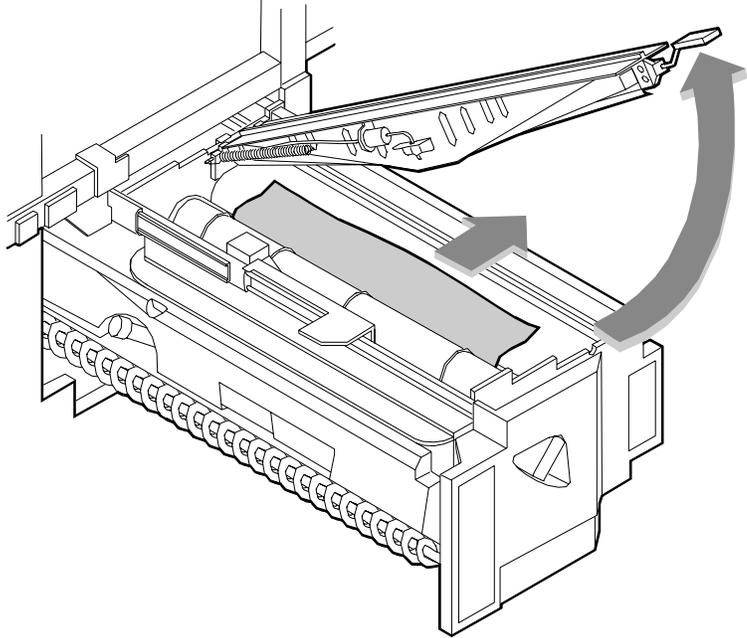
**LASER RADIATION WHEN OPEN
AVOID DIRECT EXPOSURE TO BEAM**

2. With your left hand, move and hold the green latch to the right (the direction of the arrow marked on it). With your right hand, pull out the large green handle until the fuser unit latches in the fully open position.



Warning: Take care not to touch any parts in this area. They may be hot enough to cause burns. ⚠

3. Raise the small green handle at the front of the fuser assembly.

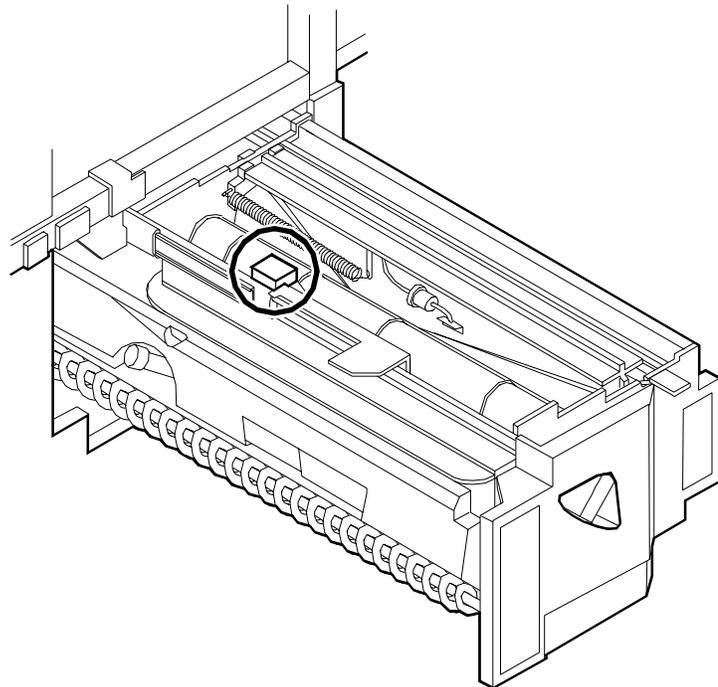


4. Remove and discard any paper you find in this area.



Caution: Do not use a sharp object to remove paper wrapped around the fuser rolls. Attempting to do so could damage the roller and require its replacement.

5. Return the small green handle to its original position.
6. Push down on the green release latch, and slide the fuser unit back into the printer until it latches into the closed position.

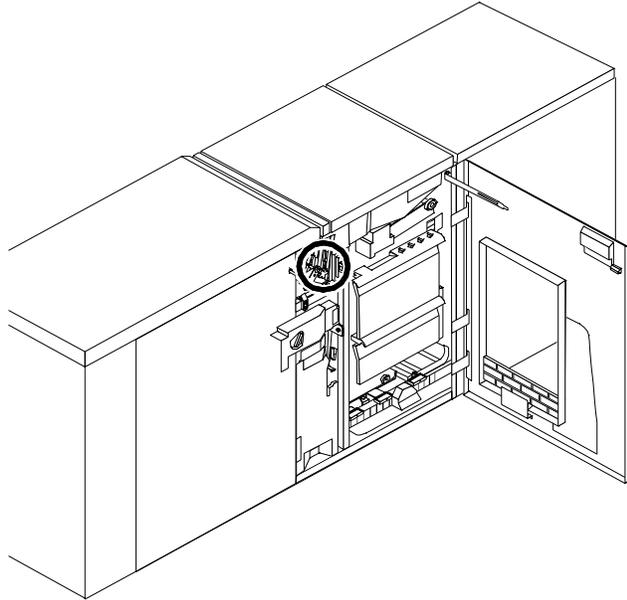


7. Close the doors (left one first) and press the Continue button to resume printing.

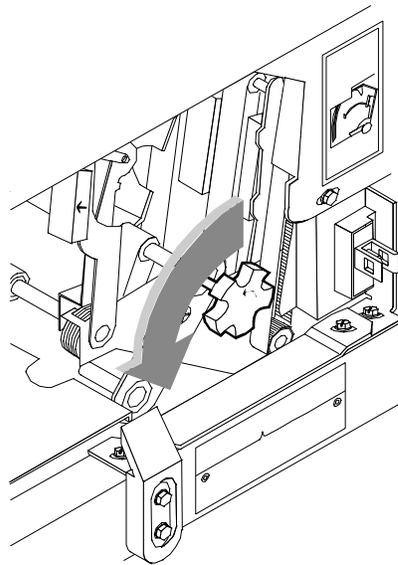
Clearing paper jams from area 5

Follow these steps to clear jams in area 5.

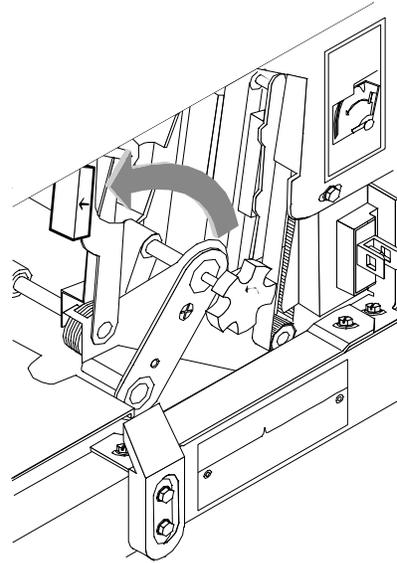
1. Open the middle door and locate area 5.



2. If paper is caught in the rollers between areas 4 and 5, first turn the green knob in the direction of the arrow marked on it. This ensures that the paper has completely moved into area 5, where you can remove it without tearing it.



3. Push and hold the green handle to the left (in the direction of the arrow marked on it). Remove and discard any paper you find there.

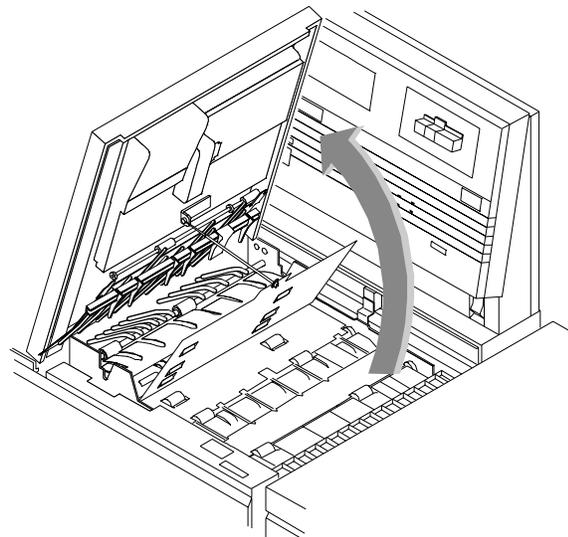


4. Release the green handle.
5. Close the door and press the Continue button to resume printing.

Clearing paper jams from areas 6 and 6A

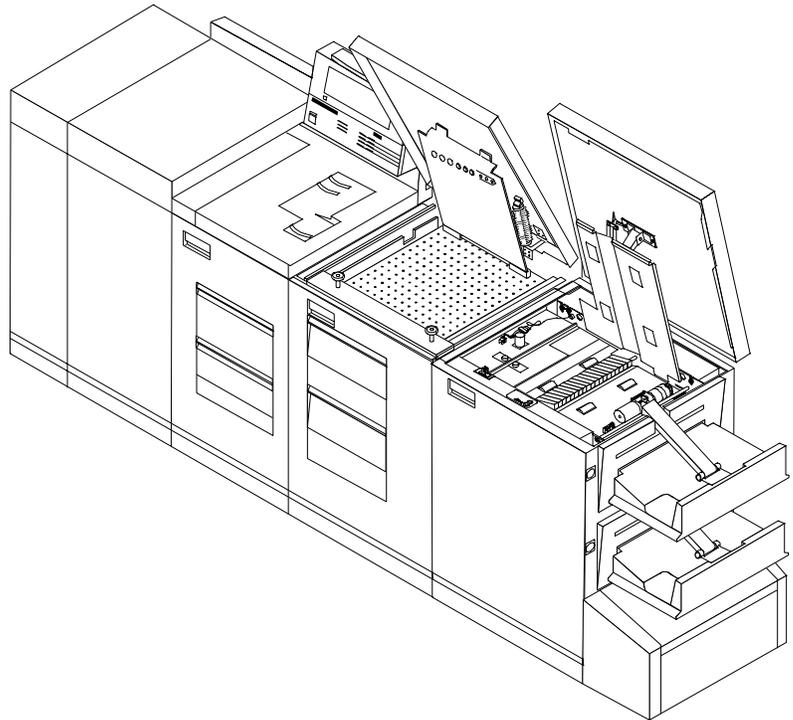
Follow these steps to clear jams in areas 6 and 6A.

1. Open the printer left-most top cover. Remove and discard any paper you find in this area.



2. Close the top cover.

3. Open the top cover of the high-capacity feeder. (Open the top cover of the stacker, too, if the printer control console message display indicates it needs to be opened.)

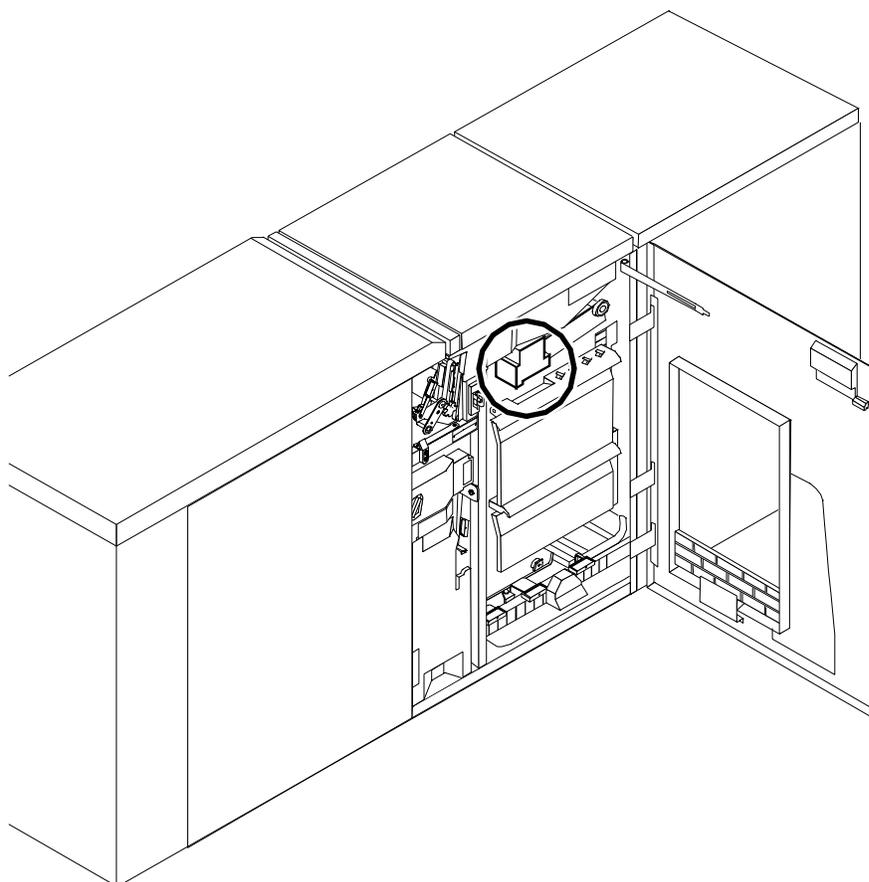


4. Remove and discard any sheets under the high-capacity feeder cover. If the printer control console message display also indicates a problem in the output module, remove and discard those sheets as well.
5. Close the top covers and press the Continue button to resume printing.

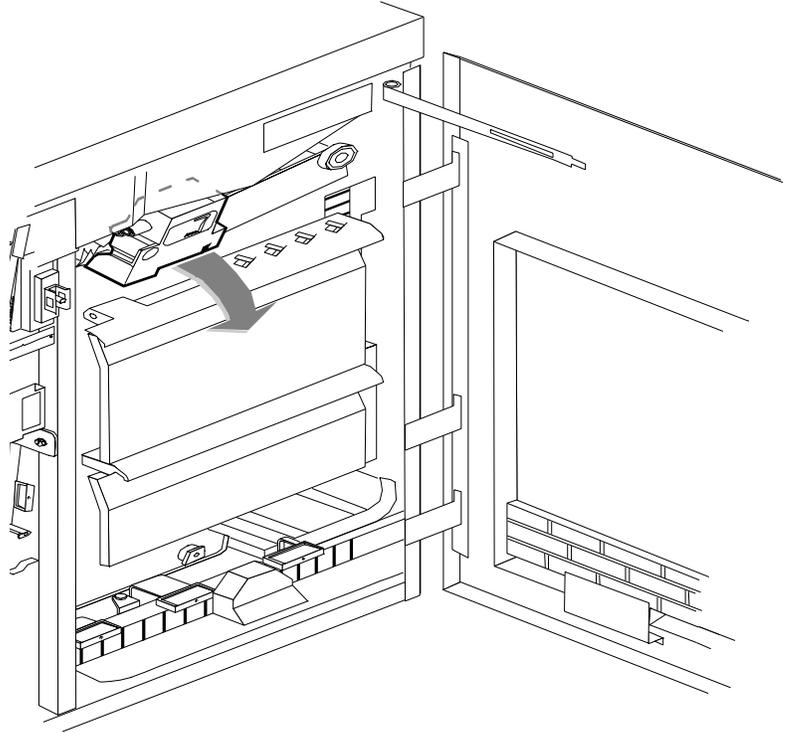
Clearing paper jams from area 7

Area 7 of the paper path is used only during duplex printing.

1. Open the middle door and locate area 7.



-
2. Pull the block-shaped set separator toward you and hold it in that position.

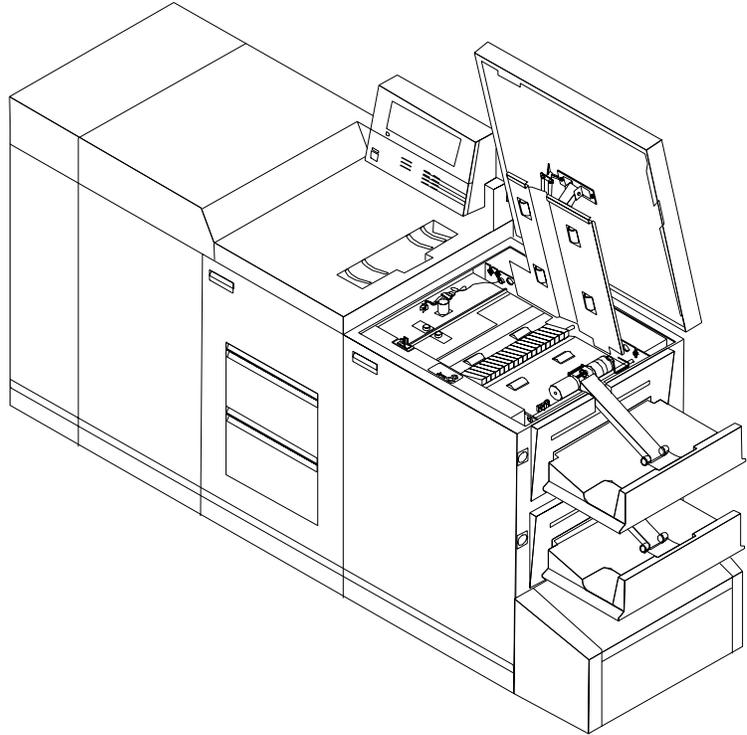


-
-
3. Remove and discard any paper in the duplex tray.
4. Return the set separator to its upright position.
5. Close the door and press the Continue button to resume printing.

Clearing paper jams from area 8

If your printer has a stitcher/stacker, see the “Correcting stacker problems” chapter.

1. Open the top cover of the output module, as indicated on the graphic display of the printer control console.

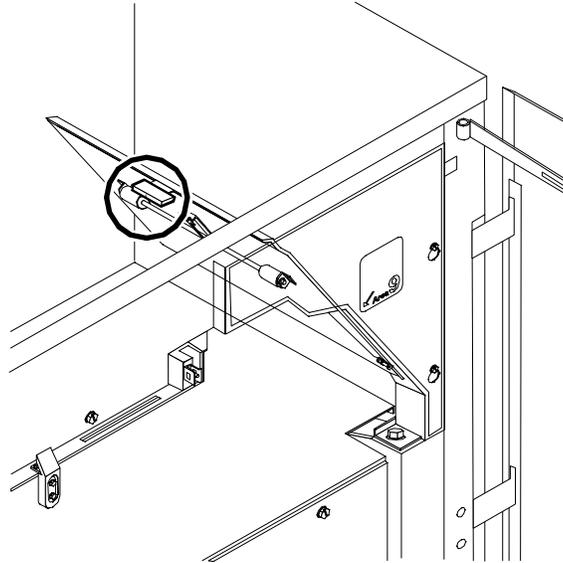


2. Remove and discard any paper you find in this area.
3. Lower the lid and press the Continue button to resume printing.

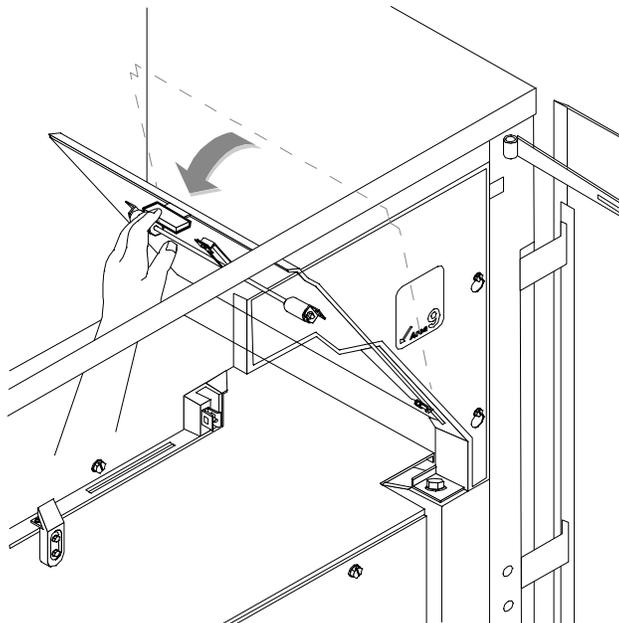
Clearing paper jams from area 9

If your printer has a stitcher/stacker, see the “Correcting stacker problems” chapter.

1. Open the right door and locate the green handle on the upper right side of area 9.



2. Pull the green handle down and to the left (in the direction of the arrow marked on it) to hold the assembly open while you remove and discard any paper you find in this area.

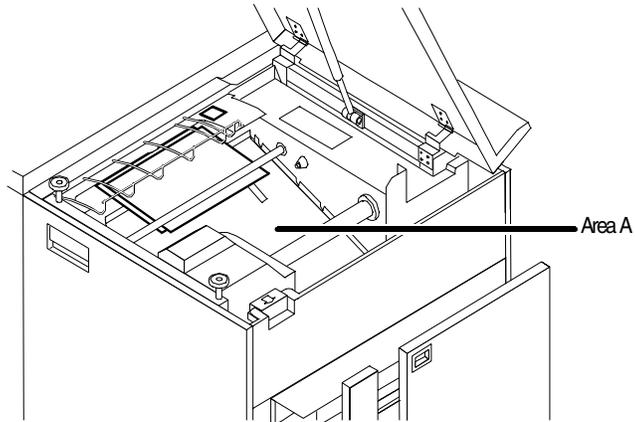


3. Return the handle to its original position and close the door.
4. Press the Continue button to resume printing.

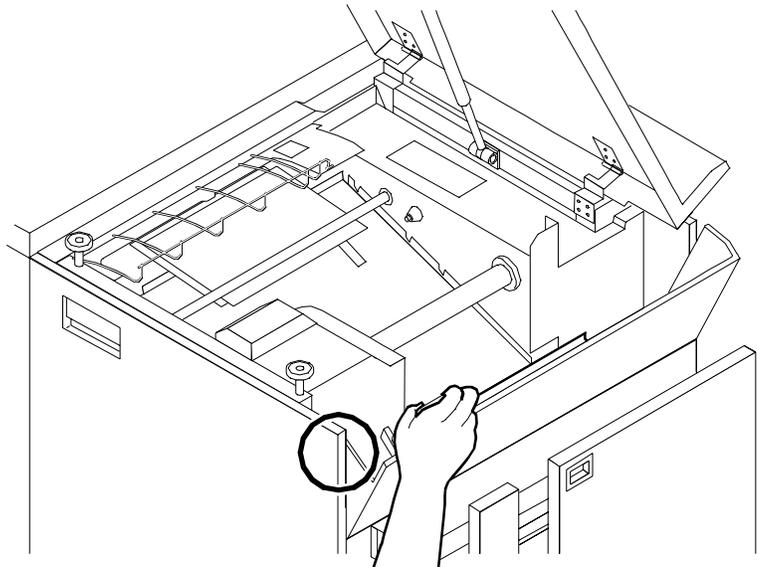
Clearing stitcher/stacker paper jams (areas A and B)

Follow these steps to clear stitcher/stacker jams in areas A and B.

1. Open the top cover of the stitcher/stacker and locate area A in the center.



2. Remove and discard the paper under the paper guide. The paper guide is a spring-loaded, heavy wire form guide that pops up when you open the cover.
3. Locate the side cover of area B on the right.
4. Push the cover to the right (in the direction of the large green arrow at the front of the cover) to open it.



5. Remove only the set of pages leaving the stitcher/stacker at the right, and place it on the output in the stacker tray. Do not remove any other pages from this area.



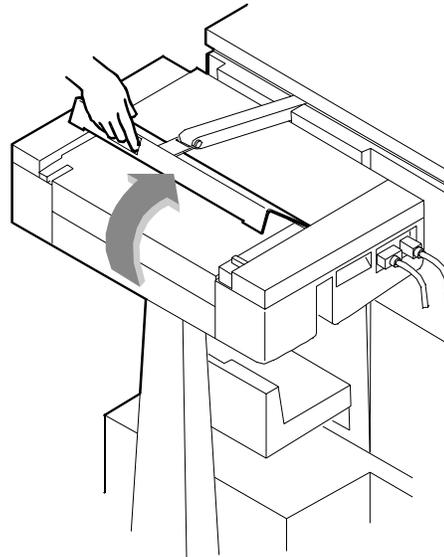
Note: The pages were compiled by the stitcher/stacker into a set (stapled or not), but something prevented the set from being delivered to the stacker. You put the set in the stacker tray because the system has counted it as completed. □

6. Close the side and top covers.
7. Press the Continue button to resume printing.

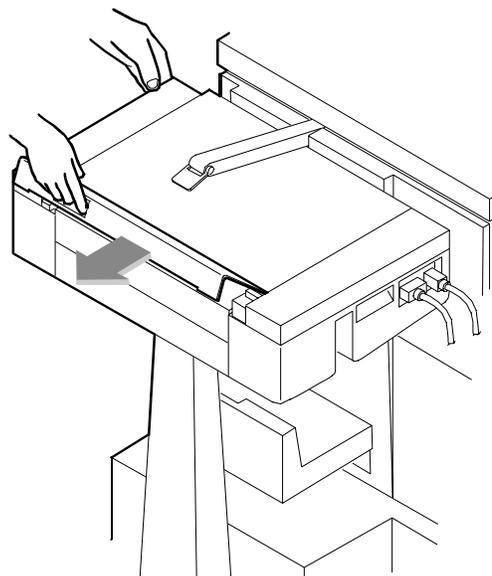
Clearing bypass transport paper jams (4890 only)

To clear bypass transport paper jams on 4890:

1. Verify that a sheet is caught between the bypass transport and the finishing device. If a sheet is there, remove it and discard it.
2. Open the top cover of the bypass transport by lifting upward on the recessed handle.



3. Remove and discard any paper you now see in the bypass transport.
4. Grasp the handle again and slide the top cover to the right. This exposes the remainder of the bypass transport paper path.



5. Remove and discard any paper you see.

6. Push the cover back to the left and close it tightly. The cover snaps shut.
7. Press the Continue button on the printer control console to resume printing.
8. Discard any sheets sent to the sample tray when the jam was detected.

Adjusting dual stacker tray scuffer arms

Paper jams can occur when the paper does not stack smoothly in the stacker trays. If some papers stack well while others do not, the scuffer arms may need to be adjusted.



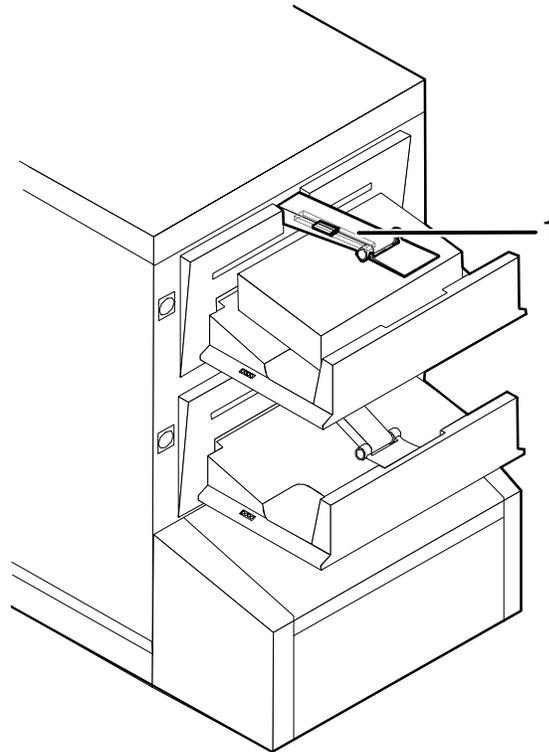
Note: The scuffer arm weights on some printers are bolted in place. These must be adjusted by a service representative. □

The adjustable weights are located on the underside of the scuffer arms, on a track down the center. To adjust them:

1. Slide the weight right or left along its track under the scuffer arm.
 - If the paper is driven too far up the outside edge of the tray, move the weight toward the machine.
 - If the paper is not driven far enough into the tray, move the weight away from the machine.



Note: For lightweight paper move the weight toward the machine; for heavyweight paper move the weight away from the machine. □

Figure 4-6. **Adjusting scuffer arm weights****1 Scuffer arm**

2. Clear all paper jams, following the jam clearance instructions provided by the message and graphic displays on the printer control console.
3. Discard any pages sent to the sample tray or to a used stacker tray when the jam was detected.
4. Press the Continue button on the printer control console to resume printing.

5. Using sample documents

You can use sample documents to test the print quality of your DocuPrint printer.

Listing and printing sample documents

The List Sample Documents command shows what sample documents are available.

DocuPrintFAQ

One sample document, DocuPrintFAQ, provides a list of frequently asked questions (FAQ) and answers about DocuPrint NPS. This document may contain information that can help you resolve some problems.

List Sample Documents

Use the List Sample Documents command to list the available sample documents.

Access level	Administrator or operator
Syntax	List Sample Documents
Arguments	None



Note: The Sample button on the printer control panel is not supported.

Example Listing sample documents:

```
PS-op>list sample documents
Available Sample Documents are:
100 pages
2pages
4pages
50pages
dfaq0397
dpps
FontDir
HC
iso8859-1
maze
mesh50
mesh100
pclfont
shapes
StdPCLFonts
StdPSFonts
testgray
testxerox
worm
XeroxSpiral
XGFGoldenJob
XGFLicenseRequestForm
XRXPJ1
XRXPJ2
```

Print Sample Document

Use the Print Sample Document command to print the sample document you select from the list. If you do not enter arguments with the command, the system prompts you for them.

Access level Administrator or operator

Syntax Print Sample Document <Document> <Copies> <Plex> <Staple>
<Resolution> <Media> <Stacker group>

- Arguments**
- <Document>
Indicates the name of the sample document you want to print. The name is case-sensitive.
 - <Copies>
Indicates the number of copies of the sample document you want to print.
 - <Plex>
Indicates whether the sample document prints on one side of each page or on both sides of each page. Specify "simplex," "duplex," or "tumbleduplex."
 - <Staple>
Indicates whether the sample document is stapled after it prints. Specify "Staple" or "DontStaple"
 - <Resolution>
Indicates the printing resolution.

<Media>

Indicates the media you want to use for printing the sample document. Use the syntax <size:type:color:weight> to specify media. Specify "USLetter," "USLegal," "A4" or "n xn" for the size. Use a text string to indicate the media type and color. Specify weight in grams per square meter (gsm).

<Stacker group>

Indicates you want the sample document to output to a specified stacker. You can specify "Top," "1," or "2."

Example Printing one duplex unstapled copy of the sample document "shapes" at 300 dpi resolution on USLetter, white paper, output to stacker 1:

```
PS-op>print sample document shapes 1 duplex dontstaple 300 USLetter::white 1
```



Note: When Print Sample Document is invoked with output to the top Tray with stitching finish, the stitching is ignored.

6. Adjusting print quality and speed

This chapter considers means for checking and optimizing print quality and speed.

Adjusting print quality on DocuPrint Models 4890 NPS and 4850 NPS

The system maintains optimal print quality by monitoring the state of the dry inks for each new print job. If the print quality would be adversely affected, the printer automatically runs a Print Quality Adjustment (PQA) before printing the next document. The printer also automatically runs a PQA if it has been idle for a period of time. (The default period is 16 hours, but the service representative can reset it.)

When the printer requires a PQA, the printer console displays a message. It also displays one of two messages indicating the state of the dry ink housing:

- Ready
- Not ready—You must run a PQA



Note: If either the black or the color housing is not ready, the system runs a PQA before printing the next document, whether that document is black only or highlight color.

You do not have to wait until the printer automatically runs a PQA. You can run PQAs routinely so as to limit the number of printer-requested PQAs.

You can start a PQA anytime. The printer performs the PQA when the manual PQA document is scheduled for printing. A PQA takes 2 to 20 minutes. If you use the color housing daily and keep it in a stable environment, a PQA usually takes 2 to 5 minutes.

If a PQA command is issued on an NPS system with a bypass transport installed, the trailing sheet is sent to the bypass transport, but the test patterns are not.

Access level	Administrator or operator
Syntax	PQA
Arguments	None

Example Manually running a PQA

```
PS-op>pqa  
DocuPrint manual PQA submitted as document number: (N)
```

Measuring performance

You can use the DocuPrint sequencer log file to calculate print speeds. Although a stopwatch is the recommended method for obtaining sustained throughput print speeds, the sequencer log can be used to calculate speeds which include the start-up latency associated with the printer. This section describes how to calculate speeds using the sequencer log and how to minimize the start-up latency in your calculations.



Note: The sustained throughput using a stopwatch is a better measurement of the speed of the job since the several seconds of start-up time do not need to be measured.

Example Refer to the following example when reading “Calculating throughput.” The **Show Log** command in this example displays a menu of logs with the current sequencer log named DocuPrint sequencer:

```

PS-admin> Show Log

1 Quit
2 /var/log/DocuPrint
3 /var/log/DocuPrint.sequencer
4 /var/log/DocuPrint.Wed
5 /var/log/DocuPrint.Tue
6 /var/log/DocuPrint.Mon
7 /var/log/DocuPrint.sequencer.Mon
8 /var/log/DocuPrint.Sun
9 /var/log/DocuPrint.Sat
10 /var/log/DocuPrint.Fri
11 /var/log/DocuPrint.sequencer.Fri
12 /var/log/DocuPrint.Thu
13 /var/log/DocuPrint.sequencer.Wed
14 /var/log/DocuPrint.sequencer.Tue
15 /var/log/DocuPrint.sequencer.Thu
16 /var/log/syslog
17 /var/adm/messages
18 /var/adm/messages.0
19 /var/adm/messages.1
20 /var/adm/messages.2
21 /usr/spool/xerox/log/nps.log
22 /usr/spool/xerox/log/nps.log.Wed
23 /usr/spool/xerox/log/nps.log.Tue
Enter choice number: 3

Enter number of lines from the end to show (or "All"): 40
Job #84 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:44:00 am PST
Printing simplex, 300 spi, 210 x 297 mm, 43 buf, black, red [r: 0.88, g:
0.00, b: 0.00]
Job #85 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:44:17 am PST
Job #86 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:44:31 am PST
Job #84 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:44:34 am PST
pages: 30, decomp: 14.14, elapsed: 34.89
Job #87 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:44:44 am PST
Job #85 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:44:54 am PST
pages: 30, decomp: 12.72, elapsed: 36.57
Job #88 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:44:56 am PST
Job #89 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:45:09 am PST
Job #86 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:45:13 am PST
pages: 30, decomp: 11.92, elapsed: 42.14
Job #90 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:45:21 am PST
Job #87 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:45:32 am PST
pages: 30, decomp: 11.54, elapsed: 48.65, compress: 5.28x, min
free: 102400K
compress pages: 9, expand pages: 0
Job #91 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:45:37 am PST
Job #88 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:45:52 am PST
pages: 30, decomp: 11.45, elapsed: 55.83, compress: 5.00x, min
free: 102400K
compress pages: 41, expand pages: 0
Job #92 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:45:56 am PST
Job #89 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:46:12 am PST
pages: 30, decomp: 11.55, elapsed: 63.14, compress: 5.01x, min
free: 102400K
compress pages: 73, expand pages: 0
Job #93 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:46:15 am PST
Job #90 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:46:32 am PST
pages: 30, decomp: 14.89, elapsed: 70.66, compress: 5.02x, min
free: 101917K
compress pages: 105, expand pages: 0

```

```
Job #91 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:46:50 am PST
pages: 30, decomp: 17.22, elapsed: 73.27, compress: 5.02x, min
free: 101618K
compress pages: 90, expand pages: 0
Job #92 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:47:10 am PST
pages: 30, decomp: 17.14, elapsed: 74.36, compress: 5.02x, min
free: 101202K
compress pages: 60, expand pages: 0
Job #93 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:47:30 am PST
pages: 30, decomp: 17.71, elapsed: 75.19, compress: 5.02x, min
free: 100750K
compress pages: 30, expand pages: 0
```

Calculating throughput

For measuring performance, note the start time, stop time, decomposition time, elapsed time, and pages of the job being measured:

- The start time is the time that the sequencer began to decompose the job (translate the PostScript).
- The stop time is the time the last page was printed.
- The decomposition time is the time (in seconds) spent working on the job. The decomposition time can be increased by factors such as use of highlight color, images that compress poorly, duplexing, and job size. See the *Guide to Using Page Description Languages* for more details about factors affecting performance.
- The elapsed time, equal to the stop time minus the start time, is the total amount of time DocuPrint spent printing the job. The elapsed time includes delays for warm-up time, paper loading, jam clearing, print quality adjustments and the start-up latency associated with the first job in a set of jobs.
- The “pages” number represents the number of images printed, (not the number of sheets printed when running a duplex job).

To make a meaningful measurement of performance, obtain the measurements while the printer is running a block of jobs. Since start and stop times tend to overlap between jobs in a block, the only way to obtain a measurement using the start and stop times is to use the start time when the printer first powers up to print a block of jobs, then subtract that start time from the stop time when the printer powers down as shown in this procedure:

1. Enter **Stop Printing** at the Printer Controller.
2. Enter **Set Option ForceReport False** and **Set Option UseTitlePage False**. This to avoids extra pages in the output that are not included in the pages reported in the sequencer log.
3. Send a series of jobs to the DocuPrint.
4. Use the List Documents command to determine that the jobs have passed the prescanner and have a Pending status.
5. Enter **Start Printing**.



Note: If you experience delays due to empty paper trays or paper jams, repeat steps 1-5 until the jobs complete without delays.

6. Calculate the elapsed time by subtracting the stop time of the last job from the start time of the first job.
7. Add up the total number of pages for all jobs.
8. Calculate throughput using the formula:

$$\text{PPM} = 60 \times \text{pages/elapsed time in seconds}$$

Here is the calculation for the example of the sequencer log above:

The start time was: 9:44:00 am

The stop time was: 9:47:30 am

(This gives an elapsed time of 3 minutes and 30 seconds, or 210 seconds)

$$\text{PPM} = 60 \times 300/210 = 85.8 \text{ pages per minute}$$

This example illustrates the problem with calculating the elapsed time from the first job, since this job was actually printing at the maximum rate of the DocuPrint Model 4890 printer (92ppm). The start-up latency made the printer appear to be printing at a rate 6.2 ppm lower than the maximum rate.

To verify the assumption that the sustained throughput of the job prints at the rated speed of a Model 4890, a calculation of the rate based on the decomposition time is recommended. The decomposition time gives the theoretical maximum that the DocuPrint can print this job. Since the DocuPrint usually decomposes more than one job at a time, the jobs are time-shared on the one processor and this will cause the decomposition time to be larger than if the DocuPrint decomposed once by itself. In the sample log, there are always 3 jobs printing at the same time and the decomposition times reported vary from 11.45 to 17.71. After submitting this job by itself, the decomposition time reported is:

```
Job #94 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:54:44 am PST
Printing simplex, 300 spi, 210 x 297 mm, 43 buf, black, red [r: 0.88, g:
0.00, b: 0.00]
Job #94 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 9:55:20 am PST
pages: 30, decomp: 10.83, elapsed: 35.39
```

$$\text{PPM} = 60 \times 30/10.83 = 166.2 \text{ pages per minute}$$

This is considerably higher than the maximum speed of the printer, so it is very likely that this job prints at rated speed.

Minimizing the start-up latency

There are two ways to get a measurement that minimizes the impact of the start-up latency of the printer.

- Use a stopwatch to measure the elapsed time from when the first sheet is delivered to when the last sheet is delivered to the output tray.
- Take the start time and stop time from the sequencer for a larger block of jobs.

Using the second method, the same job as in the first example was submitted 33 times to measure the throughput for 990 pages. Here is part of the log:

```
Sequencer restart at November 14, 1996 10:12:20 am PST
Job #103 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:12:25 am
PST
Printing simplex, 300 spi, 210 x 297 mm, 82 43 buf, black, red [r: 0.88,
g: 0.00, b: 0.00]
Job #104 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:12:48 am
PST
Job #105 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:01 am
PST
(More)
Job #103 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:05 am
PST
    pages: 30, decomp: 16.60, elapsed: 42.31
Job #106 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:14 am
PST
Job #104 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:24 am
PST
    pages: 30, decomp: 11.78, elapsed: 36.24
Job #107 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:27 am
PST
Job #108 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:39 am
PST
Job #105 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:43 am
PST
    pages: 30, decomp: 11.76, elapsed: 42.92
Job #109 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:13:52 am
PST
Job #106 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:14:03 am
PST
    pages: 30, decomp: 11.56, elapsed: 49.22, compress: 5.28x, min
free: 102400K
    compress pages: 9, expand pages: 0
...
Job #133 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:21:36 am
PST
Job #130 stop, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:21:54 am
PST
    pages: 30, decomp: 18.17, elapsed: 76.50, compress: 5.05x, min
free: 100750K
    compress pages: 140, expand pages: 0
Job #134 start, ftpadmin, rxlb300-ps2.ps, November 14, 1996 10:21:55 am
PST
```

```
Job #131 stop, ftpadmin, rx1b300-ps2.ps, November 14, 1996 10:22:13 am
PST
    pages: 30, decomp: 18.38, elapsed: 76.50, compress: 4.99x, min
free: 100750K
    compress pages: 138, expand pages: 0
Job #135 start, ftpadmin, rx1b300-ps2.ps, November 14, 1996 10:22:15 am
PST
Job #132 stop, ftpadmin, rx1b300-ps2.ps, November 14, 1996 10:22:33 am
PST
(More)
    pages: 30, decomp: 17.98, elapsed: 76.36, compress: 5.04x, min
free: 100750K
    compress pages: 138, expand pages: 0
Job #133 stop, ftpadmin, rx1b300-ps2.ps, November 14, 1996 10:22:52 am
PST
    pages: 30, decomp: 18.06, elapsed: 76.53, compress: 5.01x, min
free: 100750K
    compress pages: 106, expand pages: 0
Job #134 stop, ftpadmin, rx1b300-ps2.ps, November 14, 1996 10:23:12 am
PST
    pages: 30, decomp: 18.13, elapsed: 76.41, compress: 4.99x, min
free: 100750K
    compress pages: 71, expand pages: 0
Job #135 stop, ftpadmin, rx1b300-ps2.ps, November 14, 1996 10:23:31 am
PST
    pages: 30, decomp: 18.21, elapsed: 76.57, compress: 5.06x, min
free: 100750K
    compress pages: 36, expand pages: 0
```

In the example shown in this log, here is the calculation:

The start time was: 10:12:25 am

The stop time was: 10:23:31 am

(This gives an elapsed time of 11 minutes and 6 seconds, or 666 seconds)

$PPM = 60 \times 990 / 666 = 89.2$ pages per minute

As you can see for the same job, the calculated throughput approaches the maximum speed of the printer as the start-up latency becomes less important and the calculation is closer to the actual sustained throughput of the job.

Setting page order

DocuPrint delivers documents with the pages face down in the order presented in the Page Description Language. The order can be changed by setting the PageOrder attribute.

If the Staple attribute is set, DocuPrint must deliver the document face up. In order to deliver the stapled document in the correct order, it must image the document in reverse page order. In order to image a document in reverse page order, the entire document must be processed before printing starts.

For the best print speed, ensure that each PostScript program has the pages in the correct order for the finishing requirement for the document:

- No finishing is required: PDL should be in ascending page order. PageOrder attribute should be set to ascend.
- Stapling is required: PDL should be in descending page order.
- Duplex printing is required: there should be an even number of pages. Page order should be set to descend.



Note: If you are using a third-party finishing device connected to DocuPrint by a bypass transport, the page delivery order is determined by the requirements of the third-party device (face up or face down). To maximize performance, place the pages in the PostScript master in the order in which they are required by the finishing device.

Product features that affect print quality

You can improve the appearance of your documents by being aware of potential problems created through the use of proprietary PostScript extensions and device-dependent operators.

Proprietary PostScript extensions

PostScript masters that use proprietary printer features may cause appearance inconsistencies between different PostScript printers. Some PostScript printers contain proprietary PostScript extensions. For example, some versions of the Apple Macintosh PostScript driver download encrypted proprietary image “smoothing” operators to Apple LaserWriters. The downloaded PostScript code uses the **product** operator to determine if it is being used on a LaserWriter. If not, the proprietary code is bypassed by doing a **flushfile**. This allows the PostScript master to print on non-LaserWriter products. As a result, PostScript masters generated on a Macintosh with Apple proprietary features may produce output that varies between LaserWriter and non-LaserWriter PostScript printers.

Device-dependent operators

Some PostScript operators result in device-dependent PostScript files. “Device dependence” means that devices having different output characteristics may produce different-looking output even though they use the same software. This section documents the most serious examples of device dependence. The *PostScript Language Reference Manual*, second edition, lists all of the graphics state operators that are considered device-dependent.

Gray shading—**setscreen** and **setcolorscreen**

The PostScript operators **setscreen** and **setcolorscreen** control the PostScript halftone software that simulates various intensity levels of gray and color inks. Since each PostScript product may have a different default halftone definition, the halftone patterns and gray scale range may differ also. Because **setscreen** is inherently device dependent (especially when used for pattern fills), PostScript masters look different on almost every different model of PostScript printer.

The operators are also used to perform pattern fills, since PostScript Level 1 does not have a pattern fill operator. (PostScript Level 2 has pattern fill operators.) As stated in the *PostScript Language Reference Manual*, first edition, “Remember that everything pertaining to halftones is, by definition, device-dependent. In general, when an application provides its own halftone specifications, it sacrifices portability. Associated with every device is a default halftone definition that is appropriate for most applications.”

In addition to the device-dependent nature of halftoning, a spot function is used by **setscreen** and **setcolorscreen** to determine the order of pixel darkening in the halftone cell. When two pixels have the same spot function value, their ordering values are determined arbitrarily. Duplicate spot function values are very common. In fact, almost all the various default spot functions generate duplicate values. Therefore, different PostScript implementations yield different halftone patterns, resulting in visual differences in the output.

Gray shading—**settransfer** and **transfer function**

The PostScript operators **settransfer** and **setcolortransfer** are used to change the procedure for mapping perceived color values in the output of the print device into specified color values in the PostScript master. PostScript devices use an internal transfer array or procedure that takes into account the printing characteristics of their marking engines in order to produce levels of color.

Transfer functions are called by the **setcmykcolor**, **setbsbcolor**, **setrgbcolor**, and **setgray** operator before processing of the desired color level that is specified in the master. The transfer function takes a value from the stack and leaves another value on the stack for each color component (red, green, blue, and gray).

The PostScript language provides a scheme for overwriting the internal transfer function of a printing device by providing the **settransfer** and **setcolortransfer** operators. However, some Xerox PostScript devices do not allow you to overwrite their internal transfer function.

Typically, a master tries to replace the internal transfer function with a null transfer function such as:

`{ } settransfer`, or

`{ } { } { } setcolortransfer`

If either of the above procedures is successful, the transfer functions return the same color levels that are passed to them without modifying or mapping the level. On printers which do not allow the overwriting of the transfer function, the **settransfer** operator does not affect the mapping of gray values between the output of the print device and specified levels of color.



Note: **Settransfer** actually sets the transfer functions for all four color components (red, green, blue, and gray) to the same value. The **setcolortransfer** operator sets the transfer functions individually.

Smooth curves—**setflat**

PostScript masters that use the PostScript operator **setflat** produce inconsistent output across different PostScript printers. **setflat** controls curve rendering smoothness. PostScript curve operators use cubic Bezier control points to define the curve shape. These curves can be rendered from straight line segments. Normally the line segments are so short that the curve appears smooth. The **setflat** operator indirectly controls the length of the straight line segments. As stated in the *PostScript Language Reference Manual*, second edition, “If the flatness parameter is large enough to cause visible straight line segments to appear, the result is unpredictable. **Setflat** sets a graphics state parameter whose effect is device-dependent. It should not be used in a page description that is intended to be device-independent.”

Invisible strokes—**0 setlinewidth**

PostScript masters that use the PostScript operator **setlinewidth** are not consistent across different PostScript printers. **setlinewidth** controls the width of a stroked line. When **setlinewidth** is executed with an input of zero, it produces a line that is one pixel wide. On devices whose dot size is small, single-pixel-width lines may be invisible.

Scan conversion—**fill, eofill, and stroke**

Scan conversion algorithms are implementation-dependent, so different PostScript printers paint (“turn on”) different dots, resulting in output differences. For filled circles, PostScript printers differ in the dots they paint at the edge of the circle; thus, some printers produce slightly larger circles than others. For large circles this is not noticeable, but for small circles, it is.

Sections 2.2 and 6.5 of the *PostScript Language Reference Manual*, second edition, discuss scan conversion. Section 6.5 states that scan conversion details are not part of the PostScript standard.

7. Correcting stacking problems

This chapter describes stacker problems other than paper jams. It suggests corrective actions when printed sets are not stitched. (See “Clearing paper misfeeds and jams” for stitcher/stacker paper jams.)

Symptom	Probable cause	Action
Printed sets are not stitched.	Stitcher/stacker is out of wire (fault code L152), or is jammed (fault code L172), or stitching head has malfunctioned (various fault codes).	If you have completed Advanced Customer Training (ACT), follow the recommended procedures to correct the problem. If not, contact your supervisor or your service representative. Until the problem is fixed you can continue printing without stitching the output.
Printing stops and the printer console displays a message indicating that an incorrect paper size is loaded in a feeder tray.	Incorrect paper size or a damaged sheet.	<ol style="list-style-type: none"> 1. Check the paper in the indicated tray. 2. If the paper is not the correct size, load the correct size paper or select another feeder tray containing the correct paper size. <p>If the paper size is correct, press the Continue button to resume printing.</p>
The number displayed in the Wire Percentage indicator of the printer console begins to flash, and the message <code>STITCHER LOW ON WIRE</code> appears when you start a new print job.	Stitching wire has decreased to a percentage predetermined by the service representative.	<p>If you have completed Advanced Customer Training (ACT), follow the recommended procedures to correct the problem. If not, contact your supervisor or your service representative. You can continue printing, but the stitcher may run out of wire.</p> <p>One percent of the wire will stitch about 300 sets (maximum).</p>
Printer console displays the message <code>OFFSET FAILED, SET IN OUTPUT BIN NOT OFFSET</code> , but the printed sheets in the stitcher/stacker tray are offset normally.	Faulty component in the offsetting mechanism of the stitcher.	<ol style="list-style-type: none"> 1. Clear the message by pressing the Continue button on the printer console. 2. Call customer service support for further assistance.
Paper does not stack evenly in the dual stacker trays.	Scuffer arm weights are out of adjustment.	<p>If printer has adjustable weights under the scuffer arms, slide them to the right or the left. (Refer to “Clearing paper misfeeds and jams” chapter in this guide.)</p> <p>If the weights are bolted in place, ask your service representative to adjust them.</p>

8. System unresponsive

This chapter describes problems in which your monitor shows no image, the printer does not respond when you press the Continue button, or the printer main window does not respond.

Symptom	Probable cause	Action
Blank display: pressing a key fails to restore image.	Monitor is switched off; brightness and contrast controls are misadjusted; or there is a more serious problem.	<ol style="list-style-type: none">1. Make sure that the monitor is switched on.2. Make sure that the brightness and contrast controls (if available) are turned far enough to the left to brighten the screen.3. If switch is on and controls are turned to the left, call the service representative.
You have cleared all faults that are listed on the printer control console, but the Attention light is still on and the following message is displayed: Output is stopped. See message at the System Display	There is an uncleared output fault.	Follow the instructions in the output message and press the Continue button.
Printer is totally unresponsive even after pressing the Continue button.	Unknown	Enter Restart Sequencer . If that fails to correct the problem, enter Restart System . If the printer is still unresponsive, call your service representative. Refer to <i>Guide to Configuring and Managing the System</i> for more information on Restart Sequencer.
The first job to print after a reboot or a diagnostics session takes 30 to 60 seconds longer than usual.	This is normal operation.	No action is needed. Subsequent jobs should print without a delay.

A

area 3, clearing paper jams, 4-12
area 4, clearing paper jams, 4-13–4-15
area 5, clearing paper jams, 4-15–4-16
area 7, clearing paper jams, 4-18–4-19
area 8, clearing paper jams, 4-20
area 9, clearing paper jams, 4-21
areas 1 and 1A, clearing paper jams, 4-8–4-9
areas 2 and 2A, clearing paper jams, 4-9–4-11
areas 6 and 6A, clearing paper jams, 4-16–4-17
areas A and B, clearing stitcher/stacker tray paper jams, 4-22–4-23

B

bypass transport, clearing paper jams, 4-23–4-24

C

calculating throughput, 6-4–6-5
Class 1 laser product, iii
clearing
 bypass transport paper jams, 4-23–4-24
 feeder trays, 4-1–4-4
 paper jams
 area 3, 4-12
 area 4, 4-13–4-15
 area 5, 4-15–4-16
 area 7, 4-18–4-19
 area 8, 4-20
 area 9, 4-21
 areas 1 and 1A, 4-8–4-9
 areas 2 and 2A, 4-9–4-11
 areas 6 and 6A, 4-16–4-17
 stacker tray paper jams, 4-24
 stitcher/stacker tray paper jams (areas A and B), 4-22–4-23
Continue button, no response, 8-1
Correcting stacking problems, 7-1
correcting stacking problems, 7-1

D

danger labels, iii
device-dependent operators, 6-10
documentation, ix
DocuPrintFAQ, 5-1

E

eofill, 6-11
error messages, Client Software installation, 2-2

F

FAQ
 DocuPrintFAQ, 5-1
feeder trays, clearing faults, 4-1–4-4
fill, 6-11
flushfile, 6-9

G

glazing, 4-3
gray shading
 setcolorscreen, 6-10
 setscreen, 6-10
 settransfer function, 6-10
 transfer function, 6-10

H

hard disk, Xerox Client Software requirements, 2-1
hotlines
 ozone information, iii
 safety, iv

I

invisible strokes, setlinewidth, 6-11

L

labels, danger, iii
laser safety, iii
List Sample Documents command, 5-1
listing, sample documents, 5-1

M

measuring performance, 6-2–6-4
messages
 Client Software installation, 2-2
 paper jams, 4-5
modem
 enable, 1-2
monitor, blank display, 8-1

N

Novell implementation, troubleshooting, 3-1–3-3

O

operation safety, iii, iii–iv
 ozone, iii
 ozone information, iii

P

page order, setting, 6-9
 paper
 clearing jams
 area 3, 4-12
 area 4, 4-13–4-15
 area 5, 4-15–4-16
 area 7, 4-18–4-19
 area 8, 4-20
 area 9, 4-21
 areas 1 and 1A, 4-8–4-9
 areas 2 and 2A, 4-9–4-11
 areas 6 and 6A, 4-16–4-17
 bypass transport, 4-23–4-24
 stacker tray, 4-24
 stitcher/stacker tray (areas A and B), 4-22–4-23
 jams
 graphic display, 4-5
 message display, 4-5
 misfeeds, frequent, 4-3
 performance
 measuring, 6-2–6-4
 PostScript, proprietary extensions, 6-9
 PQA
 automatic, 6-1
 manually running, 6-2
 Print Quality Adjusting, *see* PQA
 print quality, adjusting, 6-1–6-11
 Print Sample Document command, 5-2
 printers
 start-up latency, 6-2, 6-6–6-8
 printing
 quality
 features affecting, 6-9
 monitoring, 6-1
 sample documents, 5-1
 speed, optimizing, 6-1–6-11
 procedures
 calculating throughput, 6-4–6-5
 feed belt, cleaning, 4-3–4-4
 paper trays, clearing misfeeds, 4-1–4-2
 product operator, 6-9
 PServer problems, 3-1
 publications, related, ix

R

Ready To Open indicator, 4-1
 remote service, 1-2
 requirements, hard disk, 2-1
 RPrinter problems, 3-3

S

safety
 hotline, iv
 laser, iii
 operation, iii–iv
 precautions, iii
 standards, iii
 sample documents, DocuPrintFAQ, 5-1
 SAP packets, 3-1
 scanconversion, 6-11
 scuffer arms, 4-24
 sequencer log file, 6-2
 server override switch, Xerox Client print command, 2-1
 service call, required information, 1-1
 setbscolor, 6-10
 setcmykcolor, 6-10
 setcolorscreen, 6-10
 setflat, 6-11
 setgray, 6-10
 setlinewidth, 6-11
 setrgbcolor, 6-10
 setscreen, 6-10
 settransfer, 6-10
 Show Log command, 6-2
 smooth curves, 6-11
 stacker tray, clearing paper jams, 4-24
 start-up latency
 minimizing, 6-6–6-8
 printers, 6-2
 stitcher/stacker
 tray, clearing paper jams (areas A and B), 4-22–4-23
 stroke, 6-11
 system unresponsive, 8-1

T

third-party finishing device, 6-9
 throughput, calculating, 6-4–6-5
 transfer, 6-10
 transfer functions, 6-10
 Tray Unlock button, 4-1
 troubleshooting
 Novell implementation, 3-1–3-3
 Xerox Client Software installation, 2-1–2-2

X

- Xerox Client print command, 2-1
- Xerox Client Software, troubleshooting installation,
2-1-2-2
- Xerox Product Safety, iv

