
Xerox 4890 HighLight Color Laser Printing System Operator Guide

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Laser safety

The Xerox 4890 HighLight Color Laser Printing System (LPS) is certified to comply with laser performance standards set by the U.S. Department of Health, Education, and Welfare and by IEC 825 for non-U.S. markets as a Class 1 laser product. This is a class of laser products that does not emit hazardous radiation. This is possible only because the laser beam is inaccessible during all modes of customer operation.

WARNING: Use of controls or adjustments, or performances other than specified herein, may result in hazardous radiation exposure.

Operational safety

Your Xerox equipment and supplies are designed and tested to meet strict safety requirements. These requirements include safety agency examination, approval, and compliance with established environmental standards. Attention to the following notes ensures the continued safe operation of your equipment.

U.S. only: If you need any additional safety information concerning the equipment or if you need Xerox-supplied materials, call the following toll-free number: 1-800-828-6571.

Always:

- Connect equipment to a properly grounded power source receptacle. If in doubt, have the receptacle checked by a qualified electrician.

WARNING: Improper connection of the equipment grounding conductor can result in electrical shock.

- Place equipment on a solid support surface with adequate strength for the weight of the machine.
- Use materials and supplies designed specifically for your Xerox equipment.

WARNING: Use of unsuitable materials may result in poor performance and can possibly create a hazardous condition.

Never:

- Move or relocate the printer or the system controller without first contacting Xerox for approval.
- Use a ground adaptor plug to connect equipment to a power resource receptacle that lacks a ground connection terminal.
- Attempt any maintenance function that is not specifically described in this guide.
- Remove any covers or guards that are fastened with screws. There are no operator-serviceable areas within these covers.
- Override or "cheat" electrical or mechanical interlock devices.
- Use supplies or cleaning materials for other than their intended purposes.
- Operate the equipment if unusual noises or odors are noticed. Disconnect the power cord from the power source receptacle and call your Xerox service representative to correct the problem.

Ozone information

This product produces ozone during normal operation. The ozone produced is dependent on copy volume and is heavier than air. Providing the proper environmental parameters as specified in the Xerox installation instructions ensures that concentration levels meet safe levels.

U.S. only: If you need additional ozone information, request the Xerox publication, *Ozone*, by calling Xerox Product Safety at the following toll-free number: 1-800-828-6571.

Radio communication

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules, for U.S. markets, and with the EEC 82/449 standard for VDE 08791 Class A device, for non-U.S. markets. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

<p>CAUTION: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference that you are required to correct at their own expense.</p>
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The *Xerox 4890 HighLight Color Laser Printing System Operator Guide* provides step-by-step instructions on operating and maintaining your Xerox 4890 HighLight Color Laser Printing System. The guide is designed to help you perform all standard operator tasks and should be kept near the printer at all times.

This guide is intended for operators who perform the routine operation and maintenance of the printer. If your job involves other tasks, such as system administration or job creation, refer to other documents in the *Xerox 4890 HighLight Color LPS Reference*.

Document conventions

This guide uses the following conventions:

< >	Angle brackets are used for keys on the system controller keyboard.
{ }	Curly brackets are used for required characters.
...	Ellipses indicate that you can repeat a parameter or list a series of parameters.
[]	Square brackets are used for optional command characters.
|	Vertical bars are used to separate parameters in a series. The vertical bar stands for "or."
bold	Bold is used for characters you enter at the command line.
<i>italics</i>	Italics is used for variable information.
terminal font	Terminal or monospace font is used to display system responses.
<u>underline</u>	System default parameters are underlined.
UPPERCASE	Uppercase letters are used for command names.

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.

This chapter describes the standard and optional components of the Xerox 4890 HighLight Color Laser Printing System (LPS), as well as the tasks you will perform in your function as operator.

Primary operator tasks

Table 1-1 provides an overview of major tasks you perform as printer operator and describes how these tasks fit into the process of printing a job on the 4890 LPS.

Table 1-1. **Operator task flow overview**

Tasks	Procedures	Chapters, Sections
Set up the system	1. Power on the system	2, "Powering on the LPS"
	2. Set up Queue Management	2, "Setting up queue management"
Set up print job source		
<i>Offline jobs</i>	1. Power on the tape drives	3, "Powering on the open reel tape drive" 3, "Powering on the 1/2 inch cartridge tape drive"
	2. Load the tape drives	3, "Loading an open-reel tape" 3, "Loading 1/2 inch cartridge"
	3. Unload the tape drives	3, "Unloading an open reel tape" 3, "Unloading a 1/2 inch cartridge"
<i>Online jobs</i>	1. Communicate with the channel-attached host	3, "Communicating with the channel-attached host"
	2. Set up print jobs from the host interface processor	3, "Setting up print jobs from the host interface processor"
Run the print job	1. Set up feeder tray	4, "Setting up feeder trays"
	2. Set up output trays	4, "Setting up output trays"
	3. Determine the color requirements of the job. If the required color is not installed:	
	— Install the required color	5, "Changing the color dry ink"

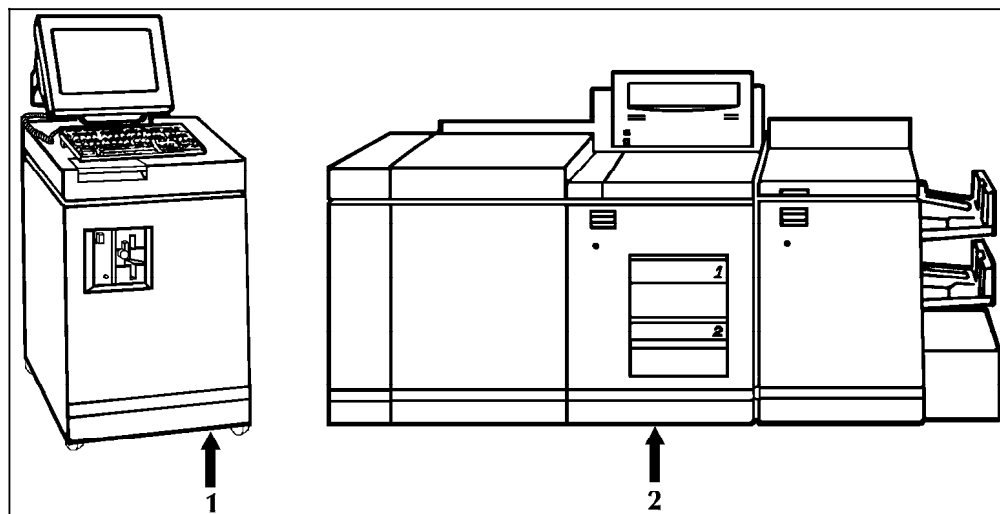
Table 1-1. **Operator task flow overview** (continued)

Tasks	Procedures	Chapters, Sections
Run the print job (continued)	— Print job using the dry ink installed or black only	5, "Substituting inks"
	— Allow the job to be queued	4, "Managing print jobs and queues"
	— Cancel the job	4, "Managing print jobs & queues"
	4. Print a sample if desired	4, "Printing samples"
	— Change paper size if necessary	5, "Changing paper size"
	— Change form alignment if necessary	5, "Adjusting form alignment"
	5. Start the job	4, "Starting a print job"
	6. Check job and queue status	4, "Checking job and printer status"
Maintain print jobs (perform if requested by the controller)	7. Manage print jobs and queues	4, "Managing print jobs and queues"
	1. Add paper	5, "Loading feeder trays"
	2. Add dry ink	5, "Adding dry ink"
	3. Remove output from the output tray	5, "Unloading output trays"
	4. Add stitcher wire	5, "Adding stitcher wire"
Maintain the printer (perform at periodic intervals)	5. Run PQA	5, "Running Print Quality Adjustment"
	Various tasks	6, "Printer maintenance"
	— Clean tape and disk drives	
	— Copy and back up files	
	— Replace dry ink waste container	
	— Replace developer waste container	
	— Reset the date and time.	

System components

The 4890 LPS consists of two base components shown in figure 1-1. Your system may also have optional components. This section helps you identify the standard and the optional components in your system.

Figure 1-1. 4890 base components

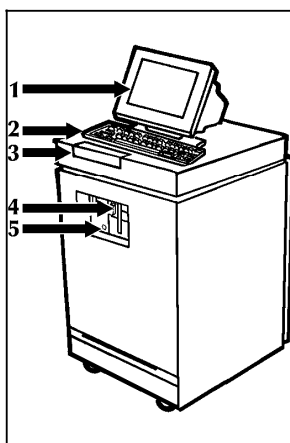


- 1 4890 system controller
- 2 Printer

System controller

You interact with the system through the components of the system controller shown in figure 1-2. The system controller also contains the central processing unit and the system disks.

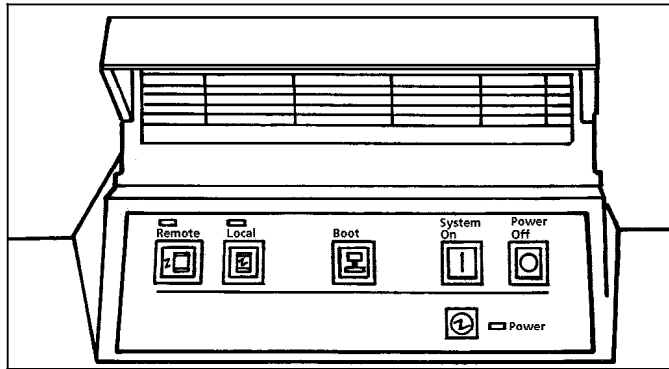
Figure 1-2. System controller



- 1 Display
- 2 Keyboard
- 3 System controller panel
- 4 Floppy disk drive
- 5 1/4 inch cartridge tape drive (optional)

The system controller panel shown in figure 1-3 contains important controls for operating the 4890.

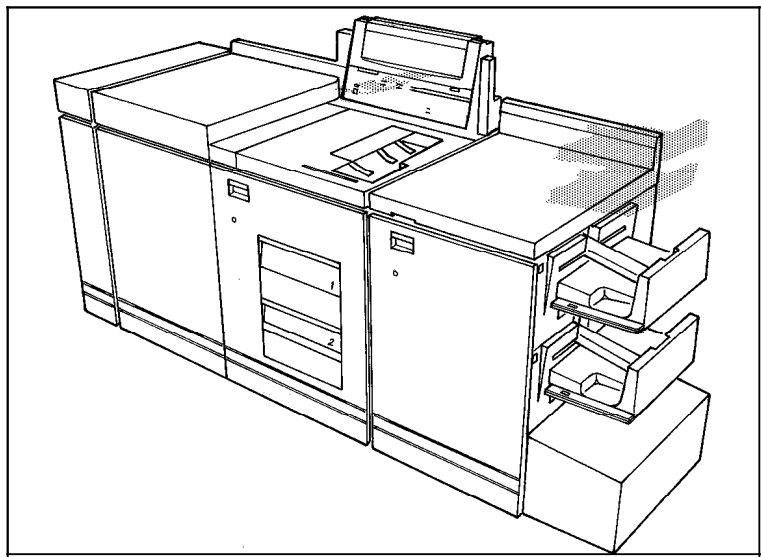
Figure 1-3. **System controller panel**



Printer

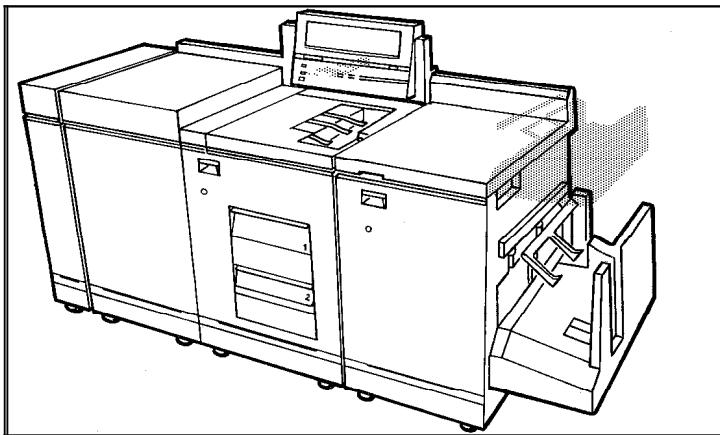
The printer has two stacker options: the dual stacker shown in figure 1-4 and the stitcher/stacker shown in figure 1-5.

Figure 1-4. **Printer with the dual stacker option**



The dual stacker offers a choice of two separate output trays. The stitcher/stacker offers the ability to staple sets.

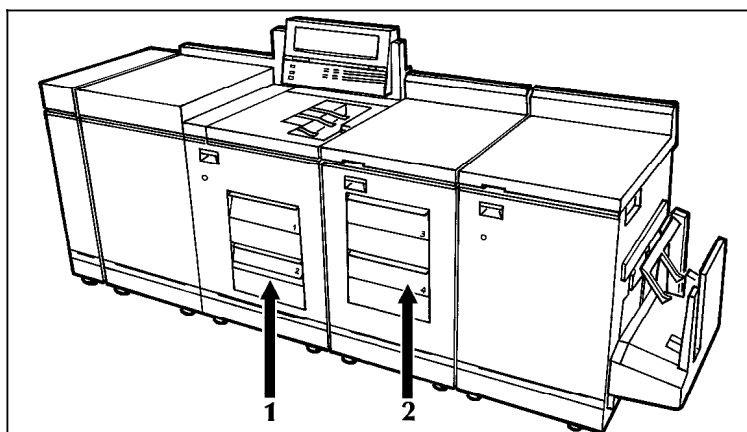
Figure 1-5. **Printer with the stitcher/stacker option**



Both stacker options also provide a sample tray for additional limited output. The sample tray receives sample prints, rejected pages, and transparencies.

The printer has two feeder trays shown in figure 1-6. Your 4890 LPS may also have an optional high-capacity feeder, which adds two feed trays to your system for a total of four feeder trays.

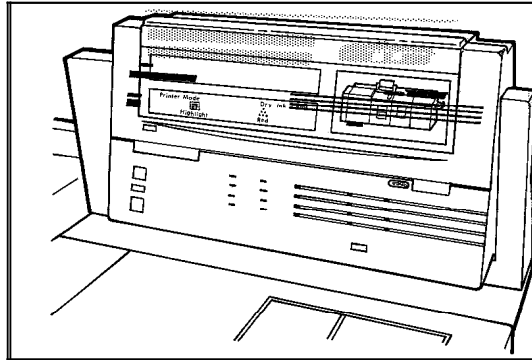
Figure 1-6. **Printer with the high-capacity feeder**



- 1 Standard feeder trays: trays 1 and 2
- 2 High-capacity feeder: trays 3 and 4 (optional)

The printer control console shown in figure 1-7 displays important messages, attention signals, and information about the setup of your system. The printer control console also contains a graphic mimic of the system for finding the location of paper jams.

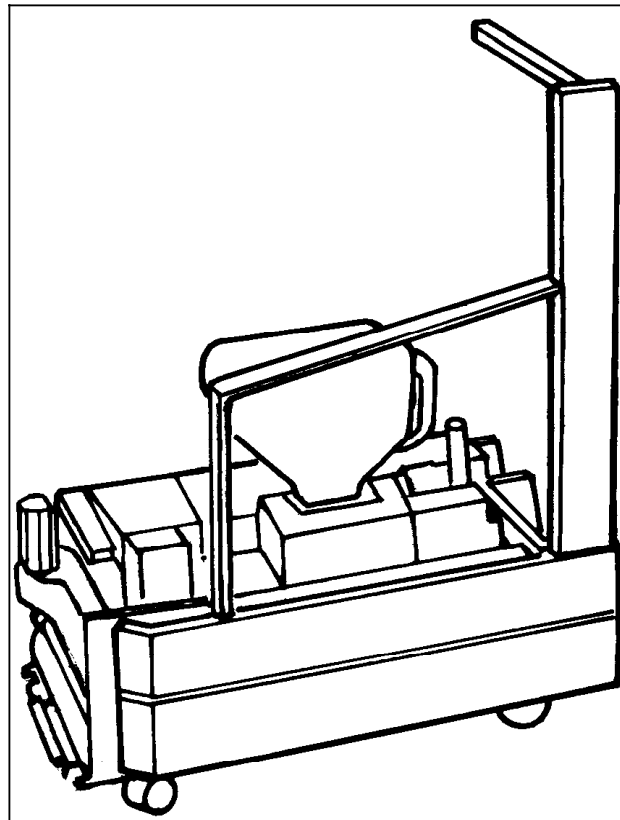
Figure 1-7. **Printer control console**



The customer changeable unit (CCU) is mounted inside the printer. It contains the color developer housing and the color dry ink bottle. To change the color dry ink installed in the printer, you remove the CCU currently installed and replace it with a CCU of the desired color.

The CCU changeout cart shown in figure 1-8 is used to remove and install the CCU. The cart is also used to store the CCU when it is not installed in the printer.

Figure 1-8. **CCU changeout cart**



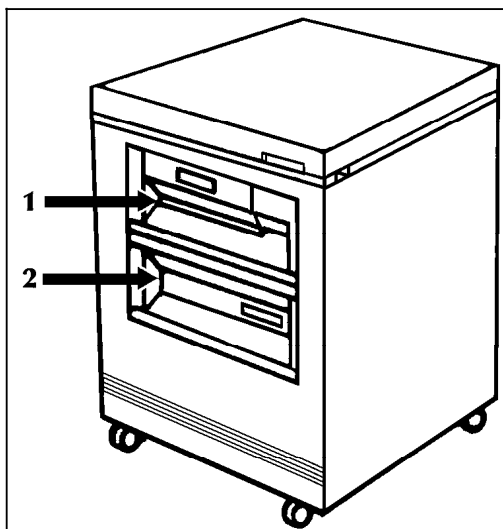
Print job sources

Your 4890 can process print jobs from a variety of sources. Print job sources can be divided into two main categories: online and offline. Your 4890 LPS may have either one or both connection types.

To process online jobs through a network connection or through a direct channel connection, your system is equipped with an interface appropriate for the connection. The interface is mounted inside the system controller cabinet. If you are unsure of the interfaces installed in your system, consult your system administrator.

Offline jobs are run from data stored on magnetic tape. To process offline jobs with your 4890 LPS, your system is equipped with one or more tape drives mounted in a peripheral cabinet shown in figure 1-9.

Figure 1-9. **Peripheral cabinet**



- 1 Open-reel tape drive
- 2 1/2 inch cartridge tape drive

The tape drive reads the print job data from the tape and transmits it to the system controller. The dual tape drive may contain either an open-reel tape drive or 1/2 inch cartridge tape drive, or both drives may be mounted in the same cabinet.

Basic system functions

You use special function keys and command syntax to operate the 4890.

Function keys

<ALT>	Activates the extended (alternate) characters in the green keyboard. You must hold down the <ALT> key, press the multinational key, and then release both keys.
<BACKSPACE>	Deletes the character to the left of the cursor.
<CAP LOCK>	Makes all characters you enter uppercase (all caps). This key toggles on and off.
<CLEAR SCREEN>	Clears all data from the screen and the display memory. The cursor returns to column 1, line 1, in the upper-left corner of the screen. The key only works if the cursor is in column 1 of the display screen.
<CON>	Resumes (continues) processing.
<CTRL><E>	Deletes the character highlighted by the cursor.
<CTRL><X>	Deletes the current line.
<CTRL><Z>	Clears all data from the screen and the display memory. The cursor returns to column 1, line 1, in the upper-left corner of the screen. The key only works if the cursor is in column 1 of the display screen.
<DELETE>	Deletes the character under the cursor.
<ENTER>	Executes commands keyed in at the command line.
<HOME>	Moves the cursor to the beginning of the current line.
<JOB STATUS>	Displays status information about the print job. There can be a delay of a few seconds before the status displays.
<LEFT ARROW>	Moves the cursor left one space.
<LINE DELETE>	Deletes the current line.
<PRINTER STATUS>	Displays printer status information. There can be a delay of a few seconds before the status displays.

<RIGHT ARROW>	Moves the cursor right one space.
<SAMPLE>	Sends a sample of the next page to be printed to the sample tray. Does not interrupt printing.
<SHIFT>	Activates the symbols on the upper portion of certain keys on the keyboard. For example, the symbols above the numbers on the numeric keys and the symbols above the punctuation keys.
<SPACE BAR>	Inserts a space at the cursor position.
<STOP>	Halts processing temporarily.
<TAB>	Moves the cursor eight spaces to the right.

Note: When the function keys for <CONTINUE>, <JOBS STATUS>, <PRNTR STATUS>, or <SAMPLE> are pressed, an A, B, C, or D may occasionally be displayed on the screen rather than the desired function being performed. This can occur when the processing unit is extremely busy processing other requests and is unable to quickly respond to the terminal input sequence created by these function keys. Simply erase the character, either with a backspace or LINE DELETE, and press <ENTER> to cancel the input. Then press the desired function key again.

If you are willing to accept and ignore an error message, you can clear the input request by pressing the function key you want while the character is still displayed. Following the error message, press the desired function key again.

Commands

You enter commands at the command line of the system controller. The 4890 HighLight Color LPS accepts your commands whenever the following prompt displays:

READY FOR COMMANDS

For a command to be recognized by the system, you must do the following:

1. Enter the command in the format specified by the system.
2. Press <ENTER> to execute.

Note: All instances where the operator is instructed to use <ENTER> or <RETURN> should be understood to mean the same thing. Some keyboards have <ENTER> and some keyboards use <RETURN>. In cases where both keys are available for selection, the operator should use the key specified.

If you make an error entering a command, the system displays the following message:

OS2710 Invalid command re-enter.

1. Verify the command syntax:
 - Keyword is correct
 - All required parameters are included
 - Parameters are correct
 - Parameter values are valid

- Commas are in place for all parameters skipped.
2. Enter the command again.

Commands are not case sensitive. You can enter them using lowercase, uppercase, or a combination of the two.

The command syntax is made up of two elements:

- Keywords
- Parameters.

Keywords

All commands begin with a keyword. This word sends a specific instruction to the system (for example, SAMPLE).

You can enter keywords in any of the following ways:

- Full spelling (for example, SAMPLE)
- Abbreviation (for example, SAM)
- Three or more characters, up to the full command (for example, REALLOC for REALLOCATE).

A few commands begin with more than one keyword (for example, SUB INK). Exceptions to this are I, O, A (for INPUT, OUTPUT, and ALL) and Q (for QUEUE).

Other exceptions to keywords are CAR (for CARTRIDGE) and TAP (for TAPE). CAR and TAP are reserved and cannot be used as file names.

Parameters

Most parameters are optional. You use them to refine commands. For example, the "I" in STOP I specifies input processing. Likewise, the "O" in STOP O specifies output processing.

If you use more than one parameter, follow these guidelines:

- Separate each parameter with a comma (for example, PQA CONTINUE,2,S).
- Do not include spaces around the commas.
- Enter parameters in the order specified for that command.

If you want to omit a parameter, you must enter a comma in its place (for example, PQA CONTINUE,,S). The default value set for the omitted parameter is then used.

For more information about commands, refer to the *Xerox 4850/4890 HighLight Color Laser Printing System LPS Command Reference*.

2.

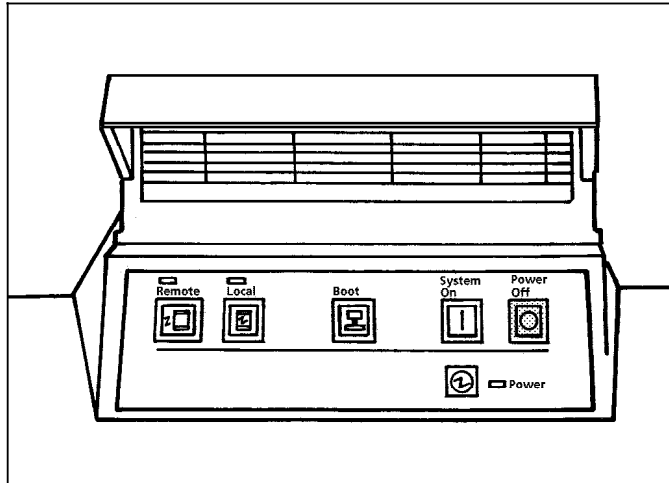
Setting up the LPS

This chapter describes the procedures for powering up and logging onto the Xerox 4890 HighLight Color Laser Printing System (LPS).

Powering on the LPS

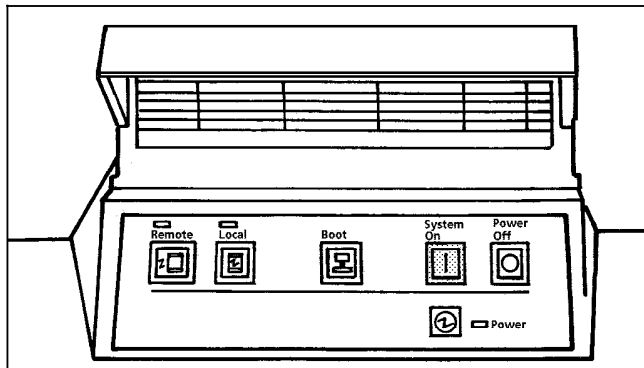
Follow this procedure to power up the 4890 LPS.

1. Select local or remote control of the system.



Press the Local button on the system controller panel to use the internal power supply or press the Remote button to use a remote power supply. Contact your system administrator if you are not sure what power supply to use.

2. Press the System Power On button.



Either the Local status indicator or the Remote status indicator lights show the power supply you selected (refer to step 1).

The Power indicator lights.

A cursor appears on the system controller display for about 15 seconds while the system completes its initial diagnostic tests, then READY \$ appears on the display. There may be a delay of up to 80 seconds before the \$ appears.

3. Boot the operating system software.

Your system may be set up to boot automatically after powering on. This control is set by the system administrator. In this case, you do not need to boot the operating system software.

If your system does not boot automatically, enter **B** at the system controller keyboard.

When the booting process is complete, the system controller displays the following message:

```

XEROX 4890
LASER PRINTING SYSTEM
Version V5.0
Copyright 1991, 1992, 1993, 1994 Xerox Corporation. All rights reserved.
Disk ID = system name MMM DD, 1994 15:06:16

```

When initialization is complete, the system displays the date, time, and the ready message:

```
OS1000 READY FOR COMMANDS
```

4. Log on to the system

Logging on to security level 1 is automatic. This security level is usually appropriate for an operator. However, if you wish to enter the LIGHT ENABLE, LIGHT DISABLE, or SETTIME command, you must log on to security level 2.

To log on to level 2, enter the LOGON command:

LOGON 2 [,.password]

Your system administrator must provide you with the password for security level 2. For more information about logging on, refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*.

After powering on, allow four to seven minutes for the printer to warm up. When the printer is ready, you hear a tone and the system displays the following message on the printer control console:

```
READY--JOB START WILL BE DELAYED 20-40 SECONDS FOR PRINT
QUALITY ADJUSTMENT
```

There may also be a display message on the printer control console:

```
BLACK HOUSING NOT READY
COLOR HOUSING NOT READY
```

If this should occur, you will need to perform the POA command described in the "Print job maintenance" chapter of this guide.

Setting up queue management

The Queue Manager facilitates the efficient printing of reports having different resource requirements.

When set up in the “schedule by resources” mode, the system queues any report that cannot be printed because it requires a resource (color or stitching) that is not available. Reports that can be printed with the current printer resources are scheduled for printing and are printed according to the order received.

To set up your printer for proper queue management perform the following:

1. Enter the INITIALIZE QUEUE command.

INITIALIZE QUEUE <ENTER>

Your system administrator will identify any alterations to this command for your printing environment.

2. To set up the scheduling mode, enter the SCHEDULE command.

SCHEDULE [RECEIVED | SINGLE | MULTIPLE]

Your system administrator will identify which of the modes you will enter.

3. Setting up print job sources

You can transmit print jobs to the Xerox 4890 HighLight Color Laser Printing System (LPS) from one of three sources:

- A magnetic tape. This is known as an offline job source. The 4890 HighLight Color LPS supports 1/2 inch cartridge tape and open reel tape formats to print offline jobs:
 - Mount the tape on the appropriate tape drive (refer to the "Open reel tapes" or "1/2 inch cartridge tapes" section in this chapter)
 - Establish communication between that tape drive and the controller (refer to the "Receiving offline jobs" section in this chapter).
- A channel-attached host computer. This is known as an online job source. Refer to the "Communicating with a channel-attached host" section in this chapter.
- A network connection through the host interface processor. This is also an online job source. Refer to the "Communicating with the channel-attached host" section in this chapter.

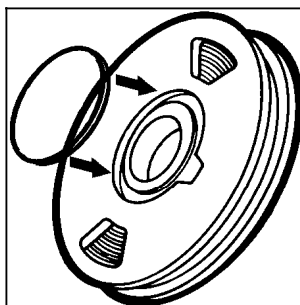
Open reel tapes

Improper handling of open reel tapes can cause damage to tapes and to tape drives, and can result in unreadable data. Observe the following guidelines when handling open reel tapes:

- Do not allow dust, dirt, or smoke to come in contact with the tapes, tape storage area, or tape drives.
- Do not touch the tape beyond the first few feet on the reel.
- Do not place tapes near electric motors or other devices that generate electromagnetic energy.
- Do not pull on the tape at the end of a reel. Wind tape off the supply reel by turning the reel at the hub.
- Make sure that the components of a tape drive are clean and dry before mounting the tape.
- Store tapes vertically in racks in a clean, climate controlled environment. If the temperature or humidity of the tape storage environment differs from the printer environment, condition tapes for 24 hours in the printer environment before using them.

Write protection of open reel tapes

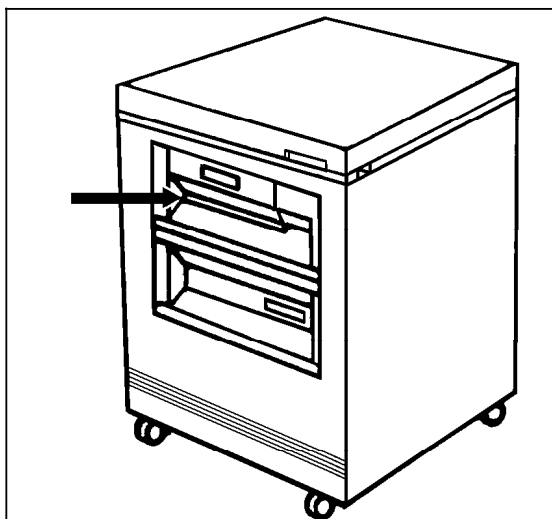
Open reel tapes have a removable write-enable ring that fits into the inside of the reel. Removing the write-enable ring prevents the system from writing data on to the tape. This protects the data on the tape from accidental erasure.



In most cases, you do not need to write data to a tape when running print jobs, so it is not necessary to have the write-enable ring installed.

Optional peripheral cabinet tape drives

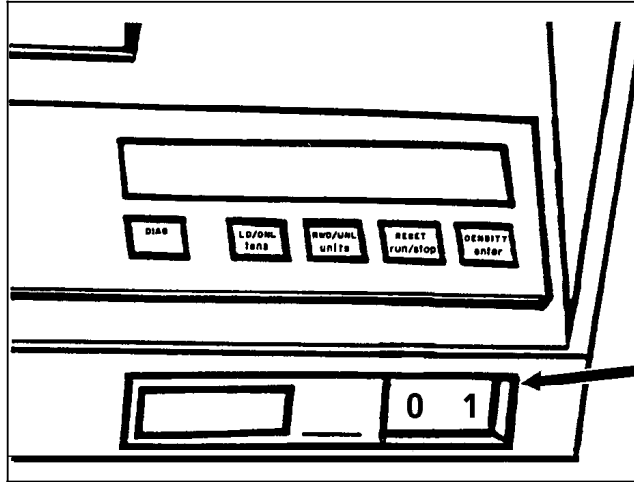
The open reel tape drive is mounted in the peripheral cabinet at the location shown below.



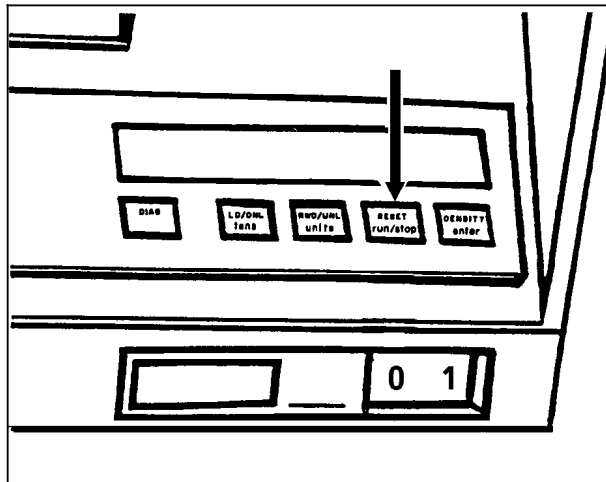
Powering on the open reel tape drive

To power on the open reel tape drive:

1. Press the Power switch to the on position by pressing down on the side marked 1.



2. Press the Reset button to open the loading door.



The loading door opens and you can load a magnetic tape.

If "OK" appears on the message display, but the door is closed, press the Reset button to open it. If this fails, tap lightly on the door to open it.

Loading an open reel tape

The open reel tape drive features automatic loading and threading of tapes. In most cases, you should use the automatic loading feature. If you must load or unload the tape manually, for example because of a power loss, refer to the "Open reel tape drive problems" section in the "Solving problems" chapter.

To load an open reel tape:

1. Check the write-enable ring.

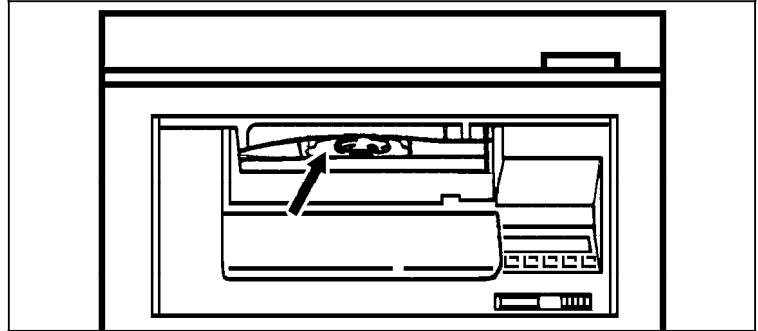
To protect the data on the tape from accidental erasure, remove the write-enable ring.

If you need to write on the tape, make sure that the write-enable ring is installed.

2. Check the tape to make sure the end is free.

Often tapes are stored with the ends taped or secured by a rubber block to prevent the tape from unraveling. Remove the tape or block.

3. Press the Reset button to open the tape loading door.
4. Place the tape reel in the loading chamber with the ring side facing down.



5. Close the loading door.

"LOCATING" and then "LOCKING" appear on the tape drive message display.

The self-loading routine of the tape drive threads the tape.

When the tape drive finds the Beginning of Tape (BOT) indicator, "Ld Point" appears on the tape drive message display and the tape drive is placed online.

Unloading an open reel tape

You can unload an open reel tape by entering the following command at the system controller keyboard:

TAPE UNLOAD

This command rewinds and unthreads the tape, and opens the loading door. The system accepts the TAPE UNLOAD command only while it is idle.

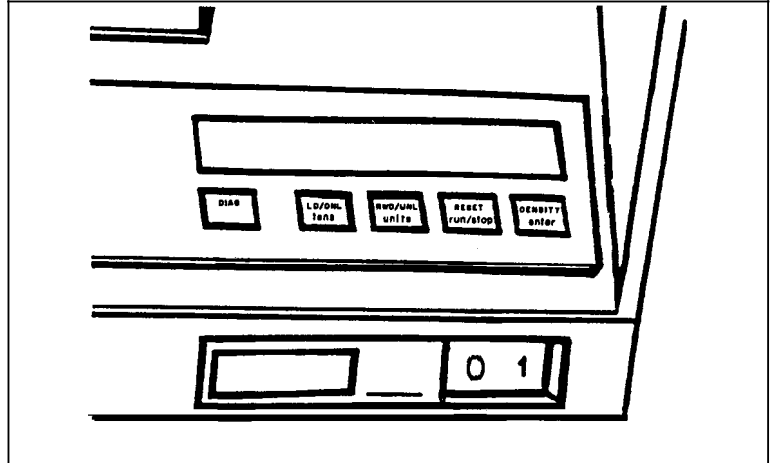
If you want to unload a tape while the system is processing or printing, unload the tape manually using the following procedure:

To manually unload an open reel tape:

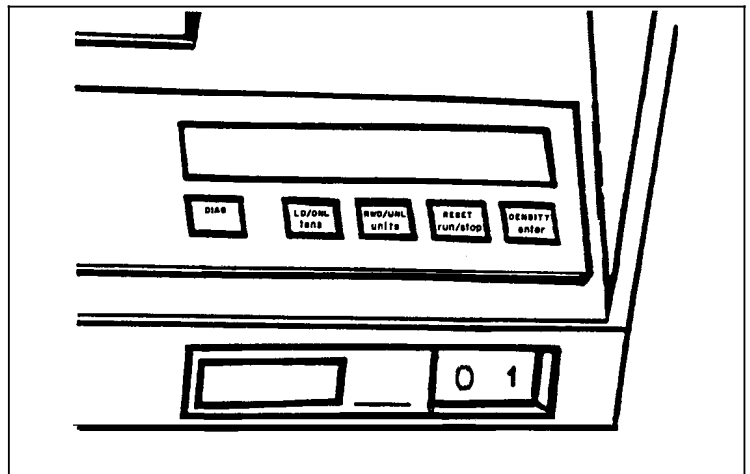
1. Make sure the LPS is not accessing the tape.

CAUTION: Attempting to unload a tape while the system is accessing the tape drive could result in the loss of data.
--

- Press the Reset button (or the Diag button if you are in Diagnostic mode).



- Press the Reset button and then the Rwd/Unl button.



The tape rewinds through the BOT. The tape door opens.

- Remove the tape.
- Close the tape loading door.

1/2 inch cartridge tapes

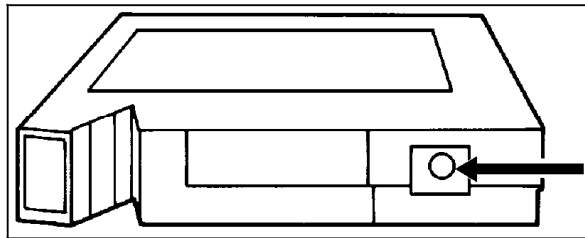
Improper handling of cartridge tapes can cause damage to tapes and to tape drives, and can result in unreadable data. Observe the following guidelines when handling cartridge tapes:

- Inspect each cartridge for obvious damage before inserting it into the cartridge tape drive.
- Always remove cartridges from the tape drive before powering off the drive.
- Store cartridges vertically in racks in a clean, climate-controlled environment. If the temperature or humidity of the tape storage environment differs from the printer environment, condition the cartridges for 24 hours in the printer environment before using them.

- Never attempt to open the cartridge, remove the tape from the cartridge, or force open the feed slot door.
- Do not expose the cartridges to extreme heat, humidity, or direct sunlight.
- Do not place tapes near electric motors or other devices that generate electromagnetic energy.
- Do not attempt to clean a cartridge with anything other than a dry, lint-free cloth.
- If the leader block comes off a cartridge tape, repair the cartridge using a leader block repair kit before loading it.
- Do not attempt to insert a cartridge if its label is peeling off. Peel the old label completely off and replace it with another label.
- Do not write on a tape cartridge label while it is on the cartridge. If you wish to change a label, write a new label, remove the old label, and replace it with the new label.

Write protection of cartridge tapes

A 1/2 inch cartridge tape has a thumbwheel on the side of the cartridge for write protection. Write protection prevents the system from writing data on to the tape. This protects the data on the tape from accidental erasure.

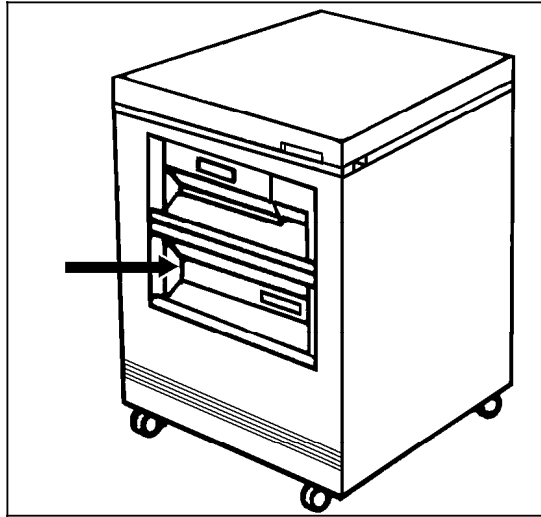


To enable write protection (prevent data from being erased), turn the thumbwheel so that the white dot is showing in the window.

To disable write protection (allow data to be written to the tape), turn the thumbwheel so that the white dot is not showing in the window.

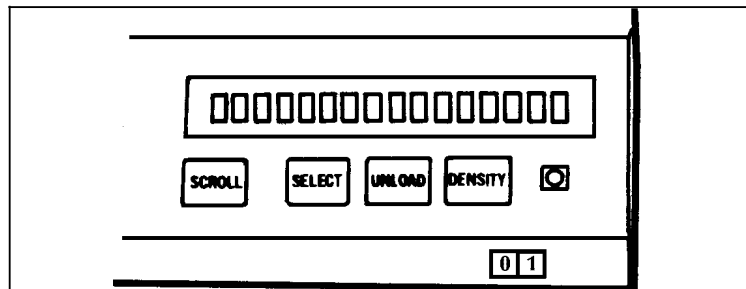
In most cases, you do not need to write data to a tape when running print jobs, so it is safer to enable write protection before loading tapes.

The 1/2 inch cartridge tape drive is located in the optional peripheral cabinet at the location shown below.



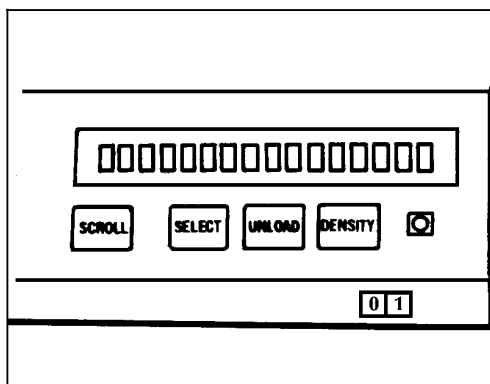
Powering on the 1/2 inch cartridge tape drive

1. Press the Power switch to the on position by pressing down on the side marked 1.



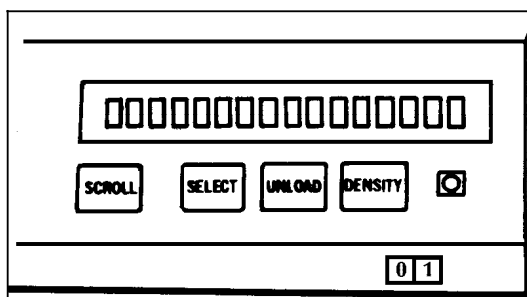
Diagnostics are performed and the results are listed on the message display.

2. Press and release the Scroll button.



" +Subsys Status" appears in the message window.

3. Press the Select button.



"Online Request" appears in the message display.

Note: If the unit is already online, "Offline Request" appears in the message display. Most units turn on in online mode if they were turned off in online mode.

4. Press the Select button twice to select and execute the online function. The following message appears on the display:

ON : IDLE : *

Loading a 1/2 inch cartridge

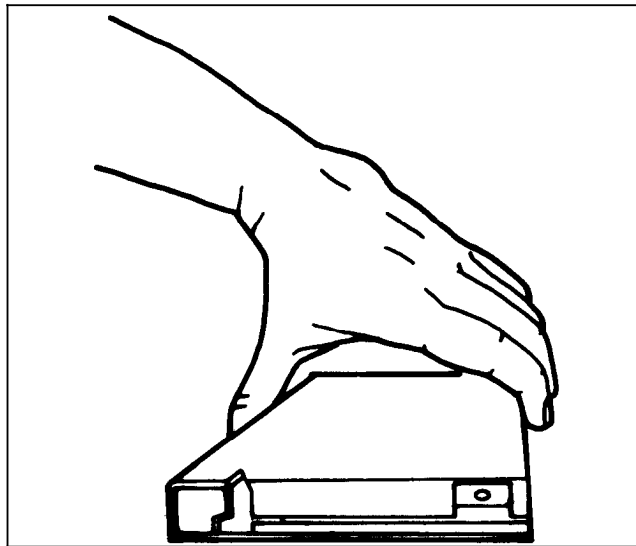
To load a 1/2 inch cartridge tape:

1. Inspect the cartridge for visible damage.

For more specific information on checking for signs of damage, refer to the guideline for handling tapes at the beginning of this section.

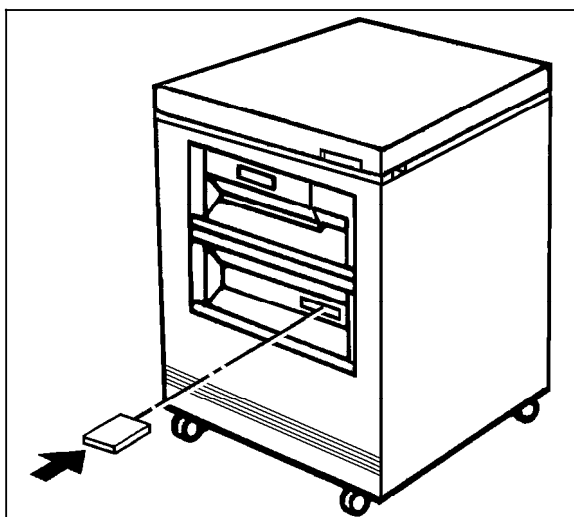
CAUTION: Loading a damaged tape can cause damage to the tape drive and can result in loss of data.

2. Hold the cartridge with the smooth side on top and the leader block toward the drive.



3. Insert the cartridge into the entry slot and slide it all the way into the drive opening until it stops.

CAUTION: When you insert a cartridge, never force it.



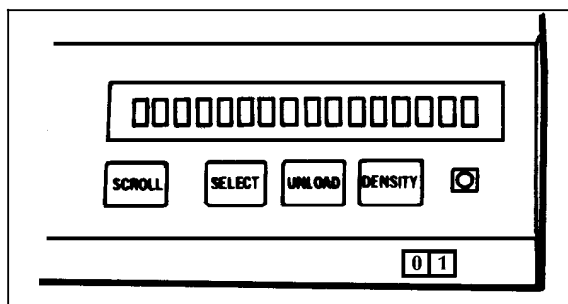
After about 15 seconds, the tape drive completes the loading process and the message display reads "ON LINE." The message display also shows whether the cartridge is file protected (F) or unprotected (U).

Unloading a 1/2 inch cartridge

Under normal circumstances, the system controller rewinds the tape and unloads the cartridge automatically when the job has finished. When the tape ejects, remove it.

If you need to unload the tape manually:

1. Make sure the LPS is not accessing the tape. The tape drive display area must read "Ready."
2. Press the Unload button twice.

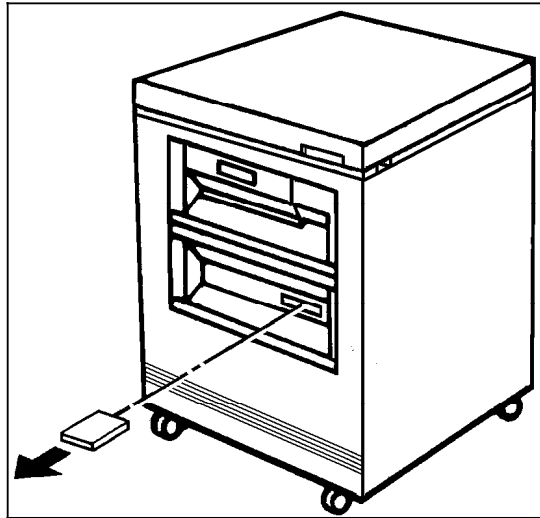


The message display shows the tape drive condition while the rewind and unload operation is in progress.

An asterisk appears in the message display when the cartridge is unloaded.

The cartridge is ejected from the transport.

- Once the cartridge is ejected, remove it from the tape drive.



Receiving offline jobs

Before printing offline jobs, you must identify the tape drive where you mounted the tape containing the print job.

If your system is equipped to process offline jobs, you may have an open reel tape drive, a 1/2 inch cartridge tape drive, or your system may have both. These are your print job sources for offline jobs. Tape drives are mounted in the peripheral cabinet.

Your system may also be equipped with a 1/4 cartridge tape drive. This is not a source for print jobs.

The system recognizes two keywords for specifying the tape drive where the job tape is mounted: TAPE and CARTRIDGE. You must identify the physical tape drive assigned to each of these keywords. You identify the device using the SUB DEVICE command. For example, if you are using a cartridge, you would enter the following substitute device command:

SUB DEV SFCTS FOR TAPE

The TAPE keyword applies to open reel tape drives. Your 4890 LPS has only one option for an open reel tape drive, so you do not need to identify the physical device for this keyword. If an open reel tape drive is installed in your system, the TAPE keyword identifies this device by default.

The CARTRIDGE keyword applies to cartridge tape drives. Your 4890 LPS has two options for cartridge tape drives: the 1/2 inch cartridge tape drive and the 1/4 inch tape drive. The 1/4 inch cartridge tape drive is not a source for print jobs, but it may be identified for copying and backing up files.

- If only one of these tape drive options is installed in your system, you do not need to identify the physical device for the CARTRIDGE keyword.
- If both cartridge tape drives are installed in your system, you must identify the drive using the SUB DEVICE command.

To identify the 1/2 inch cartridge tape drive with the CARTRIDGE keyword, enter the following command:

SUB DEV SFCTS FOR CAR

To identify the 1/4 inch cartridge tape drive with the CARTRIDGE keyword, enter the following command:

SUB DEV SCTS FOR CAR

The device specification remains in effect until you enter a new SUB DEVICE command. For more information about the SUB DEVICE command, refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*.

Communicating with the channel-attached host

A 4890 LPS channel-attached to a host can receive data from the host in online mode. Before data can be sent to the printer, both the printer operator and the host operator must issue commands to place the LPS online to the host.

All 4890 operations and maintenance tasks can be performed while the printing system is online. However, you may be asked to take the 4890 offline for service or other purposes, and to bring it back online when ready to resume operation.

Placing the LPS online

1. Enter the **ONLINE** command.

The system responds by displaying:

```
OS0030 System is "ON-LINE"  
OS1000 READY FOR COMMANDS
```

2. Enter the **START** command and begin normal job processing.

Until a START command is entered, the LPS is in an online but not ready state, and the host does not transmit any data.

3. Request the host operator to vary the system online.

Taking the LPS offline

The 4890 has a feature that flushes print commands. This feature is accessed manually with the DRAIN command, or through the Automatic Drain Feature. When accessing this feature through either method, you will receive a message indicating that there are no pages waiting to be drained, and all the data received by the system has been formatted for output. At that point, output processing continues and a message displays indicating that output is continuing. If there are pages that were previously formatted by the system but not printed, they will print at this time.

For more information on starting print jobs, refer to the "Printing jobs" chapter.

To take the LPS offline, follow these steps:

1. Request the host operator to drain or purge the output from the host to the 4890, then vary the system offline.

2. Press <JOBS STATUS> to determine if the system is idle.
3. If the job queue is empty, enter the **OFFLINE** command, or **ENDJOB** followed by the OFFLINE command.
Entering the ENDJOB command prints any pages remaining in the print file. Then press <JOBS STATUS> again to verify that the queue is empty. Enter the **OFFLINE** command.

4. Enter the **CONTINUE I** command or press <CON>. The following message is then displayed:

OS0040 System is "OFF-LINE"

Setting up print jobs from the host interface processor (HIP)

The 4890 LPS can communicate with hosts that are not channel-attached, in a range of communication environments, or with other networked devices through the host interface processor (HIP) software. All you have to know is the interface or communication mode you use to communicate with the host or network. A brief description of each communication mode is given in the "Selecting a communication mode" section of this chapter. There are several commands that you use to set up the LPS for HIP operation:

- Selecting a host
- Placing HIP online
- Starting HIP

Additional commands available are:

- Taking HIP offline
- Unloading HIP HOST selection
- Changing hosts.

For more information refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*.

NOTE: For resolution of problem messages, refer to the *Xerox 4850/4890 HighLight Color LPS Message Guide*.

Selecting a host

Use the HIP HOST command to specify the host with which you want to communicate:

HIP HOST {871 | DMR | XNS | XPF | XPS}

This is also called specifying the communication mode. Use the HIP HOST command to specify one of the following:

871

Identifies a host in an SNA/SDLC or BSC environment

DMR

Identifies a VAX/VMS host in a DDCMP environment

XNS

Identifies Xerox Network Services (XNS) host in an Ethernet LAN environment

XPF

Identifies an IBM host in an MVS/XA or an MVS/ESA environment

XPS

Identifies Xerox Print Services (XPS) Manager as the printer front end to other hosts.

After entering the HIP HOST command, the following is displayed:

```
HP0010 HOST Interface Processor loaded    15:52:23
OS1000 READY FOR COMMANDS    15:52:23.
```

If your LPS interfaces with only one host, then HIP automatically performs this function each time it is loaded.

Placing HIP online

In order for the printing system to receive files from the host, you must place the interface online. Enter the HIP ONLINE command:

HIP ONLINE [ALL] <ENTER>

The ALL parameter specifies that both print and nonprint files are accepted, otherwise, only print files are accepted. As print jobs are received, they are entered into the HIP job queue before being entered into the Queue Manager queue.

One of the following messages will be displayed:

- HP1210 HOST ONLINE. Accepting ALL jobs.
- HP1220 HOST ONLINE. Accepting print jobs only.
- HP2010 No HOST selected.
- HP2030 ALL not allowed at current LOGON level.
- HP0200 Failed to go ONLINE.

ONLINE ALL is accepted in logon level 2 and above for all hosts except for XNS hosts. ONLINE ALL is the default for XNS hosts.

If the selected host is not online and responding, the following message is displayed every 30 seconds until the host comes online or the online request is terminated using HIP OFFLINE command:

```
HP1240 HOST not responding.
```


Starting HIP

To enable processing to begin, it is necessary to use the HIP START command. Enter HIP START command.

HIP START <ENTER>

After entering the HIP command, the following message-is displayed:

```
OS1000 READY FOR COMMANDS    15:52:23.
```

If the host is not online and responding, the following message is displayed every 15 seconds until the host comes online or HIP is terminated:

```
HP1240 HOST NOT RESPONDING
```

For a complete explanation of all the HIP options available, refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*

Combined HIP set up

To set up for HIP operations, you can use one of the following commands:

HIP HOST

HIP ONLINE

HIP START

To set up for HIP operations, you can also enter:

HIP HOST {871 | DMR | XNS | XPF | XPS} ;ONL;STA <ENTER>

Taking HIP offline

To take HIP offline and stop it from accepting files from the host, enter the HIP OFFLINE command:

HIP OFFLINE <ENTER>

The system response is delayed to the end of the current file if a file is being transmitted. The following messages display:

```
HP1200 OFFLINE pending End Of Transmission.
HP1207 OFFLINE pending end of current active XNS session.
HP1230 HOST OFFLINE.
```

The following are reasons the message HP1230 HOST OFFLINE occurs:

- If an XNS transmission error occurs, the HIP will request retransmission of data starting with the data packet following the last successfully received packet. If the packet can not be successfully retransmitted, the request is aborted and the session with the client is terminated.
- The HIP will also terminate an XNS session (and abort a print request if one is in progress for that session) if it is expecting data from a client but has not received a packet from that client in forty seconds.
- If the HIP has not received a packet within sixty seconds after the last packet was received, it will attempt to determine if an

interface problem exists. To do this, it broadcasts requests for Clearinghouse and Time servers on the net. If the HIP does not receive any responses, it will assume an interface problem has occurred. To correct this problem, the HIP will take the interface offline (to reset the controller), and attempt (up to five times) to bring the interface back online.

Unloading HIP HOST selection

Use the **HIP END** command to terminate HIP processing at the earliest opportune moment. This command is irreversible once issued. HIP may not be brought online until the system completes the HIP END process and displays the following message:

```
HP0020 HOST Interface Processor unloaded
```

When the current files being received or transmitted and printed (if any) are completed, the internal job queue is saved on the system disk for later restart.

Changing hosts

To change from one host to another, perform the following steps:

1. Enter **HIP END** to unload the currently loaded communication mode.
2. Enter the HIP HOST command for the host you want to change to.

If HIP is not offline or if the system is not idle, the command is rejected, and one or more of the following messages is displayed:

- HP2020 Selected HOST not present on system.
- HP2400 HIP interface must be OFFLINE. Enter 'HIP OFFLINE'
- HP7100 Cannot change HOST while jobs are pending or active

To ensure that HIP is started, enter the HIP start command.

This chapter explains the procedures for setting up paper trays, processing a print job, and checking print status displays.

Setting up feeder trays

Each job may have its own paper feeding requirements, including the paper size, color, or stock type. A single job may require several different paper stocks. When a job is ready to print, you must set up the feeder trays so that the job can feed the proper paper stocks.

1. Determine the paper stock requirements of the job.

The paper stock requirements are coded into the job by the person who created the job. The job may designate a specific paper tray or logical grouping of paper trays with a certain stock. This logical grouping of input paper trays is called cluster. This specification is the preference of the person who coded the job.

When a job is ready for printing, the system displays messages indicating the paper stock to load in specific trays according to the cluster. You have the option of loading the trays according to these specifications or overriding them.

2. Once you have determined what stocks to load in specific trays, you must load them with the correct stock.

Setting up output trays

In most cases, output is delivered to the stacker trays in automatic switching mode if the dual stacker is installed on your system, or to the only output tray on the stitcher/stacker if it is installed. You may need to redirect the output to a specific tray or to the sample tray:

- If one of the output trays has malfunctioned
- If the job is printing on transparencies, it must be directed to the sample tray.

Determining the color requirements of the job

If the Queue Manager is running in Schedule as Received mode, you must take one of these actions when a report requires a color other than the color installed in the printer:

- Change the color dry ink installed in the printer. Refer to the “Changing the color dry ink” section in the “Print job maintenance” chapter.
- Substitute the current ink for the ink required by the report. Refer to the “Substituting inks” section in the “Print job maintenance” chapter.
- Abort the job. Refer to the “Managing print jobs and queues” section later in this chapter.

If the Queue Manager is running in Schedule by Resources mode, and a report requires a color other than the color installed, the system holds the report in the queue.

Under normal circumstances, you allow the report to be queued. When it is convenient, change the color dry ink installed in the printer. The report then prints in sequence according to reports of that color in the queue in order received.

If you need to print the report without changing the color dry ink installed in the printer:

- Schedule the job and then substitute inks for that report only
- Change the color dry ink and then move the report to the top of the queue.

For more information on how to determine the color required by a report, refer to the “Checking job status” section later in this chapter.

Printing samples

You can obtain sample prints of the following:

- Forms, logos, graphic images, or fonts for reference when creating jobs. Programmers at your site may ask you to sample these files.

Programmers may request using the **HARDCOPY** command to sample non-color graphic image files because it provides more detailed information about the file. For more information on the **HARDCOPY** command, refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*.

- The current job while the job is running. You can use sample prints to check print quality and form alignment prior to printing the entire job.

To sample a form, logo, graphic image, or font file, or to sample pages from a job that is temporarily suspended, enter the sample command:

SAMPLE [*filename*[_S|D]][,*copies*] [,INKS=*inkname*]

filename

The name of the file to sample, including the file extension.

Example: SAMPLE SAMPLE.FRM,D,2,INKS='XEROX BLUE'

[S|D]

S prints the sample pages in simplex mode.

D prints the sample pages in duplex mode.

[copies]

The number of copies of the sample pages to print.

INKS=*inkname*

The name of a valid ink name to override the ink called for in the file you are sampling. For example, the format is INKS='XEROX BLUE'

To sample pages from the current job while the job is running:

1. Verify that the job is more than three pages long.

If the job is less than three pages, the system cannot deliver sample pages.

2. Press <SAMPLE> on the keyboard, press the Sample button on the printer control console, or enter the SAMPLE command with no parameters.

The system delivers sample pages to the sample tray. When you sample pages from a job in progress, the system reprints the sampled pages and delivers them to the current output tray to maintain the integrity of the output.

Restrictions

- When HIP submitted jobs are running, the SAMPLE command (with parameters) is not allowed.
- Also, when Tape or Disk jobs are running, the SAMPLE command with parameters is not allowed.
- For non-English sysgens, a translated SAMPLE command with optional position information does not work. For example, SAM XVGHO.IMG,,(.5in, .5in). Use the English command.

Starting a print job

Before starting a print job, make sure the system is set up properly for that job. Follow the steps in the "Printing task flow overview" at the beginning of this chapter.

You start a print job by entering the START command at the system controller keyboard. The procedure for starting an offline or online print job differs from the procedure for starting a print job in the HIP queue. When HIP submitted jobs are running, the START command is not allowed.

Starting an offline or online print job

The job descriptor entry (JDE) contains information the system needs to print the job, including the form data, fonts, name and location of the data file, and so forth. The JDE may be stored in a job descriptor library (JDL) file. The person who programmed the job provides the names of these files.

The JDE file must reside on the system disk. You may need to first copy the JDE file and any other necessary non-data files

(such as fonts and forms) to the system disk before starting the job (refer to the "Copying and backing up files" section in the "Printer maintenance" chapter).

The job data may be read off a magnetic tape (in the case of offline jobs) or sent through the host channel (in the case of channel-attached host online jobs). When you enter the START command, the system looks for the data file specified in the JDE on the physical tape drive you selected when setting up the print job source (refer to the "Receiving offline jobs" section in the "Setting up print job sources" chapter) in the case of offline jobs, or in the host channel.

Enter the START command:

START [[*jdename*][,*jdlname*][,*S* | *M*][,*copies*] [,REPORTS:*r*₁,*r*₂...]]]

jdename

Name of the job descriptor entry (JDE) containing the job information. The *jdename* is usually provided by the person who created the job.

jdlname

Name of the job descriptor library file containing the JDE specified in the first parameter. The *jdlname* is usually provided by the person who created the job.

[*S* | *M*]

This option pertains to print jobs on tape or cartridge (offline) only.

S

Specifies single report mode, which processes only one report at a time. Use this mode when changes must be made to the job specification from one job to the next.

M (default)

Specifies multiple report mode, which processes all reports without stopping.

copies

Number of copies of each report requested.

[REPORTS:*r*₁,*r*₂...]

The numbers of specific reports within the job you want to print, or the form name you want to use.

You may print selected reports for offline jobs only. To specify selected reports, enter REPORTS: followed by the numbers of the selected reports in the order you want to print them.

Example: START 21,POWGRP,M,2,REPORTS:1,3-5,2

This command requests that the system print reports number one, then three through five, then two.

If no REPORTS: parameter is specified, all reports are printed.

You can also select specified reports after the START command by interrupting the print job and entering the SPACE *n* REPORTS command. Refer to the "Selecting reports within a job" section later in this chapter for more information.

INTERPRESS

The Interpress parameter is valid for offline jobs only.

Specifies that you are submitting data in Interpress format from tape or cartridge.

Example: START 21,POWGRP,M,2,,INTERPRESS

Starting a print job through HIP

To start or continue jobs in the HIP internal queue, enter the HIP START command:

HIP START [DUMP][*job-ids*]

DUMP

Starts the job specified in the job-id parameter (or the next job in the HIP queue if no job-id is specified) using the START command parameters in the DUMPJOB command in the HIP file. The system prints one job only. After the job finishes, HIP issues a HIP STOP command.

job-ids

One or more job-id numbers of the job(s) you want to print.

If you do not specify a job-id, the system prints all the jobs in the HIP queue in the order shown in the queue.

If you do specify job-ids, the system moves those jobs to the head of the job queue, and submits them for printing. When these jobs finish printing, the system submits all remaining jobs in the queue in the order stored.

Jobs that have already been submitted may not be specified in the job-ids parameter. If a job-id you specify is invalid for any reason, the system displays the following message:

```
HP1150 Cannot start job(s): n [...]
```

Check the START command you entered to verify that you typed the job-id correctly. If so, the job is probably already in progress.

Selecting reports within a job

You can only select specific reports within a job for offline jobs.

If you have not yet entered the START command for the job, you can specify the reports to print and their order in the START command. Refer to the previous section, "Starting an offline or online print job."

If you have entered the START command but the job has not started printing:

1. Enter **SPACE *n* REPORTS**, (*n* indicates the number of reports to skip). You may move either forward by entering a positive value for *n* or backward by entering a negative value for *n*.
2. Press <CON> to continue.

If you have entered the START command and the job is already printing:

1. Interrupt the print job. Press <STOP> on the keyboard, the Stop button on the printer control console, or enter STOP at the keyboard.
2. Enter **SPACE *n* REPORTS**, where *n* is, enter the number of reports to skip.

You may move either forward by entering a positive value for *n* or backward by entering a negative value for *n*.

3. Press <CON> to continue.

Printing multiple copies of large jobs

When multiple copies of a report are printed in collated mode, the system processes all the pages of the first copy from first to last, then repeats the process for each additional copy requested. The mode (collated or noncollated) is specified by the person who created the job.

Offline jobs

When a report in an offline job is too large to fit on the one tape, the system may request that you mount and unload each tape once for each copy requested. The system displays the following message:

```
OS2020 Mount next volume 'CONTINUE I' when ready
```

The person who created the job may have split the report into smaller parts that fit onto a single tape. This eliminates the need to mount and unload tapes for each copy; however, the segments of each report must be assembled by hand when the printing is complete.

Online jobs

If the system is unable to store the entire report on the system disk, and multiple copies of the report are requested, the system displays the following messages:

```
OS6300 Current report saturates disk. Enter option:
CONTINUE I      - CONTINUE MULTICOPY MOD
PRINT 1         - PRINT ONE COPY OF CURRENT REPORT
ENDJOB          - PRINT ALL COPIES SO FAR, END
ABORT O         - ABORT CURRENT REPORT
ABORT           - ABORT CURRENT JOB
```

Enter one of the following commands:

CONTINUE I

Continues multicopy printing in sections. When the printing is complete, assemble the copies of the report manually.

PRINT 1

Prints only one complete copy of the report. Additional copies can be printed by resubmitting the job from the host once for each copy desired.

ENDJOB

Prints the pages already formatted by the system and ends the job.

ABORT O

Cancels the current report and starts printing the next report.

ABORT *n*

Cancels the current job (*n* is the current job number).

Checking job and printer status

You can obtain status information on the job currently printing, the job queue, on the printer.

Checking job status

To check on the status of jobs while they are printing, press <JOBS STATUS> or enter the JOBS command:

JOBS [QUEUE | ALL | *n* | MULTIPLE] [*attribute*][BRIEF | CLASSIC | FULL]

[QUEUE | ALL | *n* | MULTIPLE]

QUEUE

Displays all reports queued for printing; that is, waiting in line to be processed.

ALL

Displays all reports queued for printing and the status of up to 100 completed reports.

n

Displays the status of all reports queued for printing, held, active, or printing to the specified number ("*n*") of completed reports. The number entered must be less than 100.

The **MULTIPLE** selection is unique to V5.0 software.

The SHOW QUEUE STATUS command displays the number of PRIMARY COLOR, MULTIPLE, and STITCH jobs.

In pre V5.0 software, the operator could enter JOBS PRIMARY COLOR/STITCH (where PRIMARY COLOR indicates any of the primary colors currently available), to view the actual job entries. The operator could also enter SHOW QUEUE STATUS to find out how many multiple reports exist. The MULTIPLE selection allows the operator to display these reports.

MULTIPLE

Displays all jobs requiring multiple primaries that are currently in the queue.

[*attribute*]

stitch

Displays all reports that require stitching.

entry-string

Displays entries that match the entry-string specified.

pstring

Displays all reports that require the specified primary

state-name

Displays all reports that match the specified name, for example, JOBS HELD or JOBS QUEUED.

pstring & stitch

Displays all entries that use the specified primary and also require stitching.

pstring ! stitch

Displays all entries which use the specified primary or that require stitching.

cluster - xxxxx

Displays all entries with a cluster name matching the one specified.

For a more detailed description of the attributes, refer to the "System commands" chapter in the *Xerox 4850/4890 Highlight Color LPS Command Reference*.

[BRIEF | CLASSIC | FULL]

BRIEF

Displays entries in the brief display format shown in figure 4-1.

CLASSIC

Displays the individual entries in the traditional format shown in figure 4-2.

FULL

Displays entries in the expanded display format shown in figure 4-3.

Job status display

The job status display is available in three formats. An example of each is shown in figures 4-1 through 4-3.

Figure 4-1. **Jobs status display: Brief format**

System is OFF-LINE									
Stitch off active									
Job queue is empty									
Approximately 400 unused entries in the queue									
Entry	Cust	Report	Job	Copy	Total	Pages			
#	ID	Name	#	Count	Pages	Printd	Colr	JDE/JDL	Status
54	Judith	HLCA016 - Bl	494	1	3	3	BLU	IP/ENET	Done
53	Judith	HLCA016 - Bl	493	1	3	3	BLU	IP/ENET	Done
52	Judith	HLCA054 - Fa	492	1	11	11	RED	IP/ENET	Done
51	Judith	HLCA053 - Fa	491	1	11	11	CYAN	IP/ENET	Done
50	Judith	HLCA052 - Fa	490	1	11	11	RED	IP/ENET	Done
49	Judith	HLCA051 - Fa	489	1	11	11	RED	IP/ENET	Done
48	Judith	HLCA050 - Fa	488	1	11	11	RED	IP/ENET	Done

Figure 4-2. Jobs status display: Classic format

```
System is OFF-LINE
Stitch off active
Jobs held in queue
Job id 487 jde IP      queued for INPUT
Approximately 398 unused entries in the queue
```

Job	Cust	Rpt	Report	JDE/JDL	Cpy	Total	Pages	Status
No.	JOB#	NO.	Name		Cnt	Pages	Printed	Msg
0485	Judith	0001	HLCA016 - Blue V	IP/ENET	0000	000003	000000	Active
0486		0001		IP/ENET	0000	000003	000000	Input
0484	DCU001	0001		DCU/TASKS\$	0001	000002	000002	Done
0483	PRTFIL	0001		EDIT/TASKS\$	0001	000004	000004	Done
0482	SPOOL	0001		DC20/TASKS\$	0001	000006	000006	Done
0481	PRTFIL	0001		EDIT/TASKS\$	0001	000002	000002	Done
0480	DCDTPO	0001		DCD/TASKS\$	0001	000088	000088	Done

Figure 4-3. Jobs status display: Full format

```
System is OFF-LINE
Stitch off active
Job queue IS EMPTY
Approximately 400 unused entries in the queue
```

Entry	Cust	Report	Job	Rept	Copy	Total	Pages		
#	ID	Name	#	#	Count	Pages	Printd	JDE/JDL	Status
...53	Judith	HLCA016 - Bl	..494	...1	.....1	.....3	.....3	IP/ENET	Done....
	Colors		Sti		Clusters				SMsg#
	Blu		N		-				-
...534	Judith	HLCA016 - Bl	..493	...1	.....1	.....3	.....3	IP/ENET	Done....
	Colors		Sti		Clusters				SMsg#
	Blu		N		-				-
...52	Judith	HLCA054 - Fa	..492	...1	.....1	....11	....11	IP/ENET	Done....
	Colors		Sti		Clusters				SMsg#
	RED		N		-				-
...51	Judith	HLCA053 - Fa	..491	...1	.....1	....11	....11	IP/ENET	HELD*....
	Colors		Sti		Clusters				SMsg#
	*GREEN		N		-				-

Enter return to continue

Each line represents one report, which is identified by a unique entry number. Each job status display format contains information useful for different queue management functions:

- The classic and full formats both display the entry number, which is required for moving and scheduling reports.
- The full format displays both job number and report number, which is useful for selecting reports within a job.
- In the full format only, an asterisk appears next to the attribute (either color required or stitching), that is causing the report to be held. Notice an asterisk next to HELD under the status column also.

The meanings of status messages are described below:

ACTIVE The report is received by OUTPUT but a print was not issued.

DONE	The report has completed printing.
HELD	The entry cannot be sent to OUTPUT for printing.
IABORT	Input aborted the report or job.
IN/PRNT	The report is in the input and print phases and has begun to print.
INPUT	The report is in the input phase and has not begun to print.
OABORT	Output aborted the report or job.
PRINTING	The report has completed the input phase and is printing.
QUEUED	The report completed the input phase and is waiting to print.
RESET	The report was aborted by the RESET command.
RCVYN/S	The operator did not request recovery.
STOPPED	The report was stopped.
UABORT	User aborted the report or job.

The system may display one of the following status messages:

- Completion code as on accounting page (blank if completion is normal).
- Error message number if report aborted. This message number form is `xxxxx` and corresponds with an error message (`osxxxx`) in the *Xerox 4850/4890 HighLight Color LPS Message Guide*.
- `cs` is displayed while the report is processing if the report is copy sensitive (different copies of the report contain different data).

Checking printer status

When you press <PRNTR STATUS> or enter the PSTATUS command, the system displays the current status of the feeder and stacker trays. You may request status information either before or during a print job. If the system controller is occupied with nonprint functions, it ignores the request.

Figure 4-4. **Printer status display**

Paper trays:		Output Trays:
Feed Tray		SELECT: AUTO
Tray 1 8.5 X 11	IN USE	Tray 1 IN USE
Tray 2 8.5 X 14	READY	
Tray 3 8.5 X 11	READY	
Tray 4 8.5 X 11	READY	
Stitcher: READY		
Xerographic Mode: HIGHLIGHT Dry Ink Color: RED		
Attention light: ENABLED, STEADY		
Blade: DISABLED		
Darkness (Lightest=1, Darkest=7)		
Black 4		
Color 4		

For V5.0 software the Bypass Transport (BT) Output device and its status must also be reflected when the PRNTR STATUS button is pressed. The status of the BT Output device is reflected in tray 1 status.

Figure 4-5. **Printer status display with bypass transport**

Paper trays:		Output Trays:
Feed Tray		SELECT: AUTO
Tray 1 8.5 X 11	IN USE	Tray 1 IN USE
Tray 2 8.5 X 14	READY	
Tray 3 8.5 X 11	READY	
Tray 4 8.5 X 11	READY	
Bypass Transport: READY		
Xerographic Mode: HIGHLIGHT Dry Ink Color: RED		
Attention light: ENABLED, STEADY		
Blade: DISABLED		
Darkness (Lightest=1, Darkest=7)		
Black 4		
Color 4		

Checking the HIP job queue status

You can review the current status of your job by entering the following command:

HIP SHOW JOBS [*parameter*]

This command displays the current status of the selected jobs in the HIP jobs queue as well as the current status of the HIP processor. The format of the display depends on the parameter.

The parameter options are as follows:

ABORTED	Displays all jobs that have been aborted
ACTIVE	Displays all jobs in the active state: QUEUED, ACTIVE, OQUEUED, or PRINTING.
ALL	Displays all jobs in all queues.
CANCELLED	Displays all jobs that have been cancelled.
COMPLETED	Displays jobs in a completed state: PRINTED, STORED, SEND, or ABORTED.
CONTINUE	Continues a previously requested display if all jobs in the queue were not displayed.
PAGE[<i>n</i>]	Divides the queue up to 20 jobs, which are ordered from the oldest completed job to newest completed job received.
PENDING	Displays all jobs in the pending state: PENDING or RECEIVING (but not submitted to the operator communications subsystem (OCS)).
PRINTED	Displays the jobs in the printed state: PRINTED or TRUNCATED.
SUMMARY	Displays a summary of the job queue.

Job queue display

The job queue display screen consists of two lines of header information, up to 20 lines of jobs status information, and a message indicating the end of the display. If there are fewer than 20 jobs in the selected state, only that number displays. If there are more than 20 jobs in the selected state, all jobs are not shown, and the following message displays:

```
HP2145 Enter 'HIP SHOW JOBS CONTINUE' for more.
```

In this case, entering HIP SHOW JOBS CONTINUE causes the additional jobs to be displayed. The format of a normal display screen is shown in figure 4-6.

Figure 4-6. HIP job status display

Host:XNS:		READY	HIP: STARTED	Filemode: All Jobs	
JID#	Host name	Received	Status	Job#	Time
1	HLCA016 - Bl	13:16:28	Completed	485	13:18:18
2	HLCA016 - Bl	13:16:37	Completed	486	13:19:04
3	HLCA051 - Fa	13:16:49	Completed	487	13:20:30
4	HLCA051 - Fa	13:17:12	Completed	488	13:21:53
5	HLCA052 - Fa	13:17:33	Completed	489	13:23:07
6	HLCA052 - Fa	13:17:55	Completed	490	13:24:12
7	HLCA053 - Fa	13:18:20	Printing	491	13:23:42
8	HLCA054 - Fa	13:18:44	Active	492	13:24:34
HP1110 End of job display.					

The meanings of status messages for HIP job queue display are described below:

RECEIVE	The job is currently being received.
SENDING	The job is currently being sent.
PENDING	The job is waiting to be sent.
QUEUED	The job is in OCS job queue waiting to be processed.
ACTIVE	The job is being processed by input or output.
OQUEUED	Input phase is complete and the job is queued for printing.
PRINTING	Input phase is complete and printing is in progress.
TRUNCATED	The transfer was ended before completion.
COMPLETED	The job was completed normally.
STORED	The file was stored in a permanent file directory.
SENT	The file was successfully sent to the host.
ABORTED	The job was aborted using a HIP or OCS ABORT command.
HOSTABORT	The job was aborted using the host command.
REJECTED	The transfer from the host to the Original Equipment Manufacturer (OEM) was rejected.
CANCELLED	The transfer was cancelled by a host restart.

Note: If the status message shows TRUNCATED, it is possible the data transfer ended before it completed. Check the output and resend the job if necessary.

Managing print jobs and queues

For various reasons, you may need to stop the print job currently running. You can interrupt a job, and then resume printing where it left off, or you can cancel a job.

Aborting a print job

You can use the ABORT command to stop a job or a report that is either printing or being processed for printing. The CANCEL command is identical to the ABORT command, and you can use it interchangeably with the ABORT command.

ABORT Enter this command with no parameters to abort any currently active non-print task, such as FDL or PDL processing. However, if a job is being input or is printing, the ABORT command must have a parameter.

`OS1190 Invalid parameter, command ignored`

ABORT O Enter this command to abort the report that is printing. The system displays the following message:

`OS1820 OUTPUT processing is aborting current report.`

Printing continues with the next report.

ABORT I This command aborts the report currently being processed for printing (in the input phase). It is typically used in response to an error message, where you are given the choice of continuing or aborting a specific report after a problem has been identified. In response to an ABORT I command, the following message displays:

`OS1800 INPUT processing aborting.`

ABORT *job-id* To abort a specific job, enter **ABORT *job-id***, where *job-id* is the job number for that job. This command aborts all reports of the specified job that have not been printed.

RESET When RESET is used, all jobs in the queue are deleted and have to be resent from the host. RESET stops all processing in the system, including accounting. Therefore, RESET should be used only if the ABORT command fails to produce the desired results.

If you enter the RESET command, the following messages display:

`Reset will clear job queue. Confirm with 'Y' or 'N' (CR='Y')`

If you enter **Y**, all processing is stopped, and all jobs in the queue are cleared.

<p>CAUTION: The RESET command can cause substantial data loss. Do not use the RESET command without first checking with your system administrator.</p>

With the stitcher/stacker output configuration, a few sheets are held in the stitching tray when you enter RESET. These sheets are released when the next print job begins.

Continuing jobs after Queue Manager stops scheduling

Queue is full

When the scheduling mode is by resource, the queue is full and output is not printing, the Queue Manager stops scheduling and the following messages display:

```
QM1075      Queue is full - INPUT is stopped
QM2010      Change housing or
QM2020      Enter appropriate SUB INK command or
QM2025      Enter STITCH OFF if stitcher is not functional
QM2000      Enter CONTINUE to resume printing
```

Perform the necessary corrective action, then enter **CONTINUE** to resume printing.

Attributes that cannot be filled

When the scheduling mode is by resource and all the reports in the queue have attributes the printer cannot fulfill, the Queue Manager stops scheduling and the following messages display:

```
QM1065 %0 entry(s) being HELD
QM2010 Change housing or
QM2020 Enter appropriate SUB INK command or
QM2025 Enter STITCH OFF if stitcher is not functional
QM2000 Enter CONTINUE to resume printing
```

The %0 is replaced with the number of held entries.

The Time of Day display on the upper right-hand corner of the screen alerts you whenever the system is idle and not actively printing. The second line of the display indicates the number of unprinted reports in the queue as follows:

```
QM: xxx
```

Perform the necessary corrective action, then enter **CONTINUE** to resume printing.

Flushing a print job command

The 4890 has a feature that flushes print commands. This feature is accessed with the DRAIN command or through the Automatic Drain feature. Refer to the "Placing the LPS offline" section of the "Setting up print job sources" chapter for more information on the use of this feature.

There is an additional command available to allow you to modify the time out interval for the Automatic Drain feature for online printing. The time interval is specified in minutes and indicates the number of minutes to wait after receipt of online data to automatically initiate the drain process.

- 1 To invoke the command, enter **@DRAIN** at the Ready for Commands prompt. The command file may only be run at the system logon level three or higher. If you are not already at an appropriate level, the system will prompt you to log on to a higher level.
- 2 The system prompts you for the number of minutes you wish to change the drain timeout. Enter the value in minutes.

If you need additional assistance to use this feature, contact your system administrator.

Ending a print job

The ENDJOB command signals the system that the current print job is the last job coming from the host. All formatted pages in the output queue are printed. This command can only be used in online mode.

Identifying an entry number or an entry-string

The Queue Manager assigns a unique entry number to each report. Use this entry number with the following commands: ABORT, JOB, MOVE, and SCHEDULE.

An entry-string can specify a single entry, a range of entries, or multiple single entries. An entry string must begin with a pound sign (#). Examples of entry strings are as follows:

#2
#2-4
#(2-4, 6, 9-11)

Interrupting a print job

If you need to interrupt a job during printing for any reason, use one of the three variations of the STOP command (STOP, STOP I, or STOP O), press the <STOP> key on the keyboard, or press the Stop button on the printer control console. It is important to understand the difference between the variations.

STOP command	<p>If you enter the STOP command, the following messages display:</p> <pre>OS0510 INPUT stopped OS0500 OUTPUT stopped</pre> <p>This command stops both input and printing.</p>
STOP I command	<p>If you enter the STOP I command, the following message displays:</p> <pre>OS0510 INPUT stopped</pre> <p>This command stops input, but printing continues until output catches up with input.</p>
STOP O command	<p>If you enter the STOP O command, the following message displays:</p> <pre>OS0500 OUTPUT stopped</pre> <p>This command stops the printing, but input continues.</p>
<STOP> key	<p>If you press <STOP>, both input and printing cease, just as if you entered the STOP command.</p>

Stop button If you press the Stop button on the printer control console, only printing stops, not input. Pressing the Stop button acts as a STOP O command.

Removing entries from the queue

Use the ABORT ENTRY command to remove reports from the queue. This command allows you to remove multiple entries (reports) from the queue in a single command.

ABORT ENTRY [ALL | resource attribute | #entry-string]

ALL

Removes all entries in a queue

resource attributes

PRIMARY COLOR

Removes reports that contain the specified primary color.

STITCH

Removes reports that require stitching.

EXAMPLES of ABORT ENTRY *resource attributes*:

ABORT ENTRY RED

ABORT ENTRY GRE

ABORT ENTRY STITCH

For various combinations of *resource attributes*, there are several symbols used to indicate combinations:

& is used to indicate AND,

! is used to indicate OR, and

- is used to indicate NOT.

EXAMPLES of combined resource attributes:

ABORT ENTRY BLUE&-STITCH (all entries requiring blue dry ink and not requiring stitching)

ABORT ENTRY BLUE!STITCH (all entries requiring blue dry ink or stitching)

#entry-string

Removes a specific entry string, either single entries or multiple entries.

Examples:

Single entry:

ABORT ENTRY #65

Multiple entries (non sequential):

ABORT ENTRY #65, #78, #81

Multiple entries (sequential):

ABORT ENTRY #65-71

Multiple sets of entries:

ABORT ENTRY #(65-71,78,81-85)

Reordering reports

You can change the sequential order of the reports in the queue to a preferred order. However, in resource mode, the order that jobs are actually printed also depends on the resources these individual jobs require.

MOVE command

You can use the MOVE command to reposition an entry in the queue. Note the following points about the MOVE command:

- You can move multiple entries. Separate individual entry numbers by commas or enter a range of entry numbers as shown in the examples below.
- Moving an entry does not necessarily mean that it will print. In resource mode, if the resources required to print that report are not available, the report will not print until the operator intervenes by changing the installed dry ink, substituting inks, disabling stitching, and so forth. If an appropriate ink substitution is already in effect, and the job permits substitution, the job will print.
- To be moved, entries must have a status of either QUEUED or HELD.
- When moving multiple entries, if some of the entries cannot be moved, you can still move entries that are eligible.

**MOVE{#entry-string}{BEFORE#entry-string| AFTER
#entry-string| TOP| BOTTOM}**

Examples:

MOVE #12 BEFORE #3

MOVE #(2-9) AFTER #25

MOVE #17 TOP

SCHEDULE command

The SCHEDULE command submits selected reports for printing immediately regardless of the resources required. Note the following points about the SCHEDULE command:

- You can schedule multiple entries. Separate individual entry numbers by commas or enter a range of entry numbers as shown in the examples below.
- Scheduling an entry sends the report directly to the printer. If the report requires a resource that is not currently available (color dry ink or stitching) the system may display a message and wait for operator intervention before printing can resume.
- To be scheduled, entries must have a status of QUEUED or HELD.
- When scheduling multiple entries, if some of the entries cannot be scheduled, you can still schedule entries that are eligible.

Examples of the SCHEDULE command are as follows:

SCHEDULE #12

SCHEDULE #(1, 4-9)

What to do when the queue is full

The queue can contain as many as 2,000 entries. When the queue becomes full, the queue manager stops printing jobs. The queue becomes full when:

- A printer fault (out of paper condition or output tray full) that has not been corrected in a timely manner and prevents the reports in the queue from printing.
- In resource mode, all reports in the queue may require resources that are not available (a different color or stitching)
- The operator enters a STOP O or STOP Q command, which prevents the reports from printing.

To resume scheduling, you need to correct the condition that is preventing the reports in the queue from printing: correct any printer faults, change the color dry ink, substitute inks, disable stitching, and so forth.

What to do when the system stops printing

The LPS may stop printing because all jobs being held in the queue require a resource that is not available. A series of messages appear indicating that reports that cannot be printed are being held in the queue.

Enter **JOBS ALL FULL** to display the reports being held in the queue. An asterisk appears next to the attribute that is causing the job to be held. Using this information, take corrective action: change the color dry ink, substitute inks, disable stitching, and so forth.

Stopping and starting the Queue Manager

You may wish to stop the queue manager from scheduling. For example, when changing the dry ink installed in the printer, enter **STOP Q**. To resume scheduling of reports, enter **CONTINUE Q**. Note that if you fail to resume scheduling by entering **CONTINUE Q**, the system eventually stops printing.

Resuming an interrupted print job

If a print job has been interrupted, either by you, by the software, or by a condition such as a misfeed or low paper, use the **CONTINUE** command when you are ready to resume. The variations of the command are described below.

CONTINUE command

If you enter the **CONTINUE** command, the following message displays:

```
OS0010 Resuming INPUT
OS0020 Resuming OUTPUT
```

Both input and printing resume.

CONTINUE I command

If you enter the **CONTINUE I** command, the following message displays:

OS0010 Resuming INPUT

Input resumes, but printing does not.

CONTINUE O command

If you enter the CONTINUE O command, the following message displays:

OS0020 Resuming OUTPUT

Printing resumes, but input does not.

<CON>key

If you press <CON>, both input and printing resume, just as if you entered the CONTINUE command.

Continue button

If you press the Continue button on the printer control console, only printing resumes, not input. Pressing the Continue button acts as a CONTINUE O command.

Stopping a HIP print job

To stop HIP from submitting jobs for processing, enter the following command:

HIP STOP

Jobs already submitted for processing are not affected.

HSPP or SDI Tasks

The Xerox High Speed PostScript Printing (HSPP) or Shared Disk Interface operator related tasks are defined in the *Xerox High Speed PostScript Printing (HSPP) Operations Guide*.

5.

Print job maintenance

This chapter describes the tasks you must perform to maintain the quality of printed copies from your Xerox 4890 HighLight Color Laser Printing System (LPS).

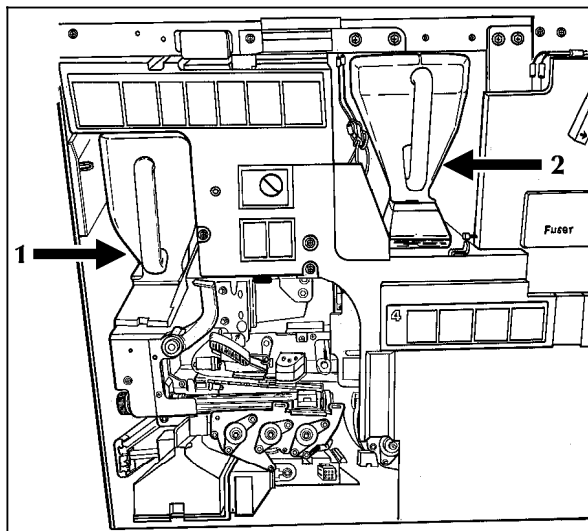
Adding dry ink

When the color or the black dry ink supply is low, the system displays a message on the printer control console and the Attention light modulates between bright yellow and dim yellow. Add dry ink at your earliest convenience. If you do not add dry ink in a timely manner, the printer eventually stops.

Note: Do not discard damaged, unused dry ink bottles. Return the bottles to Xerox for exchange (or credit in the U.S.A.).

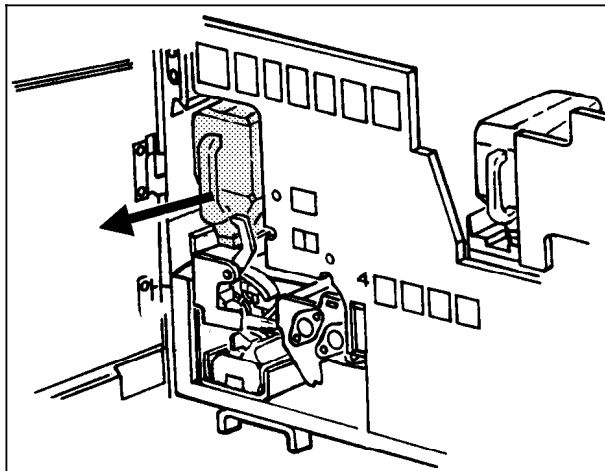
To add dry ink, follow this procedure:

1. Open the middle and left printer doors.
2. Locate the appropriate dry ink area.



- 1 Color dry ink bottle
- 2 Black dry ink bottle
3. Spread a drop cloth on the floor under the dry ink area.

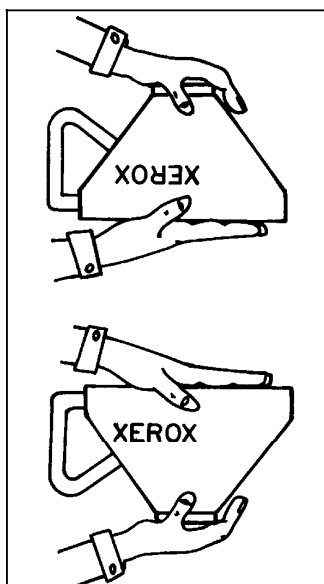
4. Pull the empty dry ink bottle towards you.



The bottle is recapped as you pull it back onto its lid.

CAUTION: If there is still dry ink in the bottle, the ink may spill as you move the bottle back onto its lid.

5. Remove the empty bottle and discard it.
6. Rotate the new dry ink bottle at least ten times to thoroughly mix its contents.



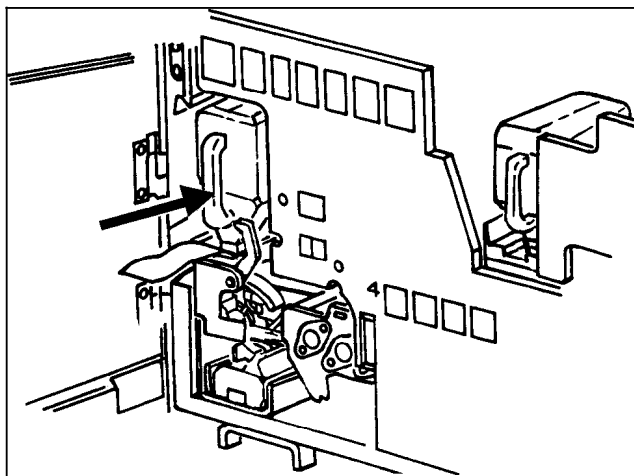
From its shipped position, grasp the new bottle firmly by the top and bottom sections, taking care to support the bottle cap.

Turn the bottle upside down (into its machine loading position) and let the material inside fall and settle towards the cap. This is one half rotation. Complete the rotation by turning the bottle back into its shipped position.

Repeat the procedure for a total of ten rotations.

It is important that you follow this procedure to thoroughly mix the contents of the bottle.

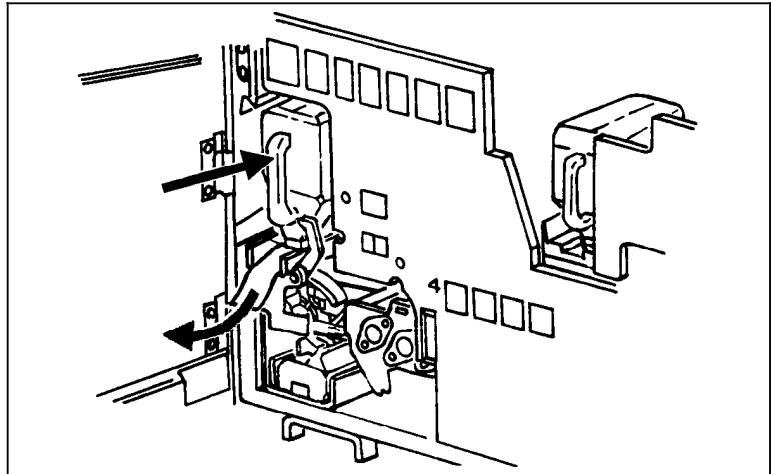
7. Insert the new bottle into the printer, pushing the bottle well into the recess.



As you push the bottle, the cap remains in the front part of the recess, while the bottle slides into the back part.

CAUTION: Each bottle is uniquely coded to the color of the housing. Do not attempt to insert the wrong color bottle into the color housing. Take care when inserting bottle as you risk damaging the bottle and the housing by using excessive force.

8. Hold the bottle in place with one hand and remove the white paper seal by pulling it toward you with the other hand.



9. Discard the seal along with the drop cloth.

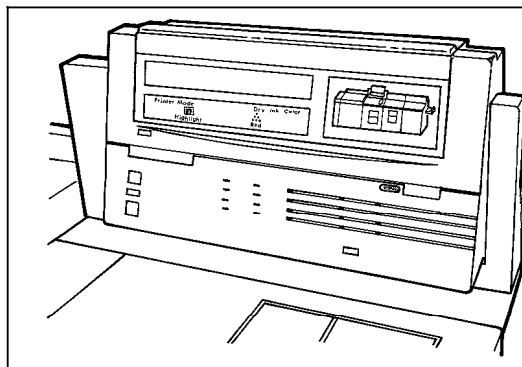
If any dry ink gets on your hands, wash them with soap and cold water (heat sets the ink permanently).

If any dry ink gets on your clothes, brush them with a dry paper towel or a stiff-bristled brush. If this does not remove the ink immediately, launder with detergent and cold water. Dry cleaners should be told that the spot is dry ink for a copy machine so they will not use a solvent that sets the stain.

Adding stitcher wire

Contact your service representative if the stitcher is out of wire. This should seldom happen since the representative checks the wire supply on each service call and replaces the spool as needed.

Figure 5-1. **Wire Percentage indicator**



The Wire Percentage indicator, located on the printer control console, displays the approximate percentage of stitcher wire remaining on the spool. The service representative can set the display to flash at a predetermined percentage to warn you that you are running low on stitcher wire. When the spool is empty,

the printer stops, the print quantity display shows the fault message L152, and the message display shows the following message:

```
STITCHER IS OUT OF WIRE OR
SPOOL NOT ROTATING PRESS i
```

When *i* is pressed again, the message reads:

```
TRAINED OPERATOR CHECK WIRE
MANAGEMENT SYSTEM PRESS i
```

When *i* is pressed, the message reads:

```
IF UNABLE TO FIX, PRESS CONTINUE
TO RESUME WITHOUT STITCHING i
```

The system controller displays the following messages:

```
0S3050 Stitcher is out of wire

0S2000 Enter 'CONTINUE O' to resume printing
```

If you continue the job without replacing the wire, the sets will print normally without being stapled. The stitcher status reported in the printer status displays the following:

```
OUT OF WIRE.
```

Adjusting the form alignment

Form alignment refers to the position of the printed image on the page. In some cases, the form prints correctly but its position on the page is off center. You adjust the form alignment when:

- The alignment is incorrect because the printer needs adjustment. The alignment of your LPS is exceptionally accurate and very rarely needs adjustment for this reason. You can use this procedure to temporarily correct the problem until the printer is serviced.
- A job has been coded incorrectly. If you adjust the alignment for a specific form, remember to restore the alignment to its original settings when the job is completed.

To change the form alignment:

1. Check the current alignment settings.

Enter **ALIGN**

The system displays a message showing the current settings for the horizontal skew value (measured in dots) and the vertical skew value (measured in scan lines):

```
0S1380 Alignment is 36 scan lines and 0 dots.
```

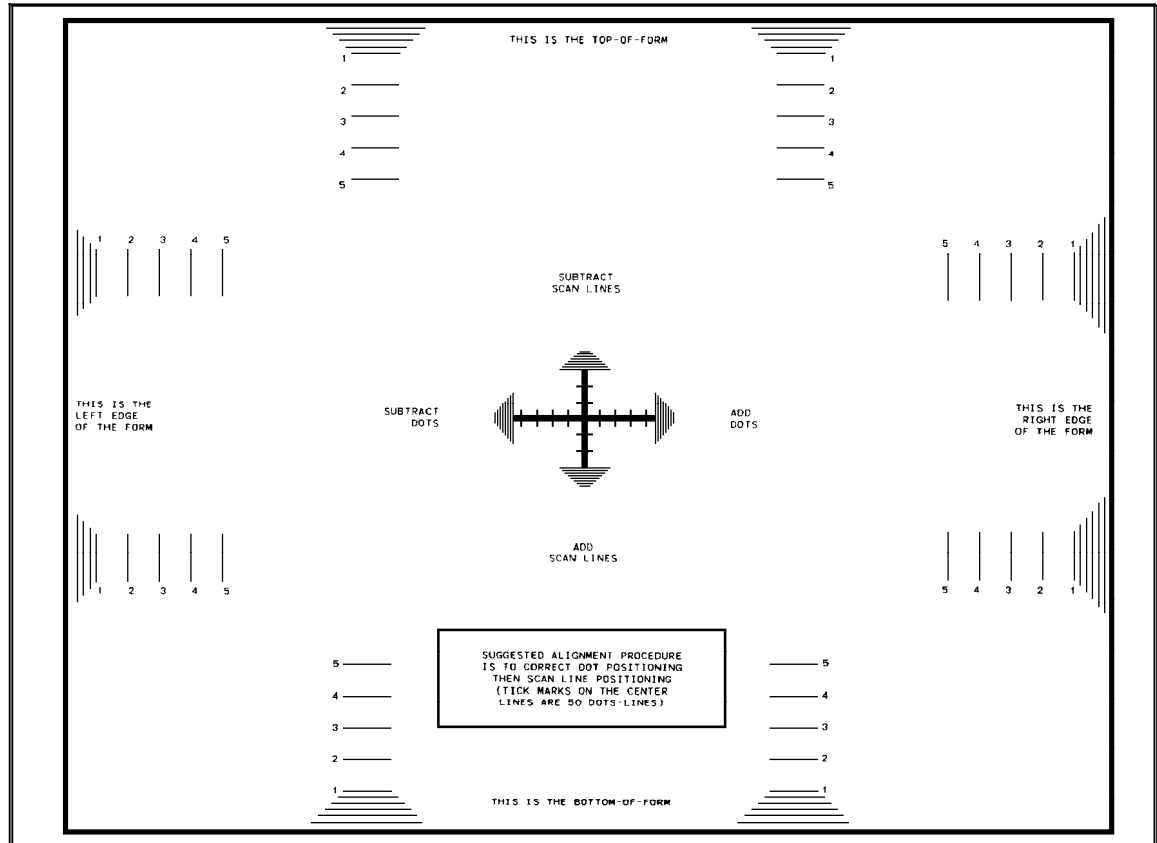
Write down these values so you can restore the alignment to the normal settings, if necessary.

2. Print a sample page for reference using the following command:

SAMPLE TEST.FRM

If you suspect that the form is not aligned properly because the printer needs adjustment, print the alignment test pattern form. Enter the ALIGN command as follows:

ALIGN,,,TEST



The alignment test pattern form is the only reliable way of checking printer adjustment. It not only gives you the TEST.FRM form, it also gives you the alignment status.

If you are adjusting the alignment to correct a problem with a specific form, you do not need to print the test pattern form. Use a sample page from the job for reference.

3. Determine the adjustment necessary.
 - a. If you are correcting a problem with the printer adjustment, measure the horizontal skew (measured in dots) and vertical skew (measured in scan lines) on the alignment test pattern form using a ruler. The test image should be centered on the page.
 - b. If you are correcting a problem with a specific form, measure the horizontal and vertical skew on that form using a ruler.

Refer to the test pattern form shown in this procedure. Note that the test form is in landscape orientation. You must measure horizontal and vertical skew values according to the orientation shown on the test pattern form.

4. Convert the measurements to dot and scan line values.
 - a. Horizontal skew (dots). One inch is equal to 300 dots. Convert your measurement to dots by multiplying inches by 300. Refer to the alignment test pattern form for the correct orientation of the image to the page. To move the image to the right, add dots to the current value

(determined in step 1). To move the image to the left, subtract dots. You may not enter a negative number.

- b. Vertical skew (scan lines). One inch is equal to 300 scan lines. Convert your measurement to scan lines by multiplying inches by 300. Refer to the alignment test pattern form for the correct orientation of the image to the page. To move the image toward the bottom of the page, add scan lines to the current value (determined in step 1). To move the image up, subtract scan lines. You may not enter a negative number.
5. Change the alignment values. Enter the ALIGN command:

ALIGN,scans,dots,[TEST]

scans

This is the number of scan lines to shift the image and they must be a positive whole number between 0 and 296. Add scan lines to the current value to shift the image down. Refer to the test pattern form for the correct orientation.

dots

This is the number of dots to shift the image and they must be a positive whole number between 0 and 11,995. Add dots to the current value to shift the image to the right (refer to the test pattern form for the correct orientation).

Note: Although any scan line increment can be used, the dots increment can only be in steps of 8 dots.

[TEST]

Print the alignment test pattern form with the new alignment values.

6. Verify the new form alignment.
Repeat steps 2 and 3. If the form alignment is correct, continue printing jobs. If the alignment needs further adjustment, repeat steps 4 and 5.
7. Continue printing jobs.
If you have set the alignment for one particular job, print only that job.
8. If you have set the alignment for one particular job, restore the form alignment settings to the original values. Enter the ALIGN command using the original values determined in step 1.

Changing the color dry ink

To change the color dry ink installed in your system, you must remove the customer changeable unit (CCU) in the printer and replace it with a CCU having the color dry ink you wish to use. The CCU consists of the color developer housing and the dry ink bottle. The CCU is specific to one color, and you must replace it to print with another color.

WARNING: Never attempt to install a 4850 CCU into the 4890 LPS. The CCUs are not compatible.

Use an empty CCU changeout cart to remove the CCU. A CCU that is not currently in use should be stored on its own cart, therefore there should always be at least one empty cart at your site. Use that cart to install the new CCU.

WARNING: Never attempt to remove or install a CCU without a cart.

Remove the CCU when:

- A print job requires that you load another color dry ink
- The color housing is faulty.

Store the cart:

- In a dry, dust free area with consistent temperature and humidity similar to that in the printer room.
- With the top cover of the cart closed.

Before changing the color dry ink installed in the printer, make sure that reports requiring the current color are not in the process of printing (either in the input or the output phase). Refer to the "Checking job and printer status" section in the "Printing jobs" chapter for more information on determining the status of jobs in the queue.

Enter the **STOP Q** command before changing the CCU to ensure that reports requiring the current color are not processed in the input phase while you are changing the CCU.

Removing the CCU

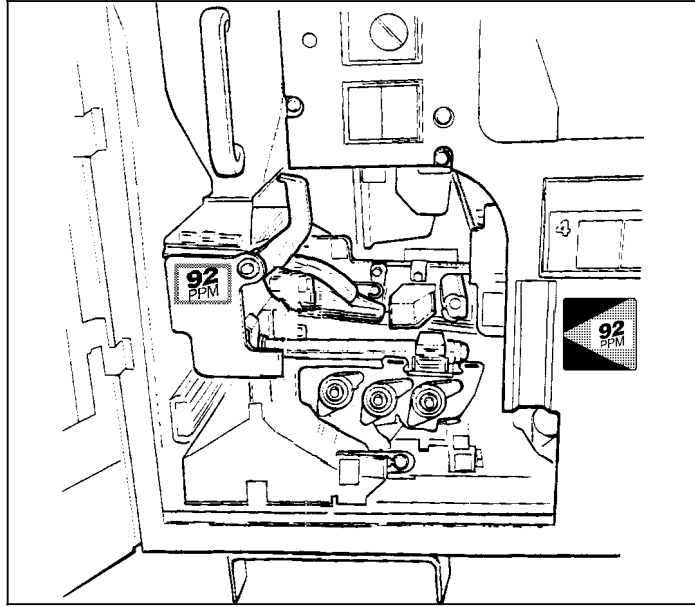
1. Make sure that the printer is idle.

If the printer is not idle, press the Stop button.

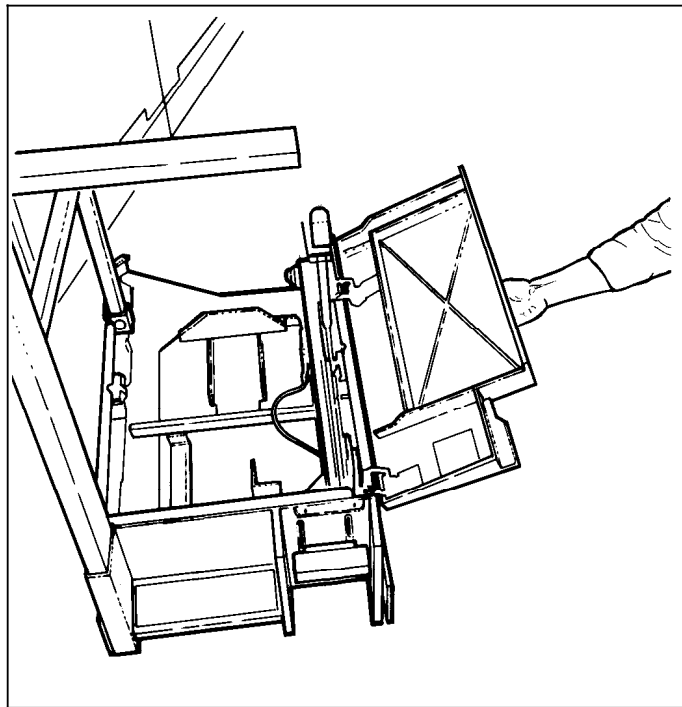
WARNING: Do not remove the CCU after a paper jam, system rollover, or other fault that stops printing. Press the Stop button before attempting to remove the CCU.

2. Enter **STOP Q**
3. Open the middle and left front doors of the printer.

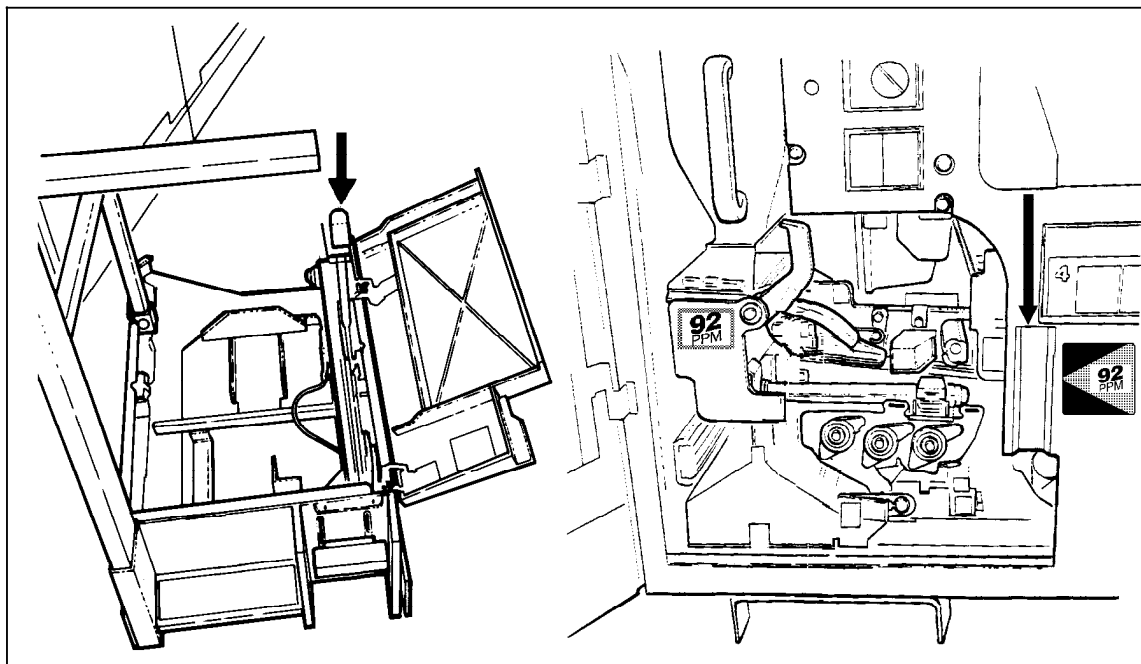
4. Locate the color housing area on the left side of the printer.



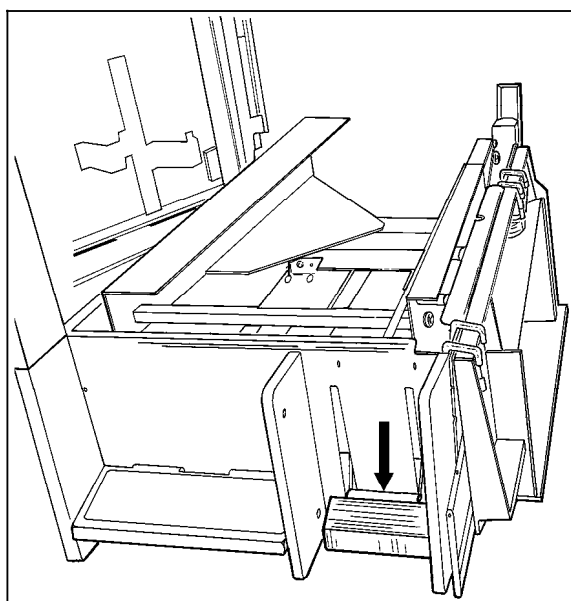
5. Open the top cover of an empty CCU cart.



6. Push the cart up to the left side of the printer, lining up the gold alignment knob on the cart with the gold recess on the printer inner cover.

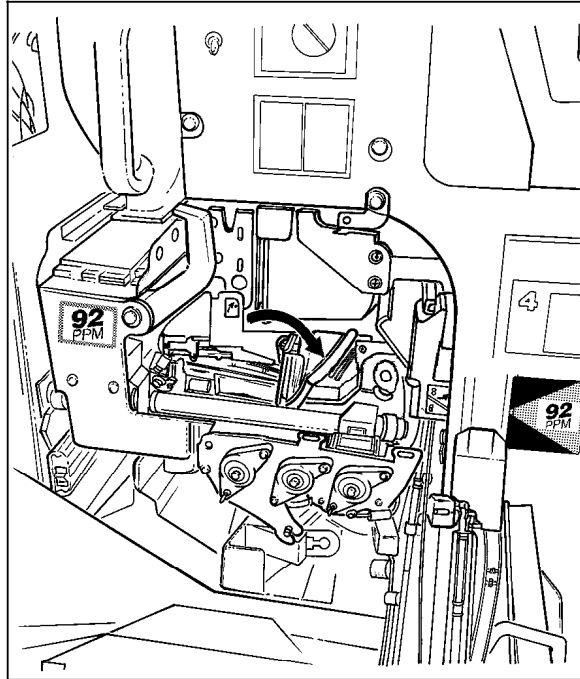


7. Push the cart firmly into the printer until the two latch together.
8. Push down firmly on the cart pedal with your right foot until the pedal catches.

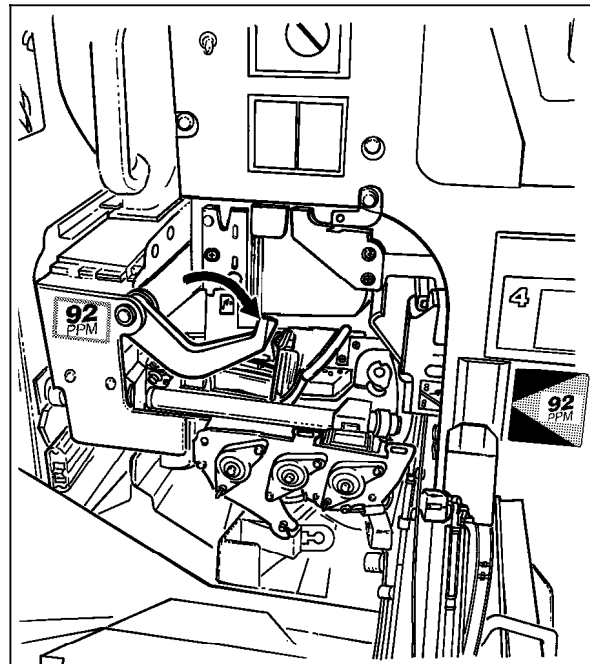


The pedal should stay locked down. The pallet within the cart is raised.

9. Turn the Backup roller handle clockwise 1/4 turn.



10. Turn the CCU handle clockwise 1/4 turn.



11. Grasp the CCU handle and pull the CCU out of the printer until it is completely on the cart.
12. Push down firmly on the cart pedal with your right foot until it clicks.

The pallet with the CCU is lowered into the cart. If the pallet does not move, make sure that the CCU is all the way out of the printer and push down on the pedal again.

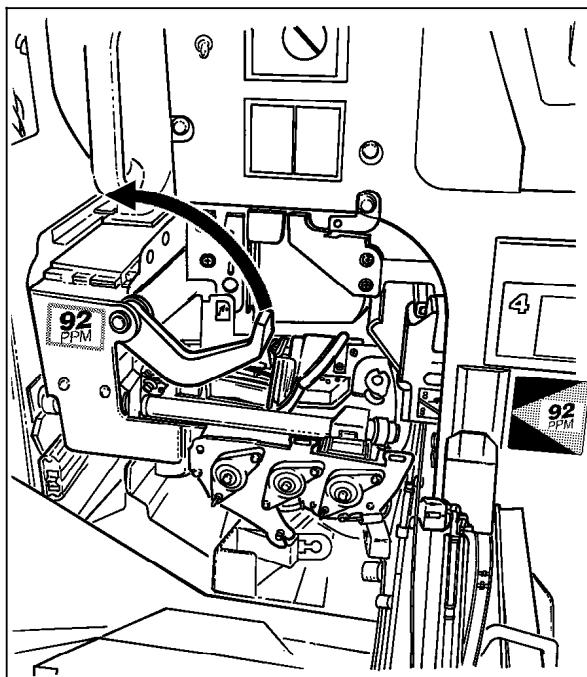
13. Close the top cover of the cart.
14. Pull the cart away from the printer and store it.

Loading a CCU

1. Open the top cover of the cart containing the CCU you want to install.

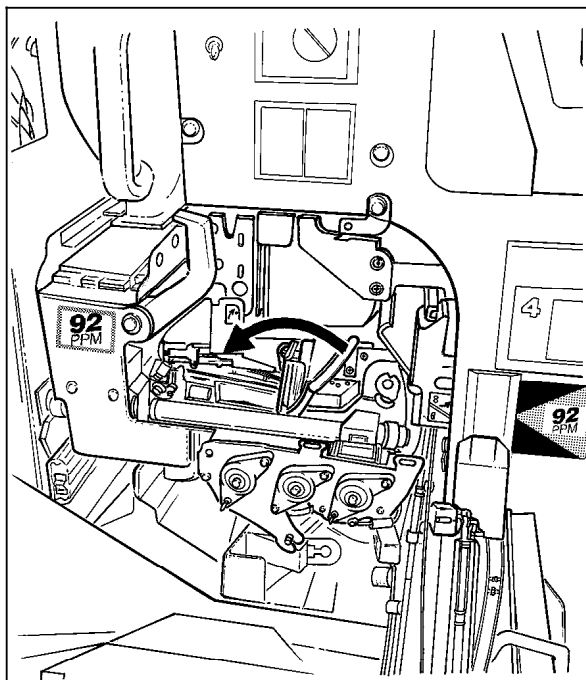
WARNING: Never attempt to install a 4850 CCU into the 4890 LPS. The CCUs are not compatible.

2. Push the cart up to the printer, lining up the gold knob on the cart with the gold recess on the inner cover of the printer.
3. Push the cart firmly into the printer until you can feel the two latch together.
4. Push down firmly on the cart pedal with your right foot until the pedal catches.
5. The pedal should stay locked down. The pallet containing the CCU is raised. Using the CCU handle, firmly push the CCU into the printer.
6. Turn the gold CCU handle counterclockwise 1/4 turn.



If the handle does not turn, make sure the CCU is firmly seated in the printer.

7. Turn the Backup roller handle counterclockwise 1/4 turn.



8. Push down firmly on the cart pedal with your right foot until it clicks.
If the pallet does not drop, check that the CCU is all the way in the printer and push down on the pedal again.
9. Close the top cover of the cart.
10. Pull the cart away from the printer and store it.
11. Close the left and middle front doors of the printer.
12. Enter **CONTINUE Q** to resume scheduling by the queue manager.

Changing paper size

When you change to 8.5 x 14 inch / 216 x 356 mm paper after an extended run of 8.5 x 11 inch / 216 x 279 mm or A4 paper, run 20 copies of the test pattern to clean the fusing system.
Enter the command:

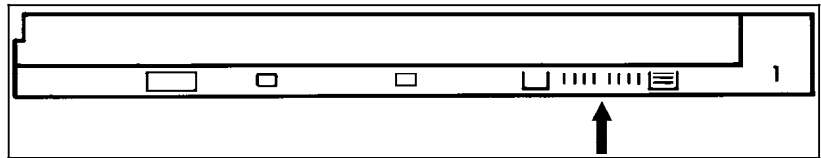
SAMPLE TEST.FRM,20

If you fail to do this before starting the first print job, the first 20 pages of the job are of poor quality.

Loading feeder trays

The LPS provides the following displays for monitoring the condition of each feeder tray:

- The green indicator lights on the outside of each tray provide a graphic display of how much paper is remaining in each feeder tray. Each light in the display represents about 125 sheets of 20-pound/80 gsm paper.



- Messages appear on the system controller display and on the printer control console when trays containing required stock become low. The graphic display on the printer control console shows the location of empty feeder trays.

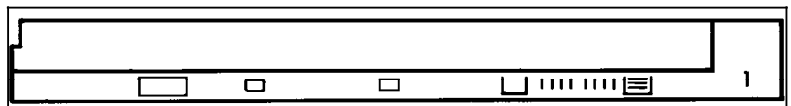
When a feeder tray containing a required stock becomes low:

- If the required stock is available in another tray and if the FEED command is appropriately set, the printer switches to that tray. You may load the first tray while the printer is feeding from the backup tray.
- If the required stock is not available in another tray, the printer stops and displays a message requesting that you load paper.
- If the backup feeder tray paper supply becomes low, the system displays a message indicating what tray needs to be loaded. You may load this tray while the printer is feeding from the main tray.

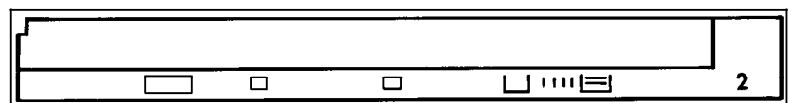
You may load trays while jobs are printing provided the printer is not currently feeding from that tray.

The following instructions apply to all feeder trays, whether dual or high capacity. To load paper:

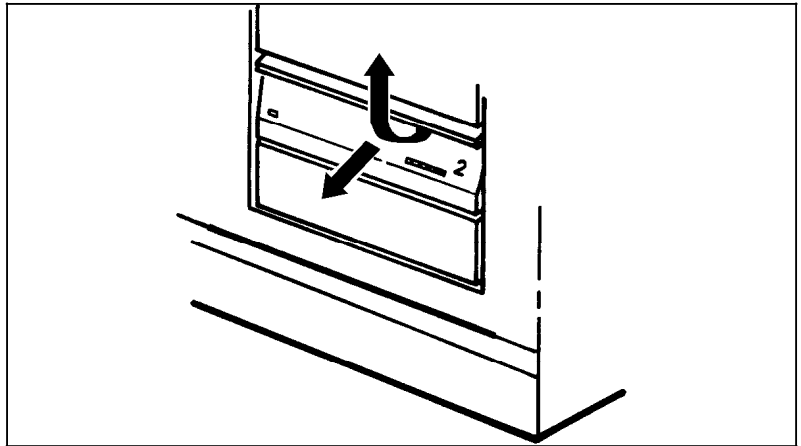
1. Check the Ready to Open indicator on the feeder tray door.



If it is not lit, press the Tray Unlock switch and wait for the Ready to Open indicator to light before opening the feeder tray.

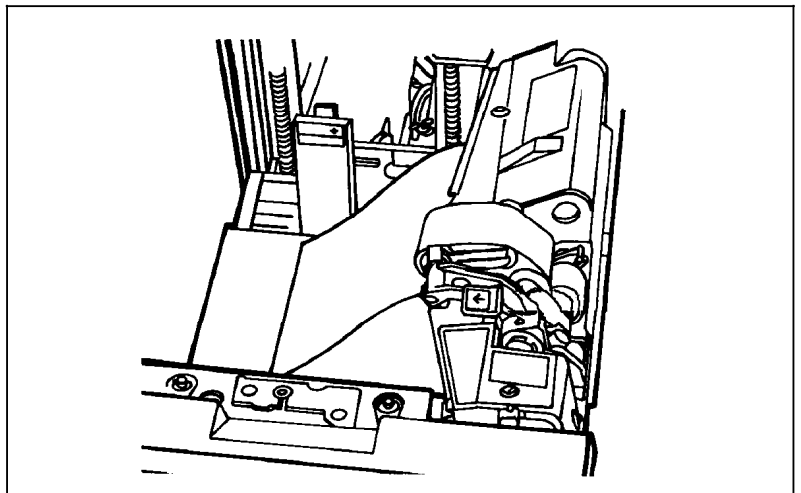


2. Lift and pull out on the blue bar along the top of the feeder tray.



Slide the tray all the way out for best access and ease of loading.

3. Press the bright green lever in the direction of its arrow to unlatch the paper feeder assembly.

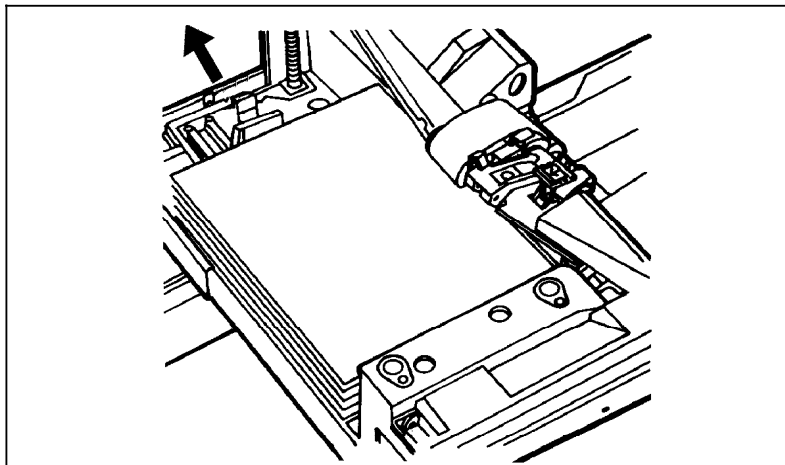


CAUTION: Attempting to move the lever in any other direction could break it.

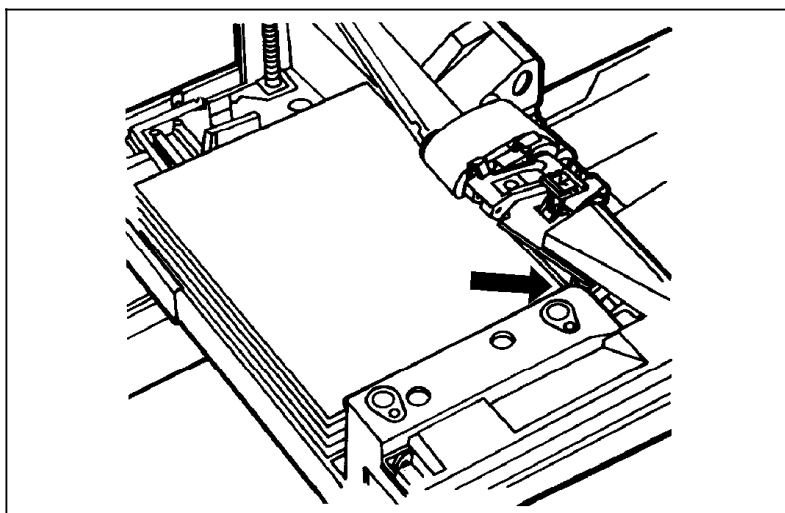
Remove any partially fed paper from the feeder assembly and discard it. Transparencies and other stiff materials should not be discarded unless they are damaged.

4. Remove any paper remaining in the tray and set it aside to be placed on top of the new paper.

5. Slide the length guide toward the rear of the printer.



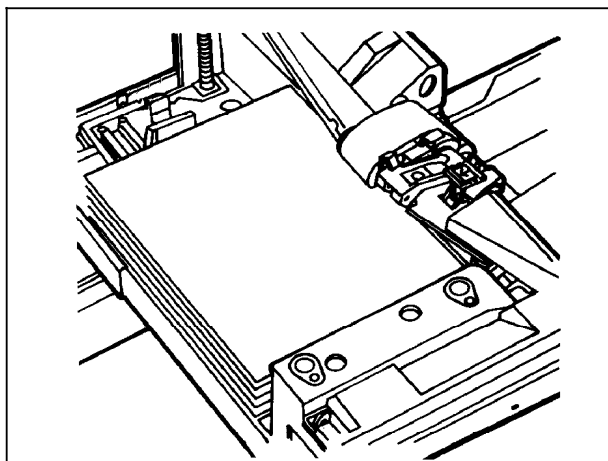
6. Load paper in the tray.



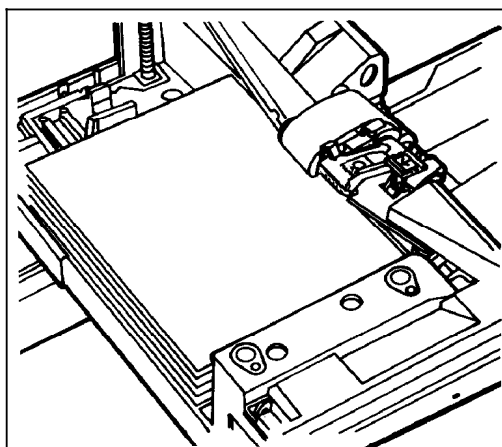
Carefully position the paper in the right front corner. Avoid fanning the paper unless you are loading predrilled paper.

Do not load paper above the MAX line on the length guide; too much paper in the paper tray could result in paper misfeeds.

7. Pull the length guide forward to touch the back of the paper stack.



8. Relatch the paper feeder assembly by pressing the green dot until the assembly clicks into position.



9. Slide the tray into the printer until it latches. You are ready to resume printing.

Running print quality adjustment

The system maintains optimal print quality by monitoring the state of the dry inks as they are called for by the print job. If the system determines that either the black developer housing or the color developer housing (that contains the dry ink) is not ready, it requests that you initiate print quality adjustment (PQA) or take alternative action.

A request for PQA can occur when:

- A new CCU is loaded
- A CCU is idle for more than 16 hours.

When the system presents a message indicating that one of the developer housings is not ready, you have the following options:

- If the black developer housing is not ready, you must run PQA. If the color developer housing is disabled (by service

personnel or through a fault) and you wish to run PQA on the black housing, you must substitute black ink for color using the ALWAYS parameter (refer to the "Substituting inks" section in the "Print job maintenance" chapter).

- If the color developer housing is not ready, you can:
 - Run PQA.
 - Substitute black ink for the color ink required and print the job using only black ink.
 - If the job requires black ink only, continue printing the job by entering CONTINUE O.
 - Abort the job (refer to the "Managing print jobs and print queues" section in the "Printing Jobs" chapter).

Run PQA when:

- The system displays a message asking that you run PQA. If the black housing is not ready, you must run PQA. If the color housing is not ready, you must initiate PQA or run the job using black ink only. If the job is a monochrome job, you may run the job.
- There is down time during your shift. Running PQA routinely limits the number of system-initiated requests, and reduces the number of delays and interruptions to print jobs.

To minimize delays caused by PQA:

- Store unused CCUs in an environment having stable temperature and humidity similar to that of the print room.
- Minimize the number of times the CCU is changed by batching jobs according to their color requirements.
- Run PQA during down time in your shift. You can run PQA even if the system has not requested it.

Before running PQA

Select a paper tray for PQA sheets and load scratch paper in that tray. PQA can generate as many as 750 simplex (or 375 duplex) sheets, although the process generally requires no more than 100 simplex (50 duplex) sheets and in some cases produces only one sheet.

The feeder tray specifications set for the PQA process are independent of the tray specifications of the interrupted print job. The system reverts to the feeder tray or cluster specified for the print job once the print job resumes printing.

PQA sheets are delivered to the sample tray so that they do not interfere with the output of the job.

Running PQA

You initiate PQA by entering the PQA START command. Each parameter has a default setting. The parameter values you specified in the last valid PQA command become the default values. The last values used override the system defaults set during sysgen.

- If you do not know how the current PQA parameter defaults

are set, check the settings before entering the PQA START command.

- If the default settings are not appropriate, change the PQA defaults.
- If you are sure that the current default settings are appropriate, start PQA using the current defaults.

Checking the PQA default settings

To check the current PQA parameter settings, enter the PQA command without parameters:

PQA

The system responds with a series of messages describing the current PQA parameter settings.

Changing the PQA default settings

1. To change the PQA parameters, enter the PQA command with new values for any one or all three of the parameters:

PQA [CONTINUE | STOP][, *tray-spec*][, S | D]

[CONTINUE | STOP]

CONTINUE

Resumes printing any interrupted job immediately after PQA finishes without cycling down the printer.

STOP

Cycles down after PQA finishes and waits for you to press the Continue button before resuming the interrupted print job. This option allows you to reload feeder trays before printing resumes. Stop is the default after sysgen. If it is changed to CONTINUE, it will default to CONTINUE until changed again.

[*tray-spec*]

Specify a tray number (1 to 4) or the name of a valid cluster that contains stock to be used for the PQA sheets. Tray 1 is the default after sysgen.

S | D

S

Prints the PQA sheets in simplex.

D (default)

Prints the PQA sheets in duplex.

Note: If the default is changed to S, it will default to S until changed again.

2. Start PQA or cancel the request.

By changing the default settings, you have initiated a PQA request. You must take one of the following actions:

- If the settings displayed in the messages are appropriate, you may enter **CONTINUE O** to perform PQA now with these settings.
- If you need to change the parameter settings or if you do not wish to run PQA at this time, enter **PQA CANCEL**.

Starting PQA using the current defaults

To initiate PQA using the default values, enter the PQA START command:

PQA START

PQA can take from 2 to 20 minutes. When you enter the PQA START command, the system displays the following message on the printer control console:

```
PLEASE WAIT 2-3 MINUTES FOR PRINT QUALITY ADJUSTMENT
```

In most cases, the process takes less than 5 minutes. If the following message appears, the process may take up to 20 minutes:

```
PERFORMING EXTENDED PRINT QUALITY ADJUSTMENT
```

Canceling or aborting PQA

Changing the PQA parameters initiates a PQA request. If you do not wish to run PQA, you may cancel the request by entering:

PQA CANCEL

If the system does not have a pending PQA request, the system displays the following message:

```
OS1964 No print quality adjustment is pending
```

If PQA is in progress, you may abort the process:

1. Press the STOP button on the printer control console, or enter STOP O at the keyboard.
2. Enter **PQA CANCEL**

PQA completion

If you abort the PQA process, one or more of the housings may not be ready.

```
OS1981 Print quality adjustment has been completed  
OS2691 Ensure proper stock is loaded for print job  
OS2692 Empty SAMPLE output tray
```

If you specified the CONTINUE parameter in your PQA command, the printer resumes the printing of jobs without your intervention.

If you specified the STOP parameter, the printer cycles down and the system also displays the following message:

```
OS2000 Enter 'CONTINUE O' to resume printing
```

Press the Continue button or enter **CONTINUE O** to resume printing.

PQA problems

Improper setup

The system displays the following message if you have not satisfied all the conditions necessary to continue printing automatically after PQA has completed:

OS1962 The 'PQA CONTINUE' option is not allowed with the current selections

When this occurs, review the PQA default settings and the cluster specifications to be sure the setup is correct, then enter the PQA command again.

Cluster problems

If the cluster you specified in the PQA command is not defined, the system displays the following messages:

```
OS1291 Cluster name not defined.
OS1190 Invalid parameter, command ignored.
```

If the cluster you specified is defined but has no current trays, the system displays the following messages:

```
OS020 Cluster <cluster name> selected. *** Cluster has no
trays ***
```

```
OS1190 Invalid parameter, command ignored.
```

Check the cluster specifications and enter the PQA command again. For information on clusters, refer to the "Selecting feeder trays" section later in this chapter.

Data not ready for printing

If you enter a PQA command while the printer is waiting for more data to complete a partially printed job, the system displays the following message on the controller after your PQA settings and any other conditional messages:

```
OS1651 Print quality adjustment will start when more data is
ready for printing
```

When the system receives the data, you are prompted to enter CONTINUE O to begin PQA. When PQA is complete, the print job resumes.

PQA unsuccessful

If PQA fails, the system displays the following messages:

```
OS1965 Print quality adjustment was unsuccessful
OS2672 Enter PQA command again
```

If you can identify the cause of the fault, correct it and try to run PQA again. Multiple failures indicate a faulty housing. If the color housing is faulty, you can substitute inks and print the job using black ink only or change the housing and use another color (refer to the "Substituting inks" section in the "Print job maintenance" chapter).

Report integrity problems in an online system with a stitcher/stacker

The housing not ready condition usually occurs when the printer cycles down. In an online system, the printer often cycles down in the middle of a job. Running PQA at this time may cause a problem with the integrity of a report.

To prevent this problem, initiate PQA at least once every 24 hours during down time in your shift.

Selecting feeder trays

The 4890 provides two feeder trays (1 and 2) as part of the base configuration. Two additional feeder trays are available with the high-capacity feeder option (trays 3 and 4). You have the option of selecting any of the trays individually or as a single grouping of several trays, called a cluster.

Understanding clusters

Clusters provide a means of feeding specific paper stock to a print job. A cluster is a group of related paper trays. The trays assigned to a cluster usually contain the same size and type of paper. This allows common stock to feed from more than one tray.

Clusters are usually set up and named by the person who programs the print job. The cluster name consists of 1 to 6 alphanumeric characters, beginning with an alphabetic character. The name can represent the type of stock used in the job. The cluster definition and the name allow the 4890 to locate the feeder trays with the correct paper stock to use for a specific job. Clusters allow you to use more than one size of paper within a job and to use groups of trays within a job as if they were only one tray.

Based on messages from the 4890, you load the correct stock into the feeder trays and identify the stock in each tray. The system then selects the stock as required by the print job. It does this by selecting a feeder tray for each page by checking the cluster name and paper size associated with the page.

Matching paper size to image size

Commands to change paper size are written into the print jobs when they are created. The 4890 checks the paper size required for the job against the paper size currently being used. If the sizes do not match, one of the following series of messages displays:

```
OS2260 Paper in selected tray too large. Change if desired
OS2000 Enter 'CONTINUE O' to resume printing
```

```
OS2261 Paper in selected tray too small. Change paper
OS2000 Enter 'CONTINUE O' to resume printing
```

```
OS2262 Paper in cluster xxxxxx is too large.
OS2000 Enter 'CONTINUE O' to resume printing
```

```
OS2263 Paper in cluster xxxxxx is too small.
OS2000 Enter 'CONTINUE O' to resume printing
```

You can either change the paper in the selected tray (or cluster) or switch to another tray so that it is loaded with the correct paper size.

Note: If necessary, you can print on paper that is too large, but the printer does not allow you to print on paper that is too small. If you specified a paper size larger than the paper size loaded in the current tray, you must change the paper, select another tray

with the correct size, abort the report, or space over pages until you reach a page that is the correct size for the paper in the tray.

Paper sizing and clusters

Different trays within a cluster can hold different size paper. An **A** in the ASIZ column of the cluster display on your system controller display indicates whether a cluster can contain trays of different sizes.

CLUSTER NAME	ASIZ	-----PREFER-----	-----CURRENT-----	-----STATUS-----
WHITE	A	1 2	1 2	HAS TRAYS

The person who codes the job using the above cluster tells the printer how to make the automatic sizing choices. Depending on how the job was coded, the printer either stops, asks you to correct a tray sizing problem and key in CONTINUE O, or it makes its own decisions. (For instance, in the case of a mismatch where the paper is larger than the paper specified in the job, the printer continues to print on any paper that is the size it needs or larger.) If you encounter any problems related to paper sizing and clusters, contact your lead operator or systems specialist.

Current trays and preferred trays

Current trays in a cluster are those loaded with the correct stock. The CLU command establishes or deletes current trays for a cluster. Preferred trays in a cluster are those recommended when the cluster was created. The CLP command defines or deletes preferred trays for a cluster.

You can display the current trays in a cluster, confirm the preferred trays recommended by the cluster, or override them and choose another specific cluster or tray to use for feeding paper to a job.

A cluster remains in the cluster database while it has at least one preferred tray. You can still use a cluster after its preferred trays are deleted, provided you assign at least one current tray to the cluster. When those current trays are reassigned or deleted, the cluster is deleted from the database.

Displaying cluster status

You can display the status of any cluster or tray associated with a cluster. A cluster is active when at least one tray contains the stock specified for the cluster, and you have established that tray as a current tray. A cluster is inactive when no tray is loaded with the stock specified for the cluster. Both types of clusters are in use when they are called by a job that finds trays defined for the cluster. A cluster is missing when it is called by a job that cannot find either a preferred or current tray defined for that cluster.

To display information about all clusters, or information based on the preferred trays in a cluster, enter the CLP command:

```
CLP [cluster-name| tray-number]
[cluster-name|tray-number]
```

cluster-name

Displays cluster information about the specified cluster only. Omit this parameter to display information about all clusters.

tray-number

Displays all clusters having the specified tray number as a preferred tray.

To display information about clusters based on the current trays in a cluster, enter the CLU command:

CLU [*cluster-name* | *tray-number*]*[cluster-name|tray-number]*

Displays cluster information about the specified cluster only. Omit this parameter to display information about all clusters having current trays.

tray-number

Displays all clusters having the specified tray number as a current tray.

The following sample shows the cluster display format. If CLU was used, only the first four lines would be displayed.

CLUSTER	ASIZ	--PREFER--	--CURRENT--	--STATUS--
MAIN	A	1	1	HAS TRAYS
AUX	A	2	2	HAS TRAYS
AUTO		1 2 3 4	1 2 3 4	HAS TRAYS
WHITE	A	1 2		IS DEFINED
RED		3		IS DEFINED

- CLUSTER: The name of the cluster.
- ASIZ (auto size): An A in this column indicates that the cluster can have multiple sizes of paper. (The "Matching paper size to image size" section in the "Printer maintenance" chapter gives more information on automatic paper sizing.)
- PREFER: The trays defined by the programmer as the recommended trays in which to load the stock for greatest efficiency.
- CURRENT: The trays, if any, that you loaded with the requested stock of the cluster, and defined as the current trays for that cluster.
- STATUS:
 - HAS TRAYS is displayed for an active cluster (loaded with stock).
 - IS DEFINED is displayed for an inactive cluster (not loaded with stock).
 - UNDEFINED is displayed when a job calls a missing cluster (no preferred or current trays defined). The cluster cannot be used until you define it.

Setting the current trays

To confirm preferred trays:

1. Load the required stock into the feeder tray (or trays) requested by the screen prompt.
2. Enter the **CLU *cluster-name* SET** command.

This command notifies the 4890 that the cluster is loaded exactly as specified by the defined preferred trays. The cluster status is updated to show that the preferred trays are also the current trays. If the cluster name is omitted, the definition of the current tray is updated with the preferred definition for each active cluster.

To override preferred tray:

1. Load the required stock into your chosen feeder tray (or trays).
2. Enter **CLU *cluster-name* *tray-number***, for example, **CLU RED 3** and press <ENTER>. To assign more than one tray, separate each tray number by a comma (for example, **CLU RED 1,2,3**).

The cluster status is updated to show the current trays you have just assigned to the cluster.

3. Enter **CLU** and press <ENTER> to verify that your chosen trays are removed from the current set of any clusters where trays were previously assigned.

To set current trays without removing trays from another active cluster:

Add /NR to the end of any CLU command you use to assign specific trays to a cluster (for example, **CLU RED 3,4/NR**).

Modifying the current trays

To add trays:

Enter **CLU *cluster-name* + *tray-number*** (for example, **CLU RED +4**), and press <ENTER>.

To delete trays:

Enter **CLU *cluster-name* — *tray-number*** (for example, **CLU RED -4**), and press <ENTER>.

Redefining the preferred trays

To define preferred trays:

Enter **CLP *cluster-name* + *tray-number*** (for example, **CLP RED 3**), and press <ENTER>. To assign more than one tray, separate each tray number by a comma (for example, **CLP RED 1,2,3**).

To add trays:

Enter **CLP *cluster-name* + *tray-number*** (for example, **CLP RED +4**), and press <ENTER>.

To delete trays:

Enter **CLP *cluster-name* — *tray-number*** (for example, **CLP RED - 4**), and press <ENTER>.

To turn autosize on:

Enter **CLP *cluster-name* /A**, followed by any other parameters you need to redefine the cluster (for example, **CLP RED/A, +4**), and press <ENTER>.

To turn autosize off:

Enter **CLP *cluster-name* /-A**, followed by any other parameters you need to redefine the cluster (for example, **CLP RED/ -A +4**), and press <ENTER>.

Assigning all system trays to a cluster

To add all feeder trays in your printing system to a cluster, key in **ALL** at the end of any **CLU** or **CLP** command you use to define or modify a cluster (for example, **CLP WHITE ALL**).

To delete all the system trays from a cluster, key in **-ALL** at the end of the command (for example, **CLU RED -ALL**).

Changing the stock in a tray assigned to an active cluster

To avoid feeding a job the wrong stock, the following steps are recommended:

1. Lower the tray to prevent its selection before the change of stock is complete.
2. Enter the necessary **CLU** command to add the tray to the new stock cluster. This step also removes the tray from the cluster feeding the job that is still running.
3. Load the tray with the new stock.

If you are changing the paper stock in response to a system prompt, use **CLU *cluster-name* SET**.

Points to note when redefining clusters

- In some sites access to the **CLP** command may be restricted.
- When you assign a current tray to a cluster, that tray is automatically deleted from the list of current trays for any other cluster where it was previously assigned. This can result in the previous cluster being deleted if all of its current trays are reassigned and it has no preferred trays assigned to it. You can avoid this situation by always maintaining preferred trays for all clusters or by using the **/NR** parameter (keeping the following point in mind).
- Exercise caution when using the **SET** and **NR** parameters, because one tray can easily be assigned to more than one cluster by mistake. To avoid that situation, use the following commands only during printing:
 - **CLU *cluster-name* SET**
 - **CLU SET**
 - **CLU *cluster-name* SET/NR**
 - **CLU SET/NR**

Error conditions

Tray overlap	This condition occurs when the same current trays have been assigned to more than one cluster. You must remedy the problem by reassigning the current trays.
Sizing error	<p>The current trays in the cluster contain paper of different sizes, but autosize is not set for the cluster. Enter CLP <i>cluster-name</i> /A to turn autosize on.</p> <p>The printer cycles up again only after each of these errors is remedied.</p>

Using the FEED command

The choice of feeder trays for each job can be established either as part of the job setup or by the operator. When you are using the FEED command to select feeder trays, remember:

- The MAIN cluster is predefined as tray 1, the AUX cluster as tray 2, and the AUTO cluster as all the trays physically present in the printer. However, all of these clusters may have been redefined at installation. You can also override these definitions with the CLUSTER (CLU) and CLP commands.
- The FEED 1 and FEED MAIN commands will not have the same result, even if the main cluster consists of only tray 1. (Refer to the description below for details of each command.)
- Remember to enter the FEED MAIN command after a change of shift or after the printer is serviced. A previous operator or a service representative may have instructed the LPS to use a specific tray or cluster to override all the tray specifications within the jobs you start. The FEED MAIN command returns control to the printer.

The following description shows the FEED command to use to select a tray, cluster name, or cluster mode (MAIN, AUX, and AUTO).

FEED [MAIN | AUX | AUTO | *tray-number* | *cluster-name*]

(no parameters)

If the printer is in FEED MAIN or FEED AUX mode, the command with no parameters toggles to the other of these two modes. If the printer is not in one of these two modes, the command has no effect.

MAIN

Feeds from the MAIN cluster and give the printer control of paper sources to ensure that all sheets from a designated stock name are fed from the assigned cluster.

AUX

Feed from the AUX cluster and override the feed source specified in the job.

AUTO

Feeds from the AUTO cluster.

tray-number

Feeds from a specified feed tray until you enter another FEED command. This command overrides the feed source specified in the job.

cluster-name

Feeds from a specified cluster until you enter another FEED command. This command overrides the feed source specified in the job.

Selecting output trays

Use the SELECT command to specify where the system delivers the printed output. If your 4890 LPS has the dual stacker configuration, your choices are tray 1, tray 2 or the sample tray. If your 4890 has a stitcher/stacker, your choices are tray 1 or the sample tray.

You may specify that the output be directed to a single tray, or you may specify automatic switching. With the automatic switching feature enabled, the printer switches to the other tray when the current tray becomes full. Automatic switching is the default mode set when the printer is powered on.

Transparencies must be delivered to the sample tray.

To change the output tray specification, enter the SELECT command:

SELECT *tray-designation*[,SAMPLE]

tray-designation=AUTO|TRAY|*tray-number*

Specifies the tray selected.

AUTO

Selects automatic switching mode.

SELECT AUTO means that bins 1 and 2 are identical as far as the user is concerned and that either may be used, provided it is empty when you start a job.

If SELECT AUTO is entered when a Bypass Transport (BT) Output device is attached to the printer, the following (and existing) message displays:

OS1295 Destination trays not configured for this command

TRAY

Selects the sample tray.

If you wish to specify an alternate sample tray, refer to the description of the SAMPLE parameter below.

tray-number

Selects a specific tray by the tray number or by entering **E** for the Bypass Transport (BT) Output device. With the stitcher/stacker, tray 1 is the only valid tray number.

Example: SELECT 1

This command instructs the system to use tray 1 as the output tray.

Example: SELECT E

This command instructs the system to use Bypass Transport Output device as the output tray.

Example: SELECT 1

This command instructs the system to use stitcher stacker as the output tray.

SAMPLE

If you wish to specify an alternative sample tray, enter the tray number as the tray designation followed by the SAMPLE parameter. Use this option when the other output is more than 100 pages or when the sample tray is not functioning properly.

Example: SELECT 1,SAMPLE

This command instructs the system to use tray 1 as the active tray and the remaining tray as the sample tray. Do not use this option when printing transparencies.

The Bypass Transport (BT) Output device cannot be used as the sample tray.

If SELECT 2,SAMPLE is entered when a BT and bin 2 are attached to the printer, the following (and existing) message displays:

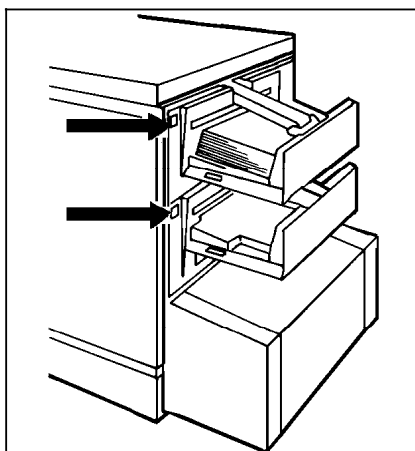
OS1295 Destination trays not configured for this command.

Changing output tray specification while the job is printing

You can change the output tray specification while a job is printing. This allows you to unload output trays before they become full. Make sure that the other output tray is empty before redirecting output.

There are two ways of changing the output tray specification while a job is printing:

- Enter the SELECT command at the system controller.
- Press the tray selection button next to the tray to receive the printed output. This option is available only on the dual stacker.



When redirecting output while the job is printing, you may specify that the system completes the current report before

switching trays. This option prevents a report from being split between two trays.

To keep reports together in the output tray, enter **SEPARATE**. Enter the command before the tray is full. The switch takes place as soon as the current report has finished printing.

To cancel the SEPARATE command, enter **SEPARATE OFF**.

Substituting inks

Ink substitution within a print job is an option set by the person who creates the job. In some instances, substitution occurs automatically, and a message displays at the controller.

However, when the creator of the job enables operator ink substitution, you must decide whether or not to substitute an ink.

When operator ink substitution is allowed, options are presented to you when a job requires a colored dry ink that is not currently loaded or whose housing is faulty.

Your options are as follows:

- Load the required dry ink housing and run POA.
- Substitute for the unavailable dry ink.
- Abort the job.

Substitute an ink when:

- The required housing is faulty.
- The printing schedule does not permit the 2 to 20 minute interruption required for extended POA.
- There is insufficient dry ink for the print job (for example, if the level of dry ink is low, and you do not have access to additional supplies, or the supplies themselves are too low to last the entire print job).
- In-house guidelines indicate you should substitute an ink.

Entering the SUBSTITUTE INK command

The SUBSTITUTE INK command has the following format:

SUBSTITUTE INK {new-ink} FOR {old-ink}[,REPORT | JOB | ALWAYS]

new-ink={*new-ink-name*|CURRENT}

new-ink-name

Specifies the name of the new ink to substitute. Use any valid primary color name, for example, CYAN, MAGENTA, RED, GREEN or BLUE.

CURRENT

Substitutes the currently loaded ink for the ink requested by the job.

old-ink={*old-ink-name*|COLOR|ALL}

old-ink-name

Indicates the name of the ink to substitute, that is, the ink called for by the job. Use any valid primary color name, for example, CYAN, MAGENTA, RED, GREEN or BLUE.

COLOR

Substitutes all colors requested by the job (not including black) with the new ink.

ALL

Substitutes all colors requested by the job (including black) with the new ink.

[REPORT|JOB|ALWAYS]

Determines how long the ink substitution you specify remains in effect.

REPORT

Substitution remains in effect only for this report.

JOB

Substitution remains in effect only for this job.

ALWAYS

Substitution remains in effect until you enter a new substitute ink command or cancel the ink substitution.

Once you enter a valid command, a message displays on the controller to reflect the substitution options you specified. For example:

```
OS0862 Substituting RED for all other inks for this report
```

If the following message displays on the controller, check to make sure the name is keyed in correctly:

```
OS1195 Undefined Ink: color
(color is the name of an ink)
```

If the ink is still flagged as undefined, refer the error to your systems administrator.

Displaying ink substitution settings

To display the current settings without changing a substitution, enter the **SUBSTITUTE INK** command without any parameters. The current settings are always shown whenever a valid SUBSTITUTE INK command is entered, as well as immediately following a successful print quality adjustment.

The SUBSTITUTE INK settings are displayed on the controller whenever output processing is initiated. A message similar to the following one displays. The exact wording of the message depends on the parameters you specified in your SUBSTITUTE INK command.

```
OS0872 Substituting BLACK for all other inks for all jobs
```

If there are no current substitutions, the following message displays:

```
OS2677 No ink substitutions are in effect
```

Canceling a previous substitution

To cancel an ink substitution, use the **SUBSTITUTE INK CANCEL** command while the printer is cycled down.

To cancel all substitutions, enter **SUBSTITUTE INK CANCEL ALL**. All ink substitutions are canceled immediately.

To cancel one particular substitution, enter **SUBSTITUTE INK CANCEL *ink***. The previous substitution for the ink you specify is canceled immediately (without canceling any other substitutions).

Unloading output trays

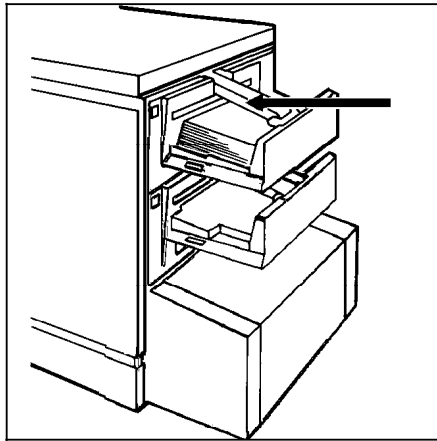
You can unload output trays while the system is printing.

When a stacker tray is full the following happens:

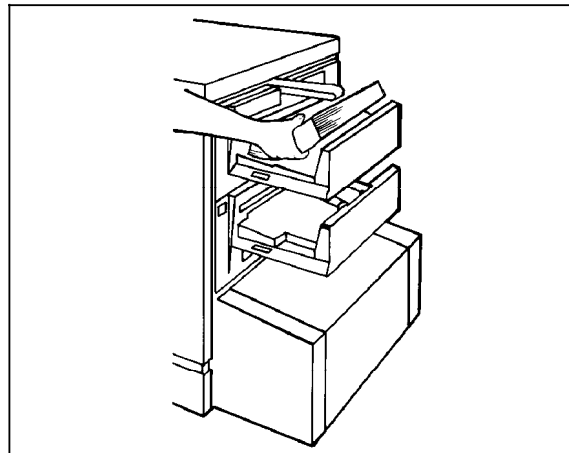
- The Tray Full indicator illuminates on the appropriate stacker tray (applies to dual stacker only).
- The Attention light shines steadily.
- A message displays on the printer control console that indicates what output tray is full.
- In automatic switching mode, the system automatically switches over to the second tray (if it is empty) when one tray is full (applies to the dual stacker only).
- If only one tray was selected, or if both output trays are full, the printer stops. The Attention light modulates between bright yellow and dim yellow.
- The picture on the graphic display shows the location of the full tray.

Unloading dual stacker trays

1. Raise the scuffer arm.



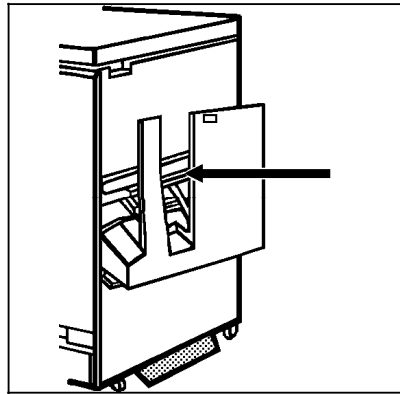
2. Remove the stack of prints.



3. If the printer has stopped, resume printing by pressing the Continue button on the printer control console or by pressing the <CON> key on the keyboard.

Unloading the stitcher/stacker tray

1. Lift the black handle on the outside of the tray.
Ease the tray out slowly to prevent it from falling or breaking.



The tray will slide out and up. Make sure you let the tray slide all the way out before removing the paper.

A false tray-full condition occurs when you remove small stapled sets without pulling out the tray. The counter is not reset, causing the printer to stop before the tray is actually full.

2. Close the tray by sliding it back under the stacker arms.
The tray will click and slide back into place.
3. If the job is not complete, printing should resume automatically when the tray is replaced.

If it does not, press the Continue button on the printer control console or press <CON> on the keyboard.

You can have your service representative adjust your LPS so printing automatically continues when the stitcher/stacker tray is unloaded and replaced.

Unloading sample tray

When 70 sheets are in the sample tray:

- A message appears on the printer control console
- An audible tone sounds
- The Attention light shines steadily.

If you do not empty the tray before it reaches full capacity (100 sheets), the printer stops. The Attention light modulates between bright yellow and dim yellow, and a message appears instructing you to empty the sample tray and press the Continue button to resume printing.

To unload the sample tray:

1. Remove the prints.
2. If the printer has stopped, resume printing by pressing the Continue button on the printer control console or by pressing <CON> on the keyboard.

5.

Print job maintenance

This chapter describes the tasks you must perform to maintain the quality of printed copies from your Xerox 4890 HighLight Color Laser Printing System (LPS).

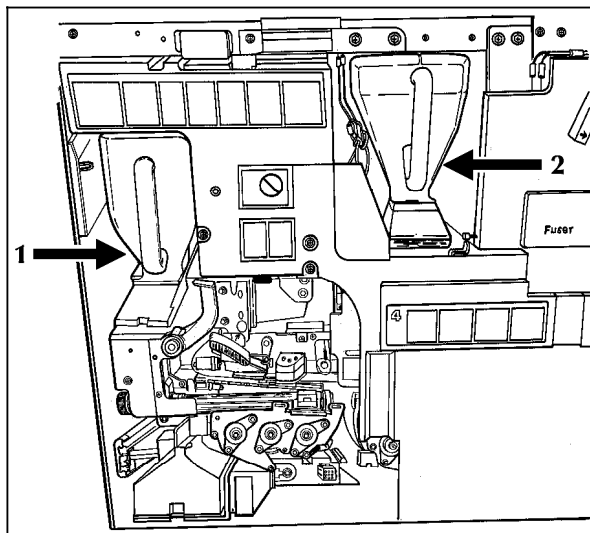
Adding dry ink

When the color or the black dry ink supply is low, the system displays a message on the printer control console and the Attention light modulates between bright yellow and dim yellow. Add dry ink at your earliest convenience. If you do not add dry ink in a timely manner, the printer eventually stops.

Note: Do not discard damaged, unused dry ink bottles. Return the bottles to Xerox for exchange (or credit in the U.S.A.).

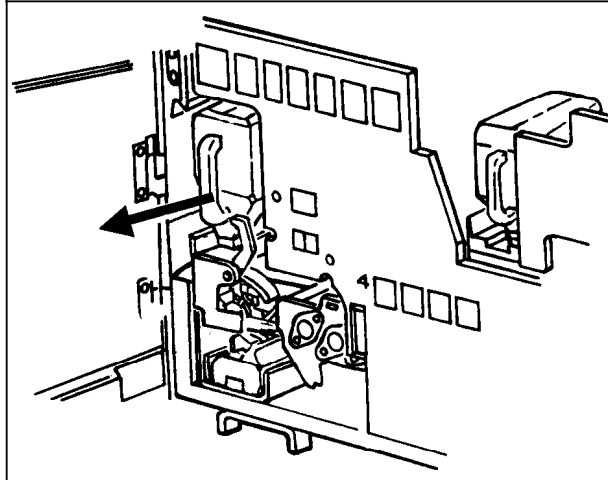
To add dry ink, follow this procedure:

1. Open the middle and left printer doors.
2. Locate the appropriate dry ink area.



- 1 Color dry ink bottle
- 2 Black dry ink bottle
3. Spread a drop cloth on the floor under the dry ink area.

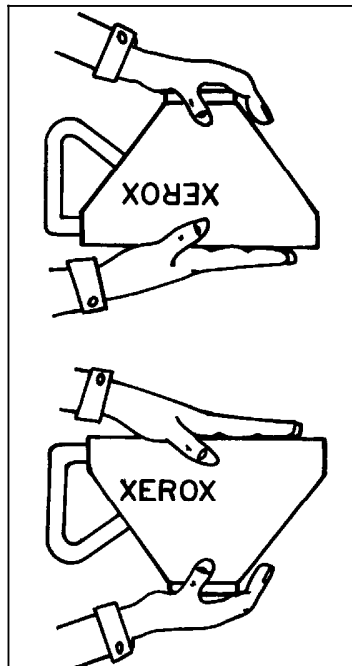
4. Pull the empty dry ink bottle towards you.



The bottle is recapped as you pull it back onto its lid.

CAUTION: If there is still dry ink in the bottle, the ink may spill as you move the bottle back onto its lid.

5. Remove the empty bottle and discard it.
6. Rotate the new dry ink bottle at least ten times to thoroughly mix its contents.



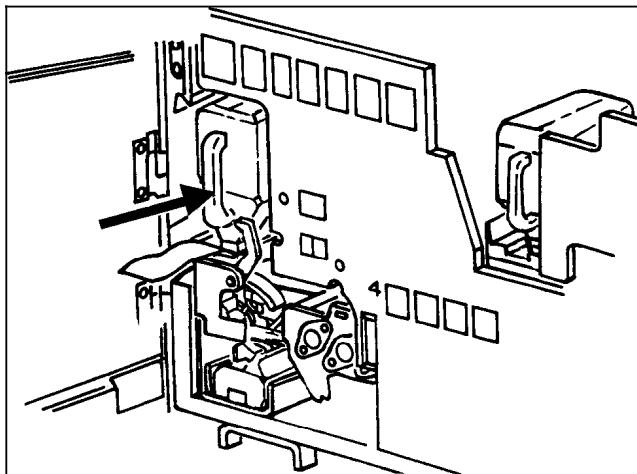
From its shipped position, grasp the new bottle firmly by the top and bottom sections, taking care to support the bottle cap.

Turn the bottle upside down (into its machine loading position) and let the material inside fall and settle towards the cap. This is one half rotation. Complete the rotation by turning the bottle back into its shipped position.

Repeat the procedure for a total of ten rotations.

It is important that you follow this procedure to thoroughly mix the contents of the bottle.

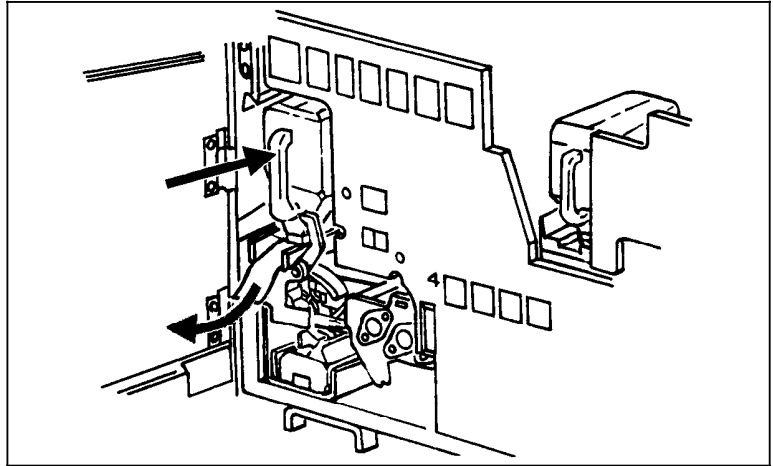
7. Insert the new bottle into the printer, pushing the bottle well into the recess.



As you push the bottle, the cap remains in the front part of the recess, while the bottle slides into the back part.

CAUTION: Each bottle is uniquely coded to the color of the housing. Do not attempt to insert the wrong color bottle into the color housing. Take care when inserting bottle as you risk damaging the bottle and the housing by using excessive force.

8. Hold the bottle in place with one hand and remove the white paper seal by pulling it toward you with the other hand.



9. Discard the seal along with the drop cloth.

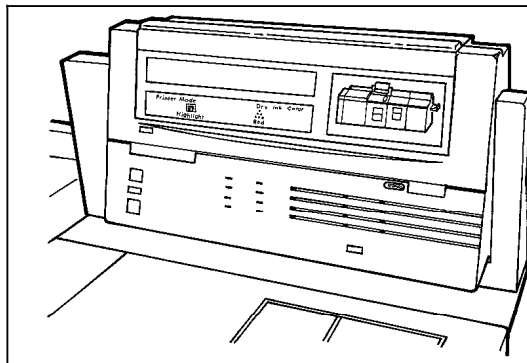
If any dry ink gets on your hands, wash them with soap and cold water (heat sets the ink permanently).

If any dry ink gets on your clothes, brush them with a dry paper towel or a stiff-bristled brush. If this does not remove the ink immediately, launder with detergent and cold water. Dry cleaners should be told that the spot is dry ink for a copy machine so they will not use a solvent that sets the stain.

Adding stitcher wire

Contact your service representative if the stitcher is out of wire. This should seldom happen since the representative checks the wire supply on each service call and replaces the spool as needed.

Figure 5-1. **Wire Percentage indicator**



The Wire Percentage indicator, located on the printer control console, displays the approximate percentage of stitcher wire remaining on the spool. The service representative can set the display to flash at a predetermined percentage to warn you that you are running low on stitcher wire. When the spool is empty,

the printer stops, the print quantity display shows the fault message L152, and the message display shows the following message:

```
STITCHER IS OUT OF WIRE OR
SPOOL NOT ROTATING PRESS i
```

When *i* is pressed again, the message reads:

```
TRAINED OPERATOR CHECK WIRE
MANAGEMENT SYSTEM PRESS i
```

When *i* is pressed, the message reads:

```
IF UNABLE TO FIX, PRESS CONTINUE
TO RESUME WITHOUT STITCHING i
```

The system controller displays the following messages:

```
0S3050 Stitcher is out of wire

0S2000 Enter 'CONTINUE O' to resume printing
```

If you continue the job without replacing the wire, the sets will print normally without being stapled. The stitcher status reported in the printer status displays the following:

```
OUT OF WIRE.
```

Adjusting the form alignment

Form alignment refers to the position of the printed image on the page. In some cases, the form prints correctly but its position on the page is off center. You adjust the form alignment when:

- The alignment is incorrect because the printer needs adjustment. The alignment of your LPS is exceptionally accurate and very rarely needs adjustment for this reason. You can use this procedure to temporarily correct the problem until the printer is serviced.
- A job has been coded incorrectly. If you adjust the alignment for a specific form, remember to restore the alignment to its original settings when the job is completed.

To change the form alignment:

1. Check the current alignment settings.

Enter **ALIGN**

The system displays a message showing the current settings for the horizontal skew value (measured in dots) and the vertical skew value (measured in scan lines):

```
0S1380 Alignment is 36 scan lines and 0 dots.
```

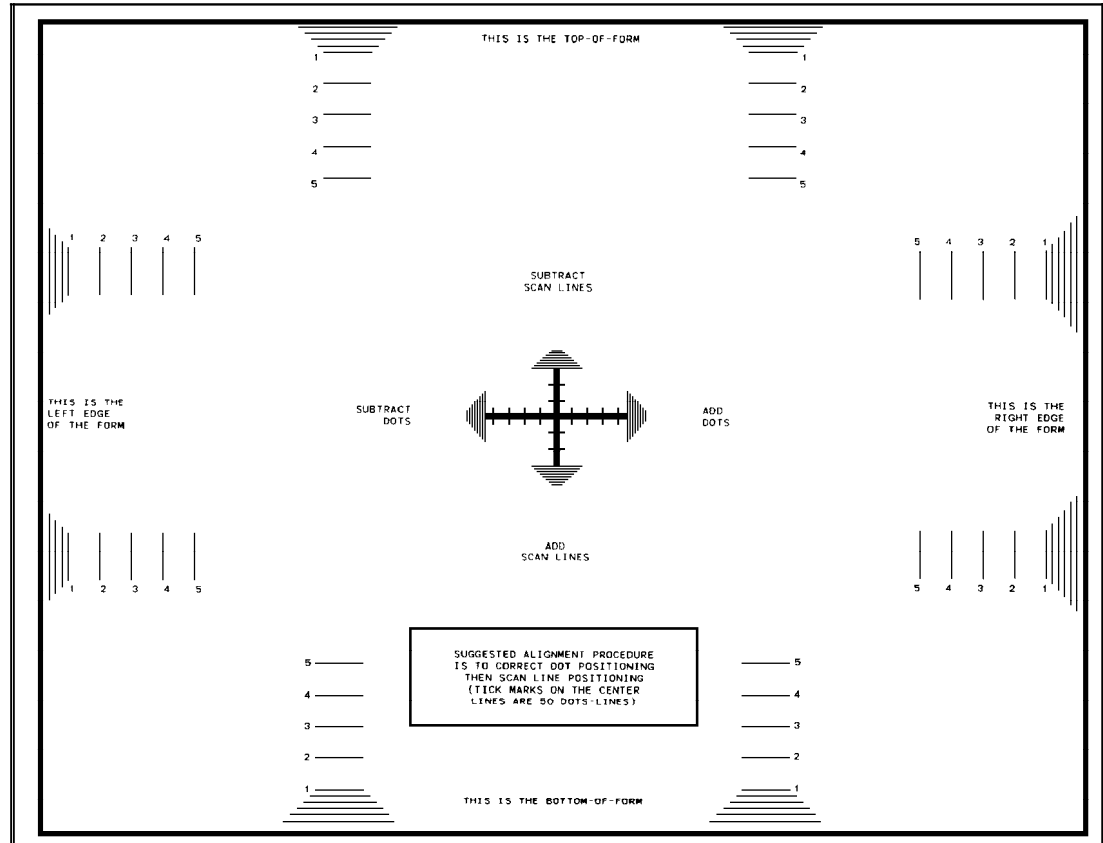
Write down these values so you can restore the alignment to the normal settings, if necessary.

2. Print a sample page for reference using the following command:

SAMPLE TEST.FRM

If you suspect that the form is not aligned properly because the printer needs adjustment, print the alignment test pattern form. Enter the ALIGN command as follows:

ALIGN,,,TEST



The alignment test pattern form is the only reliable way of checking printer adjustment. It not only gives you the TEST.FRM form, it also gives you the alignment status.

If you are adjusting the alignment to correct a problem with a specific form, you do not need to print the test pattern form. Use a sample page from the job for reference.

3. Determine the adjustment necessary.
 - a. If you are correcting a problem with the printer adjustment, measure the horizontal skew (measured in dots) and vertical skew (measured in scan lines) on the alignment test pattern form using a ruler. The test image should be centered on the page.
 - b. If you are correcting a problem with a specific form, measure the horizontal and vertical skew on that form using a ruler.

Refer to the test pattern form shown in this procedure. Note that the test form is in landscape orientation. You must measure horizontal and vertical skew values according to the orientation shown on the test pattern form.

4. Convert the measurements to dot and scan line values.
 - a. Horizontal skew (dots). One inch is equal to 300 dots. Convert your measurement to dots by multiplying inches by 300. Refer to the alignment test pattern form for the correct orientation of the image to the page. To move the image to the right, add dots to the current value

(determined in step 1). To move the image to the left, subtract dots. You may not enter a negative number.

- b. Vertical skew (scan lines). One inch is equal to 300 scan lines. Convert your measurement to scan lines by multiplying inches by 300. Refer to the alignment test pattern form for the correct orientation of the image to the page. To move the image toward the bottom of the page, add scan lines to the current value (determined in step 1). To move the image up, subtract scan lines. You may not enter a negative number.

5. Change the alignment values. Enter the ALIGN command:

ALIGN,scans,dots,[TEST]

scans

This is the number of scan lines to shift the image and they must be a positive whole number between 0 and 296. Add scan lines to the current value to shift the image down. Refer to the test pattern form for the correct orientation.

dots

This is the number of dots to shift the image and they must be a positive whole number between 0 and 11,995. Add dots to the current value to shift the image to the right (refer to the test pattern form for the correct orientation).

Note: Although any scan line increment can be used, the dots increment can only be in steps of 8 dots.

[TEST]

Print the alignment test pattern form with the new alignment values.

6. Verify the new form alignment.

Repeat steps 2 and 3. If the form alignment is correct, continue printing jobs. If the alignment needs further adjustment, repeat steps 4 and 5.

7. Continue printing jobs.

If you have set the alignment for one particular job, print only that job.

8. If you have set the alignment for one particular job, restore the form alignment settings to the original values. Enter the ALIGN command using the original values determined in step 1.

Changing the color dry ink

To change the color dry ink installed in your system, you must remove the customer changeable unit (CCU) in the printer and replace it with a CCU having the color dry ink you wish to use. The CCU consists of the color developer housing and the dry ink bottle. The CCU is specific to one color, and you must replace it to print with another color.

WARNING: Never attempt to install a 4850 CCU into the 4890 LPS. The CCUs are not compatible.

Use an empty CCU changeout cart to remove the CCU. A CCU that is not currently in use should be stored on its own cart, therefore there should always be at least one empty cart at your site. Use that cart to install the new CCU.

WARNING: Never attempt to remove or install a CCU without a cart.

Remove the CCU when:

- A print job requires that you load another color dry ink
- The color housing is faulty.

Store the cart:

- In a dry, dust free area with consistent temperature and humidity similar to that in the printer room.
- With the top cover of the cart closed.

Before changing the color dry ink installed in the printer, make sure that reports requiring the current color are not in the process of printing (either in the input or the output phase). Refer to the "Checking job and printer status" section in the "Printing jobs" chapter for more information on determining the status of jobs in the queue.

Enter the **STOP Q** command before changing the CCU to ensure that reports requiring the current color are not processed in the input phase while you are changing the CCU.

Removing the CCU

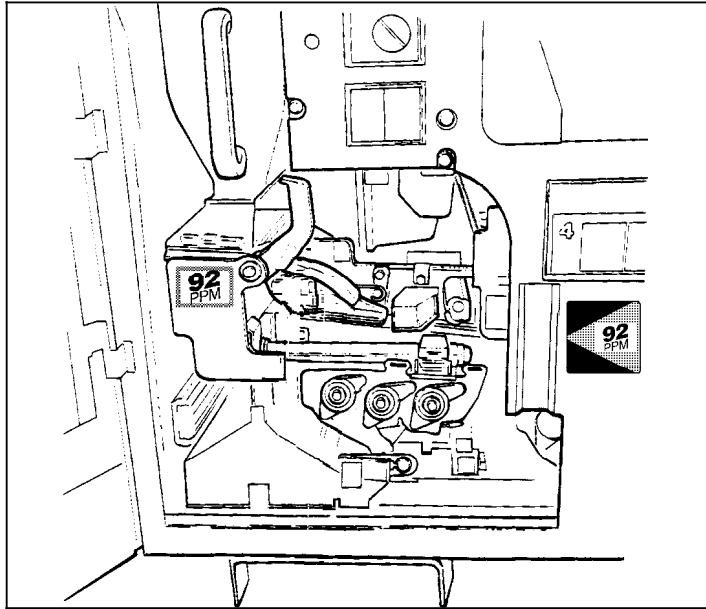
1. Make sure that the printer is idle.

If the printer is not idle, press the Stop button.

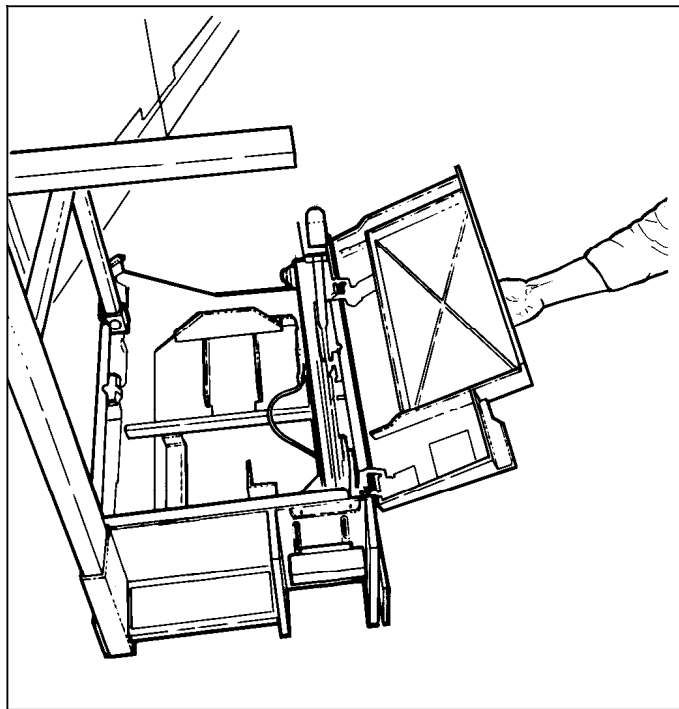
WARNING: Do not remove the CCU after a paper jam, system rollover, or other fault that stops printing. Press the Stop button before attempting to remove the CCU.

2. Enter **STOP Q**
3. Open the middle and left front doors of the printer.

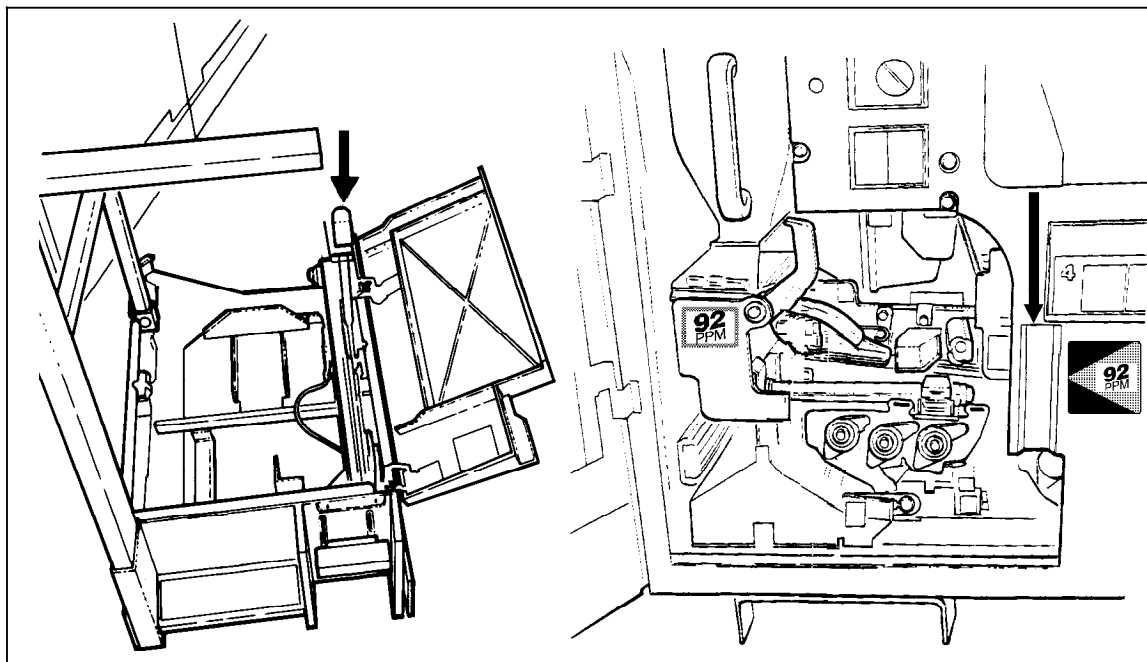
4. Locate the color housing area on the left side of the printer.



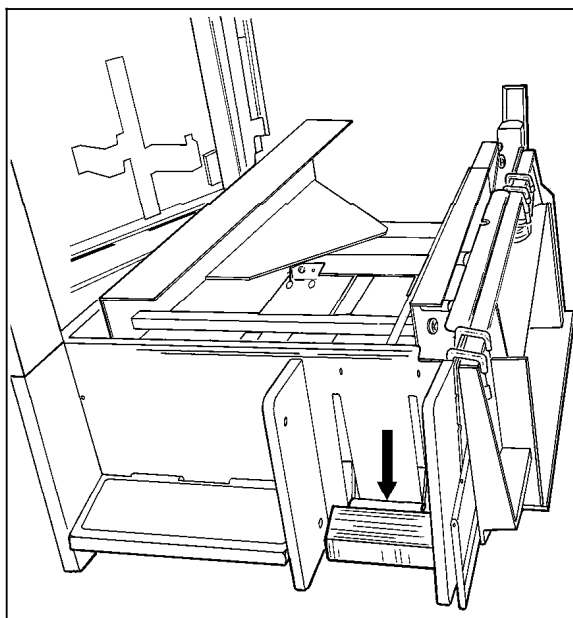
5. Open the top cover of an empty CCU cart.



6. Push the cart up to the left side of the printer, lining up the gold alignment knob on the cart with the gold recess on the printer inner cover.

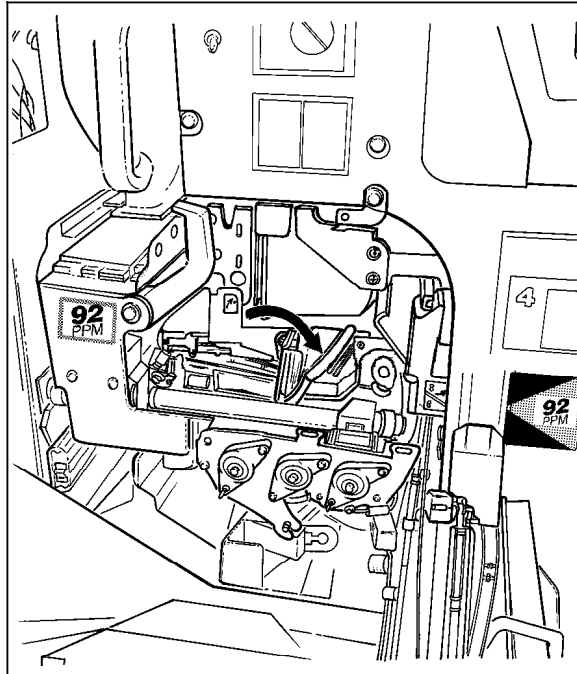


7. Push the cart firmly into the printer until the two latch together.
8. Push down firmly on the cart pedal with your right foot until the pedal catches.

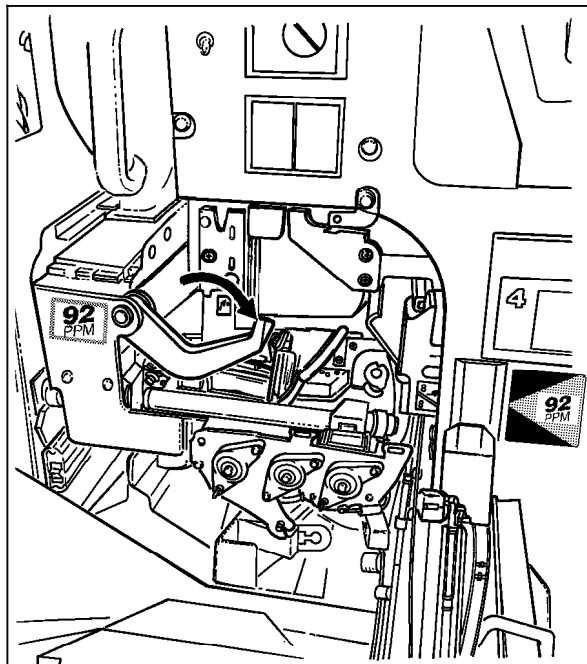


The pedal should stay locked down. The pallet within the cart is raised.

9. Turn the Backup roller handle clockwise 1/4 turn.



10. Turn the CCU handle clockwise 1/4 turn.



11. Grasp the CCU handle and pull the CCU out of the printer until it is completely on the cart.
12. Push down firmly on the cart pedal with your right foot until it clicks.

The pallet with the CCU is lowered into the cart. If the pallet does not move, make sure that the CCU is all the way out of the printer and push down on the pedal again.

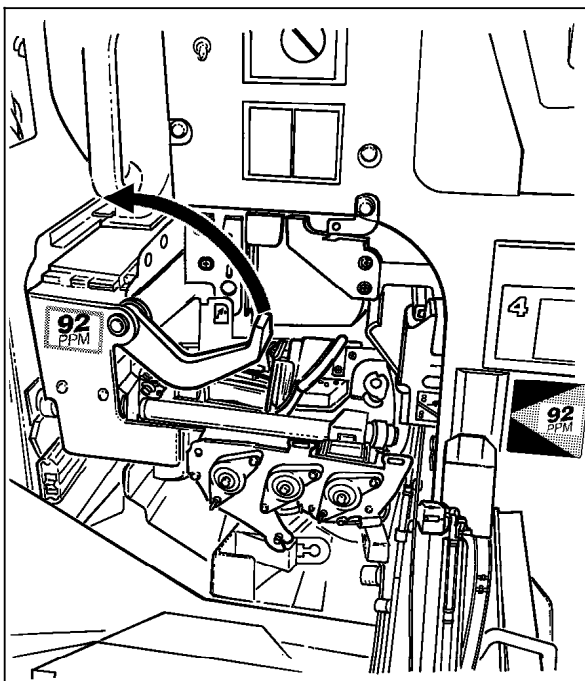
13. Close the top cover of the cart.
14. Pull the cart away from the printer and store it.

Loading a CCU

1. Open the top cover of the cart containing the CCU you want to install.

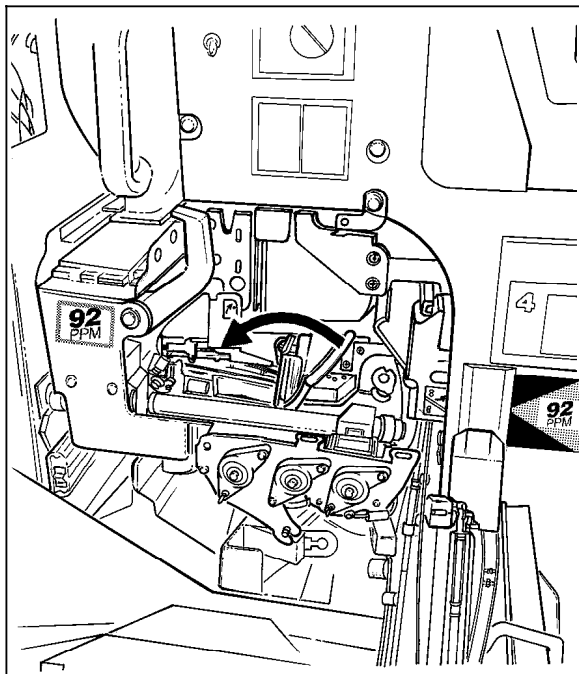
WARNING: Never attempt to install a 4850 CCU into the 4890 LPS. The CCUs are not compatible.

2. Push the cart up to the printer, lining up the gold knob on the cart with the gold recess on the inner cover of the printer.
3. Push the cart firmly into the printer until you can feel the two latch together.
4. Push down firmly on the cart pedal with your right foot until the pedal catches.
5. The pedal should stay locked down. The pallet containing the CCU is raised. Using the CCU handle, firmly push the CCU into the printer.
6. Turn the gold CCU handle counterclockwise 1/4 turn.



If the handle does not turn, make sure the CCU is firmly seated in the printer.

7. Turn the Backup roller handle counterclockwise 1/4 turn.



8. Push down firmly on the cart pedal with your right foot until it clicks.

If the pallet does not drop, check that the CCU is all the way in the printer and push down on the pedal again.

9. Close the top cover of the cart.
10. Pull the cart away from the printer and store it.
11. Close the left and middle front doors of the printer.
12. Enter **CONTINUE Q** to resume scheduling by the queue manager.

Changing paper size

When you change to 8.5 x 14 inch / 216 x 356 mm paper after an extended run of 8.5 x 11 inch / 216 x 279 mm or A4 paper, run 20 copies of the test pattern to clean the fusing system.
Enter the command:

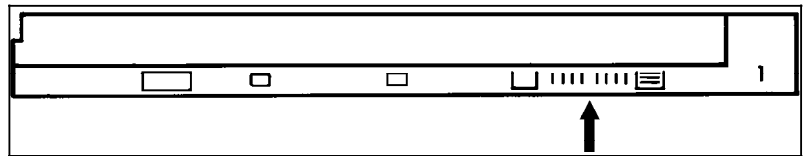
SAMPLE TEST.FRM,20

If you fail to do this before starting the first print job, the first 20 pages of the job are of poor quality.

Loading feeder trays

The LPS provides the following displays for monitoring the condition of each feeder tray:

- The green indicator lights on the outside of each tray provide a graphic display of how much paper is remaining in each feeder tray. Each light in the display represents about 125 sheets of 20-pound/80 gsm paper.



- Messages appear on the system controller display and on the printer control console when trays containing required stock become low. The graphic display on the printer control console shows the location of empty feeder trays.

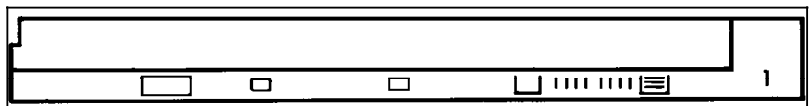
When a feeder tray containing a required stock becomes low:

- If the required stock is available in another tray and if the FEED command is appropriately set, the printer switches to that tray. You may load the first tray while the printer is feeding from the backup tray.
- If the required stock is not available in another tray, the printer stops and displays a message requesting that you load paper.
- If the backup feeder tray paper supply becomes low, the system displays a message indicating what tray needs to be loaded. You may load this tray while the printer is feeding from the main tray.

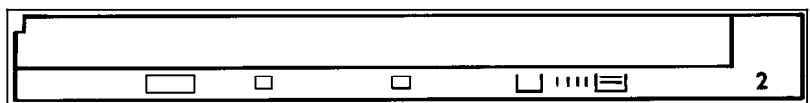
You may load trays while jobs are printing provided the printer is not currently feeding from that tray.

The following instructions apply to all feeder trays, whether dual or high capacity. To load paper:

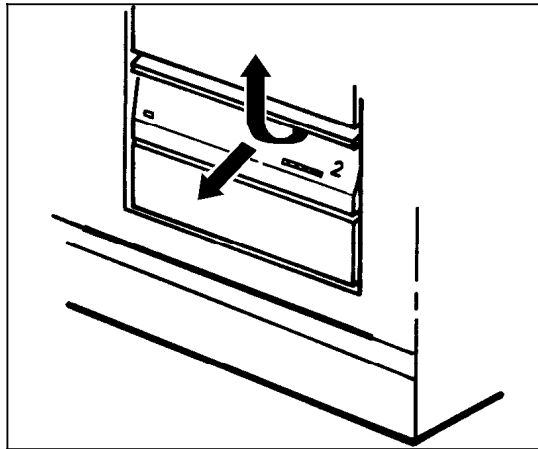
1. Check the Ready to Open indicator on the feeder tray door.



If it is not lit, press the Tray Unlock switch and wait for the Ready to Open indicator to light before opening the feeder tray.

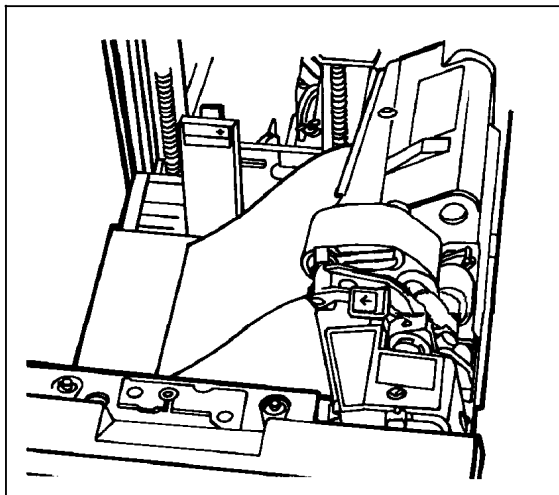


2. Lift and pull out on the blue bar along the top of the feeder tray.



Slide the tray all the way out for best access and ease of loading.

3. Press the bright green lever in the direction of its arrow to unlatch the paper feeder assembly.

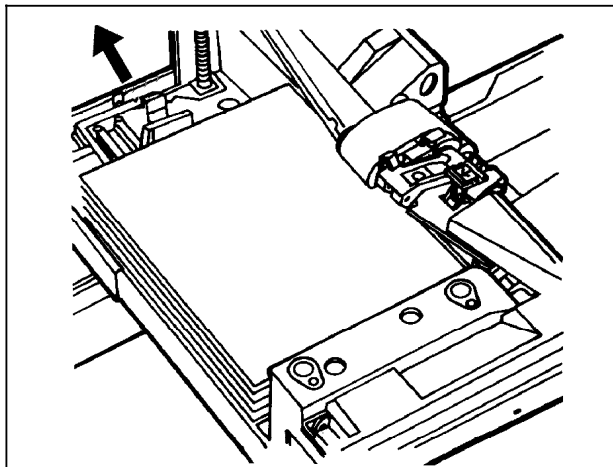


CAUTION: Attempting to move the lever in any other direction could break it.

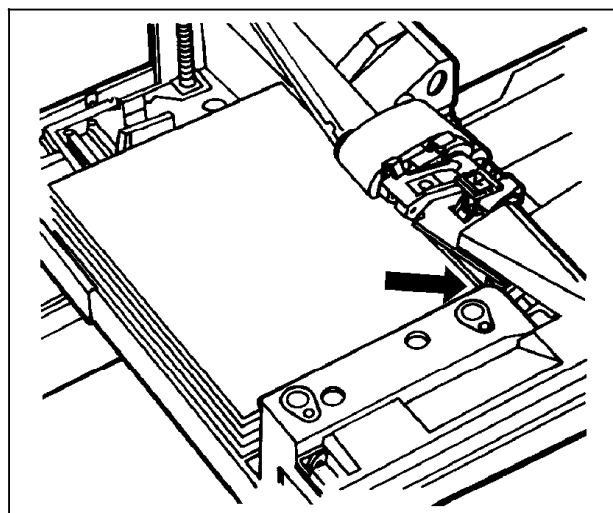
Remove any partially fed paper from the feeder assembly and discard it. Transparencies and other stiff materials should not be discarded unless they are damaged.

4. Remove any paper remaining in the tray and set it aside to be placed on top of the new paper.

5. Slide the length guide toward the rear of the printer.



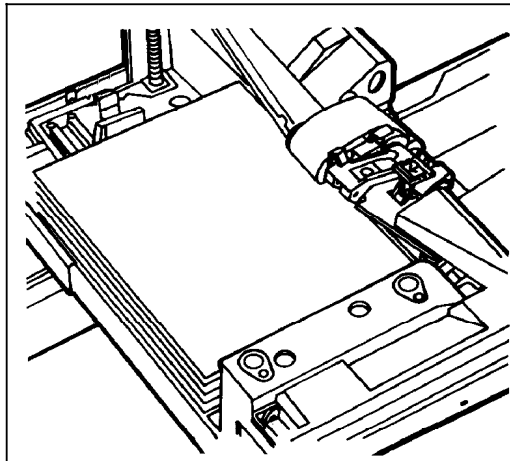
6. Load paper in the tray.



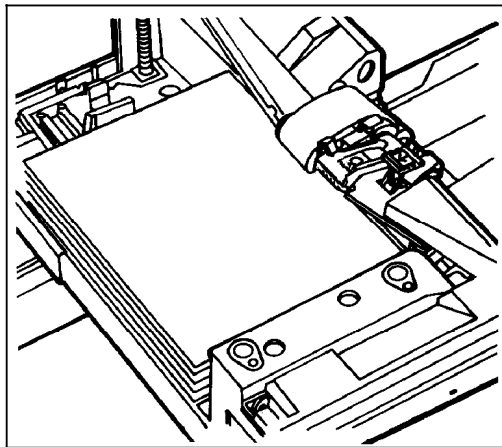
Carefully position the paper in the right front corner. Avoid fanning the paper unless you are loading predrilled paper.

Do not load paper above the MAX line on the length guide; too much paper in the paper tray could result in paper misfeeds.

7. Pull the length guide forward to touch the back of the paper stack.



8. Relatch the paper feeder assembly by pressing the green dot until the assembly clicks into position.



9. Slide the tray into the printer until it latches. You are ready to resume printing.

Running print quality adjustment

The system maintains optimal print quality by monitoring the state of the dry inks as they are called for by the print job. If the system determines that either the black developer housing or the color developer housing (that contains the dry ink) is not ready, it requests that you initiate print quality adjustment (PQA) or take alternative action.

A request for PQA can occur when:

- A new CCU is loaded
- A CCU is idle for more than 16 hours.

When the system presents a message indicating that one of the developer housings is not ready, you have the following options:

- If the black developer housing is not ready, you must run PQA. If the color developer housing is disabled (by service

personnel or through a fault) and you wish to run PQA on the black housing, you must substitute black ink for color using the ALWAYS parameter (refer to the "Substituting inks" section in the "Print job maintenance" chapter).

- If the color developer housing is not ready, you can:
 - Run PQA.
 - Substitute black ink for the color ink required and print the job using only black ink.
 - If the job requires black ink only, continue printing the job by entering CONTINUE O.
 - Abort the job (refer to the "Managing print jobs and print queues" section in the "Printing Jobs" chapter).

Run PQA when:

- The system displays a message asking that you run PQA. If the black housing is not ready, you must run PQA. If the color housing is not ready, you must initiate PQA or run the job using black ink only. If the job is a monochrome job, you may run the job.
- There is down time during your shift. Running PQA routinely limits the number of system-initiated requests, and reduces the number of delays and interruptions to print jobs.

To minimize delays caused by PQA:

- Store unused CCUs in an environment having stable temperature and humidity similar to that of the print room.
- Minimize the number of times the CCU is changed by batching jobs according to their color requirements.
- Run PQA during down time in your shift. You can run PQA even if the system has not requested it.

Before running PQA

Select a paper tray for PQA sheets and load scratch paper in that tray. PQA can generate as many as 750 simplex (or 375 duplex) sheets, although the process generally requires no more than 100 simplex (50 duplex) sheets and in some cases produces only one sheet.

The feeder tray specifications set for the PQA process are independent of the tray specifications of the interrupted print job. The system reverts to the feeder tray or cluster specified for the print job once the print job resumes printing.

PQA sheets are delivered to the sample tray so that they do not interfere with the output of the job.

Running PQA

You initiate PQA by entering the PQA START command. Each parameter has a default setting. The parameter values you specified in the last valid PQA command become the default values. The last values used override the system defaults set during sysgen.

- If you do not know how the current PQA parameter defaults

are set, check the settings before entering the PQA START command.

- If the default settings are not appropriate, change the PQA defaults.
- If you are sure that the current default settings are appropriate, start PQA using the current defaults.

Checking the PQA default settings

To check the current PQA parameter settings, enter the PQA command without parameters:

PQA

The system responds with a series of messages describing the current PQA parameter settings.

Changing the PQA default settings

1. To change the PQA parameters, enter the PQA command with new values for any one or all three of the parameters:

PQA [CONTINUE | STOP][, *tray-spec*][, S | D]

[CONTINUE | STOP]

CONTINUE

Resumes printing any interrupted job immediately after PQA finishes without cycling down the printer.

STOP

Cycles down after PQA finishes and waits for you to press the Continue button before resuming the interrupted print job. This option allows you to reload feeder trays before printing resumes. Stop is the default after sysgen. If it is changed to CONTINUE, it will default to CONTINUE until changed again.

[*tray-spec*]

Specify a tray number (1 to 4) or the name of a valid cluster that contains stock to be used for the PQA sheets. Tray 1 is the default after sysgen.

S | D

S

Prints the PQA sheets in simplex.

D (default)

Prints the PQA sheets in duplex.

Note: If the default is changed to S, it will default to S until changed again.

2. Start PQA or cancel the request.

By changing the default settings, you have initiated a PQA request. You must take one of the following actions:

- If the settings displayed in the messages are appropriate, you may enter **CONTINUE O** to perform PQA now with these settings.
- If you need to change the parameter settings or if you do not wish to run PQA at this time, enter **PQA CANCEL**.

Starting PQA using the current defaults

To initiate PQA using the default values, enter the PQA START command:

PQA START

PQA can take from 2 to 20 minutes. When you enter the PQA START command, the system displays the following message on the printer control console:

```
PLEASE WAIT 2-3 MINUTES FOR PRINT QUALITY ADJUSTMENT
```

In most cases, the process takes less than 5 minutes. If the following message appears, the process may take up to 20 minutes:

```
PERFORMING EXTENDED PRINT QUALITY ADJUSTMENT
```

Canceling or aborting PQA

Changing the PQA parameters initiates a PQA request. If you do not wish to run PQA, you may cancel the request by entering:

PQA CANCEL

If the system does not have a pending PQA request, the system displays the following message:

```
OS1964 No print quality adjustment is pending
```

If PQA is in progress, you may abort the process:

1. Press the STOP button on the printer control console, or enter STOP O at the keyboard.
2. Enter **PQA CANCEL**

PQA completion

If you abort the PQA process, one or more of the housings may not be ready.

```
OS1981 Print quality adjustment has been completed  
OS2691 Ensure proper stock is loaded for print job  
OS2692 Empty SAMPLE output tray
```

If you specified the CONTINUE parameter in your PQA command, the printer resumes the printing of jobs without your intervention.

If you specified the STOP parameter, the printer cycles down and the system also displays the following message:

```
OS2000 Enter 'CONTINUE O' to resume printing
```

Press the Continue button or enter **CONTINUE O** to resume printing.

PQA problems

Improper setup

The system displays the following message if you have not satisfied all the conditions necessary to continue printing automatically after PQA has completed:

OS1962 The 'PQA CONTINUE' option is not allowed with the current selections

When this occurs, review the PQA default settings and the cluster specifications to be sure the setup is correct, then enter the PQA command again.

Cluster problems

If the cluster you specified in the PQA command is not defined, the system displays the following messages:

```
OS1291 Cluster name not defined.
OS1190 Invalid parameter, command ignored.
```

If the cluster you specified is defined but has no current trays, the system displays the following messages:

```
OS020 Cluster <cluster name> selected. *** Cluster has no
trays ***

OS1190 Invalid parameter, command ignored.
```

Check the cluster specifications and enter the PQA command again. For information on clusters, refer to the "Selecting feeder trays" section later in this chapter.

Data not ready for printing

If you enter a PQA command while the printer is waiting for more data to complete a partially printed job, the system displays the following message on the controller after your PQA settings and any other conditional messages:

```
OS1651 Print quality adjustment will start when more data is
ready for printing
```

When the system receives the data, you are prompted to enter CONTINUE O to begin PQA. When PQA is complete, the print job resumes.

PQA unsuccessful

If PQA fails, the system displays the following messages:

```
OS1965 Print quality adjustment was unsuccessful
OS2672 Enter PQA command again
```

If you can identify the cause of the fault, correct it and try to run PQA again. Multiple failures indicate a faulty housing. If the color housing is faulty, you can substitute inks and print the job using black ink only or change the housing and use another color (refer to the "Substituting inks" section in the "Print job maintenance" chapter).

Report integrity problems in an online system with a stitcher/stacker

The housing not ready condition usually occurs when the printer cycles down. In an online system, the printer often cycles down in the middle of a job. Running PQA at this time may cause a problem with the integrity of a report.

To prevent this problem, initiate PQA at least once every 24 hours during down time in your shift.

Selecting feeder trays

The 4890 provides two feeder trays (1 and 2) as part of the base configuration. Two additional feeder trays are available with the high-capacity feeder option (trays 3 and 4). You have the option of selecting any of the trays individually or as a single grouping of several trays, called a cluster.

Understanding clusters

Clusters provide a means of feeding specific paper stock to a print job. A cluster is a group of related paper trays. The trays assigned to a cluster usually contain the same size and type of paper. This allows common stock to feed from more than one tray.

Clusters are usually set up and named by the person who programs the print job. The cluster name consists of 1 to 6 alphanumeric characters, beginning with an alphabetic character. The name can represent the type of stock used in the job. The cluster definition and the name allow the 4890 to locate the feeder trays with the correct paper stock to use for a specific job. Clusters allow you to use more than one size of paper within a job and to use groups of trays within a job as if they were only one tray.

Based on messages from the 4890, you load the correct stock into the feeder trays and identify the stock in each tray. The system then selects the stock as required by the print job. It does this by selecting a feeder tray for each page by checking the cluster name and paper size associated with the page.

Matching paper size to image size

Commands to change paper size are written into the print jobs when they are created. The 4890 checks the paper size required for the job against the paper size currently being used. If the sizes do not match, one of the following series of messages displays:

```
OS2260 Paper in selected tray too large. Change if desired
OS2000 Enter 'CONTINUE O' to resume printing
```

```
OS2261 Paper in selected tray too small. Change paper
OS2000 Enter 'CONTINUE O' to resume printing
```

```
OS2262 Paper in cluster xxxxxx is too large.
OS2000 Enter 'CONTINUE O' to resume printing
```

```
OS2263 Paper in cluster xxxxxx is too small.
OS2000 Enter 'CONTINUE O' to resume printing
```

You can either change the paper in the selected tray (or cluster) or switch to another tray so that it is loaded with the correct paper size.

Note: If necessary, you can print on paper that is too large, but the printer does not allow you to print on paper that is too small. If you specified a paper size larger than the paper size loaded in the current tray, you must change the paper, select another tray

with the correct size, abort the report, or space over pages until you reach a page that is the correct size for the paper in the tray.

Paper sizing and clusters

Different trays within a cluster can hold different size paper. An **A** in the ASIZ column of the cluster display on your system controller display indicates whether a cluster can contain trays of different sizes.

CLUSTER NAME	ASIZ	-----PREFER-----	-----CURRENT-----	-----STATUS-----
WHITE	A	1 2	1 2	HAS TRAYS

The person who codes the job using the above cluster tells the printer how to make the automatic sizing choices. Depending on how the job was coded, the printer either stops, asks you to correct a tray sizing problem and key in CONTINUE O, or it makes its own decisions. (For instance, in the case of a mismatch where the paper is larger than the paper specified in the job, the printer continues to print on any paper that is the size it needs or larger.) If you encounter any problems related to paper sizing and clusters, contact your lead operator or systems specialist.

Current trays and preferred trays

Current trays in a cluster are those loaded with the correct stock. The CLU command establishes or deletes current trays for a cluster. Preferred trays in a cluster are those recommended when the cluster was created. The CLP command defines or deletes preferred trays for a cluster.

You can display the current trays in a cluster, confirm the preferred trays recommended by the cluster, or override them and choose another specific cluster or tray to use for feeding paper to a job.

A cluster remains in the cluster database while it has at least one preferred tray. You can still use a cluster after its preferred trays are deleted, provided you assign at least one current tray to the cluster. When those current trays are reassigned or deleted, the cluster is deleted from the database.

Displaying cluster status

You can display the status of any cluster or tray associated with a cluster. A cluster is active when at least one tray contains the stock specified for the cluster, and you have established that tray as a current tray. A cluster is inactive when no tray is loaded with the stock specified for the cluster. Both types of clusters are in use when they are called by a job that finds trays defined for the cluster. A cluster is missing when it is called by a job that cannot find either a preferred or current tray defined for that cluster.

To display information about all clusters, or information based on the preferred trays in a cluster, enter the CLP command:

```
CLP [cluster-name|tray-number]
[cluster-name|tray-number]
```

cluster-name

Displays cluster information about the specified cluster only. Omit this parameter to display information about all clusters.

tray-number

Displays all clusters having the specified tray number as a preferred tray.

To display information about clusters based on the current trays in a cluster, enter the CLU command:

CLU [*cluster-name* | *tray-number*]*[cluster-name|tray-number]*

Displays cluster information about the specified cluster only. Omit this parameter to display information about all clusters having current trays.

tray-number

Displays all clusters having the specified tray number as a current tray.

The following sample shows the cluster display format. If CLU was used, only the first four lines would be displayed.

CLUSTER	ASIZ	--PREFER--	--CURRENT--	--STATUS--
MAIN	A	1	1	HAS TRAYS
AUX	A	2	2	HAS TRAYS
AUTO		1 2 3 4	1 2 3 4	HAS TRAYS
WHITE	A	1 2		IS DEFINED
RED		3		IS DEFINED

- CLUSTER: The name of the cluster.
- ASIZ (auto size): An A in this column indicates that the cluster can have multiple sizes of paper. (The "Matching paper size to image size" section in the "Printer maintenance" chapter gives more information on automatic paper sizing.)
- PREFER: The trays defined by the programmer as the recommended trays in which to load the stock for greatest efficiency.
- CURRENT: The trays, if any, that you loaded with the requested stock of the cluster, and defined as the current trays for that cluster.
- STATUS:
 - HAS TRAYS is displayed for an active cluster (loaded with stock).
 - IS DEFINED is displayed for an inactive cluster (not loaded with stock).
 - UNDEFINED is displayed when a job calls a missing cluster (no preferred or current trays defined). The cluster cannot be used until you define it.

Setting the current trays

To confirm preferred trays:

1. Load the required stock into the feeder tray (or trays) requested by the screen prompt.
2. Enter the **CLU *cluster-name* SET** command.

This command notifies the 4890 that the cluster is loaded exactly as specified by the defined preferred trays. The cluster status is updated to show that the preferred trays are also the current trays. If the cluster name is omitted, the definition of the current tray is updated with the preferred definition for each active cluster.

To override preferred tray:

1. Load the required stock into your chosen feeder tray (or trays).
2. Enter **CLU *cluster-name* *tray-number***, for example, **CLU RED 3** and press <ENTER>. To assign more than one tray, separate each tray number by a comma (for example, **CLU RED 1,2,3**).

The cluster status is updated to show the current trays you have just assigned to the cluster.

3. Enter **CLU** and press <ENTER> to verify that your chosen trays are removed from the current set of any clusters where trays were previously assigned.

To set current trays without removing trays from another active cluster:

Add /NR to the end of any CLU command you use to assign specific trays to a cluster (for example, **CLU RED 3,4/NR**).

Modifying the current trays

To add trays:

Enter **CLU *cluster-name* + *tray-number*** (for example, **CLU RED +4**), and press <ENTER>.

To delete trays:

Enter **CLU *cluster-name* — *tray-number*** (for example, **CLU RED -4**), and press <ENTER>.

Redefining the preferred trays

To define preferred trays:

Enter **CLP *cluster-name* + *tray-number*** (for example, **CLP RED 3**), and press <ENTER>. To assign more than one tray, separate each tray number by a comma (for example, **CLP RED 1,2,3**).

To add trays:

Enter **CLP *cluster-name* + *tray-number*** (for example, **CLP RED +4**), and press <ENTER>.

To delete trays:

Enter **CLP *cluster-name* — *tray-number*** (for example, **CLP RED - 4**), and press <ENTER>.

To turn autosize on:

Enter **CLP *cluster-name* /A**, followed by any other parameters you need to redefine the cluster (for example, **CLP RED/A, +4**), and press <ENTER>.

To turn autosize off:

Enter **CLP *cluster-name* /-A**, followed by any other parameters you need to redefine the cluster (for example, **CLP RED/ -A +4**), and press <ENTER>.

Assigning all system trays to a cluster

To add all feeder trays in your printing system to a cluster, key in **ALL** at the end of any **CLU** or **CLP** command you use to define or modify a cluster (for example, **CLP WHITE ALL**).

To delete all the system trays from a cluster, key in **-ALL** at the end of the command (for example, **CLU RED -ALL**).

Changing the stock in a tray assigned to an active cluster

To avoid feeding a job the wrong stock, the following steps are recommended:

1. Lower the tray to prevent its selection before the change of stock is complete.
2. Enter the necessary **CLU** command to add the tray to the new stock cluster. This step also removes the tray from the cluster feeding the job that is still running.
3. Load the tray with the new stock.

If you are changing the paper stock in response to a system prompt, use **CLU *cluster-name* SET**.

Points to note when redefining clusters

- In some sites access to the **CLP** command may be restricted.
- When you assign a current tray to a cluster, that tray is automatically deleted from the list of current trays for any other cluster where it was previously assigned. This can result in the previous cluster being deleted if all of its current trays are reassigned and it has no preferred trays assigned to it. You can avoid this situation by always maintaining preferred trays for all clusters or by using the **/NR** parameter (keeping the following point in mind).
- Exercise caution when using the **SET** and **NR** parameters, because one tray can easily be assigned to more than one cluster by mistake. To avoid that situation, use the following commands only during printing:
 - **CLU *cluster-name* SET**
 - **CLU SET**
 - **CLU *cluster-name* SET/NR**
 - **CLU SET/NR**

Error conditions

Tray overlap	This condition occurs when the same current trays have been assigned to more than one cluster. You must remedy the problem by reassigning the current trays.
Sizing error	<p>The current trays in the cluster contain paper of different sizes, but autosize is not set for the cluster. Enter CLP <i>cluster-name</i> /A to turn autosize on.</p> <p>The printer cycles up again only after each of these errors is remedied.</p>

Using the FEED command

The choice of feeder trays for each job can be established either as part of the job setup or by the operator. When you are using the FEED command to select feeder trays, remember:

- The MAIN cluster is predefined as tray 1, the AUX cluster as tray 2, and the AUTO cluster as all the trays physically present in the printer. However, all of these clusters may have been redefined at installation. You can also override these definitions with the CLUSTER (CLU) and CLP commands.
- The FEED 1 and FEED MAIN commands will not have the same result, even if the main cluster consists of only tray 1. (Refer to the description below for details of each command.)
- Remember to enter the FEED MAIN command after a change of shift or after the printer is serviced. A previous operator or a service representative may have instructed the LPS to use a specific tray or cluster to override all the tray specifications within the jobs you start. The FEED MAIN command returns control to the printer.

The following description shows the FEED command to use to select a tray, cluster name, or cluster mode (MAIN, AUX, and AUTO).

FEED [MAIN | AUX | AUTO | *tray-number* | *cluster-name*]

(no parameters)

If the printer is in FEED MAIN or FEED AUX mode, the command with no parameters toggles to the other of these two modes. If the printer is not in one of these two modes, the command has no effect.

MAIN

Feeds from the MAIN cluster and give the printer control of paper sources to ensure that all sheets from a designated stock name are fed from the assigned cluster.

AUX

Feed from the AUX cluster and override the feed source specified in the job.

AUTO

Feeds from the AUTO cluster.

tray-number

Feeds from a specified feed tray until you enter another FEED command. This command overrides the feed source specified in the job.

cluster-name

Feeds from a specified cluster until you enter another FEED command. This command overrides the feed source specified in the job.

Selecting output trays

Use the SELECT command to specify where the system delivers the printed output. If your 4890 LPS has the dual stacker configuration, your choices are tray 1, tray 2 or the sample tray. If your 4890 has a stitcher/stacker, your choices are tray 1 or the sample tray.

You may specify that the output be directed to a single tray, or you may specify automatic switching. With the automatic switching feature enabled, the printer switches to the other tray when the current tray becomes full. Automatic switching is the default mode set when the printer is powered on.

Transparencies must be delivered to the sample tray.

To change the output tray specification, enter the SELECT command:

SELECT *tray-designation*[,SAMPLE]

tray-designation=AUTO|TRAY|*tray-number*

Specifies the tray selected.

AUTO

Selects automatic switching mode.

SELECT AUTO means that bins 1 and 2 are identical as far as the user is concerned and that either may be used, provided it is empty when you start a job.

If SELECT AUTO is entered when a Bypass Transport (BT) Output device is attached to the printer, the following (and existing) message displays:

OS1295 Destination trays not configured for this command

TRAY

Selects the sample tray.

If you wish to specify an alternate sample tray, refer to the description of the SAMPLE parameter below.

tray-number

Selects a specific tray by the tray number or by entering **E** for the Bypass Transport (BT) Output device. With the stitcher/stacker, tray 1 is the only valid tray number.

Example: SELECT 1

This command instructs the system to use tray 1 as the output tray.

Example: SELECT E

This command instructs the system to use Bypass Transport Output device as the output tray.

Example: `SELECT 1`

This command instructs the system to use stitcher stacker as the output tray.

SAMPLE

If you wish to specify an alternative sample tray, enter the tray number as the tray designation followed by the `SAMPLE` parameter. Use this option when the other output is more than 100 pages or when the sample tray is not functioning properly.

Example: `SELECT 1,SAMPLE`

This command instructs the system to use tray 1 as the active tray and the remaining tray as the sample tray. Do not use this option when printing transparencies.

The Bypass Transport (BT) Output device cannot be used as the sample tray.

If `SELECT 2,SAMPLE` is entered when a BT and bin 2 are attached to the printer, the following (and existing) message displays:

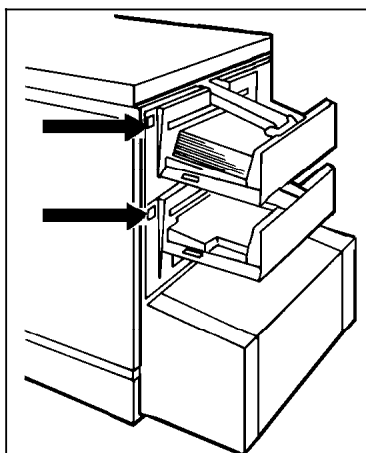
OS1295 Destination trays not configured for this command.

Changing output tray specification while the job is printing

You can change the output tray specification while a job is printing. This allows you to unload output trays before they become full. Make sure that the other output tray is empty before redirecting output.

There are two ways of changing the output tray specification while a job is printing:

- Enter the `SELECT` command at the system controller.
- Press the tray selection button next to the tray to receive the printed output. This option is available only on the dual stacker.



When redirecting output while the job is printing, you may specify that the system completes the current report before

switching trays. This option prevents a report from being split between two trays.

To keep reports together in the output tray, enter **SEPARATE**. Enter the command before the tray is full. The switch takes place as soon as the current report has finished printing.

To cancel the SEPARATE command, enter **SEPARATE OFF**.

Substituting inks

Ink substitution within a print job is an option set by the person who creates the job. In some instances, substitution occurs automatically, and a message displays at the controller.

However, when the creator of the job enables operator ink substitution, you must decide whether or not to substitute an ink.

When operator ink substitution is allowed, options are presented to you when a job requires a colored dry ink that is not currently loaded or whose housing is faulty.

Your options are as follows:

- Load the required dry ink housing and run POA.
- Substitute for the unavailable dry ink.
- Abort the job.

Substitute an ink when:

- The required housing is faulty.
- The printing schedule does not permit the 2 to 20 minute interruption required for extended POA.
- There is insufficient dry ink for the print job (for example, if the level of dry ink is low, and you do not have access to additional supplies, or the supplies themselves are too low to last the entire print job).
- In-house guidelines indicate you should substitute an ink.

Entering the SUBSTITUTE INK command

The SUBSTITUTE INK command has the following format:

SUBSTITUTE INK {new-ink} FOR {old-ink}[REPORT | JOB | ALWAYS]

new-ink={*new-ink-name*|CURRENT}

new-ink-name

Specifies the name of the new ink to substitute. Use any valid primary color name, for example, CYAN, MAGENTA, RED, GREEN or BLUE.

CURRENT

Substitutes the currently loaded ink for the ink requested by the job.

old-ink={*old-ink-name*|COLOR|ALL}

old-ink-name

Indicates the name of the ink to substitute, that is, the ink called for by the job. Use any valid primary color name, for example, CYAN, MAGENTA, RED, GREEN or BLUE.

COLOR

Substitutes all colors requested by the job (not including black) with the new ink.

ALL

Substitutes all colors requested by the job (including black) with the new ink.

[REPORT|JOB|ALWAYS]

Determines how long the ink substitution you specify remains in effect.

REPORT

Substitution remains in effect only for this report.

JOB

Substitution remains in effect only for this job.

ALWAYS

Substitution remains in effect until you enter a new substitute ink command or cancel the ink substitution.

Once you enter a valid command, a message displays on the controller to reflect the substitution options you specified. For example:

```
OS0862 Substituting RED for all other inks for this report
```

If the following message displays on the controller, check to make sure the name is keyed in correctly:

```
OS1195 Undefined Ink: color
(color is the name of an ink)
```

If the ink is still flagged as undefined, refer the error to your systems administrator.

Displaying ink substitution settings

To display the current settings without changing a substitution, enter the **SUBSTITUTE INK** command without any parameters. The current settings are always shown whenever a valid SUBSTITUTE INK command is entered, as well as immediately following a successful print quality adjustment.

The SUBSTITUTE INK settings are displayed on the controller whenever output processing is initiated. A message similar to the following one displays. The exact wording of the message depends on the parameters you specified in your SUBSTITUTE INK command.

```
OS0872 Substituting BLACK for all other inks for all jobs
```

If there are no current substitutions, the following message displays:

```
OS2677 No ink substitutions are in effect
```

Canceling a previous substitution

To cancel an ink substitution, use the **SUBSTITUTE INK CANCEL** command while the printer is cycled down.

To cancel all substitutions, enter **SUBSTITUTE INK CANCEL ALL**. All ink substitutions are canceled immediately.

To cancel one particular substitution, enter **SUBSTITUTE INK CANCEL *ink***. The previous substitution for the ink you specify is canceled immediately (without canceling any other substitutions).

Unloading output trays

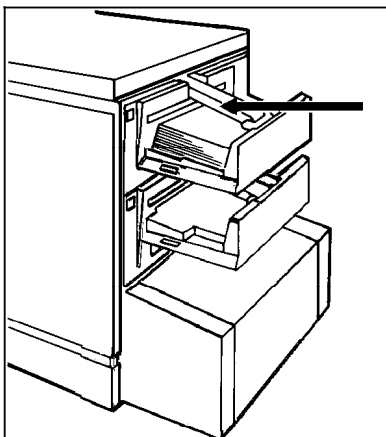
You can unload output trays while the system is printing.

When a stacker tray is full the following happens:

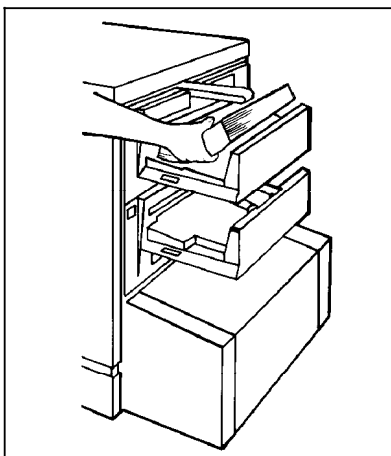
- The Tray Full indicator illuminates on the appropriate stacker tray (applies to dual stacker only).
- The Attention light shines steadily.
- A message displays on the printer control console that indicates what output tray is full.
- In automatic switching mode, the system automatically switches over to the second tray (if it is empty) when one tray is full (applies to the dual stacker only).
- If only one tray was selected, or if both output trays are full, the printer stops. The Attention light modulates between bright yellow and dim yellow.
- The picture on the graphic display shows the location of the full tray.

Unloading dual stacker trays

1. Raise the scuffer arm.



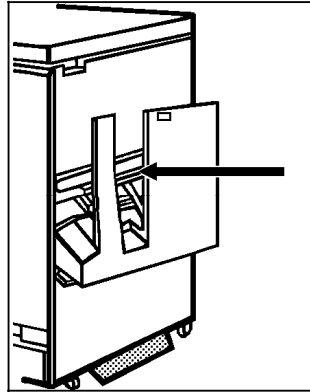
2. Remove the stack of prints.



3. If the printer has stopped, resume printing by pressing the Continue button on the printer control console or by pressing the <CON> key on the keyboard.

Unloading the stitcher/stacker tray

1. Lift the black handle on the outside of the tray.
Ease the tray out slowly to prevent it from falling or breaking.



The tray will slide out and up. Make sure you let the tray slide all the way out before removing the paper.

A false tray-full condition occurs when you remove small stapled sets without pulling out the tray. The counter is not reset, causing the printer to stop before the tray is actually full.

2. Close the tray by sliding it back under the stacker arms.
The tray will click and slide back into place.
3. If the job is not complete, printing should resume automatically when the tray is replaced.

If it does not, press the Continue button on the printer control console or press <CON> on the keyboard.

You can have your service representative adjust your LPS so printing automatically continues when the stitcher/stacker tray is unloaded and replaced.

Unloading sample tray

When 70 sheets are in the sample tray:

- A message appears on the printer control console
- An audible tone sounds
- The Attention light shines steadily.

If you do not empty the tray before it reaches full capacity (100 sheets), the printer stops. The Attention light modulates between bright yellow and dim yellow, and a message appears instructing you to empty the sample tray and press the Continue button to resume printing.

To unload the sample tray:

1. Remove the prints.
2. If the printer has stopped, resume printing by pressing the Continue button on the printer control console or by pressing <CON> on the keyboard.

This chapter contains procedures for the tasks you must perform to maintain your Xerox 4890 HighLight Color Laser Printing System (LPS).

Adding fuser lubricant

When the sensor in the reservoir detects a low level of lubricant, the Attention light turns a steady yellow, and the following message displays on the printer control console:

LOW ON FUSER LUBRICANT

Once the lubricant runs out the printer stops, the Attention light turns a modulated yellow, and the following message displays on the printer control console:

FUSER LUBRICANT CONTAINER IS EMPTY

Printing cannot resume until you add fuser lubricant.

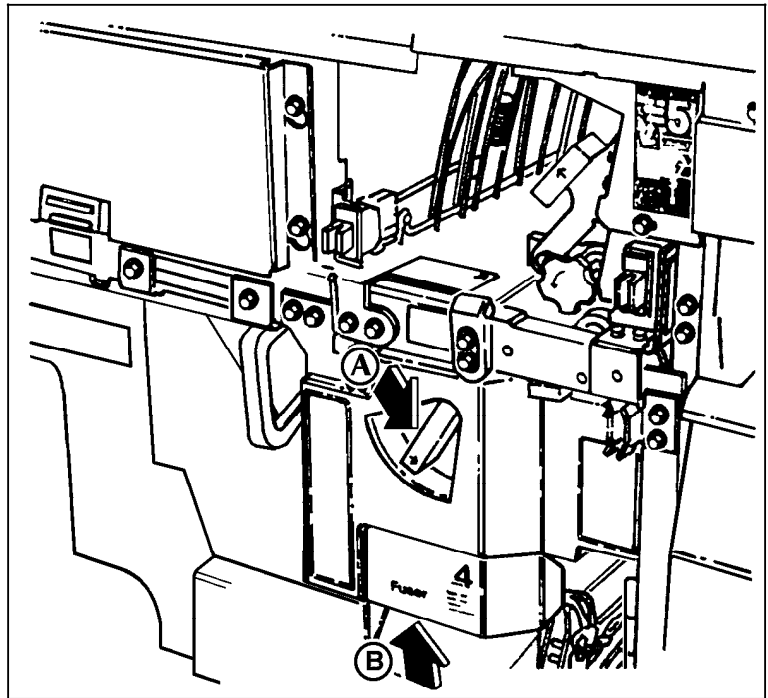
To add fuser lubricant:

1. Open the right printer door.
2. Place a drop cloth on the floor under the fuser area.

<p>WARNING: The fuser area can reach temperatures of approximately 370°F/188°C. Exercise care to prevent burns when working in this area.</p>
--

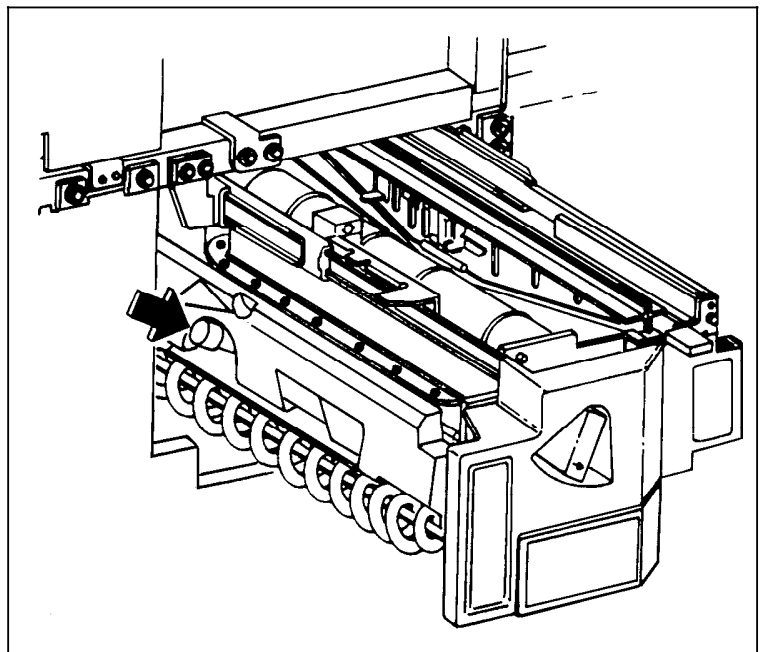
3. Open the fuser drawer.

Locate the fuser drawer and move the green lever counterclockwise (A).



Grasp the green handle on the fuser drawer (B) and pull it out until it stops.

4. Locate the fuser reservoir.



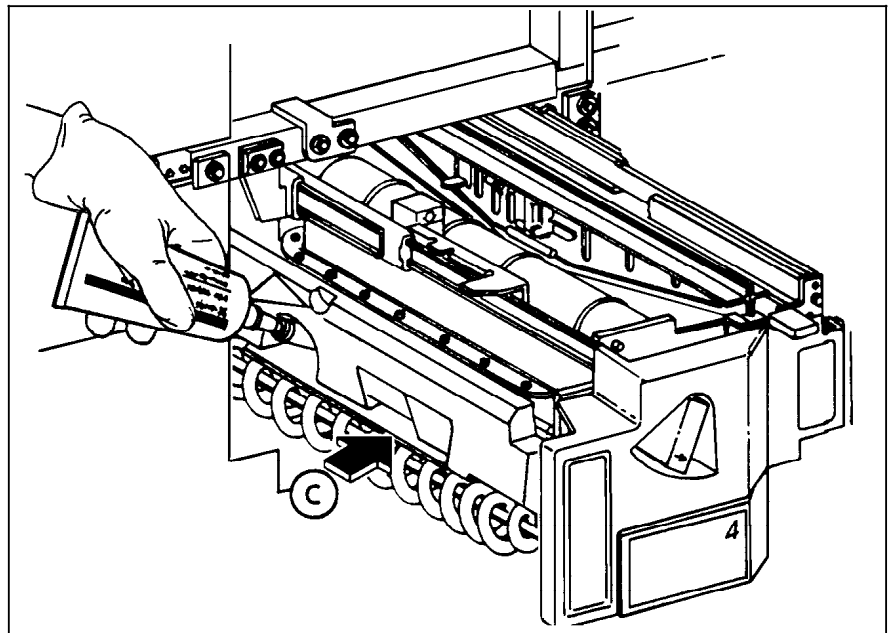
5. Put on gloves before going to step 6.

WARNING: Fuser lubricant contains silicone, which can cause eye irritation upon contact. Wash your hands with soap and water after you finish this procedure.

6. Fill the fuser lubricant reservoir.
 - a. Remove the reservoir cap by turning it counterclockwise.
 - b. Open a tube of fuser lubricant. Snip the end of the tube if it has not been opened before.

CAUTION: The orange float that indicates the lubricant level, may stick to the reservoir wall. Be careful not to overfill the reservoir or an overflow of lubricant may occur.

- c. Carefully squeeze the fuser lubricant into the reservoir until the orange float reaches the top of the reservoir, or until you see the oil reach the top edge of reservoir C below the fuser cap. The reservoir may require up to two tubes of lubricant.

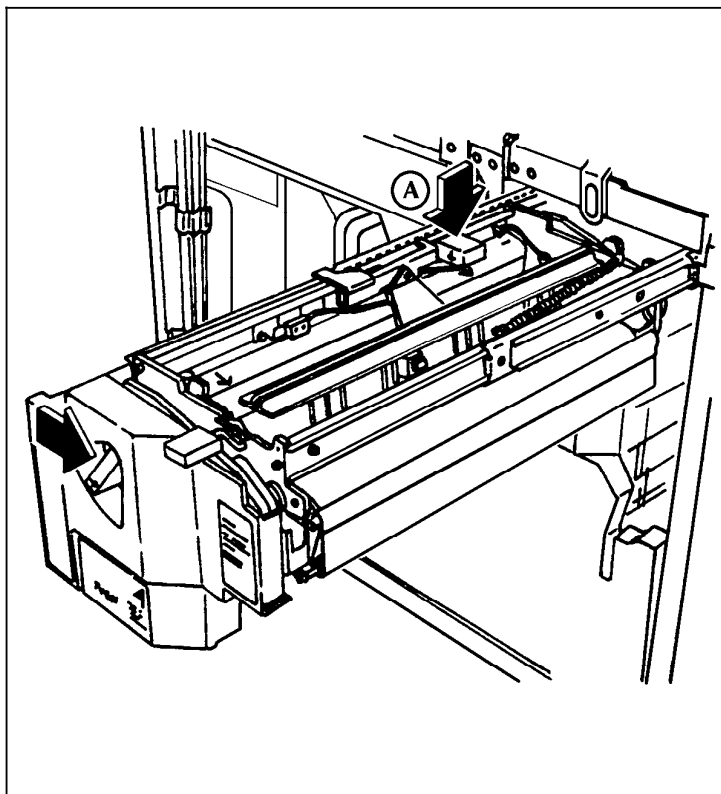


- d. Dispose of any empty lubricant tubes and the drop cloth in a trash receptacle. If there is any lubricant left in a tube, cap the tube and store it for future use.
 - e. Replace the reservoir cap by turning it clockwise.

WARNING: If any fuser lubricant is spilled onto the floor, it must be removed immediately. Fuser lubricant spills cause the floor to be slippery.

- f. Remove gloves, being careful not to let any residue come in contact with your skin. Dispose of gloves in a trash receptacle.

7. Close the fuser drawer.
 - a. Release the fuser drawer by pressing down on the green latch (A).



- b. Push the fuser drawer in until it latches in place.
8. Close the printer doors.

The system clears the fuser lubricant message after the printer doors are closed.
9. Wash your hands to remove any fuser lubricant.

Cleaning the open-reel tape drive

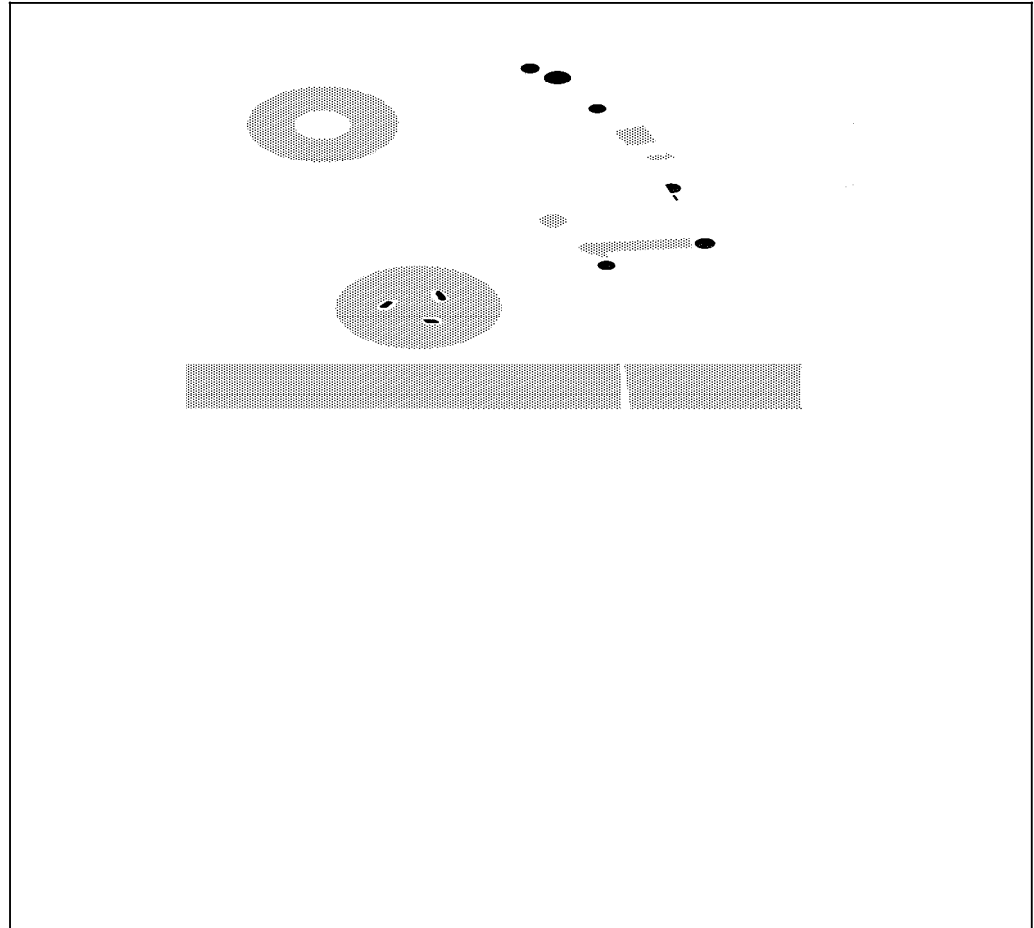
Both drives must be cleaned regularly to keep them functioning properly.

When using the open-reel tape drive, follow this cleaning schedule:

- If the tape drive is used continuously, clean the following parts daily:
 - Tape heads
 - Tape cleaner
 - Bollards
 - Rollers
 - Tacho.
- Clean after 100 tape loads:
 - Supply reel

- Clamp pads.
- Clean as required:
 - Painted surfaces
 - Tape path cover.

Figure 6-1. **Open-reel tape drive tape path components**



- 1 Tape loading door
- 2 Supply hub
- 3 Clamp pads
- 4 Roller
- 5 Tension arm
- 6 Hub Release Level
- 7 BOT/EOT sensor
- 8 Bollard
- 9 Tape cleaner
- 10 Tape heads
- 11 Bollard
- 12 Tacho
- 13 Roller
- 14 Take-up hub

Inspect the tape path regularly and monitor the error rates. You may be able to clean less frequently after seeing the results of this schedule.

Observe these important guidelines when cleaning the tape drive:

- Avoid inhaling fumes from the cleaning fluids.
- Keep the cleaning solution containers tightly closed when not in use.
- Use the cleaning solutions only in well - ventilated areas.
- If you have sensitive skin, you may want to wear gloves when using the cleaning solutions.
- Prolonged cleaning solution contact with the skin should be avoided.

Tape drive cleaning procedures

1. Access the tape path:
 - a. Open the peripheral cabinet cover.
 - b. Release the three turnbuckles on the tape path cover by turning them counterclockwise.



- c. Raise the cover as far as it will go.
 - d. Press the Reset button to open the tape loading door.
2. Clean the tape path.

- a. Lightly moisten a soft, lint-free cloth with cleaning solution.
- b. Carefully wipe the surfaces of the head and the tape cleaner, removing all traces of dirt and oxide.

In extreme cases, you may need to use a scrubbing action to remove hard oxide deposits.

WARNING: The edges of the tape cleaner are extremely sharp. Take great care when cleaning them.

- c. Inspect the remaining tape path components. If necessary, clean the components as required by the

schedule given at the beginning of this section. Refer to figure 6-1 to locate the components.

CAUTION: Do not use alcohol-based fluid or any other solvents on plastic or painted parts. Do not allow cleaning fluid to enter pregreased roller bearings.

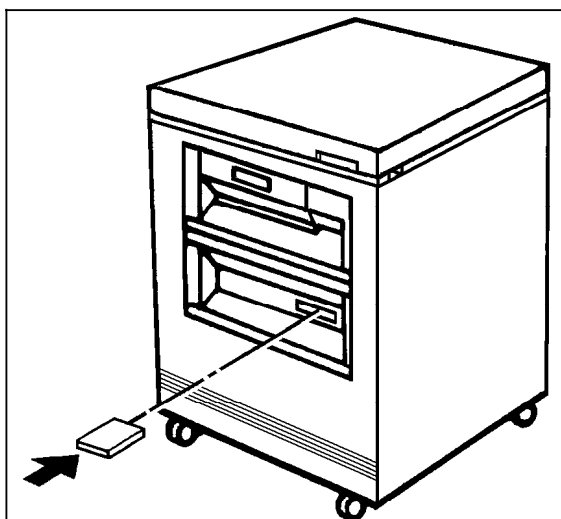
- d. Remove any dirt or oxide you find around the take-up and supply reel areas.
- e. Close the tape path cover and secure the turnbuckles by turning them clockwise.
- f. Close the peripheral cabinet cover.
3. Clean the exterior of the tape drive.
 - a. Use antistatic cleaner and a soft cloth to clean the tape path cover.
 - b. Use a cloth moistened with soapy water to clean the painted surfaces of the tape drive.

Cleaning the 1/2 inch cartridge tape drive

When the cartridge drive needs to be cleaned, CLEAN appears in the message display after a cartridge is unloaded and during a rewind or locate operation.

Never power off the cartridge drive without following the cleaning procedure once the CLEAN message has appeared.

1. Remove any cartridge loaded in the tape drive.
2. Insert the cleaning cartridge.



CAUTION: Before inserting a cartridge, inspect it for damage or dirt. If the cartridge is dirty, wipe its outside surfaces with a lint-free cloth.

The cleaning cycle takes approximately 15 seconds.

3. Remove the cleaning cartridge when it is unloaded.
4. Mark the usage on the tape label. Do not use a grease pencil.

Cleaning the 1/4 inch cartridge tape drive

The 1/4 inch cartridge tape drive heads should be cleaned at least once a week. If you use the drive for eight hours or more per day, then you should clean the drive daily. The process is simple and requires very little time.

1. If there is a cartridge in the tape drive, remove it.
2. Insert the cleaning cartridge into the tape drive and close the door.

Cleaning begins automatically once the cartridge is inserted.

3. Allow the tape to run for approximately 30 seconds.
4. Remove the cartridge.

Replace the foam pad on the cleaning cartridge after it has been used three times. The cleaning cartridge can be used approximately 100 times.

Cleaning the floppy disk drive

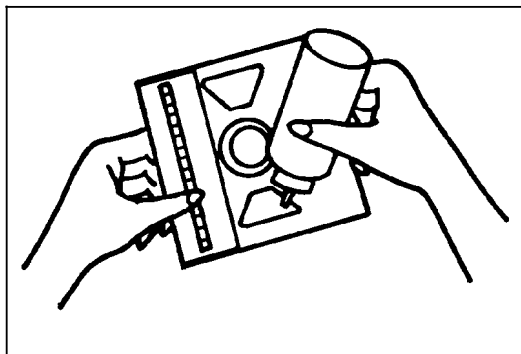
The floppy disk drive should be cleaned once each month. To clean the disk drive, you must have the cleaning kit. This kit contains two cleaning disks for double-sided disk drives and a bottle of solution.

1. Make sure the system is powered on.

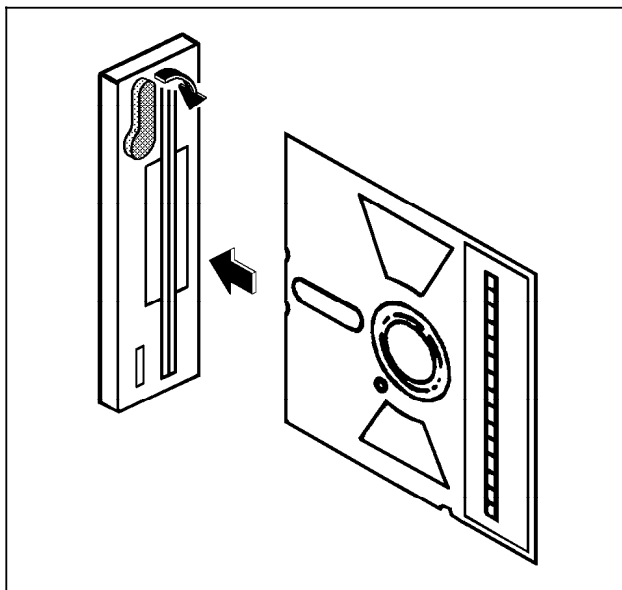
There must be power to the floppy disk drive to perform this procedure.

2. Apply a small amount of the cleaning solution to the cleaning floppy disk.

Apply just enough solution to saturate the area exposed in each of the two large cutouts.



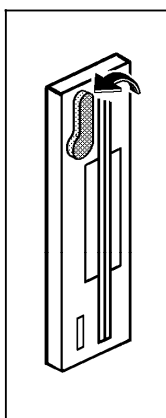
3. Insert the prepared cleaning floppy disk, label side up, into the floppy disk drive until the jacket is solidly against the stops, just as you would insert a floppy disk.



4. Move the drive lever into the closed position (clockwise) and allow the disk drive to run for at least 30 seconds.

CAUTION: You may run the cleaning disk for more than 30 seconds, but never more than five minutes. Excessive use will cause premature wear to the heads.

5. Move the drive lever to the open position (counterclockwise).



6. Remove the cleaning disk.

Check off the usage on the label and replace it in its protective envelope. Store it with the bottle of solution in the cleaning kit box for future use. Do not use the cleaning disk more than the number of times you can make checks on the label.

Cleaning exterior surfaces

Clean the display with a soft, lint-free cloth dampened with a glass or lens and mirror cleaner. Do not spray the liquid directly onto the display since it may cause damage.

Although the keyboard may seldom need to be cleaned, the exterior surfaces of the system controller and printer should be cleaned daily, if possible. Clean the keyboard and exterior surfaces with a mild household detergent poured or sprayed onto a cloth lightly dampened with water. Do not saturate the cloth; just dampen it. Liquids must not be allowed to drip onto anything electrical or mechanical. For the same reason, never spray or pour the cleaner directly onto the keyboard or the exterior surfaces of the system.

Copying and backing up files

You may need to copy files from one magnetic storage media to another or to back up files onto a floppy disk or a 1/4 inch cartridge tape.

This section contains procedures for copying files and for all operator tasks related to using the floppy disk drive and the 1/4 inch tape drive.

Copying files

This section describes the procedure for copying files. You can copy files to or from any of the magnetic media (floppy disk, 1/4 inch tape, open-reel tape, or 1/2 inch cartridge tape) in your system, including the system disk, which cannot be removed.

Note: During the copy process, the system deletes the original file and replaces it with the copy. If the copy process fails, you could lose valuable data. Before starting to copy a critical file, such as a system file, create a backup copy of the file using a different name.

If you are unfamiliar with the procedure for loading a particular medium, refer to the section of this guide named in the step.

1. Load the source tape or floppy disk.

The source tape or disk contains the file or files to copy. If the source file is on the system disk, you do not need to load the source.

For more information about loading 1/4 inch tapes and floppy disks, refer to the appropriate section later in this chapter. For more information about loading open-reel tapes and 1/2 inch cartridge tapes, refer to the "Setting up print job sources" chapter.

2. Load the target tape or floppy disk.

Copy the file or files from the source media to the target tape or floppy disk. If the target media is the system disk, you do not need to load the source.

If you are copying files onto a floppy disk, and the floppy disk has not been formatted, you must format the floppy disk. Refer to the "Formatting a floppy disk" section later in this chapter.

For more information about loading 1/4 inch tapes and floppy disks, refer to the appropriate section later in this chapter. For more information about loading open-reel tapes and 1/2 inch cartridge tapes, refer to the "Setting up print job sources" chapter.

3. Enter the **COPY** command. Use the appropriate substep described below, depending on the source and target media.
 - a. To copy files from an unlabeled tape to the system disk, enter the following command:

COPY TAPE | CAR [EBCDIC | ASCII] [disk-id] file-id

TAPE|CAR

Specifies the tape drive where the file is located. Use TAPE if the file is on an open-reel tape or CAR if the tape is on a cartridge tape. Use the SUB DEVICE command to identify the cartridge tape drive assigned to the CAR keyword, if there is more than one cartridge tape drive on your system (refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*).

[EBCDIC | ASCII]

Identifies the format of the source tape.

[disk-id]

Identifies the system disk to write the file to (DP0:, DP1:, DP2:, or DP3:). You do not need to enter this parameter.

file-id

Specifies the full name of the file to copy (including its extension).

- b. To copy files from the system disk to an unlabeled tape, enter the following command:

COPY TAPE | CAR WRITE [EBCDIC | ASCII] [disk-id] file-id

TAPE | CAR

Specifies the tape drive you want to write the file to. Use TAPE if the file is on an open-reel tape or CAR if the tape is on a cartridge tape. Use the SUB DEVICE command to identify the cartridge tape drive assigned to the CAR keyword, if there is more than one cartridge tape drive on your system (refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*).

[EBCDIC | ASCII]

The format of the tape to be written.

[disk-id]

Identifies the system disk containing the file (DP0:, DP1:, DP2:, or DP3:). You do not need to enter this parameter.

file-id

Specifies the full name of the file to copy (including its extension).

- c. To copy files from a labeled tape to the system disk, enter the following command:

**COPY TAPE | CAR LABEL [REVIEW] [disk-id]
[input-file-id] [output-file-id] NEXT | ALL | file-type]**

TAPE | CAR

Specifies the tape drive where the file is located. Use TAPE if the file is on an open-reel tape or CAR if the tape is on a cartridge tape. Use the SUB DEVICE command to identify the cartridge tape drive assigned to the CAR keyword, if there is more than one cartridge tape drive on your system (refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*).

[REVIEW]

Displays a warning message when the file to be copied is about to overwrite a file of the same name already on the system disk, and asks if you wish to continue. Enter **Y** to overwrite the file, **N** to skip the file, or **X** to abort the copy process.

[disk-id]

Identifies the system disk you want to write the file to (DP0:, DP1:, DP2:, or DP3:). You do not need to enter this parameter.

input-file-id

Specifies the full name of the file to copy (including its extension).

[output-file-id]

Specifies the name of the file to be written if it is different than the name of the source file. If *output-file-id* is not specified, the name of the source file is used.

NEXT | ALL | file-type

Specifies what files to copy:

NEXT

Copies the next file on the tape to the system disk.

ALL

Copies all files on the tape to the system disk.

[file-type]

Copies all files with a specified extension (file type) to the system disk.

- d. To copy files from the system disk to a labeled tape, verify that the tape is initialized. If is not, refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference* for information on the VOLINIT command. Then enter the following command:

COPY TAPE | CAR WRITE[/BF:n] LABEL [disk-id][file-id] [output-file-id] ALL | file-type]

TAPE | CAR

Specifies the tape drive where the file is to be written. Use TAPE if the file is on an open-reel tape or CAR if the tape is on a cartridge tape. Use the SUB DEVICE command to identify the cartridge tape drive assigned to the CAR keyword, if there is more than one cartridge tape drive on your system (refer to the *Xerox 4850/4890 HighLight Color LPS Command Reference*).

/BF:*n*

Groups disk blocks into one tape block. The variable *n* can have a value of 1 to 16, and the size of the tape block, in bytes, resides in the tape label. The default blocking factor is 1, and the label indicates the blocking factor.

disk-id

Identifies the system disk containing the file (DP0:, DP1:, DP2:, or DP3:). You do not need to enter this parameter.

file-id

Specifies the full name of the file to copy (including its extension).

output-file-id

Specifies the name of the file to be written, if it is different than the name of the source file. If *output-file-id* is not specified, the name of the source file is used.

ALL

Copies all files on the system disk to the tape.

file-type

Copies all files with a specified extension (file type) to the tape.

- e. To copy files from the system disk to a floppy disk, enter the following command:

FLOPPY SAVE [REVIEW] [*disk-id*] [*input-file-id* | *output-file-id*] ALL | *file-type*]

REVIEW

Displays a warning message when the file to be copied is about to overwrite a file of the same name already on the floppy disk, and asks if you wish to continue. Enter **Y** to overwrite the file, **N** to skip the file, or **X** to abort the copy process.

disk-id

Identifies the system disk containing the file (DP0:, DP1:, DP2:, or DP3:). You do not need to enter this parameter.

input-file-id

Specifies the full name of the file to copy (including its extension).

output-file-id

Specifies the name of the file to be written, if it is different than the name of the source file. If no *output-file-id* is specified, the name of the source file is used.

ALL

Copies all files on the system disk to the floppy disk.

[file-type]

Copies all files with a specified extension (file type) to the floppy disk.

If the files you are copying exceed the storage capacity of the floppy disk, the system displays the following messages:

**** Diskette is full ****

Remove current diskette and insert a new diskette

Enter: C To continue copying

 X To abort current save

Unload the floppy disk in the drive and load a formatted floppy disk, then enter **C** to continue the copying process.

- f. To copy files from a floppy disk to the system disk, enter the following command:

FLOPPY RESTORE [REVIEW] [disk-id][input-file-id] output-file-id | ALL | file-type]

REVIEW

Displays a warning message when the file to be copied is about to overwrite a file of the same name already on the system disk, and asks if you wish to continue. Enter **Y** to overwrite the file, **N** to skip the file, or **X** to abort the copy process.

disk-id

Identifies the system disk to copy the file to (DP0:, DP1:, DP2:, or DP3:). You do not need to enter this parameter.

file-id

Specifies the full name of the file to copy (including its extension).

output-file-id

Specifies the name of the file to be written, if it is different than the name of the source file. If *output-file-id* is not specified, the name of the source file is used.

ALL

Copies all files on the floppy disk to the system disk.

[file-type]

Copies all files with a specified extension (file type) to the system disk.

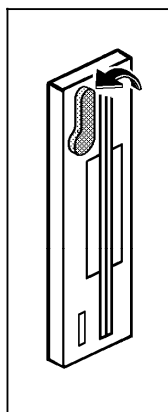
Loading a floppy disk

Observe the following guidelines when handling floppy disks:

- Hold the floppy disk by its cover. Do not touch the portions that show through the cut out areas in the floppy disk cover.
- Store the floppy disk in its protective sleeve when it is not in use.
- Write on floppy disk labels before you apply them to the floppy disk. Do not write on floppy disks or on labels that are attached to the floppy disk.
- Do not attempt to clean a floppy disk.
- Do not expose floppy disks to excessive heat or sunlight, or to magnets or magnetized objects such as displays, telephones, and so forth.
- Do not bend or fold a floppy disk.

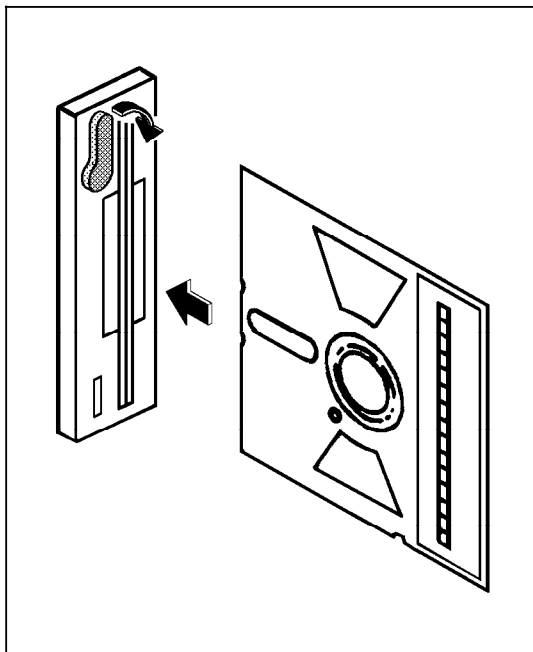
To load a floppy disk:

1. Make sure that the floppy disk drive lever is in the open position.



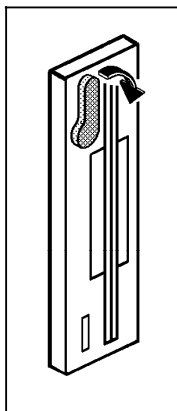
If the lever is in the closed position, there may be a floppy disk loaded in the drive. Turn the lever to the open position and remove the floppy disk.

2. Insert the floppy disk with the label facing to the left until it is completely inside the drive.



You can feel the floppy disk hit the stops.

3. Turn the lever clockwise 1/4 turn to the closed position.



If you feel any resistance when turning the lever, make sure that the floppy disk is inserted completely into the drive.

Formatting a floppy disk

You must format a floppy disk before you use it.

CAUTION: Formatting a floppy disk erases all the data on the floppy disk. Before you format a floppy disk, verify that the floppy disk is unformatted (has never been used) or that the information on the floppy disk can be erased.

1. Load the floppy disk.

For more information about loading a floppy disk, refer to the "Loading a floppy disk" section earlier in this chapter.

2. Enter the FLF FORMAT command:

FLF FORMAT [DENSITY=HIGH|LOW][,SECTORCHECK=YES|NO]

[DENSITY=HIGH|LOW]

You can buy high-density floppy disks or low-density floppy disks. The density determines the storage capacity of the floppy disk. The system detects the type of floppy disk you have loaded and formats the floppy disk accordingly.

You may format a high-density floppy disk in the low-density format (for compatibility with another system) by specifying the LOW option.

If you attempt to format a low-density floppy disk using the HIGH option, the system displays the following message:

```
FL1500 High density not available
FL1150 Proceeding at low density
      should formatting continue? (Y/N)
```

If you wish to format the floppy disk, enter **Y**, otherwise, load a high-density floppy disk and enter the FLF FORMAT command again.

[SECTORCHECK=YES|NO]

Verifies the format process was successful by checking each sector of the floppy disk. This option increases the time required to perform the format process.

3. When the formatting and initialization are complete, the system displays the following message:

```
FL1055 Total number of bad sectors = 000000

Please enter floppy label up to 30 characters:
.....*.....*.....*.....*.....*
Enter a label for the diskette if you wish.
```

Enter a label for the floppy disk.

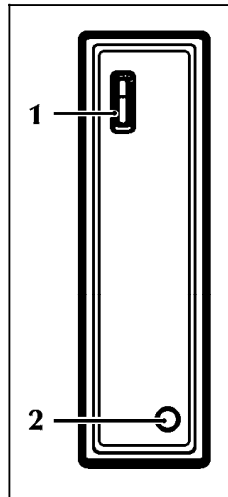
Note: If the system reports bad sectors on the floppy disk, you may wish to consult with your system administrator about formatting another floppy disk. Bad sectors on a floppy disk may limit its storage capacity, and, in some cases, may make floppy disks unreliable.

When the system displays the following message, the floppy disk is formatted, initialized, and ready to use:

```
FL1580 Floppy initialization complete
```

Loading a 1/4 inch cartridge tape

1. Locate the 1/4 inch cartridge tape drive, mounted in the system controller cabinet next to the floppy disk drive.



- 1 Cover release
- 2 LED

2. Press the cover release button.
The tape drive door opens partially.
3. Manually open the door completely.
4. Insert the cartridge (label facing to the left) into the feed slot.
5. Close the tape drive door.

The tape loads automatically.

If the tape has loaded properly, the LED indicator light is green.

If the LED indicator is flashing red, the tape has not loaded properly. Refer to the "Solving problems" chapter or contact your system administrator.

Enabling and disabling the Attention light

The Attention light is automatically enabled when the system is powered up for the first time at installation. That mode remains in effect until a LIGHT DISABLE command is entered. The light then remains disabled, even if the system is powered off and back on again, until a LIGHT ENABLE command is entered.

You may enter a LIGHT OFF command. It causes the Attention light to be turned off, yet it remains enabled for future conditions. If you enter LIGHT OFF when the Attention light is off, the command is ignored.

To enable or disable the Attention light, first log on to access level 2 or to the level your site has assigned to the Attention light commands. The commands can be entered while the printer is idle, printing, or performing Print Quality Adjustment.

They cannot be entered while the system is booting or when a non-print task is running.

To see the current state of the Attention light, press <PRINTER STATUS> or enter **PSTATUS**.

Enabling the light

Enter the **LIGHT ENABLE** command. The following message displays on the controller:

```
OS0830 Attention light enabled
```

The light is enabled until the DISABLE command is entered.

Disabling the light

Enter the **LIGHT DISABLE** command. The following message displays on the controller:

```
OS0831 Attention light disabled
```

The light is disabled until the ENABLE command is entered. The audible alarm linked to the Attention light is also disabled.

Replacing the dry ink waste container

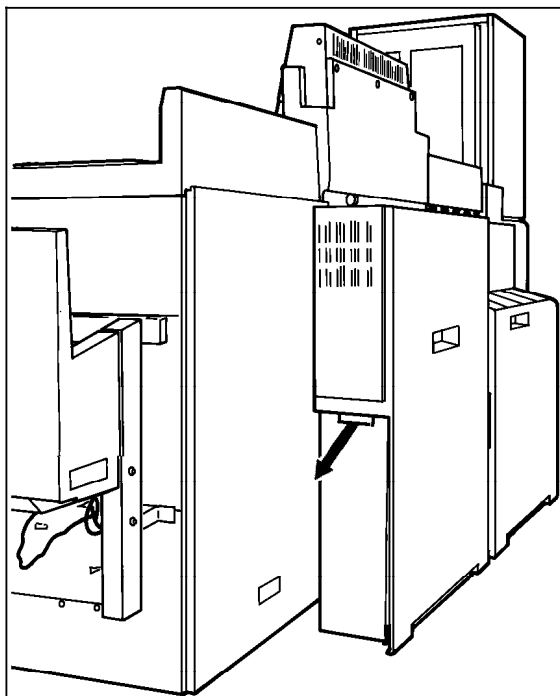
Waste dry ink is stored in a sealed waste container located in a compartment in the lower left corner at the rear of the printer.

The waste dry ink is not reusable. The waste material is a mixture of all the dry inks used by the printer, as well as contaminants, such as paper dust.

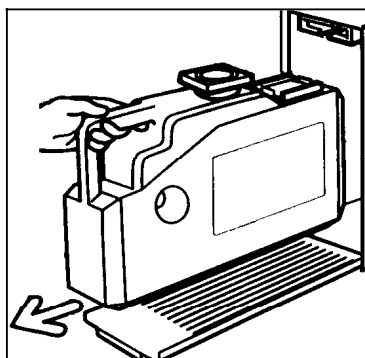
When the dry ink waste container is approximately three quarters full, the Attention light turns a steady yellow. Replace the container as soon as possible. Once the container is full the printer stops and does not resume printing until the container is replaced.

To remove the dry ink waste container:

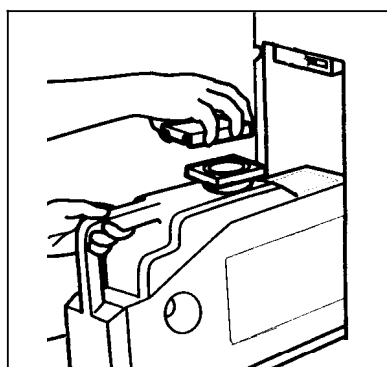
1. Open the service door at the rear of the printer by grasping the handle and pulling the door out and down.



2. Grasp the container handle and pull out the container.



3. Place the cap, which is taped to the bottle, onto the mouth of the container.



4. Dispose of the dry ink waste container in a safe manner. Disposal instructions are printed on the waste container.

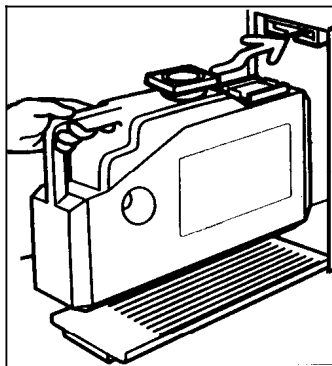
Once the waste container is removed, the following message displays on the printer control console:

DRY INK WASTE CONTAINER NOT PRESENT

The printer remains idle until a new container is inserted.

To insert a new dry ink waste container:

1. If you have not already done so, remove the cap from the new dry ink waste container.
2. Align the waste container with the support guides.



3. Slide the container into the storage compartment.
4. Close the rear door. A beep signals that the replacement is complete.

Replacing the developer waste container

Waste from the developer housings is stored in a sealed container located in the lower left corner at the front of the printer. The waste material is a mixture of black and color developer waste, and is not reusable.

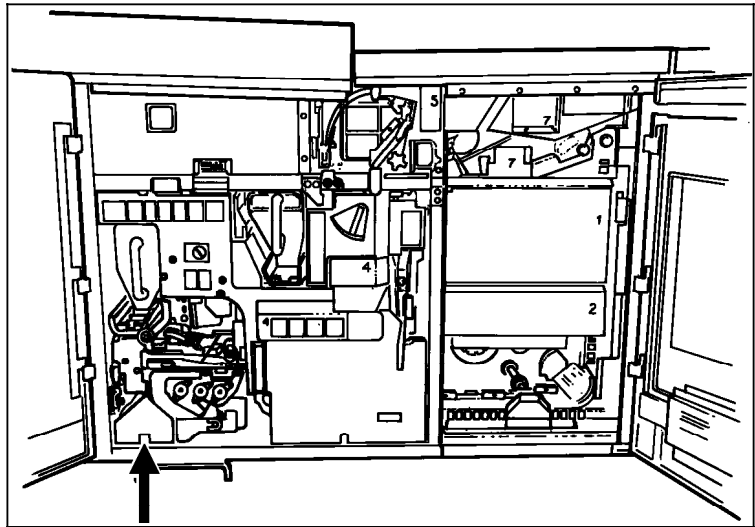
When the following message displays on the printer control console, the printer will produce approximately 1500 more sheets before stopping:

REPLACE DEVELOPER WASTE CONTAINER

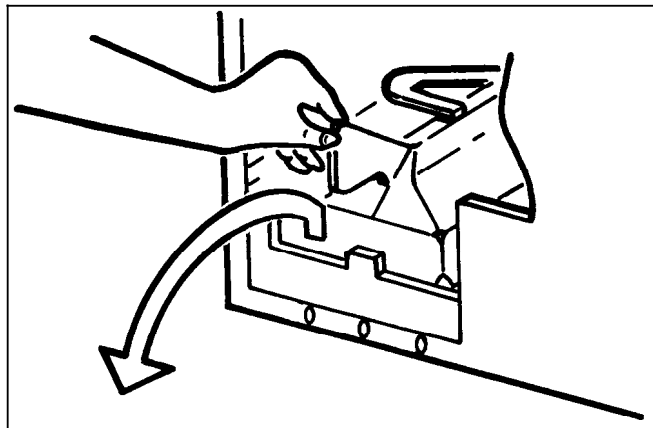
Replace the developer waste container at your earliest convenience.

To remove the developer waste container:

1. Open the middle and left front doors.
2. Locate the developer waste container in the lower left corner of the printer.

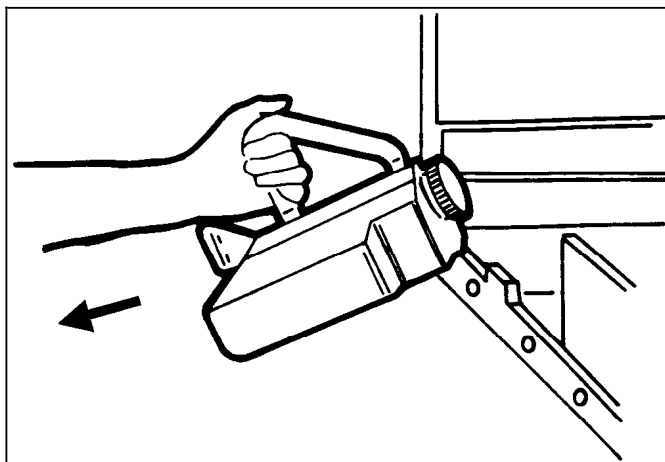


3. Hold the container by the tab on the top. Lift the container up approximately half an inch / 13 mm, then pull it out of the printer.



4. Let the tab end of the container touch the floor, then grasp the container by the handle.

A full container weighs approximately 8 pounds/3.6 kgs.



5. Use the cap from the new container to recap the old container.
6. Discard the waste container according to the instructions on the label.

To insert a new developer waste container:

1. Grasp the empty container with both hands, one hand on the handle and one on the container tab. Lift the front of the container over the tab at the front of the compartment, to position the tab into the groove running underneath the container.
2. Push the container completely into the compartment.
3. Close the printer doors.

Replacing the pressure roll wiper

Replace the wiper when:

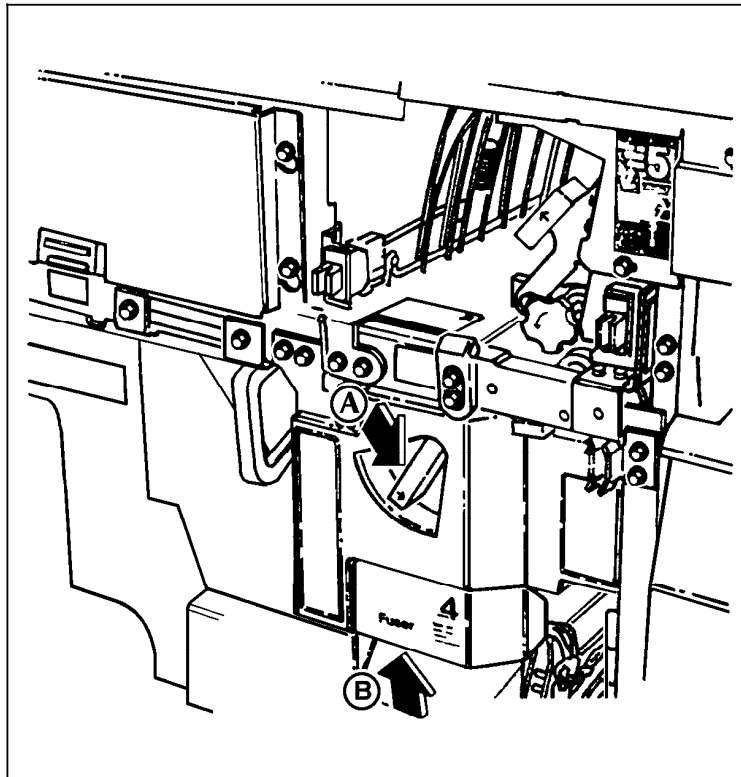
- Excessive oil or dirt buildup appears on the wiper.
- The first few prints of a job have oil or dirt on them.
- An interval of 80,000 to 100,000 prints are made.

The following materials are required:

- New pressure roll wiper and drip pan pad
- Gloves
- Cleaning cloth
- Drop cloth for the floor.

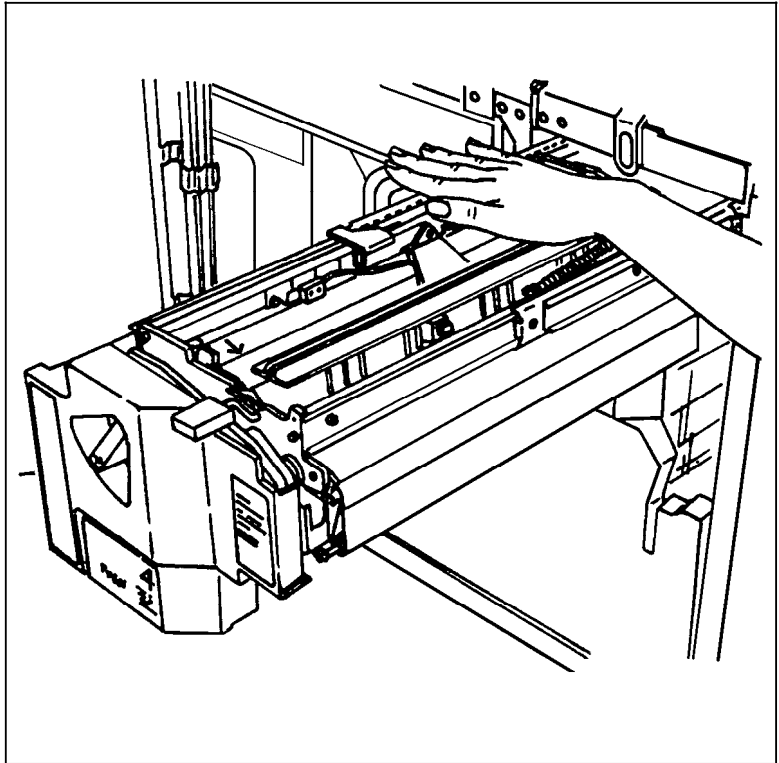
WARNING: Perform this task only when the fuser is cool. Exercise care to prevent burns when working in this area. Do not perform this task if the fuser is hot.

1. Power off the printer.
2. Open the printer doors.
3. Open the fuser drawer.
 - a. Locate the fuser drawer.
 - b. Move the green lever (A) counterclockwise.
 - c. Grasp the green handle on the fuser drawer (B) and pull it out until it stops.



4. Determine if the fuser is cool.

Place your hand approximately 1 inch (25mm) above the fuser area.



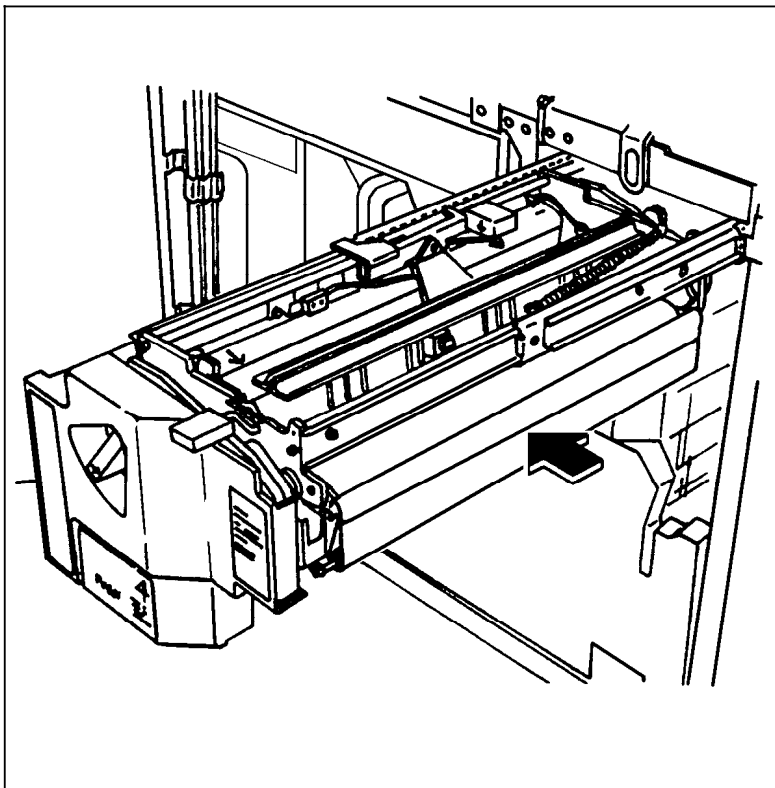
If you feel heat, STOP, leave the fuser drawer out, and wait for the fuser to cool. DO NOT touch the fuser while it is hot.

If you DO NOT feel heat, continue with the procedure.

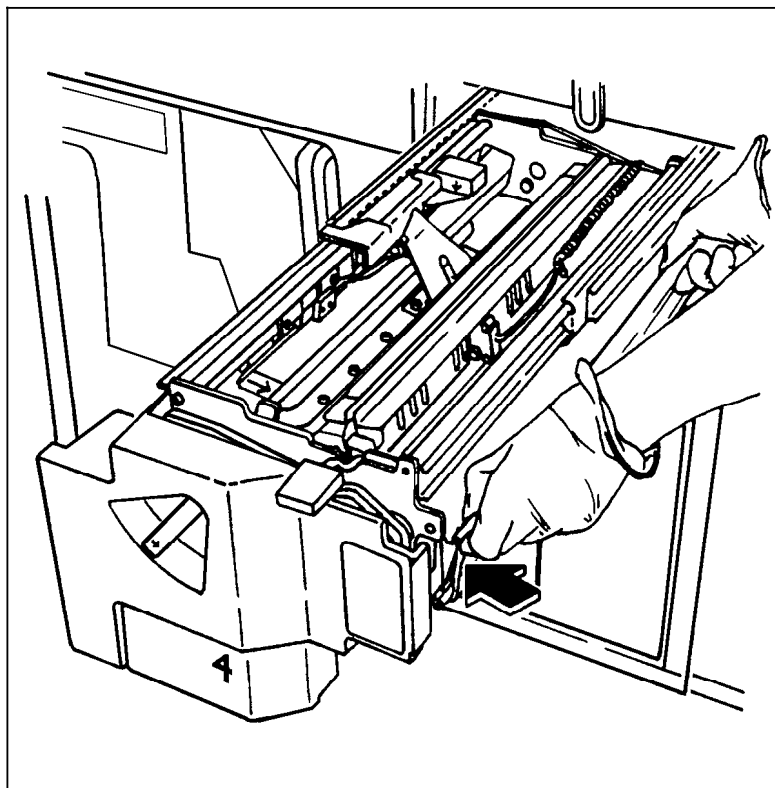
5. Put on gloves.

WARNING: Fuser agent contains silicone that causes eye irritation upon contact. Wash your hands with soap and water after you finish this procedure.

6. Locate the pressure roll wiper.

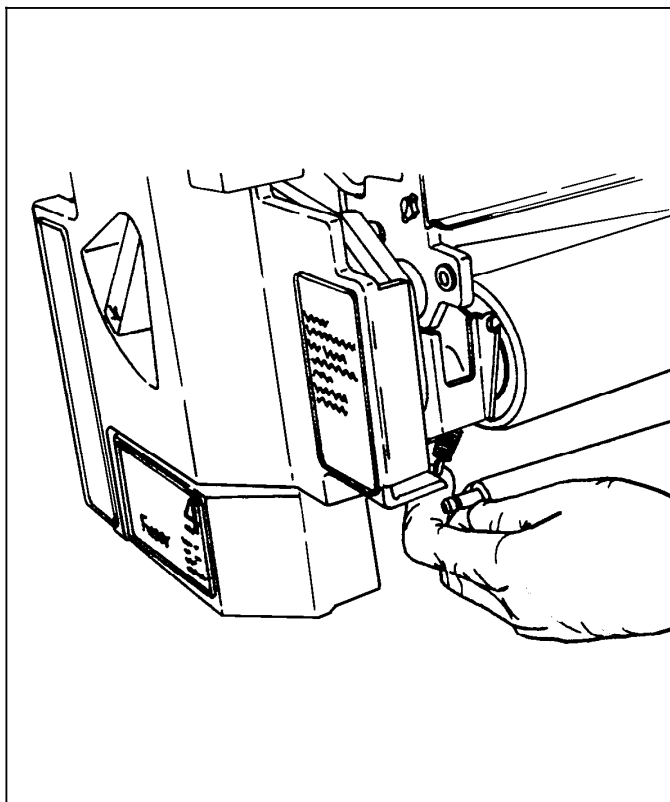


7. Remove the pressure roll wiper assembly.



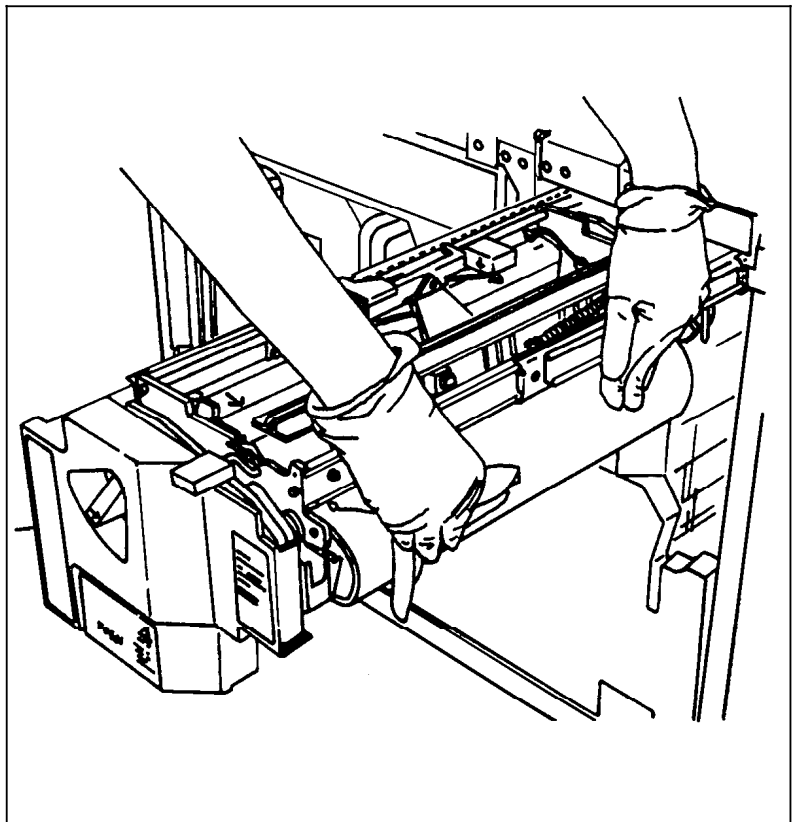
Pull upward on the upper wiper rod to release the rod, as shown.

Remove the lower rod from the springs and lift the wiper assembly away.



8. Remove the upper and lower rods from the wiper assembly.
9. Place the used wiper and drip pad in the plastic bag that came with the new wiper.
10. Dispose of the bag in a trash receptacle.

11. Use a clean cloth and wipe the dirt off the entire pressure roll. Wipe the roll while rotating it.

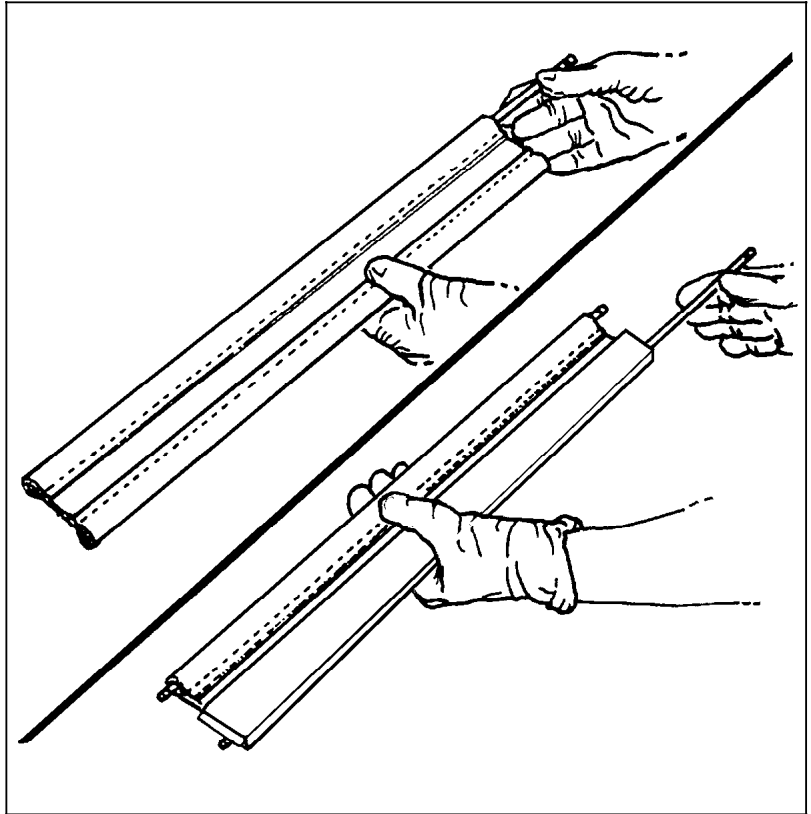


12. Discard the cloth in the trash receptacle when you are finished.

13. Carefully place the new drip pad in the drip pan.

Insert the short rod in the upper loop of the new wiper.

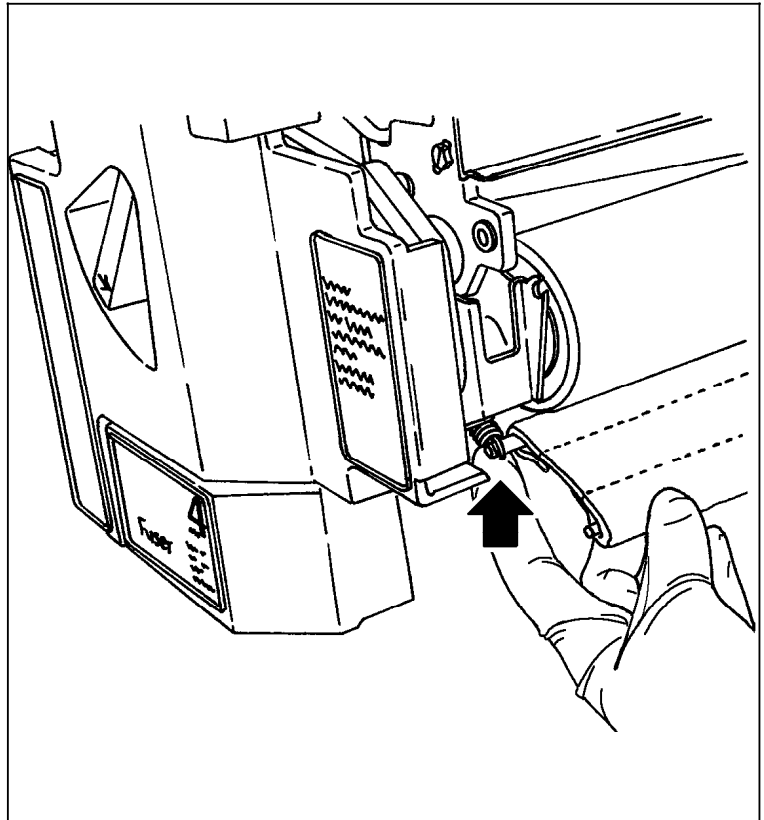
Insert the long rod through the drip pan and the lower loop of the new wiper.



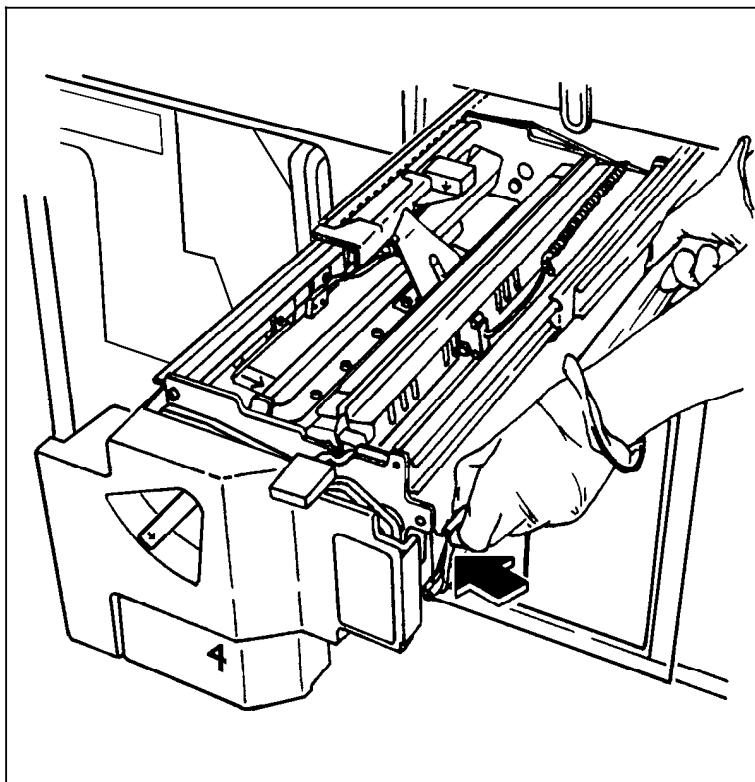
14. Install the new wiper.

CAUTION: Make sure the smooth side of the wiper is facing the pressure roll.

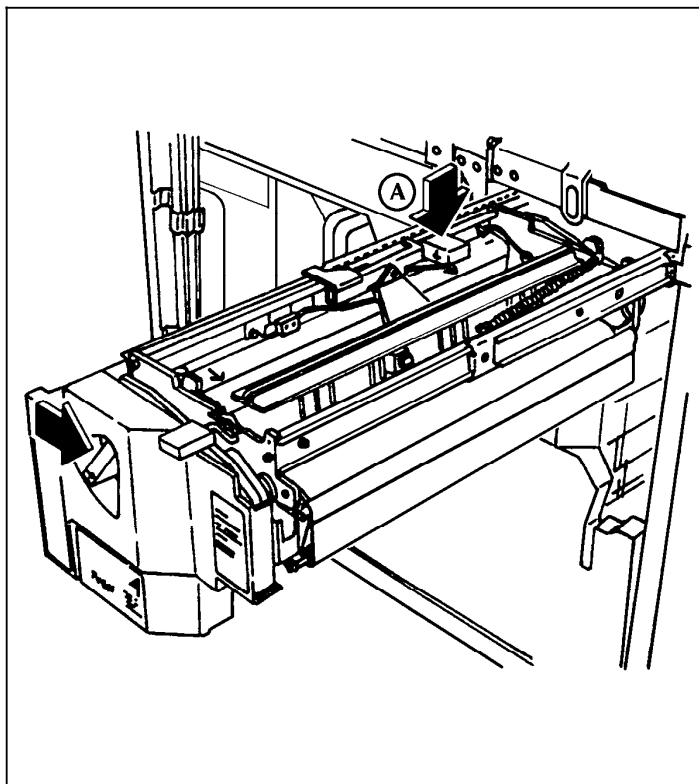
Insert the lower rod onto the springs on both ends of the pressure roll, as shown below.



Center the wiper on the pressure roll. Pull up the wiper and place the upper rod onto the brackets on both ends of the pressure roll, as shown below.



15. Remove the gloves. Do not let any residue come in contact with your skin. Dispose of the gloves in a trash receptacle.
16. To close the fuser drawer, release the fuser drawer by pressing down on the green latch (A). Push the fuser drawer in until it latches in place.



17. Close the processor doors.
18. Power on the printer.
19. Wash your hands to remove any fuser lubricant.

Setting the time and date

The time and status display has one to five lines of information, each consisting of two spaces and eight characters of status information. Figure 6-2 shows the display format.

Figure 6-2. **Time and status display**

```
..hh:mm:ss
..PF: xx%
..QM:nnn
..IiiiOooo
..HostStat
```

The first line is always the current time of day.

The second line reflects the percentage of the print file currently free, or unused. The percentage can range from 0% to 100%. The 0% indicates print file saturation. A 100% indicates the print file is empty. If this information is not provided by the Queue manager task for any reason, this line will not be displayed, and all following lines of the Time-of-Day display will be moved up. Note that the print file may indicate less than 100% free when the print queue is empty. This situation is caused by one or more cylinders being marked unavailable due to bad areas of the system disk being included in the print file area. This situation can also occur if areas of the print file are manually declared to be flawed and unavailable through the BBU utility program. For more information on the print file refer to the REALLOCATE command.

The third line displayed reflects the number of reports currently in the Queue Manager queue. The number nnn can range from 1 to 999. If more than 999 reports are in the queue, the line is displayed as:

QM: >999

This information is only displayed if it is not zero. If there are no reports in the queue, this line is not displayed, and all following lines of the Time-of-Day display will be moved up.

The fourth line reflects the status of input and output processing if they are processing. Otherwise, this line is blank.

The fifth line reflects the status of the remote input source if the system has one and it is active; otherwise, this line is blank.

The meanings of status codes displayed on the fourth and fifth lines are shown in table 6-1.

Table 6-1. Status display information

liii	Input status
WAIT	Waiting for a job
TAPE	Processing a tape job
DISK	Processing a disk job
HOST	Processing an online job
HIP	Processing a HIP job
Oooo	Output status
WAIT	Waiting for a job
JAM	Printer jammed and must be cleared
PRsd	Actively printing: source and destination are indicated by "sd"
IDLE	Neither input nor output processing is active
Host	Remote source
HOST	IBM channel host (through online/XPAF)
XNS	Ethernet host
871	871-CM host
DMR	DMR-11 host
Stat	Remote source status
OFFL	No communication between host and LPS
NRDY	Communication established but LPS not ready to receive data or commands from host
WAIT	LPS ready and waiting for data or commands from host
RECV	LPS actively receiving data or commands from host
SEND	Host actively sending data or commands to LPS
SPND	LPS has suspended communication with the host
ONLP	LPS pending receipt from host
SESN	Active XNS session

If the remote source is a host computer and the printer needs your intervention, the host is notified through status information, and the third line is replaced by the following message:

A T T N.

If your LPS uses the HIP and the IBM online channel interface concurrently, the time and status display in the upper right-hand corner of the screen may not always be correct. The third line of this display indicates the selected remote interface and its current status. When both interfaces are active, they are both updating the same status fields, and only the most recent update will be seen. As a result, the displayed current host may be, and remain, incorrect. The current status continues to display the most recent status change of whichever interfaces are active.

Use the TIME command to verify the time and date maintained by the system, or to turn the display on and off. To turn the time date display on or off or to verify the time, enter the TIME command:

TIME [ON | OFF]

No parameter entered

The time of day is displayed.

ON

Turns display on, and keeps it updated.

OFF

Turns display off.

The system must be idle when setting the system time and date. (Idle means offline, not printing, and not performing any nonprinting tasks.)

You must also log on to level 2 to use the SETTIME command.

To change the time or date display without rebooting the system, enter the SETTIME command.

SETTIME [date][time]

[date]

Specifies the date to set as the system date. Use the mm/dd/yy or mm-dd-yy format. Months may be expressed as numbers or using the common three character abbreviations.

[time]

Specifies the time to set as the system time. Use the hh:mm:ss format in a 24-hour clock. You can separate numbers by a colon or by a space. You do not need to enter the seconds.

Example: SETTIME 04-APR-93 14:27

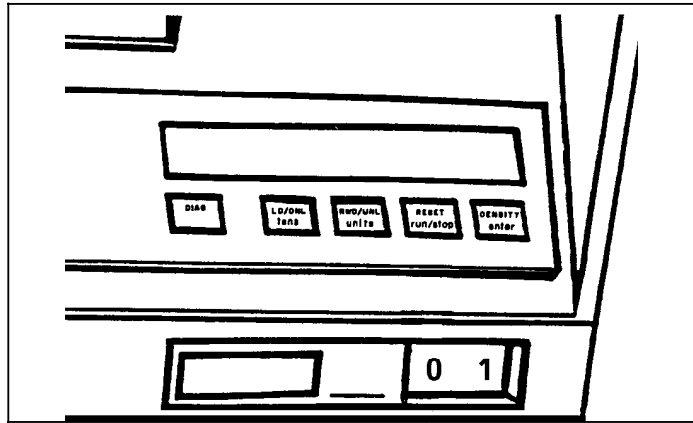
7.

Shutting down the LPS

The procedures in this chapter provide steps to follow to power off your Xerox 4890 HighLight Color Laser Printing System (LPS).

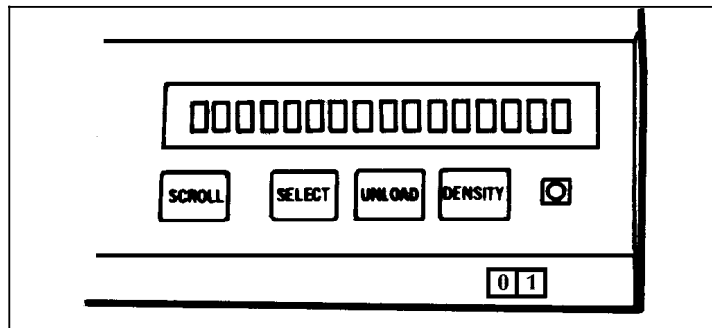
Powering off the open reel tape drive

1. If a tape is loaded in the tape drive, unload it.
2. Press the Power switch to the off position by pressing down on the side marked 0.



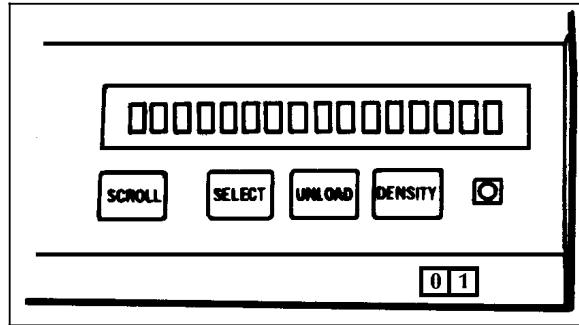
Powering off the 1/2 inch cartridge tape drive

1. Press and release the Scroll button.



" +Subsys Status" appears in the message display.

2. Press the Select button.

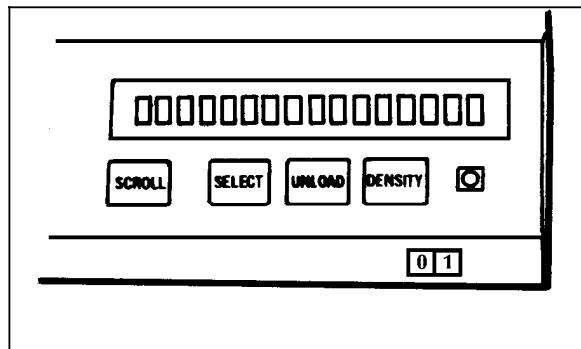


"Offline Request" appears in the message display.

3. Press Select twice to place the tape drive offline.
4. Wait for the message display to indicate that the tape drive is offline. The offline message is "OF:DIAG:".

Usually the offline message appears within five seconds unless a job is running. If the message does not appear within five minutes, notify your system administrator.

5. If a cartridge is loaded in the tape drive, unload it.
Refer to the "Unloading a 1/2 inch cartridge" section in the "Setting up the LPS" chapter.
6. Press the Power switch to the off position by pressing down on the side marked 0.



Emergency procedures

In an emergency, power off the tape drive by pressing the Power switch to the OFF position (0). To restore power after an emergency shutdown:

1. Press the Power switch to the on position by pressing down on the side marked "1."
Note: If the Power switch is not off, turn it off before turning it on.
2. Wait until "IPL COMPLETE" appears in the message display.
3. Press the Unload button to unload any tape cartridge that was in the transport when the power went off.
4. Place the tape drive online if necessary.

Powering off the system

The 4890 LPS has a power saver feature designed to save energy and to reduce wear on moving parts. You only need to power off the system when it will be idle for eight hours or more.

Depending on whether your system is receiving jobs from an offline source or an online source, follow one of the procedures described in this section to power off your 4890.

Online

1. Contact the host system operator and request that the output from the host to the LPS be drained and the system be varied offline from the host.
2. Press <JOBS STATUS> to determine if the system is idle.

If the queue has no jobs waiting to print, the following message displays on the controller:

```
JOB QUEUE IS EMPTY
```

If the job queue is not empty, enter the **ENDJOB** or the **DRAIN** command to print any pages remaining in the print file. Then press <JOBS STATUS> again to verify the queue is empty.

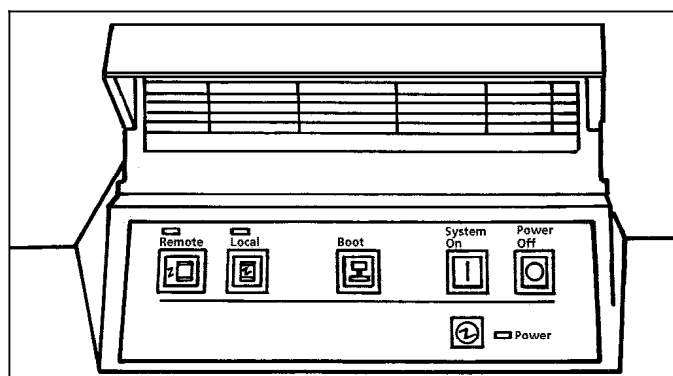
3. Enter **OFFLINE**.
4. Enter **CONTINUE I** or press <CON>.

CAUTION: Failure to have the system offline prior to powering off causes problems with the host system.

When this message appears, press the System Power Off button:

```
OS0040 System is 'OFF-LINE'
```

This affects the entire system, the printer as well as the system controller. Do not press the on/off switch on the printer.



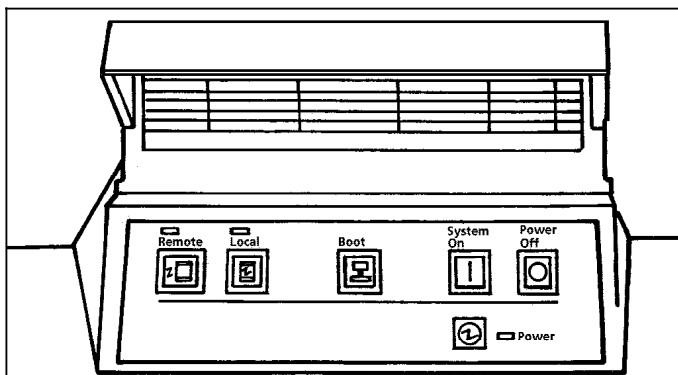
Offline

1. Press <JOBS STATUS> to determine if the system is idle.
2. Unload the tape, cartridge, or floppy disk. For more information on unloading tapes and cartridges, refer to the relevant section in the "Setting up print job sources" chapter.

CAUTION: If a tape or cartridge is loaded when the system Power Off button is pressed, data on the tape or cartridge could be destroyed.

3. Press the System Power Off button on the system controller panel.

This turns off the entire system, the printer as well as the system controller. Do not press the on/off switch on the printer.



Follow the procedures in this chapter if problems arise during the operation of your Xerox 4890 HighLight Color Laser Printing System (LPS). If additional help is required, refer to the card in the back of this guide listing instructions for contacting Xerox support services.

Aid to problem solving

If you are having trouble identifying the cause of errors, you can log the commands you enter and the system responses in a special file using a function called the Data Capture Utility (DCU). If you feel that this feature could be beneficial to your work on the system, consult your system administrator or refer to the *Xerox 4850/4890 HighLight Color LPS System Programming and Administration Guide*.

Print darkness problems

The print density is set by your service representative. However, if prints appear too light or too dark, you can use the DARKNESS command to make very minor adjustments to the print darkness. This command increases or decreases the amount of dry ink applied, which can improve the quality of solid areas of black or color or very fine lines.

To lighten or darken print:

1. Enter the **DARKNESS** command:

DARKNESS [n,[COLOR | BLACK]

n

A number between 1 (lightest print) and 7 (darkest print) referring to the darkness of the dry ink.

[COLOR|BLACK}

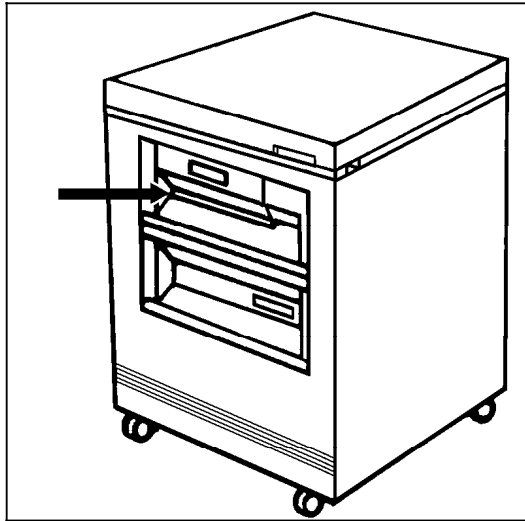
Specifies the dry ink setting.

2. Run PQA.

You must run PQA after entering the DARKNESS command in order for the change to take effect. For more information on running PQA, refer to the "Running PQA" section in the "Print job maintenance" chapter.

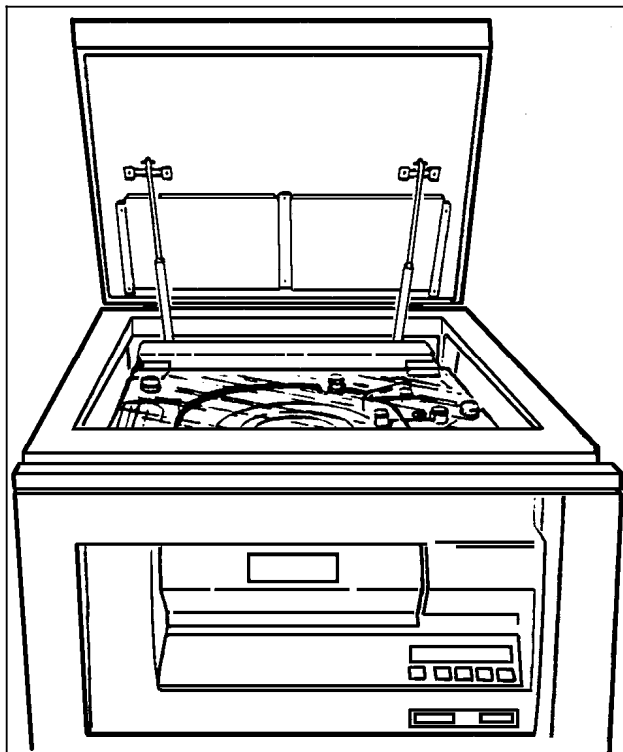
Open reel tape drive problems

The open reel tape drive is located in the peripheral cabinet.



Tape drive does not perform self-load routine

Make sure the tape path cover and the loading door are fully closed.



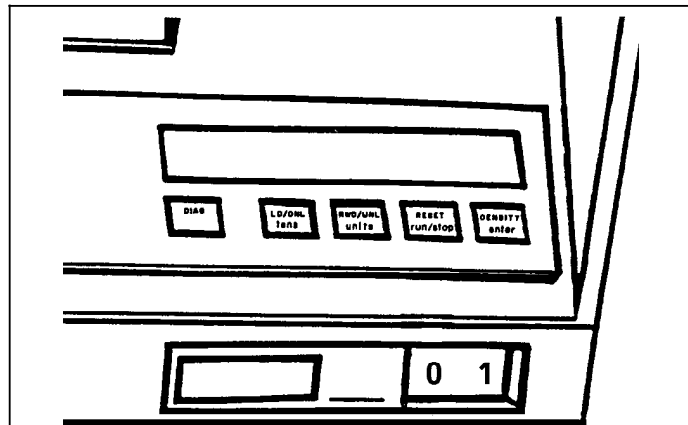
Loading an open reel tape by hand

In most cases, you should load an open reel tape using the autoload feature of your open reel tape drive. This procedure is described in the "Setting up print job sources" chapter.

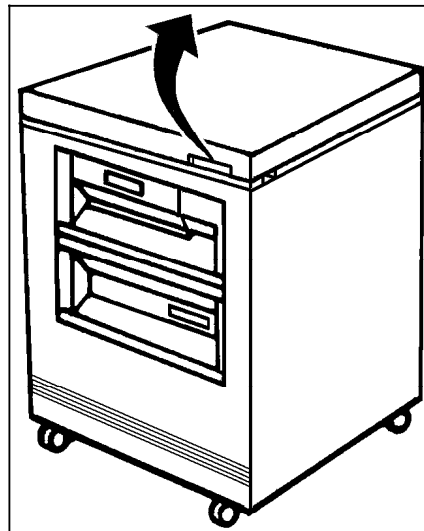
If the autoload fails, you may use this procedure to load the tape manually.

1. Press the Power switch to the off position by pressing down on the side marked 0.

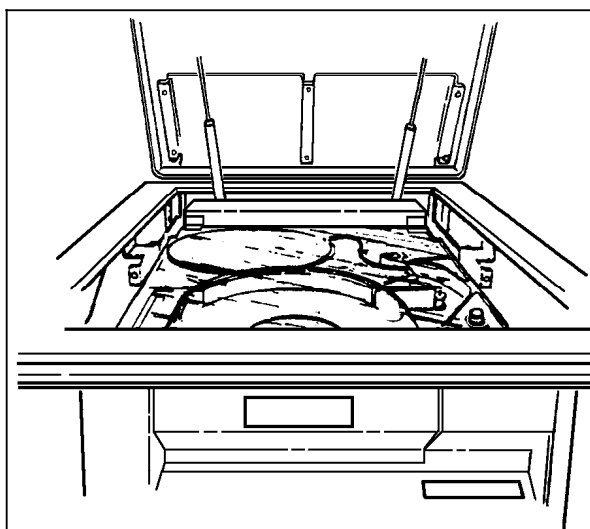
WARNING: Turning off the power is essential for safety reasons.



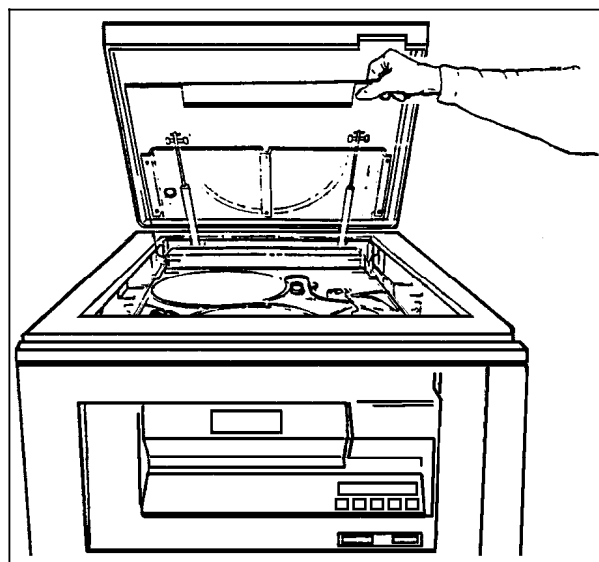
2. Open the cover of the peripheral cabinet.



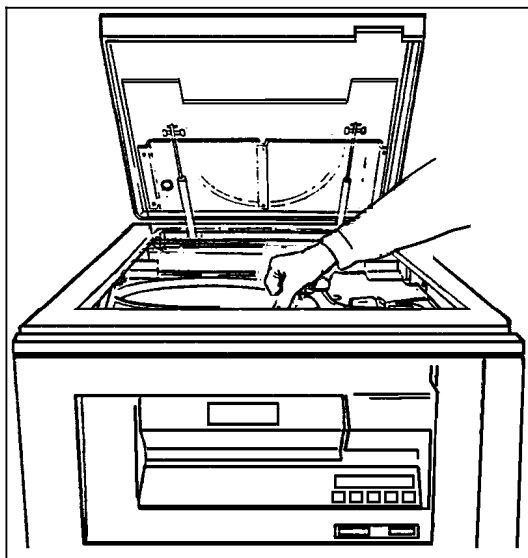
3. Release the turnbuckles on the tape path cover by turning them counterclockwise.



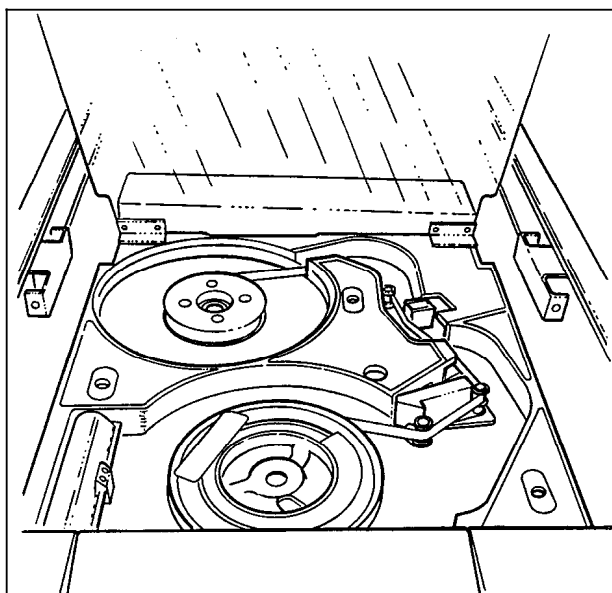
4. Lift the cover of the tape path.



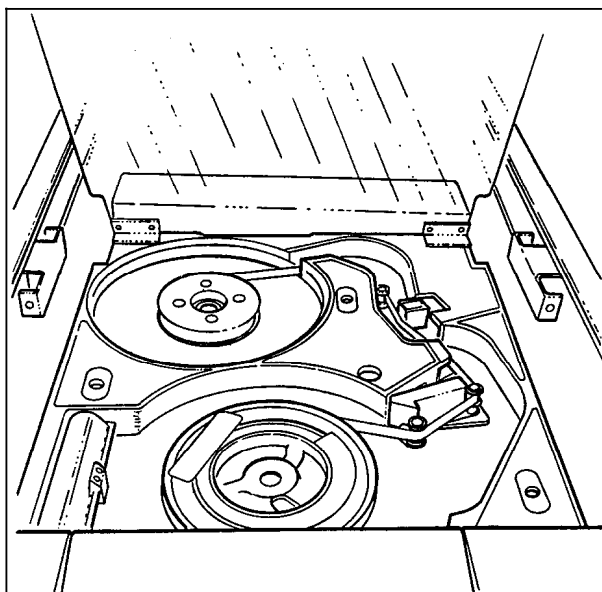
5. Place the tape reel on the supply hub.



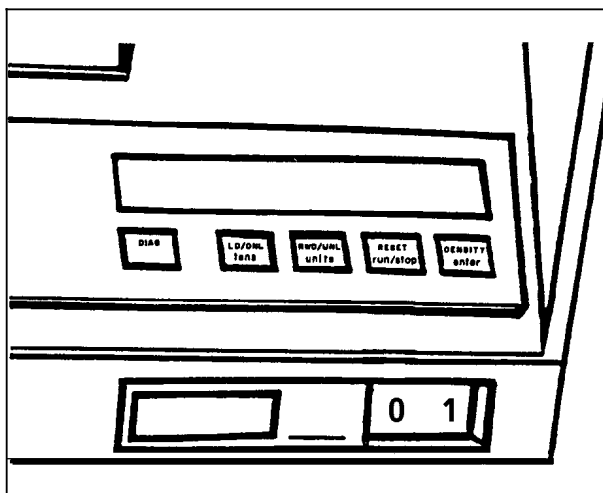
6. Thread the tape to the take-up hub.



7. Wind the tape clockwise approximately two turns. Wind the take-up reel counterclockwise until the tape tightens.



8. Close the cover of the tape path and secure the turnbuckles by turning them clockwise.
9. Close the cover of the peripheral cabinet and set the Power switch to the on position by pressing down on the side marked 1.



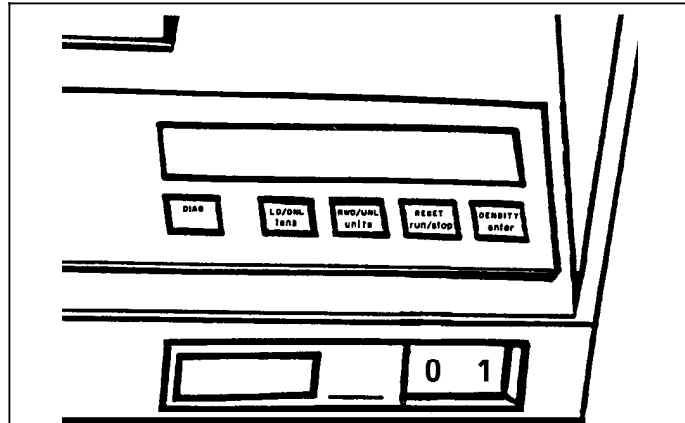
10. When the tape drive finds the BOT indicator, "Ld Point" appears on the message display and the tape drive is placed online.

Unloading an open reel tape during a power failure

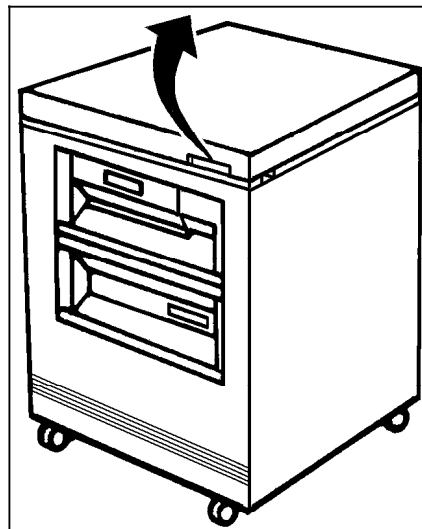
If power to the open reel tape drive is cut off and you must unload the tape reel before power is restored, follow this procedure.

1. Set the Power button to the off position by pressing down on the side marked 0.

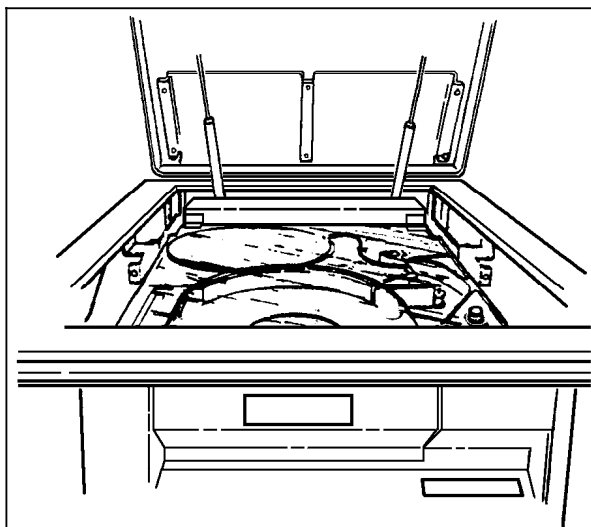
WARNING: Turning off the power is essential for safety reasons.



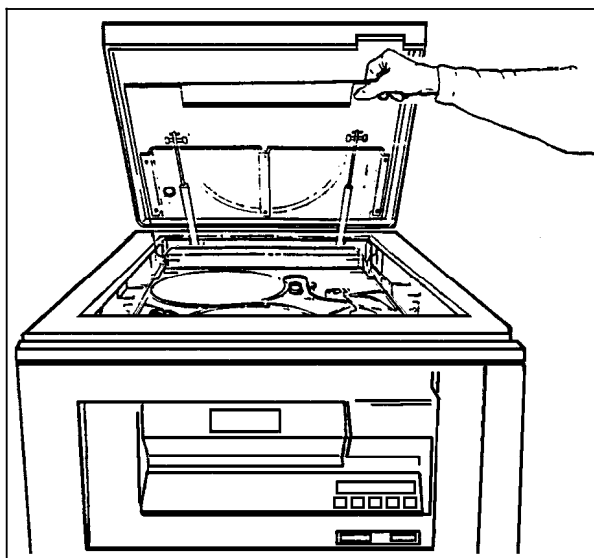
2. Open the cover of the peripheral cabinet.



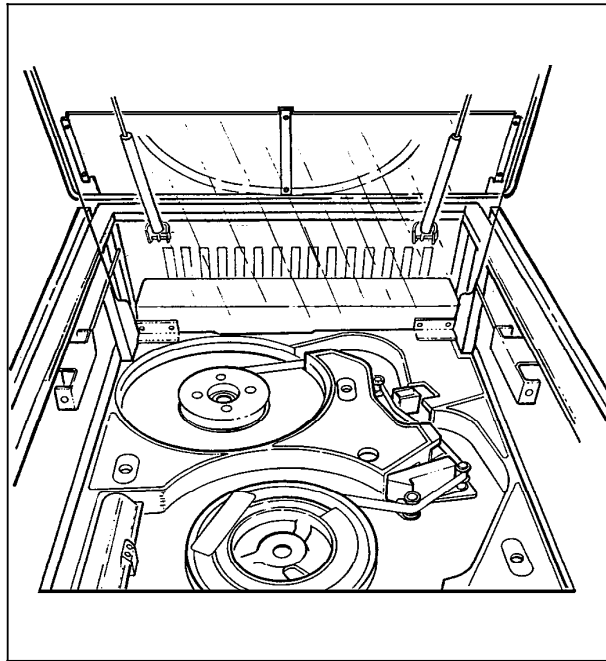
3. Release the turnbuckles on the tape path cover by turning them counterclockwise.



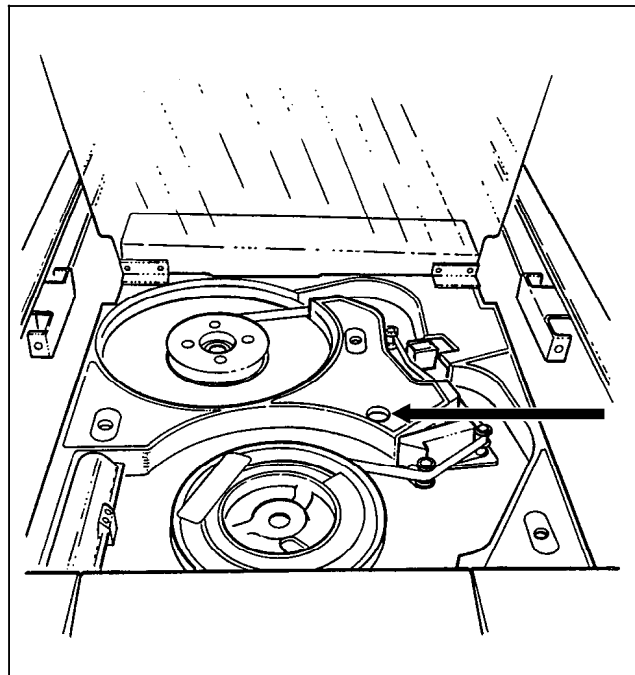
4. Lift the cover of the tape path.



5. Rotate the supply reel counterclockwise until all the tape is rewound.

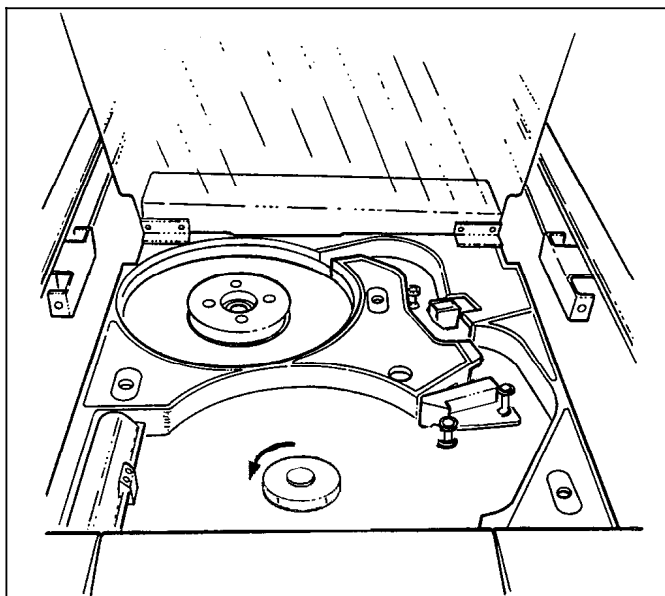


6. Gently press the Hub Release lever.



7. While pressing the Hub Release lever, turn the tape reel counterclockwise to unclamp it.
8. Carefully lift off the unclamped supply reel.

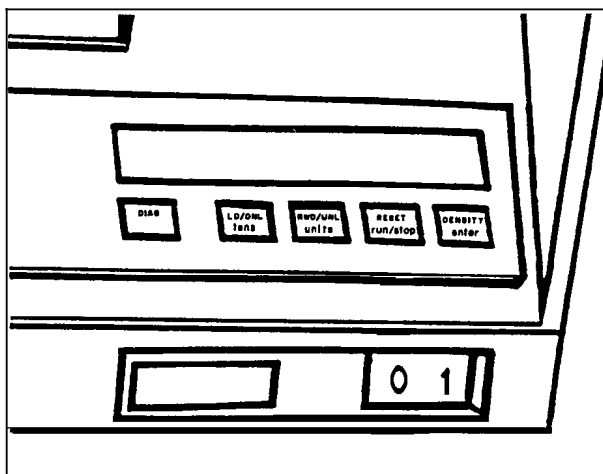
9. Gently press the Hub Release lever again, and turn the hub counterclockwise until the clamp pads are fully retracted.



10. Close the cover of the tape path and secure the turnbuckles by turning them clockwise.
11. Close the cover of the peripheral cabinet.

"OK" appears on the tape drive message display, but the loading door is closed

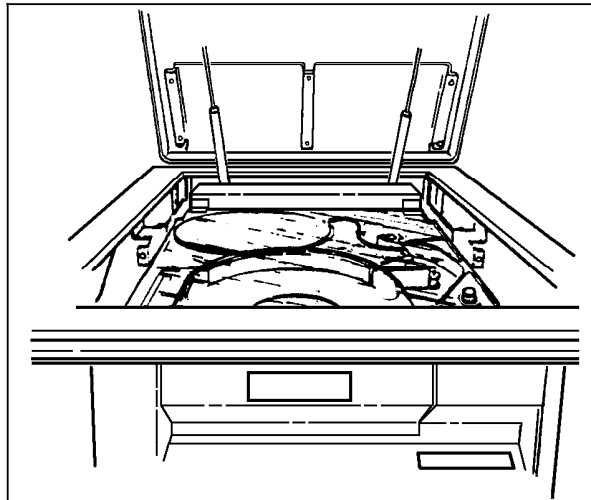
1. Press the Reset button to open the door.



2. If the door still will not open, open it manually.

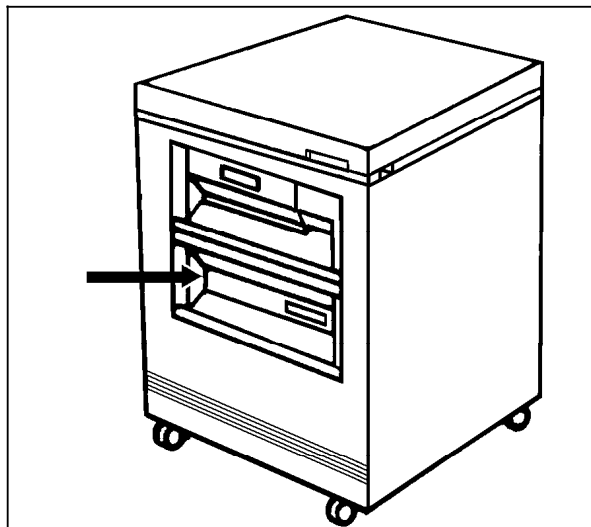
"LID OPEN" appears on the tape drive message display

Make sure all of the tape path cover turnbuckles are secured.



1/2 inch cartridge tape drive problems

The 1/2 inch cartridge tape drive is located in the peripheral cabinet.



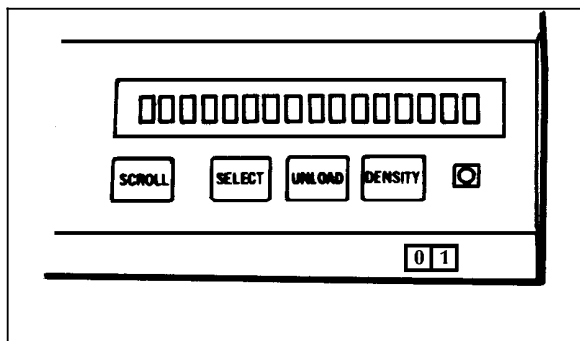
Always try to remove the cartridge from the 1/2 inch cartridge tape drive before you try to correct any problems with the drive.

1. If there is a relevant message on the printer control console, or system controller display, perform the action described there.
2. If there is an error code on the tape drive message display, record the error code and time and call for service.

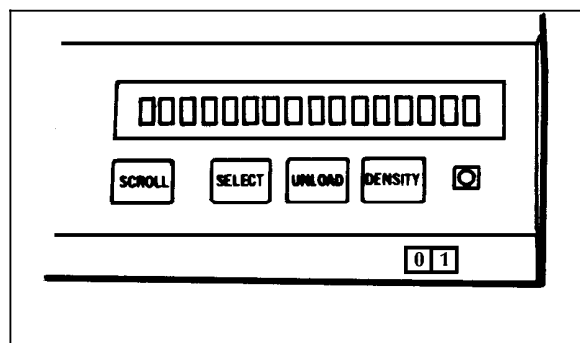
Initial program load procedure fails

An error occurred during the initial program load (IPL) procedure if the Alert indicator flashes and an error code displays after you power on the tape drive. Run the IPL on the tape drive in either of two ways:

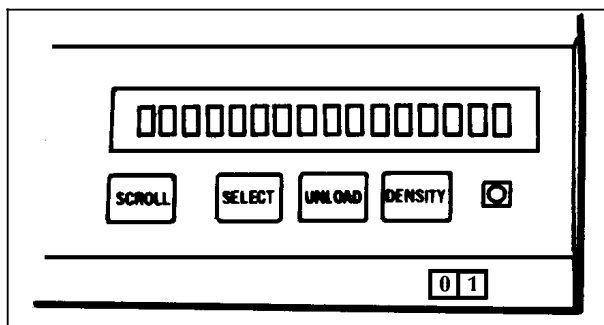
1. Turn off the tape drive by pressing the Power switch to off (0).



2. Wait 10 seconds and then turn the tape drive back on by pressing the Power switch to on (1).



3. Press and hold the Scroll, Select, and Unload buttons for at least five seconds.



If the IPL procedure still fails, note the error code and time and call for service.

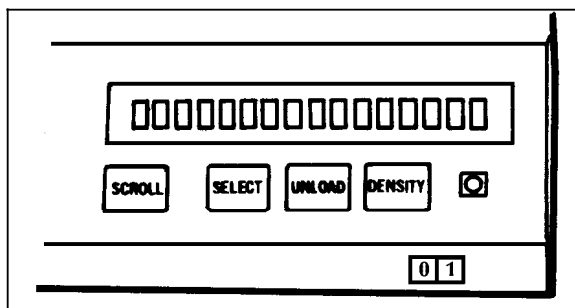
Cartridge cannot be inserted

Inspect the cartridge for damage (refer to the "Loading a 1/2 inch cartridge tape" section of the "Setting up print job sources" chapter).

- If the cartridge is damaged, use an undamaged cartridge instead.
- If the cartridge is undamaged but you cannot load it, call for service.

Tape does not unload

1. If there is an error code message on the message display, record the error code.
2. Press the Unload button.



3. Try unloading the tape again.
4. If the tape still does not unload, record the error code and time, and call for service.

Unloading a cartridge after a power failure

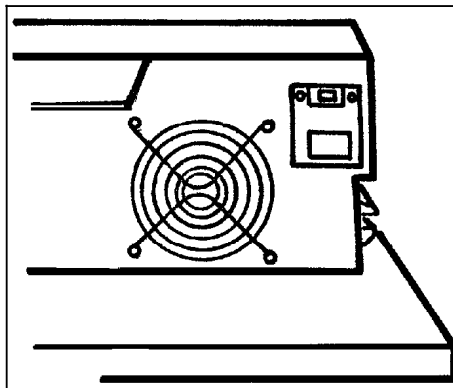
1. Turn the tape drive on. Refer to the "Powering on the cartridge tape drive" section of the "Setting up print job sources" chapter.
2. Press the Unload button.

Tape winds completely out of cartridge

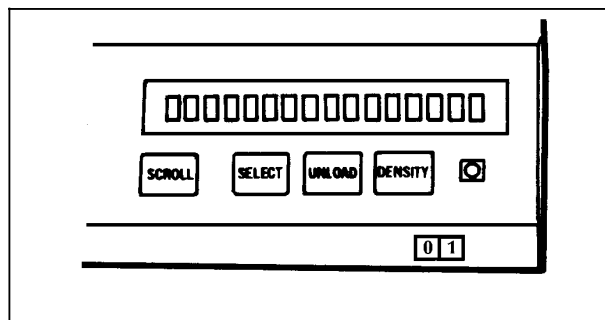
Call for service. If there is an error code message on the message display, record the code and report it to the service representative.

Message display is blank

1. Make sure the tape drive is receiving power from the main AC power source.
2. Make sure the AC Power switch on the rear of the tape drive is on.



3. Turn the DC Power switch, located on the right side of the front bezel, off (0) and then on (1).

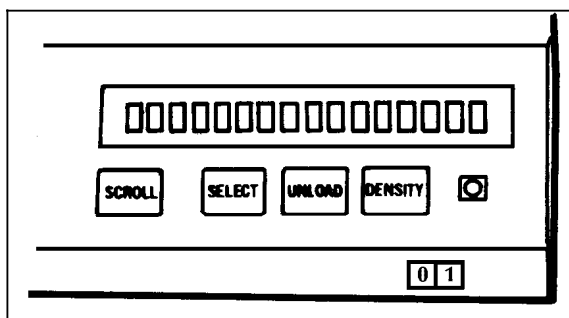


4. If the display is still blank, call for service.

Tape drive does not become ready

1. Determine if the tape drive is online by pressing the Scroll button until the message display shows the Status display.
2. If the tape drive is offline, follow the procedures presented in the "Setting up print job sources" chapter.
3. If the drive still does not become ready, the cartridge may be inserted incorrectly. Remove the cartridge from the transport and insert it again.

4. If there is an error code message in the message display, record the error code, press the Unload switch, and try the operation again.



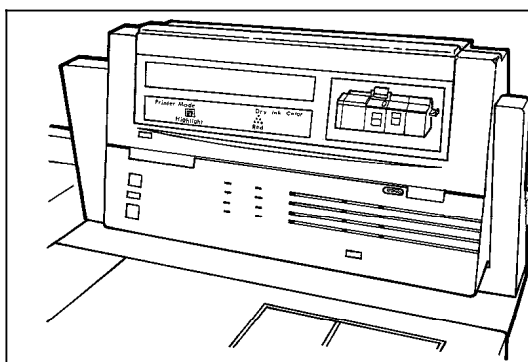
5. If the drive still does not become ready, call for service. If there is an error code message on the message display, record the code and report it to the service representative.

Note: Refer to Appendix C, "Tape drive messages," for a definition of the messages displayed during the use of the peripheral cabinet tape drives.

Paper jams

Materials sometimes jam leaving the feeder trays or moving through the paper path. You must clear the jam before printing can continue. The 4890 provides the following aids to jam clearance:

- The message display of the printer control console indicates the areas of the printer you must check or clear. The graphic mimic on the printer control console shows the location of the areas in the printer and the doors to open to access them.



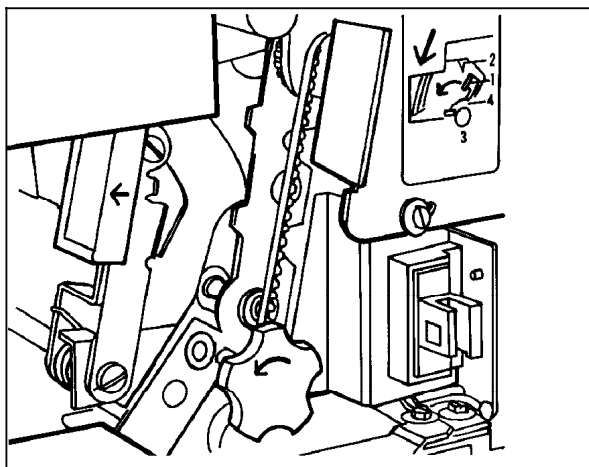
It is possible for the printer control console to indicate an existing paper jam, while the system controller display shows the following message:

ENTER CON O.

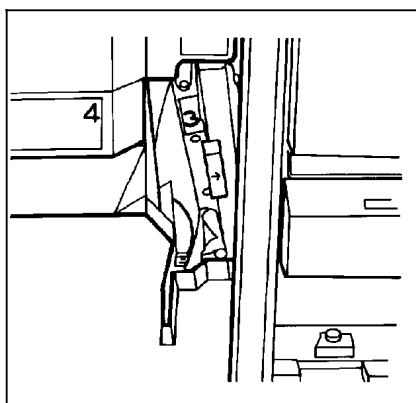
If you press <CON> without clearing the paper jam, the following printer jam message appears on the system controller display:

PRINTER JAM IN AREA see IOT

- Jam clearance message labels are located inside the printer at the point of need.

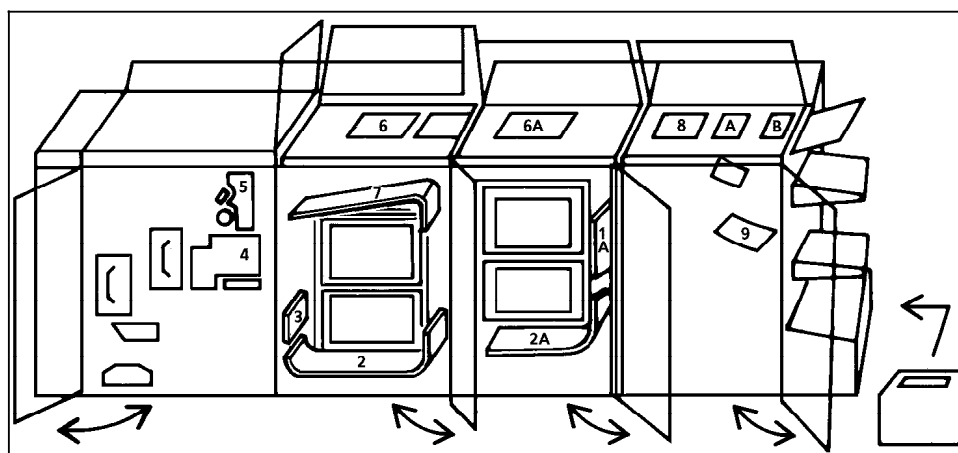


- Each handle, lever, or knob you must manipulate to clear a jam is bright green and marked with an arrow indicating the direction it moves.



Refer to Figure 8-1 for an overview of the paper jam areas.

Figure 8-1. Paper jam areas



Follow these steps to clear a paper jam:

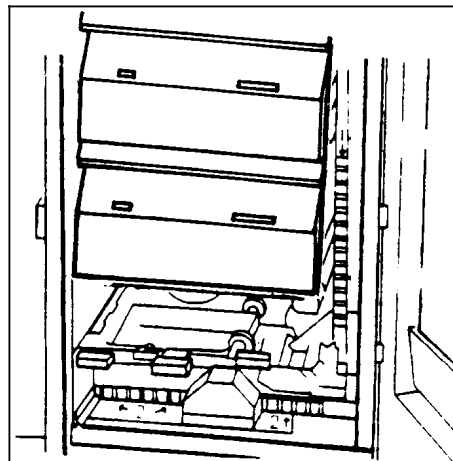
1. Go to the area of the printer indicated by the messages and the graphic mimic on the printer control console. Refer to figure 8-1.
2. Open the printer doors to access the area.
3. Clear any paper from that area following the instructions on the message labels printed on that area, the messages on the printer control console, and the instructions in this section listed by the area number.

Clear paper only from the area specified in the error message.

4. If the system has sent waste sheets to the sample tray, remove those sheets and discard them.
5. Close any printer doors you opened.
6. Press the Continue button to resume printing.
7. When the job finishes printing, check the output to make sure there are no missing or duplicate pages.

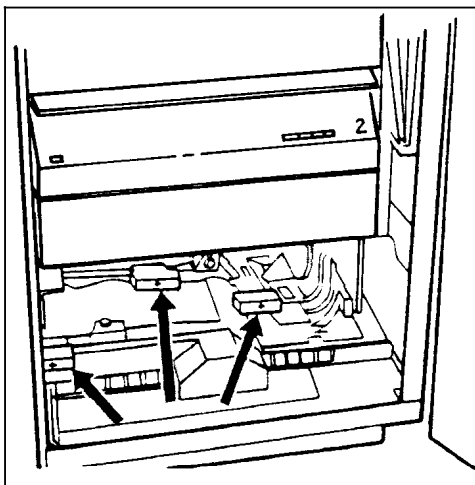
Clearing areas 1 and 1A

Remove and discard any paper found in area 1 or 1A.



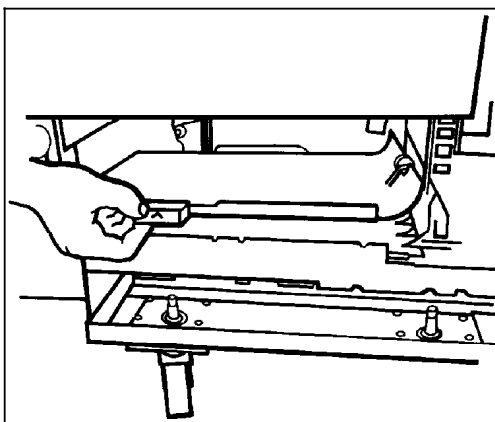
Clearing area 2

Lift the three green handles one by one. Each time you lift a handle, remove and discard any paper found beneath the open section. Lower the handles before continuing.



Clearing area 2A

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

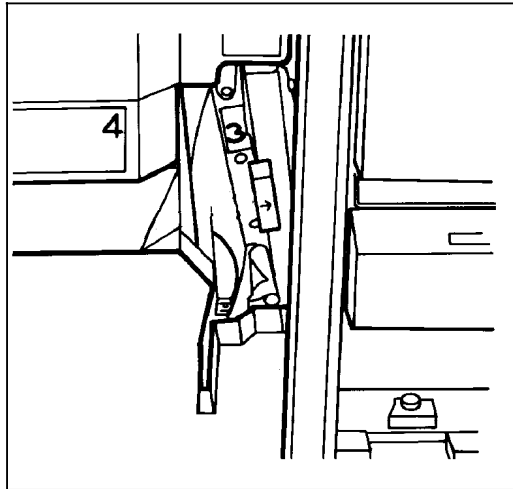


Clearing areas 3 through 5

When paper jams occur in areas 3 through 5, three extra blank sheets are sent through the printer to make sure the fuser is clean. These sheets are sent to an unused stacker tray and should be discarded. You are not charged for these sheets. (If the job is directed into stacker tray 1 or 2, the discarded copies are sent to the sample tray; if the job is directed to the sample tray, discard copies are sent to an empty stacker tray.)

To clear area 3:

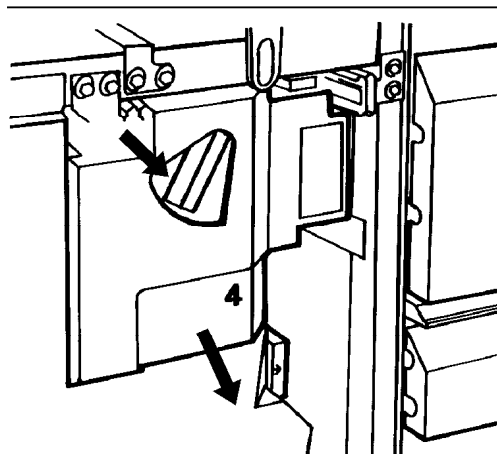
1. Push and hold the green handle to the right (in the direction of the arrow marked on it).



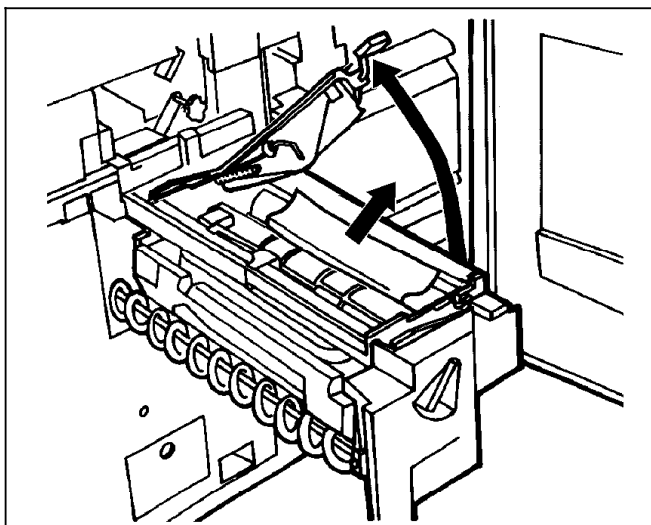
2. Remove and discard any paper found there.
3. Release the handle, and close the door.

To clear area 4:

1. If there is a jam in both areas 4 and 5, clear area 5 first.
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.



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

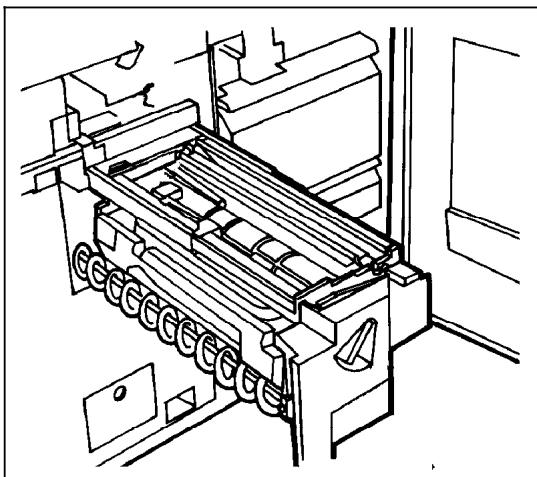


WARNING: Parts of this area are hot enough to cause some discomfort after prolonged contact. Exercise caution.

4. Remove and discard any paper found 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.

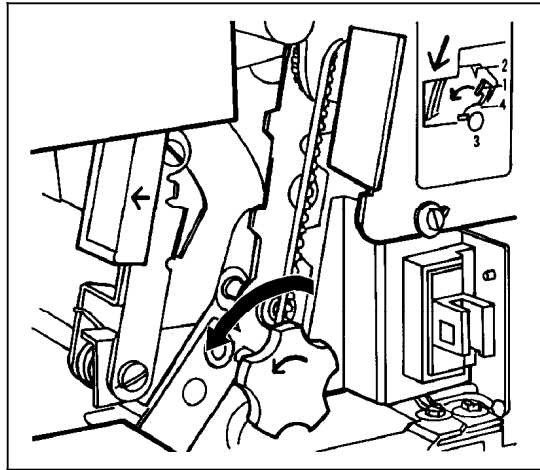
5. Return the small green handle to its original position.
6. Push down on the green release latch.



7. Slide the fuser unit back into the printer until it latches into the closed position.

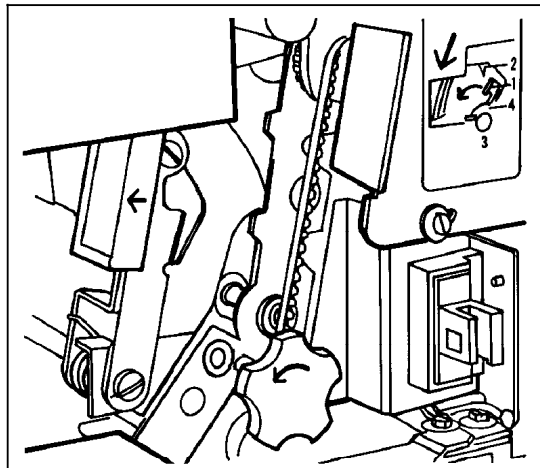
To clear area 5:

1. 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.

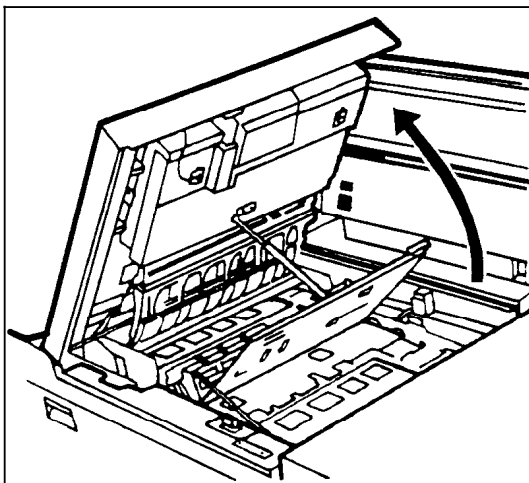
2. Push and hold the green handle to the left (in the direction of the arrow marked on it). Remove and discard any paper found there.



3. Release the green handle

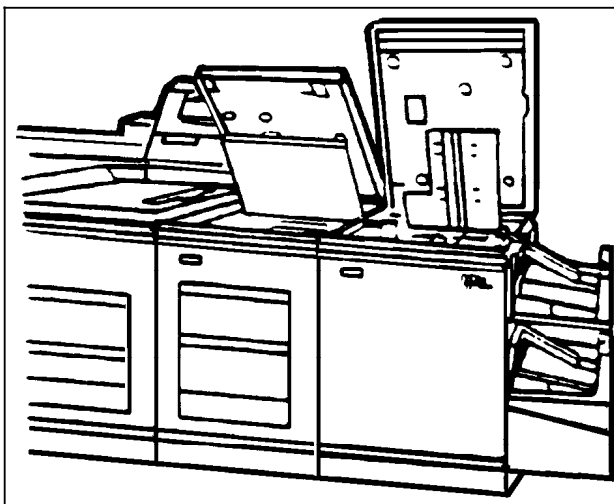
Clearing areas 6 and 6A

To clear area 6, open the top cover of the printer. Remove and discard any paper.



To clear area 6A of the high-capacity feeder:

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



2. Remove and discard any sheets under the high-capacity feeder cover.

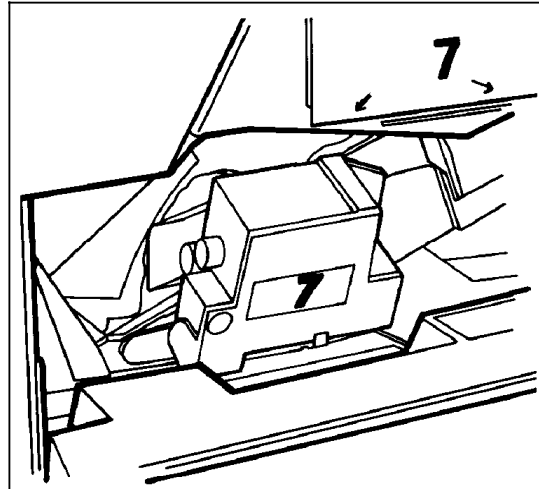
If the printer control console message display also indicates a problem in the output module, remove and discard those sheets as well. Refer to the appropriate section of this chapter for detailed instructions.

Clearing area 7

Area 7 of the paper path is used only during two-sided (duplex) printing.

To clear area 7:

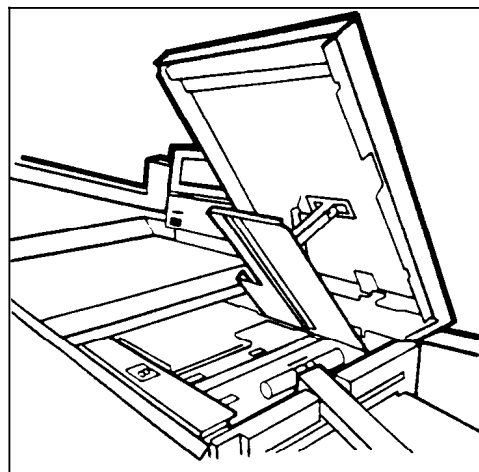
1. Pull the block-shaped set separator toward you and hold it in that position.



2. Remove and discard any paper in the duplex tray or beginning to feed from it.
3. Return the set separator to its upright position.

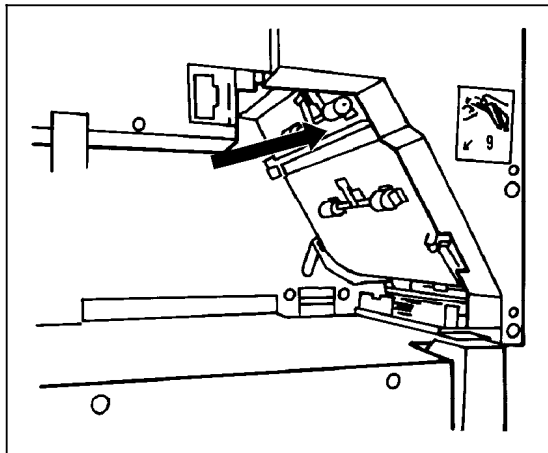
Clearing areas 8 and 9

To clear area 8, open the top cover of the output module as indicated on the graphic display of the printer control console and remove any paper found there.

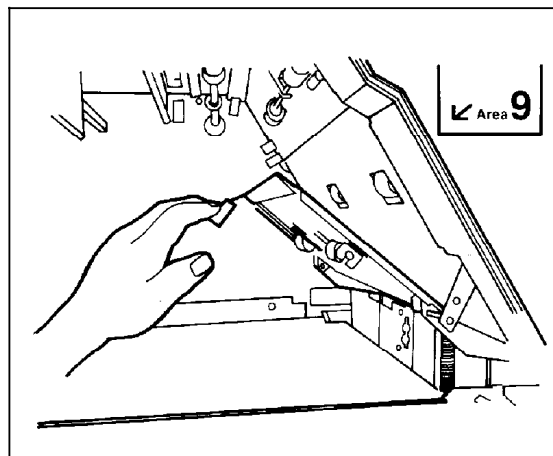


To clear area 9:

1. 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.

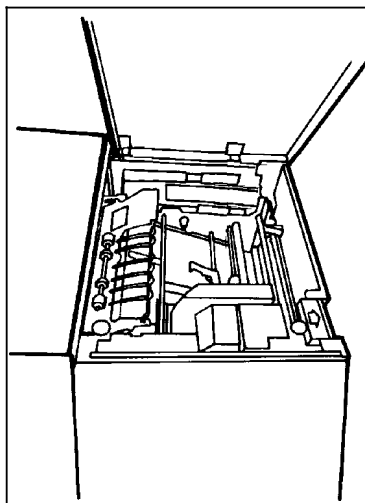


3. Remove any paper.

Clearing areas A and B

To clear area A of the stitcher/stacker:

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



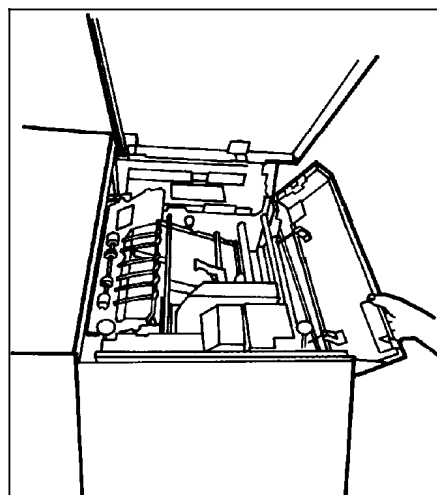
2. The instruction label for area A indicates that you should remove only the paper under this paper guide.

The paper guide is a spring-loaded, heavy wire form guide that pops up when you open the cover.

3. Remove and discard any paper found in this area.

To clear area B of the stitcher/stacker:

1. Open the top cover of the stitcher/stacker and locate the side cover of area B on the right.
2. To open the side cover of the stitcher/stacker, push the cover to the right (in the direction of the large green arrow at the front of the cover).

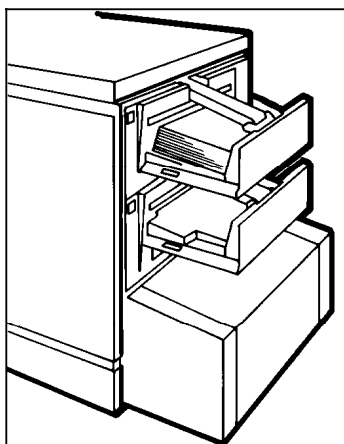


3. Remove only the set of prints leaving the stitcher/stacker at the right, and place it on the output in the stacker tray. Do not remove any other pages from this area.

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.

Clearing the stacker tray

A jam can occur when the paper does not stack smoothly in the stacker trays. If some paper weights stack well while others do not, the scuffer arms may need to be adjusted. Some printers must be adjusted by a service representative. Others have adjustable weights on the underside of the scuffer arms. If your LPS has scuffer arm weights, adjust them in the following way.



- If the paper appears to climb 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.

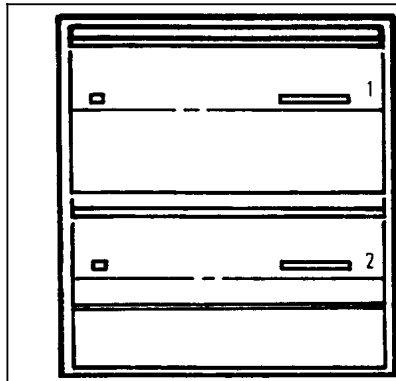
Lightweight paper generally requires less pressure while heavyweight paper requires greater pressure.

Paper misfeeds

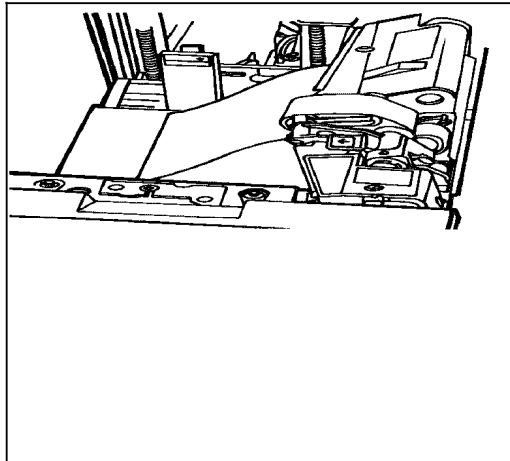
To clear paper misfeeds:

1. Go to the paper tray indicated by the message and graphic displays of the printer control console.

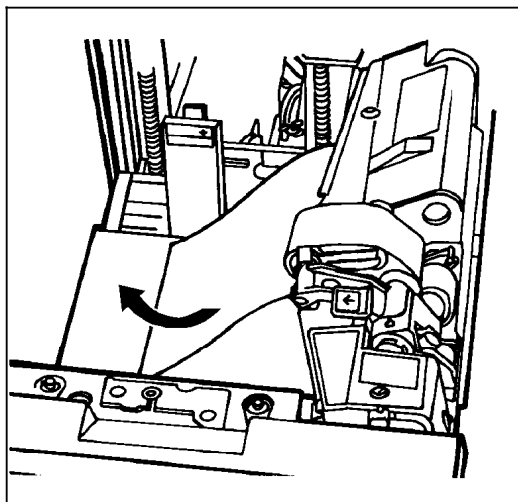
2. Press the Tray Unlock button located on the front left of the paper tray.



3. When the Ready to Open indicator lights, pull the blue bar up and out to open the feeder tray.
Pull the tray all the way out for best results.
4. Press the green lever to unlatch the paper feeder assembly.



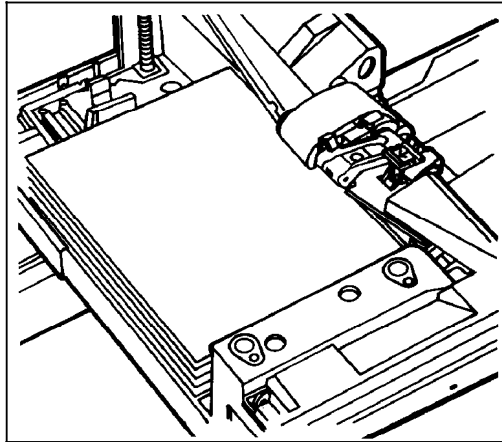
5. Remove and discard any partially fed paper.



6. Make sure the paper supply is neatly stacked, the stack is not higher than the MAX line on the length guide, and the length guide is firmly touching the back edge of the stack.

Note: Transparencies and other stiff materials need not be discarded unless they are damaged.

7. Relatch the paper feeder assembly by pressing the green dot until the assembly clicks in place.



8. Slide the tray back into the printer until the tray latches.
9. Press the Continue button on the printer control console to resume printing.
10. Discard any pages sent to the sample tray or unused stacker tray when the jam was detected.

Paper misfeeds frequently

If the printer misfeeds frequently, the problem may be caused by a glazed feed belt, especially if you notice that one tray feeds the same paper better than another one does. (Glazing is caused by a buildup of the chemicals found on most papers.)

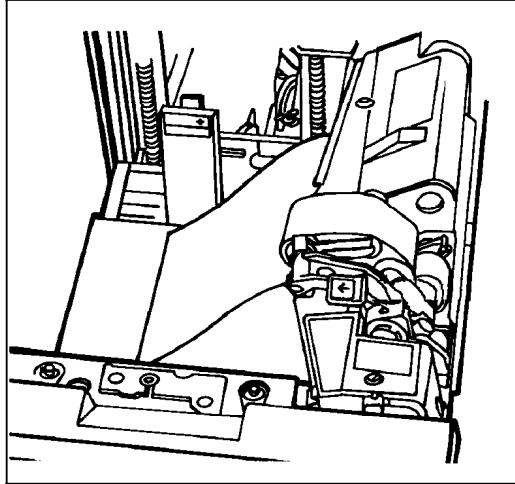
If you suspect this is the problem, cleaning the feed belt may eliminate the need to place a service call.

Only clean the feed belt to correct a problem, not as a routine maintenance procedure.

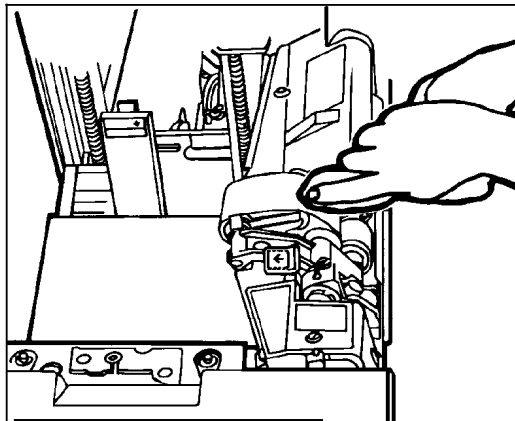
To clean the feed belt:

1. Clear any misfeeds that have occurred, but do not relatch the paper feeder assembly.

The paper feeder assembly must be unlatched to clean the belt; if necessary, unlatch it by pressing down on the bright green lever on the right side of the paper tray.

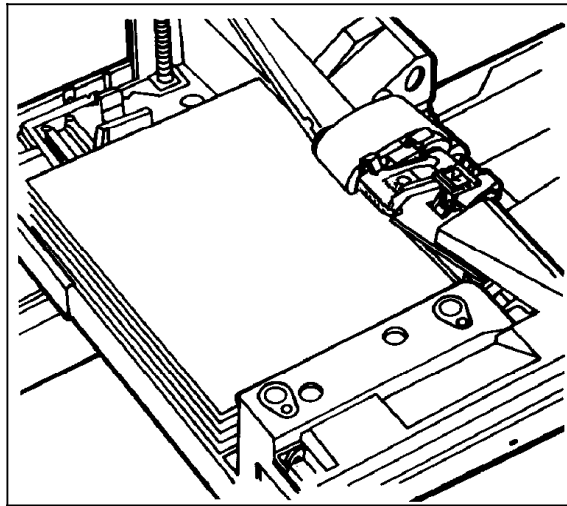


2. Clean the belt.



Lightly moisten a lint-free towel with cleaning solution and wipe the outside surface of the feed belt thoroughly in the same direction as the ribs on the belt. Allow a few seconds for the cleaning solution to evaporate.

3. Relatch the paper feeder assembly by pressing down on the bright green dot.



4. Slide the paper tray completely back into the printer.
 5. Operate the system as usual.
- If you are still experiencing misfeeds, place a service call.

Stitcher/stacker problems

The following conditions may occur with the stitcher/stacker output configuration. Both the condition and suggestions for recovery are included in this section.

- The system displays the following messages:

```
OS3026 If fault persists enter 'STITCH OFF'  
OS3020 Finisher fault
```

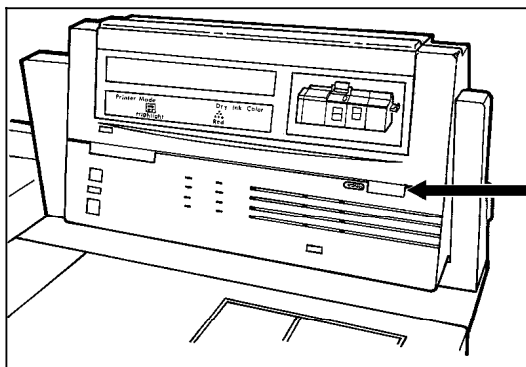
The first time this happens, press the Continue button on the printer control console to see if the system can clear the fault. If the system does not clear the fault and the fault message appears again when you try to restart the job, enter **STITCH OFF**. The stitcher remains off until you enter the **STITCH ON** command.

- The printer stops and the following messages are displayed on the controller:

```
OS3020 Finisher fault -- See printer message  
OS3025 If fault persists enter 'SEL TRAY' or 'ABORT O' or  
OS2000 Enter 'CONTINUE O' to resume printing
```

The first time you see these messages, enter **CONTINUE O** to see if the system can clear the fault. If it cannot and the messages reappear, either abort the job or enter **SELECT TRAY** to send the output to the sample tray and call service to report the problem. Remember that the system defaults to the stacker tray at the end of a job, so you must enter **SELECT TRAY** before each new job until the stitcher/stacker has been serviced.

- The number displayed in the Wire Percentage indicator of the printer control console begins to flash.



This happens when the percentage of wire remaining on the spool reaches a point set by your service representative. Once the flashing begins, the following messages appear on the printer control console when you start a new print job:

```
READY TO PRINT
STITCHER LOW ON WIRE
PRESS i

TRAINED OPERATOR REPLACE WIRE
SPOOL OR CALL SERVICE i
```

```
JOB IS PRINTING --
STITCHER IS LOW ON WIRE
```

Add stitcher wire, or contact your service representative to add wire, as soon as is practical. Refer to the "Adding stitcher wire" section in the "Print job maintenance" chapter of this guide for further information.

- The last few printed sets are not stapled. One of the following situations has occurred:
 - The stitcher/stacker is out of staple wire (indicated by a fault code of L152 in the print quantity display of the printer control console).
 - There is a stitch wire jam (indicated by a fault code of L172 in the print quantity display of the printer control console).
 - There is a malfunction of the staple head (indicated by a number of possible fault codes in the print quantity display of the printer control console).

Contact your service administrator. Until the problem is fixed you may continue printing the job without stitching the output.

- The printer control console displays the following message:

```
OFFSET FAILED, SET IN OUTPUT BIN NOT OFFSET
```

but the printed sheets in the stitcher/stacker tray are offset normally. This situation may indicate a faulty component in the offsetting mechanism of the stitcher. Call your service representative for further assistance. Clear the message by pressing the Continue button on the printer control console.

Display is blank

To prolong the life of the system controller display, the light is turned off and the display becomes blank when it has not been used for 15 minutes. As soon as any key is pressed, the image returns exactly as it was with no loss of information.

If there is no display when you press a key, check that the power switch on the right side of the display is in the on position. Also check the brightness and contrast control dials (on the lower right-hand edge of the display).

Turn them to the left to make the screen brighter. If the display is turned on, the dials are all the way to the left, and the display screen is still blank, place a service call.

Rasterization messages

When a line is too complex for the system to process normally, the output processor directs the image generator to produce a bitmap image instead of aborting the page. This process, called rasterization, can take anywhere from 3 to 20 minutes. The following messages display on the controller:

```
OS1620 Local density problem has caused a printer cycle down.  
OS1625 Local density problem rasterization in progress.
```

Do not press any keys until the process is complete. Any commands normally allowed during print mode (for example, FEED, JOBS, PSTATUS, SELECT, and so forth) entered while rasterization is in progress are delayed until the rasterization process is finished.

When the process is complete, the following message displays:

```
OS1627 Local density problem rasterization is complete
```

The printer cycles up and prints the problem page.

Status file nearly full

As jobs are printed, report information is automatically accumulated and saved in the status file on a report basis each time a report is both input and printed.

The following message displays when the accounting and status file has only enough space for 25 more reports:

```
OS2650 Queue data base file nearly full
```

When that number is exceeded, the system continues to add new reports by deleting those at the beginning of the status file, thereby losing important information.

When this message displays, notify your supervisor immediately. Appropriate action can then be taken to save the report information and reinitialize the status file.

Transparency printing problems

When printing transparencies using color ink, you must run the transparencies through a secondary fuser after they are printed in order for the color to appear. For more information on post-printing fuser devices, refer to the *Xerox 4890 HighLight Color Laser Printing System Product Reference*.

Printer fails to respond to the system controller

Certain conditions may indicate a loss of communication between the system controller and the printer, after the following message displays:

PRESS CONTINUE TO RESUME PRINTING

Those conditions indicating a loss of communication are as follows:

- The printer does not respond when you press Continue.
- The printer does not respond to directions from the system controller through the keyboard.

Use the following procedure to restore the communication between the system controller and printer.

1. Press the Continue button on the printer control console, if directed to do so.

If the printer responds and resumes printing, do not follow the rest of this procedure.

2. If the printer does not respond and resume printing, enter the **RESET** command at the keyboard.

Note: Be sure the system is varied offline from the host before doing this.

3. Enter the **PSC** (printer subsystem controller) command. This should put the printer back in communication with the system controller.

Ask your service representative to make this command a logon level 2, otherwise, you will not be able to access it.

4. Retry the command. If the printer still does not respond, inform your service representative.

Ink mismatches

An ink mismatch occurs whenever the printer requires a colored dry ink not currently loaded. A mismatch can occur within a report and may be detected only after printing has started. What happens once a mismatch is detected depends on any of the following contingencies coded by the person who created the job.

- **Automatic ink substitution.** The job uses the dry ink currently loaded. If the color housing is ready, the job

continues without interruption. The following messages display on the controller:

```
OS2678 Ink requested by the job is not available
OS0863 Substituting current ink for this report
```

If the color housing is not ready, the printer stops and you are requested to run PQA. Once the color housing is ready, the print job continues.

- **The job aborts automatically.** The following messages display on the controller.

```
OS2678 Ink requested by the job is not available
OS2679 Report aborted per job request
```

- **You are asked either to change the color housing or to abort the job.** In this instance, the following messages display on the controller (*color* is the name of the required dry ink):

```
OS2513 color housing is needed for this report
```

```
OS2682 Change housing for printing in requested ink or
abort the print job
```

Change housings, unless you cannot do so for some reason (you do not have the required color CCU on-site, for instance), or print priorities or in-house guidelines indicate that you should abort the job.

- **You have the options of changing the housing, substituting another ink, or aborting the job.** The following message is displayed on the controller (*color* is the name of the required dry ink):

```
OS2513 color housing is needed for this report
```

```
OS2682 Change housing for printing in requested ink or
abort the print job
```

```
OS2673 Enter the 'SUB INK' command or abort the print job
```

Generally, circumstances determine the action to take. Change housings whenever possible and practicable. Factors to take into account include:

- How long it will take to run PQA on the new housing. If the housing has been unused for over 16 hours, it will typically take 2 to 5 minutes, but it could take up to 20 minutes.
- How many pages will use the requested ink. The creator of the job can provide that information.
- The print priority of the job.

The “Substituting inks” section located in the “Print job maintenance” chapter explains when and how to substitute an ink.

System rollover

A system rollover is a recovery technique the 4890 uses to initiate a restart following a fatal error. This error may be induced by either a software or hardware failure.

Online System rollover recovery

The following process describes the system recovery from a rollover.

1. If your system is in an online configuration, the system displays the following message:

```
OS2576 System rollover while online. Check host then enter 'C'
```

Enter **C** to initiate the recovery procedure. From this point on, the recovery procedure is the same for online and offline systems

2. Print the abort data for analysis.

The system displays the following message:

```
System recovery from "xxx: abort: Task = <xxx>  
Print abort data for later analysis (y/n)?
```

- a. Under this message, the system displays a series of register values and flag settings. Record these values for review by your analyst.
 - b. Enter **Y** and give the resulting printout to your system administrator.
3. Make a backup copy of the abort data. Your system may display the following message:

```
COPY COREIM.SYS TO MEMSAV.SYS (Y/N)?
```

If you wish to make a copy of the abort data in a file, enter **Y**. This preserves the abort data even if the system rolls over immediately.

4. Save the abort data to tape.

If your system is equipped with a tape drive, the system displays the following message:

```
Want to capture abort data on tape (Y/N)?
```

If you wish to save the abort data on tape for later reference by your system administrator, enter **Y**. Be prepared to unload the current tape (if one is mounted) and load a scratch tape.

5. Select the recovery option.

When the system rolls over, the system provides several options for recovering the reports that were held in the queue at the time of the rollover. If there are entries in the queue, the system displays the following menu:

```
Job Recovery
-----
The crashing subsystem is <task name>

1. Full Recovery: No Data Loss
2. Partial Recovery: Abort Problem Report or Job
3. Do Not Recover: Reset Queue
4. Do Not Recover: Clear Queue
   Enter Recovery Option [default = n]:
```

Choose one of the four recovery options. In most cases, the system default is the best choice. However, you should be thoroughly familiar with all of the choices before making a selection. All four options are described in detail below.

Full recovery

This choice allows the Queue Manager to continue the report that was printing when the system rolled over. If the full recovery is successful, the report is printed with no data loss, and printing of other reports continues normally.

There is a possibility that the condition that caused the initial rollover will cause the system to roll over again. If you use the Full recovery option, abort the current Input or Output activity, or enter another command to allow the system to skip over the problem pages or data records.

Partial recovery

There are two possible actions in this recovery option:

1. If the input task caused the rollover, the system attempts to recover and print the current report to the exact page with no data loss. If this is not possible (a second rollover occurs on the same job number and report number), the system aborts that report and continues processing the next report. Finally, if a third rollover occurs on the same job number and report number, the system aborts the entire job.
2. The Output task has three distinct phases: formatting, imaging, and printing. All three phases can be happening at the same time. The report which is in the printing or imaging phase is aborted and the next report which has finished formatting, is printed. If there are no reports in the printing or imaging phase, the report being formatted is aborted. If Output has no reports in any phase, Output has nothing to report or recover.

If the Queue Manager is the crash source, the partial recovery does exactly the same as the first action.

If the crash source is neither Input, Output, or the Queue Manager, Input and Output recover to the exact page.

The partial recovery option offers the minimum amount of data loss and normally allows the system to bypass the condition that caused the system to rollover. The Queue

Manager retains any pending job that may have been started by the operator and all reports that are HELD or QUEUED.

With the exception of the oldest entry, the report currently being printed, if Output processing caused the crash, all ACTIVE reports are retained as well. The messages that are displayed during this type of recovery depend on which processor crashed.

A full or a partial recovery handles the majority of system rollover situations involving the Input and Output printing processors.

Do not recover: Reset queue

Select this option only after you have tried a full and partial recovery.

CAUTION: Do not select this option without first checking with your system administrator.

Selecting this option causes all entries in the queue, such as all entries HELD, QUEUED, or ACTIVE, and any pending START commands to be lost. All queue entries are marked RCVY/NS (ReCoVerY Not Specified). When this recovery processing is completed, the system is in an idle state. The system confirms this recovery option with the following message:

```
QM1078 Resetting the queue
```

Do not recover: Clear queue

Select this option only after you have tried a full and partial recovery, and a reset queue. Use this option only when there is a severe internal Queue Manager problem arising from a corrupted database.

Selecting this option causes the entire Queue to be reinitialized, causing the loss of any history of previous jobs/reports and any pending START commands. When this recovery processing is complete, the system is in an idle state and displays the following messages:

```
QM1077 Initializing Queue Manager
QM1076 Queue successfully cleared
```

Resume processing and printing jobs

The system displays a series of messages indicating the status of the recovery, and when the system is ready, it displays the following:

```
OS1000 Ready for commands
```

The system is ready to resume normal processing.

Power loss

If the 4890 loses power while printing due to an electrical power outage or the power cord becoming unplugged, the job is interrupted. In an online system, any lost data must be recovered. Data is not necessarily lost; however, it is important to take the printer offline as soon as possible to prevent data being sent before the printer is ready to receive it.

Basic recovery procedure

1. Press the Power Off and System On buttons on the system controller panel. The system begins rebooting.
2. Enter **Y** when the system prompts you, if you want to attempt data file recovery. In the event of a power failure, you must initiate file recovery to recover the file content.

It is possible that not all data can be recovered; the amount of data that can be recovered depends on when the last system checkpoint was taken because of the method used by the system to restore its dynamic (active) memory.
3. Check the output in the stacker trays to find the last completed page. Resubmit any jobs that are incomplete.

You can save all HIP data before rebooting by entering the following command before the boot command:

HIP END

Recovery in an online system

1. Enter **C** at the keyboard.

The controller display should prompt you, but if the prompt does not appear, enter **C** anyway.
2. If there is no response from the system after you enter **C**, press the Power Off and System On buttons on the system controller panel.
3. Enter **Y** when you are asked if you want to attempt data file recovery.

In the event of a power failure, you must initiate file recovery to recover the file content.
4. Check the output in the stacker trays to find the last completed page.

Ask the host operator to retransmit the job or jobs beginning at that point.

Calling for service

Before calling the 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 appropriate Customer Service Support

Center phone number listed on the card located at the back of this guide.

Using the PROBLEM command before placing a service call

There are two conditions under which you should key in the PROBLEM command:

- When the system recognizes a problem that cannot be corrected and directs you to enter in the PROBLEM command.
- When you are experiencing difficulties that you wish to report to service. Prior to placing a service call, you should key in PROBLEM to get the 6-digit dispatch code from the system.

When the PROBLEM command is entered, the following messages display:

```
PROBLEM F01          CONTROL PROGRAM:RUNNING

WHICH OF THE FOLLOWING TYPES OF PROBLEMS DO YOU WISH TO
REPORT?

1. COPY QUALITY PROBLEMS
2. FREQUENT JAMS
3. OUTPUT TRAY PROBLEMS
4. PAPER TRAY PROBLEMS
5. TAPE PROBLEMS
6. OTHER SYSTEM PROBLEMS
7. NO OTHER SYSTEM PROBLEMS
```

INDICATE SELECTION BY ENTERING NUMBER

When you select options 1, 3, 4, or 5, messages appear requesting more detail about the problem you are reporting.

When you select option 2 the following messages appear:

```
PROBLEM ANALYSIS RESULTS-DISPATCH CODES
```

- ```
1.TO REPORT ADDITIONAL PROBLEMS.
2.NO MORE PROBLEMS TO REPORT.
```

- If you select option 1, you are returned to the previous problem menu. If you select option 2, the following messages appear:

```
CALL THE FIELD SERVICE DISPATCHER AND REPORT THESE NUMBERS
(DISPATCH CODES)
```

```
OPERATOR - INDICATE THE ACTION YOU HAVE TAKEN.
```

- ```
1. SERVICE CALL HAS BEEN PLACED. WAITING FOR SERVICE
2. SERVICE CALL HAS BEEN PLACED. RETURN TO THE OPERATING
   SYSTEM
3. SERVICE NUMBERS COPIED FOR LATER CALL. RETURN TO THE
   OPERATING SYSTEM
4. NONE OF THE ABOVE. RETURN TO THE OPERATING SYSTEM
```

```
INDICATE SELECTION BY ENTERING NUMBER.
```

- If you select any option other than 1, you can continue using the LPS. If you select option 1, the following messages appear:

SERVICE CALL PLACED.

WAITING FOR CE

1. REDISPLAY DISPATCH CODES
2. RETURN TO OPERATING SYSTEM

INDICATE SELECTION BY ENTERING NUMBER.

- Select option 1 to see the dispatch codes.
- Select option 2 to continue using the LPS.

Make sure you record the 6-digit dispatch code to report to the representative at the Customer Service Support Center.

Note: The following message refers to the Customer Service Support Center:

CALL THE FIELD SERVICE DISPATCHER AND REPORT THESE NUMBERS

Information to have at hand when calling

Before contacting service, please make note of the following:

- Status code numbers and messages that appear on the display, including the 6-digit code number that resulted from running the PROBLEM command
- Status messages that appear on the printer control console
- Indicator lights that may or may not be lit
- Status codes which appear in the display window of the operator control panel if there is a tape drive problem. Remember, you must perform Diagnostic Test 01 before placing a service call for a tape drive problem.

Your call will be answered by a representative who will ask you for the following information:

- Your printer's model number (4890)
- Your printing system serial number (located on a panel inside the printer, behind the center door)
- Your name
- Your company name
- The system condition or status.

This information is given to a service representative who will call you back to discuss the information and give you an estimated time of arrival or assist you over the phone to resolve the problem.

Important facts about paper

As the operator of the Xerox 4890 HighLight Color Laser Printing System (LPS), you need to be aware of the importance of taking good care of the paper. Using the correct type of paper and taking time to store and condition it properly helps to keep your printer running at optimum speed and efficiency, with fewer time-wasting paper jams.

Paper specifications

- Sizes**
- 8.5 x 11 inches/216 x 279 mm
 - A4 (210 x 297 mm/8.27 x 11.69 inches)
 - 8.5 x 14 inches/216 x 356 mm

Weights 20- to 110-pound (Substance 20-110 lb/75-200 gsm). No other weights should be used.

Note: Do not use 110-pound weight paper with the 8.5 x 14 inch size.

Paper characteristics

The 4890 HighLight Color LPS performs most efficiently with paper that has the following characteristics:

- Low moisture content (below 5.7 percent)
- Smooth surface
- Moisture-resistant wrapping
- No defects (bent edges, uneven surfaces)
- Grain long (parallel with the longest side of paper).

Xerox recommends 4024/80 gsm Dual Purpose Paper, which meets the requirements outlined above.

Special paper and materials

The 4890 also prints on the special types of paper and materials listed in the following section. Make sure all paper and materials you use meet the specifications noted in the previous section.

- **Predrilled** paper has a varying number of holes for use in binders or binder rings. You should fan or fluff predrilled paper before loading it into a feeder tray. This removes any loose plugs among the sheets that could cause jams within the printer.
- **Tinted** paper is available in a variety of colors. It has many uses, including calling attention to certain printed material, separating out a special section, or dividing chapters of a report.

- **Preprinted** paper may be letterhead or may contain forms or logos.
- **Transparencies** can be printed in color on the 4890. However, for highlight colors to be rendered correctly, an external fusing process is required after the printing completes and the transparency is delivered to the sample tray.

Transparencies printed using only black inks do not require external fusing. Consult your site representative for more information about this external fusing process.

For best results when printing on transparencies, use only those recommended in the supply order form in the *Xerox 4890 HighLight Color LPS Installation Planning Reference*.

- **Labels** must be loaded with the label side up, and can be directed to any output tray.

Loading instructions are printed on both paper trays.

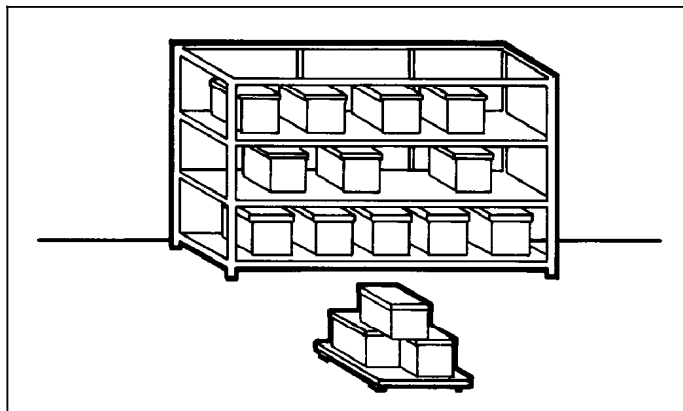
Paper storage

It is important to store paper correctly, since temperature and humidity can affect the way paper behaves in your printer.

Always store paper:

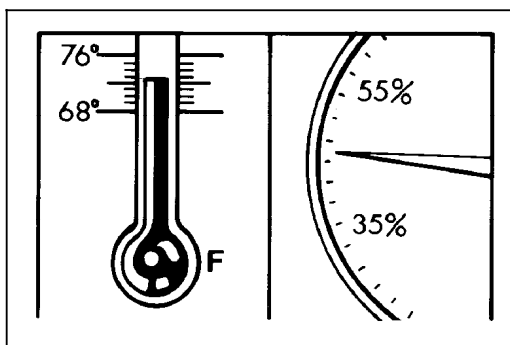
- In its wrapper
- On a flat surface
- In a closed cabinet
- In a cool, dry area.

Figure A-1. **Storing paper correctly**



Store your paper in its original carton, but do not leave cartons on the floor. Leaving cartons on the floor increases the possibility of moisture absorption. Place cartons on a wooden pallet or store them in a cabinet off the floor.

Figure A-2. Recommended temperature and humidity for paper storage



Recommended paper storage conditions are:

- 68 to 76 degrees F/20 to 24.4 degrees C
- 35 to 55 percent humidity.

Paper conditioning

Because of the effects of temperature and humidity on paper performance in the printer, it is important to condition paper before using it. This is done by storing paper for a specified amount of time in the same type of environment as your 4890.

The length of time paper should be conditioned depends on two things:

- The difference between the storage and operating environments
- The amount of paper.

The following chart may be used to determine the amount of time needed to condition stacked cartons of paper when changing environments.

Note: The numbers in the top two rows indicate the degrees of difference between the storage area and the operating environment, not actual room temperatures.

Table A-1. Paper conditioning

		Difference between storage and operating area temperatures (in degrees)						
		Fahrenheit						
		10 °	15 °	20 °	25 °	30 °	40 °	50 °
		Centigrade						
		5½ °	8½ °	11 °	13 °	17 °	22 °	28 °
Cartons	Hours							
1	4	8	11	14	17	24	34	
5	5	9	12	15	18	25	35	
10	8	14	18	22	27	38	51	
20	11	16	23	28	35	48	67	
40	14	19	26	32	38	54	75	

For example, if you want to move 10 cartons of paper from a storage area with a temperature of 90 degrees F to an operating area with a temperature of 75 degrees F (a 15-degree difference), you should do so at least 14 hours before using the paper.

Paper curl

Before paper is cut into sheets by the manufacturer, it is stored on large rolls. After it is cut and packaged, it retains some of the curl from the rollers.

Although it is unnecessary to load paper with the curl specifically up or down, best results occur when you are consistent. For example, if you open paper with the wrapper seam up, always load it in the tray that way.

As jobs are printed by the Xerox 4890 HighLight Color Laser Printing System (LPS), usage information is accumulated and saved. Instead of using physical meters, software in the printer maintains the page count in its memory. Each month, that information needs to be reviewed and transmitted to Xerox for billing purposes. This chapter describes the procedures necessary to extract the information and report it to Xerox.

Meter reading

Sometime during the last five working days of the month, when the system is idle, you must extract the billing information and report it to Xerox. To obtain a billing report, enter the REPORT BILLING command at the keyboard. You can view the data on the screen or on the printed report. (You can also specify the font in which to print the report.) If the system is not given the command to display or print the information, it will only display it.

REPORT BILLING,DISPLAY

If the REPORT BILLING,DISPLAY command is entered, the information appears on the display.

REPORT BILLING,PRINT

If the REPORT BILLING,PRINT command is entered, the information is sent to the printer, where a printed billing summary is produced.

REPORT BILLING,DISPLAY,PRINT

This command results in both a displayed and printed billing summary. The DISPLAY and PRINT parameters can be in any order.

There are four meters maintained by the LPS for customer billing:

- Meter A counts all good impressions delivered to the intended output tray. This meter cannot be reset.
- Meter J counts sheets printed in the printer diagnostic mode and during Print Quality Adjustment, and delivered to the intended output tray. Like meter A, it cannot be reset.
- Meter L counts the total number of color impressions made in highlight mode, and successfully delivered to the intended output tray. Although some impressions made in highlight mode may consist of black dry ink only, they will still be recorded by this meter. This meter can be reset.
- Meter T counts total number of all impressions successfully delivered. This count includes the total of both normal and diagnostic modes of operation. This meter is used only by your service representative.

Machine serial number request

The first time you enter a REPORT command after a full sysgen or after a system disk has been reformatted, you are prompted for the nine-character machine serial number.

The number is located on the metal plate inside the front right-hand door of the printer (refer to figure B-2).

To enter the serial number:

- Key in the product code, press the "-" key, then enter the first three characters of the number. Any alphabetical character must be in uppercase.
- Key in the remaining six digits, and press <ENTER>.

You have three chances to enter the number correctly. After that you must reenter the entire REPORT command.

Figure B-1. Sample customer billing report

XEROX 4890	
CUSTOMER BILLING REPORT	
DATE: 05/07/94	PAGE 1
TIME: 09:45	
CUSTOMER ID: Oprah V5.0 R. x.x VAX SST	
MACHINE ID: 11W030006	

**** SYSTEM CONFIGURATION ****	
Machine Type - 4850	
CPU Memory = 1024 KW	FDDC Disk units: 0,1,2,3,flopp
CD/IG: version 5	Tape: dual density
Font memory: 32 megabits	Printer characteristics
Online: address 40	- Speed: 50 ppm: duplex
- mode burst , device 3211	- Resolution: 300 spi
Enet addr: AA-33-03-67, *2-855-469-927	- Finisher: 2-tray stacker
- Net address: 44-EB, *17-643	- Default order: 1 to N
Raster image processor: 0	- Paper size: 8.5 x 11(US Let
Communications interfaces	- Dry Ink Housings: 2
- 871 CM	Language: U.S. English
Terminal Type: ADM-11/LINK MC 2	Graphics with 32 megabits
XMP: 51	Graphics Type: GVG II
	Ink Priority: Color
GOOD IMPRESSIONS SUCCESSFULLY DELIVERED:	15372
BLK XEROGRAPHIC MODE IMPRESSIONS:	6036
H/L XEROGRAPHIC MODE IMPRESSIONS:	9336
SHEETS PRINTED IN IOT DIAGNOSTIC MODE:	869
GOOD IMPRESSIONS SUCCESSFULLY DELIVERED IN NORMAL/DIAGNOSTIC MODES: 15372	

The following defines the count for specific meters shown on the bottom of the display:

Meter A - GOOD IMPRESSIONS SUCCESSFULLY DELIVERED

Meter L - H/L XEROGRAPHIC MODE IMPRESSIONS

Meter J - SHEETS PRINTED IN IOT DIAGNOSTIC MODE

Meter T - GOOD IMPRESSIONS SUCCESSFULLY DELIVERED IN NORMAL
DIAGNOSTIC MODES

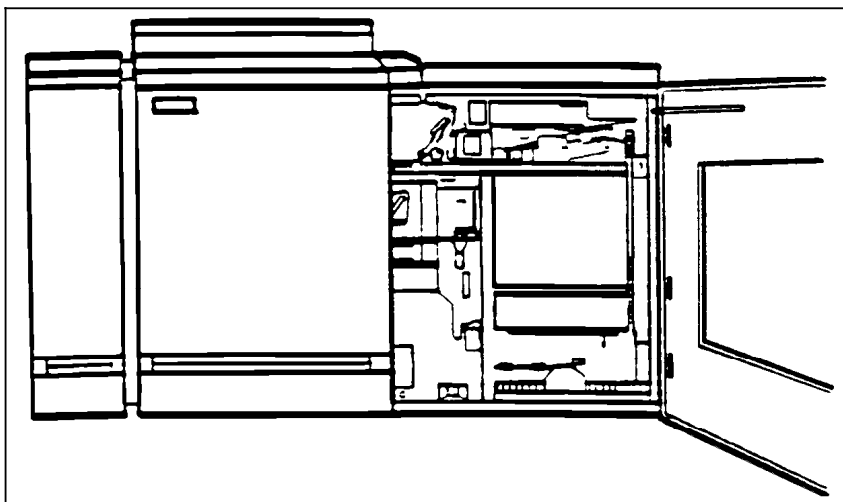
Report only meter A when you use the touch-tone telephone system. When you report using a modem, all the meters are automatically reported.

Reporting meter readings (in U.S.A.)

Before you call the Xerox Electronic Meter Collection Center, make sure you have the following information:

- Meter reading information (the A meter)
- Your printing system serial number (located on a panel inside the printer, behind the center door).

Figure B-2. **Locating your LPS serial number**



If you are reporting other Xerox printers during the same call, make sure you have the serial number and meter reading information available for each one before calling the Electronic Meter Read Collection System.

Read through all of the following instructions carefully before you attempt to make your first meter reading report. If you need assistance with this process, place a toll-free call to the Help Line 1-800-433-7769. An answering device operates during non-business hours; please leave your name and phone number and your call will be returned.

Touchtone Telephone Direct Meter Read Entry System

The Touchtone Telephone Direct Meter Read Entry System is designed to guide you through an error-free meter reading entry session. After reviewing this procedure and making several entries, you will need these instructions only for special situations. You should have no problems in entering your meter readings; if you do, the system is designed to enable you to make any necessary corrections.

This section includes:

- Step-by-step instructions for entering your meter readings and reviewing and changing data.
- A Month End Meter Read Reporting Worksheet (refer to figure B-3 at the end of this section) to help you record your meter readings. The worksheet can be used as a master for making additional copies.

Understanding the system

The following points are important to understand before you begin to use the touchtone system:

- Always wait for the system voice to finish a prompt before entering data.
- Always complete each entry with the # sign. This indicates you have finished entering the data item. When you press the # sign, the system repeats the information you just entered and prompts you for the next piece of information for the report.
- Any time you want the system to repeat the voice prompt or message it just completed, enter **3#.
- When you want the system to cancel an entry it just read back to you, enter **4#. After acknowledging the cancellation, the system asks you to reenter the needed information.
- Use **94# to cancel all data entered for a machine. It can be used any time before you enter the # sign that completes the data entry for that machine. (Refer to step 5 in the "Entering meter read information" section section.)
- Each letter in the serial number must be translated into numbers because letters are not individual keys on the touch tone keypad. A 4890 HighLight Color LPS serial number always contains the letter W.
 - To indicate you are about to enter a letter, press the asterisk (*).
 - Next, press the key marked 9 on the touchtone pad.
 - Finally, press the key marked 1. (The entire code for W is *91.)

Example: To enter the serial number 64W789123, press the following keys: 6 4 *91 7 8 9 1 2 3 #

Entering meter read information

1. Call the toll-free number to contact Xerox Electronic Meter Data Collection System. It operates 24 hours a day, every day, including weekends and holidays. Meter readings should be reported between the 20th and the last working day of each month.

423-6168 (in Rochester, NY)

1-800-638-7979 (all other U.S. locations)

When the system answers your call, you hear:

"Thank you for calling the Xerox Electronic Meter Collection System. For assistance, please call 800-433-7769."

When it is necessary to provide special information of interest to our customers, a special announcement message follows this greeting. Following these initial messages, the system is ready to receive your meter readings.

2. The system prompts you to begin by asking for your machine serial number.

"Please enter the machine serial number." Enter your machine serial number, followed by a # sign, on the telephone keypad.

Once you enter your machine serial number, the system repeats the number back to you in alphanumeric form. If the number is incorrect, cancel this entry by entering **4#, and reenter your serial number.

Note: If you would like to practice with an imaginary serial number before entering your actual serial number and meter reading, you can use serial number X12377889 (which converts to *9212377889). This serial number is only a demonstration serial number; it cannot generate a bill.
 3. When the serial number has been entered and accepted, the system asks for the date of the reading.

"Please enter the date of the reading or enter the # sign for today's date."

For example, May 3, 1994 would be entered as 5 03 94 #.

If a date appears to be incorrect, you receive an error message and are asked to reenter the date.

If the system tells you the date is not within the acceptance range, it also gives you the correct range. If you do not enter a date within that range, the system refers you to the touchtone information number and terminates the call.

When a correct date is entered, the system reads back the date, for example:

"Date is five three ninety-four."
 4. When the system finishes reading back the date, it then asks for the meter reading.

"Please enter meter A."

Enter the A meter reading, ending with the # sign. Do not enter zeros in front of the numbers of the meter reading.

Note: The serial number indicates to the system how many meters there are to report. The system asks for the meter readings by name.
 5. When the A meter has been entered, the system reads it back to you and says:

"All meter reads for this machine are complete. Enter pound sign to acknowledge."

Enter the # sign if the meter reading was correctly entered. If there was a mistake, enter **4# to cancel the entry and reenter the correct meter reading. Once again the system repeats the meter reading to you and asks you to enter the # sign to confirm the entry. If it is correct, enter #; if it is not, repeat the cancellation and reentry process.
 6. Once you have successfully completed step 5, the system says: "All readings accepted."
- The system next requests a machine serial number. At this point, you have three choices:

- If you have more machines to report, repeat the previous steps until all machines have been reported.
- If you have no more machines to report and you are sure of the accuracy of the information, enter **91# to end the reporting session. The system responds by indicating how many machines were processed and accepted during this session.

"Readings for _____ machines accepted. Thank you for using the Xerox Electronic Meter Reading System."

- If you want to review the data before ending the reporting session, enter **1# to start the review. Refer to the "Reviewing and changing data" section for instructions.

Reviewing and changing data

1. To begin the review, enter **1#. The system reads the first serial number.
2. To accept the serial number and continue, enter #. The system then reads back the A meter reading.
3. Continue the review by accepting with the # sign each time the entry is read back correctly.

If an entry is incorrect, enter **4# to cancel the entry, and reenter the correct information after the voice prompts you to do so. Make sure you wait until the voice is finished before making entries.

4. To end the review at any time, enter **2#. When the review is ended, the system asks you to enter the # sign to acknowledge the entries as complete. You may then choose to enter more machine information or terminate the session. (Refer to step 6 in the "Entering meter read information" section.)

Figure B-3. **Month End Meter Read Reporting Worksheet**

Month End Meter Read Reporting Worksheet	
Call: 423-6168 (in Rochester, NY) 1-800-638-7979 (All other U.S. locations)	
Enter: <div style="text-align: center; padding-top: 20px;">Converted Serial Numbers</div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div>	<div style="text-align: center; padding-top: 20px;">Ending Meter Read(s)</div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div> <div style="display: flex; justify-content: flex-end; align-items: center; margin-top: 10px;"> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="margin-left: 10px;">#</div> </div>
Enter: # to acknowledge completion of serial number and meter read entry for each machine.	
Enter: **91# to end call and record entry in computer base.	
For your information only: Date of Entry: _____	
For assistance call 1-800-433-7769.	

C.

Tape drive messages

The following information is visible on the eight-character alphanumeric display on the horizontal tape drive in the peripheral cabinet. The messages are classified by operating mode or circumstance.

Message definitions

Power-up messages

When power is applied to the tape drive, a series of power-up tests are run by the internal diagnostics, with the word TESTING displayed. If a malfunction occurs, the display changes to one of the indications in the following table. After a successful completion of the power-on tests, the display indicates OK. You may then insert a tape reel and initiate the loading sequence. Table C-1 lists the power-up messages.

Table C-1. **Power-up messages**

Message	Definition
Blank display	Main power is not available.
CON VAL X	X is the range of 1 to 7. Indicates a missing or disconnected subassembly.
OK	The power-up checks have been successfully completed.
Power	A fault has been found while all the internal power supply lines were being checked for normal operational limits.

General messages

The following messages in table C-2 occur during offline or online operation. Messages unique to a particular mode, such as loading or diagnostics, are omitted.

Table C-2. General messages

Message	Definition
EOT	End of tape (EOT) has been detected. The current working area is at or beyond the EOT marker.
IN LIMIT	The tension arm has reached the limit of its travel, tape tension has usually been lost.
LID OPEN	Loading has been initiated, but the tape path cover turnbuckles are not secured.
OFFLINE	The tape is tensioned and forward of beginning of tape (BOT) with the streamer not in diagnostic mode, and not online.
OK	The drive does not have a fault condition.
ONLINE	The drive is online to the host, and able to respond to host commands.
READY	Tape has been loaded and the drive is ready to accept host commands.
REWIND	The tape is rewinding following either host or operator REWIND command. This operation completes at BOT. If RESET is pressed during rewinding, the tape motion is stopped and the REWIND indication is replaced by "Offline."
REW/UNLD	An operator "rewind and unload" command was given by holding RESET down while RWD/UNL is pressed. The sequence terminates the reel unclamped and OK displays.
STUCK	The tape stuck to the read/write head.
UNLOAD	An unload sequence is in progress following the pressing of the RWD/UNL button while BOT displayed. As the unload sequence nears completion, the reel is unclamped and the display briefly indicates "OK" before "Ready," which indicates the completion of unloading.
>	Forward tape motion is in progress. This displays when the diagnostic program is running.
<	Reverse tape motion is in progress. This displays when the diagnostic program is running.

Online messages

The following messages in table C-3 occur when the streamer is online but not running diagnostics. The display remains until the next command is received.

Table C-3. **Online messages**

Message	Definition
Blank	A forward "read" or "space" interface command has been terminated after 30 feet/9 meters of blank tape. No data activity was found.
Deselect	Unit online to interface, but not selected by host computer and not at BOT.
Diag Stl	Diagnostic stack entry in progress.
Diag Ded	Dedicated diagnostic stack running.
EOTLIM	The tape has passed 12 feet/3.6 meters beyond EOT and the tape drive has been commanded to move tape further forwards.
Erase FL	An "erase fixed length" command was accepted, at low speed.
Erase FL +	An "erase fixed length" command was accepted, at high speed.
Erase VL +	An "Erase variable length" command was accepted, at high speed.
Ex Sense	The extended status bytes were accessed.
**INDENT	No identifier found on leaving BOT.
Ld Point	The tape is at BOT, and the tape drive is online.
Read	A "Read" command was accepted at low speed.
Read +	A "Read" command was accepted at high speed.
Read Only	A "write" command was given to a file protected tape. If writing is required, you must unload the tape and fit the write enable ring to the tape reel.
Ready	The tape drive is online to the interface but no commands were received.
Reject	The last command received was rejected. Placing the tape drive offline removes Reject from the display.

Table C-3. **Online messages** (continued)

Message	Definition
Rev Read	A "Reverse Read" command was accepted at low speed.
Rev Read +	A "Reverse Read" command was accepted at high speed.
Rewind	Tape is rewinding to BOT.
REW/UNLD	A "Rewind and Unload" command has been given. The sequence rewinds the tape to BOT and then continues until the tape is fully on the supply reel, and the reel unclamped.
SecErase	A "Security Erase" command was accepted.
Sense	The condensed status bytes were accessed.
SpcFwd	A "Space Forward" command was accepted, at low speed.
SpcFwd +	A "Space Forward" command was accepted, at high speed.
SpcRev	A "Space Reverse" command was accepted, at low speed.
SpcRev +	A "Space Reverse" command was accepted, at high speed.
Srch Fig	A "File Search Forward" command was accepted, at low speed.
Srch Fig +	A "File Search Forward" command was accepted, at high speed.
Srch Fwd	A "File Search Forward" command was accepted, at low speed.
Srch Fwd +	A "File Search Forward" command was accepted, at high speed.
Srch Rev	A "File Search Reverse" command was accepted, at low speed.
Srch Rev +	A "File Search Reverse" command was accepted, at high speed.

Table C-3. Online messages (continued)

Message	Definition
Srch Rig	A "File Search Reverse" (ignoring data) command was accepted at low speed.
Srch Rig +	A "File Search Reverse" (ignoring data) command was accepted, at high speed.
** Write	No write current was detected in the heads.
Write	A "Write" command was accepted, at low speed.
Write +	A "Write" command was accepted, at high speed.
Write FM	A "Write File Mark" command was accepted, at low speed.
Write FM +	A "Write File Mark" command was accepted, at high speed.

Loading and unloading messages

The following messages in table C-4 occur during the load and unload sequences.

Table C-4. Loading and unloading messages

Message	Definition
ANALYSE	The tape has reached BOT and the data circuits are analyzing the recorded density.
BOT	Tape is at BOT and loading is complete. When set online, the display changes to "Ld Point" and the tape drive is able to respond to host commands.
DOOR	The loading door, or the tape path cover is open, after a loading sequence began.
HUB LOCK	Shortly after loading has been initiated, the reel has been clamped onto the supply hub.
HUB ERR 1	Incorrect seating of the supply reel on the supply hub.
HUB ERR 2	Incorrect seating of the supply reel on the supply hub.
IN LIMIT	The tension arm has reached the limit of its travel, tape tension has been lost.
LID OPEN	Loading has been initiated, but the tape path cover turnbuckles are not secured.
LRG REEL	Near the end of the loading sequence, the system detected a large reel has been used.
LOADING	The reel has been clamped, and tape is being threaded along the tape path. If LD/ONL is pressed during loading, the ONLINE message displays. At BOT the tape drive is under the control of the host.
LOCATING	Loading has begun and the reel is being moved to lie flat on the supply hub, prior to clamping.
LOCKING	Shortly after loading has begun, the reel is being clamped, prior to feeding tape along the tape path.
MED REEL	Near the end of the loading sequence, the system detected a medium reel has been used.

Table C-4. Loading and unloading messages (continued)

Message	Definition
N I C	Not in chute. During the early stages of loading, the tape was not detected in the tape path chute.
NO TAPE	After loading has begun, no tape reel was present on the supply hub.
N T U	No take up. During the later stages of loading, tape was not gripped onto the take-up spool.
OK	The power-up checks have successfully completed.
REEL INV	During early stages of loading, the tape reel was found to be inserted with the "write protect" ring uppermost.
RESET	During the loading sequence, the RESET button was pressed.
TAB	<p>The BOT tab was not detected near the end of the loading sequence. The tab must be present, within ANSI/ECMA distances from the physical end.</p> <p>Note: This message may require the attention of a service representative.</p>
REWIND	The tape is rewinding following either host or operator rewind command.
REW/UNLD	The "Rewind & Unload" command was given, by holding RESET while RWD/UNL is pressed.
SML REEL	Near the end of the loading sequence, the system detected a small reel has been used.
TAPE NOT IN CHUTE	The tape end has not blown clear of the bulk.
UNLOAD	An unload sequence is in progress. When the unload sequence is complete the display changes to READY.
UNLOCK	The reel is being unclamped, towards the end of the unload sequence. UNLOAD followed by UNLOCK could be the result of failing to detect the BOT reflective marker.

4890 palette	A predefined set of colors or inks provided with the 4890 HighLight Color LPS. Different versions are provided with the printer and with host- or PC-based application software.
A3	International paper size measuring 297 mm by 420 mm or 11.69 by 16.54 inches.
A4	International paper size measuring 210 by 297 mm or 8.27 by 11.69 inches.
additive primary color	There are five additive primary colors: red, green, blue, magenta and cyan. When light of these five colors is combined in equal amounts, the result is white light.
American Standard Code for Information Interchange (ASCII)	Standard 7-bit code that represents alphanumeric information. Each alphanumeric character and several nonprinting characters are assigned a binary number, covering 128 possible characters. It is used for information interchange among data processing systems, data communication systems, and associated equipment.
ANSI	American National Standards Institute.
application software	Host- or LPS-resident software that directs the computer to perform specific tasks or functions. Common business applications include payroll, accounting, and inventory.
argument	Independent variable of a function, such as a parameter.
ascender	Portion of a lowercase alphabetic character that extends above the main body of characters such as b, d, or h. See also <i>descender</i> .
asynchronous	Transmission in data communications controlled by start and stop characters; thus, time intervals between transmitted data blocks may be unequal in length.
ASCII	American Standard Code for Information Interchange. Standard 7 or 8-bit code that represents alphanumeric characters and several nonprinting characters by assigning each a binary number covering 128 possible characters. It is a common standard for information interchange among data processing systems, data communication systems, and associated equipment.
B4	International paper size measuring 250 mm by 353 mm or 9.84 by 13.9 inches.

batch processing	Process that allows for repetitive operations to be performed sequentially on batched data without much involvement from the computer operator.
background job	Low-priority job, usually batched, which is executed automatically as system resources become available.
baud	Measurement of data flow between devices in bits per second. Common baud rates are 110, 300, 1200, 2400, 4800, and 9600.
BCD	Binary coded decimal.
binary	Numbering system with a base of 2. All numbers are represented by combinations of 1 and 0.
binary synchronous communication	See <i>BSC</i> .
binary synchronous transmission	Data transmission where synchronization of characters is controlled by timing signals generated at the sending and receiving stations.
bit	Abbreviation for binary digit, the smallest unit of information recognized by a computer.
bitmap	Visual representation of graphic images in which a bit defines a picture element (pixel) and a matrix of bits defines an image. For example, if a bit is 1, the corresponding pixel is printed.
bitmapped	Display image generated bit by bit for each point or dot. A software-driven scanner is used to create characters and/or graphics.
bits per second	See <i>bps</i> .
block length	Number of characters or bytes contained in a block of data (the block is treated as a unit within the computer). Block length is usually invariable within a system and may be specified in units such as records, words, computer words, or characters.
blocking	Process of combining two or more records into a single block of data which can moved, operated upon, stored, and so on, as a single unit by the computer.
BOF	Bottom of form.
boot	To load the initial instructions of a program into memory. These instructions direct the loading of the operating system and application software.
BOT	Beginning of tape.

bpi	Bits per inch.
bps	Bits per second. In serial communication, the instantaneous bit speed a device or channel transmits a character.
BSC	Binary synchronous communications. 1. Data transmission in which synchronization of characters is controlled by timing signals generated at the sending and receiving stations. 2. Communication using binary synchronous line discipline. 3. Uniform procedure using a standardized set of control characters and control character sequences for synchronous transmission of binary-coded data between stations.
buffer	Area of memory in which data is stored during transfer from one device to another. Used for: 1. Accumulating data into blocks before storage or processing. 2. Adjusting differences of speed between devices, or between a device and a communicating facility.
byte	Fixed number of bits (in data processing, usually 8) processed as a single binary value.
cache memory	A fast, small memory used to enhance CPU performance, separate from the main processor memory.
CCID	Character code identifier. Code associated with the universal identifier "Xerox" to indicate the version of the Xerox character code standard used to code Interpress strings.
CCU	Customer Changeable Unit. The color housing that fits inside the printer.
central processing unit	Interprets and executes instructions, performs all operations and calculations, and controls input and output units and auxiliary attachments.
channel	1. In data communications, a path or line that enables two or more devices to communicate (sometimes called a circuit, facility, or link). 2. In computers, a path for communication between the central processing unit (CPU) and input and output units, or between the CPU and peripheral devices.
character cell	Area defined by the outside dimensions of a character plus all horizontal and vertical spacing. In electronic printing, the character cell is defined by a bitmap of dots.
character code identifier	See <i>CCID</i> .
character set	Set of all characters defined in a font, including alphabetic, numeric, and special characters such as symbols.
characters per inch	See <i>cpi</i> .

clearing house service	Directory of registered users, services, and other resources, allowing relevant information about each item to be retrieved by name.
clocking	A method of synchronizing sending and receiving data communications devices. Clocking allows synchronous transmission at high speeds.
cluster	Group of related feeder trays, usually containing the same size and type of paper (stock). Each cluster has a name, consisting of one to six alphanumeric characters.
CME	Entry modifying the output printing characteristics of a report on a copy-to-copy basis.
CMT	Character mapping table.
CMYK	A printing industry standard color definition model where all colors are defined in terms of values for the four-color process primary colors: cyan, magenta, yellow, and black. Refer to color definition model.
Code	1. A set of symbols representing data or instructions to a computer. 2. To write a program or routine that instructs a computer to perform specified operations.
code conversion	Translation of one type of character or symbol code to another.
color definition model	A standardized format for defining colors using quantifiable values. The most popular such models are RGB, CMYK, and HSB.
color substitution	The 4890 HighLight Color LPS uses an algorithm to translate a color specified in a printing industry standard color definition model to a tone of the Highlight primary color using a 4890 palette.
command language	A language used to instruct an operating system.
communication line	Telecommunication line connecting devices at one location with devices at other locations in order to transmit and receive information.
communication link	Physical means connecting one location to another to transmit and receive information, such as a data link
compiler	Software that translates instructions written in high-level language into machine language for execution by a system.
composite character	Character that has multiple bitmap references combined into one and stored on disk in font memory.

continuous printing	Refers to Interpress job integrity under any of the following conditions: excessive graphics, forms, or font use problems.
continuous tone	A photograph, rendering, or other similar image that is made of blended gray tones or values that flow into each other gradually and without hard edges.
control program	An operating system program that manages job flow, input/output processing, and other overall system functions and resources.
Copy Modification Entry	See <i>CME</i> .
copy-sensitive	Job in which multiple copies of a report contain different data, such as paychecks and banking statements.
cpi	Characters per inch. Measure of the size of a fixed-pitch font expressed as the number of characters of the font that can be set in one horizontal inch. See also <i>pitch</i> .
CSI	Command status interface.
Data Capture Utility	See <i>DCU</i> .
data communications	Transmission and reception of encoded information over telecommunication lines.
data file	Collection of related data records organized in a specific manner so that each record is similarly structured. An example of this would be a payroll file set up with one record for each employee, last name first, indicating the rate of pay and all deductions.
data link	Physical means of connecting one location with another for communication. This might include the communications lines, modems, and controls that transmit information between two or more stations.
DCU	Data capture utility. LPS function that saves and prints all system controller activity and provides tracing and event logging facilities.
DDCMP	Digital Data Communication Message Protocol.
default	Value assigned to a field by the system if no input is received from the operator.
defined ink	The tone (defined in the ink catalog file and reproduced for your reference on the printed samples of 4890 HighLight Color LPS palettes) as it is applied to the page.

descender	Portion of the lowercase alphabetic character that extends below the main body of characters such as g, p, or y. See also <i>ascender</i> .
DEC	Digital Equipment Corporation.
device	Any piece of hardware other than the CPU (Central Processing Unit).
digitize	To express or represent data in digital (binary) form so that it can be processed electronically.
DJDE	Dynamic job descriptor entry. Command within an input data stream used to modify the printing environment dynamically.
DMA	Direct memory access.
DMR	Data mode ready. Command parameter that designates a Digital Equipment Corporation host system.
document	1. Data medium and the data recorded on it, usually permanent, which can be read by you or a computer. 2. Collection of information pertaining to a specific subject or related subjects.
dot	Picture element (pixel) imaged by a printer. The number of dots imaged per inch measures printer resolution, for example, 300 dots per inch (dpi). See also <i>spot</i> .
dpi	Dots per inch. Indicates the number of dots per inch displayed on a terminal screen or printed to form a character or graphic.
dry ink	Minute particles of resin and carbon black that can accept an electrical charge and create images. Resin and carbon black or color pigment toner are combined with developer to form the dry ink.
DSDD	Double sided double density.
DSSD	Double sided single density.
DSU	Digital signal unit.
duplex	1. Ability of a data communications system to send and receive information simultaneously. 2. In printing, duplex means printing on both sides of the paper.
dynamic Job descriptor entry	See <i>DJDE</i> .
EBCDIC	Extended binary coded decimal interchange code. Coded character set consisting of up to 256 8-bit coded characters.

edge marking	Use of graphic objects (usually lines or boxes) that bleed off the edge of the physical page. See also <i>physical page</i> .
electronic publishing	The integrated production of documents on demand, using digitally stored documents, computerized composition, and electronic printing systems.
elite	Smallest size standard typewriter type which is 12 characters per horizontal inch.
embedded blanks	Blank spaces within a command line.
EMT	Emulator trap. Language instruction.
enabler	Hardware devices or software packages that come with the printer and allow it to perform as specified.
ENET	Ethernet network.
EOF	End of file.
EOT	End of tape.
escapement	Lateral positioning of characters or font families.
Ethernet	Xerox developed local area network (LAN) that allows transmission of data by cable from one device to another. A modified version of the Ethernet specification has been approved as IEEE standard 802.3.
Extended binary coded decimal interchange code	See <i>EBCDIC</i> .
extended metrics	Measurements used in Interpress to alter the size of fonts, allowing more precision with character escapement. Used for rendered characters.
FCB	Forms control buffer. Controls the vertical format of printed output.
FCP	File control parameter.
FCG	Finishing Configuration Utility.
FCU	File Conversion Utility.
FDL	Forms description language. LPS-resident source language used to design electronic forms. See also <i>FSL</i> and <i>form</i> .

FDR	File directory.
feedback	Portion of an output signal that is returned, directly or indirectly, to be compared to a reference signal to maintain the quality of the output signal.
FFM	Font file management.
firmware	Permanent programs stored in read-only memory (ROM).
fixed font	Font containing characters with fixed spacing.
fixed pitch	Font set with every character cell having the same width. In reference to character sets, this term describes typefaces with all character cells having equal width. Monospaced as opposed to proportional spaced.
fixed spacing	Arrangement of characters on a line so that all characters occupy the same amount of horizontal space.
flag	Small indicator marking the occurrence of an event or the existence of a certain condition while the program is executing.
floating accent	Nonspacing accent characters that can be combined with characters and printed as a composite.
font	Complete set of characters of a particular font family having the same point size, weight, stress, and orientation.
Font Interchange Standard (FIS)	A standard that defines the digital representation of fonts and character metrics for the generation of an entire series of Interpress fonts.
form	1. Compiled .FSL file. 2. Specific arrangement of lines, text, and graphics stored in an electronic version. Forms can be printed without variable data or merged with variable data during the printing process. See also <i>FDL</i> and <i>FSL</i> .
format	1. Layout of a document, including margins, page length, line spacing, and typeface. 2. In data storage, the way the surface of a disk is organized to store data. 3. To prepare the surface of a disk for acceptance of data.
format line	Line preceding the message text in a formatted message display.
form feed	Keyboard and printer control character that causes the printer to skip to the top of the next page.
forms control buffer	See <i>FCB</i> .

forms	description	language	See <i>FDL</i> .
forms	source	library	See <i>FSL</i> .
	FPS		Formatting print service.
	FSL		Forms source library. Uncompiled collection of user-created files containing FDL commands. See also <i>FDL</i> and <i>form</i> .
	FST		Font specification table.
	fuse		To affix dry ink to paper by heat or pressure or a combination of both.
	GB		Gigabyte. Unit of approximately one billion bytes.
	GCR		Group code recording.
	GHO		Graphics handling option.
	gigabyte		See <i>GB</i> .
group code recording (GCR)	mode		Refers to the specific density of data (such as 6250 bpi) as it is recorded on tape, which is measured in bits per inch (bpi).
	gsm		Grams per square meter.
	GVG		Graphics video generator.
halftone	screen		A tool used in offset printing, typesetting, and laser printing to convert a continuous tone (such as photographic) image to dots, which allows the image to be rendered accurately in these printing processes.
	hardcopy		Machine output in permanent form, such as printed reports and listings. Output in a permanent form (usually on paper or paper tape) rather than in temporary form, as on a display. Contains readable printed copy of machine (such as computer) output.
	hardware		Physical components (mechanical, magnetic, electronic, and so on) of a system, as opposed to programs, procedures, rules, and associated documentation. The hardware is operated by software and firmware.
	HCF		High-capacity feeder.
	HCSS		High-capacity stitcher/stacker; also referred to as stitcher/stacker.

hexadecimal	Numbering system with a base of 16. The numbers 10 through 15 are represented by A through F.
HFDL	Host forms description language.
hierarchy	Relative priority assigned to arithmetic or logical operations that must be performed.
high-level language	Programming language consisting of words and symbols that are close to normal English and, also readily understandable by the user. High-level source languages are used for most commercial programs.
highlight color	Printing with black plus another color. A range of colors, tints, and shades is printed by varying the percentage of black dots, colored dots, and the white space between the dots.
HIP	Host interface processor.
host	Computer accessed by users that serves as a source of high-speed data processing for workstations with less computer power. Commonly referred to as mainframe.
host interface	Connection between network and host computer.
HSB	A printing industry standard color definition model in which all colors are defined in terms of values for hue, saturation, and brightness. Refer to <i>color definition model</i> .
hue	The name that describes a color's general appearance, such as red, green, and blue.
identifier (id)	Character(s) used to identify or name data and possibly to indicate certain properties of that data image area on a physical page that may contain text or graphics.
IFU	Interpress font utility. A utility for managing Interpress fonts.
image area	Area on a physical page that may contain text or graphics.
initialize	1. To prepare a blank diskette so it can accept data. This is usually accomplished when a program is booted. 2. To set all information in a computer system to its starting values.
initial program load	See <i>IPL</i> .
ink catalog	File containing inks that is referenced by all software for color information. The ink catalog file has the extension .ICT.

ink referencing	Process by which inks within the ink catalog are referenced in PDL and FDL commands, and by page description language interpreters.
ink substitution	Option of aborting the printing process or continuing with a substitute ink if the referenced ink is not found.
input devices	Keyboards, magnetic media, or any device used to give a system information.
input/output	General term encompassing the flow of data into and out of a system. Also referred to as I/O.
interface	The device that connects two systems to allow them to communicate.
Interpress	Industry-standard page description language developed by Xerox. Interpress documents can be printed on any sufficiently powerful printer equipped with Interpress print software.
Interpress font utility (IFU)	Utility for managing fonts.
Interpress font utility (IFU) program	Program used to convert FIS fonts to LPS fonts.
Interpress master	File written according to the Interpress standard.
IPD	Interpress decomposer.
IPL	Initial program load. For the optional 9-track magnetic tape drive, the internal initialization sequence whereby certain functions are loaded into random access memory (RAM).
IPM	Interpress mapping.
ips	Inches per second.
JCB	Job control block.
JCL	Job control language.
JDE	Job descriptor entry. Collection of job descriptions.
JDL	Job description library. Collection of compiled job descriptions. See also <i>JSL</i> .
JID	Job identifier.
job descriptor entry	See <i>JDE</i> .

job descriptor library	See <i>JDL</i> .
job source library	See <i>JSL</i> .
JSL	Job source library. Collection of uncompiled job descriptions. See also <i>JDE</i> and <i>JDL</i> .
keyword	Required part of a command.
label	Reference to a file saved on tape or disk, a record indicating the file name or date created, or other control information.
LAN	Local area network. LAN is the lower two layers of the network architecture: the physical layer and the data link layer
landscape	Orientation in which text and images are positioned parallel to the long edge of the paper.
laser printing	Technology that uses a laser to transfer character forms to a page by direct or indirect means.
latent image	Static charge present on the photo conductor before contact with dry ink particles.
leading	(pronounced <i>led-ding</i>) Vertical distance between lines of type (also called line space), measured from a baseline of one line to the baseline of the next.
legal size	Paper size measuring 8.5 by 14 inches or 216 by 356 mm.
letter size	Paper size measuring 8.5 by 11 inches or 216 by 279 mm.
light emitting diode (LED)	Solid substance that glows when a current is passed through it. Often used for indicator lights on disk drives or modems, as well as for displays on other electronic equipment.
LF	Line feed character.
line feed	Control character that (unless set to be interpreted as a line end) causes the printing system to begin printing in the current character position of the next line.
literal	Alphanumeric character beginning with a letter, including an asterisk, period, colon, or slash, and not enclosed in single quotes.
logical page	In Xerox printing systems, a logical page is a formatted page that is smaller than the physical page. A logical page is defined by an origin, thus allowing more than one logical page to be placed on a physical page.

logo	Small illustration or design, usually simple, typically used to identify a company.
long-edge feed	See <i>LEF</i> .
lpi	Lines per inch.
LPS	Laser printing system.
LUN	Logical unit number. A number that identifies a peripheral device to the OSS.
magnetic media	Term for all storage devices (disks, tape, and so on) on which data is stored in magnetic form.
map	To establish a set of values having a defined correspondence with the quantities or values of another set.
mask	Selection of bits from a storage unit by use of an instruction that eliminates the other bits in the unit. In accessing files, a file name mask is used to reference one or more files with similar file-id (identifier) syntax. In Interpress, a mask serves as a template, indicating the shape and position of an object on a page.
master file	File serving as a general reference point for a particular application system and providing information to be used by the program. It is usually updated and maintained to reflect the results of current or daily processing operations.
MB	Megabyte. Unit of approximately one million bytes.
metacode	Method of controlling the image generator. The character dispatcher uses these codes to generate scan line information. This information is sent in the form of character specifications to the image generator, which uses it to compose the bit stream that modulates the laser. Also called native mode.
MHz	Megahertz. One million cycles per second. Used to measure electromagnetic waves.
mixed environment	Multiple printers or printing systems in the same location.
modem	Device that converts digital information into an analog signal suitable for sending over analog telecommunication lines. Also converts an analog signal from telecommunication lines into digital information.
monochrome	Printing in one color only.

nesting	Subroutine or set of data, such as a comment, contained sequentially within another set of data.
network	System of hardware and software that manages communication and sharing of common resources (such as printers) between computers and terminals for multiple users at once.
node	Station, terminal or computer operating in a network environment.
object file	Source file converted into machine language (binary code).
octal	System of representing numbers based on 8.
offline	Devices not under the active control of a central processing unit. For example, a computer makes output to a magnetic tape. The tape is then used by an offline printing system to produce printed data. Offline operations are much slower than online operations. Refer to <i>online</i> .
offset	To place printed output sets in slightly different positions from each other in an output bin for easy separation of collated sets.
offset printing	Widely-used method of commercial and corporate printing, in which ink is picked up by a metal or paper plate, passed to an offset drum, then passed to the paper.
online	Devices under the direct control of a central processing unit, such as a printing system in interactive communication with a mainframe. Refer to <i>offline</i> .
operand	That which is acted upon, for example, data, in an operation or process.
operating system	Software that controls the low-level tasks in a computer system, such as input or output and memory management. The operating system is always running when the computer is active.
orientation	In reference to image area, describes whether the printed lines are parallel to the long edge of the paper (landscape) or the short edge of the paper (portrait).
origin	In reference to image area, the upper left corner of a sheet.
output	1. Material produced by a peripheral device of a computer, such as a printout or a magnetic tape. 2. The result of completed operations.
overprint lines	Print lines whose carriage control specifies printing with no line spacing after the last printed line.

overprint ratio	Maximum number of variable data and form characters that can be intersected by a single scan line.
page end	Command character (form feed) to terminate the current page.
page orientation	Direction that data is printed on a report. Refer to <i>landscape page orientation</i> and <i>portrait page orientation</i> .
pagination	Process of separating text into pages.
palette	Predefined set of colors or inks. Different versions are provided with the printer and with some application software packages.
parameter	Part of a command, other than the keyword. See <i>keyword</i> .
pass-through job	On systems with XPAF, a job that is sent directly from a host to a Xerox printer through XPAF without undergoing XPAF processing.
parse	To read or interpret a command; to build up a parameter list from information within a command.
PCC	Printer carriage control.
PDE	Page description entry.
PDL	Print description language. Language used to describe printing jobs to a laser printing system. PDL describes the input (type, format, characteristics), performs the processing functions (logical processing), and describes the output (type, format, font selection, accounting options).
PE	Phase encoded.
physical page	Actual page size your printer uses to print a form.
pica	1. Unit of measurement equal to twelve points or approximately 1/6 inch. 2. A 10-pitch typeface having ten characters per inch and 12 points in height. See also <i>point</i> .
pitch	Width of a fixed-pitch font expressed in characters per horizontal inch.
pixel	Acronym for picture element. Smallest addressable point of a bitmapped screen that can be independently assigned color and intensity.
point	In Xerox laser printing systems, a unit of measurement equal to 0.0139 inch. Points are always used to express type, size, and leading. There are 12 points to a pica and about 72 points to an inch. See also <i>pica</i> .

point size	Height of character set from the top of its ascenders to the bottom of its descenders in units (points). Point size does not always include leading.
portrait	Orientation in which text and images are positioned parallel to the short edge of the paper.
PostScript	Proprietary page definition language, compatible with the Xerox 4890 Highlight Color LPS when a front-end conversion utility is installed.
ppm	Pages per minute.
print quality adjustment	See <i>PQA</i> .
primary color	A color that, when combined with one or more other primary colors in a color model system in varying quantities, produces the palette of colors described by that model.
print description language	See <i>PDL</i> .
print ratio	The maximum number of variable data and form characters that may be intersected by a single scan line.
printer subsystem controller	See <i>PSC</i> .
print file	Portion of the system disk memory (up to 4 MB) reserved for temporary storage of formatted pages for printing. Pages are retained until they are delivered to the output tray.
PQA	The process the 4890 HighLight Color LPS uses to maintain the electrostatic state of the xerographic subsystem to ensure optimal print quality.
printout	Informal expression referring to almost anything printed by a computer peripheral device.
PROM	Programmable read-only memory.
prompt	Message or symbol displayed on a system console requiring the operator to take action.
process color printing	In process color printing, every color in the spectrum is printed by combining various percentages of the four-color process primary colors—cyan, magenta, yellow, and black.
processor	Applies to any system that is capable of receiving and performing operations upon data and supplying the results of those operations.

protocol	Formal set of conventions governing format of data and control of information exchange between two communication devices.
proportional font	Font containing characters that vary in width.
proportional spacing	Text where each alphanumeric character is given a weighted amount of space. Such output has print-like appearance. Proportional spacing allows more space for wide characters and less space for narrow characters.
proportional type	Characters that vary in width.
PSC	Printer subsystem controller. Command and task that download the printer and/or raster image processor (RIP) software if selected.
query	Request for data or other information, entered by an operator while the system is processing.
queue	Managed database of documents waiting to be processed.
RAM	Random access memory.
raster data	Binary data, usually consisting of dots arranged in scan lines, according to the print order.
raster image processor	See <i>RIP</i> .
rasterization	The creation of a bitmap image on a page for printing.
read-only memory	See <i>ROM</i> .
read/write head	A small electromagnet that reads, writes, and erases data in the form of magnetic dots on the surface of an external storage medium, such as a magnetic disk.
real time	To process transactions as they are entered into a system. User and system interchange allow transactions to be processed and the results returned to the user.
remote access	Access to a central computer by terminals or devices geographically separated from that computer.
RGB	A printing industry standard color definition model where all colors are defined in terms of values for the three additive primary colors: red, green and blue. Refer to <i>color definition model</i> .
ROM	Solid-state memory for programs. It cannot be rewritten.

rendered character	Character whose bitmap is a combination of other bitmaps positioned relative to each other, such as accented characters and single characters consisting of two or more characters. A rendered character does not require additional disk space or font memory.
report	In setting a separation boundary, report refers to a subset of a job. A job may consist of one or more reports.
resolution	Number of dots per inch (dpi) or spots per inch (spi). The greater the number of dots, the higher the resolution and the clearer the image. The terms dots, spots, and pixels are synonymous.
RIP	Raster image processor. LPS option that supports the Interpress V3.0 Publications Set.
scale	To adjust font or image size according to given proportions.
sci	START command index.
scroll	Manipulation of a display to bring upper or lower portions of a document page into view when available space is insufficient to view the entire document at once.
SCSI	Small computer system interface. Common standard for connecting devices to computers.
SDI	System diagnostics interface. OSS task used by service personnel to diagnose system problems.
secondary storage	Form of storage external to a system, such as magnetic tapes or floppy disks.
security	1. Procedure for limiting access to the system's resources, programs, or files, to authorized personnel. 2. Protecting programs and files from unintentional or undesired modification.
SEF	See <i>short-edge feed</i> .
sequential	1. In numeric sequence, usually in ascending order. 2. A file structure in which records are written one after another and cannot be randomly accessed.
set	Multiple copies of the same report.
SFC	Status file converter.
SFS	Status file service.

shade	Color resulting from adding black to a pure hue. See also <i>tint</i> and <i>tone</i> .
short-edge feed	Movement of paper through the printer in the direction of the paper width (the shorter side of a sheet of paper).
SIF	Sequence insert file.
simplex printing	Printing on one side of the page.
small computer system interface	See <i>SCSI</i> .
SNA	System network architecture. Total description of logical structure, formats, and protocols of operation sequences for transmitting an information unit through the communication system.
special processing	Commands allowing the user to process special reports such as printing certain records, and printing on special paper
spi	Spots per inch. See <i>resolution</i> .
spooling	Process of releasing data from main memory and storing it temporarily until a peripheral device is ready to accept it, for example, storing print data before sending it to a printer.
spot	A picture element imaged by the printer. Synonymous with <i>dot</i> and <i>pixel</i> .
statement	Detailed instructions in a program step, written according to specific rules called syntax.
static data	Information usually found on preprinted forms or overlays.
station	1. In data communications, a terminal device connected to a data link. 2. In computer networks, any of the numerous terminal devices that form a network.
stock	User-defined name in the JSL that specifies a certain type of paper for printing a job.
stock descriptor	A stock reference or a stock name.
stock name	The name of a cluster as defined by a system command.
stock reference	An application specific pseudonym for a cluster.
stockset	Collection of stocks to be used on a print job. See also <i>stock</i> .

string	Connected sequence of alphanumeric characters treated as one unit of data by a program.
symbiont	Device which shares a common purpose and close association with other devices. This term is used to identify the Xerox print software which resides in the Digital host system as part of the XPMF-VMS communications link.
symbol	Character used in a computer language to specify a particular function.
synchronous	Efficient encoding of data suitable for high-speed, block-oriented data transmission by using equal time elements.
syntax	Rules governing the structure of expressions in a programming language.
syntax error	System response to a mistake in a command's entry.
sysgen	Abbreviated form of system generation.
System	1. In data processing, a collection of computer components and procedures organized to accomplish a set of specific functions. 2. Assembly of components united by some form of regulated interaction to form an organized whole. 3. Operations or procedures used to accomplish a business activity.
System controller	The part of the LPS that provides interfacing capability, data handling, formatting, buffering, and operator control for the system. Also called the system controller.
system disk	Magnetic disk storage medium, usually of large capacity, that is not removable as opposed to floppy disk or disk packs.
system file	Master software program that keeps all components working together.
system generation	Process whereby the system is made ready to operate. Typically involves selecting the operative parameters and activating the relevant software.
System Network Architecture	See SNA.
system page	Maximum area in which text and graphics can be imaged on a printing system.
tape density	Expression of the format of a magnetic tape measured in number of bytes that can be stored per inch of tape.

tape drive	Input/output device that controls the movement of magnetic storage tape past the read/write head while data is accessed or stored.
telecommunications	The transfer of data through telephone lines.
teleprocessing	Data transfer through telecommunication lines for processing among various remote terminals and the central processing unit (CPU).
templates	1. Preset document formats, usually furnished along with application software, such as electronic spreadsheets or data base programs. 2. Also applies to keyboard overlays showing function keys for particular software packages.
temporary storage	Main memory locations reserved for intermediate results of processing, control values, or other information that needs to be kept on hand as a program proceeds.
terminal	Interface device connected to a computer or network. A terminal has no processing capability of its own.
throughput	Measure of the number of pages printed during a given unit of time, usually expressed as pages per minute.
tint	Color resulting from adding white to a pure hue. See also <i>shade</i> and <i>tone</i> .
TOF	Top of form.
toggle	In an LPS system, to switch (alternate) from one tray to another. The system will switch from an active feeder or stacker tray to an inactive one to allow continuous printing when the proper commands are invoked.
token	A coded character representing a word used in programs. For instance STOP is a word and the one-byte token for it in a BASIC dialect is 250.
tone	Primary color in its pure form, or mixed with black or white to create a lighter tint or darker shade of the primary color. See also <i>shade</i> and <i>tone</i> .
total xerographic convergence (TXC)	For the 4890 HighLight Color LPS, a function of the operating system software (OSS) that monitors the state of the color and black developer housings. If TXC detects a condition that may affect print quality, TXC requests that the operator initiate Print Quality Adjustment (POA) to adjust the xerographic subsystem. Refer to <i>print quality adjustment</i> .
tpi	Tracks per inch.

transaction processing	Method of data processing that updates files and results are generated immediately after data entry.
translation	1. In data communications, the conversion of one code to another on a character-by-character basis. 2. In programming, the function of a language processor that converts a source program from one programming language to another.
transmission speed	In data communications, the rate data is passed through communication lines, usually measured in bits per inch (bpi).
Tri-level xerography	The feature of the 4890 HighLight Color LPS that enables the rasterization of both the black and the color images in a single pass by the creation of a third charge state.
truncated	Cut off before completion, as when data transfer from a host to a printer is cut off before all data has been transmitted.
two-up	Printing two logical pages on one side of a physical page.
TXC	Total xerographic convergence.
type style	Italic, condensed, bold, and other variations of typeface that form a type family.
typeface	Set of fonts having identical design features that give the type a uniform appearance.
UCS	Universal Character Set. Printer feature that permits the use of a variety of character arrays.
UCSB	Universal Character Set Buffer.
UI	User interface.
Universal Character Set	See <i>UCS</i> .
utility program	General-purpose program that performs activities, such as initializing a disk or sorting, which are not specific to any application.
validation	Process of testing a system's ability to meet performance objectives by measuring or monitoring its performance in a live environment.
variable data	Changeable information which is merged with a standard document to create specialized or personalized versions of that document. Variable data is not a part of a form design, but varies from page to page.

variable text	Text of changing nature (such as names and addresses) combined with a form letter to make a complete document.
verification	Process of testing a system's ability to meet performance objectives by running programs in a simulated environment.
virtual page	Page area selected by a forms designer for printing.
vpos	Vertical positioning.
WAN	Wide area network.
weight	Perceived blackness of a character affected by varying the width of the stroke. Weight is expressed in general terms as either bold or roman.
wildcard	Character (usually an asterisk *) which can be inserted into a command string to indicate that it may represent one or more characters in that position.
write protection	Data protection feature implemented on magnetic media (for example, floppy disk, 9-track tape) to prevent stored data from being modified, written over, or erased.
x axis	Horizontal axis on a forms grid.
x height	Height of lowercase letters without their ascenders or descenders (height of letter "x").
xdot	Unit of measurement representing a fraction of an inch. May also be referred to as a picture element (pixel) or spot; for example, 1/600 spots per inch (spi).
xerographic engine	Component of a printer that develops an image, transfers it to paper, and fuses it for output as hardcopy.
xerographic mode	Either of two possible printer configurations: 1. Black mode which allows printing with black dry ink only. 2. Highlight mode which enables both highlight color and black printing.
xerographic mode persistence (XMP)	For the 4890 HighLight Color LPS, a value specified during sysgen, in JDL or in DJDE code that specifies on what basis xerographic mode switching (XMS) may take place. Refer to <i>xerographic mode switching</i> .
xerographic mode switching (XMS)	A function of the operating system software (OSS) that controls the xerographic mode of the 4890 HighLight Color LPS. The operator or programmer controls XMS through the xerographic mode persistence (XMP) setting. Refer to <i>xerographic mode</i> .
XICS	Xerox Integrated Composition System.

XJCF	Xerox Job Control Facility.
XNS	Xerox Network Systems is the network architecture and protocol used with Xerox equipment.
XPAF, XPF	Xerox Printer Access Facility.
XPPI	Xerox Pen Plotter Interface.
XPS (Xerox Print Service)	Xerox Print Service (XPS) Manager is a printer front end to other hosts. XPS Manager server communicates with the printer via a layered communication protocol, based on the XNS protocol suite but enhanced with "online" capability.
XPS (Xerox Publishing System)	Xerox Publishing System.
XPMF-VMS	Xerox Print Management Facility-VMS Version.
y axis	Vertical axis on a forms grid.

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