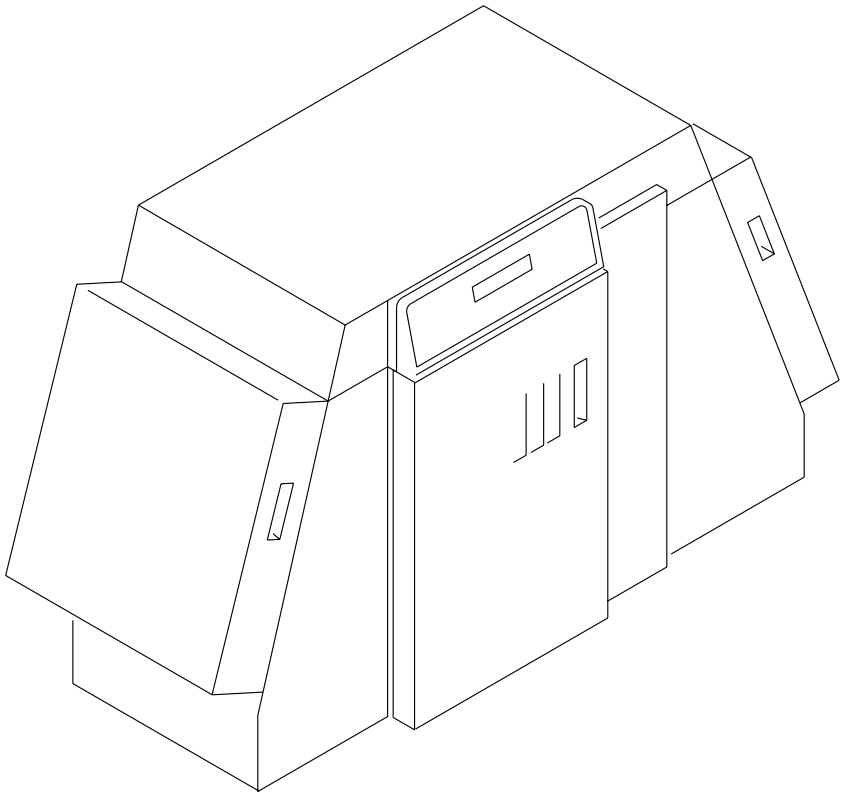
KODAK PROFESSIONAL LED II Printer 20R



Operator's Guide *Part No. 6B6192*

Regulatory Information

Radio Frequency Interference

The United States (47 CFR Part 15 Subpart B, FCC Class A, EMC)
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. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

IMPORTANT: Changes or modifications to the product that are not authorized by Eastman Kodak Company could void the FCC Certification and negate your authority to operate this product.

Canada (ICES-003 Issue 2 Rev1 Canada, Class A, EMC)
This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe A respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

European Union (EU, CE Marking, EMC)
This equipment has been type tested and found to comply with the requirements for electromagnetic compatibility as established by European Communities Council Directive 89/336/EEC and Low Voltage Directive (Product Safety) 73/23/EEC.

Japan (VCCI, Class 1 EMC)

この装置は、第一種情報処理装置（商工業地域において使用されるべき情報処理装置）で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会(VCCI)基準に適合しております。
従って、住宅地域またはその隣接した地域で使用すると、ラジオ、テレビジョン受信機等に受信障害を与えることがあります。
取扱説明書に従って正しい取り扱いをして下さい。

The following is a translation of the above statement:

“This equipment is in the Class 1 category (information to be used in commercial and/or industrial areas. Consequently, when used in a residential area or in an adjacent area thereto, radio interference may be caused to radios and TV receivers, etc. Read the instructions for correct handling”.

Safety Regulations

IMPORTANT: This equipment incorporates high-voltage components. Adequate safeguards and interlocks have been designed into this equipment to reduce the risk of injury during normal operation. As with any electrical equipment of this kind, adequate ventilation must be provided to minimize exposure to heat, dust, ozone, and other emissions. The following labels will be found on the product. The exclamation point symbol (A) indicates that the user should refer to this guide for safety information. The hot symbol (B) indicates a hot surface area on the printer that should not be touched. The electrical hazard/shock warning symbol (C) identifies the possibility of electrical shock inside an area that should only be accessed by Kodak CES personnel.

A **B** **C**

CAUTION: Before connecting or disconnecting the SCSI cable or terminator, turn off the power for the printer and the host computer. Also, if you replace the SCSI cable, remove the Ferrite bead from the existing SCSI cable and install it on the new SCSI cable.

Environmental Regulations

IMPORTANT: Always adhere to your local ordinances and regulations for disposal of paper, chemicals, filters, cleaning supplies, etc.

Warranty Information

The following warranty information pertains to equipment that is installed in the United States only. For equipment installed in countries other than the United States, the terms and conditions of the new equipment warranty will be provided by the Kodak company in the country in which the sale is finalized, or by a Kodak-appointed distributor in those countries where Kodak does not have direct sales representation.

Warranty Period

Kodak warrants new equipment to function properly for 90 days from the date of initial installation. This warranty covers the purchaser of this equipment as well as anyone else who owns it during the warranty period.

Warranty Repair Coverage

If this equipment does not function properly during the warranty period, a Kodak Customer Equipment Services Field Engineer will repair the equipment without charge during Kodak's normal working hours (usually 8:00 a.m. to 5:00 p.m., Monday through Friday). Such repair service will include any adjustments and/or replacement of parts required to maintain your equipment in good working order. Supply items are billed as required.

Off-hours services are available at overtime rates.

How to Obtain Service

For technical support, service, repair and fuse replacement information, contact Eastman Kodak Company's Technical Assistance Center at 1-800-822-1414.

Limitations

Warranty Service is limited to areas within Kodak's established marketing centers in the contiguous United States, the island of Oahu in Hawaii, and certain areas of Alaska.

This warranty does not cover circumstances beyond Kodak's control; service or parts for any attachments, accessories, or alterations not marketed by Kodak, nor to correct problems resulting from their use.

Damaged caused by failure to meet electrical specifications in this manual will not be covered under the warranty or service agreement claim.

Damage to the imaging shoe as a result of customer misuse or abuse will not be covered under the warranty or service agreement claim. Do not use sharp objects to clear paper in this area.

Kodak makes no other warranties, express, implied or of merchantability, for this equipment.

Repair or replacement without charge is Kodak's only obligation under this warranty. Kodak will not be responsible for any consequential or incidental damages resulting from the sale, use or improper functioning of this equipment, even if loss or damage is caused by the negligence or other fault of Kodak.

Such damages, for which Kodak will not be responsible, include, but are not limited to, loss of revenue of profit, downtime costs, loss of use of the equipment, cost of any substitute equipment, facilities or services or claims of your customers for such damages.

This limitation of liability will not apply to claims for injury to persons or damage to property caused by the sole negligence or fault of Kodak or by persons under its direction or control.

Kodak Service Agreements

For information on Kodak Service Agreements, call Kodak Service Marketing Operations at 1-800-645-6325.

Table Of Contents

About This Guide

This is a User's Guide for the KODAK PROFESSIONAL LED II Printer 20R. It provides step-by-step instructions for the operations you perform while using the Printer. It also includes procedures and information for operating, maintaining, troubleshooting, and calibrating the printer.

Also included in this guide are instructions for installing and using the various software packages needed.

This guide is intended for personnel who operate this system. It assumes that you can perform basic computer operations.WINDOWS NT and MACINTOSH Platforms are supported in this guide.

Using This Guide

This guide is organized as follows:

Chapter 1	**Introduction**—describes and illustrates the KODAK PROFESSIONAL LED II Printer 20R. This chapter includes general and introductory information for all of the equipment.
Chapter 2	**Using the System—**explains how to use the printer. It includes the step-by-step instructions for daily operation, from startup to shutdown.
Chapter 3	**System Operating Procedures—**provides an overview of the OCP and all of the procedures for operating the Printer.
Chapter 4	**Maintaining the Equipment—**includes the information that you need to properly maintain the printer. All maintenance procedures are categorized by frequency.
Chapter 5	**Diagnostics and Troubleshooting—**provides an error code listing, solutions to common operational problems for the printer and calibration. It also provides information for obtaining additional help.
Appendix A	**Ordering Equipment, Accessories, and Supplies—** provides ordering information for many associated items. It includes information such as size, quantities, and catalog numbers.
Appendix B	**Specifications—**provides specifications, site requirements, and environmental information for the system.
Appendix C	**Calibrating the Printer—**describes the calibration functions for the KODAK Calibration Software as well as Printer Calibration Software.
Appendices D-F	**Software—**explains how to install and use the software that is included with the printer.

About Other Publications

The following publication is included with the printer:

Quick Reference Guide for the KODAK PROFESSIONAL LED II Printer 20R and the KODAK PROFESSIONAL LED II Processor 20R–provides quick and easily accessible information for operating and maintaining the printer as well as answers to common printer problems and hints for operating the processor. Keep the Quick Reference Guide close to your printer.

Software Included With the Printer

The compact disc (CD) included with the KODAK PROFESSIONAL LED II Printer 20R contains the KODAK Calibration Software and the Printer Calibration Software for WINDOWS NT and MACINTOSH Host Computers. It also includes additional applications the printer can interface with.

This software is usually installed by a Kodak representative. However, installation instructions are included in this Operator's Guide.

A PDF file of this Operator's Guide is also included on the CD.

You can find the latest software and documentation for the KODAK PROFESSIONAL LED II Printers on the Kodak Web site: `www.kodak.com`.

Getting Help from Kodak

Your Kodak sales representative is the best source for information about setting up and operating your printer and for obtaining accessories and supplies. Please contact your Kodak sales representative if you have any questions.

Kodak Sales Representative:_____

Representative's Telephone Number:_____

K-Number:_____

In addition, for technical support in the U.S., call 1-800-3Kodak3 between 8:00 a.m. and 11:00 p.m. Eastern Standard Time on regular business days. Telephone numbers for help outside the United States are in the Chapter 5, Diagnostics and Troubleshooting.

You can also use the technical support number for information on:

- operating the printer
- how or where to obtain supplies
- how to obtain service
- the warranty
- other Kodak products

If you are calling for technical support, please know your printer's K-Number. The K-Number label is attached to the front of the printer, next to the operator control panel.

Product Literature

The faxback number for product literature is 1-800-508-1531. You may call this number 7 days a week, 24 hours a day.

1 Introduction

This chapter includes the following information about the KODAK PROFESSIONAL LED II Printer 20R:

Product Description

The KODAK PROFESSIONAL LED II 20R printing system offers a combination of printing options that produces photographic quality output of digital images. The images are printed at a resolution of 250 dpi and at sizes varying from 8 x 10 in. to 20 x 33 in.

Images printed with this system are comparable to images produced on an optical printer. By using KODAK PROFESSIONAL Digital Paper with proper color management, the 20R printer provides the “look” of VPS film on KODAK PORTRA or SUPRA Paper, or GOLD Film on KODAK EKTACOLOR Edge Paper.

The system consists of a MACINTOSH or PC host computer to manage and manipulate the digital source image, a SCSI interface to transfer the digital image to the printing system, and the KODAK PROFESSIONAL LED II Printer 20R to expose the digital image.

You can use a variety of software applications (such as KODAK Image Print Server Software) to manage and manipulate the digital images.

SCSI Interface

A SCSI cable connects the host computer to the KODAK PROFESSIONAL LED II Printer 20R. This interface transfers the digital image data from the host computer to the printer.

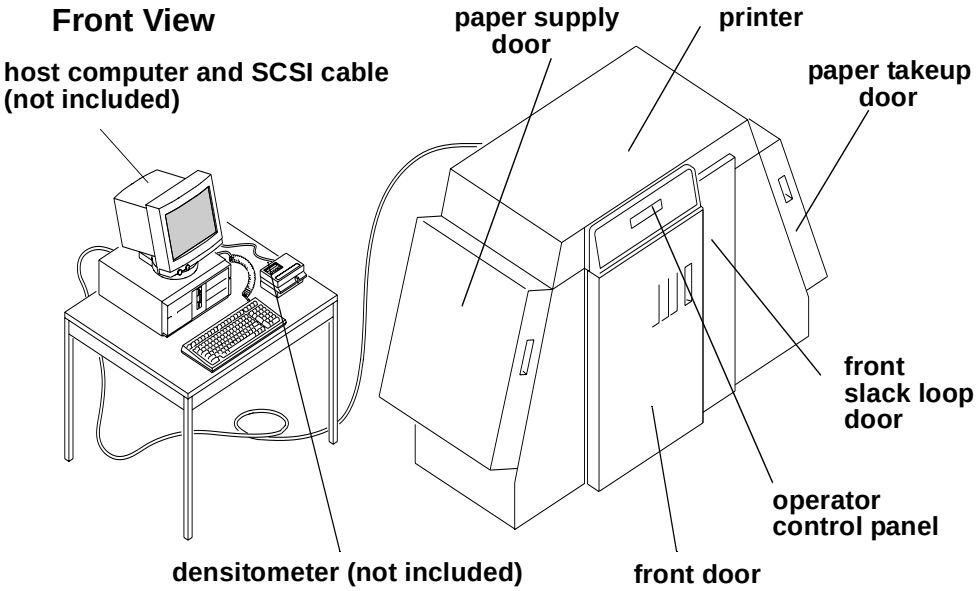
KODAK PROFESSIONAL LED II Printer 20R

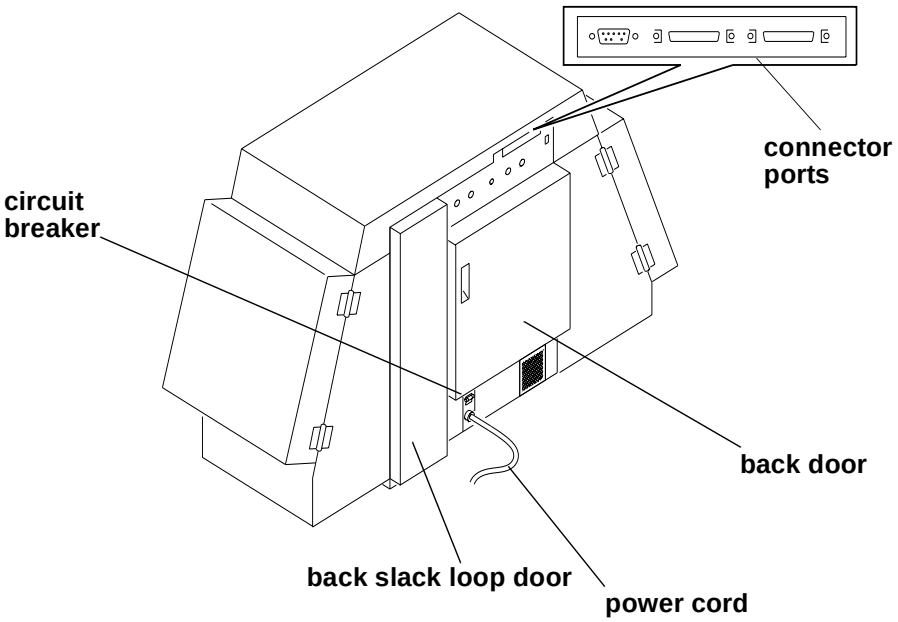
The KODAK PROFESSIONAL LED II Printer 20R exposes digital images on photographic quality paper using a sophisticated technology involving Light Emitting Diodes (LEDs). The printer uses KODAK PROFESSIONAL Digital Paper, in 10, 11, 12, 20 inch and A4 widths to create prints of 6.5 x 10 in. to 20 x 33 in. The images are wound onto a takeup roll which is then taken to an RA-4 processor for developing.

Installation and Service

The KODAK PROFESSIONAL LED II Printer 20R printer must be installed and serviced by a qualified Kodak service representative.

Equipment Overview





2 Using the System

This chapter explains how to use the KODAK PROFESSIONAL LED II Printer 20R. It takes you from startup to shutdown. Topics include:

Starting up the Printer

1. If needed, turn the circuit breaker on the back of the printer on.
2. Press the Start key on the OCP to begin the printer initialization process.

   If paper is loaded, when initialization is complete (3 to 4 minutes) the message *"Status: ON LINE - Ready"* appears on the OCP. Startup is complete and the printer is ready to print. Turn the host computer on; then go to the next page and calibrate the printer.

   If paper is not loaded, the message *"*`Out of paper, open supply door to load`*"* appears on the OCP. Do the procedures below.

   - "Loading Paper Into the Supply Cassette" on page 3-6
   - "Installing the Takeup Cassette" on page 3-14

   When "`On-line and Ready`" is displayed, turn the host computer on. Go to the next page and calibrate the printer.

Calibrating the Printer

You need to calibrate the printer when you start the system up each day. You also need to calibrate the printer when:

- you change paper
- print quality is questionable
- the temperature at the site changes more than 5° F (2.8° C)
- if running more than one shift, at the beginning of each shift

If you are calibrating at any time other than during the daily startup procedure: Before you begin, make sure the printer is not receiving printing commands from the host.

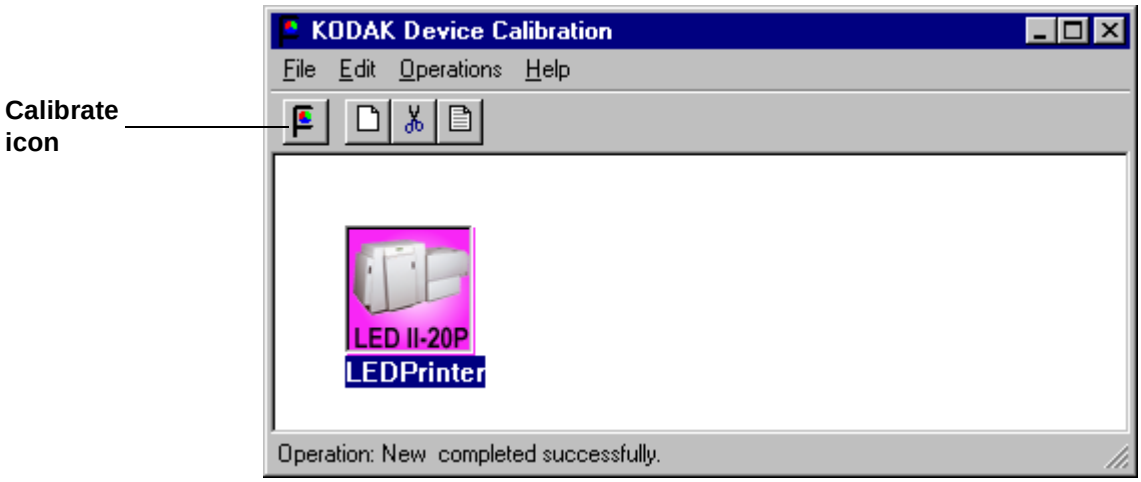
NOTE: Most windows displayed in this section are from the Windows NT version of the software. The windows for the Macintosh version of the software are similar.

For information about editing the calibration settings (for example, you may want to display a calibration graph only if calibration is out of tolerance), see “Editing the Calibration Configuration” on page C-20.

To calibrate the printer:

1. Check that:
   - the densitometer is connected and calibrated
   - the printer status is “Online and Ready”
   - the processor is in control
   - the calibration application is running
2. Select the icon for the LED Printer on the KODAK Device Calibration screen and click the **Calibrate** icon. The calibration software needs complete control of the printer to successfully calibrate the printer.

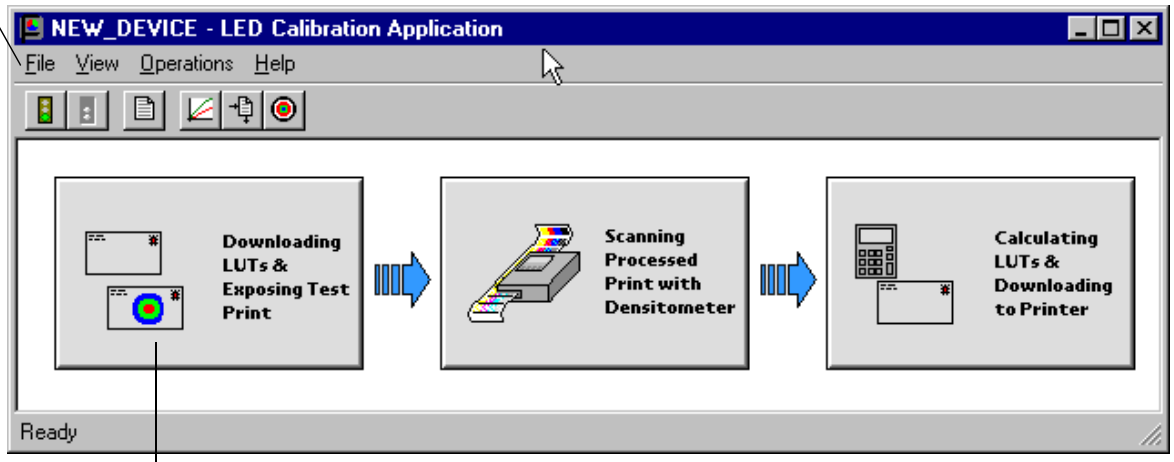
   IMPORTANT: If no icon appears on the KODAK Device Calibration screen, you need to add a calibration device. See “Adding a Device” on page C-6.



The LED Calibration screen appears.

3. Click **Go** to start the calibration cycle.

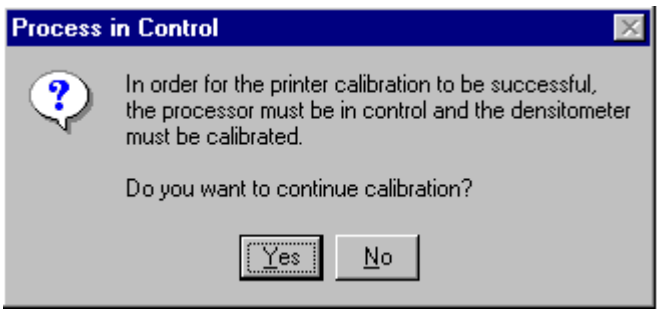
Go icon



This icon highlights after you select Go

Downloading LUTs and Sending Test Print highlights.

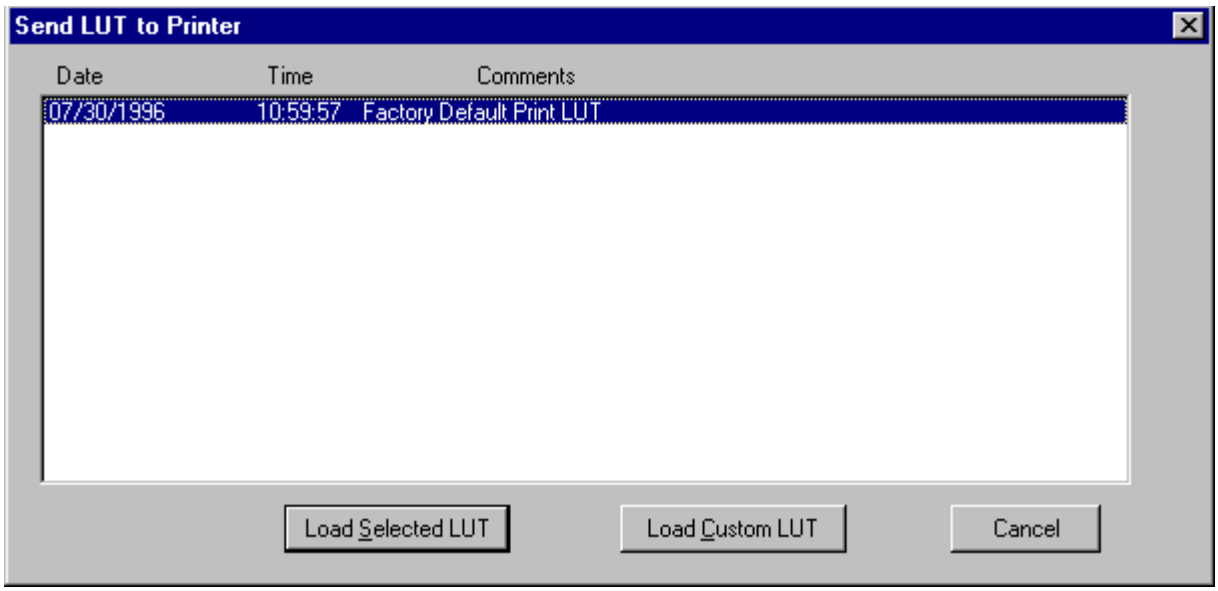
If the configuration file specifies to **Ask if processor is in control**, the Process In Control dialog box appears.



The processor is critical to printer calibration. You can calibrate the printer only if the processor is in control. Densitometers require calibration at regular intervals. Refer to your densitometer's manual for instructions on how to calibrate your densitometer.

4. Click **Yes**.

The Send LUT to Printer screen appears.



NOTE: The highlighted LUT in the dialog box above is the most recent calibration LUT.

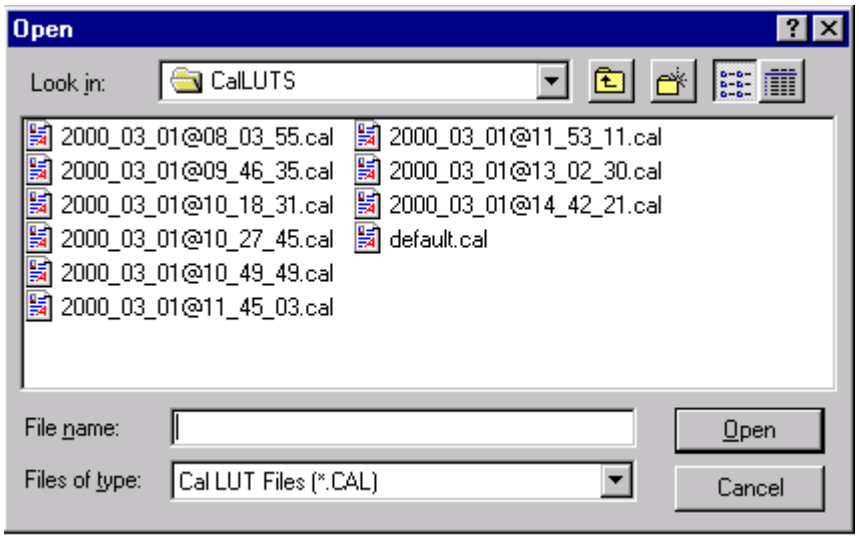
5. Click either **Load Selected LUT** or **Load Custom LUT** (or **Cancel** to cancel the calibration process).

   If you click **Load Selected LUT**, the system automatically downloads the highlighted LUT to the printer to create a test print.

   When the test print has been sent, the **Scanning Processed Print with Densitometer** status icon on the LED Printer Calibration screen is highlighted.

   Go to “Obtaining Densities” on page 2-5.

6. If you selected **Load Custom LUT** in step 5, the Open dialog box appears.



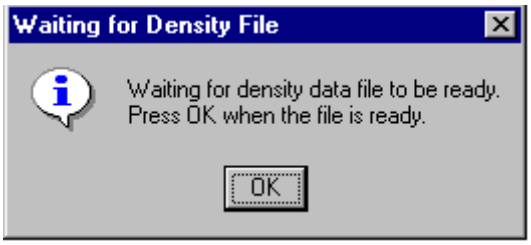
   Select or type the name of the LUT file you want and click **Open**.

The system automatically downloads the LUT file to the printer to create a test print. When the test print has been sent to the printer, the **Scanning Processed Print with Densitometer** status icon on the KODAK LED Printer Calibration screen is highlighted.

Obtaining Densities

Obtaining Densities from a File

If the configuration settings include obtaining the density data from a file, the Waiting for Density File dialog box appears. Otherwise, go to "Using the Densitometer to Read Densities."



NOTE: To create a density file, see "Creating a Density File for Use with Calibration" on page C-32.

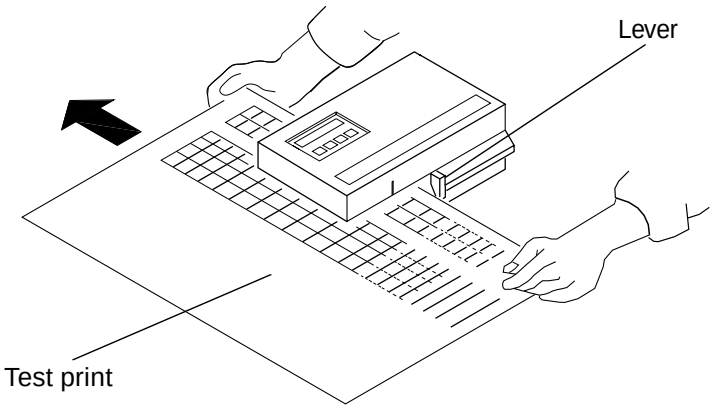
1. Click **OK** to continue with the calibration process.
2. Go to "Completing the Calibration" on page 2-6.

Using the Densitometer to Read Densities

Do the following to scan the neutral (gray) patches on the processed test print into the densitometer (refer to your densitometer manual for detailed instructions on using the densitometer):

1. Slide the lever on the densitometer to position 15. Align the edge of the test print with the lever on the densitometer. Gently feed the test print through the densitometer to scan the patches labeled "even".
2. Slide the lever on the densitometer to position 20. Align the edge of the test print with the lever on the densitometer. Gently feed the test print through the densitometer to scan the patches labeled "odd".

3. Slide the lever on the densitometer to position 30. Align the edge of the test print with the lever on the densitometer. Gently feed the test print through the densitometer to scan the patches labeled “both”.

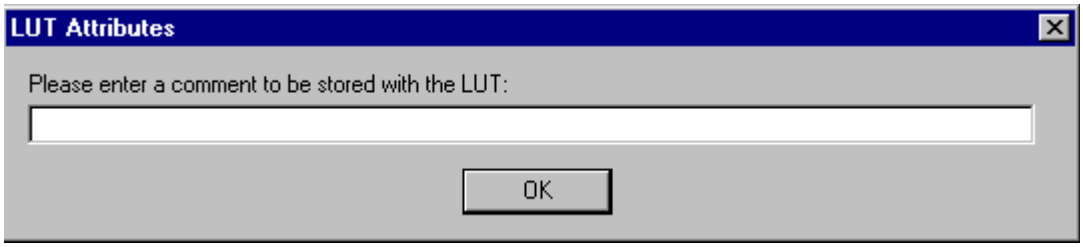


If the test print is read successfully, several messages will appear in the status bar; the final message indicates that the densitometer values have been successfully received. Go to “Completing the Calibration.”

If the test print is not read successfully, refer to “Calibration Troubleshooting” on page 5-14.

Completing the Calibration

1. **If calibration is in tolerance**, the LUT Attributes dialog box appears.



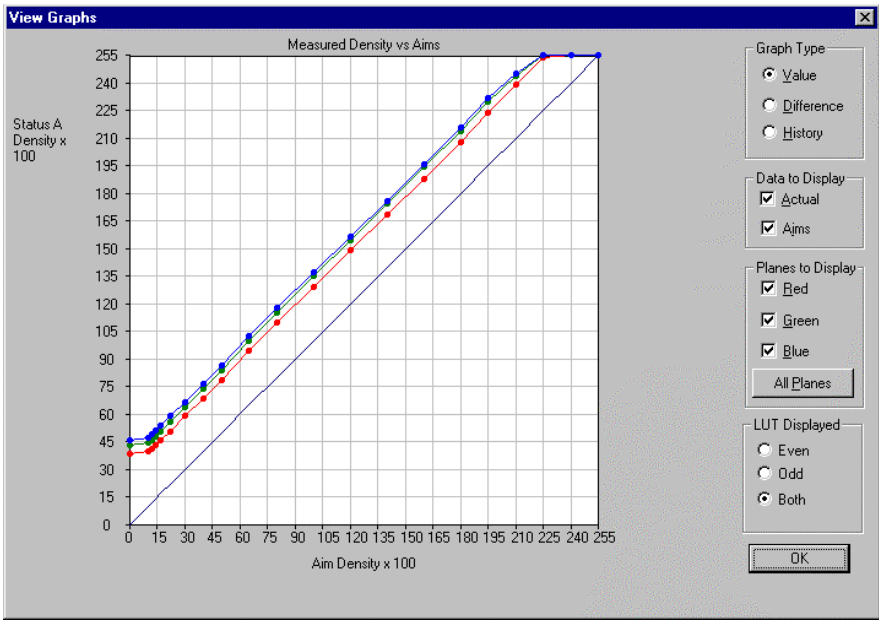
   a. Enter a name or comment in the dialog box. The comment you enter will appear on the Send LUT to Printer screen to identify the LUT file with a name that is meaningful to you (up to 75 characters).

   b. Click **OK**.

      The new printing LUT is calculated and downloaded. “Calibration Complete” appears in the status bar. The calibration is complete.

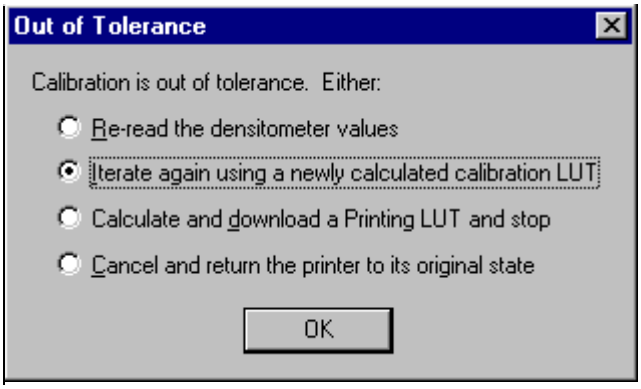
2. **If calibration is out of tolerance**, it may be necessary to run four or more iterations of the calibration cycle to achieve a successful calibration.

   If the print densities are out of tolerance, a graph appears, allowing you to select the type of data and planes that you want to see displayed.



   a. Click **OK**.

      The following list of options appears.



      Re-read the densitometer values is the most useful when the graphs show an unusual plot. Rereading the test print lets you validate the graph, then returns you to the Out of Tolerance dialog box.

      Iterate again using a newly calculated calibration LUT allows you to keep printing test prints with the newly created LUT without having to save the LUT table.

      Calculate and download a printing LUT and stop: When you select this option, the file is saved and given the same creation date and time as the name.

      Cancel and return the printer to its original state saves nothing. Any corrupted data created after you saved the last time is thrown away.

b. Select one of the four options to try to complete the calibration successfully.
   - If the **Out of Tolerance** dialog box appears again, repeat this step until you get a successful calibration; go to step 1.
   - If you cannot get a successful calibration, request help from a system administrator or service person.

Making Prints

You can make prints using the LED Printer 20R with a wide variety of applications that run on WINDOWS NT Computers and MACINTOSH Computers. One application that is widely used for printing is the KODAK PROFESSIONAL Imaging System.

Two applications that you may wish to print from are included with the system. You can use the KODAK PROFESSIONAL Image Print Server for WINDOWS NT to print TIFF images. You can use the Export Module for ADOBE PHOTOSHOP that runs on MACINTOSH Computers to print images from the PHOTOSHOP application.

For more information about these applications, see the appropriate Appendix in this guide.

Shutting Down the Printer

There are two methods for shutting down the printer. The soft shutdown method is the recommended way to shut down the printer overnight or for a period of several hours. The hard shutdown method should be used for shutting down the printer for an extended period of time (several days or longer).

Soft Shutdown

IMPORTANT: The soft shutdown method ensures that all printer information is saved and that the print head is safely turned off if paper is loaded in the printer.

1. Check that all jobs in the print queue are printed.
2. Press the On/Off Line key on the OCP to take the printer offline.
3. Press the Menu button on the OCP to access the menu.
4. Select “Shutdown” in the message display.
5. Press the Start key.
6. Select “Shutdown now” in the message display.
7. Press the Select key to begin the shutdown.

   NOTE: If any jobs are not complete, you will be asked if you want to delete the remaining jobs before you can select Shutdown.

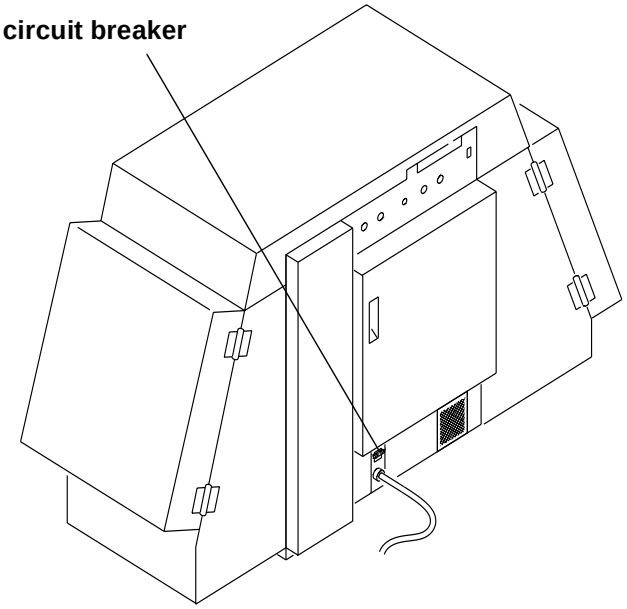
Hard Shutdown

Use this method for shutting down the printer for an extended period of time (several days or longer).

1. Do a soft shutdown. See “Soft Shutdown” on page 2-8.

   CAUTION: Turn off the circuit breaker only after doing the soft shutdown. Otherwise, you could lose printer status information and will cause dark lines to appear in the middle of the prints if paper is loaded.

2. Turn off the circuit breaker on the back of the printer.



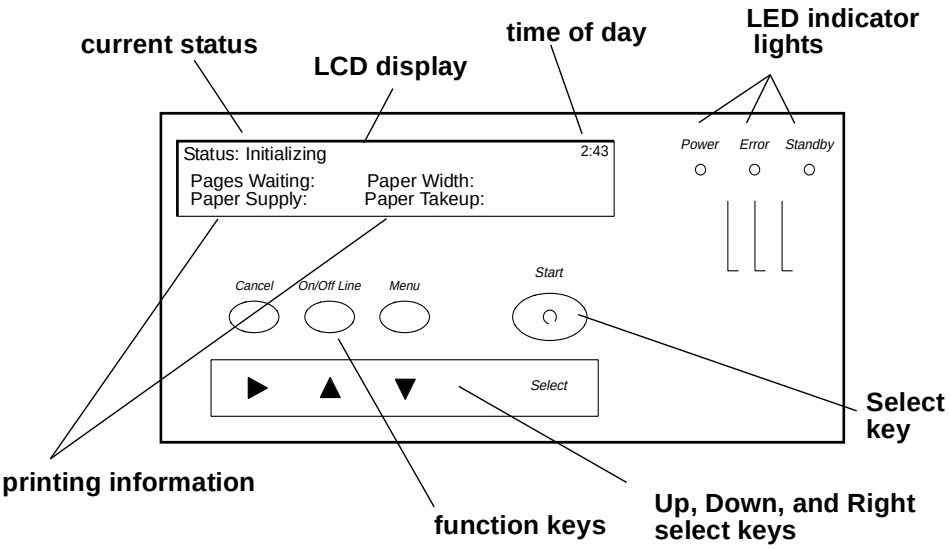
3 Operating Procedures

This section provides the information you need to operate the KODAK PROFESSIONAL LED II Printer 20R. Topics include:

Operator Control Panel (OCP)

The operator control panel (OCP) for the printer allows you to view and control:

- current status of the printer
- current time of day
- paper specifications
- error and power status
- cancel, on/off line and menu functions
- parameters of the printer
- error messages



The display on the OCP is a 4 line by 40 character liquid crystal display (LCD). An audible beeper is installed to the right of the LCD display. Each of the function keys also operates as the arrow key (selector) directly below it when **Menu** has been pressed. LED indicator lights illuminate to indicate power, error, and standby statuses.

The operator control panel (OCP) displays the current status of the printer, including the following information:

- **Pages Waiting** – the number of printing jobs that are waiting in the print queue/buffer
- **Paper Supply** – the approximate amount of paper left in the paper cassette. This information is input by you and is for your convenience only
- **Paper Width** – the width of the current roll of paper that is installed in the printer
- **Paper Takeup** – the amount of paper that has been fed into the takeup ("**" will appear in this field if the paper is not cinched in the takeup cassette)

OCP Key/Light Descriptions

Key/Light	Key /LED Indicator Light	Description/Function
Start 	Start Key	The **Start** key turns on the power for the printer when the printer has been shut down through the OCP. When using the OCP menu, the **Start** key functions as a **Select** key to select the highlighted item from the OCP menu.
Cancel 	Cancel Key	Pressing **Cancel** causes the job that is currently printing to quit. In addition, the printer automatically goes into the Offline mode after the current printing job has quit.
On/Off Line 	On/Off Line Key	This key toggles between the Online and Offline modes. If you press this key when the printer is in the Online mode, the printer goes into the Offline mode. If you press this key when the printer is in the Offline mode, the printer goes into the Online mode.
Menu 	Menu Key	Pressing this key activates the menu for the OCP **when the printer is in the Offline mode.**
▷ △ ▽	Arrow Keys	When using the OCP menu, the **Cancel** key functions as a **Right Arrow**, the **On/Off Line** key functions as an **Up Arrow**, and the **Menu** key functions as a **Down Arrow**.
Select 	Select Key	When using the OCP menu, the **Start** key functions as a **Select** key to select the highlighted item from the OCP menu.
Power 	Power Light	The power light illuminates to indicate that the main power for the printer is on.
Error 	Error Light	The error light illuminates to indicate that a printer error occurred.
Standby 	Standby Light	The standby light illuminates to indicate that the printer has been shut down from the OCP and is now in the Standby mode, waiting for **Start** to be pressed.

Menu

The menu allows you to access other printer features.

NOTE: To access the menu, the print queue must not have any pages waiting to be printed.

1. Press **On/Off Line** to take the printer offline.
2. Press **Menu**.

Taking the Printer Offline

This feature is useful when you need to access the printer OCP menu.

When the printer is offline, it cannot send jobs to the processor or accept jobs from the host.

To take the printer offline, press **On/Off Line** on the OCP. If a job is printing when you take the printer offline, the job will complete printing.

Online Mode

The Online mode is the normal mode and must be activated for the printer to accept print jobs from the host computer.

Offline Mode

When the printer is in the Offline mode it cannot accept print jobs from the host computer. When an error occurs, the printer is automatically placed into the Offline mode.

Cancelling Jobs

To cancel the sheet currently being printed, press **Cancel** on the OCP. After the sheet has been cancelled, the printer automatically toggles to the Offline mode.

To cancel all jobs waiting to be printed:

1. Press **Cancel** on the OCP to cancel the sheet that is currently printing.
2. Press **Menu** twice.

Printing Deferred or Buffered Jobs

“Pages Deferred” displays on the OCP and a number other than zero displays in the Pages Waiting field when one or more jobs are waiting to be printed.

1. Press **On/Off Line** to take the printer offline.
2. Press **Menu**.
3. Press **Start** to print the jobs.

Status Messages

Status messages display on the LCD display of the OCP to indicate the status or current state of the printer.

Status Message/Printer State	*Definition*
status: ON LINE – Ready	The printer is idle and ready to accept jobs.
status: ON LINE – Processing	The printer is currently downloading or processing a job.
status: ON LINE – Pages Deferred	Pages are waiting and nothing is being downloaded. If jobs were sent with the “Defer Print” or “Buffer” option, the printer is waiting for more data to fill the frame store.
status: ON LINE – Printing	The printer is printing and may also be processing more jobs.
status: OFF LINE – Idle	The printer is currently offline. No jobs exist in the printer. “Idle” is used instead of “Ready” because the printer is actually idle (not doing anything) and will not accept jobs.
status: OFF LINE – Processing	The printer is offline but a job is being downloaded. A print cycle will not be initiated.
status: OFF LINE – Pages Deferred	The printer is offline but there are jobs in the printer that are waiting to be printed. A print cycle will not be initiated.
status: OFF LINE – Printing	The printer will complete the current print cycle and then pause.
status: OFF LINE – Cancelling	**Cancel** was pressed when the printer was printing. The sheet that was printing was immediately terminated. This message is also displayed when you select “Yes” to the prompt to cancel all remaining jobs when you enter the menu.
status: Initializing	The printer is powering up (after **Standby** has been pressed or the printer has been turned on).
status: ON LINE – Resetting	The print engine is being reset because of an error or operator intervention. The printer will return to the “ON LINE – Ready” state after the machine reset is complete (even if the printer was offline because of an error or key that was pressed before the reset).
status: Printer Error: <Error Message>	A printer error (such as a paper jam) has occurred. The error message is displayed on the second line of the display. For a complete list of error messages, see “Printer Error Messages” on page 5-1.

Loading Paper Into the Supply Cassette

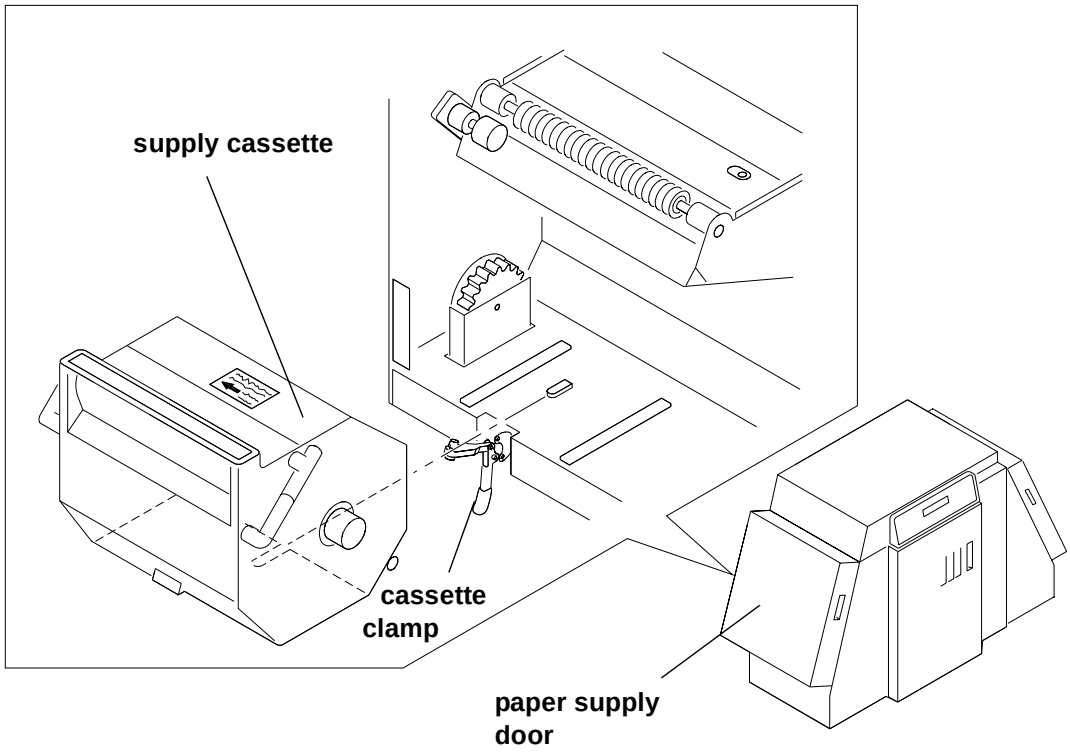
WARNING: Move the supply cassette from the printer to a table to load or unload paper.

One 10- to 20-inch supply cassette and one 10- to 20-inch takeup cassette are included with the printer and are designed to hold rolls of paper that are 10-, 11-, 12-, 20-inch, and A4 widths.

The supply cassette and takeup cassette are **not** interchangeable.

Removing the Supply Cassette

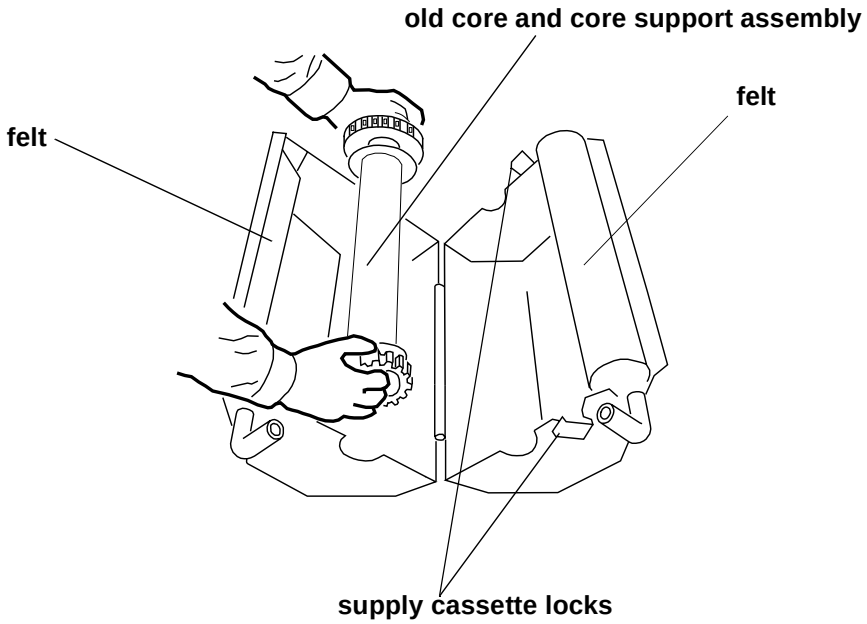
1. Open the paper supply door.
2. Unlock the cassette clamp for the supply cassette.
3. Remove the empty supply cassette.



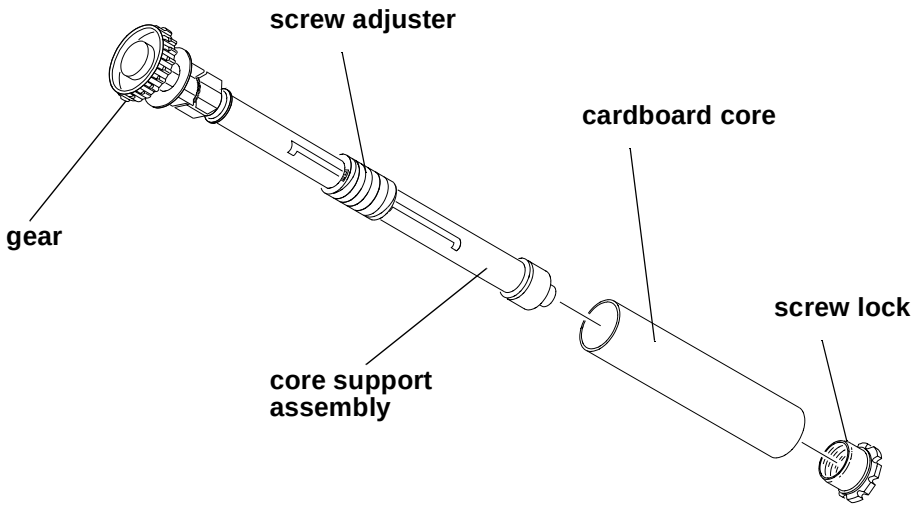
Loading the Paper

1. Unlock the supply cassette locks.
2. Open the supply cassette.
3. If necessary, remove paper scraps from the core support assembly.
4. Remove the old core and support assembly from the supply cassette.

   NOTE: Keep the felt surfaces clean to prevent scratches on the paper.



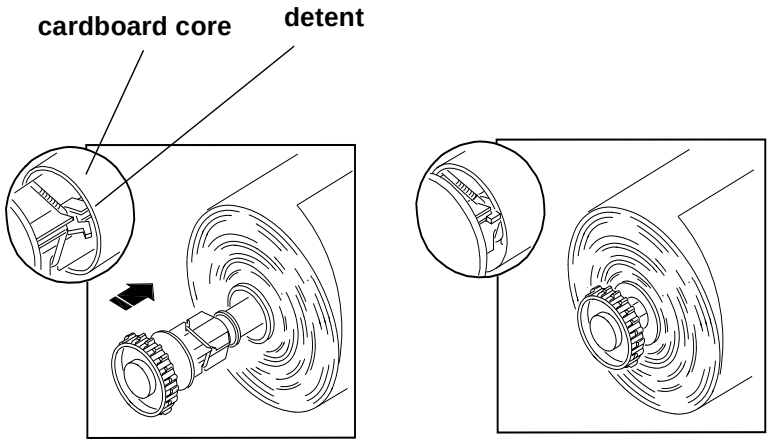
5. Remove the screw lock and the old cardboard core from the core support assembly.
6. Pull the metal spring for the screw adjuster away from the gear and slide the screw adjuster to the correct position until it locks into place in the detent.



TIP: Practice the following steps in the light with an empty cardboard core before you load a new roll of paper in the dark.

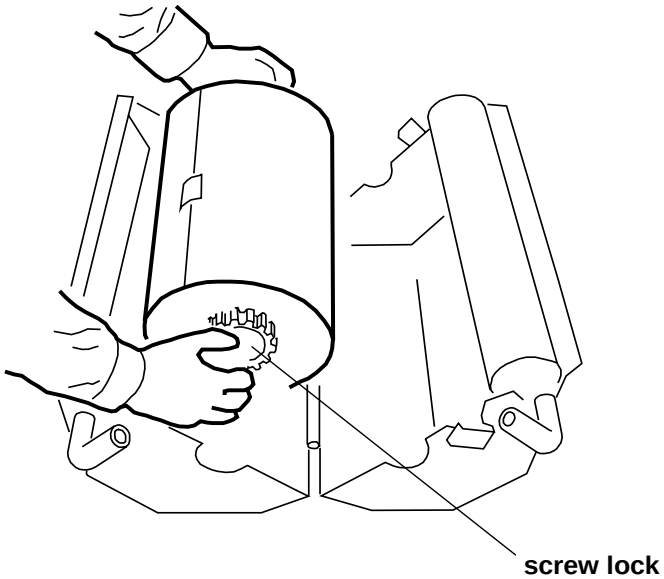
CAUTION: Loading paper into the paper cassette must be completed in a darkroom with the lights off.

7. Position the paper so that the lead edge of the paper is away from you.
8. Insert the core support assembly from the left side into the roll of paper as shown.
9. Push the cardboard core toward the gear until it engages the detent.

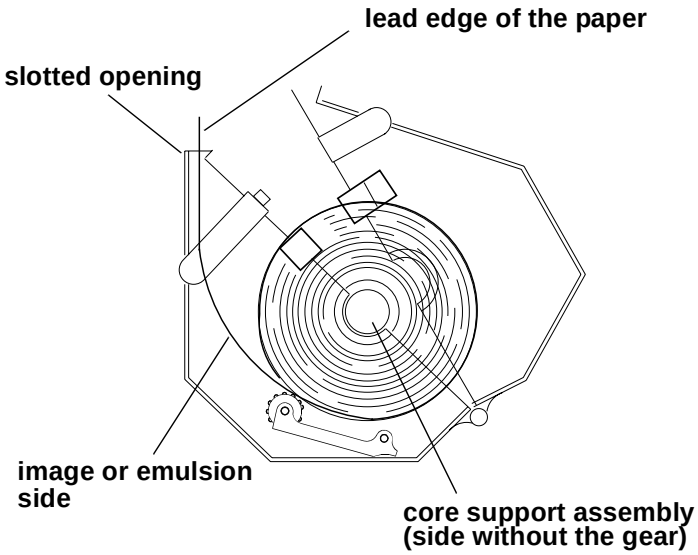


10. Install the screw lock onto the core support assembly and ensure that it is snug.
11. Place the core support assembly with the full paper roll into the supply cassette.

IMPORTANT: Make sure that the right and left edges of the paper on the paper roll remain aligned. Do not allow the roll of paper to slide or "telescope".

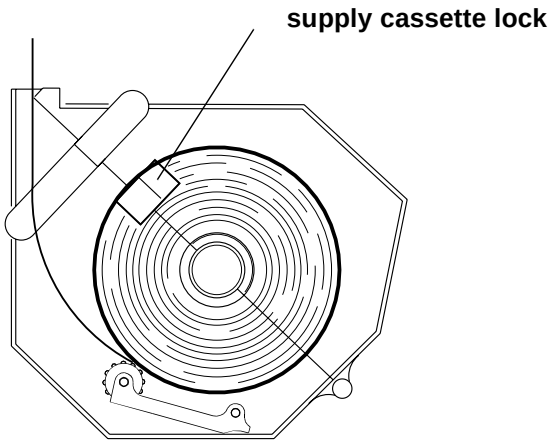


12. Feed the lead edge of the paper through the slotted opening in the paper cassette.



13. Close the supply cassette and latch the supply cassette locks.

    NOTE: Be sure that the core support assembly rotates freely in the supply cassette and that the paper feeds freely.



NOTES: – When the paper cassette is locked, you can turn on the room lights.

– See page 3-10 for instructions on how to install a digital printer paper saver.

IMPORTANT: When moving the supply cassette, pick up and carry the cassette by both handles to prevent the paper from sliding or "telescoping" to one side.

Attaching a Digital Paper Saver

To save paper that is lost during the paper loading process when using the "1-Step Normal" paper loading option, you may install a digital printer paper saver (leader) to the lead edge of the roll of paper. Using the digital printer paper saver reduces the amount of paper lost from threading the printer by 5.5 feet as shown in the table below.

Threading Method	*Amount of Unprintable Paper**
Paper Leader	9 feet
Digital Printer Paper Saver	3.5 feet

*For additional paper saving, see "Selecting a Loading Option" on page 3-24.

To order digital printer paper savers and splice tape, see "Leaders and Splice Tape" on page A-3.

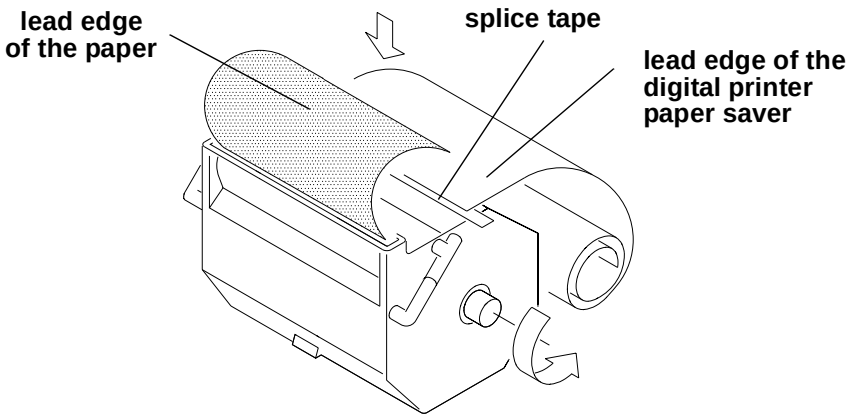
NOTE: The digital printer paper saver may be used many times.

CAUTION: To prevent spots or scratches on images, keep the digital printer paper saver away from surfaces that have dust and dirt on them.

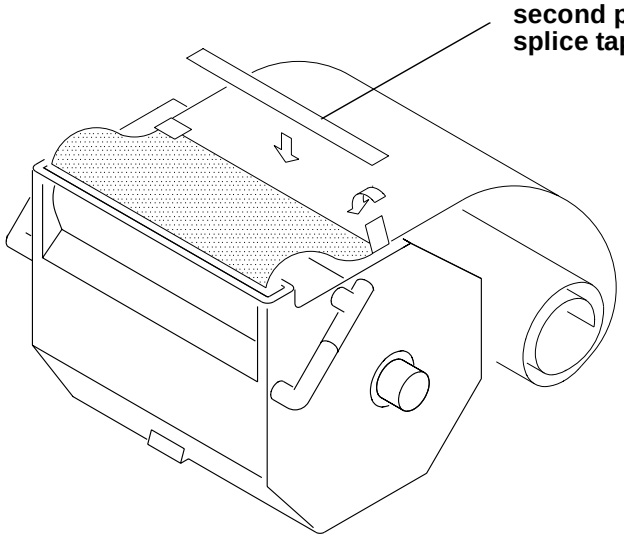
1. Load the paper into the supply cassette. See "Loading Paper Into the Supply Cassette" on page 3-6.
2. If necessary, cut a straight edge on the lead edge of the paper that is coming through the slotted opening in the supply cassette.
3. Cut a piece of splice tape that is approximately 2 inches longer than the width of the supply cassette.
4. Set the splice tape on the supply cassette with the adhesive side facing up.
5. Place the lead edge of the paper onto the splice tape.
6. Place the trail edge of the digital printer paper saver (the edge without the hole) on the splice tape.

   NOTE: If the digital printer paper saver is new, wipe it with a damp cloth to remove dust and static electricity.

   IMPORTANT: The digital printer paper saver must be the same width as the paper. Also, the curl of the digital printer paper saver and the curl of the paper must match.



7. Fold the edges of the splice tape over the digital printer paper saver and the paper.
8. Cut a second piece of splice tape that is slightly smaller than the width of the paper.
9. Install the second piece of splice tape over the paper and the digital printer paper saver.

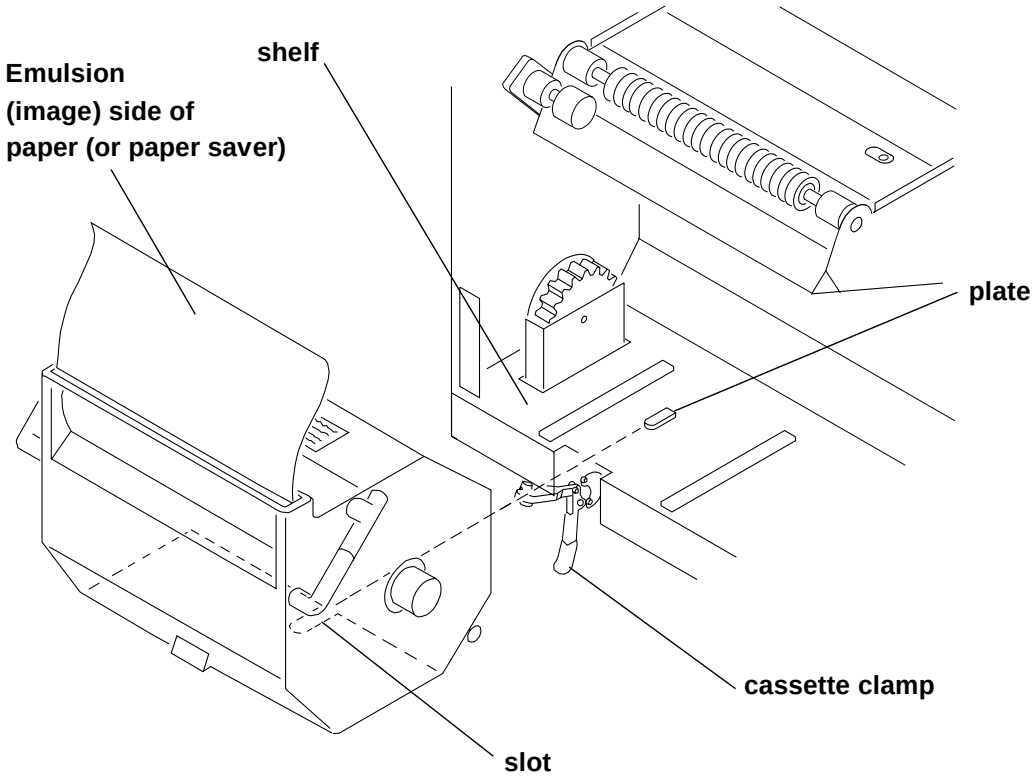


10. Turn the core support assembly to rewind the paper and digital printer paper saver into the supply cassette.

    NOTE: Do not wind the entire digital printer paper saver into the supply cassette.

Installing the Loaded Paper Supply Into the Printer

1. Open the paper supply door.
2. Empty the punch chad tray. See “Removing the Punch Chad” on page 4-2.
3. Align the slot on the bottom of the supply cassette with the plate on the bottom of the shelf and slide the supply cassette into place on the shelf.

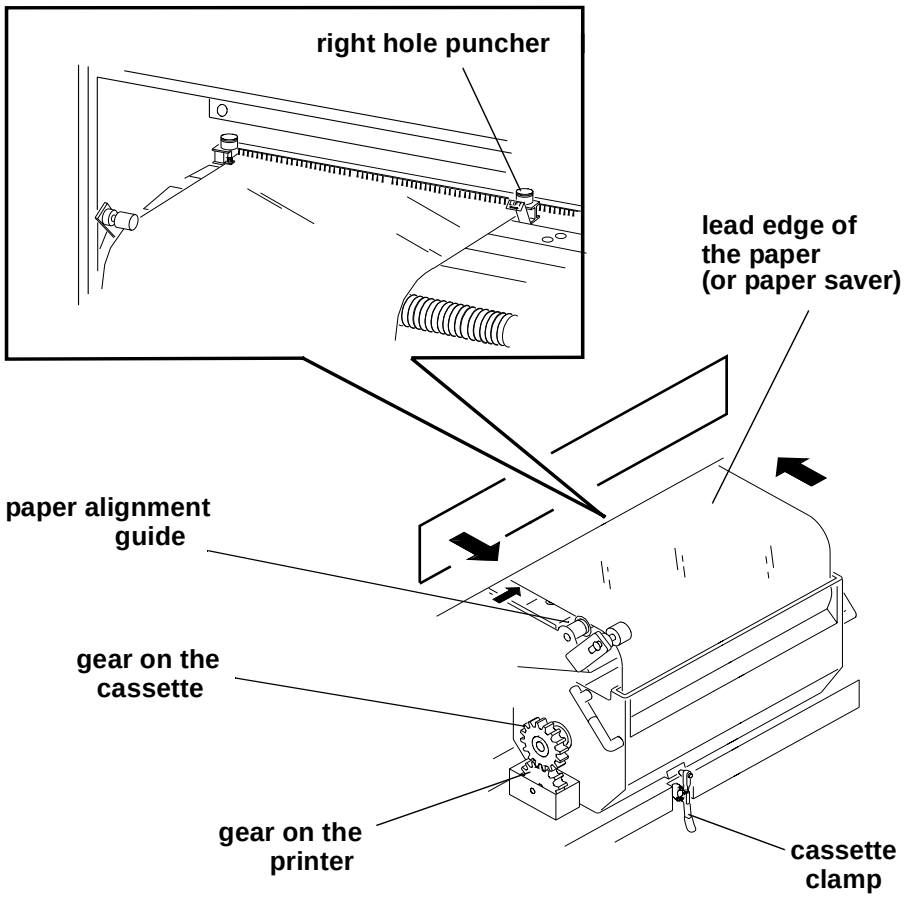


4. Check that the gear on the supply cassette aligns and meshes with the gear on the printer.
5. Lock the clamp to secure the paper cassette into place.
6. If you are not using the digital printer paper saver, check that the cut on the lead edge of the paper is straight.

   NOTE: Use scissors to cut the paper. Knives and razor blades will shred the paper.

7. Adjust the right punch to the correct paper width (10, 11, 12 or 20 inch and A4). See “Adjusting the Paper Hole Punchers” on page 3-22.
8. Press **Start** on the OCP.
9. Enter the number of feet on the roll of paper when prompted and if necessary, enter the roll ID. See “Using the Automatic Roll ID” on page 3-29.

10. When the message “Feed paper into printer...” appears, pull the lead edge of the paper (or digital printer paper saver) out of the paper cassette and place the lead edge of the paper into the punch slots.



11. Slide the lead edge of the paper under the feed roller and static brushes using both hands. Keep the paper flat until you feel it being pulled into the printer. Keep the left edge of the paper against the paper alignment guide.

    NOTE: The sound from the printer will change when the printer is ready to advance the paper.

    CAUTION: If the paper does not load properly or a paper jam occurs, press Cancel on the OCP. Remove any paper from the shoe area and repeat steps 7 through 10. If you are not using a digital printer paper saver, make sure the lead edge is cut square and does not have any bends or dings. If necessary, install a new digital printer paper saver.

12. Close the paper supply door. If a 1-step load option is selected, the paper automatically advances to the takeup cassette. When this is complete, a message on the OCP prompts you to load the paper into the takeup cassette. If a 2-step load option is selected, the prompt to cinch paper appears after the appropriate length of images has been printed. See “Installing the Takeup Cassette” on page 3-14.

    NOTE: For additional paper saving methods, see “Selecting a Loading Option” on page 3-24.

Installing the Takeup Cassette

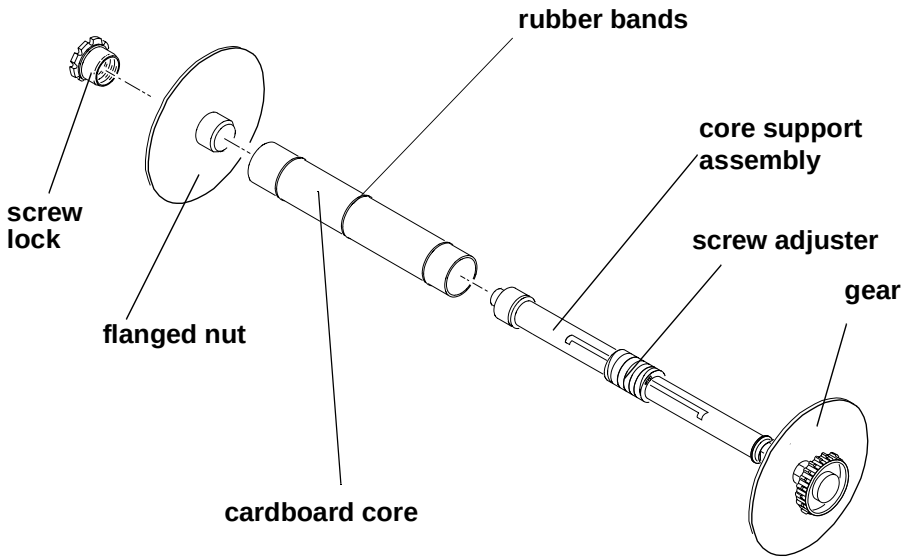
Preparing the Takeup Cassette

1. Unlatch the takeup cassette locks and open the takeup cassette.
2. Remove the core support assembly.
3. Move the screw adjuster to the correct position for the paper size that you are loading. Pull the metal spring for the screw adjuster away from the gear and slide the screw adjuster to the correct position until it locks into place in the detent.
4. Slide the correct size cardboard core onto the core support assembly. Push the cardboard core toward the flange until it engages the detent.
5. Install the flanged nut (when using 10-, 11-, 12-inch and A4 paper) or the screw lock (for 20-inch paper) onto the core support assembly. The core support assembly uses left hand threads. The threaded parts are color coded to prevent confusion.

   NOTE: Make sure the screw lock or flanged nut is secure.

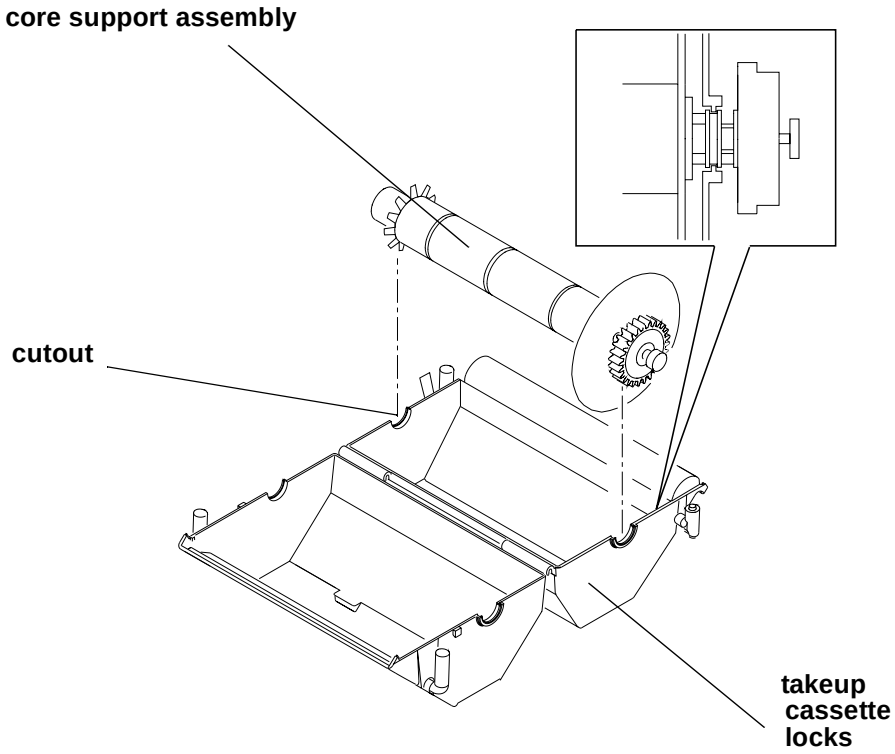
6. Place three rubber bands over the cardboard core.

   IMPORTANT: The rubber bands must have the same thickness and must not be twisted or wrinkled when installed.



7. Install the core support assembly into the takeup cassette. See the instructions on the label on the top of the takeup cassette.

   NOTE: Make sure that the core support assembly is installed correctly in the cutouts of the takeup cassette.



8. Close the takeup cassette and latch the takeup cassette locks.

   NOTE: Be sure the core support assembly rotates freely in the takeup cassette.

Installing the Takeup Cassette

1. Open the takeup door.

   If the takeup cassette is in the printer and has paper in it, remove it. See “Removing the Takeup Cassette” on page 3-20 or “Removing Exposed Paper from the Takeup Cassette” on page 3-21.

2. If necessary, move the adjustable cassette support arm to accommodate the size of the cassette you will be using. To move the adjustable arm:

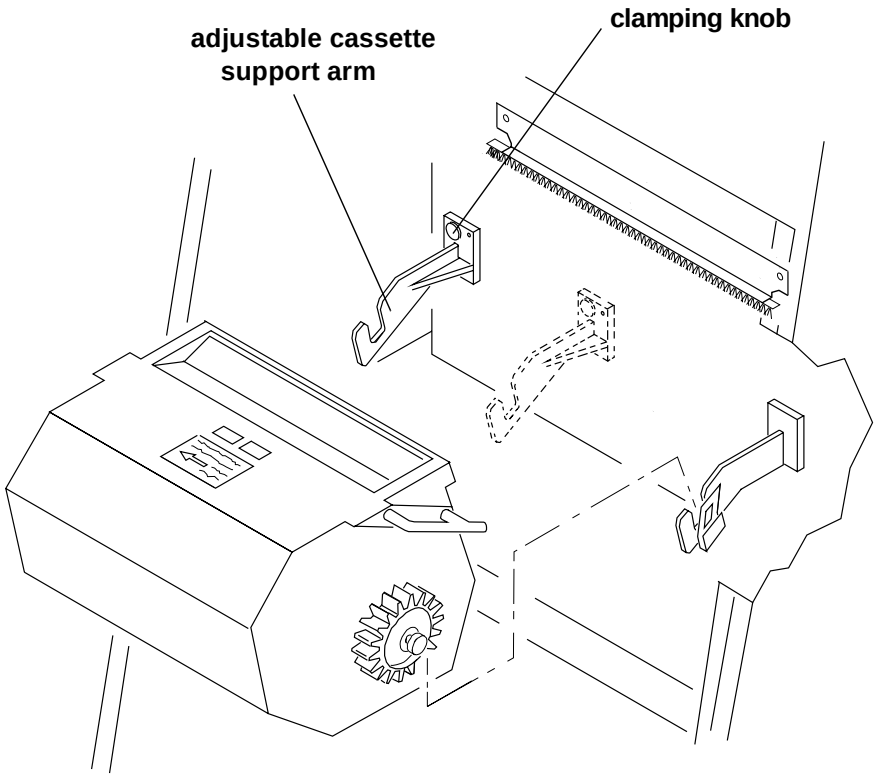
   a. Unscrew the clamping knob.

   b. Move the arm to the correct position.

   c. Reinstall the clamping knob and tighten.

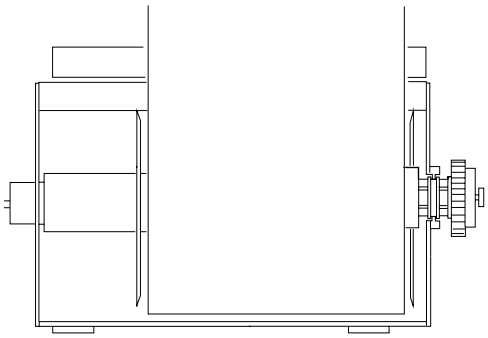
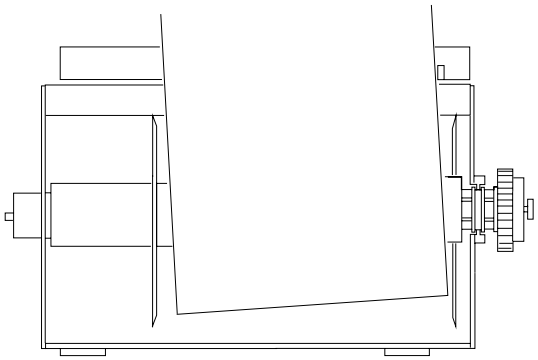
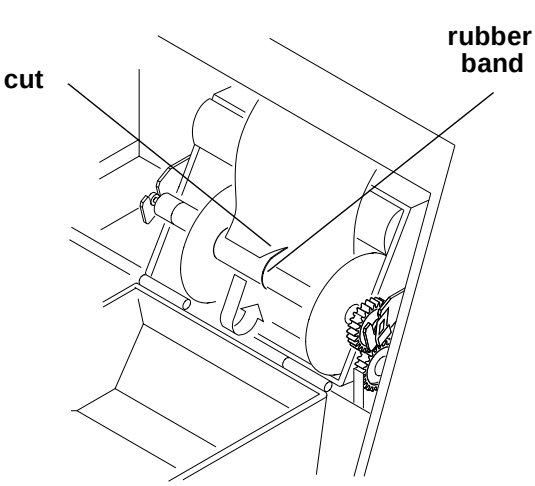
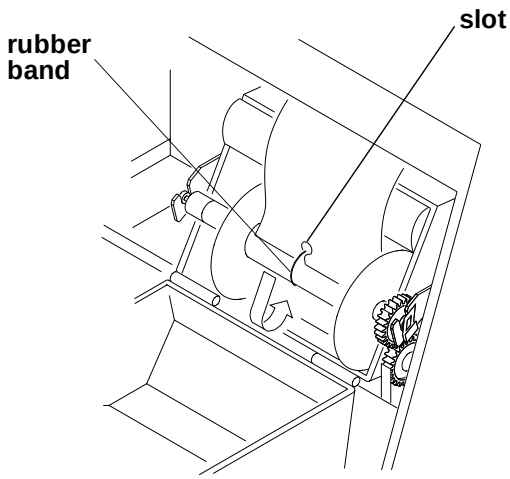
3. Install the takeup cassette onto the cassette support arms.

   IMPORTANT: Check that the bearings on the cassette are seated in the support arms.



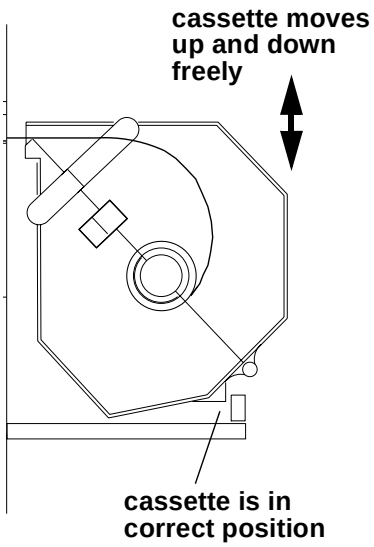
Cinching the Media to the Cardboard Core

Do the following to cinch (attach) the media (paper or digital printer paper saver) to the cardboard core:

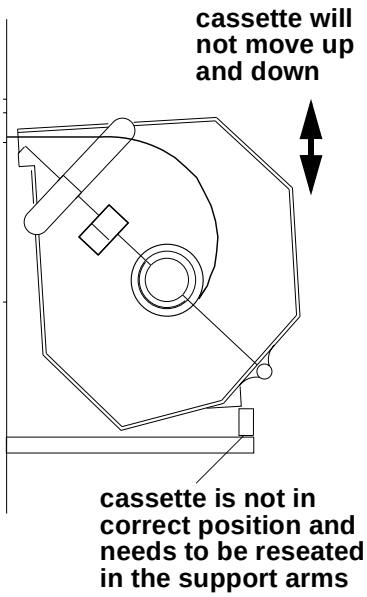
Cinching Paper to the Cardboard Core	***Cinching the Digital Printer Paper Saver to the Cardboard Core***
(a) Hold the lead edge of the paper against the cardboard core and close to the flange. NOTE: Align the right edge of the paper with the flange, making sure that the paper is not skewed.	(a) Hold the lead edge of the digital printer paper saver against the cardboard core and close to the flange. NOTE: Align the right edge of the digital printer paper saver with the flange, making sure that the paper saver is not skewed.
correct (paper edge is not skewed) 	**incorrect (paper edge is skewed)** 
(b) Make a 3 inch cut in the lead edge of the paper at a 45^{o} angle to form a small flap. (c) Pull the rubber band that is in the middle of the cardboard core through the cut in the paper and push the flap under the rubber band. 	(b) Pull the rubber band that is in the middle of the cardboard core into the slot on the lead edge of the digital printer paper saver. 

Cinching Paper to the Cardboard Core	*Cinching the Digital Printer Paper Saver to the Cardboard Core*
(d) Turn the flange on the core support assembly until you have wrapped enough paper around the cardboard core to cinch it to the core. (e) Check that the right edge of the paper is still aligned with the flange and close to it. (f) Close and lock both sides of the takeup cassette. NOTE: The closed takeup cassette should move freely when you press down on the front of it. If necessary, reposition the takeup cassette to move freely.	(c) Turn the flange on the core support assembly until you have wrapped enough digital printer paper saver around the cardboard core to cinch it to the core. (d) Check that the right edge of the paper is still aligned with the flange and close to it. (e) Close and lock both sides of the takeup cassette. NOTE: The closed takeup cassette should move freely when you press down the front of it. If necessary, reposition the takeup cassette to move freely.

correct



incorrect



Unloading the Paper from the Printer

The menu provides two options for unloading paper before the end of the roll is detected:

- **Unload Supply and Takeup**—Automatically makes a cut between the exposed paper and the unexposed paper. The printer then winds the exposed paper and trailer into the takeup cassette and rewinds the unexposed paper into the supply cassette.

  NOTE: Approximately 27 inches of unexposed paper will not be rewound into the supply cassette.

- **Unload Takeup and Rethread**—Automatically makes a cut between the exposed paper and the unexposed paper. The printer then winds the exposed paper and trailer into the takeup cassette. Paper is then advanced as appropriate for the loading option selected. See “Selecting a Loading Option” on page 3-24.

  NOTE: You can determine the amount of trailer. See “Setting the Length of the Paper Trailer” on page 3-27.

To choose one of the above options, see “Unloading Paper” on page 3-23.

Reaching the End of Roll of Paper

When the end of the roll is detected, the remainder of the paper is wound into the takeup cassette and the message “Out of Paper...” is displayed on the OCP. See “Removing Exposed Paper from the Takeup Cassette” on page 3-21 and “Loading Paper Into the Supply Cassette” on page 3-6.

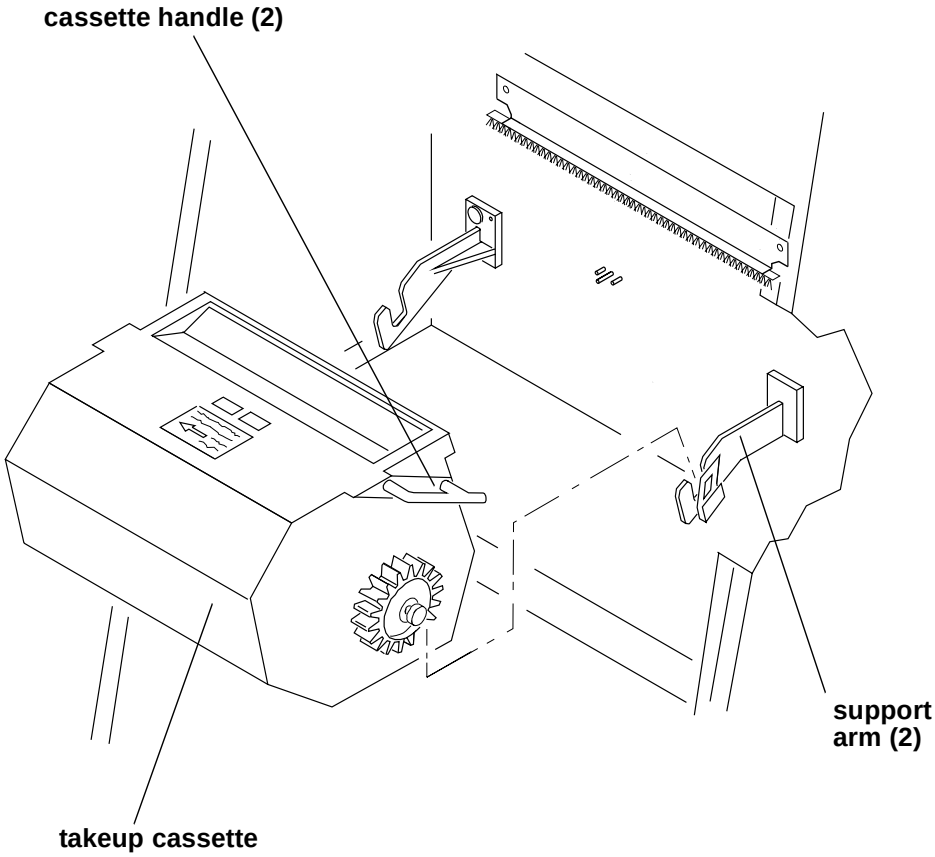
If an error has occurred and/or a door has been opened or closed after the printer reached the end of the roll, the message “Out of Paper...” may display even though paper is still partially threaded. To completely wind the paper into the takeup cassette, either reinitialize the printer or see “Unloading the Paper from the Printer” above.

Removing the Takeup Cassette

WARNING: Move the takeup cassette from the printer to a table to load or unload paper.

1. Open the takeup door.
2. Remove the takeup cassette from the printer by lifting it off of the support arms by the cassette handles.

CAUTION: Move the takeup cassette to a darkroom before removing the exposed paper. See "Removing Exposed Paper from the Takeup Cassette" on page 3-21.

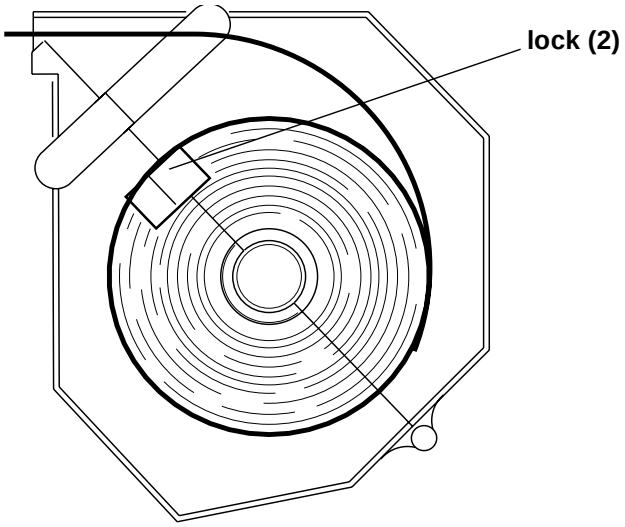


Removing Exposed Paper from the Takeup Cassette

1. Remove the takeup cassette from the printer. See “Unloading the Paper from the Printer” on page 3-19.

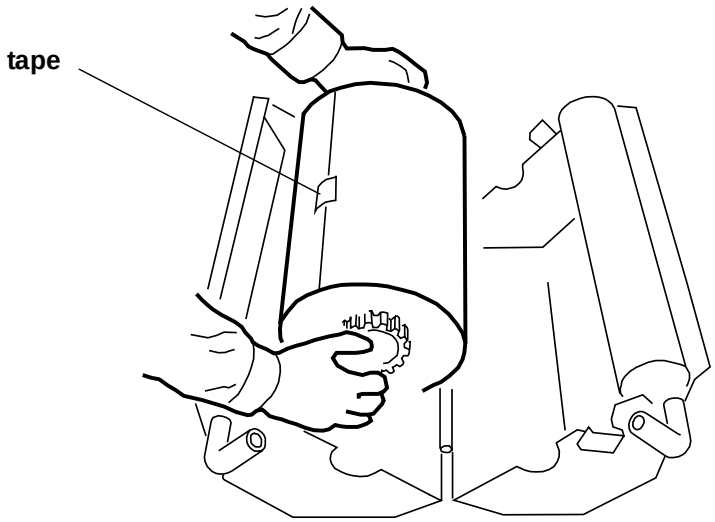
   CAUTION: The following steps must be completed in a darkroom.

2. Unlatch the locks on the takeup cassette.



3. Open the takeup cassette.
4. Tape the edge of the paper to the paper roll to prevent the paper from unwinding.
5. Remove the roll of paper from the takeup cassette.

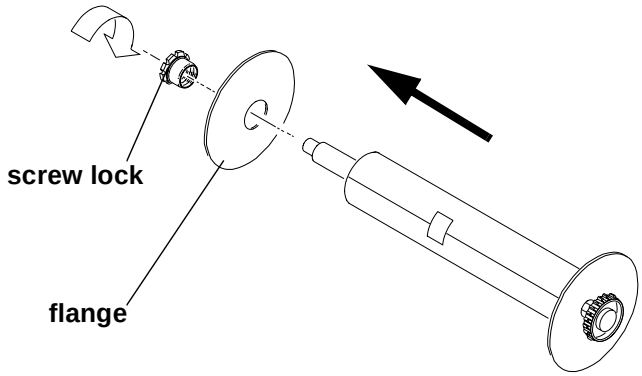
   NOTE: Keep the roll in the horizontal position to prevent it from “telescoping”.



6. Remove:
   - screw lock or flange
   - exposed paper from the core support assembly

   NOTE: After removing the screw lock, tap the screw lock end of the core to loosen the paper roll and make it easier to remove from the core support assembly.

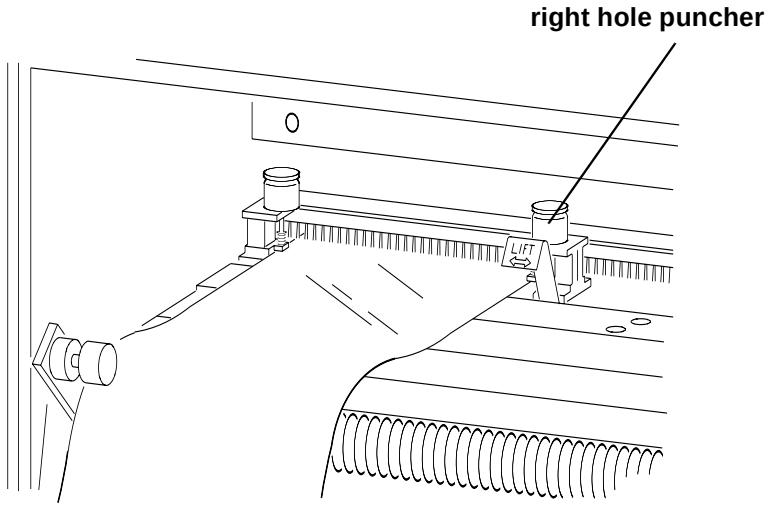
   CAUTION: Keep the exposed paper in a darkroom or a dark bag until you process it.



Adjusting the Paper Hole Punchers

1. Lift the arm for the right paper hole puncher.
2. Move the right paper hole puncher to the correct location. The hole puncher falls into a detent on the sliding bar when it is in the correct location.

   NOTE: The punch positions for A4 and 12 inch paper are very close together and can be easily mistaken for each other. Make sure you set the paper hole puncher to the correct position for the paper you are using.



Using the Printer Features

The following features are available from the menu on the OCP.

Accessing the Menu

1. Press **On/Off line** to take the printer offline.
2. Press **Menu**.

   NOTE: If there are jobs waiting to be printed, the following options are available:

   - "Cancel" – exit
   - "Start" – prints jobs in the print queue and then accesses the menu
   - "Menu" – deletes jobs in the print queue and then accesses the menu

Unloading Paper

Follow one of the following procedures to unload paper. For more information about these procedures, see "Unloading the Paper from the Printer" on page 3-19.

Unloading the Supply and Takeup

1. Select "Unload Paper" from the main menu on the OCP.
2. Select "Unload Supply and Takeup" from the main menu on the OCP.
3. Select "Unload Supply and Takeup NOW?"

   The printer enters its unload paper sequence. When the unload paper sequence is complete, the OCP returns to the main menu.
4. Select "Exit" to return to the OCP display. You will be prompted to load another roll of paper into the printer.

Unloading the Takeup and Rethread

1. Select "Unload Paper" from the main menu on the OCP.
2. Select "Unload Supply and Rethread" from the main menu on the OCP.
3. Select "Unload Supply and Rethread NOW?"

   The printer enters its unload paper sequence and you will be prompted to recinch the takeup cassette. When the unload paper sequence is complete, the OCP returns to the main menu.
4. Select "Exit" to return to the OCP display.

Shutdown and Restart

Shutdown

1. Select “Shutdown” from the main menu on the OCP.
2. Select “Shutdown NOW?”
   This causes the printer to shut down operations and enter the standby mode.

Restart

1. Select “Restart” from the main menu on the OCP.
2. Select “Restart NOW?”
   This causes the printer to immediately shut down operations and reboot.

   NOTE: This shutdown is not a soft shutdown and does not save the parameter settings that have been made since the previous startup. Also, using this feature may cause a black line on the paper in the shoe.

Selecting a Loading Option

The optional paper loading feature, available on the OCP’s main menu, allows you to choose a loading option depending on your needs. The option you choose determines how much paper is used during the load and whether or not the first images from the shoe have cut or order punches.

NOTE: Do not use this feature if you are using a digital printer paper saver.

The four load options are:

- **1-Step Normal (factory default)**—The first image exposure will be made on the paper that was stored before the paper punch when the takeup cassette was loaded. All images have the appropriate cut and order punches.
- **1-Step Save**—Since the paper in the shoe is still unexposed, it is used for the first image exposure. However, since the paper is threaded through the printer during loading, the images on the first exposure are not individually punched.
- **2-Step Dark**—the room is completely dark while the paper is being cinched onto the takeup cassette. When loading, the paper is only partially advanced through the printer. You must then expose some images and when prompted, cinch the paper to the takeup cassette in the dark. The first exposure may or may not be punched, depending on whether you loaded a new roll of paper or are rethreading an existing roll. This option provides the least amount of waste.
- **2-Step Light**—the room is light while the paper is being cinched onto the takeup cassette. When loading, the paper is only partially advanced through the printer. You must then expose some images and when prompted, cinch the paper to the takeup cassette in the light. The first exposure may or may not be punched, depending on whether you loaded a new roll of paper or are rethreading an existing roll.

Paper Loading Options

Load Option	*Lead Edge Paper Waste*	*Paper Punches*
1-Step Normal (factory default)	108 inches	at all images
1-Step Save	62 inches	at all images after the first exposure
2-Step Dark (new load)	35 inches	at all images
2-Step Dark (rethread)	18 inches	at all images after the first exposure
2-Step Light (new load)	47 inches	at all images
2-Step Light (rethread)	47 inches	at all images after the first exposure

NOTE: For options in which the first exposure is not individually punched, the first exposure will use 33 inches of paper. To minimize paper waste, the size of the images for the first exposure should total 33 inches whenever possible.

Selecting the Paper Load Option

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “Paper Load”.
4. Use the **Up** and **Down Arrows** to select the desired paper load option.
5. Press **Select** to select/set the new value.
6. Select “Exit” to return to the previous menu on the OCP.

2-Step Paper Loading

The 2-step paper loading process is used when you choose the “2-Step Dark” or “2-Step Light” option for paper loading. This process minimizes paper waste by printing on the paper before the paper is threaded to the takeup area and you cinch it onto the takeup cassette.

The 2-step loading process is different than the 1-step loading process that is used for loading paper under “1-Step Normal” or “1-Step Save” conditions. When you choose “1-Step Light” or “1-Step Save”, the paper is threaded through the shoe and cinched onto the takeup cassette before images are printed.

Changing the Paper Loading Option

When using the Paper Loading Feature, you should select the paper load option before you load paper into the printer. However, you can change the paper load option at any time. If you change the loading option:

- before selecting “Unload Takeup and Rethread” from the main menu on the OCP, the paper will follow the rethreading procedure for the loading option that you selected.
- after the paper is loaded but before the first exposure is made, the paper loading process will not be affected. If you are using the “2-Step Dark” option and the paper is not cinched, you will still be prompted to “go dark” when it is time to cinch the paper.

When you change the paper loading option from “1-Step Normal” or “1-Step Save” or “2-Step Dark” or “2-Step Light”, the printer will print the first exposure on the paper that is already positioned in the shoe. Similarly, when you change the paper loading option from “1-Step Subdued”, “2-Step Dark” or “2-Step Light” to “1-Step Light”, the first exposure will not be made on the paper in the shoe and all images will be punched appropriately.

Additional Paper Loss

(For 1-Step Save and 2-Step Rethread Paper Loading Only)

Only one exposure is made on the paper that is in the shoe after loading. Some paper may be wasted if the total size of the images on the first exposure does not fully use the paper in the shoe (33 inches). If “Automatic Roll ID” is enabled, the first image on the roll (for the Roll ID) is 6.5 inches long. This leaves 22.5 inches available for additional images.

If the first image for the second exposure is less than 12.5 inches,12 inches of paper between the first and second exposure may be wasted.

If the printer is reinitialized before the first exposure, additional paper is advanced and all images are individually punched.

Changing the Length of Paper Remaining on the Supply Roll

The value displayed is the length of paper that is left on the supply roll or in the takeup cassette. This number should be edited when a new or partially used paper roll is installed in the printer. You will normally receive a prompt to enter this number when a new roll is being loaded into the printer. The value should only need to be modified here if there is a need to change the number. The range for paper is 0 to 999.

1. Select “Setup” from the main menu on the OCP.
2. Select “Paper”.
3. Select “Supply Length”.
4. Select “Takeup Length”.
5. Use the **Up** and **Down Arrows** to select a new length for the paper.
6. Press **Select** to select/set the new value.
7. Select “Exit” to return to the previous menu on the OCP.

Setting the Length of the Paper Trailer

This value determines the amount of unexposed paper to be added to the trail edge of the paper wound into the takeup cassette when you send an “Unload Takeup and Rethread” command.

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “Trailer”.
4. Use the **Up** and **Down Arrows** to select a new trailer length (from 0 to 3000 pixels).
5. Press **Select** to select/set the new value.
6. Select “Exit” to return to the previous menu on the OCP.

Setting the Punches

The printer has two paper punches, the back paper punch (closest to the back of the printer) and the front paper punch (closest to the front of the printer). The front paper punch can be adjusted to accommodate the width of the paper.

The printer is capable of three types of paper punches:

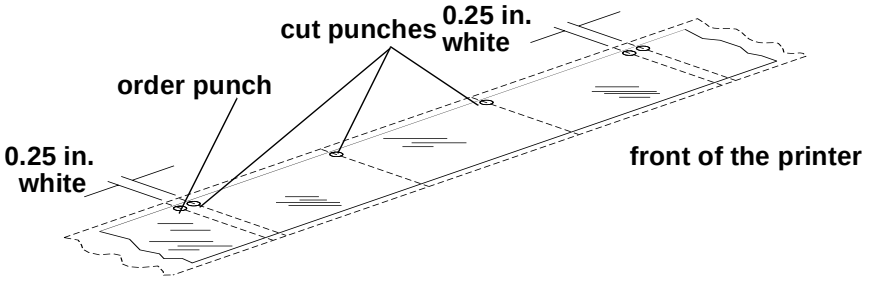
Cut Punch—occurs automatically between each print. This punch can be made by either the back or front paper punch.

Order Punch—controlled by a command that is sent from the host computer. This punch can be made by either the back or front paper punch.

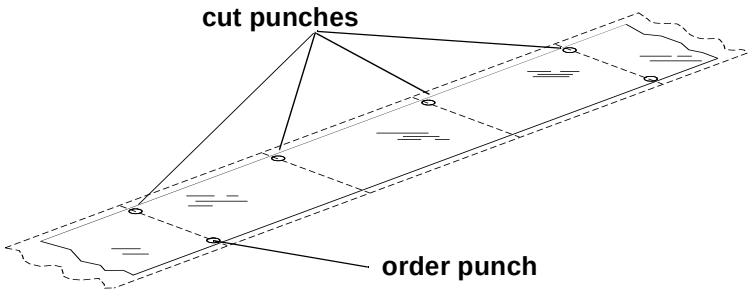
Gutter Punch—controlled by a command sent from the host computer. See “Changing the Gutter Width” on page 3-35. This punch is on the same side as the cut punch and is 0.25 to 1.0 in. inside of the image (depending on the value of the gutter width).

outline of paper ——
outline of image – –

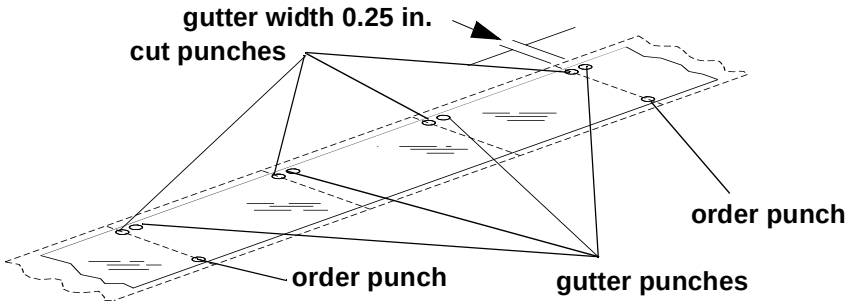
Cut and Order Punches on Same Side of the Paper



Cut and Order Punches on Opposite Sides of the Paper



Gutter Punches With Cut and Order Punches on Opposite Sides of the Paper



NOTE: All three types of paper punches are made at the trail edges of the print.

Determining the Location of the Cut and Order Punches

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “Cut Punches” or “Order Punches”.
4. Select “<>Punch Position”.
5. Select “front” or “back”.
6. Select “<> Punch Enabled”.

Using the Automatic Roll ID

The printer has the ability to automatically print a roll identification (roll ID) at the beginning of each roll.

When this feature is enabled, the roll id will be printed every time paper is loaded into the printer and every time the paper is rethreaded (for example: when “Unload Takeup and Rethread” is selected).

The roll ID includes the date, time, and roll ID number. The date and time are the date and time that the roll of paper was loaded. The roll ID is a three digit number. This number will automatically increment each time a new roll is loaded. During loading, this number will be displayed on the OCP. The operator can change the number or accept the incremented number.

If the printer runs out of paper while printing a job, an asterisk (*) will be printed after the roll ID on the following roll to indicate that the first print(s) on this roll of paper belong with the print(s) of the last job that was printed on the previous roll of paper.

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “More”.
4. Select “Roll ID”.
5. Select “Printer ID”. The printer ID will be printed with each roll ID and will not change.
6. Select “Roll ID Enabled” and toggle to:
   - “Yes” if you want a roll ID to be printed at the beginning of each roll

     or
   - “No” to not print a roll ID.

Using Page Starts

The value for “Page Starts” indicates the number of pixels between the back wall of the printer and the edge of the image. For example, when the printer begins to print, it moves the print head to the back wall of the printer and then advances it toward the front of the printer by the number of pixels specified in the “page starts” parameter (value).

The “page starts” value is set so that the edge of the image closest to the back of the printer will print off of the paper and will then be borderless on the back edge of the print.

NOTE: If the image size is wider than the paper, the front edge of the image will also be borderless.

Setting the Page Starts Value

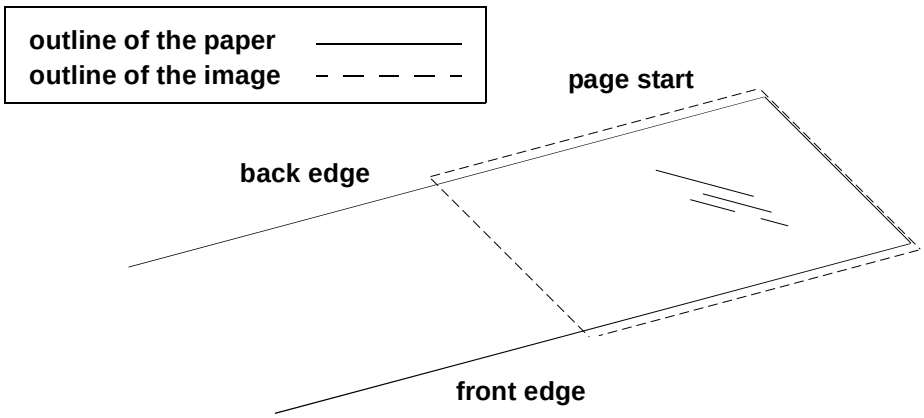
1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “Page Starts”.
4. Select the Page Start you want to modify.
5. Use the **Up** and **Down Arrows** to select a new Page Start value.
6. Press **Select** to select the new value.
7. Select “Exit” to return to the previous menu on the OCP.

Producing Borderless Prints

To achieve borderless prints on both the front and back edges of the paper, you must set the Page Starts value to adjust the location of the image so that both edges of the image will print off of the paper.

NOTE: The image width must be at least 76 pixels wider than the width of the paper to ensure a borderless print. For example:

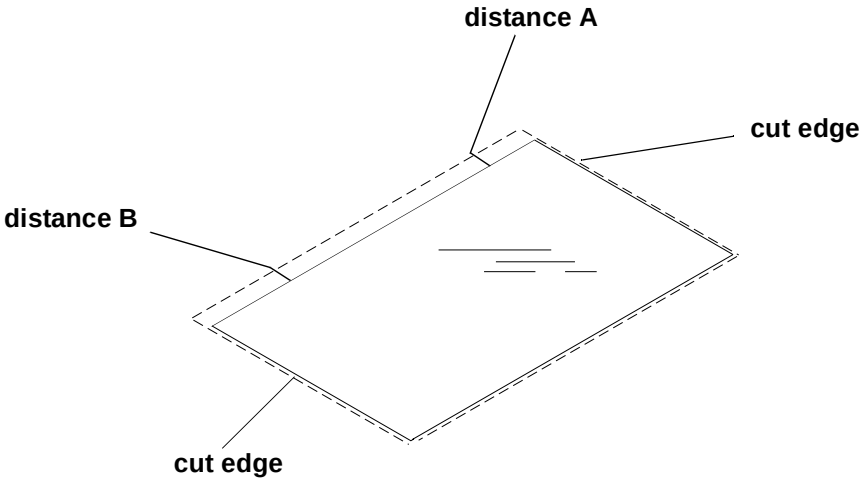
Paper Size	*Image Width in Pixels*
10 inch	2576
11 inch	2826
12 inch	3076
20 inch	5076
A4	3000



If white borders are present on either the front or back edge of the print:

1. Measure the white border at both the lead (distance A) and the trail edge (distance B) and determine its average width.
2. Convert the average width of the white border to a pixel value.

3. Adjust the page starts value to the calculated pixel value. If the white border is on the:
   - back edge—reduce the page start value by the pixel value
   - front edge—increase the page start value by the pixel value



IMPORTANT: The page start value for each paper width is different.

Resetting the Defaults

Resetting the Parameters

This procedure resets the parameters of the printer to the factory setup (default) values. To indicate that the values have been reset to the factory setup values, the word “done” is displayed in parenthesis after “Reset Parameters To Factory” on the menu.

NOTE: Diagnostic parameters are not reset by this action.

1. Select “Setup” from the main menu on the OCP.
2. Select “Defaults”.
3. Select “Reset Parameters to Factory”.
4. Select “Exit” to return to the previous menu on the OCP.

Resetting the Printing LUTs

This procedure resets the Printing LUTs stored in nvram to the factory setup (default) values. To indicate that the values have been reset to the factory setup values, the word “done” is displayed in parenthesis after “Reset Printing LUTs To Factory” on the menu.

1. Select “Setup” from the main menu on the OCP.
2. Select “Defaults”.
3. Select “Reset Printing LUTs to Factory”.
4. Select “Exit” to return to the previous menu on the OCP.

Resetting the Copyright Detection LUTs

This procedure resets the Copyright Detection LUTs stored in nvram to the factory setup (default) values. To indicate that the values have been reset to the factory setup values, the word “done” is displayed in parenthesis after “Reset Copyright LUTs To Factory” on the menu.

1. Select “Setup” from the main menu on the OCP.
2. Select “Defaults”.
3. Select “Reset Copyright LUTs to Factory”.
4. Select “Exit” to return to the previous menu on the OCP.

Selecting the SCSI Ports

1. Select “Setup” from the main menu on the OCP.
2. Select “Ports”.
3. Select “SCSI”.
4. Select “SCSI Target ID”.
5. Use the **Up** and **Down Arrows** to select a new SCSI ID. Valid SCSI IDs are 0, 1, 2, 3, 4, 5, 6, 7.

   NOTE: Make sure the number you select for the SCSI ID has not been assigned to another device.
6. Press **Select** to select/set the new value.
7. Select “Exit” to return to the previous menu on the OCP.

Setting the Target Pad Reads

1. Select “Setup” from the main menu on the OCP.
2. Select “Ports”.
3. Select “SCSI”.
4. Select “Target Pad Reads”.
5. Use the **Up** and **Down Arrows** to select “Yes” or “No” to indicate whether or not the SCSI device driver will pad initiator read requests with zeros to the requested length or simply terminate the SCSI read transaction when it has sent only the data it has to send.
6. Press **Select** to select/set the new value.
7. Select “Exit” to return to the previous menu on the OCP.

Selecting A Modem

Resetting the Modem Port

1. Select “Setup” from the main menu on the OCP.
2. Select “Ports”.
3. Select “Modem (Diag)”.
4. Select “Reset Port”.
5. Select “Reset Modem Port Now”.

   NOTE: This causes the modem port to be set to its original factory setting.
6. Select “Exit” to return to the previous menu on the OCP.

Checking the Modem Presence

NOTE: This causes the printer to query the modem port for the presence of a modem.

1. Select “Setup” from the main menu on the OCP.
2. Select “Ports”.
3. Select “Modem (Diag)”.
4. Select “Check Presence”.
5. Select “Check Modem Presence Now”.
6. Select “Exit” to return to the previous menu on the OCP.

Setting the Time and Date

Setting the Current Time

1. Select “Setup” from the main menu on the OCP.
2. Select “Time”.
3. Select “Current Time”.
4. Use the **Up** and **Down Arrows** to select a new time.
5. Press **Select** to select/set the new value.
6. Select “Exit” to return to the previous menu on the OCP.

Setting the Current Date

1. Select “Setup” from the main menu on the OCP.
2. Select “Time”.
3. Select “Current Date”.
4. Use the **Up** and **Down Arrows** to select a new date.
5. Press **Select** to select/set the new value.
6. Select “Exit” to return to the previous menu on the OCP.

Setting the Current Day

1. Select “Setup” from the main menu on the OCP.
2. Select “Time”.
3. Select “Day”.
4. Use the **Up** and **Down Arrows** to select a new day.
5. Press **Select** to select/set the new value.
6. Select “Exit” to return to the previous menu on the OCP.

Setting the Amount of Space Between Images

The Page Spacing feature allows you to determine the amount of white space the printer adds between the images. Having this space between the images maximizes the image area of each print by centering the cut and order punches (that will be removed later by a cutter) in this space.

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “Page Spacing”.
4. Select “Page Spacing Enabled”.
5. Use the **Up** and **Down Arrows** to select either “On”, “Off” or “Host Select”.
6. Press **Select** to select/set the new value.

Host Select	***On***	***Off***
The amount of space between the images is determined by the input from the host. If the host does not specify a value for page spacing, space is not inserted between the images.	The Page Spacing feature is on and the amount of space between the images is determined by the value specified in the “Page Spacing (pixels)” field. If the host specifies a value, this value is used in place of the value specified in the “Page Spacing (pixels)” field.	The Page Spacing feature is off. Space is not inserted between the images. Page spacing information from the host is not used by the printer.

7. Select “Page Spacing (pixels)”.
8. Use the **Up** and **Down Arrows** to select the value for number of pixels that you would like for the width of the space between the images.
   NOTE: This value must be a multiple of 8 between 8 and 248.
9. Press **Select** to select/set the new value.
10. Select “Exit” to return to the previous menu on the OCP.
    NOTE: Another way to maximize the image area of each print is to overfill (enlarge) the images through the host software before sending them to the printer.

Changing the Units of Measurement for Paper Sizes

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “More”.
4. Select “Units”.
5. Select “Units” again.
6. Use the **Up** and **Down Arrows** to select either “English” or “Metric”.
7. Press **Select** to select/set the new value.
8. Select “Exit” to return to the previous menu on the OCP.

Changing the Gutter Width

This feature allows you to change the location of the gutter punch that is sent by a command from the host computer. The gutter punch is made in the trail edge of the image. See “Setting the Punches” on page 3-27.

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “More”.
4. Select “More”.
5. Select “Gutter: #”.
6. Use the **Up** and **Down Arrows** to select the value for number of pixels that you would like the gutter width to be.

   NOTE: This value must be between 62 and 250.
7. Press **Select** to select/set the new value.
8. Select “Exit” to return to the previous menu on the OCP.

Accessing the Software Version Number

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “More”.
4. Select “Version” to view the version number for the FEE, PEC and OPC circuit boards.
5. Select “Exit” to return to the previous menu on the OCP.

Setting the Copyright Detection Feature

The Copyright Detection feature is designed to protect the copyrighted images of professional photographers. This feature is applied to copyrighted images to prevent images from being duplicated.

1. Select “Setup” from the main menu on the OCP.
2. Select “Printer”.
3. Select “Copyright Detection”.
4. Use the **Up** and **Down Arrows** to select “Always On”, “Always Off” or “Host Select”.

Host Select	*Always On*	*Always Off*
Copyright Detection can be enabled or disabled by the host on a print by print basis for each image that is downloaded to the printer.	Copyright Detection is enabled and will be applied to every image that is downloaded to the printer.	Copyright Detection is disabled for every image that is downloaded to the printer.

5. Press **Select** to select/set the setting for the new option.
6. Select “Exit” to return to the previous menu on the OCP.

Handling and Storing the Paper

Follow the instructions included with the paper for storing and handling the paper properly.

IMPORTANT: Avoid storing paper in low humidity conditions.

Storing Paper by Using the Soft Shutdown Feature

The Soft Shutdown feature (see “Soft Shutdown” on page 2-8) causes the rollers to automatically reverse to rewind the lead edge of the paper to the first metering roller during the soft shutdown process.

About Printing

- A print job is not printed until it is completely downloaded to the printer.
- Print jobs are printed in the order they are received.
- If multiple copies of a print job are requested, they are positioned next to each other down the length of the roll, regardless of the width of the image.
- It takes the same amount of time to print (expose the paper) a length of 6.5 inches as it does to print 33 inches.

Image Size

The minimum image length is 6.5 inches (1625 pixels). White space will automatically be added to images smaller than 6.5 inches to increase the image size to this minimum.

The maximum image length is approximately 33 inches (8248 pixels).

Buffered and Unbuffered Jobs (or Deferred and Immediate)

Jobs can be stored in memory when downloaded from the host until enough jobs are downloaded to maximize the printing that occurs during the print cycle.

Most host applications have an option to indicate whether to print the job as soon as it completes downloading to the printer or to wait until the printer has a full buffer to print.

If the print job is sent down to the printer with the Unbuffered/Immediate option, the job will be printed as soon as it completes downloading to the printer. Regardless of the number of (or size of) the jobs in the printer waiting to print, jobs sent down with this option will be printed separately.

In the printer, the paper is punched before the print job is printed. Since the punch is upstream of the printing, the first job of the next print cycle may be punched when positioning the paper for the current print cycle (to reduce waste). If the print job is sent down to the printer with the Buffered/Deferred option, this indicates to the printer to wait until it has a full buffer before printing. A full buffer is 26.5 to 33 inches. A print job sent with this option will be printed when:

- the next print job received will not fit within the full buffer length
- the next print job received is requested to be printed unbuffered/immediate (the job received this way is printed by itself)
- the buffer is forced to be printed (see below)
- the buffer is full and the next print job has started to be downloaded to the printer

NOTE: If your host application needs to wait until a print job has been completely downloaded to the printer before it can begin processing the next print job, this option should not be used with larger width paper. It will slow down the productivity of your system.

To print deferred or buffered jobs:

"Pages Deferred" displays on the OCP and a number other than zero displays in the Pages Waiting field when one or more jobs are waiting to be printed.

1. Press **On/Off Line** to take the printer offline.
2. Press **Menu**.
3. Press **Start** to print the jobs.

Host Software Functions Supported By the Printer

The printer supports the following functions that may be available through your host software. Check the documentation for your host software to see if these functions are available and how to activate them.

Bar Coding

The bar coding function can be used for order tracking, package cutting (for example type 208), etc.

Pixel Doubling

The pixel doubling function can be used to double the size of an image.

4 Maintaining the Equipment

This chapter includes information you will need to maintain the KODAK PROFESSIONAL LED II Printer 20R. The topics are as follows:

Maintaining the Printer

Daily Maintenance

Calibrating the Printer

Calibrate the printer after every 8 to 10 hours of operation or when you change paper emulsions.

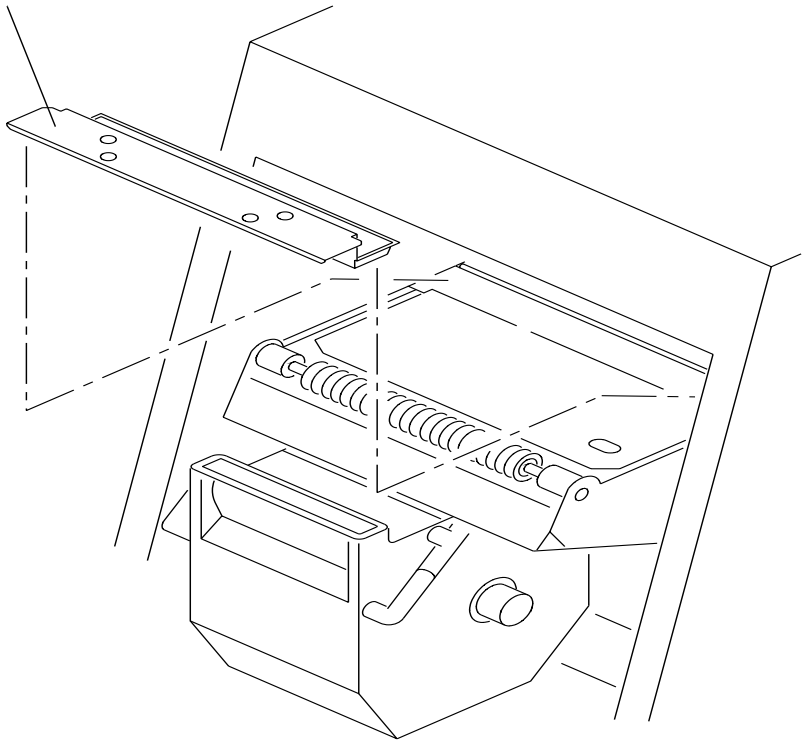
NOTE: If the environmental temperature changes more than 5^{o} Fahrenheit (3^{o} Celsius) since the printer was last calibrated, a calibration will be necessary to maintain the image quality of the prints.

Follow the instructions for calibrating the printer (see “Calibrating the Printer” on page 2-2).

Removing the Punch Chad

Remove and dispose of the punch chad from the punch chad tray in the paper supply area every time you add a new roll of paper to the printer.

punch chad tray

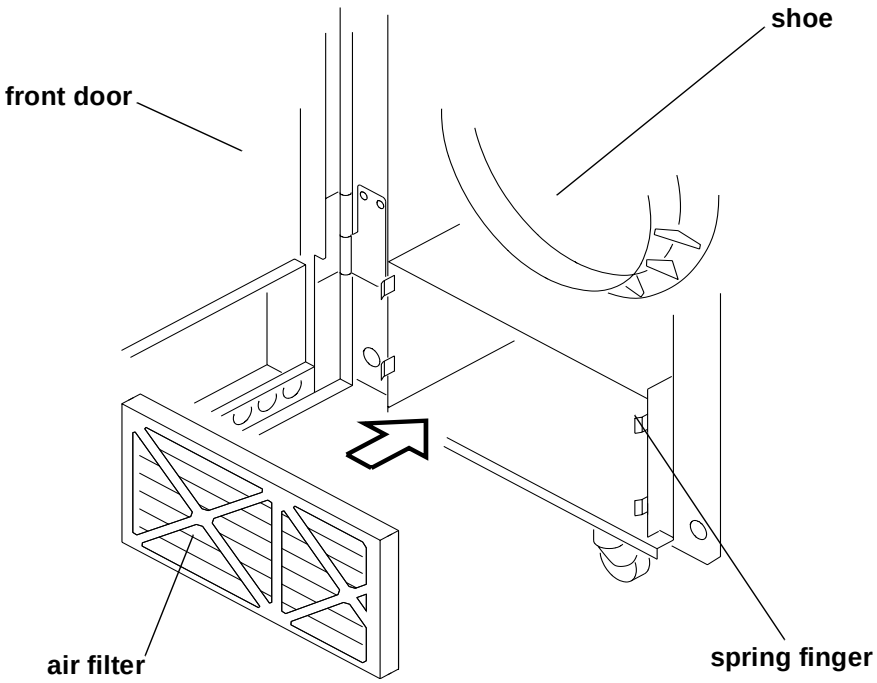


Periodic Maintenance

Replacing the Air Filter

The air filter under the shoe should be replaced approximately every 3 months.

1. Open the front door of the printer.
2. Pull back the spring fingers.
3. Remove the air filter.
4. Install a new air filter. For parts ordering information, see “Supplies” on page A-1.



5 Diagnostics and Troubleshooting

This chapter describes the error messages for the KODAK PROFESSIONAL LED II Printer 20R and offers information for troubleshooting. The information in this chapter includes:

Printer Error Messages

The following messages appear on the printer's OCP when an equipment problem occurs:

- **Error Messages**–indicate an error condition that needs to be corrected or resolved before you can resume operating the equipment. (For example: "OUT OF PAPER", "SUPPLY DOOR OPEN") Some error conditions may be easily corrected and some may require the attention of a high level operator or even a service person.
- **Miscellaneous Error Messages**–indicates a problem with the printer has occurred that may or may not require you to call your service person.

More than one problem can occur at a time, however, only the message for the first error will appear.

Manual or Automatic Reinitialization

The printer will reinitialize when you correct the problem that caused the error code and press the Start key on the OCP within 30 seconds after closing the printer door(s).

If you do not press the Start key within 30 seconds after closing the printer door(s), the error message will disappear and the printer will automatically reinitialize when you begin to print.

The reinitialization process includes:

- **Mechanical Self Check**—A self-check of all mechanical systems in the printer occurs.
- **Paper Check**—A cut is made across the lead edge of the paper roll to ensure a clean straight cut. The paper is then repositioned in the shoe.

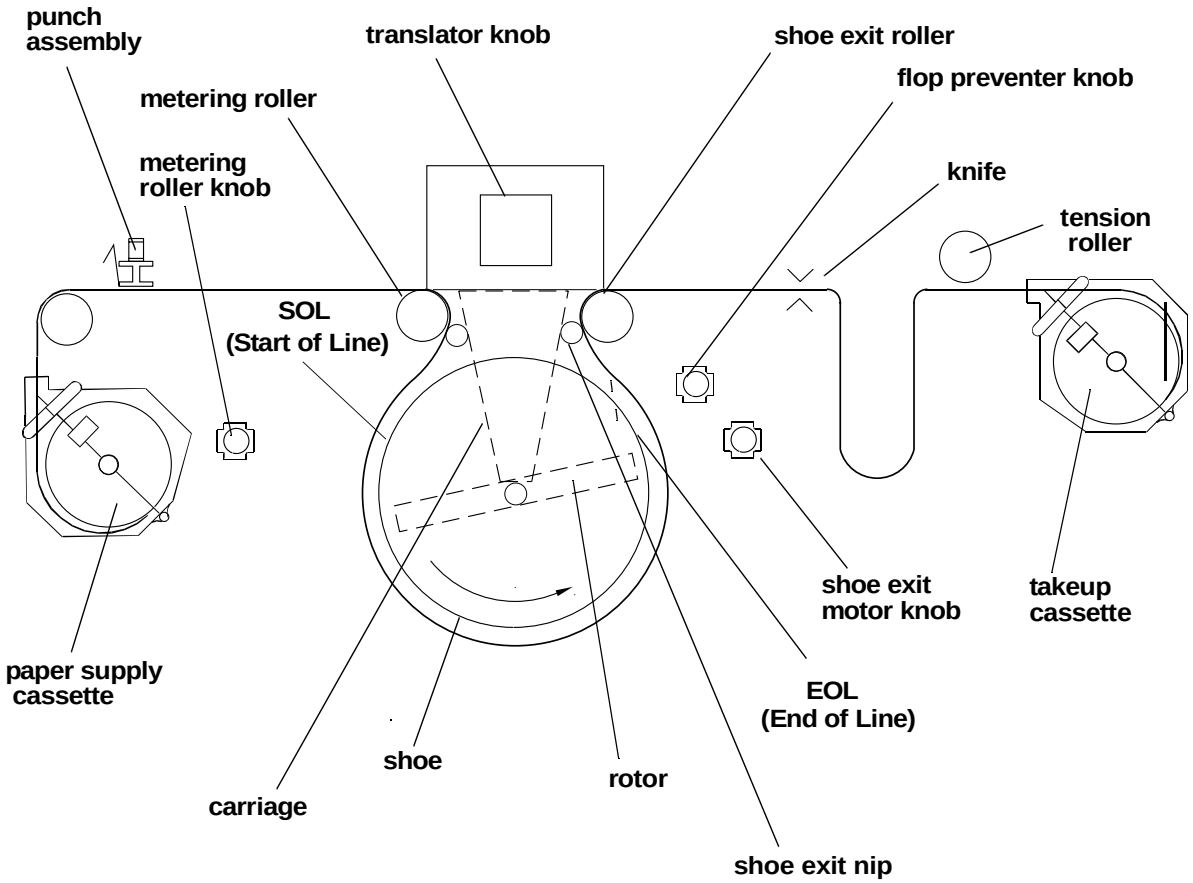
Printer Paper Path

The paper path through the printer is illustrated below. Use this information when troubleshooting the printer.

WARNING: Do not touch the carriage. Use the translator knob to move the carriage.

CAUTION: Do not use sharp objects on the shoe.

Rotate the flop preventer knob to move the flop preventer out of the way before moving the carriage with the translator knob.



Printer Error Messages

If the error message continues to occur after implementing the possible solutions from the table below, call your service person.

Error Code	Error Message	Possible Cause	Possible Solution
1	not initialized	Attempting to perform a function before the printer has initialized.	Reinitialize the printer.
2	initializing err	Attempting to perform a function during the initialization process.	Wait for initialization to complete and try the function again.
3	busy	Attempting to perform a function while the printer is busy performing another function.	Wait for the previous function to complete and try the function again.
4	out of paper	Paper cassette is empty and the paper path sensors do not detect paper.	Load a full paper cassette into the printer.
5	end of roll at supply	Printer has run out of paper and the tail end of the paper has been rewound to the paper supply area.	Remove the tail end of the paper at the supply door and load a full supply cassette into the printer.
6	paper already loaded	“Load Paper” was selected when paper was already loaded.	Solution not required.
7	supply door open, please close	The paper supply door was left open.	Close the paper supply door.
8	front door open, please close	The front door was left open.	Close the front door.
9	back door open, please close	The back door was left open.	Close the back door.
10	takeup door open, please close	The takeup door was left open.	Close the takeup door.
12	motor busy	A low level motor move command was issued while the timer motor was in use.	Wait for the motor move to complete or stop the motor and reissue the command.
13	motor setup invalid	A low level motor move command was issued while the timer motor was in use.	Wait for the motor move to complete or stop the motor and reissue the command.
14	bad printer state	The printer cannot execute the requested command.	Reinitialize the printer.
15	timers busy	A low level motor move command was issued while the timer motor was in use.	Wait for the motor move to complete or stop the motor and reissue the command.
16	timer spurious interrupt code	A spurious (false) timer interrupt has occurred.	No solution required.
17	command not implemented	The function requested is not supported in this software release.	No solution required.

Error Code	Error Message	Possible Cause	Possible Solution
18	unexpected OCP reply	The 300 board sent an unexpected message to the 200 board.	Call for service.
20	pec service mode	The service switch for the 200 board is on, enabling on-board LEDs that can cause fogging.	Call for service.
21	opc service mode	The service switch for the 300 board is on, enabling on-board LEDs that can cause fogging.	Call for service.
23	in error state	A previous error has not been cleared.	Reinitialize the printer.
24	middle of load	Attempting to perform a function while paper is being loaded.	Wait until paper loading is complete and perform the function again.
26	slack loop back door open	The back slack loop door was left open.	Close the back slack loop door.
27	slack loop front door open	The front slack loop door was left open.	Close the front sheet slack loop door.
28	unit does not fit	The sum of all the unit setups since the last print start exceeds 33 inches.	Begin printing.
30	unexpected knife neither limit	Knife not detected at either end.	Call for service.
31	operation failed due to door open	The door was opened and closed and paper was fogged.	Reinitialize the printer.
32	need to cinch paper in takeup	The paper is not cinched correctly in the takeup cassette.	• Cinch the paper in the takeup cassette • Check that the takeup cassette is installed correctly,
33	end of roll detected	The supply paper cassette is empty.	Remove the paper from the takeup cassette and install a new roll of paper in the supply cassette.
35	printer needs to cinch takeup	The paper is not cinched correctly in the takeup cassette.	• Cinch the paper in the takeup cassette • Check that the takeup cassette is installed correctly.
36	cinch cancelled, paper not cinched	Paper loading was cancelled after the prompt to cinch paper.	• Cinch the paper in the takeup cassette • Check that the takeup cassette is installed correctly,
37	error occurred in sheet transport	An error occurred in the sheet transport area.	Reinitialize the printer.
64	bad msg checksum	A problem with a prom has occurred.	Call for service.

Error Code	Error Message	Possible Cause	Possible Solution
66	paper jam in shoe	Jam detect sensor detected jammed paper at the shoe entrance.	• Remove jammed paper and unload the takeup cassette. • If you are using a digital printer paper saver and the paper jammed before it was cinched in the takeup cassette, wipe the paper saver with a damp, cloth to remove dust and static electricity. • Reload the paper.
67	rotor not up to speed	An obstruction in the shoe area prevented the rotor from achieving the correct speed in the expected amount of time.	Wait for at least 1 minute, then clear the obstruction in the shoe and confirm that all doors are closed.
68	xltr hard limit detected	Either the front or back hard limit switch was actuated.	• Move the translator off the front or back hard limit switch. Use the translator knob. • Call for service.
69	unexpected xlator front limit	The translator front limit switch was detected unexpectedly.	Confirm that all doors are closed and reinitialize the printer.
70	xlator front limit not detected	The translator front limit switch was not detected after moving translator to the front of the printer.	Confirm that all doors are closed and reinitialize the printer.
71	unexpected xlator back limit	The translator back limit switch was detected unexpectedly.	Confirm that all doors are closed and reinitialize the printer.
72	xlator back limit not detected	The translator back limit switch was not detected after moving translator to the back of the printer.	Confirm that all doors are closed and reinitialize the printer.
74	paper present not detected	Paper was detected at the 11- and 20-inch paper sensors but not at the 10-inch paper sensors.	Check that the paper is loaded and threaded properly.
75	unexpected 11 inch paper	Paper was detected at the 11-inch paper sensor but not at the 10- or 20-inch paper sensors.	Check that the paper is loaded and threaded properly.
76	11 inch paper not detected	Paper was detected at the 10-inch paper, 20-inch paper, shoe entrance, and the knife sensors but not at the 11-inch paper sensor.	Check that the paper is loaded and threaded properly.
77	unexpected 20 inch paper	Paper was detected at the 20-inch paper sensor but not at the 10- or 11-inch paper sensors.	Check that the paper is loaded and threaded properly.
79	unexpected paper at shoe entr.	Paper was detected at the shoe entrance sensor but not at the paper width sensor.	Remove any paper from the shoe.

Error Code	Error Message	Possible Cause	Possible Solution
80	paper at shoe entr not detected	During paper loading, the lead edge of the paper was not detected at the shoe entrance sensor within the expected amount of time.	Load the paper in less time.
81	unexpected paper at knife	• Paper jam occurred as paper was being reversed from the knife to the end of roll and paper was detected at the knife instead of at the shoe entrance. • Paper sensor at knife or shoe is not functioning correctly.	Check that the paper is loaded and threaded properly. Check for a paper jam at the knife area.
82	paper at knife not detected	• Paper was not detected at the knife when it should have been. • Paper jam occurred. • Paper sensor at knife or shoe is not functioning correctly.	Check that the paper is loaded and threaded properly. Check for a paper jam at the knife area.
85	slack loop err, takeup paper cinched?	The printer was unable to takeup the slack loop because the paper was not properly cinched.	Check that the paper is properly attached to the cardboard core in the takeup cassette.
86	slack loop high not detected	Unable to detect slack loop.	Check that the paper is properly attached to the cardboard core in the takeup cassette.
87	timeout waiting to cinch takeup	The printer door was not closed within the normal amount of time.	Open the takeup door, attach the paper to the cardboard core in the takeup cassette and close the takeup door.
89	unexpected deflector nip up not detected	The deflector nip up switch was detected after moving the deflector to the down position.	• Check for a paper jam at the sheet transport area. • Reinitialize the printer.
90	knife front not detected	The front switch for the knife was not detected after moving from front to back.	Check for a paper jam at the knife area.
91	deflector nip up not detected	The deflector nip up switch was not detected after moving the deflector from the down position to the up position.	• Check for paper at the sheet transport area. • Reinitialize the printer. • Call for service.
92	knife back not detected	Knifeback switch was not detected after moving knife from front to back.	Check for a paper jam at the knife area.
93	translator power fault error	A power fault was detected by the translator puck.	Close all doors and reinitialize the printer.
95	unexpected shoe exit nip detected	The shoe exit nip made switch was detected after moving the shoe exit nip to the nip unmade position.	Check for a paper jam in the shoe exit nip area.

Error Code	Error Message	Possible Cause	Possible Solution
96	shoe exit nip made not detected	The shoe exit nip made switch was not detected after moving the shoe exit nip to the nip made position.	Check for a paper jam in the shoe exit nip area.
97	unexpected deflector nip made	The deflector nip made switch was detected after moving the deflector to the up position.	Check for a paper jam in the deflector nip area.
98	deflector nip made not detected	The deflector nip made switch was not detected after moving the deflector to the up position.	Check for a paper jam in the deflector nip area.
99	timeout clearing data patch	The rotor was not able to be properly started.	Call for service.
100	xlator start failed	The translator failed to start.	Call for service.
101	shoe exit nip start failed	The shoe exit nip failed to start.	Call for service.
102	deflector start failed	The deflector failed to start.	Call for service.
109	sheet xport ready timeout	The sheet transport area remains busy or initializing process is taking longer than expected.	Call for service.
110	paper detected in machine	Paper was detected in the printer while attempting to load a new roll of paper.	Remove all paper from the printer and reload the new roll of paper.
111	xlator home failed	The translator could not find its home position after several attempts.	Call for service.
112	invalid paper width sensor coverage	The paper is not laying flat over the paper width sensors or the end of roll has been reached.	Open the supply door and move the paper to the correct position.
128	back checksum 0	ROM test failed at powerup.	Reinitialize the printer and call for service.
129	bad checksum 1	RAM test failed at powerup.	Call for service.
130	rotor not stopping	Rotor will not turn off.	Turn off the printer and call for service.
131	xlator at both limits	Both the front and back translator soft limit switches are actuated.	Call for service.
132	knife at both limits	Both the front and back knife limit switches are actuated.	Call for service.
133	timeout sheet xport reply	The 300 board does not reply to the 200 board within the expected amount of time.	Call for service.
134	duart self test failed	Duart test failed when the printer was turned on.	Call for service.
192 – 219	Various software error messages.	A software problem has occurred.	Shut down and restart the printer. Call for service.

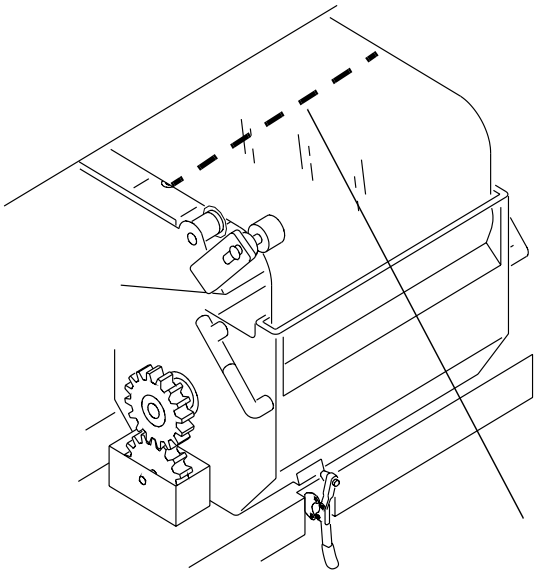
Miscellaneous Printer Error Messages

Miscellaneous error messages indicate that a problem with the printer has occurred that may or may not require you to call your service person.

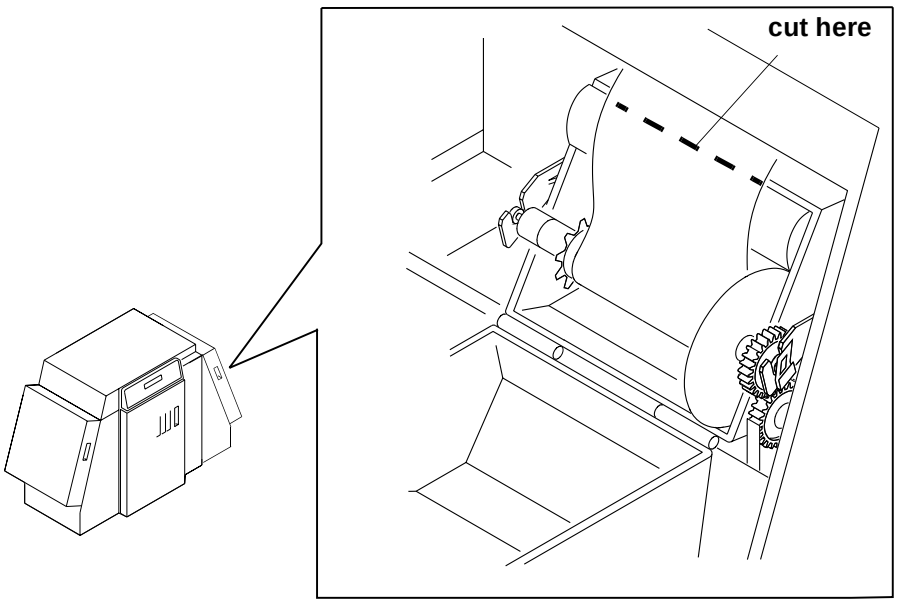
Error Code	Error Message	Possible Cause	Possible Solution
256	door open, please close	The paper supply door was left open.	Close all doors.
257	machine control initialize error	The printer did not initialize.	Reinitialize the printer and call for service.
258	machine control initialize timeout	The printer did not initialize in time.	Reinitialize the printer and call for service.
259	machine control reply timeout	A machine control communications error occurred.	Reinitialize the printer and call for service.
261	time out waiting to feed paper	• Paper did not feed in time during loading. • Paper was loaded incorrectly.	• Reload the paper. • Reinitialize the printer and call for service.
262	bad communications - call service	A communications error has occurred.	Reinitialize the printer and call for service.
263	DMA timeout	Data being sent to the printhead did not arrive in the specified amount of time.	Reinitialize the printer and call for service.
264	FIFO empty interrupt	Data was sent to the printhead too quickly.	Reinitialize the printer and call for service.
265	machine control state timeout	A message from machine control did not arrive in time.	Reinitialize the printer and call for service.
266	failure creating test image	The test image could not be created.	Follow the instructions on the OCP.
267	paper/width mismatch, end of roll	The end of the paper roll was detected.	Load a new roll of paper.

Clearing Paper Jams

1. Open the paper supply door.
2. Cut the paper with a scissors or knife.

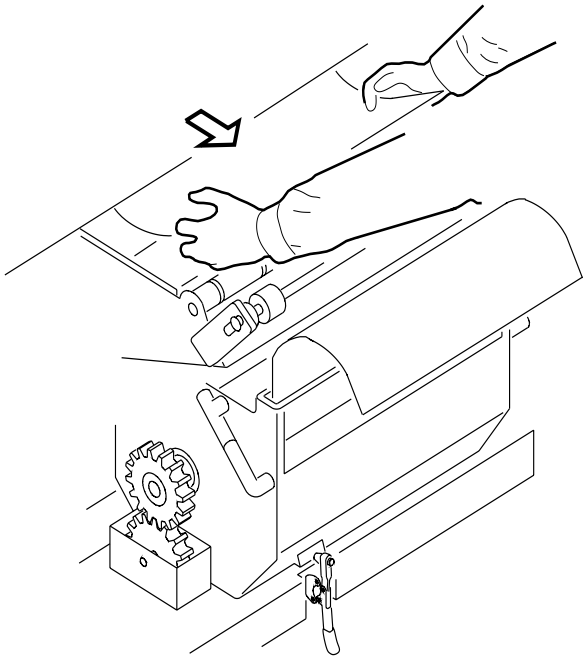


3. Open the takeup door.
4. If the paper has not already been cut at the takeup cassette area, cut the paper with a scissors in front of the takeup cassette.



5. Move the right paper punch away from the paper.

6. Pull the paper out of the printer from the paper supply area.



NOTE: Follow the instructions for clearing paper jams on the paper supply door label.

CAUTION: Do not use sharp objects when clearing paper jams. Do not leave small pieces of paper in the printer.

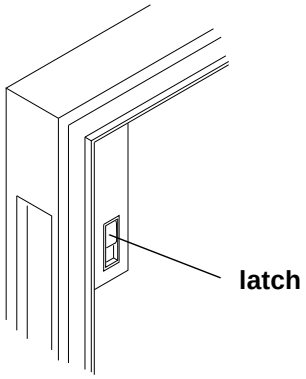
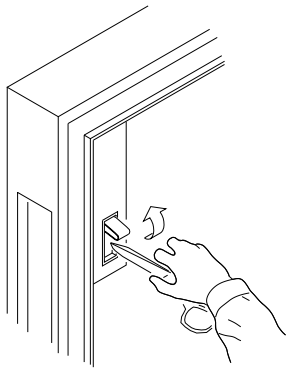
7. If necessary, wind the paper into the takeup cassette.
8. Reload the paper.
9. Close the paper supply door.

CAUTION: To avoid damage to the printer and the digital printer paper saver, do not send a command that will cut the paper unless you have removed the digital printer paper saver or you are certain that it is on the takeup side of the knife.

Troubleshooting Observable Errors

Observation	*Possible Cause*	*Possible Solution*
A print has a line on it.	The circuit breaker was turned off when paper was in the shoe.	• Do not turn off the circuit breaker when paper is in the shoe. • Do a shutdown prior to turning off the circuit breaker.
	The printer was disturbed or bumped during the print cycle.	Do not disturb or bump the printer during the print cycle.
The prints have a repeated unfocused pattern on the edges.	The roll of paper was dropped on its edge.	Load a new roll of paper.
The edges are out of focus.	The relative humidity level is too low for the paper to be stored in the cassette for more than one day.	Increase the humidity level in the room or store the paper in a sealed plastic bag when it is not being used.
The prints have a light leak exposure on them.	The opening for the control strip feed box is open.	Store and carry the cassette with the opening facing down.
The rotor is hitting the paper in the printer and causing noise.	The paper is not loaded correctly.	Reload the paper.
The vacuum reduction insert is damaged and causing noise in the printer.	• The vacuum reduction insert was not installed properly and has become damaged. • A damaged vacuum reduction insert was installed.	Properly install an undamaged vacuum reduction insert.
The paper is being creased and crumpled when feeding into the printer.	The lead edge of the paper has not been squarely trimmed and is being pulled at an angle or unevenly or it is being loaded at an angle into the rollers.	1. Pull the paper out of the printer from the paper supply area. 2. Recut the lead edge of the paper squarely. 3. Reload the paper. Wait for a message and the push the paper evenly and slowly. NOTE: If necessary, remove the curl in the paper by rolling the paper on an empty core in the opposite direction of the curl.
The paper jams repeatedly.	Small strips or pieces of paper are caught in the printer from the previous paper jam.	Remove small pieces of paper from the printer.
	The splice tape was only installed on one side of the digital printer paper saver and the paper.	Apply splice tape to both sides of the paper and the digital printer paper saver. See “Attaching a Digital Paper Saver” on page 3-10.
The prints have not been cut correctly by your cutter.	• The cutter may not be set correctly. • The punch marks line up with the ends of the image.	• Readjust the cutter. • Check the position of the paper punch.

Observation	Possible Cause	Possible Solution
The boarders on the prints are not the right size.	The host software's image positioning is not correct.	Refer to the instructions for image positioning in the manual for the host software.
	The page start parameter may be incorrect.	See "Using Page Starts" on page 3-29.
The edge(s) of the prints are damaged and the image is skewed.	• The paper is not loaded correctly in the paper cassette. • The paper supply cassette clamp is not secured correctly. • The paper supply cassette was not aligned with the pin when installed on the shelf. • The paper supply cassette was not picked up or carried correctly and the paper has "telescoped". • Paper was not straight when it was fed into the printer. • The Punch assembly is not adjusted correctly. • Paper was not fed correctly into the punch slots.	1. Reload the paper in the paper supply cassette. 2. Position the paper supply cassette on the pin of the shelf. 3. Close the clamp to lock the paper supply cassette into position. NOTE: Always carry the paper cassette with two hands to prevent the paper from sliding to one end or "telescoping". 4. When loading paper into the printer: • cut the corners of the lead edges of the paper at a 45^{o} angle • wait for a message to feed • push the paper slowly into the printer's rollers, keeping the paper taut between the cassette and the rollers. NOTE: Push the paper evenly so that the paper remains flat and does not buckle and do not push the paper too hard against the paper alignment guide.
The edge of the paper is damaged in the takeup area.	• The paper was not straight when cinched. • The paper was not centered when cinched. • The bearings on the takeup cassette were not seated correctly when the takeup cassette was placed on the arms.	Make sure that the takeup cassette is seated correctly on the arms and can move up and down a few degrees when you push on the top of it.
The text on the paper has flare.	• The text density is too high. • The processor is not in control. • The printer is not calibrated correctly.	• Calibrate the printer. • Download the latest calibration software from Kodak's Web site and then calibrate the printer.
The host does not recognize the printer	An error was made during the power up sequence.	1. Turn off the host computer. 2. Turn off the printer. 3. Power up the printer and wait for it to initialize. 4. Power up the host computer.
	The SCSI IDs are different.	1. Change the SCSI ID through the OCP. 2. Turn off the host computer. 3. Turn off the printer. 4. Power up the printer and wait for it to initialize. 5. Power up the host computer.

Observation	*Possible Cause*	*Possible Solution*
The supply or takeup door will not close.	The latch on the door was pushed in (flush with the door) when the door was closed with too much force. 	Pull the latch back to its normal position with scissors and close the door with a normal amount of force. 

Additional Troubleshooting Tips for the Printer

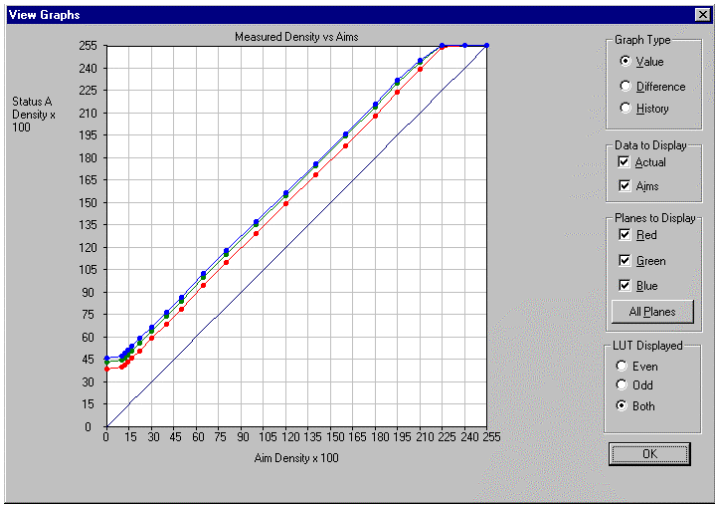
- Be careful to correctly load, seat, and thread the paper into the paper cassettes.
- Be careful to correctly close all doors prior to printing. Doors ajar or interlock switches that are not closed will prevent the printer from printing.
- Be sure to follow the proper instructions when installing the digital printer paper saver.
- Before connecting or disconnecting the SCSI cable or terminator, turn off the power for the printer and the host computer. Also, if you replace the SCSI cable, remove the Ferrite bead from the existing SCSI cable and install it on the new SCSI cable.

Calibration Troubleshooting

This section describes the problems that you may occasionally have when using the KODAK Device Calibration Software or the Calibration Software for the KODAK PROFESSIONAL LED II Printer. It also identifies the probable causes for these problems and provides solutions for correcting these problems.

Calibration Graph

The graph below is an indication that the calibration performed was out of tolerance.



This may be result from invalid densitometer readings. It is necessary to perform another calibration cycle if you see a graph that looks like the one above.

Numbered Error Messages

Error Code	Error Code /Status Message	Possible Cause/Subsystem	Possible Solution
1	The following file is locked:_*filename*_.	The system is trying to access a file that is currently in use.	Close any other applications that may be accessing the file.
2	The following file is protected:_*filename*_.	The system is trying to access a file that is protected.	Change the protections on the file to grant access to the user.
3	The following file was not found:_*filename*_.	The system was trying to access a file that it could not find.	Verify that the filename on one of the configuration dialog windows is correct.
4	Error:_*oserror*_occurred during operation:_*operation*_ on file:_*filename*_.	An operating system error occurred.	• Rerun the application. • Reboot the operating system
5	The following file is in an incorrect format:_*filename*_.	The file does not conform to the application specification.	Verify the file format.

Error Code	Error Code /Status Message	Possible Cause/Subsystem	Possible Solution
6	The following file already exists:_*filename*_.	The system is trying to save to a file that already exists.	• Delete the existing file. • Change the filename.
7	There is not enough space to create:_*filename*_.	The system is trying to save a file but there is not enough disk space.	Remove any unnecessary files to increase free disk space.
8	There are too many files to open _*filename*_.	Too many files open.	Close some files and or applications.
9	You do not have permission to open file _*filename*_.	The file permission is invalid.	Rerun the application.
10	Error copying print LUT to DP2 folder (can't open _*filename*_.	Folder doesn't exist or is read-only.	Modify protection on folder.
11	Error creating DP2 LUT folder	A folder of the same name may exist.	Change the selected folder name.
101	No response from device:_*devicename*_.	The device is not responding to the system.	Verify that the device is connected and on-line.
102	Device not found:_*devicename*_.	The system was trying to access a device that it could not find.	Verify that the device name on one of the configuration dialog windows is correct.
103	The following device is indicating it is not ready:_*devicename*_.	The device is not ready.	Wait several minutes and try the activity again.
104	The following device is busy:_*devicename*_.	The device is busy.	Wait several minutes and try the activity again.
105	The following device is not a TTY port:_*devicename*_.	The port name in the configuration file does not refer to a valid serial port.	Change the port name in the configuration file to a valid serial port.
106	The following device is closed:_*devicename*_.	The serial port closed during system reading.	• Verify that no other application is accessing the port. • Restart the application.
107	No data on device:_*devicename*_.	No data is available for the system to read data on the serial port.	• Verify that the densitometer is connected correctly. • Restart the application.
108	Error:_*oserror*_occurred during operation: _*operation*_ on device: _*devicename*_.	An operating system error occurred.	• Rerun the application. • Reboot the operating system • If problem continues, call for service.
109	Invalid Device ID: _*devicename*_.	Created a new device with an incorrect device ID.	• Edit the device ID to reflect the correct device ID.
110	Unable to perform operation: _*operation*_ Status Message:_*statmsg*_ Error Message:_*errmsg*_.	An unknown device error occurred.	Use the information in the status message and error message to resolve the device error.

Error Code	Error Code /Status Message	Possible Cause/Subsystem	Possible Solution
111	There is insufficient memory for the requested operation on device:_*devicename*_.	The application does not have enough memory to complete the operation.	Close the other applications and unnecessary windows.
112	A communications time-out occurred during operation on device:_*devicename*_.	The connection between the printer and host computer was lost.	Check that all of the cables are properly connected.
113	A device driver for the following device could not be found:_*devicename*_.	The application could not find the necessary device software to communicate with the printer.	Make sure that the Calibration Application and ASPI SCSI device driver are installed correctly.
114	An error occurred during communications to the following device: _*devicename*_.	• The cable between the printer and the host computer is worn. • One or more of the connections between the printer and the host computer has malfunctioned.	• Check that all of the cables are properly connected. • Check the cables and connections between the printer and the host computer for wear and if necessary, replace them.
115	An operation error occurred during communications to the following device:_ *devicename*_.	• The cable between the printer and the host computer is worn. • One or more of the connections between the printer and the host computer has malfunctioned.	• Check that all of the cables are properly connected. • Check the cables and connections between the printer and the host computer for wear and if necessary, replace them.
116	A software warning has been issued by the following device: _*devicename*_ Error Message: _*errmsg*_	A software error has occurred on the printer.	Resolve printer error condition.
117	A software error has been detected by the following device: _*devicename*_ Error Message: _*errmsg*_	An error has occurred on the printer.	Resolve printer error condition.
118	A SCSI ID for the following device was not found: _*devicename*_.	SCSI driver not found.	Reinstall SCSI driver on host computer.
119	The wrong SCSI ID was specified for the following device: _*devicename*_.	SCSI ID is incorrect.	Set Target SCSI ID to printer SCSI ID.
120	This device has been setup for the wrong model of printer: _*devicename*_.	Device chosen has not been found.	Verify device chosen matches the printer model.
121	Unable to read STATUS from device: _*devicename*_.	Unable to see the printer.	Check SCSI cable connections.
122	The selected LUT contains data that exceeds the limits of this printer.	Trying to send a 12-bit LUT to a 10-bit printer.	Select a 10-bit LUT file.
201	An error occurred while trying to allocate memory.	The system is trying to allocate memory, however, no memory is available.	Close any unnecessary applications.

Error Code	Error Code /Status Message	Possible Cause/Subsystem	Possible Solution
202	The following parameter is invalid:*_parametername: _parametervalue_.*	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
203	The function is not supported by the class.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
204	This function has not been implemented.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
205	Must enter the following field:*_field_*.	The operator left a blank configuration field.	Enter information in the blank configuration field.
301	The following key was not found _key_.	• An internal error occurred with the software. • One of the files was edited manually and a key was changed.	• Restart the application. • Restore the key to its previous value. • If problem continues, call for service.
302	The following grouper was not found:*_grouper_*.	• An internal error occurred with the software. • One of the files was edited manually and a grouper was changed.	• Restart the application. • Restore the grouper to its previous value. • If problem continues, call for service.
303	The call depends on a current grouper, but the current grouper has not been set.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
501	An error occurred while applying the data.		
601	A bad count was entered. The expected count was:*_count_*.	• A file was edited manually and an incorrect number of rows was entered. • An internal software error occurred.	• Manually enter the correct number of rows in the file. • If problem continues, call for service.
602	An error occurred during the calculation process.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
701	Patch *_patch_,* column *_column_*, value *_value_* is beyond tolerance *_tolerance_* for aim *_aim_*.	A density patch was out of tolerance.	Perform another calibration cycle.
702	Patch *_patch_* has a spread of *_spread_* which is out of range *_range_*.	The spread between colors for a given density patch is out of tolerance.	Perform another calibration cycle.
703	CalToleranceFile can only be initialized once.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.

Error Code	Error Code /Status Message	Possible Cause/Subsystem	Possible Solution
704	CalToleranceFile**::** initialize must be called first.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
801	Could not find row:_*row_.*	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
802	Could not find column:_*column_*.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
803	Could not find element - column:_*column_*. row:_*row_.*	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
804	Row value was not set before using.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
805	Column value was not set before using.	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
806	Error deleting row:_*row_.*	An internal error occurred with the software.	• Restart the application. • If problem continues, call for service.
807	Element at row:_*row_*; column:_*col_* value:_*val_* failed audit.	An input file had incorrectly formatted data in it at the location indicated.	• Verify that you are using the correct file. • Edit the file and correct the format.
910	Configuration file field:_*filename_*is invalid. Calibration will be cancelled.	The user manually edited a field in a configuration file and entered an incorrect value.	• Manually enter the correct value. • Reinstall the application. • If problem continues, call for service.
911	Error_*errcode_*occurred. Processing stopped.	An internal error occurred with the software.	Restart the application.
919	Error occurred preparing to handle exit from Kodak Calibration. Will not perform cleanup at exit.	An internal error occurred with the software.	Restart the application.
921	Unable to return the printer to its original state. Fix printer problem and re-calibrate.	The application was trying to cancel but received an error when sending the original LUT back to the printer.	Printer is in an unknown state. Correct any printer problems and restart the application.
922	There is already a printer open. Please close the open printer first.	User tried to open a printer when the printer was already open.	Close the open printer.

Error Code	Error Code /Status Message	Possible Cause/Subsystem	Possible Solution
923	An error occurred during the loading of a printer. Please check to make sure the file chosen was of the correct type and/or format.	An error occurred during the loading of a printer.	Check that the file chosen was of the correct format or type.
924	No printer loaded.	The operator has not yet opened a printer.	Open a printer.
941	The height and width values do not agree with the size of the target file.	The specified size does not match the file size.	Enter the correct file size.
942	Unable to configure densitometer. Densitometer configuration file may be corrupt or lost.	The file CalDevDensGen2.cfg is corrupt or lost.	Restart the application. If problem continues, call for service.
1003	Unable to load default configuration file:*_filename_*.	The default configuration file was deleted or renamed or moved.	Restore the file manually or reinstall the software.
1004	Unable to set values in new configuration file.	An internal error occurred with the software.	Restart the application.
1005	Unable to save configuration file:*_filename_.*	The system is trying to save a file but there is not enough disk space.	Remove any unnecessary files to increase free disk space.
1006	Configuration file field:*_field_* is invalid.	The user manually edited a field in a configuration file and entered an incorrect value.	• Manually enter the correct value. • Reinstall the application.
1007	Unable to remove directory:*_directory_*.	User does not have update authority on the directory.	Verify that the user has authority on the directory.
1101	Density DMIN/DMAX points are invalid.	Density points are invalid.	Reread density values on densitometer or make a new calibration print.
1102	Density data is not monotonic increasing.	Density data is invalid.	Reread density values on densitometer or make a new calibration print.
1103	Exceeded maximum number of allowable data errors.	Density data is invalid.	Reread density values on densitometer or make a new calibration print.
1104	Asymmetric Density Groupings are invalid.	Density data is invalid.	Reread density values on densitometer or make a new calibration print.
1201	Unknown response from densitometer.	The application received an unknown response from the densitometer during initialization.	Verify that the baud rate of the densitometer matches the applications configuration.

Error Code	Error Code /Status Message	Possible Cause/Subsystem	Possible Solution
1202	Error:_*error*_from densitometer.	Unexpected error was returned from the densitometer.	Calibrate the densitometer. If the problem continues, check the manual for the densitometer.
1203	Error: Number of patches seen by densitometer is incorrect.	Unable densities on densitometer.	Try adjusting frame counts or reread the density patches on the densitometer.
1300	Values have not been loaded	Matrix file missing.	Create a new device.
1301	Data or Matrix files have not yet been loaded	Matrix file missing.	Create a new device.
1302	Data cannot be saved, must first apply the matrix	Matrix file missing.	Create a new device.

Non-Numeric Error Messages

Error Message	*Possible Cause/Subsystem*	*Possible Solution*
An underrun error occurred during communications to the following device.	• The cable between the printer and the host computer is worn. • One or more of the connections between the printer and the host computer has malfunctioned.	• Check that all of the cables are properly connected. • Check the cables and connections between the printer and the host computer for wear and if necessary, replace them.
An UNKNOWN error occurred during communications to the following device.	An unknown error occurred in the application.	• Restart the calibration application. • If the problem continues, make sure you have the Calibration Application and ASPI SCSI device driver installed correctly.
Device not found.	The host computer attempted to contact the printer at the specified SCSI ID but did not get a response.	• Make sure that the printer is turned on and is on-line. • Make sure the Calibration Application and ASPI SCSI device driver are installed correctly.
Invalid Device ID.	The host computer attempted to contact the printer at the specified SCSI ID but did not get a response.	Make sure that the printer is turned on and is on-line
The following device is busy.	The printer at the specified SCSI ID is busy.	Check that all of the cables are properly connected.
The following device is closed.	The connection between the printer and host computer was lost.	Check that all of the cables are properly connected.

Getting Additional Help

Your Kodak Sales Representative is the best source for information about the KODAK PROFESSIONAL LED II Printer 20R.

In addition, technical support is also available in the United States. Call Kodak's Technical Assistance Center at 1-800-3Kodak3 from 8:00 a.m. to 11:00 p.m. Eastern Standard Time on regular business days.

Have your printer's K-Number ready. The K-Number label is attached to the front of the printer, next to the operator control panel.

Help numbers for the Asia/Pacific and European regions are listed on the next page.

Asia/Pacific Region

Country	*Country Code*	*Helpline Number*
Australia	61	1800-034487
Hong Kong	85	2-5649387
Indonesia	62	21-430-4527
Japan	81	0120-451-881
Korea	82	02-708-5471-4
Malaysia	60	3-757-2722
New Zealand	60	0800500135
Philippines	63	2-816-67-18
Singapore	65	4769-688
Taiwan	88	6-2-893-8234
Thailand	66	2-271-3040-x396

European Region

Country	*Country Code*	*Helpline Number*
Belgium	32	02/2632400
Denmark	45	43/717111
Finland	358	90/87071
France	33	1/4989-0083
Germany	49	0711/406-5561
Italy	39	02/66028454
Netherlands	31	03405/99704
Norway	47	02/818181
Spain	34	91/6267100
Sweden	46	08/58023663
UK	44	044261122 Ext.44239

Appendix A: Ordering Supplies

This appendix includes ordering information for Kodak accessories, supplies, paper, leaders and splice tape, and publications.

Accessories

Purchase these items through Kodak.

Item	*Qty/Size*	*Catalog Number*
X-RITE DTP—36 Densitometer	1	196–1119
US ROBOTICS-SPORTSTER 28.8 Modem	1	873–3743
10 - 20 Inch Paper Cassette	1	159–2971
10/11 Inch Paper Cassette	1	164–0978
10 - 20 Inch Take-up Cassette	1	861-2079
10/11 Inch Take-up Cassette	1	871-1665
SCSI Interface Kit	1	*

* Order through you Kodak Sales Representative

Supplies

Purchase these items through your dealer or distributor.

Item	*Qty/Size*	*Catalog Number*
Printer Air Filter	1	833-3247

Standard (U.S.) Paper

Purchase these items through your Kodak representative.

Item	*Surface Types**	*Size*
KODAK PROFESSIONAL Digital Paper	E, F, or N	10 in. x 262 ft.
KODAK PROFESSIONAL Digital Paper	E, F, or N	10 in. x 574 ft.
KODAK PROFESSIONAL Digital Paper	E, F, or N	11 in. x 262 ft.
KODAK PROFESSIONAL Digital Paper	E, F, or N	11 in. x 574 ft.
KODAK PROFESSIONAL Digital Paper	E, F, or N	12 in. x 262 ft.*
KODAK PROFESSIONAL Digital Paper	E, F, or N	20 in. x 262 ft.

* NOTE: 12 in. x 574 ft. paper is not supported.

Metric Paper

Purchase these items through your Kodak representative.

Item	*Surface Type**	*Size*
KODAK PROFESSIONAL Digital Paper	E, F, or N	25.4 cm x 80 m
KODAK PROFESSIONAL Digital Paper	E, F, or N	25.4 cm x 175 m
KODAK PROFESSIONAL Digital Paper	E, F, or N	27.9 cm x 80 m
KODAK PROFESSIONAL Digital Paper	E, F, or N	27.9 cm x 175 m
KODAK PROFESSIONAL Digital Paper	E, F, or N	29.7 cm x 80 m (A4)
KODAK PROFESSIONAL Digital Paper	E, F, or N	30.5 cm x 80 m
KODAK PROFESSIONAL Digital Paper	E, F, or N	50.8 cm x 50 m
KODAK PROFESSIONAL Digital Paper	E, F, or N	50.8 cm x 80 m

***Surface Types**

F = smooth, glossy
E = fine grained, lustre
N = smooth, semi-matte

Leaders and Splice Tape

Purchase these items through the appropriate vendor.

Item	*Qty*	*Vendor*	*Catalog Number*
KODAK 1-Inch Splice Tape	2	Kodak	168-1311
10-Inch Digital Printer Paper Saver	10	Liberty Photo Products*	L-1210
11-Inch Digital Printer Paper Saver	10	Liberty Photo Products*	L-1211
20-Inch Digital Printer Paper Saver	10	Liberty Photo Products*	L-1220

* Call 1-800-572-3600 in the United States to order items through Liberty Photo Products.

Publications

Purchase these items through Kodak Parts Services at 1-800-431-7278.

Item	*Qty/Size*	*Part Number/ Catalog Number*
Operator's Guide for the: KODAK PROFESSIONAL LED II Printer 20R	1	Part No. 6B1625
Quick Reference Guide for the: KODAK PROFESSIONAL LED II Printer 20R	1	Part No. 6B1626

Appendix B: Specifications

This appendix includes specifications and site requirements information for the printer.

Printer Specifications

Dimensions and Weight

Width	*Length*	*Weight*
102 cm (40 in.)	149 cm (58.5 in.)	499 kg (1100 lbs) 517kg (1140 lbs)–with paper

To move the printer through a 91 cm (36 in.) doorway, the following parts will be removed by a Kodak representative:

- front printer door
- rear printer door
- sheet transport module door
- operator control panel

To move the printer through a 71.2 cm (28 in.) doorway, the following parts will be removed by a Kodak representative (in addition to the above parts):

- enclosures
- covers
- subassemblies for the paper supply module
- knife and sheet transport module

Acoustic Specifications

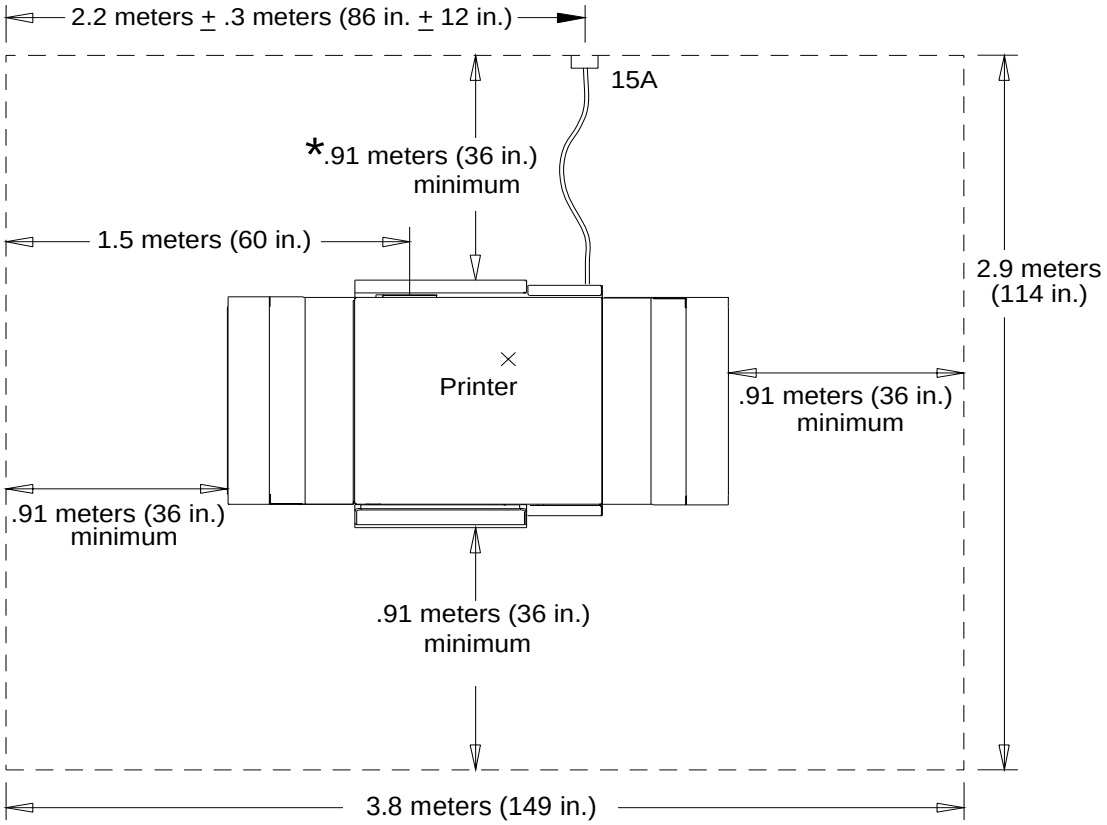
NOTE: These specifications apply to the *Kodak Professional* LED II Printer 20R only.

Operator Position	*Sound Pressure Level (L_A)*	*Instantaneous Peak ≥ 130 dB(C)*	*Sound Power Level (L_{WA})*
Standby	51.3dB(A)	NA	66.1dB(A)
Full System Operating	55.7dB(A)	None	71.0dB(A)

Site Requirements

Operator and Service Access

When fully assembled the equipment requires a minimum of 91 cm (36 in.) on each side to allow sufficient access for normal operator maintenance and for service.



*SCSI-2 connection from host here

Floor Requirements

The equipment should be installed on a smooth, hard, and level floor surface. Carpet is not recommended.

The floor pitch should not exceed 1 inch in 5 feet.

Electrical

The KODAK PROFESSIONAL LED II Printer 20R is manufactured to operate within one of the following sets of power constraints or can be configured to do so by a Kodak representative:

Nominal Voltage/Frequency	*Voltage Range*	*Power Consumption*
200 - 240V, 15A, 50/60 Hz, 1 phase*	190 - 254V, 47 - 63 Hz, 1phase, 15 A (Automatic Sensing)**	Less than 2.4kVA

***** Phase selection must be completed at the factory or by a trained Kodak representative.

*** ***Outside the U.S. and Canada, amperage for the printer is 16A.

Consult with your electrical contractor or utility company to ensure that on-site wiring complies with the printer specifications and that wall outlets use isolated grounds and comply with codes. Further information is provided in the following sections.

If the equipment is to be permanently connected, then the equipment must be provided with its own circuit breaker that is located near the equipment within easy reach of the operator and marked as the disconnecting device for the equipment.

The unit is an Insulation Category Type II machine, and operates in a Pollution Degree 2 environment in accordance with IEC 664 (Normal Office Environment).

For technical support, service, repair and fuse replacement information, contact Eastman Kodak Company's Technical Assistance Center at 1-800-822-1414.

Power Cords

A 2.4 m (8 ft.), grounded power cord with a special three prong plug is provided with your printer. The printer conforms to the NEMA N6/15 Printer Plug Specification.

Special plugs and cords may be required outside of the United States and Canada. These plugs and cords will be provided by the Kodak distributor (the power cord provided for international locations must have at least 14 gauge wire).

The power cord should be certified and approved by a national test house.

CAUTION: Make certain nothing obstructs or is placed on power cords. Do not use extension cords; they can cause voltage loss which may result in unreliable equipment performance or equipment damage.

Power Outlets

A separate, dedicated power line with a 208 V, 15 amp dedicated receptacle is required for the printer.

The outlets should meet the following standards:

Item	*Printer Standard*
amperage	15 amp
wire size	14 gauge or larger
phase	1 (single)
receptacle	NEMA5—N6/15
impedance between ground and neutral wires	less than 2 ohms
voltage drop across the circuit breaker	less than 0.1 volts
distance between receptacle and equipment	1.5 m (5.0 ft.) or less

Line Frequency

In most cases, the electric utility company is responsible for maintaining the proper frequency of the alternating current in its distribution network. If the building is supplied with power by its own motor-generator, make certain that the governor that controls the frequency is capable of delivering power within the required operating frequency range.

Line Voltage

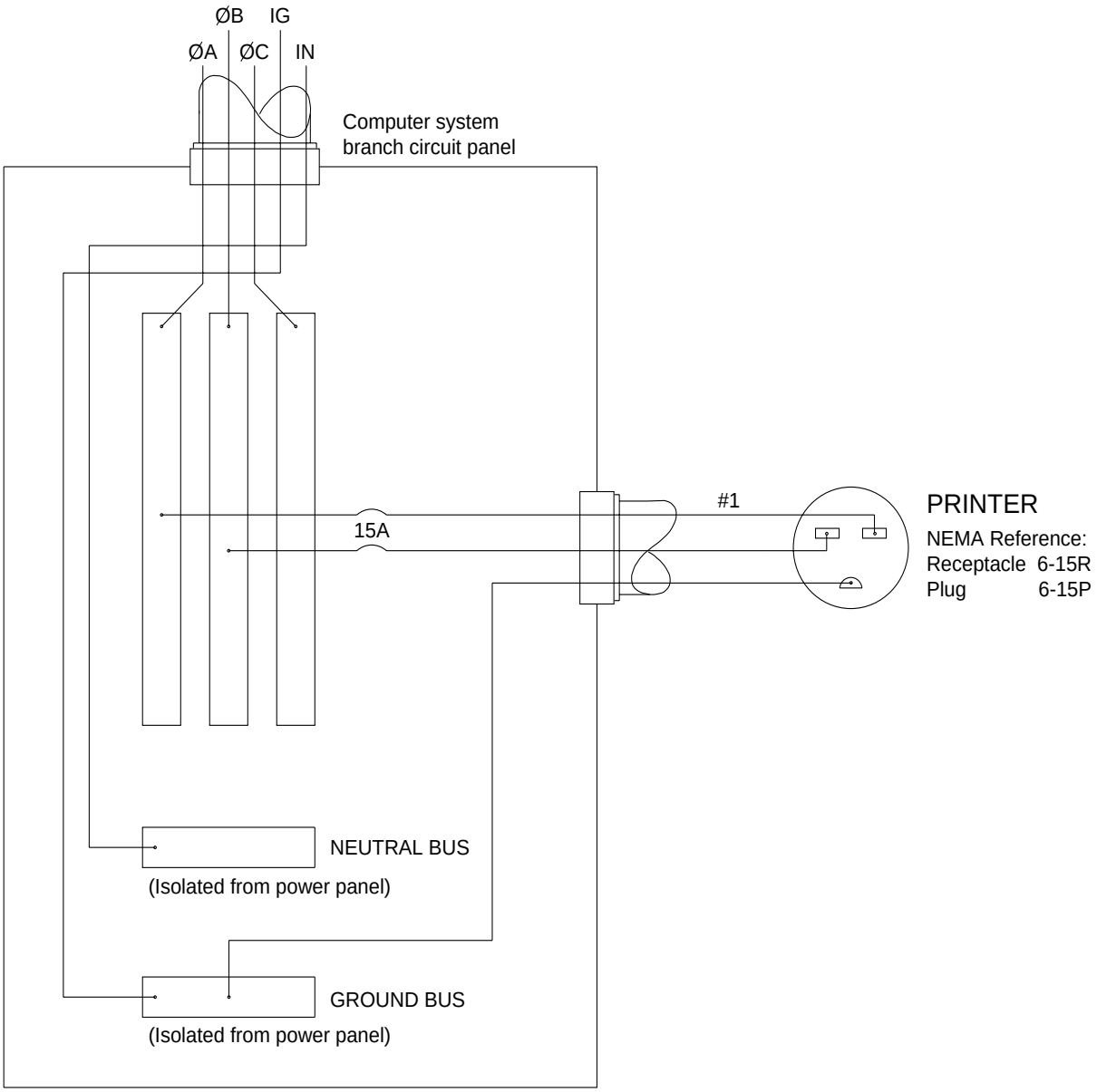
The printer operates satisfactorily over a range of voltages around the nominal voltage.

The local utility company is required to deliver power usually within ±10% of the rated value to the main distribution panel in the building. Voltage then drops from there to the outlets where the equipment is connected. The total voltage drop is a function of the following factors:

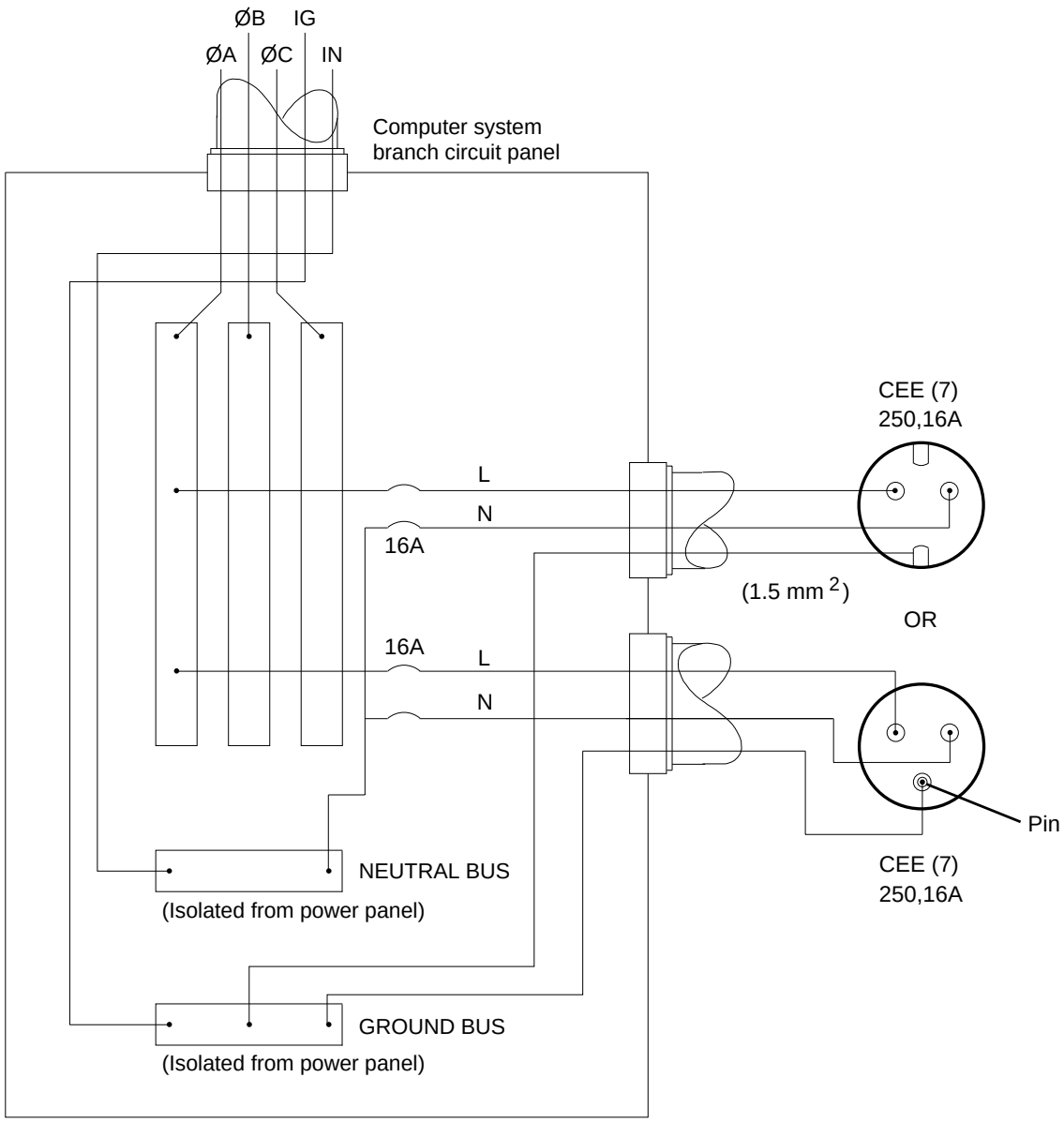
- The composition of the conductor material in the wire. Copper wire is a better conductor than copper-clad aluminum and aluminum wire, which results in less voltage loss over the same length of wire.
- The diameter or gauge of the conductor. Large diameter conductor exhibits less voltage loss than small diameter conductor.
- The length of the circuit. A long circuit layout may result in more voltage loss than a short, direct circuit layout.
- The load or current on the circuit (amperes). A large circuit load may result in voltage loss in a circuit.
- The types and number of connections. Several connections in a circuit increase the chance of improper wiring practices, which could result in voltage loss.

You must allow for adequate wiring to keep the supplied voltage within the required range. Otherwise, intermittent data errors and system errors may occur. Low-voltage problems are more common than high-voltage problems and are generally caused by poor wiring practices.

Power Receptacles (U.S. and Canada)



Printer Power Receptacles (Europe)



Telephone line

A telephone line (with a RJ11C modular phone jack) must be installed within 3 m (10 ft.) of the printer to support the remote diagnostics. We recommend a high-grade analog service line.

Densitometer

An X-RITE DTP—36 Densitometer is required to calibrate the printer and for process control. It is available through Kodak. See “Accessories” on page A-1.

SCSI Cable

A single-ended or differential-ended SCSI cable is required to connect the host computer to the printer. Install a single-ended SCSI cable if the distance between the host computer and the printer is less than 6 meters. Use a differential-ended SCSI cable if the distance between the host computer and the printer is greater than 6 meters but less than 30 meters.

IMPORTANT: The printer is configured in single-ended mode at the factory. Before installing a differential-ended SCSI cable, you must contact your Kodak service representative to have your printer reconfigured to the differential-ended mode.

Operating Environment

NOTE: The operating environment should be free of smoke and excessive dust.

Air conditioning requirements:

The Printer generates 7,509 BTU/hr.

Appendix C: Additional Calibration Information

The topics covered in this section include:

- Installing the Calibration Software
- An overview of the KODAK Device Calibration Software
- Advanced Features of the LED II Calibration Software
- Installing the Densitometer

IMPORTANT: For the step-by-step procedure to calibrating the printer, see *"Calibrating the Printer" on page 2-2.*

Installing the Calibration Software

Installing the software includes installing both the *Kodak* Device Calibration Software (which manages the calibration of multiple Kodak devices) and the Calibration Software for the *Kodak Professional* LED II Printer 20P/20R.

System Requirements

MACINTOSH Version

- Power MACINTOSH System 7.5 or above
- Minimum of 35 MB free disk space
- 608 K free disk space for each of as many as six configured devices
- 256 colors at 640 x 480 spatial resolution
- CD ROM Drive

WINDOWS NT Version

- 100 MHz PENTIUM Processor
- 64 MB Main System Memory
- VGA Monitor (640 x 480 spatial resolution)
- CD ROM Drive

Installation Procedure

1. Place the supplied CD-ROM in your CD-ROM drive.
2. When the Browser appears, select **LED Printer**.

MACINTOSH Version

Under “Download File,” select **LEDCalAppVn** (n is the current version number).

LEDCalAppVn is saved to your desktop.

WINDOWS NT Version

Under “Download File,” select **KPRO Calibration Utilities**.
You can either save the installation file to a hard drive or run it directly from the Internet.

If you choose to save the installation file to a hard drive, the Save File dialog box appears. Either accept the path and file name or select another path and file name and save the file.

MACINTOSH Version and WINDOWS NT Version

NOTE: From this point on, the installation is similar for Macintosh and Windows NT systems. When the instructions say, for example, click **Next** or **Install**, the first option is for Windows NT systems; the second is for Macintosh systems.

CAUTION: To avoid possible damage, do not connect or disconnect the cable between your host computer and the printer when either device is powered up.

1. Double-click the installation file.
   The splash screen for KODAK PROFESSIONAL Universal Calibration Utility appears and a Setup message appears.
2. After the Welcome screen appears, click **Next** or **Continue**.
3. *For Macintosh systems only,* read the readme information, then click **Continue.**
4. Read the license agreement.
   - To accept the terms and continue the installation, click **Yes** or **Agree**.
   - Or, to cancel the installation, click **No** or **Disagree**.
5. *For Windows NT systems only,* read the readme information, then click **Next**.

6. Select the installation type:

   For Windows NT systems, select one of the following:

   - **Typical** includes Device Calibration Applications for the *Kodak Professional* LED Printer and for the *Kodak Professional* Digital Multiprinter, plus the Linearization Calibration Application for the *Kodak Professional* RFS 3570+ (Speed Up) Film Scanner
   - **Compact** allows you to choose to install individual applications from the list included under Typical
   - **Custom** allows you to choose specific features for the application you choose to install; for the LED Printer, you may choose to install either Gen I or Gen II

   *For Macintosh systems, select **Easy Install**.*

7. Click **Next** to install the software on your system.

   A dialog box appears for you to designate where to install the calibration software.

8. Either accept the default path and folder or select another path and folder.

9. Click **Finish** or **OK**.

   NOTE: For Windows NT systems, the screen gives you the option of reading the readme file associated with your installed applications.

10. Remove the CD-ROM and store it in a safe place.

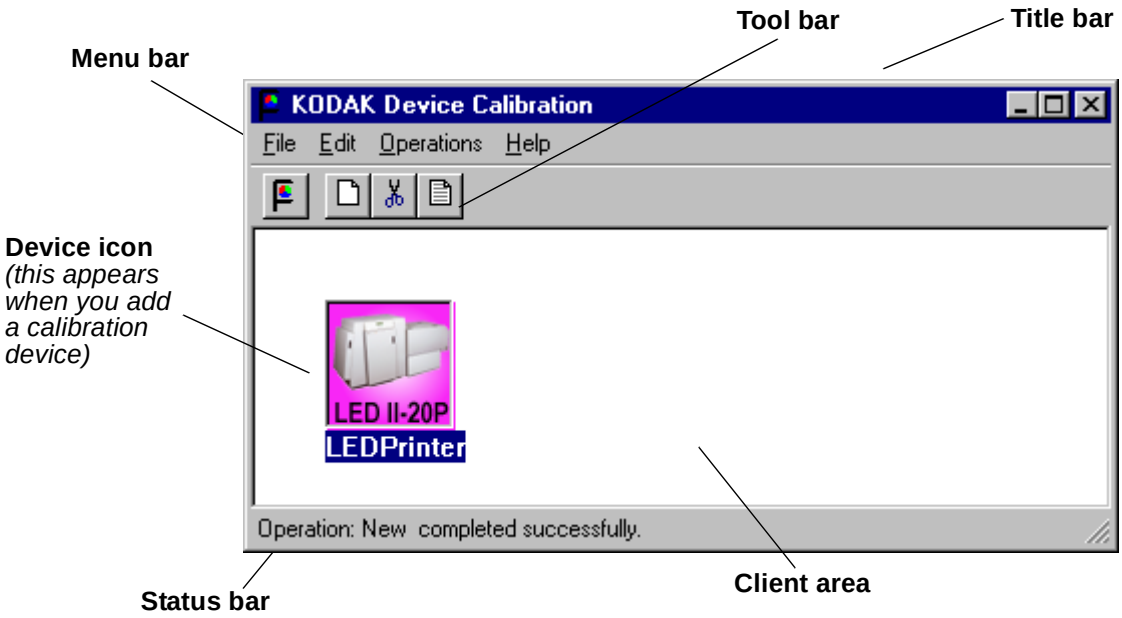
Kodak Device Calibration Software

The *Kodak* Device Calibration Software is used to launch the Calibration Software for the 20P and 20R Printers and to launch calibration software for other devices such as other printers and scanners.

NOTE: Most of the windows displayed in this chapter are from the WINDOWS NT Version of the software. The windows for MACINTOSH Computers are similar.

Application Window Definitions

The window below and the tables that follow define the application window for the KODAK Calibration Device Software.



Window Area	*Description*
Title Bar	Contains the application name, “KODAK Device Calibration”
Menu Bar	Contains selectable menu items
Tool Bar	Contains the user selectable menu choices and is activated by a shortcut keystroke or by a mouse pointer and left mouse button
Client Area	Contains the icons that represent devices available for calibration
Device Icon	Represents a device that can be calibrated
Status Bar	Displays messages to the user to indicate actions that are occurring or the status of the occurring action and the currently selected device

The table below defines the functions and their corresponding icons on the main window of the KODAK Device CalibrationSoftware.

Menu Access	***Function***	***Icon/Key***	***Availability***	***Description***
Operations	Calibrate	 MACINTOSH: ⌘ +L WINDOWS NT: Ctrl+L	When the device is selected	Passes control to the calibration software for the device; double-clicking on a device icon performs the same action
File	New	 MACINTOSH: ⌘ +N WINDOWS NT: Ctrl+N	Always	Displays a Create a New Device dialog box; adds a device to the control area
Edit	Cut	 MACINTOSH: ⌘ +X WINDOWS NT: Ctrl+X	When a calibration device is selected	Removes the object from the control area. All history data files (including log data, LUT files etc.) ***will be deleted*** for this device. A confirmation dialog box appears to allow you to cancel the action.
File	Edit	 MACINTOSH: ⌘ +E WINDOWS NT: Ctrl+E	Always	If no object is selected, the Edit Application Configuration dialog box appears. If an object is selected, the Update a Device Registry dialog box for that device appears.
File	MACINTOSH: Quit WINDOWS NT: Exit	MACINTOSH: ⌘ +Q WINDOWS NT: Ctrl+Q	Always	Exits the application
Help	Product Information	NA	Always	Displays the Product Information dialog box

Starting the *Kodak* Device Calibration Software

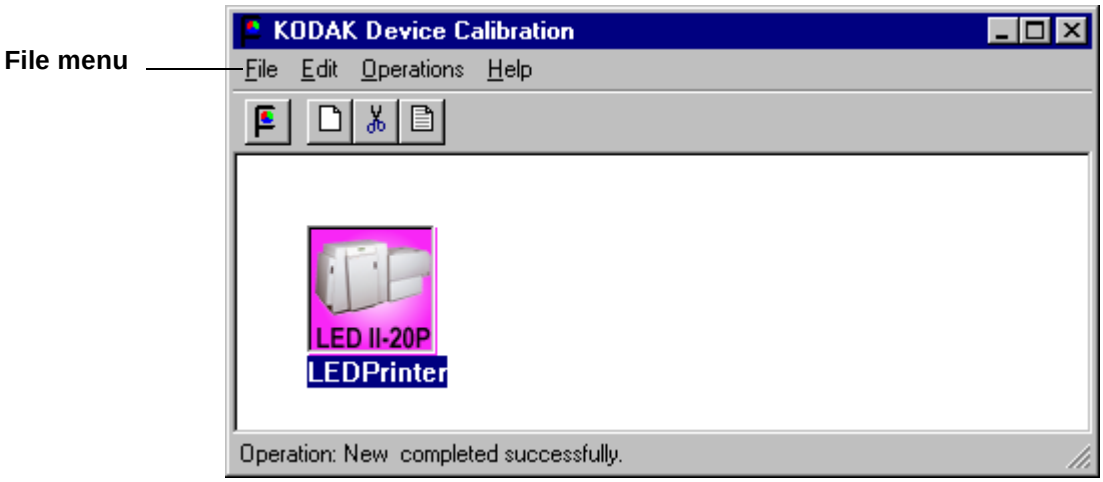
Load the Calibration Software according to the table below. (If needed, see "Installing the Calibration Software" beginning on page C-1.)

MACINTOSH Version	*WINDOWS NT Version*
1. Open the folder that contains the files for the calibration application. 2. Click on the icon for **KODAK Device Calibration**.	Select: **Programs/Eastman Kodak/** **KPRO Applications/** **Kodak Universal Calibration Utility** from the WINDOWS NT Start menu.

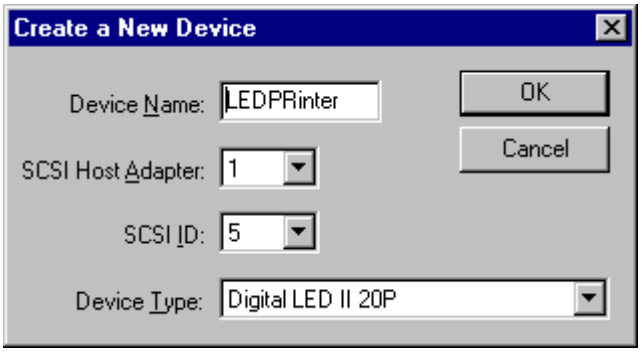
Adding a Device

To add a calibration device icon to the KODAK Device Calibration Software:

1. Select **New** from the File menu on the KODAK Device Calibration window.



The Create a New Device dialog box appears.



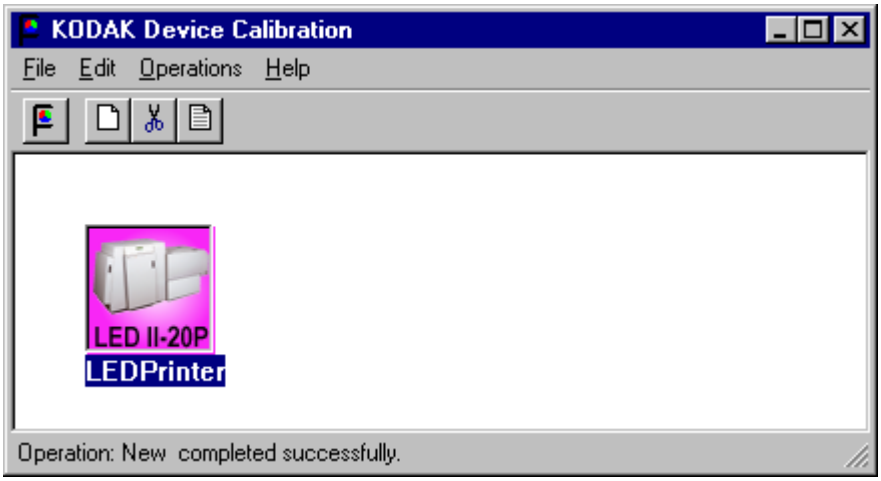
2. Enter the correct device settings. Use a unique identifying word for the device name.

   NOTES: The default SCSI ID for the printer is 5. The printer's OCP menu displays the current SCSI ID for the printer.

   Make sure the Device Type field matches the type of printer that is being calibrated (for example: Digital LED II 20P).

3. Click **OK** to accept the changes.

   A new printer device icon appears on the KODAK Device Calibration screen.

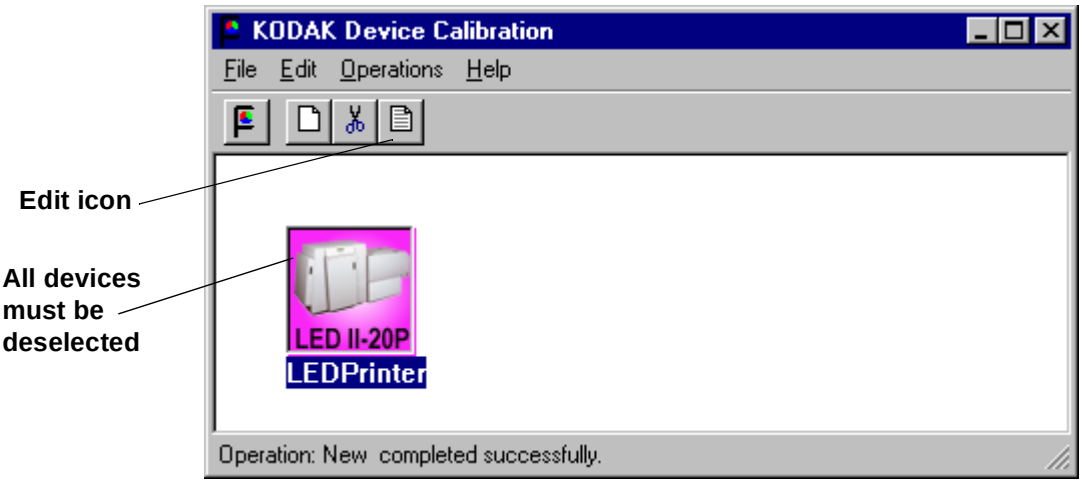


NOTE: If an error message appears, refer to "Calibration Troubleshooting" on page 5-14.

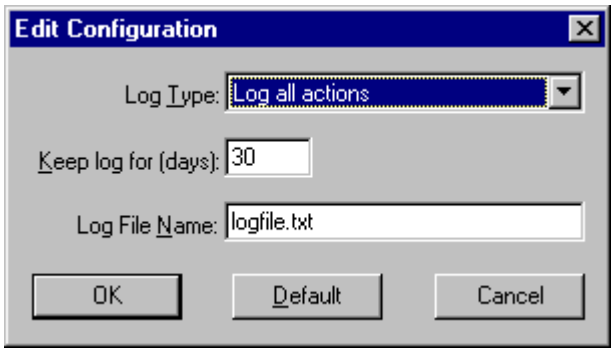
Editing the Log Settings

To change the log settings for the KODAK Device Calibration:

1. Deselect all devices on the KODAK Device Calibration screen and click the **Edit** icon.



The Edit Configuration dialog box appears:



2. Edit the device settings as needed or click **Default** to refresh the screen with the default settings.

   The log operations/settings include:

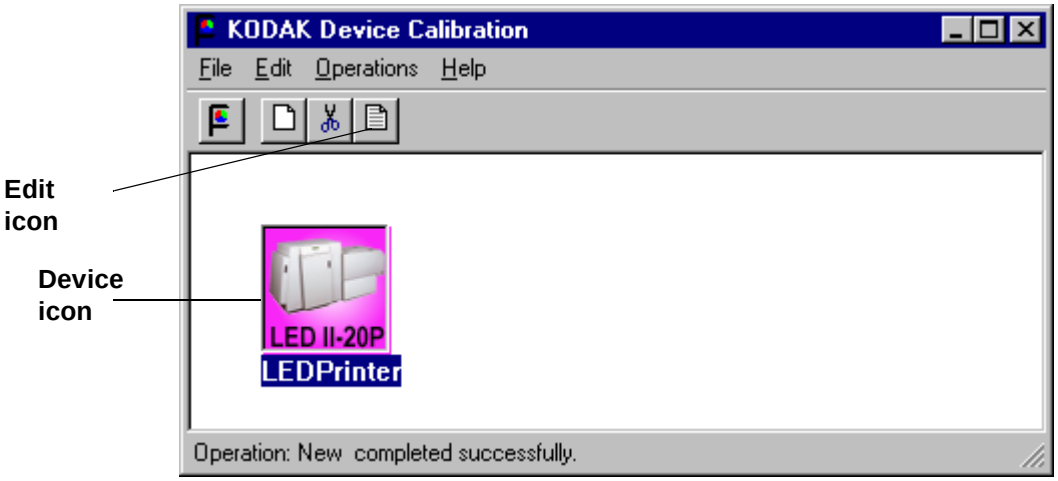
Device Setting	***Options***
Log Type	**None:** No logging of events or errors **Events:** Log events only (status messages that appear on the screen) **Errors:** Log errors only **Log all actions:** Log all actions
Keep log for (days)	Enter the number of days you want to keep logged information – for up to 99 days
Log File Name	Enter the name that you want to give to the log file

3. Click **OK** to save (or **Cancel** to cancel) the changes.

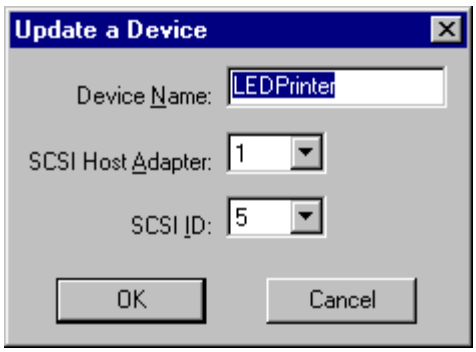
Updating a Device

To update or change the device name or the SCSI ID for any device:

1. Select the device by clicking *once* on the device icon on the KODAK Device Calibration screen.



2. Click the **Edit** icon.
   The Update a Device dialog box appears.



3. Enter the correct device settings.
   The options for the device settings include:

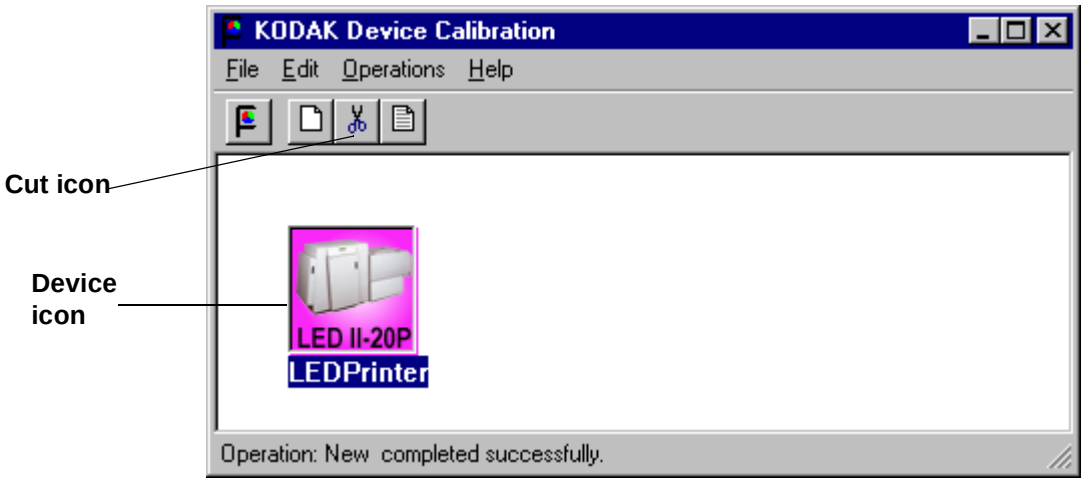
Device Setting	***Options***
Device name	Enter the name that you want to give to the device. NOTE: The MACINTOSH platform limits the device name to 10 characters.
SCSI Host Adapter	Adapter ID on host computer
SCSI ID	The SCSI ID for the device

4. Click **OK** to save (or **Cancel** to cancel) the changes.

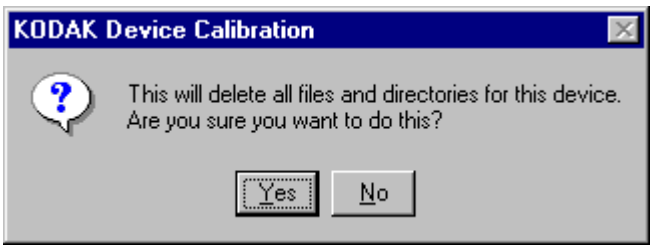
Deleting a Device

To delete a device from the KODAK Device Calibration Software screen:

1. Select the device by clicking on the device icon.



2. Click the **Cut** icon.
   The following dialog box appears:



3. Click **Yes** to delete the files and directories for the selected calibration device. (Click **No** to stop the deletion process.)

Advanced Features of the LED II Calibration Software

The Calibration Software for the KODAK PROFESSIONAL LED II Printer 20P/20R provides automated neutral density printer calibration and is designed to be used without assistance from technical experts. The advanced calibration features provided by this product enable you to customize the calibration of the printer. To use the advanced features, you should understand image science technology and the implications of manipulating neutral density calibrations.

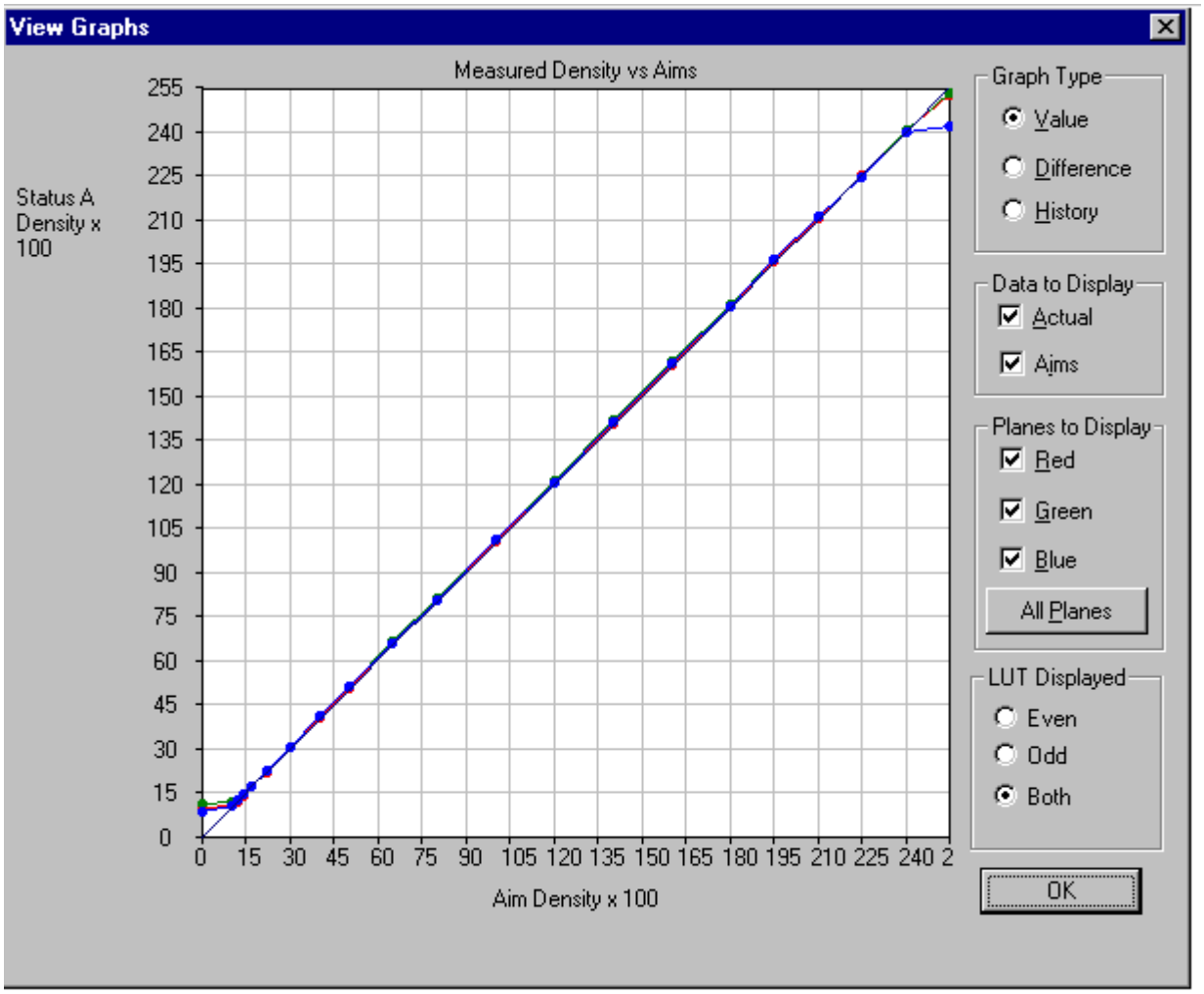
IMPORTANT: Printer calibration should not be mistaken for color management. Color management is provided by software applications that are independent of the printer and the calibration software.

Viewing Graphs

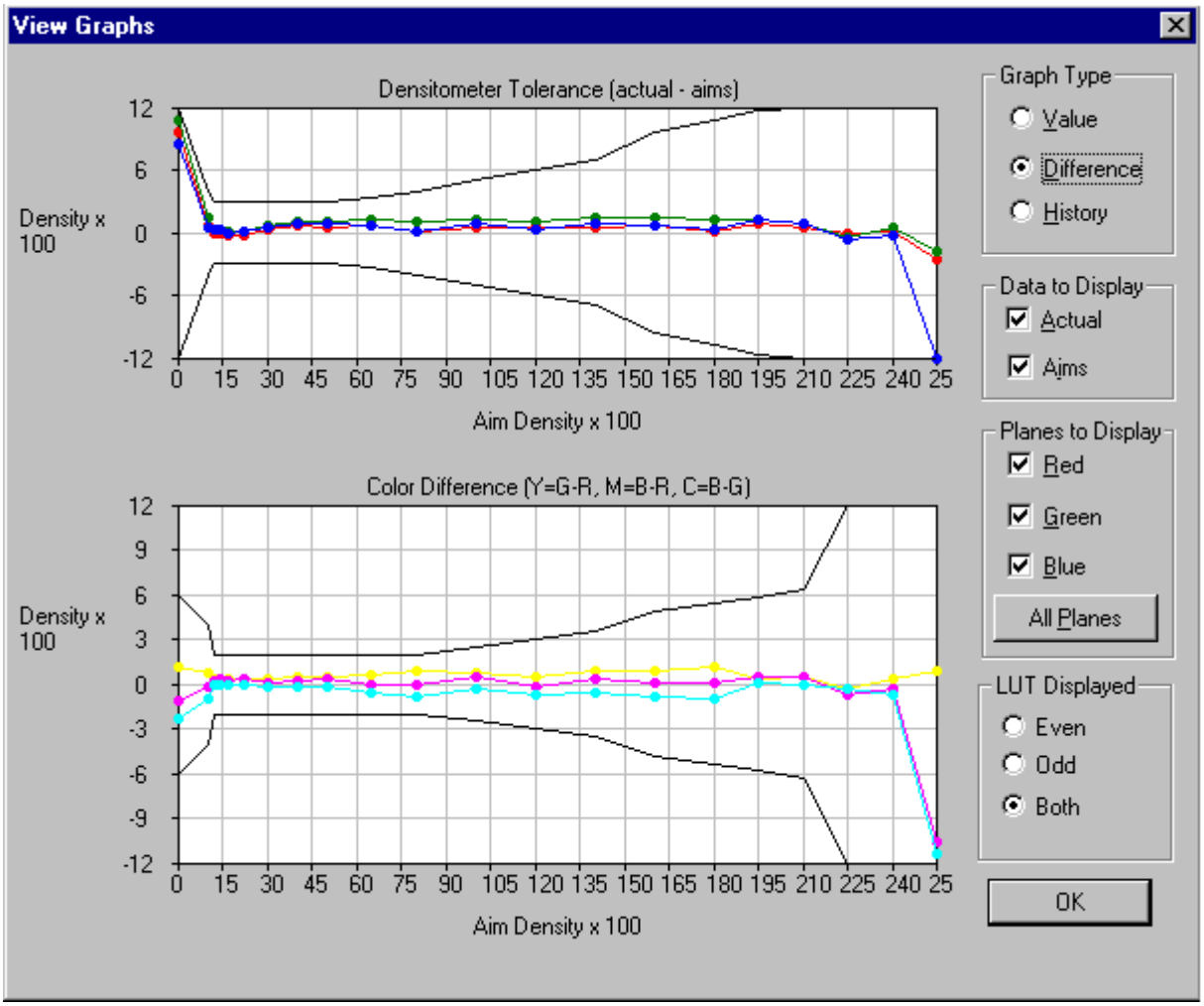
The View Graphs feature provides access to the available graphs from the most recently completed calibration.

Examples of the Value, Difference, and History Graphs are shown below. The Value and Difference Graphs reflect the densitometer values that were last read. The History Graph displays the data from completed calibrations.

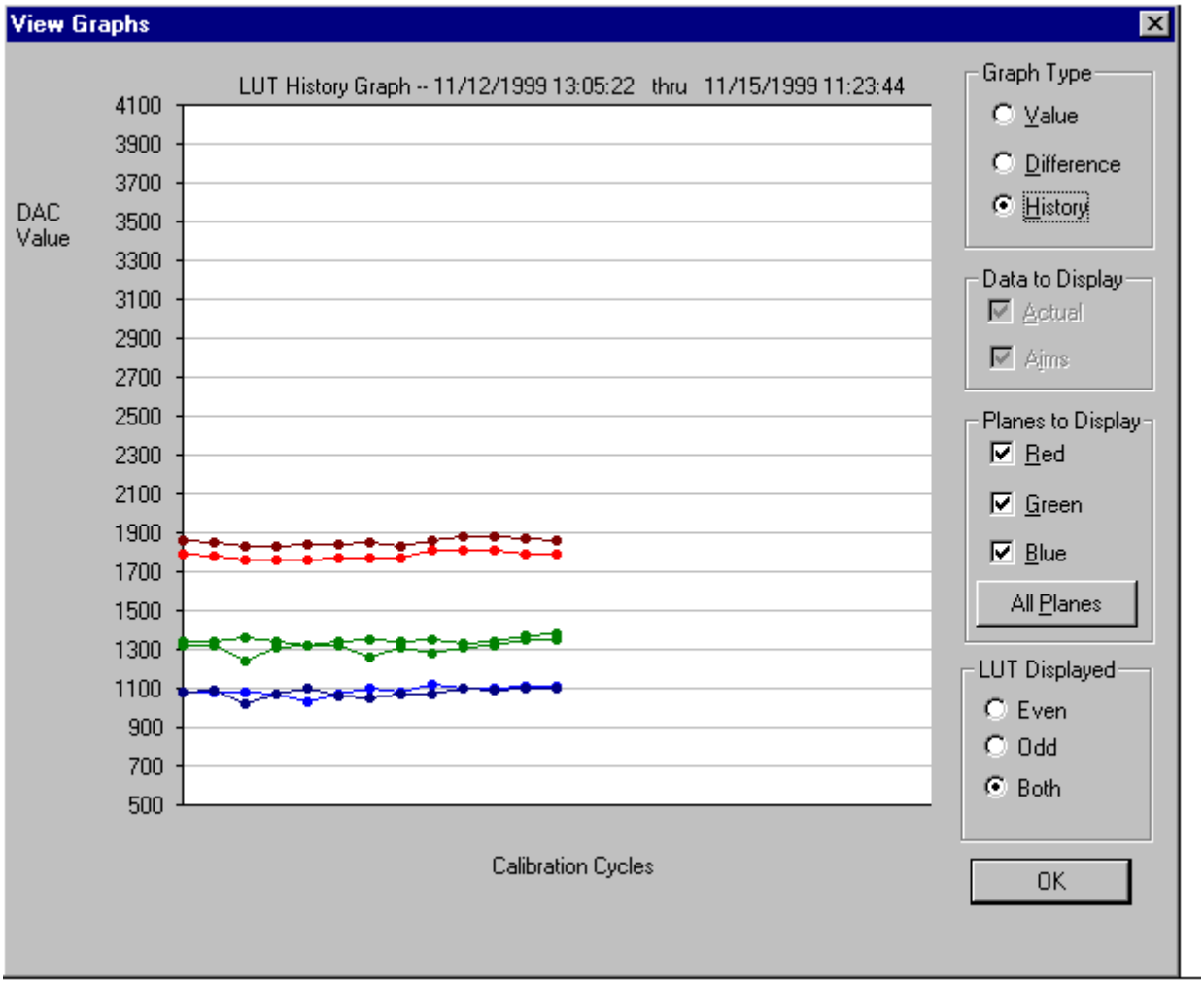
Value Graph



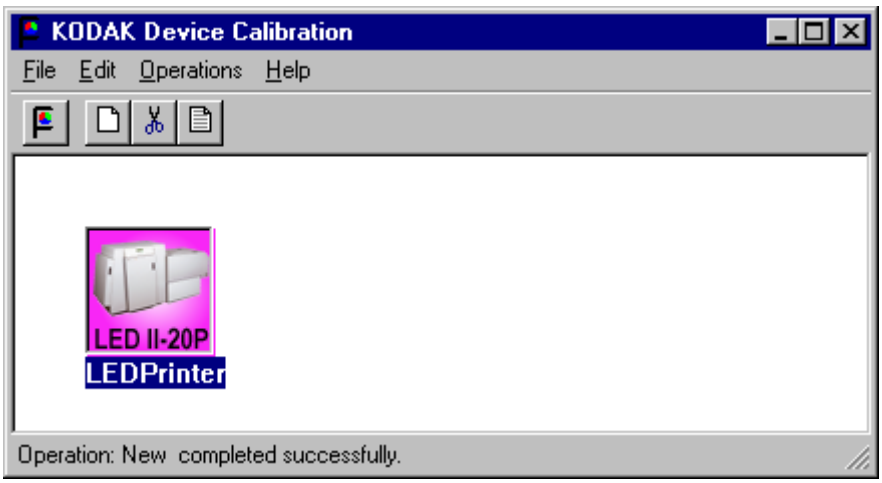
Difference Graph



History Graph

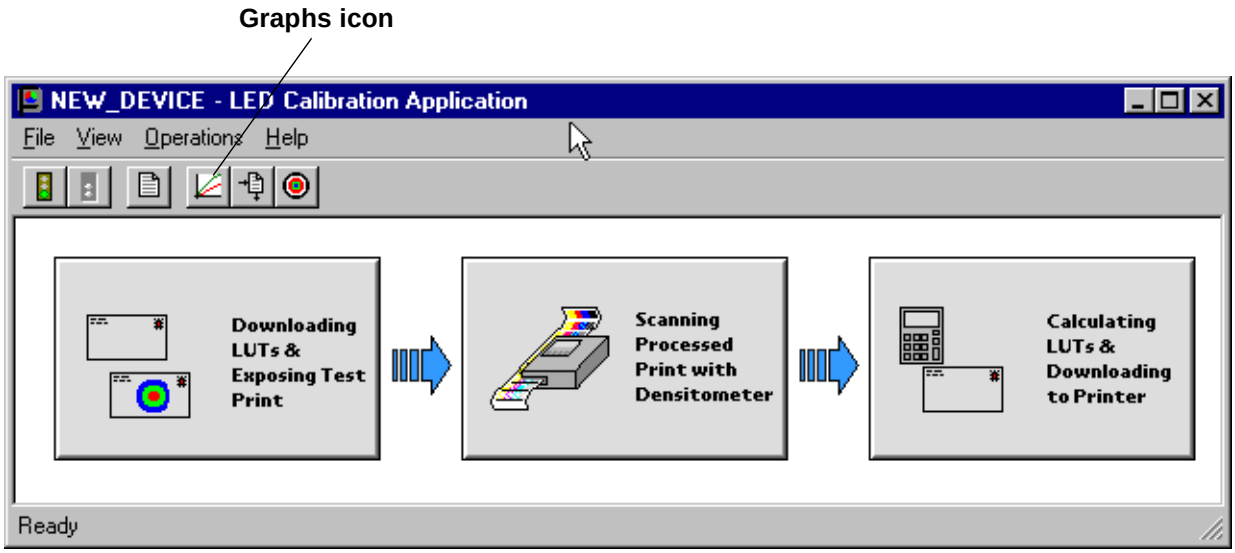


To view calibration graphs:



1. From the KODAK Device Calibration screen, double-click the device for which you want to view graphs.

The LED Calibration Application screen appears.



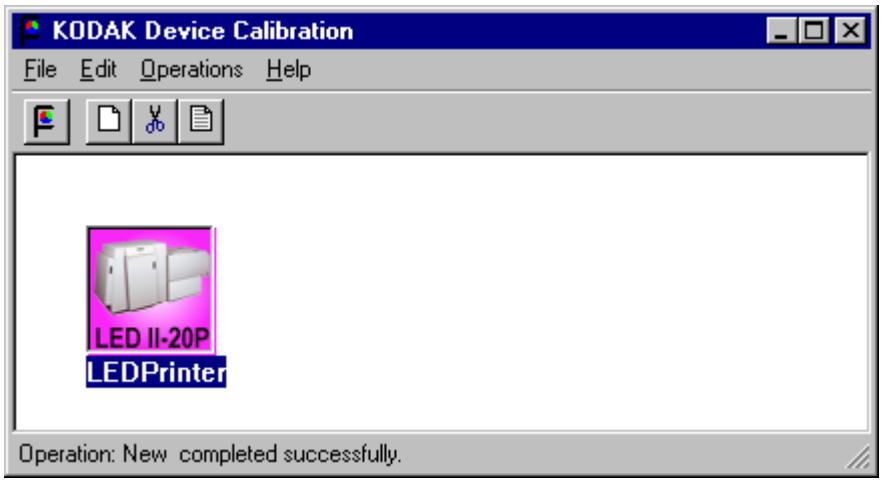
2. Click the **Graphs** icon.
   One of the graphs appears; normally it is the Value graph.
3. Select the Graph Type that you want to view. When the graph appears, select the type of data and planes that you want to see displayed.

NOTE: The graph will be blank if the printer has not been calibrated.

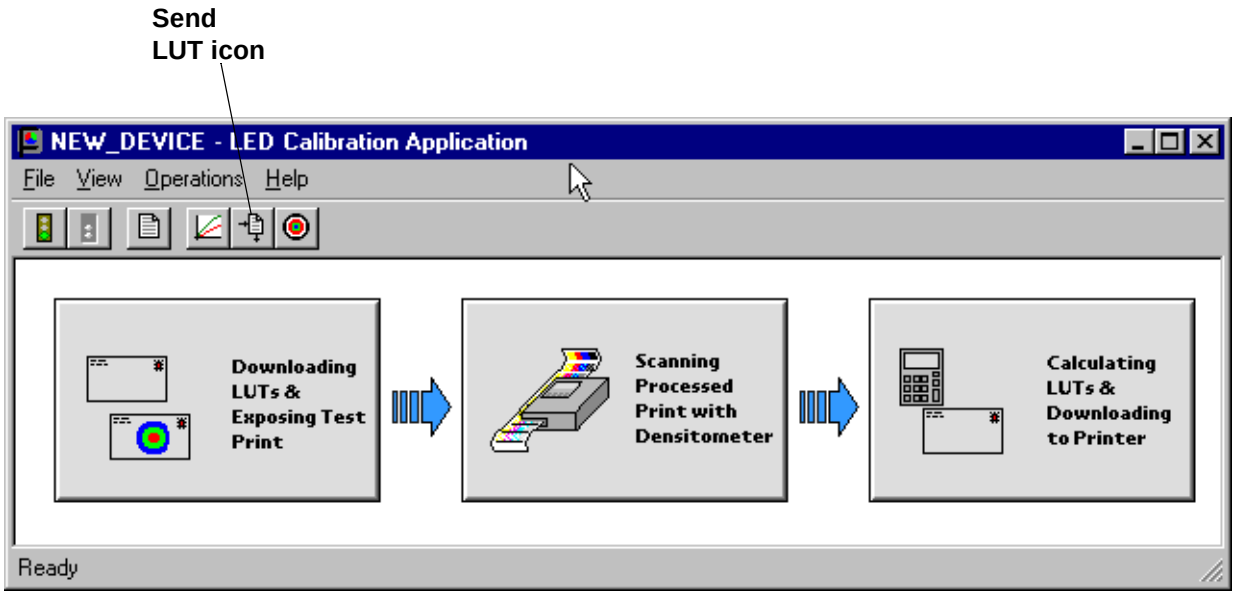
Sending LUTs

The Send LUT to Printer feature allows you to overwrite the current LUT in the printer. You can create a valid printing LUT using an ASCII text editor. This option sends the selected LUT to the printer, overwriting any existing LUT.

To send a LUT to the Printer:

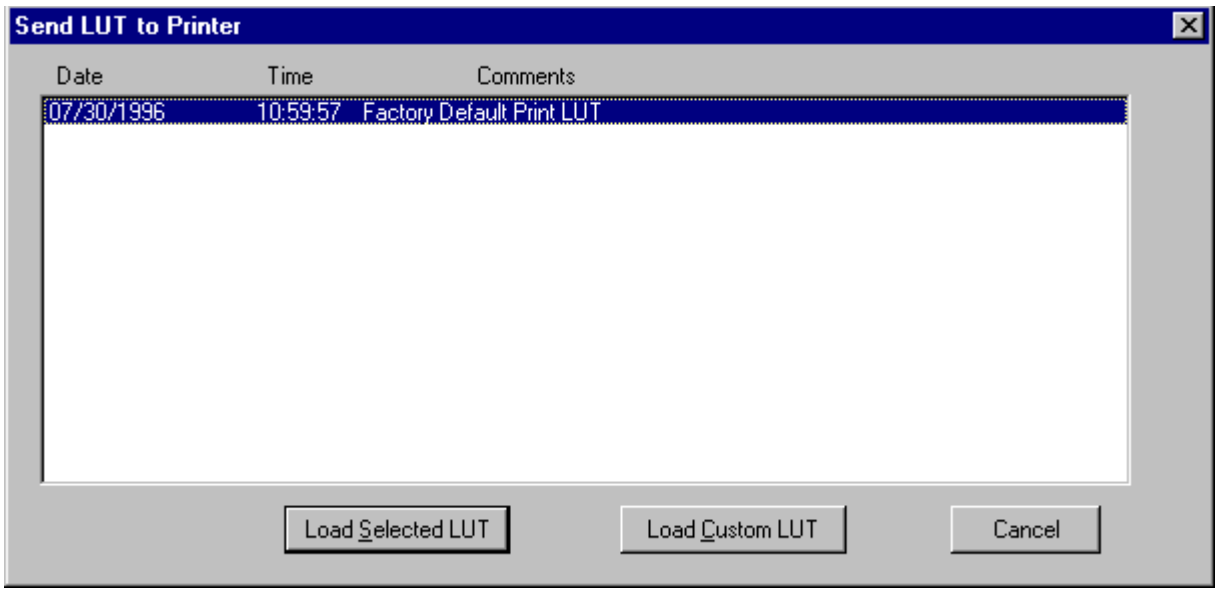


1. From the KODAK Device Calibration screen, double-click the device for which you want to send a LUT.
   The LED Calibration Application screen appears.



2. Click the **Send LUT** icon.

The Send LUT to Printer dialog box appears.

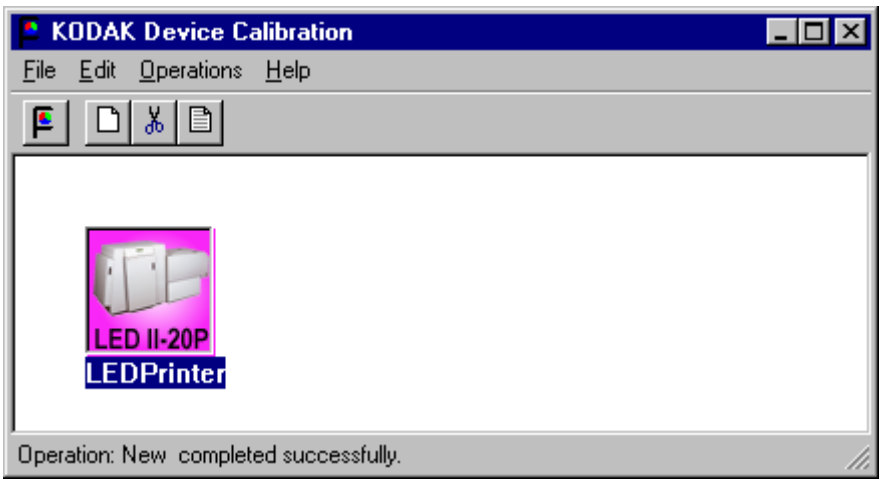


3. Select one of the LUTs from the dialog box and click **Load Selected LUT** or click **Load Custom LUT** and follow the prompts to load a custom LUT. The LUT is downloaded to the printer, **overwriting the current LUT.**

Sending Targets

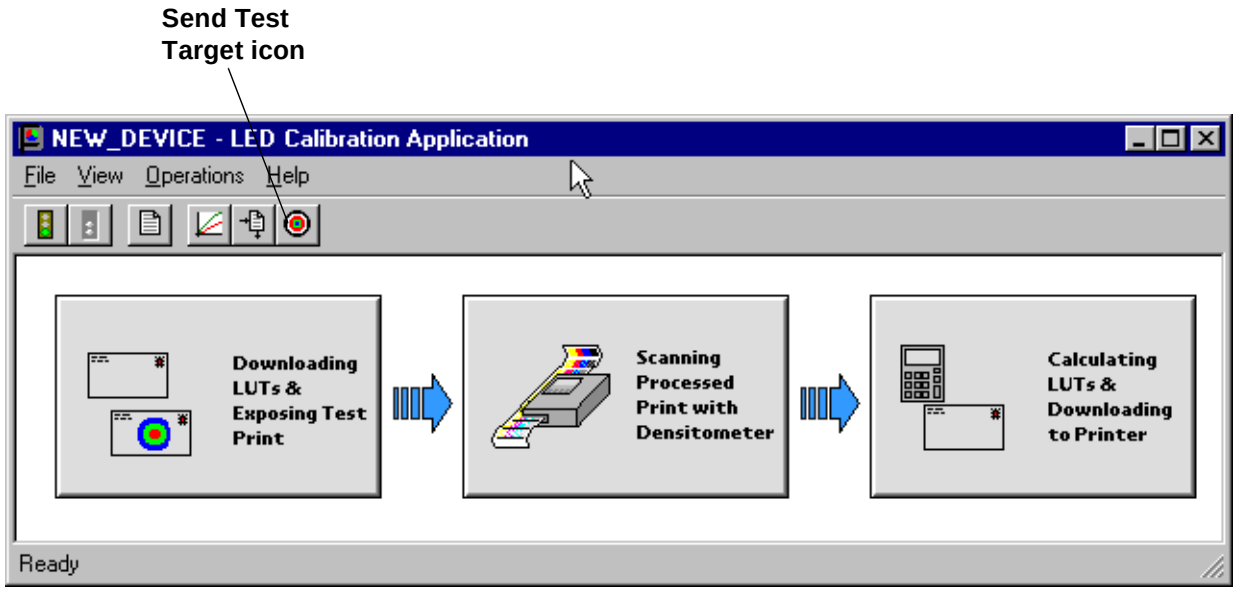
The Send Target feature enables you to send any properly formatted target file to the printer without performing a calibration. The target file must contain image data in the format for the *Kodak Professional* LED II Printer 20P/20R. The format of this file must be raw RGB pixel interleaved.

To send a test target to the printer:



1. From the KODAK Device Calibration screen, double-click the device for which you want to send a test target.

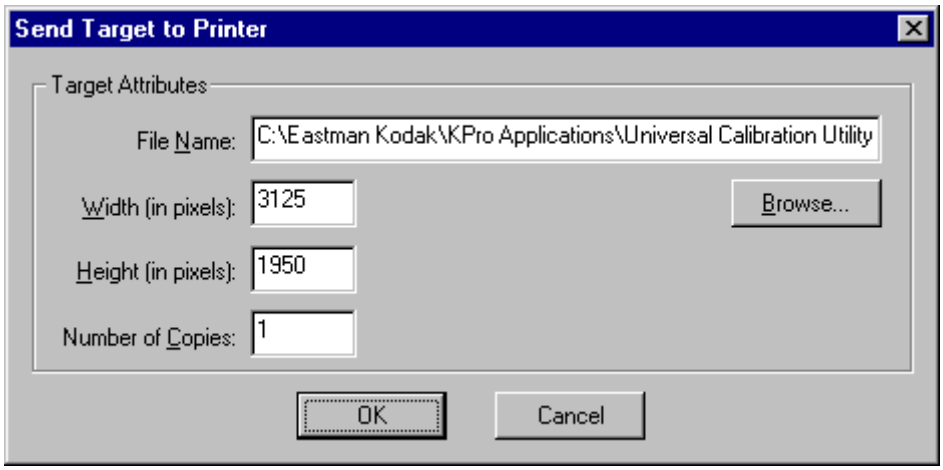
The LED Calibration Application screen appears.



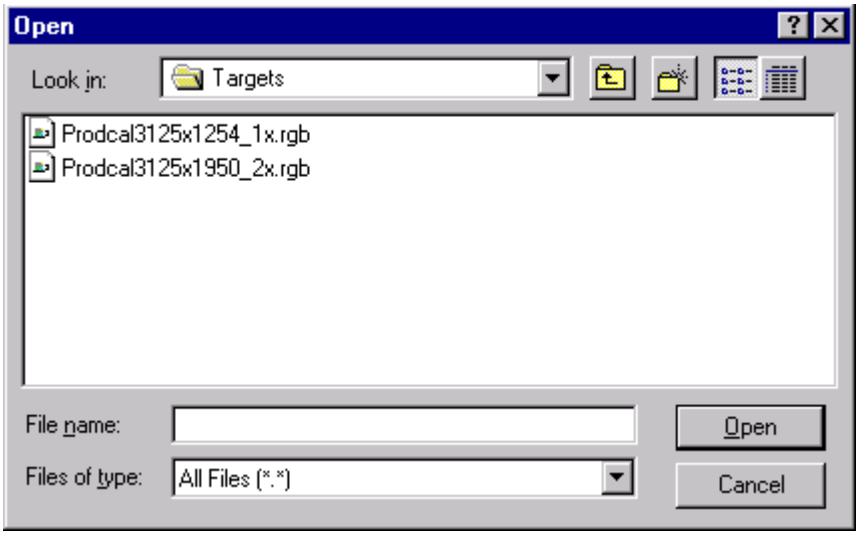
2. Click the **Send Test Target** icon.

   The Send Target to Printer dialog box appears. (Both the Windows NT and Macintosh versions are shown here.)

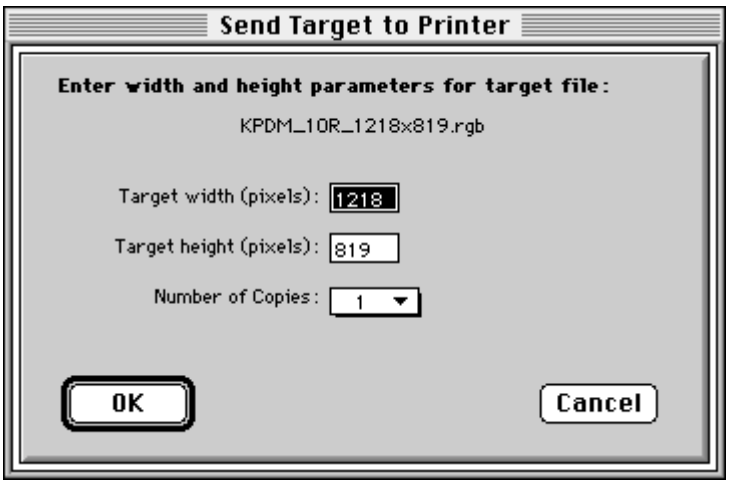
WINDOWS NT Version



NOTE: Windows NT users can click **Browse** to select another file name. The Open dialog box appears. Select the file name you want, then click **Open**.



MACINTOSH Version



3. Enter the desired settings and click **OK** to save the settings (or **Cancel** to keep the previous settings).

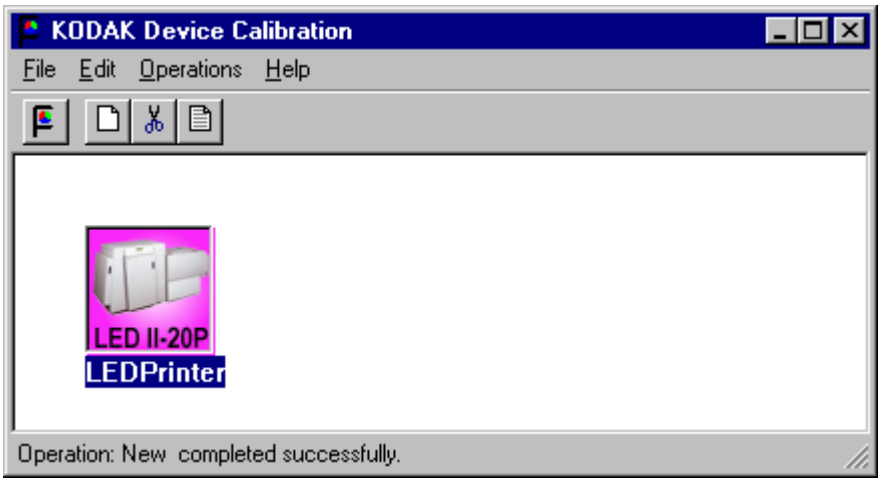
   The selected test target is sent to the printer.

Editing the Calibration Configuration

The Edit Configuration feature allows you to change the printer's calibration configuration attributes. ***However, it is recommended that you use the default settings for these attributes for most operations***. The settings should only be changed for the most advanced operations.

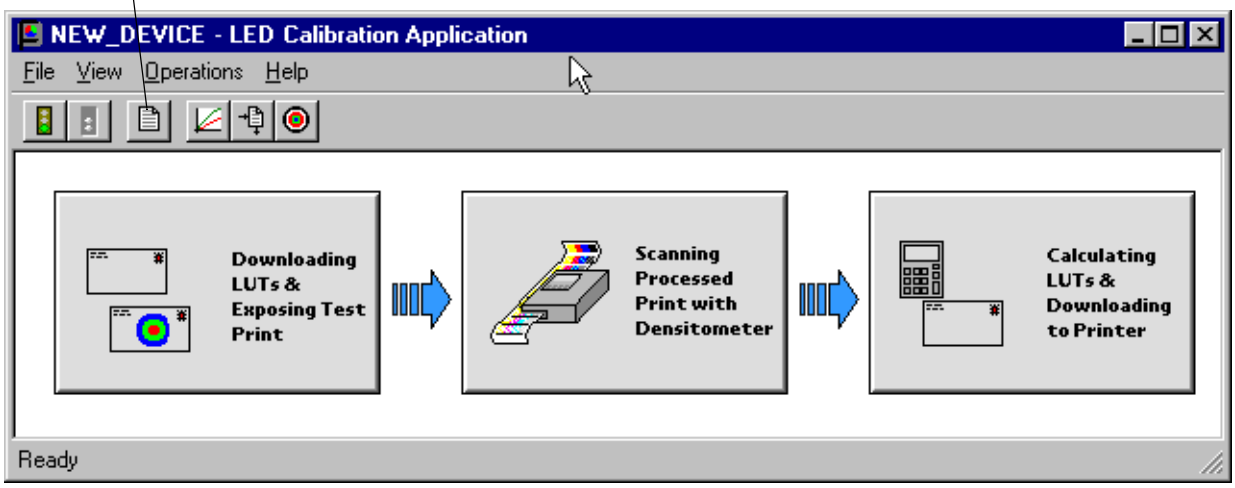
Edit Configuration consists of a set of six tabbed screens—each with related configuration attributes. There can be only one set of configuration attributes for the printer calibration application at a time. If you make any changes to one or more of the tabbed screens and then click **OK** to save your changes, the changes will overwrite the previous attributes used for the automated calibration.

To edit the calibration configuration:



1. From the KODAK Device Calibration screen, double-click the device for which you want to change the calibration configuration.
   The LED Calibration Application screen appears.

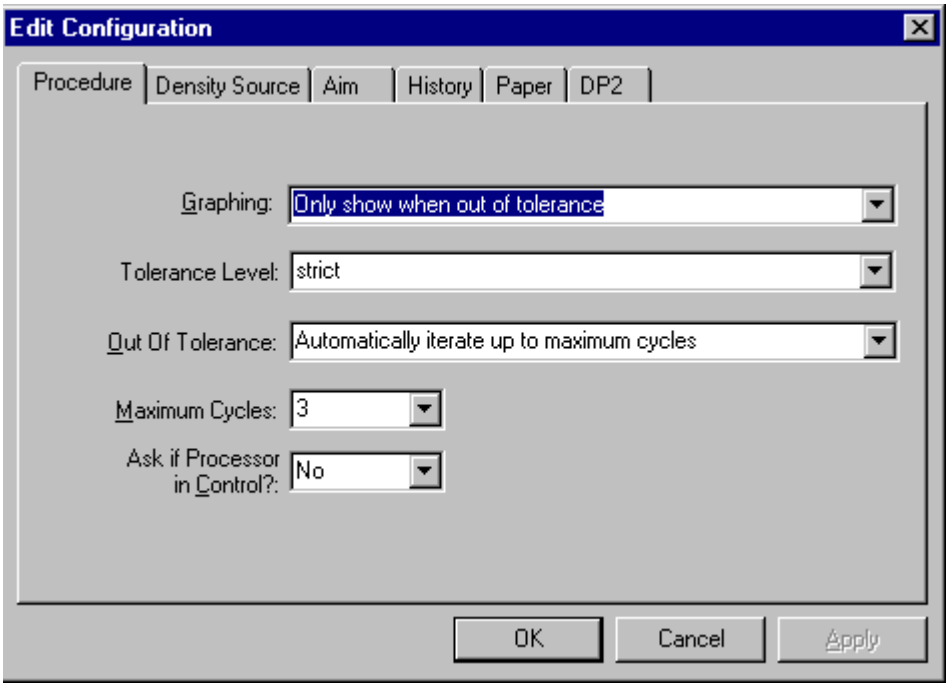
Edit icon



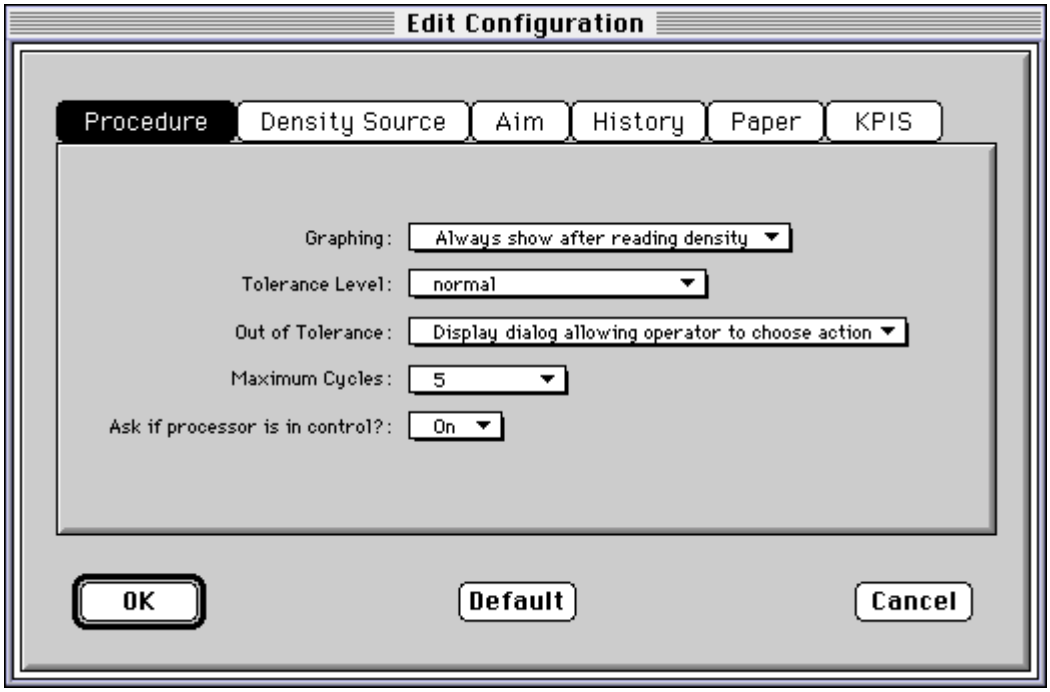
2. Click the **Edit** icon.

The Edit Configuration screen appears with the Procedure tab displayed.

Edit Configuration Screen for WINDOWS NT Systems



Edit Configuration Screen for MACINTOSH Systems



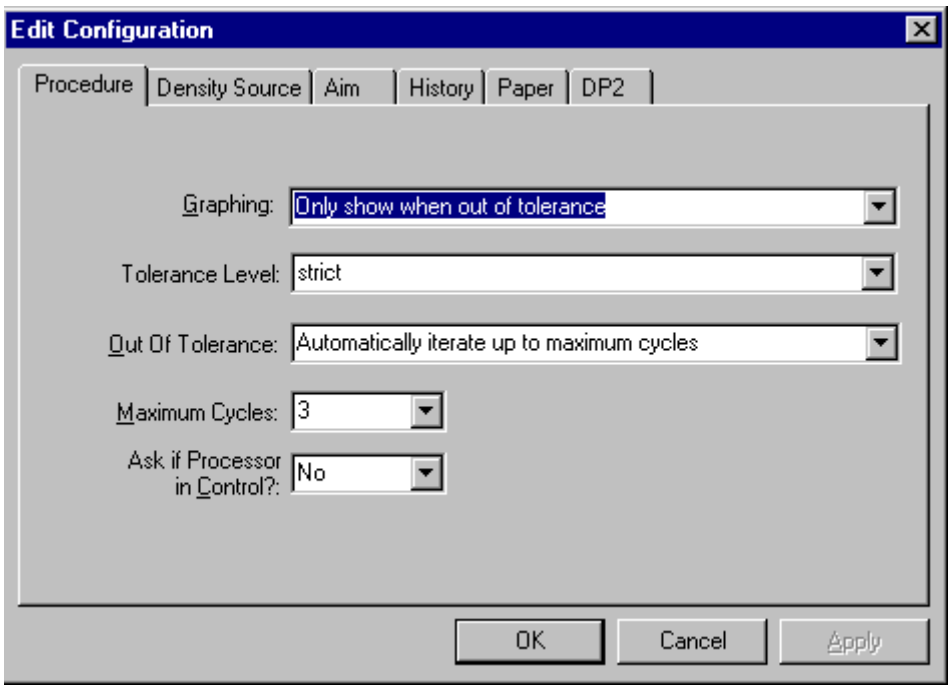
3. To navigate among the tabs, click the tab you want and follow the instructions for updating the information for that tab.

*IMPORTANT: Whenever you click **OK**, the software assumes ALL changes to the Edit Configuration are complete and the Edit Configuration screen closes. Similarly, you can click **Cancel** at any time while the Edit Configuration screen is open; any changes you made to any of the tabbed information are canceled and the Edit Configuration screen closes.*

Note that for Macintosh users only, you can click **Default** at any time to reset the attributes to their factory defaults and then click **OK** to save the defaults.

Editing Information on the Procedure Tab

The Procedure tab contains general configuration attributes as shown and described below. The values displayed in the example are the default settings.



Procedure Attribute	***Description***
Graphing	Instructs the application when to display the graphs of the data
Tolerance Level	Indicates whether the level of tolerance is Normal, Loose, or Strict
Out of Tolerance	Provides the flexibility to interact at each step or to use a fully automated calibration
Maximum Cycles	Indicates the maximum number of iterations the calibration procedure will perform if “Out of Tolerance” is set to “Automatically iterate up to maximum cycles.”.
Processor In Control	Indicates whether the Processor In Control dialog box is to be displayed at the beginning of the calibration process

To edit the configuration information on the Procedure tab:

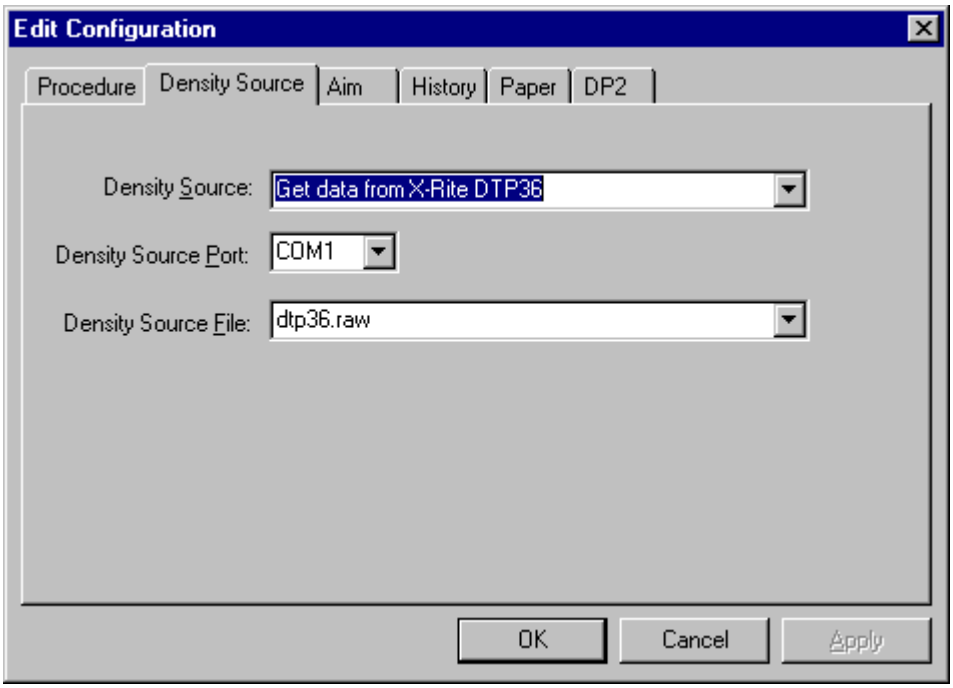
1. Use the drop-down lists to change the Procedure information as needed.
2. If you have completed all editing of configuration information (including information on the other tabbed screens), click **OK** to save the changes and close the Edit Configuration screen.

   NOTE: Click **Cancel** to cancel all changes made to the Edit Configuration screen and close the Edit Configuration screen.

3. To continue making changes to the Edit Configuration, click on another tab and make changes as needed.

Editing Information on the Density Source Tab

The Density Source tab specifies how the calibration application is to receive density data. The values displayed in the example are the default settings.



Density Source Attribute	*Description*
Density Source	Indicates the source (densitometer or file) of the density data.
Density Source Port	Indicates the name of the RS-232 port that the densitometer is connected to. This port is the source of the density data. The name of the port is specific to the computer system platform.
Density Source File	Indicates the filename for the source of density data. This is only used if the Density Source is a file. If you designate a file as the density source, this is the file name you use for “Creating a Density File for Use with Calibration” on page C-32.

To edit the configuration information on the Density Source tab:

1. Use the drop-down lists to change the Density Source information as needed.
2. If you have completed all editing of configuration information (including information on the other tabbed screens), click **OK** to save the changes and close the Edit Configuration screen.

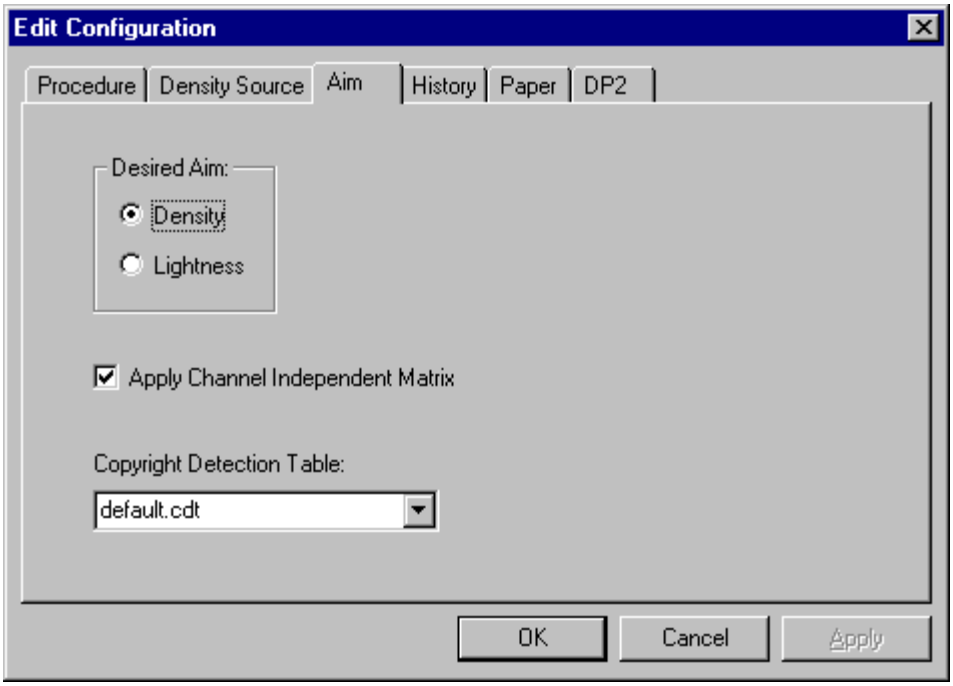
   NOTE: Click **Cancel** to cancel all changes made to the Edit Configuration screen and close the Edit Configuration screen.
3. To continue making changes to the Edit Configuration, click on another tab and make changes as needed.

Editing Information on the Aim Tab

The Aim tab specifies:

- whether the aims used for calibration are to be Density Aims or Lightness Aims
- whether to apply the Channel-Independent Matrix
- which table to use if Copyright Detection is functional

The values displayed in the example are the default settings.



Attribute	*Description*
Desired Aim	Indicates whether to use Density Aims or Lightness Aims for calibration. Using Lightness Aims will improve both the highlights and shadows of your prints.
Apply Channel Independent Matrix?	Indicates whether or not to apply the Channel-Independent Matrix to the aim values. If the matrix is applied, the number of cycles required to successfully calibrate the printer should be reduced.
Copyright Detection Table	Select the table to be used. This feature is available with Gen II LED printers only. ***Only use this feature as instructed by Kodak.***

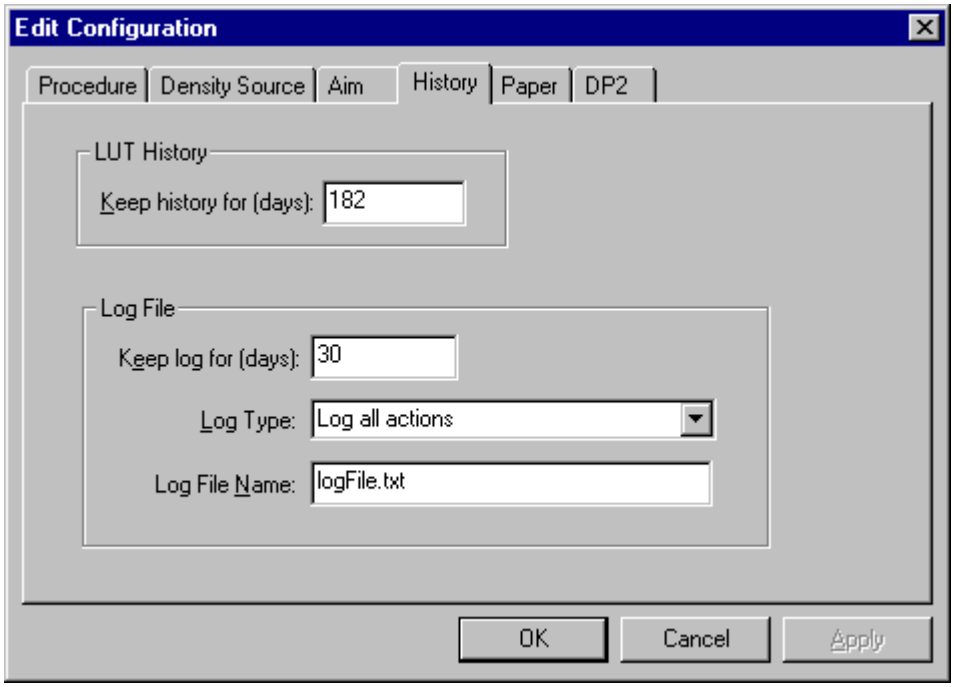
To edit the configuration information on the Aim tab:

1. Change the Aim information as needed.
2. If you have completed all editing of configuration information (including information on the other tabbed screens), click **OK** to save the changes and close the Edit Configuration screen.

   NOTE: Click **Cancel** to cancel all changes made to the Edit Configuration screen and close the Edit Configuration screen.
3. To continue making changes to the Edit Configuration, click on another tab and make changes as needed.

Editing Information on the History Tab

The History tab specifies information about maintaining calibration history data. The values displayed in the example are the default settings.



Attribute	*Description*
Keep History For (days)	Indicates the number of days that the calibration LUT, print LUT, density data and LUT history information (LED trend data) are to be kept. Information older than the specified number of days will be deleted.
Log Type	Indicates the type of log file available during calibration. All recordable events or just the recordable errors can be logged to a selected filename.
Keep log for (days)	Indicates the number of days that the error and events information is to be kept. Information older than the specified number of days will be deleted.
Log File Name	The name of the file that contains the logged information.

To edit the configuration information on the History tab:

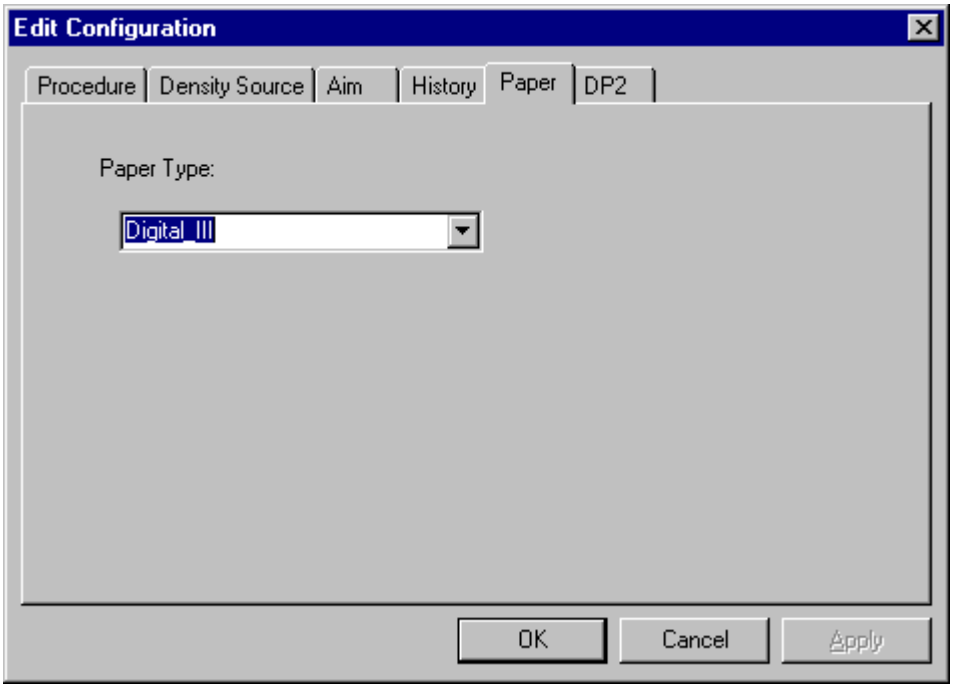
1. Change the History information as needed.
2. If you have completed all editing of configuration information (including information on the other tabbed screens), click **OK** to save the changes and close the Edit Configuration screen.

   NOTE: Click **Cancel** to cancel all changes made to the Edit Configuration screen and close the Edit Configuration screen.

3. To continue making changes to the Edit Configuration, click on another tab and make changes as needed.

Editing Information on the Paper Tab

The Paper tab allows you to specify the paper being calibrated. The value displayed in the example is the default setting.



Attribute	*Description*
Paper Type	Select either KODAK PROFESSIONAL Digital III Paper (Digital III) or KODAK PROFESSIONAL Digital PT 2976 Paper (2976).

To edit the configuration information on the Paper tab:

1. Change the Paper Type if needed.
2. If you have completed all editing of configuration information (including information on the other tabbed screens), click **OK** to save the changes and close the Edit Configuration screen.

   NOTE: Click **Cancel** to cancel all changes made to the Edit Configuration screen and close the Edit Configuration screen.
3. To continue making changes to the Edit Configuration, click on another tab and make changes as needed.

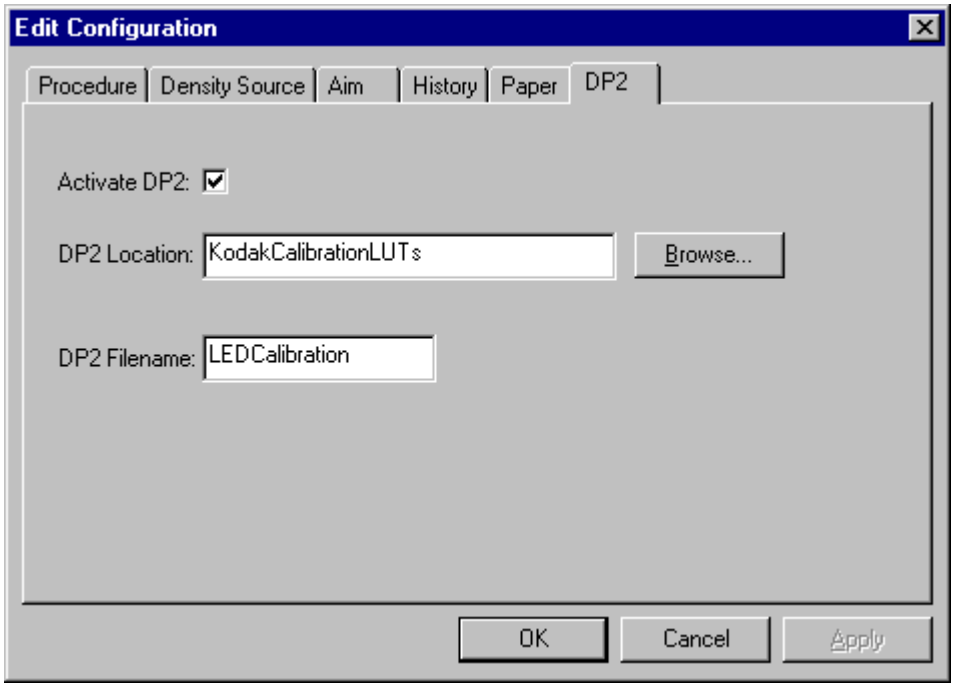
Editing Information on the DP2 (Windows NT) or KPIS (Macintosh) Tab

The DP2 (or for Macintosh versions, KPIS) tab specifies whether to activate DP2 (or KPIS) interoperability, and if so, names the directory and filename designated for the DP2 (or KPIS) information.

There are some minor differences in the editing of DP2 and KPIS information; both are presented. Instructions for editing KPIS information begin on page 29.

Editing DP2 Information (WINDOWS NT Systems)

When you click the DP2 tab of the Edit Configuration screen, the following tabbed screen appears. The values displayed in the example are the default settings.



Attribute	*Description*
Activate DP2	Indicates if the calibration procedure should generate a LUT file to be used with the DP2 system
DP2 Location	Directory to contain generated LUT files for use with DP2
DP2 Filename	Name of the file containing the DP2 LUT files

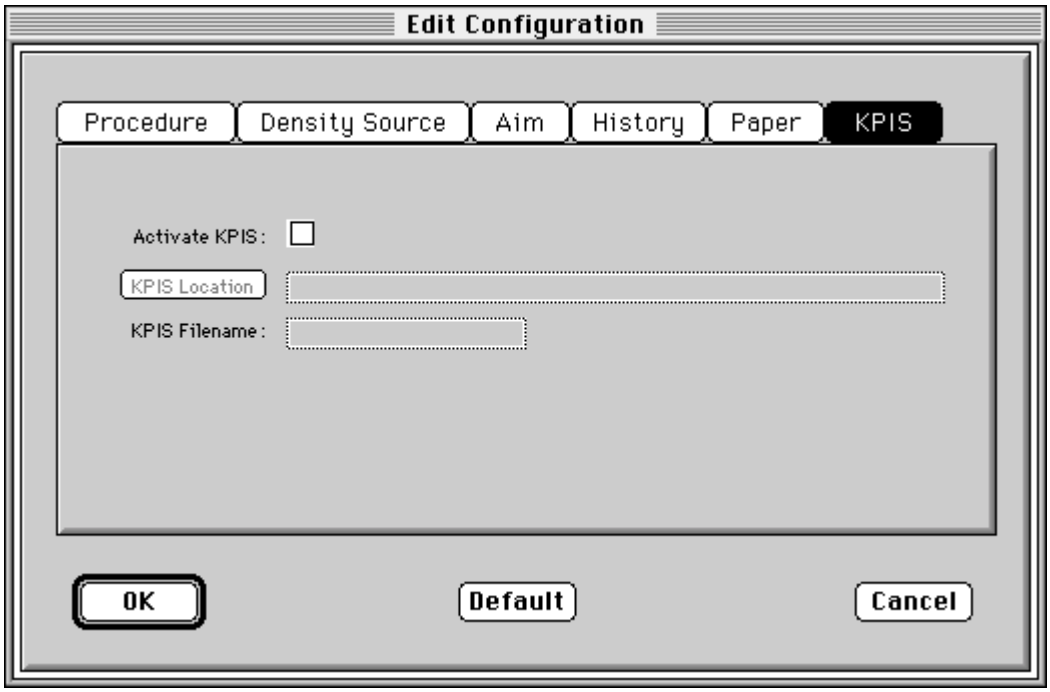
1. If DP2 is not already activated, click the **Activate DP2** checkbox (click again to deactivate) so that the screen looks like the example above.
2. To change the DP2 Location, type a new directory name or click **Browse** and select another directory.
3. If needed, change the DP2 Filename.
4. If you have completed all editing of configuration information (including information on the other tabbed screens), click **OK** to save the changes and close the Edit Configuration screen.

   NOTE: Click **Cancel** to cancel all changes made to the Edit Configuration screen and close the Edit Configuration screen.
5. To make other changes to the Edit Configuration, click on another tab and make changes as needed.

Editing KPIS Information (Macintosh Systems)

If you are using the calibration output files with the KPIS system, it is necessary to activate KPIS and assign a filename and location to the output file.

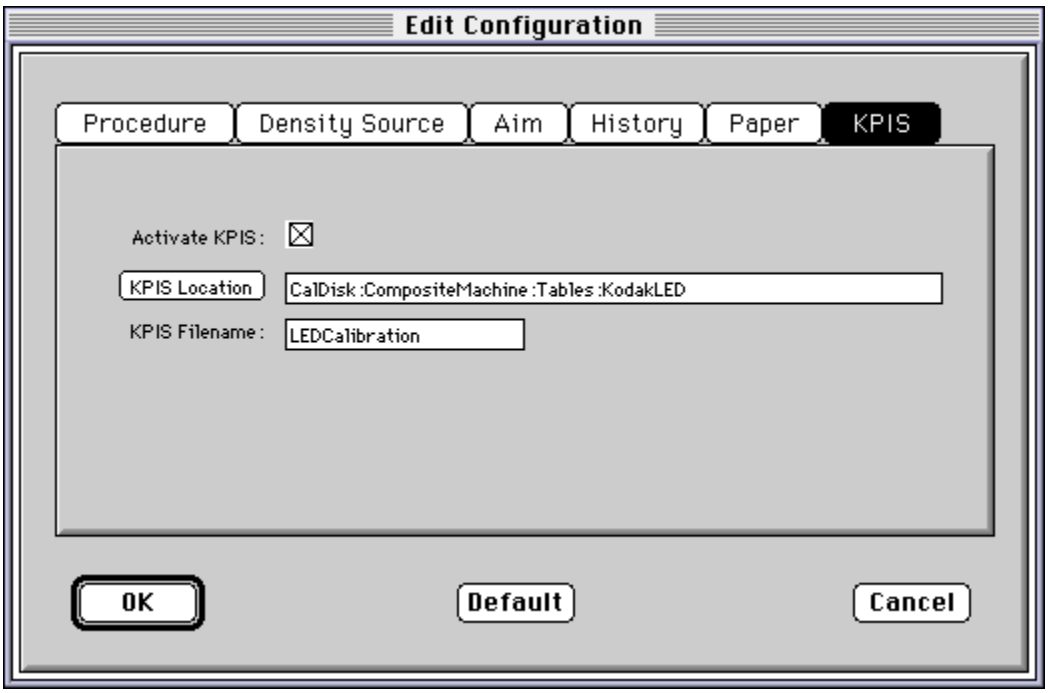
When you click the KPIS tab of the Edit Configuration screen, the following tabbed screen appears. The values displayed in the example are the default settings.



Attribute	*Description*
Activate KPIS	Indicates if the calibration procedure should generate a LUT file to be used with the KPIS system
KPIS Location	Directory to contain generated LUT files for use with KPIS
KPIS Filename	Name of the file containing the KPIS LUT files

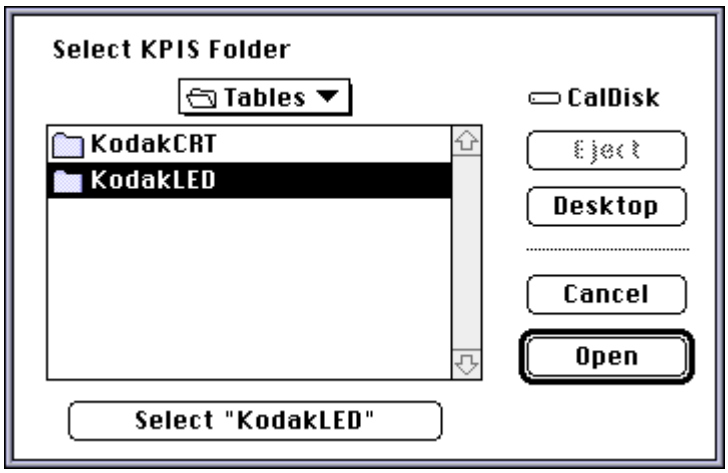
1. Click the **Activate KPIS** checkbox (click again to deactivate).

The display shows the Edit Configuration screen with the default settings for KPIS Location and KPIS Filename.



2. To change the directory for the KPIS file:

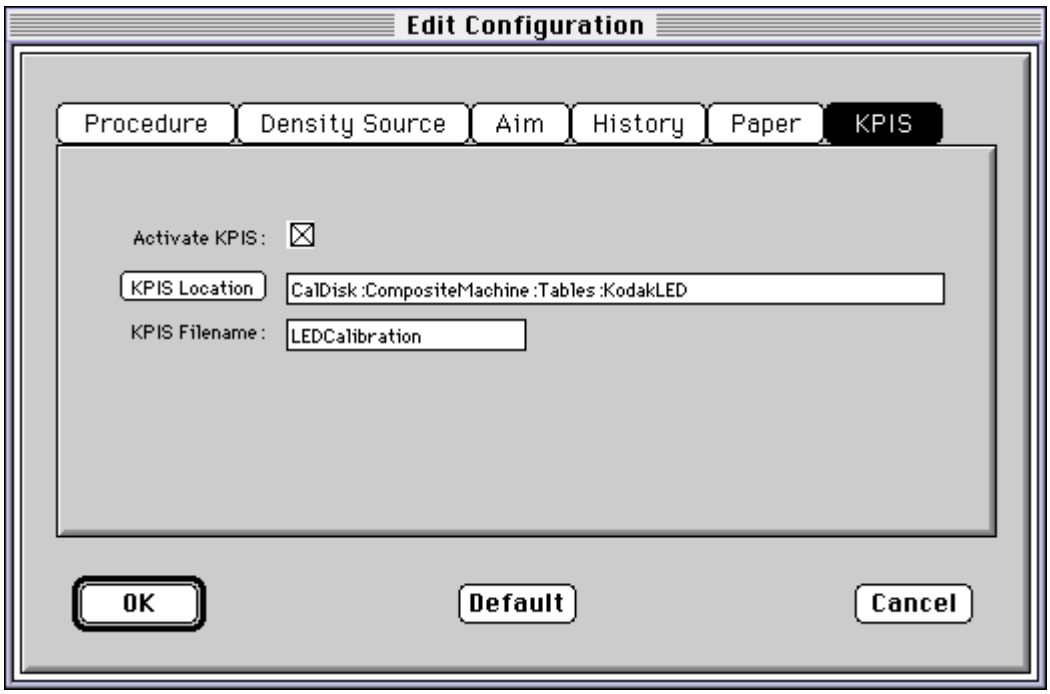
   a. Click **KPIS Location**. The display shows the Select KPIS Folder dialog box.



   b. If needed, browse to find the folder you want.

   c. Click on **Select "directoryname"** (the example above shows **Select "KodakLED"**).

The display shows the updated Edit Configuration screen with updated File Location of CalDisk:CompositeMachine:Tables:KodakLED.



Completing the Edit Configuration

When finished, click **OK** to save the attributes. (Click **Cancel** to exit the screen without saving your changes. Macintosh users: you can click **Default** at any time to reset the attributes to their factory defaults and then click **OK** to save the defaults.)

Creating a Density File for Use with Calibration

During calibration, you have the option of obtaining density data from a file or by scanning a processed test target through an X-RITE DTP 36 densitometer. The option is determined by the entry in the calibration configuration file. If the configuration file is set up to receive density data from a file and you are creating the file:

1. Scan the print into your densitometer.
2. Save the data to file using the density data file format specification (see “File Formats” below). The *Kodak* Calibration Software does not perform this function.
3. Move the density data file that you just saved to the folder or path selected on the Density Source tab of the Edit Configuration screen (see “Editing Information on the Density Source Tab” on page C-24).

File Formats

NOTE: If a file contains data in a tabular format, each entry may be separated by multiple spaces and tabs; however, when the file is saved by the application, each group of multiple spaces and tabs is automatically converted to a single tab.

DensityDataRaw (TECHNET Format)

Example:

R2340 G1000 B2010
R2350 G1010 B2020
R2360 G1020 B2030
R2370 G1030 B2040

Installing the Densitometer

This section describes how to install the X-RITE DTP 36 Densitometer, including changing some of the attributes on the Edit Configuration screen to accommodate the densitometer.

IMPORTANT: The supported densitometers use a RS-232 interface for communication to the host. Each platform uses different designations to identify the RS-232 ports.

To install the densitometer:

1. Connect the appropriate cable (provided by the user, supplier or with the densitometer) between the densitometer and the host computer.

   NOTE: For the X-RITE DTP 36 Densitometer:

   - Remove the protective strip (for shipping) from the densitometer.
   - Verify that the densitometer is configured with the factory defaults. (Refer to the densitometer manual for this information.)
   - Perform an initial calibration of the densitometer. (Refer to the densitometer manual.)

2. Run the calibration software for the printer and click the **Edit** icon to access the Edit Configuration screen; see “Editing the Calibration Configuration” beginning on page C-20.
3. Click the Density Source tab.
4. Edit the attribute for the Density Source. Select the appropriate choice for your densitometer from the list.
5. Edit the attribute for the Density Source Port. Enter the name of the port that the RS-232 cable is connected to on the host computer system.

Host System	***Default Port***
MACINTOSH	Printer
WINDOWS NT	COM 1

6. Click **OK** to save the changes to the configuration.

   IMPORTANT: Densitometers require calibration at regular intervals. Refer to your densitometer manual or instructions on how to calibrate your densitometer and perform a calibration.

Appendix D: Using the Image Print Server Software

This section describes how to use the KODAK PROFESSIONAL Image Print Server Software for WINDOWS NT Workstation 4.0 Systems with the KODAK PROFESSIONAL LED II Printer 20P (20P Printer) and the KODAK PROFESSIONAL LED II Printer 20R (20R Printer).

The IPS Software enables printing of TIFF images and provides easy, intuitive methods for performing simple print management operations that include:

- stopping/suspending and resuming the processing
- deleting images from the queue
- inserting new images into the queue
- applying a tone scale correction to images

In addition, IPS Software allows you to monitor a specified file system or folder while waiting for TIFF images.

Communication Channels

Your computer can print to the 20P or 20R Printer through a SCSI connection only.

Installing the IPS Software

You must be familiar with the WINDOWS System in order to perform the installation.

Hardware Requirements

The following is the minimum hardware required for the IPS Software:

- 64 MB Main System Memory
- 100 MHz PENTIUM Processor
- VGA Monitor (640 x 480 spatial resolution)

Software Requirements

The following must be installed on your computer:

- WINDOWS NT Workstation 4.0
- An ASPI-compliant SCSI interface driver

Installing the Software

1. Insert the IPS Software CD into the CD-ROM drive.
2. Double-click on the *Setup.exe* icon.
3. Follow the on-line instructions to complete the installation.

The default installation location for the software is “C:\Eastman Kodak\KPro Applications\KODAK PROFESSIONAL Image Print Server.” In addition to the application, the installation procedure also installs a tone scale correction LUT that may be used by the IPS application. The default installation location for this LUT is “C:\Eastman Kodak\KPro Color Management\LUTS.”

Using the Image Print Server

This section summarizes the process of printing an image. See “Dialog Boxes and Print Options” on page D-6 for detailed descriptions of the options.

Inserting Images into the Print Queue

The IPS application allows you to submit images by specifying a “hot folder” (for example: the **Source Directory** in the Source Directory Preferences dialog box) or inserting through the enqueue function from the application menu bar.

Source Directory Insertion

Images placed in the **Source Directory** are automatically placed into the print queue. The images are then sorted by the date and time that they were placed in the **Source Directory.** Images are printed in the order that they are placed into the directory. Once the image has been downloaded, the file is removed from the **Source Directory**.

NOTE: The properties of the images that are placed in the **Source Directory** are taken from the Source Directory Preferences dialog box.

Menu Bar Insertion

To enqueue an image through the menu bar, select File->Enqueue or click the Enqueue button.

Images placed in the queue through the menu bar are not removed from their original directory after they are downloaded.

NOTE: The properties of images inserted in this manner are taken from the Enqueue dialog box.

Suspending and Resuming

When the IPS application begins execution, it searches the current directory for its preferences file, KIPSpref.dat. If this file is not found, the application begins execution in the “suspended” state as if the Suspend button was pressed. While suspended, the application does not communicate with the printer for any reason. As a result, the status bars on the application will not reflect the accurate state of the printer.

If the application is suspended, pressing the Resume button will activate the application. If the preferences have not been initialized (for example: first time execution), you are prompted to initialize the IPS preferences. The application will remain suspended until the preferences have been properly initialized.

If the preferences file is found when the application is launched, the application will begin execution in the “running” state as if the Resume button was pressed.

Failed Jobs

When an image fails to download for any reason, an appropriate error message is appended to the log. The log file is specified in the Source Directory Preferences dialog box.

Images in the **Source Directory** are moved to the **FailedJobs Directory**. The **FailedJobs Directory** is created as a subdirectory within the **Source Directory** when the first failure occurs.

Images that fail and were not inserted through the **Source Directory** are not moved to the **FailedJobs Directory**.

Attended Operation

The IPS application allows you to operate in the Attended or Unattended mode. The Server-> Attended menu item is used to enable and disable Attended mode operation.

In Attended mode, all errors are displayed in dialog boxes. The IPS application is halted until you respond to the message.

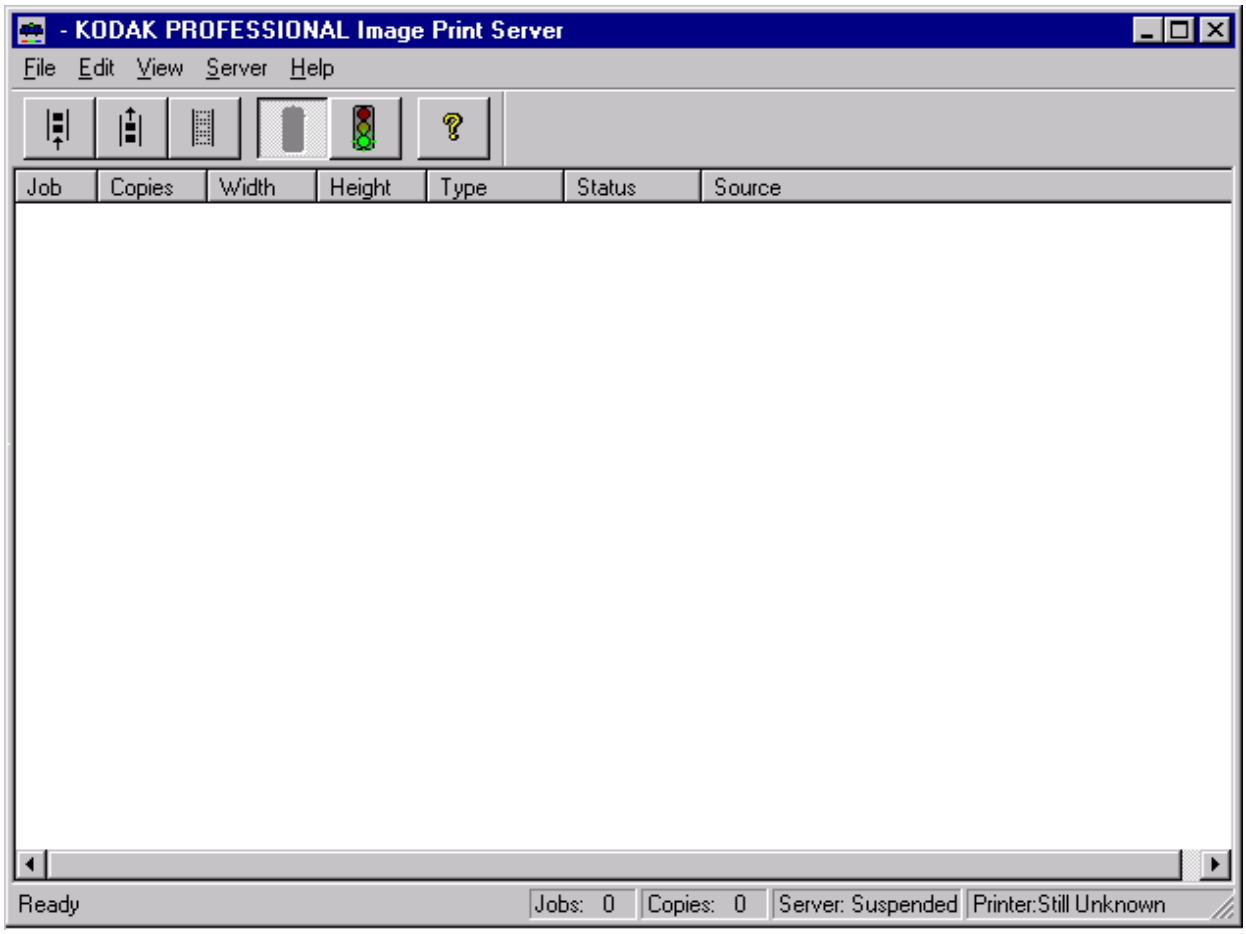
In Unattended mode, only errors that require user intervention are displayed in dialog boxes. Errors that do not require user intervention, such as an invalid file format, are logged in the log file.

In both Attended and Unattended modes, all errors are written to the log file.

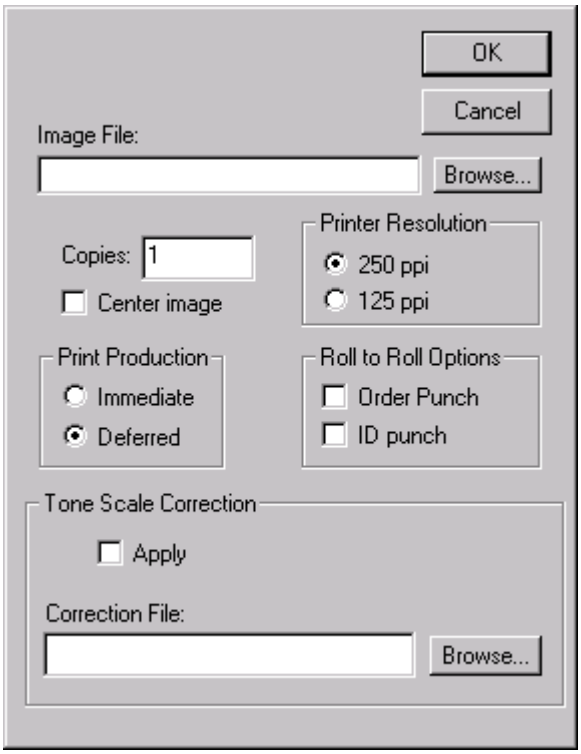
NOTE: If a communication error occurs while the file is being downloaded to the printer, the image may not be printed. In addition, jobs that fail to print from the source directory are copied to the failed jobs directory.

Enqueue Example

1. Select *File->Enqueue* from the menu bar for the main application screen



The Enqueue dialog box appears.



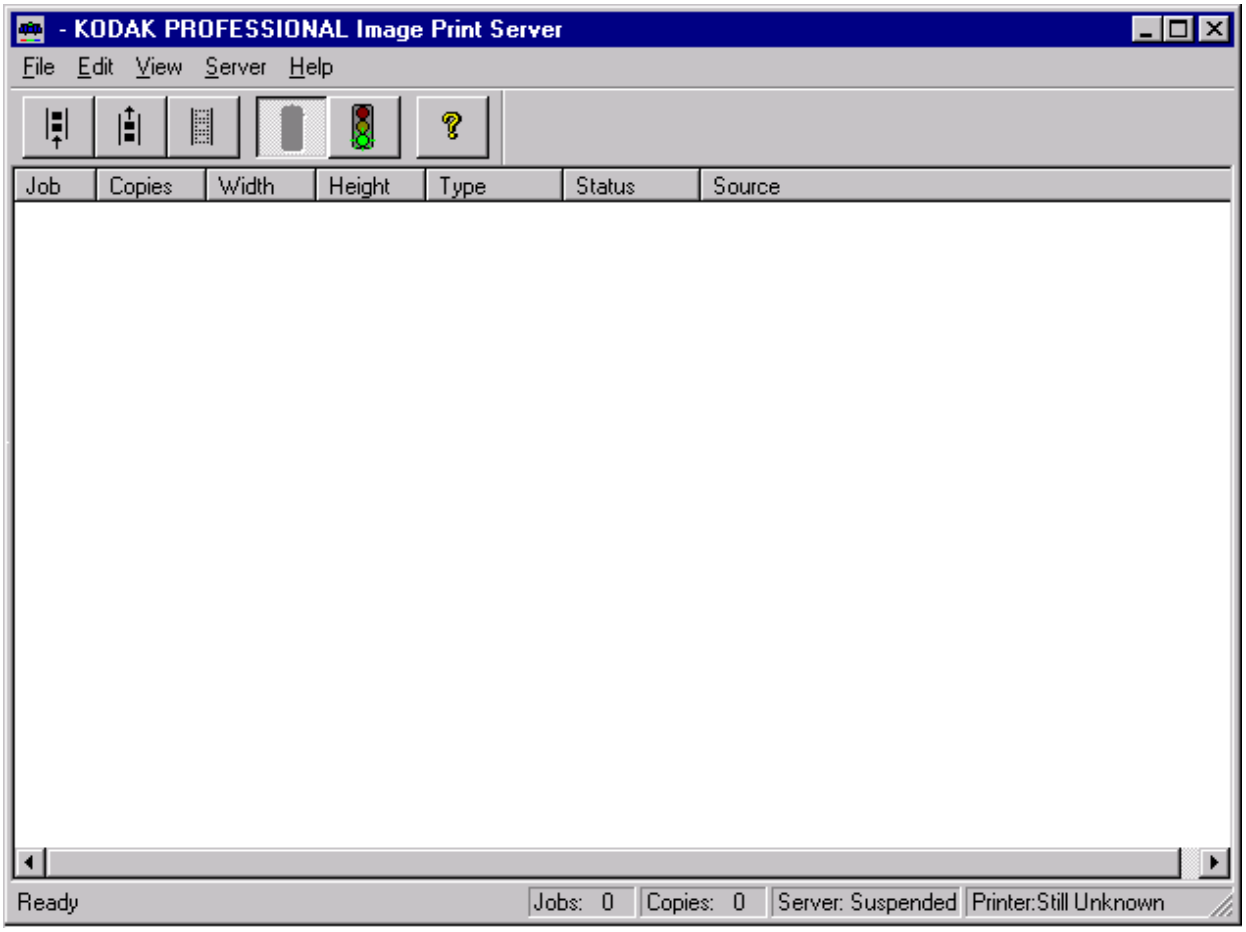
2. Type a file name into the Image File text box or click the Browse button.
3. Click OK to close the Enqueue dialog box and to insert the specified file into the print queue.

   NOTE: You cannot enqueue a file that is being downloaded to the printer. You must wait the file has completed downloading before you can access the file.

Dialog Boxes and Print Options

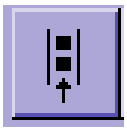
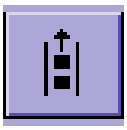
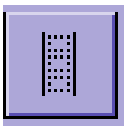
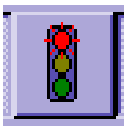
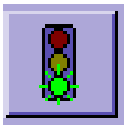
This section describes the dialog boxes and print options for the KODAK Image Print Server Software.

KODAK PROFESSIONAL Image Print Server Main Window:

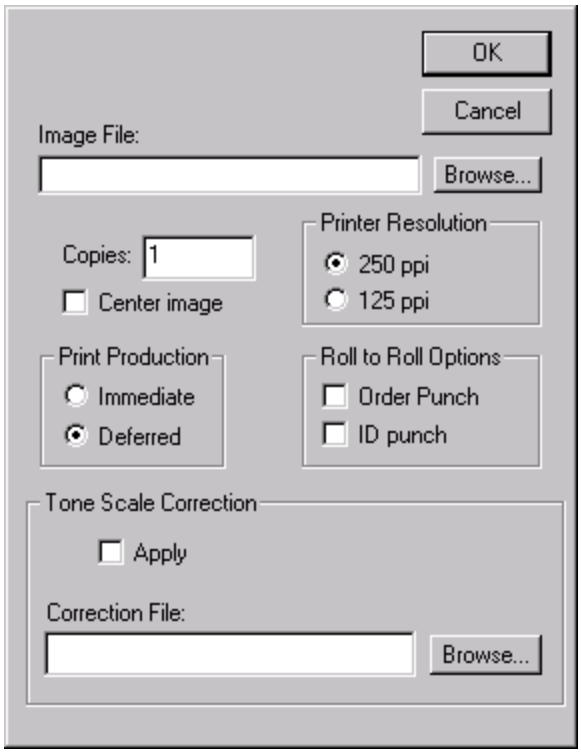


Option Descriptions

The main window allows you to choose the following options:

Menu Access	*Button*	*Icon*	*Description/Function*
File	Enqueue		Displays the Enqueue dialog box and allows you to insert a new image into the print queue.
File	Dequeue		Allows you to remove the top entry from the print queue.
File	Flush		Allows you to delete all entries from the print queue.
Server	Suspend		Suspends the operation of the application. If an image is being sent to the printer, it will continue to download and is active only when the system is executing normally.
Server	Resume		Resumes the operation of the application and is active only when the system is suspended and can only be used if the server defaults were initialized.
Help	About		Displays the About box that includes version information about the IPS.

Enqueue Dialog Box



Option Descriptions

The selections/options that you can make from the Enqueue dialog box include the following:

Image File Text Box— you may type in a name or browse the directory structure.

OK—closes the dialog box and inserts the specified file into the print queue.

Cancel—closes the dialog box without saving any changes.

Copies—the number of copies to print. The valid number of copies is 1—9999

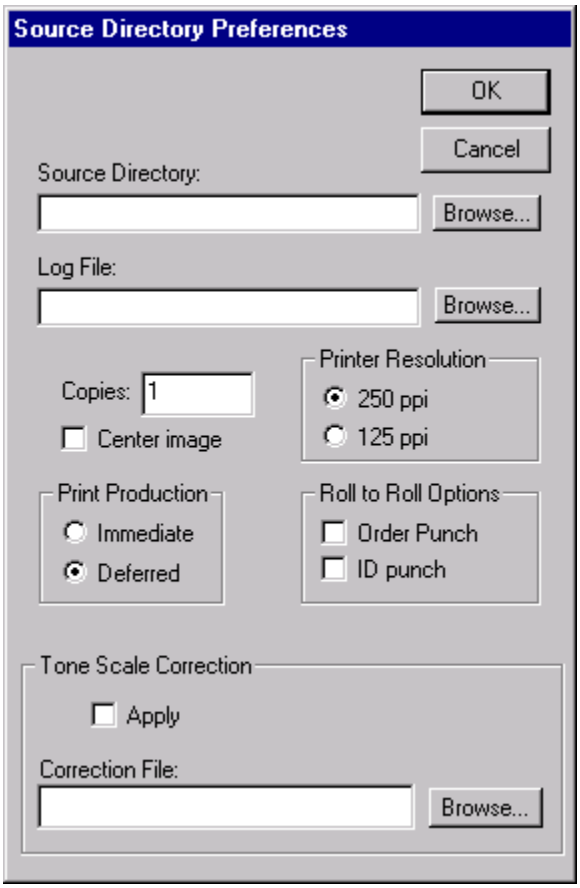
Printer Resolution—“125 ppi” enables the hardware pixel replication capability on the printer, “250 ppi” prints the image pixel for pixel.

Print Production—“Immediate” instructs the printer to print the image immediately, “Deferred” allows the printer to buffer the image until an entire sheet of images can be printed.

Punches—“Order Punch” places a punch between each order, “ID Punch” places a punch .25 in. inside each image area to mark a gutter for host image information.

Tone Scale Correction—”Correction File” is the name of the file to use for the tone scale correction. A 2.2 gamma correction LUT is installed with the application. See “Installing the Software” on page D-2 for the default installation location. Select the “Apply” box to instruct the application to apply the LUT to the image.

Source Directory Preferences Dialog Box



Option Descriptions

The selections/options that you can make from the Server Default dialog box are:

OK—closes the dialog box and saves the specified values.

Cancel—closes the dialog box without saving any changes.

Source Directory—the directory/folder where the TIFF application will look for the TIFF images to arrive. Type a directory name or click the browse button.

Log File—the file name where the IPS application will store the printer error information. Type a file name or click the Browse button.

Copies—the number of copies to print. The valid number of copies is 1–9999

Center Image—centers the image on the paper.

Printer Resolution—"125 ppi" enables the hardware pixel replication capability on the printer, "250 ppi" prints the image pixel for pixel.

Print Production—"Immediate" instructs the printer to print the image immediately, "Deferred" allows the printer to buffer the image until an entire sheet of images can be printed.

Punches—"Order Punch" places a punch between each order. "ID Punch" places a punch .25 in. inside each area to mark a gutter for the host image information.

Tone Scale Correction—"Correction File" is the name of the file to use for the tone scale correction. A 2.2 gamma correction LUT is installed with the application. See "Installing the Software" on page D-2 for the default installation location. Select "Apply" to instruct the application to apply the LUT to the image.

Initialize Default Parameters Dialog Box

Description

This dialog box appears if you press the Resume button (or activated through the menu bar) before the Source Directory Preferences have been initialized.

File Format Details

The data portion of the TIFF file must contain RGB byte interleaved data. The specific TIFF tags that are supported are shown below.

Supported Tags

The Image Print Server supports the TIFF tags listed below. The range of legal values for TIFF tags 256, 257, 258, 273, 278 and 279 are image dependent. If these values are incorrect, an error will occur while reading the image data and an appropriate error message will be placed in the log file. Values indicated in the table below by a "*" are image dependent.

TIFF Tag ID	*Name*	*Valid Range*
256	Image Width	*
257	Image Length	*
258	Bits per Sample	*
262	Photometric Interpretation	2
273	Strip Offset	*
277	Samples per Pixel	3
278	Rows per Strip	*
279	Strip Byte Count	*
284	Planar Configuration	1

*indicates an image dependent value.

LZW Compression

The IPS does not support LZW compression.

Appendix E: Using the PHOTOSHOP Export Module

This appendix describes how to use the Export Module for PHOTOSHOP on MACINTOSH Systems with the KODAK PROFESSIONAL LED II Printer 20P. The Export Module allows you to export prints from PHOTOSHOP to a 20P Printer.

The Export Module allows you to:

- Scale an image by 200%
- Center an image within a user specified border

Installing the Export Module

This section explains how to install the Export Module on your MACINTOSH system. It assumes that you are familiar with the MACINTOSH System Environment.

Hardware Requirements

The following hardware is required for the Export Module:

- 120 MHz PowerPC 601 Processor
- Minimum of 72 MB of RAM
- Hard disk space that is at least three times your image size
- A standard SCSI terminator if you are daisy-chaining your external disk drive or other peripheral with the printer and you are not using a MACINTOSH IIfx Computer
- An APPLE SCSI Terminator if you are using a MACINTOSH IIfx Computer and you have an external SCSI disk drive or other peripheral device
- KODAK PROFESSIONAL LED II Printer 20P or 20R

Software Requirements

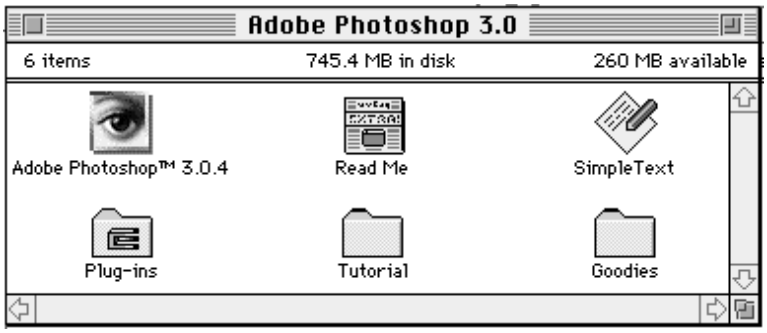
The following must be installed on your MACINTOSH System:

- MACINTOSH System 7.5.5 or later
- ADOBE PHOTOSHOP, version 3.0 or later

Installing the Software

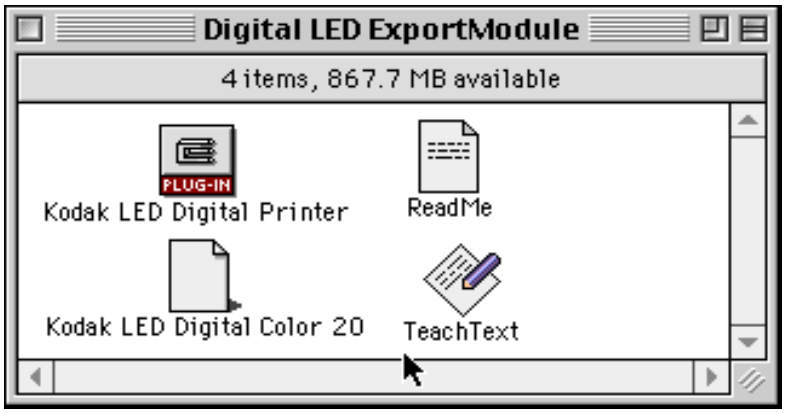
1. Open the *Adobe Photoshop* folder on your computer.

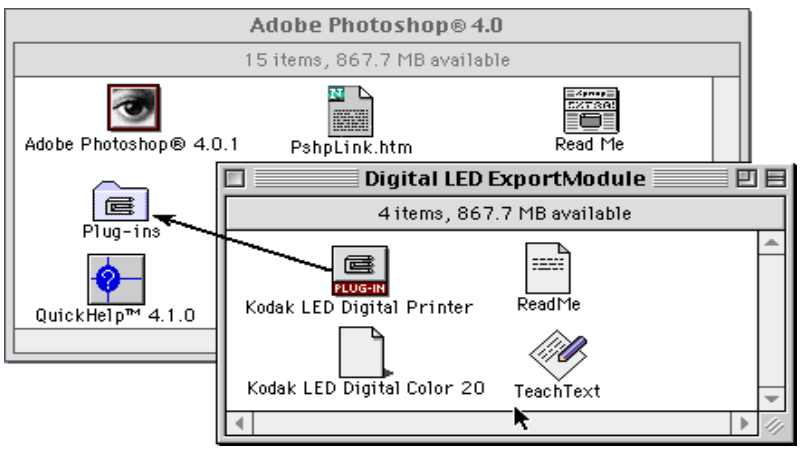
   The Adobe Photoshop window appears. It should look similar to the one shown below.



2. Insert the *Host Software* CD (included with your printer) into the CD drive.
3. Double-click the CD icon on your desktop.
4. Double-click on the Macintosh folder.
5. Double-click the KODAK LED Printer Export Module folder.

   The KODAK LED Printer icons appear.





6. Click and drag the *KODAK LED Printer plug-in* icon and *Media Files* over the Adobe Photoshop *Plug-ins* folder and release the mouse button.

   A copy progress dialog box appears as the folders and files are copied.

7. Click and drag the remaining files from the *KODAK LED Printer* window to a Utility folder or another location on your system.

Printing Images

Do the following to print an image. See page 6 for details.

1. Start PHOTOSHOP and open an image file.

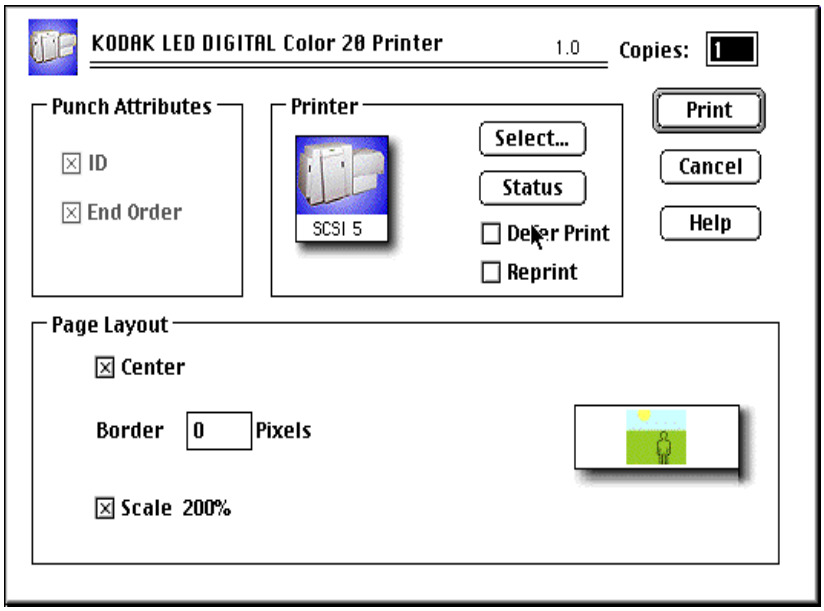
   NOTE: Make sure the image is in the RGB Color mode. If the image is not in the RGB Color mode when you try printing the file, you will receive an error message.

2. Choose *Export* from the File menu.

   NOTE: You cannot access the *Export* submenu if an image is not open in PHOTOSHOP.

3. Choose *KODAK LED Printer* from the Export menu.

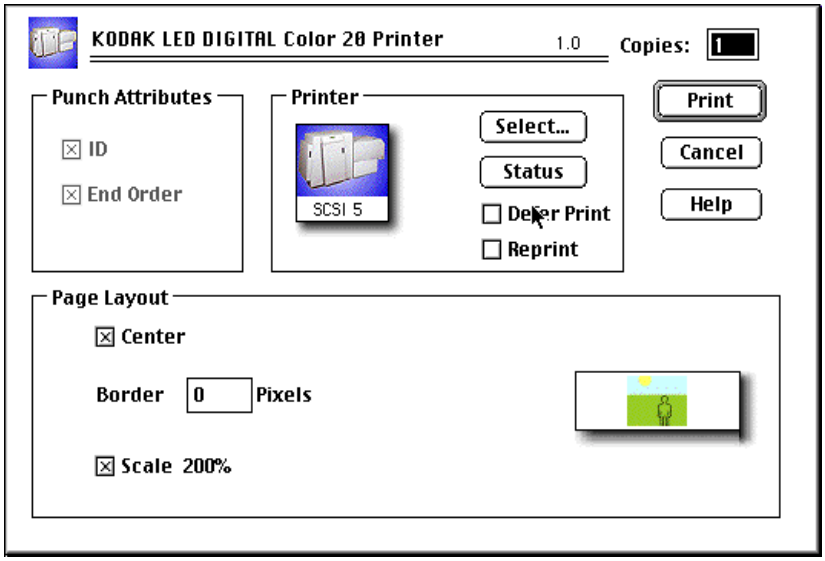
   The KODAK LED Printer main dialog box appears.



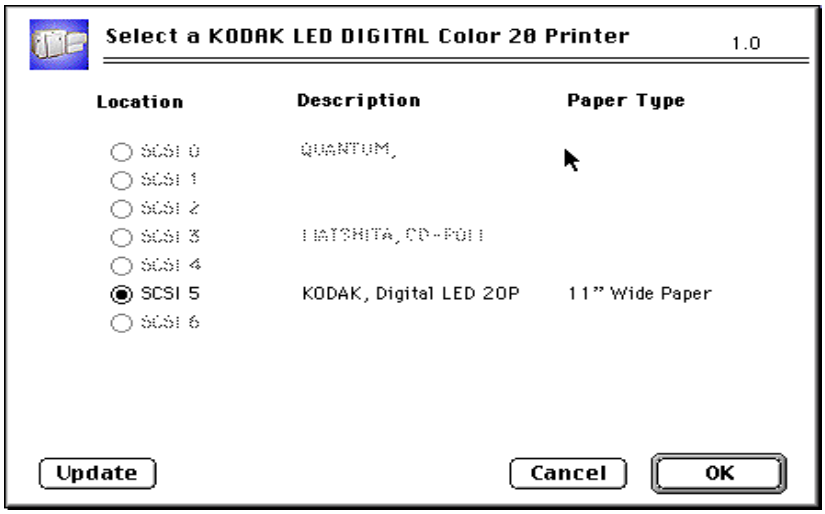
4. Click **Print**.

To select another printer:

1. Click **Select**.

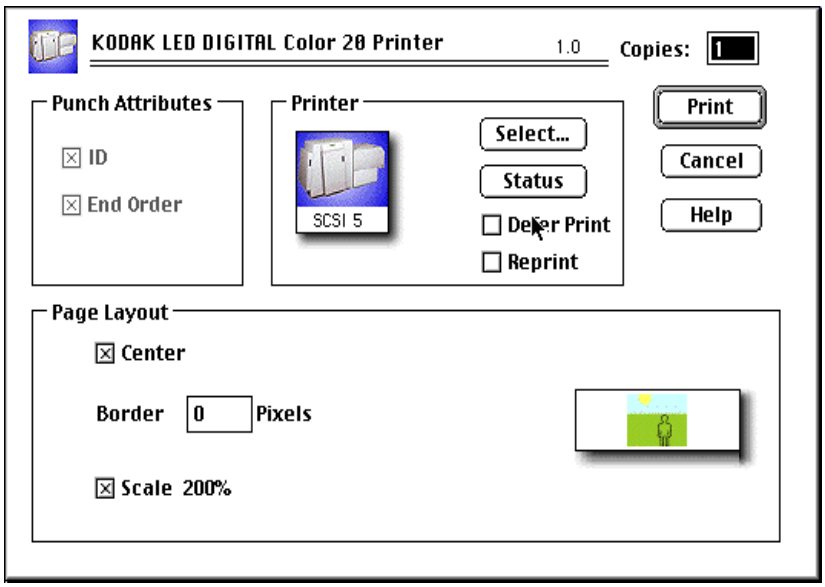


The Select a KODAK LED Printer dialog box appears.

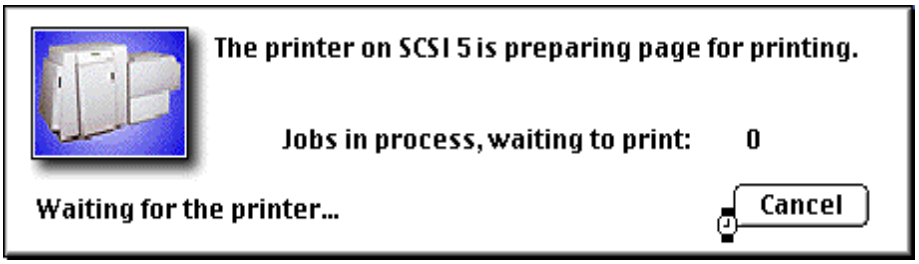


2. Select the printer by clicking the appropriate button.
3. Click **OK**.

The KODAK LED Printer main dialog box appears.



4. Make the remaining print option choices to meet the needs of your print job from the KODAK LED Printer dialog box. See “Dialog Boxes and Print Options” on page E-6 for more information.
5. Click **Print**.
   A PHOTOSHOP progress dialog box appears.

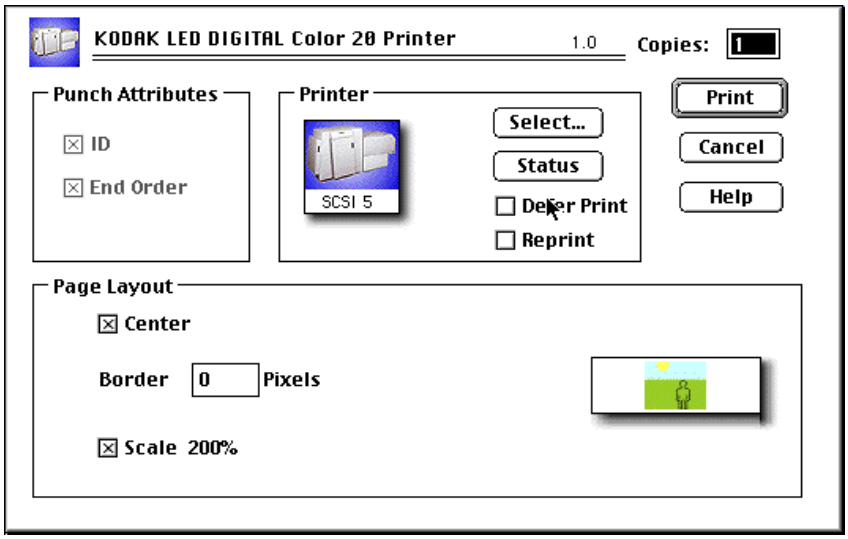


To cancel printing, press the command key and type a **.** (period). If the cancel command is ignored, select **Cancel Printing** in the PHOTOSHOP progress dialog box.

Dialog Boxes and Print Options

This section describes the dialog box that allows you to specify print options.

KODAK LED Main Dialog Box



Option Descriptions

The Printer group box allows you to choose the following options:

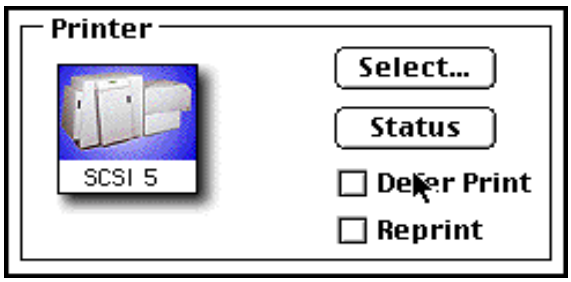
Select—opens the Select a KODAK LED Printer dialog box.

Status—opens the Printer Status dialog box.

Defer Print—instructs the printer to “defer” printing the image until the printer queue is full.

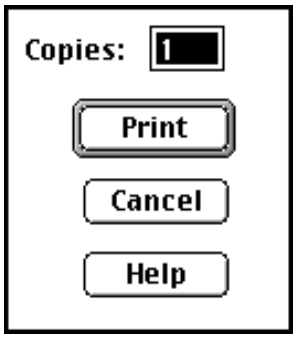
Reprint— allows you to print the last page sent to the printer. The last page sent remains in the buffer until the printer is shut off, the computer is restarted, or the next page is sent. If a page is not stored on the selected printer, the printer ignores the request.

NOTE: The page that prints is the last one sent and stored in the printer. This may or may not be the last page you sent. In network environments, another job could have been sent to the printer after you sent yours.



Other options

The other selections you can make from the KODAK LED Printer main dialog box include the following options:



Copies— allows you to specify the number of copies. Up to 99 copies can be printed at a time. The default is 1.

Print—sends the job to the printer.

Cancel—closes the dialog box without printing the image or saving changes.

Help—opens a Help dialog box so you can find information about the Export Module within the software program.

Punch Attributes

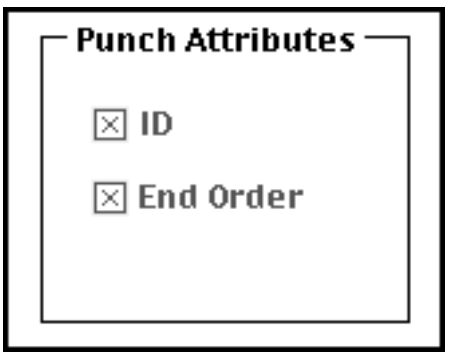
Option Descriptions

The Punch Attributes group box provides the following options to punch the paper on **20R Printer only**:

ID—places a page identification punch on the page that you are about to send.

End Order—Inserts an end of order punch on the paper web after the page you are about to send.

NOTE: The ID and end order punches may be on the same side or on the opposite sides of the paper, depending on how your printer is configured.



Page Layout Attributes

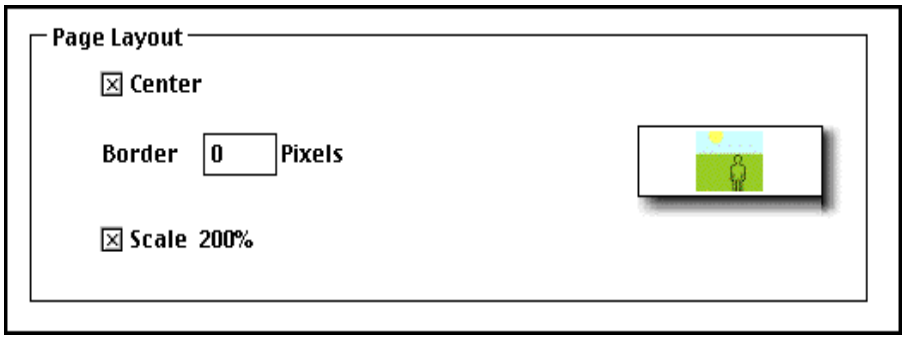
Option Descriptions

The Page Layout Attributes group box allows you to manipulate the position of the image on the page.

Center—centers the image within the specified border.

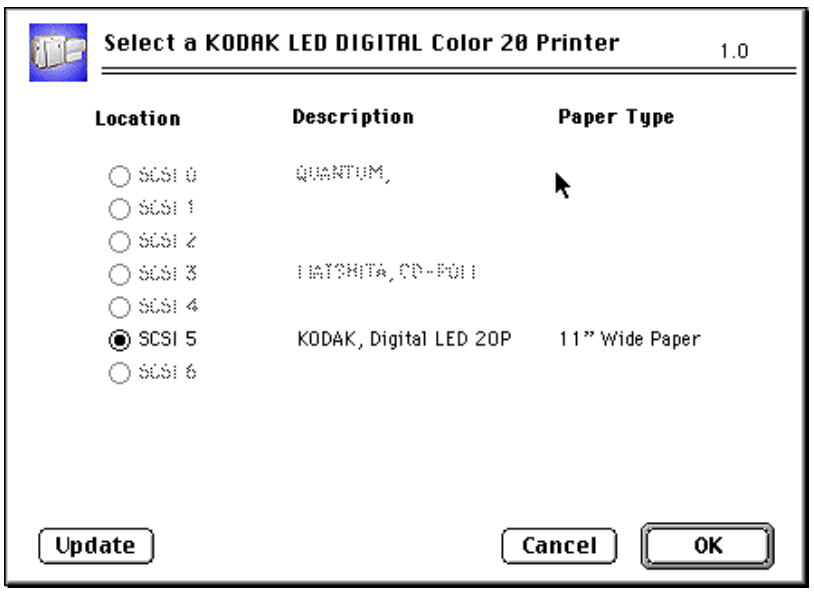
Border—specifies the number of pixels of white border that should surround the image on the page. This box is only active when the center box (above) is checked.

Scale 200%—allows you to scale the image 200%.



Select an LED Printer Dialog Box

The Select a KODAK LED Printer dialog box is shown below, and it is accessed by clicking **Select** in the KODAK LED Printer main dialog box.



This dialog box displays the KODAK LED Printer connected to the SCSI ports on the MACINTOSH System.

Option Descriptions

The following are descriptions of the options in the Select a KODAK LED Printer dialog box:

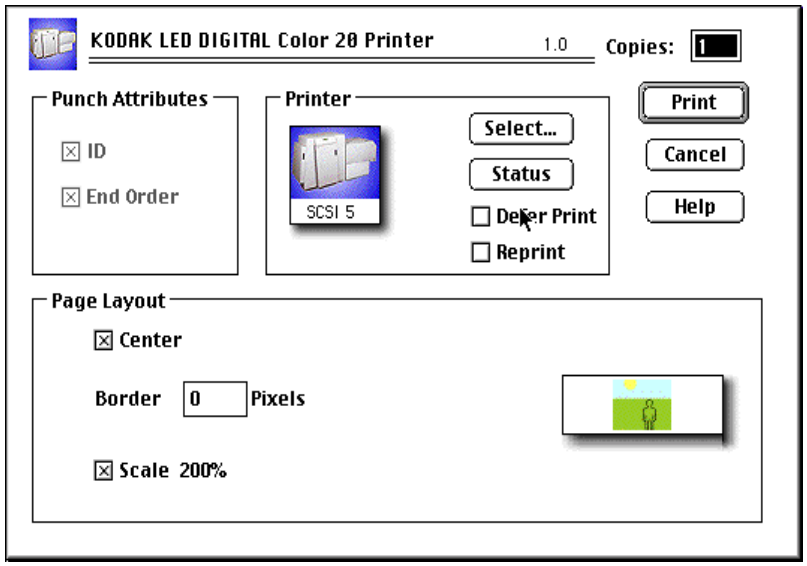
Update—refreshes the screen and replaces any information that has changed.

Cancel—closes the Select a KODAK LED Printer dialog box without changing the current printer selection.

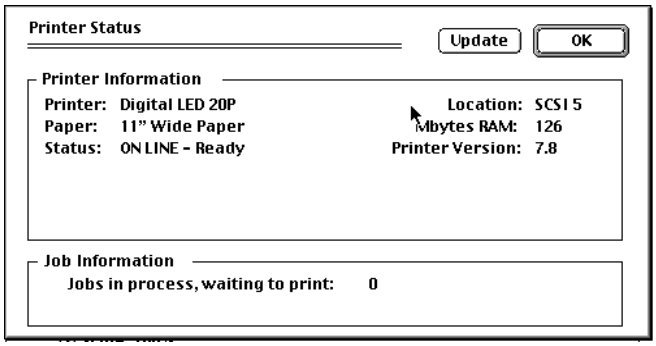
OK—closes the Select a KODAK LED Printer dialog box.

Printer Status Dialog Box

Selecting the *Status* button to open the status dialog box in the KODAK LED Printer main dialog box.



The Printer Status dialog box appears. The information that appears corresponds to the printer currently selected for printing.



Option Descriptions

The following are descriptions of the options in the Printer Status dialog box:

Printer Information—describes the state of the selected proofer. The color of the status field appears black if the proofer is idle, red for error conditions, and blue if the printer is processing or printing. Information includes the printer model, print media, print location, amount of RAM installed on your system, and the printer version number.

Job Information—lists the number of jobs being processed.

Update—refreshes the screen and replaces any information that has changed.

OK—closes the Printer Status dialog box.

Troubleshooting

Error messages

Many of the error messages displayed by the Export Module are self explanatory. The following list provides additional information about some of the more frequently encountered messages. If you do not find an error message in the list, refer to your MACINTOSH or PHOTOSHOP Documentation.

A good approach for troubleshooting errors is to:

1. Check all connections.
2. Make sure the printer is in raster mode.
3. Make sure that the display shows the READY prompt.
   If the problem persists, restart the printer and the computer. If you still have trouble, try reinstalling the Export Module.

General error messages

The image is not in RGB Color!
Convert to RGB Color in PHOTOSHOP before printing (exporting).

Change the color mode using the PHOTOSHOP Mode menu.

The file is too large for the paper installed!
Resize the image in PHOTOSHOP before printing.

Change the size of the image using the PHOTOSHOP Mode menu.

A printer must be selected to continue to the Print dialog box.
Select a printer or use Cancel to exit PHOTOSHOP.

This message occurs when a printer has not been selected and the user is attempting to proceed to the Print dialog box from the Select dialog box. Click **OK** to close the error dialog box and return to PHOTOSHOP.

There are no printers found attached to the host computer.
Check the connections and power to each printer.

Check that the connections to each printer, including the SCSI cables and power cables, are properly connected.

The previously selected SCSI printer is no longer available or has been changed.

This message occurs if the SCSI printer that you selected is no longer available. Click **OK** to open the print dialog box.

The selected printer is not available!
Check the connections and make sure the printer is turned on or, select another printer.

This message occurs when the selected printer is not connected or is turned off when **Print** is selected. Click **OK** to return to close the error dialog box and return to the print dialog box.

The number of border pixels exceed the maximum printer page size, reduce the number of pixels.

This message occurs when the borders control causes the page limits in the printer to be exceeded. Click **OK** to close the error dialog box and return to PHOTOSHOP.

Other Problems

"On-Line Pages Deferred" appears, But Jobs Are Not Printing

If jobs were sent with the "Defer Print" option, the printer is waiting for more data to fill the frame store. If you wish to print these jobs in the frame store:

1. Select the "Reprint" box in the Export Module.
2. Set the number of copies to 0.
3. Deselect the Defer Print key.
4. Click **Reprint** in the Export Module to instruct the printer to print the frames that are currently being stored.

or

1. Press **On/Off Line** on the printer's OCP to take the printer offline.
2. Press **Menu**.
3. Follow the instructions on the printer's OCP.

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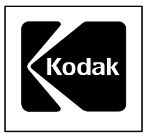
EASTMAN KODAK COMPANY
Rochester, New York 14653
U.S.A.

KODAK CANADA INC.
Toronto, Ontario M6M 1V3
Canada



 Printed in U.S.A.