

7 X 9 inside cover

Kodak

Kodak **DryView** 8100 Laser Imager

User Guide

8754020
96-0000-0197-2
3/00 Rev. B

Safety, EMC, and CE Marking Compliance

Read and understand all instructions before using.

For a translation of the following warnings, please refer to the applicable safety addendum listed below:

- **DryView 8100 Imager User Guide Safety Addendum (Polish)** 74-0500-5507-3
- **DryView 8100 Imager User Guide Safety Addendum (Hebrew)** 74-0500-5508-1
- **DryView 8100 Imager User Guide Safety Addendum (Korean)** 74-0500-5509-9

WARNING



This equipment is operated with hazardous voltage which can shock, burn, or cause death.

Remove wall plug before servicing equipment. Never pull on cord to remove from outlet. Grasp plug and pull to disconnect.

Do **not** operate equipment with a damaged power cord.

Do **not** use an extension cord to power this equipment.

Use only the power cord supplied with this equipment.

Position the power cord so it will not be tripped over or pulled.

Connect this equipment to a grounded outlet.

WARNING

This equipment contains moving parts that may be accessible to the user. Loose clothing, jewelry, or long hair may cause minor personal injury or damage to the equipment. Do not operate equipment with the covers open. Do not operate equipment with any of the safety interlocks overridden.

WARNING

This equipment is not contained in a sealed cabinet. Therefore it must not be used in locations where it can come in contact with liquids, including bodily fluids.

WARNING

For continued protection against fire, replace fuses only with fuses of the same type and rating.

Read and understand all instructions before using.



Do not use in the presence of flammable anesthetics, oxygen or nitrous oxide. This equipment does not have a gas sealed electronics enclosure and could ignite any flammable or explosive gases present in its environment.



This equipment is intended to connect to other medical devices. Installation and service maintenance are to be performed only by qualified service personnel. The laser in the equipment is not a patient device. Therefore the equipment must be installed no closer than 1.83 meters from a patient bed or chair.



Do not substitute or modify any part of this equipment without approval of Eastman Kodak Company.



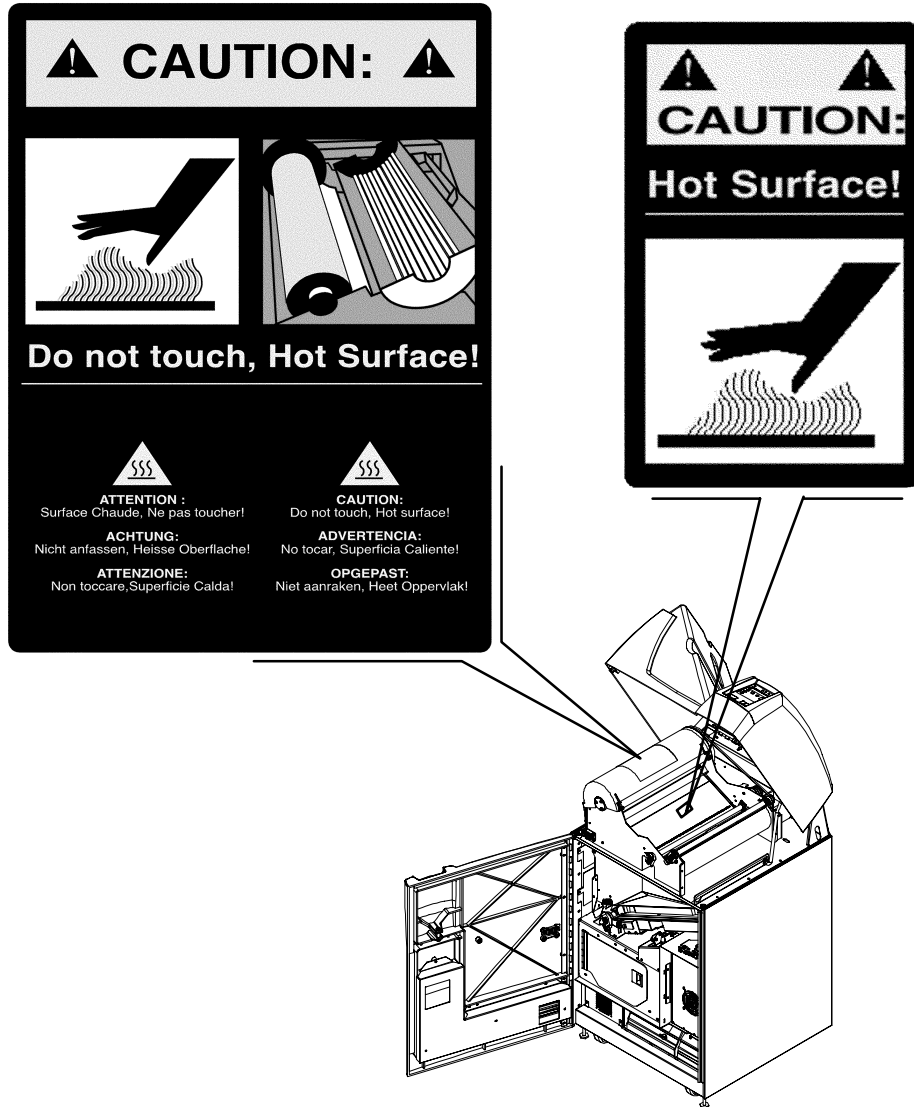
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. Those limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Read and understand all instructions before using.

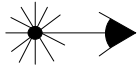
⚠ CAUTION

General External Cleaning: This equipment may be cleaned with a damp cloth using water with mild detergent, or commercial electronic equipment cleaner.



Read and understand all instructions before using.

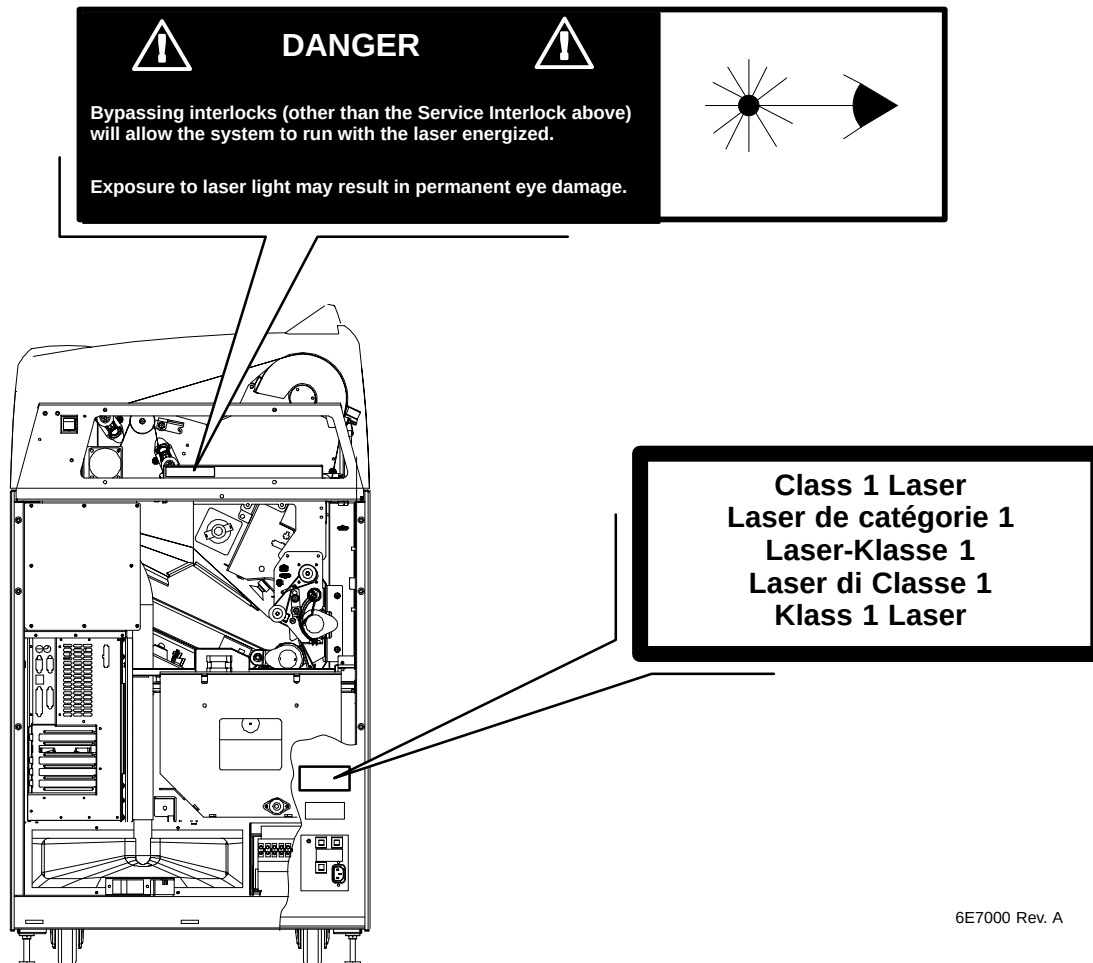
 **DANGER**



The equipment employs a 50 milliwatt laser. Laser radiation may be present when the machine operates without the rear cover installed.

Use of controls or adjustments, or performance of procedures other than those specified herein, may result in eye damage.

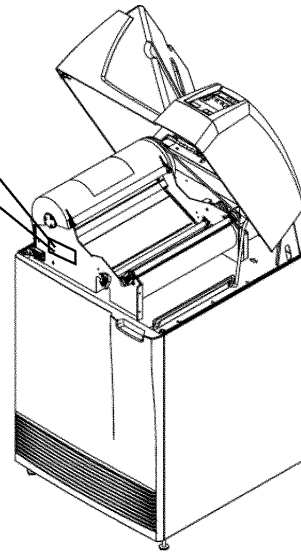
The rear cover shall be removed by authorized service personnel only.



6E7000 Rev. A

Read and understand all instructions before using.

Kodak		8100 DryView™, U.S. STANDALONE IFE	
MODEL		P/N	
S/N		MFG DATE	
VOLTS		FREQ	
AMPS			
		FILE NO. E183585	LISTED 8R88
EASTMAN KODAK COMPANY			
ROCHESTER, NEW YORK 14650			
MADE IN U.S.A.			



This equipment has been tested for and complies with the following Safety and Emission Standards. Certificates of Compliance and Declarations of Conformity have been issued as shown below.

Safety:

Canada:

- C22.2 NO 950-95–CAN/CSA Safety for Information Technology Equipment, Including Electrical Business Equipment
- C22.2 NO 601.1–M90–CAN/CSA Medical Electrical Equipment – Part 1: General Requirements for Safety

Europe:

- EN60950: Safety of Information Technology Equipment, Including Electrical Business Equipment (IEC 60950 : 1991, Modified) (Includes Amendment A1 and A2: 1993)
- EN60601–1–1: Medical electrical equipment – Part 1: General requirements for safety – Section 1: Collateral standard: Safety requirements for medical electrical systems
- EN60825–1: Safety of laser products – Part 1: Equipment classification, requirements and user's guide

U.S.A.:

- UL 1950: Safety of Information Technology Equipment, Including Electrical Business Equipment DOD (Bi–National Standard) with UL 2601–1 Medical Electrical Equipment, Part 1: General Requirements for Safety
- 21CFR1040.10 Class I: FDA CDRH Code of Federal Regulations Title 21, Volume 8, Food and Drugs, Part 1040 Performance Standards For Light–Emitting Products, Section 10 Laser Products
- FDA Premarket Notification 510(K): Regulatory Requirements For Medical Devices

Rest of World:

- IEC 950: Safety of information technology equipment
- IEC 60601–1–1: Medical electrical equipment – Part 1: General requirements for safety – Section 1: Collateral standard: Safety requirements for medical electrical systems
- IEC 60825–1: Safety of laser products – Part 1: Equipment classification, requirements and user's guide

EMC:

Canada:

- CAN/CSA–C108.6–M91 Class A: Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio–Frequency Equipment

Europe:

- EN55022 (CISPR 22) Class B Group 1: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
- EN61000–3–2 (IEC 1000–3–2): Electromagnetic compatibility (EMC) – Part 3: Limits – Section 2: Limits for harmonic current emissions (equipment input current ≤ 16 per phase)
- EN 61000–4–2 (IEC 1000–4–2): Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test. Basic EMC Publication
- EN 61000–4–3 (IEC 1000–4–3): Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio–frequency, electromagnetic field immunity test
- EN 61000–4–4 (IEC 1000–4–4): Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test. Basic EMC Publication
- EN 61000–4–5 (IEC 1000–4–5): Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test
- EN 61000–4–6 (IEC 1000–4–6): Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 6: Immunity to conducted disturbances, induced by radio–frequency fields
- EN 61000–4–11 (IEC 1000–4–11): Electromagnetic compatibility (EMC) – Part 4: Testing and measuring techniques – Section 11: Voltage dips, short interruptions and voltage variations immunity tests

U.S.A.:

- FCC Rules and Regulations, Title 47, Part 15, Subpart B, Class B: Radio frequency devices: Unintentional Radiators

Rest of World:

- CISPR 22 Class B Group 1: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment

EU Directives:

- 73/23/EEC Council Directive on the Harmonization of the Laws of Member States Relating to Electrical Equipment Designed for Use within Certain Voltage Limits
- 89/336/EEC Council Directive on the Approximation of the Laws of the Member States Relating to Electromagnetic Compatibility
- 93/42/EEC Council Directive Concerning Medical Devices

CE Marking:

Documents concerning the conformance of this product to Council Directive 93/42/EEC of 14 June 1993 concerning Medical Devices can be obtained from the Eastman Kodak Health Imaging Systems European Representative at:

Kodak AG
Quality Services
Product Safety
70323 Stuttgart
Germany
Phone: ++49 711 406 2993
Fax: ++49 711 406 3513

DOC:

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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Introduction

Introducing the Kodak DryView 8100 Laser Imager

The **DryView** 8100 Laser Imager is a continuous tone laser imager with an internal photothermographic film developer. Heat, rather than photo chemicals, is used to develop the film. The imager can be connected to and print images from a variety of medical image source devices such as CT scanners or Ultrasound. It can also be connected to a DICOM medical image network via the PACS Link 9410 Acquisition System.

The **DryView** 8100 Laser Imager uses 14 inch x 17 inch (35 cm x 43 cm) **DryView** Laser Imaging Film, which is packaged in 125-sheet Kodak Instant Daylight Load Film Cartridges.

A **DryView** V2 Keypad can be used to control the imager, or the system can be controlled from the host modality. A footswitch is also available, providing an optional method of acquiring images for printing.

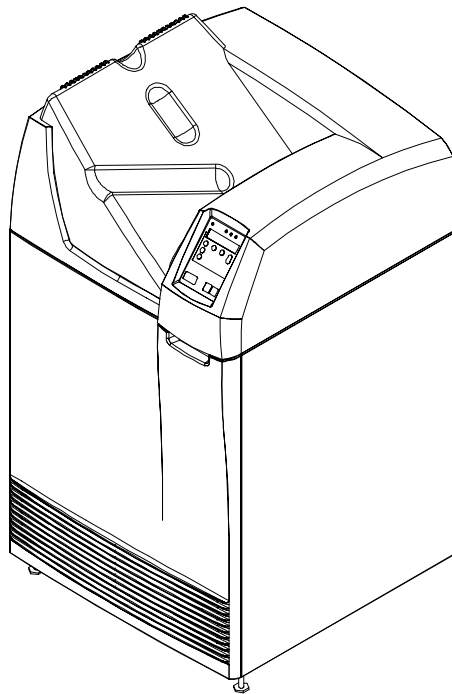


Figure 1-1. DryView 8100 Laser Imager

System Configurations

The **DryView** 8100 Laser Imager can be used in two system configurations. The key features of these are described below.

DryView 8100 Laser Imager

- The imager connects directly to up to three image source devices. (The standard unit has one input, but it can be upgraded for additional inputs.)
- Copper cables are used for connections to the source imaging device and keypad.
- The operator controls image acquisition and printing from either a keypad or a console on the host source imaging device.

Dryview 8100 PACS Link Laser Imager

- The imager connects to a DICOM medical image network via a PACS Link Interface.
- The imager prints images sent from image source devices or archiving stations connected to the DICOM network.

Keypad Features

The table below lists the features provided by the **DryView V2 Keypad**.

Feature	DryView V2 Keypad
Format Select	Yes*
Multiple Copies Setting	Yes
Sequential Image Acquire	Yes
Random Image Acquire	Yes
Sequential Image Erase	No
Random Image Erase	Yes
Move Acquired Image	No
Print	Yes
Stop Print	No
Density or Dmax Setting	Yes**
Contrast Setting	Yes**
Print Density Test	Yes**
Print Contrast Test	Yes**
Smooth/Sharp Select	Yes
Image Polarity Select	Yes
Image Framing Select	No
Auto-Print Select	Yes
Auto-Format Select	Yes
Alarm Volume Setting	Yes

* Available image formats include:

- From **DryView V2 Keypad**: 1:1, 2:1, 4:1, 6:1, 9:1, 12:1, 15:1, 16:1, and 20:1.
- From host console: Same as for the **DryView V2 Keypad**, plus 24:1.

** Can also be set at the imager's Local Panel.

How the DryView 8100 Laser Imager Works

- Using the keypad or host console, the operator acquires an image from the image source device. The image is stored on a hard disk in the imager.
- Using the keypad or host console, the operator prints the image.

The following sequence occurs each time the operator issues a print command. The step numbers refer to the circled numbers in Figure 1-2. The dashed lines in the illustration indicate the film path.

1. Suction cups lift a single sheet of film out of the supply cartridge and route it into the film feed rollers.
2. The film feed rollers move the film down to the platen rollers.
3. The platen rollers drive the film into the exposure module platen.
4. A moving laser beam writes the image onto film, which is held stationary in the platen.
5. The platen rollers reverse direction and move the exposed film up through the vertical transport area.
6. Transport rollers drive the film onto the processor drum.
7. The heated processor drum develops the film as it passes over the drum.
8. Rollers move the developed film from the processor drum, through the densitometer (see the next paragraph), and onto the receive tray.

Automatic Image Quality Control

The built-in densitometer is a key element in the Automatic Image Quality Control (AIQC) process. AIQC allows the imager to automatically adjust processing parameters to ensure optimum image quality. The imager adjusts these parameters each time it prints a calibration film. A calibration film is printed whenever:

- The **DryView** 8100 Laser imager is powered on.
- A calibration film is requested from the Local Panel.
- The imager has not been used for 7 days, and a print is requested.

Manual Mode of Operation

The imager can be operated in a "manual" mode, without AIQC. Use of this mode is explained in Section 3 of this manual.

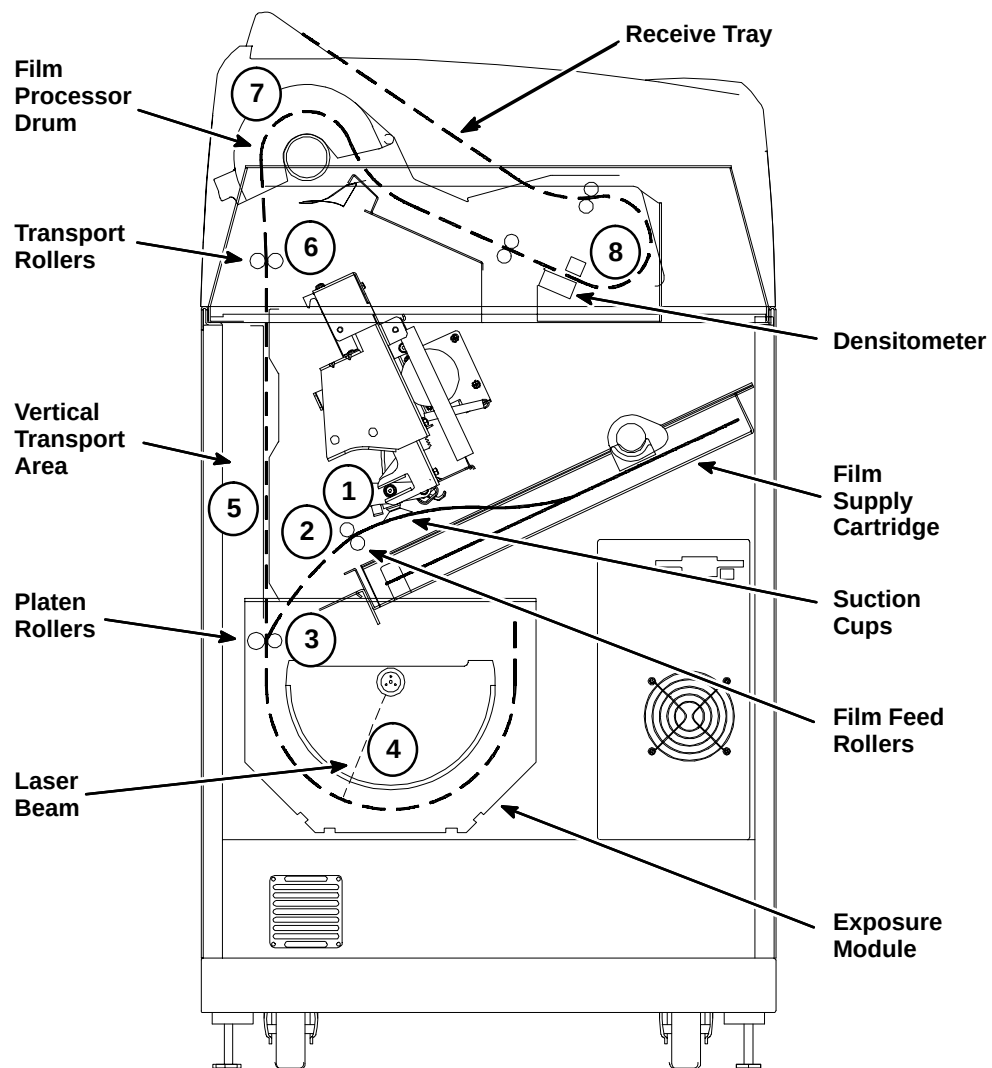


Figure 1-2. Print Sequence

How This Manual is Organized

The remainder of this manual is organized as follows:

- Section 2 describes operator controls and indicators on the main cabinet, including the Local Panel.
- Section 3 provides general procedures for operating and maintaining the system. (It does not include instructions for using the keypad. These are provided in Section 4.)
- Section 4 provides instructions for using the **DryView** V2 Keypad, including: descriptions of keypad controls, procedures for operating the imager from the keypad, and keypad error messages.
- Section 5 includes system troubleshooting procedures.
- Section 6 provides system specifications.
- Section 7 includes technical information about **DryView** 8100 Laser Imaging Film.

Controls and Indicators

Main Cabinet Controls and Indicators

This section describes the operator controls on the **DryView 8100** Laser Imager cabinet, focusing on the Local Panel. For keypad functions, refer to Section 4.

The numbered descriptions below correspond to the circled numbers in Figure 2-1.

1. **Local Panel** – Includes a message display, status indicator lights, and pushbutton controls. The Local Panel is described in greater detail on the following pages.
2. **Power Switch** – Controls power to the imager. (On rear of cabinet.)
3. **Front Door** – Accesses the film cartridge.
4. **Upper Hood** - Accesses upper assemblies.
5. **Receive Tray** – Collects developed film.
6. **Floppy Disk Drive** – Used to update the imager internal software.

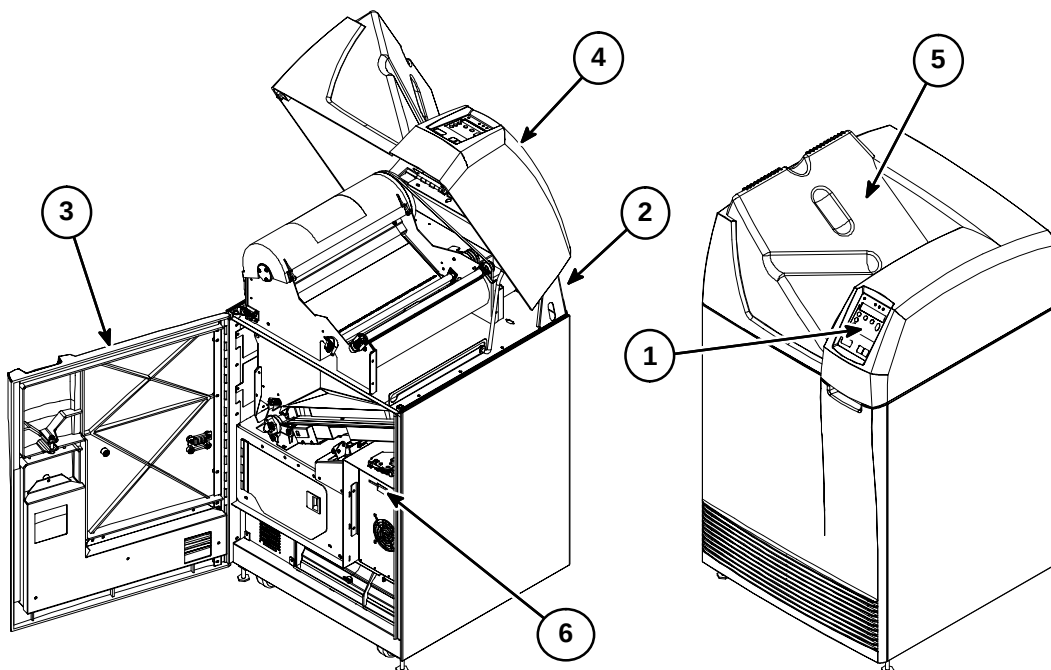


Figure 2-1. DRYVIEW 8100 Laser Imager – Controls and Indicators

Local Panel Functions

This paragraph describes the controls and indicators on the Local Panel. Use of these controls is covered in Section 3. Display window messages are explained in Section 6.

1. **Power Light** – Indicates that the imager is powered up.
2. **Ready Light** – ON: Indicates that the imager is available for printing.
– Blinking: Indicates that the imager is printing.
– OFF: Indicates that the imager is not available for printing.
3. **Attention Light** – Indicates an error condition that may affect imager operation (e.g., imager warming or film low). Check the display window for a related message.
4. **Alarm Light** – Indicates that an error condition exists (e.g., a film jam or open door), and imager operation cannot continue until the error has been cleared. Check the display window for a related message.
5. **Display Window** – Provides information about the status and function of the imager and the prints in progress. Refer to Section 5 for descriptions of the messages displayed in this window.
6. **↵ (Enter) Key** – Press to enter a selected value or to return to the status and error screen.
 - After you have changed the contrast or density setting, press ↵ to lock in the new setting.
 - After viewing maintenance information or IP addresses on the message display, press ↵ to return to the status and error message screen.
7. **Maintenance Information Key** – Press to display a scrollable list that includes:
 - Maintenance information such as total lifetime print count and number of prints remaining until preventive maintenance is required.
 - IP address of the imager.
 - Reserved service IP address.
8. **Calibrate Key** – Press to print a calibration test (step wedge pattern) as the next film. (The test film will interrupt a multiple-sheet print job.)

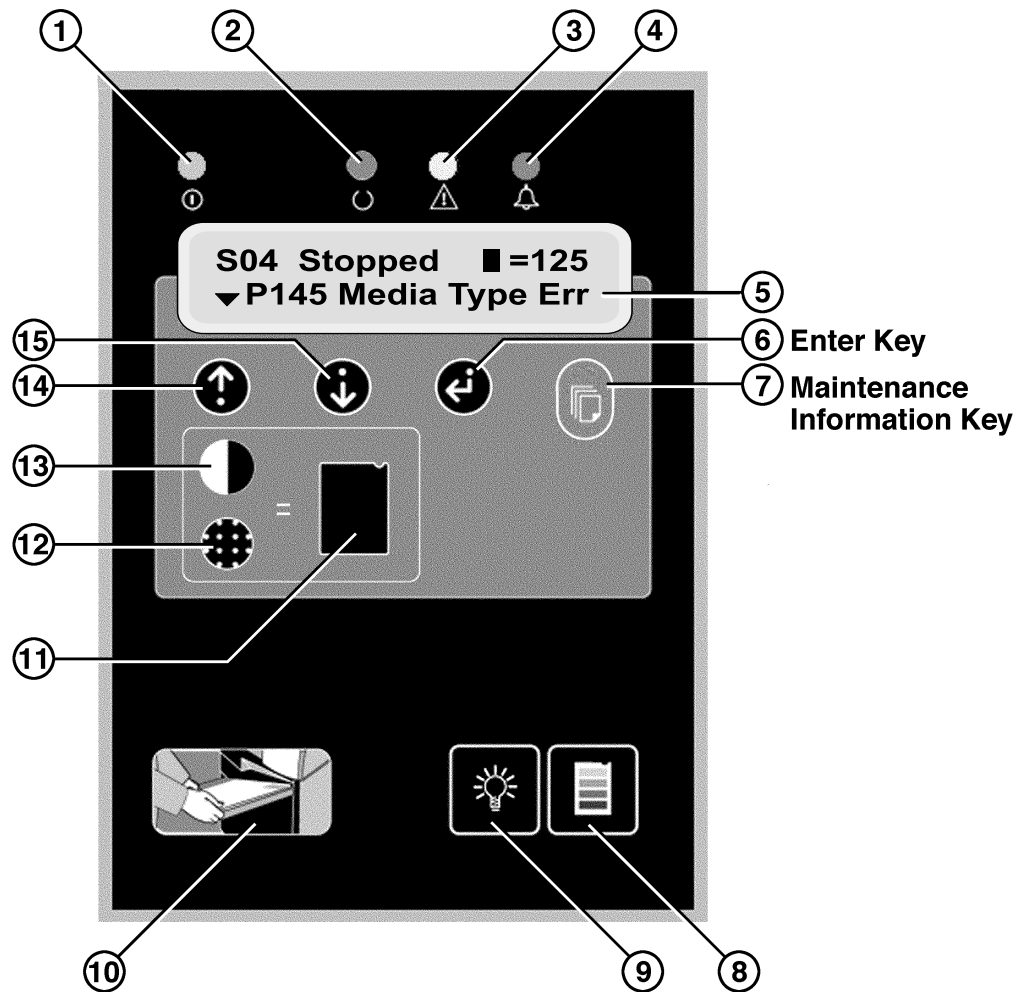


Figure 2-2. Local Panel Controls

9. **Backlight** Key – When system power is applied, the message display backlight turns on and the **Ready**, **Attention**, and **Alarm** lights are enabled for use.
- Press the **Backlight** key once to turn off the backlight.
 - Press the **Backlight** key a second time to disable the **Ready**, **Attention**, and **Alarm** lights. The backlight remains off. (This is darkroom mode.)
 - Press the **Backlight** key a third time to return the backlight and the three indicator lights to their original state (enabled for use).

- 10. Open Door Key** – Press momentarily to open the front door. The film cartridge first closes to prevent exposing the film. Then the front door is unlatched.

If a film jam at the cartridge prevents the cartridge from closing, error message P138 (Press Open 5S) will display. This indicates that you must hold down the **Open Door** key for 5 seconds to unlatch the door. Since the film cartridge is open, when you open the door the top sheets of film will be exposed. To minimize exposure, you should make the room as dark as possible before opening the door.



Caution

Do not leave the imager unattended after pressing the **Open Door** Key.

- 11. Test Print Key** – Press this key after you press the **Contrast** or **Density** key, to initiate a test print for examination of contrast or density.
- 12. Density Key** – Press this key to display and change the density setting. Use the ↑ and ↓ keys to adjust the setting up or down (The density range for blue film is from 1.7 to 3.1. For clear film it is from 1.7 to 3.0.) Then press the **Test Print** or **Enter** key to apply the new setting. (Do not use this key to change density if your system includes a **DryView** V2 keypad.)



Note

If your system includes the **DryView** V2 keypad, density must be set via the keypad rather than the Local Panel. The values set at the keypad will override values entered at the Local Panel.

- 13. Contrast Key** – Press this key to display and change the contrast setting. Use the ↑ and ↓ keys to adjust the setting up or down (range: -15 to -1 and 1 to 15). Then press the **Test Print** or **Enter** key to apply the new setting.



Note

If your system includes the **DryView** V2 keypad, contrast must be set via the keypad rather than the Local Panel. The values set at the keypad will override values entered at the Local Panel.

- 14. ↑ Key**– Press to move up through item lists or increase a parameter value.
- 15. ↓ Key** – Press to move down through item lists or decrease a parameter value.

Operation and Maintenance

System Power Up

1. Set the imager Power Switch to ON. (The Local Panel **Power** light will turn on.)
 - The imager performs a series of self-diagnostic tests and begins a warmup cycle. (The time required for warmup varies based on how long the imager has been turned off. The maximum warmup time at normal room temperature is about 25 minutes.)
 - After the diagnostic tests and warmup cycle are complete, the Local Panel displays SO1 Ready and the **Ready** light turns ON.



Caution

On occasion the imager may have to perform file maintenance on its hard disk after power on. When this occurs, the message P154 Disk Maint displays on the Local Panel. The process may require several minutes. To avoid longer delays, NEVER turn off power during disk maintenance. As long as the P154 Disk Maint message is displayed, the system is operating correctly.

2. You can acquire images during the warmup cycle, but the system will not print until the **Ready** light turns on.

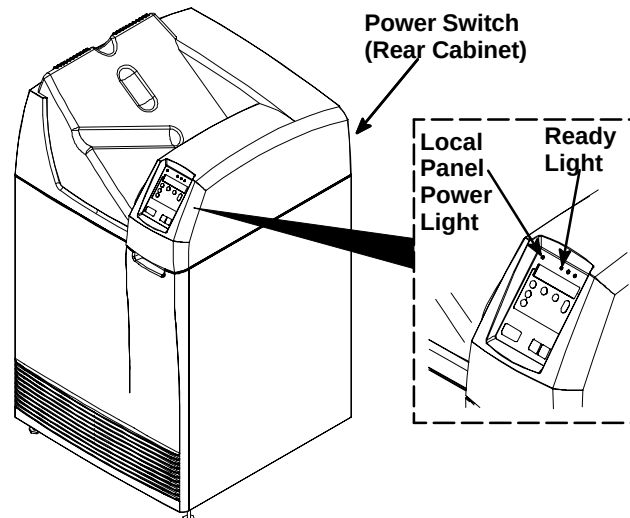


Figure 3-1. Power Switch and Local Panel

Methods for Acquiring and Printing Images

The basic operator functions required to acquire and print images on film are the following:

1. Selecting the *number of copies* to print.
2. Selecting the *format* (order) in which the images will be printed on film.
3. *Acquiring* the images from the host modality and storing them on hard disk in the imager.
4. *Printing* the stored images on film.

Other operator functions include:

1. *Erasing* images stored on disk (before printing).
2. *Stopping* a requested print job.

The operator functions listed above can be processed in different ways:

- From a host console, using software programmed specifically for imager control. (See the host user documentation for operator instructions.)
- From a **DryView** V2 Keypad. (If your system includes this keypad, see Section 4 for detailed procedures.)

Note

An optional footswitch can be used for acquisition of images from the host modality.

Methods for Adjusting Image Density and Contrast

These image quality control functions can be performed in two ways:

- From the imager Local Panel, if your system does not include a **DryView** V2 keypad. (See the instructions on the following pages in this section.)
- From a **DryView** V2 Keypad. (If your system includes this keypad, see Section 4 for instructions. If it does not include this keypad, the procedures must be performed from the Local Panel.)

Adjusting Density from the Local Panel

Note

If your system includes the **DryView V2 Keypad**, do not use this Local Panel procedure. Use the keypad procedure described in Section 4. Values set at the keypad will override any values set in the Local Panel.

1. Press the **Density** key. The display will show **DMAX = x.x**. The number **x.x** is the value of the maximum density desired.
2. Press the **Test Print** key. The imager will print a SMPTE test print.
3. Examine the test print. If the maximum density on the test print is not acceptable, follow the steps below to adjust density.
4. Press the **Density** key.
5. Press the $\uparrow$ key to increase density or the $\downarrow$ key to decrease density. The display will show the new density value. Repeat steps 2 and 3 until you reach an acceptable maximum density.

Note

If you know the desired Dmax value, you can simply enter the value without printing a test print. Follow the steps below.

1. Press the **Density** key.
2. Press the $\uparrow$ or $\downarrow$ key until the desired value is displayed.
3. Press the $\downarrow$ (**Enter**) key to lock in the new value.

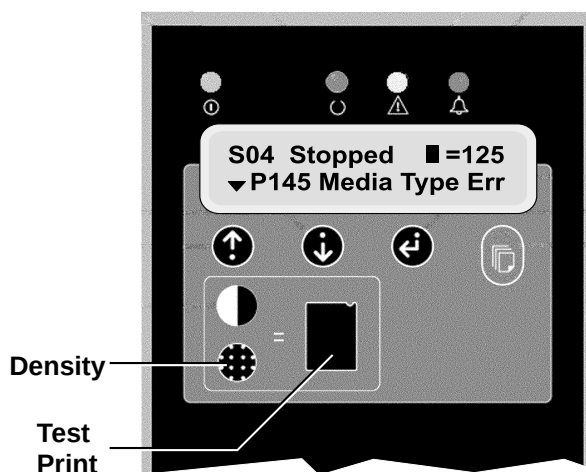


Figure 3-2. Local Panel Controls

Adjusting Contrast from the Local Panel

Note

If your system includes the **DryView** V2 Keypad, do not use this Local Panel procedure. Use the keypad procedure described in Section 4. Values set at the keypad will override any values set in the Local Panel.

After acquiring an image, perform the following steps at the Local Panel.

1. Press the **Contrast** key.

The display will show **CONTRAST = x**, where x is a positive number from 1 to 15 if the image is positive, or a negative 1 to 15 if the image is negative.

2. Press the **Test Print** key.

The imager will print a contrast print. The image you acquired is printed 15 times on a single film, using contrast values of 1 through 15 if a positive image was selected. If a negative image was selected, contrast values of negative 1 through 15 are used. Contrast values are printed under each image.

Note

If the size of the acquired image is too large for a 15:1 format, the imager will print a contrast test of the internal SMPTE image.

3. Examine the contrast print and choose the most desirable contrast value.
4. Press the **Contrast** key again.
5. Use the ↑ or ↓ key to scroll to the chosen contrast value.
6. Press the ↵ (**Enter**) key to lock in the new value.

Note

If you know the desired contrast value, you can ignore steps 2, 3, and 4.

Producing a Calibration Test Print

To produce a calibration print (step wedge pattern) as the next film, press the **Calibrate** key on the Local Panel. (The system will interrupt a multiple-sheet print job to produce the calibration print.)

Operating in Manual Mode

The calibration sheets produced by the imager (and the density patch at the top of each film) are products of the Automatic Image Quality Control (AIQC) system. This system ensures that density, contrast and other image quality parameters are constantly fine-tuned to produce high quality images.

An error code P631 or P632 displayed on the Local Panel indicates that calibration has failed, that a print has failed to meet the AIQC standard. This occurrence is usually the result of aging film, and if you load a new film cartridge the error probably will not recur. If, however, the error does recur with the new film, you will have to call service to analyze the problem. Until the Field Engineer arrives, you can choose to run the imager in “manual” mode, without AIQC. To operate in manual mode:

1. Simultaneously press the ↓ Key and the **Calibrate Key** on the Local Panel. The message P561 Manual Mode will display.

Note

While manual mode is in effect, the imager will not produce calibration prints and prints will not include density patches.

2. Run a print and check image quality. As long as image quality is acceptable, you can continue to run prints until the Field Engineer has repaired the imager problem. At this point you can resume operating with AIQC in effect.
3. To exit manual mode and enter AIQC mode, press the **Calibrate Key** on the Local Panel. (Loading a new film cartridge will return the imager to AIQC mode, if the new film is within the required operating parameters.)

Note

Manual Mode can be entered only when the P631 or P632 error code has been displayed.

Opening the Front Door Via the Local Panel

During normal machine operation, you will occasionally need to open the front door (with power applied) to load and unload film cartridges, or to change the charcoal filter. Also, if a film jam should occur in the lower part of the imager, you will need to open the front door to clear the jam.

1. Press and release the **Open Door** key on the Local Panel (see Figure 3-3). The imager will close the film cartridge, to avoid exposing film, and then unlatch the door.



Caution

Do not leave the imager unattended when the front door is open.

2. A film jam can prevent the film cartridge from closing. When this occurs, the front door will not open normally. In this case you can hold down the **Open Door** key for 5 seconds to unlatch the door without closing the film cartridge. Several sheets of film at the top of the cartridge will be exposed. You can minimize film exposure by making the room as dark as possible.

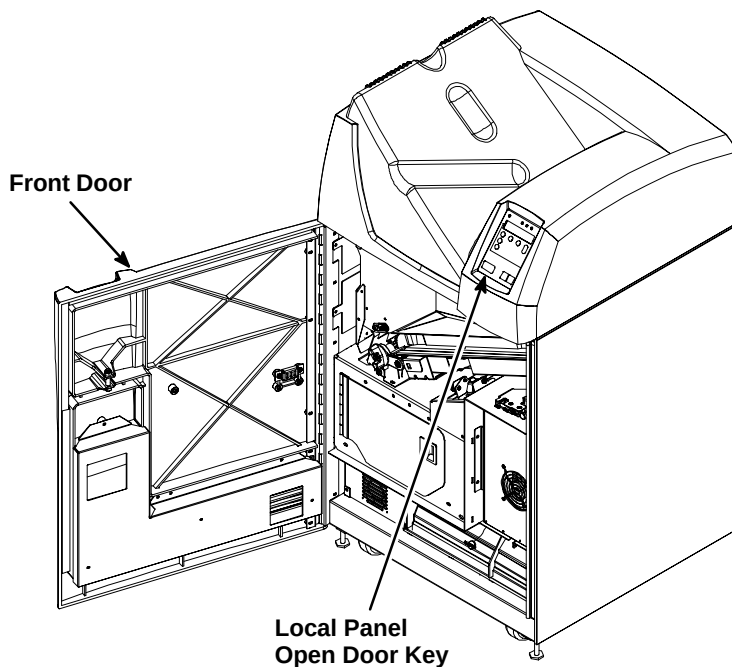


Figure 3-3. Opening the Front Door Via the Local Panel

Opening the Front Door Manually

When power is not applied to the imager, you will of course will not be able to open the front door via the Local Panel. Use the following “manual” procedure to open the door.

1. Open the upper hood (see the next page).
2. Insert a thin pencil (or other small instrument) into the slot on the right side of the processor base (see Figure 3-4).
3. Press down to open the front door.

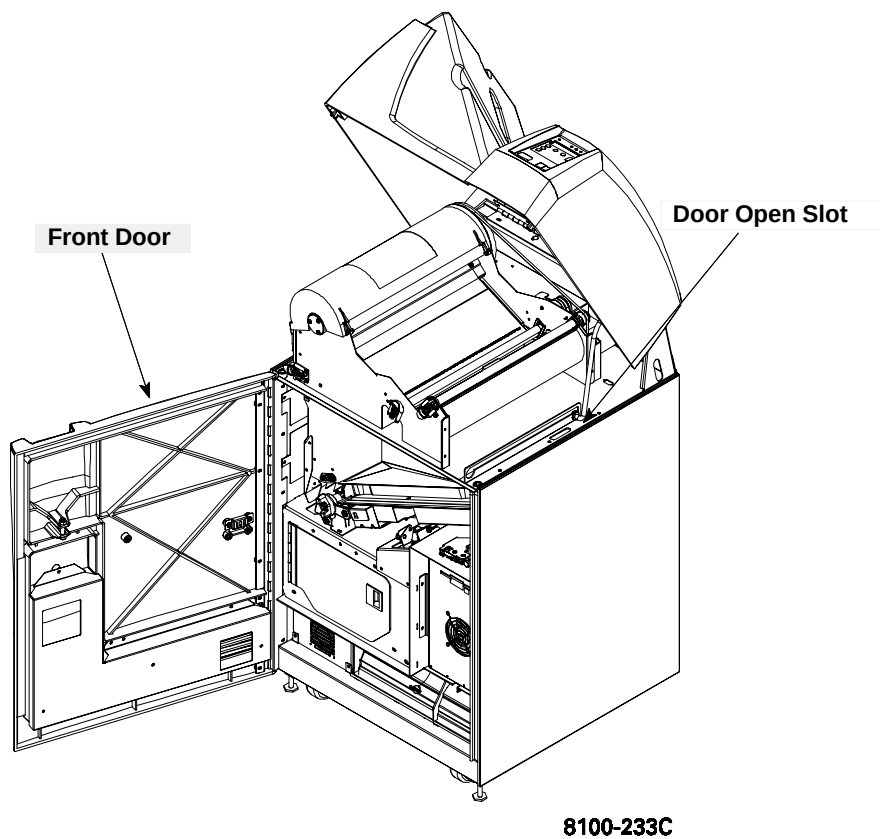


Figure 3-4. Opening the Front Door Manually

Opening and Closing the Upper Hood

If a film should jam in the developer area, you will have to lift the upper hood to clear the jam.

Open the upper hood as follows:

1. Grasp the hood at the recessed slot below the Local Panel (see View A in Figure Figure 3-5).



Caution

Whenever you raise or lower the hood, grasp it only in the area of the recessed slot below the Local Panel to avoid possibly pinching your fingers.

2. Raise the hood until the prop rod falls into the slot at the end of its travel (see View B in Figure Figure 3-5).

Close the hood as follows:

1. Raise the hood slightly to lift the prop rod out of its slot, and pull the prop rod slightly forward from the slot.



Caution

Close the hood carefully. Releasing and dropping it could damage the laser.

2. Gently lower the hood to its closed position.

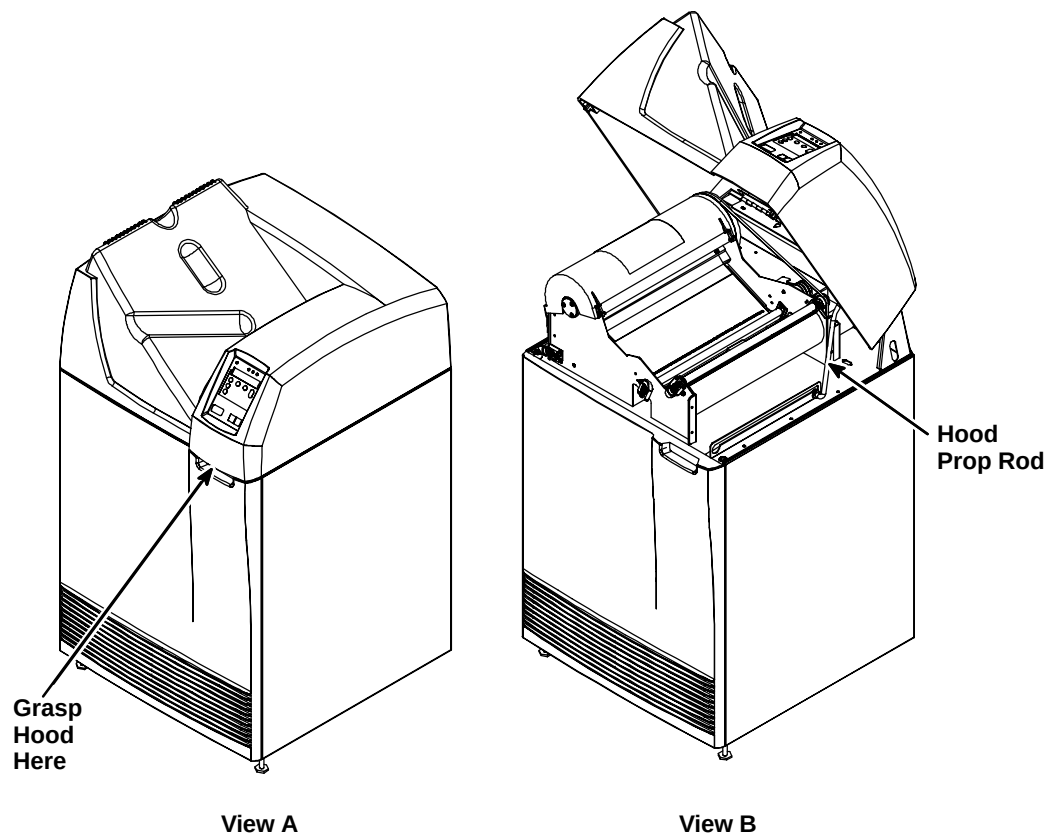


Figure 3-5. Opening and Closing the Upper Hood

Loading/Unloading Film

1. To access the film cartridge, press the **Open Door** key on the Local Panel. This will close the film cartridge cover and then unlock the front door.
2. Open the front door to access the film cartridge.
3. To remove the film cartridge, lift the edge of the cartridge slightly, then pull the cartridge out of the imager.
4. To install the film cartridge, insert it into the cartridge slot as shown in Figure 3-6.
5. Slide the cartridge into the imager.
6. Close the front door.

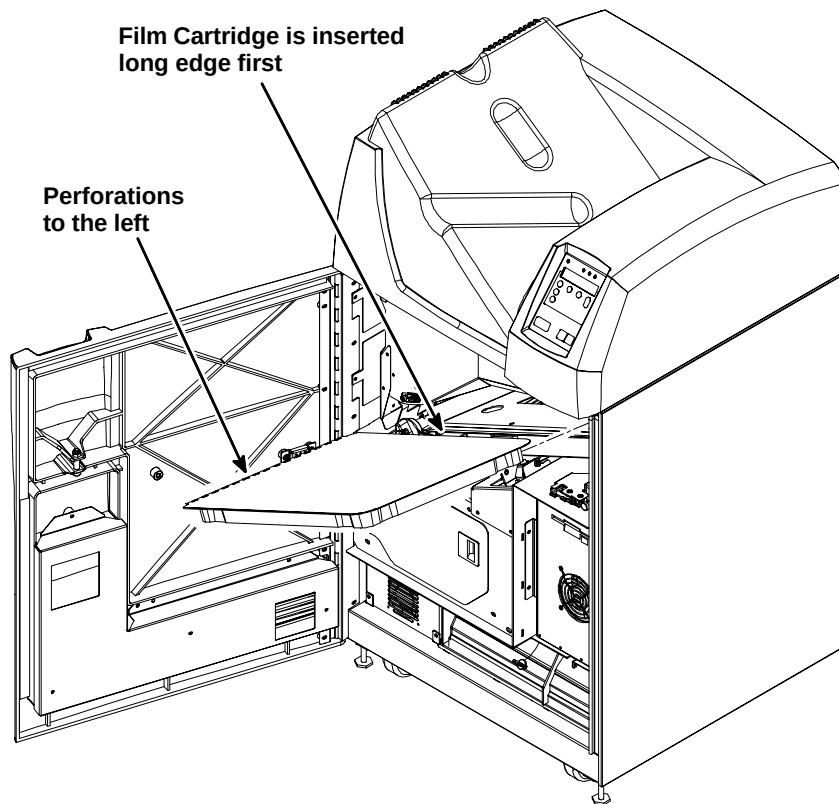


Figure 3-6. Loading and Unloading Film

Replacing the Charcoal Filter

DryView Laser Imaging Film emits a slight odor while it develops. The charcoal filter absorbs and neutralizes this odor. As the imager is used, the filter becomes less effective. When the odor become noticeable you should replace the filter.

1. Open the front door.
2. Push the retaining clip on the top front of the filter back and up (see Figure 3-7) and pull out the old filter.
3. Slide the new filter in all the way to the back stop.
4. Pull the retaining clip forward and down to lock the filter in position.
5. Close the front door.

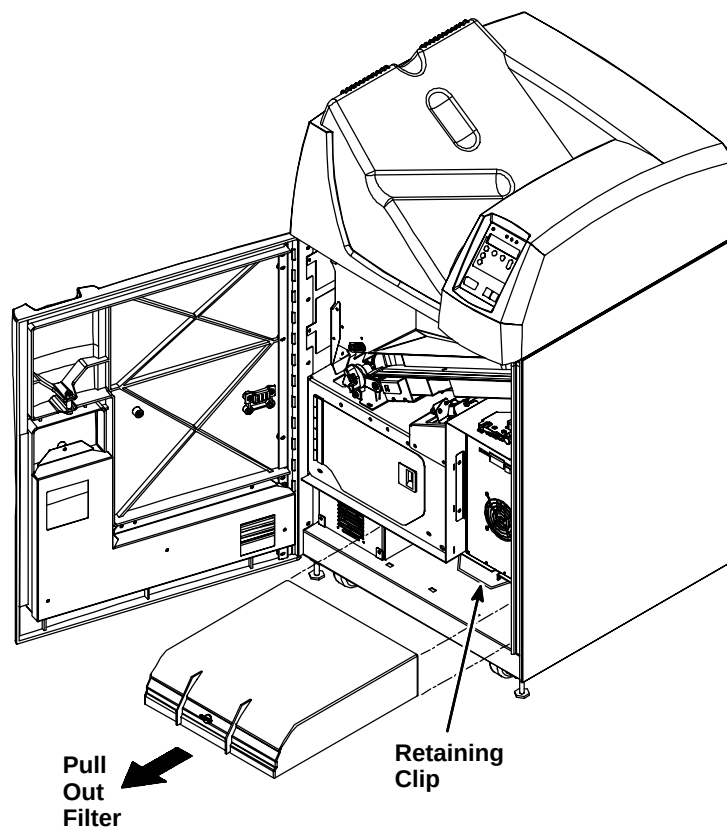


Figure 3-7. Replacing the Charcoal Filter

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Using the DryView V2 Keypad

DryView V2 Keypad Controls

The numbered descriptions below correspond to the numbered callouts in Figure 4-1.

1. **Touch Screen** – Displays a variety of menus used for system configuration and operation. These menus are described in detail on the following pages.
2. **Print Key** – Places a print request in the print queue.
3. **Store Keys** – Used to acquire and store images in specific positions for printing. LEDs above each button indicate used (red) and available (green) storage locations.
4. **Sequential Store Key** – Used to acquire and store images in sequential order, starting in the top row of a rectangular grid, and working from left to right in each row.
5. **Erase Key** – Used to enter Erase Image mode, which allows for random erasure of any or all stored images.

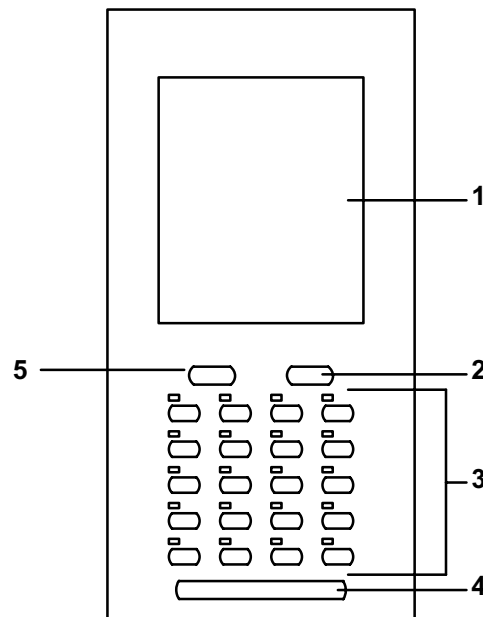


Figure 4-1. DryView V2 Keypad

DryView V2 Keypad – Main Menu

The numbered descriptions below correspond to the numbered callouts in Figure 4-2

1. **Attention Message** Area – Displays system status and error messages.
2. **Imager Print Information** Area – Displays the total number of prints that have been completed.
3. **Copy Count Set** Keys – Increase or decrease the copy count (range: 1 - 99).
4. **Format Menu** Key – Accesses the Format Menu.

Note

When in Erase Image mode, the **Erase All Images** key is displayed in place of the **Format Menu** key. The **Erase All Images** key is used to erase all stored images from the current format.

5. **Keypad Menu** Key – Used to access the Keypad Menu.
6. **Imager Menu** Key – Used to access the Imager Menu.

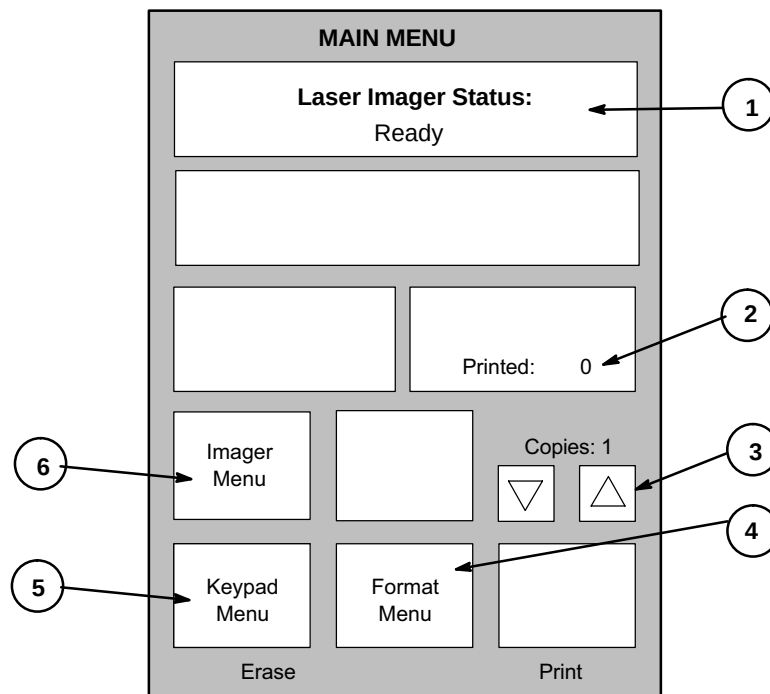


Figure 4-2. DryView V2 Keypad – Main Menu

DryView V2 Keypad – Format Menu

The numbered descriptions below correspond to the numbered callouts in Figure 4-3.

1. **Attention Message** Area – Displays system status and error messages.
2. **CANCEL** Key – Used to return to the Main Menu without selecting a format.
3. **Format Select** Keys – Used to select the desired image format. Keys are displayed only for those formats that are currently available. These include nine fixed formats.

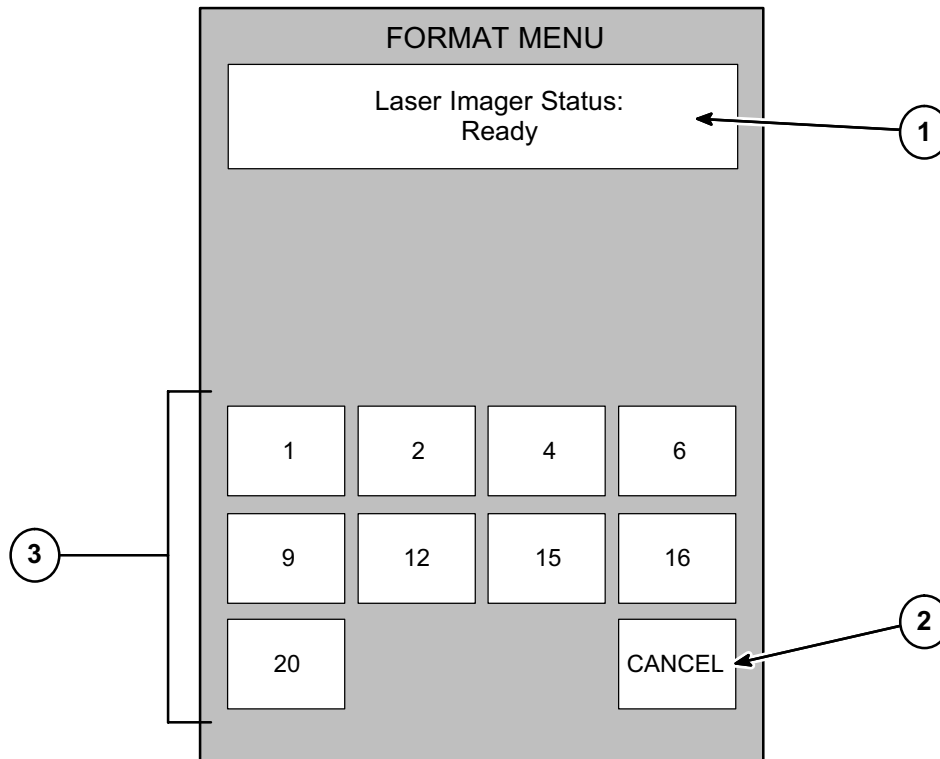


Figure 4-3. DryView V2 Keypad – Format Menu

DryView V2 Keypad – Imager Menu

The numbered descriptions below correspond to the numbered callouts in Figure 4-4.

1. **Attention Message** Area – Displays system status and error messages.
2. **Print Density Test Film** Key – Initiates the printing of a density test film containing a SMPTE test pattern.
3. **Density Set** Keys – Used to increase or decrease the density setting. If AIQC (Automatic Image Quality Control) is active, the selected Dmax setting is displayed (range: 1.70 – 3.10 for blue film, and 1.70 to 3.00 for clear film).
4. **Imager Polarity** Key – Selects positive or negative image polarity.
5. **Return** Key – Used to return to the Main Menu.
6. **Contrast Set** Keys – Used to increase or decrease the contrast setting (range: 1 – 15).
7. **Print Contrast Test Film** Key – Initiates the printing of a contrast test film. The last image stored is printed in a 15:1 format, using 15 different contrast settings.
8. **Image Processing** Key – Selects smooth or sharp image processing. (The choice depends on the personal preference of the viewer.)

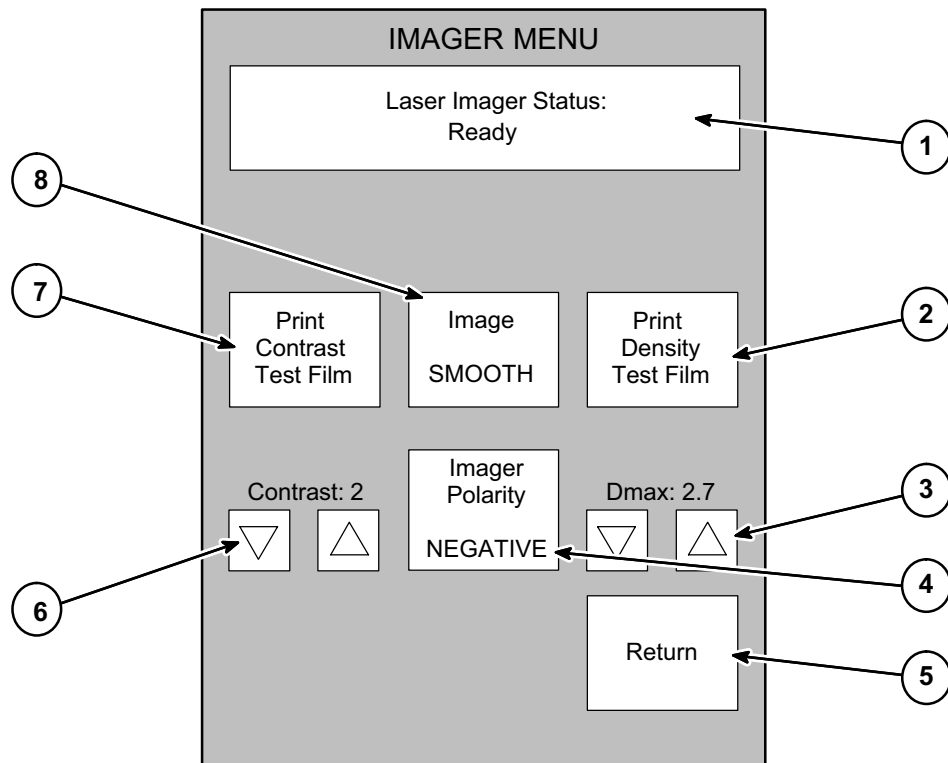


Figure 4-4. DryView V2 Keypad – Imager Menu

DryView V2 Keypad – Keypad Menu

The numbered descriptions below correspond to the numbered callouts in Figure 4-5.

1. **Attention Message** Area – Displays system status and error messages.
2. **Display Brightness Set** Keys – Increase or decrease the keypad display brightness.
3. **Alarm Beep Volume Set** Keys – Increase or decrease the volume of the keypad alarm beep.
4. **Return** Key – Used to return to the Main Menu.
5. **Auto Print** Key – Sets the Auto Print function to ON or OFF. When set to ON, a print is automatically queued after the last image is stored (the **Print** key does not have to be pressed).
6. **Auto Format** Key – Sets the Auto Format function to ON or OFF. When set to ON, a new format is automatically displayed (i.e., the LEDs above the **Store** keys change from red to green) after a print is queued.
7. **Color Blind Mode** Key – Sets the Color Blind feature to ON or OFF. When set to ON, the red LEDs above the **Store** keys (which indicate used storage locations) blink instead of staying on constantly. This allows the red LEDs to be differentiated from the constant green LEDs (which indicate available storage locations).

Note

When in Erase Image mode, the red LEDs blink regardless of whether the Color Blind feature is ON or OFF.

8. **Key Beep Volume Set** Keys – Set the key beep volume.
9. **Reset Local Print Counter** Key – Resets the print counter on the Main Menu Display.

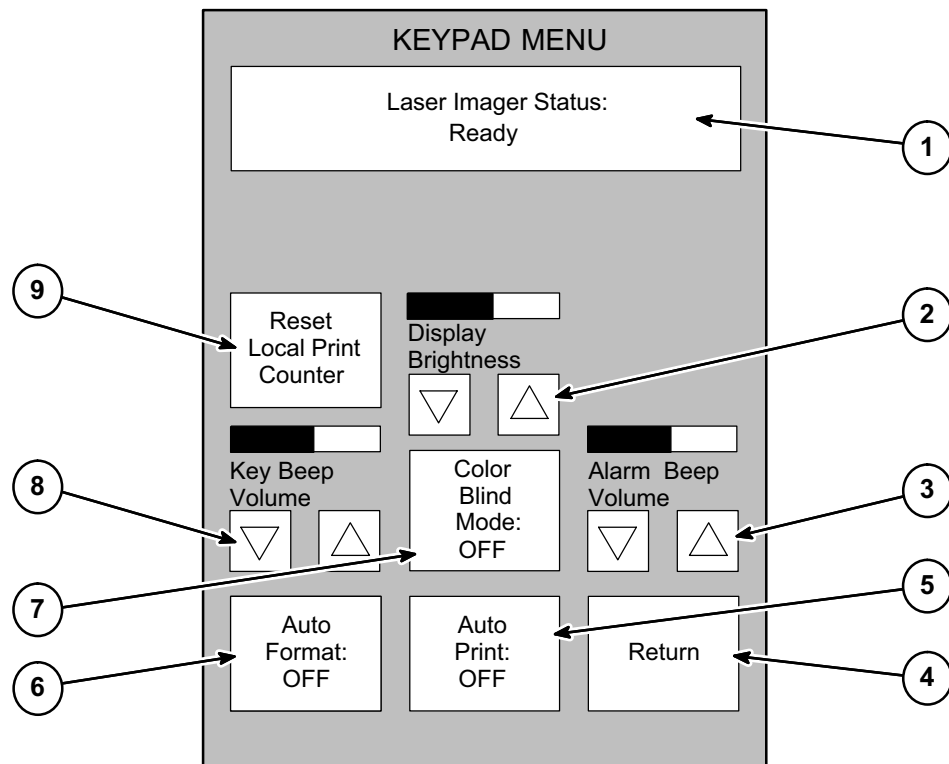


Figure 4-5. DryView V2 Keypad – Keypad Menu

Using the Keypad to Format/Acquire/Print

1. Power up the imager.
2. On the keypad's Main Menu, press the **Copy Count Set** keys (see Figure 4-6) to select the number of copies desired.
3. Press the **Format Menu** key to access the Format Menu. On that menu, press the appropriate **Format Select** key to select the desired format.
4. Press the appropriate **Store** keys to acquire images.
 - When an image has been successfully acquired, the light above the corresponding **Store** key changes from green to red.
 - The images are stored on a hard disk in the imager. You can acquire up to the number of images in the format you selected. For example, if you are using the 6-image format, you can acquire only six images. You must then print before you can acquire more images.
5. Once all the images have been acquired for a single film, press the **Print** key to place a print request in the print queue.

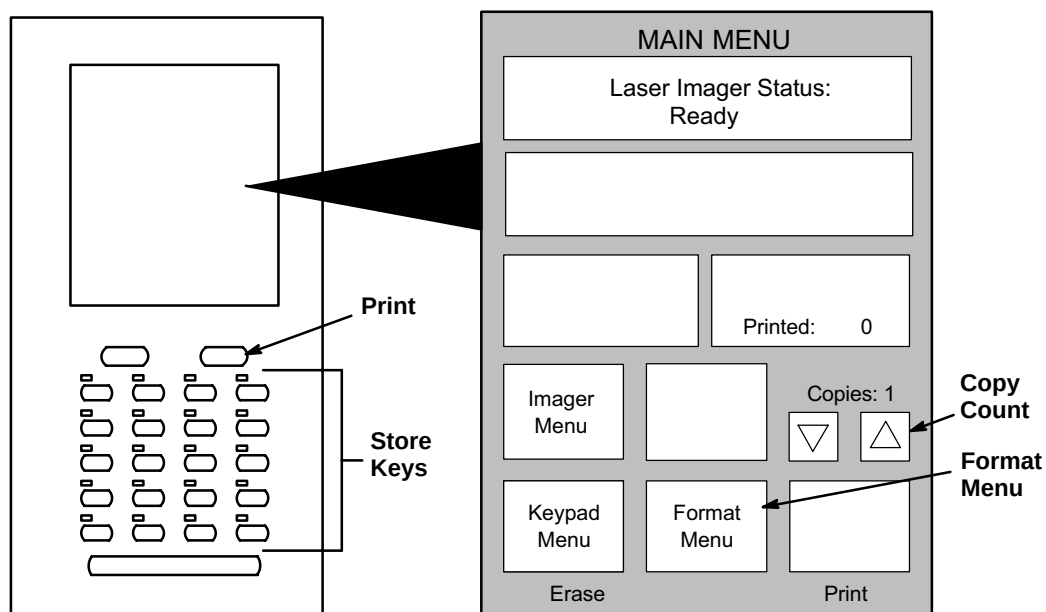


Figure 4-6. Formatting/Acquiring/Printing

 Note

If the Auto Print function is ON, a print request is automatically placed in the print queue as soon as the last image in the format has been stored. (See the next paragraph for instructions for selecting Auto Print.)

6. At this point, you can select a new format and continue acquiring images.
 - If the Auto Format function is ON, the red lights above the **Format** keys will change to green, indicating that you can start acquiring more images. (See the next paragraph for instructions for selecting Auto Format.)
 - If the Auto Format function is OFF, you cannot acquire more images until you select a new format or you erase currently stored images using the Erase Image function (see page 5-13).

Selecting Auto Print or Auto Format Mode

1. On the Main Menu, press the **Keypad Menu** key to access the Keypad Menu.
2. On the Keypad Menu (see Figure 4-7):
 - To select the Auto Print mode, press the **Auto Print** key so it indicates **ON**.
 - To select Auto Format, press the **Auto Format** key so it indicates **ON**.
 - Press **Return**.

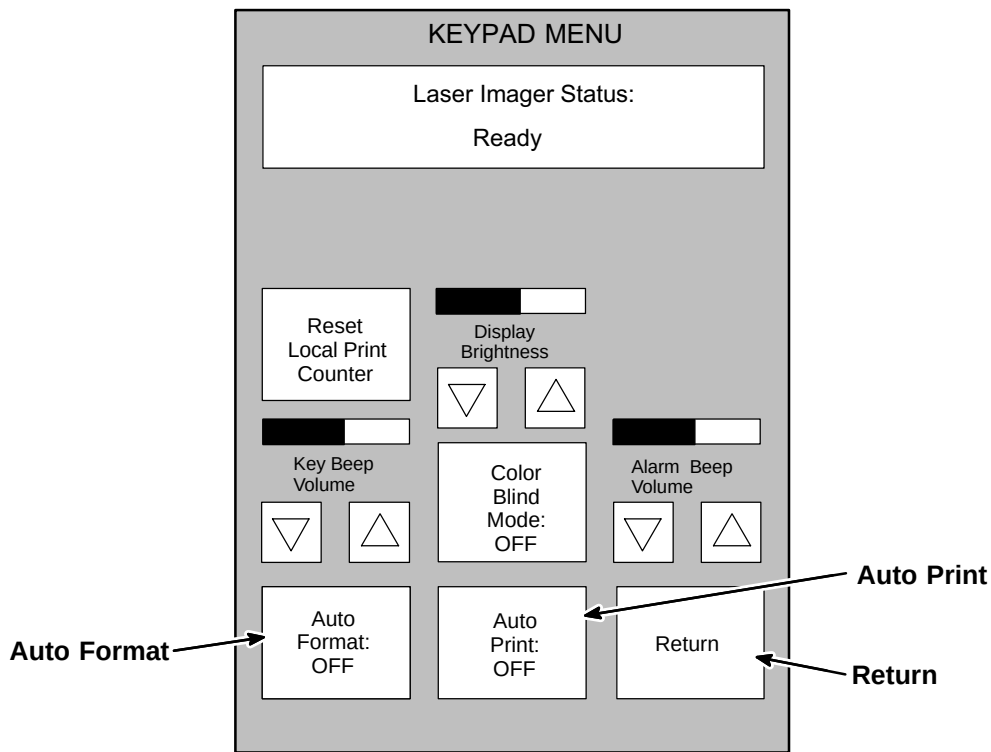


Figure 4-7. Selecting Auto Print or Auto Format

Using the Keypad to Adjust Image Density

Run a SMPTE test print as follows:

1. From the keypad Main Menu, press the **Imager Menu** key.
2. Press the key labeled **Print Density Test Film** on the Imager Menu (see Figure 4-8). The imager will print a SMPTE test print.
3. Examine the test print. If the maximum density on the test print is not acceptable, proceed as follows:

Note

Density changes set at the **DryView V2** keypad will override any density values set in the Local Panel.

Set desired image density as follows:

1. Use the **Density Set** keys to scroll to a new density value. Press the **Return** key to lock in the new value.

The display will show **Dmax = x.x**. The number **x.x** is the density value.

2. Repeat running test prints and adjusting density until you arrive at an acceptable maximum density.
3. Press the **Return** key to return to the Main Menu.

Note

If you know the desired Dmax value, you can simply enter the value without printing and examining test film.

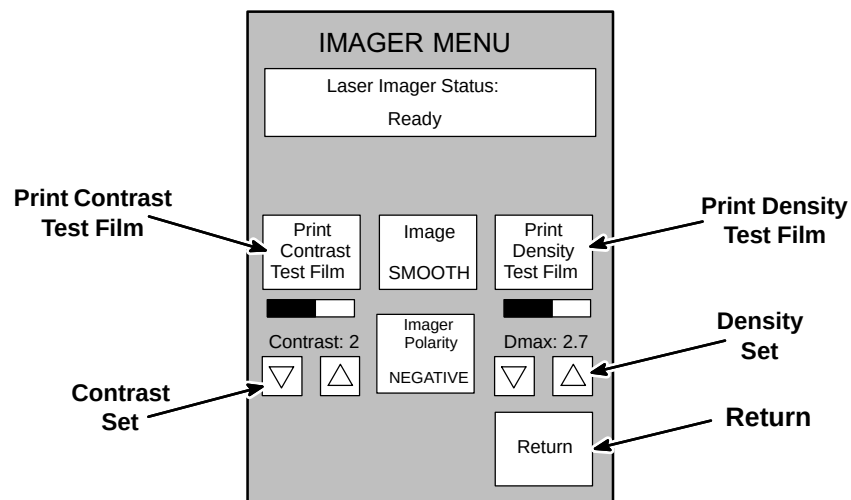


Figure 4-8. Adjusting Image Density and Contrast

Using the Keypad to Adjust Image Contrast

Note

Do not adjust image contrast if you are not satisfied with image density. If a density adjustment is required, perform it first before proceeding with the contrast adjustment described below.

Acquire a typical image for the contrast procedure as follows:

1. Display an image on the appropriate user's console.
2. Adjust the window and level controls on the console to achieve the desired image quality on the display monitor.
3. Press the **Format Menu** key on the Main Menu of the keypad. Then press any **Format Select** key on the Format Menu.
4. Press any lighted **Store** key or the **Sequential Store** key on the keypad to acquire the image.

Note

Contrast changes set at the **DryView** V2 keypad will override any contrast values set in the Local Panel.

Select and set desired contrast as follows:

1. From the keypad Main Menu, press the **Imager Menu** key.
2. Press the key labeled **Print Contrast Test Film** on the Imager Menu (see Figure 5-8).

The imager will print a contrast print. The image you acquired is printed 15 times on a single film, using contrast values of 1 through 15, if **Image Polarity** is Set to **POSITIVE**. If **Image Polarity** is set to **NEGATIVE**, negative contrast values 1 through 15 are used. The contrast value is printed under each image.

3. Examine the contrast print and choose the most desirable contrast value.
4. Press the **Imager Menu** key again.
5. Use the **Contrast Set** keys to scroll to the contrast value you have selected. Press the **Return** key to lock in the new contrast value.

The display will show **CONTRAST = x**, where x is a number from 1 to 15. The imager will produce prints using positive contrast x, if positive polarity has been selected via the **Imager Polarity** key. If negative polarity has been selected, the contrast value will be negative.

6. Press the **Return** key to lock in the new value.

Note

If you know the desired contrast value, you can ignore steps 2, 3, and 4.

Using the Keypad to Erase Stored Images

Press the **Erase** key on the keypad to enter the Erase Image mode (see Figure 4-9). In this mode, any or all stored images can be erased.

- To erase an individual image, press the **Store** key for that image. Once all the desired images have been erased, press the **Erase** key again to exit the Erase Image mode.
- To erase all stored images, press the **Erase All Images** key on the Main Menu. After erasing the images, the keypad automatically exits the Erase Image mode.

Note

When in Erase Image mode, the **Erase All Images** key is displayed in place of the **Format Menu** key on the Main Menu.

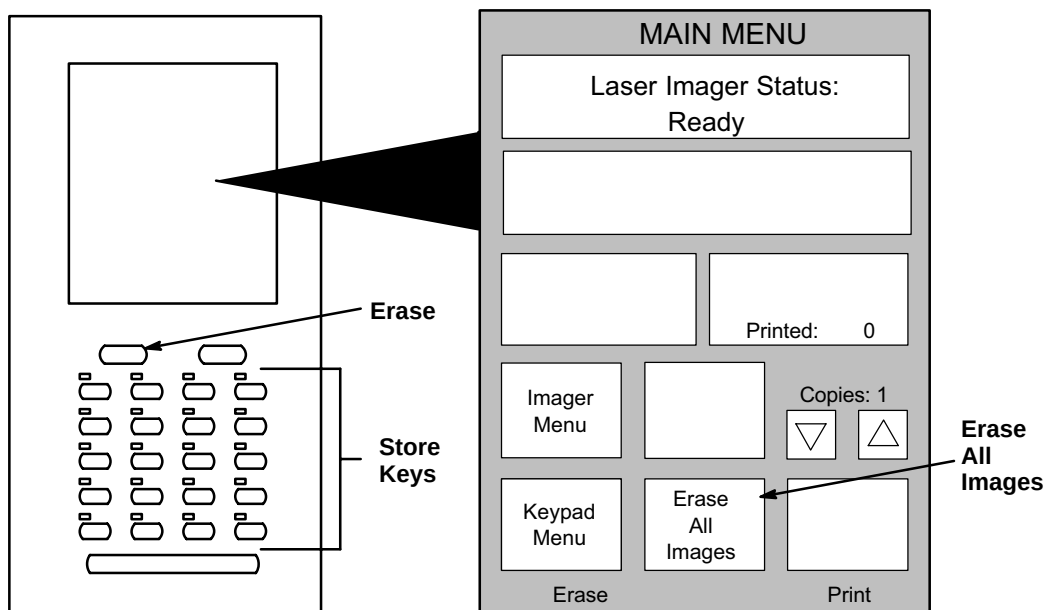


Figure 4-9. Erasing Stored Images

DryView V2 Keypad Error Message Table

The following table lists all the **DryView** V2 Keypad error messages. (It does not include status or action messages.) For each error message, perform the operator action listed in the table next to the message. If the listed action does not clear the error message, call for service.

Table 4-1. DryView V2 Keypad Error Messages

Message	Operator Action
Laser Imager Status: Off-line	Refer to the message on the Local Panel for a corresponding error number. Then look up this number in the error message table in Section 6 of this manual. Follow the instructions for resolving the problem.
Printer Feed Error. Remove Jam	
Supply Magazine Failed to Close	
Supply Magazine Failed to Open	
Supply Magazine is Empty	The film cartridge is empty. Load a new cartridge.
Supply Magazine is Missing	There is no film cartridge in the machine. Load one.

Troubleshooting

Operator Troubleshooting

Operators occasionally have to clear film jams in the imager or correct other simple problems. If more serious malfunctions occur, operators must call a trained Kodak service technician (see page 5-18).

To help operators monitor imager operation and identify problems, the imager displays status and error messages. The following paragraphs describe these error messages and list corrective actions the operator should take.

Local Panel Message Types

The Local Panel displays two types of messages, as described below.



Note

A scroll icon at the beginning of the message line indicates that more information (above or below the line) is available. Press the Local Panel ↑ or ↓ key to display another line of information.

Status Information

Status messages (see Table 5-1) are strictly informational and require no operator action.

Error Messages or Notices

Error messages (see Table 5-2) indicate an error condition within the imager. In some cases, error messages can be cleared by operator action, but in many cases a service call will be required. Notices are brief messages identifying special print requests (for example, calibration prints).



Note

The **DryView** 8100 Laser Imager displays a Local Panel message (P550) when preventive maintenance and cleaning are recommended. Preventive maintenance and cleaning ensure optimum performance of the imager. This message **will not** interfere with normal operation. The intent of the message is to allow the operator to schedule a convenient time to have preventive maintenance and cleaning performed by a certified technician.



Note

For **DryView** V2 Keypad error messages, see Section 4.

Local Panel Status Messages

Table 5-1. Local Panel Status Messages

Status Code	Local Panel Message	Explanation
S00	Self Test	The imager is performing a start-up self test. Please wait.
S01	Ready	The imager is idle and available for printing images.
S02	Warming=#	The imager is warming up. Please wait for Ready message. (# = the number of minutes remaining until the imager will be ready to print.) The user can acquire but not print during the warmup period.
S04	Stopped	An error condition has caused the imager to stop. See error message on line 2 of the display.
S11	Printing	The imager is printing an image.
S12	Calibrate	The imager is printing a calibration print. The user can acquire and queue prints but the calibration film will be printed first.
S13	Contrast	The imager is printing a contrast test print. The user can acquire and queue prints, but the contrast test film will be printed first.
S14	Density	The imager is printing a density test print. The user can acquire and queue prints, but the density test film will be printed first.

Status Code	Local Panel Message	Explanation
S16	Wait	1. The imager is completing films in process before unlatching the front door or, 2. There is an error condition. See error message on line 2 of the display. The user can continue to acquire and queue prints, but the imager will not print until the condition has been corrected.
S21	Door Open	The front door is open. The user can continue to acquire and queue prints, but the imager will not print until the door has been closed.
S22	Hood Open	The upper hood is open. The user can continue to acquire and queue prints, but the imager will not print until the hood has been closed.
S23	Doors Open	The front door and upper hood are both open. The user can continue to acquire and queue prints, but the imager will not print until the door and hood have been closed.
S24	Crtg Openg	The imager is opening the film cartridge after the front door has been closed. The user can acquire and queue prints, but the imager will not print until the cartridge is fully open.
S25	Crtg Clsng	The imager is closing the film cartridge before unlatching the front door. The user can continue to acquire and queue prints, but the imager will not print until the front door is closed and the cartridge reopened.

Local Panel Error Messages

The following table lists the error messages displayed on the Local Panel. When an error message is displayed, perform the operator action listed in the table for that message. If this action does not clear the error message, call for service. When you make a service call, be prepared to give the error message and message number to the call taker (see page 5-18).

Note

In the table below the action “Cycle power” means to turn the imager Power Switch off, wait 5 seconds, and then turn the switch on. If cycling power does not clear the error, a service call is usually required.

Table 5-2. Local Panel Error Messages

Message Number	Message Displayed	Message Details/ Operator Action
P116	Pickup Fail	The film pickup arm is unable to pick up film from the film cartridge. Try printing again. If the error recurs: See Film Pickup Problems in Area 1 on page 5-11.
P118	Elevator Fail	The cartridge elevator did not return to its home position after the door was closed. Cycle power.
P119	Feed Err Area 2	Film is stalled in the feed area. See Removing film Jams from Area 2 on page 5-12.
P121	Printer Error	The imager is unable to print due to system problems. Cycle power.
P123	Printer Error	The imager is unable to print due to system problems. Cycle power.
P132	No Crtg	There is no film cartridge in the imager. Load a film cartridge.
P133	Media Low	Film cartridge contains less than 20 sheets. Be ready to load a new film cartridge.

Message Number	Message Displayed	Message Details/ Operator Action
P134	Crtg Empty	The film cartridge is empty. Insert a new film cartridge.
P137	Open Door Req	The front door will not open because the imager is printing. Wait until S25 (cartridge closing) is displayed.
P138	Press Open 5S (This message alternates with P177.)	The front door does not unlatch because the film cartridge would not close or the elevator would not lower. Hold down the Open Door key on the Local Panel for 5 seconds to force the front door open. Clear the film jam or other error condition and manually close the film cartridge. The top few sheets in the film cartridge will be exposed.
P139	Bad Barcode	The imager is unable to read the barcode on the bottom of the film cartridge. Try a different film cartridge.
P145	Media Type Err	A reading of the barcode on the cartridge indicates that the cartridge contains the wrong type of film. Replace the cartridge with one containing the correct type of film.
P146	Media Size Err	A reading of the barcode on the cartridge indicates that the cartridge contains film of the wrong size. Replace the cartridge with one containing the correct size film.
P149	Wait FilmModel	The system is calculating film descriptive data from the barcode data on the film cartridge. Wait until the calculation is complete.
P154	Disk Maint	The system is operating normally. A file system problem is being corrected by recovery from a recent backup. DO NOT cycle power while this message is displayed. If power is cycled, the recovery will have to start over from the beginning.

Message Number	Message Displayed	Message Details/ Operator Action
P164	Jam—Area 3	Film is stalled in the exposure area. See Removing Film Jams from Area 3 on page 5-13.
P165	Jam—Area 3	Film is stalled between the exposure area and the processor. See Removing Film Jams from Area 3 on page 5-13.
P169	Jam—Area 3	Film has stalled exiting the exposure area. See Removing Film Jams from Area 3 on page 5-13.
P176	Crtg Open Err	The imager could not open the film cartridge. Press the Open Door key on the local Panel to open the front door. Make sure that the cartridge is installed correctly (not backward). Close the door and try again. If the error recurs, call for service.
P177	Crtg Close Err (This message alternates with P138.)	The imager could not close the film cartridge. See Film Pickup Problems in Area 1 on page 5-11.
P202	Override Swtch	The Service Override switch is ON. The imager cannot expose film. (This switch is used only by service technicians.) Call for service.
P208	Door Fail Open	The front door does not open. Hold down the Open Door key on the Local Panel for 5 seconds to force the front door open.
P506	Printer Error	The imager is unable to print because of processor problems. Cycle power.
P509	Printer Error	The imager is unable to print due to a system problem. Cycle power.

Message Number	Message Displayed	Message Details/ Operator Action
P512	Calibrate Req	The user has requested a calibration test film or the imager has initiated an automatic calibration test film.
P513	Contrast Req	The user has requested a contrast test film.
P514	Density Req	The user has requested a density test print.
P515	Calibrate Fail	The calibration print failed. Request another calibration. If the error recurs, cycle power.
P542	Jam–Area 4	Film is stalled in the processor. See Removing Film Jams from Area 4 on page 5-14.
P543	Jam–Area 5	Film is stalled between the processor and the densitometer. See Removing Film Jams from Area 5 on page 5-16.
P544	Jam–Area 5	Film is stalled between the densitometer and the exit tray. See Removing Film Jams from Area 5 on page 5-16.
P550	Cleaning Recmd	The imager is due for cleaning. Schedule a service call.
P551	Printer Error	The imager is unable to print because the processor heater did not warm up. Note P number and call for service.
P554	Printer Error	The imager is unable to print. The processor heater is shut down because temperature was too high. Cycle power.
P561	Manual Mode	The imager is operating in “manual” mode, without Automatic Image Quality Control.
P601 through P606	Printer Error	The imager is unable to print due to a system problem. Note P number and call for service.

Message Number	Message Displayed	Message Details/ Operator Action
P621	Printer Error	The imager has detected that a film parameter file is missing. Call for service.
P622	Printer Error	The imager is unable to print due to a system problem. Request a calibration print via the Local Panel.
P623	Printer Error	The imager is unable to print due to a system problem. Note P number and call for service.
P624	Calibrate Fail	The imager is unable to print because of print density problems. Try a new film cartridge. If the problem remains, call for service. (Manual mode is NOT usable with this error.)
P631	Calibrate Fail	The Dmin specification was not met on a calibration print. Try a new film cartridge. If the problem remains, call for service. Before service arrives, you can choose to operate in manual mode. (See page 3-5.)
P632	Calibrate Fail	The Dmax specification was not met on a calibration print. Try a new film cartridge. If the problem remains, call for service. Before service arrives, you can choose to operate in manual mode. (See page 3-5.)
P640	Optics Fail	The imager is unable to print due to an optics problem. Cycle power.
P910	IMS Down	The Image Management System is not communicating. Cycle power.
P912	IMS XFR Parity	A parity error has been detected in the data transferred from the Image Management System. Cycle power.

Message Number	Message Displayed	Message Details/ Operator Action
P913	IMS XFR Count	Either too little or too much data has been transferred from the Image Management System. Cycle power.
P920	Printer Error	The MCS Board failed its power-up self-test. Cycle power.
P921	Printer Error	The Feeder Board failed its power-up self-test. Cycle power.
P922	Printer Error	The Barcode Reader Board failed its power-up self-test. Cycle power.
P923	Printer Error	The Optics Board failed its power-up self-test. Cycle power.
P924	Printer Error	The Densitometer Board failed its power-up self-test. Cycle power.

Film Drive Problems

Figure 5-1 shows the path that film travels through the imager after the operator requests a print. The numbers in the illustration identify key areas on the path from film pickup to exposure through development and exit onto the film tray:

- Area 1 – Film pickup from the cartridge
- Area 2 – Film feed into the exposure area
- Area 3 – Film feed out of the exposure area
- Area 4 – Film feed into the processor
- Area 5 – Film feed out of the processor

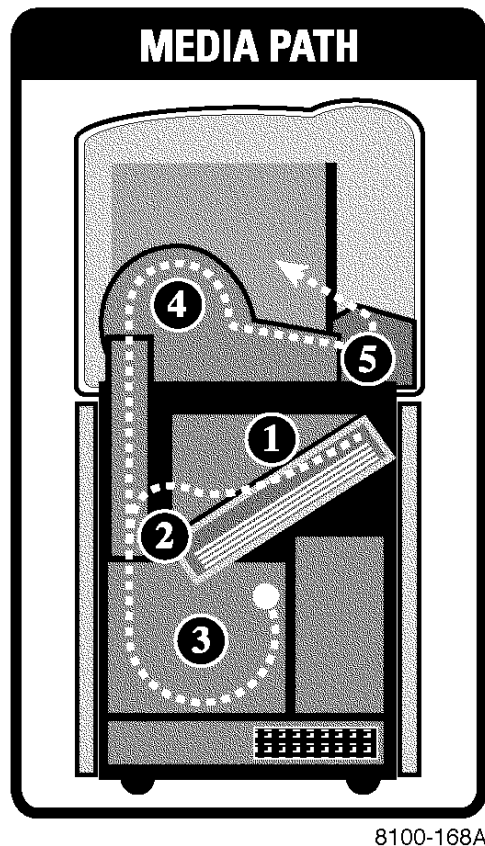


Figure 5-1. Film Drive Path

Film Pickup Problems in Area 1

Area 1 identifies the location where film is removed from the film cartridge and positioned to be sent by drive rollers toward the exposure area (see Figure 5-2). If the imager cannot properly pick up a sheet of film and position it for drive, error P116 is declared. P177 (Cartridge Close Error) also relates to Area 1.

Note

When problems occur in Area 1, the film cartridge is left open. When you open the front door, the top sheets of film in the cartridge will be exposed. Before opening the door, make the room as dark as possible to minimize exposure.

1. Press and hold in the **Open Door** key on the Local Panel for 5 seconds to unlock the front door.
2. Open the front door and check the film pickup area. (There may be a film cartridge problem.) If you cannot resolve the problem, call for service.
3. Turn the rollback knob counterclockwise to manually close the cartridge lid.
4. Close the front door.

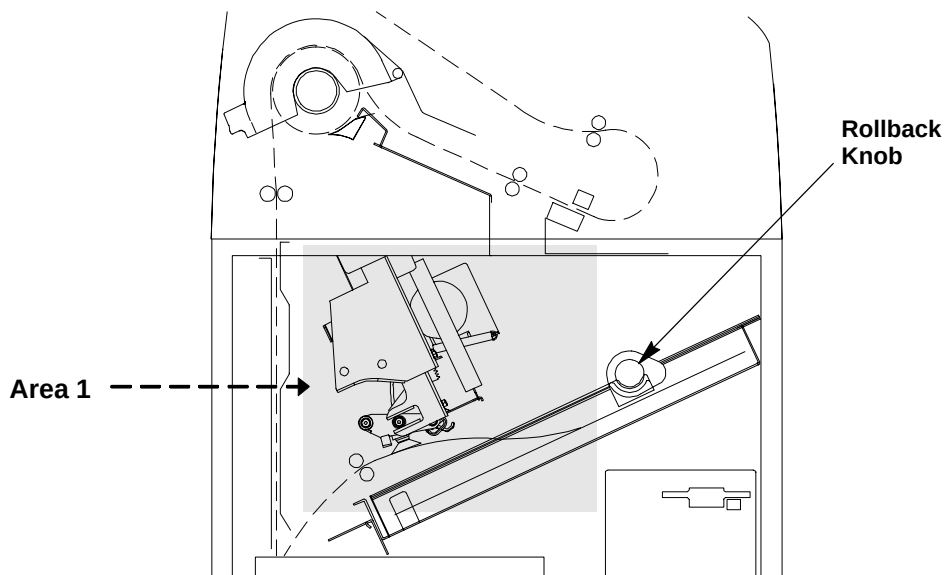


Figure 5-2. Film Area 1

Removing Film Jams from Area 2

Area 2 in the imager includes the path between the film pickup assembly and the exposure platen (see Figure 5-3).

Note

When jams occur in Area 2, the film cartridge is left open. When you open the front door, the top sheets of film in the cartridge will be exposed. Before opening the door, make the room as dark as possible to minimize exposure.

1. Press and hold in the **Open Door** key on the Local Panel for 5 seconds to unlock the front door.
2. Open the front door and clear the film jam.
3. Turn the rollback knob counterclockwise to manually close the cartridge lid.
4. Close the front door.

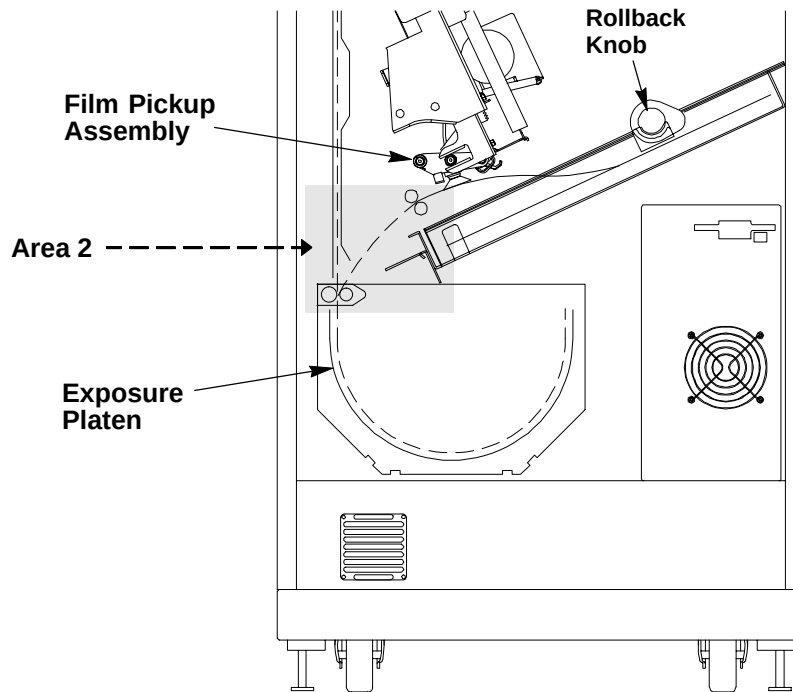


Figure 5-3. Jam Area 2

Removing Film Jams from Area 3

Area 3 includes the exposure platen (see Figure 5-4). Jams in this area occur as film is entering the platen before exposure, or as film is leaving the platen after exposure. In rare cases, film may stall in the transport area above the platen.

1. Press the **Open Door** key on the Local Panel to unlock the front door. (The status message S25 Crtg Clsng will display, and the imager will close the cartridge and unlock the front door.)

Note

If the film cartridge does not close, you will have to press and hold the **Door Open** key for 5 seconds to unlock the front door. Be aware that when you open the door, the top sheets of film in the cartridge will be exposed. Before opening the door, make the room as dark as possible to minimize exposure.

2. Open the front door and clear the jammed film, if it is accessible.
3. If the film is not accessible:
 - a. Open the platen door by sliding the door latch to the left and pulling out.
 - b. Clear the film from inside the platen. If film is caught in the feed rollers (see Figure 5-4), pull the green thumb tab to the right to open the rollers and free the film.
 - c. After clearing the jam, close the platen door.
4. Close the front door.

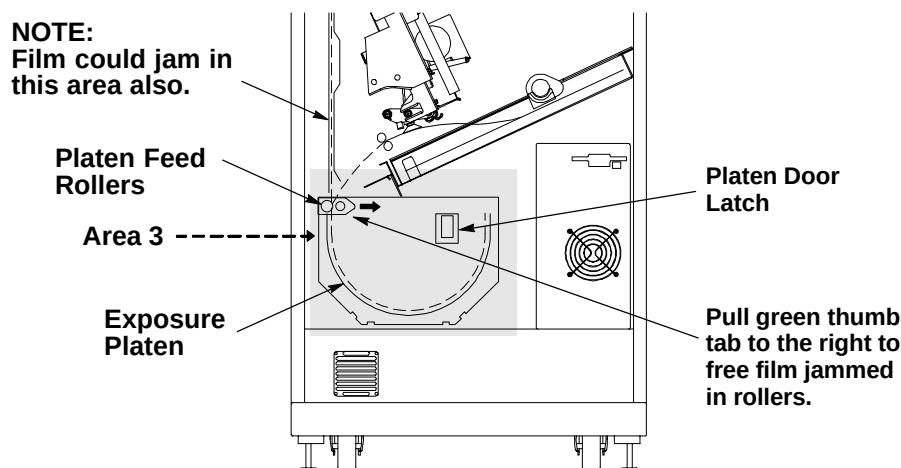


Figure 5-4. Jam Area 3

Removing Film Jams from Area 4

Area 4 includes the film processor.

1. Open the upper hood.



Caution



Hot Surface



Drum and rollers inside the processor are hot. Exercise caution when removing jammed film from the processor.

2. Release the two clamps at the left of the processor and open the drum cover (see Figure 5-5).



Caution

To prevent damage to the surface of the processor drum, do not use any type of tool to remove jammed film.

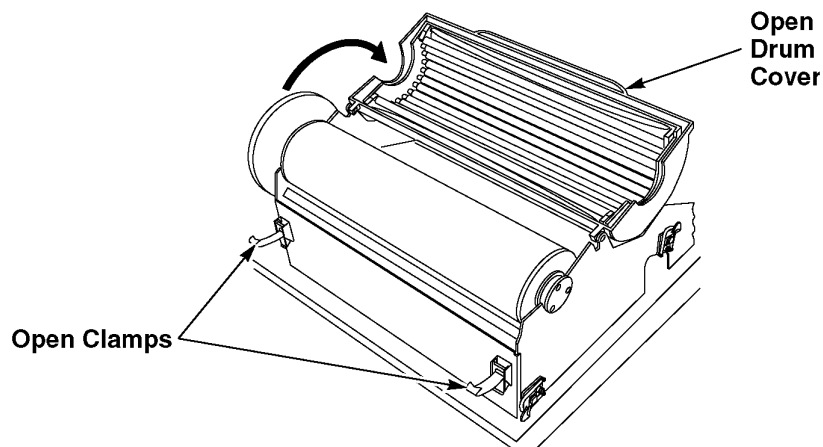


Figure 5-5. Opening the Drum Cover

3. Clear the jammed film from the processor area. (There may be more than one sheet.) If film is jammed in the drive rollers (see Figure 5-6), pull the green thumb tab to the left to open the rollers and free the film.
4. Close the drum cover and secure it with the two clamps.
5. Close the upper hood. (The processor will have to warm to operating temperature before printing can occur again.)

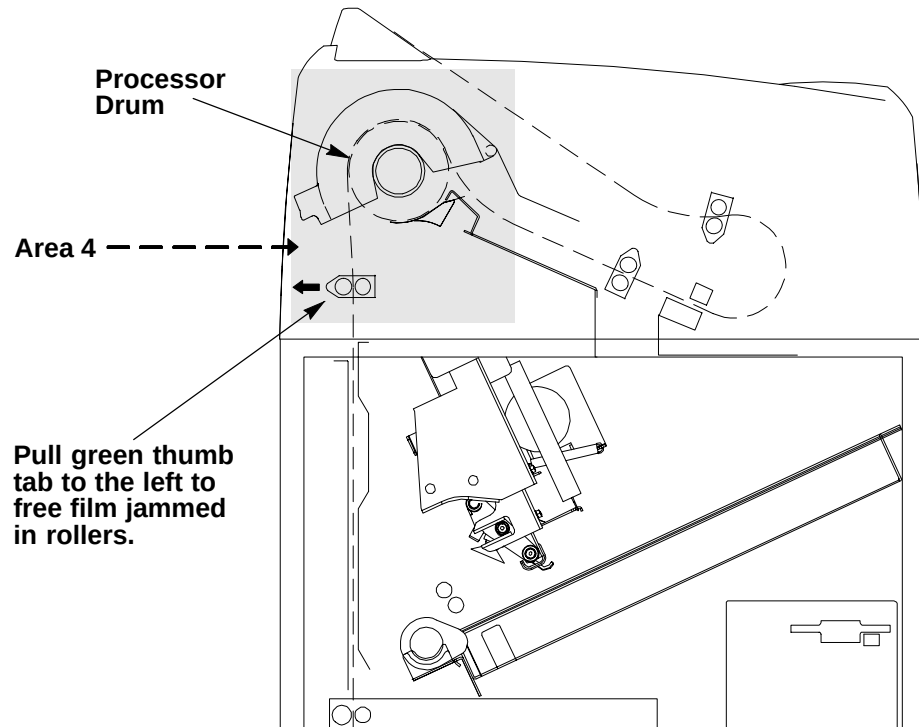


Figure 5-6. Jam Area 4

Removing Film Jams from Area 5

Area 5 consists of the components between the processor drum and the film exit tray (see Figure 5-7). Jams can occur in this area between the drum and the densitometer, or in the densitometer.

1. Open the upper hood.



Caution



Hot Surface



Drum and rollers inside the processor are hot. Exercise caution when working in the drum area.

2. Clear the jammed film. (There may be more than one sheet.) If film is jammed in the drive rollers (see Figure 5-7), use the green thumb tab to open the rollers and free the film.
3. Close the upper hood.

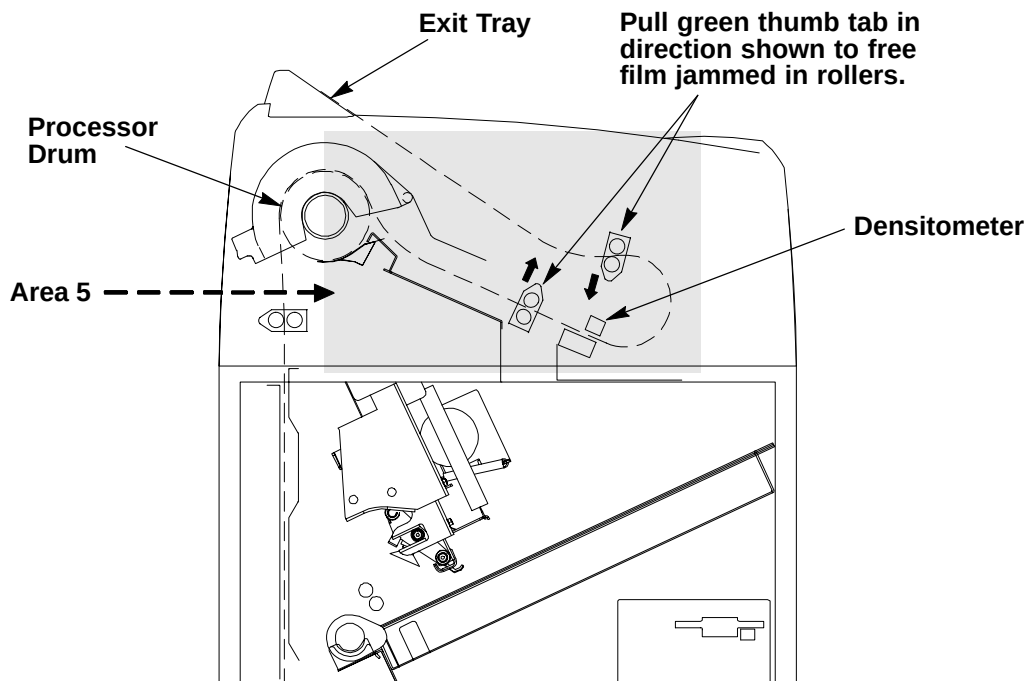


Figure 5-7. Jam Area 5

Manually Closing the Film Cartridge

The imager automatically closes the film cartridge when the **Door Open** key is pressed. If the imager is unable to close the cartridge, a P177 error displays.

Note

If the front door is opened when the film cartridge is open, the top sheets of film in the cartridge are exposed. Make the room as dark as possible to minimize exposure.

1. Press and hold the **Open Door** key on the Local Panel for 5 seconds to unlock and open the front door.
2. Clear any films that may be jammed in the film cartridge area.
3. Turn the rollback knob (see Figure 5-8) counterclockwise to close the cartridge.

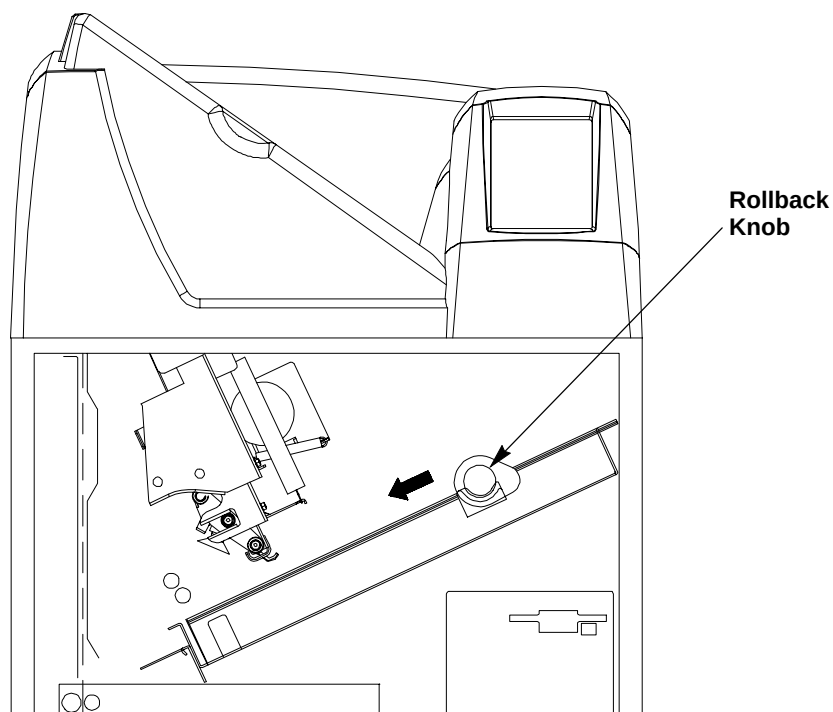


Figure 5-8. Manually Closing the Film Cartridge

Calling for Support

When you have tried to repair the machine, but realize that you need help, it is time to call for service. Before you call, have the following information ready:

- Model Number: 8100
- Serial Number: For serial number location, see Figure 5-9.
- Phone for Service: 1-800-328-7754, Option 1

Note

For general information about Kodak Health Imaging Products, call 1-800-328-2910, Option 3.

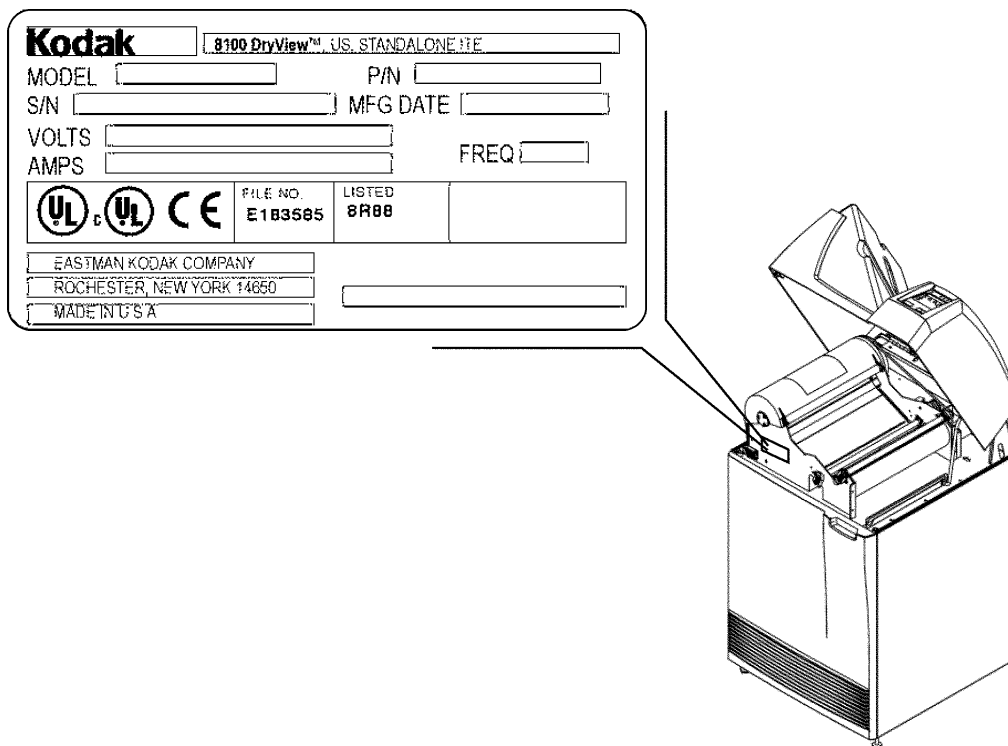


Figure 5-9. Serial Number Location

Specifications

Dimensions

Height:	1168 mm (46 in.) – Top cover closed 1581 mm (62–1/4 in.) – Top cover open
Width:	635 mm (25 in.)
Depth:	661 mm (26 in.) – Front door closed 1245 mm (49 in.) – Front door open
Weight:	188 kg (414 lbs.)

Electrical

Voltage:	100 V AC □ 10%, 50/60 Hz □ 3 120 V AC □ 10%, 50 Hz □ 3 230 V AC □ 10%, 50 Hz □ 3
Current Draw:	Less than 12 Amperes at 100 V AC input Less than 10 Amperes at 120 V AC input
Power Consumption:	700 Watts (maximum)

Operating Environment

Temperature:	15° to 35°C (59° to 95°F)
Humidity:	15% to 85% RH, Noncondensing
Magnetic Field:	= 50 Gauss

Environmental Effects

Heat Dissipation:	3000 BTU/Hr (average)
Acoustical Noise:	Less than 55 dB at one meter (70 dB momentarily) Less than 80 dB, non-repetitive tasks such as door open/close

Storage Environment

Temperature: –35° to 60°C (–31° to 140°F)

Humidity: 10% to 90% RH, Noncondensing

Film Size

The 8100 will process 14 inch by 17 inch **DryView** Laser Imaging Film.

Film Throughput

55 films per hour (assuming images of 1024 by 1024 pixels and a direct connect input).

Host Control

RS232 or RS422 connection to imager.

DryView V2 Keypad

- Available image formats include 1:1, 2:1, 4:1, 6:1, 9:1, 12:1, 15:1, 16:1, and 20:1.
- Images can be acquired and stored in random or sequential order.
- Can be located up to 3 meters (10 feet) from imager when connected directly.
- Can be located up to 60 meters (198 feet) from imager if a UKEIB interface box is used.

Agency Compliance

See the Safety, EMC, and CE Marking Compliance paragraphs at the beginning of this manual.

Technical Information

Note

The information in this section relates to the characteristics of **DryView** Laser Imaging Film, not to the operation of the **DryView** 8100 Laser Imager.

General Description

DryView Laser Imaging Film is a high-resolution, infrared-sensitive, photothermographic film designed specifically for the new family of **DryView** Laser Imaging Systems.

This new film delivers the same diagnostic image quality you get with your current silver halide laser films – but it requires no “wet” chemistry, no “wet” film processors, and no darkroom procedures. This means there is no need for special plumbing, wet chemistry disposal procedures, or modifications to your facility. This new film is packaged in daylight load packages and is available in 14 inch by 17 inch size. It is available in blue or clear, 7 mil polyester base.

Spectral Sensitivity

DryView Laser Imaging Film is infrared sensitive and has been sensitized to the infrared laser diode of **DryView** Laser Imaging Systems. When handled according to instructions on the film package, safelights are not needed. It is not recommended, but if you remove undeveloped film from the daylight load package, you will need a darkroom setting and a green safelight.

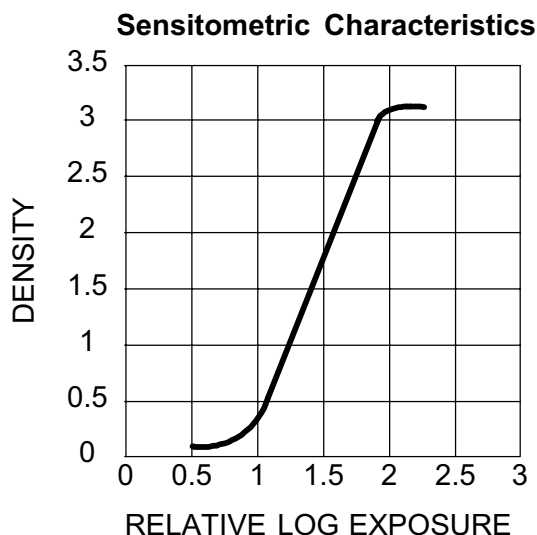


Image Quality

DryView Laser Imaging Film delivers diagnostic-quality, continuous-tone images along with sharp alphanumerics and optimum contrast. This high-quality silver-based film provides radiologists with the same diagnostic information they are accustomed to viewing – including the spatial resolution, contrast, and gray levels. Plus, because it is a totally dry imaging process, there is no image quality variability due to “wet” chemistry.

Automatic Image Quality Control

DryView Laser Imaging Film is system-matched for the unique Automatic Image Quality Control (AIQC) technology. This fully automated system, which is a standard feature of **DryView** Laser Imaging Systems, is designed to ensure that contrast, density, and other image quality parameters meet preset user preferences, film-to-film, lot-to-lot.

Barcode information on each film cartridge allows the **DryView** 8100 Laser Imager to automatically determine film type, the number of sheets remaining, and the film manufacturing lot. The AIQC uses this information to automatically calibrate the imager’s electronics and optimize image quality without operator intervention.

The AIQC also reads a special density patch printed on each 14 inch by 17 inch sheet of **DryView** Laser Imaging Film as it passes through a built-in densitometer. Slight density variations are corrected automatically.

Less Impact on the Environment

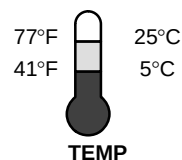
Disposal regulations and procedures for “wet” processing chemistry are time-consuming and expensive. And even with the most exacting procedures, the potential exists to discharge hazardous materials into the environment.

Tests show that **DryView** Laser Imaging Film is not considered hazardous to the environment. As a result, you can develop, recycle, and dispose of films with less impact on the environment than if you were using wet developed silver halide films.

DryView Laser Imaging Film Environmental Regulations Comparison					
	<u>Wet Silver Halide</u>				<u>DryView</u>
	<u>Developer</u>	<u>Fixer</u>	<u>Wash</u>	<u>Film</u>	<u>Film</u>
Product Regulation					Provided No Limits None
OSHA MSDS	Required	Required	Not Required	Not Required	
DOT	Hazardous	Hazardous	No Limits	No Limits	
Use Permits	Local	Local	None	None	
Disposal * Regulation					
EPA	Hazardous	Hazardous	No	No	No No
DOT	Hazardous	Hazardous	No	No	
Note: There is no SUPERFUND liability with DryView Laser Imaging Film.					
* State and local laws vary. Consult appropriate regulations or authorities prior to disposal.					

Storage and Handling of Undeveloped Film

As with other laser imaging films, to achieve consistent results up to the expiration date indicated on the film package, **DryView** Laser Imaging Film must be stored in a cool, dry place (41°F/5°C to 77°F/25°C) and protected from radiation and chemistry fumes.



The film can also withstand short-term temperature spikes (up to 95°F/35°C for several hours) during transit without any significant effect on film quality or performance. Transit temperatures above 95°F/35°C will gradually diminish shelf life. If the Automatic Image Quality Control system (AIQC) encounters film that has been damaged by improper handling, it will automatically alert system operators before the film is developed.

Handling of Developed Film

As with other photographic films or data storage materials, the handling of **DryView** Laser Imaging Film requires reasonable care. Spills, humidity, and other moisture typically have no significant effect on developed films. Prolonged exposure to intense light or excessive heat (130°F/54.4°C for more than 3 hours) may cause some gradual darkening of images. Leaving films in vehicles in hot climates for extended periods of time is not recommended.

Under typical working conditions, **DryView** Laser Imaging Film will maintain diagnostic quality for over 30 years. For best results, store film in sleeves when not being reviewed. **DryView** Laser Imaging Film can be left on a light box for more than 24 hours; in extreme cases in which light boxes are exceptionally hot (120°F/49°C), we recommend removing them prior to 8 hours of continuous exposure.

Care should be taken when using spotlight viewing for more than 30 seconds, because temperatures near the light source may exceed 180°F/82.2°C. Use in slide projectors is not recommended due to the high temperatures generally found in these devices.

With the new **DryView** technology, a small amount of final development occurs when the film exits the **DryView** Laser Imager and is initially exposed to ambient or view box lighting. This is virtually undetectable and has no effect on image quality (i.e., typically 0.02 change in density). This small density increase is uniform and permanent upon full exposure of the film under normal handling conditions (i.e., room light or view box).

Archivability of Developed Film

DryView Laser Imaging Film is fully archivably for more than 100 years when stored at American National Standards Institute (ANSI) recommended storage conditions (77°F/25°C). Developed films may be stored at higher temperatures, but that may affect archivability. For example, storing films at a constant elevated temperature of 90°F/32.2°C may reduce archivability to 30 years.

Exposure to Moisture

While moisture can damage traditional wet processed silver halide films, **DryView** Laser Imaging Films typically withstand humidity, spills, and other forms of water without any significant effect on image quality or film integrity. If needed, films can be cleaned with a clean, damp cloth.

Odor Dissipation

The “wet” chemistry associated with the development of silver halide film creates strong, unpleasant odors. By eliminating “wet” chemistry, **DryView** technology eliminates virtually all of these odors. While some low-level odors are produced during the development process, they pose no known adverse health risks. Processing odor levels are further reduced by a non-hazardous, recyclable filter in **DryView** Laser Imaging Systems. This filter traps most low-level odors and prevents them from dissipating into the work environment. To help maintain optimum performance, the filter requires periodic replacement as specified in the **DryView** Laser Imager User’s Manual. Unlike silver halide systems, **DryView** Laser Imagers require no special venting.

Heat Dissipation

DryView Laser Imaging Systems use controlled heat to develop **DryView** Laser Imaging Films. The heat has virtually no effect on the air temperature of the work area. The amount of heat dissipated into an area during a day is typically less than the heat generated by four 100-watt light bulbs.

Film Recycling

According to the Environmental Protection Agency (EPA) standards, **DryView** Laser Imaging Film is not considered hazardous – so unlike typical “wet” films, these films require no special disposal procedures. But they do contain silver and polyester that may be recovered by using one of several recycling processes.

If you are interested in recycling and silver recovery, Kodak can provide your local recyclers with the information they need to get started. In some countries, national contracts have been established with recycling firms. Call your local Kodak sales representative for more information about these contracts.

IMPORTANT NOTICE TO PURCHASER

Kodak warrants that Kodak hardware products will be free from defects in parts, material, and manufacture for the period of one (1) year from the date of installation. For defects occurring during the warranty period and about which Kodak has received notice during the warranty period, Kodak will provide Customer with free replacement parts and labor to replace warranty-covered items. THIS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND THOSE ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE. This express warranty does not apply to expendable parts; defects or damage due to neglect, misuse, operator error, improper installation or alteration of Kodak hardware products or operation of Kodak hardware products out of specification. EXCEPT FOR THE EXCLUSIVE REMEDY STATED ABOVE, KODAK IS NOT LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, HOWEVER OCCURRING AND REGARDLESS OF THE LEGAL THEORY ASSERTED, INCLUDING NEGLIGENCE AND STRICT LIABILITY. Kodak shall in no event be liable for any of the following:

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