

**Kodak**

2400DSV-E Digital Scanner-Printer

# Operator's Manual

A-61316

## Safety Warnings

This section contains detailed instructions on the operation and maintenance of the *Kodak 2400DSV-E Scanner/Printer*. All operators should carefully read and follow the instructions in this manual.

The following section contains important information related to operator safety and may help prevent equipment problems. Make sure you observe all of the precautions listed in this manual.



### Warning symbols

	<ul style="list-style-type: none"> <li>Do not modify this product, as a fire, electrical shock, or breakdown could result. If the product employs a laser, the laser beam source could cause blindness.</li> <li>Do not attempt to remove the covers and panels, which have been fixed to the product. Some products have a high-voltage part or a laser beam source inside that could cause an electrical shock or blindness. The operator is only allowed to slide out/in the projection unit of the scanner.</li> </ul>
	<ul style="list-style-type: none"> <li>Only use the power cord supplied in the package. If a power cord is not supplied, only use the power cord and plug that is specified in <i>Power Cord Instruction</i>. Failure to use this cord could result in fire or electrical shock.</li> <li>Use only the specified power source voltage. Failure to do so could result in fire or electrical shock. If you are in doubt, contact a qualified electrician.</li> <li>Do not use a multiple outlet adapter to connect any other appliances or machines. Use of a power outlet for more than the marked current value could result in fire or electrical shock.</li> </ul>
	<ul style="list-style-type: none"> <li>Do not connect and disconnect the plug of the power cord with a wet hand..</li> </ul>
	<ul style="list-style-type: none"> <li>Keep hands, hair and clothing away from rollers and other moving parts.</li> </ul>
	<ul style="list-style-type: none"> <li>Do not scratch, abrade, place a heavy object on, heat, twist, bend, pull on, or damage the power cord. Use of a damaged power cord (exposed core wire, broken wire, etc.) could result in a fire or breakdown. Should any of these conditions be found, immediately turn OFF the power switch, unplug the power cord from the power outlet, and then call your Kodak Service Representative.</li> <li>Do not use an extension cord. Use of an extension cord could cause a fire or electrical shock. Contact your Kodak Service Representative if an extension cord is required.</li> </ul>
	<ul style="list-style-type: none"> <li>Do not place a flower vase or other container that contains water, or metal clips or other small metallic objects on this product. Spilled water or metallic objects dropped inside the product could result in a fire, electrical shock, or breakdown.</li> <li>Should a piece of metal, water, or any other similar foreign matter get inside the product, immediately turn OFF the power switch, unplug the power cord from the power outlet, and call your Kodak Service Representative.</li> </ul>
	<ul style="list-style-type: none"> <li>If this product becomes inordinately hot or emits smoke, or unusual odor or noise, immediately turn OFF the power switch, unplug the power cord from the power outlet, and then call your Kodak Service Representative. A fire or electrical shock could result if you continue to use the product.</li> <li>If this product has been dropped or its cover damaged, immediately turn OFF the power switch, unplug the power cord from the power outlet, and call your Kodak Service Representative. A fire or electrical shock could result if you continue to use the product.</li> </ul>
	<ul style="list-style-type: none"> <li>Connect the power cord to an electrical outlet that is equipped with a grounding terminal.</li> </ul>



## Caution symbols

	<ul style="list-style-type: none"><li>• Do not use flammable sprays, liquids, or gases near this product, as fire could result.</li><li>• Do not let any object plug the ventilation holes of this product. Heat could accumulate inside the product, resulting in a fire or malfunction.</li><li>• Do not install this product at a site that is exposed to direct sunlight, or near an air conditioner or heating apparatus. The resultant temperature changes inside the product could cause a malfunction, fire, or electrical shock.</li><li>• Do not place the product in a dusty place, or a site exposed to soot or steam, near a kitchen table, bath, or a humidifier. A fire, electrical shock, or breakdown could result.</li><li>• Do not place this product on an unstable or tilted bench, or in a location subject to a lot of vibration and shock. It could drop or fall, causing personal injury or mechanical breakdown.</li><li>• After installing this product, mount it on a secure base. If the unit moves or falls, it may cause personal injury.</li><li>• Do not store toner units and PC drum units near a floppy disk or watch that are susceptible to magnetism. They could cause these products to malfunction.</li></ul>
	<ul style="list-style-type: none"><li>• Replacing the projection lamp. The projection lamp is hot. Do not touch it before it cools down.</li></ul>
	<ul style="list-style-type: none"><li>• The wall socket must be easily accessible so the plug of the power cord can be disconnected at any time.</li></ul>
	<ul style="list-style-type: none"><li>• Always use this product in a well-ventilated location. Operating the product in a poorly ventilated room for an extended period of time could injure your health. Ventilate the room at regular intervals.</li><li>• Whenever moving this product, be sure to disconnect the power cord and other cables. Failure to do this could damage the cord or cable, resulting in a fire, electrical shock, or breakdown.</li><li>• When moving this product, always hold it by the locations specified in the operator's manual. If the unit falls it may cause severe personal injury. The product may also be damaged or malfunction.</li><li>• When unplugging the power cord, be sure to hold onto the plug. Pulling on the power cord could damage the cord, resulting in a fire or electrical shock.</li></ul>

## Routine Precautions

	<ul style="list-style-type: none"><li>• Do not store toner units, PC drum units, and other supplies and consumables in a place subject to direct sunlight and high temperature and humidity, as poor image quality and malfunction could result.</li><li>• Do not attempt to replace the toner unit and PC drum unit in a place exposed to direct sunlight. If the PC drum is exposed to intense light, poor image quality could result.</li><li>• Do not unpack a toner unit or PC drum unit until the time of use. Do not leave an unpacked unit standing. Install it immediately or poor image quality could result.</li><li>• Do not keep toner units and PC drum units in an upright position or upside down, as poor image quality could result.</li><li>• Do not throw or drop a toner unit or PC drum unit as poor image quality could result.</li><li>• Do not use this product in an area where ammonia or other gases or chemicals are present. Failure to do so may shorten the service life of the product, cause damage or decrease performance.</li><li>• Do not use this product in an environment with a temperature outside the range specified in the operator's manual, as a breakdown or malfunction could result.</li><li>• Do not attempt to feed stapled paper, carbon paper or aluminum foil through this product, as a malfunction or fire could result.</li></ul>
	<ul style="list-style-type: none"><li>• Do not touch or scratch the surface of the toner unit developing roller and the PC drum, as poor image quality could result.</li></ul>
	<ul style="list-style-type: none"><li>• Use the supplies and consumables recommended by the dealer. Use of any supply or consumable not recommended could result in poor image quality and breakdown.</li></ul>

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# 1 Introduction

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This Operator's Manual provides information and procedures for using the *Kodak 2400DSV-E* Digital Scanner-Printer. Following is a summary of what is included:

**Chapter 1, Introduction** — provides general information about the *Kodak 2400DSV-E* Scanner-Printer including a product description, installation information, environmental specifications, an overview of external components, and how to turn the scanner and printer on and off.

**Chapter 2, Control Panel Functions** — provides a list of the icons found on the Operator Control Panel and what functions can be performed using the Operator Control Panel.

**Chapter 3, Using the Scanner** — provides procedures on how to use the scanner, including replacing the lens, selecting negative/positive printing, image density, number of prints to be made, how to adjust image processing features, etc. In addition, information about setting up and recalling job programs is included.

**Chapter 4, Printer Functions** — provides general information about the High-Speed Video Laser Printer including an overall description of external components, use and care of the printer and printer supplies.

**Chapter 5, Maintenance** — provides maintenance procedures for the scanner and procedures for replacing the projection lamp.

**Chapter 6, Troubleshooting/Messages** — provides information on analyzing and correcting operating/printing problems or errors. Also provides procedures for clearing paper misfeeds in the printer.

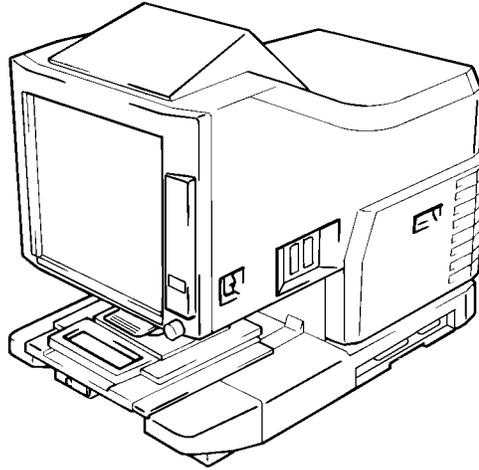
**Appendix A** — provides specifications for the *Kodak 2400DSV-E* Scanner.

**Appendix B** — user and system settings can be changed by you or your Kodak Service Representative. This appendix provides the factory settings and a description of those settings.

**Appendix C** — provides Key Operator information along with a chart that you can record system information, such as scanner/printer model, accessory names and serial numbers.

## Product description

The *Kodak 2400DSV-E* Digital Scanner-Printer scans images and outputs to a printer or through the PC interface. All controls are mounted on the front panel for ease of operation. You can scan directly to the optional laser printer or to a PC at up to 800 dpi.



## Installation

Placement of the scanner in the environment described below ensures optimal performance.

- A well ventilated place, which is free from ammonia or other organic gases.
- The wall socket must be easily accessible so that the plug of the power cord can be disconnected at any time.
- An area free from direct sunlight.
- A place which has easy access to a power outlet so the unit may be easily plugged in and unplugged.
- A place, which is out of the direct air stream of an air conditioner, heater or ventilator and is not subject to extremely high or low temperatures or humidity.
- A stable location with a flat surface that is not subject to vibration.
- A place that is free from any object that would block the heat exhaust duct of the printer.
- A place away from curtains or anything else that is easily flammable.
- An area that is safe from spilled water or other liquids.
- A dust-free location.

NOTE: If the scanner is to be located near a window, do not face the screen towards the window.

## Power source

The power source voltage requirements are as follows:

- Use a power source with minimal voltage fluctuation.
- Power Source: 230V/50Hz/3A  
Voltage fluctuation: within  $\pm 10\%$   
Frequently fluctuation: within  $\pm 3\%$
- Be careful not to exceed the capacity of the outlet, especially when sourcing other appliances from the same outlet.
- NEVER connect any other appliances or machines by means of a multiple socket to the outlet being used for the unit.
- Make sure that the power cord does not become caught in any mechanism of the system. Do not allow the power cord to become caught underneath the weight of the unit.

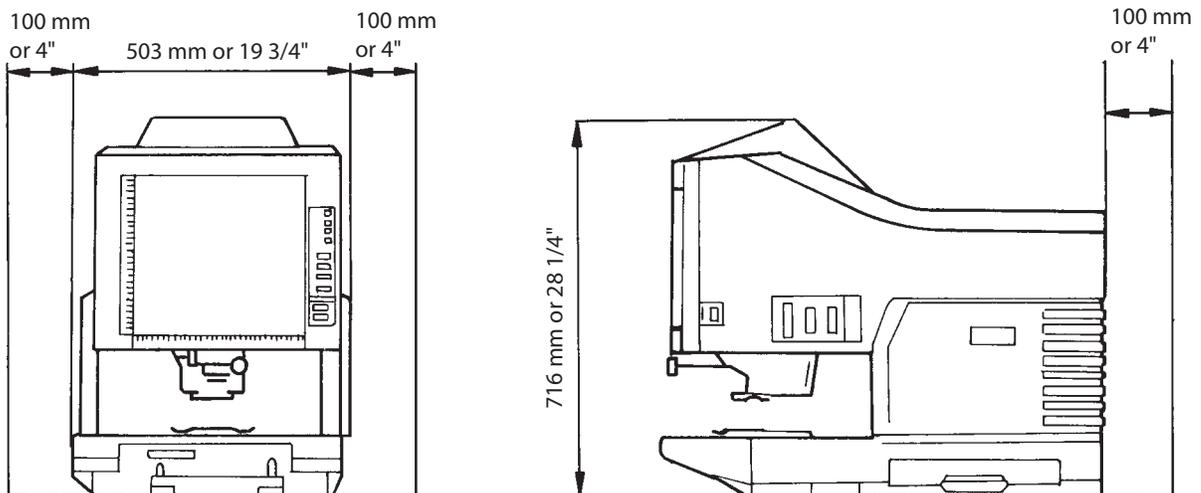
## Grounding

To prevent electrical shocks caused by electrical leakage, always connect the plug of the power cord to a grounded wall socket that complies with the local electrical standards.

## Space requirements

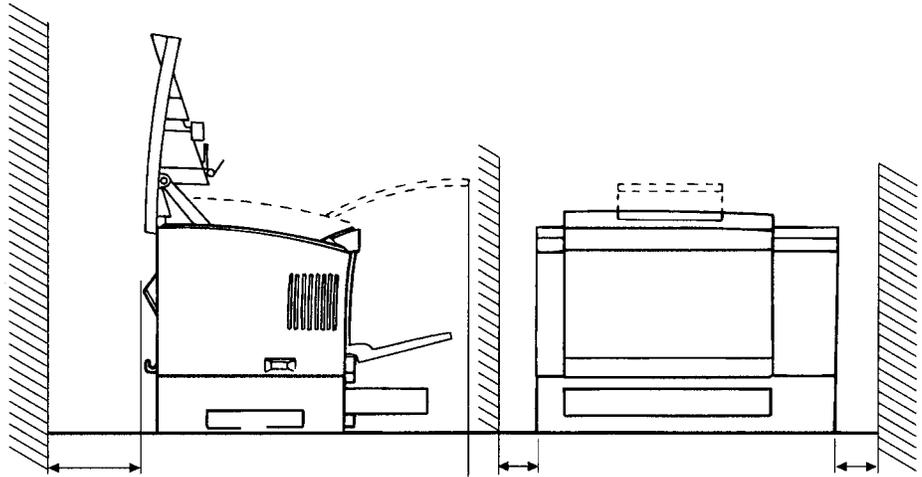
### 2400DSV-E Scanner

The illustration below provides the clearance dimensions between the wall and the rear of the unit as well as the right and left sides which provide ample space for the ventilation ports to dissipate heat.



## High-Speed Video Laser Printer

For ease of operation, maintenance and replenishment of supplies, the minimum clearance shown below is required. Install the unit in an area that allows easy access.

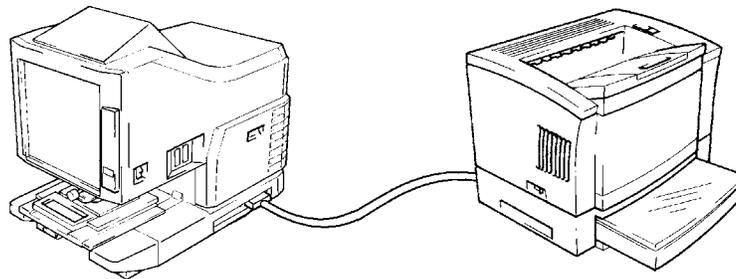


**Operating environment** The environmental requirements for operating the system are as follows:  
**Temperature:** 50°F to 95°F (10°C to 35°C) with a fluctuation of 18°F (10°C) per hour  
**Humidity:** 15 to 85% with a fluctuation of 20% per hour

**System configuration** This scanner is configured with a printer (video) and PC (SCSI) interface.  
**Printer Mode (2400DSV-E Scanner plus a Video Laser Printer)**

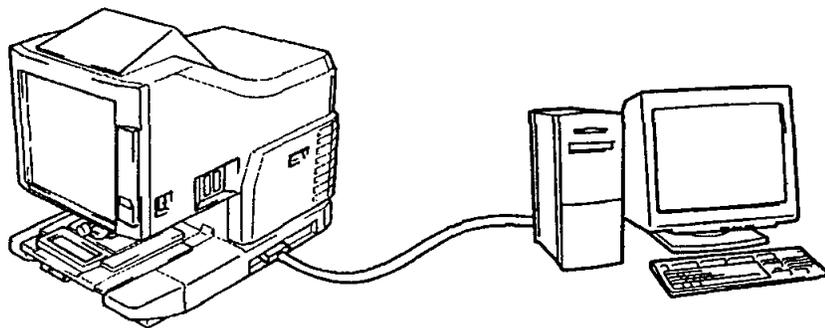
The scanner is connected to a dedicated printer, allowing scanned images to be printed out directly.

NOTE: Each 2400DSV-E Scanner is designed exclusively for use with its respective printer. Contact your Kodak Representative if you are in doubt on how to connect the laser printer.



**PC Interface mode (2400DSV-E Scanner plus a PC)**

The scanner is connected to a personal computer and the scanned images can be uploaded to the computer. The PC interface cable is for connection to a personal computer through PowerFilm Application software.

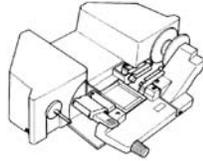


Connection to a personal computer and printer can be switched using the Control Panel. Refer to "Selecting the Connection mode" in Chapter 2.

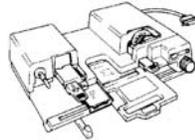
## Film Carriers



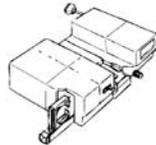
**Fiche Carrier-5** — for use with Jackets, Microfiche and Aperture cards.



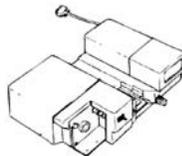
**RFC-9B** — a motorized carrier for semi-automatic loading of 16 and 35 mm open spool film.



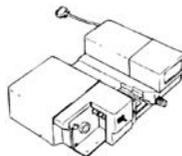
**UC-2** — a motorized carrier for semi-automatic loading of 16 and 35 mm open spool film, microfiche, Aperture Cards, Jackets.



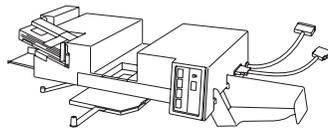
**RFC-15A** — for automatic loading of 16 mm ANSI Clip Cartridge Microfilm (Open Spool Adapter option).



**RFC-15M** — for automatic loading of 16 mm 3M Type Cartridge Microfilm.



**RFC-21** — for automatic loading of 16 mm ANSI or 3M Type Cartridges. This carrier is designed for very high-speed 16 mm film searching.



**ACF-7** — for automatic loading, viewing and ejection of aperture cards and works in medium- to high-volume applications. The ACF-7 is recommended for the *Kodak* 3000DSV-E Scanner-Printer but can be used with the 2400DSV-E Scanner-Printer providing the image area of the film is completely visible on the screen.

## Auto-retrieval Controllers



**Mini Mars-2 Controller** — for automatic reading of 16 mm Cartridge Microfilm using up to 2-level image marks.



**Mars IV Controller** — for automatic reading of 16 mm Cartridge Microfilm using up to 3-level image marks.

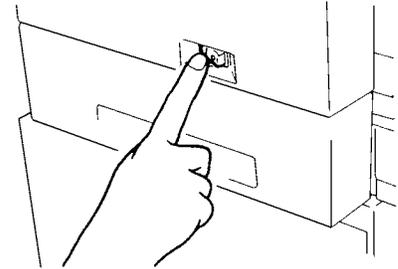
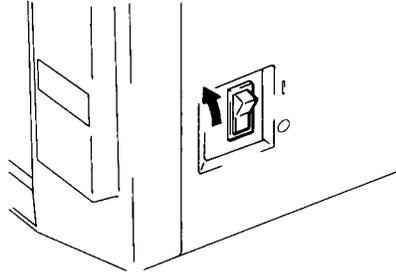
Both controllers may be used in conjunction with the RFC-15A, RFC-15M or RFC-21A/M Carriers.

## Turning the power on and off

Following are illustrations and procedures of turning the power on and off of the scanner, the video laser printer.

### To turn the power on:

- Press the Power switch of the scanner and printer to the On (I) position.

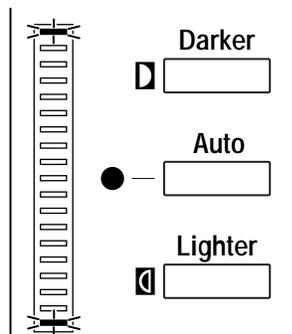


### 2400DSV-E Scanner

### Video Laser Printer

When the scanner is turned on, the Control Panel displays a blinking "1". When the scanner is ready, the "1" stops blinking.

NOTE: If you load the film in the film carrier and press the Start button while the printer is warming up, you can scan and memorize the film image of about 9 pages (Letter or A4 size/400dpi). The Printer allows that print process to be started as soon as the printer completes warming up.



Both ends of Exposure Display blink. If you want the Print Reserve/Memory Function disabled, contact your Kodak Service Representative.

### To turn the power off:

- Press the Power switch of the scanner and printer to the O (Off) position.

NOTE: The power to the scanner and printer can be turned On and Off at the same time by using a cord that is equipped with an on/off switch saving both time and energy. *Make sure that all cords used comply with the specified ratings of the unit.*

## **Auto Power Save/ Projection Lamp functions**

This system provides two functions that help to decrease power consumption:

- The Auto Power Save function that automatically shuts down power to the printer heater.
- The Auto Projection Lamp OFF function that automatically turns off the Projection Lamp of the scanner.

Both are activated when the system is left idle for a specified period of time.

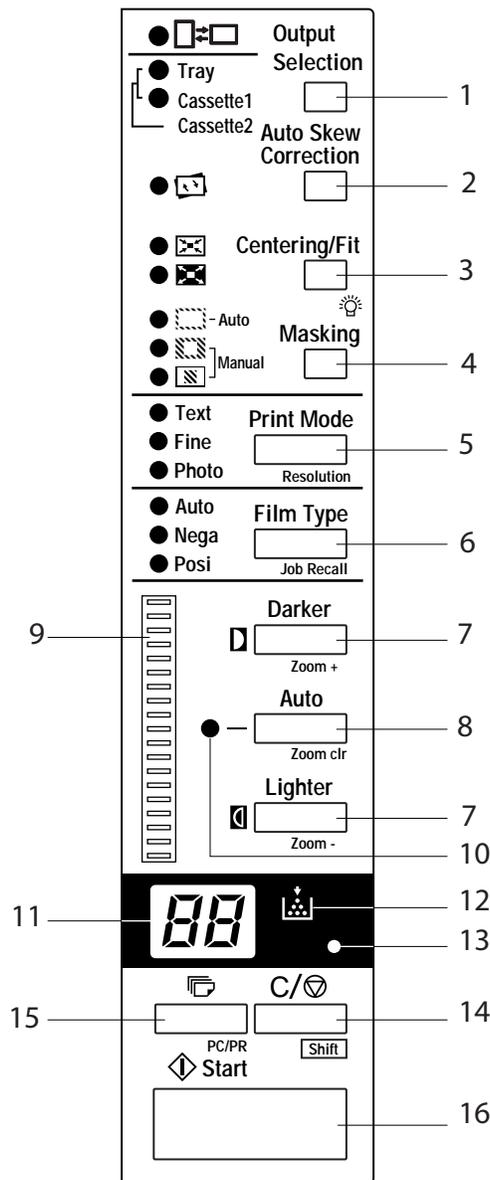
These functions may be disabled or enabled. When enabled, timing can be selected from either 30 or 60 minutes. The default for both of these functions is Disabled. Contact your Kodak Service Representative for more information.

When the system is in the Auto Power Save mode, each outside segment of the Multi-Print Display LEDs light up sequentially.

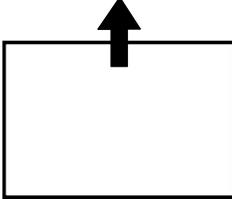
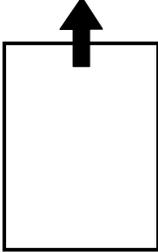
## 2 Control Panel Functions

Following are descriptions of the Control Panel functions. Some functions are available by using the Shift key and some of the functions provide access to optional accessories. This chapter provides an overview of each function. Chapter 3, *Using the Scanner*, provides procedures on how to use each function.

**Standard Control Panel functions** The functions described below are standard Control Panel functions.



- 1 **Output Selection key** - select the paper feeding source according to the format of the image displayed on the screen. The options are:

	<p><b>Rotation symbol:</b> when lit, the image will be rotated 90 degrees on the screen and during printing. The screen image will be oriented horizontally on paper that is positioned lengthwise and vertically on paper that is positioned crosswise.</p> <p style="text-align: center;"><b>Crosswise      Lengthwise</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p>If the symbol is blinking, the Auto Film Format Select Print function is available when Letter (or A4) size paper is placed in both lengthwise and crosswise positions in the paper feeding tray and cassette. Paper that best suits the format of the image as displayed on the screen will be used for printing. If you want to use this function, contact your Kodak Service Representative. For more information about the Auto Film Format Select Print function see Chapter 3.</p>
<b>Tray</b>	Prints the displayed image on paper fed from the Print tray.
<b>Cassette1</b>	Prints the displayed image on paper fed from Cassette 1.
<b>Cassette2</b>	Prints the displayed image on paper fed from Cassette 2 (when the Tray and Cassette1 indicators are both lit). This cassette is optional.

- 2  **Auto Skew Correction key** - turns auto skew on or off. When auto skew is on, the indicator is lit and any skew of the image will be corrected during printing.

After printing, the skew is retained by default. Contact your Kodak Service Representative to change the default.

- 3 Centering/Fit key** - when pressed, enables or disables the Centering and Fit functions. When Auto Masking, Trimming or Masking are set to Off, Auto Masking will automatically be enabled when Centering is selected.

	<p><b>Centering:</b> places a screen image that was searched using Auto Masking or an image that was trimmed in the center of the page.</p>
	<p><b>Fit:</b> enlarges a screen image that was searched using Auto Masking or an image that was trimmed to fit the page. The image is enlarged to fit the paper size. The image displayed on the screen does not change size. When Masking is selected or when the scanner is connected to the PC, this mode cannot be used.</p>

NOTE: When Auto Masking, Trimming or Masking are set to OFF, Auto Masking will automatically be enabled when Centering is selected.

- 4 Masking** — when pressed, cycles through Off to Auto Masking to Manual Trimming to Manual Masking to Off.

<p>Off</p>	<p>Indicates no masking or trimming will be done.</p>
	<p><b>Auto Masking:</b> omits the frame (non-image area) of a printed film image. Auto Masking is not applicable with the Masking or Trimming settings.</p> <ul style="list-style-type: none"> <li>▪ The previous Centering/Fit setting is applied whenever On is selected from the Off state.</li> <li>▪ If Off is selected from the On state, Centering/Fit is disabled.</li> </ul> <p>NOTE: Auto masking is not applicable with the Masking or Trimming settings.</p>
	<p><b>Trimming:</b> when enabled, the image is printed (scanned) with the non-image area (frame) automatically masked.</p>
	<p><b>Masking:</b> prints only the image outside the area that is defined on the screen.</p> <ul style="list-style-type: none"> <li>▪ If Trimming is selected from the Off state, the previously entered settings for Centering/Fit and Manual Masking are applied.</li> <li>▪ From Trimming, when Masking is selected, the Centering/Fit setting is disabled and the previous settings for the Masking area are applied.</li> <li>▪ The Manual Masking is cancelled when Off is selected from the Masking state.</li> </ul> <p>NOTE: Trimming or Masking are not available through Auto Masking and cannot be set when the scanner is connected to the PC.</p>

- 5 **Print Mode key** - allows you to fine-tune the image quality of the print according to the original. When pressed, cycles through Text, Fine and Photo.
  - **Text:** for use with text images.
  - **Fine:** for use with lower grades of film.
  - **Photo:** for use with photographic images.
- 6 **Film Type key** - when pressed, cycles through Auto, Negative or Positive.
  - **Auto:** automatically determines between the film type options or Negative or Positive for print production.
  - **Nega:** select Nega when using negative film. Dark and light values of the print will be reversed.
  - **Posi:** select Posi when using positive film. Dark and light values of the print will be consistent with the image on film.
- 7 **Exposure Adjustment keys** - adjusts the density of the image to be printed during the Auto or Manual Exposure mode.
  - **Darker:** supports darker image density.
  - **Lighter:** supports lighter image density.
- 8 **Exposure Mode key** - select either Auto or Manual exposure mode. When Auto is selected, the system produces the optimum quality of the image for printing. You can then use the Manual mode to enhance the quality if the desired results from the Auto exposure are not achieved.
- 9 **Exposure Display** - indicates the current density level of the printed image.
- 10 **Exposure Mode indicator** - Auto Exposure mode is indicated when the green Auto light is on. The green Auto light turns off when the scanner is in the Manual Exposure mode.
- 11 **Multi-Print display** - displays the number of prints to be made. Also displays corresponding codes in the event of a malfunction or paper misfeed. The blinking number in this display indicates the scanner is in operation.
- 12  **Add Toner indicator** - blinks when the Imaging Cartridge or Toner Cartridge of the printer is running out of toner and lights up when the cartridge has completely run out of toner. (*Laser Printer mode only*)

**13 Memory Input indicator** - allows you to store one of the following functions into the memory of the scanner.

- Negative or positive
- Print mode
- Output Format
- Print image density
- Exposure mode
- Centering or Fit
- Masking
- Auto Skew Correction
- Horizontal Area setting
- Vertical Area setting
- Electrical Zoom
- Resolution
- Image Distortion Correction

**14 Clear/Stop key** - use this key to clear the setting on the Multi-Print display, reset the Multi-Print display to "1" or stop a multi-print cycle. This key also provides a Shift function. See the next section for more information regarding using this function.

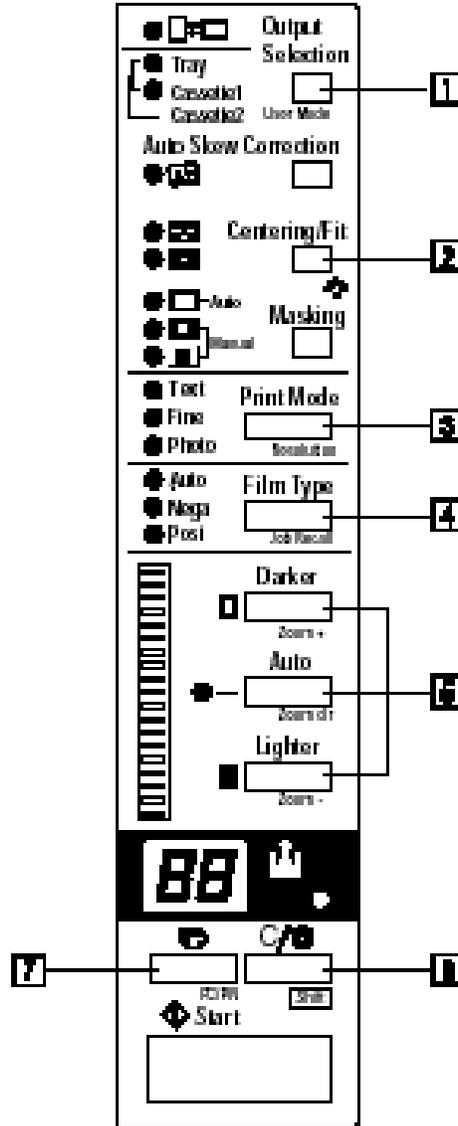
**15 Multi-Print key** - used to set the number of prints when printing continuous or multiple pages. The value of this setting increases by one (1, 2, 3...) every time the key is pressed (maximum 19). (*Laser Printer mode only*)

**Start key** - press to print (scan) the displayed image.

## Using the Shift function on the Control Panel

When you use the Shift function (Clear/Stop key) on the Control Panel, other options are available.

NOTE: All of these functions can be performed when the Shift key and one of the keys described below are pressed.



- 1 **User Mode** (Output Selection key) – pressing this key together with the Shift key puts the Scanner-Printer into the User mode. The User mode allows you to change the default values of various functions. Contact your Kodak representative for more information.

- 2 Lamp Illuminance** (Centering/Fit key) - adjusts the illumination of the screen. To adjust:
  - Hold down the Shift key while pressing the Centering/Fit key until the desired contrast is achieved. When this key is continuously pressed, the screen is gradually darkened until it is turned off. When the screen is turned off, you can press any key to illuminate the screen to the maximum level.
- 3 Resolution** -sets the resolution of the scanner.
  - When the scanner is connected to the printer. Available resolutions are: 400 dpi (4H) and 600 dpi (6H)
  - When the scanner is connected to the PC through PowerFilm Application software. Available resolutions are: 200, 300, 400, 600 and 800 dpi (2H, 3H, 4H, 6H and 8H respectively).
- 4 Job Recall** - when this key is pressed together with the Shift key, the program registration locations (1J, 2J and 3J) are called. Each time this key is pressed while the Shift key is held down, the display rotates through 1J, 2J and 3J.
- 5 Zoom** - sets zoom magnification.
  - **Zoom+:** when Zoom+ is pressed with the Shift key the magnification is increased by an increment of 0.01X (up to 2.00X).
  - **Zoom clr:** clears the current zoom setting when this key is held down together with the Shift key for one second.
  - **Zoom-:** when Zoom- is pressed with the Shift key the magnification is decreased by a decrement of 0.01X (down to 0.50X).
- 6 Shift** - the Shift key must be pressed when you want to access one of the functions described in this section: Lamp Illumination, Resolution, Job Recall, Zoom or PC/PR.
- 7 PC/PR** - when selected (with the Shift key) the connection to the PC or printer is selected. This key is not valid unless the PC interface cable is connected to the PC.

### 3 Using the Scanner

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This chapter provides procedures on how to use the *Kodak 2400DSV-E* Scanner.

Following is an outline of the basic printing procedure. Detailed procedures on these steps can be found later in this chapter.

1. Load the film. The procedure for loading film is determined by the type of Film Carrier (optional) that is being used. Review the Operator's Manual that came with your Film Carrier for more information.
2. Select and replace the lens.
3. Select the connection mode.
4. If desired, zoom, focus or rotate the image.
5. Select negative or positive printing.
6. Select the image density.
7. Enter the number of prints to be made.
8. Select the output format.
9. Adjust the image processing features.
10. Print and scan the displayed image. The printing or scanning of the image appearing on the screen is initiated after the Start key is pressed.

**Selecting a projection lens**

Projection lenses are available in the following types. Select the type of lens that corresponds to the film you are using.

- 1 Type 1: 7.5X
- 2 Type 1: 9 x 16
- 3 Type 2: 13 to 27X
- 4 Type 3: 23 to 50X

The list below shows the standard types of film and the recommended zoom ratios of lenses to be used with the scanner. The size and format of one frame of film may vary depending on the shooting conditions.

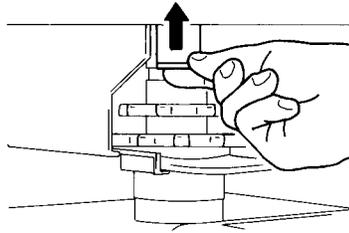
Film		Scanning Size 8.5 x 11-inch (A4)
35 mm	Half	2
	Full	1
16 mm	Half	3
	Full	2
Source Document	60	3
	98	3 or 4
	325	4
	420	4
COM	63	3
	70	3
	80	3 or 4
	84	3 or 4
	120	3 or 4
	208	4
	270	4

Zoom the lens in and out to find the optimum ratio that will fit the scanning size.

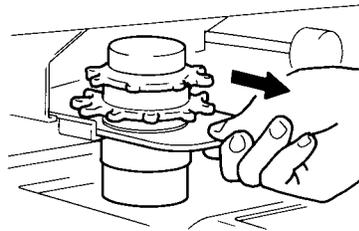
## Installing a projection lens

To install a lens with a magnification different from the pre-installed lens:

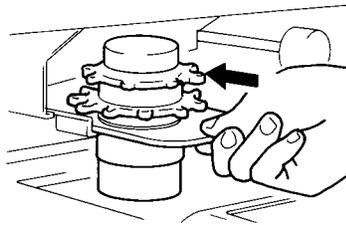
1. Grasp the Prism Holder lever and pull it up.



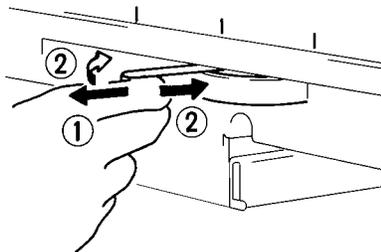
2. Pull out the lens unit.



3. Slide the lens unit into the machine along the lens guide.



4. Pull out the Brightness Select lever and slide it to a position appropriate for the type of the Projection Lens loaded in the machine. The lever should click into position. (Each lens is color-coded.)



**NOTE:** Brightness on the screen may be uneven if the Brightness Select lever is not placed in a position corresponding to the type of the Projection Lens being used. Be sure to place the lever into the correct position according to the type of Projection Lens.

## Selecting the Connection mode (PR/PC)

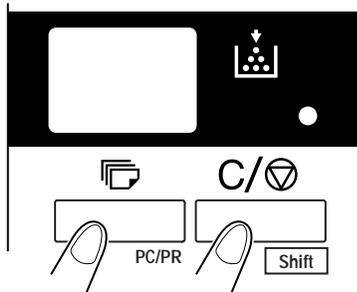
Images are scanned and output to the Video Laser Printer or through the PC interface. You can use the PR/PC key to switch between Printer mode and PC mode if you are connected to a PC.

**PC mode** — when the display is switched from Multi-Print to PC, connection to the PC is valid.

**PR mode** — when the display is switched from PC to Multi-Print, connection to the Printer is valid.

To change modes:

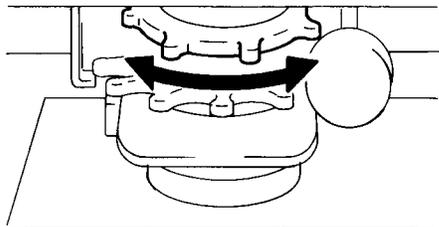
- Hold down the Shift key and the PC/PR key together for more than one second.



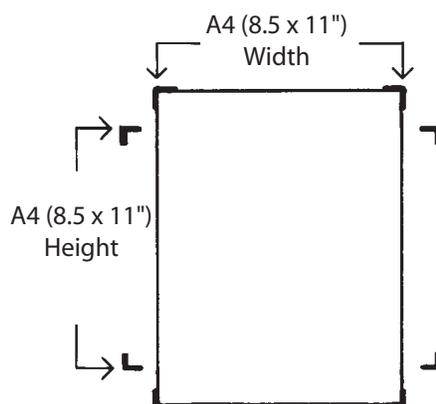
## Zooming and focusing images

Zooming in on the displayed image:

1. Rotate the Zooming Ring dial to bring the image on the screen into print size frame.



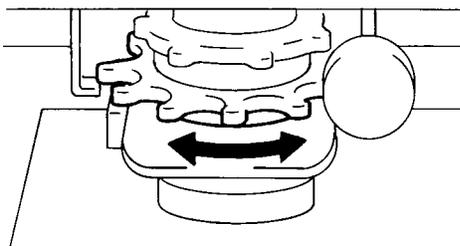
Marked on the screen are the size frame markers corresponding to the paper size 8.5x 11-inch (A4).



2. Zoom the film image so it fits inside the markers.

Focusing the displayed image:

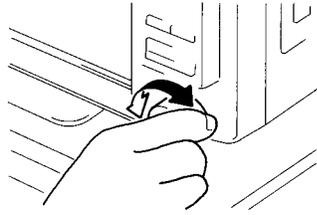
- Rotate the Focusing Ring dial to bring the image on the screen into focus.



## Rotating images

To rotate the image on the screen:

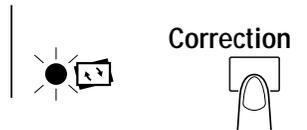
- Turn the Image Rotation knob until the image is displayed at the desired rotation. The greater the turning angle of the Image Rotation knob, the faster the turning speed.



NOTE: If you hold down the Shift key and turn the Image Rotation knob, the image quickly rotates by 90 degrees.

## Auto skew correction

If Auto Skew Correction is turned on, the system automatically corrects any skew of the image when printed. When auto skew is on, the indicator is lit.



NOTE: This function supports angle rotations of up to 30 degrees.

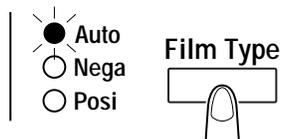
## Selecting the film type

You can choose Auto, Negative or Positive film type.

	<p><b>Auto:</b> automatically determines the polarity of the film being used.</p> <p>NOTES:</p> <ul style="list-style-type: none"> <li>• The system cannot determine the polarity of certain types of film. If this happens, select the film type manually.</li> <li>• The system does not detect exterior conditions such as when the glass surface of the carrier is dirty or scratched.</li> </ul>
	<p><b>Nega:</b> select Nega when using negative film. Dark and light values of the print will be reversed.</p>
	<p><b>Posi:</b> select Posi when using positive film. Dark and light values of the print will be consistent with the image on film.</p>

To select a film type:

- Press the Film Type key. Each time you press the key it will rotate between the Auto, Nega and Posi selections.

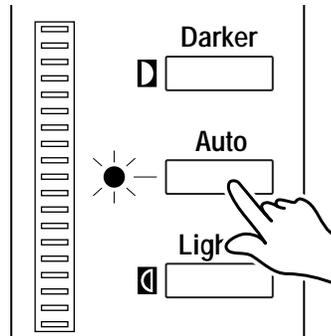


## Selecting the image density

The Exposure Adjustment keys (Darker and Lighter keys) on the Control Panel are used to adjust the density of the image to be printed during the Auto or Manual Exposure mode.

- Darker: makes the image density darker.
- Lighter: makes the image density lighter.

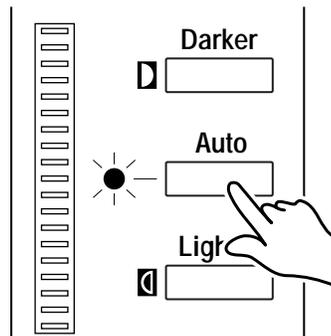
The Auto key on the Control Panel is used to select between **Auto** or **Manual** Exposure mode. When the scanner is in Auto mode, the green Auto light is on. The green Auto light turns off when the scanner is in the Manual Exposure mode.



The bar on the right side of the Darker, Auto, and Lighter keys is the Exposure Display. This display indicates the current density level of the printed image.

## Using Auto exposure

1. Press the Auto key to select the Auto Exposure mode. The Auto Exposure indicator will illuminate (green) when Auto Exposure is selected.

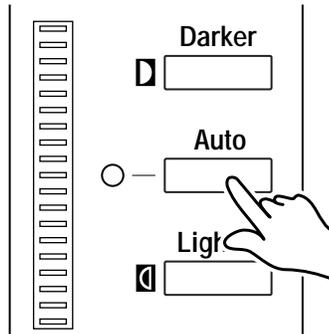


2. Press the **Darker** or **Lighter** key to set the desired image density or exposure level.

NOTE: When the Darker and Lighter keys are pressed at the same time, the exposure level returns to the center.

## Using Manual exposure

1. Press the Auto key to select the Manual Exposure mode. The Auto Exposure indicator will not be illuminated when Manual Exposure is selected.



2. Press the **Darker** or **Lighter** key to set the desired image density or exposure level.

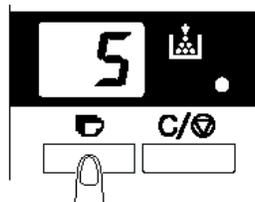
NOTE: When the Darker and Lighter keys are pressed at the same time, the exposure level returns to the center.

## Setting print quantities

The Multi-Print key on the Control Panel allows you to set the number of prints you want to make. This function is only available when using the Printer mode. 19 is the maximum number of prints that can be entered.

To set the number of prints:

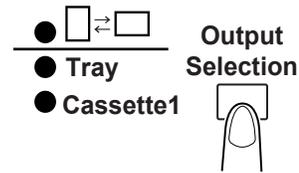
- Press the **Multi-Print** key until the number of prints you want to make appears in the display.



NOTE: To reset the number displayed, press the **Clear/Stop** key. The display will be reset to 1.

## Selecting the output format

The Output Selection key is used to select the paper source and print format.



- **Tray** —prints the displayed image on paper fed from the Print tray.
- **Cassette1** —prints the displayed image on paper fed from cassette 1.
- **Cassette2 (optional cassette)** —prints the displayed image on paper fed from cassette 2 (when the Tray and Cassette1 indicators are both lit).

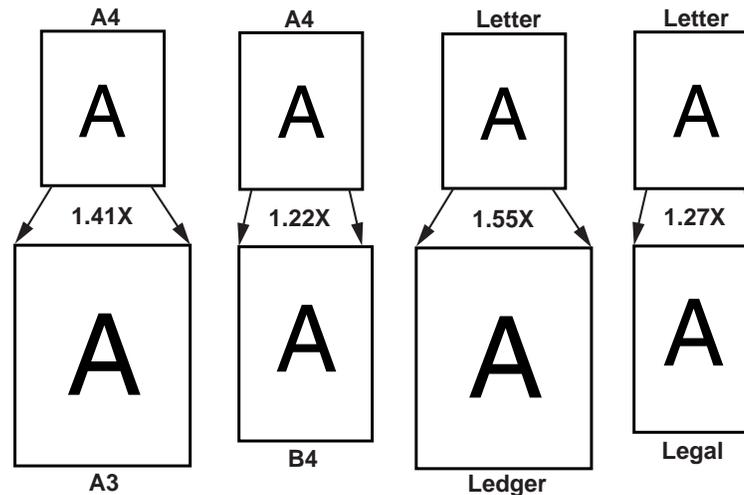
To select the paper tray:

- Press the **Output Selection** key until the paper tray you want to print from is selected.

The standard magnification is fixed according to the selected size of the paper from the paper tray.

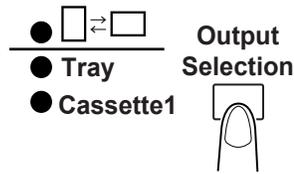
Paper Size	A3	B4	A4	B5	Ledger	Legal	Letter	11 x 17"
Standard Magnification	1.41X	1.22X	1.00X	1.00X	1.55X	1.27X	1.00X	1.41X

NOTE: For A3, B4, Ledger and Legal, zoom is made by the standard magnification and printed within the on-screen range 8.5 x 11-inch (A4).

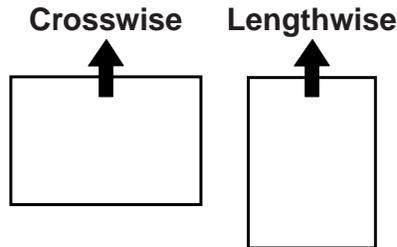


## Selecting the print format

The Print format can be selected by using the Output Selection key.



Display	Paper Feeding	Description
○	Lengthwise	Prints the on-screen lengthwise area.
	Crosswise	Prints the on-screen crosswise area.
●	Lengthwise	Prints the on-screen crosswise area.
	Crosswise	Prints the on-screen lengthwise area.
☀	Lengthwise	Prints the on-screen image by automatically judging whether it is lengthwise or crosswise.
	Crosswise	



## Print mode

The Print mode key provides the function of fine-tuning the image quality of the print according to the original. Available options:

**Text** — for use with text images.

**Fine** — for use with lower grades of film.

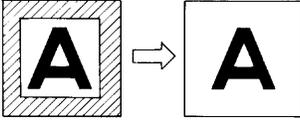
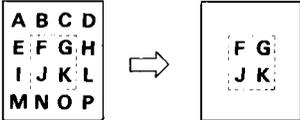
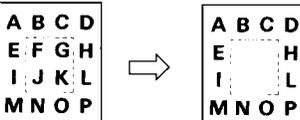
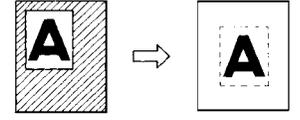
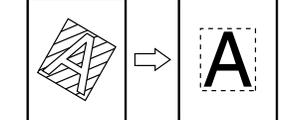
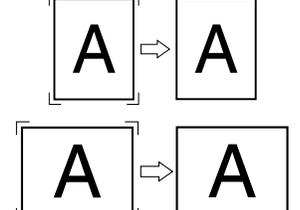
**Photo** — for use with photographic images.

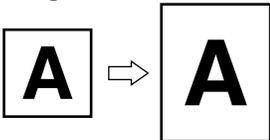
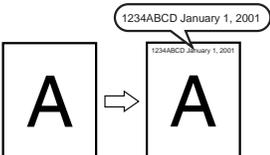
To set the Print mode:

- Press the Print mode button to select **Text**, **Fine** or **Photo** depending upon the desired result.

## Image processing features

This section provides a description of the image processing features and procedures for how to adjust and use them. Image processing features include:

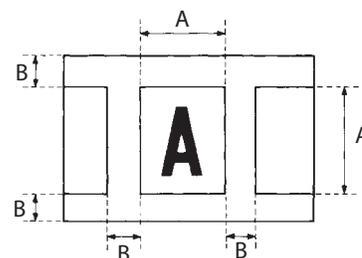
Screen image → Print Image	Description
<p><b>Auto Masking (1 Frame)</b></p> 	<p>The black borders that run along the edges of the image are masked.</p>
<p><b>Trimming (1 Frame)</b></p> 	<p>Everything but the center of the image is masked. NOTE: The Manual Frame Masking Kit (option) is required.</p>
<p><b>Masking (1 Frame)</b></p> 	<p>The center of the displayed image, through the Manual Frame Masking panel, is masked. NOTE: The Manual Frame Masking Kit (option) is required.</p>
<p><b>Auto Centering</b></p> 	<p>An image is generated that is centered on the printed page from the displayed image with a masked frame.</p>
<p><b>Fit</b></p> 	<p>Fits the displayed image onto the entire surface of the print.</p>
<p><b>Auto Skew Correction</b></p> 	<p>Automatically corrects any skew when the image is printed.</p>
<p><b>Auto Film Format Select Print</b></p> 	<p>Automatically determines the format (lengthwise or crosswise) of the displayed image and prints it as necessary.</p>

Screen image → Print Image	Description
<p><b>Image Zoom</b></p> 	<p>Magnifies the displayed image according to the size of the paper being used. The range of magnification is 1.55X for ledger; 1.27X for legal, 1.41X for A3/11 x 17" and 1.22X for B4 sized paper.</p> <p>NOTE: This function is only available when the High-Speed Video Laser Printer is connected.</p>
<p><b>Imprint</b></p> 	<p>Time, date and messages can be included on a print.</p>
<p><b>Image Distortion</b></p> <p>Before Correction      After Correction</p> 	<p>The system automatically corrects slight image distortion that can occur during scanning.</p>

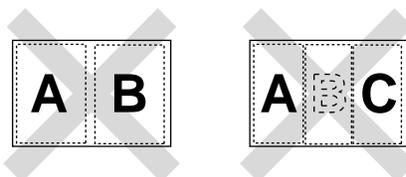
### Using auto masking

The Auto Masking function prevents the frame (non-image area) of a film image from appearing on the print. In order to use auto masking the following must exist:

- A The image area must provide at least 1.8 inches (45 mm) horizontally and vertically.
- B The width of the frame to be masked must be at least 0.4 inches (10 mm).

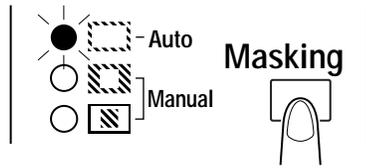


NOTE: Auto Masking is a frame-erasing feature. It cannot remove an image from in between two separate frames.



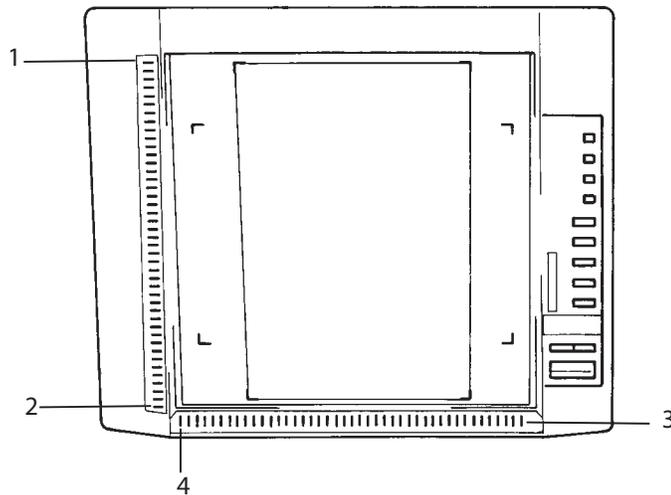
## Selecting auto masking

- Press the **Auto Masking** key to turn this function on.



## Using manual masking (option)

Masking can be performed manually if you have purchased the Manual Frame Masking Kit. Manual Masking allows you to specify any area for printing of the displayed image using the Trimming and Masking features. To use manual masking you should become familiar with the manual masking panels.



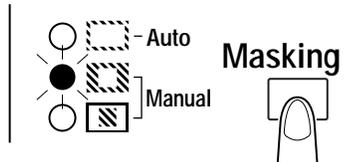
- 1 Vertical Area Indication Panel** — used to specify the vertical print scan area of the displayed image. There are 42 lights placed at 7 mm intervals. The lights create a pattern when lit specifying the area on the screen that will be printed.
- 2 Vertical Area Clear Key** — press this key to clear a previously specified vertical print/scan area.
- 3 Horizontal Area Indication Panel** — used to specify the horizontal print/scan area of the image on the screen. There are 42 lights placed at 7 mm intervals. The lights create a pattern when lit specifying the area on the screen that will be printed.
- 4 Horizontal Area Clear Key** — press this key to clear a previously specified horizontal print/scan area.

## Defining the print area for trimming or masking

The trimming and manual masking procedures are the same. Use the following procedures for either feature.

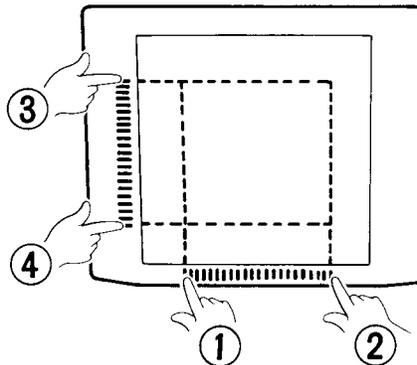
	<p><b>Trimming</b> — automatically masks the non-image area when the image is printed/scanned.</p>
	<p><b>Masking</b> — prints/scans only the image outside the area that is defined on the screen.</p>

1. Press the Masking key to select Trimming or Manual Masking.



Once you are in the Manual Masking mode, the lights on the Vertical and Horizontal Area Indication Panel will light according to the currently selected paper size and print position. You can print the area specified by the green lights, or change it.

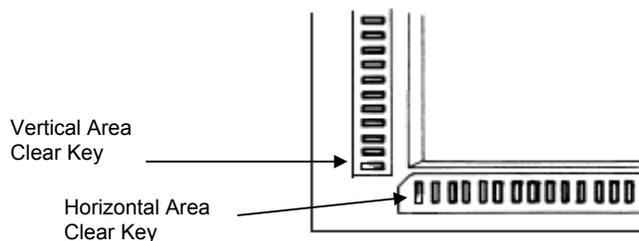
2. Define the end points for both the vertical and horizontal areas of the displayed image using the green lights. You can define the vertical and horizontal areas in any order.



**NOTE:** Blinking lights on the indication panels indicate an improper entry of the specified area. If the lights are blinking, specify the area again.

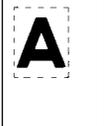
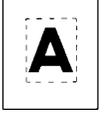
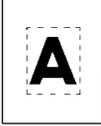
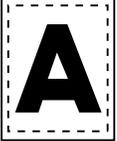
To clear a defined print area:

- Press the Vertical or Horizontal Area Clear keys.



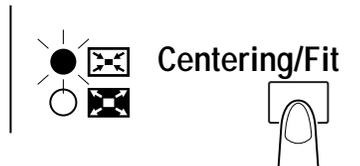
## Using Centering and Fit

Once the image has been trimmed or masked, the Centering function moves the image to the center of the print. The Fit function, however, fits the image on the screen onto the entire surface of the print.

	Screen Image	Print Image	
Centering		Centering Off	
		Centering On	
Fit		Fit Off	
		Fit On	

### Centering an image

1. Press the **Centering/Fit** key to turn Centering On.



2. Press **Start**.

NOTE: Centering/Fit mode cannot be used if Masking is selected.

### Using the Fit function

1. Press the **Centering/Fit** key to turn Fit On.



2. Press **Start**.

NOTE: Fit mode cannot be used when the reader-printer is connected to the PC.

## Cycle Print mode

This mode automatically scans the next image following a preset period of time. Images are manually loaded onto the carrier glass in between cycles.

The Cycle Print setting must be enabled. If you want to use Cycle Print mode, connect your Kodak Service Representative.

NOTE: This function is only available when using the Printer mode.

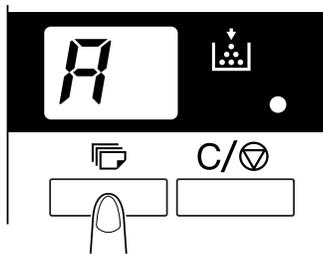
## Setting the interval between scanning operations

The chart below provides the time intervals that can be set between scanning operations. The time interval is based upon how much time it takes you to move, for example, a roll of film from frame-to-frame. Refer to this table when making a value selection.

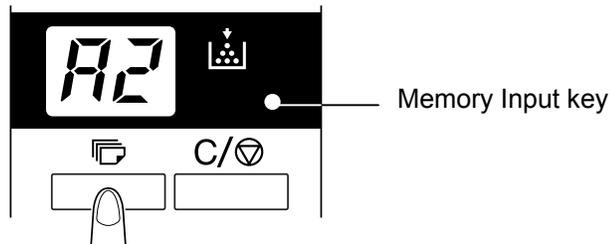
Value	1	2	3	4	5	6	7	8	9	0
Period (sec.)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

To set the time interval:

1. Press the Multi-Print key to change the value to "A". This enables the Cycle Print mode.



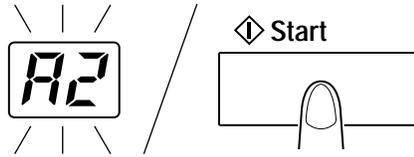
2. Press the Multi-Print key to set the interval of time between scan operations. Refer to the table above for the time interval value.
3. After entering the desired value, press the Memory Input key to store the selected interval setting.



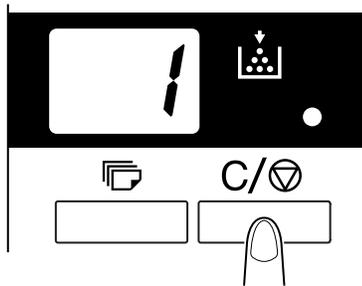
## Using Cycle Print mode

The Cycle Print mode will operate until it is cancelled. After the first scanning operation has finished, the system automatically scans the next image following a preset period of time.

1. After entering the Cycle Print mode, press **Start**.



2. To pause an operation during the Cycle Print mode press **Clear**. The *No. of Copies* value will change from a blinking display to a constant display.
3. While the pause function is enabled, you can exit the Cycle Print mode by pressing **Clear** a second time (the value displayed in the *No. of Copies* display changes to 1).



### NOTES:

- The Cycle Print mode continues to operate until it is cancelled. After the first scanning operation has finished, the system automatically scans the next image following a preset period of time.
- The *No. of Copies* value flashes during the scanning and waiting operations.
- The next scanning job can be started manually by pressing **Start** before the system automatically initiates the same job.

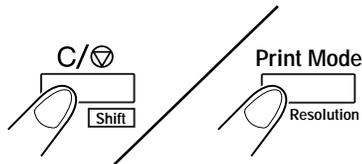
## Selecting the resolution

The table below shows the resolution values that can be obtained in the PR and PC mode.

Connection mode	Resolution	Display
PR mode	400 dpi	4H
	600 dpi	6H
PC mode	200 dpi	2H
	300 dpi	3H
	400 dpi	4H
	600 dpi	6H
	800 dpi	8H

To set the resolution for scanning or printing:

1. Press the Shift key and Resolution keys together. The current resolution is displayed.



2. Press the **Resolution** key while holding down the **Shift** key to set the resolution to a different value.

## Setting and recalling Job Programs

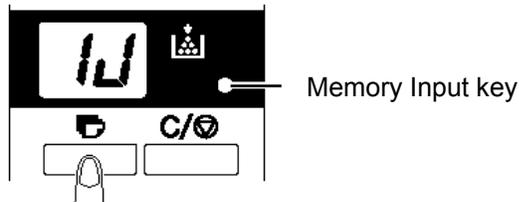
The current setting can be set up to 3 program registration locations (1J, 2J and 3J) for both the Printer connection and the PC connection. Once the Job Programs have been set you can recall them as needed.

The Memory Input key allows you to store one of the following functions into memory:

- Negative or positive
- Print mode
- Output format
- Print image density
- Exposure mode
- Centering or Fit
- Masking
- Auto Skew Correction
- Horizontal Area setting
- Vertical Area setting
- Electrical Zoom
- Resolution
- Image Distortion

To set a job program:

1. Press the desired function on the Control Panel (i.e. Resolution, Print Mode, etc.)
2. Using the head of a pen or pencil, press the **Memory Input** key. 1J will blink.



NOTE: To change the program registration location, press the Multi-Print key. The display rotates in the order of 1J to 2J to 3J to 1J.

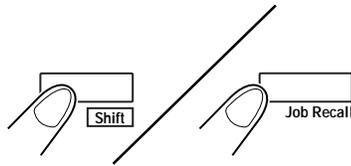
3. Select the program registration location (1J, 2J or 3J) and press the **Memory Input** key again. When the program registration is complete, all LEDs on the Control Panel will light up and the normal display is resumed.

## Recalling Job Programs

To recall a registered Job Program:

1. Press the **Shift** and **Job Recall** keys at the same time.

NOTE: Each time the Job Recall key is pressed while holding down the Shift key, the display rotates through 1J, 2J, 3J.



2. When the desired setting is displayed, release the keys.

## Using Electrical Zoom

In addition to using the lens to zoom, the electrical zoom function has been provided for magnifying the image when it is printed.

**Zoom +:** When the Zoom+ key is pressed with the Shift key, the magnification is increased by an increment of 0.01X (up to 2.00X).

**Zoom -:** When the Zoom- key is pressed with the Shift key, the magnification is decreased by a decrement of 0.01X (down to 0.50X).

NOTE: The Zoom magnification is displayed in the Multi-Print display to two decimal places. For example, when the magnification is 0.50X, it is displayed as 50. When the magnification is 1.50X, it is displayed as 50 also.

The Zoom magnification level is also displayed in the Exposure Display.

## Clearing the Zoom magnification

You can clear the current zoom setting by holding the Zoom Clr key and the Shift key down together for more than one second.

The standard magnification is fixed according to the selected paper size.

Paper Size	A3	B4	A4	B5	Ledger	Legal	Letter	11 x 17"
Standard magnification	1.41x	1.22x	1.00x	1.00x	1.55x	1.27x	1.00x	1.41x

NOTE: When the Zoom magnification is changed, it is displayed in the Multi-Print display as follows:

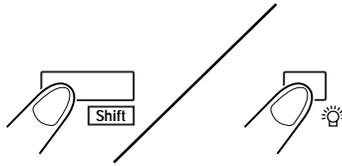


When standard magnification is resumed, this display goes off. When the Zoom function is used, the Multi-Print can only be set to 9.

## Adjusting screen illumination

To set screen illumination:

- Press the Shift and Illumination keys together to adjust the illumination. As the keys are continuously pressed, the screen gradually darkens until it is turned off. When any key is pressed, the illumination returns to the maximum level.



## Changing settings with the User mode

User mode allows the default values of various functions to be set or changed as necessary. Most of these functions are set-up and changed by your Kodak representative, however some User modes can be changed by you.

Setting these default values according to your needs saves time and allows you to work more efficiency. The following modes can be set:

Display	Function	Description
U2	Image Distortion	Corrects any slight image distortion that can occur during scanning.
U6	Year, Month, Date Set Mode	Used to set the print pattern for the Date Print function.
U7	Imprint Mode	Used to correct the time of day for the Date Print function when it is incorrect.

## Entering and exiting the User mode

1. Hold down the Shift key and Output Selection key at the same time. The Multi-Print Display displays a "U".



2. Press the Exposure Adjustment key (Darker or Lighter) to select the specific function: U2, U6 or U7.
  - Pressing the Darker key scrolls through the functions in the following order: U, U1, U2, U3, etc.
  - Pressing the Lighter key scrolls through the functions in the following order: U8, U7, U6, U5, etc.
3. Press the Exposure Mode key to display d(\*). The asterisk indicates the current setting value.



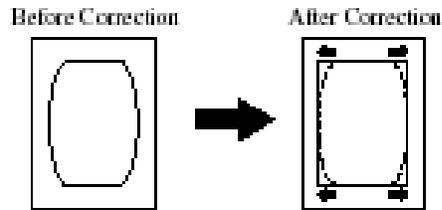
4. Press the Exposure Adjustment key (Darker or Lighter) to select the specific setting value.
  - Pressing the Darker key scrolls through the setting values in the following order: d0, d1, d2, etc.
  - Pressing the Lighter key scrolls through the setting values in the following order: d5, d4, d3, etc.
5. Press the Start key to validate the setting value.

### NOTES:

- If the Exposure Mode key is pressed, the setting value is not validated and the User mode initial screen (U) appears.
  - If a new function is to be set, start the procedure over beginning with Step 2.
6. Press the Clear key to exit User mode.

## Correcting Image Distortion

User mode allows the default values of various functions to be set or changed as necessary. Most of these functions are set-up and changed by your Kodak representative, however some User modes can be changed by you.



1. Press and hold the Shift key and the Output Selection key to enter User mode.
2. Select U2.
3. Press the Exposure Mode key to display d\*. The table below shows the amount of correction based on the setting value:

Code	Setting Value
d0	0 mm
d1	0.5 mm
d2	1.0 mm
d3	1.5 mm
d4	2.0 mm
d5	2.5 mm
d6	3.0 mm
d7	3.5 mm
d8	4.0 mm

4. Press the Exposure Adjustment key (Darker or Lighter) to select the desired setting value.
5. Press the Start key to validate the setting.

NOTE: This setting returns to the default value (d3) when the Power switch is turned off. You can register the setting value using the Job Program function.

## Year, Month and Date Set mode

The print pattern for the Date Print function can be set with this function.

1. Press and hold the Shift key and the Output Selection key to enter User mode.
2. Select U6.
3. Press the Exposure Mode key to display d\*. The table below shows the amount of time based on the setting value.

Code	Setting Value
d0	Year, month, day (2004.05.15)
d1	Month day year (05 15 2004)
d2	Day month year (15 05 2004)

Year: 4 digits of dominical year

Month: 2 digits

Day: 2 digits

Hour: 2 digits (24-hour system)

Minutes: 2 digits

4. Press the Start key to validate the setting.

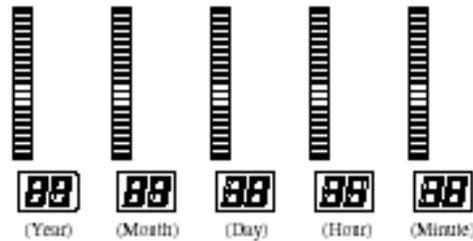
## Set Imprint mode

If the time of day becomes incorrect for the Date function, you can reset it by following the procedure below.

1. Press and hold the Shift key and the Output Selection key to enter User mode.
2. Select U7.
3. Press the Exposure Mode key. When the Exposure Mode key is pressed, both the Exposure Display and Multi-Print Display light up steadily.

NOTE: In the initial condition, the year default setting is displayed.

- Each time the Darker key is pressed, the Exposure Display scrolls upward to select the current setting mode in the following order: Month, Day, Hours, Minutes.
- Each time the Lighter key is pressed, the Exposure Display scrolls downward to select a default mode.



4. In each setting mode, press the Multi-Print key to enter the setting value. Each press of the Multi-Print key increases the setting value. When the value exceeds the maximum setting of the selected mode, it returns to "00" or "01" (month, day).
5. Press the Start key to validate the time-of-day setting, when all of the modes are completed.

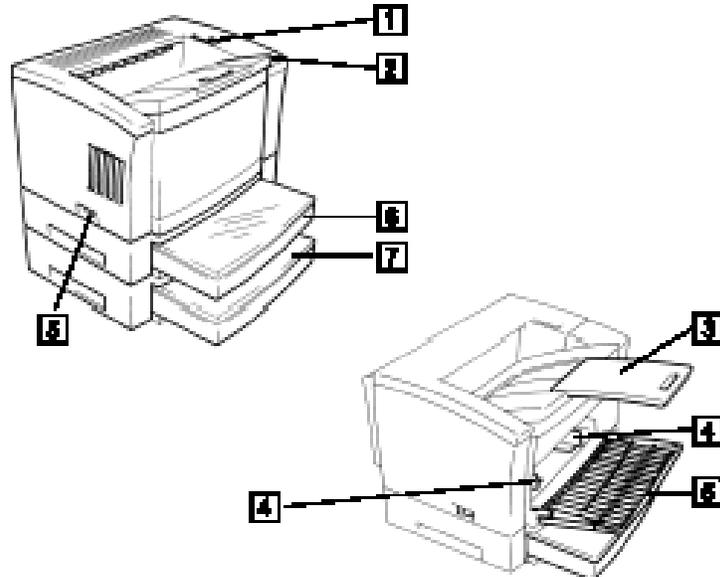
## 4 Printer Functions

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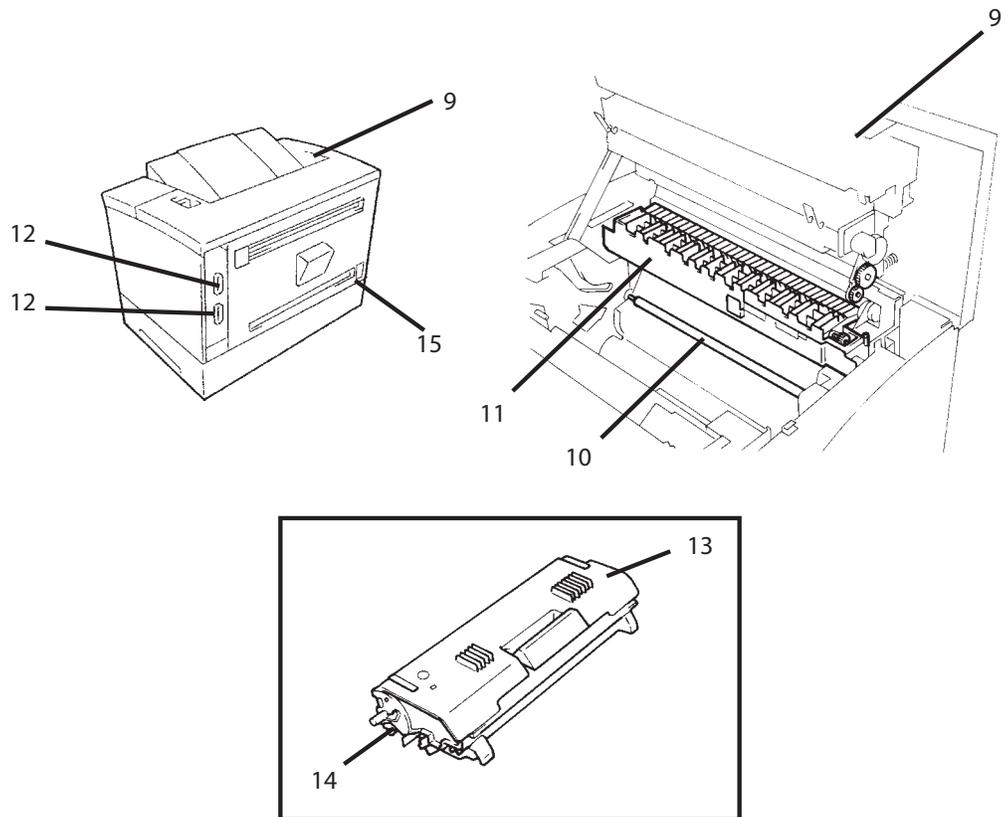
This chapter provides general information about the High-Speed Video Laser Printer including an overall description of external components, use and care of the printer and printer supplies.

### Parts of the printer

Following is a list of the standard components of the Laser Printer.



- 1 Upper Unit Lock Release Lever** —used to open the Upper Unit.
- 2 Power indicator** — light indicates when the printer is turned on.
- 3 Print Tray** — prints are output from the printer face-down onto this tray which can hold up to 500 sheets of standard paper.
- 4 Paper Guides** — slide the guides to secure the paper stack.
- 5 Paper Feeding Tray: (Tray)** — capable of holding up to 150 sheets of 8.5 x 11-inch (A3) or 11 x 17" (A4) paper.
- 6 Cassette 1** — capable of holding up to 250 sheets of standard-sized paper (8.5 x 11-inch, 11 x 17-inch, 8.5 x 14-inch / A4, A3, B4)
- 7 Cassette 2** — optional print cassette which is capable of holding up to 250 sheets of standard-sized paper (8.5 x 11-inch, 11 x 17-inch, 8.5 x 14-inch / A4, A3, B4)
- 8 Power Switch** — used to turn power to the printer On and Off.



- 9 Upper Unit** — open to replace the imaging cartridge and to clear misfed sheets of paper.
- 10 Image Transfer Roller** — transfers the image onto a sheet of paper. Avoid touching it with your bare hands.
- 11 Fusing Unit** — permanently fixes the image onto the sheet of paper.
- 12 Interface Connectors** — facilitates connections for the scanner. The printer has two connectors to facilitate connection with two separate scanner units.
- 13 imaging cartridge** — where the image is generated for transfer onto a sheet of paper. Avoid touching it with your bare hands.
- 14 Seal** — remove the seal before installing the new cartridge.
- 15 Power Cord Socket** — the power cord is plugged into this socket.

NOTE: It is recommended that you order a spare toner/PC cartridge with a new printer. The standard cartridge will yield approximately 2,500 (letter/A4) prints at about 5% dark content.

The toner/PC cartridge supplied with a new printer is only a “sample” cartridge and is designed to get you “up and running”. It provides approximately 500 (letter/A4) prints at about 5% dark content.

## Using the printer

To ensure the best performance of the printer, follow the precautions below:

- NEVER open any cover, or turn OFF the printer during printing.
- NEVER bring any magnetized object or flammable gas or liquid close to the printer.
- ALWAYS insert the power plug all the way into the outlet.
- ALWAYS provide good ventilation when making a large number of continuous prints.

NOTE: **Locate the printer in a well ventilated room.** A minimal amount of ozone is generated during normal operation of the printer. An unpleasant odor may, however, be created in poorly ventilated rooms during extensive printer operations.

## Care of the printer supplies

When handling the printer supplies (imaging cartridge, paper, etc.), avoid storing the supplies in any of the following places:

- Any place subject to direct sunlight. The imaging cartridge should not be exposed to fluorescent light.
- A hot, humid or dusty place or near an open flame.

In addition:

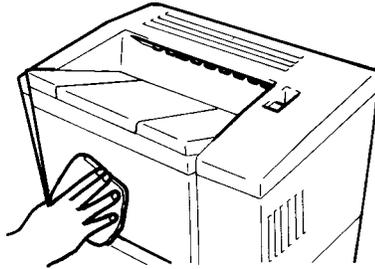
- Store paper, which has been removed from its wrapper but not loaded onto the print tray, in a sealed plastic bag in a cool, dark place.
- Only use imaging cartridges that are exclusively designed for use with this printer.
- Keep supplies out of the reach of children.
- If your hands become soiled with toner, wash them with soap and water immediately.

NOTE: Immediately wrap the imaging cartridge in a heavy cloth to protect it from the light whenever it is removed from the printer.

## Cleaning the printer

Before cleaning, turn the power off and unplug the cord from the power outlet.

- Clean the printer at regular intervals. The printer should be cleaned with a soft cloth. Never use abrasives or corrosive detergents.
- Clean the exterior panels with a soft, dry cloth. A damp cloth and a mild home detergent can be used for heavier cleaning.



## Replenishing the paper supply

Use only the following types of paper:

**Type:** Plain and recycled paper weight (60 to 90 g/m<sup>2</sup> or 16 to 24-lb.)

**Size:** Standard sizes: 11 x 17-inch, 8.5 x 11-inch or 8.5 x 14-inch (A3, B4, A4)

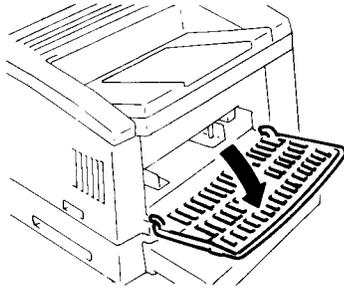
**Capacity:** Paper Feeding Tray:  
8.5 x 11-inch or A4 plain and recycled paper  
Up to 150 sheets

Paper Cassette:  
11 x 17-inch, 8.5 x 11-inch or 8.5 x 14-inch (A3, B4, A4) plain  
and recycled paper  
Up to 250 sheets

## Loading paper into the paper feeding tray

To load paper into the paper feeding tray:

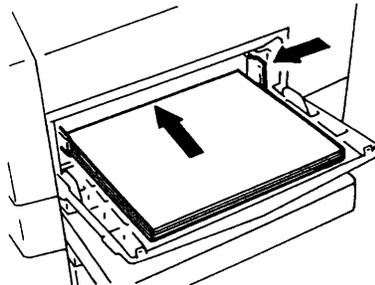
1. Open the paper feeding tray.



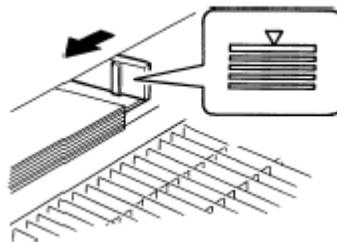
2. Fan the paper stack thoroughly and align the edges.



3. Load the paper stack face up in the tray and adjust the paper guides to secure the paper stack.



**NOTE:** Make sure the paper stack does not exceed the Maximum Level indicator.

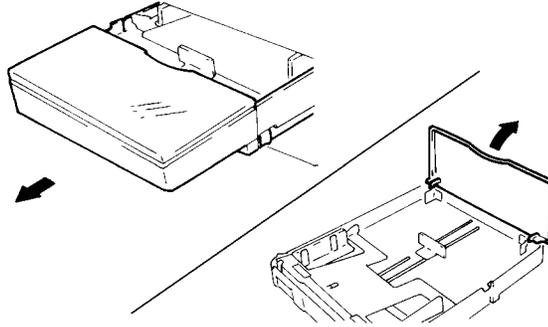


4. Close the paper feeding tray.

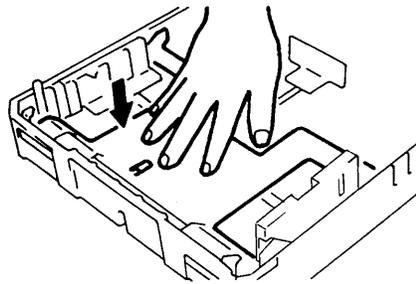
## Loading paper into the paper cassette

To load paper into the paper cassette:

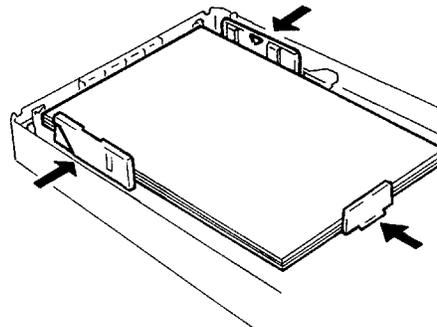
1. Pull the cassette out of the printer and open the cover.



2. Press down the Paper Lifting Plate until it locks. Fan the paper stack thoroughly, align the edges, and place the paper in the cassette.

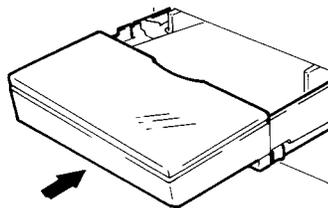


3. Secure the paper stack in the paper cassette with the paper guides.



**NOTE:** Make sure the paper stack does not exceed the Maximum Level indicator. Load a new paper stack only after the old one has run out.

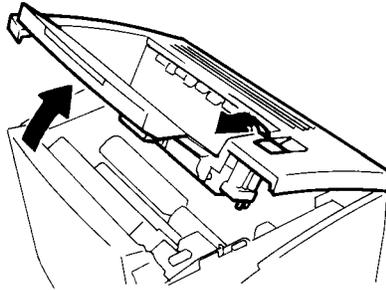
4. Close the cover and insert the cassette into the printer.



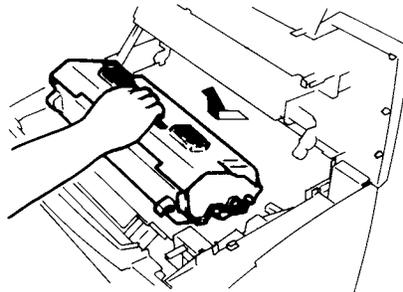
## Replacing the toner

To replace the toner cartridge:

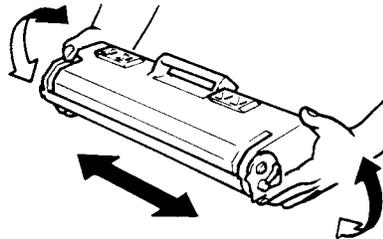
1. Open the upper unit by pulling the Upper Unit Lock Release Lever forward.



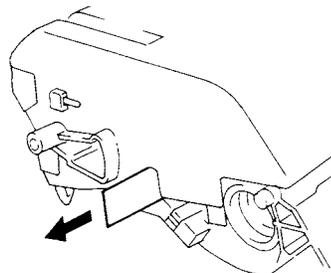
2. Remove the old imaging cartridge from the printer.



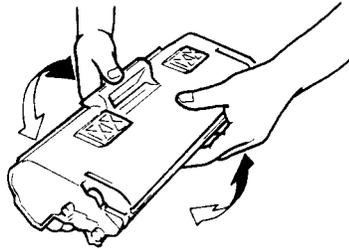
3. Take a new imaging cartridge out of the box. Holding it with both hands, shake it well in the direction indicated by the arrows.



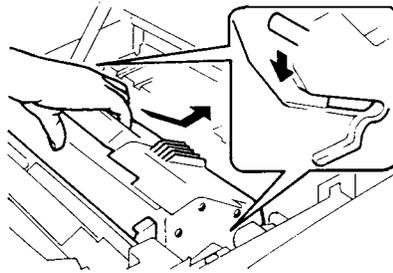
4. Remove the seal from the imaging cartridge by pulling it steadily straight out.



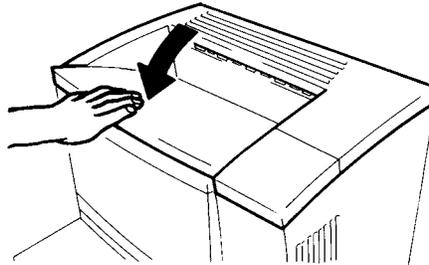
5. Shake the imaging cartridge four or five times as shown to evenly distribute the toner inside.



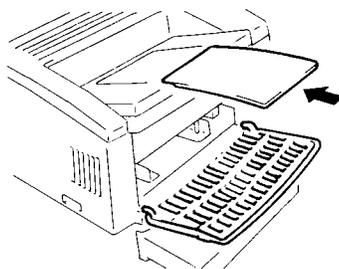
6. Slide the pins located on both sides of the imaging cartridge into the grooves of the printer as shown and gently push the imaging cartridge securely into place.



7. Close the upper unit.



NOTE: Push the print tray in before opening the upper unit.



## 5 Maintenance

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This chapter provides maintenance procedures for:

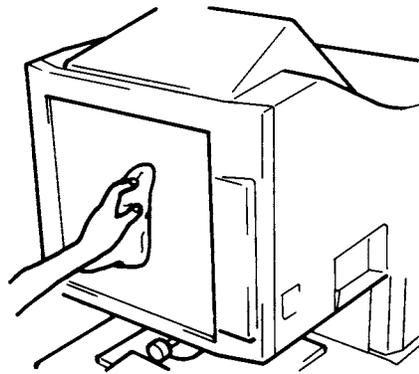
- Cleaning the scanner
- Replacing the projection lamp

### Cleaning the scanner

The scanner should be cleaned daily for optimal operating conditions.

#### Screen

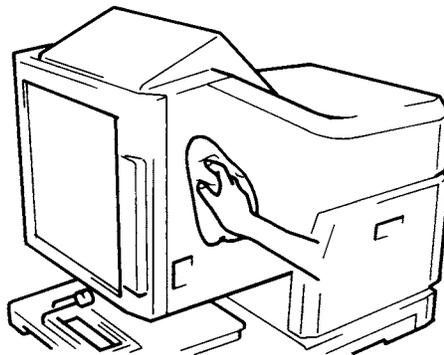
- With a damp cloth, clean and remove any dust or debris from the surface of the screen.



**IMPORTANT:** *Never use alcohol or any other solvent when cleaning to avoid causing damage to the screen or erasing the frame size markers.*

#### Outer Covers

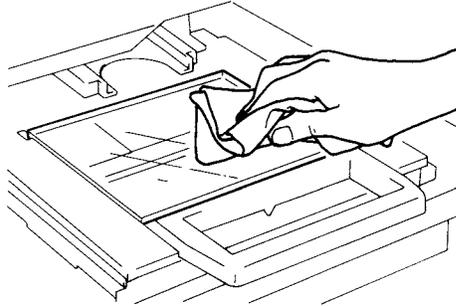
- Dust the exterior panels of the scanner with a soft, dry cloth.



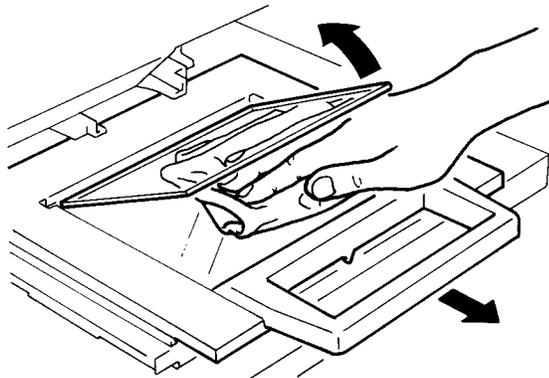
### Carrier Glass (option)

Before cleaning the carrier glass, remove the projection lens from the scanner.

1. With a damp cloth, clean and remove any dust or debris from the surface of the carrier glass.



2. To open the carrier glass, pull out the handle of the microfiche holder. Wipe the inner surfaces of the carrier glass with a damp cloth.



3. Dry and polish the glasses with a soft, dry cloth to prevent spotting or smearing.

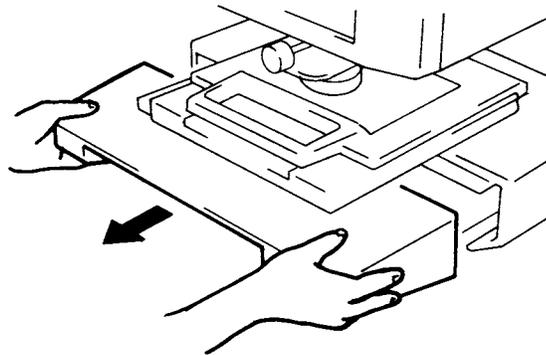
## Replacing the projection lamp

Use the following procedure to replace the projection lamp whenever a reduction in brightness on the screen is detected or the lamp burns out.

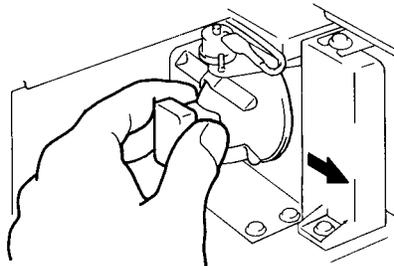
If the projection lamp burns out during a print operation, the L2 code will appear and the print job will stop. A blank piece of paper may be output depending upon the stage of the job. Once the system detects the projection lamp has burnt out, the scan job will be cancelled. If the system is operating in the Cycle Print mode, the scanning operation will stop.

**WARNING: Do not touch the projection lamp with your bare hand immediately after the machine has been turned off. Allow sufficient time (30 minutes is recommended) for the bulb to cool BEFORE attempting to change the lamp.**

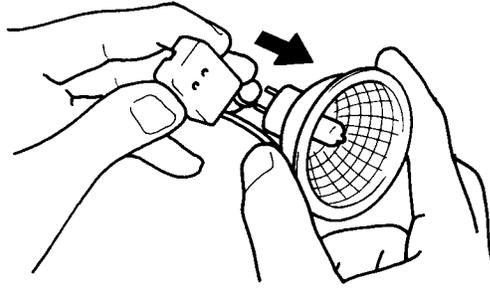
1. Turn the scanner off and unplug the power cord.
2. Slide the projection unit out of the scanner.



3. Remove the projection lamp from the lamp holder.

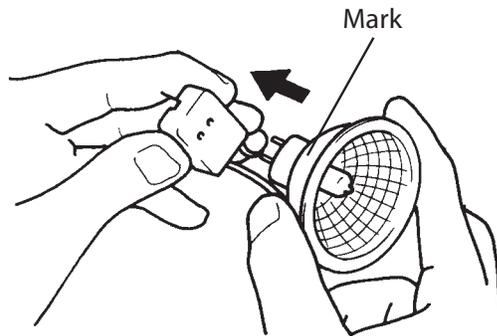


4. Remove the projection lamp from the lamp socket.

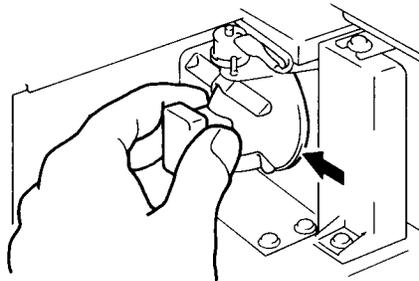


5. Insert a new projection lamp so that the mark on its base is facing upwards. Make sure the new projection lamp is inserted securely so there is no gap between the projection lamp and the lamp socket.

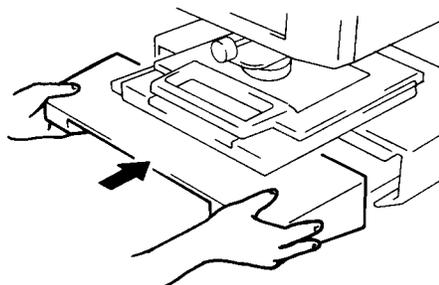
**IMPORTANT: Do not touch the reflector mirror surface of the projection lamp. Fingerprints, smudges or debris should be wiped clean with a soft, dry cloth.**



6. Insert the new projection lamp all the way into the lamp holder.



7. Slide the projection unit back into the machine.



NOTE: If the projection unit is not properly installed, power will not be supplied and the machine will not operate.

8. Turn the power switch on.

## 6 Troubleshooting

This chapter contains information on analyzing and correcting operating problems or errors that may occasionally arise during the use of the *Kodak 2400DSV-E Scanner/Printer*.

**Malfunction procedure** — if the Misfeed/Call Tech Rep Code is displayed, a paper misfeed or malfunction has occurred in the system. Check the code shown on the Multi-Print Display and perform the misfeed clearing procedure. If the error persists, contact Kodak.

Code	Probable cause	Solution
L2	The projection lamp is burned out.	Replace the lamp. See the procedures in Chapter 5, <i>Maintenance</i> .  If the lamp goes out during the print cycle, a blank print may be output.
E1	<ul style="list-style-type: none"> <li>▪ The power to the printer is off.</li> <li>▪ There is a problem with the connection of the interface cable to the printer.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Turn on the printer.</li> <li>▪ Make sure the interface cable is securely connected.</li> </ul>
E2	The upper cover of the printer is not closed.	Make sure the cover is completely closed.
PE	The printer is out of paper.	Load some paper into the paper cassette. See Chapter 4, <i>Printer Functions</i> .
PC	The scanner is connected to the PC and ready for scanning.	Press the Start key when ready. This display blinks when the scanner is in operation.
Pc	The scanner is not connected to the PC.	Turn on the PC or connect the scanner to the PC with the interface cable.

**Misfeed Clearing procedure** — locate the misfeed using the code and perform the appropriate clearing procedure.

Code	Probable cause	Solution
PO	<ul style="list-style-type: none"> <li>▪ The wrong size paper has been loaded in the Paper Feeding Tray.</li> <li>▪ Two or more sheets of paper are taken up at the same time.</li> </ul>	Load the correct-sized paper in the tray.  Clear the paper jam. See the procedures in the section “Clearing a misfeed from the paper feeding tray” later in this chapter.
P1	A misfeed is near the paper take-up section.	See the procedures in the section “Clearing a misfeed from the paper feeding tray” later in this chapter.
P2	A misfeed is near the imaging cartridge.	
P3	A misfeed is near the fusing unit.	

**Call Tech. Rep. Procedure** — if one of the following codes is displayed, a malfunction has occurred in the system. After turning the power off and unplugging the power cord, contact your Kodak Service Representative.

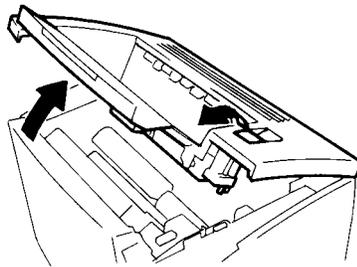
Location	Code	Description
Scanner	C1	Optical path switching failure.
	C2	A scanning malfunction.
	C4	A Fan Motor malfunction.
Printer	C6	A Fusing malfunction.
	C7	A Laser malfunction.
	C8	A Polygon Motor malfunction.
	C9	A Main Drive Motor malfunction.
	CA	A Fan Motor malfunction.
Scanner Printer	C6	A Communication malfunction (Printer).
	CL	A Printer Clock malfunction.
Scanner PC	CC	A Communication malfunction (PC)

**Clearing misfeeds from the paper feeding tray**

Following are procedures for clearing a misfeed from the paper feeding tray. Use these procedures if the P1, P2 or P3 code is displayed.

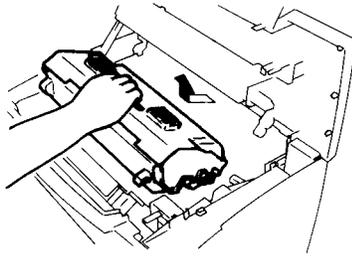
**CAUTION:** The fusing unit inside the printer becomes very hot during operation. To avoid a burn, be very careful not to touch the fusing unit until it is cool.

1. Open the upper unit by pulling the upper unit lock release lever forward.



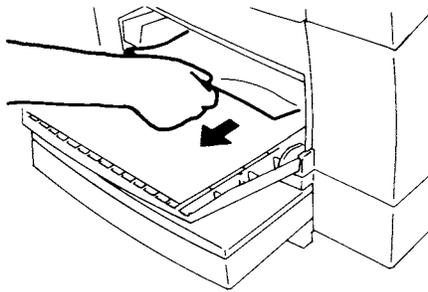
NOTE: Push the print tray in before opening the upper unit.

2. Remove the imaging cartridge.

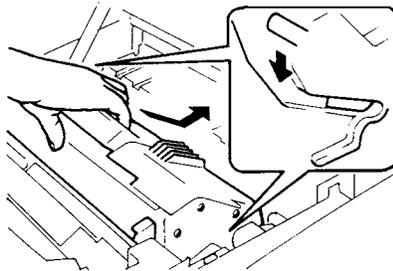


NOTE: Be sure to cover the imaging cartridge with a heavy cloth to protect it from light when it is removed from the printer.

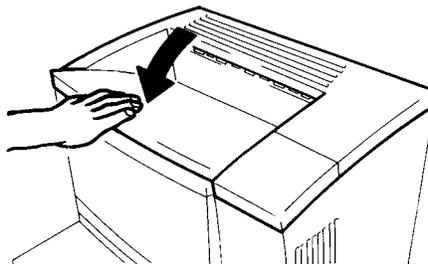
3. Remove the sheet(s) of paper that caused the misfeed from the paper feeding tray.



4. Check that no misfed paper is left in the printer and reinstall the imaging cartridge.



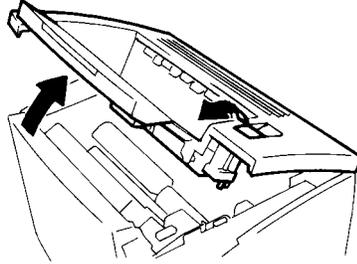
5. Close the upper unit.



## Clearing misfeeds from the paper cassette

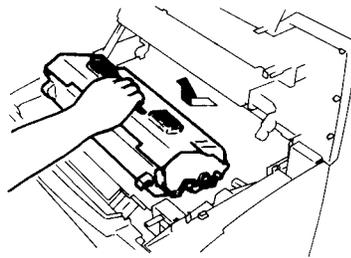
Following are procedures for clearing a misfeed from the paper cassette.

1. Open the upper unit by pulling the upper unit lock release lever forward.



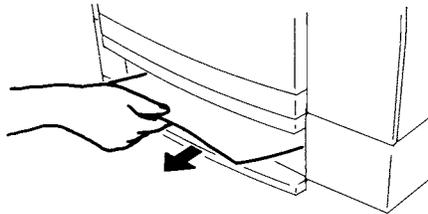
NOTE: Push the paper cassette into before opening the upper unit.

2. Remove the imaging cartridge.

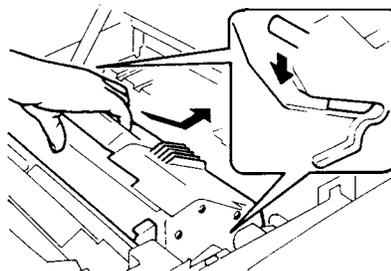


NOTE: Be sure to cover the imaging cartridge with a heavy cloth to protect it from light when it is removed from the printer.

3. Remove the sheet(s) of paper that caused the misfeed as shown.



4. Check that no misfed paper is left in the printer and reinstall the imaging cartridge.

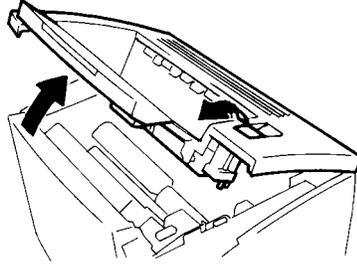


5. Close the upper unit.

## Clearing misfeeds from inside the printer

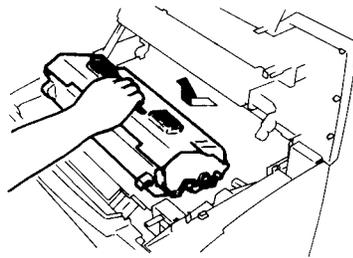
Following are procedures for clearing a misfeed from the inside of the printer.

1. Open the upper unit by pulling the upper unit lock release lever forward.



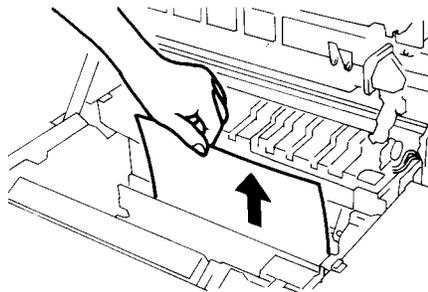
NOTE: Push the print tray in before opening the upper unit.

2. Remove the imaging cartridge.

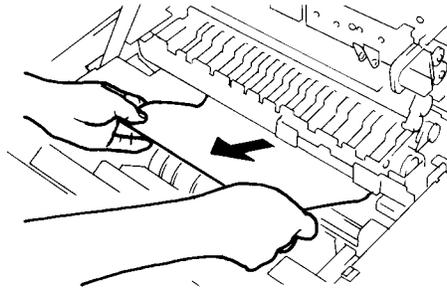


NOTE: Be sure to cover the imaging cartridge with a heavy cloth to protect it from light when it is removed from the printer.

3. If the misfeed occurred before the sheet of paper entered the fusing unit, gently pull the misfed sheet up and out as shown.

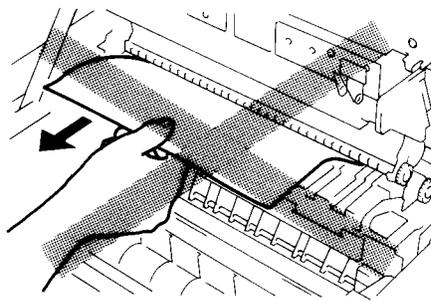


4. If the misfeed occurred after the sheet of paper entered the fusing unit, gently pull the misfed sheet toward you and out as shown.

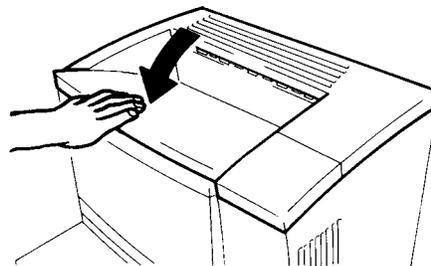


NOTES:

- Since the toner has not yet been fixed onto the sheet of paper, be careful not to soil your hands or clothes when pulling out the misfed sheet.
- Do not remove the misfed paper by pulling on the sheet of paper toward the output end of the fusing unit as shown:

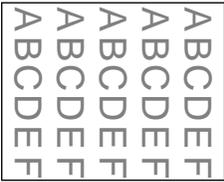
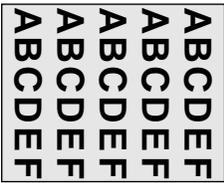
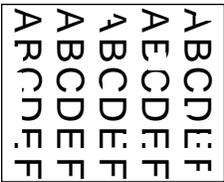
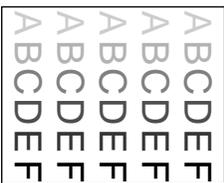
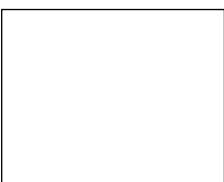


5. Reinstall the imaging cartridge and close the upper unit.



## Solving printing problems

Use the following procedures to fix minor printing problems. If print quality does not improve after implementing the procedures below, contact your Kodak Service Representative.

Symptom	Cause	Action
<b>Light image</b> 	Print density is not properly set.	Change the print density setting as necessary.
	Toner in the imaging cartridge is running out.	Replace the imaging cartridge with a new one.
<b>Dark image</b> 	Print density is not properly set.	Change the print density setting as necessary.
<b>Partial void image</b> 	The paper in the tray is damp.	Replace the damp paper with fresh, dry paper.
<b>Uneven image density</b> 	Toner in the imaging cartridge is not evenly distributed.	Remove the imaging cartridge, shake it several times and replace.
<b>Blank print</b> 	The printer has malfunctioned.	Contact your Kodak Service Representative.

## Appendix A Specifications

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Following are specifications for the *Kodak 2400DSV-E* Scanner/Printer.

<b>Type</b>	Desktop-type Microfilm Scanner
<b>Resolution</b>	200, 300, 400, 600, 800 dpi (in PC mode) 400, 600 dpi (Printer mode: when the Printer is connected)
<b>Output scale</b>	PC mode: binary, grayscale (option) PR mode: binary
<b>PC interface</b>	SCSI-2
<b>Exposure control</b>	Automatic or Manual
<b>Type of film</b>	Microfiche, Jackets, Aperture Cards, 16mm and 35 mm roll film, 16 mm film cartridges
<b>Screen</b>	12 x 12" (300 mm x 300 mm)
<b>Magnification</b>	7.5x, 9x-16x, 13x-27x, 23x-50x
<b>Image rotation</b>	Motorized Image Rotation
<b>Print size</b>	8 ½ x 11" (A4) crosswise, 11 x 17" (A3) lengthwise 8 ½ x 11" (A4) lengthwise, 8 ½ x 14" (B4) lengthwise
<b>Power consumption</b>	350 W
<b>Dimensions</b>	19.75" (W) x 32 3/8" (D) x 28 ¼" (H) 503 x 821 x 716 mm
<b>Weight</b>	86 lbs (39 kg)
<b>Standard Accessories</b>	Power Cord, Printer Cable, SCSI Cable, PC Interface Cable Kit, Prism Unit, Counter, Operator's Manual in English, French, German, Italian, Spanish, Brazilian-Portuguese
<b>Options</b>	Lenses, Fiche Carrier 5, Universal Carrier UC-2, Roll Film Carrier 9B, Roll Film Carrier 15A/15M, Roll Film Carrier 21, ACF7 Carrier, MARS IV Controller, Mini-MARS 2 Controller, Manual Masking Kit, Footswitch Kit, Grayscale Board Upgrade Kit, Paper Cassette (250-sheet)

Following are specifications for the High-Speed Video Laser Printer.

<b>Type</b>	Microfilm Scanner/Printer System
<b>Printing method</b>	Laser Electrostatic
<b>Resolution</b>	400, 600 dpi
<b>Developing system</b>	Fine Micro-Toning (Fine-MT) System
<b>Print size</b>	8 ½ x 11" (A4) crosswise, 11 x 17" (A3) lengthwise 8 ½ x 11" (A4) lengthwise, 8 ½ x 14" (B4) lengthwise
<b>Print speed</b>	20 sheets per minute (8 ½" x 11" or A4: crosswise)
<b>First print time</b>	13 seconds (8 ½" x 11" or A4: crosswise)
<b>Warm-up time</b>	Less than 50 seconds
<b>Multiple printing</b>	1-19 sheets (LED countdown identification)
<b>Paper supply</b>	Automatic Feeding System Paper Feeding Tray (250 sheets max.) Paper Cassette (250 sheets max.)
<b>Power consumption</b>	Less than 1100 W (Scanner 350 W, Printer 750 W)
<b>Printer Dimensions</b>	22" (W) x 20 ½" (D) x 16" (H) 561 x 521 x 409 mm
<b>Printer Weight</b>	61 ¾ lbs (28 kg)

## Appendix B User and System Settings

This system offers two types of settings:

- User settings that are setup by the operator from the control panel
- System settings that are setup and can be changed by the Kodak Service Representative.

Following is a list of factory settings:

User Setting	Factory Setting	Comments
Exposure mode	Auto	
Print image density	Center	
Print format	Portrait	
Film type	Auto	
Auto skew correction	Off	
Auto masking	Off	
Manual masking	-	Enabled only when the optional Manual Frame Masking Kit is installed.
Centering/Fit	Off	

When any of these functions has been changed and you want to store the new setting in the system's memory, press the Memory Input key.

System Setting	Selection	Default	Description
Auto reset	Enabled Disabled	Enabled	Setting changes made to the control panel that are not used within 60 seconds of being input are automatically cancelled and the system reverts back to the original settings.
Auto power save (PR mode only)	Disabled 30 min. 60 min.	Disabled	Turns the printer's fuser off if the system is left idle for a specific period of time.  NOTE: 230V units operate on a 30-minute Auto Power Save setting.
Auto Projection Lamp OFF	Disabled 30 min. 60 min.	Disabled	Turns the projection lamp off if the system is left idle for a specified period of time.
Fine mode contrast select	Contrast Emphasis  Outline Emphasis	Contast Emphasis	Applies the following functions as required: <ul style="list-style-type: none"> <li>▪ Contrast Emphasis: applied when film contains text that is poorly contrasted against its background making it difficult to read.</li> <li>▪ Outline Emphasis: applied when film contains blurred black and white images.</li> </ul>

System Setting	Selection	Default	Description
Auto skew correction retain	Retained Not Retained	Not Retained	Determines whether or not to retain the original (uncorrected skew of a screen image after the print has been made).
Machine ID Printing (High-speed Video Laser Printer only)	Disabled Pattern 1 Pattern 2	Disabled	When two scanners are connected to one printer, this function leaves an identification marker on the print so the scanner used for the job can be determined after printing.  <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Pattern 1</p>  <p>Paper</p> </div> <div style="text-align: center;"> <p>Pattern 2</p>  <p>Paper</p> </div> </div>
Cycle print mode (PR mode only)	Enabled Disabled	Disabled	This function automatically scans the next image following a preset period of time (the period can be set by your Kodak Service Representative). Images are set by the user onto the Carrier Glass between cycles.
Paper size of Paper Feeding Tray (High-speed Video Laser Printer only)	Lengthwise Crosswise	Crosswise	Determines the desired paper size from the Paper Feeding Tray of the printer.
Contrast setting	Lighter Normal Darker	Normal	To view subtle images with standard ranges of density clearly: Light (-1 to -7). To bring out the darker and lighter ranges of an image: Dark (+1 to +7).
The print function at the time of Toner Empty detection (PR mode only)	Disable Print Enable Print	Disable Print	After a toner empty condition is detected, this function allows you to select either to stop printing or continue printing.
Auto Film Format Select Print function (PR mode only)	Enabled Disabled	Enabled	The Auto Film Format Select Print function is enabled or disabled through the control panel. This function is used for managing horizontal and vertical printing when letter- or A4-sized paper is set crosswise/lengthwise into the paper feeding tray/paper feeding cassette.
90 degree rotation setting	Enabled Disabled	Disabled	Enables the prism to rotate the screen image 90 degrees.
Automatic paper source switching (High-Speed Video Laser Printer only)	Auto switching Disabling Auto switching	Auto switching	Allows you to specify the paper source when letter- or A4-sized paper is loaded in lengthwise or crosswise orientations into the paper feeding tray and paper feeding cassette.  Auto switching: printing continues by automatically switching to the remaining paper source after paper in the specified paper source runs out.  Disabling Auto switching: a paper empty mode occurs and printing stops after paper in the specified paper source runs out. The paper source must be refilled or the paper source must be switched by pressing the Output Selection key to resume printing.

## Appendix C Key Operator Information

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When you need to call for service, be prepared to provide the following information:

- Your company name, address, telephone number, department name, floor number, machine location, etc.
- K# (Mainframe and/or Printer), model name, serial number, condition or system(s) indication(s) on the display, etc.

For your reference purposes:

Model Name	<i>Kodak 2400DSV-E Scanner/Printer</i> Serial No. K#
	High-Speed Video Laser Printer Serial No. K#
Attached Accessories	Serial No.
	Serial No.
Installation Date	
Kodak Representative Phone #	

**New equipment warranty**

Kodak warrants this equipment to function properly for three months from date of shipment. However, certain requirements may dictate a different warranty period. 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, Kodak will provide on-site repair service during Kodak's normal working hours. Such repair service will include any adjustments and/or replacement of parts necessary to maintain the equipment in an operating condition, which is consistent with Kodak's specifications.

**Days and hours of coverage**

Warranty coverage is available Monday through Friday during Kodak's normal working hours (usually 8:00 a.m. to 5:00 p.m.), excluding holidays celebrated locally.

Any on-site service performed after normal working hours will be billed at prevailing overtime rates.

**How to obtain service**

Call (800) 3KODAK3.

**Limitations**

Standard warranty service is limited to the contiguous United States, Hawaii, and certain areas of Alaska.

This warranty does not cover: circumstances beyond Kodak's control (such as Customer overriding, bypassing or defeating interlock switches on equipment or devices sold by Kodak); problems due to failure of Customer to conform to Kodak's site specifications; service or parts to correct problems resulting from the use of attachments, accessories or alterations not marketed by Kodak; relocation of equipment or service required as the result of relocation; unauthorized modifications or service; misuse; abuse; failure to follow Kodak's operating instructions; or supply items (such as glass and projection lamps).

**KODAK MAKES NO OTHER WARRANTIES, EXPRESS, IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE FOR THIS EQUIPMENT.**

Repair or replacement without charge are Kodak's only obligations 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, REGARDLESS OF THE CAUSE.** Such damages for which Kodak will not be responsible, include, but are not limited to, loss of revenue or 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.

<p>The High-Speed Video Laser Printer has a rated Print Life of 360,000 print actuations. Kodak reserves the right to discontinue service agreements or increase the service agreement price when the life expectancy of the scanner is reached.</p>
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Rochester, New York 14650

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