Kodak *ds* *digital science™*

Document Scanner 9500

User's Guide

Safety Information for Installation Instructions for the *Kodak Digital Science*™ Document Scanner 9500

IMPORTANT: Equipment shall be installed by qualified personnel.

WARNING: Dangerous voltage. Disconnect the main power before installation.

CAUTION: Hot surface, avoid contact

ATTENTION: Eviter le contact, pieces brulantes

VORSICHT: Heisse oberflaeche, beruehrung vermeiden

Safety Information for User/Installation Instructions for the *Kodak Digital Science*™ **Automatic Document Feeder**

IMPORTANT: Equipment shall be installed by qualified personnel.

WARNING: Dangerous voltage. Disconnect the main power before installation.

CAUTION: Moving parts, avoid contact
ATTENTION: Eviter le contact, pieces en mouvement
VORSICHT: Bewegliche teile, beruehrung vermeiden

1 Introduction

The *Kodak Digital Science* Document Scanner 9500 is a high-speed, medium- to high-resolution rotary scanner designed for high-volume digital capture of business documents. The Document Scanner 9500 captures printed characters, handwritten text, and graphics from documents of various sizes.

NOTE: Illustrations in this User's Guide are shown using the semi-automatic feeder.

Scanner features

The Document Scanner 9500 has the following features:

- Scans up to 144 pages per minute (standard sized documents fed in landscape orientation; continuous transport using the semi-automatic feeder).

- High-speed scanning and image resolution.

  ◊ **Scanner 9500** scans 160 landscape (A4 size) or 120 portrait (8 ½ x 11-inch) documents per minute at 200 dpi or 107 landscape (A4 size) or 80 portrait (8 ½ x 11-inch) documents per minute at 300 dpi.

- Handles documents of up to 2.5 to 20 in. (64 to 508 mm) long, 2.5 to 12 in. (64 to 305 mm) wide, and 0.014 in. (0.36 mm) thick. The gap release feature allows thicker documents to be scanned.

NOTE: Documents longer than 20 inches can be scanned, but might require special handling.

- Easy-to-reach control panel keys, identified by graphic symbols.

- A high-speed document transport system.

- A two-line, 80-character display for status information and operator messages.

- Full programmability of 18 application modes, with override capability.

- Linked modes allow the image address to be carried over from one mode to another.

- Programmable keys to perform commonly-used functions.

- A transport-on function that allows 27 of the function codes to be executed while the transport is running.

- Audible tones for selected functions, such as footswitch, patch reading, etc.

- English or other language message display.

- A large, built-in wor-shelf.

- An adaptable, modular design for easy addition of accessories.

Scanner options

The following options are available for use with your scanner:

- A choice of feeders (e.g., an optional check feeder, semi-automatic document feeder or automatic document feeder)

- A choice of exit hoppers (e.g., an optional check stacker)

- A Footswitch for document level control

- An Endorser for stamping information on documents

- A 600 dpi, 12-character ink-jet printer which supports black and magenta ink colors

- A Patch Reader for automatic document level control

- End-fed patch capability

- A Bar Code Reader for decoding encoded information

- A skew/length monitor

- A multi-feed detection device

- A workstation console, left or right position

Scanner components

The following illustrations and descriptions will help you locate and become familiar with scanner components.
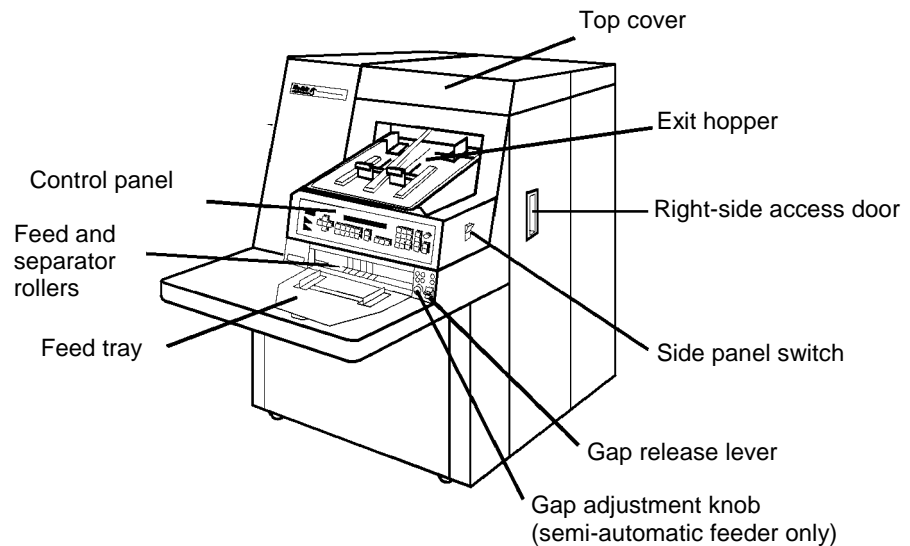
Control panel — contains the status display, indicators, and operating keys used to control the scanner.

Feed and separator rollers (semi-automatic feeder only) — provides smooth document feeding of various sizes and textures.

Feed tray — holds documents prior to feeding.

Top cover — provides access behind the transport area.

**Exit hopper** — collects documents after they have been scanned.

Right-side access door — provides access to the transport system components.

Side panel switch — allows you to turn the transport system on and off.

Gap release lever — allows you to open the feed gap to allow thicker documents to be fed into the transport.

Gap adjustment knob (semi-automatic feeder only) — allows you to manually adjust the space between the feed and separator rollers for documents of varying thicknesses.

Rear view
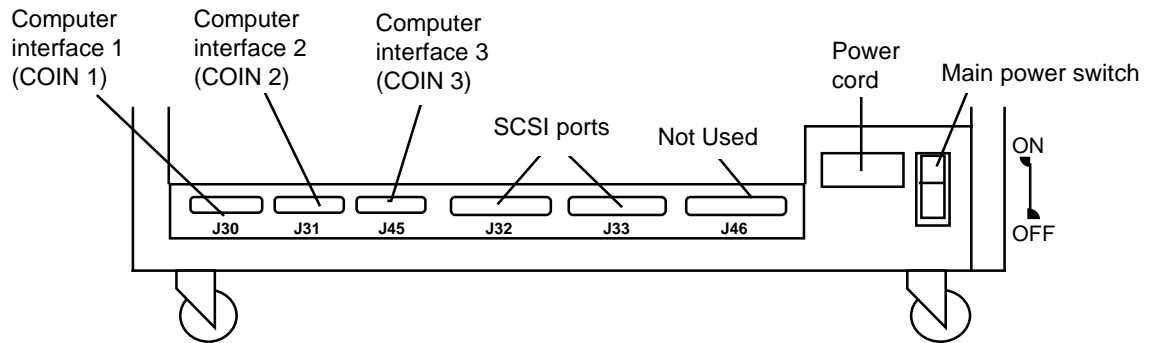
Computer interface 1 (COIN1) — service/diagnostic interface. Configures the scanner and runs diagnostics.

Computer interface 2 (COIN2) — bar code interface. Transfers commands between the scanner and external devices/subsystems.

Computer interface 3 (COIN3) — SCSI diagnostic port interface. System debugging and monitoring SCSI-host computer communications.
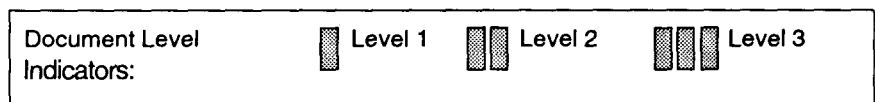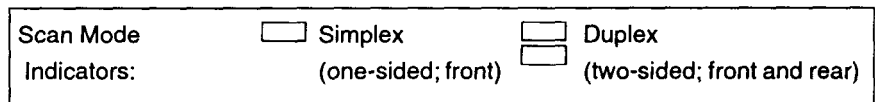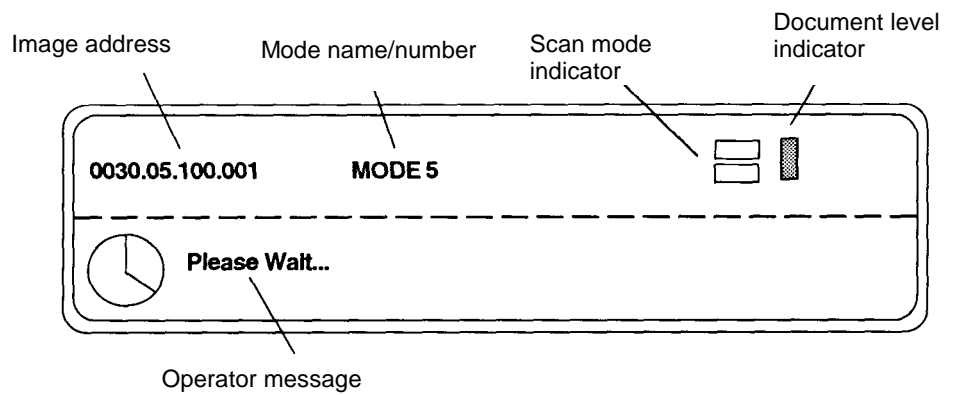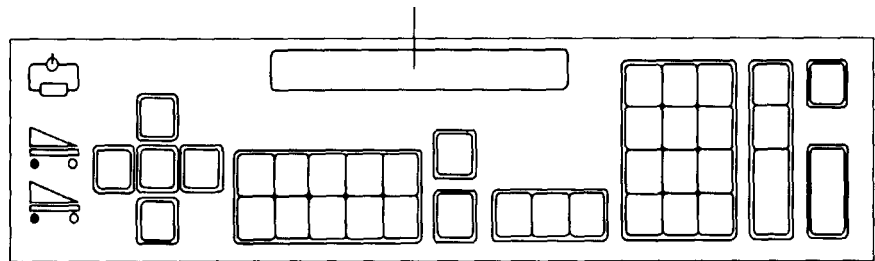
SCSI ports — SCSI interface connection for the scanner.

Power cord — plugs into an appropriate power outlet.

Main power switch — turns main power to the scanner on and off.

Status display — indicates the image address, scan mode, document level and operator messages.

Two-line status display

Image address   Mode name/number   Scan mode indicator   Document level indicator

0030.05.100.001	MODE 5

Please Wait...

Operator message

Scan Mode Indicators:	☐ Simplex (one-sided; front)	☐ Duplex (two-sided; front and rear)

Document Level Indicators:	▌ Level 1	▌▌ Level 2	▌▌▌ Level 3

Operating keys and indicators

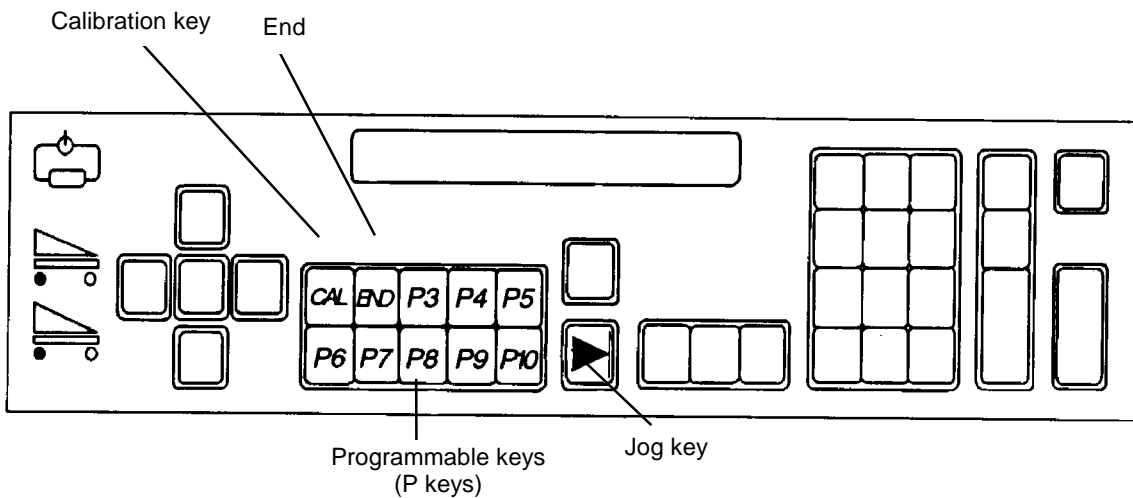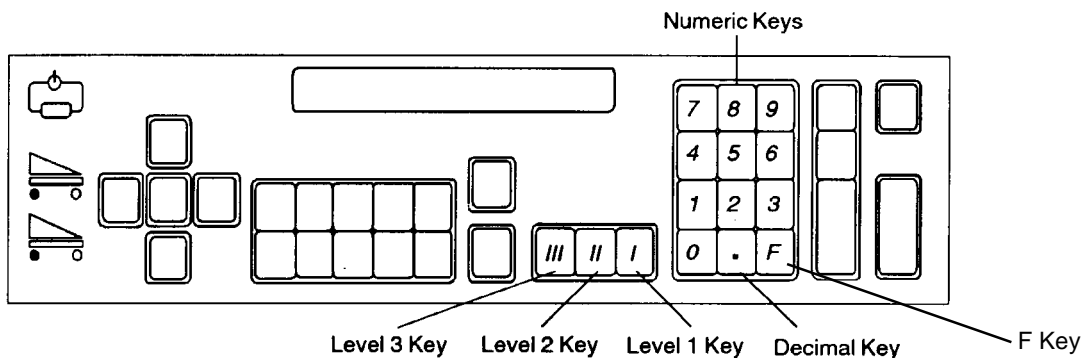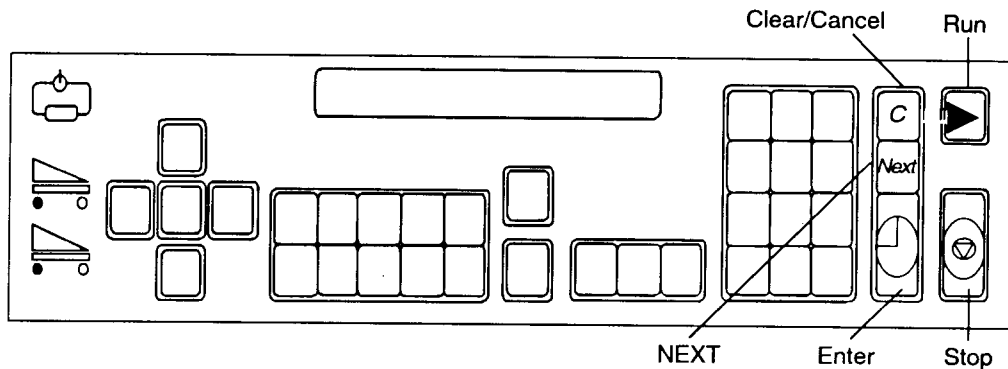| Key/Indicator	Function
Scanner buffer indicators	Indicates the amount of image buffer space available. A full image buffer is represented by a single light in the display; an empty image buffer is represented by all lights in the display. • The upper indicator represents the image buffer for front side images. • The lower indicator represents the image buffer for rear side images.
Left arrow ($\leftarrow$)	The Left arrow allows you to: • Decrement values at a slower rate. • Backspace, delete the last keystroke, or clear messages in the status display. • Enter an alphanumeric character in the image address.
Down arrow ($\downarrow$)	The Down arrow allows you to: • Decrement values at a faster rate. • Decrease a data value when used with certain functions. • Enter an alpha character in the image address fixed field.
Plus key (+)	Inputs a value for the image address. When pressed, it allows a field to remain unchanged.
Right arrow ($\rightarrow$)	The Right arrow allows you to: • Increment values at a slower rate. • Display additional messages in the status display. A blinking cursor over the arrow in the display indicates there are additional messages. Press the Right arrow key to display these messages. • Enter an alphanumeric character in the image address.
Up arrow ($\uparrow$)	The Up arrow allows you to: • Increment values at a faster rate. • Increase a data value when used with certain functions. • Enter an alpha character in the image address fixed field.

Operating keys and indicators

Calibration key   End

Programmable keys
(P keys)   Jog key

Keys/Indicators	Function
CAL	Starts the calibration process.
END	Informs the host computer when a batch or job has ended.
Programmable keys (P keys)	Perform specific functions. The P keys have default values; any or all of the defaults may be overridden/reprogrammed at installation.
Jog	Momentarily turns on (jogs) the transport system to help clear document jams.

Numeric Keys

Level 3 Key   Level 2 Key   Level 1 Key   Decimal Key   F Key

Keys/Indicators	Function
Numeric keys (0-9)	Enter numeric data such as an image address or function code.
F key	Selects one of the available functions, when used with the numeric keys.
Decimal key	Inserts a field separator in an image address.
Level 1 key	Identifies the next document fed into the scanner as a Level 1 document.
Level 2 key	Identifies the next document fed into the scanner as a Level 2 document.
Level 3 key	Identifies the next document fed into the scanner as a Level 3 document.

Operating keys and indicators

Key/Indicator	Function
Clear/Cancel	The C key allows you to: • Cancel a function without changing the preset values. • Clear the status display after executing specified function codes. • Clear an operator message from the status display.
Run	Turns on the feeder and transport system.
NEXT	Allows you to enter the next document image address.
Stop	Allows you to stop the feeder and transport system. Documents still in the transport system will be scanned and placed in the exit hopper before the transport system stops.
Enter	Enters data for a function code or an image address change.

Confirmation tone/alarm
The confirmation tone/alarm is located under the control panel and sounds when one of the following conditions occur:

- **Run** is pressed (one long tone).

- **Stop** or **End** is pressed (many short tones followed by a long tone).

- Feeder clutch engages/disengages (one short tone).

- Incorrect key is pressed (three short tones).

- Document skew is greater than what is setup in the skew parameter, or when a document is shorter or longer than the specified length parameters (one short tone).

- A bar code is detected (if the accessory is enabled and the confirmation tone is enabled).

- A patch code is detected (if the accessory is enabled and the confirmation tone is enabled).

- The Footswitch is detected (if the accessory is enabled and the confirmation tone is enabled — one short tone).

2   Getting Started

The following steps are necessary to prepare the scanner for operation. Procedures on how to perform these steps are described in this chapter.

1. Turn on the main power switch.

2. Turn on the side panel switch.

3. Select the language display.

4. Calibrate the scanner.

5. Adjust the feed and separator roller gap.

6. Adjust the feed shelf position.

7. Adjust the feed shelf side guides.

8. Adjust the exit hopper side guides and end stop.

9. Change the deflector (if required).

10. Prepare documents for scanning.

Turning on the scanner

Follow the steps below to turn on the power to the scanner.

1. Turn on the main power switch (located at the rear of the scanner).

    NOTE: It is not necessary to turn off the main power switch during normal daily operations.

2. Turn on the side panel switch.

Wait until the status display indicators are lit and an operating display appears before you continue.

0030.05.100.001   MODE 1
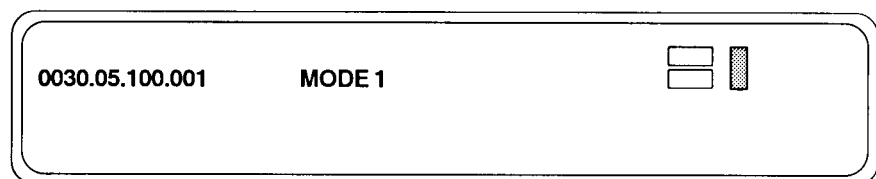
Selecting the language display

The scanner may have been configured at installation to allow use of a second language in the status display. The language used (French, German, Italian, Spanish, or other) is defined during installation. If available, the alternate language display may be accessed using function code F19.

Calibrating the scanner

Calibration sets the intensity of the lamps, which contribute to the overall quality of the scanned document image.

The scanner should be calibrated:

- at least once a day when the scanner is turned on using the side panel switch — prior to scanning documents
- any time the scanner is turned on using the main power switch
- if image quality is poor
- after changing lamps
- after cleaning the scanner or imaging guides

Calibrate the scanner using a calibration target (sheet of paper) that is:

- Blank
- Clean
- Matte finish (not glossy)
- White or the same color as the background color of the documents to be scanned. If you are scanning a variety of colored documents, use a white calibration target.
- Wider than the documents you are going to scan (i.e., to scan 8.5 x 11 inch (215.9 x 279.4 mm) documents, the calibration target should be wider than 8.5 inches (215.9 mm). The recommended width for the calibration target is 12 inches (300 mm).

To calibrate the scanner:

1. Verify the main power and side panel switches are on. A normal operating status display should appear.
2. Press **CAL** or enter function code **F37** to start the calibration sequence.
3. Insert the calibration target into the feeder.

When calibration is successful, the status display returns to a normal operating display.

Unsuccessful calibration If calibration is not successful, a message appears in the status display.

You may need to:

- Verify you are using a clean, blank sheet of paper as a calibration target.

- Verify there is not a document already in the document path. (Refer to the section entitled, "Clearing the document path" in Chapter 7.)

- Clean the imaging guides. (Refer to the section entitled "Cleaning the imaging guides" in Chapter 5.)

- Calibrate the scanner again. If calibration fails again, change the lamps. (Refer to the section entitled, "Replacing the exposure lamps" in Chapter 5.)

If you have done all of the above and calibration still fails, contact your service representative.

Preparing documents for scanning

Before you begin processing documents, make certain that the documents may be fed through the scanner easily.

- Remove any staples, rubber bands, loose mending tape, or paper clips from the documents to be processed.

- Straighten wrinkled edges and tape any torn documents.

- Trim ragged edges.

When using the semi-automatic feeder, make certain all documents are of similar size, texture, thickness and weight, and the leading edges of all documents are aligned.

Adjusting the feed and separator roller gap (semi-automatic feeder only)

IMPORTANT: *Before adjusting the feed and separator roller gap, be sure the feed and separator rollers are clean. Cleaning the feed and separator rollers will frequently resolve document feeding problems.*

*The adjustment procedure should **only** be done when feeding and separating problems continue after the feed and separator rollers have been cleaned. For procedures on cleaning rollers, see Chapter 5, Maintenance.*

The gap adjustment knob on the control panel increases or decreases the space between the feed and separator rollers. The gap must be adjusted properly for smooth transportation of documents without document overlap.

When documents of different thicknesses are fed in a group, adjust the gap using the thinnest document in the group.

The feed and separator roller gap may have to be adjusted to compensate for:

- Very thin documents (onion skin, tracing paper, etc.).
- Very thick documents (card stock, punch cards, cover stock).
- Some coated documents (photographic paper, plastic-coated paper).

If the gap is not adjusted properly:

- More than one document at a time may be drawn into the transport system at the same time; not all of the documents will be scanned.
- Documents may be drawn into the transport too quickly; documents may overlap or be spaced too closely (causing an error display).
- Documents may become skewed during transport; jamming may occur.

    NOTE: Prior to performing the adjustment procedure, the scanner must be calibrated and enabled.

To adjust the feed and separator roller gap:

1. Turn on the side panel switch.
2. Enter function code **F04** and enable Counting Only.
3. Press **Enter**.
4. Press **Run**.

    IMPORTANT: *Do not make a gap adjustment while documents are in the feeder or transport system; doing so will produce an inaccurate adjustment.*

5. Turn the gap adjustment knob clockwise three complete turns, or until it stops, to open the gap between the feed and separator rollers.

6. Turn the gap adjustment knob counterclockwise 2 1/2 turns.

Gap adjustment knob

Separated document

Gap (between feed and separator rollers)

Feed rollers

Trailing edge of top document
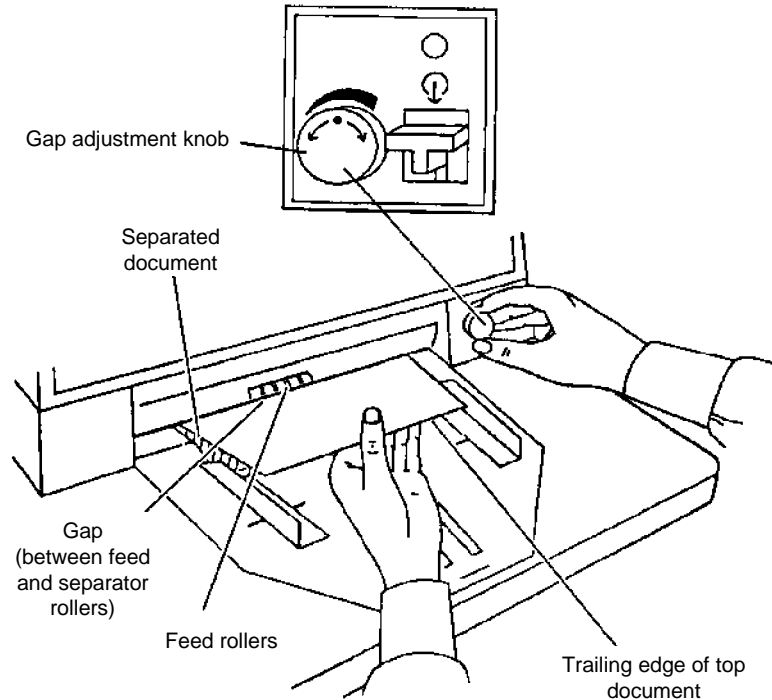
7. Select two documents of the same size, texture and thickness, similar to the types of documents you will be processing.

8. Place one document on top of the other. Hold the documents firmly by their trailing edges. Insert them into the gap approximately 1/8 in. (3 mm).

   If the documents separate, repeat the following steps until the documents do not separate:

   • Turn the gap adjustment knob clockwise 1/2 turn.

   • Insert the documents again.

   If the documents do not separate, proceed with Step 9.

9. Rotate the gap adjustment knob counterclockwise 1 or 2 clicks.

10. Hold the trailing edges of the documents firmly. Insert them into the gap.

    • If the bottom document is not separating from the top document, remove the documents and repeat Steps 9 and 10 until the bottom document separates from the top document by approximately 1 in. (25.4 mm).

    • If the bottom document is separating from the top document, proceed with Step 11.

11. When you have adjusted the gap so the bottom document separates consistently from the top document, rotate the gap adjustment knob counterclockwise another 1 or 2 clicks to complete the adjustment.

12. Feed a stack of 50 to 100 documents twice through the transport system. Verify the final count reflects the total number of documents fed and that the counter shows the same amount each time the documents are counted.

   If the count is not the same, the gap is not adjusted correctly. Rotate the gap adjustment knob counterclockwise another 1 or 2 clicks and repeat Step 12. Repeat until corrected.

13. Press **Stop**.

14. Enter function code **F04** and disable Counting Only.

15. Press **Enter**.

Adjusting the feed shelf position (semi-automatic feeder only)

Before you begin feeding documents into the scanner, adjust the position of the feed shelf.
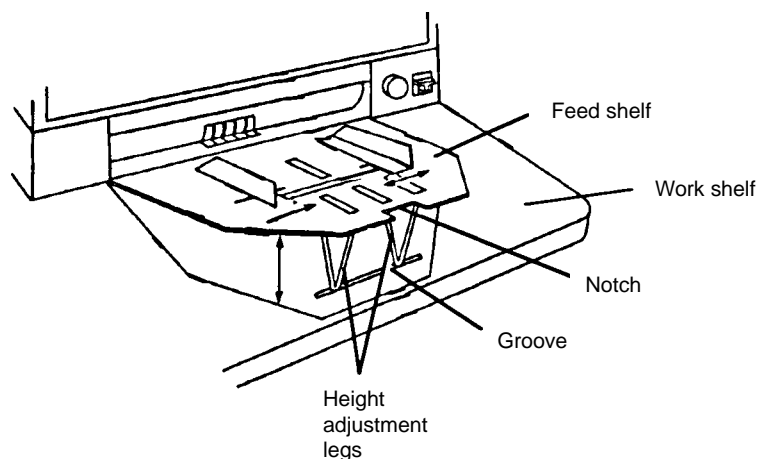
To automatically feed multiple documents, the feed shelf should be in the raised position (as shown above).

To raise the feed shelf:

1. Grasp the notch and lift the feed shelf.

2. Swing the height adjustment legs out and insert them into the groove on the work shelf.

To hand-feed documents (one at a time), the feed shelf should be in the down position (not shown).
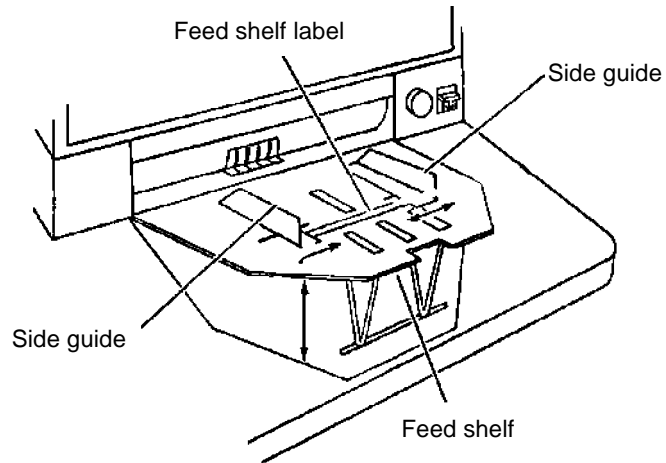
To lower the feed shelf:

1. Grasp the notch and lift the feed shelf until the height adjustment legs are no longer resting in the groove on the work shelf.

2. Tuck the height adjustment legs in and lower the feed shelf into position.

Adjusting the feed shelf side guides
(semi-automatic feeder only)

Before you begin processing documents, adjust the side guides on the feed shelf to accommodate the documents being processed.

1. Slide apart the side guides on the feed shelf until the feed shelf label is visible.

Feed shelf label

Side guide

Side guide

Feed shelf

Feed Shelf Label

Center line
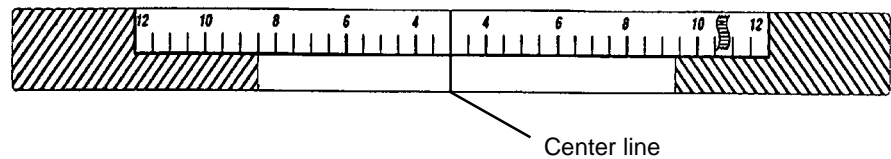
2. Center the documents across the feed shelf label. Adjust the feeder side guides dependent upon the width of the document. Leave approximately 1/16 in. (2 mm) clearance on each side of the documents so they feed properly.

   NOTE: If the documents are larger than the area shown on the feed shelf label and do not fit between the side guides, rotate and reposition the documents within the side guides.

Adjusting the exit hopper side guides and end stop

The exit hopper side guides and end stop must be adjusted so documents are stacked properly after processing.

1. Adjust the side guides on the exit hopper to match the adjustment of the side guides on the feed shelf.
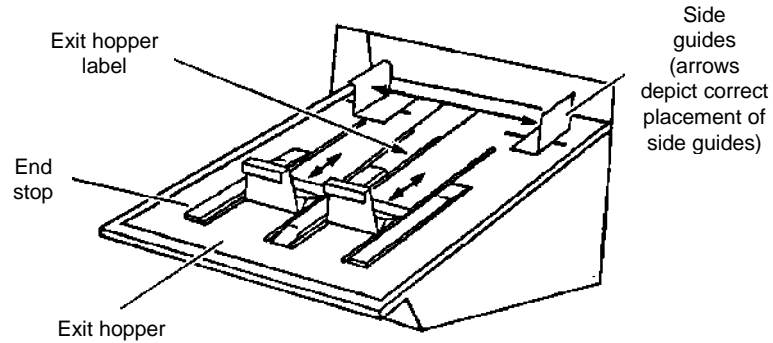
2. Adjust the end stop of the exit hopper by determining the longest document to be processed. Slide the end stop until the arrows point to where the length of the longest document is shown on the exit hopper label.
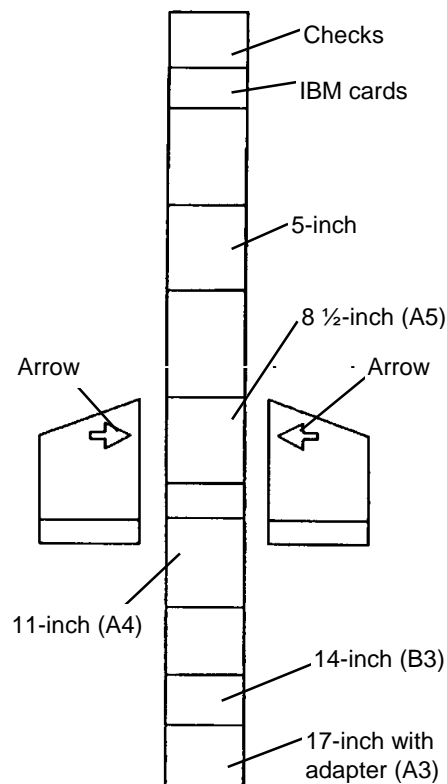
Changing the deflector

The scanner comes with two deflectors (stored in the pocket located inside the right-side access door), designed to help stack the documents as they exit the transport system and enter the exit hopper.

Use the short deflector for documents less than 5 in. (13 cm) and the long deflector for documents longer than 5 in. (13 cm) as well as for mixed sizes.

Short document deflector

Attachment pin

Long document deflector

Holding clip

Deflector

Front cover
(does not have to
be open to attach
deflectors)

(Swings to right)
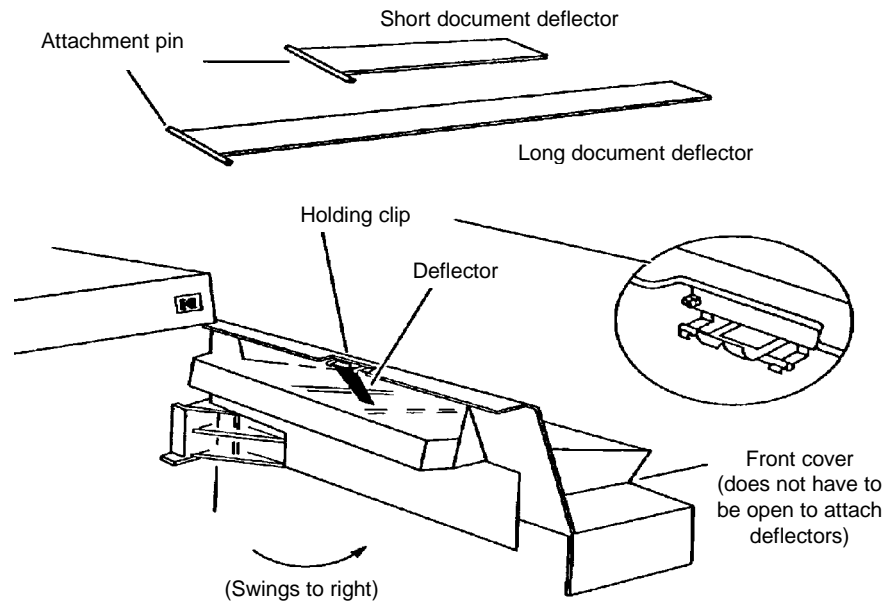
1. Grasp the deflector near the attachment pin (as shown).

Lip of exit hopper

Deflector
(black side must be down)
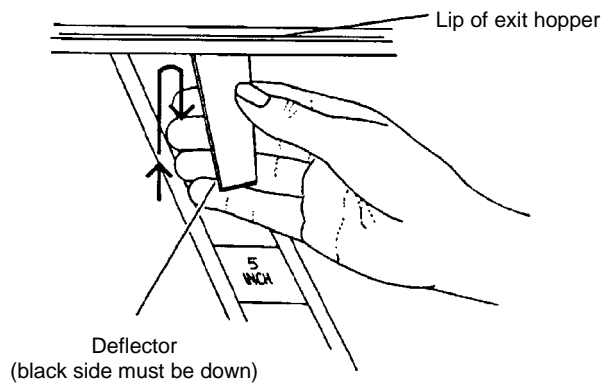
2. Guide the deflector into the exit hopper, just below the lip of the hopper, to insert the attachment pin in the holding clip.

3. Pull the deflector toward you until it clicks into place.

3 Operating the Scanner

Overview

This chapter provides instructions for selecting modes, using temporary operating values and feeding documents using either the semi-automatic feeder or the automatic feeder.

The scanning process consists of the following steps:

1. Prepare the scanner for operation (refer to Chapter 2, *Getting Started* for more information.)

2. The scanner is enabled by the host system.

3. Select a mode for the application. Typically the host computer performs this step, but it may also be performed by the operator.

4. Select temporary operating values (if required).

5. Press the **Run** key.

6. Feed documents into the transport (refer to *Feeding Documents using the semi-automatic* (or *automatic*) *feeder* later in this chapter).

   • The scanner assigns a sequential ID number (for digital image storage), the document image level and image address.

   • The document is scanned.

   • The document image header is created.

   • The host computer initiates transfer of the document image header and document image to the host system for storage on magnetic or optical disk media.

   • Documents are deposited in the exit hopper, face down, in the order in which they were fed into the transport.

7. Press the **Stop** key.

8. Press **P2** or enter function code **F38** to indicate end-of-job.

9. Turn off the side panel switch.

   NOTE: If the scanner will not be used for 8 hours or more, turn off the main power switch.

Selecting a mode

The scanner offers 18 modes that may be programmed for a particular application or group of applications.

The modes are programmed at the time of installation and stored for easy access and use.

Typically, the mode is selected via the host system, using a scanner-unique command. However, you may manually select a mode.

To select a mode, do the following:

1. Enter function code **F01** (Select Mode) by pressing the **F** key and the numeric keys **0** and **1**.

2. Press **Enter**.

3. Enter the desired mode number (modes range from 1 to 18).

4. Press **Enter**.

You can also check with your system administrator to see if one or more of the P keys has been preprogrammed to perform specific functions.

Temporary operating values

Each of the 18 modes programmed at the time of installation contain definitions that affect the output of the scanner. Each mode is programmed to conform to the output requirements of a particular application or group of applications.

There may be instances, however, when a particular application requires some variation of an existing mode. In such instances, mode definitions may be changed using available function codes. See Chapter 4, *Function Codes,* for a listing and descriptions of the available function codes.

NOTE: Changes to mode definitions remain in effect until another mode is selected or the side panel switch is turned off. The original mode definition is only affected by these changes if the mode overrides are saved (the mode override option may be selected at installation and if selected, a plus sign (+) appears in the first line of the status display).

Example:

If mode 15 contains definitions that allow you to use the *Kodak Imagelink* Endorser, the starting print position (which defines how far from the leading edge of the document the endorsement is printed) is programmed to be 0.5.

If there is a special application that requires the endorsement be printed 1 inch from the leading edge of the document, you may use function code F59 to temporarily change the starting print position.

Feeding documents using the semi-automatic feeder

Following are document feeding instructions using the semi-automatic feeder. After the scanner has been prepared for operation, the desired mode and any temporary operating values have been defined, you are ready to feed documents into the transport.

1. Verify the side panel switch is on and that any adjustments have been made (feeder side guides, exit hopper side guides, etc.).

2. Press **Run**.

3. Select a stack of documents that is no more than 0.75 in. (19 mm) thick.

4. Fan the stack of documents so the leading edge of the top document engages the feed and separator rollers as shown:

Top document
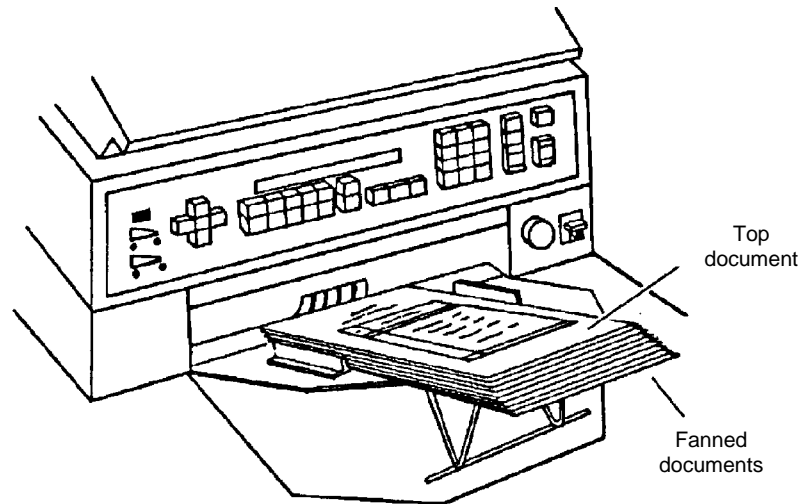
Fanned documents

5. Place the stack of fanned documents into the feeder so the leading edge of the top document contacts the feed and separator rollers. The documents are drawn into the transport, with the top document being fed first. The documents are deposited in the exit hopper face down, in the order in which they were fed into the transport.

6. Repeat Steps 3 through 5 until all of the application documents have been fed into the transport.

7. Press **Stop** after all documents have been deposited in the exit hopper.

Feeding thick documents

The gap release lever is used to feed thick documents such as card stock or cover stock. The lever is located on the front panel of the scanner, next to the gap adjustment knob.

(Graphic depicts gap adjustment)

(Graphic depicts movement of separator rollers when lever is used)
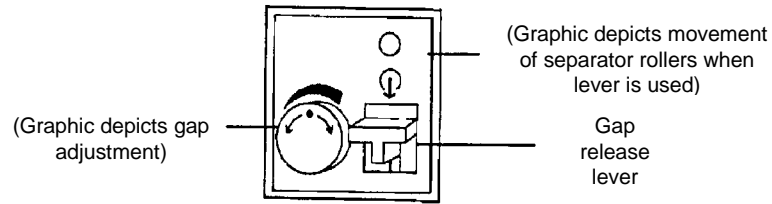
Gap release lever

1. Press down and hold the gap release lever. This opens the gap between the feed and separator rollers, allowing thick documents to pass between them. You will be able to see the gap open as the lever is pushed down.

2. Insert the thick document past the rollers until it is taken into the transport system.

    NOTE: If more than one thick document is to be scanned, feed them into the transport one at a time.

Gap release lever (hold down)

Feed roller

Gap

Separator roller
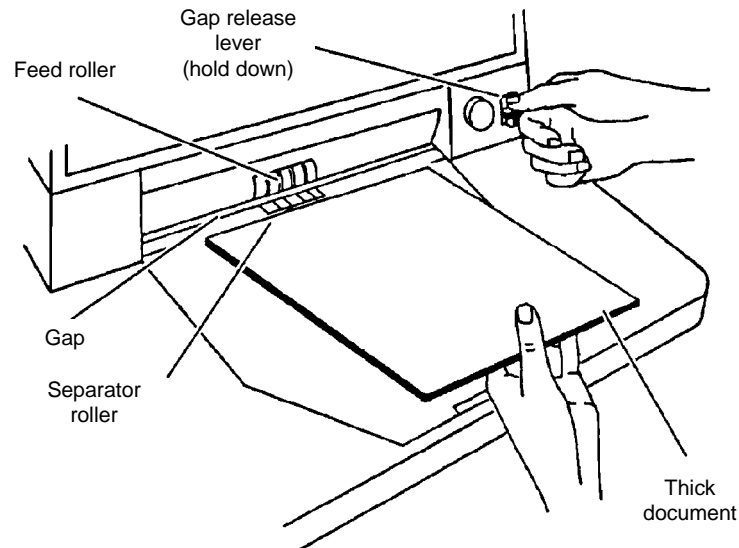
Thick document

3. After the thick document(s) have been scanned, release the gap release lever; it will return to its original position. The feed and separator rollers will return to their previously adjusted positions.

Feeding documents using the automatic feeder

Following are document feeding instructions using the automatic feeder. After the scanner has been prepared for operation, the desired mode and any temporary operating values have been defined, you are ready to feed documents into the transport.

1. Verify that the power is on and that any adjustments have been made (feeder side guides, exit hopper side guides, etc.).

2. Select a stack of documents that is no more than 1.5 in. (38 mm) thick. Hold the stack with the front sides facing up and the top of the documents facing toward the scanner. Tap the top edge of the stack against a flat surface so the documents are in an even bundle.

3. Fan the stack of documents so the leading edge of the top document sticks out the farthest.
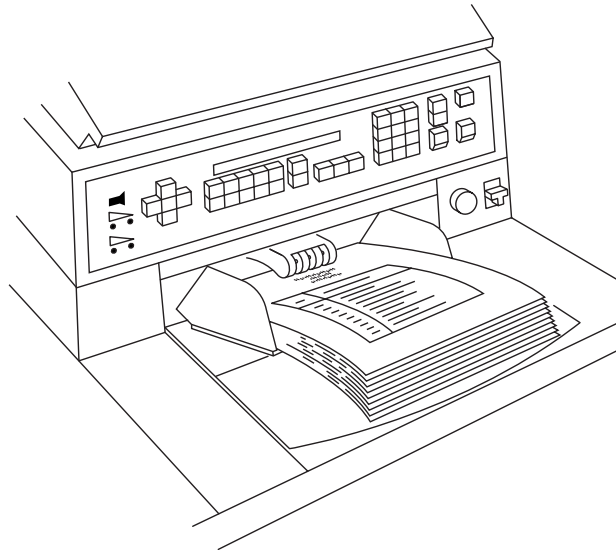
4. Lift the feeder module up and slide the leading edge of the document underneath the feeder module. To help prevent multiple feeds, place the stack of documents under the feeder module and pull the stack back slightly (about ¼-inch) from the separator roller.

5. Press **Run.**

   NOTE: Be sure the documents are center-fed so each document covers the 3 ½-inch required width.

6. As you scan documents, set the image level, as required, and periodically remove documents from the exit hopper.

7. Repeat Steps 2 through 4 until all of the application documents have been fed into the transport.

8. Press **Stop** after all documents have been deposited in the exit hopper.

4   Function Codes

Using function codes

There are a variety of functions available which may be used to temporarily change operating parameters, and to obtain system and accessory status information.

These functions are listed in the Function Code Summary later in this chapter. Following are the procedures for using function codes:

1. Press the **F** key.
2. Press the numeric keys which correspond to the desired function code.
3. Press **Enter**.

If the function is used to enable or disable an operation (turn an option on or off):

1. Press **1** to turn the option On, or **0** to turn the option Off.
2. Press **Enter**.

If the function requires numeric input:

1. Press the numeric key(s) required.
2. Press **Enter**.

If the function is used to increment or decrement a measurement or setting:

*   Press the arrow keys to increment or decrement as follows:

    −   Press the **Up** arrow to increment the measurement by 1 inch (25 mm) or one value, or
    −   Press the **Down** arrow to decrement the measurement by 1 inch (25 mm) or one value, or
    −   Press the **Right** arrow to increment the measurement by 1/8-inch (3 mm) or one value, or
    −   Press the **Left** arrow to decrement the measurement by 1/8-inch (3 mm) or one value.

*   Press **Enter.**

To cancel a function (before pressing **Enter**) or clear the status display after executing a function code:

*   Press **C** (Clear/Cancel).

Function code summary

Following is a summary of the functions and their corresponding function code:

Status

Accessory Status*...F05
Date and Time Display* ‡ F23
Elapsed Time* F17

Counters

Level 0 Count* F10
Level 1 Count* F11
Level 2 Count* F12
Level 3 Count* F13
Total Document Count*...F09
Reset Level Counts...F14

Setup

Action/Confirmation Tone ‡..F93
Alarm Tone ‡ F16
Alarm Volume F15
Change Date ‡..F22
Change Time ‡ F21
Display Contrast..F18
Display Language F19
Measurement System F20
Operator ID...F34
Scanner Calibration F37

Mode

Select Mode..F01
Select Linked Mode F91
Counting Only F04
Restore Mode F02

Index/Image Address

Last Image Address*...F08
Level 0*...F07
Level 1*...F94
Level 2*...F95
Level 3*...F96
Fixed Field F92
Next Image Address F97

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*   May be executed while transport is running.

‡   Available when using advanced capabilities.

Operation

Run F99
Terminate Batch* F06
Stop* F98

Scanning

Scanner Calibration F37
Latched Scanning Flag* F73
Momentary Scanning Flag* F74
Scanner End-of-Job F38

Endorser

Endorser On/Off..F57
Endorser Mode F58
Endorser Print Position F59

Footswitch

Footswitch Confirmation Tone ‡...............................F75

Bar Code‡

Bar Code Reading On/Off..F60
Partial Bar Code Reading On/Off.............................F66
Bar Code Reading Confirmation Tone F63
Bar Code/Patch Reading Confirmation Tone F62
Bar Code Test...F65
Omit Bar Code Reading on Next Document* F64

Document Controller

Length Checking On/Off F70
Omit Length Checking on Next Document Only* F71
Skew Detection...F72

Document Printers

All Document Printers On/Off...................................F40
Primary Document Printer 1 On/Off F41
Secondary Document Printer 1 On/Off ‡....................F42
Document Printer 12 On/Off F43
Omit Printing on Next Document..............................F44
Print Position..F46
Print Test F45
Printer Character Shift F39
Printer Open Jet Test..F56
Purge Frequency F49
Purge Print Head* F48

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*   May be executed while transport is running.

‡   Available when using advanced capabilities.

Super12 Document Printer

NOTE: Function codes F43 and F44 work the same on a
Super12 Document Printer.

Patch Reader

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*   May be executed while transport is running.

‡   Available when using advanced capabilities.

Function code listing   Following is a listing of the function codes and descriptions.

Code	Function Code Name	Description
F01	Select Mode	Allows you to select one of the predefined application modes. Enter a value from 1 to 18 and press **Enter**.
F02	Restore Mode	Allows you to restore the current application mode to its default status, provided mode overrides are not saved.
F04	Counting Only	Allows you to count the number of documents entering the scanner without scanning. Enter **1** to turn Counting Only on, or **0** to turn Counting Only off and press **Enter.**
F05	Accessory Status	Displays the current status of each accessory installed. Press the **Down** arrow to view the status of the next accessory, or press the **Up** arrow to view the status of the previous accessory.
F06	Terminate Batch	Allows you to prematurely end a batch.
F07	Level 0	Allows you to define the next document scanned as a Level 0 document.
F08	Last Image Address	Allows you to display the image address of the last document scanned.
F09	Total Document Count	Allows you to display the total number of documents that entered the feeder (Level 3, Level 2, Level 1 or Level 0). Press **0** to reset the counter and then press **Enter.**
F10	Level 0 Count	Allows you to display the total number of documents that have entered the feeder as Level 0 documents. Press **0** to reset the counter and then press **Enter.**
F11	Level 1 Count	Allows you to display the total number of documents that have entered the feeder as Level 1 documents. Press **0** to reset the counter and then press **Enter.**
F12	Level 2 Count	Allows you to display the total number of documents that have entered the feeder as Level 2 documents. Press **0** to reset the counter and then press **Enter.**
F13	Level 3 Count	Allows you to display the total number of documents that have entered the feeder as Level 3 documents. Press **0** to reset the counter and then press **Enter.**
F14	Reset Level Counts	Allows you to reset all the level counters (Level 0, Level 1, Level 2, and Level 3) to 0.
F15	Alarm Volume	Allows you to adjust the volume of the alarm. Press the **Up** arrow to increase the volume or press the **Down** arrow to decrease the volume, then press **Enter**.
F16	Alarm Tone	Allows you to adjust the pitch of the alarm tone. Press the **Up** arrow to increase the pitch or press the **Down** arrow to decrease the pitch, then press **Enter**.

Code	Function Code Name	Description
F17	Elapsed Time	Allows you to display the number of hours the motor, transport and main power have been running, in addition to the non-resettable document count. Press the **Right** arrow to view the meters. Meter A — displays motor-on hours Meter B — displays transport-on hours Meter C — displays main power-on hours Meter D — displays document count
F18	Display Contrast	Allows you to adjust the contrast of the status display. Press the **Up** arrow to increase the contrast or press the **Down** arrow to decrease the contrast, then press **Enter**.
F19	Display Language	Allows you to choose your preferred language. Press the arrow key to toggle between two available options.
F20	Measurement System	Allows you to choose your preferred measurement system. Press the arrow key to toggle between two available options.
F21	Change Time	Allows you to change the time. Enter the new time in the format illustrated and press **Enter.**
F22	Change Date	Allows you to change the date. Enter the new date in the format illustrated and press **Enter.**
F23	Time and Date Display	Allows you to view the current time and date.
F34	Operator ID Number	Allows you to display the current operator ID number and/or change to a new operator ID number. Enter a new operator ID up to 3 digits and press **Enter.**
F37	Scanner Calibration	Allows you to initiate the calibration process required before scanning documents. To do this, feed a calibration target into the scanner.
F38	Scanner End-of-Job	Allows you to signal the host computer that the last document of the job has been fed into the transport.
F39	Printer Character Shift (for Document Printer 12)	Allows you to select which set of ink jets will be used to print each character. Enter **1** to select the left set of ink jets, enter **2** to select the center set of ink jets, or enter **3** to select the right set of ink jets, then press **Enter**.
F39	Print Contrast (for Super12 Document Printer)	Allows you to increase or decrease the amount of ink put on the document. Press the **Up** arrow for more ink and press the **Down** arrow for less ink. Incremental values are: 12, 25, 37, 50, 62, 75, 87 and 100%.

Code	Function Code Name	Description
F40	All Document Printers On/Off (for Document Printers 1 and 12)	Allows you to turn all Document Printers (primary DP1, secondary DP1 and DP12) on or off. Enter **1** to turn on or **0** to turn off, then press **Enter**.
F40	Print Head Position (for Super12 Document Printer)	Allows you to change the print heads or clean the printer. This function can only be performed when the transport is off. Enter **1** to Change Heads or **2** to Clean Printer, then press **Enter.**
F41	Primary DP1 On/Off	Allows you to turn the primary Document Printer 1 on or off. Enter **1** to turn on or **0** to turn off, then press **Enter**. NOTE: If the Super12 Document Printer is installed, a message indicating "Unassigned Function" will be displayed.
F42	Secondary DP1 On/Off	Allows you to turn the secondary Document Printer 1 on or off. Enter **1** to turn on or **0** to turn off, then press **Enter**. NOTE: If the Super12 Document Printer is installed, a message indicating "Unassigned Function" will be displayed.
F43	Document Printer 12/ Super12 On/Off	Allows you to turn the Document Printer 12 or Super12 Document Printer on or off. Enter **1** to turn on or **0** to turn off, then press **Enter**.
F44	Omit Printing on the Next Document Only	Allows you to specify no information be printed on the next document scanned. Printing will resume on subsequent documents. Enter **1** to omit printing on the next document, or enter **0** to print on the next document then press **Enter**. NOTE: If you enter **F44** and then **F45**, the Omit Printing Status on Next Document will be cleared.
F45	Print Test (for Document Printers 1 and 12)	Allows you to test the position and print quality of all Document Printers installed. Enter the number of the print test you want to perform. 1=Print IA test 3=Shift test 2=Prime test 4=Standard test This function can be done when the transport is off.
F45	Print Test (for Super12 Document Printer)	Allows you to test the position and print quality of the Super12 Document Printer. Enter the number of the print test you want to perform. 1=Mode Image — will print the current image for the level and mode you are in. 2=Test Pattern — will print a preloaded test image. This function can be done when the transport is off. NOTE: If you enter **F44** and then **F45**, the Omit Printing Status on Next Document will be cleared.

Code	Function Code Name	Description
F46	Print Position	Allows you to specify how far from the leading edge of the document printed information will appear. Press the **Up** arrow to increment the starting print position by 1 inch (25 mm), press the **Down** arrow to decrement the starting print position by 1 inch (25 mm). Press the **Right** arrow to increment the starting print position by 0.125-inch (3 mm), or press the **Left** arrow to decrement the starting print position by 0.125-inch (3 mm), then press **Enter**.
F48	Purge Print Pattern (for Document Printers 1 and 12)	Allows you to initiate an immediate priming ink spurt.
F48	Print Purge Head (for Super12 Document Printer)	Allows you to initiate an automatic purging of the print heads. This function can be done when the transport is off.
F49	Purge Frequency (for Document Printer 1 and 12)	Allows you to specify how often, in terms of the number of documents fed into the transport, a priming ink spurt is initiated. Enter the number of documents, up to 50,000 and press **Enter.**
F49	Align Print Image (for Super12 Document Printer)	Allows you to specify how far to move the left half of an image up or down (in increments of one line) on the document so it will align with the right half of the image.
F50	Patch Reader 1 On/Off	Allows you to turn the primary Patch Reader on or off. Enter **1** to turn on or **0** to turn off, then press **Enter.**
F51	Patch Reader 2 On/Off	Allows you to turn the secondary Patch Reader on or off. Enter **1** to turn on or **0** to turn off, then press **Enter.**
F52	End Fed Patch Reading On/Off	Turn End Fed Patch Reading on if you expect the patch to be located in the vertical (vs. horizontal) position on the document. Enter **1** to turn on or **0** to turn off, then press **Enter.**
F53	Patch Reading Confirmation Tone On/Off	Allows you to turn the confirmation tone on or off which informs you when the Patch Reader has successfully read a patch document. Enter **1** to turn on or **0** to turn off, then press **Enter.**
F56	Printer Open Jet Test (for Document Printers 1 and 12)	Allows you to determine whether or not there are nonfunctional ink jets in the Super12 Document Printer ink cartridge. Press **C** to return to a normal operating display.
F56	Printer Cartridge Status (for Super12 Document Printer)	Allows you to determine whether or not there are nonfunctional ink jets in the Super12 Document Printer. Also checks the print head(s) connection to the flex cable to assure the print heads(s) are installed properly. Press **C** to return to a normal operating display.
F57	Endorser On/Off	Allows you to turn the Endorser on or off. Enter **1** to turn on or **0** to turn off, then press **Enter.**

Code	Function Code Name	Description
F58	Endorser Mode	Allows you to display the current Endorser mode and/or change the Endorser mode. To change to Endorser mode, press any arrow key to toggle between the two available options and then press **Enter**.
F59	Endorser Print Position	Allows you to specify how far from the leading edge of the document the endorsement will appear. Press the **Up** arrow to increment the starting print position by 1 inch (25 mm), press the **Down** arrow to decrement the starting print position by 1 inch (25 mm). Press the **Right** arrow to increment the starting print position by 0.125-inch (3 mm), or press the **Left** arrow to decrement the starting print position by 0.125-inch (3 mm), then press **Enter.**
F60	Bar Code Reading 1 On/Off	Allows you to turn bar code reading on or off. Enter **1** to turn on or **0** to turn off and then press **Enter**.
F62	Bar Code/Patch Reading Confirmation Tone	Allows you to turn the bar code/patch reading confirmation tone on or off. Enter **1** to turn on or **0** to turn off and then press **Enter**.
F63	Bar Code Reader Confirmation Tone	Allows you to turn the confirmation tone on or off which informs you when the Bar Code Reader has successfully read a bar code document. Enter **1** to turn on or **0** to turn off and then press **Enter**.
F64	Omit Bar Code Reading on the Next Document Only	Allows you to omit bar code reading on the next document scanned. Bar Code Reading will resume on subsequent documents. Enter **1** to turn on or **0** to turn off, then press **Enter**.
F65	Bar Code Test	Allows you to perform a test to verify the operation of the Bar Code Reader. Enter the number of the bar code test you want to perform: 1=Evaluate; 2=Display; 3=%Kodak; or 4=%Norm, then press **Enter**.
F66	Partial Bar Code Reading On/Off	Allows you to turn partial bar code reading on or off. Enter **1** if you want the scanner to read bar codes with a start character (and *n* characters beyond the start character that can be read) even if no end character is encountered. Enter **0** to turn off partial bar code reading off, then press **Enter**.
F70	Length Checking On/Off	Allows you to turn length checking on or off which monitors the length of the document(s) scanned using predefined maximum allowable lengths. Enter **1** to turn on or **0** to turn off and then press **Enter**.
F71	Omit Length Checking on the Next Document Only	Allows you to omit length checking on the next document scanned. Length monitoring will resume on subsequent documents. Enter **1** to turn on or **0** to turn off, then press **Enter**.

Code	Function Code Name	Description
F72	Skew Detection	Allows you to turn skew detection on or off which monitors the amount of skew using predefined skew angle(s). Enter **1** to turn on or **0** to turn off, then press **Enter**.
F73	Latched Scanning Flag	Allows you to set a flag in the image headers which alerts the host system that this document, and those which follow, are of special interest. The flag will remain activated for every document until it is turned off. Enter **1** to turn on or **0** to turn off, then press **Enter**.
F74	Momentary Scanning Flag	Allows you to set a flag in the image header which alerts the host system that this document is of special interest. This flag is set only for that one document. Enter **1** to turn the momentary scanning flag on, then press **Enter**.
F75	Footswitch Confirmation Tone	Allows you to turn the confirmation tone on or off which informs you when the Footswitch is pressed and/or released. Enter **1** to turn on or **0** to turn off, then press **Enter**.
F91	Select Linked Mode	Allows you to switch from one application mode to another, keeping the last image address. Enter the number of the application mode you wish to select, then press **Enter**.
F92	Fixed Field	Allows you to enter a new fixed field value containing alphanumeric characters. NOTE: If the fixed field width for the mode you are using is 0, and E104 error will be displayed. To correct this, change to a mode that has a fixed field or modify the mode you are using so the fixed field is not 0.
F93	Action/Confirmation Tone	Allows you to hear the pitch of the alarm tone.
F94	Level 1	Allows you to assign Level 1 to the next document fed into the transport.
F95	Level 2	Allows you to assign Level 2 to the next document fed into the transport.
F96	Level 3	Allows you to assign Level 3 to the next document fed into the transport.
F97	Next Image Address	Allows you to input the next image address. Enter the next image address, then press **Enter**.
F98	Stop	Allows you to stop the transport.
F99	Run	Allows you to turn on the transport.

5   Maintenance

Cleaning tasks

To keep your scanner in good operating condition, the following tasks should be performed:

- Cleaning the imaging guides (daily)
- Cleaning the feed and separator roller (semi-automatic feeder) (daily)
- Cleaning the feeder module and separator roller (automatic feeder) (daily)
- Cleaning the paper path (daily)
- Vacuuming inside the scanner (daily)
- Cleaning the exposure lamp housings (weekly)
- Cleaning the cabinet (weekly)
- Cleaning the air filter (monthly)

For additional maintenance and feeder adjustment information, see Kodak publication A-61604. This publication is part of the Maintenance and Feeder Adjustment procedure video; Catalog Number 828 5306.

Cleaning materials

Materials needed to perform maintenance procedures are:

- A mild cleaning agent
- A quality lens cleaner
- A soft, clean, lint-free cloth
- A soft-bristled cleaning brush
- A vacuum cleaner
- Staticide Wipes
- Roller Cleaning Pads
- Paper Path Cleaner

IMPORTANT: *Do not use any unauthorized commercial cleaning solvent in any of the cleaning procedures.*

Replacement parts

Consumable parts that can be replaced by the customer include:

- Air filter
- Exposure lamps
- Imaging guides
- Automatic Document Feeder Module
- Automatic Document Feeder Separator Roller

Instructions on how to replace these parts are included later in this chapter.

Daily maintenance procedures

Maintenance procedures that should be performed daily include cleaning the imaging guides, the feed and separator rollers, the paper path and vacuuming inside the scanner.

Cleaning the imaging guides

To clean the imaging guides, follow the steps below:

IMPORTANT: *Do not use any abrasive materials when cleaning the imaging guides. This includes abrasive cleansers, commercial solvents, paper towels, or coarse cloths.*

1. Open the right-side access door.

    NOTE: The illustration below shows the rear view of the scanner.
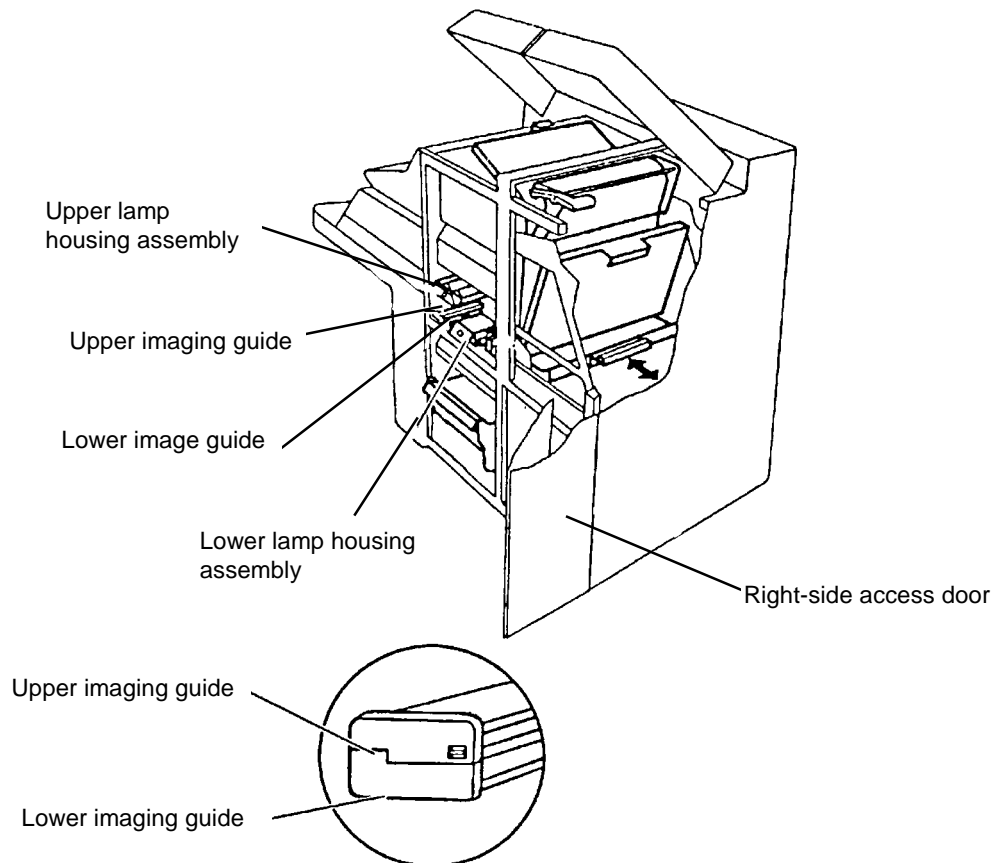
2. Locate and grasp the end of the upper imaging guide. Carefully slide the imaging guide out of its track.

3. Locate and grasp the end of the lower imaging guide. Carefully slide the imaging guide out of its track.

4. Remove dust from the imaging guides, using a soft bristle brush.

5. Remove fingerprints or smudges from the imaging guides, wiping both sides of each imaging guide with a clean, soft, lint-free cloth slightly moistened with water or lens cleaner. Then, lightly wipe both sides of each imaging guide with a dry cloth or an antistatic wipe.

   IMPORTANT: *Do not use cleaning pads on the imaging guides. Do not use any abrasive materials when cleaning the guides. This includes abrasive cleansers, commercial solvents, paper towels, or course cloths.*

6. Remove the upper lamp housing assembly.

7. Remove dust from the upper lamp housing assembly, using a soft bristle brush.

8. Reinstall the upper lamp housing assembly.

   Repeat Steps 6 through 8 for the lower lamp housing assembly.

   IMPORTANT: *Use care when handling the imaging guides. Hold the imaging guides by the green handles only.*

9. Grasp and hold the lower imaging guide by the green handle and carefully slide it back into place. Make sure the grooves fully engage the track.

10. Grasp and hold the upper imaging guide by the green handle and carefully slide it back into place. Make sure the grooves fully engage the track.

    NOTE: The imaging guides are not interchangeable. They can only be inserted one way.

11. Close the right-side access door.

Cleaning the feed and separator rollers (semi-automatic feeder)
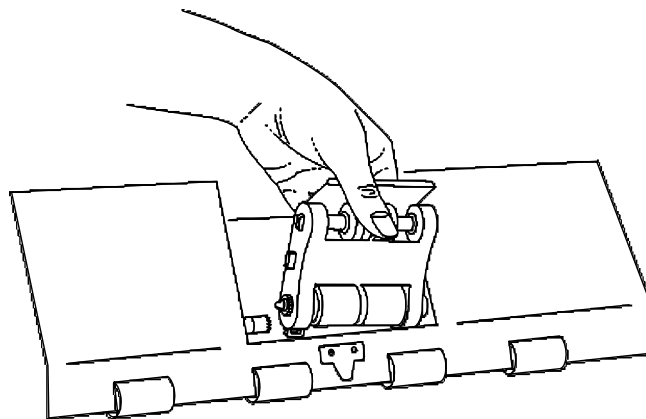
Clean the feed and separator rollers at least twice a day to prevent ink, toner, and dust from collecting on the rollers and preventing documents from separating.

1. Grasp the front cover and swing it open to the right.
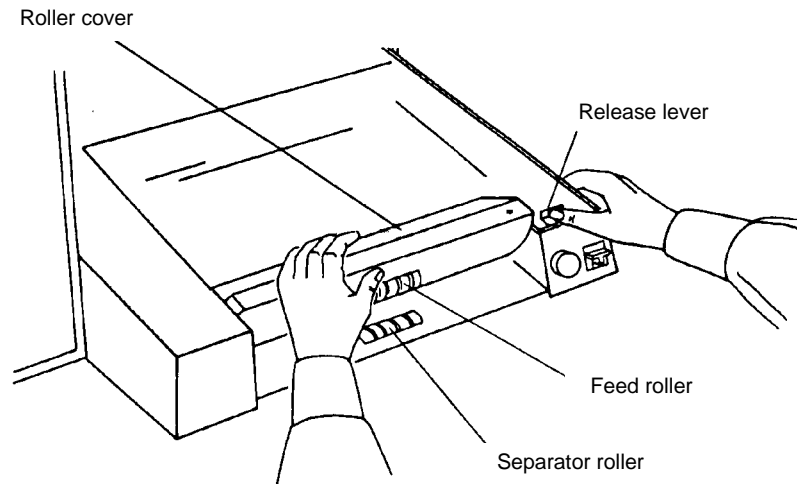
Roller cover

Release lever

Feed roller

Separator roller

2. Push the roller cover release lever toward the back of the machine.

3. Grasp and rotate the roller cover toward the back of the machine, exposing the feed and separator rollers.

Roller assembly

Feed roller
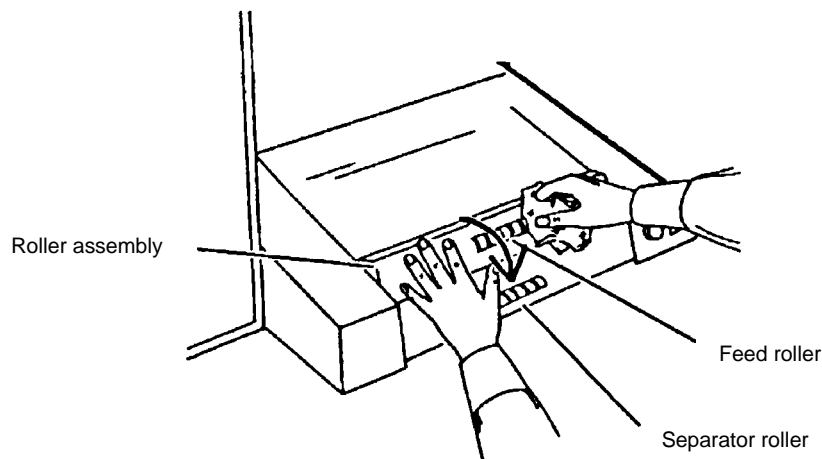
Separator roller

4. Hold the feed and separator rollers and scrub them with a roller cleaning pad until all residue is removed from the roller ribs. Clean the five small normal force rollers (below the feed roller — not shown in this illustration) in the same manner.

5. Wipe the feed and separator rollers and the five normal force rollers with a clean, dry, lint-free cloth to dry the rollers.

6. Rotate the roller assembly back into position.

7. Close the front cover.

Cleaning the feeder module and separator roller (automatic feeder)

Clean the feeder module and separator roller daily to prevent ink, toner, and dust from collecting on the rollers and preventing documents from separating.

**Cleaning the feeder module and separator roller:**

1. Open the front cover.

2. Push the roller cover release lever toward the back of the machine.

3. Grasp and rotate the roller cover toward the back of the machine, exposing the feeder module and separator roller.

Roller cover release lever

Roller cover
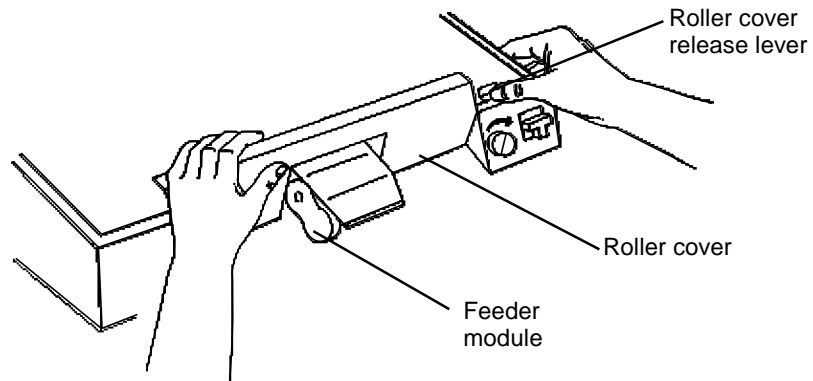
Feeder module

4. Remove the feeder module by pushing it to the right and lifting it out of its position.

5. Clean both rollers of the feeder module.

6. Replace the feeder module, by aligning the pins and fitting it into position.

Cleaning the separator roller:

1. Open the front cover.

2. Push the roller cover release lever toward the back of the machine.

3. Grasp and rotate the roller cover toward the back of the machine, exposing the feeder module and separator roller.

Roller cover release lever

Roller cover

Feeder module

4. Lift and remove the separator roller cover plate.
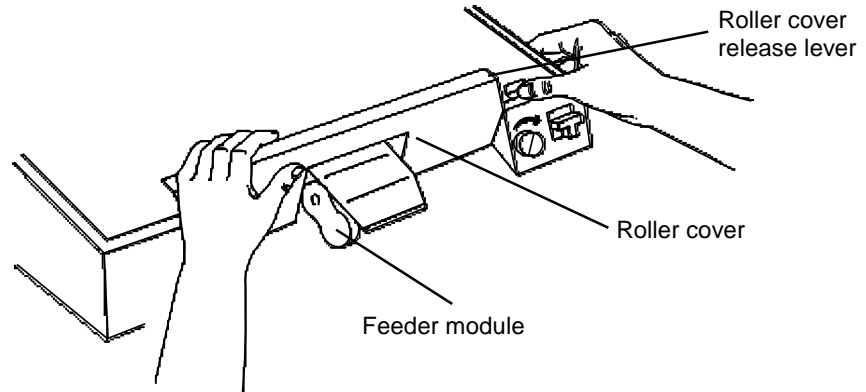
5. Lift the separator roller out of the grooved brackets.
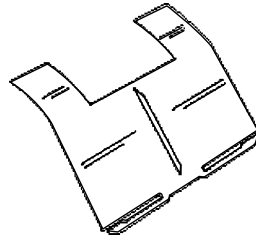
Separator roller

Grooved brackets
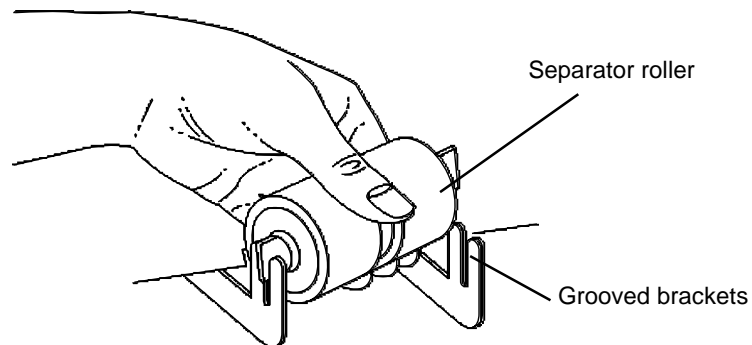
6. Clean the separator roller. Inspect the roller any areas where the white foam is showing through the roller cover. If the roller shows signs of wear, obtain and replace the separator roller.

7. Replace the separator roller by aligning the pins in the grooved brackets.

8. Reinsert the separator roller cover plate.

9. Close the feeder cover.

10. Close the front door.

Cleaning the paper path

NOTE: Before doing the following procedure, clean the machine thoroughly and use the roller cleaning pads to clean the feed, separator and normal force rollers — start with a clean machine.

Use the Paper Path Cleaner to clean the paper path rollers. Periodically feed a cleaning sheet with the gum side up through the machine in both the portrait and landscape orientation.

The paper path should be cleaned twice a day. Before you clean the paper path, be sure the feed and separator rollers and imaging guides have been cleaned.

1. To ensure complete coverage of the transport and normal force rollers, feed the cleaning sheet in the center, and to the left and right of the feeder document guides.

2. Repeat the procedure until no further residue is picked up by the cleaning sheet.

3. Using a clean Paper Path Cleaner sheet, repeat Step 1 to verify that the rollers are clean.

4. Turn the gum side down, and repeat Steps 1 through 3.

NOTE: When the gum side is down, it may be necessary to hold down the gap release lever to allow the Paper Path Cleaner sheet to feed past the separator roller.

Regular use of Paper Path Cleaner sheets may result in fewer major cleanings with the roller cleaning pads.

NOTE: If there are feeder errors after cleaning the feed and separator rollers, refer to the section entitled "Adjusting the feed and separator roller gap", in Chapter 2.

Vacuuming inside the scanner

The sensors located under the horizontal plate in the feeder/horizontal transport area and in the upper section of the lower roller housing assembly, the exposure lamp housings, and the air filter should be vacuumed or wiped down thoroughly with a clean, dry, soft, lint-free cloth at least once a week.

Refer to the instructions and illustrations provided in the Chapter 7, *Troubleshooting,* to assist in accessing the sensor locations.

Cleaning the feeder/ horizontal transport area

The sensors in the feeder/horizontal transport area are located under the horizontal plate, behind the feed/separator rollers, near the reflector strips.

1. Open the front cover.

2. Raise the horizontal plate.

3. Vacuum the area underneath the horizontal plate.

4. Remove the lower belt module.

5. Vacuum under the module and wipe with a clean, damp cloth.

6. Replace the lower belt module.

7. Lower the horizontal plate back into place.

8. Close the front cover.

Cleaning the lower roller housing assembly area

To clean the lower roller housing assembly area, follow the steps below:

1. Open the top cover.

2. Open the right-side access door.

3. Remove the imaging guides (not shown in illustration).

   IMPORTANT: *Use care when handling the imaging guides. Hold the imaging guides by the green handles only.*

Vertical baffle handle

Baffle plate

Lower roller housing assembly

Lower roller housing assembly

Screen
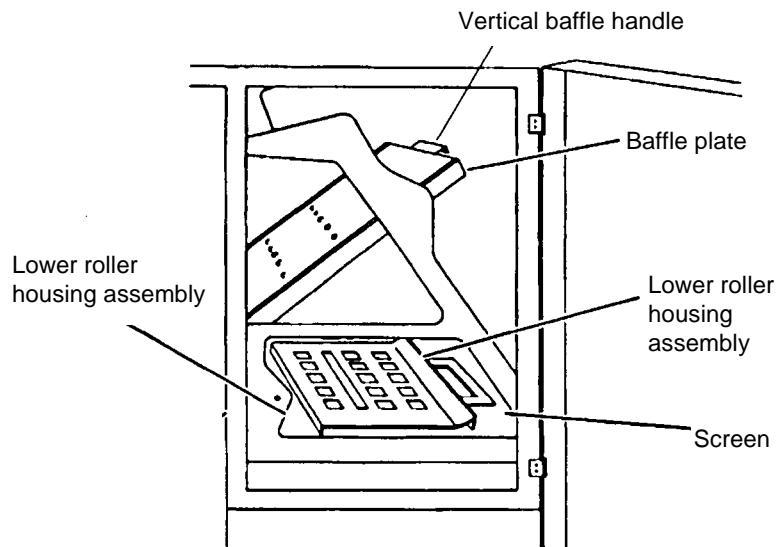
4. Grasp the vertical baffle handle, push it in and turn it counterclockwise until the baffle plate unlatches. Pull the baffle plate down until it stops, this unlocks the lower roller housing assembly.

5. Slide the lower roller housing assembly out of its housing and vacuum inside the housing.

   IMPORTANT: *Do not slide the lower roller housing assembly back into place without first removing the imaging guides. Failure to remove them first can cause misalignment and/or damage to the machine.*

6. Slide the lower roller housing assembly back into its original position.

7. Replace the imaging guides.

8. Vacuum the screen located at the base of the transport system.

9. Raise the baffle plate and push it into its original position. Turn the vertical baffle handle and latch it into place.

10. Close the right-side access door and top cover.

Weekly maintenance procedures

Maintenance procedures that should be performed weekly include cleaning the exposure lamp housings and cleaning the cabinet.

Cleaning the exposure lamp housings

The upper and lower lamp housings should be cleaned.

1. Open the right-side access door.

2. Remove the upper and lower imaging guides (between the upper and lower exposure lamp housings — not shown in this illustration).

   IMPORTANT: *Use care when handling the imaging guides. Hold the imaging guides by the green handles only.*

Upper lamp housing

Area to vacuum
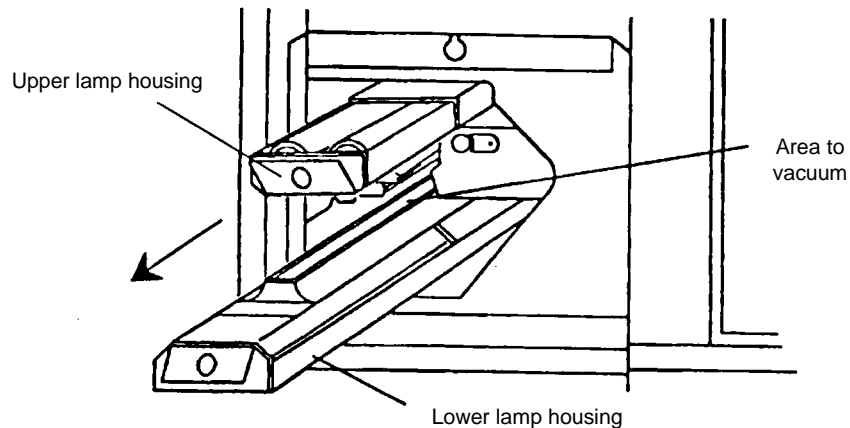
Lower lamp housing

2. Remove the lower lamp housing.

3. Vacuum the housing.

4. Replace the lower lamp housing.

5. Remove the upper lamp housing.

6. Vacuum the housing.

7. Replace the upper lamp housing.

8. Replace the upper and lower imaging guides.

9. Close the right-side access door.

Cleaning the cabinet

Clean the exterior of the scanner, the feed shelf, and the hopper area with a soft cloth. Remove any fingerprints, stains, or stubborn dirt with a cloth dampened with water or a mild cleaning agent.

Monthly maintenance procedures

Maintenance procedures that should be performed monthly include cleaning the air filter.

Cleaning the air filter

The air filter should be checked and cleaned at least once a month, and changed as needed.

1. Remove the air filter cover by pressing in on the top of the cover to release the catch.

Air filter cover

Catch
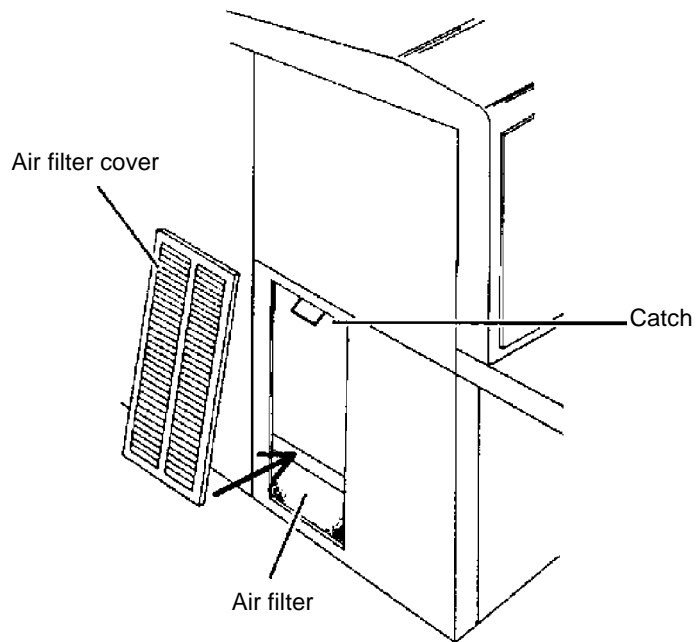
Air filter

2. Examine the filter for dust accumulation. If dust has accumulated, lightly vacuum the outside of the air filter and the air filter cover.

3. Replace the air filter cover by first inserting the bottom edge and then pushing the top edge in place.

Replacement procedures

Replacement procedures should be performed on an as-needed basis. Components that need periodic replacement include the air filter, exposure lamps and the imaging guides.

Replacing the air filter

The air filter should be replaced at least once a year, more often if needed.

IMPORTANT: *Never operate the scanner without an air filter installed. The imaging apparatus will quickly become contaminated with dust and dirt, impairing image quality.*

1. Remove the air filter cover by pressing in on the top of the cover to release the catch.

Air filter cover

Catch
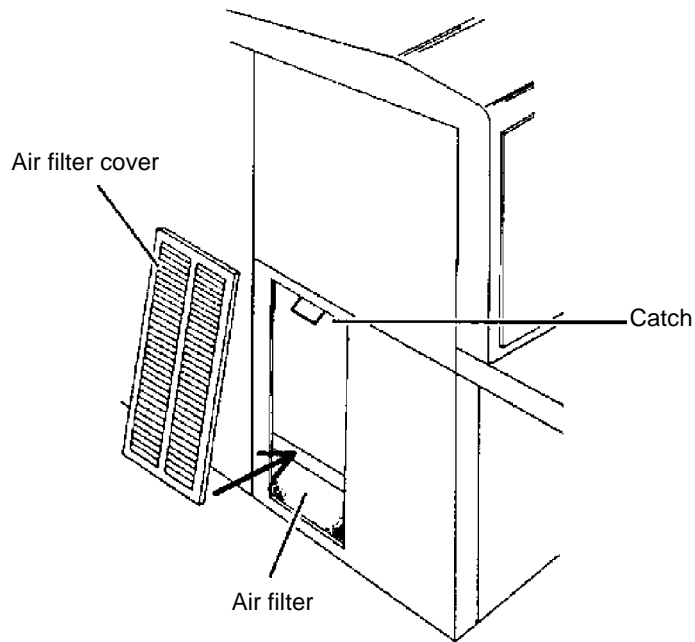
Air filter

2. Carefully remove the old air filter. Note the orientation of the filter as it is removed from the machine.

3. Orient a new air filter the same as the old air filter, and insert it into the space left open by the old air filter.

4. Replace the air filter cover by first inserting the bottom edge and then pushing the top edge in place.

Replacing the exposure lamps

The exposure system consists of four long-life fluorescent lamps. There are two lamp housings; one upper and one lower. Each lamp housing contains two lamps.

Change the lamps at least every 500 hours, when image quality appears to be degrading (and standard maintenance procedures do not improve the image quality), or when requested to do so by an operator message. Always replace both lamps in a housing at the same time, or exposures may appear inconsistent. Always use the recommended lamps, or image quality may be unacceptable.

1. Turn the side panel switch off.

2. Open the right side access door.

3. Remove the imaging guides. (Refer to the section entitled, "Replacing the imaging guides".)

4. Grasp the tab at the end of the upper lamp housing and slide the housing out of the track.

Tab
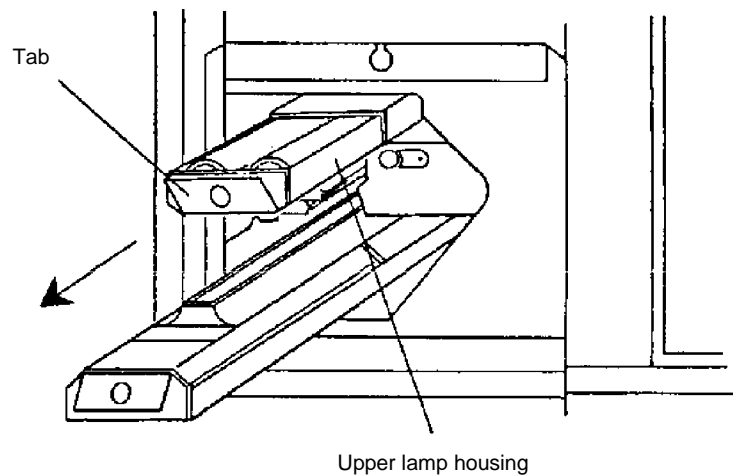
Upper lamp housing

WARNING: *Make sure the lamps are cool before attempting to remove them from the lamp housing.*

5. Carefully grasp the end of the lamp that is nearest the tab and lift it out of the lamp housing socket. Free the other end of the lamp and lift it out of the lamp housing. Remove the second lamp in the same manner.
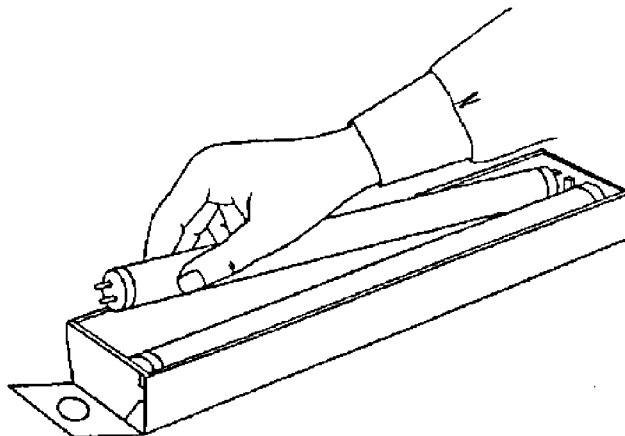
6. Dispose of or recycle the used lamps.

7. Install each lamp using the following sequence of steps:

   • Face the clear, horizontal line of the new lamp toward the slot in the bottom of the lamp housing.

   • Insert one end of the lamp into the socket at the tab end of the lamp housing. Insert the opposite end of the lamp into the other socket.

     WARNING: The exposure lamps are fragile. Never apply pressure to the center of the lamp; press down only on the ends of the lamp.

   • Gently push down on each end of the lamp. Do not force the lamp into place. The lamp should fit securely into the housing and click into place.

     NOTE: Improperly installed lamps (i.e., not securely seated in the lamp housing) will result in repeated low lamp warnings.

8. Place the upper lamp housing in the track and slide it back into place. Repeat Steps 4 through 8 to replace the lamps in the lower lamp housing.

9. Reinstall the imaging guides.

10. Close the right-side access door.

11. Turn the side panel switch on.

Replacing the imaging guides

To replace the imaging guides, follow the steps below:

1. Open the right-side access door.

2. Locate and grasp the end of the upper imaging guide. Carefully slide the imaging guide out of its track.

    IMPORTANT: *Use care when handling the imaging guides. Hold the imaging guides by the green handles only.*

3. Locate and grasp the end of the lower imaging guide. Carefully slide the imaging guide out of its track.

4. Grasp and hold the new lower imaging guide by the green handle and carefully slide it into place. Make sure the grooves fully engage the track.

5. Grasp and hold the new upper imaging guide by the green handle and carefully slide it into place. Make sure the grooves fully engage the track.

    NOTE: The imaging guides are not interchangeable. They can only be inserted one way.

6. Close the right-side access door.
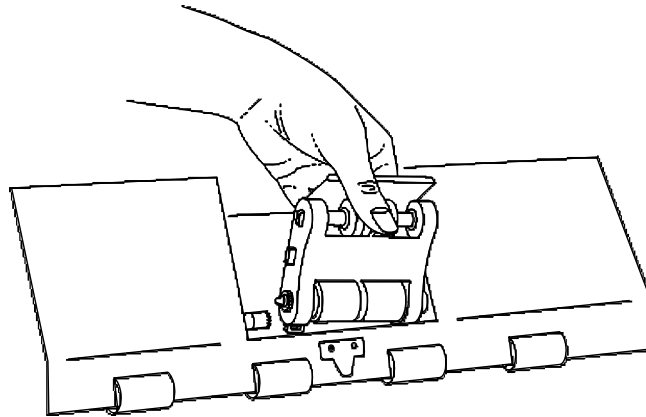
Replacing the feeder module and separator roller

To replace the feeder module and separator roller, follow the steps below:

Replacing the feeder module:

1. Open the front cover.

2. Push the roller cover release lever toward the back of the machine.

3. Grasp and rotate the roller cover toward the back of the machine, exposing the feeder module and separator roller.


Roller cover release lever

Roller cover
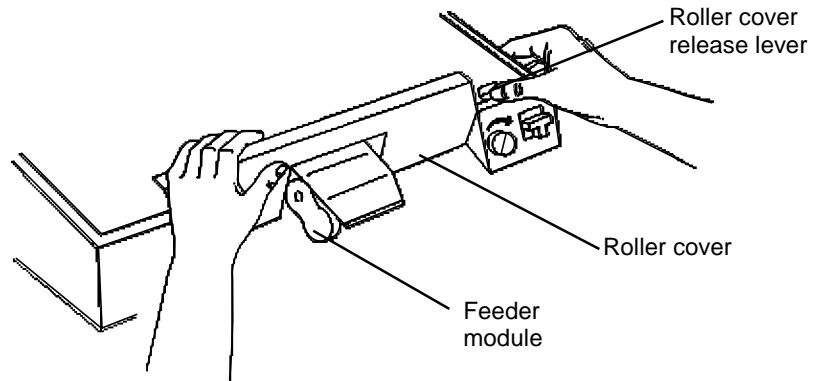
Feeder module

4. Remove the feeder module by pushing it to the right and lifting it out of its position.

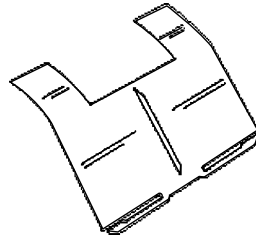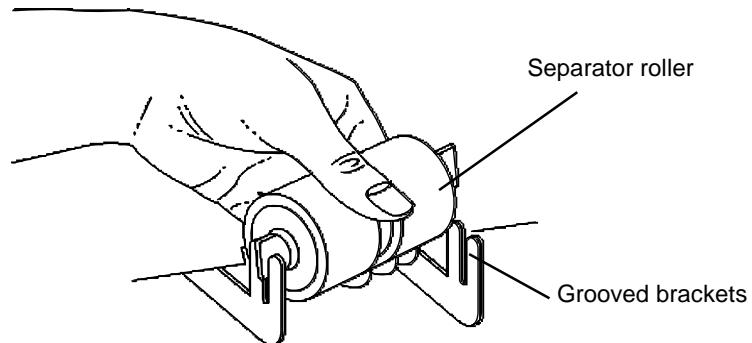5. Reinsert a new feeder module, by aligning the pins and fitting it into position.

Replacing the separator roller:

1. Open the front cover.

2. Push the roller cover release lever toward the back of the machine.

3. Grasp and rotate the roller cover toward the back of the machine, exposing the feeder module and separator roller.

Roller cover release lever

Roller cover

Feeder module

4. Lift and remove the separator roller cover plate.
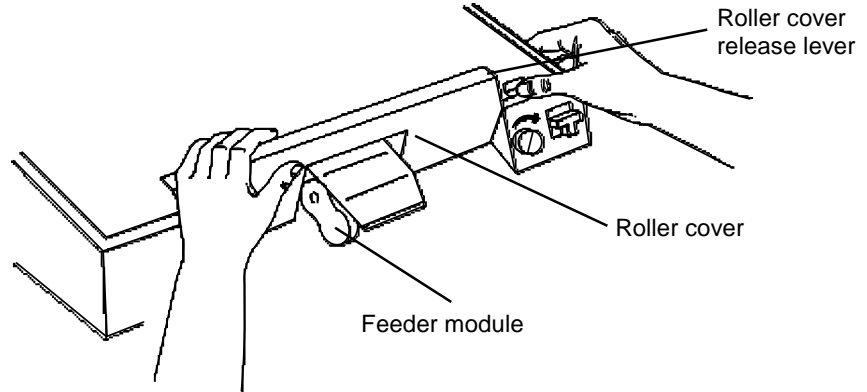
5. Lift the separator roller out of the grooved brackets.

Separator roller

Grooved brackets

6. Reinsert a new separator roller by aligning the pins in the grooved brackets.

7. Reinsert the separator roller cover plate.

8. Close the feeder cover.

9. Close the front door.

Ordering replacement parts

The following consumable parts can be ordered by calling: 1-800-431-7278.

- Imaging guides

    – Upper: Part No. 964365

    – Lower: Part No. 942000

- White exposure lamp: Part No. 964683

- Automatic Document Feeder Module (for automatic feeder): CAT No. 123 6066

- Automatic Document Feeder Separator Roller (for automatic feeder): CAT No. 161 4908

- Air filter: Part No. 942890

Ordering cleaning materials

The following cleaning materials can be ordered:

- Paper Path Cleaner: Part No. 4C9073 (pack of 50)

- Roller Cleaning Pads: Part No. 4C9069 (pack of 24)

- Staticide Wipes: Part No. 1C8102 (pack of 24)

6   Operator Messages

This chapter outlines the actions that should be taken by the user and system administrator when an operator message appears in the status display.

If a message appears in the status display that is within the ranges E000-E299 or E500-E599, you should take the action indicated in the table(s) in this chapter.

IMPORTANT: *Never power down the machine without first contacting your system administrator.*

If a message appears in the status display that is within the ranges E300-E499 or E600-E999, contact your system administrator.

The following action(s) should be taken:

- Determine whether or not the error can be addressed from the host system.

- If the error cannot be addressed from the host system, attempt to clear the error by taking the action indicated in the table(s) in this chapter.

- If the prescribed action(s) does not clear the error, initiate a controlled power-down sequence:

    − Wait for all information currently held in the buffer to be transferred to the host system.
    − Turn off the scanner transport using the side panel switch.
    − Turn off the scanner power using the main power switch.
    − Wait 10 to 30 seconds.
    − Turn on the scanner power using the main power switch.
    − Turn on the scanner transport using the side panel switch.

- If the error condition is not cleared using the controlled power-down sequence, contact service.

Operator message listing

Code	Operator Message Displayed	Description/Action Required
E000	Memory battery low — call service	Call service — do not turn off the machine.
E100	Please wait	No action required. Wait for the message to clear.
E101	Auto shut off, press RUN	Press **Run** to continue. Feed documents.
E102	Press STOP and try again	Press **Stop** and try again.
E103	Select valid mode	Invalid mode selected. Enter function code **F01** to select another mode.
E104	Function not available	Invalid function code entered. Enter another function code.
E106	Warning — document length error	Check the document length to see if it is shorter than the minimum or longer than the maximum allowed; refeed the document.
E107	Warning — skewed document	Refeed the document.
E110	Upper lamp warning, press RUN	Press **Run** to continue. Change the lamps when the current set of documents has been processed.
E111	Lower lamp warning, press RUN	Press **Run** to continue. Change the lamps when the current set of documents has been processed.
E112	Invalid patch level	Invalid patch was used. Feed correct patch.
E113	Enter correct image address	Use the **Next** key to enter correct image address.
E114	Check current level	Check the current document image level. Conflicting input regarding the proper level was received.
E117 E118 E119	Enter correct level/Image Address	Document image level assignment and next image address input conflict. Specify another document image level, or use the **Next** key to enter a valid image address.
E120	Diagnostic running — do not use	Do not use; the machine is being serviced.

Code	Operator Message Displayed	Description/Action Required
E121 E122	Check front patch reader Check rear patch reader	Patch code not recognized. Verify that the patch document was fed into the transport in the proper orientation. • If not, refeed the path document. • If so, change to a non-patch mode to continue; call service.
E123	Command data rejected — resend	Command not recognized. Enter the command again.
E124 E125	Command not allowed in this model	Command cannot be performed. Enter a valid command.
E126	Enter correct command	Press correct key(s) for mode selected.
E127	Feeder waiting for host system	System is busy. No action required. Wait for the message to clear.
E128	Feeder adjustment warning	Check and adjust feed and separator roller gap.
E130	OCR not installed	Requested action requires installation of the OCR accessory.
E131	Device not enabled	Requested action requires installation of the Bar Code Reader.
E132	Enable bar code first	Requested action requires that you enable the Bar Code Reader. Enter function code **F60** to enable bar code reading.
E133	Feeder waiting for printer (Super 12 Printer only)	The printer is moving into the print position; wait until the message clears.
E140 E141 E142 E143 E145	Document Printer not installed Patch Reader not installed Detection System not installed Bar Code Reader not installed Endorser not installed	Requested action required installation of the module/accessory indicated. The required module/accessory is not installed.
E200 E201	Verify/enter image address	An error has occurred in the system and the image address may no longer be correct. Use function code **F08** to determine the last image address. Use the **Next** key to correct the image address, if necessary.

Code	Operator Message Displayed	Description/Action Required
E204	Skewed document — refeed	Press **Clear** and use the **Next** key to enter the correct image address and refeed document(s).
E205	Level overflow — press next level	Press **Clear** and use the **Next** key to enter the correct image address, or press a level key for a higher level.
E206	Check print head	Install the correct Document Printer print head.
E207	Check printer installation	Document Printer not correctly installed. Properly install the Document Printer print head.
E211	Enter correct Image Address	Use the **Next** key to enter the correct image address.
E214	Document length error — refeed	Press **Clear** and use the **Next** key to enter the correct image address and refeed document(s).
E219	Clear error and refeed last doc	Press the **Clear** key. Press **Run** and feed the last document.
E220	Check for jam in entrance transport	Clear the document path. Press **Clear** and then press the **Jog** key. Press **Run** and refeed document(s).
E221	Clean entrance sensor	Perform maintenance/cleaning procedures.
E225	Check for jam in transport	Clear the document path. Press **Clear** and then press the **Jog** key. Press **Run** and refeed document(s).
E226	Clean slide-out sensor reflector	Perform maintenance/cleaning procedures.
E227	Check for jam in transport	Clear the document path. Press **Clear** and then press the **Jog** key. Press **Run** and refeed document(s).
E228	Check for jam in upper transport	Clear the document path. Press **Clear** and then press the **Jog** key. Press **Run** and refeed document(s).
E229	Clean exit sensor	Perform maintenance/cleaning procedures.

Code	Operator Message Displayed	Description/Action Required
E230	Open access door to correct error	Open the access door. Verify all operator accessible areas are properly closed. Press **Run** to continue.
E231	Press JOG, and try again	Press **Jog** and then press the **Run** key. Try again.
E232	Close all access doors and RUN	Close all access doors. Press **Run** to continue.
E234	Press JOG, and try again	Press the **Jog** key and then press **Run**. Try again.
E235 E236	Turn main power OFF and ON	• Turn the side panel switch off. • Turn the main power switch off. • Wait 5 to 10 seconds. • Turn the main power switch on. • Turn the side panel switch on. If the error repeats, call service.
E238	User function string invalid	The P-key, End-of-Batch, etc., definition made during installation is invalid. Correct the definition using the Mode Setup Software.
E240 E241 E242 E243 E244 E245	Enter correct level of IA — refeed	Set or change the document image level or use the **Next** key to enter a new image address. Press **Run** to continue.
E246	Conflicting input — what level?	Set or change the document image level to confirm the proper document image level. Press **Run** to continue.
E267	Clear error, re-enter IA	Press **Clear**. Use the **Next** key to enter an image address. Press **Run** to continue.
E280	Feeder off due to host request	System is busy. The feeder will be reactivated when the system is no longer busy. Wait until the message clears and continue.

Code	Operator Message Displayed	Description/Action Required
E281	OCR was reset — restart batch	Use the **Next** key to enter a starting image address.
		Rerun the batch.
E282	Comm buffer full — please wait	System is busy. Wait until the message clears, then continue.
E285	Feeder off due to OCR request	System is busy. Feeder will be reactivated when the system is no longer busy.
		Wait until the message clears, then continue.
E286	Feed calibration target	Calibration process has started.
		Press **Run** and feed the calibration target into the transport.
E291	Scanner disabled	The machine has been disabled due to an error. Determine the cause of the error via the host system.
		Enable the machine.
		Press **Run** to continue.
E293	Host recovery required	Contact your system administrator to initiate the required action on the host system.
E294	Front calibration warning	Perform maintenance/cleaning procedures for the Document Scanning Array, imaging guides, etc.
		Check the lamps; replace if necessary.
		Recalibrate the machine.
E295	Rear calibration warning	Perform maintenance/cleaning procedures for the Document Scanning Array, imaging guides, etc.
		Check the lamps; replace if necessary.
		Recalibrate the machine.
E296	Target not seen	Repeat the calibration process using a blank target. If error repeats, call service.
E297	Document queue full	The feeder and transport are stopped and the machine is disabled.
		Transfer images from the image buffer to the host system.
		Re-enable the machine.
		Press **Run** to continue.
E298	Calibration required	Enter function code **F37** to initiate the calibration sequence.

Code	Operator Message Displayed	Description/Action Required
E500 E501 E502 E503 E512 E513 E550 E551 E552 E553 E562 E563	System error	Contact your system administrator. A controlled power-down sequence is required.
E504 E505 E506 E507 E508 E509 E510 E511 E514 E515 E516	Display communications error	Press **Jog** to clear all documents from the transport. Press **Run** and refeed the document(s).
E554 E555 E556 E557 E558 E559 E560 E561 E564	COIN-2 communications error	Check cable connections. Verify all equipment components are powered on.

Code	Operator Message Displayed	Description/Action Required
E600 through E699	*various messages*	• Turn the side panel switch off. • Turn the main power switch off. • Wait 5 to 10 seconds. • Turn the main power switch on. • Turn the side panel switch on. If the error repeats, or if additional errors are received, call service.
E700 through E799	*various messages*	• Turn the side panel switch off. • Turn the main power switch off. • Wait 5 to 10 seconds. • Turn the main power switch on. • Turn the side panel switch on. If the error repeats, or if additional errors are received, call service.
E800 through E899	*various messages*	• Turn the side panel switch off. • Turn the main power switch off. • Wait 5 to 10 seconds. • Turn the main power switch on. • Turn the side panel switch on. If the error repeats, or if additional errors are received, call service.
E900 through E999	*various messages*	• Turn the side panel switch off. • Turn the main power switch off. • Wait 5 to 10 seconds. • Turn the main power switch on. • Turn the side panel switch on. If the error repeats, or if additional errors are received, call service.

7   Troubleshooting

Trouble and remedy chart

This chapter outlines some of the problems you may encounter and their probable causes and remedies.

Trouble	Probable Cause	Remedy
Scanner does not power on (status display does not illuminate).	The power cord is not connected.	Push the power cord plug into the receptacle.
	The wall outlet is defective.	Check the outlet (call an authorized electrician.)
	The main power switch is off.	Turn the main power switch on.
	The side panel switch is off.	Turn the side panel switch on.
	The cabinet covers are not closed.	Check and close all the cabinet covers.
Documents not feeding properly.	The feed and separator roller gap is not properly adjusted.	Refer to Chapter 2, "Adjusting the feed and separator roller gap".
	Feeding thick documents without using the gap release lever.	Refer to Chapter 2, "Adjusting the feed and separator roller gap".
	The feed and separator rollers may be dirty.	Refer to Chapter 5, "Cleaning the feed and separator rollers".
	The feed shelf position is not properly adjusted.	Refer to Chapter 2, "Adjusting the feed shelf position".
	The feed shelf side guides are not properly adjusted.	Refer to Chapter 2, "Adjusting the feed shelf side guides and end stop".
Documents not stacking properly.	The exit hopper side guides are not properly adjusted.	Refer to Chapter 2, "Adjusting the exit hopper side guides and end stop".
	The exit hopper end stop is not properly adjusted.	Refer to Chapter 2, "Adjusting the exit hopper side guides and end stop".
	The wrong deflector is being used.	Refer to Chapter 2, "Changing the deflector."

Trouble	Probable Cause	Remedy
Repeated jamming.	The transport system baffle plates and operator-accessible areas are not firmly closed.	Repeat any recent jam clearing or maintenance procedures, making certain all baffle plates are firmly in place and all operator-accessible areas are properly closed. Refer to "Clearing the document path" later in this chapter.
Clear streak on scanned images.	There may be a foreign object in the optical path.	Check and clean imaging guides and transport area. Refer to Chapter 5, "Cleaning the imaging guides".
Overall scanned image density too light, too dark, or uneven.	Dust or dirt on the mirrors or imaging guides.	Check and clean imaging guides and mirrors. Refer to Chapter 5, "Cleaning the imaging guides".
	Calibration is not performed or is not performed correctly.	Perform calibration using instructions provided. Refer to Chapter 2, "Calibrating the scanner".
	Lamps are dirty or not properly installed.	Check the lamps for proper installation. Check for dirt or debris in the lamp housing. Refer to Chapter 5, "Cleaning the exposure lamp housings".
Calibration failure.	Calibration target was skewed when feeding.	Retry. Adjust feed tray side guides. Adjust feed and separator roller gap.
	Lamps are dirty or not properly installed.	Check the lamps for proper installation. Check for dirt or debris in the lamp housing. Refer to Chapter 5, "Cleaning the exposure lamp housings".
	Document was in the transport at the time of calibration.	Remove any documents in the transport system. Retry. Refer to "Clearing the document path" later in this chapter.

Clearing the document path

If a document becomes lodged in the scanner transport system, the system stops running and a message appears in the status display.

A document can become lodged in the transport system when:

- Documents are not fed straight (skewed).

- Documents are torn, badly folded, or wrinkled.

- Staples and paper clips were not removed from documents.

- Imaging guides are not seated properly or are not installed.

- Transport system baffle plates are not firmly closed.

The document path can be cleared easily because:

- No tools are needed.

- Easy-access panels let you quickly locate and clear documents.

The document path

There are six areas in the transport system where documents may become lodged and need to be removed:
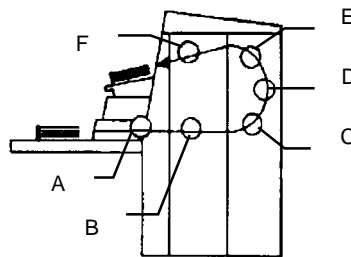
A   The feeder/horizontal transport area

B   The imaging guide area

C   The lower roller assembly area

D   The vertical transport area

E   The upper turn area

F   The document exit area

Clearing documents

Follow the steps below to clear the document path:

1. Check each transport area (Areas A through F) for documents lodged in the document path. You only have to remove the jammed document(s). The Jog feature places the rest of the documents in the exit hopper. Make certain all operator-accessible areas are firmly closed and all baffle plates are locked into place.

2. Press and hold down the **Jog** key to clear any remaining documents.

3. Collect the documents located in the transport system. Put them back into their original order, if necessary.

4. Reset the image address, level, etc., if necessary.

5. Rescan the documents. If an error code appears in the status display, check each transport area again to make certain all documents have been cleared.

NOTE: Green labels on handles designate operator-accessible areas.

The feeder/horizontal transport area

To clear the feeder/horizontal transport area (Area A):

1. Grasp the front cover and swing it open to the right.

2. Push the roller cover release lever toward the rear of the machine.
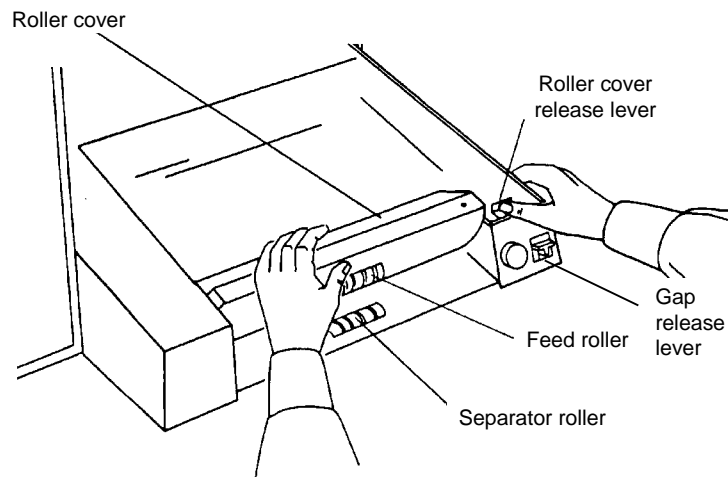
3. Grasp the roller cover and rotate it up and toward the back of the machine.

4. Remove any documents or document pieces found in the feeder.

5. Grasp and rotate the roller cover back into its original position.

6. Verify that the roller cover release lever snaps back and locks the roller cover down into position.

7. Close the front cover.

The imaging guide area

To clear the imaging guide area (Area B):

1. Open the right-side access door.

Upper lamp housing assembly

Upper imaging guide

Lower imaging guide
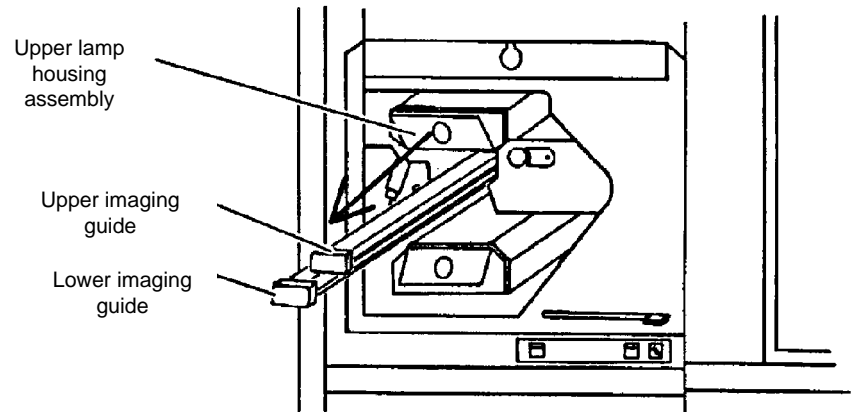
2. Locate and remove only the upper imaging guide.

    IMPORTANT: *Use care when handling the imaging guides. Hold the imaging guides by the green handles only.*

3. Locate and remove the upper lamp housing assembly.

4. Remove any documents or document pieces.

5. Reinsert the upper lamp housing assembly.

6. Reinsert the upper imaging guide.

7. Close the right-side access door.

NOTE: It may also be helpful to remove the lower lamp housing assembly for easier access to this area.

The lower roller assembly area

To clear the lower roller assembly area (Area C):

1. Open the top cover.

2. Open the right-side access door.
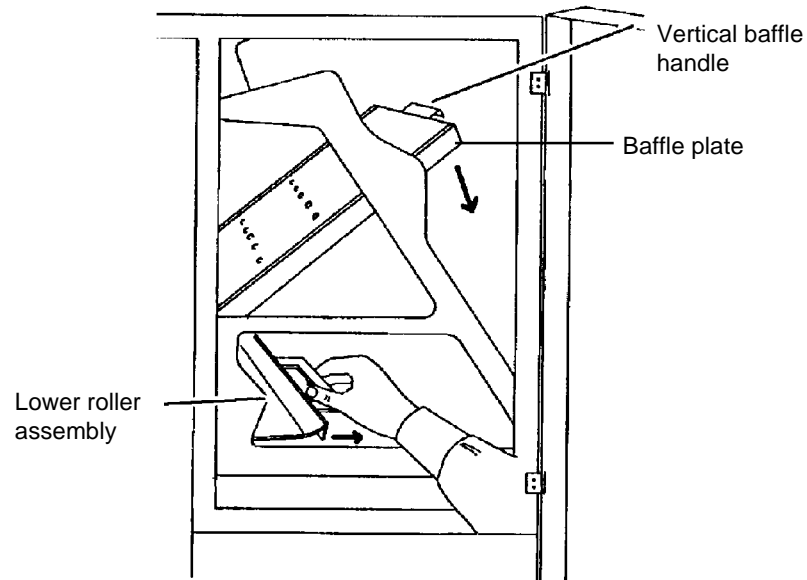
3. Remove the imaging guides (not shown in this illustration).

   IMPORTANT: *Use care when handling the imaging guides. Hold the imaging guides by the green handles only.*

4. Turn the vertical baffle handle latch counterclockwise to unlatch the baffle plate. Lower the baffle plate until it stops. This unlocks the lower roller assembly.

5. Grasp the lower roller assembly handle (as shown) and slide the assembly toward the rear of the machine.

6. Remove any documents or document pieces.

    IMPORTANT: *Do not slide the lower roller assembly back into place without first removing the imaging guides. Failure to remove them first can cause misalignment and/or damage to the machine.*

7. Slide the lower roller assembly back into place.

8. Raise the plate into its original position. Turn the vertical baffle latch clockwise to lock the baffle plate into position. **Be sure the baffle plate is securely locked into its original position.**

9. Replace the imaging guides.

10. Close the right-side access door and top cover.

The vertical transport area

To clear the vertical transport area (Area D):

1. Open the top cover.

2. Open the right-side access door.

Vertical baffle ha[n]
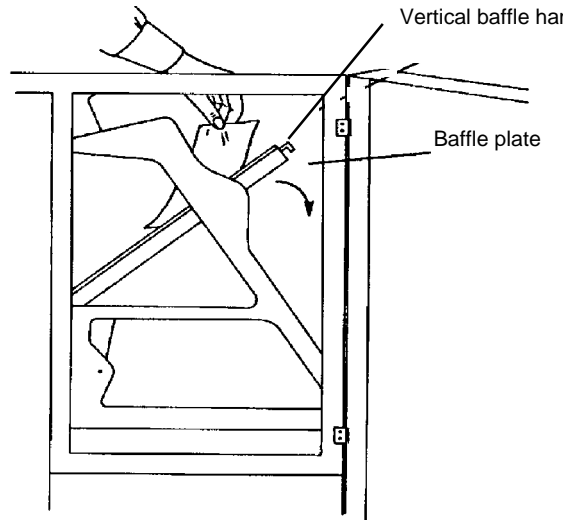
Baffle plate

3. Turn the vertical baffle latch handle counterclockwise to unlatch the baffle plate. Lower the baffle plate until it stops.

4. Remove any documents or document pieces.

5. Raise the plate into its original position. Turn the vertical baffle latch clockwise to lock the baffle plate into position. **Be sure the baffle plate is securely locked into its original position.**

6. Close the right-side access door and top cover.

The upper turn area

To clear the upper turn area (Area E):

1. Open the top cover.

Top cover

Baffle plate
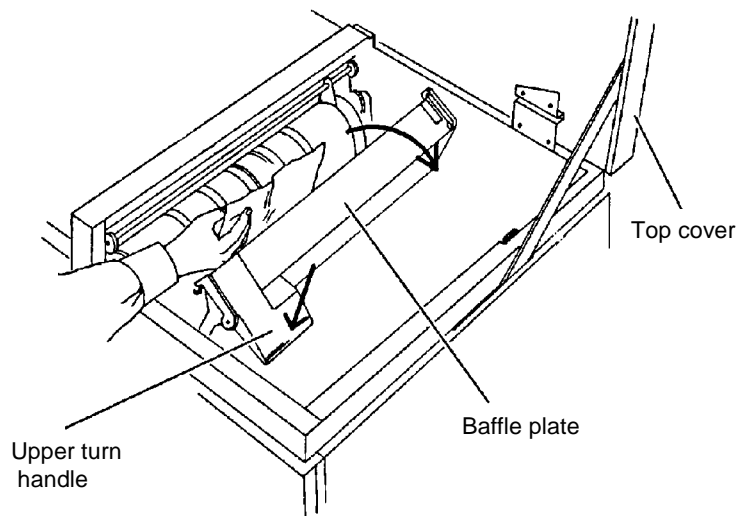
Upper turn handle

2. Locate and grasp the upper turn handle.

3. Push the upper turn handle down and lower the baffle plate until it stops.

4. Remove any documents or document pieces.

5. Raise the plate into its original position. Turn the vertical baffle latch clockwise to lock the baffle plate into position. **Be sure the baffle plate is securely locked into its original position.**

6. Close the top cover.

The document exit area

To clear the document exit area (Area F):

1. Open the top cover.

Exit handle

Exit baffle

Static brush

Static brush (under housing)
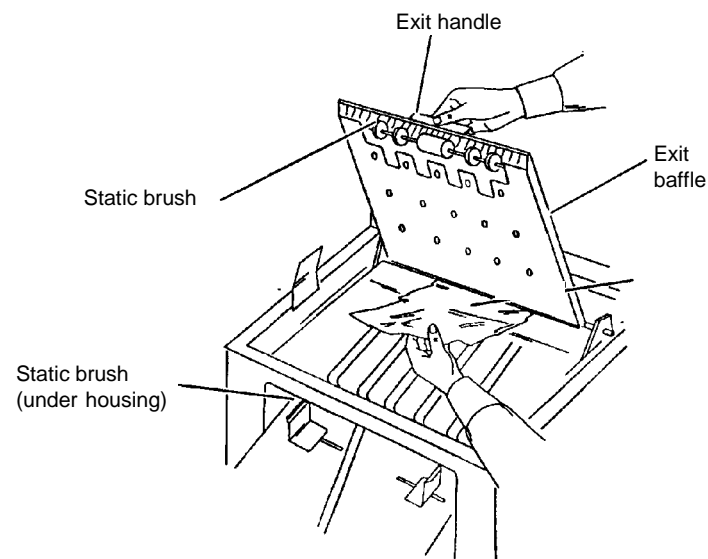
2. Locate and grasp the exit handle.

3. Raise and hold the exit baffle to expose any documents.

4. Remove any documents or document pieces.

   IMPORTANT: *Be careful not to damage the static brushes when removing documents.*

5. Lower the exit baffle into its original position.

6. Close the top cover.

8   Accessories

This chapter provides a list of available accessories for the *Kodak Digital Science* Document Scanner 9500. Operating instructions for most of these accessories can be found in this chapter.

Other accessories are available but do not necessarily require any specific operating instructions. All accessories can be ordered using the catalog number listed.

Any operating instructions you receive on new accessories can be conveniently placed in this chapter so you can easily access them as needed.

- **Advanced Document Controller** — detects document length and skew. CAT No. 820 6880

- **Bar Code Reader** — a productivity feature which provides a hands-off method of entering data by automatically reading and decoding information encoded in bar code form. CAT No. 822 0790

- **Check Feeder** — provides continuous feeding of check-sized documents. CAT No. 177 5030

- **Check Stacker** — provides continuous stacking of check-sized documents. CAT. No. 153 2522

- **Endorser** — automatically imprints endorsements on the rear side of documents (with a variety of die stamp styles) as they pass through the transport system. CAT No. 800 7106

- **Footswitch** — provides a hands-off method of performing document level changes or commonly used functions while documents are being fed into the transport system. CAT. No. 124 8707

- **Imaging Station Lamps** — provides color form drop-out capability for more efficient document storage. See the section entitled, "Supplies" for catalog numbers.

- **Patch Reader** — a productivity feature which controls document level changes by automatically sensing a predefined patch code and changing the document level accordingly. CAT No. 833 9749

- **Scanner 9500S/9500D Rear Optics Module** — allows for an upgrade of a 9500 simplex scanner to a 9500 duplex scanner. CAT No. 826 9011

- **Multi-Feed Detector** — increases document processing efficiency by detecting double document feeds. CAT No. 820 2434

- **Super12 Document Printer** — provides easy installation and maintenance of print cartridges for 12-character printing of customer-specified information on documents. CAT No. 816 4865

- **Document Image Manager Accessory** — this accessory provides skew detection and correction, auto-cropping and border reduction. Simplex — CAT No. 172 2552; Duplex — CAT No. 156 6330

- **Workstation Side Console** — provides extra work space for the operator when scanning documents. CAT No. 844 2915

Supplies

The following supplies are available and can be order through Parts Services 1 (800) 431-7278.

Endorser

It is recommended that at least one die drum, one die set, and two ink rollers be ordered.

Supply	Catalog #
Die Drum	822 6896
Die Drum—Payee	835 7683
Die Drum—International	831 6770
Die Set	157 6172
Die Set—Payee	822 7456
Die Set—Special	804 7532
Ink Roller—Red	149 1984
Ink Roller—Purple	149 1018
Ink Roller—Green	104 0492
Ink Roller—Black	142 0272

Imaging Station Lamps

Supply	Catalog #
Red Image Color Element (set of 2)	175 9893
Green Image Color Element (set of 2)	104 9675
Blue Image Color Element (set of 2)	160 0410

Parts and tools

The following parts and tools are needed to properly maintain your system.

NOTE: Field Engineers/Specialists are not authorized to order these items; they should be ordered by the customer.

Part/Tool	Order Number
Upper Imaging Guide	964365
Lower Imaging Guide	942000
Scanner 923 Air Filter (used on 9500)	942890
White Exposure System Fluorescent Lamps (4 required)	964683
Bar Code Reader Standard Test Document Set	TL 4528
Staticide Wipes (24 per box)	1C8102
Round Cleaning Brush, natural bristle	TL 2253
Flat Cleaning Brush, natural bristle	TL 2156
Roller Cleaning Pads	4C9069
Paper Path Cleaner	4C9073

United States and Canada

Parts and tools are available through Parts Services at Eastman Kodak Company:

- Call Parts Services at 1(800) 431-7278, or

- Send a facsimile or (716) 724-3051

All other regions

Parts and tools are available through Eastman Kodak Company's Parts Services.

Using the Bar Code Reader

The Bar Code Reader provides a hands-off method of data entry, eliminating the need to manually enter data found on document(s). Bar code image(s) are read, decoded, and converted to a data string of ASCII characters. The ASCII data string is placed in the image header which is sent to the host computer when scanning, or merged with the document image address and transmitted as a data record to a host computer for storage in a data library when filming.

During installation, modes are defined for use with specific applications. The Bar Code Reader may be enabled or disabled for each mode. In addition, the bar code type, number of bar codes-per-document, minimum bar code length (characters), and the distance between multiple bar codes are defined for each mode. Some of the features of the Bar Code Reader are:

- Image processing (for dot matrix bar codes)

- Scan directory (uni- or bi-directional reading)

- Partial read (number of partial read characters)

This User's Guide:

- explains what bar code types can be read and decoded by the *Kodak Digital Science* Bar Code Reader.

- provides specifications that must be followed when placing bar codes on documents.

- explains how to enable (or disable) bar code reading and the bar code confirmation tone.

- explains how to perform a bar code test and how to use the four test options — Evaluate, Display, %Kodak, and %Norm.

- provides information on how to evaluate test results.

For more detailed information about bar codes, see Kodak publication, *Bar Code Made Easy*, A-61099.

Bar code types

During installation, the type of bar code used is defined for each mode. The Bar Code Reader is capable of reading and decoding three different types of bar codes.

- **Code 3 of 9** — also known as Code 39, is a widely used code in which 9 bars or spaces comprise the characters, 3 of which are wide.

- **Interleaved 2 of 5** — or I 2 of 5, is a compact, interleaved code for numeric characters only. Each digit is represented by 5 bars or spaces, 2 of which are wide.

- **Codabar** — similar to Code 3 or 9, but not as widely used. Codabar includes only numeric and special characters.

The following table shows a comparison of bar code types:

Code Type	Character Set	Available Characters in Set	Start/Stop Characters
Code 3 of 9	alphanumeric space special characters: - .$ / + %	43	* / *
Interleaved 2 or 5	numeric	10	both unique
Codabar	numeric special characters: - $	12	a-d /a-d

Bar code placement

Bar codes must appear with the bars perpendicular to the leading edge of the document:

Leading edge
(fed into transport first)
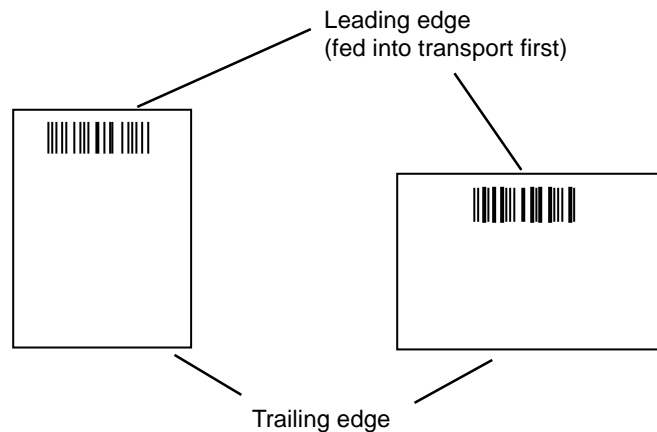
Trailing edge

In addition, the following must be true:

* The bar code must be at least 0.25 in. (6.3 mm) from the leading edge of the document.

* The bar code must be at least 0.25 in. (6.3 mm) from the trailing edge of the document.

* There must be at least 0.25 in. (6.3 mm) of blank space preceding the start character and following the stop character.

* The bar code may not exceed 11 in. (275 mm) in length.

* The bar code height must be at least 0.40 in. (9.5 mm) or 25% of the bar code length, whichever is greater.

More detailed specifications are provided in Kodak publication, *Bar Code Made Easy* (A-61099).

Before you begin

Before feeding documents containing bar codes, verify the following:

* Bar code reading is enabled in the current mode.

* The bar code confirmation tone is enabled (if desired).

* A bar code test has been performed and the read rate/accuracy is satisfactory.

Once each of these items has been verified, you may begin feeding documents.

Enabling bar code reading

Make sure that Bar Code Reading is enabled before feeding documents.

To enable Bar Code Reading at the mode level:

- Enter function code F60.

Partial Bar Code Reading allows the scanner to read bar codes with a start character (and *n* characters beyond the start character that can be read) even if no end character is encountered.

To enable Partial Bar Code Reading:

- Enter function code **F66**.

  NOTE: Partial Bar Code Reading can only be enabled (or disabled) if Bar Code Reading is enabled at the mode level.

If you have enabled the Bar Code Reader, but do not want to read/decode bar code(s) found on the next document only, perform function code F64.

Enabling the bar code confirmation tone

The bar code confirmation tone may be used to signal that a bar code has been read.

- If your scanner is configured for no confirmation tones, then no confirmation tones of any kind will be heard in any mode.

- If your scanner is configured to allow confirmation tones, then you can disable (or enable) confirmation tones in any mode as desired.

  If the confirmation tones and the bar code confirmation tone are enabled during installation for the mode being used, you may enable/disable the bar code confirmation tone during normal operations by performing function code F63.

  In addition, a bar code/patch confirmation tone may be used to signal that both a bar code and a patch have been detected. This confirmation tone may be enabled or disabled by performing function code F62.

  NOTE: Patch Code Reading must be enabled in the scanner in order to use this feature.

Performing a bar code test

Before feeding documents, perform a bar code test (F65) to verify the operation of the Bar Code Reader.

NOTES:

- No document processing, image address changes or level counting, etc. will occur during the test.

- Verification of the read rate/accuracy is typically performed by selecting option 4=%NORM.

To perform a bar code test:

1. Enter function code F65.

2. Select one of the following test options.

```
Bar Code Type =
1=EVALUATE    2=DISPLAY    3=%KODAK    4=%NORM
```

- **1=EVALUATE** — provides a measure of the overall quality of the bar codes being used by evaluating specific bar code characteristics. This test is performed whenever a new batch of preprinted bar code documents or labels are received, or when there is a change in the printing method (i.e., a new printer), media (i.e., new paper type) or bar code characteristics (i.e., new bar code size).

- **2=DISPLAY** — displays the decoded value of an individual bar code as it is fed into the transport. This test is performed whenever there is a need to verify that a bar code is decoded properly. The bar code is read and decoded. No capturing of images or any other system function is performed when this test is run.

- **3=%KODAK** — provides a measure of equipment performance by determining the read rate (percentage of bar codes read properly) of Kodak Bar Code Standard Test Documents. Two percentages are calculated each time the test is run; a current percentage and a historical percentage. The historical percentage reflects all tests run, providing information which may be used to track system performance over time.

- **4=%NORM** — provides a measure of the quality of the bar codes used, by determining the read rate (percentage of bar codes read properly) of actual customer-application documents. Two percentages are calculated each time the test is run; a current percentage and a historical percentage. The historical percentage reflects all tests run, providing information which may be used to track system performance over time.

Function code F65 options may also be used if there is a decline in bar code readability (read rate) during normal document processing. If this occurs, the following steps will assist you in diagnosing the problem:

1. Perform test option 3=%KODAK.
   This test determines whether or not the reduction in readability is caused by a deficiency in the equipment.

   - If the resulting read rate is significantly lower than the benchmark given, contact your service representative.

   - If the resulting read rate is equal to or greater than the benchmark given, proceed to Step 2.

2. Perform test option 4=% NORM.
   This test determines whether or not the reduction in readability is caused by a deficiency in the bar codes being used.

   - If the resulting read rate is below an acceptable level, proceed to Step 3.

3. Perform test option 1=EVALUATE.
   This test evaluates the bar codes being used in terms of dimensional and print clarity. Deficiencies in any one or more of these criteria could result in a reduction in the overall read rate.

Using the Evaluate option

Use the **Evaluate** option when you want to measure the quality of the bar codes being used by evaluating specific bar code characteristics.

The Evaluate option allows you to perform a Static Bar Code Evaluation test or a Dynamic Bar Code Evaluation test.

*   **Static Bar Code Evaluation** — is performed if you want to just verify how well the Bar Code Reader is working. This test is performed with the transport off.

*   **Dynamic Bar Code Evaluation** — is performed if you want to verify how well the Bar Code Reader is working and the speed of the Bar Code Reader. This test is performed with the transport on. Unlike the Static Bar Code Evaluation, the results of this test can be influenced by the motion of the document. If less than satisfactory results are obtained, perform the evaluation again using the Static Bar Code Evaluation.

To use the Evaluate option:

1. Select **1=EVALUATE**.

> Bar Code Type =
> 1=EVALUATE   2=DISPLAY   3=%KODAK   4=%NORM

2. Select either **1=Transport Off** or **2=Transport On**.

> 1=Transport Off   2=Transport On

    If you select **1=Transport Off**, proceed to the next section entitled, "Static bar code evaluation". If you select **2=Transport On**, proceed to the section entitled, "Dynamic bar code evaluation".

Static bar code evaluation

Static Bar Code Evaluation allows you to verify how well your Bar Code Reader is working. This test is performed with the transport off. Follow the procedures below to perform the Static Bar Code Evaluation test.

After selecting option **1=Transport Off**, the following message is displayed:

> Bar Code Type=
> Place bar code under the scan head

*   Place the bar code is placed directly under the imaging station for evaluation.

Using the Imaging Station

To place the bar code under the imaging station:

1. Open the right-side access door.

Right-side
access door
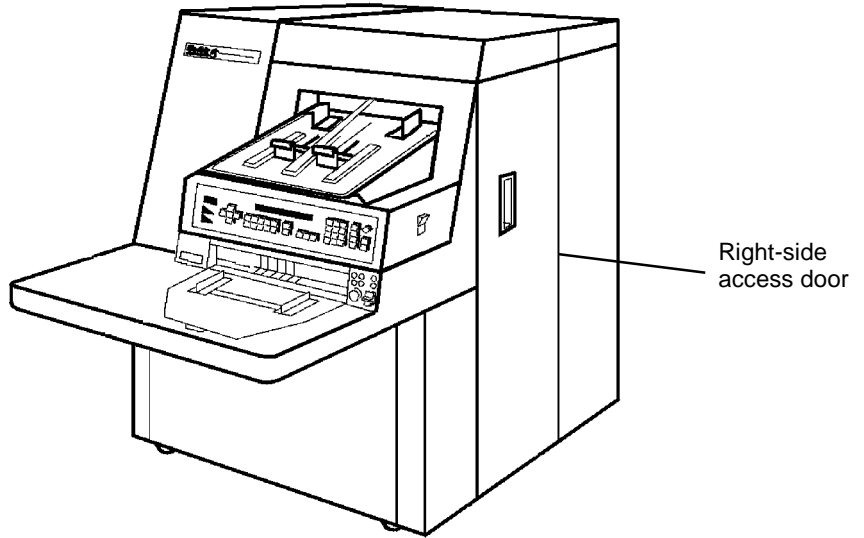
2. Grasp the end of the upper imaging guide and carefully slide the imaging guide out of its track.

Upper
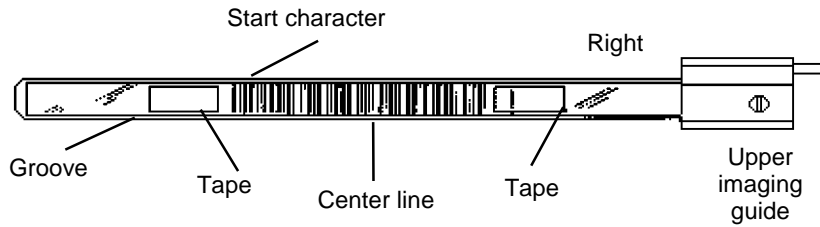imaging guide

Lower
imaging guide

Upper imaging guide

Lower imaging guide
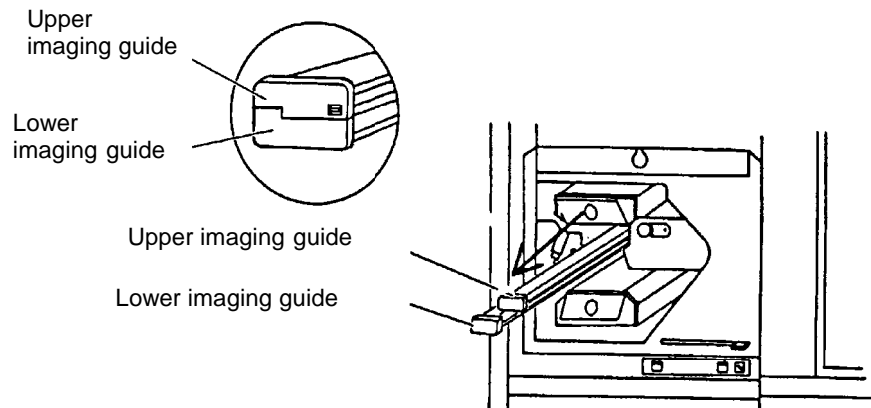
3. Take a sample bar code document and cut a 0.5 in. (12.5 mm) section out of the bar code. Make sure to leave an extra inch or so on each end of the bar code.

Cutting line

0.5 in.

12.5 mm

1 in.
25 mm

1 in.
25 mm
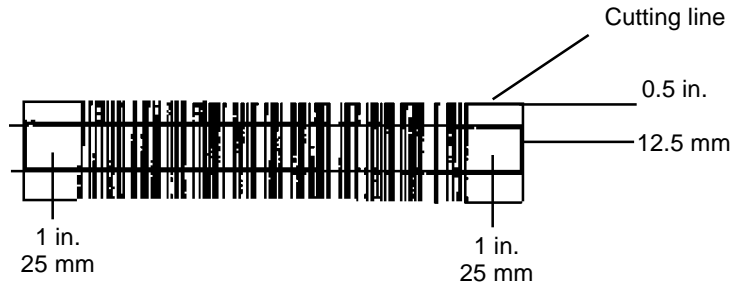
4. Position the bar code sample section on the underside of the upper imaging guide centered on the clear surface with the start character toward the left. Make certain the bar code can be read looking down through the top side of the upper imaging guide.

Start character

Right

Groove

Tape

Center line

Tape

Upper imaging guide

5. Tape the bar code sample section in place.

6. Hold the upper imaging guide by the edges and carefully slide it back into its housing. Ensure that the grooves fully engage the track.

7. Close the right-side access door.

8. Go to the section entitled, "Evaluating test results" to review the test results.

Dynamic bar code evaluation

Dynamic Bar Code Evaluation allows you to verify the speed of the Bar Code Reader and how well your Bar Code Reader is working. This test is performed with the transport on. Follow the procedures below to perform the Dynamic Bar Code Evaluation test.

After selecting option 2=Transport On, the following message is displayed:

Bar Code Type=
Leading edge distance (in):

1. Measure the distance from the leading edge of the document to the center of the bar code.
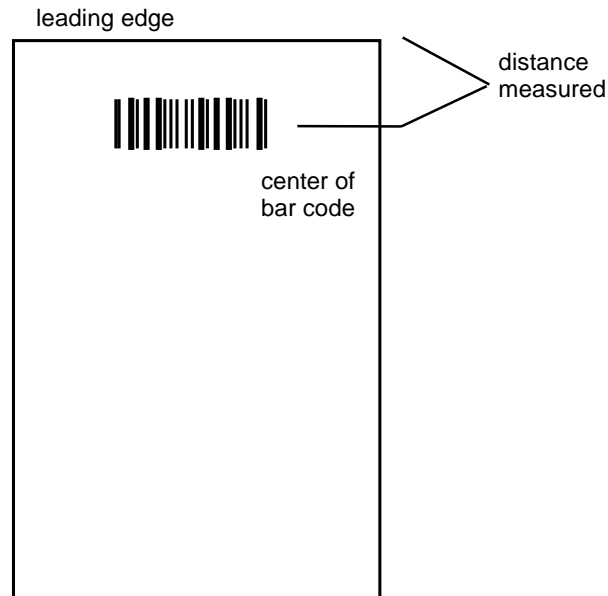
2. Enter the distance from the leading edge of the document to the center of the bar code.

3. Press **Enter**. The transport will turn on.

4. Feed the bar code document.

5. Go to the section entitled, "Evaluating test results" to review the test results.

Evaluating test results

After the bar code has been placed under the scan head (when using the Static Bar Code Evaluation method) or the bar code document has been fed into the transport (when using the Dynamic Bar Code Evaluation method), the following message will be displayed:

```
Bar Code Type=
   Please wait…
```

After approximately 30 seconds of processing time, the results of the bar code evaluation will be displayed or a message indicating the bar code was not read will be displayed.

If the display indicates the bar code was not read, it could be for one of the following reasons:

- The type of bar code placed under the scan head was not the type indicated in the status display.
  Action: Verify the type of bar code placed under the scan head.

- The bar code was not positioned properly under the scan head.
  Action: Verify the position of the bar code placed under the scan head.

- The bar code quality is poor.
  Action: Perform required maintenance.

If the bar code evaluation results are displayed, the following information will help you evaluate these results.

```
Grade=        W/N=  :1          Contrast= %
NEW=          MOD=  %           DEF= %      RMIN= %
```

Grade — indicates the overall grade of the bar code evaluation. This grade is based upon the field values that appear in the remainder of the display. The fields which appear in the remainder of the display are either *dimensional* or *reflectance* fields.

Each of the reflectance field values are converted to a letter grade (where *A* is the highest and *F* is the lowest). The lowest letter grade assigned to any one of the reflectance fields is the overall grade assigned to the bar code.

Dimensional Fields (Pass or Fail)

W/N — the average ratio of wide element widths to narrow element widths within a bar code. The ratio is calculated for both bars and spaces; the smallest of the two ratios is displayed.

New — the measure of the smallest Narrow-Element Width.

Reflectance Fields (Grades A through F)

Contrast — a comparison of the darkest element and the lightest element of the bar code.

MOD — Modulation. A measure of the consistency of the overall bar code print clarity (all elements), specifically the occurrence of spots (in spaces) and voids (in bars).

DEF — Defect ratio. A measure of the consistency of the individual element print clarity, specifically the occurrence of spots (in spaces) and voids (in bars).

RMIN — Minimum reflectance. A measure of the lightest element of the bar code.

Table 1 illustrates how the dimensional field values are converted to a pass/fail status and the print clarity field values are converted to letter grades:

Table 1 — Bar Code Grades

Field	Grade				
	A (Pass)	**B**	**C**	**D**	**F (Fail)**
W/N	3:1 to 2:1* 3:1 to 2.2:1**				2:1 to 1:1* 2.2:1 to1:1**
NEW	0.080 to 0.010				0.009 to 0.000
Contrast	100 to 70	60 to 55	54 to 40	39 to 20	19 to 0
MOD	100 to 70	69 to 60	59 to 50	49 to 40	39 to 0
DEF	0 to 15	16 to 20	21 to 25	26 to 30	31 to 100
RMIN	0 to 49				50 to 100

*   Narrow Element Width greater than or equal to 0.020
**   Narrow Element Width less than 0.020

Table 2 identifies the most common causes of low bar code ratings/grades.

Table 2 — Common Causes of Low Bar Code Ratings

Field	Problem Type	Cause
W/N NEW	Dimensional	Bar codes not printed according to specifications (refer to Kodak publication *Bar Code Made Easy,* A-61099).
		Inaccurate measurements due to: • Ink smearing (improper curing) • Ink spreading (use of super-absorbent paper) • Use of dot matrix printers (ragged edges)
RMIN CONTRAST	Reflectance	Bar elements are too light often caused by: • Use of old ink ribbon • Hammer pressure too light • Defective/dirty print head
		Space elements are too dark often caused by: • Dark colored paper background • Stain on paper
MOD	Reflectance	Bar code element edges are ragged rather than straight often caused by use of a dot matrix printer.
DEFECT	Reflectance	Bar elements contain voids (white spots) often caused by: • Use of old ink ribbon • Hammer pressure too light • Defective/dirty print head
		Space elements contain dark spots often caused by: • Paper with flecks • Ink smearing (improper curing) • Ink spreading (use of super-absorbent paper) • Defective/dirty print head • Toner contamination (if using a laser printer)

Upon completion of the test:

- Remove the bar code from under the scan head if a Static Bar Code Evaluation has been performed.

- Press **C** to return to normal operation, or press **Stop** to remain in the test environment.

Using the Display option

The Display option allows you to display the decoded value of an individual bar code as it is fed into the transport. After selecting Option 2, DISPLAY, feed a bar code document.

To verify that a bar code is decoded properly:

1. Select **2=DISPLAY**.

```
Bar Code Type =
1=EVALUATE    2=DISPLAY    3=%KODAK    4=%NORM
```

One of the following messages will be displayed:

*   **Bar code was not read.**
    If the display indicates the bar code was not read, it could be for one of the following reasons:

    ◊   The type of bar code read was not the type indicated in the status display.

        Action: Verify the type of bar code read.

    ◊   The bar code quality is poor.

        Action: Perform the required maintenance.

*   **?**
    This display indicates the start character was recognized, but the remainder of the bar code was unreadable.

    Action: Perform the required maintenance.

*   **Decoded bar code value**
    This display gives the decoded value of the bar code read.

2. When the test is completed, press **C** to return to normal operation, or press **Stop** to remain in the test environment.

Using the %KODAK option

The %KODAK test option establishes the percentage of bar codes properly read when using Kodak Bar Code Standard Test Documents. This option is designed to provide a baseline value as well as the current read rate. A comparison of the two values provides a measure of machine performance over time.

To use the %KODAK test option:

1. Select **3=%KODAK**.

```
Bar Code Type =
1=EVALUATE    2=DISPLAY    3=%KODAK    4=%NORM
```

2. Feed at least 100 Kodak test documents. As documents are fed into the transport, the *Kodak documents fed* value will increment.

```
Kodak documents fed = 100
Current = xx.x%
Historical = xx.x%
```

The transport automatically stops when 100 documents have been processed and the Current and Historical percentages are displayed.

NOTE: To stop the test and leave the percentages unchanged, press **Stop** before the 100 documents have been processed.

Current — indicates the read rate of the documents just processed.

Historical — indicates the read rate of all tests run over time.

The first time the test is run, the two percentages will be the same.

If the Current percentage is significantly lower than the Historical percentage, this indicates any reduction in the overall read rate may be caused by a deficiency in the equipment. Perform required maintenance and rerun the test. If the results of the second test are similar to the first, contact service.

NOTE: If an asterisk (*) appears in the display (i.e., Current = xx.x*%), the Historical percentage is unaffected by the current read rate. This indicates the current read rate is uncommonly low.

3. When the test is finished, press **Clear** to return to normal operation, or press **Stop** to remain in the test environment.

Using the %NORM option

This option establishes the percentage of bar codes properly read when using actual customer-application documents. This test is the same as the %KODAK option, except actual customer-application documents are used. The option is designed to provide a baseline value as well as the current read rate. A comparison of the two values provides a measure of bar code quality over a period of time.

To use the %NORM test option:

1. Select **4=%NORM**.

```
Bar Code Type =
1=EVALUATE    2=DISPLAY    3=%KODAK    4=%NORM
```

2. Feed at least 100 application test documents. As documents are fed into the transport, the *Normal documents fed* value will increment.

```
Normal documents fed = 100
Current = xx.x%
Historical = xx.x%
```

The transport automatically stops when 100 documents have been processed and the Current and Historical percentages are displayed.

NOTE: To stop the test and leave the percentages unchanged, press **Stop** before the 100 documents have been processed.

Current — indicates the read rate of the documents just processed.

Historical — indicates the read rate of all tests run over time.

The first time the test is run, the two percentages will be the same.

If the Current percentage is significantly lower than the Historical percentage, this indicates any reduction in the overall read rate may be caused by a deficiency in the bar codes being used. Perform the Evaluate option to determine the cause of the test results.

NOTE: If an asterisk (*) appears in the display (i.e., Current = xx.x*%), the Historical percentage is unaffected by the current read rate. This indicates the current read rate is uncommonly low.

3. When the test is finished, press **C** to return to normal operation, or press **Stop** to remain in the test environment.

Using the Check Feeder / Check Stacker

The check feeder/check stacker provides continuous feeding of small-sized documents; such as, checks.

Using the check feeder

To use the check feeder, follow the procedures below:

NOTE: Thick documents may be processed with the check feeder installed by using the hand-feed throat with the gap release lever held down.
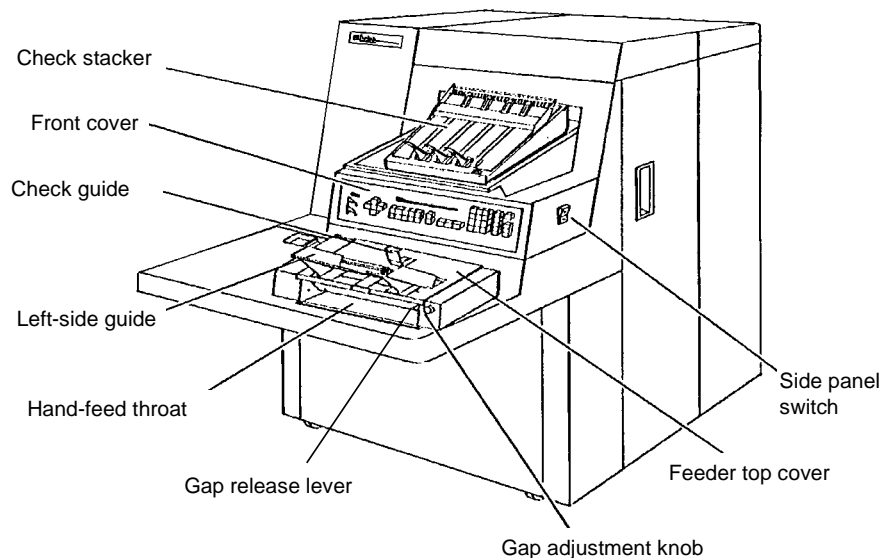
1. Adjust the feeder left-side guide to accommodate the width of the documents.

2. Turn on the side panel switch.

3. Adjust the feed and separator rollers for the thickness of the documents.

4. Properly prepare the documents, removing any staples, rubber bands, paper clips, or loose mending tape. Straighten any wrinkled edges and torn documents.

5. Make sure the documents are evenly stacked, with the leading and left edges square, for proper feeding and endorsement positioning (if documents are to be endorsed).

6. Place the documents against the check guide.

7. Press **Run** to feed the documents.

Clearing jams in the check feeder

To clear a document jam in the check feeder, perform the following procedure:

1. Check the hand-feed throat first for any documents.

2. Remove the feeder top cover by carefully lifting up at the front edge and pulling it toward the front of the unit.

3. Open the front cover.

4. Raise the baffle plate until it locks into position.

Baffle plate

Tab

Tab

Feed assembly roller
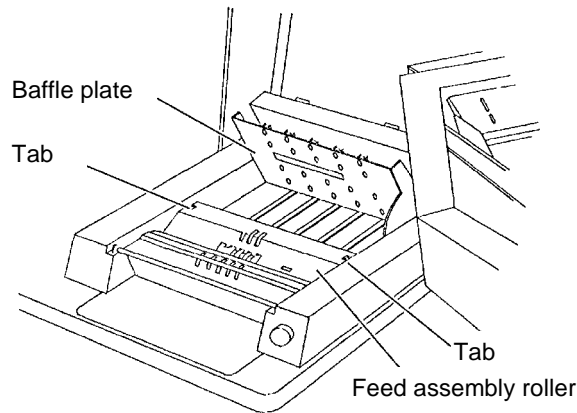
5. Press the two tabs inward and rotate the feed roller assembly backward.

6. Remove any documents from this area.

7. Rotate the feed roller assembly forward until it locks into place.

8. Close the baffle plate by lifting up and then lowering it into place.

9. Close the front cover.

10. Replace the feeder top cover by placing it back in position directly under the front cover and sliding it forward until it is squarely in place. Lower the feeder top cover until it snaps shut.

After clearing a document jam, perform the following procedure:

1. Make certain the baffle plate, doors, and panels are securely closed and the imaging guides are in the proper position.

2. Press and hold the **Jog** key, which will move any remaining documents through the transport system and place them onto the check stacker.

3. Feed retrieved documents again.

Cleaning the check feeder

Clean the check feeder daily to keep it in good operating condition.

To clean the check feeder:

1. Remove the feeder top cover by carefully lifting up at the front edge and pulling it toward the front of the unit.

2. Open the front cover.

3. Raise the baffle plate until it locks into position.
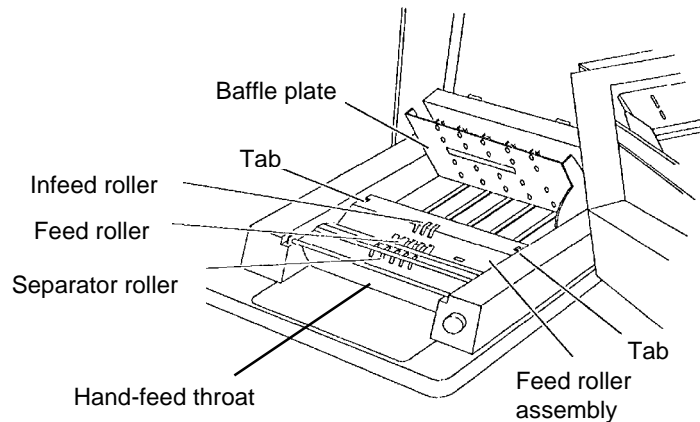
4. Press the two tabs inward and rotate the feed roller assembly backward.

5. Clean the rollers (the infeed roller, feed roller, and separator roller) using a lint-free cloth moistened with water.

6. Dry each roller with a clean lint-free cloth.

7. Vacuum any dust inside the feeder while checking for paper scraps or any other foreign objects inside the check feeder.

8. Rotate the feed roller assembly forward until it locks into place.

9. Close the baffle plate by lifting it up and then lowering it into place.

10. Close the front cover.

11. Replace the feeder top cover by placing it back in position directly under the front cover and sliding it forward until it is squarely in place. Lower the feeder top cover until it snaps shut.

Using the check stacker

The check stacker provides efficient stacking of small documents.

During installation, modes are defined for use with specific applications. The check stacker operating mode is defined for each mode.

One of two operating modes may be selected:

- Continuous mode, where the stacker operates whenever the transport is on.

- Batch mode, where the stacker operates only when documents are sensed exiting the transport.

Document deflector

Momentary advance switch
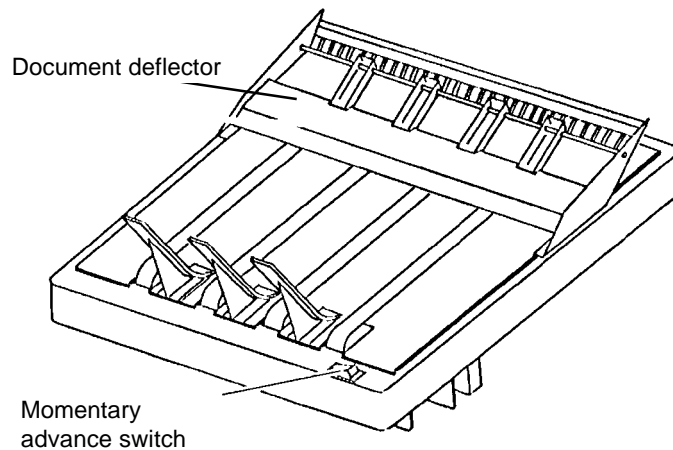
- Slide the document deflector forward or backward as required to allow smooth stacking of documents.

    NOTE: If a document does not appear to clear the document deflector, press the stacker momentary advance switch to release the document(s).

Using the Endorser

The *Kodak Imagelink* Endorser automatically imprints endorsements on the back of documents (with a variety of die stamp styles) as they pass through the transport system.

During installation, modes are defined for use with specific applications. The Endorser may be enabled or disabled for each mode. In addition, the desired Endorser mode and Endorser print position are defined for each mode.

Die styles

The following endorsement styles are available:
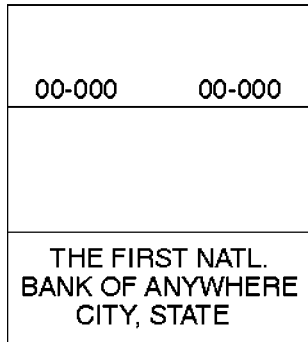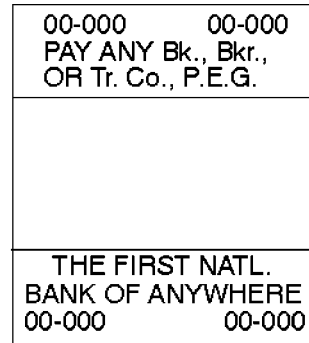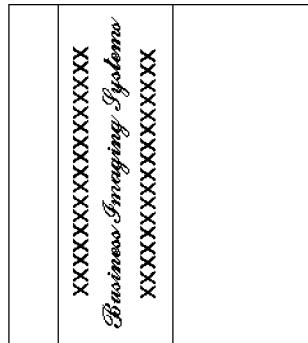
Before you begin

Before feeding documents requiring an endorsement, verify the following:

1. The correct die drum is installed.

2. A new ink roller is installed (if print quality is not acceptable).

3. The correct date and code number is specified.

4. The feeder side guides are properly positioned to place the endorsement where it is required on the documents.

5. The Endorser is enabled.

6. The correct Endorser print position is specified.

7. The desired Endorser mode is selected.

Once each of these items has been verified, you may begin feeding documents.

Changing the die drum

The die drum may need to be replaced after extensive use or if a different die style is required.

NOTE: If a number of special die drum assemblies have been purchased, simply remove and replace the entire assembly with the required one.

To replace a die:

1. Open the top cover.

Top cover
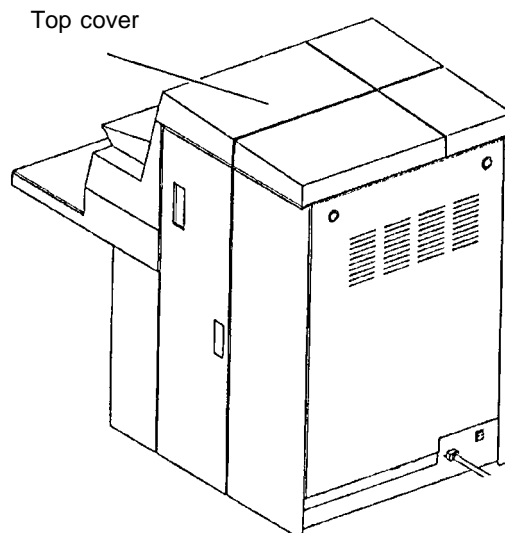
2. Push down the locking lever.

3. Press down and hold the latch to unlock the Endorser.

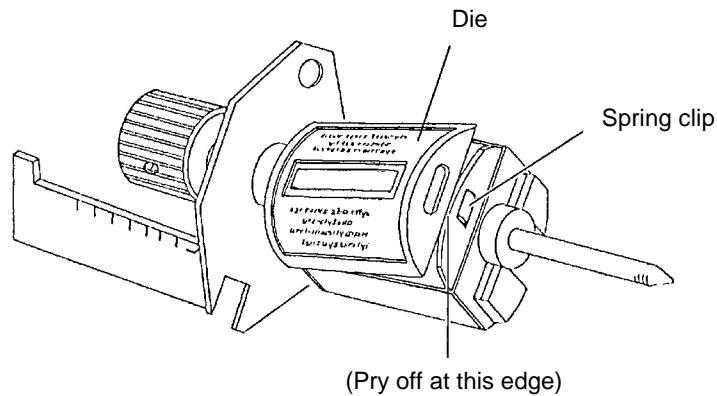4. Rotate the Endorser toward the back of the unit.
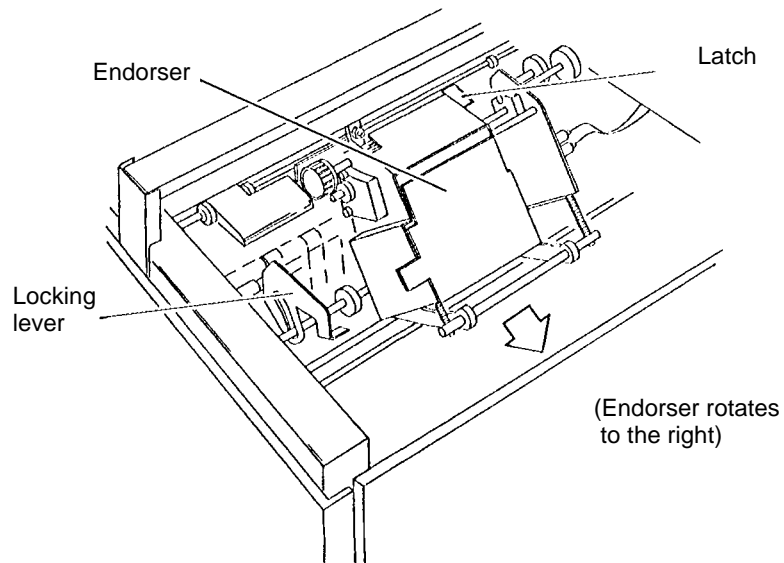
5. Press down the drum locking lever located on the left side of the Endorser.
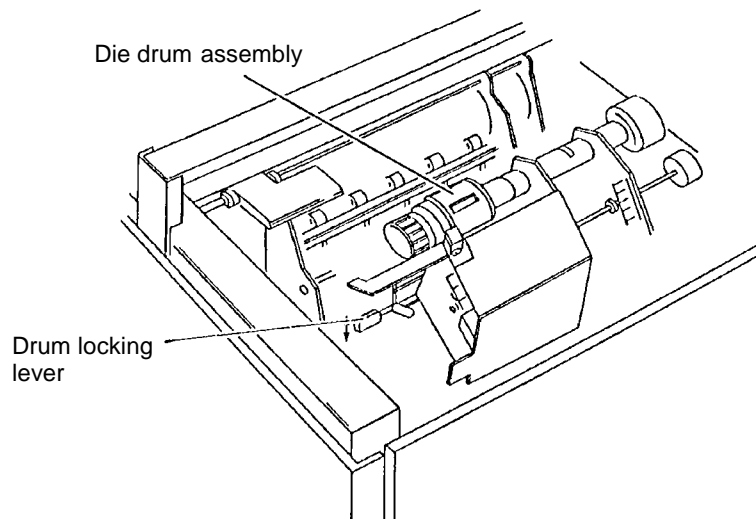
6. Grasp the die drum assembly and carefully slide it to the left and remove it.

7. Remove the rubber die by carefully prying it off. Insert a new rubber die in place of the old one. Ensure that it engages the spring clips at both sides. (If an entire die drum assembly is available to replace the die, this is not necessary.)

Die

Spring clip

(Pry off at this edge)

8. Reinstall the die drum assembly by inserting the shaft, aligning the die, and directing the shaft into the mounting holes and the slot.

9. Raise the drum locking lever to secure the die drum assembly.

10. Rotate the Endorser toward the front of the unit. The latch will automatically lock the Endorser in place.

11. Lift the locking lever to secure the Endorser.

12. Close the top cover.

13. Feed several blank pages to allow the new die to be properly inked.

Changing the ink roller

Feed several blank pages to ensure that the print quality is acceptable. If the endorsements are light or hard to read, you may need to replace the ink roller.

NOTE: Before replacing the ink roller, place a protective cover over the work surface near your machine. This protects your work surface from ink stains when you remove the old ink roller.

To change an ink roller:

1. Open the top cover.

2. Open the new ink roller container and remove the plastic gloves. Use the plastic gloves to keep your hands clean when handling the inked rollers.

3. Open the cover plate covering the ink roller and slide out the roller carrier holder.

Cover plate

Ink roller

Roller carrier holder
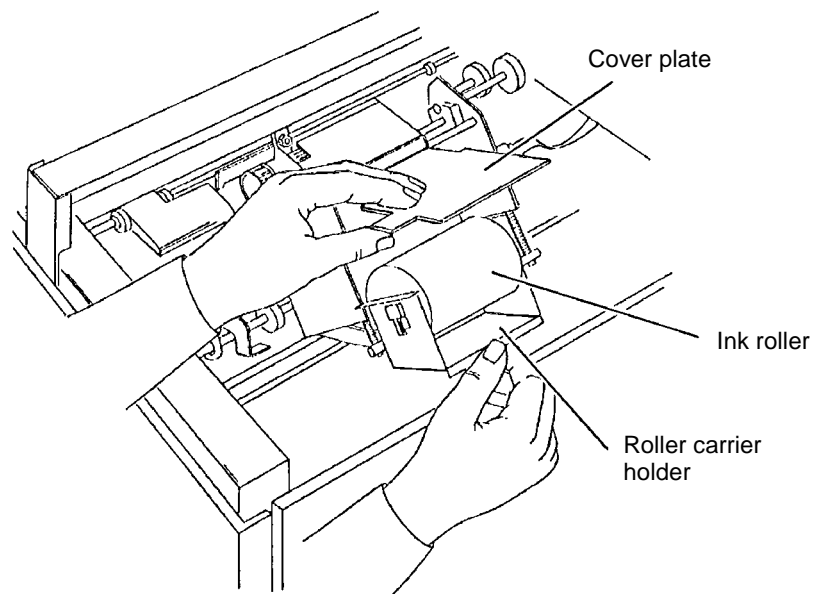
4. Carefully remove the ink roller by lowering it and removing it from the retaining slots. Use the paper to roll it up. Place it in a container and discard it.

5. Use your gloved hand to unwrap the new ink roller and install it into the roller carrier holder. Make sure the roller snaps into the retaining slots.

6. Open the cover plate and slide the roller carrier holder back into its original position, making sure it is fully seated.

7. Close the top cover.

Setting the date and code number

To set the date and code number:

1. Open the top cover.

2. Push down the locking lever.

Endorser

Latch

Locking lever

(Endorser rotates to the right)
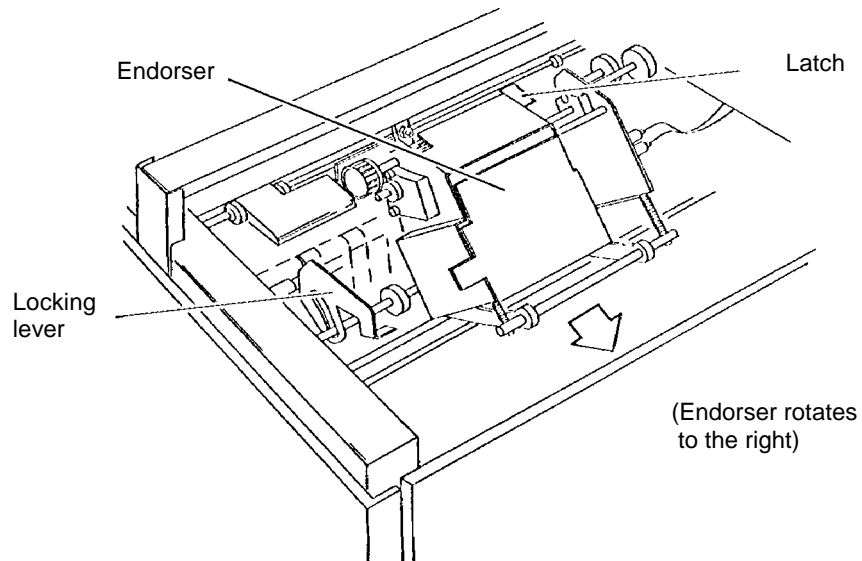
3. Press down on and hold the latch to unlock the Endorser.

4. Rotate the Endorser toward the back of the unit.

   NOTE: The index plate contains markings which identify the date characters and the code numbers.

Stamp

Colored band

Date knob
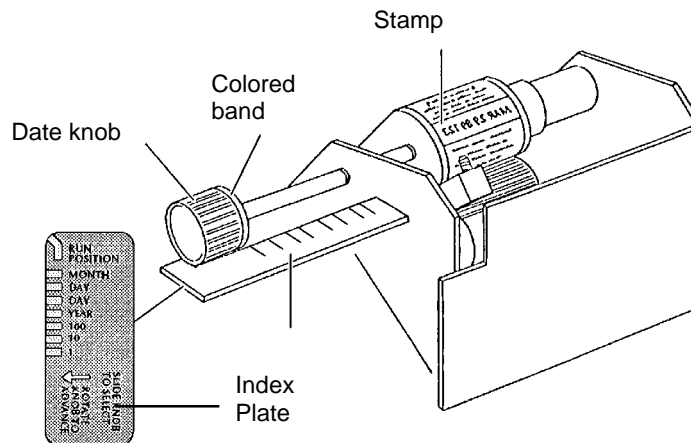
Index Plate

5. Slide the date knob out to the left until the colored band on the knob is opposite the appropriate mark on the index plate.

6. Rotate the date knob clockwise or counterclockwise to set the month, day, year, or code number required for endorsing.

7. Repeat the two previous steps until all of the fields are set.

    NOTE: Make sure that all characters on the drum are in line, flat and not off center so the ink will be picked up evenly for a high quality endorsement.

8. Slide the date knob back into the locked or run position (as indicated on the index plate).

9. Rotate the Endorser toward the front of the unit. The latch will automatically lock the Endorser in place.

10. Lift the locking lever to secure the Endorser.

11. Close the top cover.

Enabling the Endorser

Make sure the Endorser is enabled prior to feeding documents. The Endorser may be enabled or disabled at the mode level using function code F57.

Changing the print position

The Endorser print position specifies how far from the leading edge (fed into the transport first) of the document the endorsement will be printed. The print position may be changed using function code F59. This function allows you to temporarily change the Endorser print position. The new print position will be used to print endorsements until function code F02 (Restore Mode) is used to return the print position to its original value (provided that mode overrides are not saved), or until function code F59 is used again to change the Endorser print position.

NOTE: The Endorser print position should be carefully calculated. Make sure to set the Endorser print position close enough to the leading edge (fed into the transport first) of the document so the printed information does not extend beyond the trailing edge of the document.

Selecting the Endorser mode

The Endorser mode determines whether the Endorser prints one endorsement per document (single stamp) or continuous endorsements (continuous). The Endorser mode may be specified using function code F58.

Using the Footswitch

The *Kodak Digital Science* Footswitch provides a hands-off method of changing document image levels or performing commonly used function(s). You can change a document image level or perform a commonly used function simply by pressing, pressing and holding, or releasing the Footswitch.

During installation, modes are defined for use with specific applications. The action(s) which are to be performed when the Footswitch is pressed, pressed and held, and/or released, are defined for each mode. In addition, the Footswitch confirmation tone may be enabled/disabled for each mode.
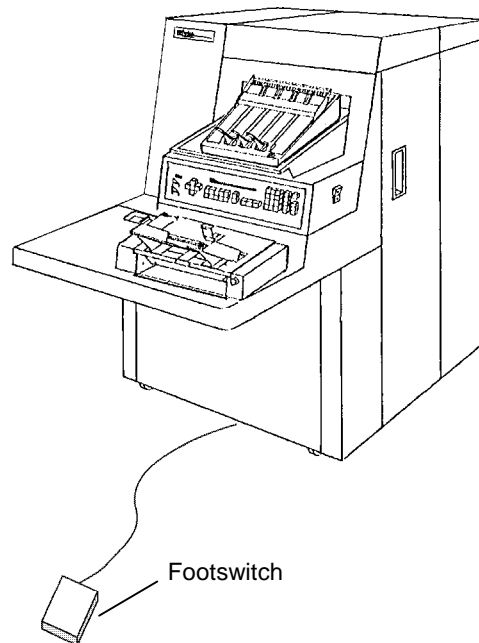
Footswitch

Enabling the confirmation tone

The Footswitch confirmation tone may be used to signal that action has been taken as a result of the Footswitch being pressed or released.

- If your machine is configured for no confirmation tones, then no confirmation tones of any kind will be heard in any mode.

- If your machine is configured to allow confirmation tones, then you can disable (or enable) confirmation tones in any mode as desired.

- If the machine confirmation tones and the Footswitch confirmation tone are enabled during installation for the mode being used, you may enable/disable the Footswitch confirmation tone during normal operations by performing function code F75.

Footswitch Pressed actions

One Footswitch Pressed action can be defined per mode. When you press (and/or release) the Footswitch, you can perform one of the following actions. The action that is being performed is dependent upon what is programmed during Mode Setup.

Footswitch Pressed Definition	Action
Next document Level 0	The next document fed into the transport is assigned Level 0.
Next document Level 1	The next document fed into the transport is assigned Level 1.
Next document Level 2	The next document fed into the transport is assigned Level 2.
Next document Level 3	The next document fed into the transport is assigned Level 3.
Increment Level	The next document fed into the transport is assigned the next higher document level (i.e., if the current document is assigned Level 2, the next document is assigned Level 3).
Function command	The function code(s) for a Footswitch pressed, programmed during Mode Setup, is performed (i.e., if the Footswitch press definition is f04,1, the Count Only mode is activated when the Footswitch is pressed).
P-key	The function code(s) for a Footswitch pressed, programmed during Mode Setup as the P-key definition, is performed (i.e., if the Footswitch pressed definition is P8, and P8 is defined as f98f38, the transport stops and signals end-of-job when the Footswitch is pressed).

Footswitch Pressed Definition	Action
Sustained Level 0	All documents fed into the transport while the Footswitch is pressed and held are assigned Level 0.
Sustained Level 1	All documents fed into the transport while the Footswitch is pressed and held are assigned Level 1.
Sustained Level 2	All documents fed into the transport while the Footswitch is pressed and held are assigned Level 2.
Sustained Level 3	All documents fed into the transport while the Footswitch is pressed and held are assigned Level 3.
No action Undefined	No action is performed when the Footswitch is pressed.

Footswitch Released actions

One Footswitch Released action can be defined per mode. When the Footswitch is released, one of the following actions will be performed. The action that is being performed is dependent upon what is programmed during Mode Setup.

Footswitch Released Definition	Action
Next document Level 0	The next document fed into the transport is assigned Level 0.
Next document Level 1	The next document fed into the transport is assigned Level 1.
Next document Level 2	The next document fed into the transport is assigned Level 2.
Next document Level 3	The next document fed into the transport is assigned Level 3.
No action Undefined	The action is performed when the Footswitch is released.

Using the Patch Reader

The Patch Reader controls document level changes by automatically sensing a predefined patch code and changing the document level accordingly.

During installation, modes are defined for use with specific applications. Patch reading may be enabled or disabled for each mode.

Patch types

During installation, the patch type(s) used are defined for each mode. The Patch Reader is capable of reading three types of patches.

Patch III — assigns a Level 3 to the *current* document.

Patch II — assigns a Level 2 to the *current* document.

Patch T/Transfer Patch — assigns a predetermined level to the *next* document.

The Transfer Patch Definition is also defined at installation. The Transfer Patch Definition controls the level assigned to the next document when a Transfer Patch is used. For example, if the Transfer Patch Definition for the current mode is defined as Level 3 and a Transfer Patch is used, the next document will be assigned Level 3.

Patch code placement

Patches may appear parallel to the leading edge of the document:

Leading Edge
(fed into the transport first)
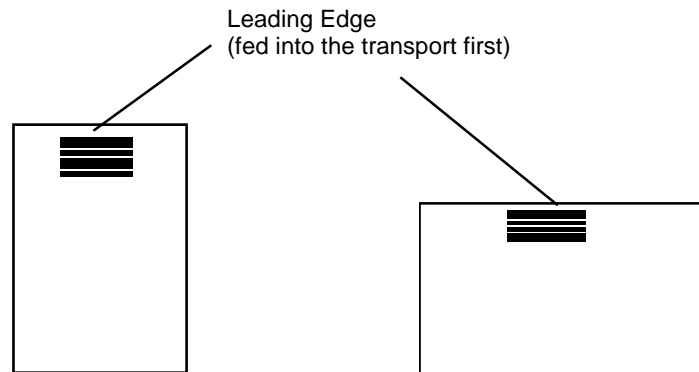
Patches may also be placed perpendicular to the leading edge of the document (in which case, they are called end-fed patches):

Leading Edge
(fed into the transport first)
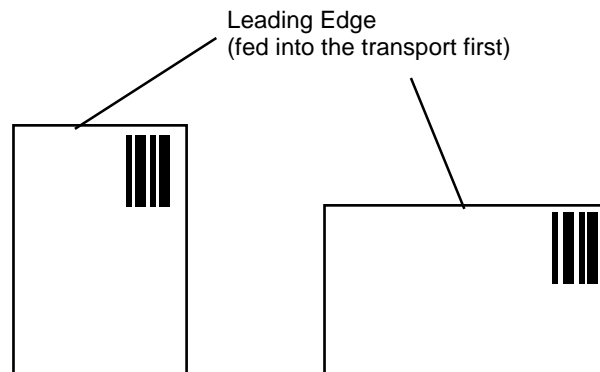
NOTE: End-fed patch reading is only available with a Document Scanning Array. End fed patches are scanned from right to left. Therefore, the patch must be oriented so the leading edge of the patch is toward the right edge of the document as fed. If the patch is not oriented properly, it may be misread, or not read at all.

Detailed specifications for creating patch codes are provided in Patch Code Information for *Kodak Imagelink* Products (A-61599).

Before you begin

Before feeding documents containing patches, verify the following:

- The Patch Reader is properly positioned.
- Patch reading is enabled.
- End-fed patch reading is enabled (if desired).
- The patch code confirmation tone is enabled (if desired).

Positioning the Patch Reader

There are five locations for the Patch Reader.

NOTE: If patch reading is performed by a Document Scanning Array, the following instructions do not apply.

Using the Patch Reader

The Patch Reader may be installed to read patches placed on the front of the documents being processed.

Patch Reader locations
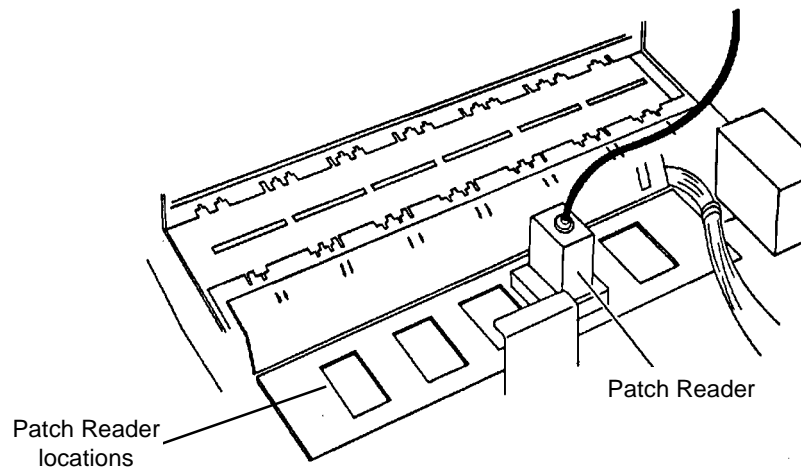
Patch Reader

To move the Patch Reader:

1. Lift the Patch Reader out of the current location and place it in the desired location.

2. Be sure the patch placed on the document and the position of the Patch Reader are aligned so the patch will be read properly.

Enabling patch reading

Make sure patch reading is enabled before feeding documents.

- Patch reading may be enabled or disabled at the mode level using function code F50.

If you have enabled patch reading, but do not want to read a patch found on the next document only, perform function code F54.

Enabling the patch code confirmation tone

The patch code confirmation tone may be used to signal that a patch has been read.

- If your machine is configured for no confirmation tones, then no confirmation tones of any kind will be heard in any mode.

- If your machine is configured to allow confirmation tones, then you can disable (or enable) confirmation tones in any mode as desired.

- If the machine confirmation tones and the patch code confirmation tone are enabled during installation for the mode being used, you may enable/disable the patch code confirmation tone during normal operations by performing function code F53.

    NOTE: In addition, a patch/bar code confirmation tone may be used to signal that both a patch and a bar code and have been detected. This confirmation tone may be enabled or disabled by performing function code F62.

Cleaning the Patch Reader

Periodically wipe the sensor at the end of the Patch Reader with a dry, lint-free cloth.

Sensor
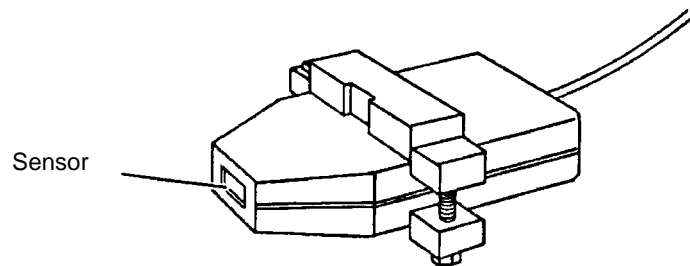
Appendix A   Basic Concepts

This appendix provides the basic concepts associated with scanning documents.

Modes

The scanner offers 18 modes that can be defined for a particular application or group of applications.

When you select a mode for use with a particular application, you are selecting the format/appearance of the output. Each mode is comprised of definitions that affect the output of the scanner. Required mode definitions include index format, level to follow level rules, etc. Optional mode definitions include a variety of accessory options, such as turning the Endorser on or off, etc. Mode definitions are established during installation.

Many optional mode definitions established during installation can be overridden using function codes. The overrides are temporary, unless during installation, it is specified that the mode overrides be saved. After executing a function that overrides a prior definition, a plus sign (+) appears in the first line of the status display if the mode overrides are saved.

Linked modes

Mode linking eliminates the need to re-enter the image address when changing from one mode to another. When two modes are linked, you can change from one mode to another while maintaining the image address.

Modes are linked by defining the same index format and image address fields (both number of fields and individual field lengths) during installation.

NOTE: The level rule options defined during installation do not need to be the same to link modes.

Use function code F91 to change from one mode to another, while maintaining the image address.

The following example illustrates the use of linked modes.

- Assume that in Mode 10:
    - The index format is three-level.
    - The image address Level 3 field length is 3 characters; the image address Level 2 field length is 2 characters; the image address Level 1 field length is 4 characters.
    - The level rules are: Level 1 followed by Level 1; Level 2 followed by Level 1; and Level 3 followed by Level 3.

- Assume that in Mode 12:
  - The index format is three-level.
  - The image address Level 3 field length is 2 characters; the image address Level 2 field length is 2 characters; the image address Level 1 field length is 5 characters.
  - The level rules are: Level 1 followed by Level 2; Level 2 followed by Level 2; and Level 3 followed by Level 2.

- Assume that in Mode 14:
  - The index format is three-level.
  - The image address Level 3 field length is 2 characters; the image address Level 2 field length is 2 characters; the image address Level 1 field length is 5 characters.
  - The level rules are: Level 1 followed by Level 1; Level 2 followed by Level 1; and Level 3 followed by Level 2.

Mode 10 and Mode 12 may not be linked; the image address field lengths are not the same.

Mode 10 and Mode 14 may not be linked; the image address field lengths are not the same.

Mode 12 and Mode 14 may be linked; the index format is three-level; and the image address has three fields, each with the same length.

NOTE: If you are currently in Mode 12 and want to change to Mode 14, note the affect of different level rules on the image address. Assume that the image address of the last document fed into the transport is 01.05.01234. The next image address displayed while still in Mode 12 is 01.06.00000. However, if you change to Mode 14, using function code F91, the next image address displayed in Mode 14 is 01.05.01234.

Image addresses

An image address is assigned to every document scanned. An image address is composed of four fields, each representing a different document level. An image address has a maximum length of 15 characters; 12 alphanumerics (field A, field B, and field C must be numeric; the fixed field may contain alphanumerics) and 3 delimiters (inserted between fields).

The image address (number of fields and characters) is based on the indexing scheme chosen (refer to the section entitled "Indexing schemes" later in this appendix).

For each mode, regardless of the indexing scheme used, the following four fields must be defined during installation:

- Field A. A numeric field representing document Level 1. Its value is incremented whenever a document is assigned Level 1.
- Field B. A numeric field representing document Level 2. Its value is incremented whenever a document is assigned Level 2.
- Field C. A numeric field representing document Level 3. Its value is incremented whenever a document is assigned Level 3.
- Fixed field. An alphanumeric field containing fixed information; typically, the date.

An example of an image address is:

1201.01.020.005

where:

- Field A (Level 1) contains 005
- Field B (Level 2) contains 020
- Field C (Level 3) contains 01
- Fixed field contains 1201

Assigning an image address

An image address may be assigned or changed by pressing the **Next** key or by entering function code **F97**. The Next key (or function code F97) is used when setting/changing any or all of the image address fields. Function code F92 is used when setting/changing only the fixed field of the image address.

Using the Next key

Press **Next** (or enter function code F97) to set or change an image address function code.

The next image address is displayed. A cursor appears over the first character of the next image address. Enter the desired image address or use the left ($\leftarrow$) and right ($\rightarrow$) arrow keys to position the entry cursor over the character to be set/changed and enter the desired value. The plus key (+) may also be used to move the entry cursor to the first character in the next image address field, without changing the current image address field.

The numeric keys (0 - 9) and the decimal key have dedicated keys on the keyboard and can be entered directly.

For example, perform the following steps to change the image address from 1201.01.020.005 to 1201.02.000.000.

- Press **Next** or enter function code **F97**. The cursor will appear over the first fixed field character (1201.01.020.005).

- Press **+** (plus key) to leave the image address field (1201) unchanged.

- Enter **.02.000.000.**

- Press **Enter** to exit, saving the changes to the image address and return to a normal operating display.

Using Function Code F92

Function code F92 allows you to set or change the image address fixed field.

The number of characters in the image address fixed field is defined during installation for each mode. Using F92, you will not be allowed to enter more than the predefined number of characters.

The fixed field of the image address will be displayed. An entry cursor will appear over the first character of the fixed field.

To enter numeric characters, input the desired value using the numeric keys (0 to 9) on the keyboard and press **Enter** to input the value.

To enter alpha characters, enter the alpha entry mode by pressing either the Up or Down arrow key. A portion of the alpha character set will be displayed with a flashing cursor appearing over one of the characters. If the desired alpha character does not appear in the display, press either the Up or Down arrow key to display another portion of the alphabet.

The alpha character set is composed of: uppercase English characters (A-Z), a space ( ), seven special characters (**$ * - : < > +**), "a" dieresis (ä), beta (ß), "n" tilde (ñ), "o" dieresis (ö), and "u" dieresis (ü).

NOTE: The plus sign cannot be input as the first character in the fixed field.

Once the desired alpha character appears in the display, it may be selected for input into the fixed field. To input the desired alpha character, use the Left or Right arrow key to move the flashing cursor over the desired alpha character. Press **Enter** to place the alpha character into the fixed field.

Repeat the above process to enter each fixed field character.

For example, perform the following steps to change from 1201 to DEC5:

1. Enter function code **F92**. The entry cursor appears over the first fixed field character (1201).

2. Press the Up or Down arrow key to enter alpha entry mode.

3. If the letter D is not displayed, press the Up or Down arrow key until it is displayed.

4. Use the Left or Right arrow key to position the flashing cursor over the letter D.

5. Press **Enter** to place the letter D in the first fixed field character position. Only the letter D appears in the display, with the entry cursor appearing in the next character position.

6. Press the Up or Down arrow key to enter alpha entry mode.

7. If the letter E is not displayed, press the up or down arrow key until it is displayed.

8. Use the Left or Right arrow key to position the flashing cursor over the letter E.

9. Press **Enter** to place the letter E in the second fixed field character position. The letters DE appear in the display, with the entry cursor appearing in the next character position.

10. Press the Up or Down arrow key to enter alpha entry mode.

11. If the letter C is not displayed, press the Up or Down arrow key until it is displayed.

12. Use the Left or Right arrow key to position the flashing cursor over the letter C.

13. Press **Enter** to place the letter C in the third fixed field character position. The letters DEC appear in the display, with the entry cursor appearing in the next character position.

14. Press **5** to place the number 5 in the fourth fixed field character position.

15. Press **Enter** to exit function code F92 and save the changes to the image address.

Image address formats

The image address may be displayed in the status display, and printed on the original documents as they are transported through the system.

The format in which the image address appears when displayed, written, or printed is defined during installation for each mode.

The written/printed image address may appear in one of three formats:

- Display leading zeros format (e.g., 004.003.002.001)
- Suppress leading zeros format (e.g., 004.3.2.1)
- Compress leading zeros format (e.g., 004.3.2.1)

NOTE: The format chosen does not affect the fixed field of the image address; it is always displayed and printed in its entirety.

Indexing schemes

Documents are scanned to record the information contained on them in an easily accessible form.

An indexing scheme is used to access or retrieve the information recorded and is defined during installation for each mode.

The scanner offers the following indexing schemes:

- Single level
- Two level
- Two level offset
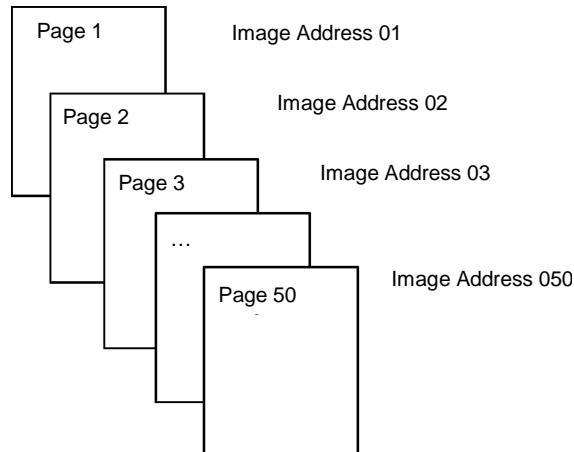- Three level
- Three level offset

Single level indexing

When using single level indexing, the image address assigned to each document is defined as follows:

- Field A (Level 1) is defined as having a field length greater than 0

- Field B (Level 2) is defined as having a field length of 0

- Field C (Level 3) is defined as having a field length of 0

- Fixed field may be defined, if desired

For example, if you scan a book with 50 pages, the image address has been defined:

- Field A has a field length of 3 characters

- Field B has 0 characters

- Field C has 0 characters

- Fixed Field has 0 characters

Page 1   Image Address 01

Page 2   Image Address 02

Page 3   Image Address 03

...

Page 50   Image Address 050

The first page is assigned image address 001. The second page is assigned image address 002, and so on, through the remainder of the book.

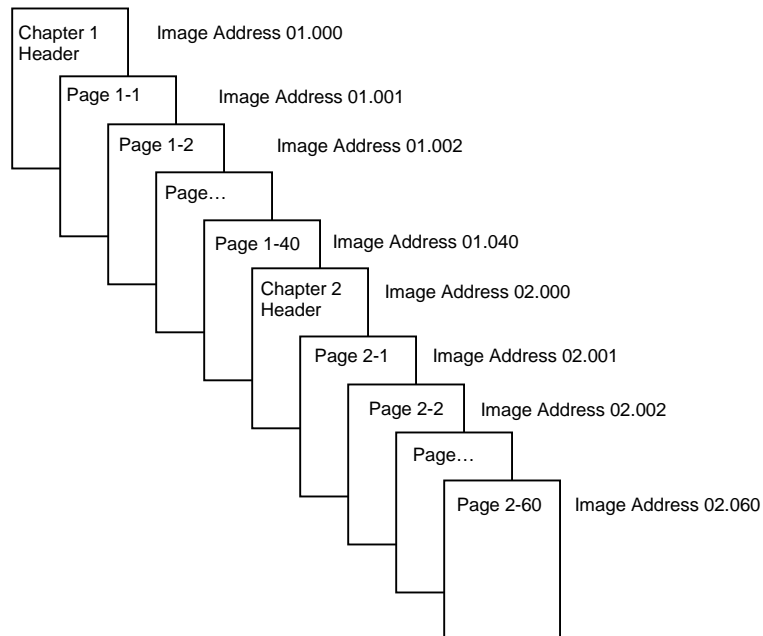Any one of the 50 pages may later be located and retrieved using its unique image address.

Two level indexing

When using two level indexing, the image address assigned to each document is defined as follows:

- Field A (Level 1) is defined as having a field length greater than 0

- Field B (Level 2) is defined as having a field length greater than 0

- Field C (Level 3) is defined as having a field length of 0

- Fixed field may be defined, if desired

For example, if you scan a book with 2 chapters (Chapter 1 has 40 pages and Chapter 2 has 60 pages) the image address has been defined:

- Field A has 3 characters
- Field B has 2 characters
- Field C has 0 characters
- Fixed field has 0 characters

The header page for Chapter 1 is assigned image address 01.000. The first page of Chapter 1 is assigned image address 01.001; the second page is assigned image address 01.002, and so on through Chapter 1.

The header page for Chapter 2 is assigned image address 02.000. The first page of Chapter 2 is assigned image address 02.001; the second page is assigned image address 02.002, and so on through Chapter 2.
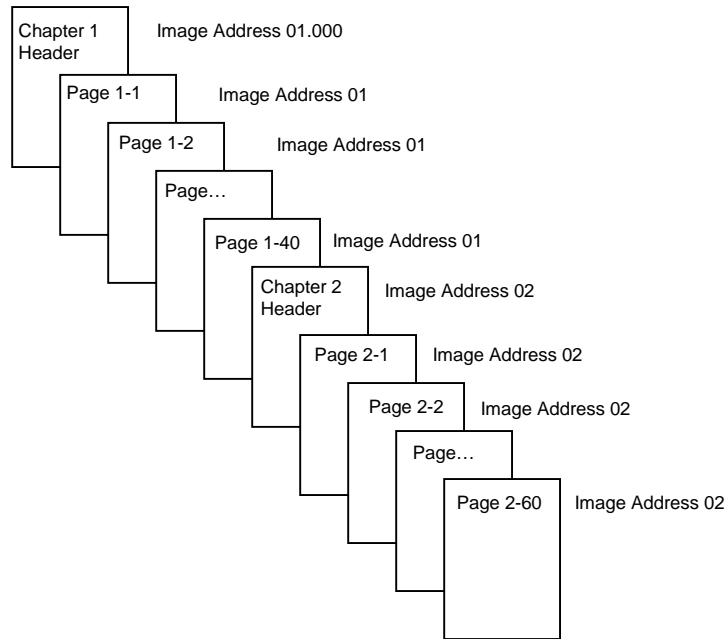
Any one of the pages may later be located and retrieved using its unique image address.

Two level offset indexing

When using two level offset indexing, the image address assigned to each document is defined as follows:

- Field A (Level 1) is defined as having a field length of 0

- Field B (Level 2) is defined as having a field length greater than 0

- Field C (Level 3) is defined as having a field length of 0

- Fixed field may be defined, if desired

For example, if you scan a book with 2 chapters (Chapter 1 has 40 pages and Chapter 2 has 60 pages), the image address has been defined:

- Field A has 0 characters

- Field B has 2 characters

- Field C has 0 characters

- Fixed field has 0 characters

Chapter 1 Header	Image Address 01.000
Page 1-1	Image Address 01
Page 1-2	Image Address 01
Page…	
Page 1-40	Image Address 01
Chapter 2 Header	Image Address 02
Page 2-1	Image Address 02
Page 2-2	Image Address 02
Page…	
Page 2-60	Image Address 02

The header page for Chapter 1 is assigned image address 01. The remaining pages of Chapter 1 are also assigned image address 01.

The header page for Chapter 2 is assigned image address 02. The remaining pages of Chapter 2 are also assigned image address 02.

Either one of the chapter header pages may later be located and retrieved using its unique image address. Pages within a chapter may located and retrieved by first finding the chapter header and then manually scrolling through the remaining pages of the chapter.

Three level indexing

When using three level indexing, the image address assigned to each document is defined as follows:

- Field A (Level 1) is defined as having a field length greater than 0
- Field B (Level 2) is defined as having a field length greater than 0
- Field C (Level 3) is defined as having a field length greater than 0
- Fixed field may be defined, if desired

For example, if you scan a book with two sections (Section 1 contains 2 chapters, each having 40 pages; Section 2 contains only 1 chapter, having 120 pages) the image address has been defined:

- Field A has 3 characters
- Field B has 2 characters
- Field C has 1 character
- Fixed field has 0 characters
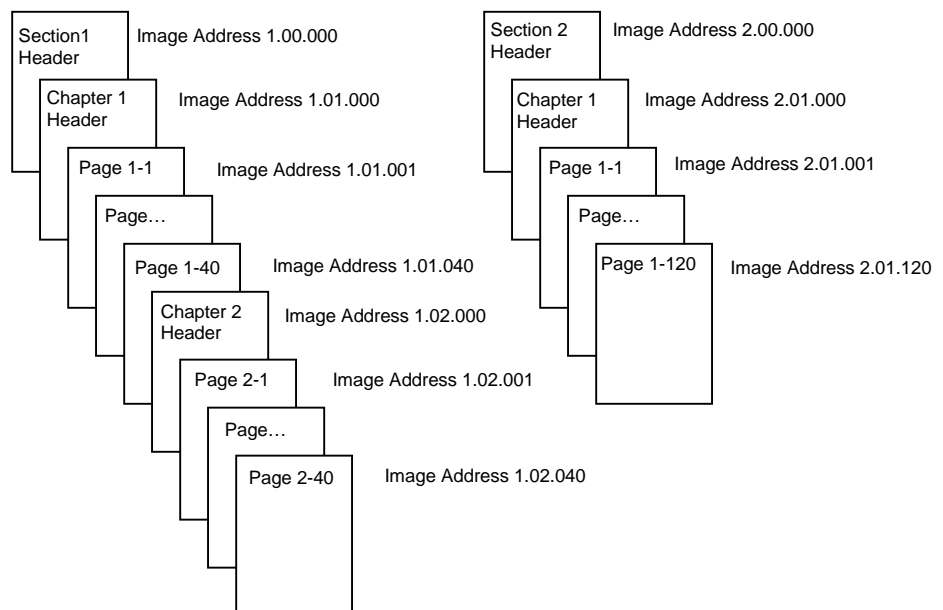
The header page for Section 1 is assigned image address 1.00.000. The header page for Chapter 1 of the section is assigned image address 1.01.000. The pages within the Chapter are assigned image address(es) 1.01.001 through 1.01.040. The header page for Chapter 2 of the section is assigned image address 1.02.000. The pages within the chapter are assigned image address(es) 1.02.001 through 1.02.040.

The header page for Section 2 is assigned image address 2.00.000. The header page for Chapter 1 of the section is assigned image address 2.01.000. The pages within the chapter are assigned image address(es) 2.01.001 through 2.01.120.

Any one of the pages may later be located and retrieved using its unique image address.

Three level offset indexing

When using three level offset indexing, the image address assigned to each document is defined as follows:

- Field A (Level 1) is defined as having a field length of 0
- Field B (Level 2) is defined as having a field length greater than 0
- Field C (Level 3) is defined as having a field length greater than 0
- Fixed field may be defined, if desired

For example, if you scan a book with two sections (Section 1 contains 2 chapters, each having 40 pages; Section 2 contains only 1 chapter, having 120 pages) the image address has been defined:

- Field A has 0 characters
- Field B has 2 characters
- Field C has 1 character
- Fixed field has 0 characters
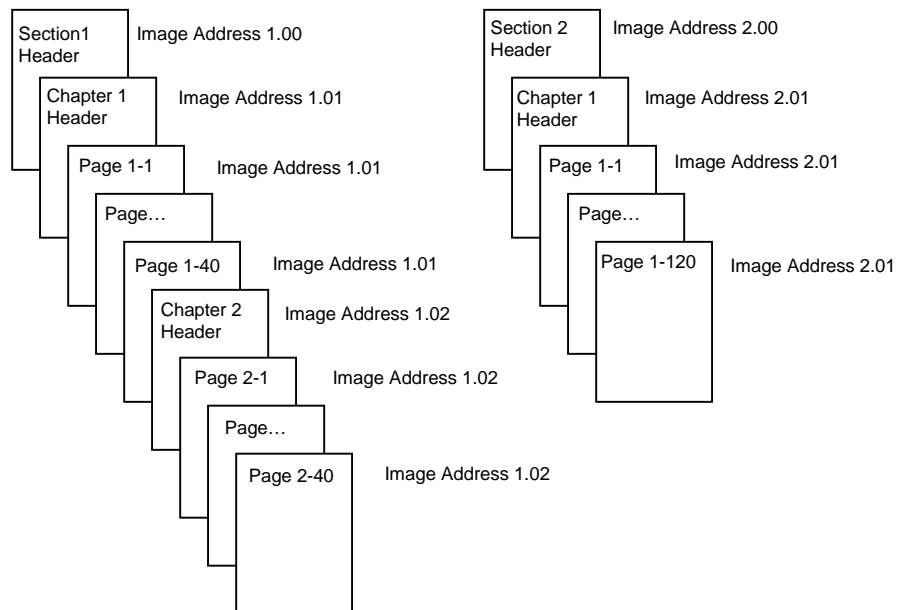
The header page for Section 1 is assigned image address 1.00. The header page for Chapter 1 of the section is assigned image address 1.01. The remaining pages of Chapter 1 are also assigned image address 1.01. The header page for Chapter 2 of the section is assigned image address 1.02. The remaining pages of Chapter 2 are also assigned image address 1.02.

The header page for Section 2 is assigned image address 2.00. The header page for Chapter 1 of the section is assigned image address 2.01. The remaining pages of Chapter 1 are also assigned image address 2.01.

Either one of the section header or chapter header pages may later be located and retrieved using its unique image address. Pages within a chapter may later be located and retrieved by first finding the chapter header and then manually scrolling through the remaining pages of the chapter.

Controlling document level changes

The previous Indexing Scheme examples, have illustrated how document levels change within a single group of documents. There are four document image levels: 3, 2, 1, and 0.

There are a number of ways in which you can set or change the document level:

- You may press a document level key on the control panel to assign a document Level 3, 2, or 1.

- You may use function code F07 to assign a document Level 0.

- You may use the optional *Kodak Digital Science* Footswitch accessory; pressing, pressing and holding, or releasing the Footswitch can change document levels.

- You may use the optional *Kodak Digital Science* Patch Reader accessory; feeding a document containing a particular type of patch can change document levels.

If you do not set or change the document level using one of the methods listed, the document level will be set automatically based upon the level rules (i.e., Level 2 is followed by Level 1, etc.) defined during installation for each mode.
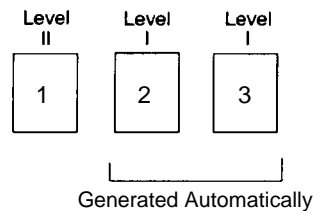
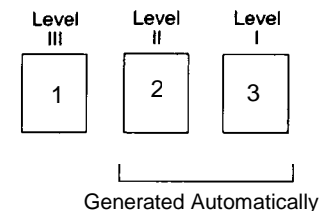The following diagram illustrates how document levels are set or changed:
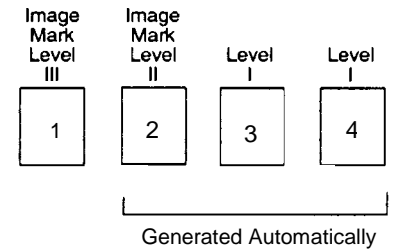
Level instruction:
Operator presses the III key or uses a patch III document (Level II and I documents are generated automatically depending on the index mode).
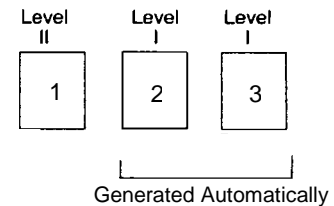
Level Instruction:
Operator presses the II key (Level I documents are generated automatically depending on the index mode).

Level Instruction:
Operator presses the II key or uses a patch II document (Level 1 documents are generated automatically depending on the index mode).

Level Instruction:
Operator presses the III key (Level II and I documents are generated automatically depending on the index mode).

Document level information is transmitted in each image header file. See the Integrator's Guide for more information.

DOCUMENT
IMAGING

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