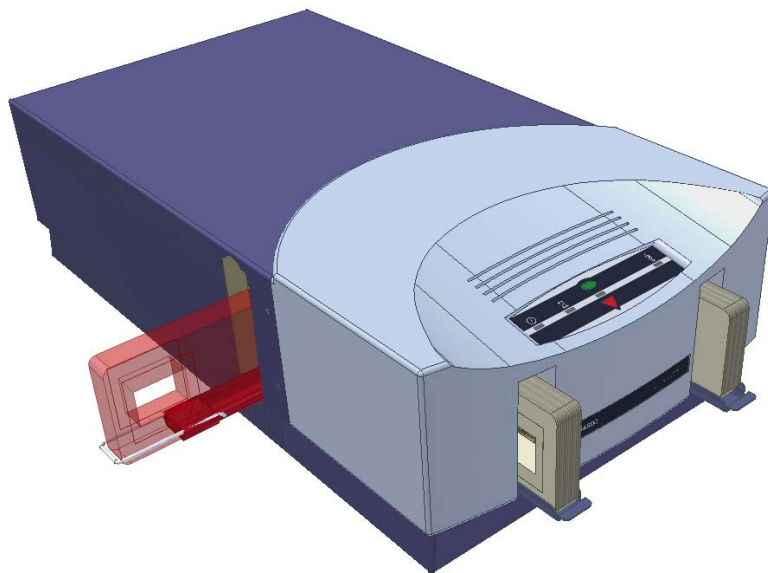

Operator's Guide

Aperture Card Monochrome Scanners



2004 Edition

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1. About This Guide

This guide explains how to operate and maintain your scanner for scanning aperture microfilm cards.

The Aperture Card Scanner and its built-in features for image enhancement and Hollerith code interpretation is interfaced and controlled from your workstation through compatible scanning or copying software. Please refer to the relevant software documentation for details on scanning and copying operations.

The scanner takes aperture card standards: MIL-C-9877B, MIL-C-9949, MIL-D-9868, ISO 3272 and DIN 19052. Silver and Diazo aperture cards with support of both Odd and Even generation copies.

The ACS 4600 supports a max. aperture scanning area of 31.9 x 42.0 mm (standard within tape: 30.4x41.0 mm) and oversize reduction ratios up to 37 x, support scanning of microfilmed oversize drawings up to 45" x 61" (standard E-size: 36" x48", A0: 841x1189 mm (33.11"x36.81")).

This guide assumes basic knowledge of your computer and operating system and does not repeat material from their documentation.

Be sure to refer to the *WIDEsystem TOOLS User's Guide* found on the *WIDEsystem TOOLS* CD-ROM for additional information regarding installation and maintenance of your scanner.

2. Scanner System Requirements

- PC or supported workstation.
- Compatible Windows operating system - see the *WIDEsystem Tools* documentation for details."
- USB port or enabled FireWire Port on your workstation. (Note: USB and FireWire are not supported on Windows NT)
- The *WIDEsystem TOOLS* CD supplied with your scanner.
- Scanning software and compatible third party software.

3. Installation

3.1 Installation steps

Here are the necessary steps to get your ACS scanner running:

Step	Description	Instructions in Section
1	Install the WIDEsystem TOOLS Software (Drivers) on your PC	3.2
2	Control the Smart Card on the scanner	3.3
3	Shut down the PC	
4	Select the interface you wish to use FireWire or USB	3.4
5	Connect the interface cable to the scanner and PC	3.5 or 3.6
6	Connect the scanner power cable and turn scanner ON	
7	Turn on the PC	
8	Verify the installation and run scanner maintenance	3.7 and 3.8

Instructions for installation and connecting with a **FireWire** interface is described in section 3.5.

Instructions for installation and connecting with a **USB** interface is described in section 3.6.

3.2 Install Maintenance software and Drivers

You are now ready to install the basic drivers and maintenance utilities for your scanner. Insert the *WIDEsystem TOOLS* CD and select the *WIDEsystem* installation option(s). Follow the installation instructions described in the *WIDEsystem TOOLS* user's guide that is included on the CD.

Before connecting the scanner, you must install its basic drivers and maintenance utilities on your PC. The basic drivers and maintenance utilities are installed from the *WIDEsystem TOOLS* CD-ROM that came with your scanner.



! Important: Be sure to install WIDEsystem before you connect the scanner or install any scanner software applications. Your scanner drivers are automatically installed with WIDEsystem and your PC will then be fully prepared to detect and setup the newly connected scanner device.

If you connected and tried to install the scanner before installing WIDEsystem, the scanner will be entered on the system as a new device without functional drivers. The scanner will be displayed in the Windows Device Manager with a yellow error icon. The scanner entry must be removed from the Device manager before re-installing.

! Important: Be sure to use the WIDEsystem TOOLS CD-ROM that came with your scanner or a newer version. Out-of-date versions of WIDEsystem software may not detect your scanner model.

To install the basic drivers and maintenance software:

1. **Start up the WIDEsystem TOOLS CD-ROM** - Insert the CD-ROM into your PC. Normally the setup menu interface will start automatically. If it does not, perform the following steps to activate it.
 - a. Click the *Start* button on the taskbar and choose *Run* from the menu.
 - b. Type D:\setup in the Command Line Box (where D: represents the name of your CD-ROM drive).
 - c. Select the OK button.
2. **View Installation Instructions** - Click on the CD's *Installation Guide* option to view additional installation instructions.
3. **Install WIDEsystem and drivers** - click on the option from main menu or run the setup.exe program directly from the WIDEsystem (ws) folder on the CD-ROM. Follow the instructions that appear on your screen.
4. **Install the Scanner Maintenance program** - click on the option from main menu or run the setup.exe program directly from the Scanner Maintenance (sm) folder on the CD-ROM. Follow the instructions that appear on your screen.

3.3 Smart Card

You will find the Smart Card in the small drawer labeled "PUSH" in the back of the scanner next to the interface connection sockets (see figure 3-1).

- Check that the scanner Smart Card is correctly installed with the contact side facing the drawer surface.
- Make sure the card corresponds to your scanner model.

The scanner will only function correctly when a Smart Card is inserted.

3.4 Select the Scanner Interface

The Aperture Card scanner supports two types of interface connections – USB and FireWire. You need to select the one that is best for your scanning purposes and is compatible with your PC system. The two interface types and their advantages are described in the following section.

FireWire

FireWire is currently the fastest connection type for monochrome (and color) scanning. FireWire can accommodate 400 megabits (around 50 megabytes) per second, which is more than adequate for high volume scanning. FireWire is a plug-and-play (PnP) specification. You do however need a FireWire card installed on your computer and many computers are delivered with a FireWire card preinstalled. Check your computer specifications and operating system to see if your system is equipped for FireWire connectivity.

Note: FireWire is not supported on Windows NT.

USB

USB is a connectivity specification that allows computer peripherals to be attached to a computer and eliminates the need to open the computer and install cards into dedicated slots. USB is a plug-n-play (PnP) specification that does not require configuration of switches or jumpers.

The USB 1.1 bus provided with USB connection scanners supports a data transfer speed of 12Mbps. USB is supported on Windows 98 or above. USB is not supported on Windows NT. Most newer PC's and laptops come equipped with a USB port. USB 1.1 is relatively slower than FireWire.

Note: USB is not supported on Windows NT.

3.4.1 Cable Connector Panel on the Scanner

The interface cable connectors are grouped in the Cable-Connector-Panel found on the back of the scanner

You will find one USB and two FireWire cable connectors on the panel.

FireWire(2) and USB(1) Cable Connectors



Back of the Aperture Card Scanner - FireWire and USB Connectors

Regulatory Notice: Your scanner product has been tested to comply with the EMC Standards EN55022 and FCC, Part 15. To maintain compliance, only use shielded USB/FireWire (FW) interface cables.

3.5 Connecting through the FireWire interface

To connect through FireWire, you will need the FireWire cable that came with your scanner and your computer must be enabled for FireWire through a FireWire card and port.

3.5.1 Check your computer for FireWire

Some computers come with built in FireWire inputs. You can check if FireWire is enabled by following these steps:

1. In Windows, Click Start, Settings, and then Control Panel.
2. Double-click the System icon.
3. Click the Device Manager tab.

If a FireWire host controller (IEEE) is listed, then FireWire is enabled on your computer. If you do not see this device listed, you will need to install a FireWire card and port .

To install a FireWire card, shutdown your computer and install the card into an empty PCI slot. See your computer's user's manual for installation of new hardware and the driver installation information that came with your FireWire card to setup the device under your specific Windows operative system.

3.5.2 Connect the scanner with the Firewire cable

1. **Make sure you have installed WIDEsystem** on your PC before you connect the scanner. Your scanner drivers are automatically installed with WIDEsystem and your PC will then be fully prepared to detect and setup the newly connected scanner device.
2. Shut down (power off) your PC. Do not connect the scanner power cable or turn on the scanner.
3. Locate the FireWire cable that came with your scanner.
4. Connect the PC end to the FireWire port on your computer
5. Connect the peripheral end to a FireWire connection socket on your scanner.
6. Connect the power cable to your scanner and turn the scanner on.
7. Turn on the PC. The OS will detect and setup the newly connected scanner device.
8. If an *"Unknown device is found"* message appears after you plug in the cable, follow the steps described below under *Unknown device is found message*.

3.5.3 "Unknown device is found" message

If your system has problems detecting the scanner, make sure your FireWire port is enabled (see above). Make sure you have installed the WIDEsystem software from the CD that came with your scanner or a newer WIDEsystem version. Make sure you have installed WIDEsystem **before** connecting the scanner. You should never attempt to step through device installation dialogs before installing WIDEsystem. If you have done so, see the trouble shooting section for instructions on reinstalling.

If your system still does not detect the device, disconnect the FireWire cable, unplug the power to your scanner and turn off the computer. Wait a few minutes, reconnect the scanner, restart the PC and turn on the scanner.

3.6 Connecting through the USB interface

USB is supported on Windows 98 or above. USB is not supported on Windows NT. Your computer must have an enabled USB port.

3.6.1 Check your USB Port

Even if the computer has a USB port, it will not function unless it is set up, or enabled. Follow the instructions below to determine whether your USB port is enabled.

1. In Windows, Click Start, Settings, and then Control Panel.
2. Double-click the System icon.
3. Click the Device Manager tab.
4. Click the plus (+) icon to the left of the Universal Serial Bus Controller item.

If a USB host controller and a USB root hub are listed, then USB is probably enabled on your computer. If you do not see these devices listed, refer to your computer's documentation or contact the manufacturer for more information on enabling and setting up USB.

3.6.2 Connect the scanner with the USB cable

1. **Make sure you have installed WIDEsystem** on your PC before you connect the scanner. Your scanner drivers are automatically installed with WIDEsystem and your PC will then be fully prepared to detect and setup the newly connected scanner device.
2. Shut down (power off) your PC. Do not connect the scanner power cable or turn on the scanner.
3. Locate the USB cable that came with your scanner.
4. Connect the PC end to the USB port on your computer
5. Connect the peripheral end to a USB connection socket on your scanner.
6. Connect the power cable to your scanner and turn the scanner on.
7. Turn on the PC. The OS will detect and setup the newly connected scanner device.
8. If an *"Unknown device is found"* message appears after you plug in the cable, follow the steps described below under *Unknown device is found message*.

3.6.3 "Unknown device is found" message

If your system has problems detecting the scanner, make sure your USB port is enabled (see above). Make sure you have installed the WIDEsystem software from the CD that came with your scanner or a newer WIDEsystem version. Make sure you have installed WIDEsystem **before** connecting the scanner. You should never attempt to step through device installation dialogs before installing WIDEsystem. If you have done so, see the trouble shooting section for instructions on reinstalling.

If your system still does not detect the device, disconnect the USB cable, unplug the power to your scanner and turn off the computer. Wait a few minutes, reconnect the scanner, restart the PC and turn on the scanner.

3.7 Installation Verification

Turn on the power to the computer and the scanner.

If you have not yet done so, install the Scanner Maintenance Software and your scanning applications on your PC. Follow the installation instructions supplied with each item. The Scanner Maintenance Software is on your *WIDEsystem TOOLS* CD.

Start up the maintenance software (*Start – Programs – Scanner Maintenance*). The program will detect your scanner if it is installed correctly and display an introduction to the maintenance wizard. Otherwise, a message will inform you that your scanner could not be detected. If this is the case turn off power to all connected devices and reboot the system.

3.8 Preliminary Maintenance

Once you have setup your scanner and verified your installation, it is important that you run your first maintenance session before working with the scanner.

Follow the instructions described under the chapter on *Maintenance* in this Operators Guide and in the Scanner Maintenance instructions found on the *WIDEsystem TOOLS* CD-ROM that came with your scanner.

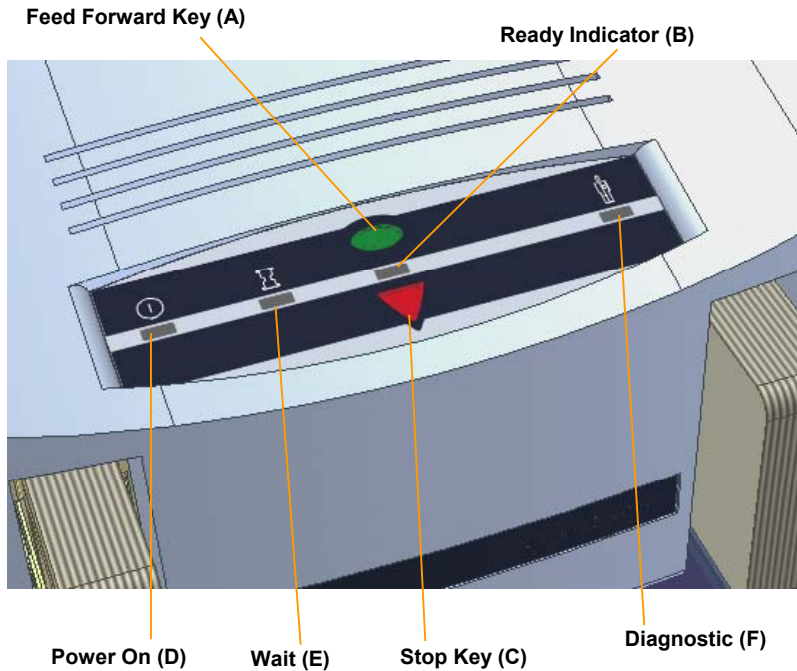
4. Operator Panel and Indicators

4.1 Overview

The Aperture Card Scanner's Operator Panel shown below has two keys and four indicator lamps.

Operator Keys: The *FEED FORWARD* Key(A) with *READY* indicator (B), and *STOP* key (C).

Indicator lamps: *POWER-ON* (D), *WAIT* (E), and *DIAGNOSTIC* (F).



4.2 FEED FORWARD Key (A)

Press the *FEED FORWARD* key to move the first card into the start-of-scanning position. The *READY* indicator remains ON, signifying that the scanner is ready for control from the computer/workstation.

4.3 READY Indicator (B)

During scanning the *READY* indicator (B) blinks. At the end of scanning the *READY* indicator will stop blinking and remain on, signifying that feeding and scanning of the next card can be initiated/controlled from the computer.

4.4 STOP Key (C) to Interrupt/Halt Scanning

Press the *STOP* key (C) to interrupt the scanning process. After this, pressing the *FEED FORWARD* key (A) will eject the current card without feeding the next card from the input bin.

4.5 POWER-ON Indicator (D)

The *POWER-ON* indicator (D) lights when scanner is connected to a power outlet and the outlet switch at the back of the scanner is on. Stays green also in Power-Down mode (see below).

4.6 WAIT Indicator (E)

The *WAIT indicator* (E) lights up as soon as the Aperture Card scanner power is turned on. The light stays on during the normal start-up internal diagnostic and stabilization phase and shuts off when internal diagnostic and stabilization is complete.

In this way, the *WAIT indicator* reveals the status of the scanner's self-adjustment procedure, which consists of light profile adjustment. If the scanner does not self adjust the light profiles may change over time due to thermal changes in the scanner. The *WAIT indicator* works in the following way:

- When the *WAIT Indicator* is off, self-adjustment is up-to-date, and the scanner is ready to scan.
- When the *WAIT Indicator* is on, the scanner is warming-up or self-adjusting; a scan may be issued, but quality may be compromised (when adjusting is completed, the *Wait Indicator* turns off).
- When the *WAIT Indicator* flashes (and the *Diagnostics Indicator* is off) self-adjustment is required, but not possible. A card could be jammed in the scanner and needs to be removed (see section on maintenance). When adjusting is again possible, the *WAIT Indicator* stops flashing, but continues to be on until the self-adjust process is completed.
- The *WAIT Indicator* is on during basic calibration.

4.7 DIAGNOSTIC Indicator (F)

The *DIAGNOSTIC indicator* (F) flashes if an error is detected by the built-in diagnostic check. Simultaneous flashing by both the *DIAGNOSTIC* and the *WAIT indicators* may mean that the scanning area needs cleaning. See the "Maintenance" chapter for instructions on cleaning the scanning area.

4.8 Using Power-ON, Power-down Modes

When you connect the scanner to the power outlet and turn on the outlet switch at the back of the scanner, it starts up in Power-ON mode meaning it boots and the *POWER-ON* LED lights green. With the scanner then connected to the power outlet, you can control the scanner power through the scanner's panel. The scanner can be in Power-on mode or in Power-down mode.

Power-ON mode: The scanner is ready for scanning. The Power on LED lights green (indicating power is coming in from the outlet) and the *WAIT Indicator* is OFF.

Power-down mode: The scanner is off for scanning purposes but can be restarted by scanner control software timer functions (see the *WIDEsystem Tools User's Guide* for details). The Power-on LED lights green (indicating power is coming in from the outlet) and the *WAIT Indicator* flashes.

To turn the scanner from Power-ON to Power-down: Press and hold both the *STOP* key and the *FEED FORWARD* key simultaneously for a few seconds until the *WAIT indicator* starts flashing.

To turn the scanner from Power-down to Power-ON: Press the *FEED FORWARD* key again for a few seconds. You can also use your scanner driver software to set your scanner to automatic Power-ON through a timer function. See your *WIDEsystem Tools User's Guide* for details.

5. Using the scanner

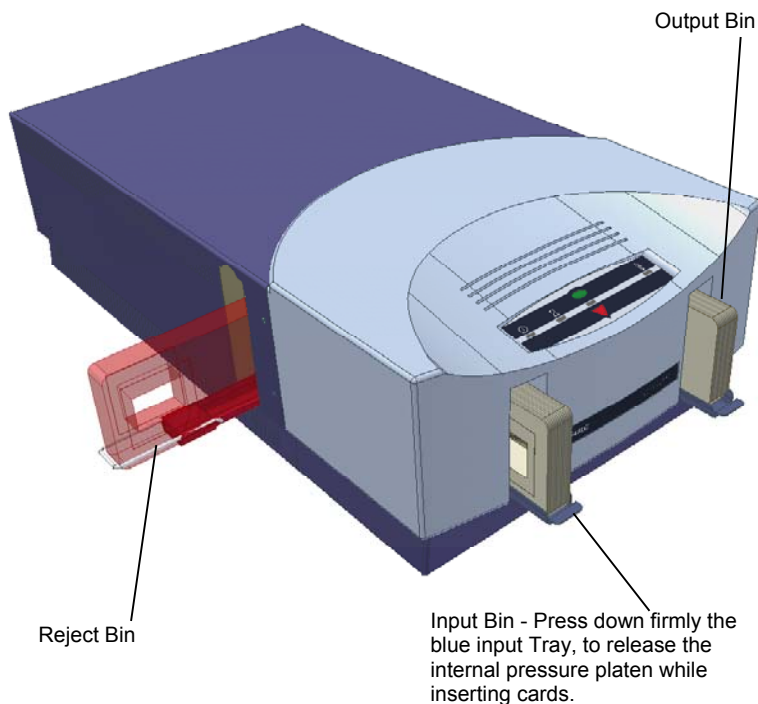
5.1 Card Standards

Aperture card standards: MIL-C-9877B, MIL-C-9949, MIL-D-9868, ISO 3272 and DIN 19052. Silver and Diazo aperture cards with support of both Odd and Even generation copies.

5.2 Input Bin (left bin) - Inserting Cards

1. Insert one or more aperture cards, press down firmly on the blue hopper on the left (see figure below). This releases the pressure plate enabling the aperture cards to be inserted fully into the hopper slot.
2. The aperture cards should be inserted with the cut corner facing down and forwards for Odd generation of cards (Original and copies 3,5 etc.). For even generation copies (2,4 etc.) the cut corner should face up and forwards. This ensures that the aperture card film emulsion side always faces against the lamp.
3. The cards should be fully inserted into the input card hopper slot until resistance is met. The green *Ready Indicator* (B) will light when the cards are correctly positioned.
4. The first card will move into the start-of-scanning position when the *Feed Forward* key is pressed. The *Ready Indicator* remains ON, signifying that the scanner is ready for control from the computer/workstation.

Card Input and Output Bins:



5.3 Output Bin – right bin

Scanned cards will be sent back and recollected in the output bin in the order they were inserted. If the Reject bin is not enabled, rejected cards will go to the output bin (see below).

5.4 Reject bin – side bin

Cards rejected by the scanner, because of unreadable Hollerith code, will be collected in the reject bin (red bin) for reprocessing.

To protect your cards from the high temperature inside the scanner, cards that are loaded but not used within 5 minutes will also be sent to the reject bin (or Output bin if the Reject bin is disabled (see below)).

Reject bin - Automatic disabling: The scanner contains switches for automatic disabling of the Reject bin. The Reject bin will be disabled if:

1. The Reject bin is not completely open i.e., in the full down position.
2. If the Reject bin is full of cards.

With the Reject bin disabled, the scanner will send rejected cards to the Output bin.

5.5 Paper Sizing Factors

The standard selectable combinations of original drawing size, reduction ratio and orientation are shown in the following table.

Any entry in the setup table can be associated with a punched card code and column number, for automatically setting the scanning parameters.

For all drawing size entries, a user selectable 1%, 2% or 3% enlargement factor of the scanwindow is available to compensate for any inaccuracies in film position or original size.

Paper size can also be setup to custom sizes through the scanning or copy application.

The normally centered position of the scanwindow (in the aperture of the card), can be user adjusted in both horizontal and vertical directions.

Drawing Size	Original's Dimensions		Orientation on film	Reduction Ratio
	Inches	mm.		
S-A4L		10x297	L(Landscape)	7.5
S-A4P		297x210	P(Portrait)	10.5
S-A3L		297x420	L	10.5
A4P		297x210	P	15
A4L		210x297	L	15
A3		297x420	L	15
A2		420x594	L	15
A1		594x841	L	21.2
A0		841x1189	L	30
A-1(US)	8.5x11		P	16
A-1L(US)	11x8.5		L	16
A-2 (US)	9x12		P	16
B-1 (US)	11x17		L	16
B-2 (US)	12x18		L	16
C-1 (US)	17x22		L	16
C-2 (US)	18x22		L	16
D-1 (US)	22x34		L	24
D-2 (US)	24x36		L	24
E-1 (US)	34x44		L	30
E-2 (US)	36x48		L	30
Full	36.0x48.15	914x1223	L	30
S-36	42.9x57.8	1089x1467	L	36
S-37	44.1x59.4	1120x1508	L	37
U0				
..... 10	User-defined		Drawing Size, Orientation, Reduction.	
U9				

- S-Drawing sizes are special DIN-norm size/reduction ratios, or Oversizes (S-36 & S-37)

6. Maintenance

6.1 Maintenance Points

The maintenance points on the Aperture Card Scanner are shown below. Use the illustration in conjunction with the maintenance instructions in this section.

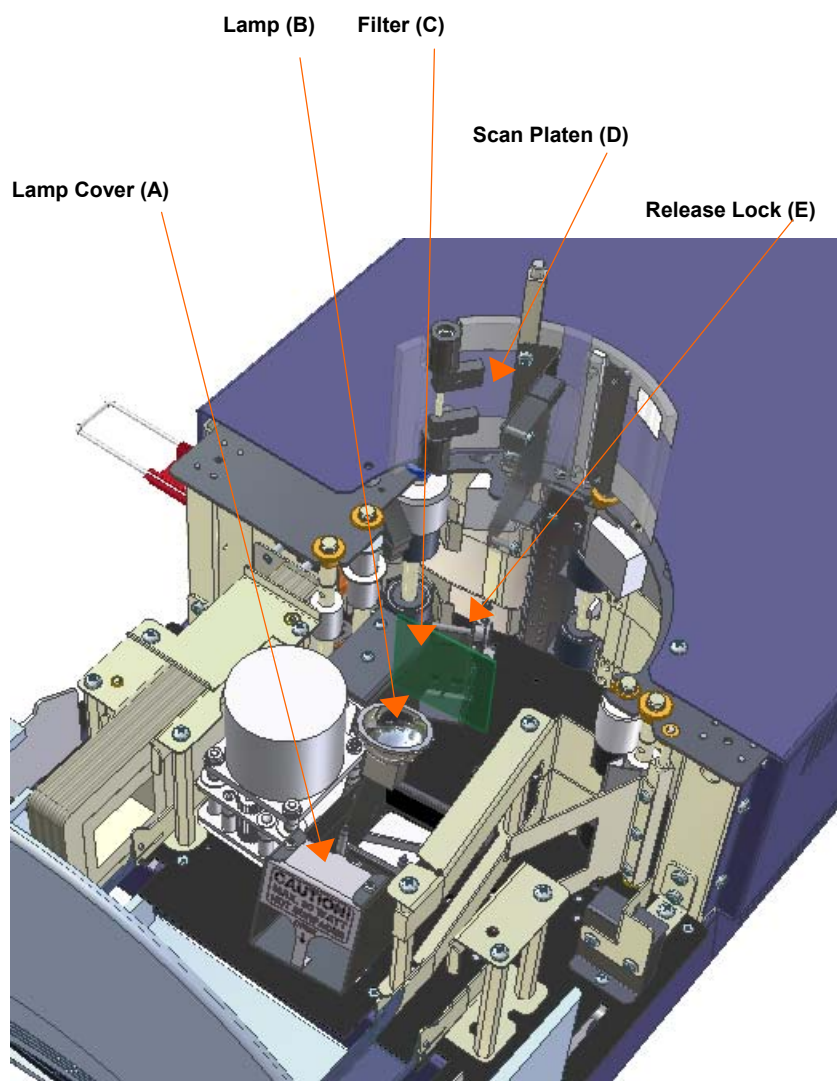


Fig. 6-1: Maintenance points inside the scanner

6.2 Regular Maintenance

Routine maintenance procedures such as cleaning and Basic calibration will improve image quality and reduce your service costs.

Cleaning and Calibration are closely entwined and should be performed in a single maintenance session, starting with cleaning the scan area and ending with calibration. The reason for this is simple. If you clean the transparent scanning platen then you will have changed conditions in the scanning area and will need to calibrate in order to readjust black and white interpretation. This works the other way as well – scanner calibration must always be preceded by cleaning to get reliable calibration results.

6.2.1 Cleaning the transparent scanning platen

Before you access the internal scanning area of the Aperture Card Scanner, make sure the scanner is turned OFF and has been allowed to cool down for at least 5 min. Make sure that the power cord is unplugged before proceeding with the following steps.

1. Open the Aperture Card Scanner's front cover, by gently pulling at the top of the cover.
2. Pull back the release lock (E) for the transparent scanning platen (D), and remove the platen.
3. Gently wipe clean the front of the transparent scanning platen (D), with a damp cloth and a mild detergent (alcohol must not be used for cleaning).
4. Carefully reinsert the transparent scanning platen (D), and insure that it is locked by release lock (E).

Note: Avoid spraying cleaning fluid directly on to the transparent scanning platen. This may allow the liquid to penetrate into the mounted optical parts of the platen. Instead, spray the liquid sparingly on the cleaning cloth and then wipe the platen clean.

6.2.2 Basic Calibration

Scanner calibration is very easy to perform and completely automatic. After manually cleaning the scan area, you just start the Maintenance program and let the wizard take over. The Maintenance program scanner works with the scanner hardware to set blacks and whites accordingly. The wizard will inform you when the process is over.

6.3 Special Maintenance Tasks

6.3.1 Removing a Jammed Card

Refer to the Maintenance Points diagram at the start of this section.

Before you access the internal scanning area of the Aperture Card Scanner, make sure the scanner is turned OFF and has been allowed to cool down for 5 min. Unplug the power cord.

1. Open the Aperture Card Scanner's front cover, by gently pulling at the top of the cover.
2. Pull back the release lock (E) for the transparent scanning platen (D), and remove the platen.
3. Locate and remove the card that is jammed.
4. Carefully reinsert the transparent scanning platen (D), and insure that it is locked by release lock (E).
5. Close the cover.

6.3.2 Replacement of the Scanner Lamp

Before you access the internal scanning area of the Aperture Card Scanner, make sure the scanner is turned OFF and has been allowed to cool down for 5 min. Unplug the power cord.

1. Open the Aperture Card Scanner's front cover, by gently pulling upwards at the top of the cover.
2. Push the lamp cover (A) gently backwards to access the lamp (B).
3. Pull the lamp (B) upwards and carefully insert the new lamp in the fixture.
4. Close the lamp cover (A) by gently pushing it forwards until it snaps into the upright closed position.

Note: For optimal performance of the Aperture Card Scanner, only original spare lamps must be used.

6.3.3 Replacement of the UV/IR Filter

The Ultraviolet/Infrared filter is found under the lamp cover near the lamp. Before you access the internal scanning area make sure the scanner is turned OFF and has been allowed to cool down for 5 min. Unplug the power cord.

1. Open the Aperture Card Scanner's front cover, by gently pulling upwards at the top of the cover.
2. Push the lamp cover (A) gently backwards to access the filter (C).
3. To exchange the filter (C), slide it upwards and insert the new filter carefully into the holder.
4. Close the lamp cover (A) by gently pushing it forwards until it snaps into the upright closed position.

7. Appendix A: Important Safety Instructions

Read all of these instructions and save them for later use. Please follow all warnings and instructions marked on the scanner.

CAUTION!

The halogen lamp and lamp-cover can both be very hot !
Always allow the Aperture Card Scanner to cool for at least 5 min.
before attempting to open the scanner and access parts inside.

- A.** Do not place the scanner on an unstable surface, stand, cart or table. Serious damage can be caused if the unit falls.
- B.** Turn off all power to the unit before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- C.** The scanner should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- D.** The scanner is equipped with a three-wire grounding type plug. This plug will fit only into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat or ignore the purpose of the grounding-type plug.
- E.** Do not allow anything to rest on the power cord. Do not locate the scanner where persons will walk on the cord.
- F.** If an extension cord is used with the scanner, make sure that the total of the ampere ratings of the products plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
- G.** Slots or openings in the cabinet at the back or bottom are provided for ventilation. This ensures reliable operation of the product and protects it from overheating. These openings must never be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar soft surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
- H.** Never push objects of any kind into the scanner through cabinet slots since they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock. Avoid any possibility of spilling liquid of any kind on the scanner.
- I.** Do not attempt to service the scanner yourself. Opening or removing those covers requiring tools may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to authorized service personnel.

J. Unplug the scanner from the wall outlet and refer servicing to authorized service personnel under the following conditions:

- When the power cord or plug is damaged or frayed.
- If liquid has been spilled into the scanner.
- If the scanner has been exposed to rain or water.
- If the scanner does not operate normally when operating instructions are followed then adjust only those controls that are covered by the operating instructions in this manual. Improper adjustment of controls other than those mentioned in this manual may result in permanent damage and will at best require extensive work by a qualified technician to restore this product to its normal operation.
- If the scanner has been dropped or the cabinet has been damaged.
- If the scanner exhibits a distinct change in performance, indicating a need for service.

8. Appendix B: Regulations

FCC Regulations

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.