



F-235 Series

User Manual



1. Introduction

1.1. - Scanner Specifications

1.1.1. - Minimum Host Computer Specifications

- Pentium IV CPU 1.7GHZ or higher
- 1 40GB hard drive to be used for the operating system, application programs, and storage. If IDE, it must be configured as **Primary Master**.
- 1 40GB hard drive capable of a sustained transfer rate of 30MB/sec. This is to be a dedicated drive for the scan data buffer. If IDE, it must either be a **Secondary Master** drive or connected using a serial ATA connection. Drive letter must be N:\ and **it must NOT be formatted**. This should be a 7200rpm drive. See the “Disk Management” chapter for more information on configuring this drive.
- Windows 2000, Service Pack 2
- 512MB of RAM
- A motherboard with an integrated USB 2.0 controller as part of the motherboard chipset. A dedicated port is recommended. USB 2.0 hubs have not been fully tested for reliability.
- Microsoft USB 2.0 drivers.
- SCSI CD-RW drive if both hard drives are IDE. (Plextor 12/10/32S or 40/10/40S recommended, and required for Kodak Picture CD support.) If using a serial ATA hard drive, the CD-R can be an IDE drive. (Plextor CD-R PX-W48, 52/24/52A, or PlexWriter Premium recommended, and required for Kodak Picture CD support)
- 1.5GB Pagefile.(Virtual Memory)

1.1.2. - Power

- Auto-switching power supply for 100-240VAC
- 50-60Hz Input voltage frequency
- Standard 3 conductor IEC 320 male power cable connector

1.1.3. - Contents of Box

- F-235 Film Scanner
- 6ft. USB 2.0 Cable
- Software and User Manual CD
- Power Cord

1.1.4. - Size

- 17.3”W x 13.6”H x 12.6”D with cover on

1.1.5. - Resolutions

There are three supported resolutions.

4Base	1000 x 1500
8Base	1400 x 2100
16Base	2000 x 3000

1.1.6. - Light Source

The F-235 uses a 50 Watt Solux Halogen light bulb. During scans, the bulb operate at standard voltage. After completing a scan operation, the bulb power will be reduced to a lower voltage to increase the bulb's life expectancy. This bulb's normal life should be three months of operation.

Note: Using an alternative light source will cause image quality problems and will void the scanner's warranty.

1.1.7. - Film Types and Variations

- The F-235 is designed to scan film in 35mm and 24mm (APS) formats. Color negative, color reversal (positive or slide) film, black and white, C-41 processed black and white films are all supported.
- APS film can only be scanned once removed from the canister for the F-235 and F-235 Plus, but cannot be cut into strips. All APS formats (C, H, and P) will scan only in full frame (H) format.
- The F-235C can scan APS film while still in the APS canister.
- 35mm cut strips are supported in sizes from 2 frames to 40 frames. However, to ensure DX code reading, the strips must be a minimum of 3 frames.
- Mounted slides are not supported.

1.1.8. - DX Code Reading

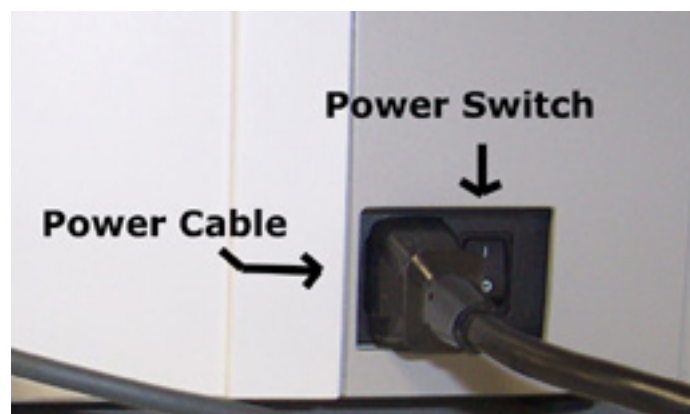
- 35mm DX codes are read using the ISO 1007 specifications and are used by the host manager.
- APS encoding will only be read by a full roll of film, and will not be read from an APS strip.

5. Installation

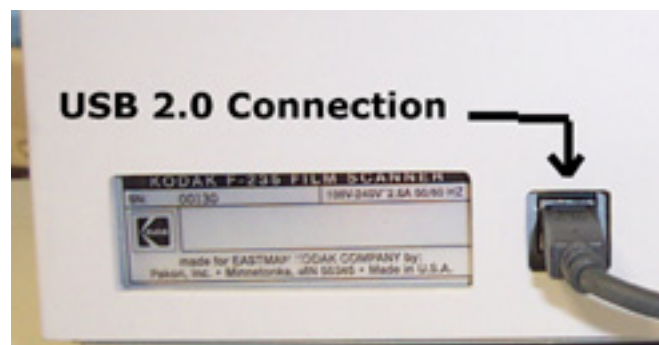
5.1. - F-235 Installation

The F-235 is a peripheral device. It must be connected to a computer that meets the required specifications listed on page 2 of this manual.

1. Clear a space near your computer system to place the F-235 scanner. The USB 2.0 cable must be able to reach the PC, so it cannot be more than 6 feet (2m) from the computer. There must also be 4 inches (10cm) clearance above and behind the scanner's ventilation duct.
2. Connect the power cord to the power supply plug on the back of the scanner.



3. Connect the USB 2.0 cable to the back of the scanner.



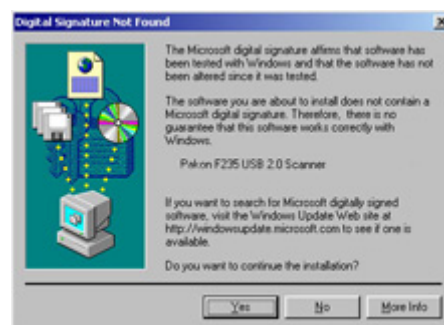
4. Connect the USB 2.0 cable to the back of the computer, in a USB 2.0 port. **Do not plug in to a USB 1.0 connector!**



5. While the computer is on and Windows 2000 is loaded, turn the scanner power switch into the 'on' position.
6. Insert F-235 Software CD. The computer will prompt the user to locate the driver software. This driver software is located in the C:\Program Files\Pakon\F235Driver folder.



7. The install will ask for authorization to install the driver despite it not having been "digitally signed." Yes must be selected for the driver to install.



8. After the driver is finished installing, verify that the scanner driver is properly installed, by viewing the scanner properties in the Device Manager under the heading, "Imaging Devices."



9. Clean the F-235 from any dust that may be inside the scanner. Please refer to these procedures in the “Operator Maintenance” chapter.

5.2. - BIOS Configuration

The following BIOS options are used on systems configured by Pakon, and are recommended to be configured as outlined below.

Option	Setting
Plug and Play O/S	Disable
AGP Aperture Size	32MB
PCI Latency Timer	248
ACPI Suspend State	S1 State
USB Boot	Disable
PXE Boot to Lan	Disable
PCI to DRAM Prefetch	Disable

5.3. - SCSI BIOS Configuration

These settings should be followed in the SCSI BIOS of the SCSI card used in the Pakon computer system, if SCSI is present.

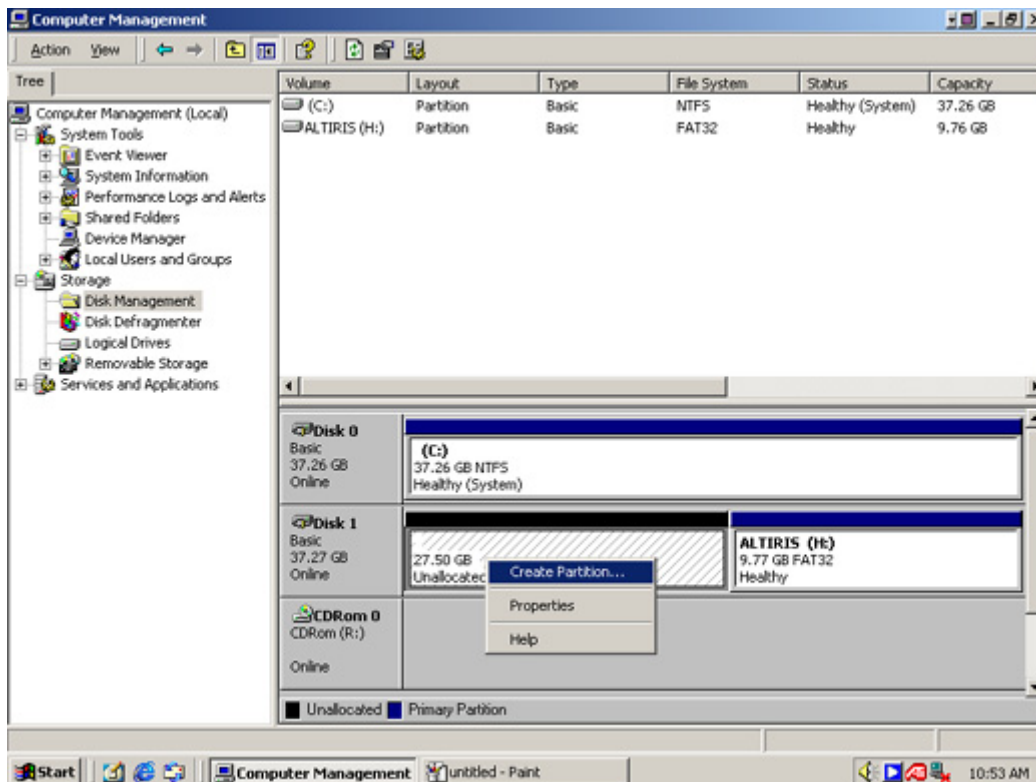
Option	Setting
Sync. Transfer Rates	10
Bootable CD-ROM	Disable
BIOS Support for Int. 13 Ext.	Disable

4. Hard Disk Configuration

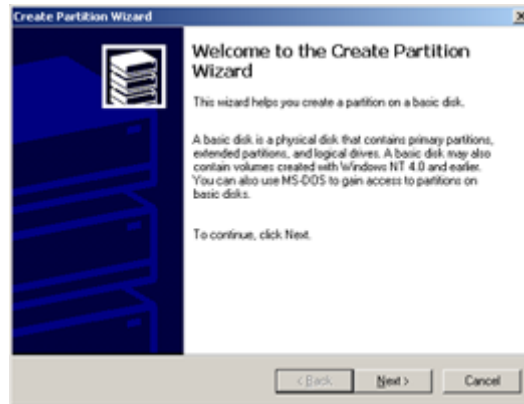
The F-235 software requires that there be a hard drive partition set up specifically for the software to use. This drive needs to be the secondary master drive, configured as the N: drive, and **must NOT be formatted**.

Configure the drive as instructed below:

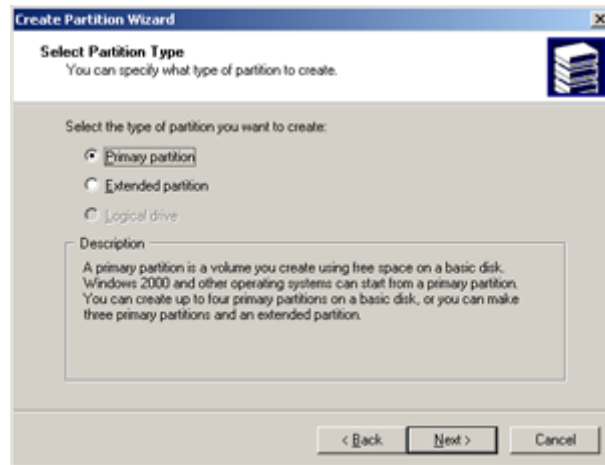
1. Right-click on “My Computer” and select “Manage.”
2. Click on “Disk Management” to begin configuring the drives.
3. Right-click on the un-allocated space on disk 1, which should be the secondary master drive.



4. The “Create Partition Wizard” will open. Click “Next” to begin.

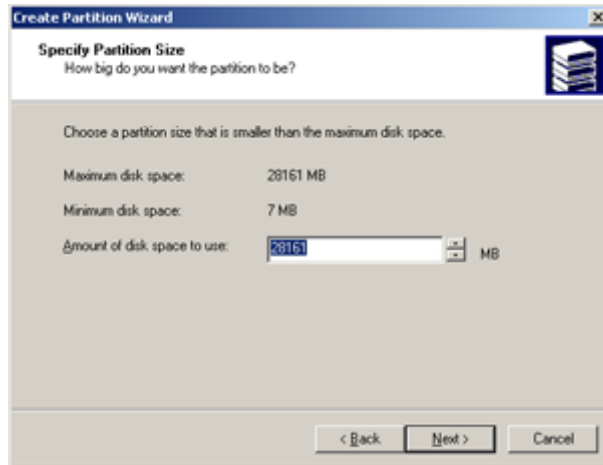


5. Select “Primary Partition” and click “Next.”

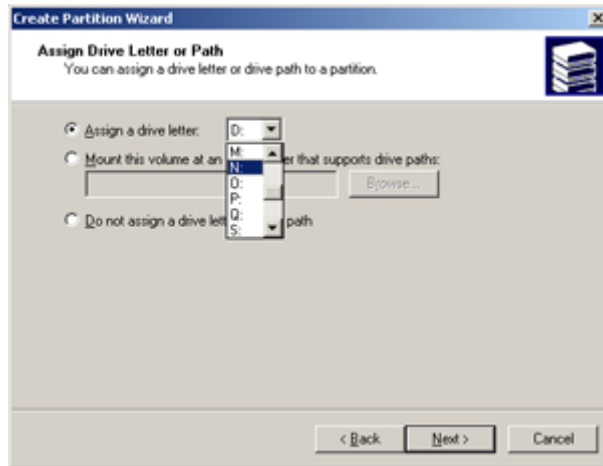


6. Use the full size of the drive, unless making a Disaster Recovery partition.

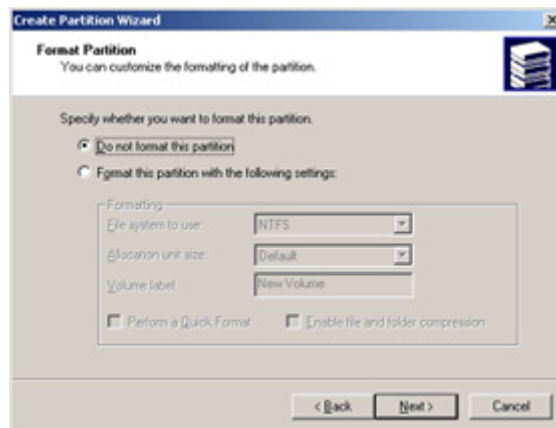
A “Disaster Recovery” partition is used by Pakon, to back-up the C:\ to make a system recovery option available. If no system back-up drive will be used, use the full size of the secondary drive for the scanner buffer drive.



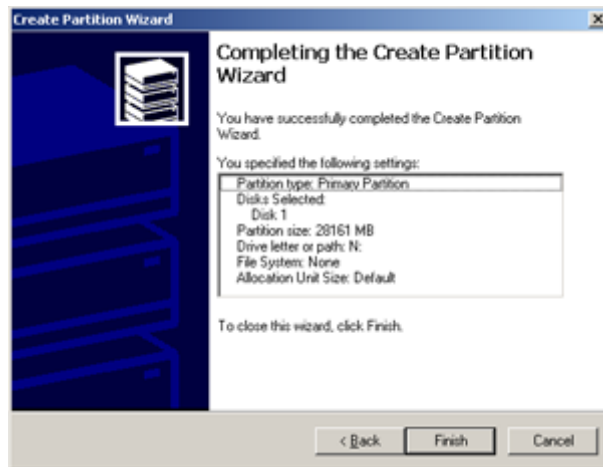
7. Assign this drive to be N:. Select N: and click “Next.”



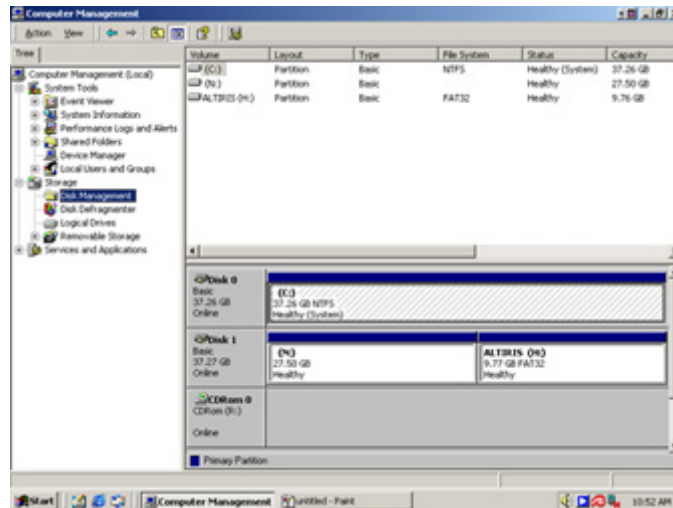
8. It is imperative to **NOT** format this partition. Select “Do not format this partition.”



9. Review the settings on the new drive, to finish click “Next.”



10. Verify that the Disk Management screen looks correct before closing the program.



6. Operation

6.1. - Unit Operation

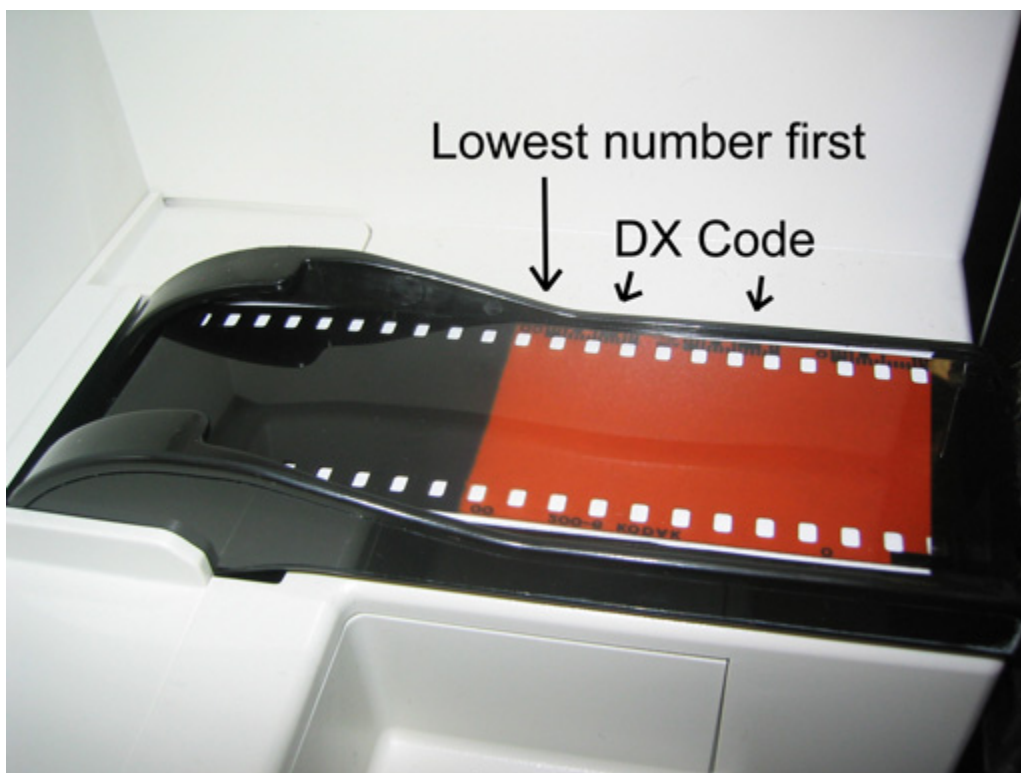
6.1.1 - Powering On

Power on the host PC, and allow it to finish loading Windows before turning the F-235 scanner on. This will ensure that the scanner can properly communicate with the host computer.

6.1.2. - Operation and Film Insertion

When scanning film, ensure the appropriate film type is selected in the scanner interface software program supplied. Do not attempt to scan 35mm film when APS is selected, and likewise do not scan APS film when 35mm film has been selected.

Inserting the film properly will ensure that the DX codes are read and that the framing will be done correctly. Insert the film with the emulsion up, DX Code to the back of the scanner, and starting with the lowest number first, as shown below:



Do not attempt to remove film from the scanner while the scanner motor is moving! This will cause damage to both the film and the scanner.

6.1.3. - APS Cartridge Handling

The F-235C scanner has the ability to scan film from an APS cartridge without having to manually remove the film from the cartridge.

1. Open the MOF door by pressing down on the button to the right of the door itself.



2. Insert the cartridge with the film door facing the film track entrance.



3. Close the door by pushing the drawer forward until it clicks shut.



In the software interface program, select “APS”.

6.1.4. - Calibration

There are two types of calibration for the F-235.

Color calibration is set during the manufacturing process, as well as any service that involves the CCD or any optical filter. This is to be performed by trained and authorized service personnel only.

Scanner corrections are performed automatically. They consist of a series of steps performed when the scanner is first turned on, as shown below:

- Start-up corrections
- Initial bulb warm-up
- Gain and exposure Control Corrections
- Run Time Corrections

6.1.5. - Format Change

The scanner will automatically change the film guide, lens position, CCD position, or color filter position whenever one of the following steps take place:

- Film Format change between 35mm and APS
- Film type change between color negative, color reversal, and black and white
- Magnification Change (Change of scanning resolution)

6.1.6. - Film Gate Change

The film gate opens and closes depending on the size of the film being scanned. It will open for 35mm film and close for APS film. This gate will open or close automatically when a different film size is selected.

6.1.7. - LED Indicator Lights

Power LED	Function
Solid Green	+5V is functioning
Off	+5V is not functioning

Status LED	Function
Solid Green	Scanner Ready
Blinking Green	Scanner is Scanning
Blinking Yellow	Scanner is Calibrating
Blinking Red	Scanner Error
Off	Scanner not Functioning

APS LED	Function
Solid Green	Scanner in APS mode
Blinking Green	Scanner is Scanning
Blinking Red	APS mode Error
Off	Scanner in 35MM mode

6.1.8. - Digital ICE

Digital ICE is designed to assist in removing scratches, dust, and debris artifacts from scanned film. It should be used as a complement to a photo lab's normal cleaning procedures. Customers are still advised to clean the floors and work surfaces regularly to keep the lab environment as dust-free as possible.

It is also recommended to clean all film with a lint-free cloth before attempting to make prints 8"x10" or higher.

If a lab is having persistent dust problems, it is recommended to perform the following regularly:

- Clean all customer film with a lint-free cloth before scanning it.
- When the scanner is turned off, cover it with a plastic, or lint-free cover.
- Use a lint-free cloth daily to clean the cover of the scanner and the surface of the table it is positioned on.
- Clean or replace the air filter on the back of the scanner once per week.

6.2. Maintenance (Operator)

Warning: These procedures require the operator to remove up to two of the three covers on the scanner. Do not attempt to operate the scanner without these covers properly in place!

WARNUNG: Bei diesen Verfahren muss der Bediener bis zu zwei der drei Abdeckungen am Scanner entfernen. Der Scanner darf nicht betrieben werden, wenn diese Abdeckungen nicht ordnungsgemäß angebracht sind!

ATTENTION : au cours de ces procédures, vous devez ôter deux des trois couvercles du scanner. N'essayez pas de faire fonctionner le scanner sans que ces couvercles de protection soient correctement à leur place !

Dust cleaning of illuminator

The F-235 is a precision optical device. A relatively smoke and dust free environment is necessary. The scanner must be cleaned periodically to remove large collections of dust or debris inside the scanner, on the illumination. **This procedure is recommended to be performed every two weeks.** Software is designed to compensate for smaller collections of dust or debris, but cleaning may be required. Digital ICE is only designed to complement the lab's normal cleaning procedures--which should include cleaning the floor and work surfaces regularly.

Follow each step by a verification process to determine if the cleaning was effective. If the verification determines that level of cleaning was ineffective, the next level is required.

1. Simple cleaning with compressed air and or lens brushes.
2. Cleaning with rubbing alcohol and a cotton swab.
3. Service call.

Cleaning the Illuminator with Compressed Air

1. Turn off the scanner.
2. Disconnect the USB and power cables.
3. Gently remove the side panel of scanner, by pulling back on it. It should snap out of place.



Do not touch anything inside the scanner while the power is on. The cover is only off to allow dust and debris to be blown out of the scanner.

WARNUNG: Berühren Sie keine Bauteile innerhalb des Scanners, während das Gerät eingeschaltet ist. Die Abdeckung wird nur deshalb abgenommen, damit Staub und Verschmutzungen aus dem Inneren des Scanners heraus geblasen werden können.

ATTENTION : ne touchez aucun élément interne du scanner lorsque ce dernier est sous tension. Le couvercle est ouvert pour permettre d'éliminer poussière et débris du scanner.

4. Connect power to the scanner.
5. Turn the scanner on.
6. Remove the small film path cover.



7. Aim the hose of a can of compressed air into the film path--aiming for the clear piece of glass in the middle.

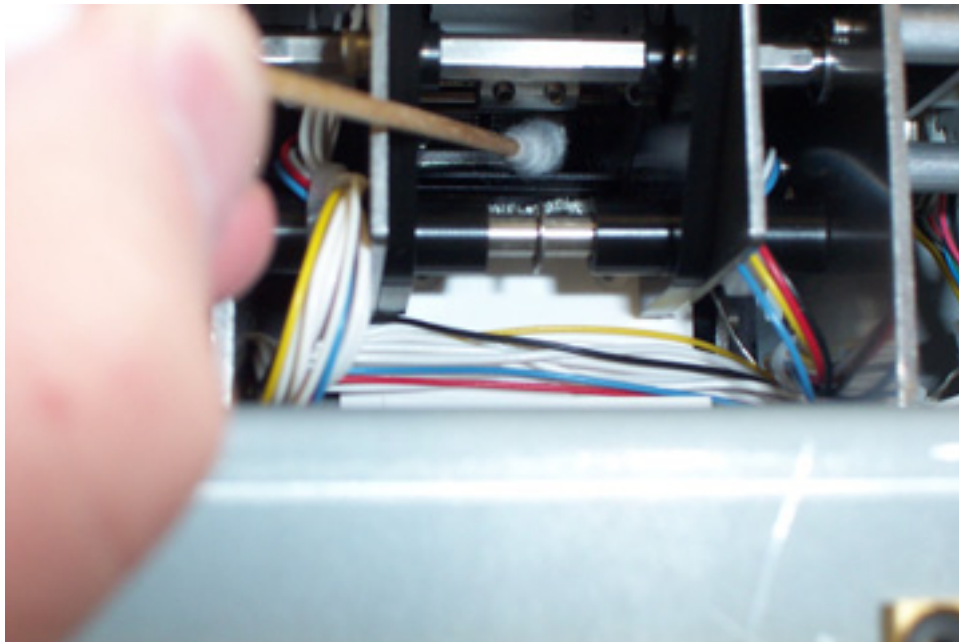


8. It may be beneficial to insert a strip of film into the scanner before blowing it out. This will focus all the air onto the light transfer bar, and should dislodge any dust or debris.
9. When finished, put the film path cover back in place.
Turn off the scanner immediately when finished cleaning the scanner!
10. Turn off the scanner and unplug the power cable.
11. Replace the side cover by snapping into place.
12. Plug in the USB and power cables.

Cleaning Illuminator with Cotton Swab

CAUTION--Be Careful not to scratch or damage the top of the glass light bar!

1. Turn off the scanner.
1. Disconnect the USB and power cables.
2. Gently remove the side cover.
3. Using a long cotton swab, dabbed in isopropyl alcohol, clean the illuminator bar inside the film track assembly. (The illuminator bar is a small piece of glass, sitting upright.)



4. After cleaning the illumination bar, replace side cover and turn on.

Light Bulb Replacement

The light bulb will have a nominal life of 100 working days or longer, depending on certain variables. This number is based on the following assumptions:

- 6 working days per week
- 10 hours per day

Changing the light bulb does not require any special tools.

Replacing the Scanner Light Bulb

CAUTION: The lamp may be hot. Allow the bulb to cool before attempting to replace it.

CAUTION: Use gloves when replacing the scanner light bulb. Fingerprints can damage the light bulb.

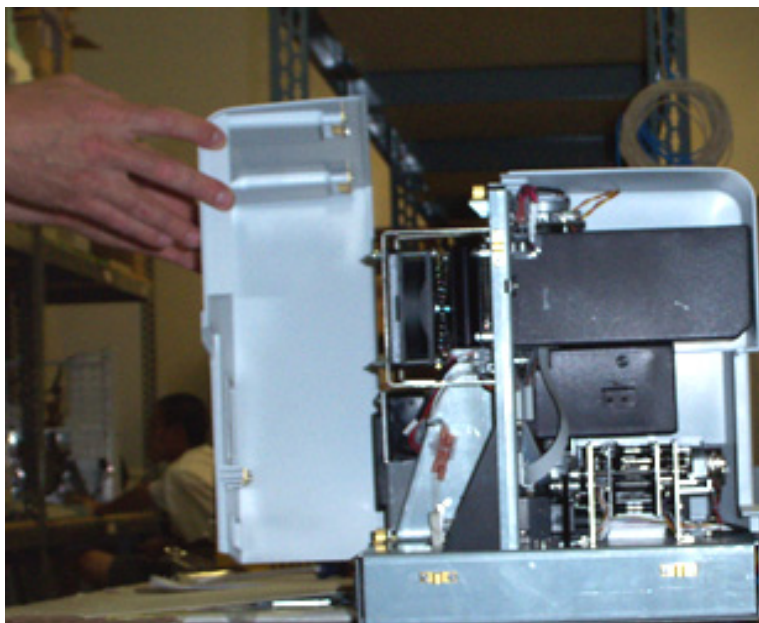
VORSICHT: Die Lampe kann heiß sein. Lassen Sie die Glühlampe abkühlen, bevor Sie sie austauschen.
Berühren Sie die Scanner-Glühlampe nur mit Handschuhen. Fingerabdrücke können die Glühlampe beschädigen.

ATTENTION : l'ampoule risque d'être chaude. Attendez qu'elle refroidisse avant d'essayer de la remplacer. Utilisez des gants pour remplacer l'ampoule du scanner. Les empreintes digitales peuvent l'endommager.

1. Close all scanning software.
2. Turn off the scanner.
3. Disconnect the USB and power cables.
4. Gently remove the side cover by pulling on it. It will snap out of place.



5. Gently pull off the back cover. It should snap off much like the side cover.



6. Locate the small lever, just to the back of the bulb.

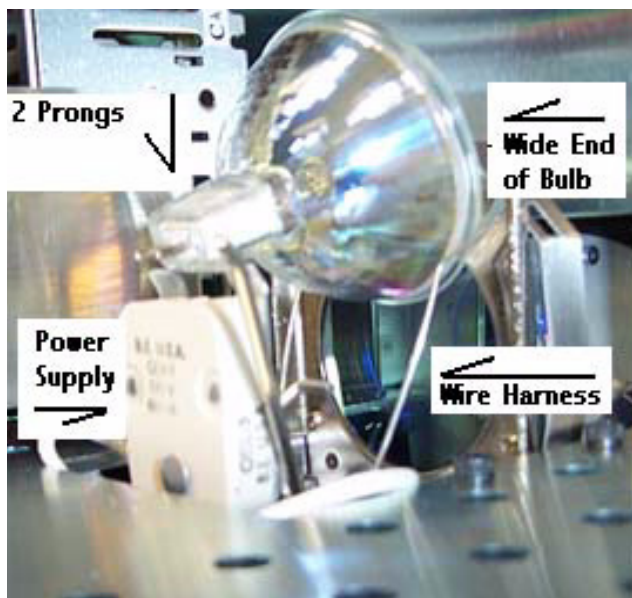


Gloves must be worn to ensure the bulb is not damaged by dirt or skin oils.

7. With one hand, gently pull the lever towards the back of the scanner.
8. As the lever is pulled, the bulb will be pushed up, and partially out of its wire harness.
9. Once the bulb has been pushed up far enough, use your other hand to gently remove the bulb from the harness.

WARNING: Replacing the bulb with an unauthorized bulb will void the manufacturer's warranty and can severely damage the scanner!

10. Orient the new light bulb so that the largest, or widest part of the bell shape is facing the front of the scanner. And place the smaller end with the prongs, facing the back.
11. Rest the wide end of the bulb on the top edge of the wire harness, do not push or force it downward.
12. Spin or rotate the bulb so that the two prongs line up with the grooves in the lamp ballast.



13. Gently apply downward pressure equally to both the front and the back of the bulb.
14. Slide the bulb into place, until it fits securely.
15. Replace the back cover by snapping it into place.
16. Replace the side cover by snapping it back into place.
17. Plug in USB and power cables.
18. Turn scanner on, and allow to warm up before using again.

Cleaning the Fan Filter

The fan filter keeps dust from inside the scanner. This filter needs to be cleaned every two weeks, or more depending on the conditions of the lab environment.

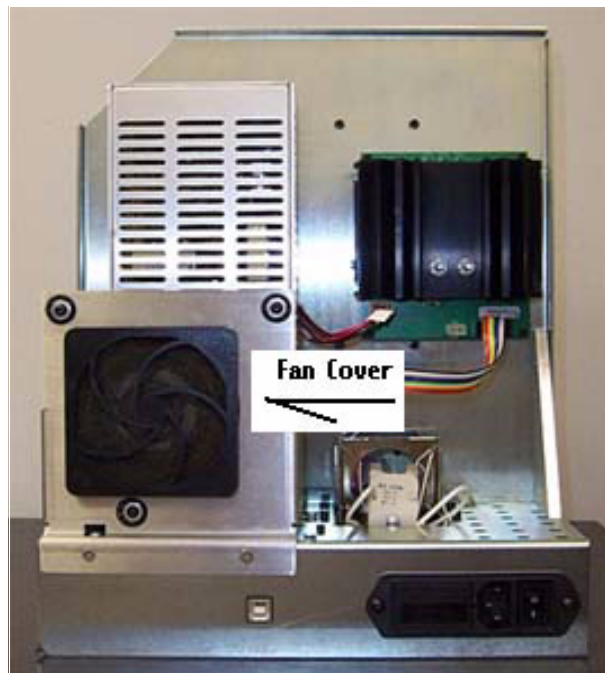
1. Close scanner software.
2. Turn off the scanner.
3. Disconnect USB and power cables.
4. Gently remove side cover by pulling on it. It should snap off.
5. Gently remove back cover by pulling on it. It too, should snap off.

Be Careful not to touch anything other than the fan and filter assembly. Many pieces on the back of the scanner will be hot to the touch, and are to be avoided.

VORSICHT: Berühren Sie keine Bauteile, mit Ausnahme des Ventilators und der Filter. Zahlreiche Bauteile an der Rückseite des Scanners sind heiß und dürfen daher nicht berührt werden.

ATTENTION : ne touchez rien d'autre que le module ventilateur et filtre. De nombreux éléments situés à l'arrière du scanner sont chauds, évitez de les toucher.

6. Locate the Fan filter (123816). It is located on the back of the scanner, just under the plastic fan cover.



7. Pull straight back on the plastic fan cover until it comes free from the scanner housing.



8. Remove the filter from inside the cover, and rinse with tap water; replace if necessary.
Replace the filter only after it has dried completely.



9. Re-attach the fan cover by applying moderate pressure to each of the four sides, until it snaps back in to place.

Cleaning the Film Track

It is recommended to clean the film track every two weeks, along with the illumination cleaning. Keeping the film track clean will ensure that DX code reading remains reliable. It will also maintain the proper motor speed for each resolution.

1. Remove the film path cover.
2. Position the tip of the compressed air hose on both sides of the film track entrance, and blow.



3. Position the tip of the compressed air hose on both sides of the film track exit, and blow.



4. After cleaning the film track, run the 'Film Track Test' in the client interface program.
5. Verify the scanner is properly reading DX codes by scanning a roll of film.

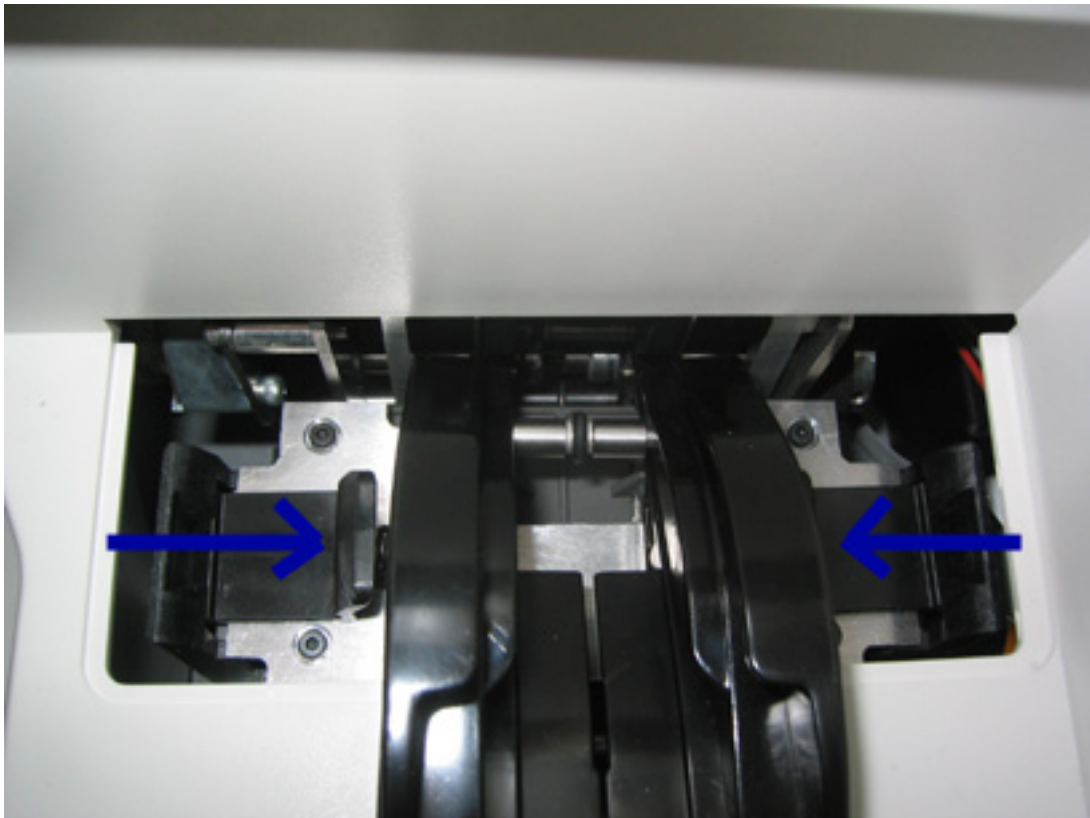
MOF Head Cleaning

The MOF heads on F-235C models require monthly cleaning. These heads read the magnetic data from APS films.

1. Remove the film guide assembly piece shown below:

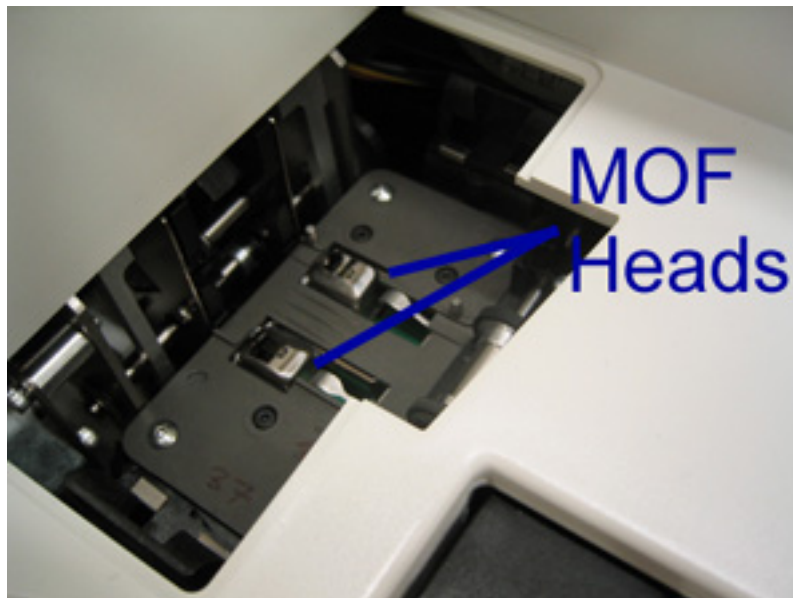


2. Pinching the tab on both sides of the film guide assembly.



3. This will expose the MOF heads on the scanner.

4. Use a cotton swab with superpolite (rubbing) alcohol to gently clean the MOF heads.



5. Clean the film path guide with compressed air.



Exterior Surface Cleaning

Clean surfaces with lint-free cloths or mild, non-abrasive spray type cleaners, where the cleaner is sprayed onto the cleaning cloth and not directly onto the equipment. Perform this type of cleaning only with the equipment disconnected and powered down.

7. Appendix

7.1. - Regulatory Information



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.

Note:

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.

Note:

Taiwan:

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Site Conditions

Temperature	59-85 degrees Fahrenheit
Humidity	30-75% (non-condensing)
Vibration	Not to Exceed 0.05G RMS 5-200Hz
Ventilation	A 4" clearance above and behind the scanners venti- lation duct is necessary
Lighting	<1000 LUX ambient light
Noise	< 70db(A)

Shipping and Storage Conditions

Temperature: -13 to 140 degrees Fahrenheit

Humidity: 30%-90% (non-condensing)

Fuse Ratings

Only Pakon service technicians are qualified to replace fuses in the F-235 Scanner.

Die Sicherungen im Scanner F-235 dürfen nur von Pakon-Servicetechnikern ausgetauscht werden.

Seuls les techniciens du service d'entretien de Pakon sont qualifiés pour remplacer les fusibles du scanner F-235.

Factory Fuse Rating
3 Amps, 250V

Warranty

Pakon, Inc. warrants to the original purchaser that each Pakon product is free from defects in workmanship and material for 12 months, from the date of purchase. In the event any Pakon product or component of equipment is replaced by Pakon, Inc. under this warranty, such item is covered by this same warranty for the remainder of the original warranty period, or sixty days from the date of installation, whichever is longer. OEM products supplied by Pakon will be covered by the remainder of the original equipment manufacturer's warranty.

Pakon's obligation during this warranty period is expressly limited to repair, or in its discretion, replacement of non-expendable original equipment or components which it finds defective; service and labor costs for such repairs or replacement will be covered under this warranty for the first 30 days following the date of installation. Upon authorization, Pakon, Inc. shall prepay all transportation costs and return the equipment to the party asserting a claim within the first 30 days of installation. That party shall also bear all reasonable service and labor charges incident to any warranty claim and those service and labor charges beyond the 30 day labor warranty period.

This warranty does not apply to (1) to any expendable parts, (2) to any Pakon product or component which as been repaired or altered with parts or by persons not approved in writing by Pakon, Inc. provided, however, that such approval is not to be unreasonable withheld, or (3) to any product on which this serial number or name has been altered, defaced or removed. This warranty also shall not apply to any Pakon product whose unsatisfactory performance or condition is due to:

- Use of any expendable parts or consumable products not tested and approved by Pakon, Inc.
- Failure to follow the maintenance or safety procedures recommended for Pakon product operation
- Unusual physical or electrical stress
- Accident, neglect, misuse, failure of electric power, air conditioning, humidity control, transportation or causes other than ordinary use in the purposes for which the product was intended.

The above express limited warranty is in lieu of all other warranties, express or implied, and there are no warranties beyond those stated in this document. The implied warranties of merchantability and fitness for a particular purpose, and all other warranties, express or implied, or inferable from the course, of dealing or usage of trade, are excluded and shall not apply to this product.

The provisions for repair or replacement of defective parts provided in this warranty shall be the exclusive and sole remedy of the purchaser. Pakon, Inc. shall not be liable for any other damages (Whether in tort, due to negligence or otherwise) including but not limited to loss or labor, time, materials, customer profits, goodwill, or any other indirect, special, incidental, or consequential damages in connection with the furnishing operation or faulty performance of this product. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as Pakon is willing and able to repair or replace defective parts in the prescribed manner.

Service Policy

Warranty Period - New Equipment

- Parts - One year (expendables excluded)
- Phone Service & Factory labor - 30 days
- OEM Equipment - Remainder of original manufacturer's warranty

Warranty Service - New Equipment

- Phone Service - First 30 days, no charge
- Defective parts - First year Pakon will send a part replacement (expendables excluded), no charge
- Factory Repair / Replacement - First 30 days, if necessary, Pakon will repair or replace, at its discretion, any defective unit. Pakon, Inc. will pay standard freight costs both ways for the repaired or replaced unit. Any expedited shipping fees are the responsibility of the buyer.

Warranty Service - Refurbished/used Equipment

- Phone Service - First 30 days, no charge
- Defective Parts - First 90 days Pakon will send a part replacement (expendables excluded), no charge
- Factory Repair / Replacement - First 30 days, if necessary, Pakon will repair or replace, at its discretion, any defective unit. Pakon, Inc. will pay standard freight costs both ways for the repaired or replaced unit. Any expedited shipping fees are the responsibility of the buyer.

After Warranty Service / OEM Service

- Scanner Phone Service - Incident charge of \$35.00 per incident payable via credit card or with pre-approved credit terms
- OEM Phone Service - Helping buyer install or service Pakon supported OEM equipment or software is considered an incident and charged accordingly. Pakon does not service unsupported products. (Supported products are those sold or recommended by Pakon.)
- Factory Repair / Replacement - Buyer pays freight both ways, plus service labor charges at \$75.00 per hour and packing costs if needed to return unit safely. Beyond one year the buyer is responsible for parts.

Software

Software updates are provided at no charge. Any software offering new features is optional and billable.

This writing constitutes the final, complete and exclusive expression of the terms of warranty and remedy as agreed to by the parties to this sale. Pakon, Inc. neither authorizes nor adopts any statement made by any representative which differs from the terms of this writing, and all such statements are superseded by this document.