

Nikon

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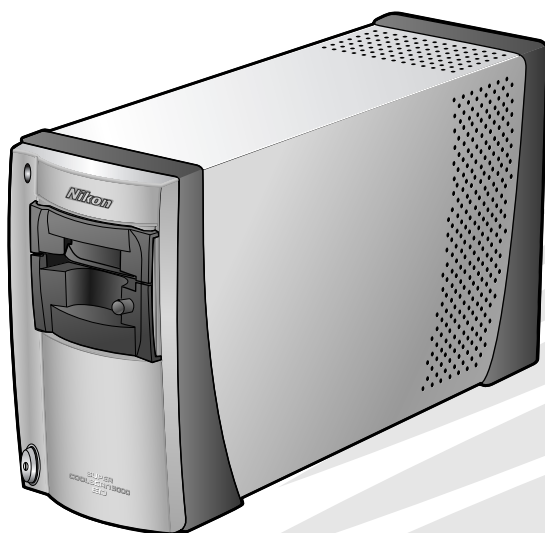
Es

35mm/APS(IX240) Film Scanner

SUPER COOLSCAN 5000 ED

35mm/APS(IX240) Film Scanner

COOLSCAN VED



User's Manual

Manuel de l'utilisateur

Manual del Usuario



35mm/APS(IX240) Film Scanner

SUPER COOLSCAN 5000 ED

35mm/APS(IX240) Film Scanner

COOLSCAN VED

Before You
Begin

Setup

Basic Scanning

Nikon Scan

Technical
Notes

User's Manual

Product Documentation

The documentation for this product includes the manuals listed below. Be sure to read all instructions thoroughly.

Quick Start Guide	The <i>Quick Start Guide</i> provides a quick introduction to installing the Nikon Scan driver software for the scanner, inserting film, and making a simple scan.
User's Manual (this manual)	This <i>User's Manual</i> provides detailed instructions for installing and using a SUPER COOLSCAN 5000 ED and COOLSCAN V ED film scanners.
Nikon Scan Reference Manual/ Easy Scanning Guide (on CD)	<p>The <i>Nikon Scan Reference Manual</i> provides complete information on Nikon Scan, the software used to scan images into the computer. This manual is stored on the reference CD in pdf format, and can be viewed using Adobe Acrobat Reader 4.0 or later. If necessary, Windows users can install Adobe Acrobat 5 using the installer provided on the reference CD. For more information on installing Adobe Acrobat Reader 5 and viewing the reference manual, see the <i>Quick Start Guide</i>.</p> <p>The <i>Easy Scanning Guide</i> uses animation to explain such basic scanning tasks as setting image size and resolution. See the <i>Quick Start Guide</i> for viewing instructions.</p>
Nikon View Reference Manual (on CD)	The <i>Nikon View Reference Manual</i> provides complete information on using the supplied Nikon View software to view and organize images. This manual is stored on the reference CD in pdf format.

Trademark Information

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For Your Safety

To prevent damage to this Nikon product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use the product will read them.

The consequences that could result from failure to observe the precautions listed in this section are indicated by the following symbols:



This icon marks warnings, information that should be read before using this Nikon product to prevent serious injury or death.



This icon marks cautions, information that should be read before using this Nikon product to prevent damage to the equipment or injury to yourself or to others.

WARNINGS



Do not disassemble or modify

- The interior of the device contains areas of high voltage. Removing the casing could result in fire or electric shock. Contact an authorized Nikon service representative for inspection or repair.
- Do not modify. Modification could result in fire or electric shock.



Do not touch exposed parts

Should the product break open as the result of a fall or other accident, do not touch the exposed parts. Unplug the power cable and take the product to an authorized Nikon service representative for inspection.



Unplug in the event of malfunction

- Should the equipment start to smoke or produce an unusual noise or smell, turn the device off immediately and unplug the power cable. Continued use could result in fire or electric shock. Wait for the equipment to stop smoking and then contact an authorized Nikon service representative for information on replacement or repair. Do not attempt repairs yourself, as this would be extremely dangerous.
- In the event of damage to the equipment, turn the device off at once and unplug the power cable, then contact an authorized Nikon service representative for information on replacement or repair. Continued use could result in fire or electric shock.



Do not use in the presence of flammable gas or dust

Failure to observe this precaution could result in explosion or fire.



Keep clear of foreign objects

Do not place vases, flowerpots, cups, cosmetics, vessels containing chemicals or water, or small metal articles on the device. Should water or another foreign object enter the equipment, unplug the power cable and contact an authorized Nikon service representative. Continued use could result in fire, electric shock, or malfunction.



Keep out of reach of children

Particular care should be taken to prevent infants from putting small parts into their mouths. Should a child swallow any part of the equipment, contact a physician immediately.



Use an appropriate power supply

The power supply must be 50/60Hz and 100–240V AC. The power cable must comply with the safety standards of the country of use, have SVT insulation or better, and be more than AWG18 in thickness.

At voltages over AC 125V

Use a plug rated for 250V, 15A (NEMA 6-P 15)

At voltages of AC 125V or less

Use a plug rated for 125V, 10A

Handling the power cable and plug

- Do not damage, modify, or forcibly tug or bend the power cable, place it under heavy objects, or expose it to heat or flame. Should the insulation be damaged and wires become exposed, contact an authorized Nikon service representative for information on replacement or repair. Failure to observe these precautions could result in fire or electric shock.
- Do not handle the plug with wet hands. Failure to observe this precaution could cause electric shock.
- Dust on or near the metal parts of the plug should be removed with a dry cloth. Continued use could result in fire.
- Do not handle the power cable or go near the equipment during thunderstorms. Failure to observe this precaution could result in electric shock.

CD-ROMs

The CD-ROMs on which the software and manuals are distributed should not be played back on audio CD equipment. Playing CD-ROMs on an audio CD player could cause hearing loss or damage the equipment.

CAUTIONS

Do not handle with wet hands

Failure to observe this precaution could result in electric shock.

Install only as directed

Failure to install the device as directed in this manual could block the vents, causing overheating and possibly fire.

Do not place on unstable or sloping surfaces

The device could fall, resulting in injury or damage. Should glass parts inside the device break as the result of a fall or other accident, care should be taken to avoid injury caused by broken glass.

Do not place heavy objects on the device

The objects or device could overbalance or fall, causing injury.

Unplug before cleaning

Turn off and unplug the device before cleaning. Failure to observe this precaution could result in injury.

Do not insert fingers in equipment

Do not insert your fingers in the device save where indicated otherwise. Failure to observe this precaution could result in injury.

Unplug when not in use

Turn off and unplug the device if it will not be used for an extended period. Failure to observe this precaution could result in fire.

Handling the power cable and plug

- Do not place the power cable in the vicinity of a stove or heater. The insulation could melt, resulting in fire or electric shock.
- Unplug the cable by pulling on the plug, never on the cable itself. Failure to observe this precaution could damage the cable, resulting in fire or electric shock.
- Do not plug the power cable into an extension cord or multi-outlet adapter, as this could cause fire or malfunction.

Ground the equipment

- The outlet into which the power cable is plugged must be grounded. Failure to ground the power supply could result in electric shock.
- Do not ground the outlet to a gas or water pipe or a dedicated telephone system earth connector. Failure to observe this precaution could result in fire or electric shock.

Notices

- No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.
- Nikon reserves the right to change the specifications of the hardware and software described in these manuals at any time and without prior notice.
- Nikon will not be held liable for any damages resulting from the use of this product.
- While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate having any errors or omissions brought to the attention of the Nikon representative in your area (address provided separately).

Notices for customers in the U.S.A.

Federal Communications Commission (FCC) Radio Frequency Interference Statement

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

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

Notice for customers in the State of California

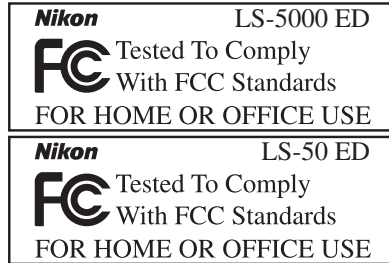
WARNING: Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. **Wash hands after handling.**

Nikon Inc.,
1300 Walt Whitman Road, Melville, New York
11747-3064, U.S.A.
Tel.: 631-547-4200

Notice for customers in Canada

CAUTION

This class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.



CAUTIONS

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Nikon Corporation may void the user's authority to operate the equipment.

Interface Cables

Use the interface cables sold or provided by Nikon for your equipment. Using other interface cables may exceed the limits of Class B Part 15 of the FCC rules.

ATTENTION

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

Notice Concerning Prohibition of Copying or Reproduction

Note that simply being in possession of material that has been digitally copied or reproduced by means of a scanner, digital camera or other device may be punishable by law.

- **Items prohibited by law from being copied or reproduced**

Do not copy or reproduce paper money, coins, securities, government bonds, or local government bonds, even if such copies or reproductions are stamped "Sample."

The copying or reproduction of paper money, coins, or securities which are circulated in a foreign country is prohibited.

Unless the prior permission of the government has been obtained, the copying or reproduction of unused postage stamps or post cards issued by the government is prohibited.

The copying or reproduction of stamps issued by the government and of certified documents stipulated by law is prohibited.

- **Cautions on certain copies and reproductions**

The government has issued cautions on copies or reproductions of securities issued by private companies (shares, bills, checks, gift certificates, etc.), commuter passes, or coupon tickets, except when a minimum of necessary copies are to be provided for business use by a company. Also, do not copy or reproduce passports issued by the government, licenses issued by public agencies and private groups, ID cards, and tickets, such as passes and meal coupons.

- **Comply with copyright notices**

The copying or reproduction of copyrighted creative works such as books, music, paintings, woodcut prints, maps, drawings, movies, and photographs is governed by national and international copyright laws. Do not use this product for the purpose of making illegal copies or to infringe copyright laws.

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Before You Begin



This chapter describes the conventions used in this manual, the names of scanner parts, and precautions for use.



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Introduction

Thank you for your purchase of a Nikon COOLSCAN film scanner. This manual is for use with both the SUPER COOLSCAN 5000 ED and the COOLSCAN V ED. Read this manual thoroughly before use, and keep it handy when using the product.

To make it easier to find the information you need, the following symbols and conventions are used:



This icon marks cautions, information that should be read before using the scanner to prevent damage to the device.



This icon marks tips, additional information that may be helpful when using the scanner.



This icon marks notes, information that should be read before using the scanner.



This icon indicates that more information is available elsewhere in this manual or in the other documentation provided.

Principal Features

- The **Scan Image Enhancer** automatically adjusts hue to produce images with clear contrast
- **Digital ICE** detects, analyzes, and automatically compensates for scratches and dust
- **Digital ROC** digitally restores for faded colors in old film
- **Digital GEM** automatically corrects for film grain, smoothing pictures taken with high-speed film
- **Digital DEE** reveals details in shadows of backlit and underexposed shots and increases contrast in “washed-out” areas of highlights to produce natural-looking exposure

Illustrations

The majority of illustrations showing the scanner interface are taken from Windows XP Professional. Where operations in the two operating systems differ, illustrations from Mac OS X are also used.

Terminology

In this manual, the SUPER COOLSCAN 5000 ED is sometimes referred to as the 5000 ED. Windows XP Home Edition and Windows XP Professional are jointly referred to as Windows XP, Windows Millennium Edition as Windows Me, and Windows 98 Second Edition as Windows 98 SE.

Life-Long Learning

As part of Nikon’s “Life-Long Learning” commitment to ongoing product support and education, continually-updated information is available on-line at the following sites:

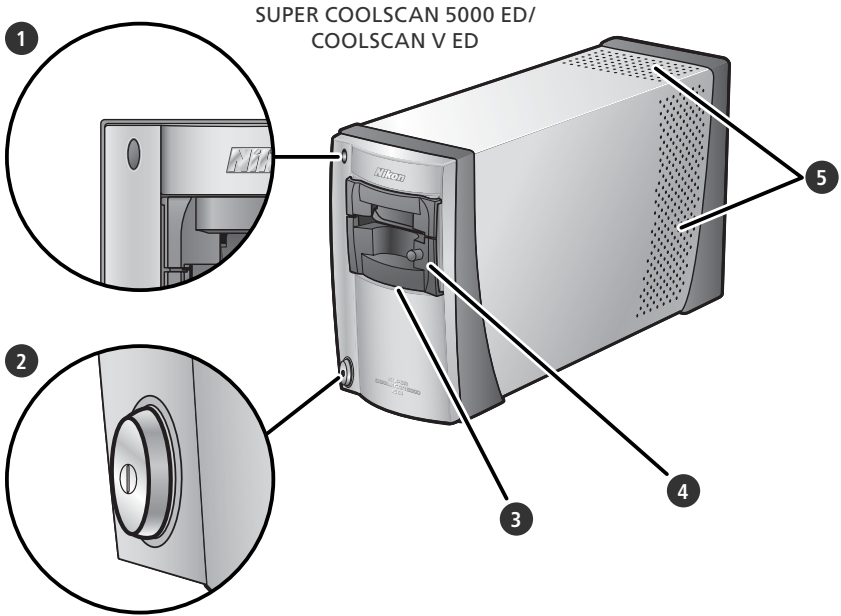
- For users in the U.S.A.: <http://www.nikonusa.com/>
- For users in Europe: <http://www.europe-nikon.com/support>
- For users in Asia, Oceania, the Middle East, and Africa: <http://www.nikon-asia.com/>

Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography. Additional information may be available from the Nikon representative in your area. See the URL below for contact information:

<http://www.nikon-image.com/eng/>

Parts of the Scanner

Front View



1 Status LED

Scanner status is indicated as follows:

Status LED	Scanner status
On	No operations in progress. Film and adapters can be inserted or removed.
Blinks (about 1.5 ×/s)	Scanner busy. Do not turn scanner off or insert or remove film or adapters.
Flickers (about 5 ×/s)	Hardware or communications error. Turn scanner off, wait for at least 5s, and turn scanner on again.

2 Power switch

Pressing this switch turns the scanner on and off.

3 Adapter slot

Adapters for various types of film can be inserted in this slot. The MA-21 is inserted in the slot at shipment; other adapters include the SA-21 strip film adapter (provided) and a variety of optional adapters for different types of film (P. 48).

Adapters are equipped with a flap that prevents dust from entering the scanner via the adapter slot. Leave an adapter in the slot when the scanner is not in use.

4 MA-21 slide mount adapter

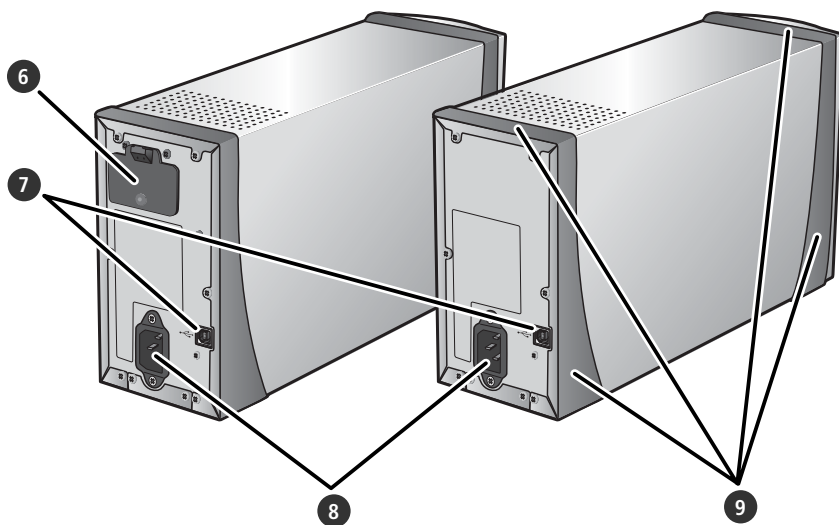
This adapter is used to scan slides. Additional adapters are available for scanning other types of film.

5 Vents

Rear View

SUPER COOLSCAN 5000 ED

COOLSCAN V ED



- 6 Film gate (5000 ED only)**
This gate is used with the SA-30 roll-film adapter (available separately for the 5000 ED).
- 7 USB interface connector**
The square USB cable connector is inserted here.
- 8 AC connector**
The female end of the AC power cable plugs into this connector.
- 9 Feet**

Precautions for Use

Observe the following precautions to ensure that the scanner always produces the best possible results.

✓ Check the status LED

- Do not turn the scanner off or insert or remove film or adapters while the status LED is blinking.
- Do not use other USB devices or turn them on or off while the status LED is blinking.
- Do not connect or disconnect USB or IEEE 1394 (Firewire) cables while the status LED is blinking.
- Do not operate camera control software for digital cameras connected via USB while the status LED is blinking.

✓ When the scanner is not in use

- To prevent accumulation of dirt and dust when the device is not in use, turn the scanner off and insert one of the supplied adapters in the adapter slot.
- Remove optional holders from the adapter slot when not in use.

✓ Connecting the scanner

- Connect the scanner directly to the computer. The scanner may not function as expected when connected to a USB hub or keyboard.
- The scanner may not function as expected when used together with other USB devices. Should the scanner not function as expected, use the scanner with all other USB devices disconnected.
- Do not connect two or more scanners to the computer simultaneously.

✓ Protecting film

- Before inserting film, remove dirt and dust with a blower. This will not only keep the film free of scratches but will also help prevent scanning errors and malfunctions.
- Remove fingerprints with a soft, dry cloth, being careful not to scratch the film.
- Remove film from adapters or holders after scanning. Storing film in an adapter or holder could damage the film.
- The film base and emulsion will deteriorate if exposed to high temperatures or humidity. Be sure temperature and humidity are within the limits given below.
- Sudden changes in temperature and humidity, even when within the limits stated below, can cause condensation on the film. Check before use to ensure that no condensation is present. If condensation has occurred, leave the film out until it dries. Condensation can damage the film during insertion.
- The operating environment for the scanner is as follows:
Temperature: +10–+35°C (+50–+95°F)
Humidity: 20–60%



Setup

This chapter contains all the information needed to set up the scanner for use, including installing Nikon Scan and connecting the scanner to a computer.

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Setup and Scanning Guide

This figure outlines the steps involved in installing the scanner and making a scan. Refer to the page numbers listed for more information.

Install software (10–19)

Imaging application (e.g., Adobe Photoshop)



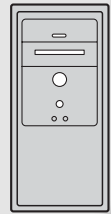
Nikon Scan 4



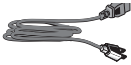
Nikon View



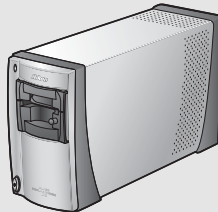
Computer



Set up the scanner (20–22)



Connect the power cable (21)



SUPER COOLSCAN 5000 ED/
COOLSCAN V ED

Connect the scanner to the computer (22)



Connect the USB cable

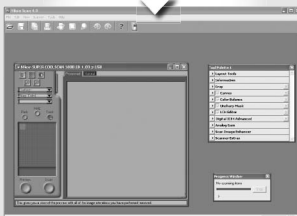
Turn the scanner on (24)

Open the scan window (26–27)

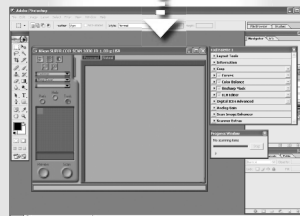
Nikon Scan can function as a “stand-alone” application to scan, process, and save images, or it can be used to scan images directly into an imaging application such as Adobe Photoshop.



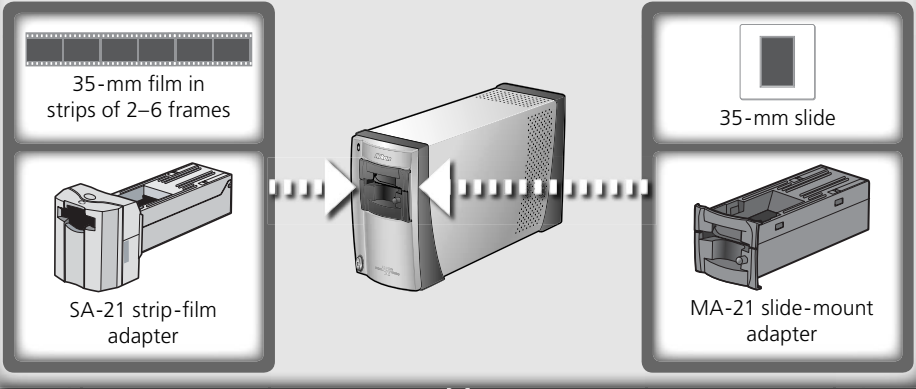
Nikon Scan



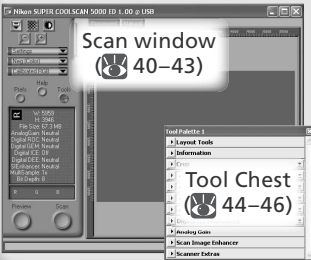
Imaging application (e.g., Adobe Photoshop)



Choose an adapter (🔗 25) and insert film (🔗 28–29)



Scan images (🔗 30–36)



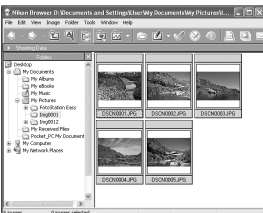
- Specify the film type and color model (🔗 31)
- Preview images (🔗 32–33)
- Flip and rotate images (🔗 33)
- Select the area to be scanned (🔗 34–35)
- Enhance images using the tools in the Tool Chest, including the Scan Image Enhancer, Digital ICE⁴ Advanced, and curves (🔗 35, 44–46)
- Scan images (🔗 36)

Save images (🔗 37)



After scanning, images are opened in images windows in the host application, where they can be printed or saved (🔗 37).

Organize images



Images that have been saved to disk can be viewed and organized in Nikon View. See the *Nikon View Reference Manual* (on CD) for more information.

Installing Nikon Scan

Nikon Scan software (provided) is required to control the scanner. The installation instructions that follow are divided into Windows and Macintosh sections.

Windows

Turn the computer on and wait for Windows to start up. Before continuing with installation, make sure that:

- The scanner is NOT connected
- No other applications (including anti-virus software) are running
- The computer satisfies the following system requirements:

CPU	300 MHz Pentium or better
OS	Preinstalled versions of Windows XP, Windows 2000 Professional, Windows Me, Windows 98 SE
RAM*	128 MB or more (512 MB or more recommended)
Hard-disk space†	A minimum of 40 MB required for installation (200 MB or more recommended), with an additional 200 MB of free disk space available while Nikon Scan is running
Video resolution	800 × 600 pixels or more with 16-bit color (High Color) or more
USB‡	Built-in USB 1.1/USB 2.0 ports
Miscellaneous	CD-ROM drive required for installation

* More memory may be required depending on film type, scan size, resolution, bit depth, the number of scans performed in each session, the adapter used, and on whether Digital ROC, Digital GEM or Digital DEE is used. A system with more than the minimum amount of memory is recommended.

† More free disk space may be required depending on the film type and number of frames. Nikon recommends having as much free disk space as possible when running Nikon Scan.

‡ Depending on the type of interface installed, USB will operate at high speed (USB 2.0 only; maximum transfer rate 480 Mbps) or full speed (USB 1.1/USB 2.0; maximum transfer rate 12 Mbps). Windows XP and Windows 2000 Professional computers with a USB 2.0 interface support high-speed USB. For more information, consult the manufacturer.

Additional technical and support information may be available at *the Nikon web sites listed in this manual* (📄 2).

Windows XP/Windows 2000 Professional

When installing or uninstalling Nikon Scan under the above operating systems, log in as the “Computer administrator” (Windows XP) or “Administrator” (Windows 2000 Professional).

Earlier Versions of Nikon Scan

Before installing Nikon Scan 4, uninstall any earlier versions of Nikon Scan. See “Uninstalling Nikon Scan” (📄 62).

Nikon View

For information on installing and using Nikon View, see the *Nikon View Reference Manual* (on CD).

1 Insert the Nikon Scan 4 CD into the CD-ROM drive

A language-selection dialog will be displayed. Select a language and click **Next**.



If the Language Selection Dialog Is Not Displayed

If the language selection dialog does not appear after the Nikon Scan CD is inserted:

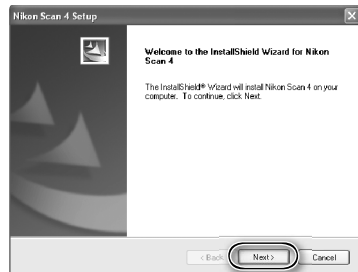
1. Double-click the **My Computer** icon on the desktop.
2. Right click the CD-ROM drive containing the Nikon Scan CD.
3. Choose **AutoRun** from the menu that appears.

2 Click Install

The "Install Center" dialog will be displayed. Open the "Software" panel and click **Install**.



3 Click Next



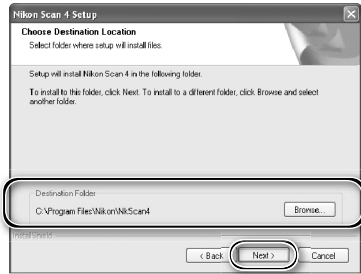
4 Read the license agreement

Click **Yes** to accept the agreement and continue installation.



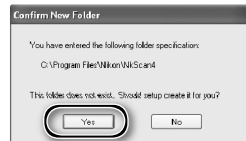
5 Choose a destination folder

The default install location for Nikon Scan is displayed under “Destination Folder.” To choose a different location, click **Browse...** and navigate to the desired folder. Click **Next** to install Nikon Scan to the selected folder.



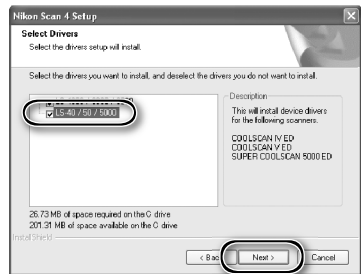
6 Click Yes

Click **Yes** to create the destination folder.



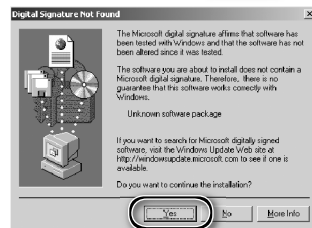
7 Select the scanner drivers

Select **LS-40/50/5000** and click **Next**.



Windows 2000 Professional

A “Digital Signature Not Found” dialog will be displayed twice; click **Yes** each time (if the **LS-4000/8000/9000** scanner drivers were not selected, this dialog will be displayed only once).




Device Registration

Windows 2000 Professional

A “Digital Signature Not Found” dialog will also be displayed the first time the scanner is connected and turned on following installation of Nikon Scan. Click **Yes** to register the scanner with the system.

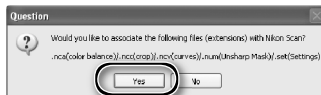
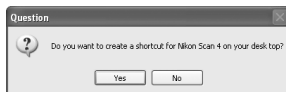
Windows XP, Windows Me, Windows 98 SE

Once Nikon Scan has been installed, the scanner will automatically be registered with the system the first time the scanner is connected and turned on ( 66).

- 8 Create a shortcut (optional)**
Click **Yes** to create a shortcut to Nikon Scan on the desktop. Click **No** to proceed without creating a shortcut.

Settings File Extensions

If other Nikon imaging software is installed, the dialog shown at right will be displayed. Click **Yes** to associate Nikon Scan with settings file extensions such as “.nca” and “.ncv”.



- 9 Click Use Wizard (recommended)**
Click **Use Wizard** to choose an RGB color-space profile with the help of the Color Space Wizard (recommended). The selected color-space profile can be changed in the Nikon Scan “Preferences” dialog after installation.

Note that choosing the correct color-space profile is very important if the scanner is used in a professional setting, for example as part of a production workflow. For more information on choosing an RGB color-space profile, see the *Nikon Scan Reference Manual* (on CD). Your national Nikon office may also be able to provide or recommend color management training resources.



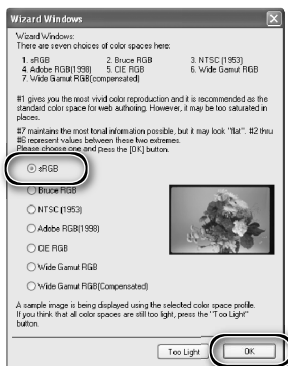
- 10 Click Windows**
Clicking **Use Wizard** in the opening dialog of the Color Space Wizard displays a platform selection dialog. Click **Windows**.



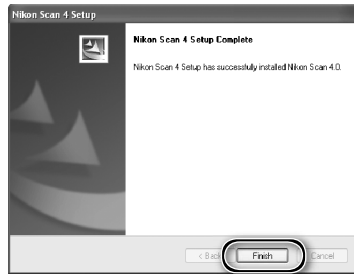
- 11 Select sRGB**
In the Windows Color Space Wizard, select **sRGB** (recommended) and click **OK**. For more information on color-space profiles, see the *Nikon Scan Reference Manual*.

Windows 98 SE

If the computer displays a message stating that an IEEE 1394 update is required, click **OK**.

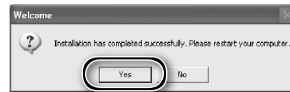


12 Click Finish



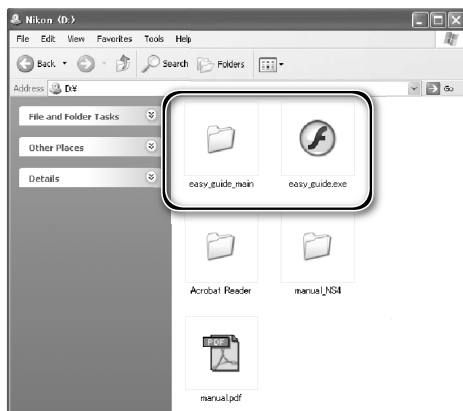
13 Restart the computer

Click **Yes** to restart the computer. Once the computer has restarted, take a few minutes to view the ReadMe file, which may contain important information that could not be included in this manual.



Viewing the Easy Scanning Guide (Windows)

Insert the *Nikon Scan 4 Reference Manual/Easy Scanning Guide CD* and double-click the **easy_guide.exe** icon. The Macromedia Flash Player will start and a language selection screen will be displayed; click the appropriate link to view the guide in the desired language. The *Easy Scanning Guide* can also be copied to the computer hard disk for ease of reference (total size: approximately 200MB). Copy the "easy_guide_main" folder and **easy_guide.exe** to the desktop.



Macintosh

Turn the computer on and wait for it to start up. Before continuing with installation, make sure that:

- The scanner is NOT connected
- No other applications (including anti-virus software) are running
- The computer satisfies the following system requirements:

CPU	Power PC G3 or later (G4 or later recommended)
OS*	Mac OS 9 (9.1 or later), Mac OS X (10.1.5 or later)
RAM†	<ul style="list-style-type: none">• Mac OS 9: 64 MB or more (256 MB or more recommended)• Mac OS X: 128 MB or more (512 MB or more recommended)
Hard-disk space‡	A minimum of 70 MB required for installation (200 MB or more recommended), with an additional 200 MB (Mac OS 9) or 550 MB (Mac OS X) of free disk space available while Nikon Scan is running
Video resolution	800 × 600 pixels or more with 16-bit color (thousands of colors) or more
USB**	USB 1.1 (built-in ports only), USB 2.0††
Miscellaneous	CD-ROM drive required for installation

* For the latest information on supported versions of Mac OS, see the Nikon web site listed in this manual (2).

† More memory may be required depending on film type, scan size, resolution, bit depth, the number of scans performed in each session, the adapter used, and on whether Digital ROC, Digital GEM or Digital DEE is used. A system with more than the minimum amount of memory is recommended.

‡ More free disk space may be required depending on the film type and number of frames. Nikon recommends having as much free disk space as possible when running Nikon Scan.

** Depending on the type of interface installed, USB will operate at high speed (USB 2.0 only; maximum transfer rate 480 Mbps) or full speed (USB 1.1/USB 2.0; maximum transfer rate 12 Mbps). Mac OS X computers with a USB 2.0 interface support high-speed USB. For more information, consult the manufacturer. Users of Mac OS X whose computer is not equipped with USB 2.0 can install a RATOC PCIU3U USB 2.0 interface board (for more information, visit Ratoc Systems English-language web-site at <http://www.ratocsystems.com/english/index.html>).

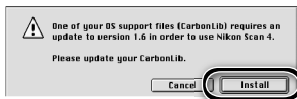
†† The computer may fail to recover from sleep mode when a 5000 ED or COOLSCAN V is connected via USB 2.0. To prevent the computer from entering sleep mode, select **System Preferences...** from the Apple menu, open the "Energy Saver" pane (in Mac OS 9, select **Energy Saver** from the **Control Panels** submenu in the Apple menu), and set the **Put system to sleep whenever it is inactive for** slider to **Never**. Additional technical and support information may be available at *the Nikon web sites listed in this manual* (2).

Mac OS X

Administrator privileges are required to install and uninstall Nikon Scan under Mac OS X.

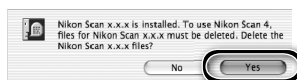
Mac OS 9

CarbonLib 1.5 or later is required to install Nikon Scan. If the installer detects an earlier version of CarbonLib, a message will be displayed. Click **Install** to upgrade to a new version of CarbonLib.



Earlier Versions of Nikon Scan

If the installer detects an earlier version of Nikon Scan, the dialog shown at right will be displayed. Click **Yes** to upgrade to Nikon Scan 4.



Nikon View

For information on installing and using Nikon View, see the *Nikon View Reference Manual* (on CD).

1 Insert the Nikon Scan CD into the CD-ROM drive

A Nikon Scan 4 CD icon will appear on the desktop. Double-click the icon to open the "Nikon Scan 4" window.

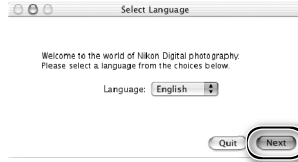


2 Double-click the **Welcome** icon in the "Nikon Scan 4" window



3 Choose a language

A language-selection dialog will be displayed. Select a language and click **Next**.



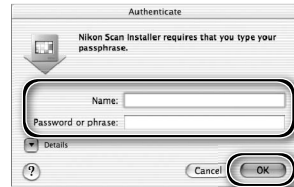
4 Click **Easy Install**

The "Install Center" dialog will be displayed. Open the "Software" panel and click **Easy Install**.



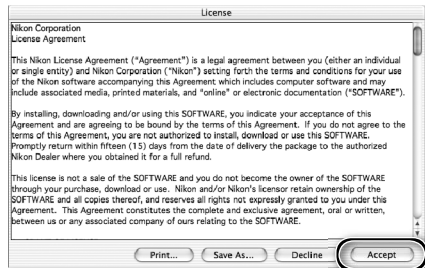
"Authenticate" (Mac OS X Only)

Clicking **Easy Install** in the software panel displays the "Authenticate" dialog shown at right. Enter the administrator name and password and click **OK**.



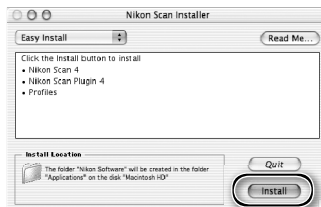
5 Read the license agreement

Click **Accept** to accept the agreement and continue installation.



6 View the “ReadMe” file
Take a few moments to read this file, which may contain important information that could not be included in this manual. Click **Continue...** to continue with installation.

7 Click **Install**
Click **Install** to begin installation.



Selecting a Plug-ins Folder (Mac OS 9)

If a copy of the Nikon Scan plug-in is installed in the plug-ins folders for supported versions of Adobe Photoshop, Photoshop can be used to acquire images directly from the scanner. If more than one copy of Photoshop is installed on the computer, a list will be displayed. Select the copies of Photoshop that will be used to acquire images and click **Continue** to copy the Nikon Scan plug-in to the appropriate plug-ins folders.



8 Click **Use Wizard (recommended)**
Click **Use Wizard** to choose an RGB color-space profile with the help of the Color Space Wizard (recommended). The selected color-space profile can be changed in the Nikon Scan “Preferences” dialog after installation.



Note that choosing the correct color-space profile is very important if the scanner is used in a professional setting, for example as part of a production workflow. For more information on choosing an RGB color-space profile, see the *Nikon Scan Reference Manual* (on CD). Your national Nikon office may also be able to provide or recommend color management training resources.

9 Click **Macintosh**
Clicking **Use Wizard** in the opening dialog of the Color Space Wizard displays a platform selection dialog. Click **Macintosh**.



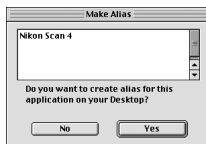
10 Select **Apple RGB**
In the Windows Color Space Wizard, select **Apple RGB** (recommended) and click **OK**. For more information on color-space profiles, see the *Nikon Scan Reference Manual*.



11 Add Nikon Scan to the Dock (Mac OS X) or create an alias (Mac OS 9)
Click **Yes** to add Nikon Scan to the Dock (Mac OS X) or to create an alias for Nikon Scan on the desktop (Mac OS 9). Click **No** to proceed without adding Nikon Scan to the Dock or creating an alias.

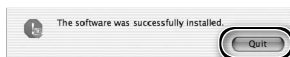


Mac OS X



Mac OS 9

12 Click **Quit**
Click **Quit** to exit the installer.



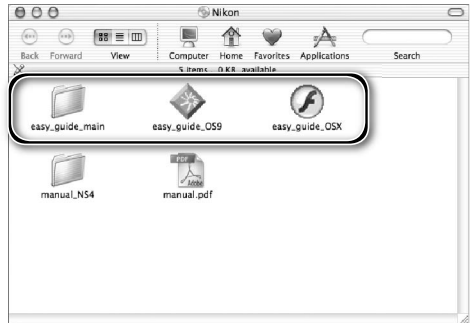
13 Restart the computer
Click **Restart** to restart the computer. This completes installation of Nikon Scan.



Viewing the *Easy Scanning Guide* (Macintosh)

Insert the *Nikon Scan 4 Reference Manual/Easy Scanning Guide CD* and double-click the **easy_guide_OSX** icon (Mac OS X) or **easy_guide_OS9** icon (Mac OS 9). The Macromedia Flash Player will start and a language selection screen will be displayed; click the appropriate link to view the guide in the desired language. The *Easy Scanning Guide* can also be copied to the computer hard disk for ease of reference (total size: approximately 200 MB). Copy the "easy_guide_main" folder and **easy_guide_OSX** (Mac OS X), or **easy_guide_OS9** (Mac OS 9) to the desktop.

Users of Mac OS X should ensure that the start-up disk is named using only letters and numbers (the default name for the start-up drive is "Macintosh HD"). The guide may not start if the volume name contains punctuation or other non-alphanumeric characters.



Installing the Scanner

Step 1—Choose a Location

Choose a flat, stable location close to the computer.

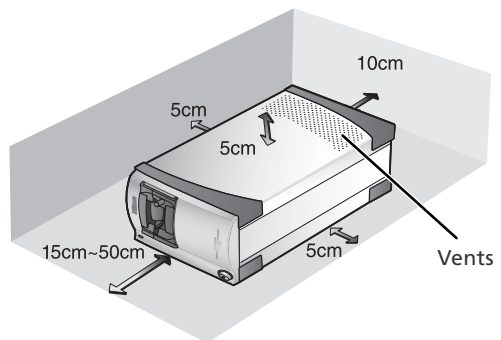
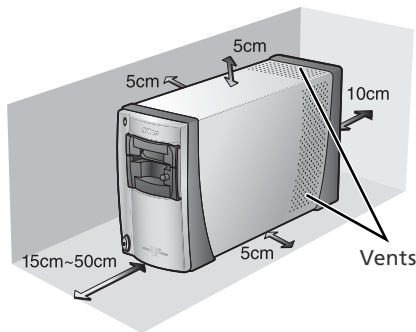
✓ *Installing the Scanner*

Do NOT install the scanner where other objects would block its vents or where it would be exposed to:

- direct or reflected sunlight
- condensation or rapid temperature changes
- electromagnetic interference from other electronic devices
- temperatures over 35°C (95°F) or below 10°C (50°F)
- excessive dust
- water vapor from a humidifier or similar device
- smoke

The scanner can be installed with either the top or side vents uppermost (see illustration below). Leave at least 5 cm (2") clear above and on either side of the scanner, 10 cm (4") behind, and 15 cm (6") in front. Additional space is required in front of the scanner when using the following optional adapters and holders:

- FH-3 film holder (available separately): 25 cm (10")
- SF-210 slide feeder (available separately for 5000 ED only): 50 cm (20")

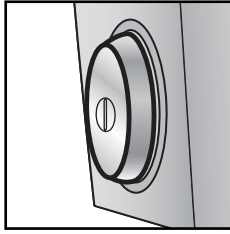


✓ *Optional Adapters for the 5000 ED*

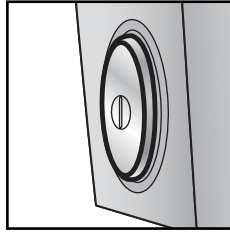
The scanner must be installed on its side (see illustration above at right) when the optional SF-210 slide feeder is in place. The scanner can not be installed on its side when the optional SA-30 roll-film adapter is used.

Step 2—Connect the Power Cable

- 1 Make sure the power switch is in the “off” position



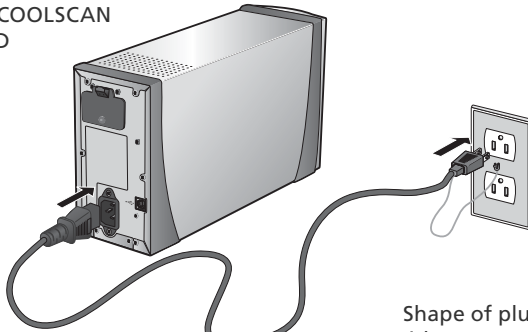
Off position



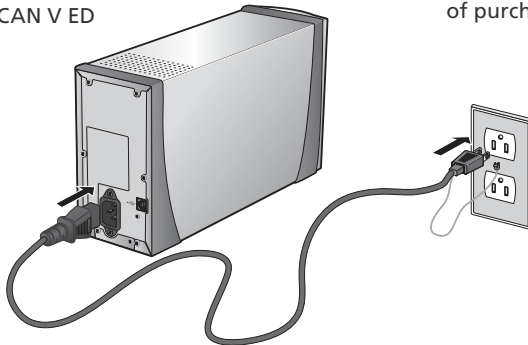
On position

- 2 Connect the power cable
Connect the power cable as shown and plug the scanner into a general-purpose household outlet.

SUPER COOLSCAN
5000 ED



COOLSCAN V ED



Shape of plug varies
with country or region
of purchase

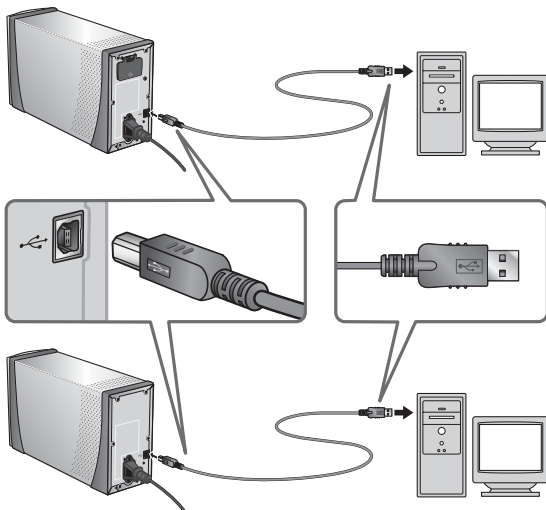
Step 3—Connect the USB Cable

- 1 Make sure that the scanner is off
- 2 Connect the USB cable
Connect the USB cable provided with the scanner as shown below. Connect the scanner directly to the computer; do not connect the cable via a USB hub or keyboard.

Connecting the USB Cable

Connect the flat connector to the computer, the square connector to the scanner, making sure that each connector is correctly oriented to match the shape of the USB terminal. Using the wrong connector or attempting to insert the connectors in another orientation could damage not only the connector, but also the scanner or computer.

SUPER COOLSCAN 5000 ED



COOLSCAN V ED

Connecting the Scanner

- Do not connect or disconnect USB cables while Nikon Scan is starting or after it has started.
- The scanner may not function as expected when used with other USB devices. Should the scanner not function as expected, use the scanner with all other USB devices disconnected. Do not connect two or more scanners to the computer simultaneously.
- Do not connect or disconnect USB or IEEE 1394 interface cables or operate camera control software for digital cameras connected via USB while the scanner status LED is blinking.
- After disconnecting the cable, wait a few seconds before connecting it again.

USB 2.0

When connected to a Windows XP, Windows 2000 Professional, or Mac OS X computer with a USB 2.0 interface, the 5000 ED and COOLSCAN V ED support high-speed USB with transfer speeds up to 480Mbps.



Basic Scanning

This chapter details the steps involved in making a simple scan.

Step 1—Turn the Scanner On	24
Step 2—Insert an Adapter	25
Step 3—Open the Scan Window	26
Step 4—Insert Film	28
Step 5—Choose a Film Type and Color Model ...	30
Step 6—Preview	32
Step 7—Select a Crop	34
Step 8—Scan and Save	36
Step 9—Eject and Exit	38

Step 1—Turn the Scanner On

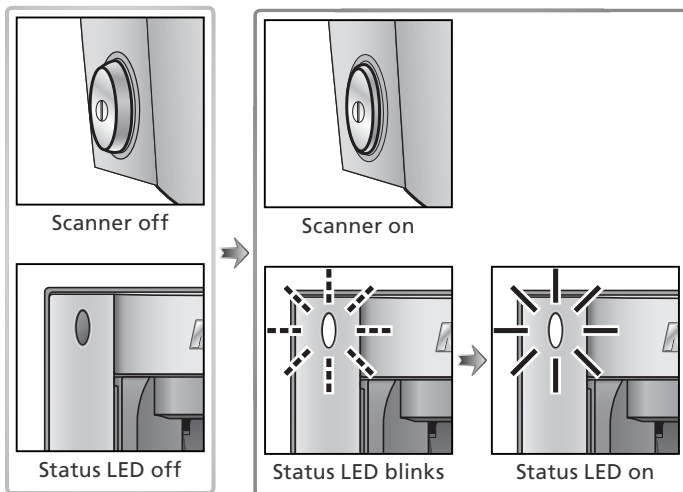
Before turning on the scanner for the first time, make sure that Nikon Scan is installed on the computer and that the power and USB cables are connected. For information on installing Nikon Scan and connecting the cables, see “Setup” (📖 7).

1 Turn the computer on

Turn the computer on and wait for the operating system to start up.

2 Turn the scanner on

The status LED will blink for about 30 seconds (5000 ED) or 20 seconds (COOLSCAN V ED) while the scanner initializes. The status LED will stop blinking when initialization is complete.



📌 Windows 2000 Professional

A “Digital Signature Not Found” dialog will be displayed the first time the scanner is connected and turned on following installation of Nikon Scan. Click **Yes** to register the scanner with Windows.




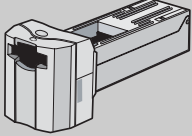

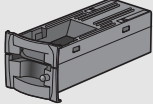
📌 If the Status LED Flickers

If the status LED flashes quickly (about five times a second), turn the scanner off, wait at least five seconds, and turn the scanner on again. If the problem persists, see “Troubleshooting” (📖 56).

Step 2—Insert an Adapter

The adapters provided with the SUPER COOLSCAN 5000 ED and COOLSCAN V ED can be used to scan 35-mm film mounted as individual slides or in strips of two to six frames.

1 Choose an adapter

To scan	Choose
 35-mm film in strips of two to six frames	 SA-21 strip film adapter
 35-mm slides (one slide at a time)	 MA-21 slide mount adapter

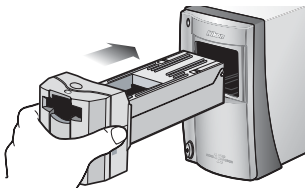
2 Check the status LED

Make sure that the status LED is glowing steadily. Do not insert adapters or film while the status LED is blinking.

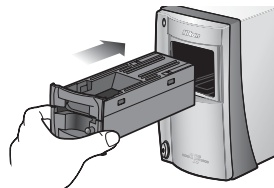


3 Insert the adapter

Slide the adapter into the adapter slot. When the adapter is fully inserted, the status LED will blink for about 30 seconds (5000 ED) or 20 seconds (COOLSCAN V ED).



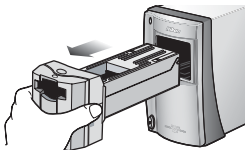
SA-21 strip film adapter



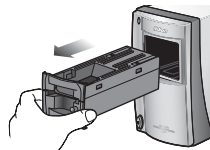
MA-21 slide mount adapter

Removing Adapters

Before removing adapters from the scanner, eject the film or slide (Ⓜ 38) and check that the status LED has stopped blinking. Remove adapters as shown.



SA-21 strip film adapter



MA-21 slide mount adapter

Optional Holders and Adapters

Optional adapters and film holders are available for a variety of film, including single-frame strips of 35-mm film, APS (IX-240) film cartridges, glass microscope slides, and rolls of developed 35-mm film up to forty frames in length (5000 ED only). See "Optional Holders and Adapters" (Ⓜ 48).

Step 3—Open the Scan Window






The scanner is controlled from the Nikon Scan scan window.

1 Choose the application in which pictures will be displayed

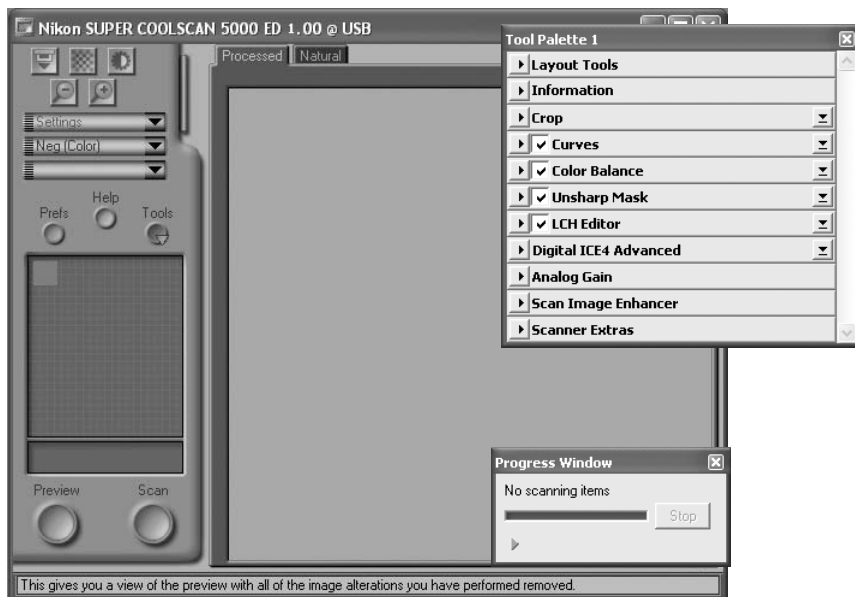
After scanning, pictures can be displayed either in Nikon Scan or in a third-party application such as Adobe Photoshop. The application in which pictures will be displayed after scanning is referred to as the “host application.”

Application	Platform	Description
Nikon Scan	Windows	Nikon Scan used as a “stand-alone” application to scan, process, print, and save images.
	Macintosh	
Third-party application	Windows	Nikon Scan used as a TWAIN source to control the scanner from a third-party application (application must support TWAIN). Images are scanned using Nikon Scan and processed, printed, and saved in the third-party application.
	Macintosh	Nikon Scan plug-in used to control the scanner from a third-party application (application must support Adobe Photoshop 5.0 acquire plug-ins, and a copy of the Nikon Scan plug-in must be installed in the application’s plug-ins folder). Images are scanned using Nikon Scan and processed, printed, and saved in the third-party application.

2 Open the scan window

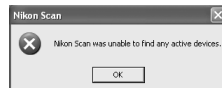
Application	Platform	Description
Nikon Scan used as “stand-alone” application	Windows	Click the Start button and select Nikon Scan 4 from the programs list. (If a shortcut was created during installation, you can also double-click the  icon on the desktop.)
	Macintosh (Mac OS X)	Open the Applications:Nikon Software:Nikon Scan 4 folder on the start-up disk and double-click the  icon. (If Nikon Scan was added to the Dock during installation, you can also click the  icon in the Dock.)
	Macintosh (Mac OS 9)	Open the Nikon Software:Nikon Scan 4 folder in the folder selected at installation (the default folder is the Applications folder on the start-up disk) and double-click the  icon. (If an alias was created during installation, you can also double-click the  icon on the desktop.)
Third-party application	Windows	Select Nikon Scan from the application’s list of “Acquire” or “Import” sources. For more information, see the documentation provided with the application.
	Macintosh	

The scan window will open.



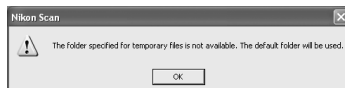
"Nikon Scan Is Unable to Find Any Active Devices"

If the message shown at right is displayed when the scan window opens, check that the scanner is connected and turned on and that the status LED is not flashing. If the scanner is connected to a Windows computer, check that the scanner has been registered with the Windows Device Manager (66).



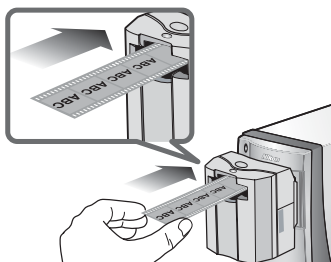
Temporary Storage (Windows Only)

If the message shown at right is displayed, click **OK**.



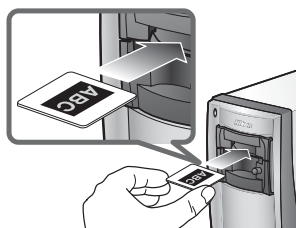
Step 4—Insert Film

Insert film as shown.



SA-21 strip film adapter

Hold the film lightly between thumb and forefinger with the reflective base up and the matte emulsion surface down. The film will be fed into the adapter automatically when inserted a short distance.



MA-21 slide mount adapter

The MA-21 can hold only one slide at a time. Insert the slide short side first, with the reflective base up and the matte emulsion surface down. Stop when the mount contacts the back of the film slot.

✓ **Caring for Film**

Keep film free of dust. If necessary, remove dust from the film with a blower before scanning. Dust on the film could damage the media or affect the quality of the scanned image (🔍 5).

✓ **Inserting Film in the SA-21**

- Release the film when the feed mechanism activates. Do not pull or push the film or otherwise interfere with the feed mechanism.
- For information on what to do if film jams in the adapter, see “Film Feed Errors (SA-21)” (🔍 60).

✓ **The SA-21 Lock Mechanism**

The SA-21 is equipped with a lock mechanism that prevents the adapter from being removed while film is in place. Before removing the SA-21 from the scanner, be sure to eject the film using the eject button in the Nikon Scan scan window (🔍 38). Attempting to remove the SA-21 without first ejecting the film could interfere with the connection between the adapter and the scanner. If an attempt has been made to remove the SA-21 without ejecting the film, push the adapter back into the scanner to re-establish the connection. Attempting to remove the adapter by force could damage the adapter or scanner.

✍ **Film That Can Not Be Used**

Film can not be scanned in the SA-21 if:

- It is less than two or more than six frames long
- It has excessive curl
- Perforations are torn or missing
- Tape is applied to either end
- The ends are cut on an angle or torn
- The ends are folded
- The end perforations cut or torn
- There are holes between perforations

The MA-21 can be used to scan slides with mounts 1.0–3.2mm thick and 49–50.8mm wide. Other slides can not be scanned.

✍ **“Preview/Thumbnail When Film Is Inserted”**

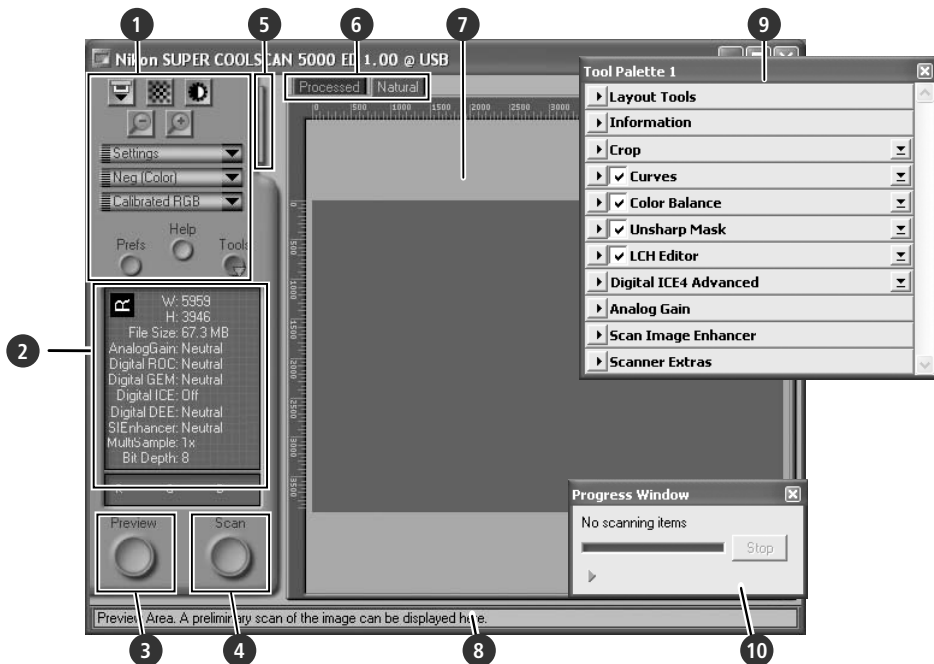
If **Thumbnail when film is inserted** (SA-21 only) or **Preview when film is inserted** is selected in the “Preferences” dialog (🔍 41), choose a film type and color model (🔍 31) before inserting film.

📷 **“Film Base”/“Emulsion Surface”**

When film is examined under bright light, the image on the emulsion surface will be in slight relief, with bumps and hollows where the image has been developed. The opposite surface (the film base) will be reflective and smooth. Insert film base up.

Step 5—Choose a Film Type and Color Model

The steps that follow involve the controls in the Nikon Scan scan window. The names and functions of the controls in the scan window are described below.

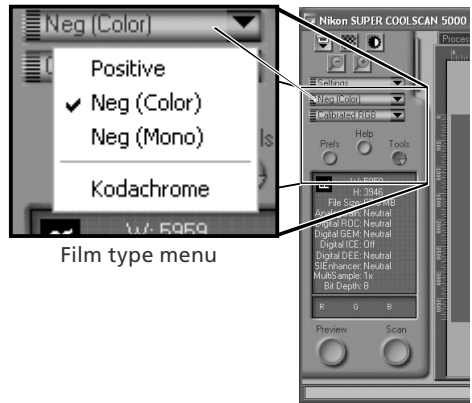


- 1 Control area (Ⓜ 41)**
Contains frequently used scanning and preview controls.
- 2 Information panel (Ⓜ 42)**
Lists information on current settings.
- 3 Preview button (Ⓜ 42)**
Click to view selected frames in the preview area, where they can be enhanced using the tools in the Tool Chest.
- 4 Scan button (Ⓜ 42)**
Click to scan the selected frames.
- 5 Thumbnail drawer tab (Ⓜ 43)**
Click to select frames to be previewed or scanned.
- 6 Processed/Natural tabs (Ⓜ 43)**
The "Processed" panel shows how the image would appear if scanned at current settings, the "Natural" panel the unmodified image. Comparing these two views can help determine whether changes to settings are having the desired effect.
- 7 Preview area (Ⓜ 43)**
Provides a preview of the image prior to scanning. Any modifications to settings are visible in the "Processed" panel.
- 8 Interactive help**
Displays a brief tip about the control under the cursor.
- 9 Tool Chest (Ⓜ 44)**
Contains tools for changing the orientation of the image and selecting the portion to be scanned, choosing the dimensions and resolution of the scanned image, enhancing color, contrast, and sharpness, processing images to remove the effects of scratches, dust, fading, film grain, and under- or over-exposure, and controlling scanner settings.
- 10 Progress window (Ⓜ 43)**
Shows the status of current tasks and lists operations that have been or are about to be performed.

1 Choose the film type

Click the film-type menu in the scan window control area and choose a film type that matches the film being scanned.

Option	Use with
Positive	Use with most makes of positive slides and reversal film. These films have a black film base, and the image in each frame appears in its actual colors.
Neg (Color)	Use with color film negatives. Color negatives can be identified by their orange-tinted film base and by the fact that the colors in the images are reversed.
Neg (Mono)	Use with black-and-white negatives.
Kodachrome	Use with Kodachrome positives.

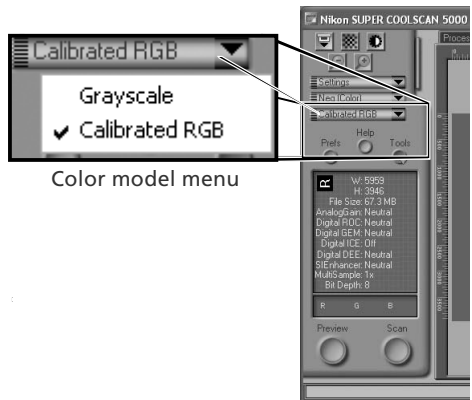


Film type menu

2 Choose a color model

Click the color-model menu in the scan window control area and choose a color model according to how the image will be used.

Option	Description
Grayscale	Image scanned as grayscale data. Use when scanning images that will be printed or viewed in black-and-white.
Calibrated RGB	Image scanned as RGB data. Use to scan images in color.




Color model menu

Step 6—Preview

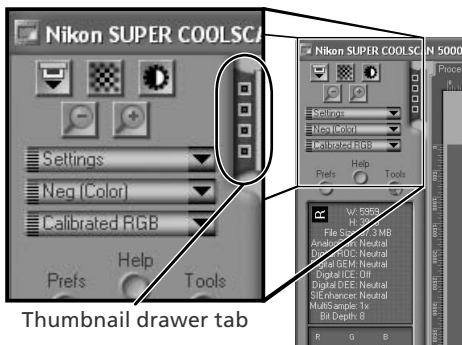
The SA-21 strip film adapter can be used to perform a “batch scan” on multiple images. Select the frame or frames to be scanned from the thumbnail drawer.

The MA-21 Slide-Mount Adapter

Because the MA-21 scans slides one at a time, there is no need to select the frame to be scanned. Users of the MA-21 can skip ahead to Step 6-4 ( 33).


1 Open the thumbnail drawer

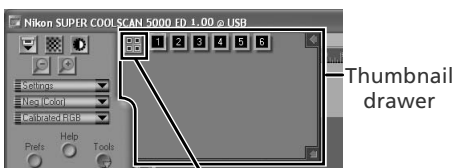
Click the thumbnail drawer tab.



Thumbnail drawer tab

2 Display thumbnails

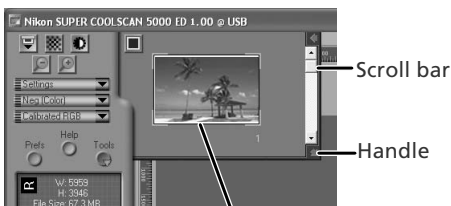
To view the frames in the thumbnail drawer as small “thumbnail” previews, click the  button. The scanner will scan the film to generate thumbnails and display them in the thumbnail drawer.



Click here to display/hide thumbnails



3 Select frames

Select the frame to be scanned by clicking the associated thumbnail or frame number (selected frames are indicated by a green border). To select multiple frames, hold down the Ctrl (Windows) or command (Macintosh) key while clicking each frame in turn, or hold down the shift key and click to select two images and all frames between them. To view frames not currently visible in the thumbnail drawer, use the scroll bar or enlarge the drawer by dragging the handle at its lower right corner.



Selected frame

The Thumbnail Display

If the wrong film type is chosen when thumbnails are generated, the thumbnail display will not reflect the contents of the film. Click the  button in the thumbnail drawer to hide thumbnails, and then select the correct film type from the film type menu. Click the  button to view the new thumbnails.

4 Click the **Preview** button

A preview will be displayed in the preview area.








Preview button

If multiple frames are selected, additional frames can be previewed by clicking the thumbnails in the thumbnail drawer.

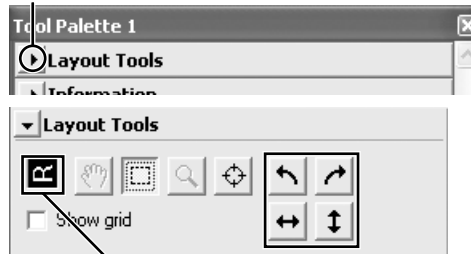


Rotating and Flipping Images

The Layout Tools palette in the Tool Chest  44) contains buttons for rotating and flipping images.

Button	Function
	Rotate image 90° clockwise
	Rotate image 90° counter-clockwise
	Flip image horizontally
	Flip image vertically

Click to display Layout Tools palette



Orientation of letter "R" reflects any flips or rotations that have been performed. "R" turns red when image is flipped.

Step 7—Select a Crop

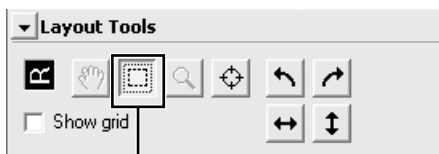
To scan only part of an image into the host application, use the Crop Tool in the Layout Tools palette to select the desired area. This selection is referred to as a “crop.”

- 1 Open the Layout Tools palette**
Click the triangle next to “Layout Tools” in the Tool Chest (if the Tool Chest is not already open, click the **Tools** button in the scan window and select **Tool Palette 1** from the menu that appears).

Click to display Layout Tools palette



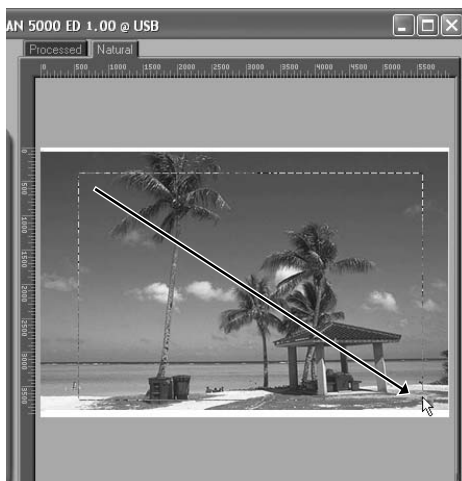
- 2 Select the Crop Tool**




Crop Tool


- 3 Select a crop**
To select a crop, drag the mouse over the image in the preview area. The borders of the crop are indicated by a dotted line. The size of the crop can be changed by dragging its borders. To change the position of the crop, place the cursor inside the selected area and drag it to a new location.

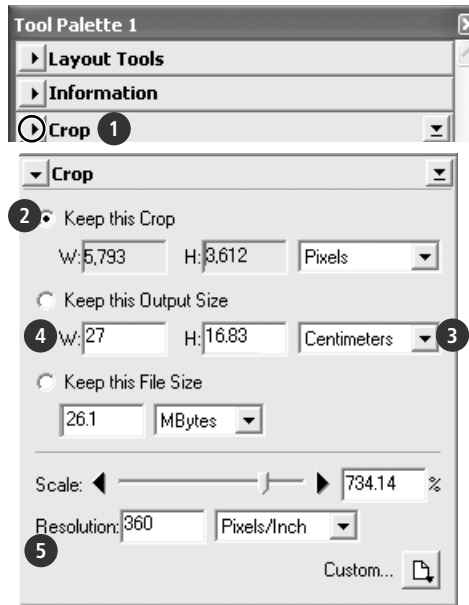
Repeat this step for the other images selected in the thumbnail drawer. To display images in the preview area, open the thumbnail drawer and click the selected thumbnails.



Choosing an Output Size and Resolution

The “Crop” palette in the Tool Chest is used to specify the size and resolution of the crop when opened in the host application ( 26). For example, to scan an image so that it can be printed within the margins of A4 (21.0×29.7 cm) or letter-sized (11”×8.5”) paper on a typical inkjet printer:


- 1 Click the triangle next to “Crop” in the Tool Chest to open the “Crop” palette.
- 2 Choose **Keep this Crop** and use the mouse to select a crop in the preview area ( 34).
- 3 Choose **Centimeters** or **Inches** from the output units menu.
- 4 Enter a value for **Height** or **Width** that will fit on A4 paper (remember to leave a margin of least 2 cm/0.79”). The other value will automatically be adjusted to maintain the current crop; if the result is still too large, enter a value that will fit on A4 paper.
- 5 Enter an output resolution of 360 pixels per inch.



Scan Bit Depth

The scan bit depth determines the maximum number of colors in the image after scanning. A choice of sixteen and eight bits (5000 ED) or fourteen and eight bits (COOLSCAN V ED) is available in the “Scanner Extras” palette. For more information, see the *Nikon Scan Reference Manual* (on CD).

Scan Image Enhancer

The image enhancement tools in the Tool Chest can be used to enhance images before they are scanned. For example, the Scan Image Enhancer automatically adjusts brightness, contrast, and hue to produce an image that can be printed or used “as is,” without further alteration (note that this will increase scanning times and may not have the desired effect on dark images). For information on the Scan Image Enhancer and the other image adjustment options and scan settings available in Nikon Scan, see “Nikon Scan” ( 39) or the *Nikon Scan Reference Manual* (on CD).

Easy Scanning Guide

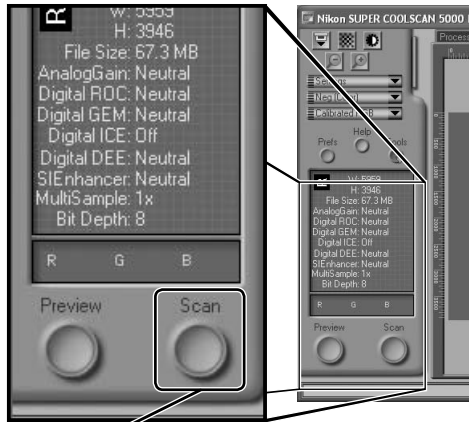
The *Easy Scanning Guide* gives examples of how to adjust “Crop” palette settings in a variety of situations.

Step 8—Scan and Save

- 1 Click the **Scan** button
Click the **Scan** button to begin scanning the crop selected in the preview area. Progress is shown in the progress window (🔍 43).

Batch Scans

If multiple frames are selected in the thumbnail drawer (🖼️ 32), clicking the **Scan** button will display a dialog of batch scan options. Click **OK** to save the scanned images to disk. If Nikon Scan is being used as a “stand-alone” application, the “File Saving Options” dialog will be displayed; choose a location and file format and click **OK** to begin scanning. Instead of being opened in image windows, the images will be saved in the location chosen in the “File Saving Options” dialog. Proceed to Step 9, “Eject and Exit” (🗑️ 38).



Scan button

The MA-21 can not be used to perform batch scans.

When scanning is complete, images will be opened in image windows in the host application (single scans only). Note that the scan window may remain “on top” of the host application window; to view the images, it may be necessary to move the scan window.

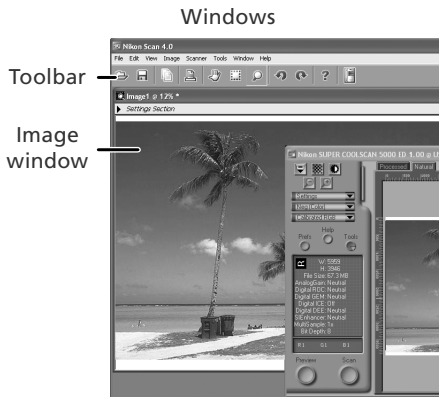

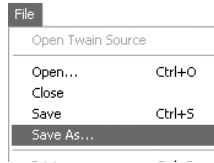


Image window

2 Select the save command

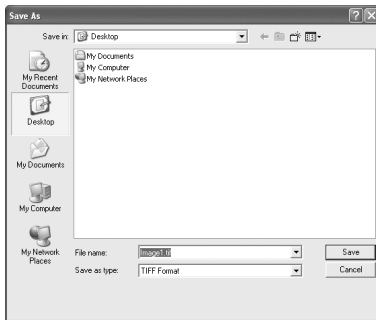
To save the image in the active window, select **Save** or **Save As...** from the **File** menu in the host application (26). If Nikon Scan is being used as a “stand-alone” application under Windows, the image in the active window can also be saved by clicking the  (“Save”) button in the toolbar.



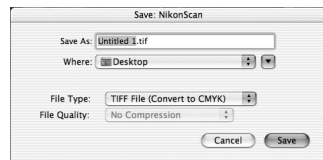
3 Save the image

After navigating to the desired location, enter a name for the image and choose a file format. Click the **Save** button to save the image to disk. Repeat steps 2 and 3 until all images have been saved.

Typical “Save As” dialogs




Windows



Macintosh

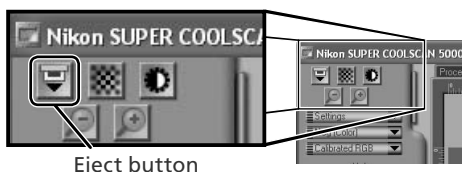
Printing Images

Images can be printed by selecting the print command from the **File** menu in the host application. If Nikon Scan is being used as a “stand-alone” application under Windows, the image in the active window can also be printed by clicking the  button in the toolbar. See the *Nikon Scan Reference Manual* for more information.

Step 9—Eject and Exit

1 Eject the film SA-21

To eject film from the SA-21 strip-film adapter, click the eject button in the control area of the scan window. Ejection is complete when the status LED has stopped blinking.



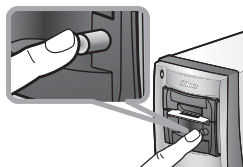
Ejecting Film from the SA-21

Always use the scan window eject button when ejecting film from the SA-21. Wait until ejection is complete before removing film by hand. Pulling on the film during ejection could damage the film or cause errors. For information on what to do if film jams in the SA-21, see "Film Feed Errors (SA-21)" (🔍 60).

If the scan window was closed before the film was ejected, turn the scanner off and then on again. The film will be ejected automatically.

MA-21

Confirm that the status LED is not blinking and press the eject button on the front of the adapter to eject the slide.



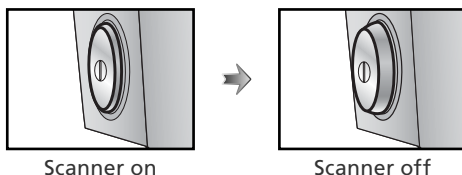
2 Exit the host application

Select **Exit** (Windows) or **Quit** (Mac OS 9) from the **File** menu. In Mac OS X, open the application menu and choose the "Quit" option for the host application.

3 Turn the scanner off

Leave an Adapter in Place

To prevent dust from entering the scanner, be sure the MA-21 or SA-21 is in the adapter slot when the scanner is off.



The SA-21 Lock Mechanism

If the scanner is turned off with film still in place, the adapter lock mechanism (🔍 29) will prevent the SA-21 from being removed. Before attempting to remove the SA-21, turn the scanner on and wait for the film to be ejected automatically. Attempting to remove the adapter without first ejecting the film could interfere with the connection between the adapter and the scanner. If an attempt has been made to remove the SA-21 without ejecting the film, push the adapter back into the scanner to re-establish the connection. Attempting to remove the adapter by force could damage the adapter or scanner.

Remove Film Holders

When using the optional FH-3 film holder (🔍 50), remove the holder before turning the scanner off.

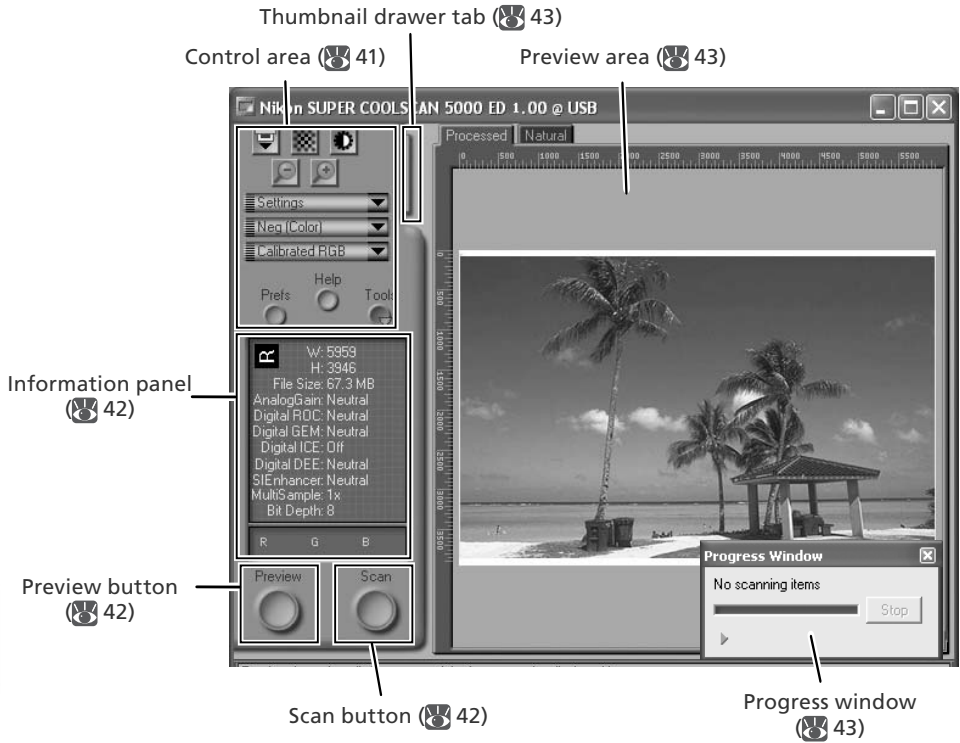
Nikon Scan

This chapter provides a brief overview of the Nikon Scan software that controls the scanner. For more information, see the *Nikon Scan Reference Manual* (on CD).

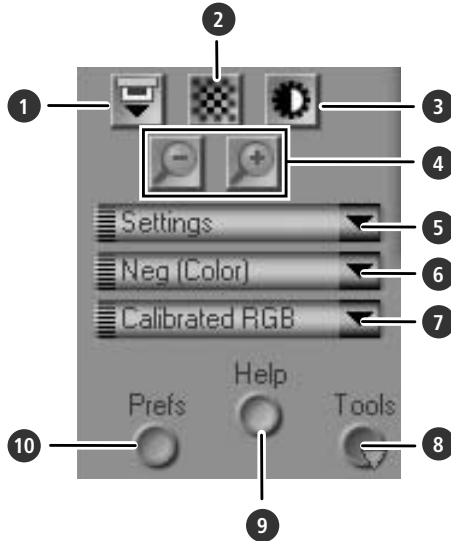
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The Scan Window

The parts of the scan window are identified below.



The Control Area



1 Eject button

Ejects film from multi-frame adapters such as the SA-21. In the case of the optional SF-210 slide-feeder adapter for the 5000 ED, clicking this button ejects the current slide and feeds a new one.

This button can not be used to eject slides from the MA-21.



2 Autofocus button

Click to focus the scanner. Control-click (Windows) or option-click (Macintosh) to select a new focus point.

3 Autoexposure button

When this button is clicked, the scanner analyzes the current image and adjusts exposure for optimal results.

4 Zoom buttons

Click  to zoom in for a closer look at the portion of the image currently selected in the preview area. Click  to zoom out.

5 Settings menu

Save and load settings or reset settings to default values.

6 Film type menu

Choose an option that matches the type of film being scanned: **Positive** for positive or reversal film, **Neg (Color)** for color negatives, or **Neg (Mono)** for black-and-white negatives. A separate **Kodachrome** option is available for scanning Kodachrome positives.

7 Color model menu

Choose a color model according to how the image will be processed or used.

8 Tools button

Click to open the Tool Chest or progress window.

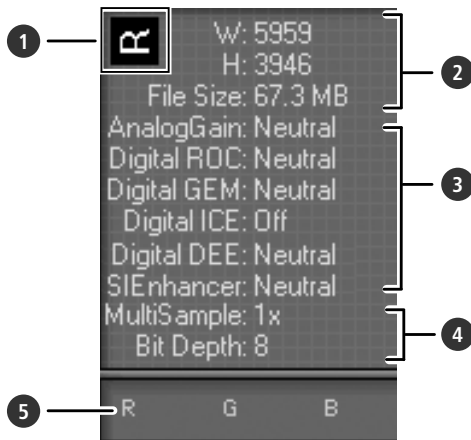
9 Help button

Click to open Nikon Scan help.

10 Prefs button

Click to open the "Preferences" dialog.

The Information Panel



1 Orientation

Shows the orientation of the image in the preview area, reflecting any flips or rotations that have been performed.

2 Dimensions/file size

Lists the width and height of the current selection (in pixels) and the size of the file that would be produced if the selection were scanned at current settings.

3 Image enhancement

Shows the current status of Digital ICE⁴ Advanced and analog gain. Note that using Digital ICE⁴ Advanced can increase scanning times.

4 Scanner extras

Lists the current bit depth (which determines the maximum number of colors available) and shows whether multi-sample scanning (5000 ED only) is in effect.

5 Color values

Lists the color values for the pixel under the cursor. The values for the Natural panel are listed in the top row, the values for the Processed panel in the bottom row.

The Preview and Scan Buttons



Preview button

Click to preview the image to be scanned (if multiple frames are selected in the thumbnail drawer, a preview will be performed for each frame). Be sure to click this button after changing the film type or choosing a new value for analog gain.

Scan button

Scans the images and opens them in the host application (if multiple frames are selected in the thumbnail drawer, a scan will be performed for each frame and the resulting images will be opened in separate windows).

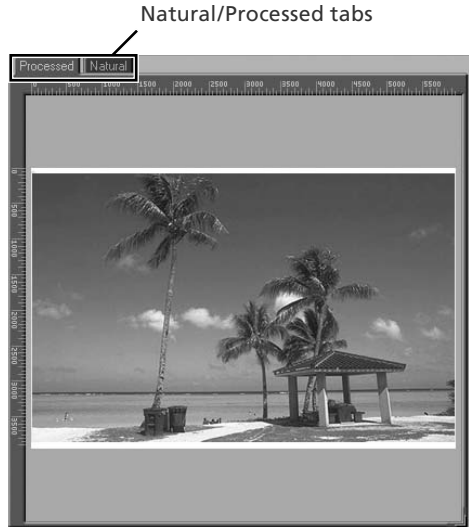
The Thumbnail Drawer Tab

Click this tab to open the thumbnail drawer. If multiple frames are selected, the selected images can be scanned in a single batch. This is called a “batch scan.”

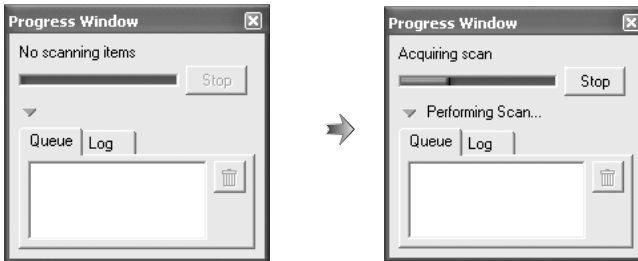


The Preview Area

Selected frames are previewed in this area. Click the “Natural” and “Processed” tabs for a quick “before-and-after” comparison showing the effect of changes to settings in the Tool Chest. The “Natural” panel shows the image before processing, the “Processed” panel the image as it would appear when scanned at current settings.



The Progress Window

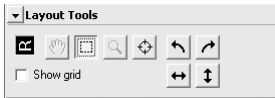


The progress of preview and scan operations is shown in this window. The current task (acquiring thumbnails, preview, or scanning) is shown at the top of the window. Tasks that have yet to be performed are listed in the “Queue” panel, completed tasks in the “Log” panel. To stop the current task, click **Stop**.

The Tool Chest

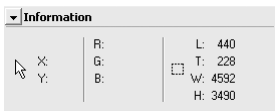
To display or hide the Tool Chest, click the **Tools** button in the control area of the scan window. For more information, see the *Nikon Scan Reference Manual* (on CD).

1 Layout tools

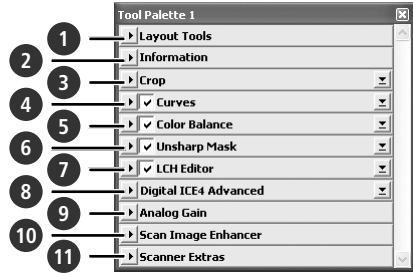


Select the portion of the image that will be scanned, choose a focus point, or rotate and flip images. Use the Zoom and Grab tools to navigate images that have been opened in Nikon Scan after scanning.

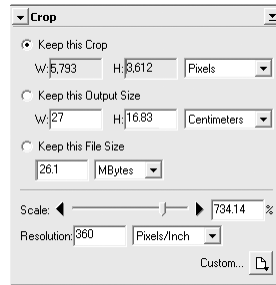
2 Information



View the width and height of the current selection and the coordinates of its top left corner. The color value display shows the color of the pixel under the cursor before and after processing.



3 Crop

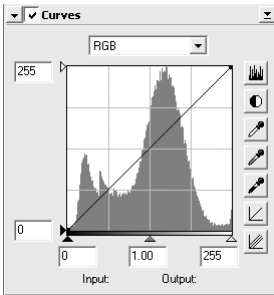


Specify the size and resolution of the image that will result when the film is scanned.

Keep this Crop	User selects exact area to be scanned, then selects output size and resolution according to how image will be used. Best choice in most situations.
Keep this Output Size	User selects general area to be scanned, then enters exact output size in output size area. Choose this option when image must fit in space of known dimensions.
Keep this File Size	User selects general area to be scanned, then enters exact file size for final image in file size area. Choose when file size is paramount, for example when scanning images for electronic distribution.

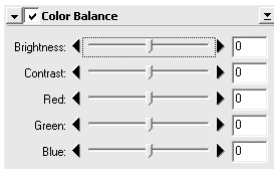
Enter the desired **Height** and/or **Width** in the text boxes. If **Keep this Crop** is selected, the remaining dimension will automatically be adjusted to maintain the current crop. If **Keep this File Size** is selected, the remaining dimension and the resolution will automatically be adjusted to maintain the selected file size, and the crop in the preview area will be adjusted accordingly.

4 Curves



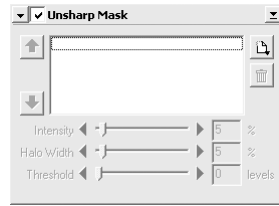
Make adjustments to brightness, contrast, and color targeted to specific portions of the tone range (for example, this tool can be used to increase brightness in shadows).

5 Color balance



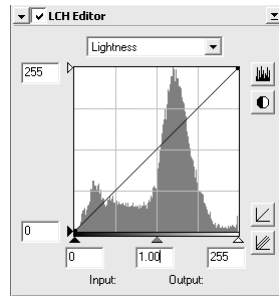
Adjust overall brightness, contrast, and color balance.

6 Unsharp mask



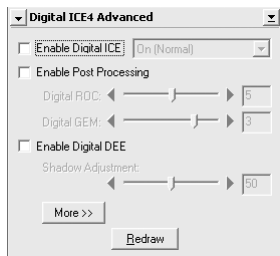
Sharpen images by making colors more distinct.

7 LCH editor



Make adjustments to brightness and contrast targeted to specific portions of the tone range, or use the hue and chroma editors for precise control of color.

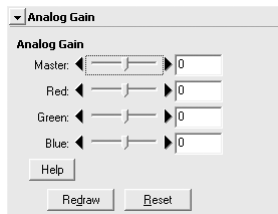
8 Digital ICE⁴ Advanced (Digital ICE quad Advanced)



Four tools are available:

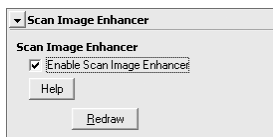
- *Digital ICE*: mitigate the effects of dust and scratches
- *Digital ROC*: restore faded colors
- *Digital GEM*: reduce the effects of film grain
- *Digital DEE*: increase detail in under- or over-exposed areas of the frame

9 Analog gain



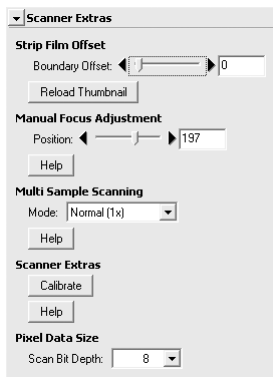
Adjust exposure values for each of the colored elements in the scanner's light source.

10 Scan Image Enhancer



Perform automatic brightness, color, and contrast adjustment.

11 Scanner extras



Control features specific to the type of scanner currently connected.

- *Multi Sample Scanning (5000 ED only)*
Use this feature to reduce noise.
- *Scan Bit Depth*
Choose a bit depth of sixteen (5000 ED), fourteen (COOLSCAN V ED), or eight bits.

Digital ICE

Digital ICE will not produce the desired results with monochrome film (unless developed in color).

Kodachrome Film

When scanning Kodachrome film with the 5000 ED or COOLSCAN V ED, select **Kodachrome** in the film type menu. Depending on the film used, blurring or localized loss of detail may occasionally result when Kodachrome film is scanned with the 5000 ED or COOLSCAN V ED.




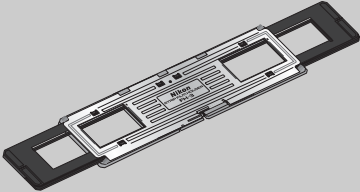

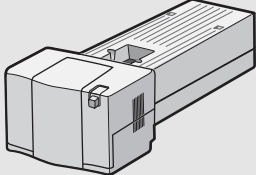

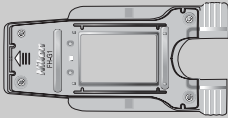
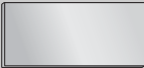
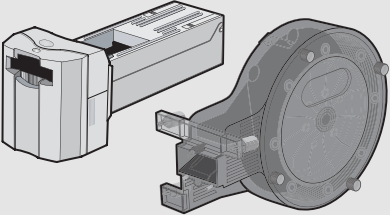

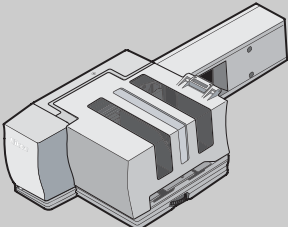

Technical Notes

This chapter lists scanner specifications and provides information on maintenance and troubleshooting.

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Optional Holders and Adapters

The following adapters and holders are available for the SUPER COOLSCAN 5000 ED and COOLSCAN V ED:

Adapter	Film	
 <p>FH-3 FILM HOLDER</p>	 <p>Use with MA-21 slide-mount adapter to scan 35-mm film (in strips of 1–6 frames)</p>	<p>49, 50–51</p>
 <p>IA-20 (S) IX240 FILM ADAPTER</p>	 <p>APS (IX-240) film cartridges</p>	<p>49</p>
 <p>FH-G1 MEDICAL HOLDER</p>	 <p>Use with MA-21 slide-mount adapter to scan glass microscope slides</p>	<p>49</p>
 <p>SA-30 ROLL FILM ADAPTER (5000 ED only)</p>	 <p>Strips or rolls of 35-mm film (2–40 frames)</p>	<p>49</p>
 <p>SF-210 SLIDE FEEDER (5000 ED only)</p>	 <p>35-mm slides (up to 50 slides with mounts 1.5 mm thick)</p>	<p>49</p>

Specifications

FH-3 STRIP FILM HOLDER (5000 ED and COOLSCAN V ED)

Film	35-mm negatives or positives (color or monochrome) in strips of 1–6 frames
Size and weight	262 × 4.7 × 50.5 mm/10.3" × 0.2" × 2.0" (W × H × D), 40 g/1.4 oz. (approx.)
Operating mode	Can be used with MA-21 in both horizontal and vertical installations

IA-20 (S) IX240 FILM ADAPTER (5000 ED and COOLSCAN V ED)

Film	Developed APS (IX-240) film in cartridges of 15, 25, or 40 frames
Feed mechanism	Automatic with built-in motor
Power source	Supplied from scanner
Size and weight	84 × 59 × 208 mm/3.3" × 2.3" × 8.2" (W × H × D), 270 g/9.5 oz. (approx.)
Operating mode	Can be used in both horizontal and vertical installations

FH-G1 MEDICAL HOLDER (5000 ED and COOLSCAN V ED)

Media	Prepared glass microscope slides
Slide	26 × 76 mm, 0.8–1.5 mm thick
Slide cover	25 × 60 mm with thickness of 0.18 mm or less
Total thickness	No more than 2 mm, including adhesive
Effective aperture	22.9 × 35 mm
Size and weight	53 × 7 × 106 mm/2.1" × 0.3" × 4.2" (W × H × D), 20 g/0.7 oz. (approx.)
Operating mode	Can be used with MA-21 in both horizontal and vertical installations

SA-30 ROLL FILM ADAPTER (5000 ED Only)

Film	Developed 35-mm film in rolls or strips of 2–40 frames
Feed mechanism	Automatic with built-in motor
Power source	Supplied from scanner
Size and weight	
Feed adapter	80 × 70 × 230 mm/3.1" × 2.8" × 9.1" (W × H × D), 500 g/1 lb 1.6 oz. (approx.)
Take-up reel	90 × 160 × 230 mm/3.5" × 6.3" × 9.1" (W × H × D), 500 g/1 lb 1.6 oz. (approx.)
Operating mode	Can be used in vertical installation only

SF-210 SLIDE FEEDER (5000 ED Only)

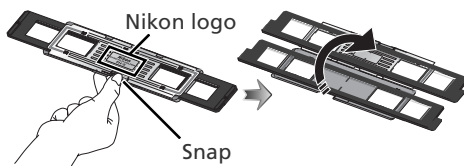
Film	Mounted 35-mm slides (1.0–3.2 mm thick, 49–50.8 mm wide)
Number of slides	Approximately 50 (assumes mounts 1.5 mm thick)
Housing space	Approximately 78.5 mm (3.1")
Feed mechanism	Automatic with built-in motor
Power source	Supplied from scanner
Size and weight	142 × 85 × 325 mm/5.6" × 3.3" × 12.8" (W × H × D), 820 g/1 lb 13 oz. (approx.)
Operating mode	Can be used in horizontal installation only

FH-3 Film Holder

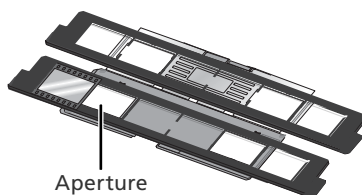
The FH-3 allows strips of 35-mm film up to six frames in length to be scanned in the MA-21 slide-mount adapter. The FH-3 can be used to scan film that can not be scanned in the SA-21, either because it is only one frame long or because it has excessive curl or damaged perforations (58).

Placing Film in the Holder

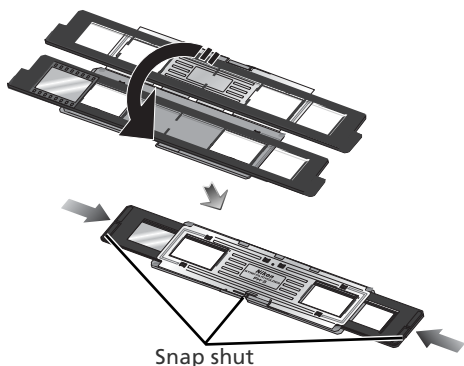
1 Open the holder
Holding the FH-3 with the Nikon logo uppermost, unlatch the holder snaps and open the holder.



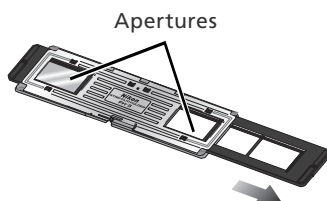
2 Place film in the holder
Place a strip of 35-mm film base up (matte emulsion surface down) in the bottom half of holder. Align the frame to be scanned with an aperture in the bottom half of the holder.



3 Close the holder
Close the holder and align the ends of the top and bottom halves. Latch the holder cover and snap the top and bottom halves together at both ends.



4 Align the film with an aperture
Slide the black plastic holder until the frame to be scanned is aligned with one of the two apertures in the metal cover.

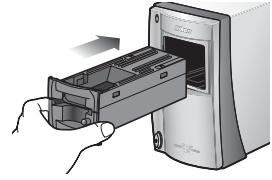


“Film Base”/“Emulsion Surface”

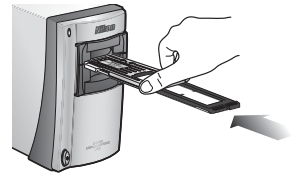
When film is examined under bright light, the image on the emulsion surface will be in slight relief, with bumps and hollows where the image has been developed. The opposite surface (the film base) will be reflective and smooth. Place the film in the holder base up.

Inserting the Holder

- 1 Insert the MA-21 slide-mount adapter**
After confirming that the status LED is not blinking, slide the MA-21 slide-mount adapter into the adapter slot (🔍 25). When the adapter is fully inserted, the status LED will blink while the scanner initializes (🔍 24). Wait until the status LED stops blinking.



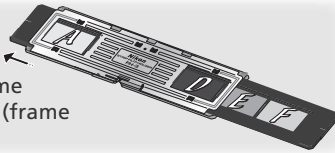
- 2 Insert the FH-3**
The direction of insertion depends on which of the two apertures in the metal cover contains the frame to be scanned; refer to the illustration below (arrows indicate direction of insertion). Slide the holder in until it stops.



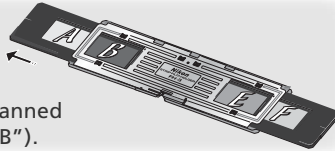
To scan frames 1–3, insert the left end of the holder into the scanner.

To scan frames 4–6, insert the right end of the holder into the scanner.

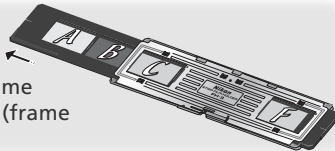
First frame scanned (frame "A").



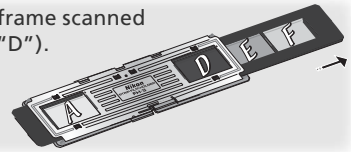
Second frame scanned (frame "B").



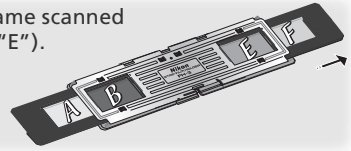
Third frame scanned (frame "C").



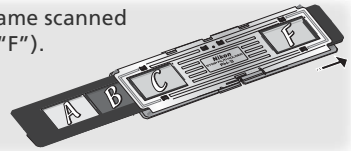
Fourth frame scanned (frame "D").



Fifth frame scanned (frame "E").



Sixth frame scanned (frame "F").



Removing the Holder

After confirming that the status LED is not blinking, remove the FH-3 by hand. The eject button on the MA-21 can not be used when removing the FH-3.



🔧 Remove Film Holders

Remove the FH-3 after use. Errors may occur if the FH-3 is in place when the scanner is turned on. If an error occurs, turn the scanner off and then on again after removing the FH-3.

Maintenance

Caring for the Scanner

Storage

When the scanner is not in use, replace the MA-21 or SA-21 in the adapter slot and turn the scanner off (be sure to remove any optional film holders from the adapter film slot). If the device will not be used for a prolonged period, unplug the scanner and store it in a well-ventilated area where the temperature is between -10°C (14°F) and $+50^{\circ}\text{C}$ ($+122^{\circ}\text{F}$) and the humidity less than 60%. Do not store the scanner where it would be subject to sudden temperature changes or condensation.

When the Scanner Is Not in Use

The MA-21 and SA-21 are equipped with flaps to prevent the accumulation of dust inside the scanner. Be sure one of these adapters is inserted in the scanner when the device is not in use.

Accumulation of dust on the optical parts in the vicinity of the adapter slot could result in scanning errors. Should an error occur, remove dust by sending air into the adapter slot with a blower. Do not insert your fingers into the adapter slot.

Cleaning

Turn the scanner off, unplug the power cable, and place the scanner on a flat, stable surface where it will not be damaged in a fall. Use a blower or a soft dry cloth to remove dust, a soft cloth lightly dampened with neutral detergent or liquid soap to remove tougher stains. Do not use alcohol or other volatile chemicals.

Servicing

Nikon scanners are precision devices. We recommend that the scanner and adapters be taken to an authorized Nikon service representative once every one to two years for inspection, and once every three to five years for servicing (fees are charged for these services). Frequent inspection and servicing are particularly recommended in the case of scanners used in commercial applications.

Transport

Before transporting the scanner:

- 1 Remove the adapter from the adapter slot.
- 2 Turn the scanner on.
- 3 Wait until the status LED stops blinking.
- 4 Turn the scanner off.
- 5 Insert the MA-21.
- 6 Disconnect the power and interface cables.
- 7 Repackage the scanner in the original packing materials (if the original packing materials are unavailable, use materials at least as shock resistant as the originals).

Transporting the Scanner

Nikon scanners are certified for use in the region or country of sale only. Transport or use outside the region or country of sale is at the risk and responsibility of the user.

Caring for the SA-21 Strip-Film Adapter

Storage

When the adapter is removed from the scanner, store it in a well-ventilated area where the temperature is between -10°C (14°F) and $+50^{\circ}\text{C}$ ($+122^{\circ}\text{F}$) and the humidity less than 60%. Do not store the adapter where it would be subject to sudden temperature changes or condensation.

Cleaning

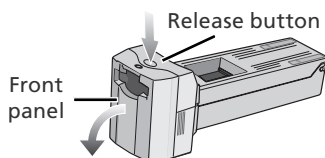
The SA-21 is equipped with internal rollers for feeding and ejecting film. Failure to keep the rollers clean may result in frequent "jams" in which the scanner is unable to feed or eject the film. If jams are occurring more frequently, clean the interior of the adapter as described below. Failure to observe this precaution could result in damaged film.

1 Place the SA-21 on a level, stable surface

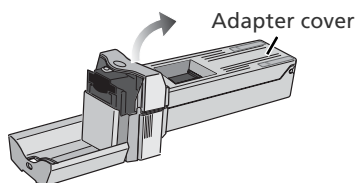
To prevent damage to the adapter, place the SA-21 on a level, stable surface during cleaning.

2 Open the front panel

Press the release button and open the front panel.



3 Remove the adapter cover

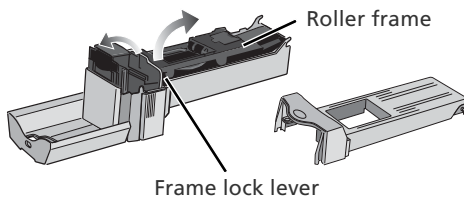


4 Open the roller frame

Release the frame lock lever and open the roller frame.

Opening the Roller Frame

Stop when resistance is felt. Attempting to force the frame open past this point could damage the adapter.

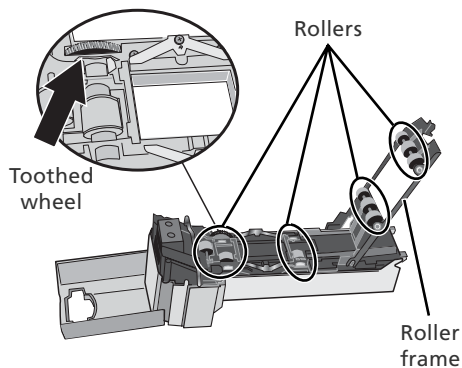


Continuing Jams

If jams continue to occur frequently after the interior of the adapter has been cleaned, consult a Nikon service representative.

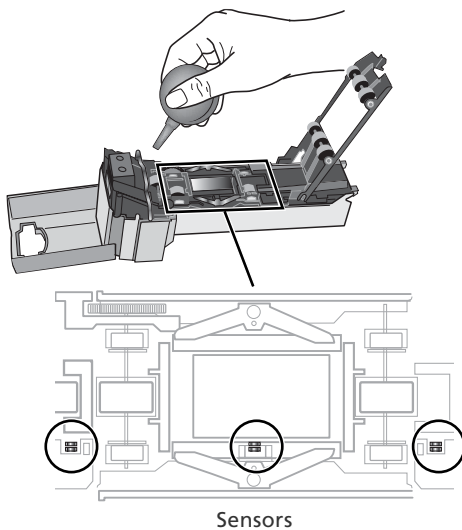
5 Clean the rollers

Using a dry cotton swab or a swab that has been lightly dampened with water and wrung out, clean the rollers while turning the toothed wheel slowly in either direction with the ball of your thumb. Excessive force or the use of a screwdriver or other rigid object could damage the wheel. Dry the rollers with a dry cotton swab or leave the roller frame open until the rollers dry.



6 Clean the sensors and feed mechanism

Remove dust from the interior of the adapter with a blower. Clean the three sensors and the feed mechanism thoroughly, changing the angle of the blower to reach all parts of the mechanism.



Caring for the MA-21 Slide-Mount Adapter

Storage


When the adapter is removed from the scanner, store it in a well-ventilated area where the temperature is between -10°C (14°F) and $+50^{\circ}\text{C}$ ($+122^{\circ}\text{F}$) and the humidity less than 60%. Do not store the adapter where it would be subject to sudden temperature changes or condensation.


Cleaning

Use a blower or a soft dry cloth to remove dust, a soft cloth lightly dampened with neutral detergent or liquid soap to remove tougher stains. Do not use alcohol or other volatile chemicals.

Troubleshooting

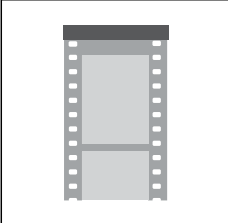
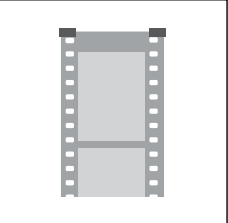

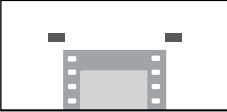
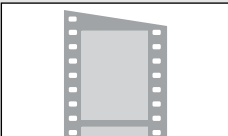
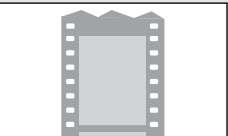
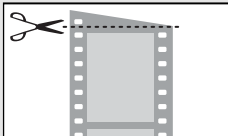
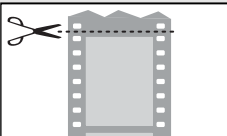
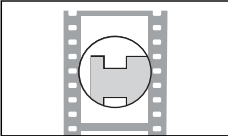
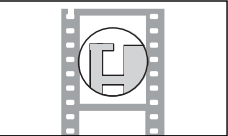
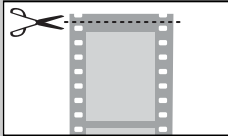
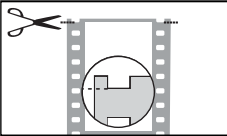
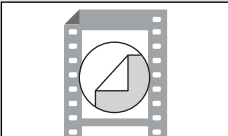
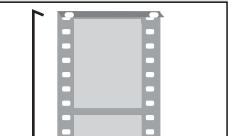
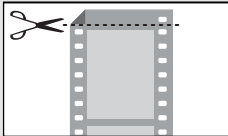
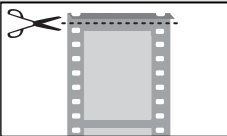
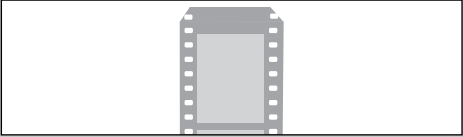
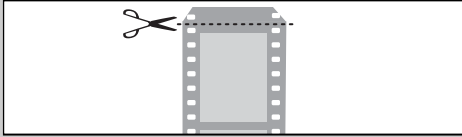
If the scanner fails to function as expected, check the problems described below before consulting the original retailer or Nikon service representative. For more information on solving the problems listed here, refer to the page numbers in the rightmost column.

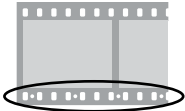
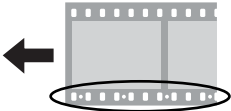
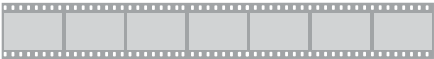
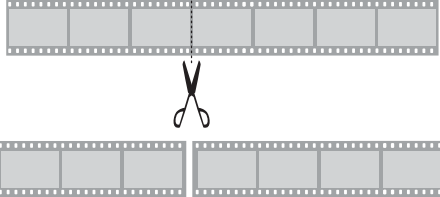



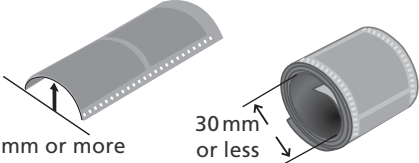
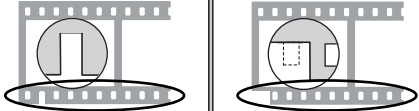
Problem	Possible cause	
Scanner will not turn on (status LED does not light)	<ul style="list-style-type: none"> • Scanner is off Turn the scanner on 	24
	<ul style="list-style-type: none"> • Power cable is not properly connected Return the power switch to the off position and reconnect the power cable. 	21
	<ul style="list-style-type: none"> • Outlet is not receiving power Plug another device into the outlet to determine whether the outlet is working properly. 	—
Status LED flickers (scanner not connected to computer, or computer off)	<ul style="list-style-type: none"> • Scanner hardware malfunction Turn the scanner off and disconnect it from the computer. Wait five seconds and turn the scanner on again. If the problem persists, contact a Nikon service representative. 	—
Status LED flickers (scanner connected to computer)	<ul style="list-style-type: none"> • Scanner hardware malfunction or communications error Turn the scanner and computer off and disconnect the scanner. Wait five seconds and turn the scanner on again. If the status LED flickers when the scanner is turned on, a scanner hardware malfunction has occurred. Contact the original retailer or a Nikon service representative. If the status LED blinks and then glows steadily, turn the scanner off and reconnect it to the computer. After waiting five seconds, turn the scanner on and restart the computer. If the status LED flickers when the computer is restarted, try the following: <ul style="list-style-type: none"> • Disconnect all other devices using the same interface as the scanner • Reinstall Nikon scan 	22, 24
	<ul style="list-style-type: none"> • Update the device drivers for the USB interface (Windows only) • Update the scanner device drivers (Windows only) 	5, 22 10–19 62–64 — 66–67
Poor quality scans	<ul style="list-style-type: none"> • Film is not properly inserted Eject and reinsert film. 	28, 38
	<ul style="list-style-type: none"> • Scanner or film moved during scanning Do not use the scanner in locations subject to shock or vibration. Failure to observe this precaution could result in scanner malfunction. 	20
	<ul style="list-style-type: none"> • Scan window settings require adjustment Adjust settings or use factory defaults. For more information, see the <i>Nikon Scan Reference Manual</i>. 	31–35
Computer does not recognize scanner	<ul style="list-style-type: none"> • Scanner is off Turn the scanner on. 	24
	<ul style="list-style-type: none"> • Scanner turned on with optional film holder inserted After removing the holder from the adapter, turn the scanner off and then on again. 	24, 51
	<ul style="list-style-type: none"> • Computer does not meet minimum system requirements Use a computer that meets the system requirements. 	10, 15
	<ul style="list-style-type: none"> • USB cable is not correctly connected Reconnect the USB cable. 	22

Problem	Possible cause	
Computer does not recognize scanner (continued)	<ul style="list-style-type: none"> • Other USB devices are connected and turned on Disconnect the other USB devices. If the scanner is connected via a USB hub, adapter, or extension cable, disconnect the scanner and reconnect it directly to the computer. If this does not solve the problem, uninstall all software that uses the USB interface and reinstall Nikon Scan. • USB interface is not compatible Confirm that Nikon Scan supports the USB expansion board or card (or, in the case of built-in USB ports, the make of computer). • USB 2.0 expansion board or card is not correctly installed Check the documentation provided with the USB 2.0 expansion board or card. • Scanner device driver is missing or corrupted (Windows only) Check that the device driver is correctly installed. For more information, see the <i>Nikon Scan Reference Manual</i>. • Nikon Scan is not correctly installed Uninstall and reinstall Nikon Scan. For more information, see the <i>Nikon Scan Reference Manual</i>. 	<p>5, 22</p> <p>10, 15, 22</p> <p>—</p> <p>66–67</p> <p>10–19 62–64</p>
Can not insert film	<ul style="list-style-type: none"> • Film can not be used in SA-21 or MA-21 Make sure that the type of film is appropriate to the adapter used. 	28
SA-21 cannot be removed from scanner	<ul style="list-style-type: none"> • Film is still in adapter Eject the film using the eject button in the scan window. • Adapter is not fully inserted in scanner Make sure the adapter is seated in the connectors at the rear of the adapter slot. 	38 25
Film jams in SA-21	<ul style="list-style-type: none"> • Film can not be used in SA-21 Use film that can be scanned in the SA-21, or purchase an optional holder or adapter appropriate to the type of film used. For information on removing jammed film, see “Film Feed Errors (SA-21).” 	58–59 60–61

Scanning Short, Long, or Damaged Film

This section details how to alter long or damaged film strips so that they can be scanned in the SA-21. Strips of 35-mm film that can not be scanned in the SA-21 even with alteration can be scanned in the MA-21 using the optional FH-3 film holder.

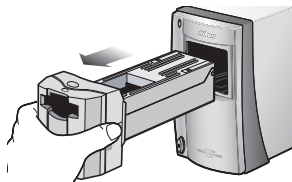
Problem		Solution	
			
Ends of film are taped.		Remove tape or trim ends of film. After removing tape, wipe off all traces of adhesive with soft, dry cloth, being careful not to damage film.	
			
Ends of film have not been cut straight across.		Trim film straight across, being careful not to cut across perforations.	
			
End perforations are cut or torn.		Trim film straight across, being careful not to cut across remaining perforations. If this would result in loss of part of frame, trim only outer edge of perforations as shown above at right.	
			
Ends of film are folded.		Trim folds from film, cutting film straight across and being careful not to cut across perforations.	
			
Ends of film are tapered.		Trim film straight across, being careful not to cut across perforations.	

Problem	Solution
	
<p>Additional perforations along one edge of film.</p>	<p>Insert film in direction shown.</p>
	
<p>Film is more than six frames long.</p>	<p>Cut film into lengths of two to six frames (cut film straight across, being careful not to cut across perforations), or use optional SA-30 roll film adapter (available for 5000 ED only;  48).</p>
	<p>Use optional FH-3 film holder ( 50).</p>
<p>Film is only one frame long.</p>	
	
<p>Film is curled.</p>	
	
<p>Perforations are torn or missing.</p>	

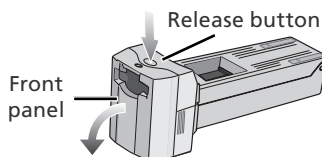
Film Feed Errors (SA-21)

If film jams in the SA-21, the scanner status LED will flicker on and off about five times a second. Normally, the film will be ejected automatically. If the scanner fails to eject the film, follow the instructions below.

- 1 Release the adapter lock mechanism**
If the computer displays an error message, click **OK** to release the adapter lock mechanism.
- 2 Remove the SA-21**
Exercise caution to avoid damaging any film that may be protruding from the rear of the adapter.



- 3 Place the SA-21 on a level, stable surface**
To prevent damage to the adapter, work with the SA-21 on a level, stable surface.
- 4 Open the front panel**
Press the release button and open the front panel.



✓ The SA-21 Lock Mechanism

Attempting to remove the SA-21 without releasing the lock mechanism could interfere with the connection between the adapter and the scanner. If an attempt has been made to remove the SA-21 without releasing the lock mechanism, push the adapter back into the scanner to re-establish the connection. Attempting to remove the adapter by force could damage the adapter or scanner.

✎ Remove Dust from Film

Dust is a common cause of film feed errors. To prevent jams, use a blower to remove dust and lint from film before scanning.

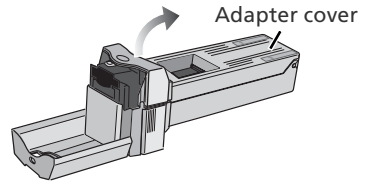
✎ Continuing Errors

If an error is displayed after the film is ejected, it may be necessary to clean the SA-21 as described under "Caring for the SA-21" (54).

✎ Optional Adapters

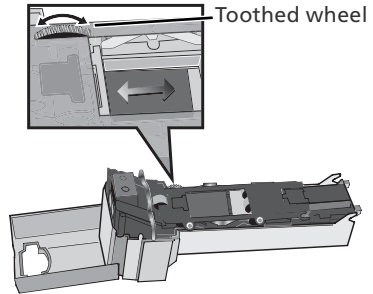
For information on removing jammed film from optional adapters, see the documentation provided with the adapter.

5 Remove the adapter cover



6 Position film at either end of the adapter

If neither end of the film is visible, rotate the toothed wheel until one end protrudes from the adapter.

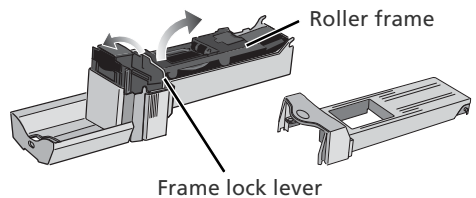


7 Open the roller frame

Release the frame lock lever and open the roller frame.

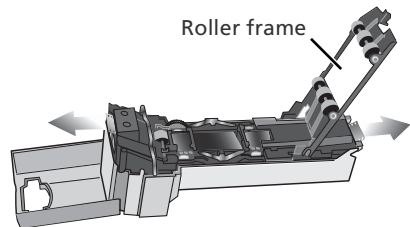
Opening the Roller Frame

Stop when resistance is felt. Attempting to force the frame open past this point could damage the adapter.



8 Remove the film from the adapter

Remove the film by pulling gently on the visible end.



9 Reassemble the adapter

Close the roller frame, replace the adapter cover, and close the front panel.

Before reinserting film in the SA-21, check that it is undamaged and free of dust and lint. If the film has been damaged and can not be scanned in the SA-21, scan the film as described "Scanning Long, Short, or Damaged Film."

Uninstalling Nikon Scan

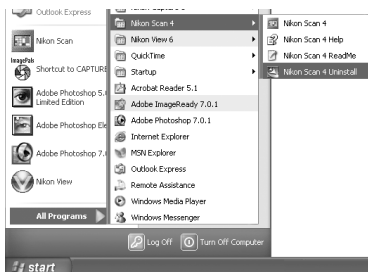
Before Nikon Scan can be reinstalled or a new version installed, the existing version must be removed from the computer (uninstalled). The instructions that follow are divided into Windows and Macintosh sections.

Export Settings

Before uninstalling Nikon Scan, export frequently-used scan window settings to a location outside the Nikon Scan application folder. These settings can then be loaded into the scan window once Nikon Scan has been reinstalled. For more information, see the *Nikon Scan Reference Manual* (on CD).

Windows

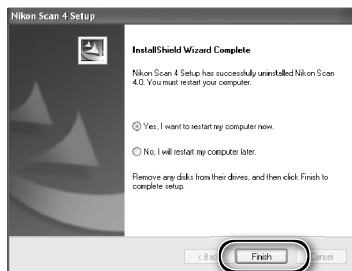
1 Select **Nikon Scan 4 Uninstall**
Click the **Start** button and select **Nikon Scan 4 > Nikon Scan 4 Uninstall** from the program list.



2 Begin the uninstall
The dialog shown at right will be displayed. Click **OK** to begin removing Nikon Scan and all of its components. If the uninstaller encounters read-only files or components shared by another application, a confirmation dialog will be displayed. Read the information displayed carefully before deciding what to do with the affected components.



3 Click **Finish**
Click **Finish** to exit the uninstaller.



Windows XP/Windows 2000 Professional

When installing or uninstalling Nikon Scan under the above operating systems, log in as the "Computer administrator" (Windows XP) or "Administrator" (Windows 2000 Professional).

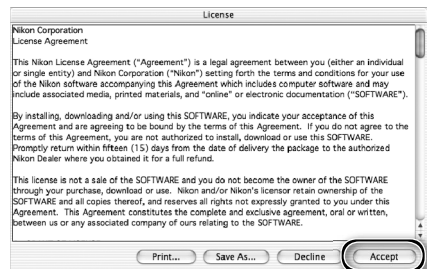
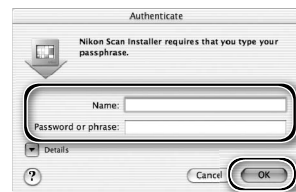
Macintosh

- 1 Quit all applications
- 2 Insert the Nikon Scan CD into the CD-ROM drive
A Nikon Scan 4 CD icon will appear on the desktop. Double-click the icon to open the "Nikon Scan 4" window.
- 3 Double-click the **Welcome** icon in the "Nikon Scan 4" window
- 4 Choose a language
A language-selection dialog will be displayed. Select a language and click **Next**.
- 5 Start the installer
The "Install Center" dialog will be displayed. Open the "Software" panel and click **Easy Install**.

"Authenticate" (Mac OS X Only)

Clicking **Easy Install** in the software panel displays the "Authenticate" dialog shown at right. Enter the administrator name and password and click **OK**.

- 6 Click **Accept**
The license agreement will be displayed. Click **Accept**.

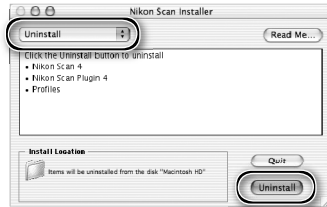


7 Click **Continue...**

The ReadMe file will be displayed. Click **Continue...** to display the “Nikon Scan Installer” dialog.

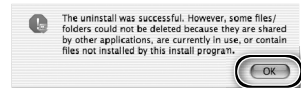
8 Select **Uninstall**

Select **Uninstall** from the menu at the top left corner of the installer dialog and click the **Uninstall** button to remove Nikon Scan and its components from the computer.



9 Click **OK**

A confirmation dialog will be displayed when removal is complete. Click **OK**.



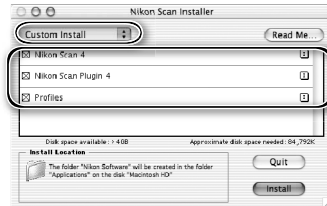
Custom Install (Macintosh Only)

The Macintosh version of Nikon Scan offers a custom install option that can be used to install selected program components as described below.

1 Display the “Nikon Scan Installer” dialog
After quitting any applications that may be running, insert the Nikon Scan CD in the CD-ROM drive and display the “Nikon Scan Installer” dialog as described in steps 2–7 of the “Uninstall: Macintosh” section (63–64).

2 Select **Custom Install**
Select **Custom Install** from the menu at the top left corner of the installer dialog and select or deselect components for installation by clicking the boxes to their left.

3 Click **Install**
Click **Install** to begin installation of the selected components. Complete installation as described in steps 8–13 of “Installing Nikon Scan: Macintosh” (17–18).



Checking Device Registration (Windows Only)

The first time the scanner is connected and turned on following installation of Nikon Scan, Windows will “register” the scanner with the Device Manager. If the computer fails to detect the scanner or the scanner does not function as expected when Nikon Scan is running, the computer may not have correctly registered the scanner. Check that the device drivers are correctly installed.

1 Make sure the scanner is connected and turned on

2 Display the “System Properties” dialog

Windows XP

Select **Control Panel** from the **Start** menu, open **Performance and Maintenance**, and click **System**.

Windows 2000 Professional

Select **Settings**>**Control Panel** from the **Start** menu and double-click the **System** icon.

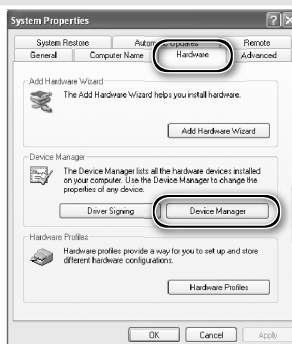
Windows Me, Windows 98 SE

Select **Control Panel** from the **Start** menu and double-click the **System** icon.

3 Open the Device Manager

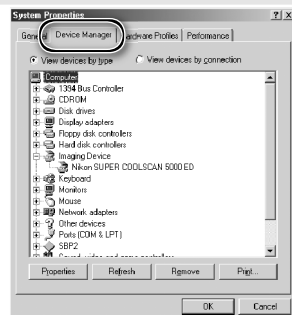
Windows XP, Windows 2000 Professional

Open the “Hardware” panel and click the **Device Manager** button.



Windows Me, Windows 98 SE

Click the “Device Manager” tab.

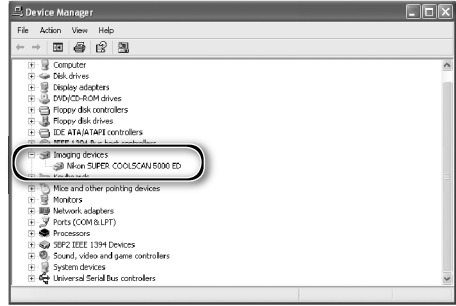


4 Check that the scanner is listed as an imaging device

Click the "+" next to "Imaging devices" (Windows XP, Windows 2000 Professional) or "Imaging Device" (Windows Me, Windows 98 SE) and confirm that the scanner is listed.

If the Scanner Is Not Listed

If the scanner is not listed or appears next to a "!", "?", or "x", the drivers have not been correctly installed. Disconnect the scanner and uninstall Nikon Scan, then reinstall Nikon Scan and reconnect the scanner.



Specifications

SUPER COOLSCAN 5000 ED (LS-5000 ED)

Media	Negatives and positives, in color and monochrome						
35-mm slides	Slides with mounts 1.0–3.2 mm thick, 49–50.8 mm wide. Optional SF-210 slide feeder can be used to scan up to 50 slides with mounts 1.5 mm thick.						
35-mm film strips	2–6 frames; 2–40 frames with optional SA-30 roll film adapter. Strips of 1–6 frames can be scanned with optional FH-3 film holder.						
APS (IX-240) film	Cartridges of 15, 25, and 40 frames can be scanned with optional IA-20 (S) adapter.						
Glass microscope slides	Prepared glass microscope slides (26×76 mm, 0.8–1.5 mm thick) can be scanned with optional FH-G1 film holder.						
Aperture/scan range	MA-21, SF-210	SA-21, SA-30	IA-20 (S)				
Aperture	25.1 × 36.8 mm	25.1 × 38.0 mm	18.6 × 28.4 mm				
Scan range	3946 × 5782 pixels	3946 × 5959 pixels	2916 × 4453 pixels				
Effective aperture	Same as slide mount	23.4 × 36.0 mm	16.1 × 27.4 mm				
Scanning system	Fixed film, movable plane single-pass optical scanning system						
Light source	Red, Green, Blue, and Infrared (RGBIr) LEDs						
Image sensor	Linear CCD image sensor with 3964 pixels in two adjacent lines						
Color separation	Performed by RGB LEDs						
Optical resolution	Up to 4000 pixels per inch						
A/D conversion	16 bits per color						
Output	Full color or grayscale at 8 or 16 bits per channel						
Focus	Auto and manual						
Scanning time (Time to display image when Preview button is clicked, or when Scan button is clicked following preview. Times do not include autofocus.)*	Scan Image Enhancer	ICE	ROC	GEM	DEE	Preview	Scan
	Off	Off	Off	Off	Off	11 s	20 s
	On	Off	Off	Off	Off	11 s	20 s
	Off	On	Off	Off	Off	12 s	46 s
	Off	Off	On	Off	Off	34 s	35 s
	Off	Off	Off	On	Off	34 s	1 min 52 s
	Off	Off	Off	Off	On	11 s	1 min 9 s
	On	On	On	On	On	41 s	2 min 42 s
Interface	USB 2.0 compliant						
Power supply	AC 100–240 V, 50/60 Hz						
Operating environment	+10–+35°C (+50–+95°F) at a humidity of 20–60%						
Size and weight	96 × 172 × 315 mm/3.8" × 6.8" × 12.4" (W × H × D), 3 kg/6.6 lb (approx.)						
Orientation	Horizontal or vertical (with SF-210: horizontal only; with SA-30: vertical only)						

* Times for positive film scanned with MA-21 at input resolution of 4000 dpi and bit depth of 16 bits (CMS on) using Nikon Scan 4 on Pentium 4 3.06 GHz FSB 533 MHz computer with 1 GB RAM, Windows XP Professional, and USB 2.0 High Speed.

COOLSCAN V ED (LS-50 ED)

Media	Negatives and positives, in color and monochrome
35-mm slides	Slides with mounts 1.0–3.2 mm thick, 49–50.8 mm wide.
35-mm film strips	2–6 frames. Strips of 1–6 frames can be scanned with optional FH-3 film holder.
APS (IX-240) film	Cartridges of 15, 25, and 40 frames can be scanned with optional IA-20 (S) adapter.
Glass microscope slides	Prepared glass microscope slides (26×76 mm, 0.8–1.5 mm thick) can be scanned with optional FH-G1 film holder.

Aperture/scan range	MA-21	SA-21	IA-20 (S)
Aperture	25.1×36.8 mm	25.1×38.0 mm	18.6×28.4 mm
Scan range	3946×5782 pixels	3946×5959 pixels	2916×4453 pixels
Effective aperture	Same as slide mount	23.4×36.0 mm	16.1×27.4 mm

Scanning system	Fixed film, movable plane single-pass optical scanning system
------------------------	---

Light source	Red, Green, Blue, and Infrared (RGBIr) LEDs
---------------------	---

Image sensor	Linear CCD image sensor with 3964 pixels
---------------------	--

Color separation	Performed by RGB LEDs
-------------------------	-----------------------

Optical resolution	Up to 4000 pixels per inch
---------------------------	----------------------------

A/D conversion	14 bits per color
-----------------------	-------------------

Output	Full color or grayscale at 8 or 16 bits per channel
---------------	---

Focus	Auto and manual
--------------	-----------------

Scanning time (Time to display image when Preview button is clicked, or when Scan button is clicked following preview. Times do not include autofocus.)*	Scan Image Enhancer	ICE	ROC	GEM	DEE	Preview	Scan
	Off	Off	Off	Off	Off	14 s	38 s
	On	Off	Off	Off	Off	15 s	38 s
	Off	On	Off	Off	Off	17 s	1 min 13 s
	Off	Off	On	Off	Off	49 s	51 s
	Off	Off	Off	On	Off	49 s	2 min 4 s
	Off	Off	Off	Off	On	15 s	2 min 25 s
	On	On	On	On	On	1 min 7 s	3 min 9 s

* Times for positive film scanned with MA-21 at input resolution of 4000 dpi and bit depth of 14 bits (CMS on) using Nikon Scan 4 on Pentium 4 3.06GHz FSB 533MHz computer with 1 GB RAM, Windows XP Professional, and USB 2.0 High Speed.

Interface	USB 2.0 compliant
------------------	-------------------

Power supply	AC 100–240V, 50/60 Hz
---------------------	-----------------------

Operating environment	+10–+35°C (+50–+95°F) at a humidity of 20–60%
------------------------------	---

Size and weight	96×172×315 mm/3.8″×6.8″×12.4″ (W×H×D), 3 kg/6.6 lb (approx.)
------------------------	--

Orientation	Horizontal or vertical
--------------------	------------------------

Supplied Adapters

MA-21 SLIDE MOUNT ADAPTER

Film	Mounted 35-mm slides (1.0–3.2 mm thick, 49–50.8 mm wide)
Size and weight	71.7 × 59 × 158.3 mm/2.8" × 2.3" × 6.2" (W × H × D), 100 g/3.5 oz. (approx.)
Operating mode	Can be used in both horizontal and vertical installations

SA-21 STRIP FILM ADAPTER

Film	35-mm negatives or positives (color or monochrome) in strips of 2–6 frames
Feed mechanism	Automatic with built-in motor
Power source	Supplied from scanner
Size and weight	80 × 70 × 230 mm/3.1" × 2.8" × 9.1" (W × H × D), 500 g/1 lb 1.6 oz. (approx.)
Operating mode	Can be used in both horizontal and vertical installations

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