MINOLTA

The essentials of imaging

www.minoltaeurope.com
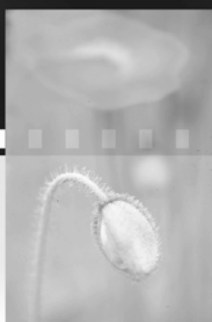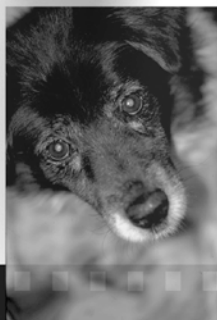
DiMAGE Scan Multi
PRO

E | INSTRUCTION MANUAL

9224-2887-11   H-A108

Thank you for purchasing the Minolta DiMAGE Scan Multi PRO. The DiMAGE Scan Multi PRO AF-5000 is a Multiple format film scanner capable of scanning 35mm, 120/220 (6x4.5, 6x6, 6x7, 6x8, 6x9).

This manual has been designed to help you understand the operation of your scanner. Please read this manual thoroughly to realize all the benefits of your scanner.

The instructions in this manual assume you have a working knowledge of the operating system for your computer (Windows®98, Windows®Me, Windows®2000 Professional, Windows NT® or Macintosh OS) and its conventions. Familiarity with the mouse and standard operating system menus and commands is necessary before operating the driver software for the DiMAGE Scan Multi PRO.

This manual does not give instruction in the:
- basic use of personal computers.
- use of Windows®98, Windows®2000 Professional, Windows®Me, Windows NT® or Mac OS 8.6 to 9.1.
- use of Adobe Photoshop, Paint Shop Pro, or CorelPhotoPaint.

The examples in this manual use Windows software. The appearance of some screens may differ from the examples when using Windows®Me or the Macintosh OS 9.1 operating system.

Microsoft, Windows®, Windows®98, Windows®Me, Windows® 2000 Professional, and Windows NT® are registered trademarks of the Microsoft Corporation.

Macintosh™, Apple®, and Power Macintosh® are registered trademarks of Apple Computer, Inc.

Adobe® and Photoshop™ are registered trademarks of Adobe Systems Incorporated.

CorelPhotoPaint™ is a trademark of the Corel Corporation.

Paint Shop Pro is the copyright of Met's Corporation.

Digital ICE3TM, Digital ICETM, Digital ROCTM and Digital GEMTM are trademarks of registered trademarks and technolgies of Applied Science Fiction,Inc in U. S. A.

Other corporate and product names are the trademarks and registered trademarks of their respective companies.

- Changes or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This manual may not be copied in part or whole without prior written permission from Minolta Co., Ltd. ©2001 Minolta Co., Ltd.
- Every necessary caution has been taken to ensure the accuracy of this instruction manual. Please contact us if you have any questions, find any errors, or notice missing information.
- Minolta is not responsible for loss, damage, or other results occurring during the operation of this product.

As an ENERGY STAR Partner, Minolta has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

This mark certifies that this product meets the requirements of the EU (European Union) concerning interference causing equipment regulations. CE stands for Conformité Européenne.

Film Scanner:DiMAGE Scan Multi PRO AF-5000

Tested to comply with FCC standards.

FOR HOME OR OFFICE USE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To meet FCC regulations, the SCSI cables and IEEE 1394 cables used with this scanner must be equipped with ferrite cores.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Tested by the Minolta Corporation 101 Williams Drive Ramsey, New Jersey 07446 USA

The sound pressure level is less than 70dB according to ISO 3744 or ISO 7779.

Please read and understand each caution before using this product.

⚠ WARNING

• Use only within the voltage range specified on the unit. Inappropriate current may cause damage or injury through fire or electric shock.
• Do not disassemble this product. Electric shock may cause injury if a high voltage circuit inside the product is touched. Take the product to a Minolta Service Facility when repairs are required.
• Immediately unplug the unit and discontinue use if the product is dropped or subjected to an impact in which the interior is exposed. The continued use of a damaged product may cause injuries or fire.
• Store this product out of reach of children. Be careful when around children, not to harm them with the product or parts.
• Do not operate this product or handle the power cord with wet hands. Do not place a container with liquid near the product. If liquid comes in contact with the product, immediately unplug the unit. The continued use of a product exposed to a liquid may cause damage or injury through fire or electric shock.
• Do not insert hands, inflammable objects, or metal objects such as paper clips or staples into this product. It may cause damage or injury through fire or electric shock. Discontinue use if an object enters the product.
• Do not use the product near inflammable gases or liquids such as gasoline, benzine, or paint thinner. Do not use inflammable products such as alcohol, benzine, or paint thinner to clean the product. The use of inflammable cleaners and solvents may cause an explosion or fire.
• Do not damage, twist, modify, heat, or place heavy objects on the power cord. A damaged cord may cause damage or injury through fire or electric shock.
• If the product emits a strange odor, heat, or smoke, discontinue use. Immediately unplug the power cord taking care not to burn yourself. The continued use of a damaged product or part may cause injuries or fire.
• Take the product to a Minolta Service Facility when repairs are required.

⚠ CAUTION

• This product should only be operated in the normal position with the feet on the desktop. Inappropriate placement may result in fire.
• Damage or injury through fire or electric shock may result if the product is used or stored in the following conditions:
  In humid or dusty environments
  In direct sunlight or hot environments
  In smoky or oily areas
  In unventilated areas
  On unstable or unlevel surfaces
• Insert the plug securely into the electrical outlet.
• Do not use if the cord is damaged.
• Do not connect the ground to a gas pipe, telephone ground, or water pipe. Improper grounding can result in injury from electric shock.
• Unplug the product when cleaning or when the unit is not in use for long periods.
• Periodically check that the power cord is not damaged and the plug is clean. Dust and dirt that may collect between the prongs of the plugs may result in fire.

PACKAGE CONTENTS

THE FOLLOWING CONTENTS SHOULD BE INCLUDED IN THIS PACKAGE

❶ Minolta DiMAGE Scan Multi PRO

❷ 35mm film holder (FH-P1), Slide mount holder (SH-P1) and Universal holder (UH-P1)

❸ 120/220 (6x4.5, 6x6, 6x7, 6x8, 6x9) film attachments with glass and glassless

❹ Film Masks

❺ Ultra SCSI D-sub half-pitch 50-pin connector cable

❻ IEEE1394 connector cable

❼ AC power cord

❽ CD-ROM for DiMAGE Scan Multi PRO software and PDF manuals

❾ Warranty card and Quick Reference Guide
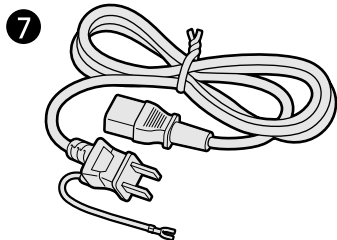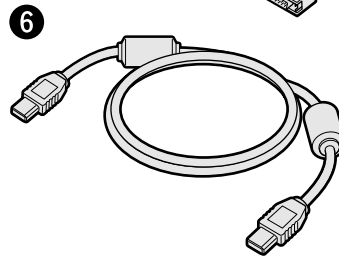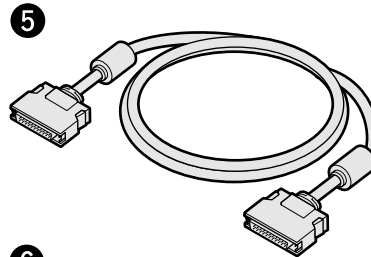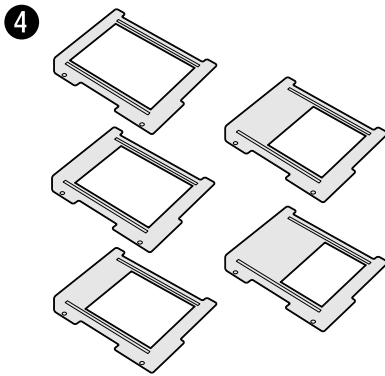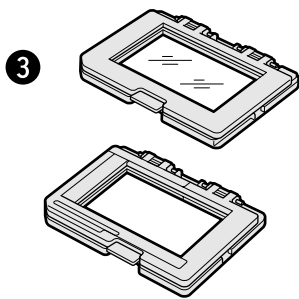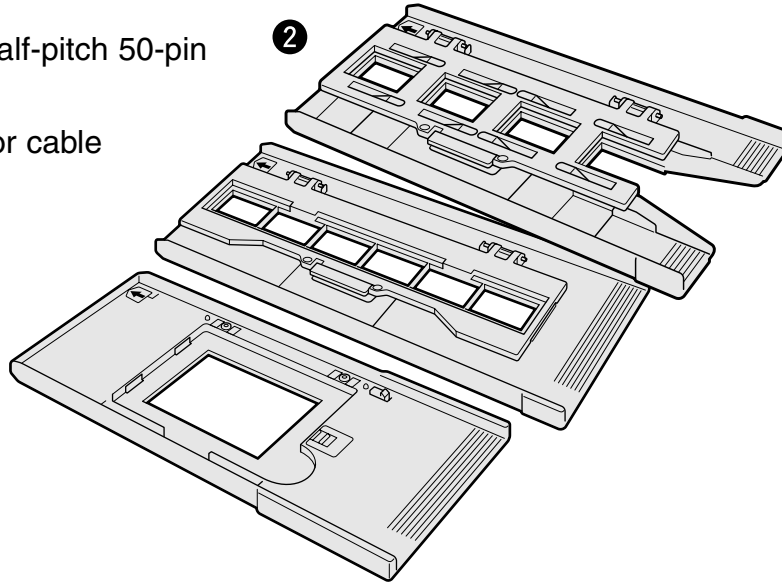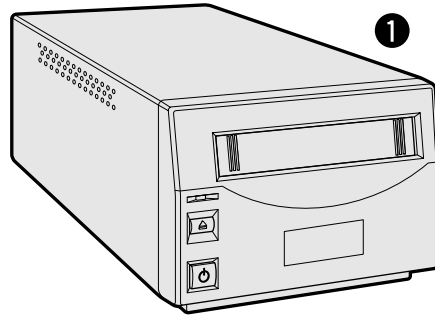
(Shape of plug varies with destination)
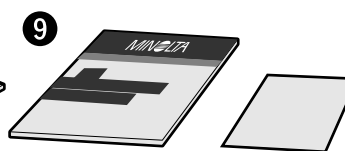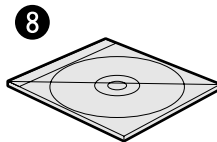
The details of the contents are described on the following page.

TABLE OF CONTENTS

IMAGE CORRECTION

Interface:	SCSI	IEEE 1394
CPU:	Pentium 166MHz or later processor (or better).	Pentium II or later processor (or better).
	Support cannot be provided for custom or home built machines.(*1*2) Pentium III processor is recommended when scanning with 16 bit output or using the Digital ICE/ROC/GEM functions.	
Operating System:	Windows®98, Windows®98 Second Edition, Windows®Me, Windows®2000 Professional Windows NT®4.0	Windows®Me, Windows®2000 Professional
Memory:	A minimum of 96 MB application RAM in addition to the requirements for the OS and Adobe Photoshop™. 256 MB or more when scanning with 16 bit output or using the Digital ICE/ROC /GEM functions. (512 MB or more is recommended.)	
Hard Disk Space:	About 2 GB or more of available hard disk space. About 6 GB or more of available hard disk space when scanning with 16 bit output or using the Digital ICE/ROC/GEM functions. (8 GB or more is recommended.)	
Monitor:	1024 x 768 pixels is recommended. 640 x 480 can be used.	
Applications:	TWAIN driver is compatible with Photoshop Ver.4.0.1, Ver.5.0.2, Ver.5.5 and Ver.6.0. Photoshop 5.0LE	
Recommended Board:	Adaptec: SCSI CARD 19160, SCSI CARD 29160, SCSI CARD 29160N	Adaptec Fireconnect 4300 PROCOMP SpeedDemon 400P • OHCI compatible IEEE 1394 port (*3) as standard interface.

*1   Only for PCs with pre-installed operating systems.
*2   Excludes notebook PCs.
*3   Non-DV-dedicated IEEE port guaranteed by PC manufacturers.

Interface:	SCSI	FireWire (IEEE 1394)
CPU:	Power PC 604 or later	Power Macintosh G3 or later
	Excludes notebook PCs. Power Macintosh G4 processor is recommended when scanning with 16 bit output or using the Digital ICE/ROC/GEM function.	
Operating System:	Mac OS 8.6 to 9.1	
Memory:	A minimum of 64 MB application RAM in addition to the requirements for the Mac OS and Adobe Photoshop™. 256 MB or more when loading with 16 bit or using the Digital ICE/ROC/GEM functions.	
Hard Disk Space:	About 2GB or more of available hard disk space. About 6 GB or more of available hard disk space when loading with 16 bit or using the Digital ICE/ROC/GEM functions. (About 8 GB or more is recommended.)	
Monitor:	1024 x 768 pixels is recommended. 640 x 480 pixels can be used.	
Applications:	Plug-in is compatible with Photoshop Ver. 5.02, Ver. 5.5 and Ver. 6.0. Photoshop 5.0LE.	
Recommended Board:	Adaptec: PowerDomain 29160N, PowerDomain 2930U, PowerDomain 2940UW, PowerDomain 2940U2W.	Only the standard built-in model made by Apple Computer, Inc.

SCANNER — NAMES OF PARTS

❶ Film-slot door

❷ Indicator lamp

❸ Film Holder Eject button

❹ Power switch

❺ SCSI ID switch

❻ IEEE 1394 interface connector

❼ Dip switches

❽ AC power socket

❾ SCSI Interface connector
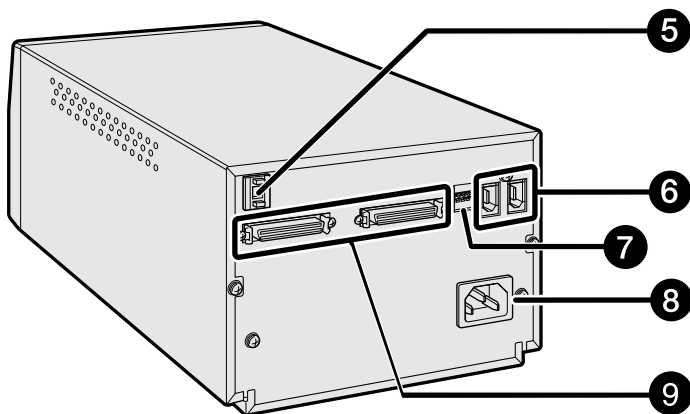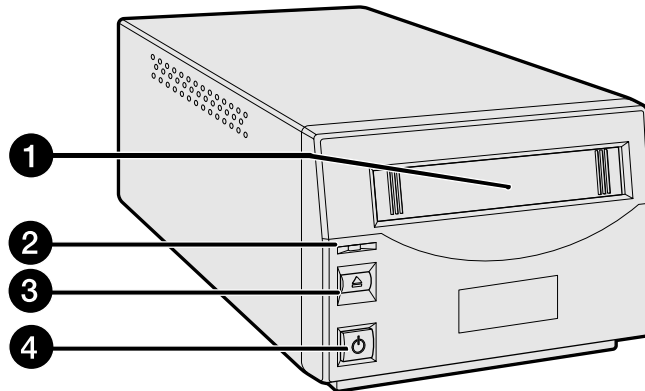
SCANNER SETUP

SCANNER SETUP FLOW
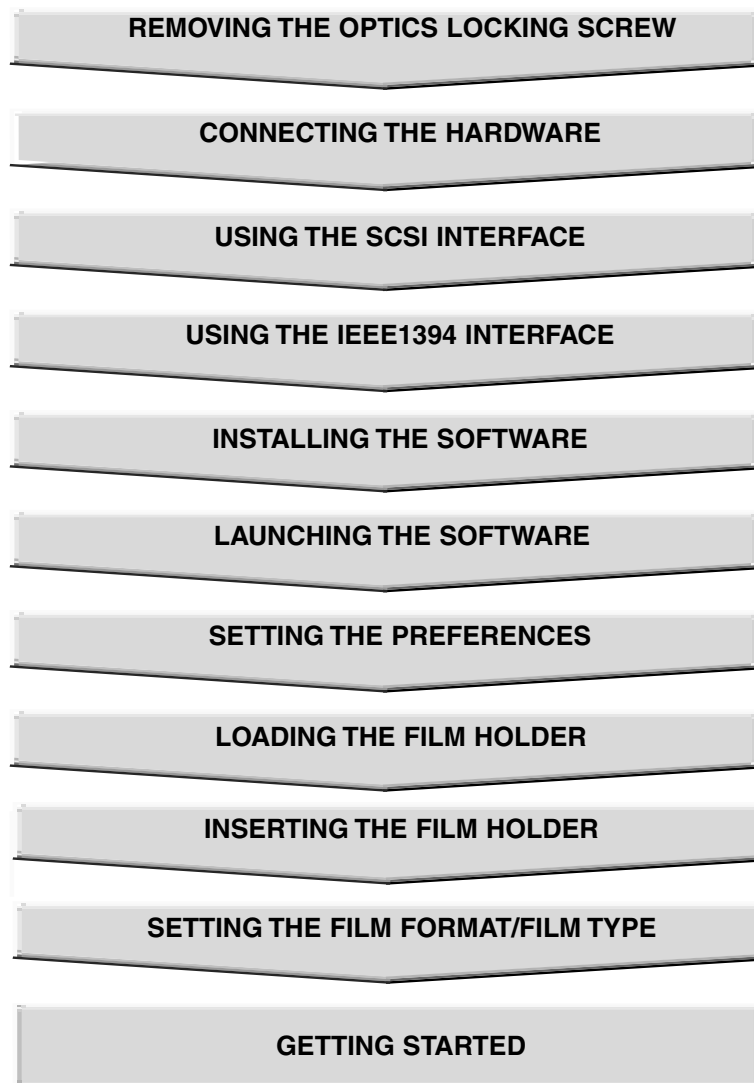
REMOVING THE OPTICS LOCKING SCREW

CONNECTING THE HARDWARE

USING THE SCSI INTERFACE

USING THE IEEE1394 INTERFACE

INSTALLING THE SOFTWARE

LAUNCHING THE SOFTWARE

SETTING THE PREFERENCES

LOADING THE FILM HOLDER

INSERTING THE FILM HOLDER

SETTING THE FILM FORMAT/FILM TYPE

GETTING STARTED

Before using the scanner for the first time, remove the optics locking screw on the bottom panel of the scanner with a flat-head screwdriver. As the removed locking screw is necessary when transporting the scanner, insert it into the storage posistion, for future use.
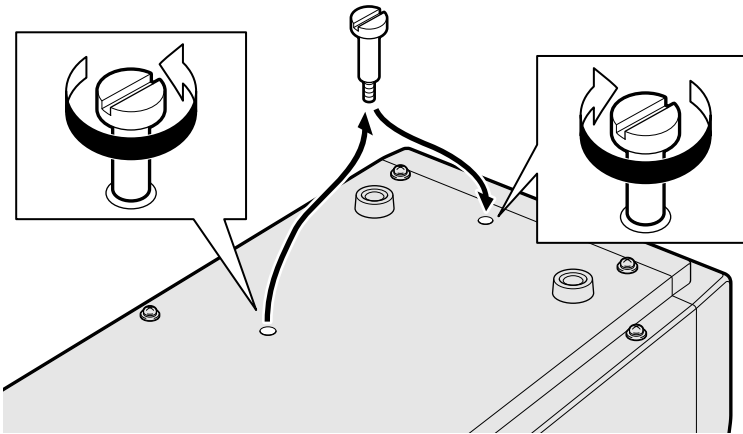
TRANSPORTING THE SCANNER

When transporting the scanner, move the optics to the locking position to prevent damage and then tighten the optics locking screw on the bottom panel of the scanner.

1. **When the DiMAGE Scan Multi PRO Utility Software is in operation:**

   Windows:
   Press Ctrl, Shift and L key simultaneously.
   Macintosh:
   Press *Command* ⌘, Shift and L key simultaneously.

2. **When "The optics will be moved to the locked position." appears on the screen, click on [OK].**
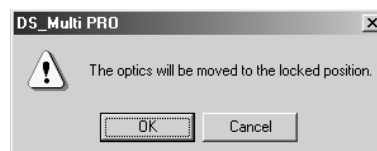
3. **"The optics have been moved. Turn the scanner off and lock the locking pin." appears on the screen, click on [OK].**

   • Turn off the power of the scanner and tighten the optics locking screw.

14

SETTING THE DIP SWITCHES

Before connecting the scanner to a computer turn off the power of the scanner, then, decide which interface you will be using, and use the Dip switch No. 4 to set the scanner to the selected interface. Set additional Dip switches for termination and auto power save if necessary.
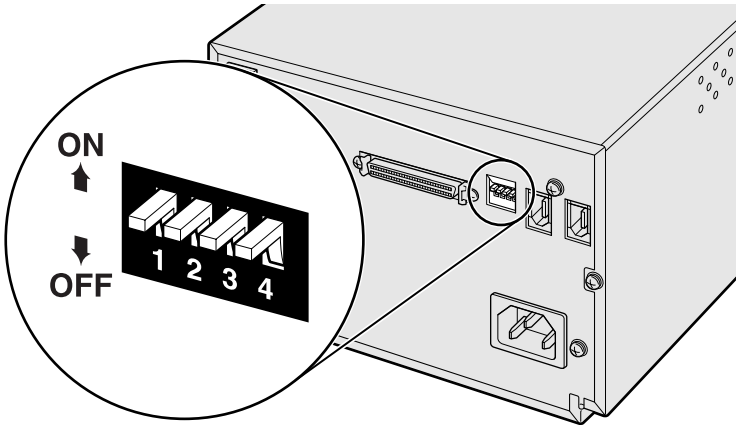
Switch No.	Function	ON	OFF
1	SCSI terminator	ON	OFF
2	Auto Power Save	ON	OFF
3	—	—	—
4	Select Interface	SCSI	IEEE 1394

Switch No. 1: SCSI Terminator

Set when selecting SCSI as the interface to be used to connect the scanner to a computer. If this scanner is the last device of the SCSI chain, set to ON. Switch No. 1 is factory preset to ON.

Switch No. 2: Auto Power Save

Set to "ON" (up), if you want the fluorescent light to turn off automatically, when you are not going to use it for about 2 hours. In order to save electricity and the life of the fluorescent light, we recommend that you have it "ON". The default setting is ON.

Switch No. 3: Inactive

Switch No. 4: Selecting an Interface

The selected interface can be switched between SCSI and IEEE 1394 when the scanner is connected to a computer. The SCSI and IEEE 1394 cannot be used simultaneously. Switch No. 4 is factory preset to SCSI.

USING THE SCSI INTERFACE

A SCSI ID is a unique address you assign to each SCSI device connected to your computer. The SCSI ID range of your computer is from 0 to 7, however some ID's are already occupied.

	Occupied SCSI ID
IBM PC/AT	7 - SCSI host adapter
Macintosh	0 - internal hard drive* 3 - internal CD ROM drive** 7 - operating system

  * IDE Macintosh systems do not use SCSI ID 0 for the hard drive.
  ** SCSI ID 3 is available on the external bus on Macintosh systems with a dual bus.

Setting the SCSI ID

1. **Turn off the computer and all connected SCSI devices.**

2. **Turn the SCSI terminator switch (Dip switch 4) to ON.**

3. **Confirm which SCSI IDs are not being used.**

4. **Set the SCSI ID using the upper or lower SCSI ID select buttons.**
    - Two operating SCSI devices in the same SCSI chain cannot share a SCSI ID.
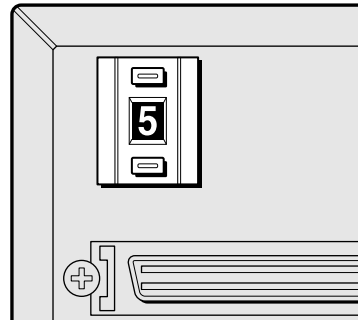
Connecting the SCSI Cable

This scanner has been packaged with the SCSI cable SC-P1. See your dealer if you require a different SCSI cable.
- To meet FCC regulations, the SCSI cables used with this scanner must be equipped with ferrite cores.

**BEFORE YOU BEGIN…
TURN THE COMPUTER AND ALL
CONNECTED DEVICES OFF.**

1. **Place the scanner on a level surface.**

2. **Connect one end of the SCSI cable to either SCSI port on the back of the scanner**
   - Either SCSI port can be used for other configurations, there is no dedicated in or out port.

3. **Connect the other end of the SCSI cable to the SCSI port on the computer or the last device in the SCSI chain.**
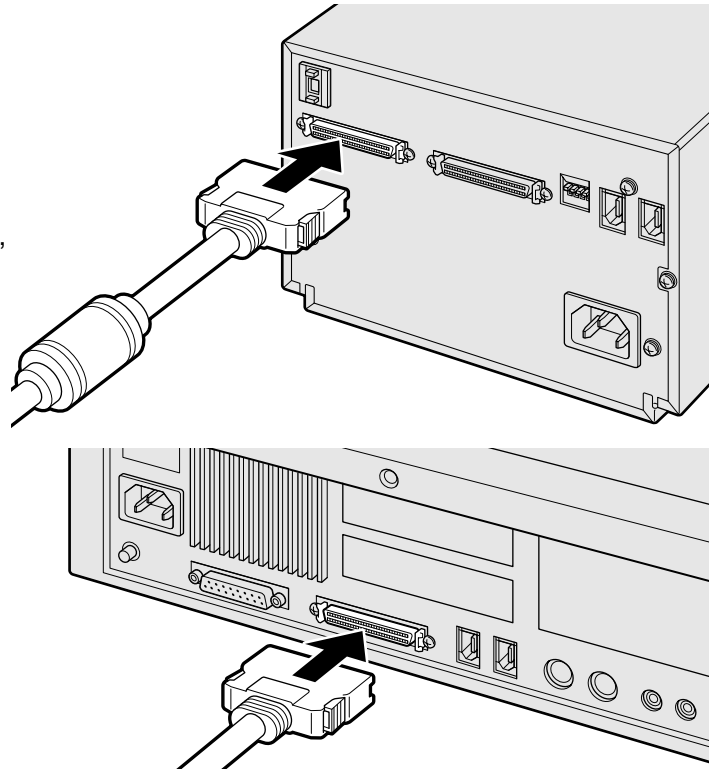
IF THERE ARE OTHER DEVICES IN YOUR SCSI CHAIN…

4. **Turn the SCSI terminator switch (Dip switch 1) to OFF.**
   - An external terminator is not necessary with this scanner.

5. **Plug the SCSI cable from the next device into the open port on the back of the scanner.**
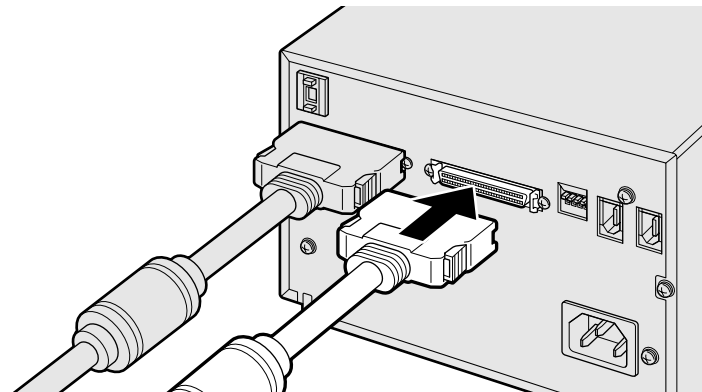
6. **Plug the power cord into the scanner's AC socket, then plug it into a grounded outlet.**

NOTE:

This device is to be used with a power source within the voltage as specified on the back of unit.
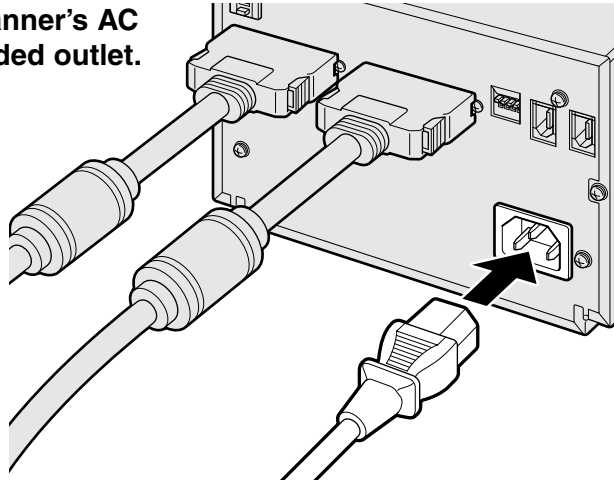
IF THE DIMAGE SCAN MULTI PRO IS THE LAST OR ONLY DEVICE IN YOUR SCSI CHAIN…

4. **Turn the terminator switch (Dip switch 1) to ON.**
   - An external terminator is not necessary with this scanner.

5. **Plug the power cord into the scanner's AC socket, then plug it into a grounded outlet.**

NOTE:

Terminating the SCSI chain helps to suppress electronic noise in the SCSI chain.
Not terminating the SCSI chain can cause slowdowns, data errors, crashes, and other unpredictable errors.

NOTE:

This device is to be used with a power source within the voltage as specified on the back of unit.
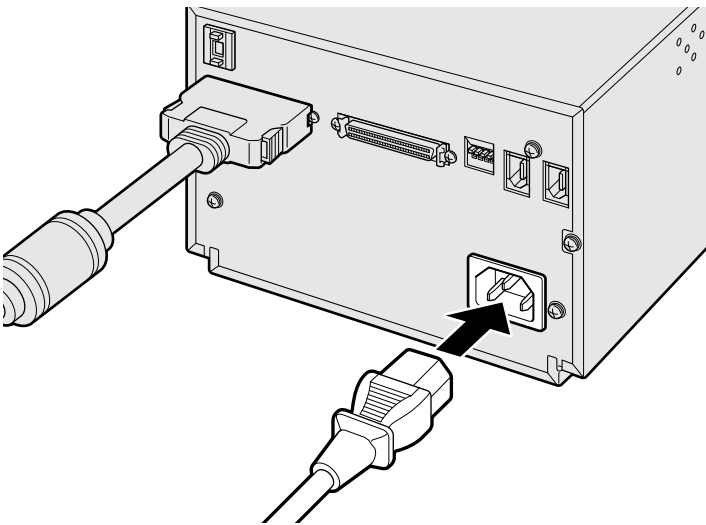
USING THE IEEE 1394 INTERFACE

The driver software only supports IEEE1394 connection with Windows®2000, Windows®Me and Macintosh OS.
This scanner has been packaged with the IEEE 1394 cable. For details, refer to the page 106.
With Macintosh made by Apple Computer, Inc., an IEEE1394 Interface is named "FireWire". Therefore, interface
names of other related peripheral equipment may also be called "FireWire".

Before connecting the IEEE1394 Interface unit to a personal computer, install the driver
software of the DiMAGE Scan Multi PRO (see pages 20 and 23).

1. **Turn the SCSI terminator
    switch (Dip switch 4) to OFF.**

2. **Connect one end of the IEEE
    1394 cable to either IEEE
    1394 port on the back of the
    scanner.**
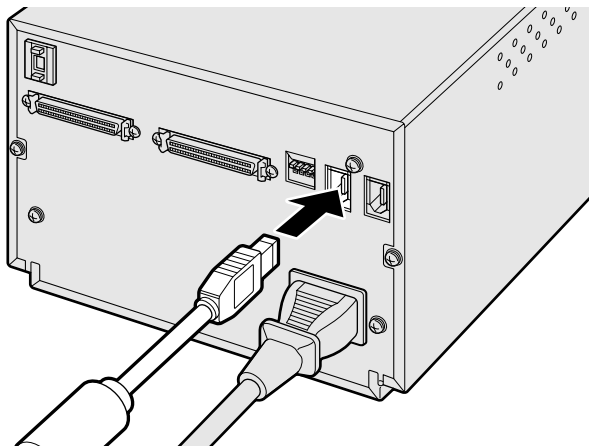
3. **Connect the other end of the IEEE 1394 cable to
    the IEEE 1394 port on the computer or the IEEE
    1394 Hub terminal.**
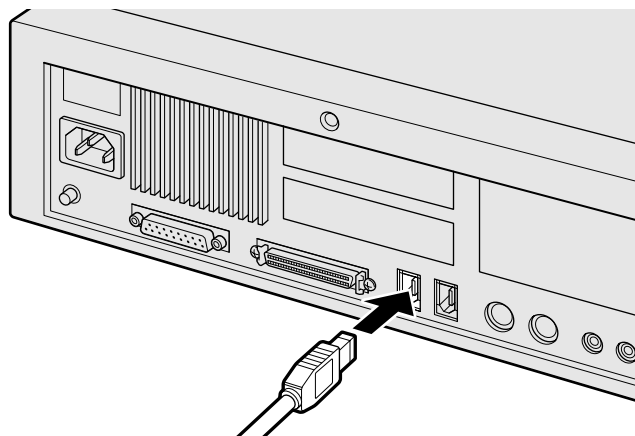
Example:
Connect the IEEE 1394 Hub terminal
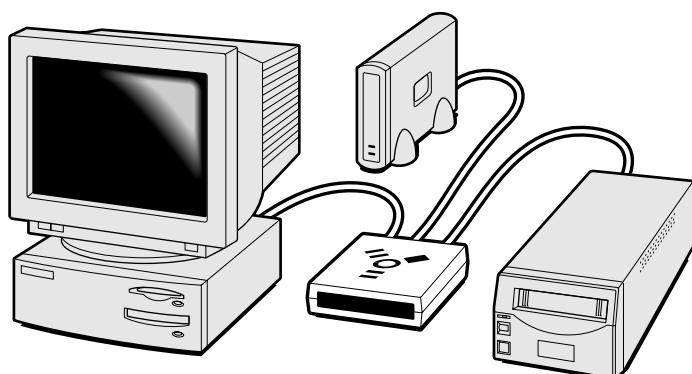
* The maximum number of items you can
   connect to this terminal is 63. However, if
   you use a daisy chain it is 16.

WINDOWS®98 / WINDOWS®2000 / WINDOWS®ME / WINDOWS NT®

• In the procedure below, the hard disk drive for system startup is drive C, and the CD-ROM drive is drive D.
• Make sure the scanner isn't connected to the computer when you install the software.

1. **Turn on the computer to start Windows®.**

2. **Insert the DiMAGE Scan Multi PRO CD-ROM into the CD-ROM drive.**
   In a little while, a splash screen for Setup will appear.

3. **Click on [Starting up the DiMAGE Scan Multi PRO installer].**
   • In a little while, the program decompression screen will appear followed by the InstallShield Wizard program screen, after that the program will start automatically.
   • To confirm the contents of the DiMAGE Scan Multi PRO CD-ROM, click on [To access the CD-ROM].
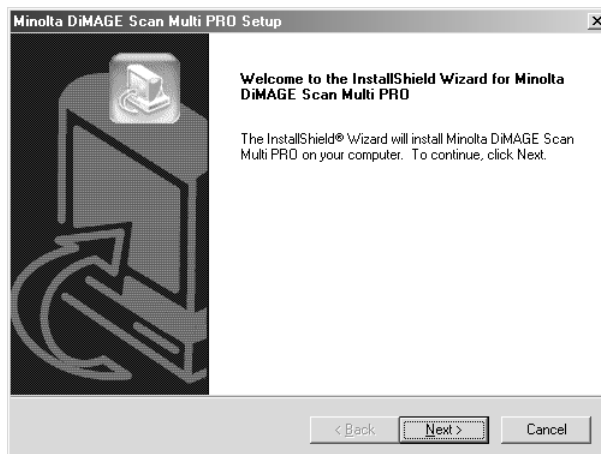
If the InstallShield Wizard program does not start up automatically
Operate the following procedure.
1. "Start" ➜ "Run…".
2. Click [Browse (B)] in the Run dialog box.
3. Select CD-ROM drive (DS MultiPRO (D:)) from the "Look in:" list box in the Browse dialog box.
4. Select "Driver" folder and click [Open (O)].
5. Select "English" folder and click *Open (O)*.
6. Click "Setup.exe". Confirm that the file is positioned at "D:\Driver\English\Setup.exe" and click [OK].
• In a little while, a splash screen for Setup will appear. After that continue to step 4.
• The drive name will differ depending on the System preference you are using.

4. **Click on** *Next*.

   The start Setup window and License Agreement window appears. Read the entire agreement carefully before continuing the setup. If you don't agree to the terms of the License Agreement, click [No] to exit the setup program.
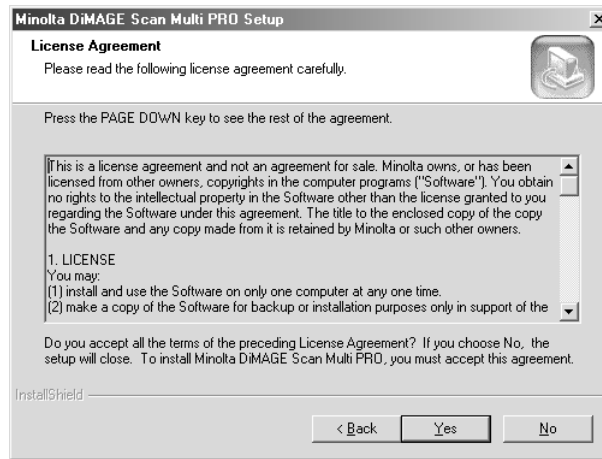
5. **Click** *Yes*.

   The window for selecting the folder in which to install the software appears.
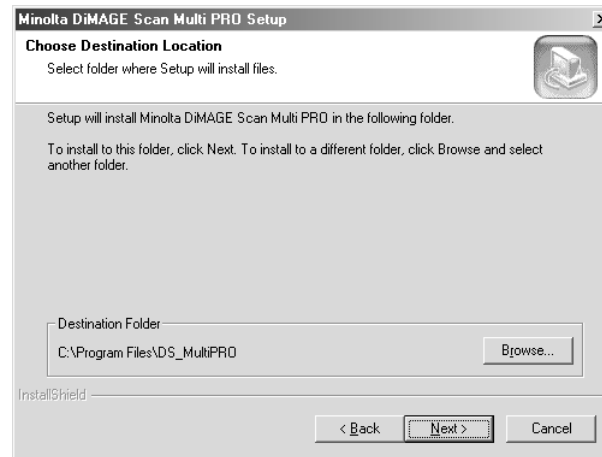
6. To install the software in the default folder (C:\Program Files\DS_MultiPRO), press *Next*.

To install the software in another folder, click [Browse...] to display the window for selecting a folder. Specify the directory to install the software in, then click [OK].
Click [Next>] to display the window for selecting the setup type.
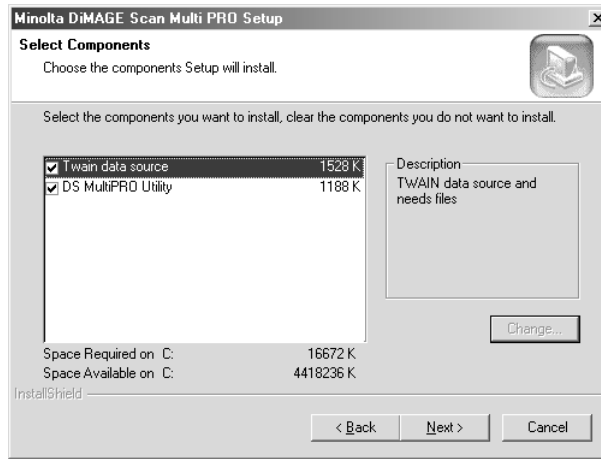
7. Select the setup type, then press *Next*.

Normally, select "Twain data source". The rest of the descriptions in this manual assume the "Twain data source" setup has been selected.

Click [Next>] to display the window for selecting the Program Folder.
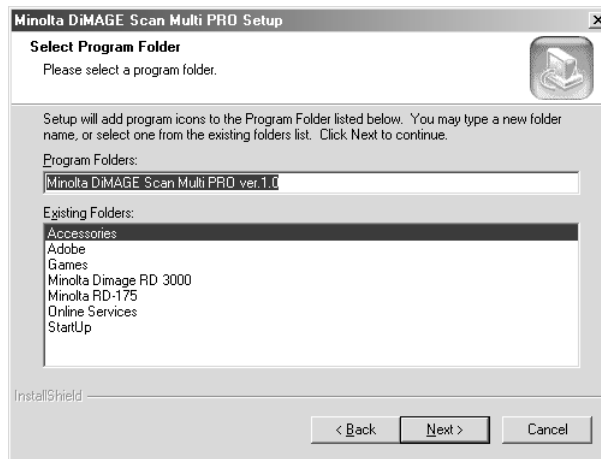
8. The name of the default Program Folder is displayed in reverse. To add the software icons to this folder, click *Next*.

To add the software icons to another existing folder, select it from the folders
listed in the box below "Existing Folders:", then click [Next>].
Installation starts when you click [Next>]. When it has finished, the "InstallShield Wizard Complete" window appears.
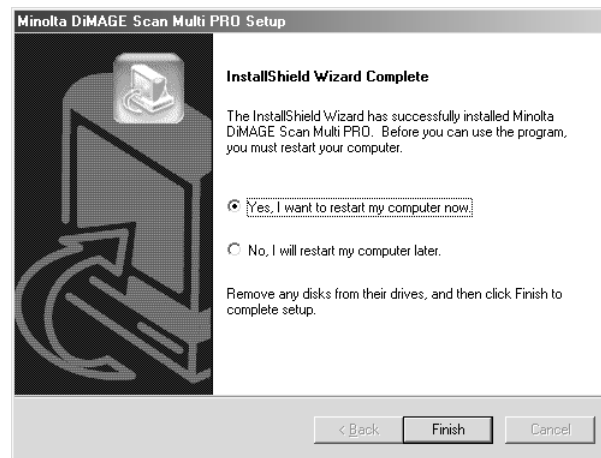
9. Check that "Yes, I want to restart my computer now." is selected, then click *Finish*.

Setup ends, and the computer restarts.

22
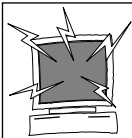
Please remove or disable any antivirus system extensions before launching this installer. These extensions may conflict with the operation of this installer. Replace or re-enable them when installation is complete. Hold the shift key down during startup to disable the extensions.

1. **Turn on the DiMAGE Scan Multi PRO.**

2. **Turn on the Macintosh and start up the Mac OS.**

3. **Insert the DiMAGE Scan Multi PRO CD-ROM into the CD-ROM drive.**
   • [Dimage Scan Multi PRO] will appear on the desktop.

4. **Double-click on [DiMAGE Scan Multi PRO].**
   • The driver folders will appear.

5. **Double-click on [Driver] folder.**
   • The language folders will appear.

6. **Open the [English] language folder, then double click on [DS MultiPRO Installer].**
   • The installer's start-up screen will appear.

7. **Click on *Continue*.**
   • The License screen will appear.
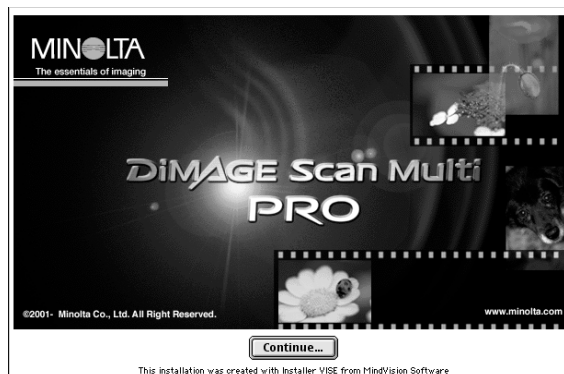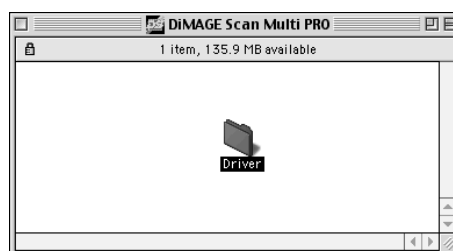
8. Click on _Accept_.

• If you do not agree to the conditions stated in the End-User License Agreement, click on [Decline] and the software will not be installed.
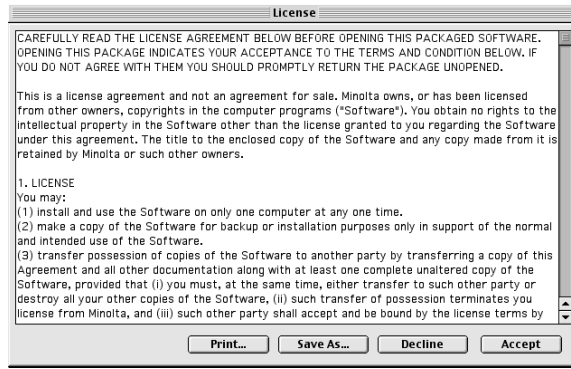
9. Check the folder in which the software will be installed. To change it, select "Select folder..." from the "Install Location:" pop- up menu, then select an existing folder or create a new one.

Install type pulldown menu

Name of the volume (disk) and folder in which the software will be installed.

Select the installation method to use.
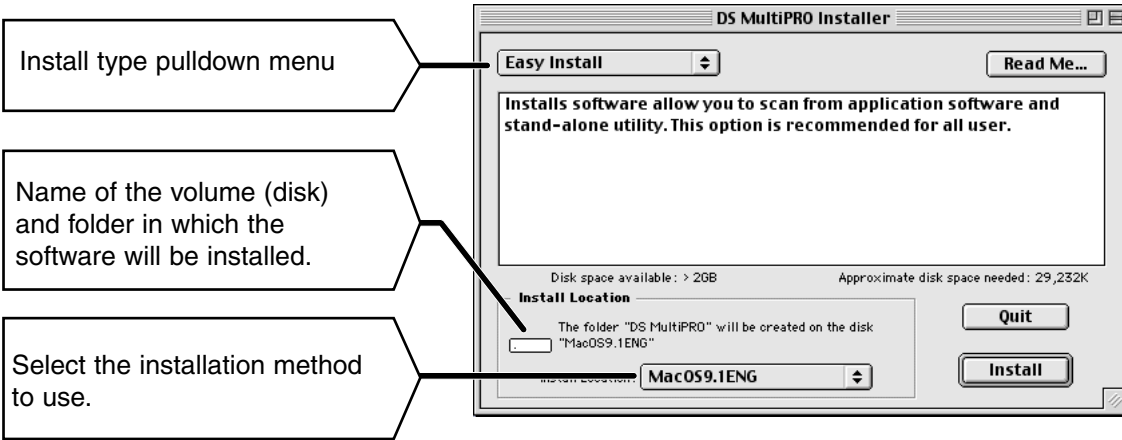
10. Select the installation method from the pop- up menu at the top- left. Normally, you don't need to change the installation method from "Easy Install".

• If you select "Custom Install", the window below appears.
Check the check box of the file you want to install.

24
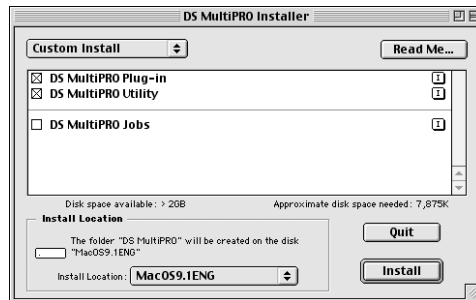
11. Click on *Install*.

The following message appears when the installer is finished.
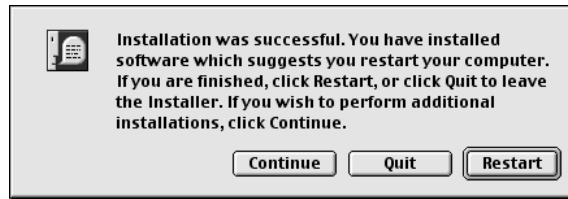
12. Click on *Quit*.
- The software will be installed in a new folder titled DiMAGE Scan Multi PRO.
- If Easy Install was chosen, the DiMAGE Scan Multi PRO folder will contain the following items: DS_MultiPRO Utility, DS_MultiPRO Plug-in, and Read Me file.

13. Drag the DS Multi PRO Plug-in to the Import/Export folder in the Adobe Photoshop Plug-ins folder.
- Your Macintosh will restart.
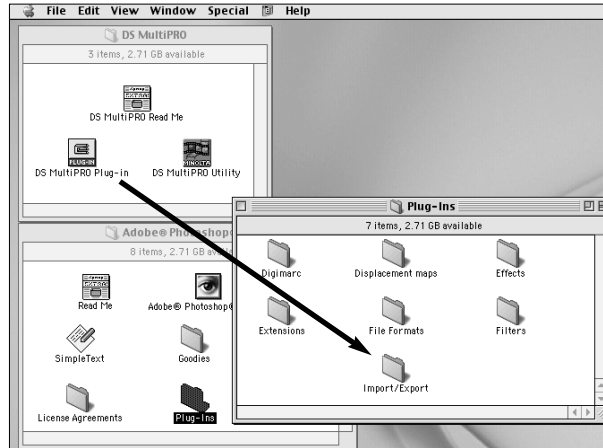
The TWAIN driver allows you to control the software through another application, such as your image editing software.

LAUNCHING THE TWAIN DRIVER

This manual uses Adobe Photoshop Ver.6.0 as the host application. Commands may vary among applications.

1. Open the host application.

2. Select File ➜ Import ➜ DS_MultiPRO1.0…

    For Adobe Photoshop Ver.5 to 5.5 (not Ver.6):
    1.Select File ➜ Import ➜ Select TWAIN_32 Source…

    2.Select DS_MultiPRO 1.0…, then click on [Select].

    3.Select File ➜ Import ➜ TWAIN_32…
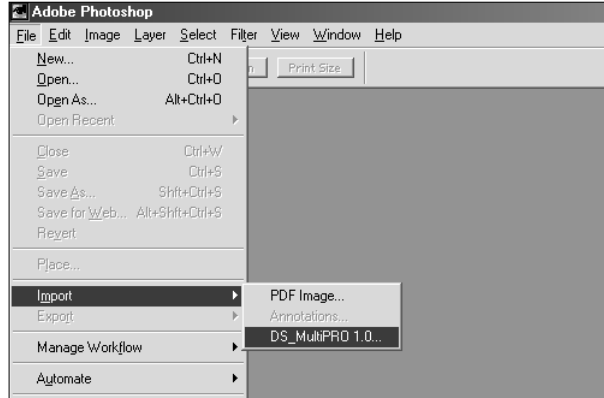
LAUNCHING THE UTILITY SOFTWARE

Use the utility software, as a stand alone application, when you just want to scan the photographic image and store.

1. Select Start ➜ Programs ➜ Minolta DiMAGE Scan Multi PRO ver.1.0 ➜ DS MultiPRO Utility.
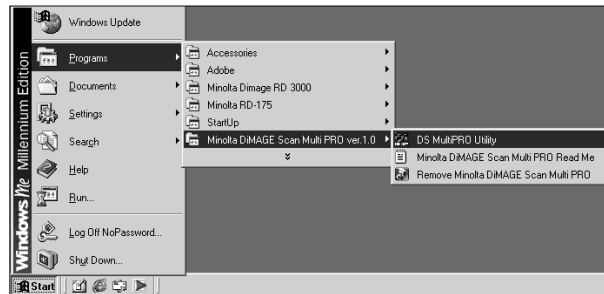
The software is ready for use when the Main window appears (page 28).

The plug-in software lets you access the software through Adobe Photoshop.

LAUNCHING THE PLUG-IN

This manual uses Adobe Photoshop Ver.6.0 as the host application. Commands may vary among applications.

1. **Launch Adobe Photoshop.**

2. **Select File ➜ Import ➜ DS_MultiPRO Plug-in…**
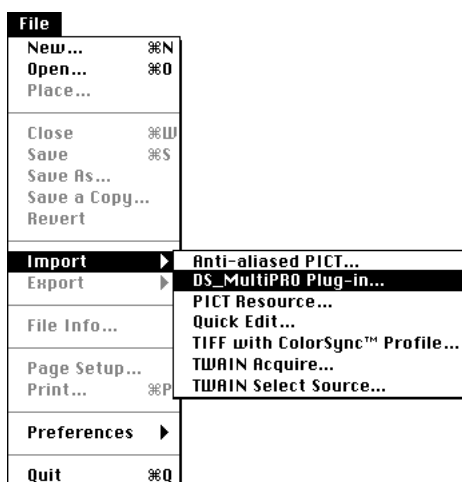
```
File
New...            ⌘N
Open...           ⌘O
Place...

Close             ⌘W
Save              ⌘S
Save As...
Save a Copy...
Revert

Import          ▶   Anti-aliased PICT...
Export          ▶   DS_MultiPRO Plug-in...
                    PICT Resource...
File Info...         Quick Edit...
                    TIFF with ColorSync™ Profile...
Page Setup...        TWAIN Acquire...
Print...          ⌘P TWAIN Select Source...

Preferences     ▶

Quit              ⌘Q
```

LAUNCHING THE UTILITY SOFTWARE

Use the utility software, as a stand alone application, when you just want to scan the photographic image and store.

1. **Double click on** DS MultiPRO Utility **.**

The software is ready for use when the Main window appears (page 28).

MAIN WINDOW

Main Window part (see below)

DS_Multi PRO

35mm | Glassless | Slide Film | Click on a frame to select it.

ICE ROC GEM

Index | Prescan | Image Correction | Digital GEM

Default

Resolution

Input 1200 dpi
Output 300 dpi

Size

Input W 1788
H 1218
Mag. 400 %
Output W 1788
H 1218
Unit pixel

Image Size 6.2MB

Tab part
• Index
(see page 41)
• Prescan
(see page 49)
• Image
Correction
(see page 63)

Scan Setting part (see page 92)
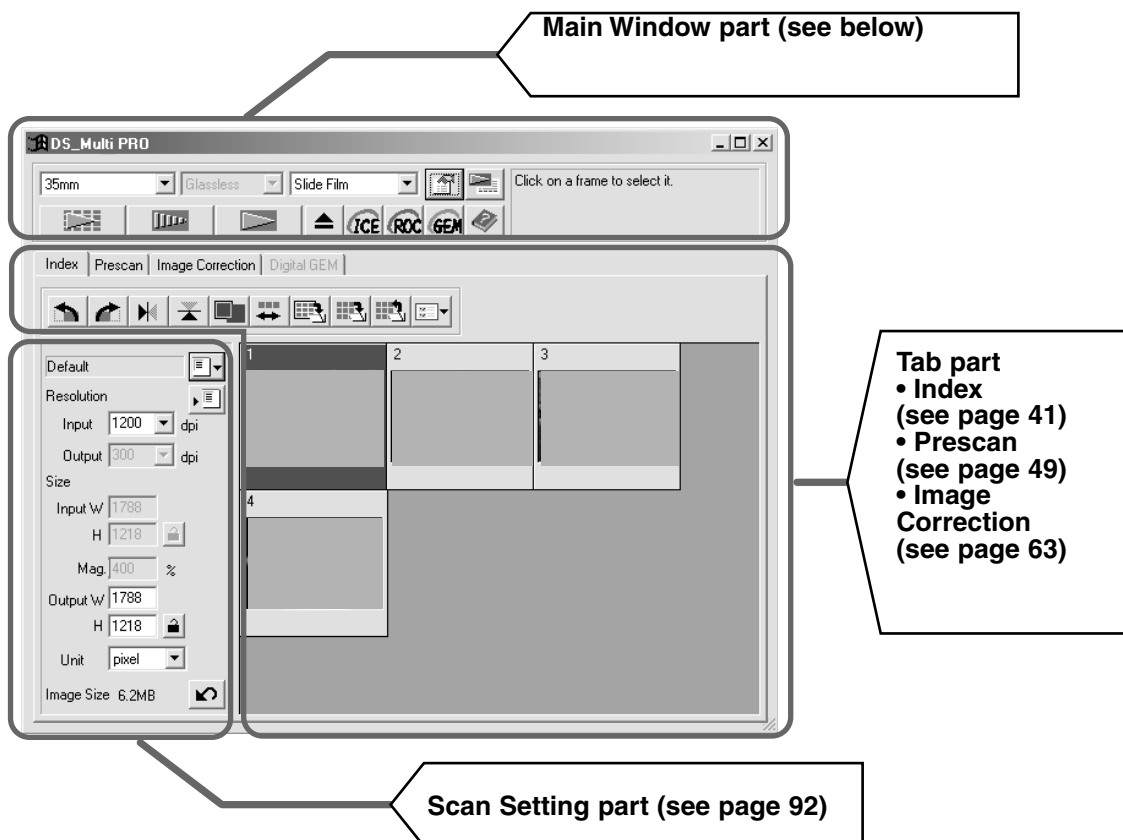
THE MAIN WINDOW PART — NAMES OF PARTS

DS_Multi PRO

35mm | Glassless | Slide Film | Click on a frame to select it.

ICE ROC GEM

❶ Holder Type list box
❷ Film format list box
❸ Index Scan button
❹ Prescan button
❺ Scan button

❻ Film Type list box
❼ Preferences button
❽ Close button
❾ Status display area
❿ Custom wizard button

⓫ Help button ([?] on Macintosh)
⓬ Digital GEM button
⓭ Digital ROC button
⓮ Digital ICE button
⓯ Eject button

28
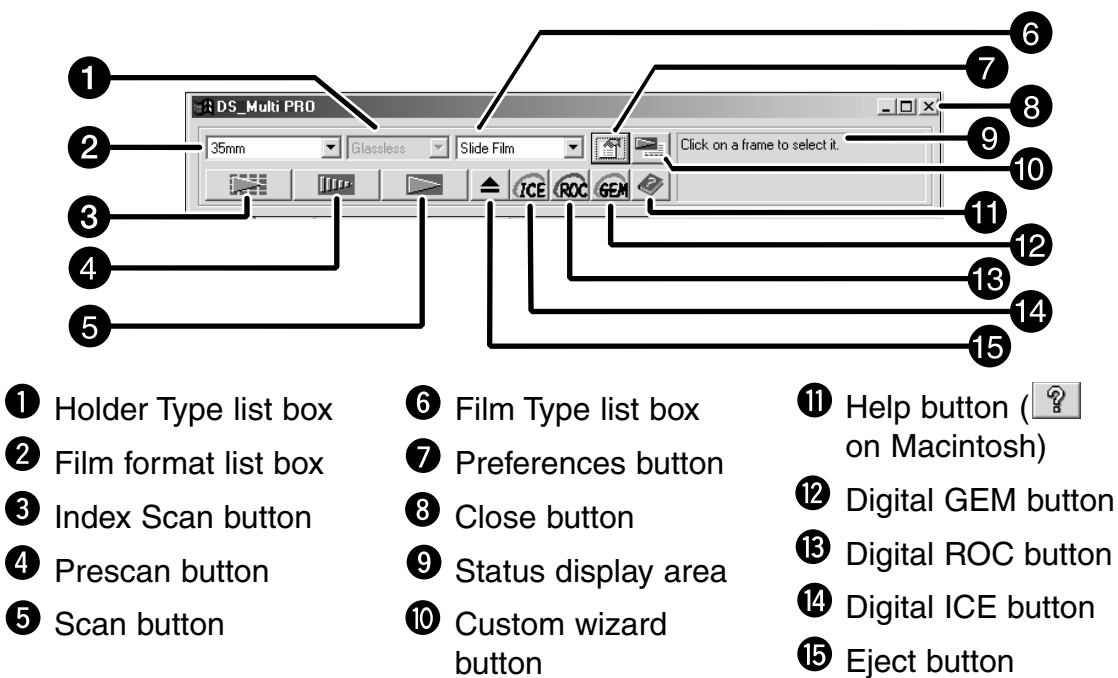
1.   Click on ⬚ in the Main window.

The Preferences Dialog Box — Name of parts

```
┌─ Preferences ──────────────────────── ×┐
│                                          │
│ ❶  □ Auto Expose for Slides      ┌ OK ─┐│
│ ❷  □ Auto Focus at Scan          └─────┘│
│ ❸  □ Close Driver After Scanning ┌Cancel┐│
│                                  └──────┘│
│    Color depth    │8bit      │▼  ┌ Help ┐│
│ ❹                              └──────┘│
│ ❺  Multi Sample   │OFF       │▼         │
│                                          │
│ ❻  Preview Size   │Small     │▼         │
│                                          │
│ ❼  Index Scan Priority  ⦿ Speed ○ Quality│
│                                          │
│ ┌ Color Matching ──────────────┐        │
│ │ □ Color Matching ON          │        │
│ │   Color Space    │sRGB    │▼ │        │
│ │   □ Use monitor ICC profile  │        │
│ │   │              │  │Load...│ │        │
│ └──────────────────────────────┘        │
└──────────────────────────────────────────┘
```

Colour
Matching
settings
(See page 107)

---
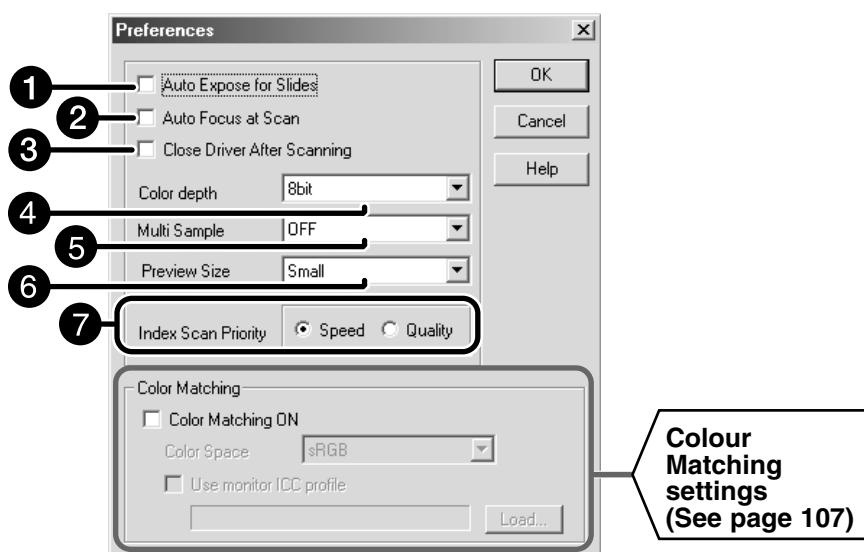
2.   Set the preferences as desired.

❶ **"Auto Expose for Slides" checkbox**

This option allows you to select whether to perform auto exposure during the prescan or the final scan when using colour slides. As colour slide users often adjust the exposure and colour when taking a photograph, the Auto Expose function when performing the prescan or final scan is turned off in the default setting (The checkmark is not on the checkbox). However, when scanning a slide which is underexposed or when using the AE Lock or AE Area lock function (see page 56 to 57), click on the checkbox of "Auto Expose for Slide" so that the Auto Expose function is turned on.

❷ **"Auto Focus at Scan" checkbox**

This option allows you to select whether to use the Autofocus function when performing the prescan or the final scan.
To obtain higher scanning speed, the Autofocus function is turned off in the default setting (The checkmark is not on the checkbox). However, if you intend to use the Autofocus function when scanning, click on the checkbox of "Auto Focus at Scan".
When using the Digital ICE, ROC or Digital GEM function (see page 85), it is recommended to turn on the Autofocus function by clicking on the checkbox of "Auto Focus at Scan".

❸ **"Close Driver After Scanning" checkbox**

This option allows you to select whether to close the driver software after scanning when using Twain driver or Plug-in Software and image editing application.
The driver software is specified not to be closed after scanning in the default setting (The checkmark is not on the checkbox). This setting is convenient when scanning multiple images continuously and loading them into an image editing application such as Adobe Photoshop.
However, if you intend to retouch each image in the editing software after scanning, click on the checkbox to display the checkmark.

4 **"Colour depth" setting list box**

This option allows you to specify the format when outputting the scanned data to a file or an application software. Select one from the following items of the list box.
The default setting is 8 bit.
- 8 bit   Outputs an image of 8 bits for each R, G or B channel
- 16 bit   Outputs an image of 16 bits for each R, G or B channel
- 16 bit linear   Outputs an image of 16 bits for each R, G or B channel but corrections such as a gamma correction cannot be made. Therefore, when scanning a negative film, it is output as a negative image.
  * Only TIFF can be selected when using the utility software and selecting 16 bit or 16 bit linear as a colour depth.
  * When selecting 16 bit, the image size display in the Scan Settings window is represented in the 16 bit size (8 bit x 2).
  * Some types of graphic application software cannot handle 16 bit image files.

5 **"Multi Sample" scan setting list box**

This option allows you to select the Multi-Sampling setting. This function reduces random noise in the image by analyzing the data of a number of sample scans in advance. Select one of the following items from the list box.
The Multi-Sample Scanning function is turned off in the default setting.
- OFF   No processing.
- 2 times   Perform sampling 2 times.
- 4 times   Perform sampling 4 times.
- 8 times   Perform sampling 8 times.
- 16 times Perform sampling 16 times.
  * The more times the image is sampled, the longer the required time for scanning.

6 **"Preview Size" selecting list box**

Select the display size of the prescan image. The default setting is "Small".
- Large   A prescan image is displayed in its original size.
- Small   A prescan image is displayed in the reduced size.

7 **"Index Scan priority" selection button**

This option allows you to select either a high speed index scan or a quality index scan by clicking on "Speed" or "Quality". The default setting is "Speed".
- Speed   This performs the index scan at high speed. The autofocus function is not used while scanning. The index images are displayed in a thumbnail representation after only easy-auto expose function is performed for each frame. When index scanning with a 35 mm film holder (FH-P1), the frame order will differ from that of the actual film frame order. This setting is to allow an even speedier index scan. The scanning order is as the numbers marked on the holder 2-1-3-4-6-5.
- Quality   After prescanning each frame, the size of the prescan images is reduced and those images are displayed in the thumbnail representation. Therefore, it takes longer to display index images. However, the prescan image can then be immediately displayed just by double-clicking the index image. Whether the autofocus function or the auto expose function for a colour slide film is performed when prescanning depends on the setting of Auto Focus at Scan or Auto Exposure for Slides.

3. Click on _OK_ to accept the new preference settings.
- Changes to the Preference settings take effect immediately.

30

LOADING THE FILM HOLDER

Three types of holder are supplied with this scanner. Select the appropriate one according to the film type to be scanned.
- 35 mm film holder FH-P1
- Slide mount holder SH-P1
- Universal holder UH-P1

35MM FILM HOLDER FH-P1

Use the FH-P1 for 35mm negatives and unmounted 35mm slide film.
- The 35mm Film Holder FH-P1 can hold film strips up to 6 frames long.
- Blow dust off the film before placing it into the film holder.

1. **Position the film holder so the white arrow is on the top-left side, then open the slide mount.**
    - Open the slide holder by pulling up the tab from underneath.
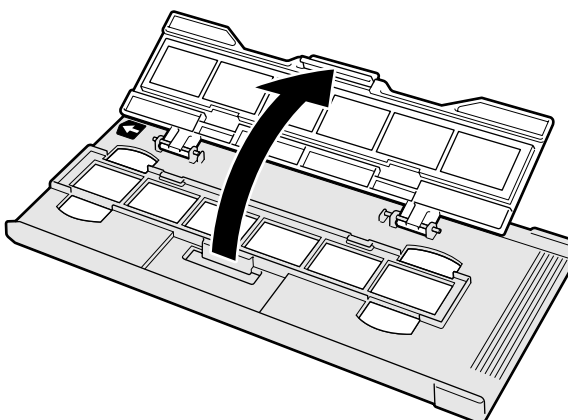
2. **Place the film in the film holder emulsion side down.**
    - Make sure the film strip is under the two nouches at the top of the holder.

3. **Align the frames within the scanning windows.**

4. **Close the cover and press firmly until it clicks.**
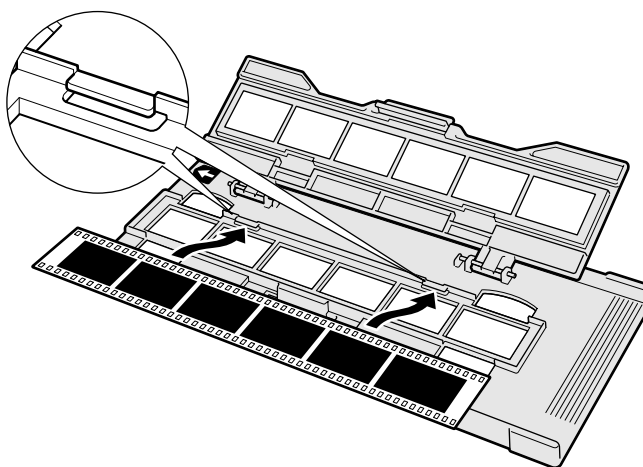
SLIDE MOUNT HOLDER SH-P1

- The slide mount holder SH-P1 can hold up to 4 mounted slides (35mm).
- Slide mounts must be thicker than 1mm and thinner than 2mm to fit properly into the holder.
- Blow dust off the slide before placing it into the film holder.

1. **Position the slide mount holder SH-P1 so the white arrow is on the top-left side, then open the slide mount.**
   - Open the slide holder by pushing up the tab from underneath.
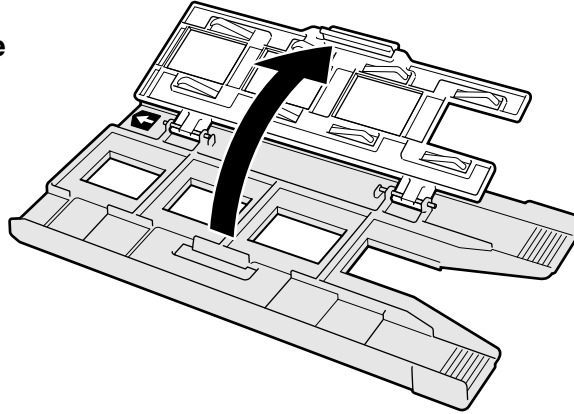
2. **Place the slides within the indentations, making sure they lie flat.**
   - Insert the slides emulsion side down.
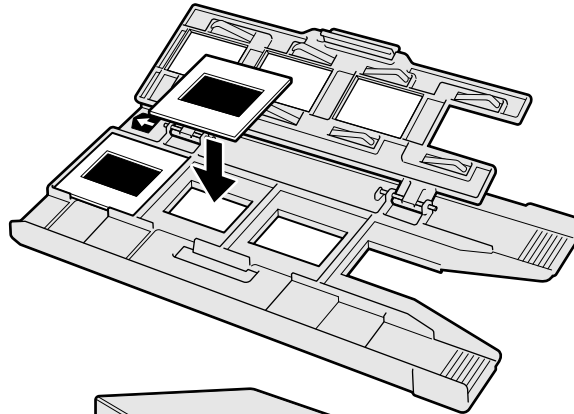
3. **Press the cover firmly closed until it clicks.**

   - With the fourth frame of the slide mount holder, you can change slides without removing the slide mount holder from the scanner. A prescan should be made with each new slide when using the AF and AE function (page 29).
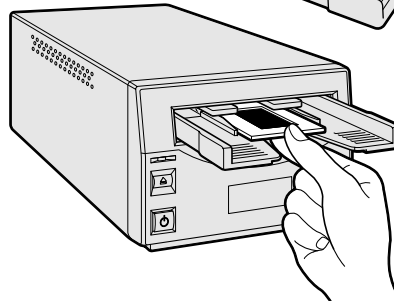
NOTE:

- Do not scan glass mounted slides. Glass mounts bend the light from the line scanner, causing bad results.

LOADING THE UNIVERSAL HOLDER UH-P1

The universal holder UH-P1 is used with the following attachments. Use the attachment suited to the film.

- **120/220 film attachment with glass (HA-P1), glassless (HA-P2)**
  When scanning 120/220 (6x4.5, 6x6, 6x7, 6x8, 6x9) film
  Select a film attachment with glass or a glassless film attachment according to your purpose.

With glass: When the film needs to be protected or kep flat.

Glassless: When you wish to avoid effects which may be caused by the glass, for example, if you want to stay clear of dust or dirt on the glass when scanning.

- **Multi-format attachment (sold separately, HA-P3)**
  When scanning a TEM film, 35 mm panorama film, 16 mm film, 4x4 or 24x24 film, etc.

120/220 (6x4.5, 6x6, 6x7, 6x8, 6x9) film attachment with glass (HA-P1)

1. **Install the selected attachment on the holder.**

   Place the attachment with the button side up at the position on the holder that is suited for the attachment you selected and fix it aligning with the two grooves on the left side until it clicks. If the 120/220 film attachment with glassless (HA-P2) or the multi-format attachment (HA-P3) is installed, remove it beforehand.
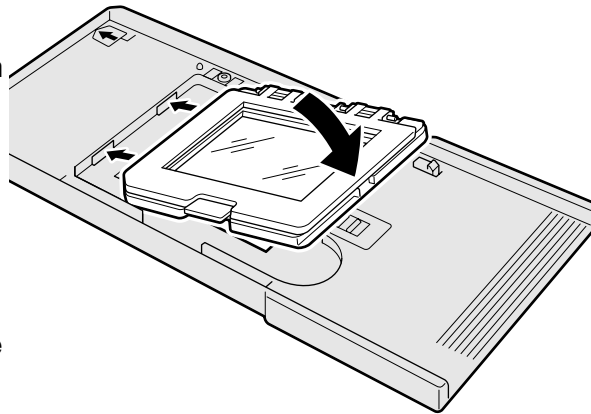
2. **Press the button on the attachment to open the film cover.**

   Before inserting a film, remove dust, etc. from the film, holder, attachment or mask using a blower brush, etc.

3. **Insert the appropriate mask for the size of the film.**

   Align the mask with the attachment. Fix the two protruding parts into the slots on the hinge side Fit the mask over the film guide and the two pins.
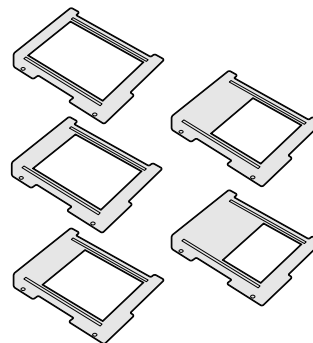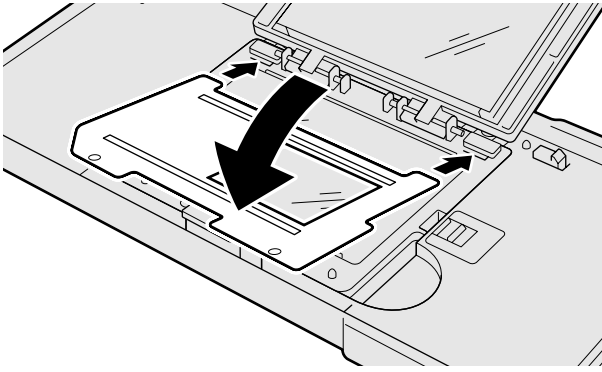
NOTE:

• Be sure to fit the appropriate mask before inserting the film in the scanner. Otherwise, interference fringes with the concentric circles-patterns may appear on the image after the scanning is performed.

4. **Place a film on the mask with the emulsion side down while aligning the lower side of the film with the film guide (at the upper or lower side).**

5. **Close the film cover of the holder until it clicks.**
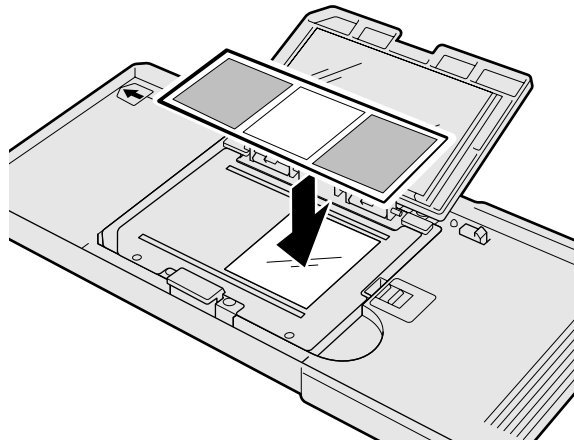
Removing a Film

While pressing the button on the lower side of the attachment, lift the film cover.

Removing an Attachment

While sliding the lever on the middle part of the holder to the right, lift the attachment.
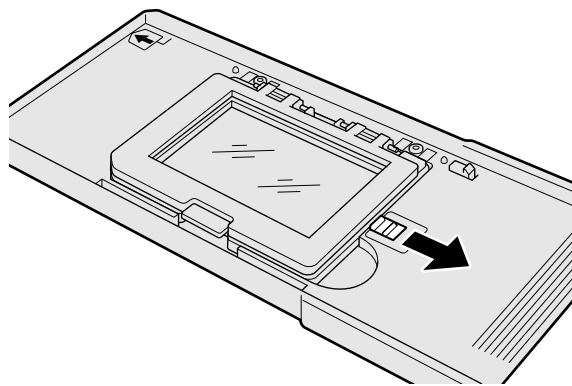
120/220 (6x4.5, 6x6, 6x7, 6x8, 6x9) glassless film attachment (HA-P2)

1. **Install the selected attachment on the holder.**

   Place the attachment with the button side up at the position on the holder that is suited for the attachment you selected and fix it aligning with the two grooves on the left side until it clicks. If the 120/220 film attachment with glass (HA-P1) or the multi-format attachment (HA-P3) is installed, remove it beforehand.
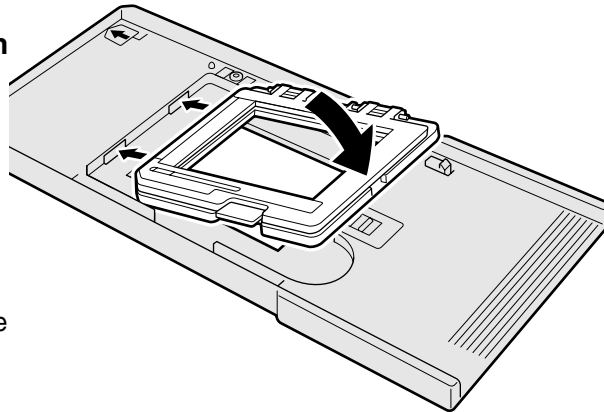
2. **Press the button on the attachment to open the film cover.**

3. **Adjust the position of the slide bars to fit the size of the film.**
   • The position for scanning is on the right side when facing the holder. Align the film to the right side of the frame. The scanning position will be determined by the film format selected on the main window.
   • Adjust the slide bars to determine the mounting position of the left side of the film. There are white markings on the slide bar, one on the bottom of the attachment and in two places on the cover. Set the position using these markings.
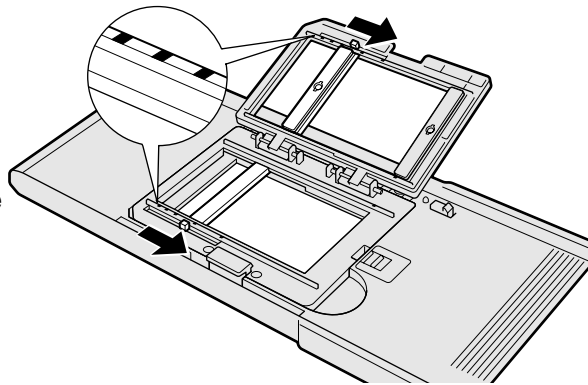
4. **Place the film on to the attachment, emulsion side down, after adjusting the position of the mount and film frame you wish to scan.**

   Before inserting a film, remove dust, etc. from the film, holder or attachment using a blower brush, etc.
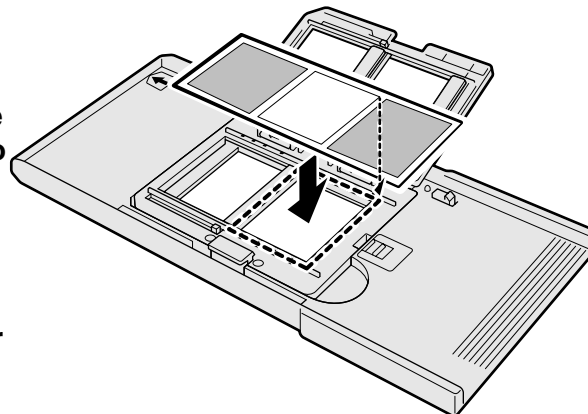
5. **Close the film cover of the holder until it clicks.**

Removing a Film

While pressing the button on the lower side of the attachment, lift the film cover.

Removing an Attachment

While sliding the lever on the middle part of the holder to the right, lift the attachment.

Multi-format attachment (sold separately, HA-P3)

Purchasing the Multi-format attachment, sold separately, will enable you to deal with a wider range of films such as a 16mm film. Multi-format attachment (HS-P1)
The following contents should be included in this package. If there is an article of inferior quality or parts missing, please contact the sales agent.

❶ Multi-format attachment (cover part)
❷ Multi-format attachment (bottom)
❸ 3 film masks
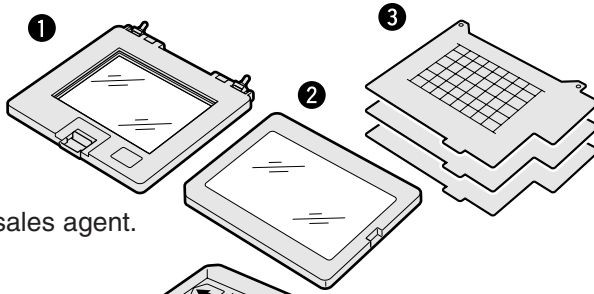
1. **Place the attachment at the position on the holder that is suited for the attachment you selected and fix it while aligning with the two grooves on the left side until it clicks.**

   If the 120/220 film attachment with glass (HA-P1) or glassless (HA-P2) is installed, remove it beforehand.
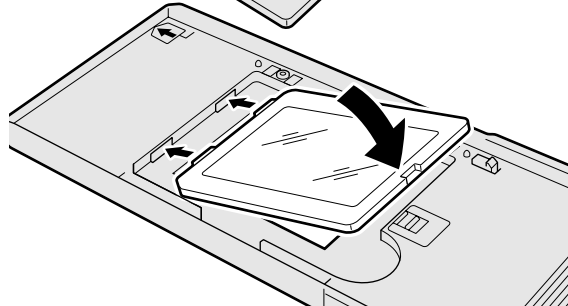
2. **Fit the two pins on the upper side of the film cover into the holes on the upper side of the holder until they click.**
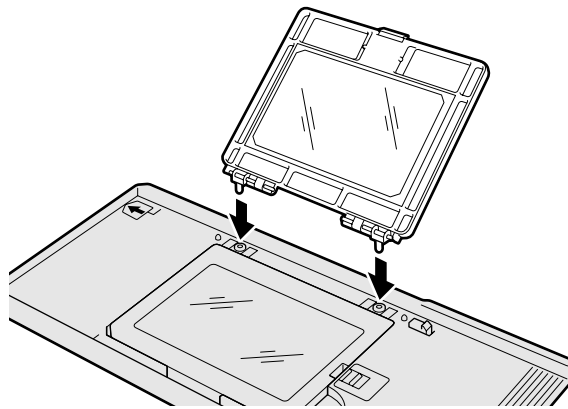
3. **Make appropriate mask for the size of the film.**

   When making a mask, cut out the sheet with a cutter, etc. using the scales drawn on the mask as a guide to a size not larger or wider than the actual film. If you use a larger or wider mask when scanning, the auto exposure function may not be performed.
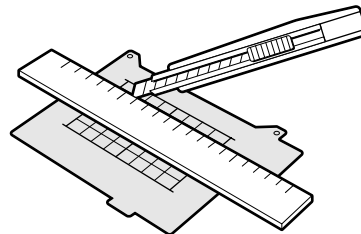
4. **Insert the mask you have cut out.**

   Fix the mask with the scale side facing up inti the slot on the lower side of the holder and then fit the holes on to the two pins on the upper side of the holder.
   Before inserting a film, remove dust, etc. from the film, holder, attachment or mask using a blower brush, etc.

36
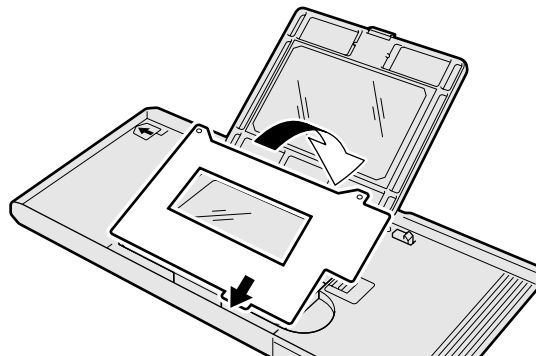
5. **Place a film on the mask with the emulsion side down while aligning it carefully with the cutout in the mask.**
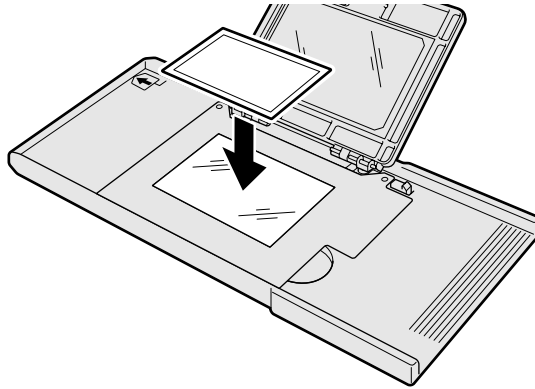
6. **Close the film cover of the holder until it clicks.**

> **NOTE:**
>
> • Be sure to insert the appropriate mask before inserting a film when scanning. Otherwise, interference fringes with concentric circles-patterns may appear on the image after the scanning is performed.

Removing a Film

While sliding the button on the cover of the attachment, lift the film cover.
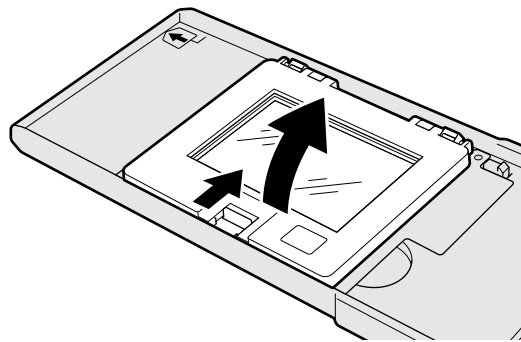
Removing an Attachment

1. While sliding the button on the cover of the attachment, open the cover, and while sliding the lever on the upper part of the holder to the right, lift the cover and remove the pins.
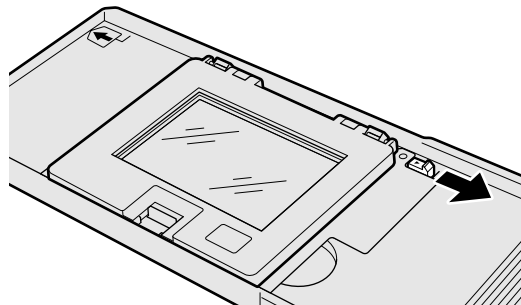
2. While sliding the lever on the middle part of the holder to the right, lift the attachment.
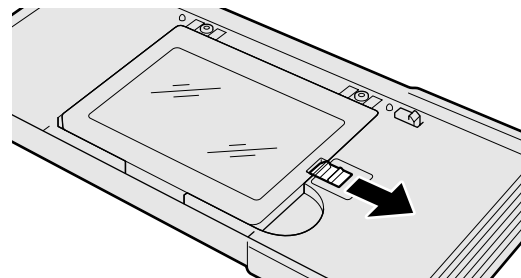
INSERTING THE FILM HOLDER

During the start-up time, the indicator lamp will blink. DO NOT insert the film holder into the film slot until the indicator lamp is steady.

1. **Press the power switch to turn the scanner on. Turn on your computer, then launch the DiMAGE Scan Multi PRO software.**
   - The green indicator lamp will blink slowly while the scanner is setting up.

2. **Insert the holder into the scanner in the direction indicated by the white arrow on top of the holder.**
   - Do not insert the holder at an angle.

3. **Gently push the holder into the scanner until the raised insertion mark is aligned with the film-slot door.**
   - The film holder will be automatically guided in past the mark.
   - If the holder is not loaded correctly, then eject and reinsert it.
   - Please take note that depending on the type of film holder, the position of this indicator will differ.
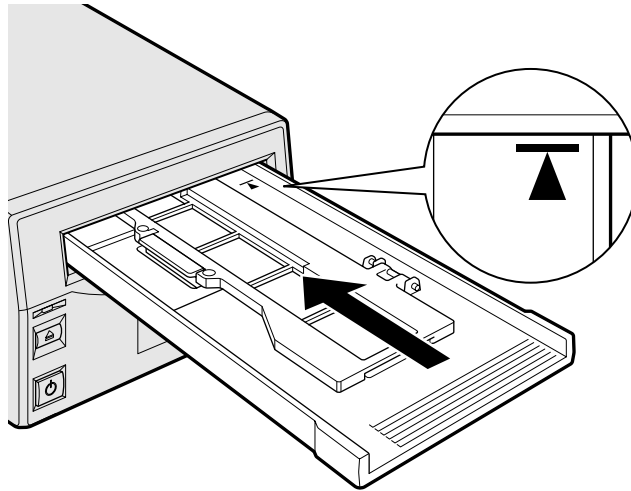
Ejecting

1. **Press the film folder eject button on the front of the scanner or click the eject button on the Main window of the DiMAGE Scan Multi PRO software.**
   - The holder will automatically eject partway, then stop.

2. **Remove the holder.**
   - Wait for the Indicator lamp to turn off before removing the holder.
   - The holder should pull out easily.

SETTING THE FILM FORMAT/FILM TYPE

SELECTING THE FILM FORMAT

1. **Select the film format from the drop-down list.**
   - The Index window (see page 42) will appear if 35mm, 6x4.5, 6x6, 6x7, 6x8, 6x9, Multi Format 35mm or Multi Format 6x9 is selected.
   - The following list shows the film formats and appropriate holders for scanning.
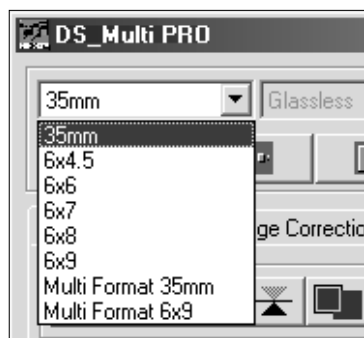
Film format	Holder type
35mm	35 mm film holder FH-P1 or Slide mount holder SH-P1
6x4.5, 6x6, 6x7, 6x8, 6x9 Multi Format 35mm, Multi Format 6x9	Universal holder UH-P1, other attachments and masks suited for each film.

Selecting the Holder Type

When 6x4.5, 6x6, 6x7, 6x8 or 6x9 is selected in the film format, select the holder type.

1. **Select the holder type from the drop-down list in the main window.**
   - The available holder types are with Glasses or Glassless.
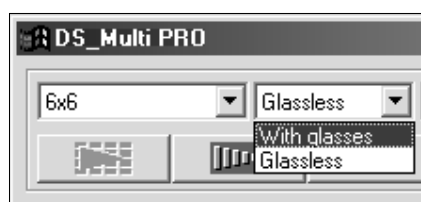
SELECTING THE FILM TYPE

1. In the Main window, select the type of film from the drop-down list.
   • The film type options differ according to the film format currently selected.
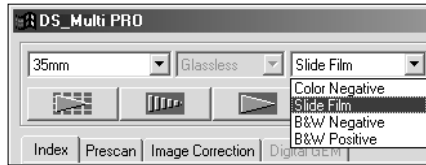
Film format	File type
35mm, 6x4.5, 6x6, 6x7, 6x8, 6x9	Colour Negative, Slide Film, B&W Negative, B&W Positive
Multi Format 35mm, Multi Format 6x9	TEM Film, Transparent Media, Colour Negative, Slide Film, B&W Negative, B&W Positive

LIST OF USABLE FILMS

Film type	Type	Strip	Slide	Universal 120/220 with Glass	Universal 120/220 Glassles	Universal Multi-format Multi-f. 35mm	Universal Multi-format Multi-f. 6x9
120/220	6 x 4.5, 6 x 6, 6 x 7, 6 x 8, 6 x 9			●	●	■	●
35mm	Slide		●	▲		▲	▲
35mm	Strip	●		▲		▲	▲
Full panorama	Strip			▲		●	●
APS	Strip			▲		●	●
16mm	Strip			▲		●	●
Minox	Strip			▲		●	●
Electron microscope	59x81.5			○ (*1)		■	■ (*1)
Electron microscope	59x163			○ (*2)		■	■
Electron microscope	59x163					○	■
Electron microscope	82x118					○	■
Aperture guard	For microfilm					■	●
4 x 5		×	×	×	×	×	×
Aperture guard	for 120/220	×	×	×	×	×	×
APS	Cartridge	×	×	×	×	×	×

● Possible to scan the entire area at a time.
■ Possible to scan partly by moving the film.
▲ Possible to scan the entire area although it is not normal method.
○ Possible to scan the centre area alone.
✕ Not possible to scan.
*1 Equivalent to ● in actual scanning.
*2 Equivalent to ■ in actual scanning.

40

INDEX SCAN

S C A N N I N G   F L O W

Launch the Software (see page 26)
Set the Preferences (see page 29)
Load the Film Holder (see page 31)
Inserting the Film Holder (see page 38)
Setting the Film Format / Film Type (see page 39)

Index Scan
Changing the window size
Selecting frames
Rotating or Flipping the index frames
Reversing frame order
full scale view
Saving the index scan image
Saving the index image file
Loading the index image file

Image Correction (see page 63)

PreVIEW scan (see page 49)

FINAL Scan and Save (see page 98)

When 35mm is selected in the film format, index scan displays a scan of each image on the film holder in the Index tab. The time required for an index scan depends on the performance of your computer.

If you don't want to index scan the entire strip, click on the appropriate image box in the index tab to select an image for prescanning or scanning.

   • There are two options for making an index scan; Speed or Quality. Select the desired option in the Preference dialog box (see page 29).

Click on Index tab in the Main window.

THE INDEX TAB PART — NAMES OF PARTS
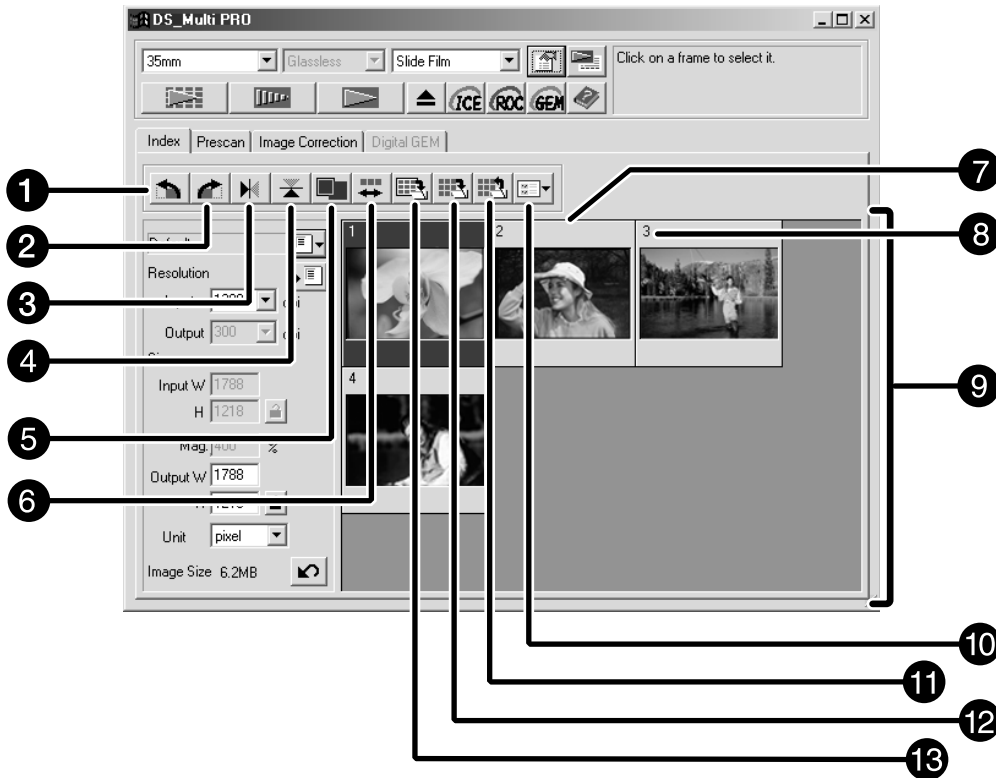
❶ Rotate left button

❷ Rotate right button

❸ Flip Horizontal button

❹ Flip Vertical button

❺ Full-Scale View button

❻ Reverse frame order button

❼ Index Image frame

❽ Frame number

❾ Index Image area

❿ Image Correction Job Load button

⓫ Index File Load button

⓬ Save Index scan button

⓭ Save Index Image button

1. **Click on** **in the Main window.**
    *   All frames on the film folder will be scanned and appear in the Index tab.
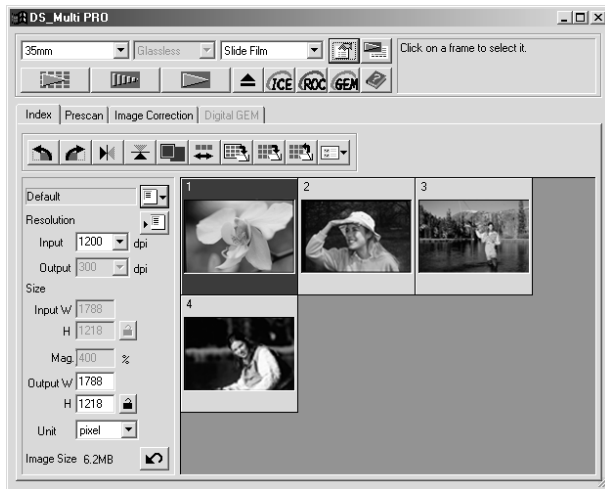
NOTE:

*   To cancel the index scan, press the escape key (⌘- • Command and period for the Macintosh) until the Cancelling Index Scan message box appears.
*   The completed index scans will appear in the Index tab.
*   Frames that have not been index scanned can still be selected for prescanning and scanning.

CHANGING THE WINDOW SIZE

Change the size of the Index tab window as desired. The position of the frames will change accordingly.
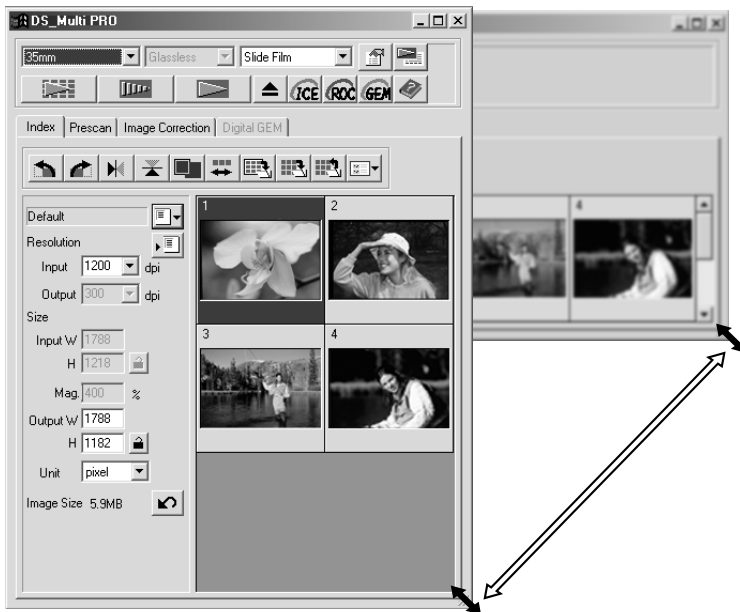
1. **Click on the corner tab (lower-right corner) and drag to reach the desired size.**

NOTE:

*   When the Full-Screen View button is not clicked, the size and shape of the index frames does not change.
*   When the Full-Screen View button is clicked, the size of the index frames changes automatically and all frames are displayed.

SCANNING THE IMAGE

SELECTING THE FRAMES

1. **Click on an image to select it for scanning.**
   - Selected images are surrounded by a dark grey frame.

   - Press the control key (⌘ key for the Macintosh) while clicking to select additional frames for scanning.
   - Press the control key (⌘ key for the Macintosh) while clicking to deselect an image.
   - Press the shift key while clicking to select all the frames between the current frame and the last frame selected.

2. **Click on** 〔IIII▪〕 **to scan the selected image (s).**
   - The image will be opened in your photo application software when the scanner's driver software is closed.
   - Some photo applications can only acquire one image at a time.

3. **Refer to page 98 to save the scanned image (s).**
   - Multiple scans will be saved using the selected file name and numbered chronologically.
     Example: File_Name01, File_Name02, File_Name03...

> **NOTE:**
> Click on 〔⊞〕 to save the index as an image file (see page 46).
> - The image can be saved in JPEG or BMP format
>   (JPEG or PICT format for the Macintosh).

44

ROTATING OR FLIPPING THE INDEX FRAMES

Rotate or Flip index frames so they appear in the Index scan tab window with the proper orientation.
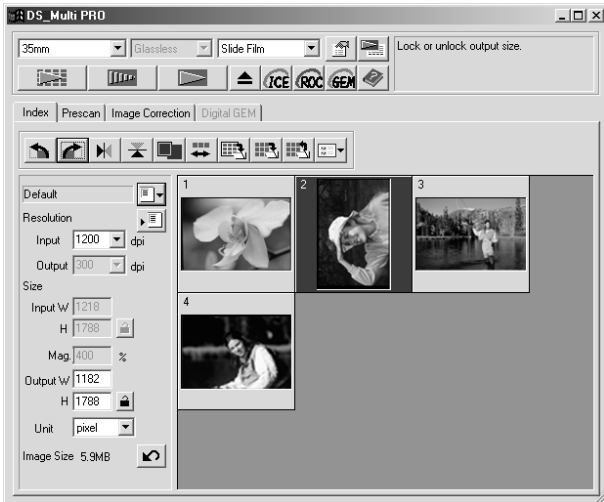
1. **Select the desired frames, then click on , or , .**
   • Each time the selected frames will rotate in 90° increments either clockwise or counter-clockwise, and flip vertically or horizontally.
   • Rotating and Flipping the index frames will not affect the Prescan or Scan.

REVERSING THE FRAME ORDER

Some cameras are reverse-winding, so the last frame is exposed at the beginning of the roll. The order of the Index tab can be reversed to correct the chronology.

1. **Click on .**

FULL SCALE VIEW

This function allows you to display the entire prescanned image in the Index tab.

1. **Click on .**
   • When [Full-Scale] button is clicked again, the prescan image returns to the previous size.

SAVING THE INDEX SCAN IMAGE

When performing the index scan, all the thumbnail images displayed in the index window can be saved as an image file.

1. **Click on ⊞ in the Main window.**
   - The standard file save dialog box for each operating system will appear.

2. **Enter the desired file name, select the file destination and then click on [Save].**
   - All the thumbnail images in the index window will be saved in the selected location with the specified file name.

   Windows®
   - For Windows, the file can be saved in the Windows® Bitmap (BMP) or JPEG format.
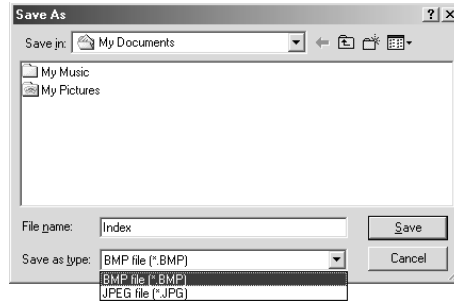
   Macintosh
   - For Macintosh, the file can be saved in the PICT or JPEG format.
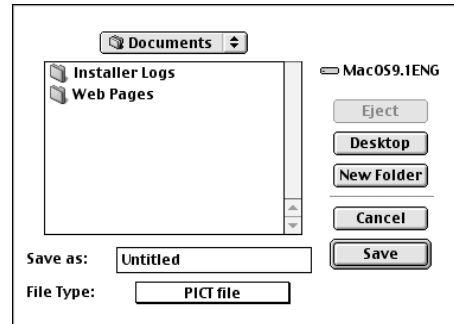
The index scan images are arranged in the image file to be saved as follows:
- When there are 4 index frames, the frames are arranged in in one line of four When there are six frames, the frames are arranged in one line of six.
- A spacing of 50 pixels is allocated at the top, bottom, right and left sides of the window.
- The horizontal or vertical space between frames is 100 pixels or 70 pixels respectively.
- The output resolution of the image file to be saved is 300 dpi.

The index images displayed in the index tab can also be saved as an index file.

1. **Click on** **in the Main window.**
   - File types other than the Index Image file (*.idx) cannot be selected in the "Save as Type" list box (or the file format pull-down menu).

2. **Enter the desired file name, select the file destination and then click on [Save].**
   - When the index images are displayed, these images are saved regardless of the film set in the scanner.
   - When the index images are not displayed, the index images are saved after performing the index scan.
   - If there are index images which have not been scanned yet, those images will be scanned and then all index images including those images will be saved.
   - The index image file is saved in the original format of this software.
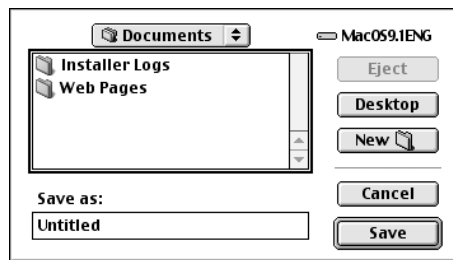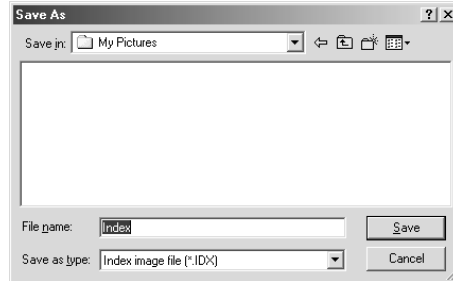
LOADING THE INDEX IMAGE FILE

The index file can be displayed in the index tab after loading the saved index file. The previously displayed preview images are erased.

1. **Click on** **in the Main window.**
   - The standard file open dialog box for each operating system will appear.

2. **Select the index file to be load and then click on [Open].**
   - When the previous index scan image is displayed, the image is replaced with the current loaded image.
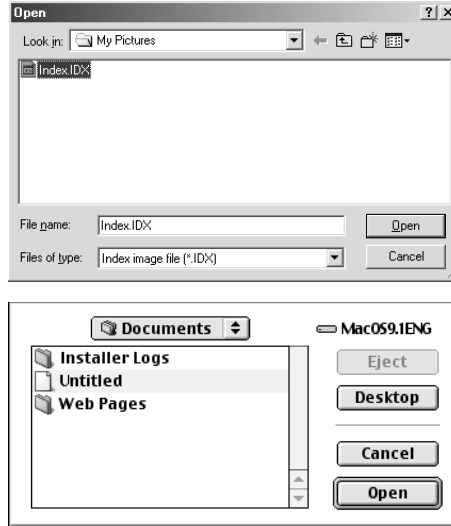
PREVIEW SCAN

S C A N N I N G   F L O W

Launch the Software (see page 26)
Set the Preferences (see page 29)
Load the Film Holder (see page 31)
Inserting the Film Holder (see page 38)
Setting the Film Format / Film Type (see page 39)

INDEX SCAN (see page 41)

IMAGE CORRECTION (see page 63)

PREVIEW SCAN
Rotating the Image
Flipping the Image
Full screen viewing,
Magnifying or Reducing the view
Scrolling the Image
AE-Exposure lock
AE area lock
Auto cropping
Cropping the Image
Cropping the prescan image
Focus – Point AF (auto focus)
Focus – Manual
Displaying frame number
RGB/CMY information

FINAL Scan and Save (see page 98)

Prescanning creates a scan of the image to which you can apply and view colour, contrast, orientation, and brightness corrections before clicking on the Scan button. This ensures that final scan will be the best it can be.

Click on the Prescan tab in the Main window.

THE PRESCAN TAB PART — NAMES OF PARTS
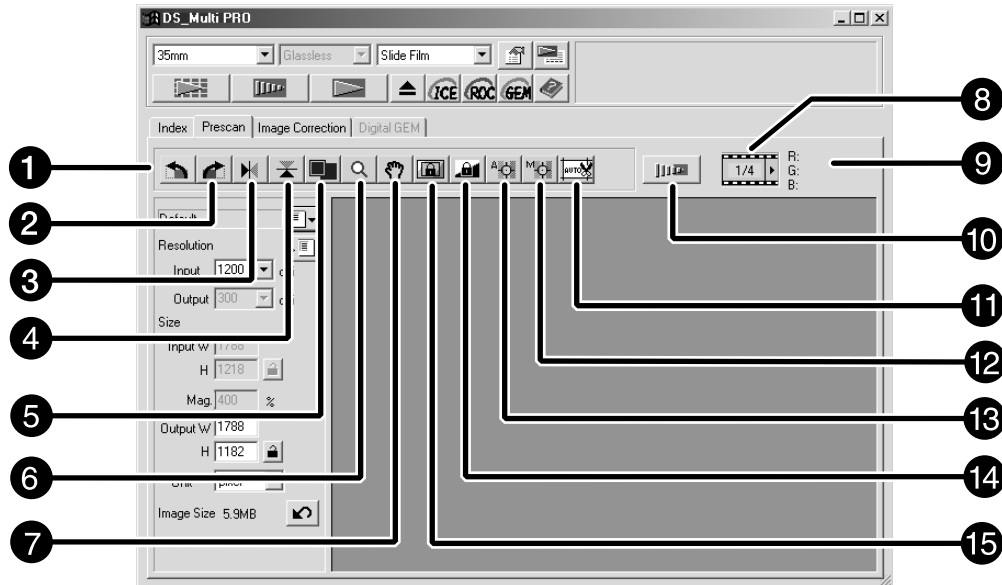
❶ Rotate Left button

❷ Rotate Right button

❸ Flip Horizontal button

❹ Flip Vertical button

❺ Full-Scale View button

❻ Zoom button

❼ Grab button

❽ Frame number indicator

❾ RGB/CMY display

❿ Zoom prescan button

⓫ Auto Cropping button

⓬ Manual Focus button

⓭ Point AF button

⓮ AE Lock button

⓯ AE Area Lock button

1. **Click on** [image] **in the Main window.**

The prescanned image will appear in the Prescan tab.

NOTE:

Press Ctrl when prescanning (⌘ on the Macintosh) to see CMY values in the RGB/CMY display.

ROTATING THE IMAGE

Click on the [icon] and [icon] buttons to correct the orientation of your image before scanning. Changes will be reflected in the prescan image.

Click on [icon] to rotate the image 90° clockwise.

Click on [icon] to rotate the image 90° counter-clockwise.

FLIPPING THE IMAGE

The ⊠ and ⊠ buttons let you flip the image left to right or top to bottom before scanning. Changes will be reflected in the prescan image.

Click on ⊠ to flip the image top to bottom.
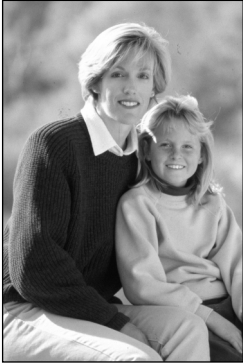
• The image is upside down compared to the original prescan.

Click on ⊠ to flip the image left-to-right.
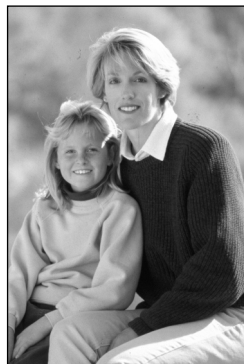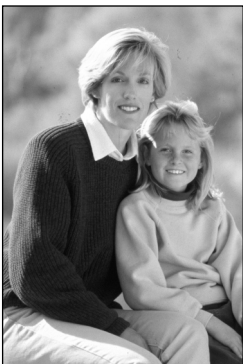
• Image is reversed compared to the original scan.

FULL SCREEN VIEW

This function allows you to display the entire prescanned image in the Prescan tab.

1. Click on ▣ .
- The prescan image is magnified so that it fits in the Main window.
- When [Full-Screen] button is clicked again, the prescan image returns to the previous size.

MAGNIFYING OR REDUCING THE VIEW

Use the zoom button to increase or reduce the image magnification

.
Zooming In

1. Click on 🔍 .
- The pointer will change to ⊕.

2. Click anywhere on the image to zoom in.
- The clicked position will be the centre of the magnified view in the Prescan tab.
- The + disappears from the magnifier icon when the maximum image magnification has been reached.

Zooming Out

1. Press and hold the Ctrl key (option key on the Macintosh) to reduce the image magnification.
- The pointer will change to ⊖.

2. Click anywhere on the image to zoom out.
- The – disappears from the magnifier icon when the minimum image magnification has been reached.

Use the grab button to scroll an enlarged image.
　　　• The grab button can only be selected when the image has been magnified beyond the limits of the Prescan tab.

1.　Click on 🖐 in the Prescan image display area.
　　• The pointer will change to 🖐.

2.　Click on and drag the image to the desired location.

AUTO-EXPOSURE LOCK

AE Lock allows you to lock an auto exposure value.
Once the auto exposure is locked, the multiple images on the same film will be scanned with the same exposure settings when performing the prescan and the final scan. With the AE lock function, for example, when scanning a backlit scene or a film to which exposure adjustments have been made, you can obtain a scanned image which reflects the exposure correction made when taking the photograph.
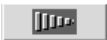
AE (Auto Exposure) function is performed in the following cases:
• When prescanning negative film.
• When prescanning colour positive film, where AUTO EXPOSE FOR SLIDES has been selected in the preferences.

SETTING THE AE-LOCK

After prescanning the image…

1. **Click on** ⊞ .
   • ⊞ cannot be selected until an image has been prescanned.

2. **Select another image, then click on** ▥ .
   • The locked exposure setting will apply to the selected prescan image.
   • The prescan and the final scan will be performed with the locked exposure setting until the AE Lock function is cancelled by clicking on the AE lock button again.
   • When [Auto Expose for Slides] in the Preferences (see page 29) is not checkmarked, the AE lock function is not available with positive film.

   Images will be scanned using the AE lock settings until AE lock is cancelled or the scanner is reinitialized.

CANCELLING THE AE-LOCK

1. **Click on** ⊞ .

2. **Click on** ▥ **to prescan the image again.**

AE AREA LOCK

Auto exposure can be based on a specified area in the prescanned image.
Perform the procedure below after prescanning the image.

1. **Click on ▦.**

2. **Press the Shift key.**
    • The AE area is indicated by an unbroken line, whereas
      the cropping area is indicated by a dashed line.

3. **While pressing down the Shift key, change the
    AE area.**
    • The operation is the same as that of changing the
      cropping area except that the shift key should be used.
    • For details, see "Cropping" (see page 58).

CROPPING THE IMAGE

AUTO CROPPING

The cropping area is determined automatically so that the holder or slide mount frame in the prescan image is removed.

1.   Click on ⊡.

CROPPING

The cropping frame defines how much of the prescan image will be scanned. The dimensions of the cropping frame are displayed in the lower left corner of the Prescan tab.

To enlarge or reduce the size of the cropping frame…

Click on the cropping frame and drag the pointer in or out.

- Click on the corners and drag to resize the cropping frame proportionally.
- Click on the sides and drag to resize the cropping frame non-proportionally.
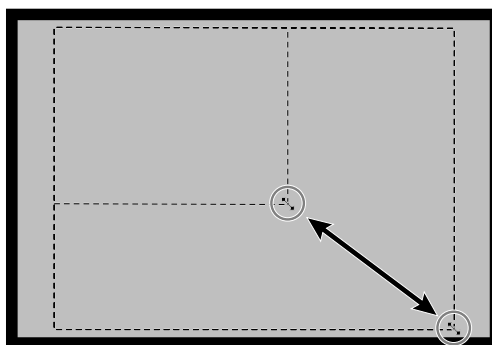
To move the cropping frame…

Click inside the cropping frame, then drag the cropping frame to its new location.
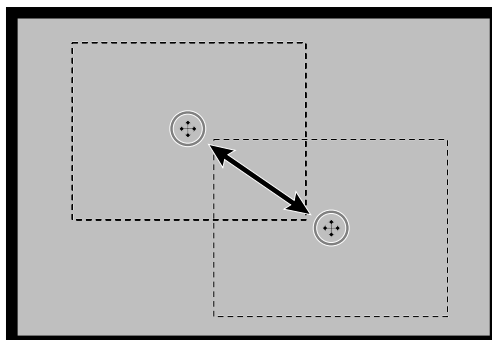
To define a new cropping frame…

Click and drag outside the current cropping frame.

* You can resize the cropping frame to cover the full prescan image again
  by pressing the following keys.

When the Prescan tab is displayed:

Windows: Press the Ctrl key and A key
                simultaneously.
Macintosh: Press the Command ⌘ key and A
                key simultaneously.
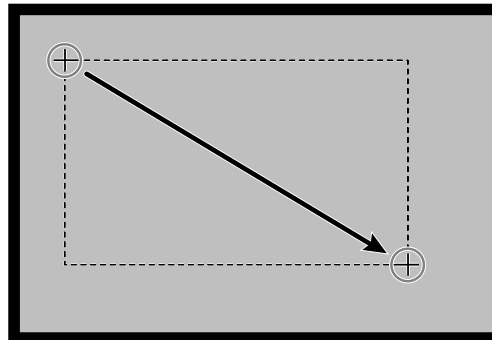
CROPPING THE PRESCAN IMAGE

A more precise prescan image can be displayed by
prescanning the cropped area again.

1. **Click on ▐▐▥ .**
   • After the cropped area is prescanned again, a more
     precise prescan image is displayed.

FOCUS

The DiMAGE Scan Multi PRO uses the CCD sensor for autofocus.
Autofocus uses the centre of the image to determine focus. Normally, this results in an
excellent scan because the film plane is flat. However, if the film is warped or curled, or if
Autofocus is turned off in the preferences, focus may not be accurate. In this case, the focus
adjustment should be performed again using the point AF or Manual Focus function.
   • Automatic autofocus can be turned on and off in the Preferences (see page 29).

POINT AF

This allows you to use autofocus on a specific area of the
image

1. **Click on** .
    • The pointer will change to the Point AF icon.
    • Click on [Point AF] button again to escape the function.

2. **Click on the area of the image you wish to be in**
    sharp focus.
    • Autofocus will begin, then a new prescan will start.
    • The prescanned image will appear in the Prescan tab
       when complete.

MANUAL FOCUS

Manual focus can be use with specific area of the image.

1. **Click on** ⬚.
   - The pointer will change to the Manual Focus icon.
   - Click on [Manual Focus] button again to escape the function.

2. **Click on the area of the image you wish to be in sharp focus.**
   - The focus control window dialog box will appear.

3. **Adjust the slider until the black and white lines are at their longest for maximum sharpness.**
   - Click and drag the slider to the left or right. Click on the slider bar to make a larger change.
   - To slightly defocus, adjust the sliders until the black bar is a little shorter than the white bar.

4. **Click on** ⬚ OK ⬚.
   - A new prescan will begin.
   - The prescanned image will appear in the Prescan tab when complete.
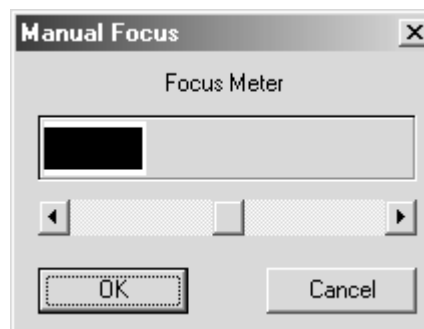
DISPLAYING FRAME NUMBER

When 35mm is selected the film format, this function allows you to display the current frame number and total frame number.

1. **To display the next frame, click on ▶ .**

2. **To display the previous frame, click on ◀ .**
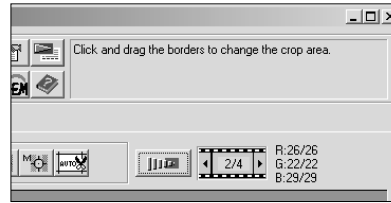
RGB/CMY INFORMATION

The RGB information from the pointer position is always displayed in the Prescan tab. The information is described in brightness levels from 0 to 255. However, the display can be changed to show CMY information.

1. **Press and hold the Shift key (Command ⌘ key on the Macintosh) with the Prescan tab open. The RGB information will change to CMY.**

IMAGE CORRECTION

I M A G E   C O R R E C T I O N   F L O W

LAUNCH THE SOFTWARE (see page 26)
Set the Preferences (see page 29)
Load the Film Holder (see page 31)
Inserting the Film Holder (see page 38)
Setting the Film Format / Film Type (see page 39)

INDEX SCAN (see page 41)

PREVIEW SCAN (see page 49)

IMAGE CORRECTION
Tone curves and histogram
Brightness/ contrast / colour balance
Hue / saturation/ lightness
Variation correction
Selective colour correction
Unsharp mask
Snapshot
Cancelling the image correction
Full-screen view
Job save / job load
Digital ICE/ROC/GEM

FINAL Scan and Save (see page 98)

IMAGE CORRECTION WINDOW

This scanner gives you three options for correcting the brightness, contrast, and colour balance of the final scan.

Click on the Image Correction tab in the Main window.

THE IMAGE CORRECTION TAB PART — NAMES OF PARTS
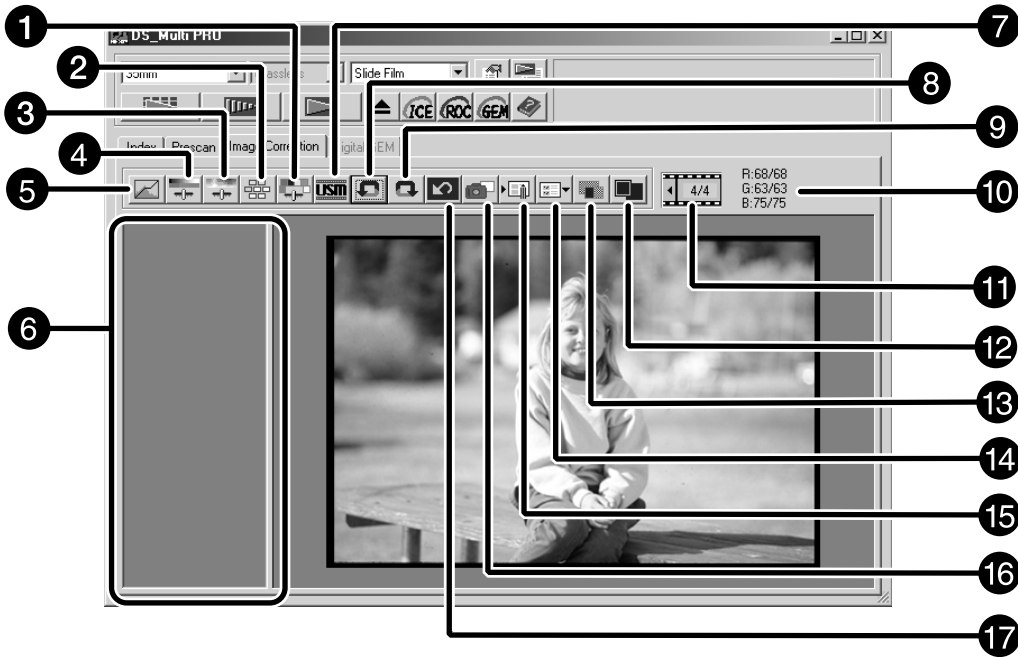
❶ Selective Colour button

❷ Variations button

❸ Hue/Saturation/Lightness Correction button

❹ Brightness/Contrast/Colour Balance Correction button

❺ Tone Curves/Histogram Correction button

❻ Snapshot display area

❼ Unsharp Mask button

❽ Undo button

❾ Redo button

❿ RGB/CMY value display

⓫ Frame Number indicator

⓬ Full-Screen View button

⓭ Pre/Post Correction Comparison Display button

⓮ Image Correction Job Load button

⓯ Image Correction Job Save button

⓰ Snapshot button

⓱ Correction Reset button

TONE CURVES AND HISTOGRAM

When the Tone curves/Histogram Correction button is clicked, the Tone Curves and Histogram dialog box is displayed.

The Tone Curves part allows you to change the tone curves and directly correct the output value.

The Histogram part allows you to specify the input and output area from the information included in a film and correct images. Also, this dialog box displays the histogram of the image area inside the cropping frame in each RGB colour. The level is indicated in 256 colour steps (0 to 255) from left to right side.

The tone curves and histogram are linked to each other so that when the tone curve is corrected, the histogram is automatically corrected.

Click on [icon] **in the Image Correction tab.**

THE TONE CURVES AND HISTOGRAM DIALOG BOX — NAMES OF PARTS
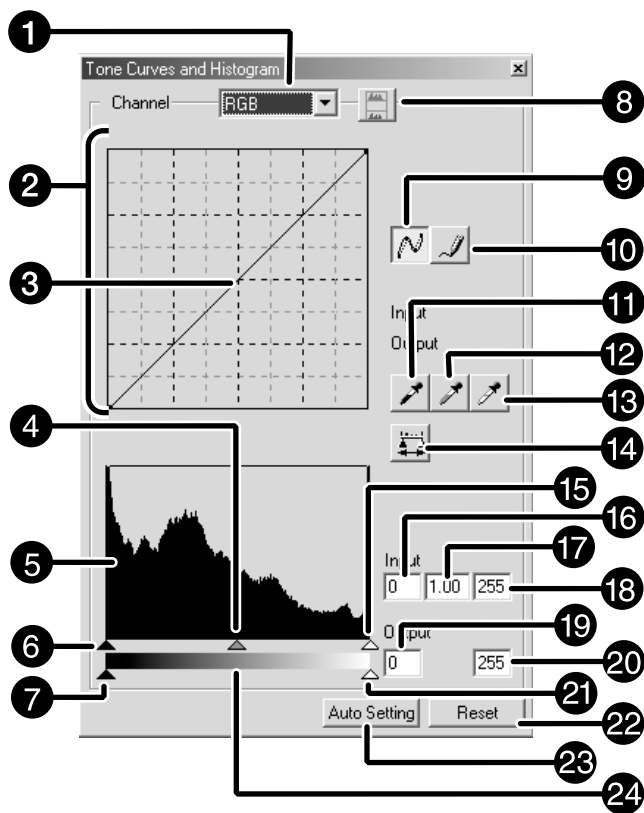
❶ Channel list box

❷ Tone curves pallet

❸ Tone curves

❹ Input Gamma slider

❺ Histogram

❻ Input Shadow slider

❼ Output Shadow slider

❽ Histogram RGB display button

❾ Tone curves/Smooth Curve button

❿ Freehand curve button

⓫ Black point button

⓬ Grey point button

⓭ White point button

⓮ Apply button

⓯ Input Highlight slider

⓰ Input Shadow text box

⓱ Input Gamma text box

⓲ Input Highlight text box

⓳ Output Shadow text box

⓴ Output Highlight text box

㉑ Output Highlight slider

㉒ Reset button

㉓ Auto Setting button

㉔ Grey scale

CORRECTING THE TONE CURVES

Changing the shape of a correction curve changes the output level for each corresponding input level. Changing the shape of the red, green, or blue curves affects colour balance of the image. Changes to the RGB curve affect the image contrast and brightness.

1. **Click on the arrow next to the channel to display the available channel (RGB, R, G, B).**

2. **Select the channel of the colour to be corrected.**

3. **Click and drag the portion of the curve to be changed.**
    *   The coordinate value of the cursor is displayed from 0 to 255.
    *   The correction made by changing the tone curves is applied to the prescan image.
    *   You can also change the tone curves by freehand.
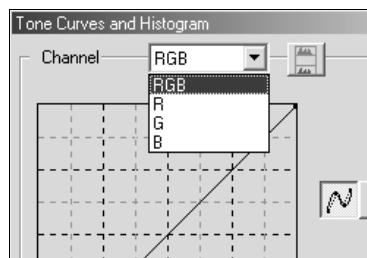
CHANGING THE TONE CURVES BY FREEHAND

This function allows you to draw tone curves by freehand.

1. **Select the channel of the colour (R, G, B, RGB) to be corrected from the channel selection menu.**

2. **Click on [pencil icon].**
    *   The cursor changes to the pencil shape.

3. **Draw the desired curve by dragging.**
    *   To smooth out the curve points, click on [icon].
    *   The change will be reflected in the prescan image.

SETTING THE WHITE, BLACK OR GREY POINTS

White point (highlight point) indicates the section you want to lighten, Black point (shadow point) the section you want to darken, and Grey the section you want to have as neutral tone. An image with no highlight or shadow will not be clear and appear dull. You can correct the image by adjusting the White point/Black point/Grey point buttons to enhance the highlight or shadow point so that the image will have good contrast and not be all white or black. Also if the image has too much contrast, you can correct it by weakening the highlight or shadow point.

> • Changes are automatically applied to the prescan image.

Setting the White Point

1. **Double-click on** ⬚.

   • The Point Value Setting dialog box is displayed.
   • The initial value of the White point is 255 in each R, G and B.

2. **Input the desired white point value.**

3. **Click on** ⬚.

   • The cursor changes to the white dropper shape.

4. **Click the desired highlight point of the image.**

   • The image is corrected so that the point you clicked is the highlight point. The colour of the highlight point is the white dropper value you input in step 2.
   • The change will be reflected in the prescan image.

• You need to identify the true highlight points of the image, not pure white points that have no detail, such as reflection points. White with no detail is called specular white and ink will not be used in these parts when printing.
• Normally, if you set each R, G, B colour to 250 to 253, white will have less brightness. You may lose the gleam of a white cup.

Point Value Setting dialog box
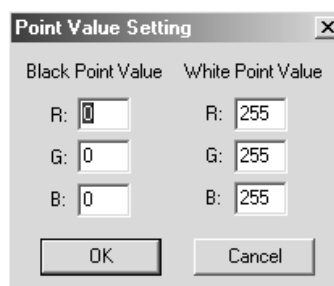
• When the film type is set to the colour mode.
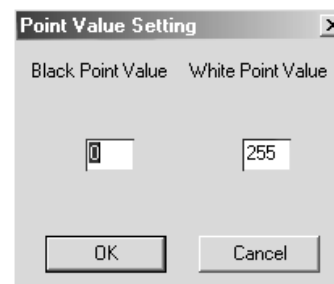
• When the film type is set to the monochrome mode.

Setting the Black point

1. **Double-click on** ⬚.

   • The Point Value Setting dialog box is displayed.
   • The initial value of the Black point is 0 in each R, G and B.

2. **Input the desired black point value.**

3. **Click on** ![black dropper icon]**.**

    • The cursor changes to the black dropper shape.

4. **Click the desired shadow point of the image.**

    • The image is corrected so that the point you clicked is shadow point. The colour of the shadow point is the black point value you input in step 2.
    • The change will be reflected in the prescan image.

• Normally if you set each R, G, B colour to 10-30, you can avoid loss of detail in the shadow areas.

Setting the Grey point

This function can specify the point to be changed to grey in the image.

1. **Click on** ![grey dropper icon]**.**

    • The cursor changes to the grey dropper shape.

2. **Click the point to be changed to grey in the image.**

    • The image is corrected so that the point you clicked is grey point.
    • The change will be reflected in the prescan image.

NOTE:

• Setting the grey point is not necessary for most images.

VIEWING THE HISTOGRAM OF IMAGES AFTER MAKING CORRECTIONS

When ![histogram icon] is clicked, the histogram of the corrected images can be displayed.

The histogram of the corrections is displayed as long as you press this button. When the button is released, the histogram returns to the previous one.

AUTO SETTING

When [Auto Setting] button is clicked, the image is corrected automatically by removing parts of the histogram which contain no information, and using all tone steps from 0 to 255.

RESET

If you click [Reset] button, the settings in the current correction window are reset.

CORRECTING THE HISTOGRAM

The input slide bar has the Input shadow slider, Input gamma slider and Input Highlight slider. The output slide bar has the Output Highlight slider and Output shadow slider.
The image can be corrected by dragging the slider or inputting the value in the text box.
The change will reflect the prescan image.

Input Level Histogram

1. **Drag the slider to move it to the desired level or input the value in the text box.**

    • The change will be reflected in the prescan image.

    * For example, if you use the input Highlight slider and input shadow slider to remove areas which contain no pixels (flat line at left or right) the original colour will be better represented.
    Although the output slider does not normally need to be adjusted, use it according to the characteristics of the output equipment. For example, use the output slider when the black part is not printed clearly with the 0 setting in the black level. (In this case, adjust the Output level by moving the Output Shadow slider to the right slightly while checking the correction result).
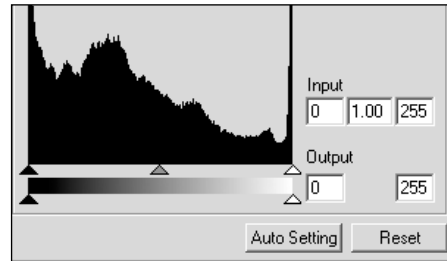
Displaying the Histogram of Each R, G, B colour

1. **Click on** ⬚.

    • When ⬚ is clicked again, the histogram of each R, G, B channel disappears.

2. **By dragging the Input Highlight slider (right) or the Input Shadow slider (left) in each R, G, B channel or inputting the value directly in each text box, the Histogram RGB can be corrected.**

    • The change will be reflected in the prescan image displayed in the Image Correction display area.
    • The change corrected in each R, G, B channel will also be reflected in each corresponding tone curve.
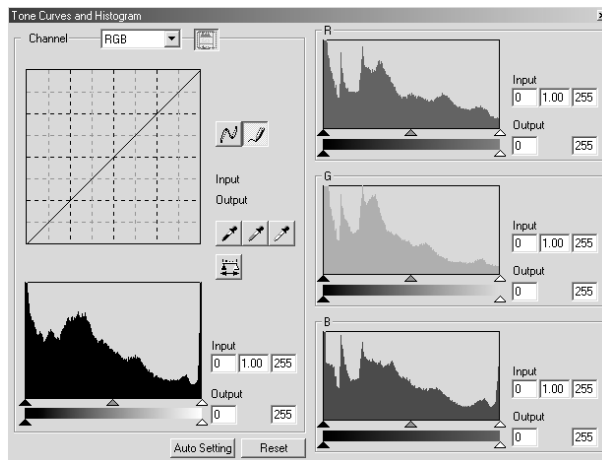
BRIGHTNESS / CONTRAST / COLOUR BALANCE

Brightness, Contrast adjusts the brightness and contrast of the whole image.
By adjusting the ratio of each RGB colour, you can correct the greenness or redness of the whole image, as well as overlapping of certain colors (colour overlap).

Click on **in the Image Correction tab.**

THE BRIGHTNESS, CONTRAST AND COLOUR BALANCE CORRECTION DIALOG BOX — NAMES OF PARTS
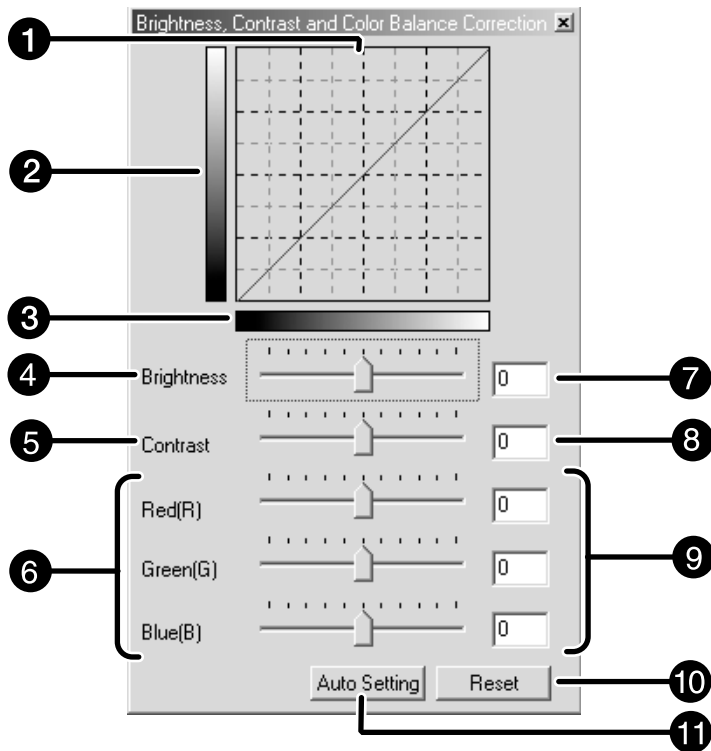
❶ Correction Result LUT (Look Up Table) display

❷ Post-Correction Grayscale control sample

❸ Pre-Correction Grey scale control sample

❹ Brightness slider

❺ Contrast slider

❻ Colour Balance (R, G, B) slider

❼ Brightness text box

❽ Contrast text box

❾ Colour Balance text box

❿ Reset button

⓫ Auto Setting button

1. **Drag each Brightness, Contrast or Colour balance (R, G, B) slider, or input the desired value in the text box.**
   - The change will be reflected in the prescan image.
   - Moving the Brightness, Contrast or Colour balance (R, G, B) slider changes "Post-Correction Greyscale" and "Correction Result LUT".

Brightness correction:
By dragging the Brightness slider to the right (or inputting a big plus number in the text box), th brightness of the image is raiesed.

Contrast correction:
By dragging the Contrast slider to the right (or inputting a big plus number in the text box), bright areas become brighter and dark areas become darker

RGB colour balance correction:
By dragging the Colour Balance slider to the right (or inputting a big plus number in the text box), the contect of each channel is increased, to emphasise each colour.

Correction Result LUT

The colour of the image is changed as shown in the Correction Result LUT.
The correspondence between the colour displayed on the Pre-Correction Grayscale and Post-Correction Grayscale appears on the Correction Result LUT.

AUTO SETTING

When [Auto Setting] button is clicked, the brightness and contrast of the image is corrected automatically according to the lightness without changing the colour balance.

RESET

If you click [Reset] button, the settings in the current correction window are reset.

HUE / SATURATION / LIGHTNESS

You can adjust the 3 colour elements Hue (tone of colour), Saturation (vividness), and Lightness (brightness) separately. This is suitable for when the colour seems dull and you wish to add vividness. It is necessary to choose a good combination of Hue, Saturation, and Lightness.

Click on **in the Image Correction tab.**

THE HUE, SATURATION, LIGHTNESS CORRECTION DIALOG BOX —
NAMES OF PARTS
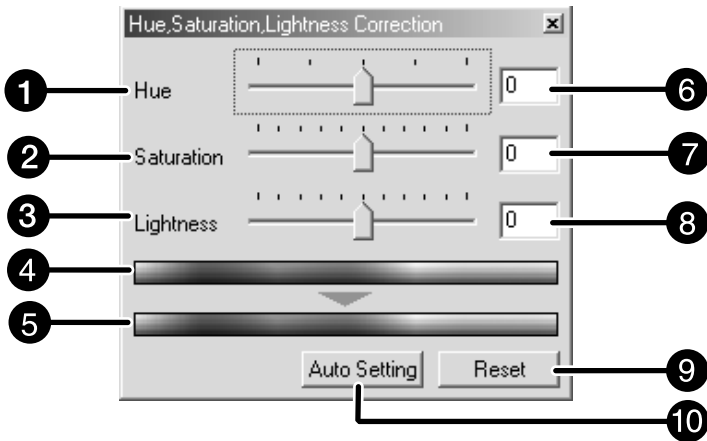
❶ Hue-level slider

❷ Saturation-level slider

❸ Lightness-level slider

❹ Pre-Correction Colour Sample

❺ Post-Correction Colour Sample

❻ Hue-level text box

❼ Saturation-level text box

❽ Lightness-level text box

❾ Reset button

❿ Auto Setting button

1. **Drag each Hue, Saturation or Lightness slider, or input the desired value in the text box.**
   - The change will be reflected in the prescan image.
   - To change the colour, move the Hue, Saturation or Lightness -level slider (or input the desired value in the text box).
     Moving the slider changes "Pre-Correction Colour Sample" and "Post-Correction Colour Sample".

72

Hue correction:
Dragging the Hue slider, changes the colour of the image displayed in Pre-Correction Colour Sample, as shown in Post-Correction Colour Sample. When the Hue slider is dragged to the rightmost or leftmost side, the hue of the image is reversed.

Saturation correction:
Dragging the saturation slider to the right (or inputting a big plus number in the text box) icreases the intensity of the image colours.
Dragging the saturation slider to the left (or inputting a big minus number in the box) reduces the intensity of the colours.

Lightness correction:
By dragging the Lightness slider to the right (or inputting a big plus number in the text box), the lightness of the image is raised.

**Pre-Correction Colour Sample and
Post-Correction Colour Sample**

The colour displayed in "Pre-Correction Colour Sample" is changed as shown in "Post-Correction Colour Sample".

AUTO SETTING

When [Auto Setting] button is clicked, the saturation of the image is corrected automatically without changing the hue and lightness.

RESET

If you click [Reset] button, the settings in the current correction window are reset.

VARIATION CORRECTION

A number of images showing different variations are displayed , around the currently corrected prescan image. You can correct the image while comparing with the variation images.

Click on 🔲 **in the Image Correction tab.**

THE VARIATION DIALOG BOX — NAMES OF PARTS

❶ Variation Amount Control slider

❷ Correction list box
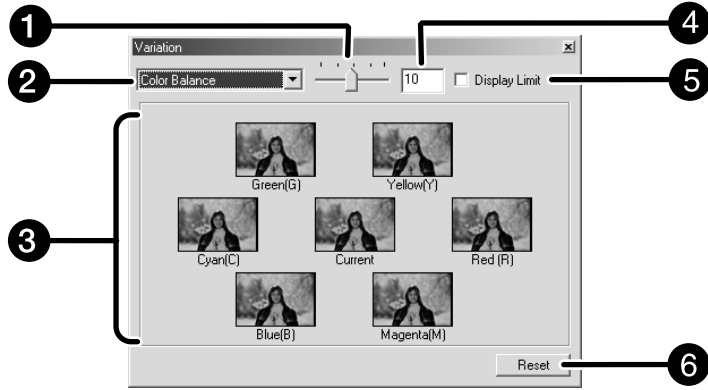
❸ Pre/Post Correction Image Display area

❹ Variation Amount Control text box

❺ Limit Indication check box

❻ Reset button

SELECTING THE ITEM TO BE CORRECTED

Colour Balance , brightness, contrast and saturation can all be selected for correction in the Variations screen.However, colour balance and saturation are not available when using the monochrome film.

1. **Click on the arrow next to the correction list box. The available correction items are displayed.**

2. **Click the item you wish to correct.**
   A number of frames of variation images corrected according to the selected correction item are displayed.
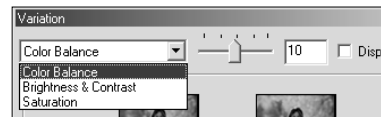
CHANGING THE SIZE OF THE CORRECTION INCREMENT

The size of the correction increments can be changed by moving the Variation Amount Control slider. The desired amount can also be input (10 to 20) in the text box.

COLOUR BALANCE CORRECTION

Six images that have been corrected by one-step in each RGBCMY direction the centre current image are displayed.

1. **Select colour balance.**
   • The corrected 6 frames of variation images are displayed.

2. **Click the image in the direction you want to correct from the 6 frames of the variation images except for the centre image.**
   • The image you clicked is placed in centre and 6 new variation images appear corrected by one-step in each direction.

3. **Correct the image properly by repeating the operation in step 2.**
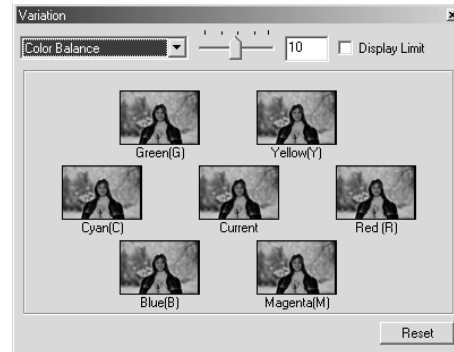
BRIGHTNESS & CONTRAST CORRECTION

Eight images in which brightness and contrast have been corrected by one-step in each direction from the centre image are displayed.
The variation images on the left and lower sides of the centre image show the – correction effect, and on the right and upper sides of the centre image show the + correction effect.

1. **Click the image in the direction you want to correct from the 8 variation images, except the centre image.**
   • The image you clicked is placed in the centre and 8 new frames corrected in each direction are displayed.

2. **Correct the image properly by repeating the operation in step 1.**
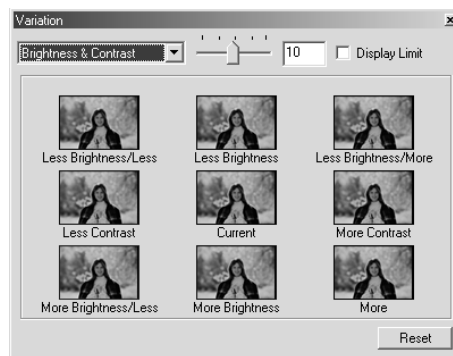
SATURATION CORRECTION

Two imageswith saturation correction are displayed on the right and left sides of the centre image. The variation image on the left side shows reduced saturation, and on the right side shows increased saturation.

1. **Click the image in the direction you want to correct, except for the image in the centre.**

   • The image you clicked is placed in the centre and 2 new variation images are displayed.

2. **Correct the image properly by repeating the operation in step 1.**
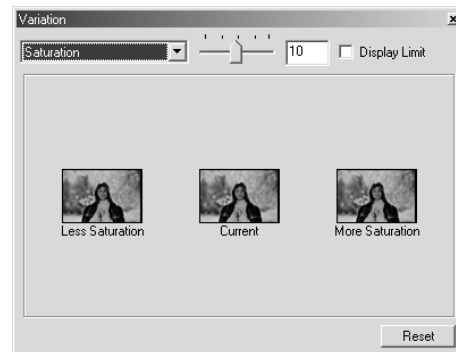
RESET

If you click [Reset] button, the settings in the current correction window are reset.

SELECTIVE COLOUR CORRECTION

This feature separates the colour region into 7 groups, Red, Green, Blue, Cyan, Magenta, Yellow and Black. You can adjust the colour range of each processed colour Cyan, Magenta, Yellow, and Black against the separate colour groups. You can use this if you wish to correct a certain colour only and not the whole picture, or if you wish to remove an unwanted colour from a particular colour. For instance, if you want the sky look vividly blue instead of purplish, decrease the component amount of Magenta from Blue to obtain a very blue sky.

Click on **in the Image Correction tab.**

THE SELECTIVE COLOUR CORRECTION
DIALOG BOX — NAMES OF PARTS
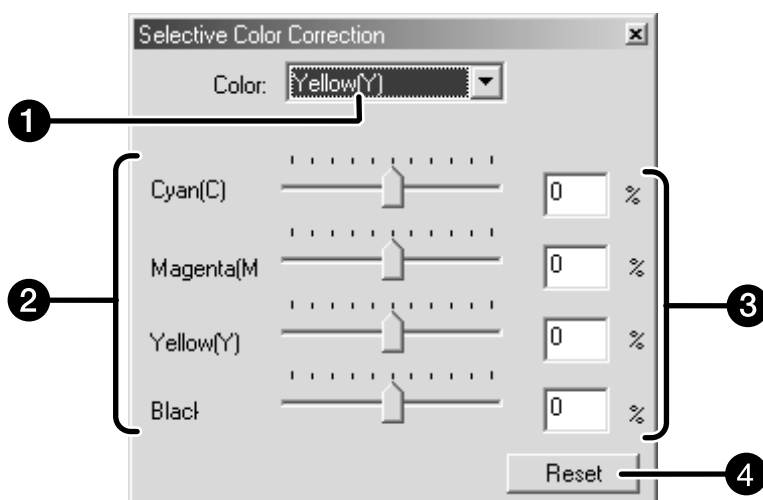
❶ Colour list box

❷ CMYK slider

❸ CMYK text box

❹ Reset button

1. **Click on the arrow next to the Colour list box to display the colour range to be corrected.**

2. **Drag the Cyan (C), Magenta (M), Yellow (Y) or Black (K) slider or input the desired value in the text box.**
   • The values from -100 to 100 can be input.
   • The change will not be reflected in the prescan image.
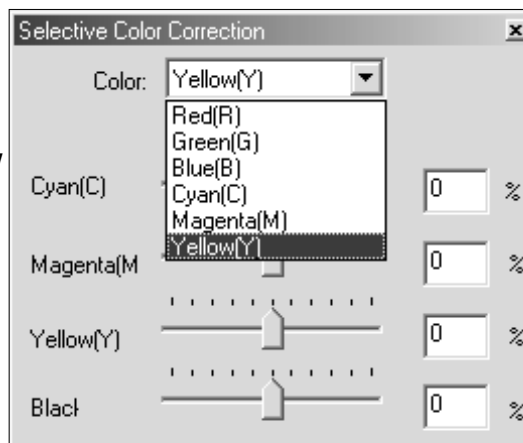
RESET

If you click [Reset] button, the settings in the current correction window are reset.

UNSHARP MASK

Unsharp Mask can increase definition of the image to make it clearer. It is useful if the image is slightly unfocused.

Click on ███ in the Image Correction tab.

THE UNSHARP MASK DIALOG BOX —
NAMES OF PARTS
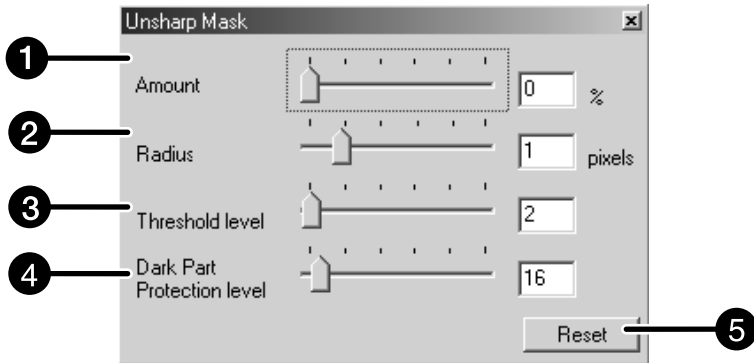
❶ Amount Level slider and text box
❷ Radius Level slider and text box
❸ Threshold Level slider and text box

❹ Dark Part Protection Level slider and text box
❺ Reset button

1. **Drag the Amount, Radius, Threshold level or Dark Part Protection level slider or input the desired value in the text box.**
   • The values from 0 to 500 for the Amount, from 0.1 to 5 for the Radius and from 0 to 255 for the Threshold level or Dark Part Protection level can be input respectively.
   • The change will not be reflected in the prescan image.

Amount:
If you adjust the slider to increase (to the right), Pixels increasing the level of contrast will become larger. If you increase the value too much, Pixelation (the Pixels image becoming noticeably rough) will occur. Normally, we recommend 150 to 200% for highly processed print images.

Radius:
If you adjust the slide to increase (to the right) or input a value, the edge of the Pixel will become sharper. Set it to determine how the sharpening effect is extended around each pixel. Normally, we recommend 1 to 2 for highly processed print images. This alteration cannot be recognized much on a print as it will be on the screen.

Threshold level:
If the difference between the surrounding pixels is greater than that of the threshold level, that pixel is recognized as a requiring sharpening. This restricts the effect to places where it is reduced.

Dark Part Protection level:
This limits the sharpening effect, so that only pixels whose light level is greater then the selected level are sharpened.

RESET

If you click [Reset] button, the settings in the current correction window are reset.

SNAPSHOT

When the Snapshot button is clicked, the current prescan image is stored in the Snapshot Display Area temporarily and displayed as a thumbnail.

When the thumbnail in the Snapshot Display Area is double-clicked, that image is displayed in the Prescan tab.

This is convenient when storing the image correction temporarily while processing, or when correcting the image again after going back to a certain step.

STORING IN THE SNAPSHOT DISPLAY AREA TEMPORARILY

1. Click on [icon] .in the Image Correction tab.

- The displayed prescan image is displayed in the Snapshot Display Area temporarily.

Snapshot Display Area 1

DISPLAYING THE IMAGE STORED TEMPORARILY AS A PRESCAN IMAGE

1. Click on the thumbnail in the Snapshot Display Area.

- The displayed prescan image is deleted and the thumbnail image is displayed as a prescan image.

Snapshot Display Area 2

CANCELLING THE IMAGE CORRECTION

When ▣ is clicked, the current image correction is cancelled and the image returns to the previous one.

REDO THE CORRECTION

When ▣ is clicked, the cancelled image correction can be resumed.

DELETE THE IMAGE CORRECTION

When ▣ in the Image Correction tab is clicked, all the image corrections are deleted and the image returns to the initial state.

FULL-SCREEN VIEW

This function allows you to display a full screen view of the corrected image in the Image Correction tab.

1. **Click on** ▣ **.in the Image Correction tab.**
   - When ▣ is clicked, the size of the pre and post correction image is automatically changed according to the size of the Main window.

CHECKING THE CORRECTION RESULT WHILE LINING UP IMAGES

When ▣ is clicked, the Image correction tab is divided into right and left sides, the pre-correction image is displayed on the left side, and post-correction image is displayed on the right side.

JOB SAVE / JOB LOAD

The image correction setting in the correction window can be saved as an image correction job. You can easily correct the image by loading the most appropriate previously saved correction job.

SAVING AN IMAGE CORRECTION JOB

1. **Click on 🖳 in the Image Correction tab.**
   - The Register Image Correction Job dialog box is displayed.
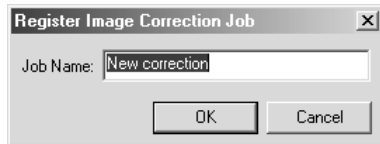
2. **Input the job name and click on ⬚ OK ⬚.**
   - The current image correction setting is saved as an image correction job.

LOADING IMAGE CORRECTION JOB

This function allows you to load the saved correction job and apply an image correction to the displayed image.

1. **Click on** **in the Image Correction tab.**
   • The Selected Image Correction Job dialog box is displayed.
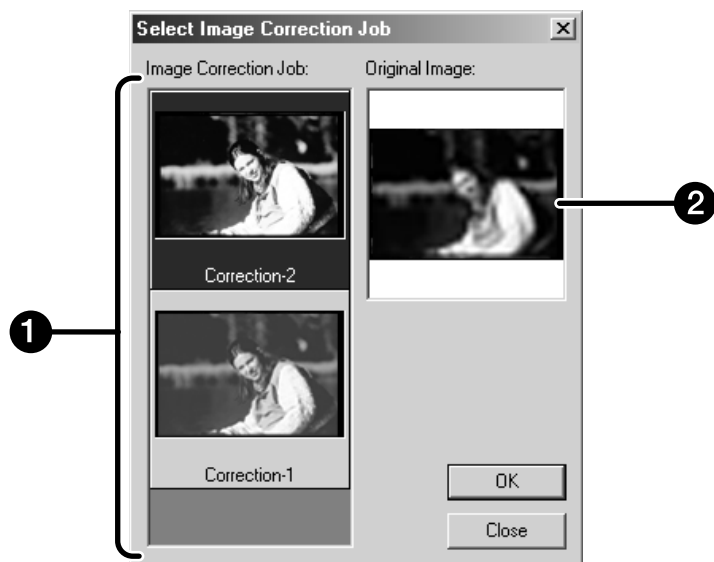
❶ Image Correction job display area

❷ Original image display

2. **Select the Image Correction job and click on** OK **.**

84

BEFORE USING THE DIGITAL ICE/ROC/GEM FUNCTION

■ WINDOWS

When connecting with the SCSI interface

With Digital ICE/Digital ROC/Digital GEM function turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Pentium 166MHz later	128MB	1.2GB	Pentium III later	512MB	2GB
Multi Format 35mm	Pentium 166MHz later	256MB	2GB	Pentium III later	512MB	4GB
Multi Format 6x9	Pentium 166MHz later	256MB	4GB	Pentium III later	512MB	6GB

With Digital ICE/Digital ROC/Digital GEM function, and loading with a 16-bit resolution turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Pentium 166MHz later	256MB	2GB	Pentium III later	512MB	3GB
Multi Format 35mm	Pentium 166MHz later	256MB	3GB	Pentium III later	512MB	4GB
Multi Format 6x9	Pentium 166MHz later	256MB	6GB	Pentium III later	512MB	8GB

When connecting with the IEEE1394 interface

With Digital ICE/Digital ROC/Digital GEM function turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Pentium II later	128MB	1.2GB	Pentium III later	512MB	2GB
Multi Format 35mm	Pentium II later	256MB	2GB	Pentium III later	512MB	4GB
Multi Format 6x9	Pentium II later	256MB	4GB	Pentium III later	512MB	6GB

With Digital ICE/Digital ROC/Digital GEM function, and loading with a 16-bit resolution turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Pentium III later	256MB	2GB	Pentium III later	512MB	3GB
Multi Format 35mm	Pentium III later	256MB	3GB	Pentium III later	512MB	4GB
Multi Format 6x9	Pentium III later	256MB	6GB	Pentium III later	512MB	8GB

■ MACINTOSH

When connecting with the SCSI interface

With Digital ICE/Digital ROC/Digital GEM function turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Power PC604 later	96MB	1.2GB	Power PC G4 later	384MB	2GB
Multi Format 35mm	Power PC604 later	192MB	2GB	Power PC G4 later	384MB	4GB
Multi Format 6x9	Power PC604 later	192MB	4GB	Power PC G4 later	384MB	6GB

With Digital ICE/Digital ROC/Digital GEM function, and loading with a 16-bit resolution turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Power PC604 later	256MB	2GB	Power PC G4 later	512MB	3GB
Multi Format 35mm	Power PC604 later	256MB	3GB	Power PC G4 later	512MB	4GB
Multi Format 6x9	Power PC604 later	256MB	6GB	Power PC G4 later	512MB	8GB

When connecting with the IEEE1394 interface

With Digital ICE/Digital ROC/Digital GEM function turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Power PC604 later	96MB	1.2GB	Power PC G4 later	384MB	2GB
Multi Format 35mm	Power PC604 later	192MB	2GB	Power PC G4 later	384MB	4GB
Multi Format 6x9	Power PC604 later	192MB	4GB	Power PC G4 later	384MB	6GB

With Digital ICE/Digital ROC/Digital GEM function, and loading with a 16-bit resolution turned on.

	Minimum system requirements			Recommended system requirements		
	CPU	Memory	Hard disk space	CPU	Memory	Hard disk space
35mm	Power PC604 later	256MB	2GB	Power PC G4 later	512MB	3GB
Multi Format 35mm	Power PC604 later	256MB	3GB	Power PC G4 later	512MB	4GB
Multi Format 6x9	Power PC604 later	256MB	6GB	Power PC G4 later	512MB	8GB

* With Macintosh, unused memory is the blank volume after the necessary memory for OS and applications bas been deducted.
 With Photoshop, assign the desired memory size adding the unused memory to the suggested memory size of the Photoshop.

DIGITAL ICE

The Digital ICE (Image Correction Enhancement) function removes visible dust, scratches, fingerprints, mould, etc. from the surface of the image.

1. **Click on ICE in the main window.**
    - The Digital ICE function is turned on. When the preview scan and final scan are performed, the image is displayed with the visable dust, scratches, figerprints mold etc removed. However, this function has no effect when scanning a monochrome film.
    - When the Digital ICE function is turned off, the scanning time will be longer.
    - Kodak Kodachrome cannot be used.
    - You can use the Digital ICE function for the following types of B&W film only after the film has been developed in colour and scanned with the "Colour Negative" setting for the film type. We cannot assure this procedure for other types of film.
      Kodak   Select Black & White 400
      Kodak   T400CN
      Illford   XP2 Super

DIGITAL ROC

The Digital ROC (Reconstruction Of Colour) function is an image correction function that can restore the colour quality of a faded image.
If the colour of the film has faded with the passage of time, the changed colour can be corrected automatically by reconstructing colour when scanning so that a digital image with appropriate colour can be restored.

1. **Click on** **in the Main window.**
   - The Digital ROC function is turned on. When the preview scan and final scan (see page 98) are performed, the colour quality of a faded image is restored and the corrected image is displayed.
   - When scanning a B&W film, the Digital ROC function is not available.
   - When scanning a colour film when 16 bit linear is selected as the scanning mode in the Preferences, the Digital ROC function cannot be used.
   - When the Digital ROC function is turned on, the settings of "Auto Expose for Slides" in the Preferences, the colour matching, the AE Lock function when prescanning (see page 56) or the AE Area Lock function (see page 57) are cancelled.
   - When using the Digital ROC function, be sure and perform the prescan and adjust the focus with the Point AF or Manual Focus function (see pages 60 to 61) before the final scan. Putting a checkmark on "Auto Focus at Scan" in the Preferences is recommended.
   - To turn off the Digital ROC function, click on the Digital ROC button again.
   - The Digital ROC function may not always operate effectively depending on the conditions of the film or the extent to which the colours are faded.
   - Much more time is required for scanning when the Digital ROC function is turned on, compared with when that function is turned off.
   - You can use the Digital ROC function for the following types of B&W film only after the film has been developed in colour and scanned with the "Colour Negative" setting for the film type. We cannot assure this procedure for other types of film.
     Kodak   Select Black & White 400
     Kodak   T400CN
     Illford   XP2 Super

DIGITAL GEM

The images of developed film are composed of high-density grains. These grains sometimes clump together so that the images look rough. This function detects the grains when scanning and equalizes them. So, a sharp and smooth image can be obtained even when a 35mm image is magnified

1. **Click on GEM in the Main window.**
   • The Digital GEM tab will be activated.

2. **Click on [IIIr] .**
   • The prescan will begin.
   • The Prescan tab will appear and the prescan image will be displayed in the window.

3. **Select the desired Input Resolution in the Scan Settings window (see page 92).**

4. **Click on Digital GEM tab.**
   • The Digital GEM tab window will appear.
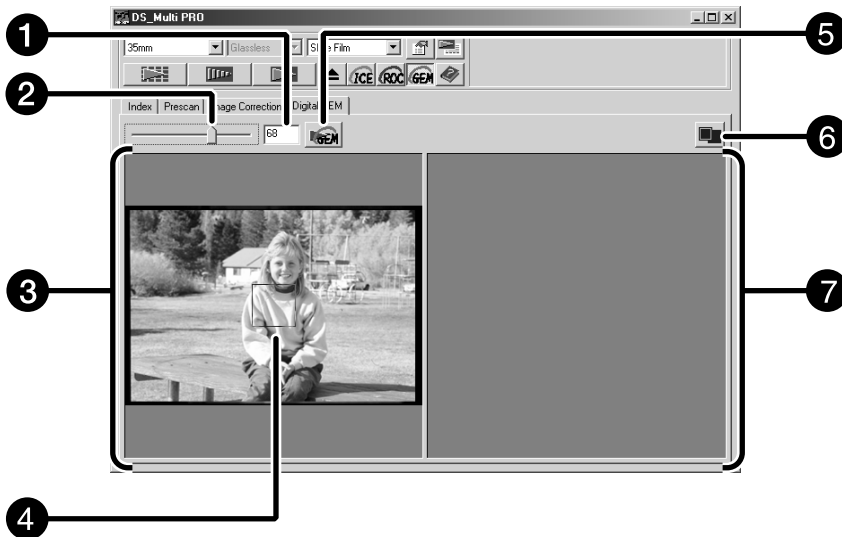
❶ Digital GEM text box

❷ Digital GEM slider

❸ Digital GEM image display area

❹ Confirm Digital GEM effect area

❺ Confirm Digital GEM effect button

❻ Full screen view button

❼ Digital GEM image display check area

5. **Drag the Digital GEM slider or input the desired value directly in the text box.**
   • Values from 0 to 100 can be input.
   • The bigger the value is, the more effective the correction result is.

6. **Change the Confirm Digital GEM effect area size or move that area if necessary and specify the image area to be checked.**
   - The Digital GEM check area is specified in the centre of the image and the size is set to 64 pixels x 64 pixels.
   - To move the area or change the area size, refer to the operations of the cropping frame (see page 59).

7. **Click on ⌊GEM⌋.**
   - To get the Confirm Digital GEM effect image, the film will be scanned according to the input resolution specified in step 3.
   - The image area specified in step 6 will be corrected according to the value specified in step 5, and displayed in the Digital GEM check image display area and the correction result can be checked.
   - The Confirm Digital GEM effect image can be enlarged by clicking on the Full screen view button.

8. **Repeat steps 5 to 7 if necessary and specify the Digital GEM adjust value so that an appropriate correction result can be obtained.**

9. **Click on ⌊▷⌋.**
   - The image will be scanned and corrected according to the specified value (Confirm Digital GEM effect value).
   - For operations after performing the final scan, see page 98.

   - When scanning a B&W film, the Digital GEM function is not available.
   - When using the Digital GEM function, be sure to perform the prescan and adjust focus with the Point AF or Manual Focus function (see pages 60 to 61) before the final scan. Putting a checkmark on "Auto Focus at Scan" in the Preferences (see page 29) is recommended.
   - The Digital GEM function may not always operate effectively depending on the condition of the film.
   - Much more time is required for scanning when the Digital GEM function is turned on compared with when that function is turned off.
   - You can use the Digital GEM function for the following types of B&W film only after the film has been developed in colour and scanned with the "Colour Negative" setting for the film type. We cannot assure this procedure for other types of film.
   Kodak   Select Black & White 400
   Kodak   T400CN
   Illford   XP2 Super

FINAL SCAN

F L O W

SCAN SETTING

Creating a job
Deleting a job
Job type

CUSTOM WIZARD

FINAL SCAN
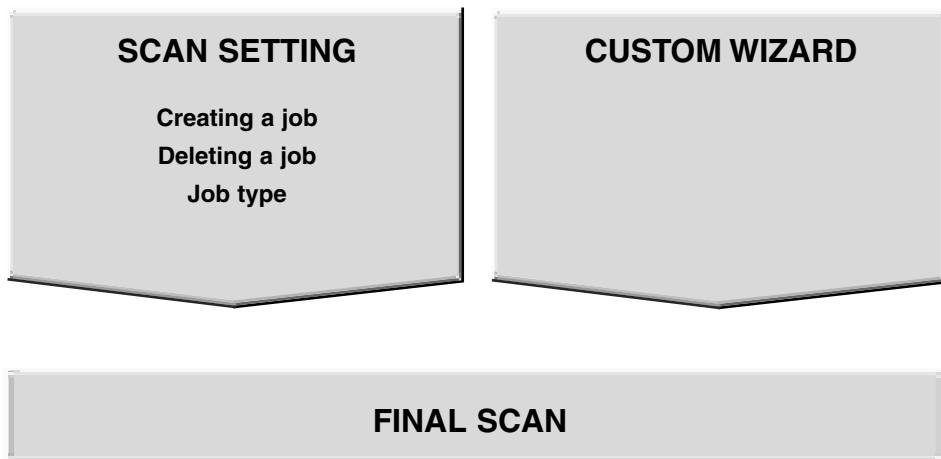
The scan settings determine your final image's resolution, dimensions, and file size, as well as helping determine the image quality. You can select a Job (see pages 96, 110 to 123) to have the scan settings selected for you or you can directly enter them into the Main window (Index tab or Prescan tab).

THE SCAN SETTINGS PART WINDOW — NAMES OF PARTS
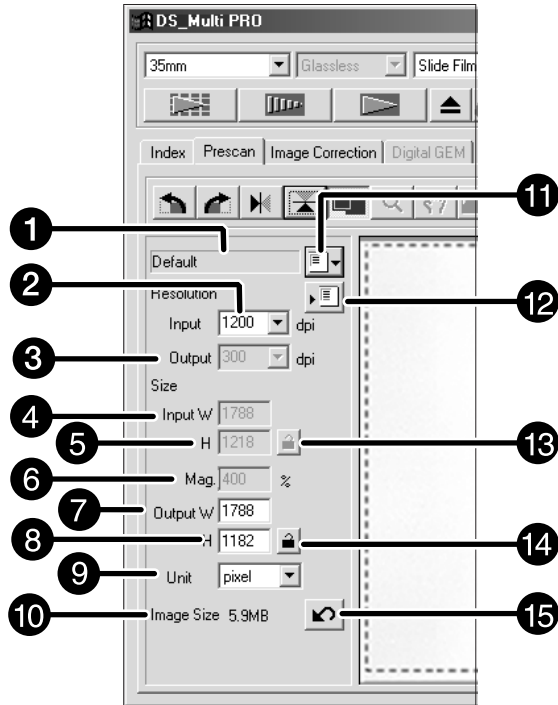
❶ Job Name list box   **❾** Unit list box

❷ Input Resolution list box   **❿** Image Size display

❸ Output Resolution list box   **⓫** Job Load button

❹ Input Size text box (W)   **⓬** Job Save button

❺ Input Size text box (H)   **⓭** Input size lock button

❻ Magnification Size text box   **⓮** Output size lock button

❼ Output Size text box (W)   **⓯** Reset button

❽ Output Size text box (H)

Image resolution is the number of pixels per inch (ppi or dpi) that represent your scanned image. The size of an image file is determined by its size (dimensions) and resolution.

The rule to follow when scanning is "bigger is better". To obtain the best results, set the output resolution to the highest value your final output device (printer, monitor, etc.) can handle. The driver software automatically determines the input resolution necessary to obtain the desired output size and resolution.

1. **Click on** ⊟▾ **in the Scan settings part of the window.**

The Job Selection dialog box will appear.

2. **Select the appropriate category from the drop-down list.**
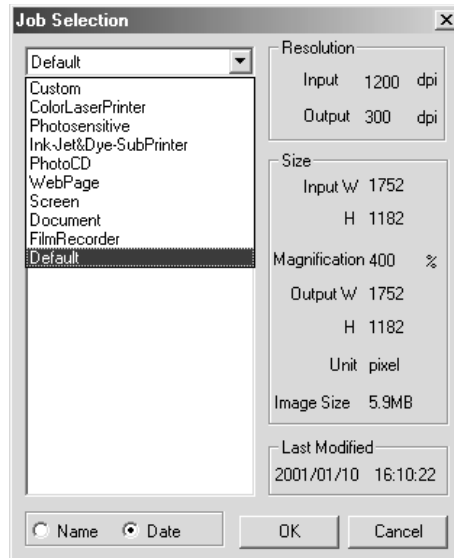
3. **Click on the job file name to select it, then click on** OK **.**
    • The settings are applied to the active Prescan tab.

NOTE:

Job names can be listed chronologically or alphabetically. Select the format by clicking on the Name or Date option button.
• The cropping frame changes accordingly, but can be proportionally resized.

---
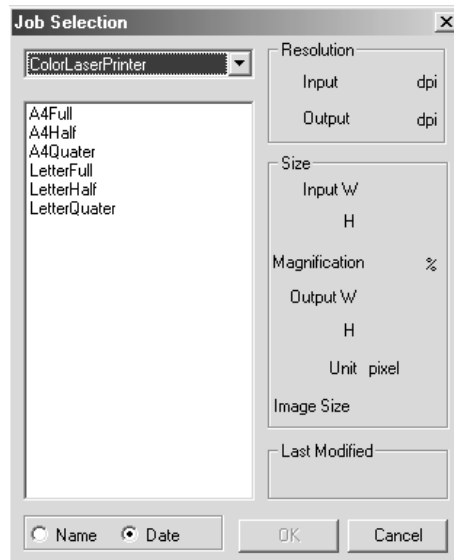
4. **Enter the desired input/output resolution from the input and the output resolution drop-down list.**

   • Values can also be entered into the output resolution list box directly.
   Input Resolution list box
   The value with "#" is the default setting.
   < When selecting 35 mm or Multi Format 35mm >
      4800/2400/1600/#1200/800/600/480
      (When inputting value directly, the desired value from 300 to 4800 is available.)
   < When selecting 6x4.5, 6x6, 6x7, 6x8, 6x9 or Multi Format 6x9 >
      4800/3200/2400/1600/1200/#800/600/400/320
      (When inputting value directly, the desired value from 200 to 4800 is available.)
   Output Resolution list box
   The value with "#" is the default setting.
      2400/1440/1200/800/720/600/400/360/350/#300/240/200/180/150/96/72/36
      (When inputting value directly, the desired value from 36 to 2400 is available.)
   • When "pixel" is selected in the Unit list box, the output resolution cannot be selected or specified.
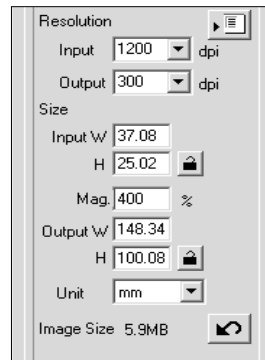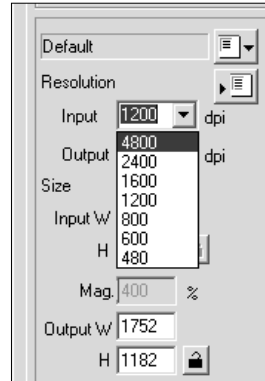
5. **The dimensions of the cropping frame are displayed in the input size text boxes.**

   • Values can be entered directly or by resizing the cropping frame.
   • The values will change if a different unit of measurement is selected.
   • The scanning area size can't be changed if the Input Size is locked.

6. **Enter the desired output size (maximum 3 digits).**

   • The output size is limited by the maximum resolution of the scanner.
   • The values will change if a different unit of measurement is selected.
   • The output size cannot be changed when the unit list box is set to pixels.
   • The scanning area size can be changed proportionally (within the resolution limits) when the Output Size is locked.

7. **The input scan resolution text box is set to the lowest input (scan) resolution necessary to achieve the desired output size and resolution.**

   Input scan resolutions can also be selected from the drop down list or entered directly.

NOTE:

• Click on 🔓 to lock the settings. The icon will change to 🔒. Click again to unlock.
• The magnification text box displays the output/input size ratio as a percentage.
• Magnification values can be entered directly.
• Unit list box allows you to select the unit of Input size and Output size from the following units displayed in the list box. The value with "#" is the default setting. #pixel/mm/cm/inch/pica/point.

CREATING A JOB

In addition to the Job settings included with the software, it is possible to create and save your own Job settings.

1. **Set the desired settings in the Main window (Index tab or Prescan tab).**

2. **Click on ▸▤.**
   The Job Registry dialog box will appear.
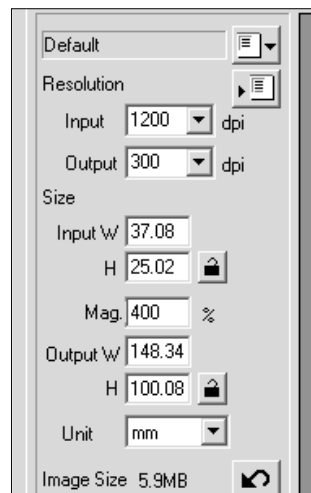
3. **Name the job by entering a title and select the desired category, then click on ⌷ OK ⌷.**
   • The scan settings you specified are registered with the specified name as a job file. The Job Registry dialog box will disappear.
   • Input the job name within 24 characters.
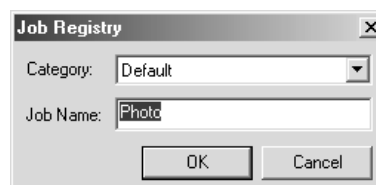
DELETING A JOB

It is possible to delete the Job you created when it is no longer needed.

1. **Click on the name of the job in the Main window scan settings part.**

2. **After clicking on the job name to be deleted,**
   Windows®: Press the Delete key.
   Macintosh: Press the Command ⌘ key and D key simultaneously.
   The deleted job cannot be restored again. If you delete the job mistakenly, register the job again.
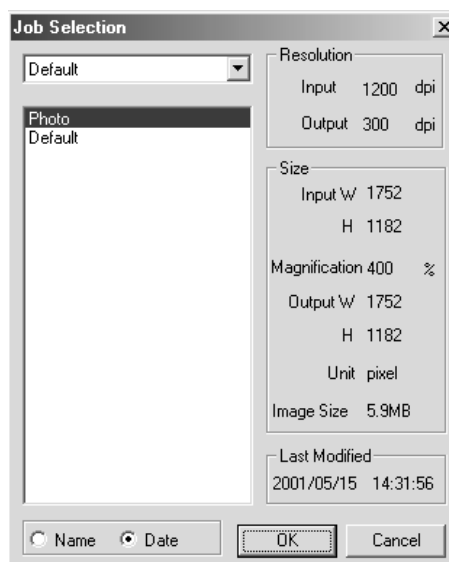
Before scanning, it is necessary to make various settings in the Scan Settings window (see page 92) such as the amount of detail required to read the original film (input resolution), the amount of detail required for output (output resolution), the size required for output (output size/magnifications), etc.
It is important that these settings are made properly in order to achieve optimal results for the size and/or purpose of the final image. A beginner may find these settings to be complicated and difficult to understand.

"Job" is a function that allows you to save all the item settings made to the Scan Settings window to a particular file so that this file can be recalled when necessary for any future jobs that require the same settings. Properly used, this function can simplify the complicated process of setting the resolution, image size, magnifications, etc. scanner settings, so that even a beginner can easily execute the ideal settings required for the job.

Up to 8 items can be set to numerical values in the Scan Settings window. One pattern reflecting settings for each of the 8 items can be saved to a Job file. Should these settings be changed, the new settings can be saved to another job file. All Job files are collected within the "Job File List" that designates 10 individual categories for each image output destination (device to which the job is to be output). In total, approximately 570 different types are available.

Because other optional settings can be registered to the Job File List, intermediate and advanced users can increase their work efficiency by saving commonly used scanner settings to the Job File List. Also, it is possible to reduce work time by saving settings to the Job File List when specific settings are required, regardless of the image to be scanned.

• When installing the setup program (installer) by following the instructions, the job files are installed in the following folders for each category.
   When using Windows® (The startup hard disk assumes drive C.)
   [C:]/[Program Files] folder/[DS_MultiPRO] folder / [Job] folder
   When using Macintosh
   [System] folder /[Start Up Disk]/[Preferences] folder / [DS Multi PRO Jobs] folder
• For adding or deleting a job file, see "Registering a Job" or "Deleting a Job" described on the previous page. The files in the folders described above cannot be operated with Explorer (or Finder on Macintosh).
• The "Scan Job File List" in which all the scan job settings are listed, appears on pages 110 to 123.

SCAN JOB TYPE

Before making the final scan, the scanner needs to know how big the final image will be and the quality of output that will be used (printer, monitor, etc.) so it knows what resolution to scan the film. Using the Job function is a quick and easy way to enter the scan settings.

SCAN JOB CATEGORY	DESCRIPTION
Custom	User created scan settings (see page 92).
Colour Laser Printer	Digital colour copiers and colour laser printers Uses output resolution of 600 dpi. There are two paper-size options; letter and A4.
Photosensitive	Printers that use photosensitive/photographic material Can use output resolutions of 400 dpi. There are 11 paper size options.
Ink Jet & Dye-Sub Printer	Ink Jet and Dye-sublimation printers Uses an output resolution of 300 dpi. There are 10 paper size options.
Photo CD	Uses an output resolution of 300 dpi. Image size is listed in pixels and will vary.
Web Page	For use on home pages Uses an output resolution of 72 dpi. Image size is listed in pixels and will vary.
Screen	For monitor display Uses an output resolution of 72 dpi. Image size is listed in pixels and will be the VGA standard of 640 x 480 to 1920 x 1200 pixels.
Document	For insertion into documents Uses an output resolution of 72 dpi. Image size depends on the paper size selected.
Film Recorder	For high input resolution images that will be output to a film recorder.
Default	This category uses the default settings for the film format. The scan settings appear in the Job Selection window.

Scan the film according to the Prescan settings.
With the DiMAGE Scan Multi PRO utility software, you can save the final scan in one of the following file formats.

- JPEG
- TIFF (No compression)
- BMP (Windows only)
- PICT (Macintosh operating system only)

The image files of 48 bit (16 bit each RGB) can only be saved in the TIFF format.

TWAIN DRIVER / PLUG-IN SOFTWARE

With the Prescan image displayed in the Prescan tab...

1. Click on ⊳ in the Main window.

- The final scan will begin.
- When scanning is complete, the final scan will appear in the host applications window.

2. Save the image using the instructions for your host application.

3. Close the Control Window to exit the DiMAGE Scan Multi PRO driver software.

- The driver window will close automatically after each scan if the Close Driver After Scanning option was selected in the Preferences dialog box (see page 29).

NOTE:

Select the compression rate when selecting JPEG as a file type.
- When you select Low the file size will be large, but there will be lens image deteriation than when medium or High is selected.
- When you select High the file size will be smaller, but there will be more image deteriation than when Medium or Low is selected.

UTILITY SOFTWARE

With the Prescan image displayed in the Prescan tab...

1. **Click on** [▷] **in the Main window.**
   • Your system's standard save dialog box will appear.

2. **Enter the desired file name and select the file destination.**

3. **Select the file type from the drop-down list.**
   • With Macintosh, a PICT file which width is more than 4096-pixel cannot be selected.

4. **Click on** [Save]**.**
   • The final scan will begin.
   • When scanning is complete, the scan will be saved in the selected location. The software will return to the Prescan tab.

5. **Close the Control Window to exit the DiMAGE Scan Multi PRO driver software.**
   • The driver window will close automatically after each scan if the Close Driver After Scanning option was selected in the Preferences dialog box (see page 29).
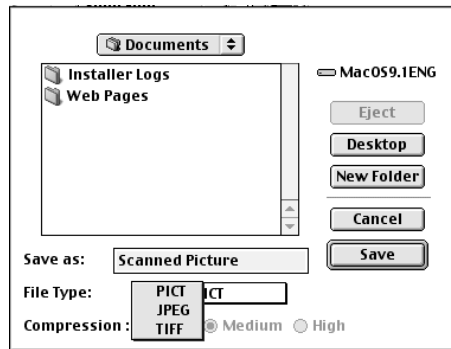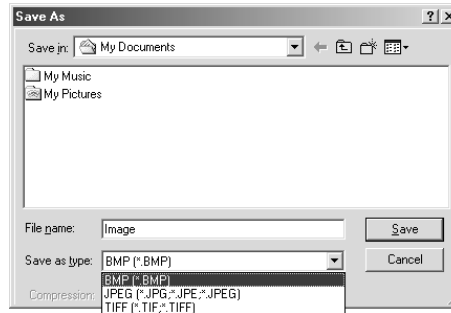
CUSTOM WIZARD

The Custom Wizard function allows you to automate a series of operations of scanning. When clicking on [Custom Wizard] button in the Main window, the Custom Wizard window appears. Auto operation settings can be saved, and later selected or deleted.

1. **Click on [icon] in the Main window.**
   - The Custom Wizard window is displayed.
   - When the Custom Wizard Setting window is displayed for the first time, "New" is selected.
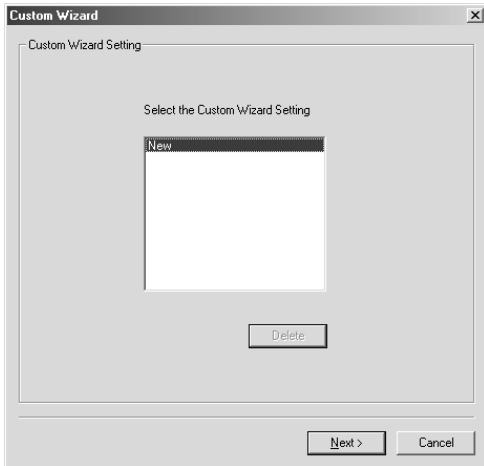
   - When specifying a new auto operation setting, select [New].

2. **Select the auto operation setting and click on [Next >].**
   - The Film window is displayed.
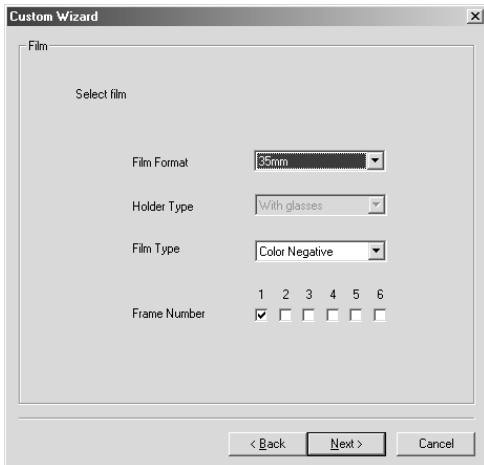
   - Click on the arrow next to the Film Format drop-down list to display the film format and select the appropriate film format.
   - When selecting 6x4.5, 6x6, 6x7, 6x8 or 6x9 in the film format, select the type of the holder set in the scanner.
   - Click on the film type to be scanned.
   - Confirm the frame number to be scanned.

3. **Select the format of the film to be scanned and click on ⎿ Next > ⏌.**
   • The Preferences dialog box is displayed.

   • For details of "Auto Expose for Slides", "Auto Focus at Scan", "Colour depth" or "Multi Sample Scan", see "SETTING THE PREFERENCES" on page 29.
   • For details of "Colour Matching", see "COLOUR MATCHING" on page 106.

4. **Set each item and click on ⎿ Next > ⏌.**
   • The Digital ICE/ROC/GEM window is displayed.
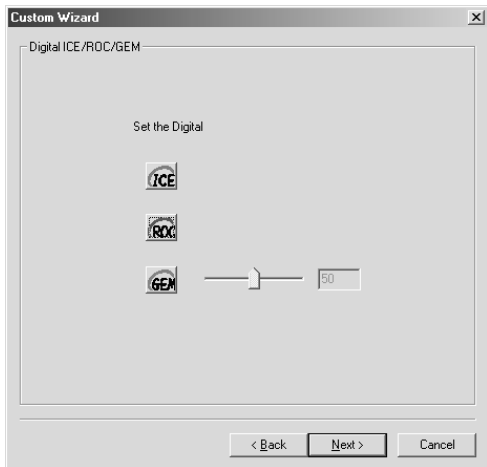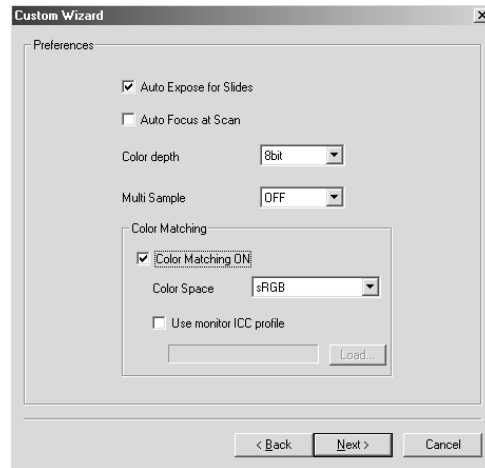
• Click on the desired function.
• For details of each function, see "DIGITAL ICE", "DIGITAL ROC" "DIGITAL GEM" on pages 85 to 90.

5. **Select whether or not to use you use the Digital ICE/ROC/GEM function and click on** ⌷ Next > ⌷ **.**

   • The Scan Setting window is displayed.
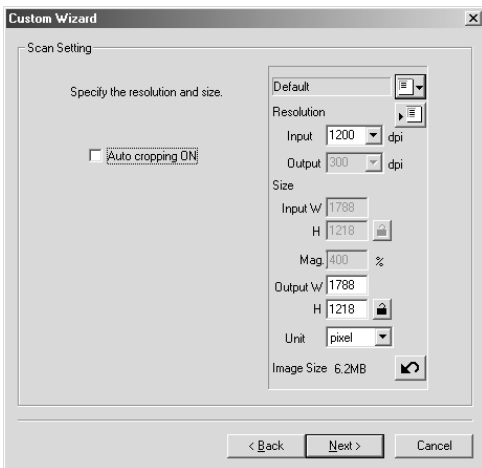
   • For details of the settings, see "SCAN SETTINGS" window on page 92.

6. **Set the resolution and size of the image to be scanned and click on** ⌷ Next > ⌷ **.**

   • The Image Correction window is displayed.
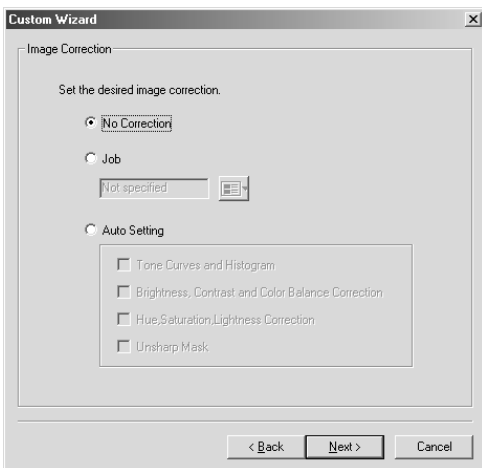
   • The image correction can be performed by selecting an image correction job or by specifying the Auto Setting.
   • For details of the Image Correction job, see "Job Save/Job Load" on page 82.

7. **Set the desired image correction and click on Next >.**

    • The End of Setting window is displayed.

    • The scanning starts and the End of Scanning window is displayed.
      When [Save] is clicked, the setting can be saved and named. The saved setting can be selected by specifying its name in the Custom Wizard Setting window.

8. **Click on Start.**

    • The Scanning is Complete window is displayed.

    • The scanning starts while the setting window is displayed and will change to the scanning complete window when scanning has been completed.
    • The film holder will eject when scanning for all the designated frames have been completed.
    • If either [Auto Cropping] or [Auto setting] for Image Correction is checked, a preview screen will show up on the main window at the point when the Custom Wizard ends.

9. When the operation is completed, click on [Quit]**.**

• Custom Wizard will end.

When continuing to scan with the same setting, click on [Start] **on the scanning complete screen.**

• Scanning will start again.

WHEN STARTING A REGISTERED SETTING

Scanning can be operated easily by calling up the registered setting by the Custom Wizard.

1. Place the film holder that you are going to scan on the scanner.

2. Click on [icon] on the main window of Custom Wizard.

The Custom Wizard window will be displayed.

3. Select a name that has been registered and click on [Start]**.**

• Scanning will start. When scanning is completed, the scanning complete window is displayed.
• The film holder will eject when scanning of all the designated frames are completed.

A P P E N D I X

IEEE 1394 INTERFACE

COLOUR MATCHING

SCAN JOB FILE LIST

GLOSSARY

TROUBLE SHOOTING

USER TECHNICAL SUPPORT

SPECIFICATIONS

IEEE 1394 INTERFACE

The IEEE1394 (FireWire for Macintosh by Apple Computer, Inc.) Interface has a High-speed serial bass standard which enables you to connect peripheral units such as scanners, exterior CD-R drive, etc. together with digital equipment such as a video camera to a personal computer.

Since the IEEE1394 Interface connection does not require ID numbers or terminator settings for each units such as a SCSI, it enables easy connection of the peripheral units. Also, using 1 Interface it can connect up to 63 units to a personal computer.

When turning on or off the power, it makes no difference what you operate first the IEEE1394 Interface unit or the personal computer.
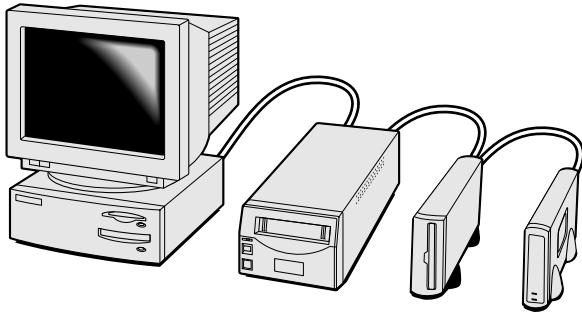
You can connect or disconnect the IEEE1394 Interface unit or the personal computer while the power is turned on. **However, if any of the devices in the daisy chain are transfering data, do not unplug or connect the IEEE1394 cable.**

To disconnect the IEEE1394 Interface unit:

For Windows 2000 Professional
1. Close the driver software.
2. Confirm that the indicator lamp is not blinking.
3. Disconnect the IEEE 1394 cable.

For Windows Me
1. Close the driver software.
2. Confirm that the indicator lamp is not blinking.
3. Double click on the Unplug-or-eject-hardware icon( ) located on the task bar. The unplug-or-eject-hardware window will open.
4. The hardware devices to be stopped will be displayed. Select "Minolta DiMAGE Scan Multi PRO" and click "Stop."
5. A confirmation screen will appear. Clicking "OK" will stop the device.
6. The safe-to-remove-hardware screen will appear. Click "OK." The scanner can now be safely disconnected from the computer.

When you re/discommect the IEEE1394Interface unit. make sure to leave a 5-second interval before connection.

The maximum length of the cable connecting the peripheral units is 4.5 m.

This unit does not provide a power source of the IEEE1394. It is necessary to obtain an AC power source separately.

Reproducing the colour and gradation of the image data you have captured with the scanner will differ, depending on the characteristics of the output unit (monitor or printer).
In order to lessen the difference in colour reproduction, it is necessary to match the colour preference that deals with colour (called output colour space), and also to correct the characteristics of the unit in order to output in that preference.
With the DiMAGE Scan Multi PRO colour matching function, match the scanning image to the specified colour space (such as sRGB), or by using the ICC profile (a file that states the characteristics of the monitor's colour reproduction) to reproduce an image suitable for your monitor.
You can make the colour of the scanned image on the monitor display be very close to the film.

1. **Click on** ⌂ **in the Main window.**

    The Colour Matching in the Preference Dialog Box —
    Names of parts
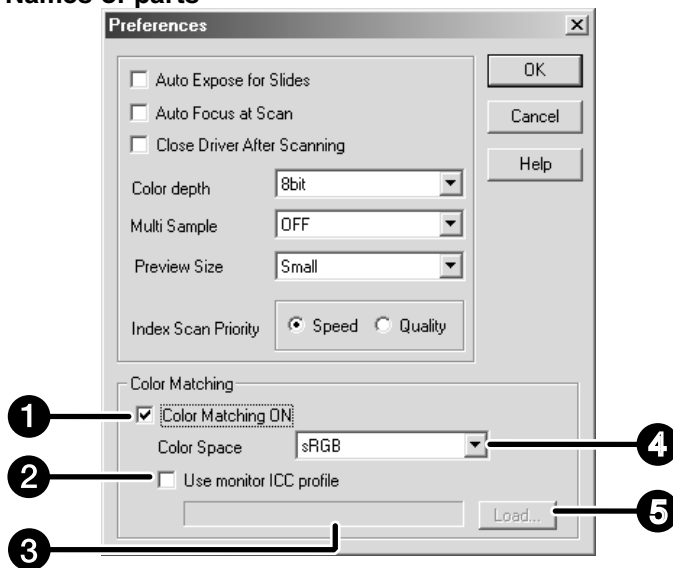
❶ Colour Matching ON/OFF setting checkbox

❷ Use monitor ICC profile ON/OFF setting checkbox

❸ ICC profile text box

❹ Output Colour Space list box

❺ ICC profile Load button

2. **Set the preferences as desired.**
    De-select the Close Driver After Scanning check box when scanning multiple images at the same time.

> **NOTE:**
>
> When the colour matching function is used, the processing time will be longer.

OUTPUT COLOUR SPACE SETTING

1. **Insert a check mark in the "Colour Matching ON" checkbox.**

2. **Click the pull-down menu button in the Output Colour Space list box. The available output colour space settings are displayed.**

3. **Click the desired output colour space setting.**
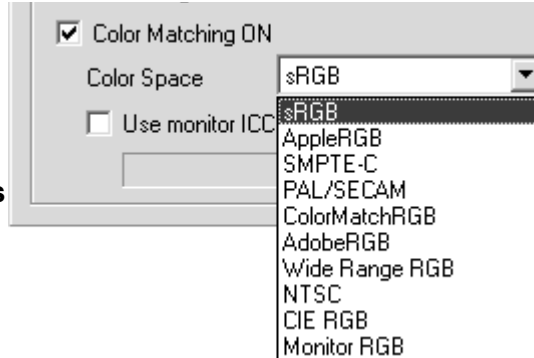
ICC PROFILE SETTING

1. **Insert a check mark in the "Use monitor ICC profile" checkbox.**

2. **Click the monitor ICC profile [Load...] button.**

   • The standard file open dialog of your operating system is displayed.

3. **Select the ICC profile according to the monitor being used.**

108

Regarding the "Output Colour Space" and the "Monitor ICC Profile" setting, the combination with respect to the application, the recommended preference setting is as follows.

When an application with Monitor Correction Display function[*1] (such as the Adobe Photoshop Ver. 5 to 6) is being used with the Monitor Correction Display function ON

Output Colour Space: Optional output colour space can be selected
                                  (select the same colour space as set in the application)
ICC Profile[*2]:   Use

When an application without Monitor Correction Display function[*1] is being used

It is possible to match it to your monitor's own colour space and not the optional output colour space.

Output Colour Space: Select [Monitor RGB]
ICC Profile[*2]:   Use

* When using the Windows Adobe Photoshop 4.0.1, the above setting is only effective if the monitor gamma of the application is set to 2.2.
[*1]: A function to correct the characteristics of the monitor and display the images appropriately.
[*2]: This sets the ICC profile of your monitor.

The supplied CD-ROM includes the ICC profile for other colour matching tool. (The directory or file name for Windows or Macintosh is shown respectively.) This ICC profile is used for images (except the images with 16-bit linear) of the positive film that have been scanned with the Colour Matching function OFF setting.

Category	Job name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Lock(IN)	Output Size W	Output Size H	Lock(OUT)	Input W	Input H
		4800				37,08 / 1,460	25,02 / 0,985					7008	4728
Default	Default	1200	300	400	pixel	1752	1182	OFF	1752	1182	OFF	1752	1182
ColorLaserPrinter	A4Full	4800	600	800	mm	35,38	25,02	OFF	283	200,152	ON	6685	4728
	A4Half	3550	600	591	mm	35,53	25,04	OFF	210	148	ON	4960	3496
	A4Quater	2518	600	419	mm	35,32	25,06	OFF	148	105	ON	3496	2480
	LetterFull	4800	600	800	inch	1,26	0,99	OFF	10,1	7,88	ON	6060	4728
	LetterHalf	3494	600	582	inch	1,46	0,94	OFF	8,5	5,45	ON	5100	3270
	LetterQuater	2589	600	431	inch	1,26	0,99	OFF	5,45	4,25	ON	3270	2550
Photosensitive	A3Full	4749	400	1187	mm	35,38	25,02	OFF	420	297	ON	6614	4677
	A4Full	3358	400	839	mm	35,4	25,03	OFF	297	210	ON	4677	3307
	A5Full	2366	400	591	mm	35,53	25,04	OFF	210	148	ON	3307	2330
	LetterFull	3452	400	863	inch	1,26	0,99	OFF	10,9	8,5	ON	4360	3400
	LetterHalf	2329	400	582	inch	1,46	0,94	OFF	8,5	5,45	ON	3400	2180
	LetterQuater	1726	400	431	inch	1,26	0,99	OFF	5,45	4,25	ON	2180	1700
	8x10	3249	400	812	inch	1,23	0,99	OFF	10	8	ON	4000	3200
	11x14	4460	400	1115	mm	31,93	25,02	OFF	356	279	ON	5606	4393
	10x12	4061	400	1015	mm	30,05	25,02	OFF	305	254	ON	4803	4000
	2L	2031	400	507	mm	35,11	25,05	OFF	178	127	ON	2803	2000
	PostCard4x6	1644	400	411	inch	1,46	0,97	OFF	6	4	ON	2400	1600
Ink-Jet & Dye-SubPrinter	SuperB	3945	300	1315	mm	36,73	25,02	OFF	483	329	ON	5704	3885
	A3Full	3561	300	1187	mm	35,38	25,02	OFF	420	297	ON	4960	3507
	A4Full	2518	300	839	mm	35,4	25,03	OFF	297	210	ON	3507	2480
	A4Half	1775	300	591	mm	35,53	25,04	OFF	210	148	ON	2480	1748
	A4Quarter	1259	300	419	mm	35,32	25,06	OFF	148	105	ON	1748	1240
	LetterFull	2589	300	863	inch	1,26	0,99	OFF	10,9	8,5	ON	3270	2550
	LetterHalf	1747	300	582	inch	1,46	0,94	OFF	8,5	5,45	ON	2550	1635
	LetterQuater	1295	300	431	inch	1,26	0,99	OFF	5,45	4,25	ON	1635	1275
	Photo4x6	1214	300	404	mm	37,13	24,75	OFF	150	100	ON	1771	1181
	Photo3x5	1068	300	356	mm	35,67	25	OFF	127	89	ON	1500	1051
WebPage	1240x836	850	72	1180	pixel	1240	836	OFF	1240	836	ON	1240	836
	1112x750	762	72	1058	pixel	1112	750	OFF	1112	750	ON	1112	750
	984x663	674	72	936	pixel	984	663	OFF	984	663	ON	984	663
	792x534	543	72	754	pixel	792	534	OFF	792	534	ON	792	534
	760x512	521	72	723	pixel	760	512	OFF	760	512	ON	760	512
	600x404	411	72	570	pixel	600	404	OFF	600	404	ON	600	404
	320x240	300	72	416	pixel	320	240	OFF	320	240	ON	320	240
PhotoCD	PhotoCD2048x3072	2105	300	701	pixel	3072	2048	OFF	3072	2048	ON	3072	2048
	PhotoCD1024x1536	1053	300	351	pixel	1536	1024	OFF	1536	1024	ON	1536	1024
	PhotoCD512x768	527	300	175	pixel	768	512	OFF	768	512	ON	768	512
Screen	1920x1200	1316	72	1827	pixel	1920	1200	OFF	1920	1200	ON	1920	1200
	1600x1200	1219	72	1693	pixel	1600	1200	OFF	1600	1200	ON	1600	1200
	1280x1024	1040	72	1444	pixel	1280	1024	OFF	1280	1024	ON	1280	1024
	1280x960	975	72	1354	pixel	1280	960	OFF	1280	960	ON	1280	960
	1152x870	884	72	1227	pixel	1152	870	OFF	1152	870	ON	1152	870
	1024x768	780	72	1083	pixel	1024	768	OFF	1024	768	ON	1024	768
	832x624	837	72	1162	pixel	832	824	OFF	832	824	ON	832	824
	800x600	610	72	847	pixel	800	600	OFF	800	600	ON	800	600
	640x480	488	72	677	pixel	640	480	OFF	640	480	ON	640	480
Document	A4Half	426	72	591	mm	35,53	25,04	OFF	210	148	ON	595	419
	A4Quater	302	72	419	mm	35,32	25,06	OFF	148	105	ON	419	297
	A4Eighth	300	72	416	mm	25,24	17,79	OFF	105	74	ON	297	209
	LetterHalf	420	72	583	inch	1,46	0,93	OFF	8,5	5,45	ON	612	392
	LetterQuater	311	72	431	inch	1,26	0,99	OFF	5,45	4,25	ON	392	306
	LetterEighth	300	72	416	inch	1,02	0,65	OFF	4,25	2,72	ON	306	195
FilmRecorder	4K	2806	2400	116	pixel	4096	2731	OFF	4096	2731	ON	4096	2731
	2K	1403	2400	58	pixel	2048	1365	OFF	2048	1365	ON	2048	1365

Category	Job name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Lock(IN)	Output Size W	Output Size H	Lock(OUT)	Input W	Input H
		3200				42,67 1,68	56,58 2,23					5376	7128
Default	Default	800	300	266	pixel	1344	1782	OFF	1344	1782	OFF	1344	1782
ColorLaserPrinter	A3Full	4454	600	742	mm	40,03	56,6	OFF	297	420	ON	7015	9921
	A4Full	3150	600	525	mm	40	56,57	OFF	210	297	ON	4960	7015
	A4Half	2227	600	371	mm	39,89	56,6	OFF	148	210	ON	3496	4960
	A4Quater	1570	600	261	mm	40,23	56,71	OFF	105	148	ON	2480	3496
	LetterFull	3036	600	506	inch	1,68	2,15	OFF	8,5	10,9	ON	5100	6540
	LetterHalf	2290	600	381	inch	1,43	2,23	OFF	5,45	8,5	ON	3270	5100
	LetterQuater	1518	600	253	inch	1,68	2,15	OFF	4,25	5,45	ON	2550	3270
Photosensitive	A3Full	2970	400	742	mm	40,03	56,6	OFF	297	420	ON	4677	6614
	A4Full	2100	400	525	mm	40	56,57	OFF	210	297	ON	3307	4677
	A5Full	1485	400	371	mm	39,89	56,6	OFF	148	210	ON	2330	3307
	LetterFull	2024	400	506	inch	1,68	2,15	OFF	8,5	10,9	ON	3400	4360
	LetterHalf	1527	400	381	inch	1,43	2,23	OFF	5,45	8,5	ON	2180	3400
	LetterQuater	1012	400	253	inch	1,68	2,15	OFF	4,25	5,45	ON	1700	2180
	8x10	1905	400	476	inch	1,68	2,1	OFF	8	10	ON	3200	4000
	11x14	2615	400	653	mm	42,73	54,52	OFF	279	356	ON	4393	5606
	10x12	2381	400	595	mm	42,69	51,26	OFF	254	305	ON	4000	4803
	2L	1259	400	314	mm	38,22	56,69	OFF	120	178	ON	1889	2803
	PostCard4x6	1078	400	269	inch	1,49	2,23	OFF	4	6	ON	1600	2400
Ink-Jet & Dye-SubPrinter	SuperB	2561	300	853	mm	38,57	56,62	OFF	329	483	ON	3885	5704
	A3Full	2227	300	742	mm	40,03	56,6	OFF	297	420	ON	3507	4960
	A4Full	1575	300	525	mm	40	56,57	OFF	210	297	ON	2480	3507
	A4Half	1114	300	371	mm	39,89	56,6	OFF	148	210	ON	1748	2480
	A4Quarter	785	300	261	mm	40,23	56,71	OFF	105	148	ON	1240	1748
	LetterFull	1518	300	506	inch	1,68	2,15	OFF	8,5	10,9	ON	2550	3270
	LetterHalf	1145	300	381	inch	1,43	2,23	OFF	5,45	8,5	ON	1635	2550
	LetterQuater	759	300	253	inch	1,68	2,15	OFF	4,25	5,45	ON	1275	1635
	Photo4x6	796	300	265	mm	37,74	56,6	OFF	100	150	ON	1181	1771
	Photo3x5	674	300	224	mm	39,73	56,7	OFF	89	127	ON	1051	1500
WebPage	1240x935	557	72	773	pixel	935	1240	OFF	935	1240	ON	935	1240
	1112x839	500	72	694	pixel	839	1112	OFF	839	1112	ON	839	1112
	984x742	442	72	613	pixel	742	984	OFF	742	984	ON	742	984
	792x597	356	72	494	pixel	597	792	OFF	597	792	ON	597	792
	760x573	342	72	475	pixel	573	760	OFF	573	760	ON	573	760
	600x452	270	72	375	pixel	452	600	OFF	452	600	ON	452	600
	320x240	200	72	277	pixel	240	320	OFF	240	320	ON	240	320
PhotoCD	PhotoCD2048x3072	1380	300	460	pixel	2048	3072	OFF	2048	3072	ON	2048	3072
	PhotoCD1024x1536	690	300	230	pixel	1024	1536	OFF	1024	1536	ON	1024	1536
	PhotoCD512x768	345	300	115	pixel	512	768	OFF	512	768	ON	512	768
Screen	1920x1200	862	72	1197	pixel	1200	1920	OFF	1200	1920	ON	1200	1920
	1600x1200	719	72	998	pixel	1200	1600	OFF	1200	1600	ON	1200	1600
	1280x1024	610	72	847	pixel	1024	1280	OFF	1024	1280	ON	1024	1280
	1280x960	575	72	798	pixel	960	1280	OFF	960	1280	ON	960	1280
	1152x870	518	72	719	pixel	870	1152	OFF	870	1152	ON	870	1152
	1024x768	460	72	638	pixel	768	1024	OFF	768	1024	ON	768	1024
	832x624	374	72	519	pixel	624	832	OFF	624	832	ON	624	832
	800x600	360	72	500	pixel	600	800	OFF	600	800	ON	600	800
	640x480	288	72	400	pixel	480	640	OFF	480	640	ON	480	640
Document	A4Half	268	72	372	mm	39,79	56,45	OFF	148	210	ON	419	595
	A4Quater	200	72	277	mm	37,91	53,43	OFF	105	148	ON	297	419
	A4Eighth	200	72	277	mm	26,71	37,91	OFF	74	105	ON	209	297
	LetterHalf	275	72	381	inch	1,43	2,23	OFF	5,45	8,5	ON	392	612
	LetterQuater	200	72	277	inch	1,53	1,97	OFF	4,25	5,45	ON	306	392
	LetterEighth	200	72	277	inch	0,98	1,53	OFF	2,72	4,25	ON	195	306

Category	Job name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Lock(IN)	Output Size W	Output Size H	Lock(OUT)	Input W	Input H
		3200				56,58 2,23	56,58 2,23					7128	7128
Default	Default	800	300	266	pixel	1782	1782	OFF	1782	1782	OFF	1782	1782
ColorLaserPrinter	A3Full	3150	600	525	mm	56,57	56,57	OFF	297	297	ON	7015	7015
	A4Full	2227	600	371	mm	56,6	56,6	OFF	210	210	ON	4960	4960
	A4Half	1570	600	261	mm	56,71	56,71	OFF	148	148	ON	3496	3496
	A4Quater	1114	600	185	mm	56,76	56,76	OFF	105	105	ON	2480	2480
	LetterFull	2290	600	381	inch	2,23	2,23	OFF	8,5	8,5	ON	5100	5100
	LetterHalf	1469	600	244	inch	2,23	2,23	OFF	5,45	5,45	ON	3270	3270
	LetterQuater	1145	600	190	inch	2,24	2,24	OFF	4,25	4,25	ON	2550	2550
Photosensitive	A3Full	2100	400	525	mm	56,57	56,57	OFF	297	297	ON	4677	4677
	A4Full	1485	400	371	mm	56,6	56,6	OFF	210	210	ON	3307	3307
	A5Full	1047	400	261	mm	56,71	56,71	OFF	148	148	ON	2330	2330
	LetterFull	1527	400	381	inch	2,23	2,23	OFF	8,5	8,5	ON	3400	3400
	LetterHalf	979	400	244	inch	2,23	2,23	OFF	5,45	5,45	ON	2180	2180
	LetterQuater	764	400	191	inch	2,23	2,23	OFF	4,25	4,25	ON	1700	1700
	8x10	1437	400	359	inch	2,23	2,23	OFF	8	8	ON	3200	3200
	14x17	2517	400	629	mm	56,6	56,6	OFF	356	356	ON	5606	5606
	11x14	1973	400	493	mm	56,59	56,59	OFF	279	279	ON	4393	4393
	10x12	1796	400	449	mm	56,57	56,57	OFF	254	254	ON	4000	4000
	2L	898	400	224	mm	56,7	56,7	OFF	127	127	ON	2000	2000
	PostCard4x6	719	400	179	inch	2,23	2,23	OFF	4	4	ON	1600	1600
Ink-Jet & Dye-SubPrinter	SuperB	1745	300	581	mm	56,63	56,63	OFF	329	329	ON	3885	3885
	A3Full	1575	300	525	mm	56,57	56,57	OFF	297	297	ON	3507	3507
	A4Full	1114	300	371	mm	56,6	56,6	OFF	210	210	ON	2480	2480
	A4Half	785	300	261	mm	56,71	56,71	OFF	148	148	ON	1748	1748
	A4Quarter	557	300	185	mm	56,76	56,76	OFF	105	105	ON	1240	1240
	LetterFull	1145	300	381	inch	2,23	2,23	OFF	8,5	8,5	ON	2550	2550
	LetterHalf	735	300	245	inch	2,22	2,22	OFF	5,45	5,45	ON	1635	1635
	LetterQuater	573	300	191	inch	2,23	2,23	OFF	4,25	4,25	ON	1275	1275
	Photo4x6	531	300	177	mm	56,5	56,5	OFF	100	100	ON	1181	1181
	Photo3x5	472	300	157	mm	56,69	56,69	OFF	89	89	ON	1051	1051
WebPage	1240x1240	557	72	773	pixel	1240	1240	OFF	1240	1240	ON	1240	1240
	1112x1112	500	72	694	pixel	1112	1112	OFF	1112	1112	ON	1112	1112
	984x984	442	72	613	pixel	984	984	OFF	984	984	ON	984	984
	792x792	356	72	494	pixel	792	792	OFF	792	792	ON	792	792
	760x760	342	72	475	pixel	760	760	OFF	760	760	ON	760	760
	600x600	270	72	375	pixel	600	600	OFF	600	600	ON	600	600
	320x240	200	72	277	pixel	320	240	OFF	320	240	ON	320	240
PhotoCD	PhotoCD2048x3072	1380	300	460	pixel	3072	2048	OFF	3072	2048	ON	3072	2048
	PhotoCD1024x1536	690	300	230	pixel	1536	1024	OFF	1536	1024	ON	1536	1024
	PhotoCD512x768	345	300	115	pixel	768	512	OFF	768	512	ON	768	512
Screen	1920x1200	862	72	1197	pixel	1920	1200	OFF	1920	1200	ON	1920	1200
	1600x1200	719	72	998	pixel	1600	1200	OFF	1600	1200	ON	1600	1200
	1280x1024	575	72	798	pixel	1280	1024	OFF	1280	1024	ON	1280	1024
	1280x960	575	72	798	pixel	1280	960	OFF	1280	960	ON	1280	960
	1152x870	518	72	719	pixel	1152	870	OFF	1152	870	ON	1152	870
	1024x768	460	72	638	pixel	1024	768	OFF	1024	768	ON	1024	768
	832x624	374	72	519	pixel	832	624	OFF	832	624	ON	832	624
	800x600	360	72	500	pixel	800	600	OFF	800	600	ON	800	600
	640x480	288	72	400	pixel	640	480	OFF	640	480	ON	640	480
Document	A4Half	200	72	277	mm	53,43	53,43	OFF	148	148	ON	419	419
	A4Quater	200	72	277	mm	37,91	37,91	OFF	105	105	ON	297	297
	A4Eighth	200	72	277	mm	26,71	26,71	OFF	74	74	ON	209	209
	LetterHalf	200	72	277	inch	1,97	1,97	OFF	5,45	5,45	ON	392	392
	LetterQuater	200	72	277	inch	1,53	1,53	OFF	4,25	4,25	ON	306	306
	LetterEighth	200	72	277	inch	0,97	0,97	OFF	2,69	2,69	ON	193	193

Category	Job name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Lock(IN)	Output Size W	Output Size H	Lock(OUT)	Input W	Input H
		3200				70,10 2,76	56,58 2,23					8832	7128
Default	Default	800	300	266	pixel	2208	1782	OFF	2208	1782	OFF	2208	1782
ColorLaserPrinter	A3Full	3595	600	599	mm	70,12	49,58	OFF	420	297	ON	9921	7015
	A4Full	2542	600	423	mm	70,21	49,65	OFF	297	210	ON	7015	4960
	A4Half	1798	600	299	mm	70,23	49,5	OFF	210	148	ON	4960	3496
	A4Quater	1267	600	211	mm	70,14	49,76	OFF	148	105	ON	3496	2480
	LetterFull	2370	600	395	inch	2,76	2,15	OFF	10,9	8,5	ON	6540	5100
	LetterHalf	1848	600	308	inch	2,76	1,77	OFF	8,5	5,45	ON	5100	3270
	LetterQuater	1185	600	197	inch	2,77	2,16	OFF	5,45	4,25	ON	3270	2550
Photosensitive	A3Full	2397	400	599	mm	70,12	49,58	OFF	420	297	ON	6614	4677
	A4Full	1695	400	423	mm	70,21	49,65	OFF	297	210	ON	4677	3307
	A5Full	1199	400	299	mm	70,23	49,5	OFF	210	148	ON	3307	2330
	LetterFull	1580	400	395	inch	2,76	2,15	OFF	10,9	8,5	ON	4360	3400
	LetterHalf	1232	400	308	inch	2,76	1,77	OFF	8,5	5,45	ON	3400	2180
	LetterQuater	790	400	197	inch	2,77	2,16	OFF	5,45	4,25	ON	2180	1700
	8x10	1450	400	362	inch	2,76	2,21	OFF	10	8	ON	4000	3200
	14x17	2517	400	629	mm	68,68	56,6	OFF	432	356	ON	6803	5606
	11x14	2032	400	508	mm	70,08	54,92	OFF	356	279	ON	5606	4393
	10x12	1796	400	449	mm	67,93	56,57	OFF	305	254	ON	4803	4000
	2L	1016	400	254	mm	70,08	50	OFF	178	127	ON	2803	2000
	PostCard4x6	870	400	217	inch	2,77	1,84	OFF	6	4	ON	2400	1600
Ink-Jet & Dye-SubPrinter	SuperB	2756	400	689	mm	70,1	47,75	OFF	483	329	ON	7606	5181
	A3Full	2397	400	599	mm	70,12	49,58	OFF	420	297	ON	6614	4677
	A4Full	1271	300	423	mm	70,21	49,65	OFF	297	210	ON	3507	2480
	A4Half	899	300	299	mm	70,23	49,5	OFF	210	148	ON	2480	1748
	A4Quarter	634	300	211	mm	70,14	49,76	OFF	148	105	ON	1748	1240
	LetterFull	1185	300	395	inch	2,76	2,15	OFF	10,9	8,5	ON	3270	2550
	LetterHalf	924	300	308	inch	2,76	1,77	OFF	8,5	5,45	ON	2550	1635
	LetterQuater	593	300	197	inch	2,77	2,16	OFF	5,45	4,25	ON	1635	1275
	Photo4x6	642	300	214	mm	70,09	46,73	OFF	150	100	ON	1771	1181
	Photo3x5	544	300	181	mm	70,17	49,17	OFF	127	89	ON	1500	1051
WebPage	1240x1000	450	72	625	pixel	1240	1000	OFF	1240	1000	ON	1240	1000
	1112x897	403	72	559	pixel	1112	897	OFF	1112	897	ON	1112	897
	984x794	357	72	495	pixel	984	794	OFF	984	794	ON	984	794
	792x639	287	72	398	pixel	792	639	OFF	792	639	ON	792	639
	760x613	276	72	383	pixel	760	613	OFF	760	613	ON	760	613
	600x484	218	72	302	pixel	600	484	OFF	600	484	ON	600	484
	320x240	200	72	277	pixel	320	240	OFF	320	240	ON	320	240
PhotoCD	PhotoCD2048x3072	1114	300	371	pixel	3072	2048	OFF	3072	2048	ON	3072	2048
	PhotoCD1024x1536	557	300	185	pixel	1536	1024	OFF	1536	1024	ON	1536	1024
	PhotoCD512x768	279	300	93	pixel	768	512	OFF	768	512	ON	768	512
Screen	1920x1200	696	72	966	pixel	1920	1200	OFF	1920	1200	ON	1920	1200
	1600x1200	580	72	805	pixel	1600	1200	OFF	1600	1200	ON	1600	1200
	1280x1024	464	72	644	pixel	1280	1024	OFF	1280	1024	ON	1280	1024
	1280x960	464	72	644	pixel	1280	960	OFF	1280	960	ON	1280	960
	1152x870	418	72	580	pixel	1152	870	OFF	1152	870	ON	1152	870
	1024x768	372	72	516	pixel	1024	768	OFF	1024	768	ON	1024	768
	832x624	302	72	419	pixel	832	624	OFF	832	624	ON	832	624
	800x600	290	72	402	pixel	800	600	OFF	800	600	ON	800	600
	640x480	232	72	322	pixel	640	480	OFF	640	480	ON	640	480
Document	A4Half	215	72	298	mm	70,13	49,33	OFF	209	147	ON	592	416
	A4Quater	200	72	277	mm	53,07	37,55	OFF	147	104	ON	416	294
	A4Eighth	200	72	277	mm	37,55	26,53	OFF	104	73,5	ON	294	208
	LetterHalf	222	72	308	inch	2,76	1,77	OFF	8,5	5,45	ON	612	392
	LetterQuater	200	72	277	inch	1,97	1,53	OFF	5,45	4,25	ON	392	306
	LetterEighth	200	72	277	inch	1,53	0,97	OFF	4,25	2,7	ON	306	194

Category	Job name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Lock(IN)	Output Size W	Output Size H	Lock(OUT)	Input W	Input H
		3200				77,15 3,04	56,58 2,23					9720	7128
Default	Default	800	300	266	pixel	2430	1782	OFF	2430	1782	OFF	2430	1782
ColorLaserPrinter	A3Full	3200	600	533	mm	77,2	55,72	OFF	411,48	297	ON	9720	7015
	A4Full	2310	600	385	mm	77,14	54,55	OFF	297	210	ON	7015	4960
	A4Half	1633	600	272	mm	77,21	54,41	OFF	210	148	ON	4960	3496
	A4Quater	1151	600	191	mm	77,49	54,97	OFF	148	105	ON	3496	2480
	LetterFull	2290	600	381	inch	2,86	2,23	OFF	10,9	8,5	ON	6540	5100
	LetterHalf	1680	600	280	inch	3,04	1,95	OFF	8,5	5,45	ON	5100	3270
	LetterQuater	1145	600	190	inch	2,87	2,24	OFF	5,45	4,25	ON	3270	2550
Photosensitive	A3Full	2178	400	544	mm	77,21	54,6	OFF	420	297	ON	6614	4677
	A4Full	1540	400	385	mm	77,14	54,55	OFF	297	210	ON	4677	3307
	A5Full	1089	400	272	mm	77,21	54,41	OFF	210	148	ON	3307	2330
	LetterFull	1527	400	381	inch	2,86	2,23	OFF	10,9	8,5	ON	4360	3400
	LetterHalf	1120	400	280	inch	3,04	1,95	OFF	8,5	5,45	ON	3400	2180
	LetterQuater	764	400	191	inch	2,85	2,23	OFF	5,45	4,25	ON	2180	1700
	8x10	1437	400	359	inch	2,79	2,23	OFF	10	8	ON	4000	3200
	14x17	2517	400	629	mm	68,68	56,6	OFF	432	356	ON	6803	5606
	11x14	1973	400	493	mm	72,21	56,59	OFF	356	279	ON	5606	4393
	10x12	1796	400	449	mm	67,93	56,57	OFF	305	254	ON	4803	4000
	2L	923	400	230	mm	77,39	55,22	OFF	178	127	ON	2803	2000
	PostCard4x6	791	400	197	inch	3,05	2,03	OFF	6	4	ON	2400	1600
Ink-Jet & Dye-SubPrinter	SuperB	1878	300	626	mm	77,16	52,56	OFF	483	329	ON	5704	3885
	A3Full	1633	300	544	mm	77,21	54,6	OFF	420	297	ON	4960	3507
	A4Full	1155	300	385	mm	77,14	54,55	OFF	297	210	ON	3507	2480
	A4Half	817	300	272	mm	77,21	54,41	OFF	210	148	ON	2480	1748
	A4Quarter	576	300	192	mm	77,08	54,69	OFF	148	105	ON	1748	1240
	LetterFull	1145	300	381	inch	2,86	2,23	OFF	10,9	8,5	ON	3270	2550
	LetterHalf	840	300	280	inch	3,04	1,95	OFF	8,5	5,45	ON	2550	1635
	LetterQuater	573	300	191	inch	2,85	2,23	OFF	5,45	4,25	ON	1635	1275
	Photo4x6	584	300	194	mm	77,32	51,55	OFF	150	100	ON	1771	1181
	Photo3x5	494	300	164	mm	77,44	54,27	OFF	127	89	ON	1500	1051
WebPage	1240x909	409	72	568	pixel	1240	909	OFF	1240	909	ON	1240	909
	1112x815	367	72	509	pixel	1112	815	OFF	1112	815	ON	1112	815
	984x721	324	72	450	pixel	984	721	OFF	984	721	ON	984	721
	792x580	261	72	362	pixel	792	580	OFF	792	580	ON	792	580
	760x557	251	72	348	pixel	760	557	OFF	760	557	ON	760	557
	600x440	200	72	277	pixel	600	440	OFF	600	440	ON	600	440
	320x240	200	72	277	pixel	320	240	OFF	320	240	ON	320	240
PhotoCD	PhotoCD2048x3072	1012	300	337	pixel	3072	2048	OFF	3072	2048	ON	3072	2048
	PhotoCD1024x1536	506	300	168	pixel	1536	1024	OFF	1536	1024	ON	1536	1024
	PhotoCD512x768	253	300	84	pixel	768	512	OFF	768	512	ON	768	512
Screen	1920x1200	633	72	879	pixel	1920	1200	OFF	1920	1200	ON	1920	1200
	1600x1200	539	72	748	pixel	1600	1200	OFF	1600	1200	ON	1600	1200
	1280x1024	460	72	638	pixel	1280	1024	OFF	1280	1024	ON	1280	1024
	1280x960	431	72	598	pixel	1280	960	OFF	1280	960	ON	1280	960
	1152x870	391	72	543	pixel	1152	870	OFF	1152	870	ON	1152	870
	1024x768	345	72	479	pixel	1024	768	OFF	1024	768	ON	1024	768
	832x624	281	72	390	pixel	832	624	OFF	832	624	ON	832	624
	800x600	270	72	375	pixel	800	600	OFF	800	600	ON	800	600
	640x480	216	72	300	pixel	640	480	OFF	640	480	ON	640	480
Document	A4Half	200	72	277	mm	75,81	53,43	OFF	210	148	ON	595	419
	A4Quater	200	72	277	mm	53,43	37,91	OFF	148	105	ON	419	297
	A4Eighth	200	72	277	mm	37,91	26,71	OFF	105	74	ON	297	209
	LetterHalf	202	72	280	inch	3,04	1,95	OFF	8,5	5,45	ON	612	392
	LetterQuater	200	72	277	inch	1,97	1,53	OFF	5,45	4,25	ON	392	306
	LetterEighth	200	72	277	inch	1,53	0,98	OFF	4,25	2,72	ON	306	195

Category	Job name	Input Res.	Output Res.	Mag.	Unit	Input Size W	Input Size H	Lock(IN)	Output Size W	Output Size H	Lock(OUT)	Input W	Input H
		3200				83,82 3,30	56,58 2,23					10560	7128
Default	Default	800	300	266	pixel	2640	1782	OFF	2640	1782	OFF	2640	1782
ColorLaserPrinter	A3Full	3150	600	525	mm	80	56,57	OFF	420	297	ON	9921	7015
	A4Full	2227	600	371	mm	80,05	56,6	OFF	297	210	ON	7015	4960
	A4Half	1570	600	261	mm	80,46	56,71	OFF	210	148	ON	4960	3496
	A4Quater	1114	600	185	mm	80	56,76	OFF	148	105	ON	3496	2480
	LetterFull	2290	600	381	inch	2,86	2,23	OFF	10,9	8,5	ON	6540	5100
	LetterHalf	1546	600	257	inch	3,31	2,12	OFF	8,5	5,45	ON	5100	3270
	LetterQuater	1145	600	190	inch	2,87	2,24	OFF	5,45	4,25	ON	3270	2550
Photosensitive	A3Full	2100	400	525	mm	80	56,57	OFF	420	297	ON	6614	4677
	A4Full	1485	400	371	mm	80,05	56,6	OFF	297	210	ON	4677	3307
	A5Full	1047	400	261	mm	80,46	56,71	OFF	210	148	ON	3307	2330
	LetterFull	1527	400	381	inch	2,86	2,23	OFF	10,9	8,5	ON	4360	3400
	LetterHalf	1031	400	257	inch	3,31	2,12	OFF	8,5	5,45	ON	3400	2180
	LetterQuater	764	400	191	inch	2,85	2,23	OFF	5,45	4,25	ON	2180	1700
	8x10	1437	400	359	inch	2,79	2,23	OFF	10	8	ON	4000	3200
	14x17	2517	400	629	mm	68,68	56,6	OFF	432	356	ON	6803	5606
	11x14	1973	400	493	mm	72,21	56,59	OFF	356	279	ON	5606	4393
	10x12	1796	400	449	mm	67,93	56,57	OFF	305	254	ON	4803	4000
	2L	898	400	224	mm	79,46	56,7	OFF	178	127	ON	2803	2000
	PostCard4x6	728	400	182	inch	3,3	2,2	OFF	6	4	ON	2400	1600
Ink-Jet & Dye-SubPrinter	SuperB	1745	300	581	mm	83,13	56,63	OFF	483	329	ON	5704	3885
	A3Full	1575	300	525	mm	80	56,57	OFF	420	297	ON	4960	3507
	A4Full	1114	300	371	mm	80,05	56,6	OFF	297	210	ON	3507	2480
	A4Half	785	300	261	mm	80,46	56,71	OFF	210	148	ON	2480	1748
	A4Quarter	557	300	185	mm	80	56,76	OFF	148	105	ON	1748	1240
	LetterFull	1145	300	381	inch	2,86	2,23	OFF	10,9	8,5	ON	3270	2550
	LetterHalf	773	300	257	inch	3,31	2,12	OFF	8,5	5,45	ON	2550	1635
	LetterQuater	573	300	191	inch	2,85	2,23	OFF	5,45	4,25	ON	1635	1275
	Photo4x6	537	300	179	mm	83,8	55,87	OFF	150	100	ON	1771	1181
	Photo3x5	472	300	157	mm	80,89	56,69	OFF	127	89	ON	1500	1051
WebPage	1240x837	376	300	125	pixel	1240	837	OFF	1240	837	ON	1240	837
	1112x751	338	300	112	pixel	1112	751	OFF	1112	751	ON	1112	751
	984x664	299	300	99	pixel	984	664	OFF	984	664	ON	984	664
	792x534	240	300	80	pixel	792	534	OFF	792	534	ON	792	534
	760x513	231	300	77	pixel	760	513	OFF	760	513	ON	760	513
	600x405	200	300	66	pixel	600	405	OFF	600	405	ON	600	405
	320x240	200	300	66	pixel	320	240	OFF	320	240	ON	320	240
PhotoCD	PhotoCD2048x3072	931	300	310	pixel	3072	2048	OFF	3072	2048	ON	3072	2048
	PhotoCD1024x1536	466	300	155	pixel	1536	1024	OFF	1536	1024	ON	1536	1024
	PhotoCD512x768	233	300	77	pixel	768	512	OFF	768	512	ON	768	512
Screen	1920x1200	582	72	808	pixel	1920	1200	OFF	1920	1200	ON	1920	1200
	1600x1200	539	72	748	pixel	1600	1200	OFF	1600	1200	ON	1600	1200
	1280x1024	460	72	638	pixel	1280	1024	OFF	1280	1024	ON	1280	1024
	1280x960	431	72	598	pixel	1280	960	OFF	1280	960	ON	1280	960
	1152x870	391	72	543	pixel	1152	870	OFF	1152	870	ON	1152	870
	1024x768	345	72	479	pixel	1024	768	OFF	1024	768	ON	1024	768
	832x624	281	72	390	pixel	832	624	OFF	832	624	ON	832	624
	800x600	270	72	375	pixel	800	600	OFF	800	600	ON	800	600
	640x480	216	72	300	pixel	640	480	OFF	640	480	ON	640	480
Document	A4Half	200	72	277	mm	75,81	53,43	OFF	210	148	ON	595	419
	A4Quater	200	72	277	mm	53,43	37,91	OFF	148	105	ON	419	297
	A4Eighth	200	72	277	mm	37,91	26,71	OFF	105	74	ON	297	209
	LetterHalf	200	72	277	inch	3,07	1,97	OFF	8,5	5,45	ON	612	392
	LetterQuater	200	72	277	inch	1,97	1,53	OFF	5,45	4,25	ON	392	306
	LetterEighth	200	72	277	inch	1,53	0,98	OFF	4,25	2,72	ON	306	195

Category	Job name	Input Res.	Output Res.	Mag.	Unit	Input Size		Lock(IN)	Output Size		Lock(OUT)	Input	
						W	H		W	H		W	H
		4800				83,82 3,30	25,02 0,99					15840	4728
Default	Default	1200	300	400	pixel	3960	1182	OFF	3960	1182	OFF	3960	1182

GLOSSARY

BRIGHTNESS   The lightness or darkness of the image.

CHANNEL   The component of an image. Your scanned image has three channels: red, green, and blue (RGB).

CONTRAST   The gradation of shades in an image. A high contrast image has very dark areas and bright areas without many middle shades. A low contrast image has many tones that are close to the same brightness. Low contrast images are often described as looking 'flat'.

CROP   To trim and delete the unwanted edges of the image.

DPI   Dots (pixels) per inch.

EMULSION SIDE   The side of the film coated with the photographic material.

GAMMA   The contrast of only the middle tones.

HIGHLIGHTS   The lighter areas of the image.

HISTOGRAM   A graph showing the amount of each level of the 256 brightness levels.

IEEE 1394   Refer to the page 106.

INTERPOLATION   A methord of adding new pixels to an image when resampling up.

JPEG   The JPEG (Joint Photographic Experts Group) compression standard is capable of producing a high compression ratio while maintaining image quality. JPEG is a widely supported image file format.

MIDTONE   The middle shades of an image, in between light and dark.

NEUTRAL   Having no colour cast, such as black, white, or grey.

PICT   (Macintosh operating system only) The PICT graphic file format uses a lossless compression scheme and is compatible with many Macintosh applications.

PIXEL   Abbreviation for picture element. The dots that make up an electronic image.

RESAMPLE   To change the number of pixels in the image. If pixels are discarded when shrinking an image, it is called resampling down. If new pixels are created in an image, it is called resampling up (see page 89).

RESOLUTION   The number of pixels in a given area of the image; such as pixels per inch or pixels per centimetre. High resolution is the term for an image with a lot of pixels in a given area. Low resolution means there are not many pixels in a given area.

RGB   Red, Green, and Blue. These are the colors of the three channels that make up the scanned image. Monitors use red, green, and blue phosphors to create the image you see on the screen.

SCSI (Ultra SCSI)   Ultra SCSI (Fast-20) is one variation of the SCSI-3 standards now being promoted by ANSI (American National Standards Institute). SCSI-3 refers to many variations including a parallel interface.

SHADOWS   The dark areas of an image.

TIFF   Tagged Image File Format (TIFF) files contain bit-mapped data. In addition to being a widely supported format, TIFF is able to handle the colour palette needed for professional-quality images and graphics.

WINDOWS® BMP   (Windows only) The BMP graphic file format is for bit-mapped images. BMP images are supported by the Paint accessory and can easily be opened on most PCs running Windows.

TROUBLE SHOOTING

SYMPTOM or MESSAGE	SOLUTION
The computer will not start up after connecting the scanner.	• Shut down the computer and all the devices in your SCSI or IEEE 1394 chain, then check the SCSI or IEEE 1394 cables and AC power cord.
DS_Multi PRO does not appear in the Import drop down list.	• Make sure the plug-in module has been placed in the correct folder. See page 26.
"Could not establish connection with scanner."	• Indicator lamp is off - Turn the DiMAGE Scan Multi PRO on, then restart your system.
"Setting up now. Remove the film holder."	• Remove the film holder and click on [OK].
Indicator lamp blinking rapidly (8Hz).	• Scanner door opened during setup. Close scanner door.
Indicator lamp lights red.	• Remove the optics locking screw on the bottom panel of the scanner. • Insufficient amount of light. Contact a Minolta service Facility.
"Set film properly…"	• Load film into the film holder.
"Set 35mm film holder properly."	• Set the correct film type.
"Set Universal film holder properly."	• Set the correct film type.
"Could not recognise the film type."	• Set the film type manually.
"Insufficient Memory"	• Increase the memory requirements for the host application. • If you have scanned multiple images, close and relaunch the host application.
"Setting up now. Remove the film holder." appears when the film holder is not loaded.	• Contact a Minolta Service Facility to change the fluorescent lamp.
Scanning takes an extremely long time.	• When an image of more than about 950 MB is scanned on Windows98 (SE) or Windows Me, the scanning speed may become extremely slow. To avoid this, reduce the image size to about 950 MB or smaller by lowering the input resolution or changing the cropping area. • With Macintosh, the scanning speed may become extremely slow when a large size image is scanned using the Utility software. To avoid this, use the Plug-in function.

USER TECHNICAL SUPPORT

Please contact your dealer for information regarding installation, SCSI or IEEE1394 interface recommendations, or application compatibility. If your dealer is unable to help you, contact an authorized Minolta service center.

**Please have the following information ready
when calling Minolta Technical Support.**

Make and Model of your computer:

Available application RAM:

Operating System version:

Other connected SCSI or IEEE1394 devices:

DS Multi PRO driver version number:

Symptoms:

Messages that appear on the screen when the problem occurs:

Frequency of occurrence:

Determining the version number of your driver software:

Place the pointer on the status window in the command window to display the version number.

SPECIFICATIONS

Type:	Multi-format film scanner up to mid-format
Usable Film:	35mm, 120/220 (6x4.5, 6x6, 6x7, 6x8, 6x9) - negative/ positive, color/ B&W
	TEM Film, Transparent Media, 16mm, Glass plate
Scanning Dimensions:	35mm - 25.0 x 37.1mm (4728 x 7008 pixels)
	120/220 (6x4.5, 6x6, 6x7, 6x8, 6x9)
	- 56.58 x 83.8mm (10692 x 15840 pixels)
Input Resolution (Max.):	4,800 x 4800 dpi
Scan method:	Fixed film, moving sensor, 1-pass scan
Bit depth	Imaging resolution: $16n$ bit
	Scanner output: 8/16 bit
Dynamic range:	4.2(tested value)
Light Source:	3 Wavelength Cold Cathode Fluorescent
Image Sensor:	RGB 3-line CCD (7,260 pixels/1line)
Focus	Auto focus, Manual focus
Interface:	Ultra SCSI (D-sub half-pitch, 50p x2) and/or
	IEEE 1394 (6p x2)
Power/Frequency:	100-240 V AC, 50/60 Hz
Power Consumption:	Max. 40W
Dimensions (W x H x D):	168 x 128 x 377mm
Weight (approx.):	4kg
Operating Environment:	Temperature 10-35°C, Humidity 15-80%
	Host Application: Adobe Photoshop 6.0
	AE: off, Digital ICE3: OFF

• The loading time changes according to the preferences used.

• The values described above do not include the transfer time to the computer.

• The loading times for negative film can be longer than positive film.

Scan Times (approx.):

Windows: 35mm Color Positive	
Index-Scan	6 frames/30 s.
Vorscan	9 s.
Scan	45 s.

Macintosh: 35mm Color Positive	
Index scan	6 frames/35sec.
Prescan	10 sec.
Scan	50 sec.

Windows: 120/220 (6x9) Color Positive	
Prescan	13 sec.
Scan	3 min 50 sec.

Macintosh: 120/220 (6x9) Color Positive	
Prescan	15 sec.
Scan	4 min 10 sec.

• Testing Conditions

IBM PC/AT
CPU: Pentium IV 1.5GHz, RAM: 1GB
OS: Windows 2000 Professional
Interface: IEEE1394:Adaptec AFW4300,
Host Application: Adobe Photoshop 6.0
AE: off; Digital ICE3: OFF

Macintosh
CPU: PowerPC G4/533MHz
 RAM: 1.5GB
OS: Mac OS 9.1
Interface: FireWire

Specifications are based on the latest information available at
the time of printing and are subject to change without notice.