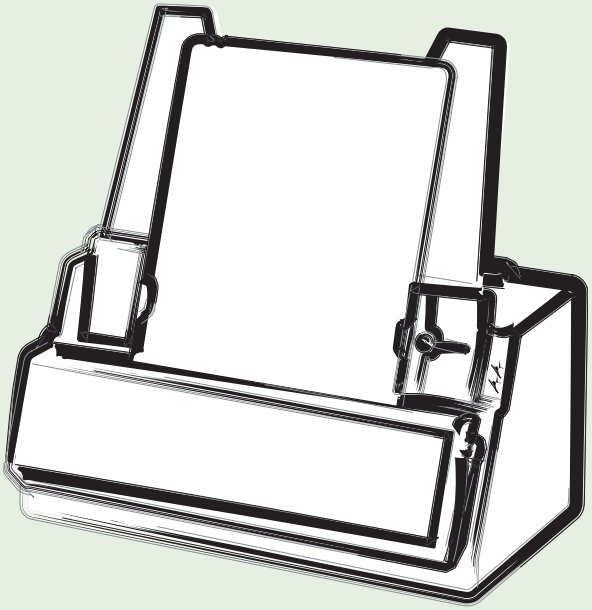
MICROTEK

# Medi-6000plus

## Film Imaging Digitizer
## User's Manual



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# Preface

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## Disclaimer

The contents of this manual have been checked carefully for accuracy, and every effort has been made to ensure that there are no errors. However, Microtek makes no guarantee as to the accuracy of the contents of this document and reserves the right to make changes to the contents without prior warning.

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CE 1639

## Compliant Device

## FDA 510(K) Certification

510(K) Number: K091288

## WEEE Compliance Statement

Microtek International, Inc. operates under full compliance with the WEEE Directive. Among the requirements of the Directive are the marking of any applicable equipment placed in the EU market with the WEEE symbol, a crossed out wheeled bin as shown at left; demonstration of the implementation of a take-back program; and meeting recycling targets.

# Guidance and Manufacturer's Declaration for EMC Directive

## For EQUIPMENT or ME SYSTEM that are not LIFT-SUPPORTING

**Recommended separation distances between portable and mobile RF communications equipment and the [ME EQUIPMENT or ME SYSTEM]**

The [ME EQUIPMENT or ME SYSTEM] is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the [ME EQUIPMENT or ME SYSTEM] can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the [ME EQUIPMENT or ME SYSTEM] as recommended below, according to the maximum output power of the communications equipment.

| Rated maximum output power of transmitter W | Separation distance according to frequency of transmitter m | | |
|---|---|---|---|
| | 150 kHz to 80 MHz $d = [\frac{3,5}{V_1}]\sqrt{P}$ | 80 MHz to 800 MHz $d = [\frac{3,5}{E_1}]\sqrt{P}$ | 800 MHz to 2,5 GHz $d = [\frac{7}{E_1}]\sqrt{P}$ |
| 0,01 | 0.117 | 0.117 | 0.233 |
| 0,1 | 0.369 | 0.369 | 0.738 |
| 1 | 1.167 | 1.167 | 2.333 |
| 1 | 3.690 | 3.690 | 7.377 |
| 100 | 11.667 | 11.667 | 23.333 |

For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

**The ME declaration- electromagnetic immunity (1)**

The ME system is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 006 should assure that it is used in such an environment.

| Immunity test | IEC 60601 Test Level | Compliance level | Electromagnetic environment- guidance |
|---|---|---|---|
| Conducted RF<br>IEC 61000-4-6 | 3 Vrms<br>150 kHz to 80 MHz | 3 Vrms | Portable and mobile RF communications equipment should be used no closer to any part of the ME EQUIPMENT or ME SYSTEM, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.<br>Interference may occur in the vicinity of equipment marked with the following symbol.<br> |
| Radiated RF<br>IEC 61000-4-3 | 3 V/m<br>80 MHz to 2,5 GHz | 3 V/m | |

| The ME declaration- electromagnetic immunity (2) | | | |
|---|---|---|---|
| The ME system is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 006 should assure that it is used in such an environment. | | | |
| Immunity test | IEC 60601 Test Level | Compliance level | Electromagnetic environment- guidance |
| Electrostatic discharge (ESD) IEC 61000-4-2 | ± 6 kV contact<br>± 8 kV air | ± 6 kV contact<br>± 8 kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %. |
| Electrical fast transient/burst IEC 61000-4-4 | ± 2 kV for power supply lines<br>± 1 kV for input/output lines | ± 2 kV for power supply lines<br>± 1 kV for input/output lines | Mains power quality should be that of a typical commercial or hospital environment. |
| Surge IEC 61000-4-5 | ± 1 kV line(s) to line(s)<br>± 2 kV line(s) to earth | ± 1 kV differential mode<br>± 2 kV common mode | Mains power quality should be that of a typical commercial or hospital environment. |
| Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11 | (>95 % dip in $U_T$)<br>for 0,5 cycle<br>40 % $U_T$<br>(60 % dip in $U_T$)<br>for 5 cycles<br>70 % $U_T$<br>(30 % dip in $U_T$)<br>for 25 cycles<br><5 % $U_T$<br>(>95 % dip in $U_T$)<br>for 5 s | (>95 % dip in $U_T$)<br>for 0,5 cycle<br>40 % $U_T$<br>(60 % dip in $U_T$)<br>for 5 cycles<br>70 % $U_T$<br>(30 % dip in $U_T$)<br>for 25 cycles<br><5 % $U_T$<br>(>95 % dip in $U_T$)<br>for 5 s | Mains power quality should be that of a typical commercial or hospital environment. If the user of the Model 004 image intensifier requires continued operation during power mains interruptions, it is recommended that the Model 004 Image Intensifier be powered from an uninterruptible power supply or a battery. |
| Power frequency (50/60 Hz) magnetic field IEC 61000-4-8 | 3 A/m | 0,3 A/m | If image distortion occurs, it may be necessary to position the Model 004 image intensifier further from sources of power frequency magnetic fields or to install magnetic shielding. The power frequency magnetic field should be measured in the intended installation location to assure that it is sufficiently low. |

| The ME declaration- electromagnetic immunity (3) | | |
|---|---|---|
| The ME system is intended for use in the electromagnetic environment specified below. The customer or the user of the Model 006 should assure that it is used in such an environment. | | |
| Immunity test | IEC 60601 Test Level | Electromagnetic environment- guidance |
| RF emissions CISPR 11 | Group 2 | The ME system must emit electromagnetic energy in order to perform its intended function. Nearby electronic equipment may be affected. |
| RF emissions CISPR 11 | Class B | The ME system must be used only in a shielded location with a minimum RF shielding effectiveness and, for each cable that exits the shielded location, a minimum RF filter attenuation of 80 dB from 10 MHz to 20 MHz, 100 dB from 20 MHz to 80 MHz and 80 dB from 80 MHz to 100 MHz. (The minimum at 20 MHz is 100 dB and the minimum at 80 MHz is 80 dB.)<br>The ME system, when installed in such a shielded location, is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. |
| Harmonic emissions IEC 61000-3-2 | Applicable | |
| Voltage fluctuations/ flicker emissions IEC 61000-3-3 | Applicable | |

# Safety Precautions

Before using your digitizer, read the following safety guides carefully, which detail the proper operation of the digitizer and its accessories to prevent injuries or damage to users or equipment.

Meanings of Symbol Signs:

Caution! This indicates hazardous situation, which, if not paid attention, could result injury or damage to users or equipment.

Power Supply:

- Use a power source only with a power rating specified on the marking label.

- Ensure to turn off the power of each device before connecting or disconnecting the cables.

- Insert the plug completely into the outlet, as a loose connection may cause arcing and result in fire.

- Ensure to hold the plug or connector to disconnect the cable; otherwise, if you pull the cable only, it may damage the core wire and result in fire or electric shock.

- Place and route the power supply cord such that it is not likely to be walked on or pinched by items placed upon or against them, paying particular attention to the cord near the power plugs, convenience receptacles, and at the point where it exits from the outlet.

- When the digitizer is left unattended and unused for long periods of time, unplug it from the wall outlet.

Moving and Storing the Film Digitizer:

- Medical equipment should not be used, stacked or located on or around equipment that may creates electromagnetic inferences.

- Always ensure that the digitizer is stored properly before shipping or moving it. Quick stops, excessive force, and uneven surfaces may cause the product to overturn when moving.

- Do not hit or drop the digitizer. The digitizer may be damaged if it receives a strong jolt, which may result in fire or electric shock if the digitizer is used without being repaired.

- Do not place the digitizer on any slippery, slanted, or unstable surface. The product may slide or fall, causing serious injury to people as well as serious damage to the product.

- Do not use the digitizer near water. Never spill liquid of any kinds on the product, or it may result in electric shock or other hazards.
- This digitizer should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
- Do not store the digitizer in which it may be exposed to direct sunlight.

Using the Digitizer

- Before using the digitizer, make sure the area of the front cover is clear from any objects that may cause jams inside.
- When using the digitizer, if your hairs have been jammed into the front cover of the digitizer, turn off the power switch immediately. Do not attend to remove your hairs from the front cover when the digitizer is still turned on.

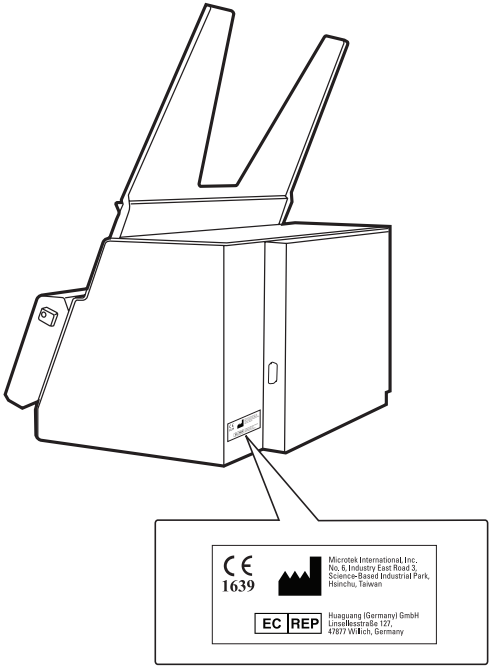
Maintenance and Service:

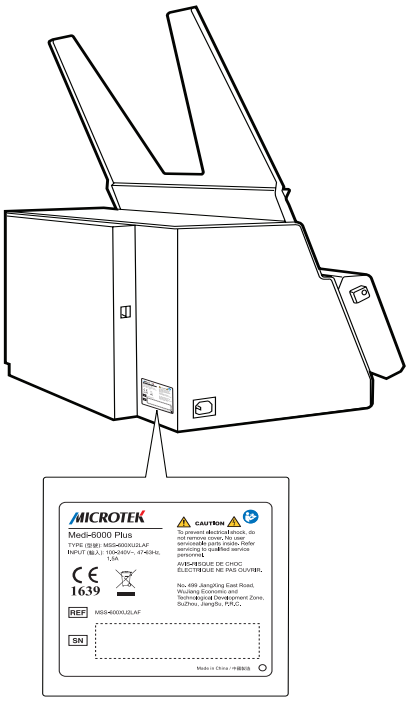
- When the digitizer is going to be cleaned, ensure to turn off the power of each device and unplug the power cable from the AC outlet.
- When you need a repair service, unplug the digitizer from the power outlet and consult qualified service personnel.
- When replacement parts are required, use replacement parts that are specified by the manufacturer or have the same characteristics as the original parts.
- For safety reasons, ensure to inspect the device before using it. In addition, carrying out a regular inspection at least once a year.

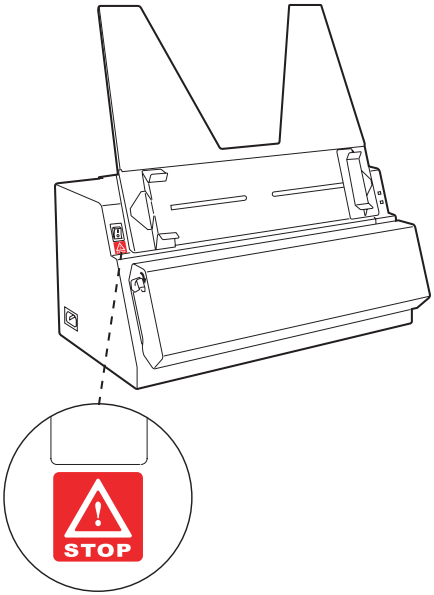
| WARNING<br>No modification of this equipment is allowed. |
|---|

# Labels and Markings

## On The Device



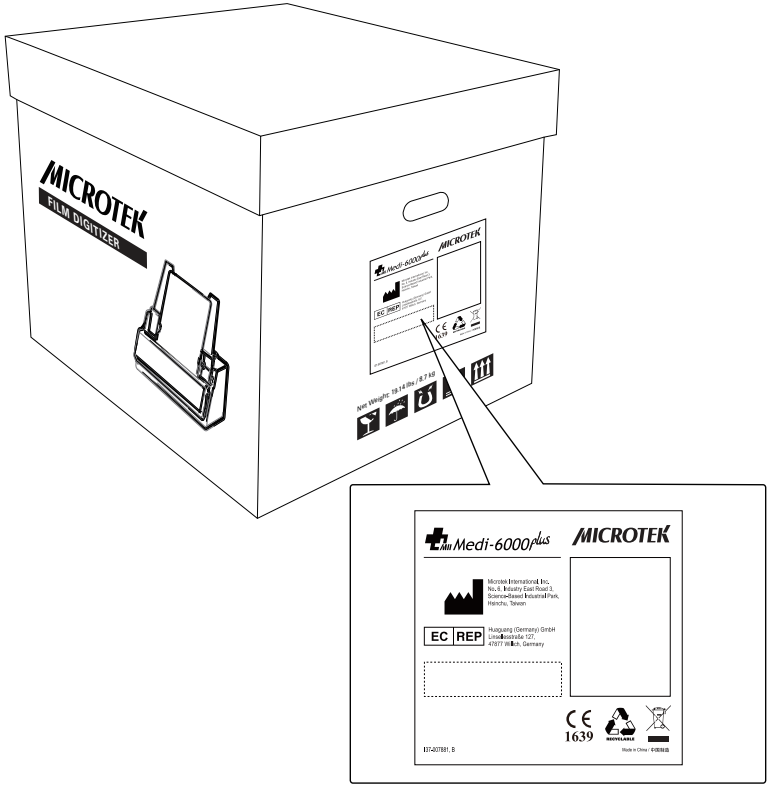




This label indicates that when an emergency situation happens, turn off the power switch immediately.

| | |
|---|---|
| | Manufacturer |
| EC REP | Authorized representative in the European Community |
| | General warning sign |
| | Warning: electricity |
| | Refer to instruction manual/ booklet |
| REF | Catalogue number |
| SN | Serial number |
| CE 1639 | European Conformity mark |
| | WEEE wheeled bin |

# On The Package Carton




| | | | |
|---|---|---|---|
| | Fragile; handle with care | | Manufacturer |
| | Keep in a dry place | EC REP | Authorized representative in the European Community |
| | Keep away from magnets | CE 1639 | European Conformity mark |
| | Store 3 boxes in one pallet | | WEEE wheeled bin |
| | Transport and storage directions | | Recyclable |

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# Knowing about Your Film Digitizer

The Medi-6000 Plus is a sheet-fed transparency film digitizer that can easily transfer radiographs and x-ray films into a digital format. The digitized images are intended for the use in primary, secondary and over reading applications. This device is not to be used for primary image diagnosis in mammography. Also, it is specifically designed for the trained medical professionals or staff. The Medi-6000 Plus can capture details in bright and dark areas of x-ray films and provide the medical professionals a convenient method to digitize the roentgenogram for the electric data storage.

## Features of the Medi-6000 Plus

The Medi-6000 Plus comes with several important features, including the following:

- Premium Image Quality — With a high optical resolution of 600 dpi, a dynamic range of 4.0 Dmax, and the 16-bit grayscale, the Medi-6000 Plus allows users to get better image details in just seconds.
- Energy-saving LED light source — Adopting LEDs as the light source, when the digitizer is detected by the system, there are no requirements for any warm-up time before carrying out the scan, which boots your productivity and reduces energy costs amazingly. With its stable performance, the image quality will remain consistent even after used for a certain period of time.
- Various sizes of x-ray films — The Medi-6000 Plus covers various sizes of sheets or x-ray films from 2.5" x 2.5" to 14" x 35", which offers more flexibility to digitize old records or x-ray films.
- Ultra high scanning speed — The Medi-6000 Plus increases your productivity with fast scanning speed, which is less than 12 seconds at 300 dpi for grayscale scans.
- Hi-Speed USB (USB 2.0) port — Hi-Speed USB (USB 2.0) is capable of high data transfer rates of up to 480 Mbit/sec.
- Easy to operate, clean and maintain — The Medi-6000 Plus requires virtually no routine maintenance and no daily cleaning, which is ideal for busy radiology departments.
- Microtek ScanWizard Medi software — The friendly user interface of ScanWizard Medi stores X-ray pictures in a computer readable format, offering an easy and quick access and management.
    - Auto-scan: With this feature, the Medi-6000 Plus automatically performs a scan job once when it detects a X-ray film put on the Feed Tray. No matter a novice or an expert can start scanning immediately.

— Auto crop: This feature automatically detects the size of the original image, crops the full scan frame to fit the image, and removes unwanted black borders.

— Auto density: This feature enables the digitizer to optimize the image density automatically when scanning a X-ray film. It automatically defines the lightest and darkest pixels in a scanned image and then redistribute the intermediate pixel values proportionately.

— Customized exposure: This manual setting tool allows you to customize an exposure time for the scanned image. It enhances the visibility of extreme dark film, delivering a better scanning result and improving the quality of saved files.

## System Requirements

In order to use your Medi-6000 Plus, your computer must satisfy the following system requirements:

- CD-ROM drive (for installing software)
- Color display with 24-bit color output capability
- 512 MB RAM or above
- Pentium IV PC or higher with Hi-Speed USB (USB 2.0) port
- Microsoft Windows 7, 8 or 10

# Unpacking Your Film Digitizer

## Looking for Damage

While unpacking your digitizer, inspect the shipping carton for any signs of mishandling or damage. The digitizer's packing carton and padding material have been carefully chosen to prevent damage to the unit in shipping and can withstand a reasonable amount of pressure.

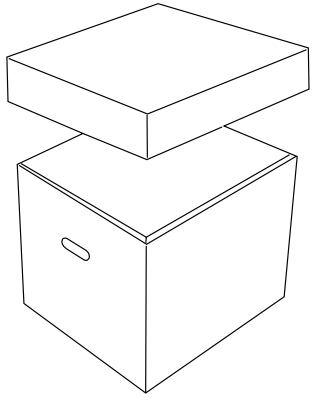
After unpacking your digitizer package, refer to the later section to ensure that you received all of the parts necessary for digitizer setup. If there are any damaged or missing parts, notify the shipper immediately or contact customer service.

NOTE: Save the carton and all packing materials. If you need to ship the digitizer later, it is recommended that you should repack it using the original wire ties, plastic bags, foam supports and cartons, which protects your digitizer from unnecessary damage. Refer to the later section "How to Repack Your Film Digitizer for Shipping" for the detail.

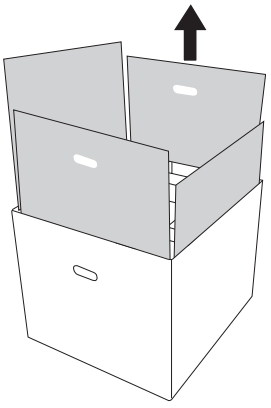
## Unpacking Package Contents

After unpacking the shipping carton, follow the steps shown below to take out your digitizer and other accessory components.

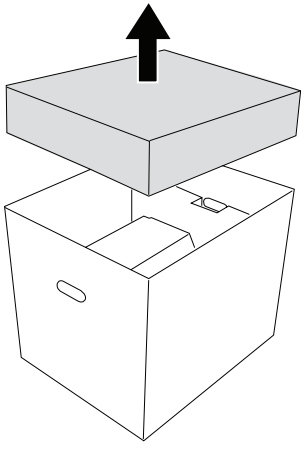
1. Ensure that you put your shipping carton toward the right direction. Then, lift up the top cover.



2. Remove each cardboard from four sides of the shipping carton.

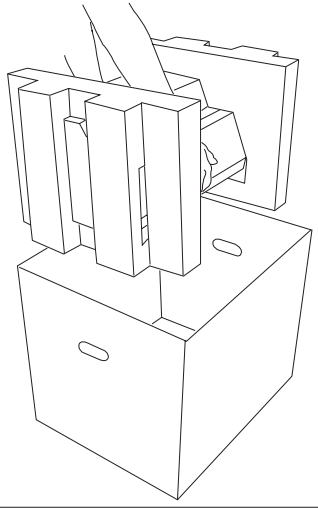


3. Take the accessory box at top out from the shipping carton.

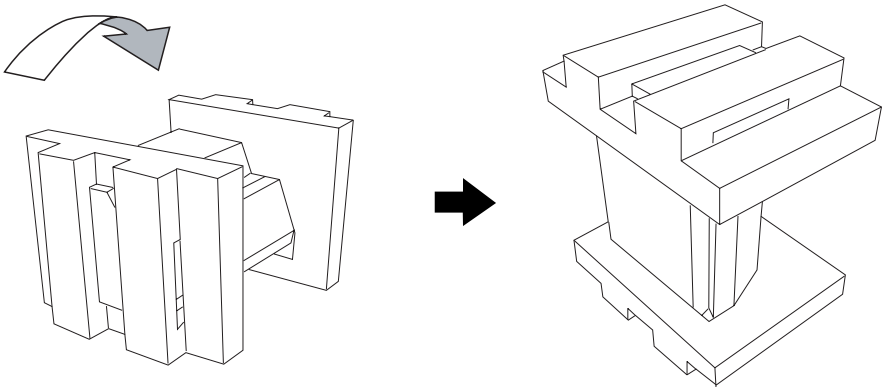


4. With both hands, hold the both sides of the scanner machine body and then lift up the scanner with foam supports firmly from the carton. Before putting down the package on a steady surface, do not go off either of hands from holding the foam supports.

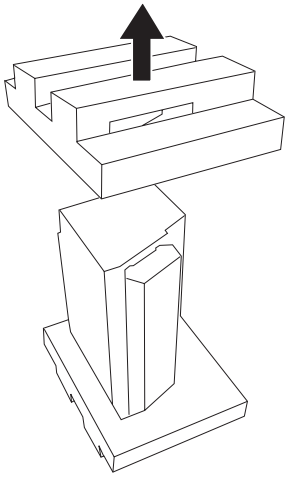
   Note: The package of the contents is heavy (almost 33 pounds). Due to the heavy weight of the package (about 33 pounds), make sure you can handle it properly before removing it from the carton.



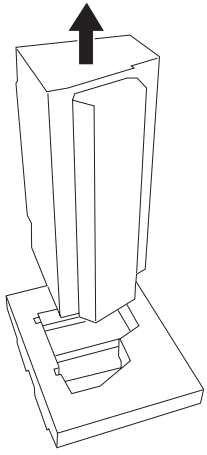
5. Turn over the foam supports and make them stand vertically.



6. Lift up the upper foam support.

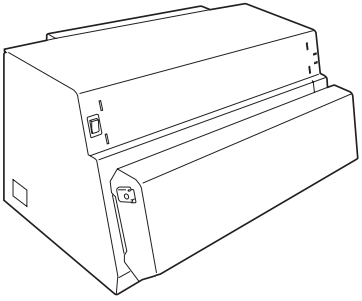


7. Pull out the digitizer from the bottom foam support. Then, remove the digitizer from the wrapped plastic bag.

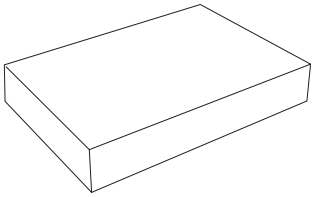


# Package Contents

After you have unpacked your digitizer package, please check for the major components listed below.

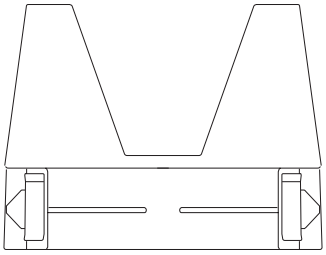


Medi-6000 Plus Film Digitizer
(I41-016546)

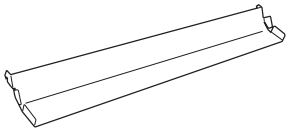


Accessory Box
(219-31-500403)

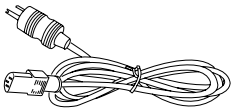
**Accessories for Box**



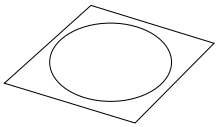
Feed Tray
(PN: 215-21-360307)



Output Guide
(PN: I41-O15324)



Power Cord
(PN/EU: 121-46-032005)
(PN/US: 121-46-500000)
(PN/TWN: 121-46-570000)



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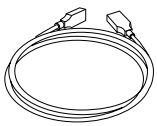
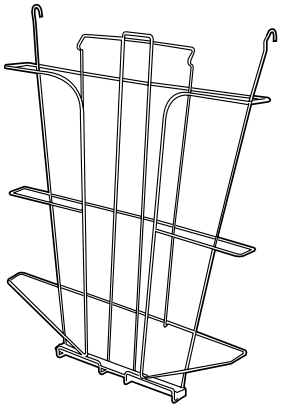


Hi-Speed USB Cable
(PN: 121-44-150504)

**Accessories for Box (cont.)**

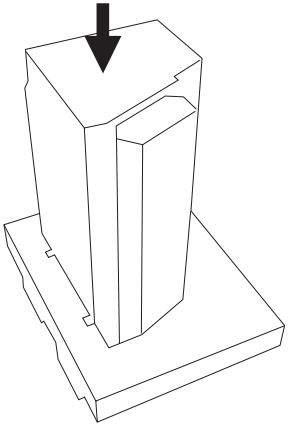


Output Basket
(PN: I41-014482)

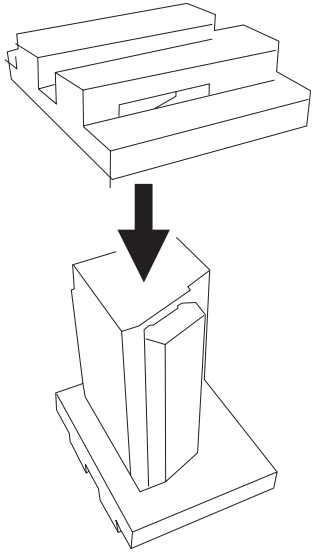
# How to Repack Your Film Digitizer for Shipping

To ship back your Medi-6000 Plus for repairing, maintenance services, or other reasons, in order to not damage your Medi-6000 Plus, it is strongly recommended that using the original carton and other packing materials. Follow the steps below to repack your Medi-6000 Plus correctly.

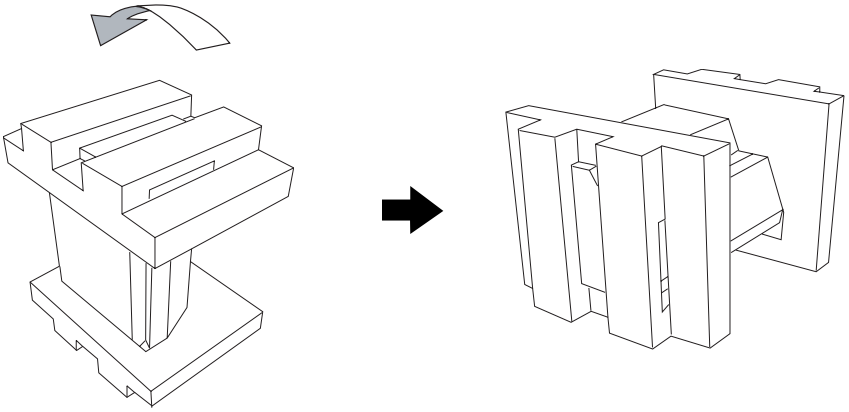
1. Wrap the digitizer with the plastic bag, and then insert it into one foam support.



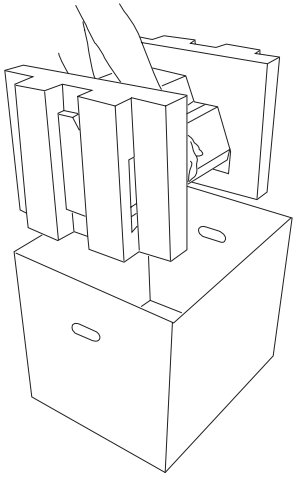
2. Cover down the other foam support on the tops of the digitizer.



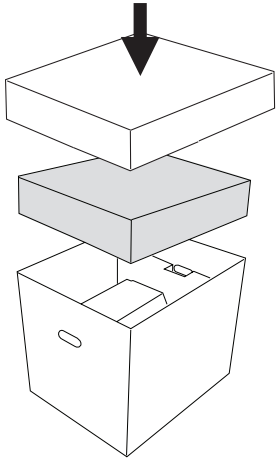
3. Turn over the foam supports and make it stand horizontally.



4. With both hands, hold the two sides of the scanner machine body with the foam soupports and then insert them into the shipping carton.

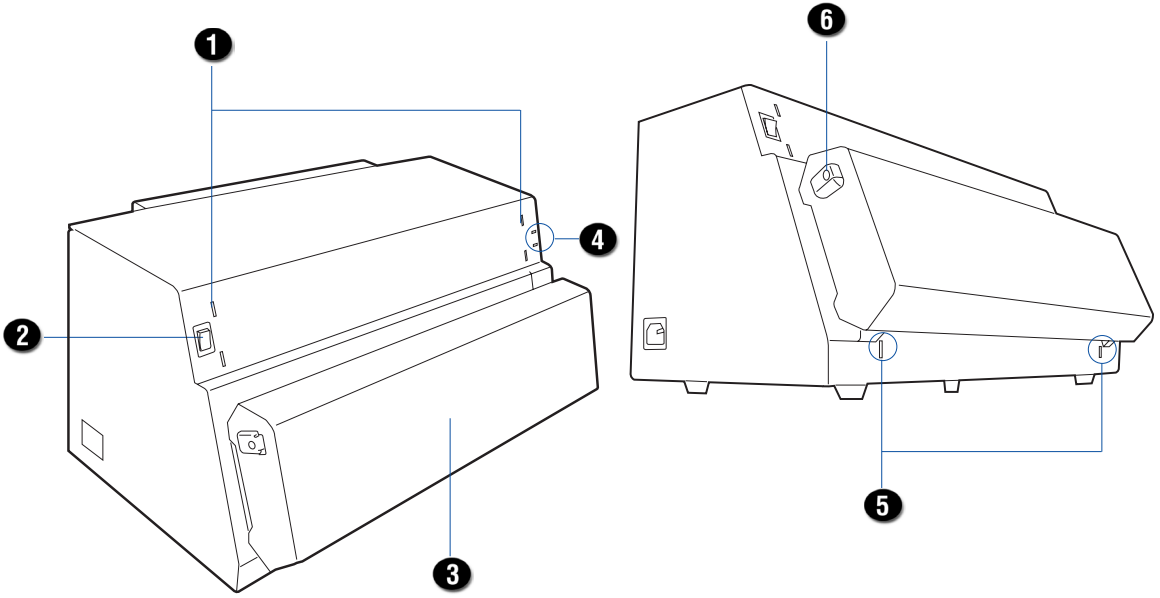


5. Put the accessory box at the top of the scanner. Finally, close the top cover of the shipping carton and seal it with tape.



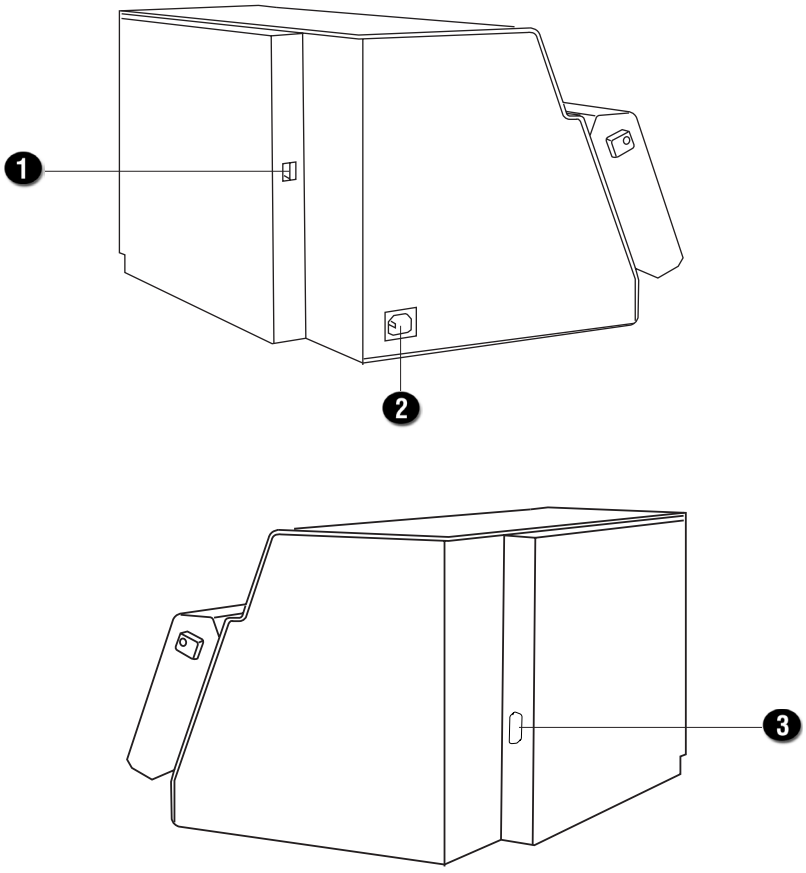
# Taking a Closer Look

## Front /Top / Bottom View




| No. | Names of Parts | Functions of Parts |
|---|---|---|
| 1 | Feed Tray Holes | Uses to hook the Feed Tray onto the digitizer. |
| 2 | Power Switch | Turns the digitizer on or off. |
| 3 | Front Cover | Uses to cover inner components of the digitizer. |
| 4 | Green/Orange LEDs | Indicates the status of the digitizer. For more details, refer to the “Troubleshooting” section of this manual. |
| 5 | Output Tray Holes | Uses to hook either the Output Guide or the Output Basket onto the digitizer. |
| 6 | Release Buttons | Releases the front cover to open the lamp holder. There are two Release buttons located on each side of the front cover. Press the buttons down simultaneously to release the front cover. |

# Rear / Side View




| No. | Names of Parts | Functions of Parts |
|---|---|---|
| 1 | Hi-Speed USB Port | Connects the Hi-Speed (USB 2.0) cable to the computer. |
| 2 | Power Connector | Connects the digitizer to the power cord. |
| 3 | AFF Connector | Connects the Auto Film Feeder (AFF) to the digitizer. |

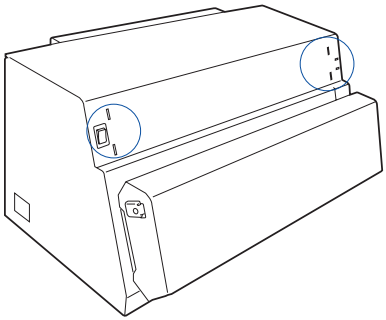
# Assembling Your Film Digitizer

## Installing the Feed Tray

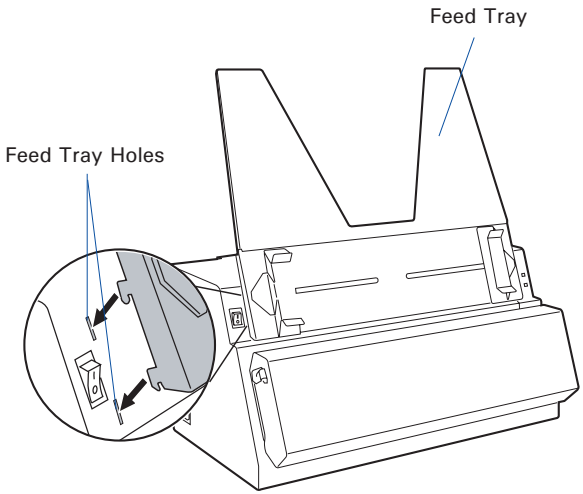
Coming with your digitizer, there is a separated Feed Tray which holds the X-ray films to be fed into the digitizer. Before using the Feed Tray with your digitizer, you need to assembly it onto the digitizer.

Follow the instructions and graphs below to correctly install the Feed Tray.

1. Look for two sets of the Feed Tray Holes at both ends of the front-top of the digitizer.



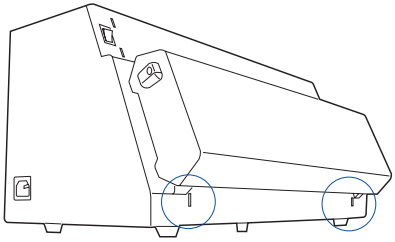
2. Insert and push down both sides of the Feed Tray into its compartment holes, making sure the Feed Tray snaps into place.



# Installing the Output Tray

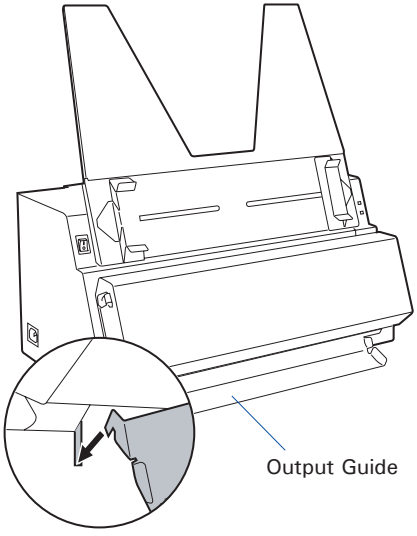
Coming with your digitizer, there are two kinds and separated Output Trays which store the stacked x-ray films which have been digitized. One of them is called Output Guide, used to guide the digitized materials staying on the table. The other is called Output Basket, used to store and keep the digitized materials in a basket. You may use only one of them as an output tray at a time. Before using them with your digitizer, you need to assembly them onto the digitizer.

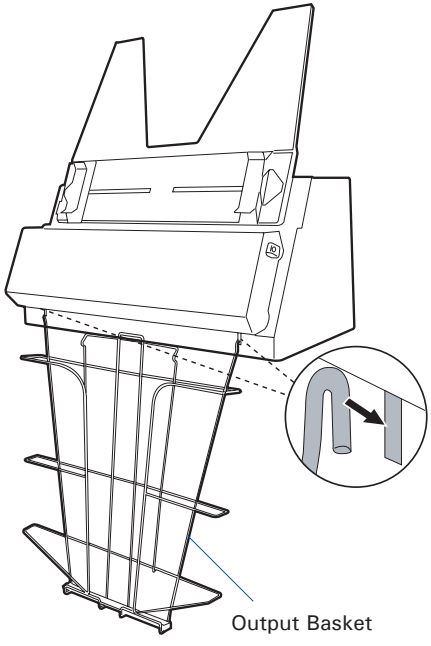
1. Look for two sets of Output Tray Holes at both ends of the front-bottom of the digitizer.



2. Insert and push down both sides of the Output Guide into its compartment holes, making sure the Output Guide snaps into place.

   Or, Insert and push down both sides of the Output Basket into its compartment holes, making sure the Output Basket snaps into place.



# Installing Your Film Digitizer

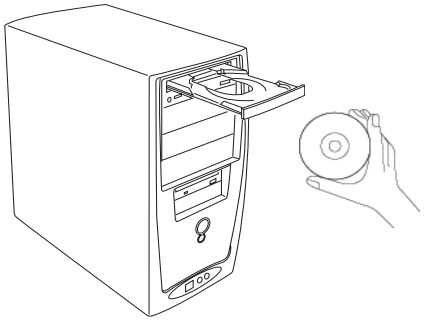
## Installing the Software

**Important**: You must install software before connecting your digitizer.

Always close any open programs, and turn off Anti-virus utilities before installing software.

1. Turn on your computer.
2. Place the Microtek CD into your CD-ROM drive.
3. Follow the on-screen instructions to install the driver and software.

   NOTE: If the Microtek Software Installer screen does not come up automatically, double-click the following in succession: “My Computer”; the CD-ROM icon; then cdsetup.exe to start the installer program.



4. Click EXIT on the Microtek Software Installer screen when all the software have been installed.
5. Restart your computer.

### Drivers & Software Upgrades

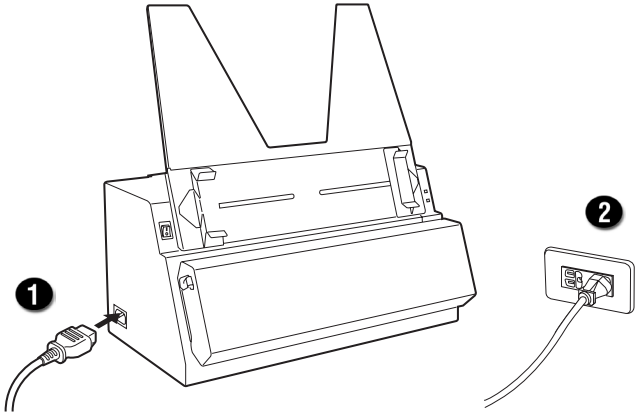
After you finish the installation of software, if you found that the installed drivers and software cannot run your product or your computer system properly later, please go to the Microtek Download Service site at www.microtek.com/service.php to download and install any updates you may require.

For additional information about Microtek products, please visit our website at www.microtek.com.

# Connecting the Film Digitizer

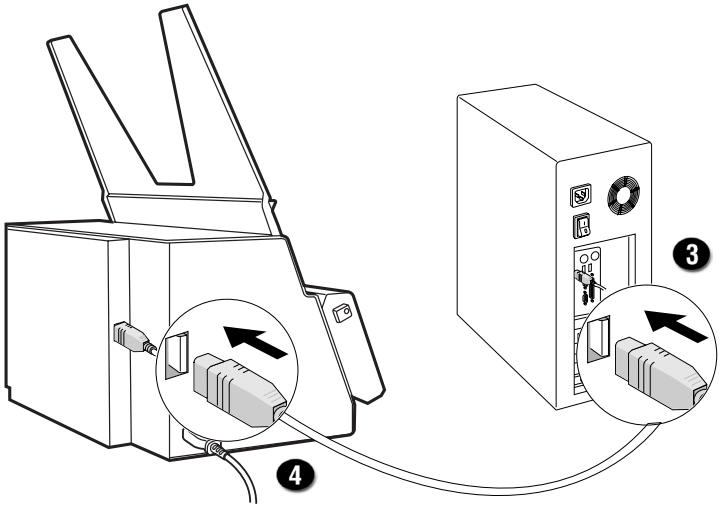
## To the Power Cord

1. Connect the power cord to the left side of the digitizer.
2. Plug one end of the power cord into a wall outlet or other power source.

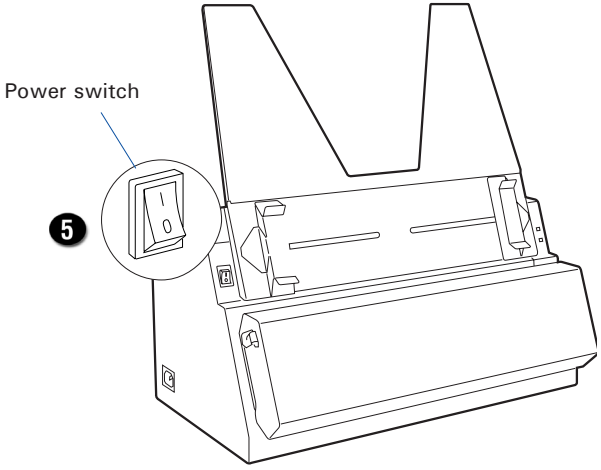



## To the Hi-Speed USB Cable

3. Connect one end of the Hi-Speed USB cable to your computer.
4. Connect the other end of the Hi-Speed cable to the digitizer's USB port, locating at the left side of the digitizer



5. Turn the power switch at the front-left panel of the digitizer to “On”; once the scanner is detected by your system, the LED lights on the front panel will brighten, and the digitizer is ready to scan.

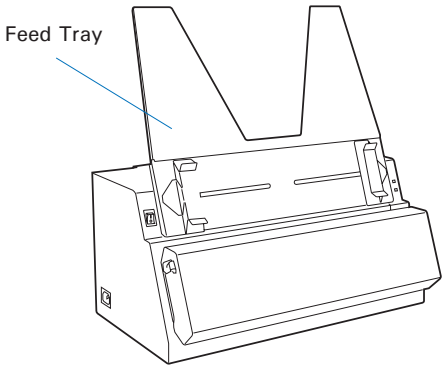


# Digitizing Your X-ray Film

## Positioning Your X-ray Film

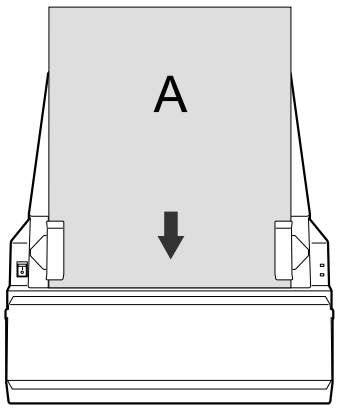
Medi-6000 Plus's Feed Tray can hold only one piece of X-ray film at a time. This section shows you how to position a single-sheet of X-ray film into the Feed Tray.

1. Install the Feed Tray onto your digitizer before using it. Refer to the front sections “Installing the Feed Tray” for the detail.

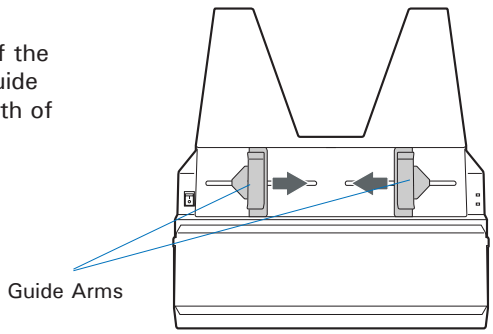



2. Load and insert the film into the Feed Tray, with the side to be scanned facing up and with the top of the film directing upwardly.

   Push the film into the tray until the edge of it touches the bottom edge of the Feed Tray.




3. Align the film with the center of the Feed Tray by sliding the two Guide Arms toward the film if the width of the film is less than 14 inches.



Note: There are several precautions and reminders about using the digitizer correctly. Please refer to the section as below for the detail.

- The Feed Tray can handle X-ray films of the following sizes:
  - Width: 2.5" to 14" (63.5 to 355.6 mm)
  - Length: 2.5" to 35" (63.5 to 889 mm)
  - Sheet Feed: Single sheet per time
- If the film are torn, curled, or wrinkled, do not put them into the Feed Tray to scan, because they may cause film jams.
- Remove clips or staples before placing the film into the Feed Tray. DO NOT use the digitizer to scan your X-ray film with clips or staples because they may cause film jams or damage the digitizer.

# Using ScanWizard Medi

The ScanWizard Medi is a scanning software designed for the use of the X-ray film scanning. Its easy and user-friendly interface enables you to easily start the scanning process. Refer to the ScanWizard Medi software manual for more details.

The following sections will show you how to scan a X-ray film by using the Medi-6000 Plus with ScanWizard Medi step by step.

Warning: Do not place more than one piece of X-ray film on the Feed Tray, for doing so will damage the original film during the feeding process.

## Scanning X-ray Films in Auto-Scan Mode

The Auto-Scan mode is the default scanning mode after the ScanWizrd Medi is launched at the first time, enabling the Medi-6000 Plus detects the X-ray film on the Feed Tray automatically and then perform a smart scan directly. The Auto-Scan mode is always displayed on the screen unless you switch the scanning mode to the Smart-Scan mode.

**To scan X-ray films in Auto-Scan mode, using one of the following methods:**

### A. Scanning with Default Settings

If this method is selected, a scan job will be carried out automatically with factory default settings.

1. Launch ScanWizard Medi (either as a stand-alone by clicking the program icon on the desktop, or by using the “File-Import” or “Scan” command from an application program).
2. Make sure the Auto-Scan Mode has been activated.

   If not, click and hold the arrow on the Smart-Scan button in the Preview window; then, choose “Auto Scan” from its option menus.
3. Load the film to be scanned into the Feed Tray.

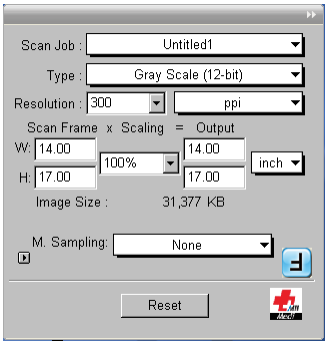
   When the film is detected by the digitizer, the ScanWizard Medi will automatically recognize, auto-crop, and perform a scan of the film and save it in your preferred folder or application.

   - If ScanWizard Medi is launched as a stand-alone program, the scanned image can be saved to a file or opened in an image-editing program.

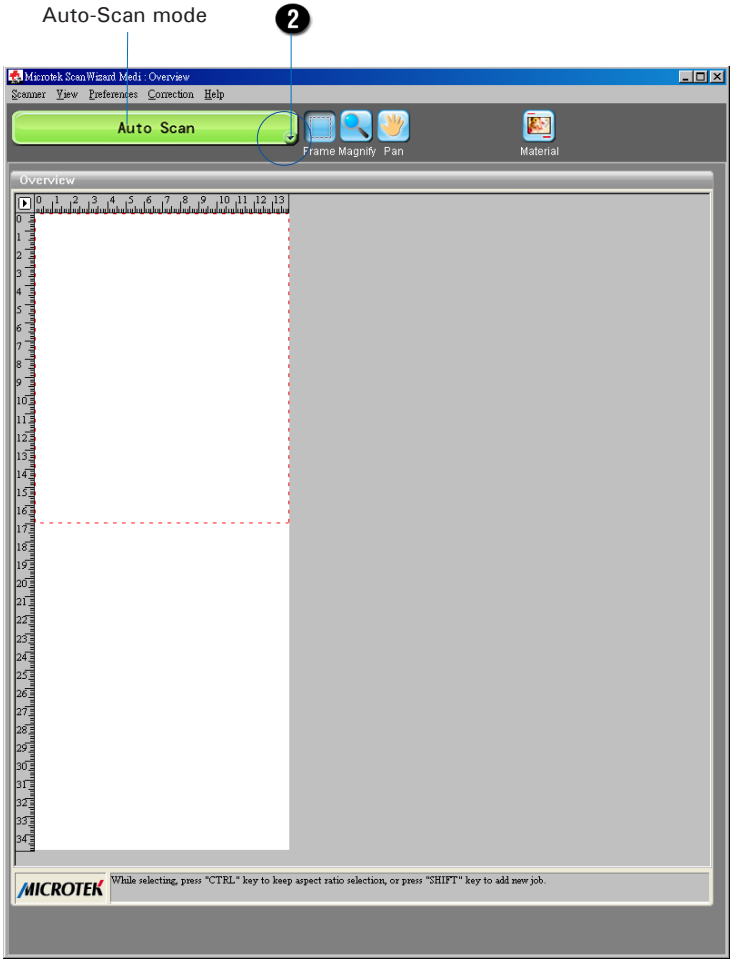
     To view the scanned image, double click the “MSmart Images” icon on your desktop .

   - If ScanWizard Medi is launched as a Plug-In from an image-editing program, the scanned image is delivered to your application, where the image can be saved, printed, or modified further.




Settings window




Preview window

## B. Scanning with Custom Settings

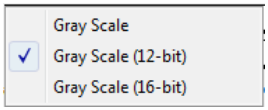
If this method is selected, a scan job will be carried out automatically with customized settings. These customized settings can be adjusted or selected in the Settings window.

1. Launch ScanWizard Medi (either as a stand-alone by clicking the program icon on the desktop, or by using the "File-Import" or "Scan" command from an application program).

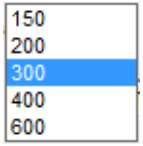
2. Make sure the Auto-Scan Mode has been activated.

   If not, click and hold the arrow on the Smart-Scan button in the Preview window; then, choose "Auto Scan" from its option menus.

3. Select your image output type as Gray Scale, Gray Scale (12-bit), or Gray Scale (16-bit) from the Type drop-down menu.




4. Select your desired image output resolution in the Resolution drop-down menu. The recommended resolution is 300 dpi or above.



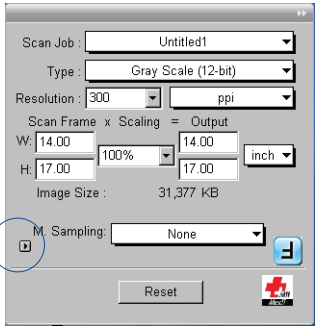

5. Specify your scan frame to meet your X-ray film size by using the Scan Frame tool ( ) button in the Preview window, and then resize the size of the scan frame by dragging on the edge or corner of the scan frame.

6. If necessary, use the Window Expansion button to enable the image correction tools to adjust image quality.

   For example,

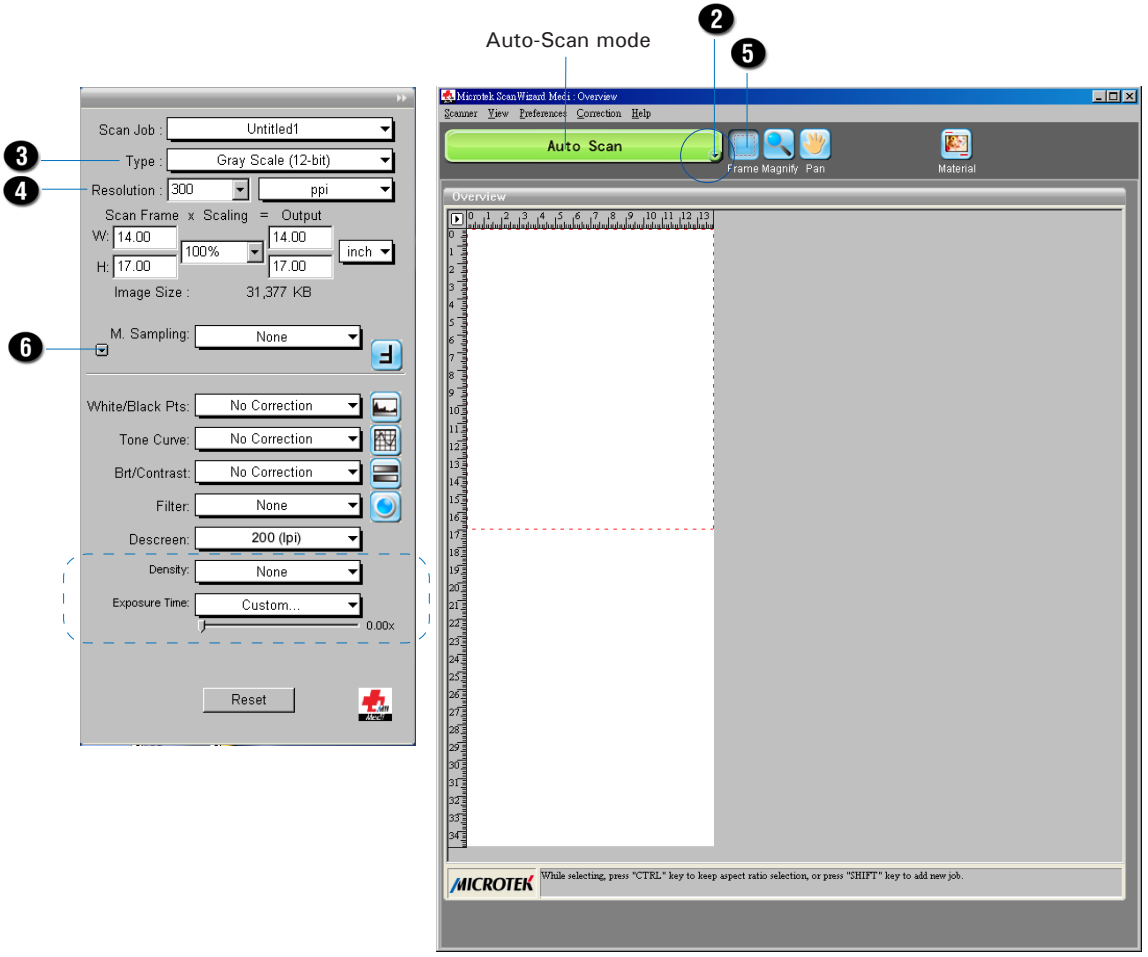
   – Enable auto density function from the Density drop-down menu.

   – Specify a customized Exposure Time in the Exposure Time drop-down menu.




7. Load the film to be scanned into the Feed Tray and the digitizer will start scanning automatically.

   After loading the film, the digitizer starts to detect for the film automatically. Once the film is detected, the ScanWizard Medi will automatically recognize, auto-crop, and perform a scan of the film and save it in your preferred folder or application.

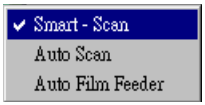

Auto-Scan mode
2
5
3
4
6
Scan Job : Untitled1
Type : Gray Scale (12-bit)
Resolution : 300 ppi
Scan Frame x Scaling = Output
W: 14.00 100% 14.00 inch
H: 17.00 17.00
Image Size : 31,377 KB
M. Sampling: None
White/Black Pts: No Correction
Tone Curve: No Correction
Brt/Contrast: No Correction
Filter: None
Descreen: 200 (lpi)
Density: None
Exposure Time: Custom...
0.00x
Reset
Microtek ScanWizard Medi : Overview
Scanner View Preference Correction Help
Auto Scan
Frame Magnify Pan
Material
Overview
MICROTEK
While selecting, press "CTRL" key to keep aspect ratio selection, or press "SHIFT" key to add new job.

## Scanning X-ray Films in Smart-Scan Mode

In the Smart-Scan mode, ScanWizard Medi will automatically recognize, auto-crop, and perform a scan of the film after the Smart-Scan button is pressed.

1. Load the film to be scanned into the Feed Tray.
2. Launch ScanWizard Medi (either as a stand-alone by clicking the program icon on the desktop, or by using the "File-Import" or "Scan" command from an application program).
3. Activate the Smart-Scan mode.

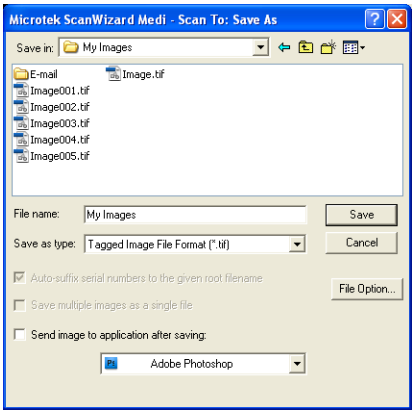
   In the Preview window, click and hold the arrow at the right bottom corner of the Auto Scan button; then, choose "Smart-Scan" from its option menus.



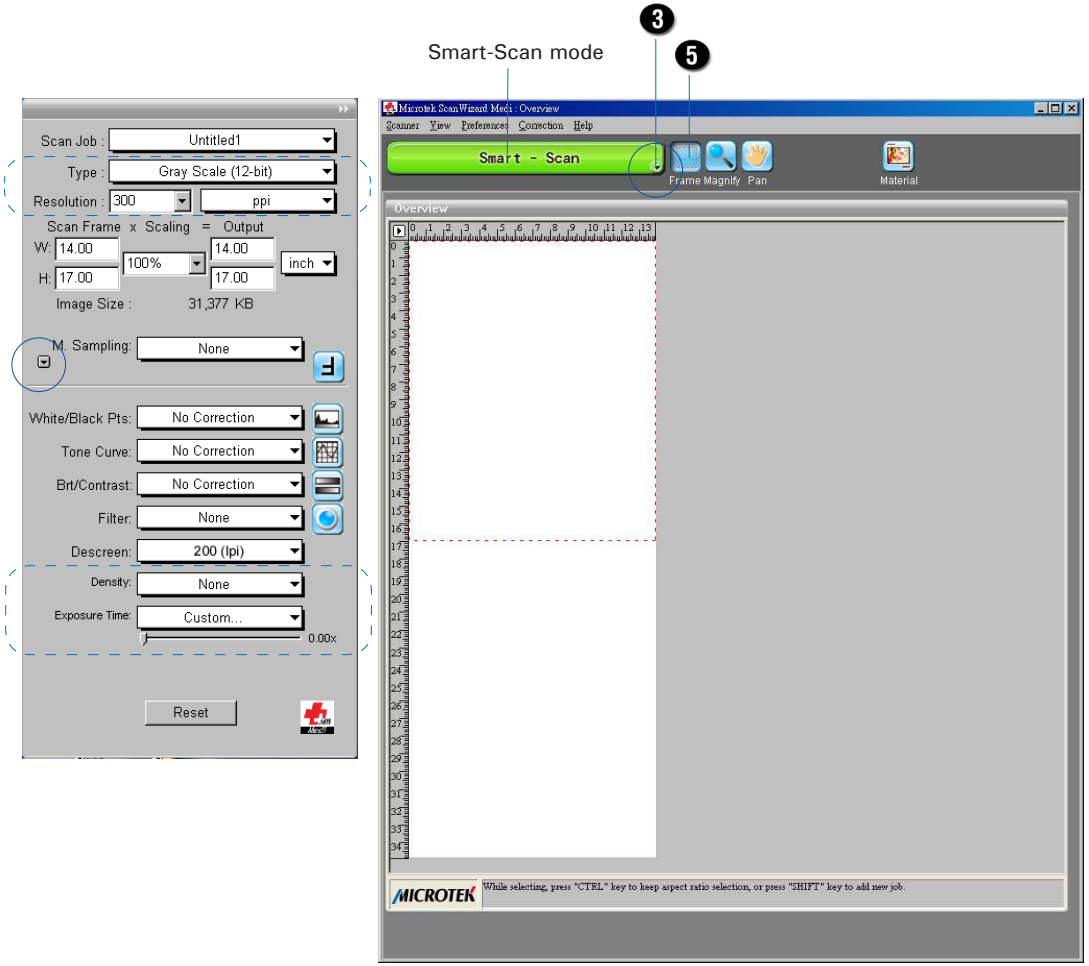

4. Follow the procedures (steps 3 through 6) for "Scanning with Customized Settings" in the previous section to specify your scanning requirements.
5. Click the Smart-Scan button to start scanning.

   - If ScanWizard Medi is launched as a stand-alone program, a window "Scan To: Save As" dialog box will appear. Click the Save button; then, the scanned image can be saved into your selected folder or sent to your selected application.

     To view the scanned image, double click the "MSmart Images" icon on your desktop (default folder assigned by the software), or retrieve it from your assigned folder.




   - If ScanWizard Medi is launched as a Plug-In from an image-editing program, the scanned image is delivered to your application, where the image can be saved, viewed, or modified further.


3
Smart-Scan mode
5
Scan Job : Untitled1
Type : Gray Scale (12-bit)
Resolution : 300 ppi
Scan Frame x Scaling = Output
W: 14.00 100% 14.00 inch
H: 17.00 17.00
Image Size : 31,377 KB
M. Sampling: None
White/Black Pts: No Correction
Tone Curve: No Correction
Brt/Contrast: No Correction
Filter: None
Descreen: 200 (lpi)
Density: None
Exposure Time: Custom...
0.00x
Reset
Microtek ScanWizard Medi : Overview
Scanner View Preferences Correction Help
Smart - Scan
Frame Magnify Pan
Material
Overview
MICROTEK
While selecting, press "CTRL" key to keep aspect ratio selection, or press "SHIFT" key to add new job.

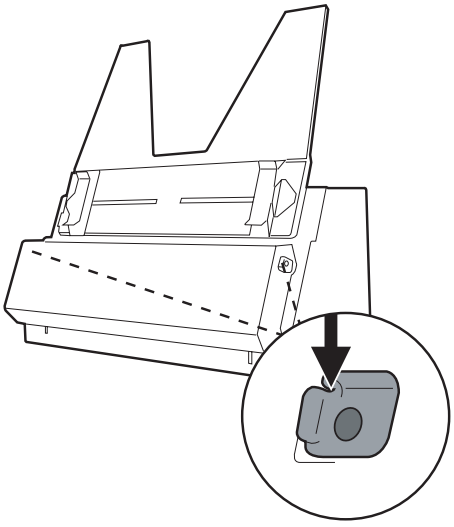
# Care and Cleaning

To ensure optimal performance from the Medi-6000 Plus, it is important to clean several critical parts of the digitizer on a regular basis.

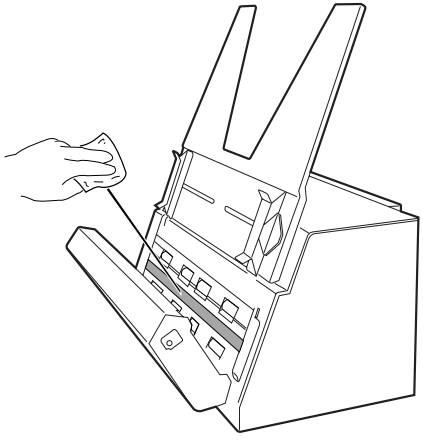
## Cleaning the Glass Surface

1. Push down two Release buttons at both sides of the front cover of the digitizer and open the front cover.

   When opening the front cover, support the both sides of the front cover with your hands, avoiding suddenly falling down of the front cover.



2. Using a soft and non-abrasive, lint-free cloth, clean the inner glass surface on the digitizer.



## Cleaning the Diffuser

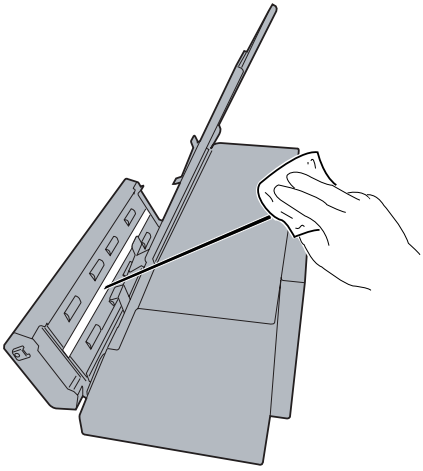
The diffuser is used when you scan a X-ray film or transparent material. The cleanness of the diffuser decides whether your digitizer may deal with the right lightness of scanned transparent materials.

To clean the diffuser:

1. Push down two buttons at both sides of the front cover of the digitizer and open the front cover.

   When opening the front cover, support the both sides of the front cover with your hands, avoiding suddenly falling down of the front cover.

2. Use the same kind of cloth for cleaning the digitizer glass surface to clean the white diffuser located at the middle of the front cover.



## Cleaning the Rollers

Prolonged used of the digitizer may result in accumulation of ink and other residue on the feeder's rollers, affecting their efficiency.  Clean the rollers periodically to maintain performance.

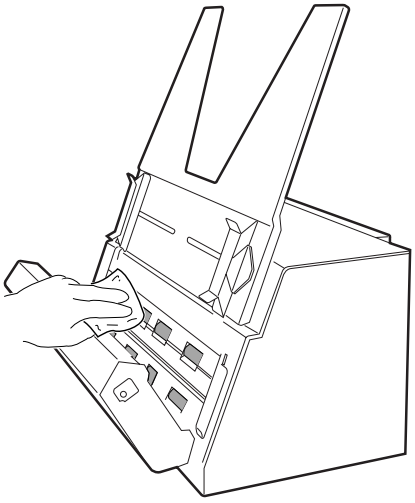
Rollers are found in two areas of the Medi-6000 Plus: Directly on the digitizer, and on the side of the front cover.

To clean the two sets of rollers:

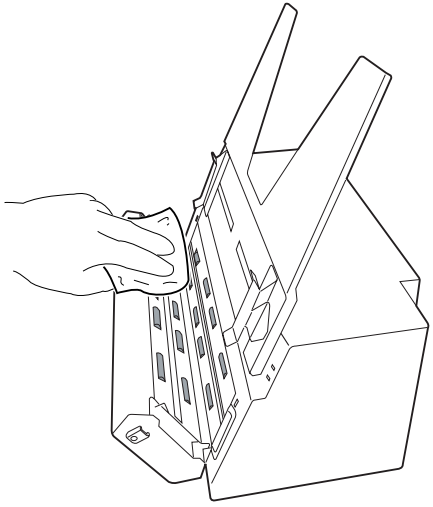
1. Push down two buttons at both sides of the front cover of the digitizer and open the front cover.

   When opening the front cover, support the both sides of the front cover with your hands, avoiding suddenly falling down of the front cover.

2. Clean the rollers with a lint-free cloth or a swab moistened with alcohol or ECO cleaner, as shown in the graphic below. Remember to clean the rollers on the digitizer and the front cover at the same time.



Rollers on the digitizer



Rollers on the front cover of the digitizer

# Maintenance

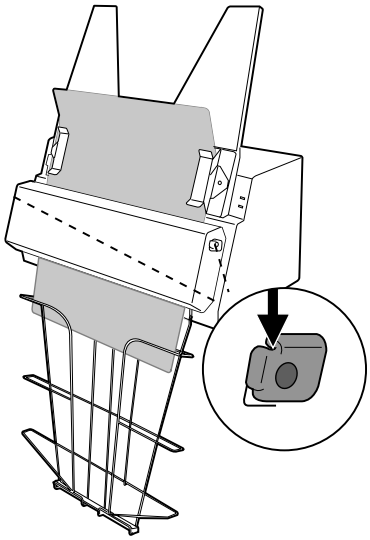
After usage for a period of time, the parts inside your digitizer, such as rollers or light source, may become worn out, and a problem such as insufficient light supply may occur. In this cases, contact your local dealers or wholesales for the maintenance services.

Note: Your digitizer need a professional to perform the required service or maintenance. Do not attend to fix or perform the maintenance by yourself, or it may cause dangers to you or the digitizer.

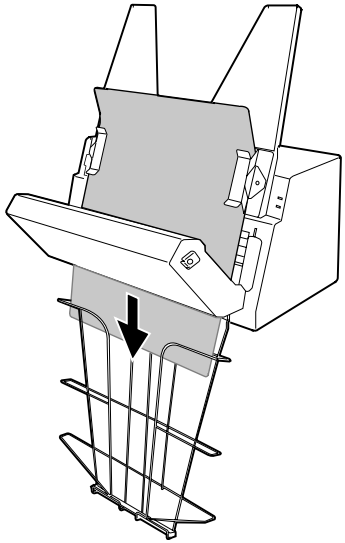
# Appendix

## A. Fixing Film Jams

1. Open the front cover by pressing the Release buttons on the both sides of the front cover.



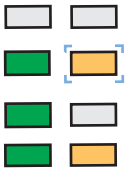
2. After opening the front cover, let the jammed film fall into the output basket and then remove it from the output basket.



Note: To remove the jammed film from the digitizer, you have to open the front cover first. Otherwise, your film may be damaged if they are forcedly removed.

# B. Troubleshooting

The LEDs on the front-right panel of the digitizer indicate the status of the digitizer.

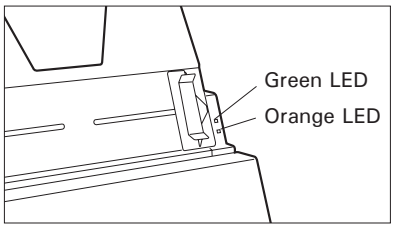


All Off - Digitizer is off

Flashing Orange - Starting up the scanning

Orange off - Scanning

All On - Ready to scan




First, make sure that you have followed steps as described in the “Assembling Your Film Digitizer” section of this document. Then if your problem is listed here, try the suggested solution.

1. **No light comes on when the digitizer is turned on.**
   Make sure your digitizer is connected to your computer and plugged into a power source.

2. **The Add/Remove Hardware Wizard appears on your screen.**
   Click the “Cancel” button and close the ScanWizard Medi scanning software. Disconnect the Hi-Speed USB cable from your computer, and refer to the installation instructions in this document.

3. **When trying to scan, an error message appears on your screen that reads, “Can’t Find Scanners”.**
   Make sure your digitizer is connected to your computer and plugged in to a power source (see “Connecting the Digitizer” in the “Assembling Your Film Digitizer” section).

   Uninstall and reinstall the ScanWizard Medi software.

4. **After clicking “Scan,” a blank screen appears.**
   Uninstall and reinstall the ScanWizard Medi software.

5. When trying to scan, an error message appears on your screen that reads, “Code -204, Scanning lamp or image sensor circuit failure. Please don't select fast preview or draft scan!”

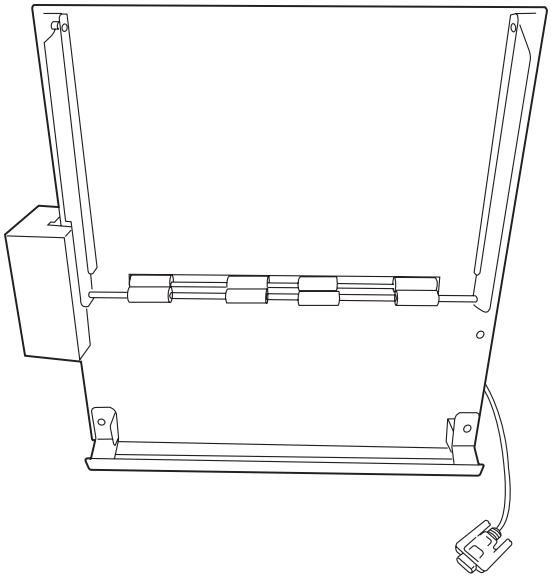
   This error message appears when the luminance of lamps is insufficient or surpassed.

   Click OK first; then contact the professional technician for the further help.

# C. Optional Auto Film Feeder (AFF)

The Auto Film Feeder (AFF) is an optional accessory for the Medi-6000 Plus digitizer. The AFF only works with X-ray film, allowing to hold up to15 sheets of the X-ray film automatically at one time. It increases convenience and efficiency in multiple-sheet-scanning of X-ray film.

Microtek recommends that the digitized images came from the use of this accessory are intended for the use in primary, secondary and over reading applications. This device is not to be used for primary image diagnosis in mammography. Also, it is specifically designed for the trained medical professionals or staff.

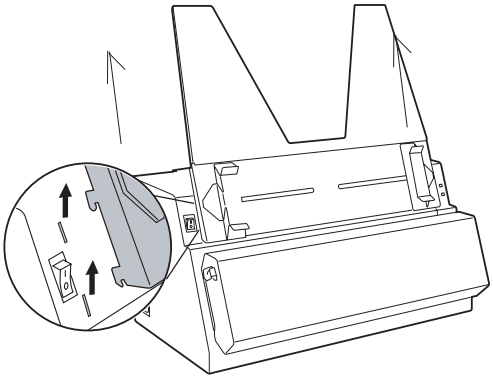


The coming section describes how to install the AFF on the Medi-6000 Plus through the Medi-6000 Plus's accessory port and how to scan X-ray films by using the AFF.

## Installing the Auto Film Feeder (AFF)

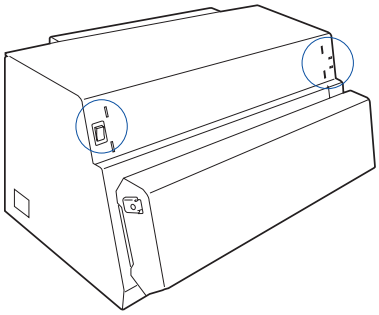
You can use either the Auto Film Feeder or the Feed Tray for one time with your digitizer; therefore, before mounting the AFF onto your digitizer, make sure that the Feed Tray has been removed out from the digitizer and the digitizer's power is off.

Lift up the Feed Tray and remove it from the digitizer before installing the AFF onto the digitizer.

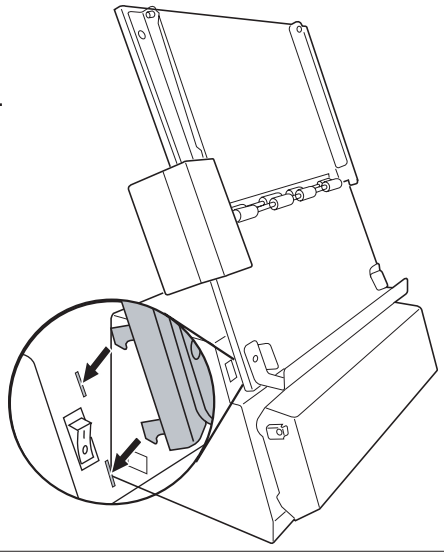


Follow the steps below to install the AFF.

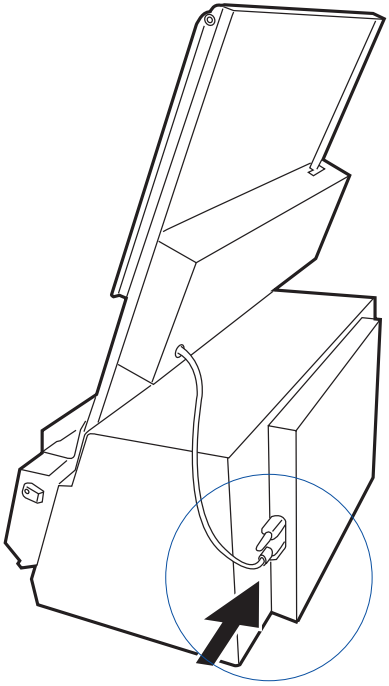
1. Unpack the AFF.
2. Look for two sets of the Feed Tray Holes at both ends of the front-top of the digitizer.



3. Insert and push down both sides of the AFF into its compartment holes, making sure the AFF snaps into place.



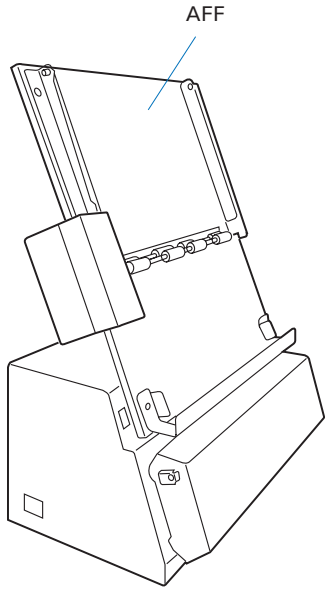
4. Plug the connector of the AFF into the digitizer's 9-pin accessory port securely and properly.



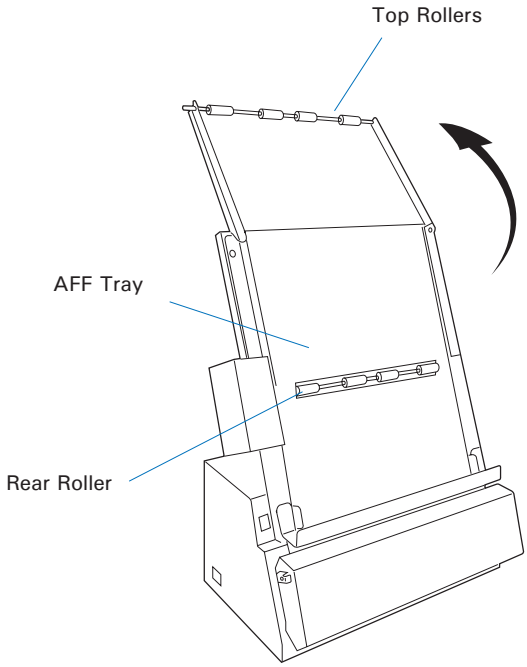
## Positioning the X-ray Films

The AFF can hold up to 15 sheets of X-ray films at a time. This section shows you how to position X-ray films into the AFF Tray correctly.

1. Install the AFF onto your digitizer before using it. Refer to the previous sections "Installing and Connecting the AFF" for the detail.

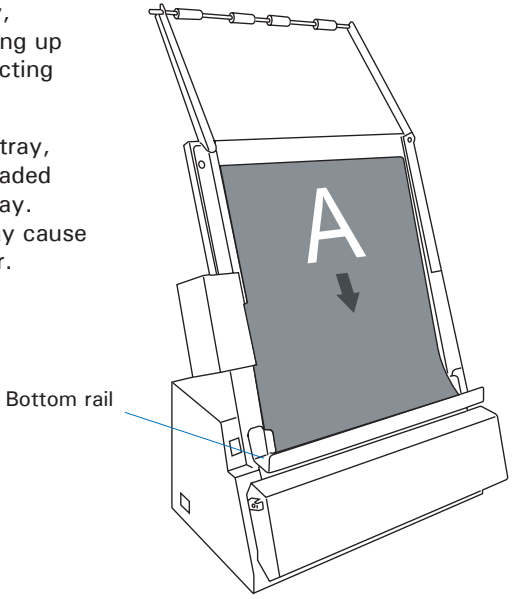



2. Lift up the Top Rollers.

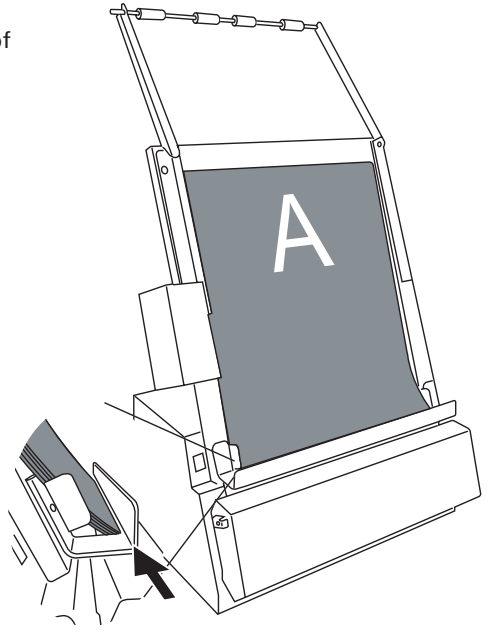


3. Load the films into the AFF Tray, with the side to be scanned facing up and with the top of the film directing upwardly.

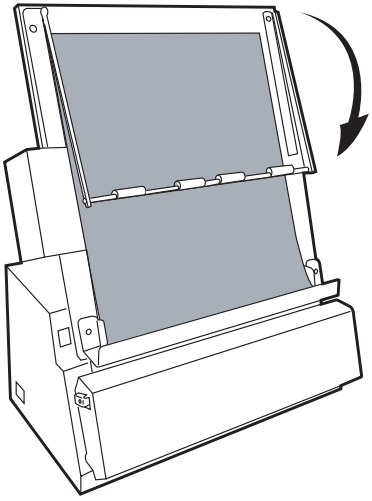
   When loading the films into the tray, make sure all films have been loaded on the bottom rail of the AFF Tray. Incorrect positioning of films may cause film jams or damage the digitizer.



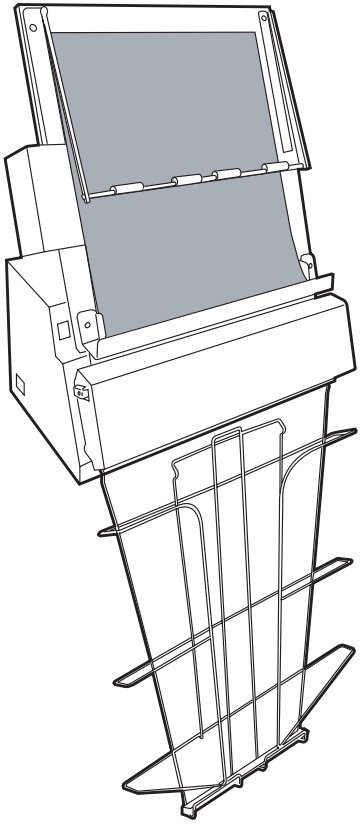

Please take note that the bottom of the films should be placed against the front side of the bottom rail as shown in the graphic and rest the back against the AFF housing.



4. Lower down the Top Rollers onto the films so the films are sandwiched between two sets of rollers (Top Rollers and Rear Rollers).



Before start using the AFF to scan, maker sure that the Output Tray (i.e., Output Basket) has been installed correctly on your Medi-6000 Plus too; otherwise, improper outputs of piles of films may cause jams of films and bring damage to your digitizer. Refer to the previous section "Installing the Output Tray" for the details about how to assemble the Output Tray onto your Medi-6000 Plus.



## Scanning X-ray Films Using the Auto Film Feeder (AFF)

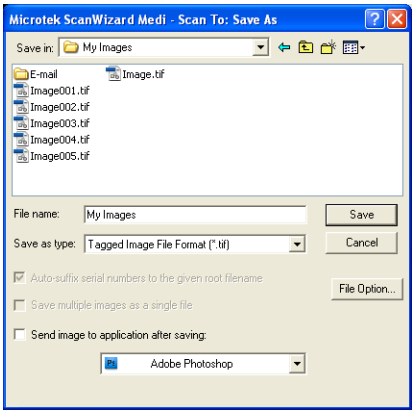
1. Load the films to be scanned into the AFF Tray.
2. Launch ScanWizard Medi (either as a stand-alone by clicking the program icon on the desktop, or by using the "File-Import" or "Scan" command from an application program).
3. Activate the Auto Film Feeder mode.

   In the Preview window, click and hold the arrow on the Auto Scan button; then, choose "Auto Film Feeder" from its option menus.

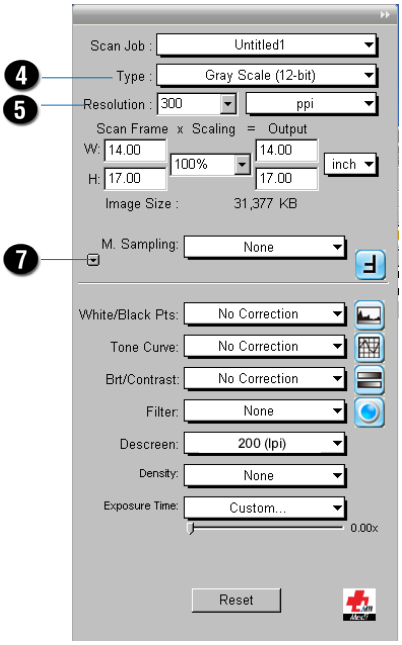
4. Select your image output type as Gray Scale, Gray Scale (12-bit), or Gray Scale (16-bit) from the Type drop-down menu.
5. Select your desired image output resolution in the Resolution drop-down menu. The recommended resolution is 300 dpi or above.
6. Specify your scan frame to meet your X-ray film size by using the Scan Frame tool ( ) button in the Preview window, and then resize the size of the scan frame by dragging on the edge or corner of the scan frame.
7. If necessary, use the Window Expansion button to enable the image correction tools to adjust image quality. For example,
   - Enable auto density function from the Density drop-down menu.
   - Specify a customized Exposure Time in the Exposure Time drop-down menu.
8. Click the Auto Film Feeder button in the Preview window to scan all the films loaded on the AFF Tray.

   - If ScanWizard Medi is launched as a stand-alone program, a window "Scan To: Save As" dialog box will appear. Click the Save button; then, the scanned image can be saved into your selected folder or sent to your selected application.

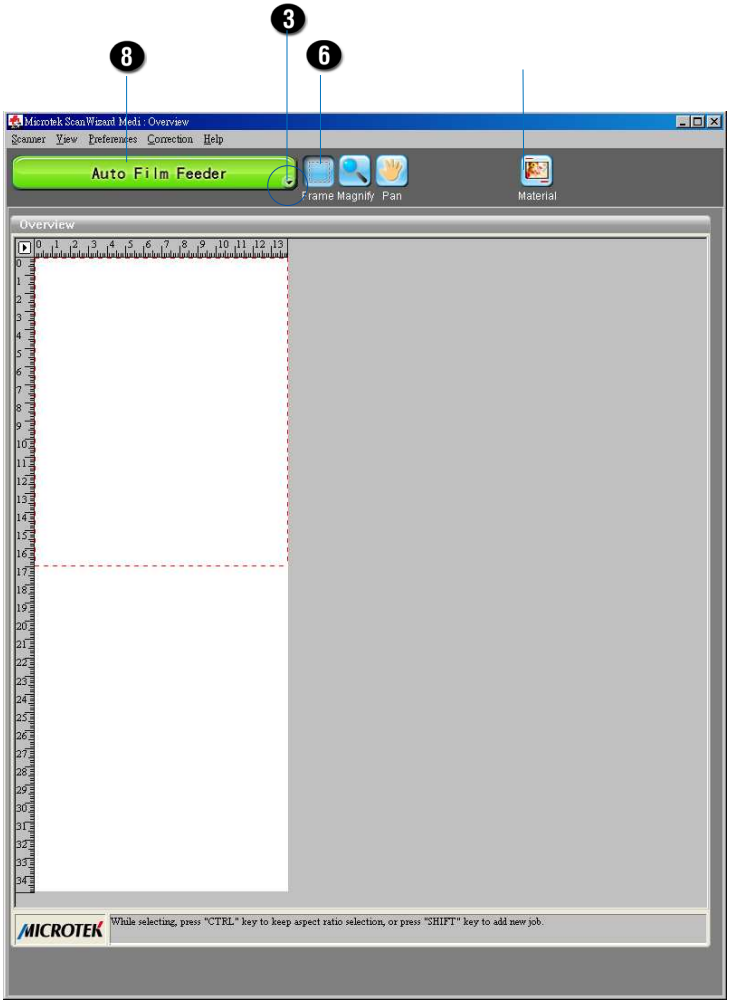
     To view the scanned image, double click the "MSmart Images" icon on your desktop (default folder assigned by the software), or retrieve it from your assigned folder.




   - If ScanWizard Medi is launched as a Plug-In from an image-editing program, the scanned image is delivered to your application, where the image can be saved, viewed, or modified further.




Settings window




Preview window

# Specifications

| | |
|---|---|
| Scanner Type | Sheet feed film digitizer |
| Model Type | MSS- 600XU2LAF |
| Light Source | LED (Light Emitting Diode) |
| Scanning Modes | Grayscale in a single scanning pass |
| | Input:<br>8-bit grayscale (Approx. 256 shades of gray)<br>16-bit grayscale (Approx. 65,536 shades of gray) |
| | Output:<br>8-bit grayscale (Approx. 256 shades of gray)<br>12-bit grayscale (Approx. 4,096 shades of gray)<br>16-bit grayscale (Approx. 65,536 shades of gray) |
| Resolution | 600 dpi |
| Scanning Area | 14" x 35" (355.6 mm x 889 mm) |
| Film Size | Min: 2.5" x 2.5" (63.5 mm x 63.5 mm)<br>Max: 14" x 35" (355.6 mm x 889 mm) |
| Lamp Life | 1,000,000 scans at 300 dpi |
| Product Life Cycle | 100,000 scans or 5 years |
| Interface | Hi-Speed USB (USB 2.0) |
| Dimensions (L x W x H) | 10.2" x 18.7" x 9.3"<br>(260 mm x 474 mm x 235 mm) |
| Weight | 19.82 lbs. (9 kg) |
| Voltage | AC 100V to 240V, 47-63 Hz<br>1.5A Max (Input) |
| Power Consumption | 54.9 W (Max) |
| Environment | Operating temperature: 50° to 104°F (10° to 40°C)<br>Relative humidity: 20% to 85%<br>Storage temperature: 14° to 140°F (-10° to 60°C)<br>Relative humidity: 20% to 95%<br>Atmosphere pressure: 70-101.3 kPa (700-1013 hPa)<br>Altitude: < = 2000 m |

**Important**

Specifications, software bundles, and accessories are subject to change without notice. Not responsible for typographic errors.