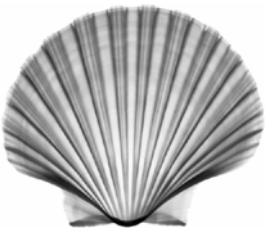
Installation guide for

SIERRA™ *plus* film digitizers

- Single film feeder
- Multi-film feeder



for serial numbers 150,000 to 159,999

NOTE

The VIDAR digitizers are used to digitize radiographs (X-ray film) or other transparent targets. When the digitizer is used to digitize radiographic films, the digital image is intended for use in primary, secondary and over reading applications.

The digitizers do not include application specific software (Picture Archiving and Communications [PAC] system, Teleradiology, Oncology Systems, or Computer Aided Detection [CAD] software). The manufacturer of the application software will determine specific indications for use. These third-party software packages or complete systems are approved separately from a regulatory perspective.

The digitizers are marketed as a component to application software development companies, who will incorporate the digitizer into their respective PACS or Teleradiology, CAD system(s). The software developer is ultimately responsible for detailing the Contraindications for the PACS System (or Teleradiology software package) or Oncology Systems as a whole, including the digitizer.

FDA (510)k 993597
China SFDA (I) 20051312941

VIDAR Part Number 15449-006 Rev. B
July 2006

VIDAR systems corporation
Medical Imaging

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Herndon, VA 20170 U.S.A.

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Fax: 1-703-471-7665
Internet: www.filmdigitizer.com

Sales: 1-800-471-SCAN or 1-800-471-7226
Email: sales@vidar.com

Technical Support:
1-800-471-SCAN or 1-703-471-7070
E-mail: medtech@vidar.com

Authorized representative in Europe

Emergo Europe
Molenstraat15
2513 BH, The Hague
The Netherlands

Phone: +31 (0) 70.345.8570
Fax: +31 (0) 70.346.7299
Email: info@emergogroup.com

Caution: No operator-serviceable parts inside. Refer servicing to qualified personnel.

Achtung: Gehäuse nicht öffnen. Wartung uno reparatur nur durch eletrofachkräfte.

Attention: Aucune piece ne peut etre remplacee par l'utilisateur. Toute operation de maintenance doit etre effectuee par une personne qualiee.

Atencion: Acceso interno solo autorizado a personal tecnico cualificado.

Attenzione: Non appire. Rivolgersi a personale qualificado.

Radio Frequency Emissions

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

Product compliance testing was conducted using VIDAR shielded cables. Modifications to the digitizer or the VIDAR shielded cables or the use of cables other than those available from VIDAR could void the user's authority to operate the equipment.

CE Declarations

VIDAR Systems Corporation declares the product is classified as a Class I medical device per Annex IX, Rule 10 and are in conformity with the essential requirements and provisions of Council Directive 93/42/EEC. This product is classified as Class II for electrical safety and conforms to standards; EN60601-1: 1998 with Amendments 1 and 2, UL60601-1(2003), CAN/CSA C22.2 NO.601.1-M90 with Amendments 1 and 2.

This device is classified as a Group 1 Class A device for Electro Magnetic Compatibility per EN55011:1998. This device complies with standards: EN55011, EN60601-1-2: 2001 (EN61000-3-2: 1995 with Amendments A1, 2 and 14, EN61000-3-3:1995, EN61000-4-2:1995 with Amendments 1 and 2, EN61000-4-3:1997 with Amendment 1, EN61000-4-4:1995 with Amendments 1 and 2, EN61000-4-5:1995 with Amendment 1, EN61000-4-6:1996 with Amendment 1, EN61000-4-8:1993, EN61000-4-11 with Amendment 1).

Acceptable shipping conditions

- Temperature: –15° to +60°C (–0° to +140°F)
- Relative humidity: 20% to 85%, non-condensing
- Atmos. pressure: 500 to 1060hPa (+18,000 to –1,200ft)

Operating conditions

- Temperature: 10°C to 30°C (60°F to 85°F)
- Relative humidity: 20% to 85%, non-condensing
- Atmos. pressure: 697 to 1060hPa (10,000 to –1,200ft)

Electrical supply Voltage: 100 to 240 VAC Current: 1.0 to 0.42 A Frequency: 50 to 60 Hz

Safety and compliance information

5RA9

MEDICAL EQUIPMENT WITH RESPECT TO ELECTRIC SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH UL60601-1, IEC60601-1 AND CAN/CSA C22.2 No. 601.1

SIERRA™ *plus* carries the CE mark, issued by BSI.

This product's function and intended use is as an X-ray Film Digitizer.

This product is in the Ordinary Equipment Class. It provides no protection against the ingress of water.

This product is not suitable for use in the presence of flammable anesthetic mixtures with air or with oxygen or with nitrous oxide.

This product is not suitable for use in a patient environment. Do not use the product or the host computer in the vicinity of a patient. Do not touch the product or the host computer while touching the patient. See Appendix Patient Vicinity for minimum distance between this product or the host computer and a patient.

Class I Medical device per 93/42/ECC Medical Device Directive

Class II per IEC60601-1, Medical Electrical Equipment , General Requirements for Safety, This product provides Class II medical device protection against electrical shock. There are no applied parts.

To maintain the Medical Equipment Certification of this product, any attached equipment must meet all relevant IEC standards and be in accordance with IEC 60601-1-1.

Power cords used with this device in North America must be rated by Underwriters Laboratories for hospital use. Power cords used with this device in Europe must meet the requirements of IEC 227 Designation 53 or IEC 245 Designation 53.

The use of portable or mobile communications equipment and/or the presence of strong electromagnetic and/or x-ray fields may interfere with proper operation of this product. This product should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, verify normal operation in the configuration in which it will be used. Should such interference occur, the user is required to provide adequate isolation between the digitizer and the source of the interference. Isolation is typically achieved by moving the digitizer away from the source of the interference.

This product is intended to be turned on and left on. Operation is continuous.

Correct and safe operation of the digitizer requires familiarity with information that is not marked on the product. The following symbol indicates the operator should consult the manual for additional information.

Contents

Unpacking

the SIERRA™ *plus* film digitizer

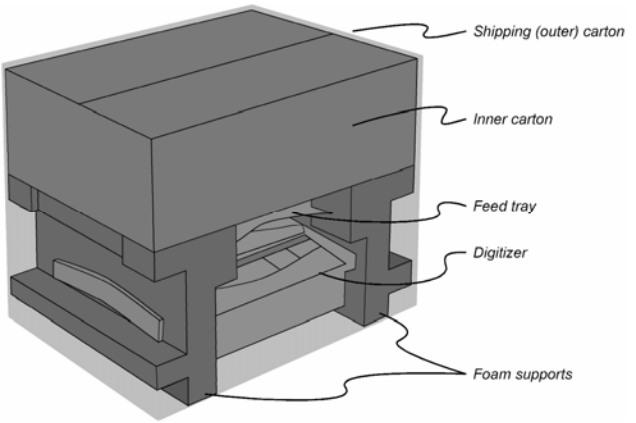
In this chapter, you will:
- Unpack and inspect the digitizer's parts.
- Identify the digitizer's parts.

1. Look for damage.

Before unpacking the SIERRA™ *plus* film digitizer, examine the shipping carton for damage.

If the carton is damaged:
- **Notify the shipper immediately.**
- **Take photographs of the damage.**
- **Send pictures and description of damage to medtech@vidar.com.**
- **Notify VIDAR Medical Support at 1-800-471-SCAN or 1-703-471-7070.**

What's inside the carton?

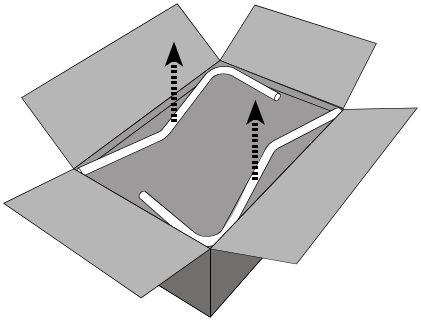


2. Unpack the shipping carton.

IMPORTANT: Save the outer carton, inner carton, cardboard separators, foam supports, plastic bag and cardboard shutter-lock (see "4. Remove the shutter lock," later in this chapter). If you need to ship the digitizer later, you should insert the shutter lock, then repack the digitizer in the original materials by reversing the procedure described here. Failure to properly pack, or failure to use VIDAR authorized shipping materials, will void the product's warranty, and will likely result in costly repairs.

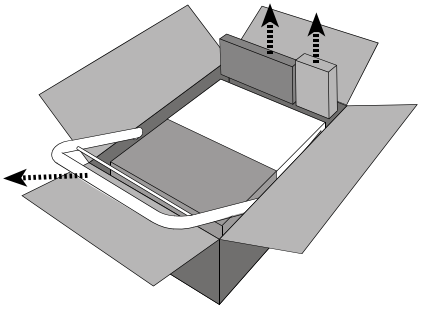
a. Remove the inner carton from the shipping (outer) carton. Open the inner carton.

b. Remove the documentation, power cable and SCSI cable. Loosen—DO NOT CUT—the tie-wraps. Remove the two leg tubes.

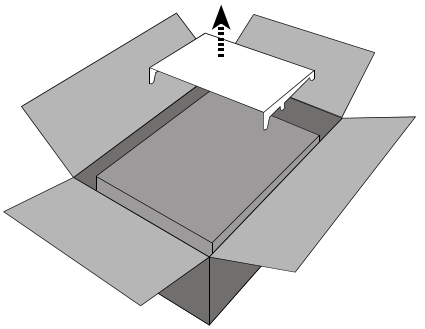


c. Remove the cardboard upper separator.

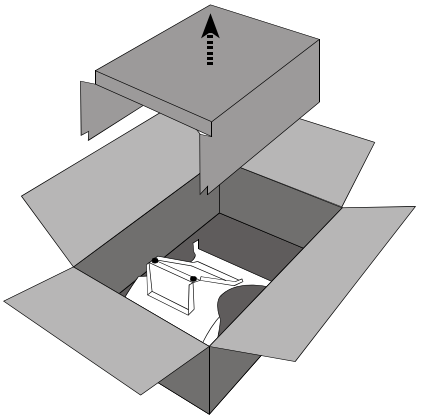
d. Remove the two small boxes packed at one end. Remove the "U" tube.



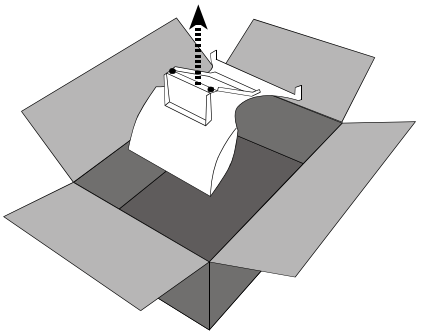
e. Remove the mounting bracket by lifting it straight up.



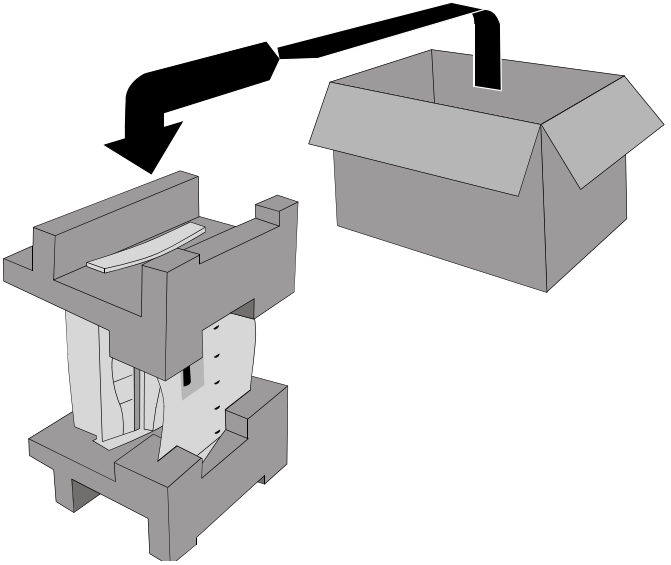
f. Remove the cardboard lower separator.



g. Remove the exit tray.

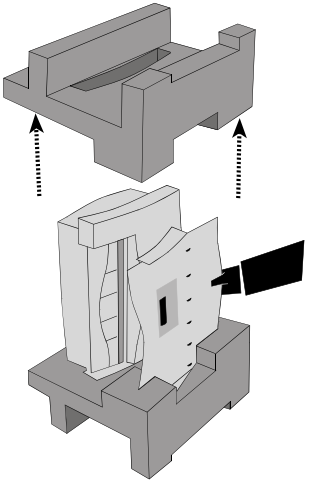


h. Lift both foam supports—with the items they are supporting—up and out of the shipping carton, then stand everything on one support.

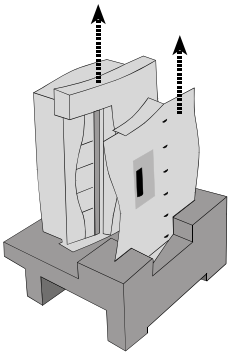


i. Remove the plastic bag surrounding the foam supports.

j. Hold the feed tray (the smaller of the two items between the foam supports) while removing the upper foam support.



k. Remove the feed tray and place it securely on a horizontal surface. Then remove the film digitizer and place it securely on a horizontal surface.

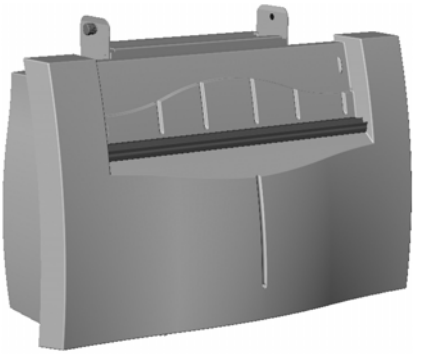
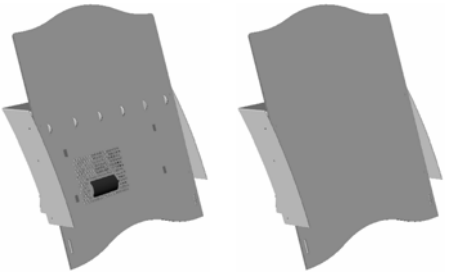
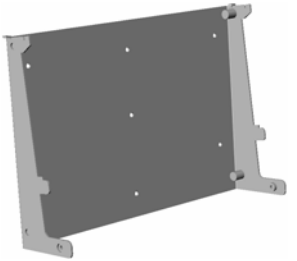


IMPORTANT: Save the outer carton, inner carton, cardboard separators, foam supports, plastic bag and cardboard shutter-lock (see "4. Remove the shutter lock," later in this chapter). If you need to ship the digitizer later, you should insert the shutter lock, then repack the digitizer in the original materials by reversing the procedure described here. Failure to properly pack, or failure to use VIDAR authorized shipping materials, will void the product's warranty, and will likely result in costly repairs.

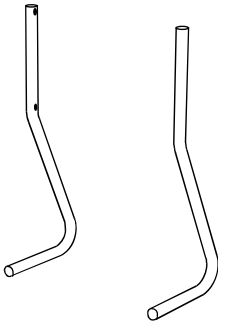
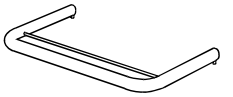
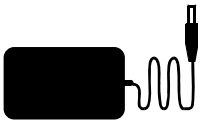
3. Identify the parts.

Check carefully to ensure you received the items listed below.

Standard items

✓	**Description** (**Note:** items are not shown to same scale.)	
☐	SIERRA™ *plus* film digitizer	
☐	Feed tray (Multi-film **or** single film)	 Multi-film Single film
☐	Mounting bracket	

continued

✓	**Description**	(**Note:** items are not shown to same scale.)
☐	Exit tray	
☐	Two leg tubes	
☐	"U" tube	
☐	Power Adapter, P/N 15468	
☐	Electrical power cord. USA Medical Power Cord, P/N 4043 or Euro-Style Power Cord, P/N 2104 or China Power Cord, P/N 4635	

✓	**Description** (**Note:** items are not shown to same scale.)
☐	SCSI box (Adaptec 2930 SCSI card and software)
☐	Multi-film feed tray cable, VIDAR part number 4200-001 (if unit has multi-film feed tray) 
☐	Switch adjusting tool 
☐	Switch adjusting tool clip
☐	*Quick start guide* card
☐	Mini SCSI to mini SCSI cable
☐	VIDAR Driver Installation CD (provided in this manual)

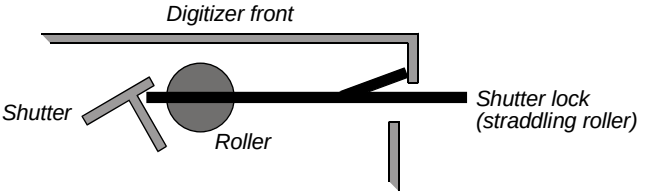
Optional items

✓	**Description**
☐	Third-party software instructions
☐	Lint-free wipes, VIDAR part number 15194 (package of 10)
☐	Bulb Replacement Cartridge Kit, VIDAR part number 15327

4. Remove the shutter lock.

Remove the cardboard shutter lock from the film digitizer.

Note: The shutter lock keeps the shutter in place to prevent damage during shipping. Keep the shutter lock in case the digitizer must be shipped later. For shipping, insert the shutter lock as shown in the cross section diagram below.

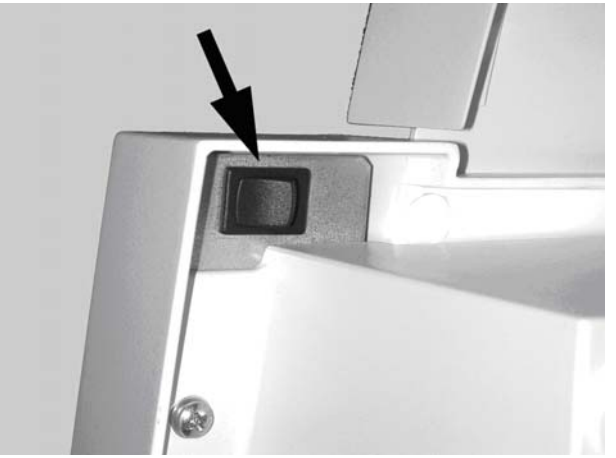


5. Identify important features

Look over the digitizer and locate the features shown in this section. You will need to know where these features are when you assemble and operate the digitizer in later chapters.

Power switch

View the digitizer from the rear to locate the power switch.



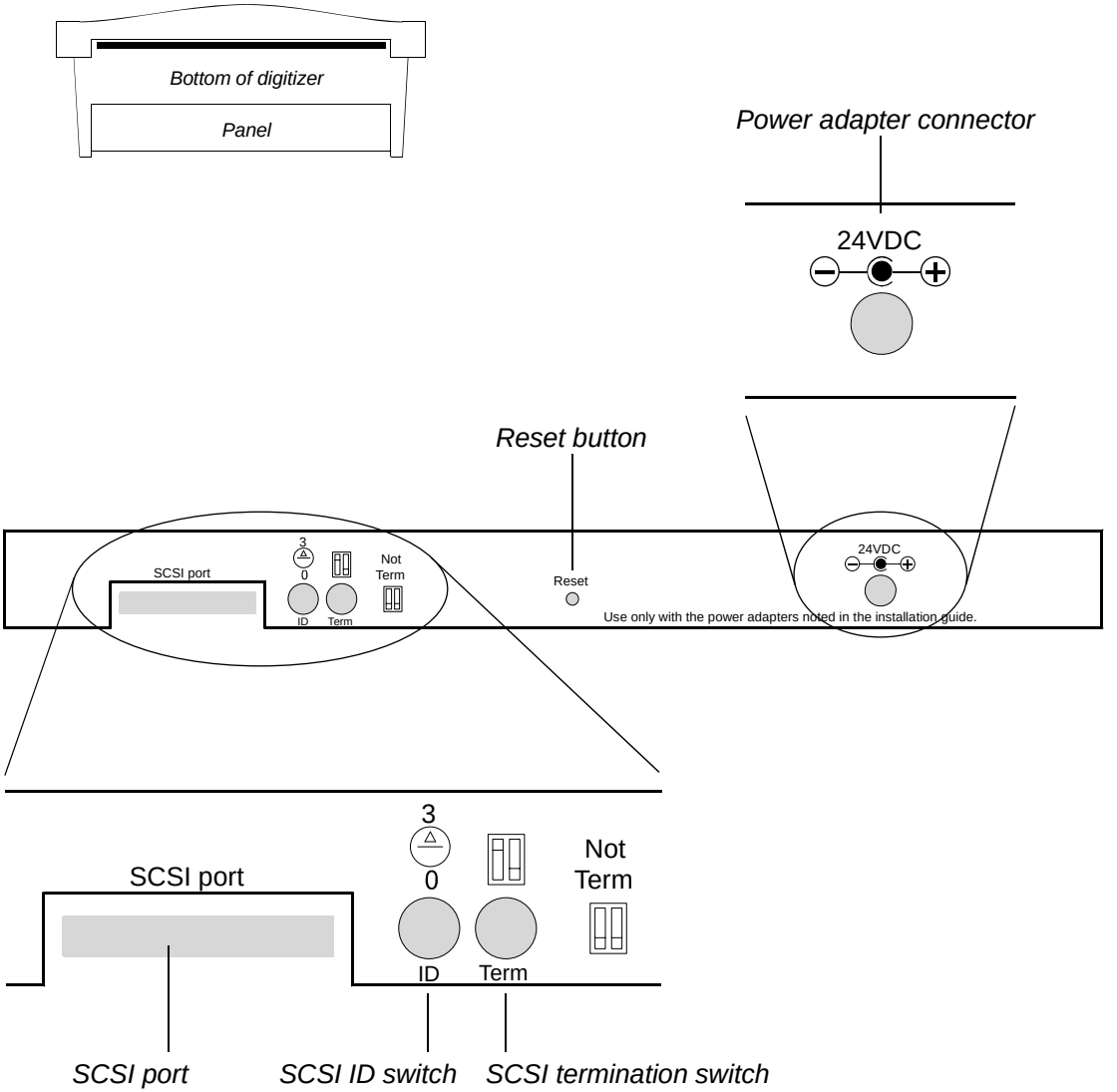
Power switch labeling

The label pictured below appears on the right front top side of the digitizer in order to assist the operator in locating the power switch.

Note: The digitizer power switch is used to disconnect the 24 volts from the external power adapter to the digitizer, and therefore applies power to and removes power *from the digitizer only*. The external power adapter is still a source of electrical current as long as it is plugged into an electrical outlet.

Bottom panel

View the digitizer from the bottom to identify various items on the panel.



6. If anything is missing...

Immediately contact your VIDAR supplier or send e-mail to medtech@vidar.com.

7. Record important information.

STOP

Note: You must record this information now. After you mount the digitizer, it will be difficult to see the SCSI switches.

a. Locate the "Warranty information and customer survey" form at the front of this manual.

Warranty information and customer survey

for VIDAR film digitizers

VIDAR Medical Imaging

Instructions:
1. Cut along dotted line at left.
2. Fill in.
3. Make a copy for your records.
4. Mail or fax to VIDAR.

460 Spring Park Place
Herndon, VA 20170 USA
Phone: (703) 471-7670 ● Fax: (703) 471-1146
E-mail: medtech@vidar.com

Warranty information

Date _____

System integrator information

System integrator administrative contact

Name	Title
Company name	Telephone no.
E-mail address	Fax no.

System integrator technical contact

Name	Title
Company name	Telephone no.
E-mail address	Fax no.

Shipping information

Company name		
Street address		
City	State	Postal code
Country	Telephone no.	Fax no.

b. In the "Product information" section, record this information:
- Product you are registering (SIERRA™ *plus*).
- Digitizer serial number.
- SCSI ID.
- SCSI termination (on/off).

8. Activate your product warranty.

Complete the warranty information/customer survey form at the front of this manual and mail it to VIDAR Systems Corp.

If your digitizer needs service, this information should be on file at VIDAR.

Contact VIDAR Technical Support if you have any questions about installing or using your VIDAR film digitizer:

Phone: 1-800-471-SCAN (1-800-471-7226)

1-703-471-7070 outside the U.S.

E-mail: medtech@vidar.com

When you contact VIDAR, you will need to provide:

- The unit's serial number.
- Your name, company and contact information.
- Where you purchased the digitizer.

NEXT: Configure the SCSI settings ⇨

Configuring SCSI settings

for the SIERRA™ *plus* film digitizer

In this chapter, you will:

- Determine if you need to change the SCSI ID switch setting.
- If necessary, change the digitizer's SCSI ID switch setting.
- If necessary, change the digitizer's SCSI termination setting.

> **Note:** If multiple SCSI devices will be connected to your computer, read this chapter. Otherwise, leave the SCSI ID switch at its factory preset of 3 and go to the next chapter.

1. If necessary, set the digitizer's SCSI ID

A computer equipped with a SCSI bus can communicate with multiple SCSI devices (for example: a film digitizer, a scanner and a disk drive). Each device must have a unique SCSI ID number so the computer can distinguish it from other SCSI devices. Valid SCSI ID numbers range from 1 to 6.

When selecting SCSI ID numbers:

- The SCSI Card 2930U is preset to SCSI ID 7 and should not be changed.

- Set the film digitizer to any SCSI ID between 1 and 6, as long as that number is not used by another SCSI device attached to the computer.

> **Note:** The SIERRA™ *plus* is shipped from the factory with the SCSI ID preset to 3.

- If the system is configured to boot from a SCSI disk drive, it's best to set the disk's SCSI ID to 0 or 1. Most SCSI disks are preset to SCSI ID 0 at the factory.

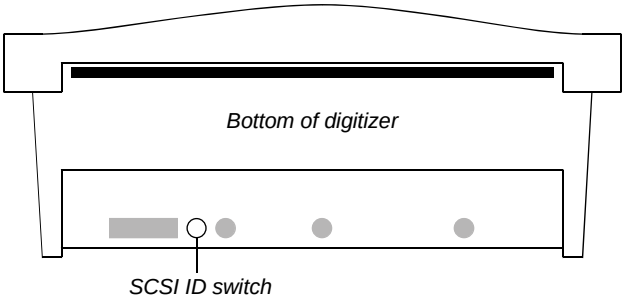
CAUTION: The digitizer and computer MUST be turned OFF before changing the SCSI ID.

To set the digitizer's SCSI ID:

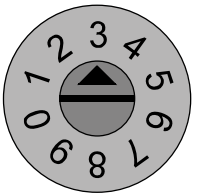
a. Locate the switch adjusting tool.

b. Lay the digitizer on its back, with its bottom surface toward you.

c. Locate the SCSI ID switch.



d. Use the tool's **flat** tip to rotate the SCSI ID switch to the desired SCSI ID number.



Note: Do not set the switch to position **0**, **7**, **8** or **9**.

CAUTION: Do not force switch rotation. Do not use a large screwdriver to rotate the switch.

2. If necessary, change the digitizer's SCSI termination.

The SIERRA™ *plus* is configured to be placed at the end of the SCSI chain. The SCSI termination switch is preset at the factory to the **on** position (termination activated).

Note: VIDAR recommends that the Adaptec 2930CU SCSI controller be used **only** for the digitizer. Do not connect internal or external disk drives to the SCSI controller.

Note: VIDAR *does not recommend* daisy-chaining multiple SCSI devices with the film digitizer. If you are considering using the digitizer in daisy-chain configurations, please contact VIDAR Technical Support (medtech@vidar.com).

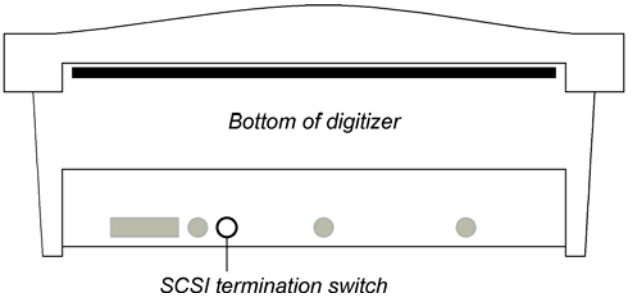
continued

To change the digitizer's SCSI termination:

> **Note:** The SCSI termination switch is preset at the factory for **internal termination on**.

a. Lay the digitizer on its back, with its bottom surface toward you.

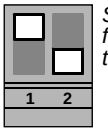
b. Locate the SCSI termination switch on the bottom of the digitizer.



c. Verify that Switch 1 is in the position shown at the top right.

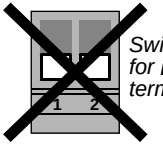
   (Switch 2 has no function.)

Factory (recommended) termination switch setting



Switch 1 set for internal termination

Not recommended



*Switch 1 set for **no** internal termination*

NEXT: Mount the digitizer on the table-top stand ⇨

or

Mount the digitizer on a wall ⇨

Table-top stand

for the SIERRA™ *plus* film digitizer

The table-top stand is for use in situations where the SIERRA™ *plus* film digitizer cannot be mounted on a wall. The stand was designed to be placed on a table, desk or countertop up to 36" (91cm) high.

SAFETY WARNING

Never place the SIERRA™ *plus* with table-top stand on the floor.

In brief, to assemble the SIERRA™ *plus* film digitizer with the table-top stand you will:

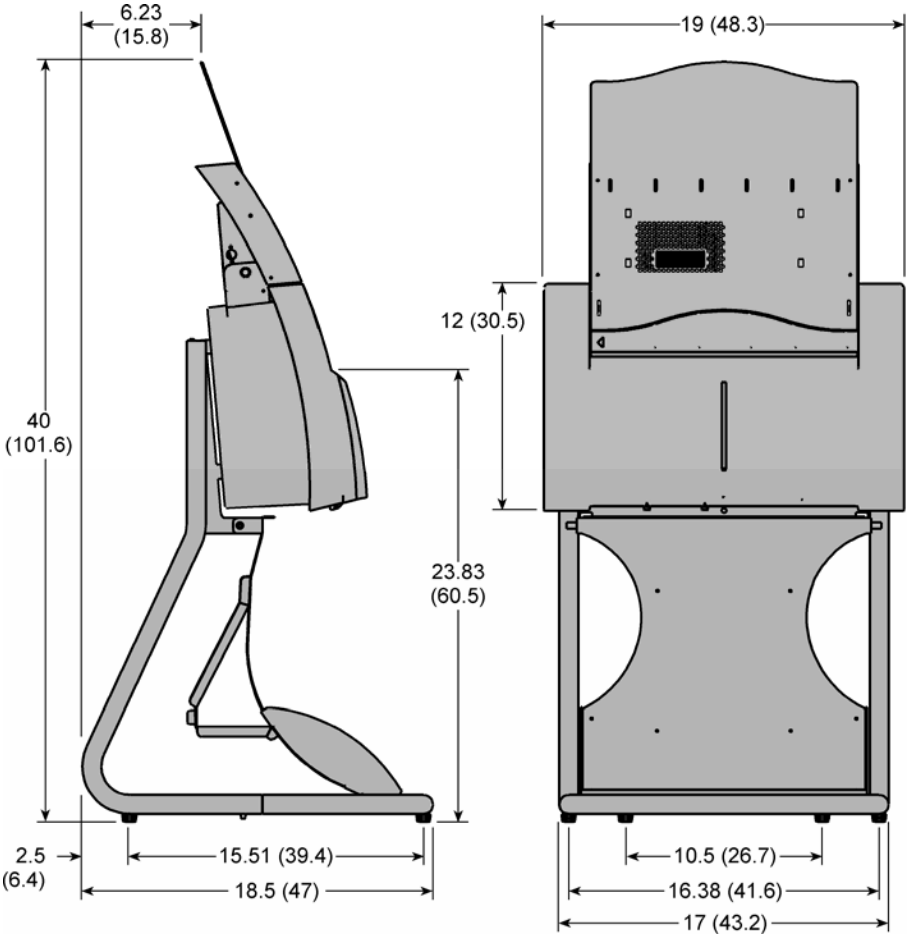
- Assemble the stand and mounting bracket.
- Install the digitizer on the mounting bracket.
- Place the stand-mounted digitizer in a suitable working location.
- Attach power and SCSI cables.
- Install the exit tray.

Instructions are provided in this chapter.

Before you start...

Be sure you have already verified the SCSI ID switch setting and the SCSI termination switch setting (see the "Configuring SCSI settings" chapter, earlier in this manual). It's easier to see and set these switches before the digitizer is attached to the table-top stand.

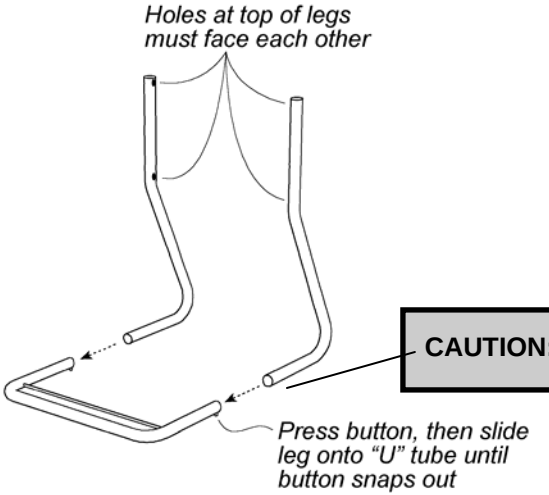
Dimensions with table-top stand



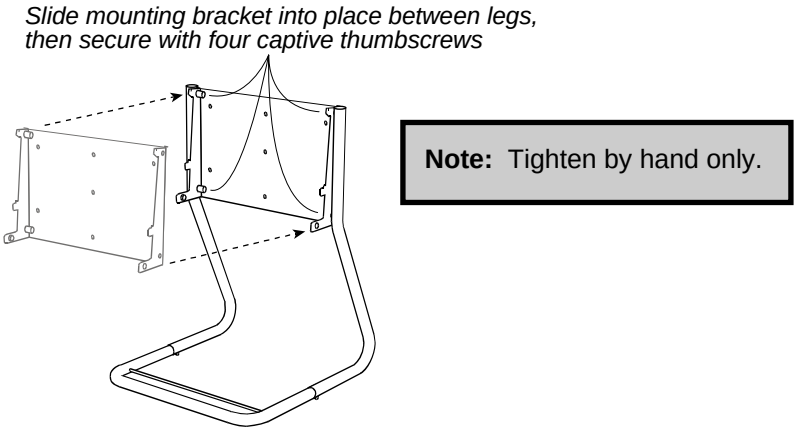
Dimensions are in inches (dimensions in parentheses are in centimeters)

1. Assemble the stand and mounting bracket.

a. Assemble the legs and “U” tube as shown below.



b. Attach the mounting bracket to the legs as shown below.



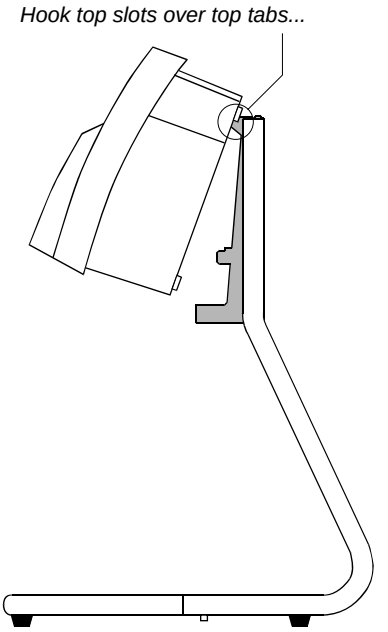
2. Mount the digitizer.

a. Locate the four mounting slots on the back of the digitizer. These slots match the four tabs on the mounting bracket.

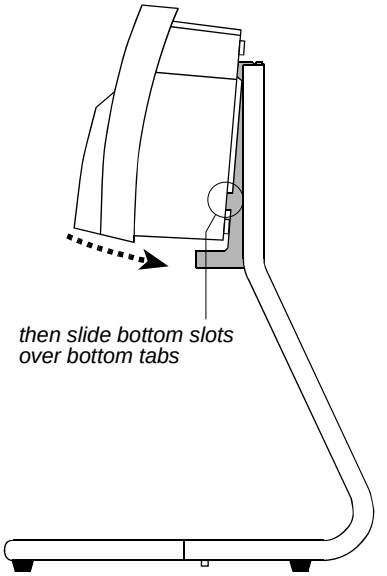
b. Position the digitizer so its front is facing you (VIDAR logo is visible).

c. Grasp the digitizer by its sides.

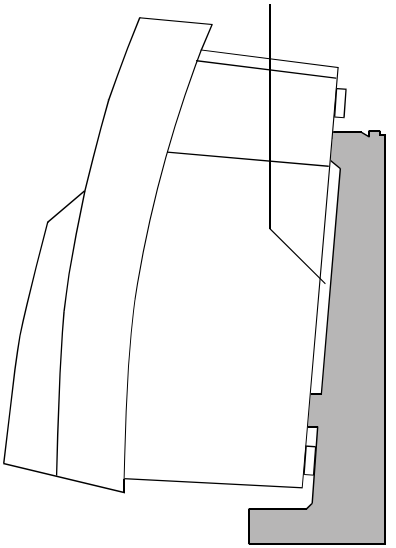
d. Slide the digitizer's upper mounting slots over the upper tabs on the mounting bracket (as shown at right). Ensure that the slots drop into the notches in the tabs.



e. Rotate the bottom of the digitizer toward the mounting bracket, so the bottom mounting slots slide over the bottom tabs on the mounting bracket (as shown at right).



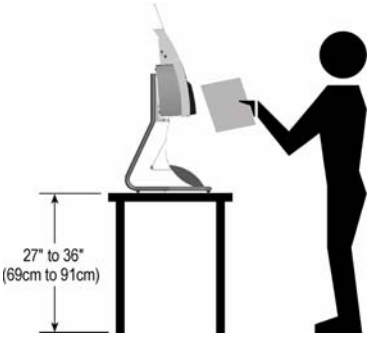
Back of digitizer should be parallel to edge of mounting bracket



3. Place the digitizer in its working location.

a. Select a working location for the film digitizer. Consider the following points when selecting a suitable location:

- The digitizer can only be used on a desk, countertop or other physically stable surface not more than 36" (91cm) high.



SAFETY WARNING

The digitizer **must** be placed on mechanically secure horizontal surface, such as a desk or countertop not more than 36" (91cm) high.

The digitizer **must not** be placed on the floor.

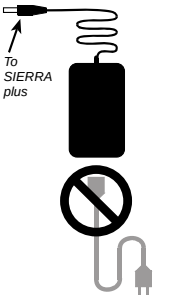
VIDAR Systems Corp. is not liable for any damages or injuries to persons or property associated with improper placement or use of the digitizer.

- The digitizer must be within about 10 feet (2.5m) of an electrical outlet.
- The SCSI cable must be able to connect to both computer and digitizer.
- The digitizer must be away from high traffic areas.

b. Place the digitizer in the location you have selected. Ensure the digitizer is stable (for example, it should not rock when touched).

4. Connect the power cable.

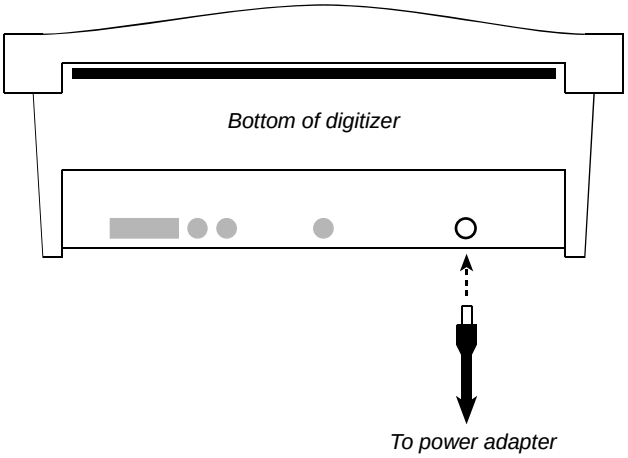
a. Locate the power adapter. Identify the power cable (permanently attached to the power adapter) and the power connector at its end.



WARNING: Do not connect the AC power cord at this time.

b. Plug the end of the power cable into the jack near the right end of the digitizer (as shown below).

IMPORTANT: Never force the power connector.



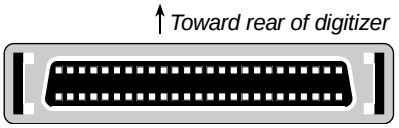
5. Connect the SCSI cable.

Note: Before connecting the SCSI cable, be certain that the SCSI cable isn't connected to anything else and the digitizer power adapter is unplugged from the wall.

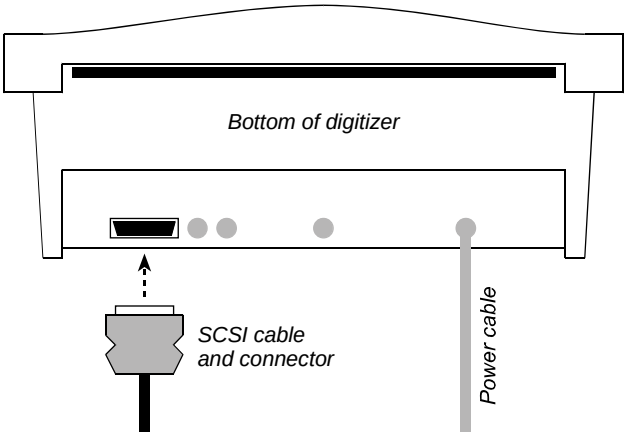
WARNING: Inspect the pins! If the SCSI connector has bent pins, it will damage the SCSI port in the digitizer. Do not attempt to straighten bent pins. Discard any SCSI cable with bent pins and replace it with a new cable.

a. Locate the SCSI cable.

b. Orient the SCSI connector as shown here. ➔

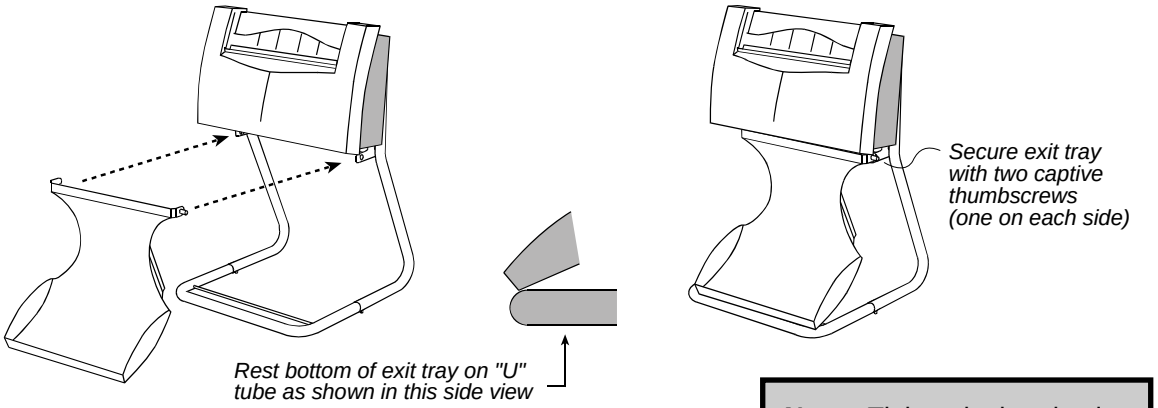


c. **Carefully** attach the SCSI connector to the digitizer's SCSI port connector (located at the opposite end of the digitizer from the power cable). Apply even pressure to avoid bending SCSI connector pins. **Do not force the connectors together.**



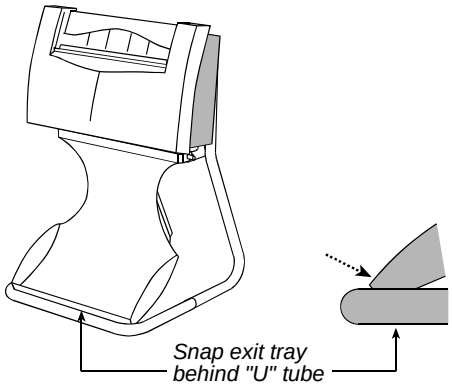
6. Install the exit tray.

a. Position the exit tray below the digitizer, outside the mounting bracket. Rest the bottom end of the exit tray on the outside of the “U” tube. Secure the exit tray using the two captive thumbscrews (one on each side).



Note: Tighten by hand only.

b. Snap the bottom of the exit tray over the “U” tube, so it rests on the bar extending across the “U” tube.



7. Install the feed tray.

a. Position the feed tray on the digitizer as shown below.

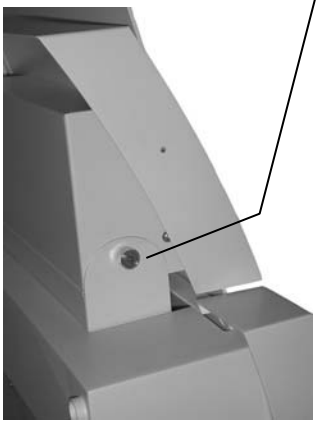
Single film feed tray

Multi-film feed tray

b. Hold the feed tray in position while securing it to the digitizer using the two captive thumbscrews on the top of the digitizer (behind the feed tray).

Feed tray thumbscrews (one on each side)

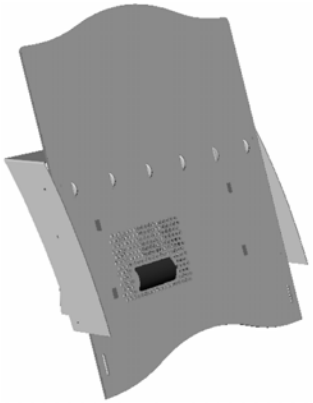
Hold while securing



Single film feed tray

Multi-film feed tray

c. If you are installing a multi-film feed tray (having a perforated area and several rollers on the front, like this...)

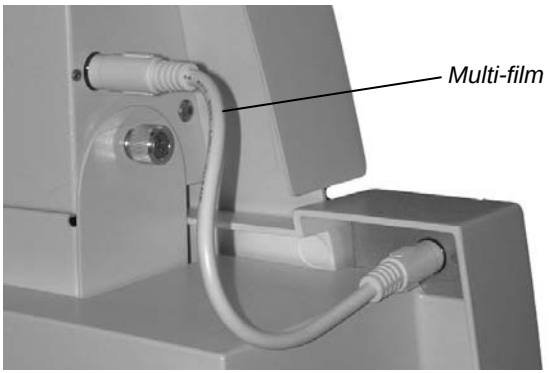


Multi-film feed tray

then install the multi-film feed tray cable as shown below:

- Insert one end of the cable into the socket in the feed tray.
- Insert the other end of the cable into the socket on the digitizer.

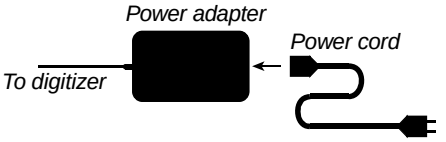
Tip: Hold the white cable connector with its arrow facing up. This aligns the connector with the socket.



8. Connect the power cord to the power adapter.

CAUTION: Power the digitizer **only** with VIDAR power adapter part number 15468.

a. Attach the female end of the electrical power cord to the power adapter.



WARNING: Do not plug the power cord into an electrical outlet at this time.

b. Move the power adapter, power cable and electrical cord against the wall, out of the way of traffic.

NEXT: Install the SCSI hardware ⇨

Wall mounting

the SIERRA™ *plus* film digitizer

In brief, to mount the SIERRA™ *plus* film digitizer you will:

- Select appropriate wall space for the digitizer and determine the best height.
- Attach the mounting bracket to the wall.
- Install the digitizer on the mounting bracket.
- Attach SCSI and power cables.
- Install the exit tray.

Details are provided in this chapter.

Before you start...

Be sure you have already verified the SCSI ID switch setting and the SCSI termination switch setting (see the "Configuring SCSI settings" chapter, earlier in this manual). It's easier to see and set these switches before the digitizer is attached to the mounting bracket.

WARNING

Only a qualified building maintenance technician can attach the mounting bracket to a wall (step 3 in this chapter).

Wall mounting of the digitizer must meet all applicable building codes.

VIDAR Systems Corp. is not liable for any damages or injuries to persons or property associated with improper installation or use of the digitizer.

1. Select proper wall space.

SAFETY WARNING

Attach the digitizer-mounting bracket to a permanent wall. Do not attach the mounting bracket to a temporary wall, unsecured wall or wall divider.

Consider the following points when selecting a location for the digitizer:

- The digitizer requires a space that is at least:
  - 46 inches (116.8cm) high.
  - 24 inches (61.0cm) wide.
  - 11 inches (27.9cm) deep.

- The digitizer's entrance tray extends above the mounting bracket, and its exit tray extends below the mounting bracket. Carefully study the diagram on the next page to ensure enough wall space is available—above, below and to the sides.

- The digitizer's entrance tray accommodates films up to 17 inches (43.2cm) high. A 17-inch film extends above the feed tray. This is accounted for in the mounting space dimensions on the next page.

- The digitizer can fit below an overhead cabinet, above a countertop, or between an overhead cabinet and a countertop—as long as the mounting dimensions shown on the next page are satisfied.

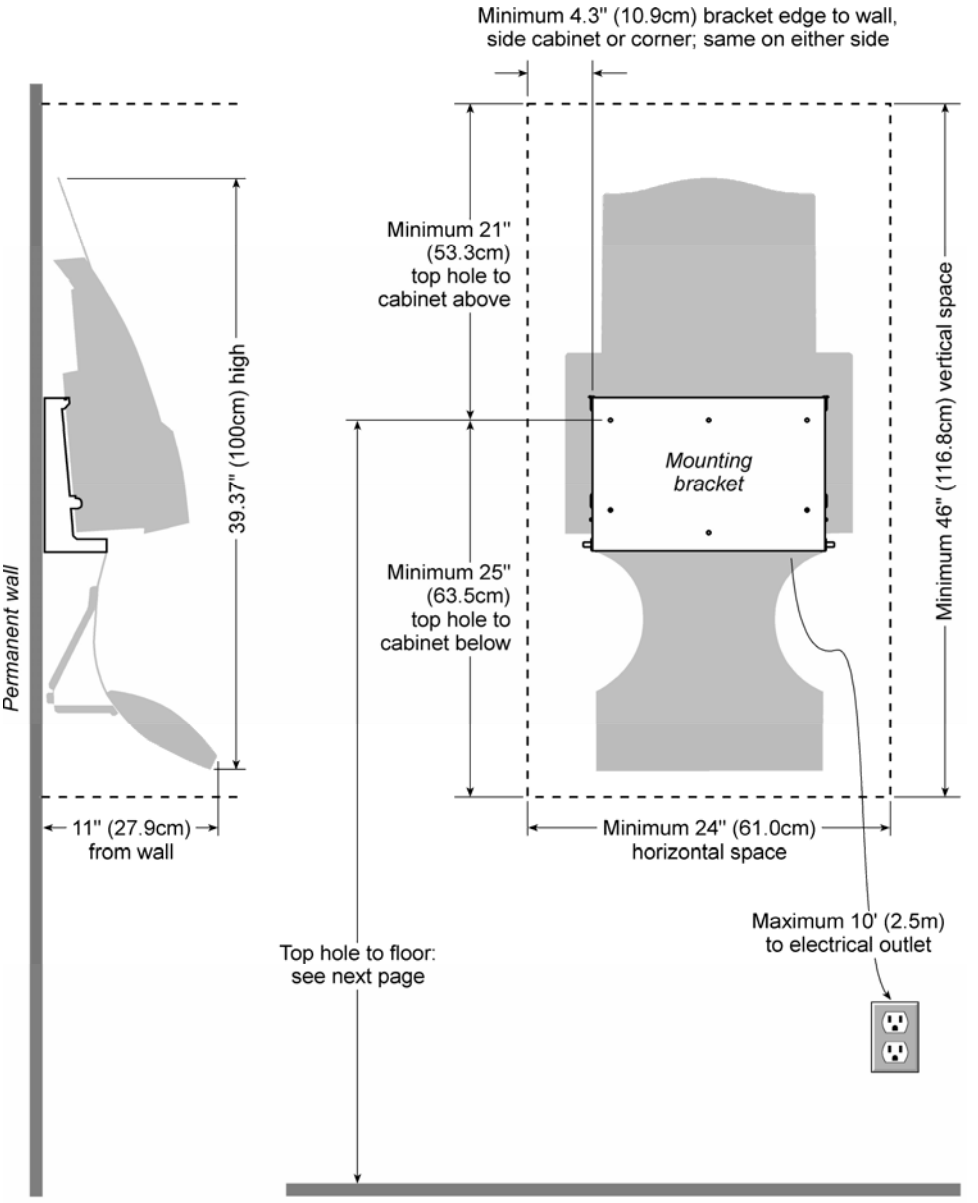
- Locate the digitizer at an efficient working height. See step 2 in this chapter for recommendations.

- The digitizer must be within 10 feet (2.5m) of an electrical outlet.

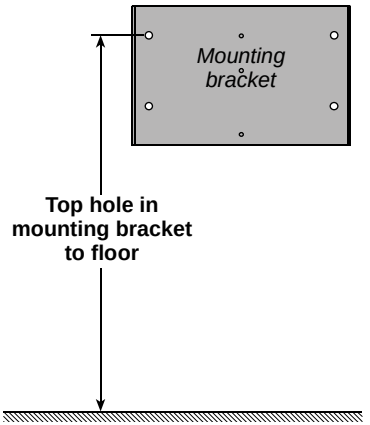
- Locate the digitizer away from high traffic areas.

Note: If suitable wall space cannot be found, you **must** mount the digitizer on the table-top stand.

Space required for mounting SIERRA *plus* on wall



2. Determine best mounting bracket height.



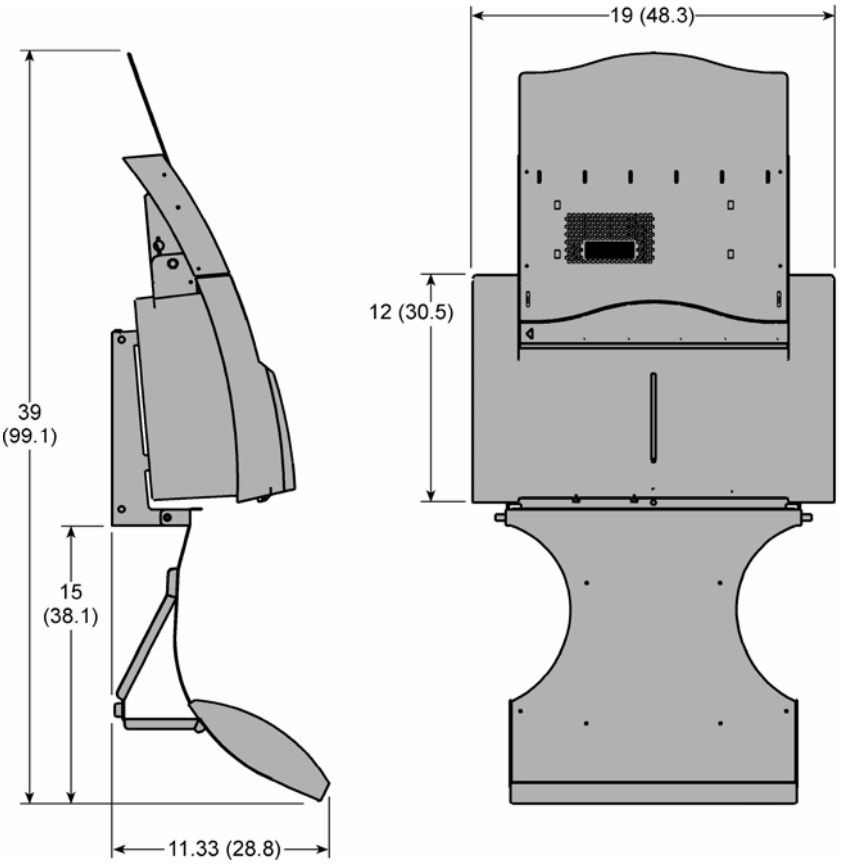
The digitizer should be mounted at a height that supports efficient working. Consider how the digitizer will be used, and by whom:

- Will the operator be sitting or standing?
- If the operator will be sitting, what is the chair's seat height?
- If the operator will be standing, how tall is the operator?

The table below shows where the digitizer mounting bracket's top mounting hole should be located for various operator positions.

Operator position	Distance from top mounting hole to floor	
Lowest possible digitizer height	27"	69cm
❶ Sitting, desk chair (seat height: 16" to 19" / 41cm to 48cm)	27" to 38"	68cm to 96cm
❷ Sitting, lab chair (seat height: 26" to 29" / 66cm to 74cm)	46" to 50"	117cm to 127cm
❸ Standing (operator height: 4'6" to 5' / 137cm to 152cm)	49" to 55"	124cm to 140cm
❹ Standing (operator height: 5' to 5'6" / 152cm to 168cm)	55" to 61"	140cm to 155cm
❺ Standing (operator height: 5'6" to 6' / 168cm to 183cm)	61" to 67"	155cm to 170cm
❻ Standing (operator height: 6' to 6'6" / 183cm to 198cm)	67" to 73"	170cm to 185cm

Dimensions for wall-mounted digitizer



Dimensions are in inches (dimensions in parentheses are in centimeters)

3. Attach the mounting bracket to the wall.

WARNING

Only a qualified building maintenance technician can attach the mounting bracket to a wall. Wall mounting of the digitizer must meet all applicable building codes.

Wall mounting requires the use of four wall anchors (supplied by the customer), each of which must be rated for at least 30 pound load capacity.

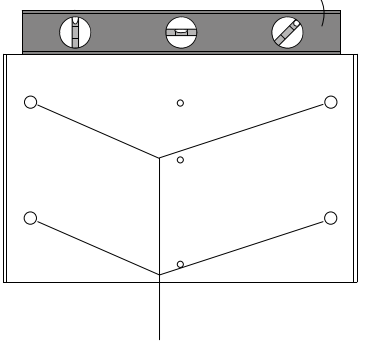
VIDAR Systems Corp. is not liable for any damages or injuries to persons or property associated with improper installation or use of the digitizer.

Taking into account...

- Space requirements (step 1 in this chapter) and
- Height above the floor (step 2 in this chapter) and
- That the bracket must be level (**use a carpenter's level**)...

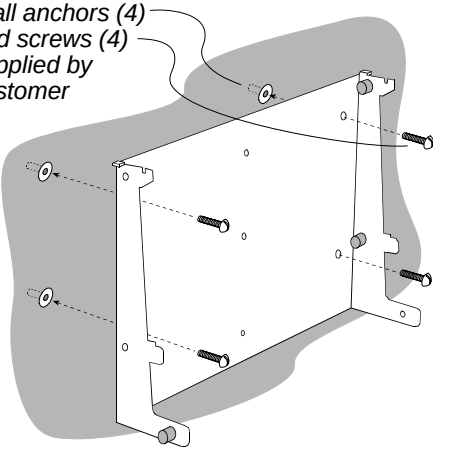
Attach the mounting bracket to a permanent wall using four wall anchors rated for at least 30 pounds each.

Use carpenter's level to assure mounting bracket is horizontal—*films will not feed properly if mounting bracket is tilted*



Use these four holes for wall mounting

Wall anchors (4) and screws (4) supplied by customer



4. Mount the digitizer.

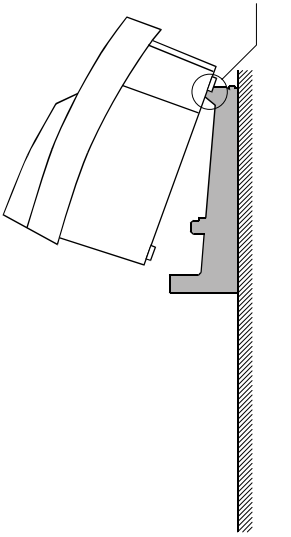
a. Locate the four mounting slots on the back of the digitizer. These slots match the four tabs on the mounting bracket.

b. Position the digitizer so its front is facing you (VIDAR logo is visible).

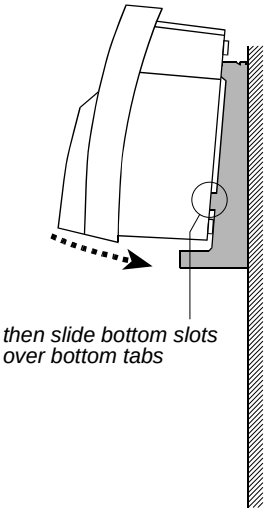
c. Grasp the digitizer by its sides.

d. Slide the digitizer's upper mounting slots over the upper tabs on the mounting bracket (as shown at right). Ensure that the slots drop into the notches in the tabs.

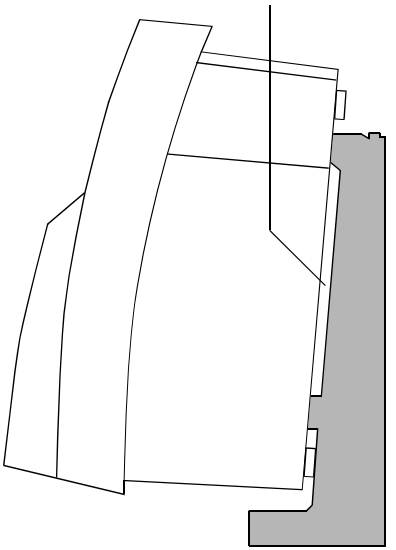
Hook top slots over top tabs...



e. Rotate the bottom of the digitizer toward the mounting bracket, so the bottom mounting slots slide over the bottom tabs on the mounting bracket (as shown at right).

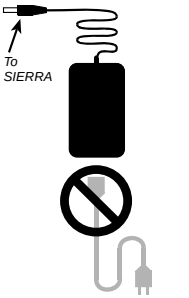


Back of digitizer should be parallel to edge of mounting bracket



5. Connect the power cable.

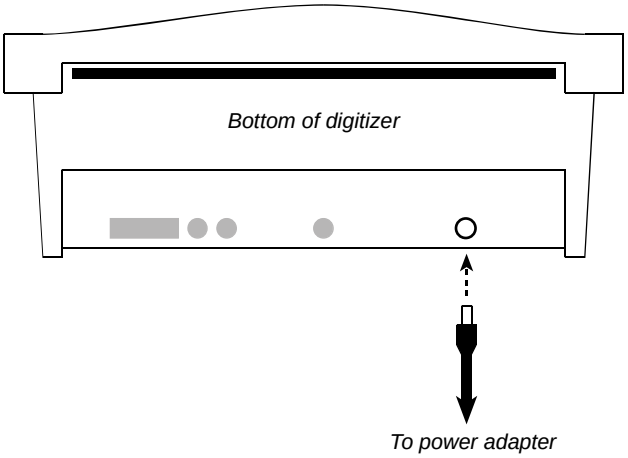
a. Locate the power adapter. Identify the power cable (permanently attached to the power adapter) and the power connector at its end.



WARNING: Do not connect the AC power cord at this time.

b. Plug the end of the power cable into the jack near the right end of the digitizer (as shown below).

IMPORTANT: Never force the power connector.



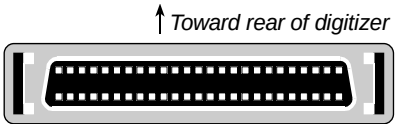
6. Connect the SCSI cable.

Note: Before connecting the SCSI cable, be certain that the SCSI cable isn't connected to anything else and the digitizer power adapter is unplugged from the wall.

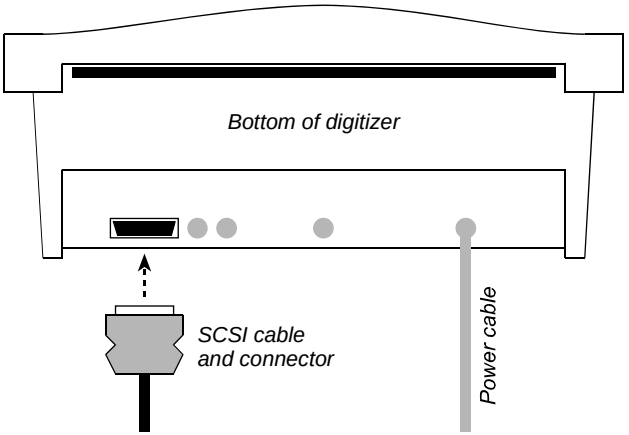
WARNING: Inspect the pins! If the SCSI connector has bent pins, it will damage the SCSI port in the digitizer. Do not attempt to straighten bent pins. Discard any SCSI cable with bent pins and replace it with a new cable.

a. Locate the SCSI cable.

b. Orient the SCSI connector as shown here. ➔



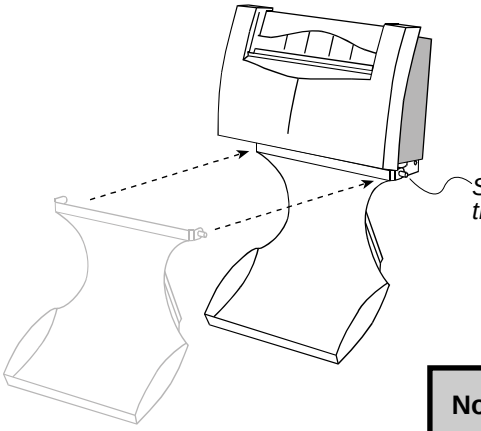
c. **Carefully** attach the SCSI connector to the digitizer's SCSI port connector (located at the opposite end of the digitizer from the power cable). Apply even pressure to avoid bending SCSI connector pins. **Do not force the connectors together.**



7. Install the exit tray.

a. Position the exit tray below the digitizer, outside the mounting bracket. Rubber feet at the back of the exit tray will rest against the wall.

b. Secure the exit tray using the two captive thumbscrews (one on each side).



Secure exit tray with two captive thumbscrews (one on each side)

Note: Tighten by hand only.

8. Install the feed tray.

a. Position the feed tray on the digitizer as shown below.

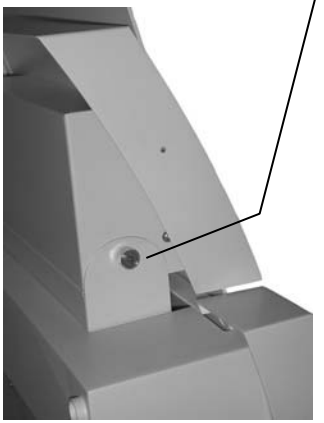
Single film feed tray

Multi-film feed tray

b. Hold the feed tray in position while securing it to the digitizer using the two captive thumbscrews on the top of the digitizer (behind the feed tray).

Feed tray thumbscrews (one on each side)

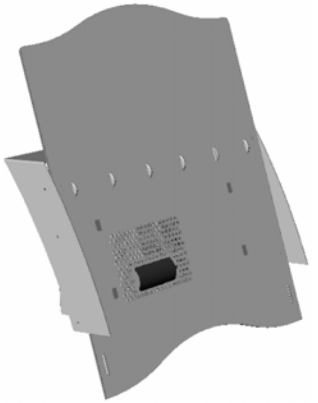
Hold while securing



Single film feed tray

Multi-film feed tray

c. If you are installing a multi-film feed tray (having a perforated area and several rollers on the front, like this...)

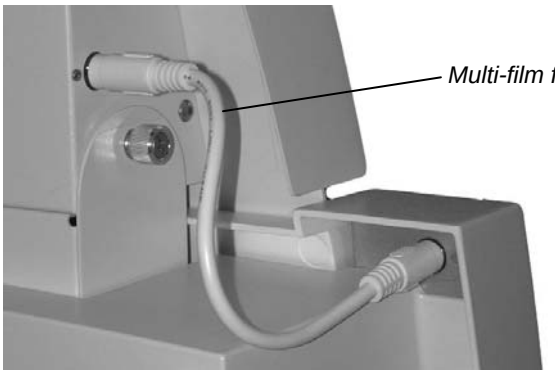


Multi-film feed tray

then install the multi-film feed tray cable as shown below:

- Insert one end of the cable into the socket in the feed tray.
- Insert the other end of the cable into the socket on the digitizer.

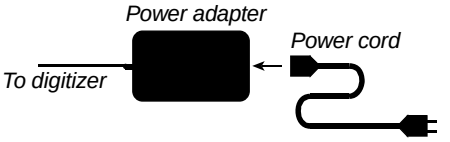
Tip: Hold the white cable connector with its arrow facing up. This aligns the connector with the socket.



9. Connect the power cord to the power adapter.

CAUTION: Power the digitizer **only** with VIDAR power adapter part number 15468.

a. Attach the female end of the electrical power cord to the power adapter.



WARNING: Do not plug the power cord into an electrical outlet at this time.

b. Move the power adapter, power cable and electrical cord against the wall, out of the way of traffic.

NEXT: Install the SCSI Hardware ⇨

Installing SCSI hardware

for the SIERRA™ *plus* film digitizer

This chapter shows you how to install the SCSI interface card in your computer. You will install the device drivers in the next chapter.

1. Unpack the SCSI accessory box.

Open the Adaptec™ SCSI accessories box and identify the following components:

✓	Description
☐	Adaptec™ SCSI Card 2930U (**CAUTION:** Leave the card in its anti-static package until just before it is installed.)
☐	50-pin internal SCSI cable (not used for SIERRA™ *plus*)
☐	Adaptec™ SCSI driver installer CD-ROM (not used)
☐	Adaptec™ documentation

Warning
Before you begin the installation procedure, turn off all power to the computer and peripherals. Connecting the SCSI cable with the power on can cause serious damage to the unit or your computer.

Précaution
Avant de commencer la connexion, assurez vous que votre ordinateur soit bien éteint. Toute connexion du cable SCSI et courant, pourrait gravement endommager votre numériseur ou ordinateur.

Advertencia
Antes de continuar con la instalación, favor de apagar su computadora y periférico. Conectando el cable SCSI con la computadora prendida puede causar daño al equipo o a su computadora.

Warnung
Vor dem Installieren den Computer und angeschlossene Geräte ausschalten. Durch Anschluß des SCSI Kabels an angeschaltete Geräte können ernsthafte Schäden entstehen.

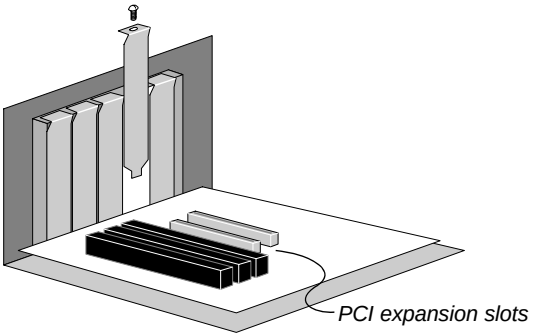
2. Install the SCSI card.

a. Turn off power to the computer and disconnect the computer's power cord from the electrical outlet.

b. Remove the cover from the computer. (Refer to the computer's manual for instructions on removing the cover.)

> **Tip:** If the computer is a tower model, it's easier to install the SCSI card when the tower is laid on its side.

c. Locate an unused PCI expansion slot (PCI connectors are typically white or ivory). Remove the expansion slot cover. Save the slot cover screw for use in step 2g.

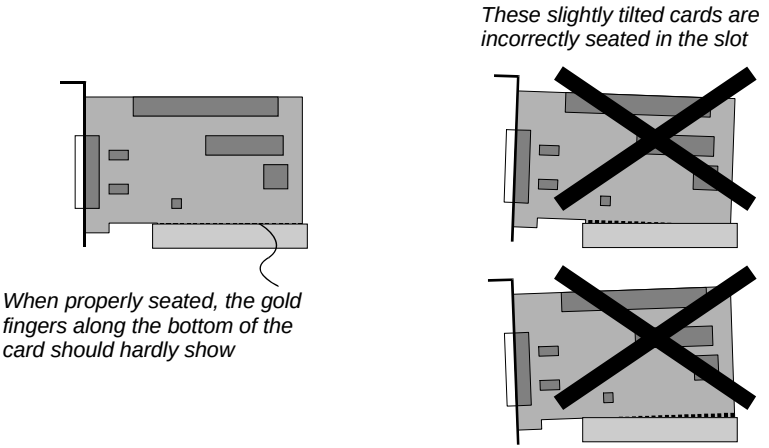


d. Before handling the SCSI card, discharge your static electricity by touching a metal part on the computer chassis.

e. Remove the SCSI Card 2930U from its anti-static packaging. **Handle the card only by its edges.**

continued

f. Insert the SCSI Card 2930U into the PCI expansion slot. Press down firmly until the SCSI card clicks into place.



g. Secure the SCSI card with the expansion slot screw you removed in step 2c.

h. Replace the cover on the computer.

i. Attach the free end of the SCSI cable to the SCSI card's external connector. (The other end of the SCSI cable was previously connected to the digitizer.)

NEXT: Install the device drivers ⇨

Installing device drivers

for the SIERRA™ *plus* film digitizer

So far, you have installed the SCSI hardware in your computer and assembled the film digitizer. This chapter covers the final installation phase: configuring the SCSI BIOS and installing device driver software on your computer.

SCSI BIOS configuration is required for all installations to assure that the computer boots properly and recognizes the film digitizer.

The procedure you follow for device driver software installation depends on the operating system resident on your computer. Instructions are provided for:

- Windows XP Professional Edition Service Pack 1 or higher
- Windows 2000 with Service Pack 2 or higher.

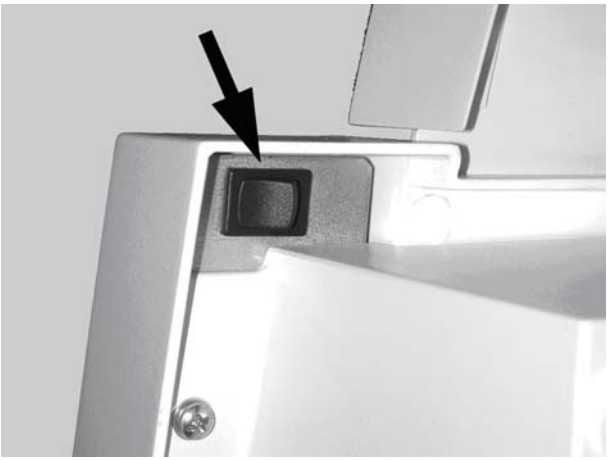
1. Apply power: digitizer first, then PC

a. Ensure the PC is turned **off**.

> **Note:** Always apply power to the digitizer before turning on the computer. This enables the computer to recognize the digitizer.

b. Connect the digitizer's electrical power cord (connected to the power adapter) to an electrical outlet.

c. Turn on the digitizer. The on/off switch is located behind the upper right corner.



Power switch labeling

The label pictured below appears on the right front top side of the digitizer in order to assist the operator in locating the power switch.

> **Note:** The digitizer power switch is used to disconnect the 24 volts from the external power adapter to the digitizer, and therefore applies power to and removes power *from the digitizer only*. The external power adapter is still a source of electrical current as long as it is plugged into an electrical outlet.

d. Observe the LED on the front of the digitizer: the LED should flash light blue for several minutes. This indicates the digitizer is performing internal tests.

e. When the LED stops flashing and remains solid green, you can proceed to step 2, next in this chapter.

2. Use the SCSI utility to configure the SCSI BIOS

In most cases, the digitizer is not properly detected after you install the SCSI adapter. This is because the computer tries to boot from the adapter, but no SCSI hard disk is connected. You must correct this behavior in the SCSI BIOS.

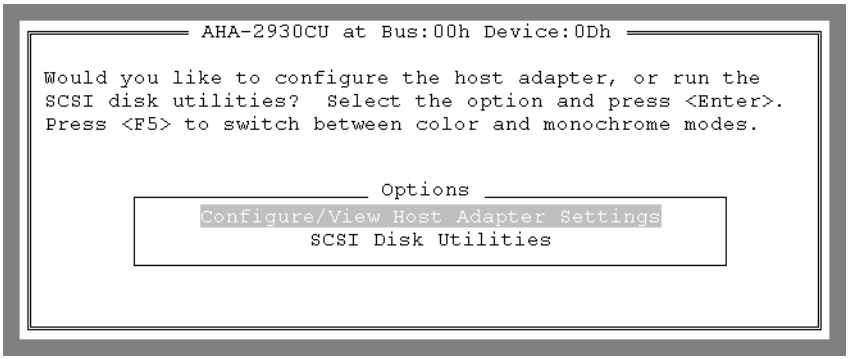
a. Turn on or restart your computer. When the computer boots up, it will detect the SCSI Adapter. When this message appears on the screen, *immediately* press CTRL+A:

Press Ctrl+A for SCSISelect™ Utility!

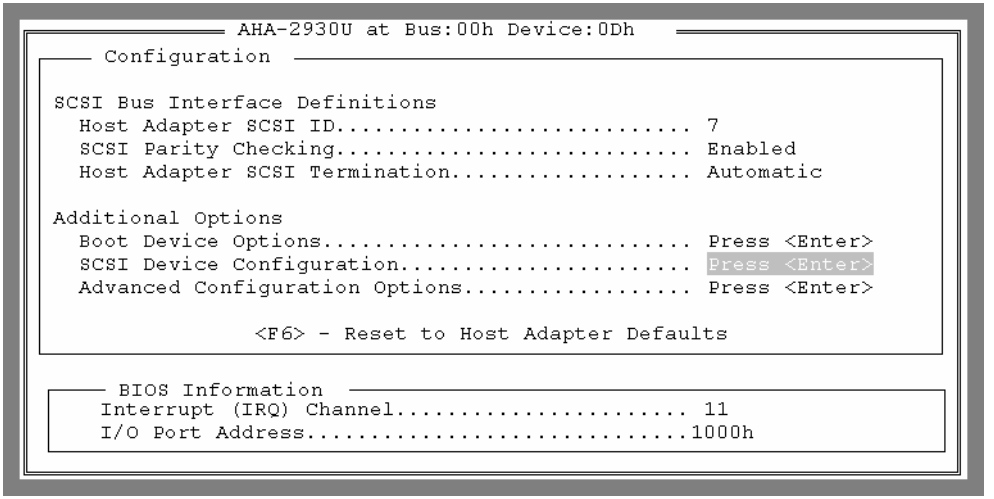
(The message appears for just a few seconds.)

> **Note:** In the next steps, use keyboard ARROW keys to navigate within a screen. When you have selected the desired option, press ENTER.

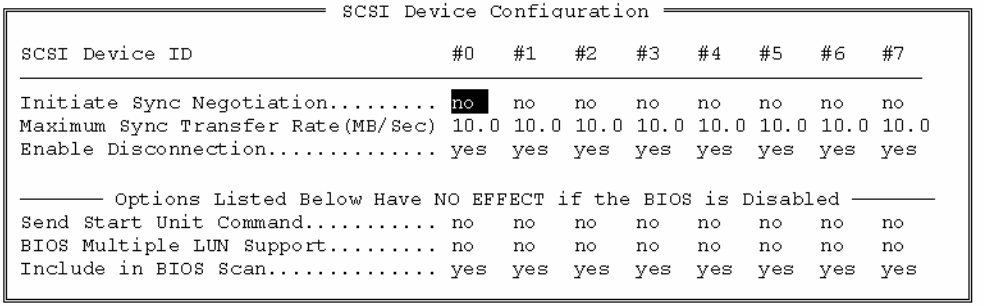
b. In the **Options** menu (see below), select the **Configure/View Host Adapter Settings** option, then press ENTER.



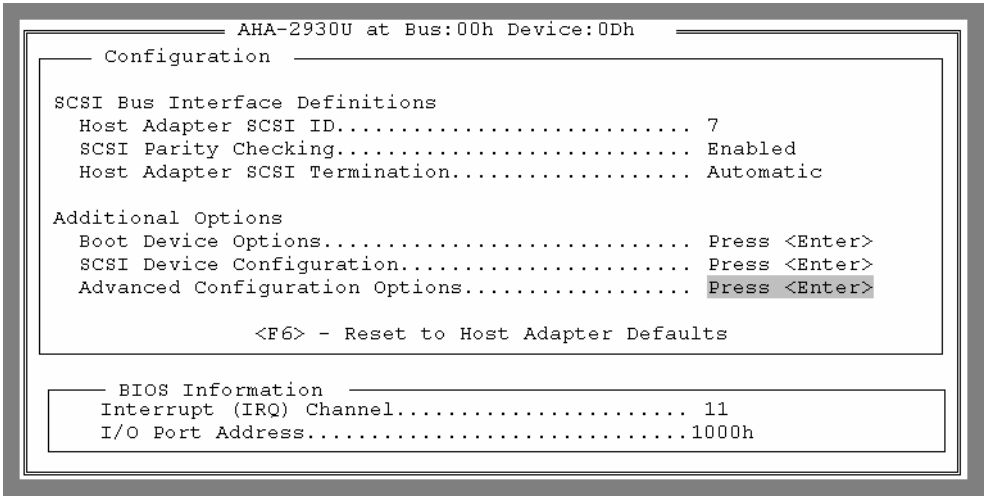
c. Under **Additional Options**, select **SCSI Device Configuration** (see below). Press ENTER.



d. You will see SCSI Device ID #s 0 to 7. **Initiate Sync Negotiation** will be set to **Yes** or **No**. Set them all to **No**. Set **Maximum Sync Transfer Rate** to **10.0** for all. Press ESC to exit this screen.



e. Select **Advanced Configuration Options** (see below) and press ENTER.



f. Select **Host Adapter Bios**. Set to **Disabled**.

g. Press ESC**,** then **SAVE SETTINGS**, then **REBOOT**.

h. Remove the VIDAR Drivers and Toolkit Installation CD from the carrier on the next page, then go to step 3, “Install the SCSI drivers.”

VIDAR device driver summary

Operating system	Device driver	EZ-SCSI Software	Update Toolkit (*vscsi32.dll*)	CD needed
Windows™ XP Professional Edition, Service Pack 1 or higher	Vidar STI	No	Yes	VIDAR Drivers and Toolkit Installation CD
Windows™ 2000 with Service Pack 2 or higher (Service Pack 4 or higher is required for USB connectivity)	Vidar STI	No	Yes	VIDAR Drivers and Toolkit Installation CD

WARNING: VIDAR has validated the STI driver and replacement of *vscsi32.dll* with all supported VIDAR digitizers on both Windows™ 2000 and Windows™ XP systems using several third party software applications. No bugs or problems were identified during validation testing. However, you must check with your system integrator or scanning software vendor to verify that they support the replacement of VIDAR's *vscsi32.dll*.

About the STI drivers

Previously, most system integrators built their scanning applications for VIDAR digitizers based on either the VIDAR SCSI Toolkit or the ActiveX control (based on the SCSI Toolkit). VIDAR's SCSI Toolkit was based on Adaptec's ASPI drivers. However, Adaptec™ is not supporting its ASPI drivers for Microsoft Windows™ 2000 or XP. Therefore, VIDAR developed a toolkit that takes advantage of Microsoft's Still Image Architecture (STI) for digital imaging devices. The new VIDAR Toolkit and VIDAR STI driver support several operating system enhancements.

The VIDAR STI driver was designed to provide compatibility between VIDAR medical film digitizers and Windows™ 2000 and XP. Features of this driver include:

- Installation/setup wizard for easy and consistent installation.
- Scanners and Cameras Control Panel, which provides a common interface for still image devices.
- Push-model event monitor and control center, a consistent model in which a still image device can initiate data transfer to an application (push model), in contrast to an application having to request data from the device (pull model).
- No need to rely on unsupported ASPI-layer drivers from Adaptec™ for SCSI adapters.

The VIDAR STI driver works with the new Toolkit (*vscsi32.dll*), which is automatically installed with the STI driver. The Toolkit was developed specifically to support the STI architecture:

- It is a direct replacement for previous *vscsi32.dll*s.
- No recompiles are necessary.
- Installation automatically replaces the current *vscsi32.dll* with the new one.
- Existing applications are easily configured to work with the Toolkit.

3. Install the SCSI drivers

Note:
- On Windows™ 2000 computers, Service Pack 2 or higher must be installed. Computers without Service Pack 2 or higher will not be supported.
- On Windows™ XP Professional Edition, Service Pack 1 or higher must be installed.

VIDAR's STI device driver provides compatibility between VIDAR film digitizers/scanners and **Windows™ 2000 and Windows™ XP only**. The STI driver takes advantage of Microsoft's Still Image Architecture (STI) for digital imaging devices.

You will need:
- VIDAR Drivers and Toolkit Installation CD.

Note: These instructions have been successfully tested on a wide range of Windows™ 2000 and Windows™ XP systems. In rare instances, you may have difficulty installing the STI driver. If that happens, try again after logging on as Administrator, or as a user with Administrator rights.

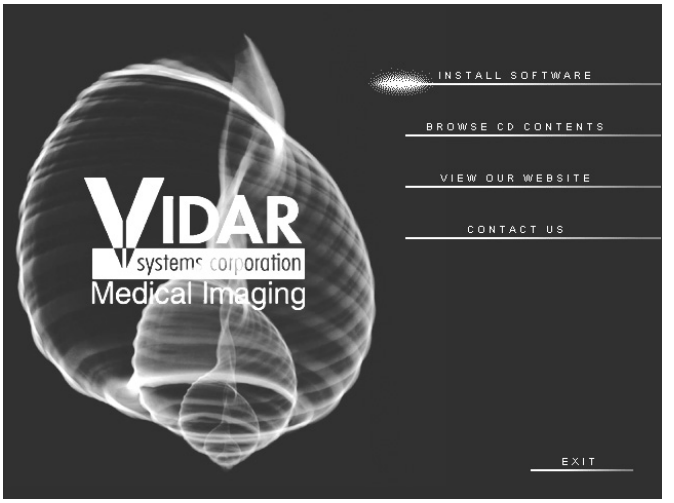
1. Be sure the digitizer is turned OFF, and is NOT connected to the PC. Wait until you are prompted to connect the digitizer.

2. Turn on the PC.

3. Insert the **VIDAR Drivers and Toolkit Installation CD** into the CD-ROM. The installer should launch automatically.

   If the installer does not launch automatically, double-click the appropriate CD drive icon under **My Computer** in Windows™ Explorer.

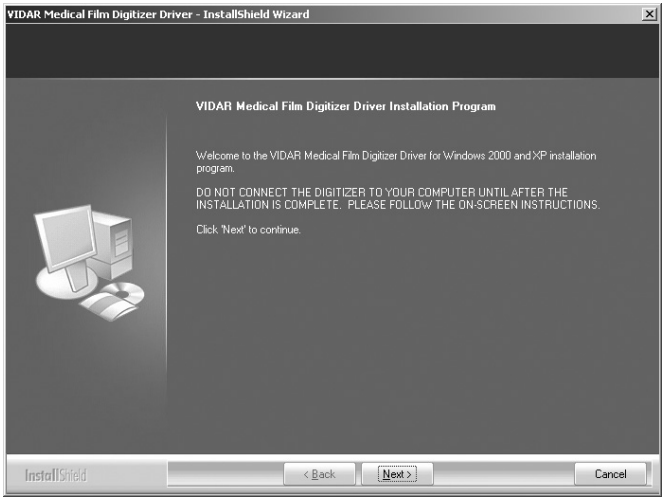
4. In the first screen, click **Install Software**.



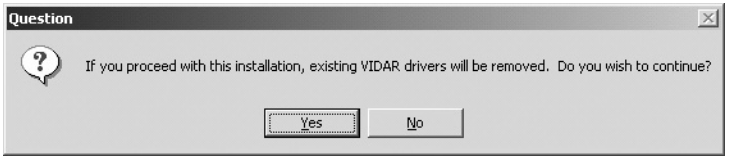
5. In the next screen, click **Install Digitizer Driver**.

6. You will see a message that the InstallShield Wizard is starting.

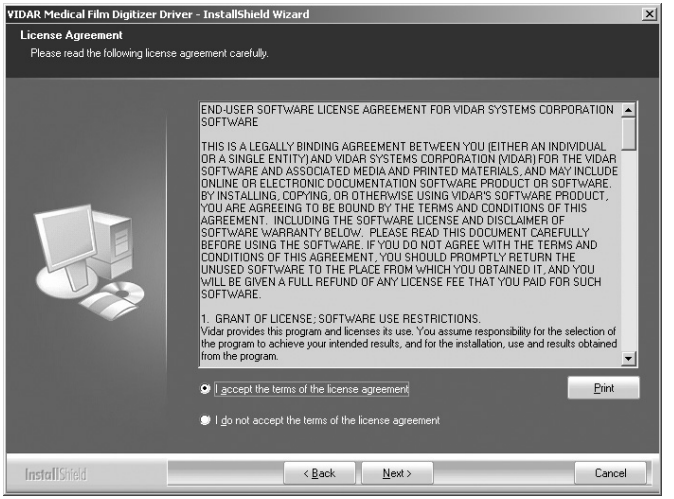
7. In the InstallShield Welcome screen, click **Next**.



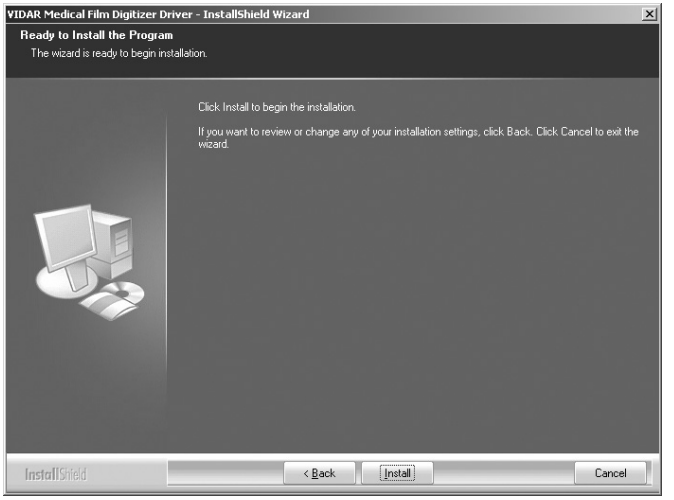
8. If you are updating from older VIDAR SCSI drivers, you will see the message below. Click **Yes**.



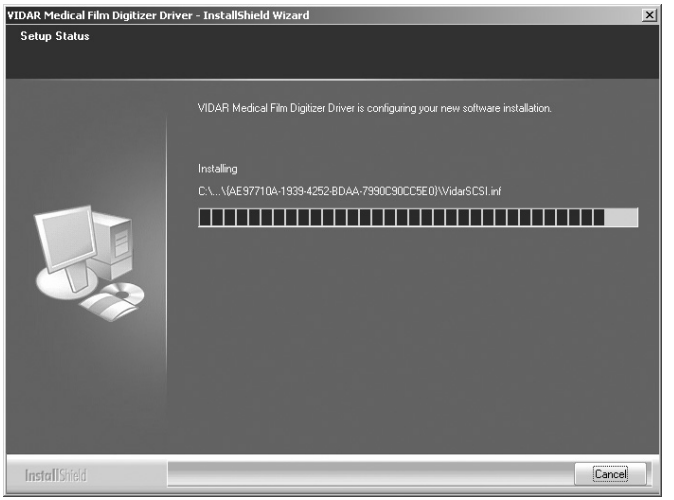
9. In the **License Agreement** window, activate the **I accept the terms of the license agreement**, then click **Next**.



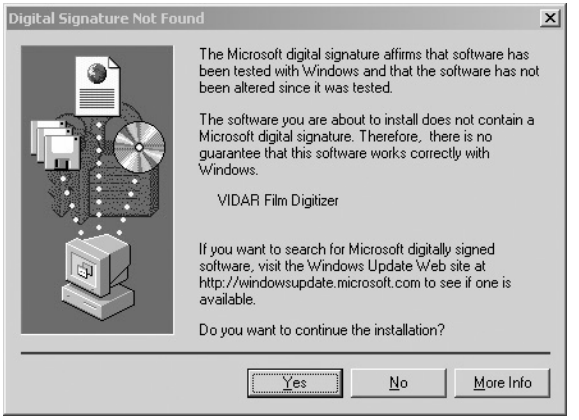
10. In the **Ready to Install the Program** window, click **Install**.



10. The **Setup Status** window will appear. Wait while the files are installed.



11. The **Digital Signature Not Found** window will appear. Click **Yes**.



12. InstallShield will indicate that installation is complete. However, drivers are not yet installed.

    In the **...Installation Complete** window, activate **No, I will restart my computer later**, then click **Finish**.

13. Shut down the computer. Leave the VIDAR CD in the CD drive.

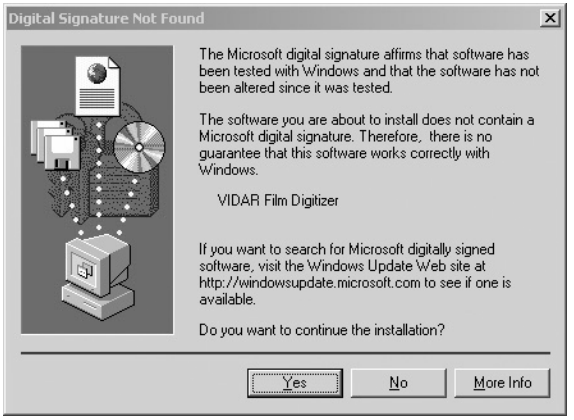
14. Earlier, you connected VIDAR SCSI cable part number 4270 to the digitizer. Now, attach the 50-pin connector on the other end of that cable to the external port on the SCSI adapter.

15. Turn on the digitizer.

16. Turn on the computer.

17. After Windows loads, the **Found New Hardware** window will appear, indicating that the digitizer is connected to the computer.

18. Next, the **Digital Signature Not Found** window will appear. Click **Yes**.



19. Verify that the digitizer drivers are fully installed by checking the device properties. Use the path for your operating system:

    - For Windows™ XP Professional: **Start > Control Panel > Printers and Other Hardware > Scanners and Cameras**.

    - For Windows™ 2000 Professional: **Start > Settings > Control Panel > Scanners and Cameras**.

20. In the device window, right-click **Vidar Film Digitizer**, then click **Properties** in the pop-up menu.

21. In the **VIDAR Film Digitizer Properties** window, click the **VIDAR Properties** tab.

Note that:

- The digitizer will report as “VXR-12” for backward compatibility.
- You may not see the same firmware and hardware version as shown in the window above.
- The serial number will not report if the digitizer was just powered on.

22. Go to step 4, “Updating the VIDAR Toolkit.”

4. Updating the VIDAR Toolkit

The **Update Toolkit DLL** feature on the VIDAR Drivers and Toolkit CD updates the scanning application with the current VIDAR Toolkit Dynamic Link Library (DLL). Check with the scanning application vendor to ensure that the scanning application has tested *vscsi32.dll*, version 4.1.81.

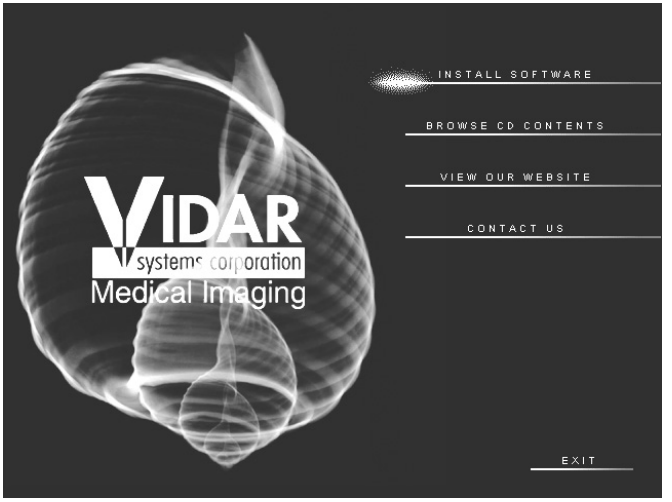
WARNING: VIDAR has validated the STI driver and replacement of *vscsi32.dll* with all supported VIDAR digitizers on both Windows™ 2000 and Windows™ XP systems using several third party software applications. No bugs or problems were identified during validation testing. However, you must check with your system integrator or scanning software vendor to verify that they support the replacement of VIDAR's *vscsi32.dll*.

Note: The scanning application must be installed before performing the Toolkit DLL Update.

1. Insert the **VIDAR Drivers and Toolkit Installation CD** into the CD-ROM. The installer should launch automatically.

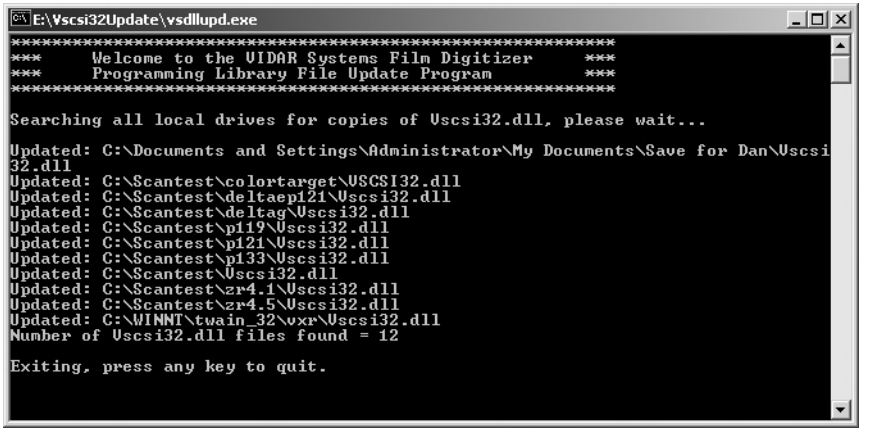
   If the installer does not launch automatically, double-click the appropriate CD drive icon under **My Computer** in Windows™ Explorer.

2. In the first screen, click **Install Software**.



3. In the next screen, click **Update Toolkit DLL**.

4. A DOS window will open. Wait while the files are updated.



5. When you see the message “Exiting, press any key to quit,” press any key or close the window by clicking the X in the upper right corner.

6. Remove the VIDAR Drivers and Toolkit Installation CD.

IMPORTANT: Please save the CD. You will need it if you:

- Uninstall or reinstall the drivers.
- Upgrade the digitizer firmware.
- Replace the digitizer with another one having different firmware.
- Reinstall the scanning application.
- Install the digitizer and scanning application on another computer.

NEXT: You can now operate the digitizer ⇨

Operating

the SIERRA™ *plus* film digitizer

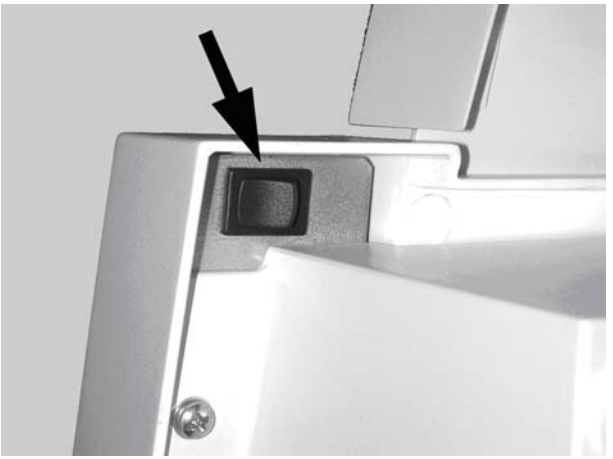
Apply power—then leave on continuously

If the film digitizer is already on and ready to scan (LED on the front of the digitizer is solid green), then skip this section.

1. Ensure the PC is turned **off**.

> **Note:** Always apply power to the digitizer before turning on the computer. This enables the computer to recognize the digitizer.

2. Turn on the digitizer (the switch is located behind the upper right corner of the digitizer body).



continued

3. Observe the LED on the front of the digitizer: the LED should flash light blue for several minutes. This indicates the digitizer is performing internal tests and calibration.

4. When the LED stops flashing and remains solid green, turn on the PC.

   The digitizer is now ready to scan films.

Note: Normally, **do not turn off the digitizer**. Leave it on continuously. Turn the PC on and off as needed.

CAUTION: X-ray images displayed on a computer monitor are representative only. Dimensional and grayscale inaccuracies may result from the build-up of tolerances in the digitizer, the display board and the computer. For this reason, special precautions must be exercised when taking measurements from the digitized image. Please refer to the user's manual for your digitizing software for more information.

About films

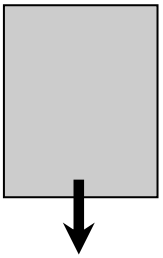
The SIERRA™ *plus* handles standard radiograph films up to 14" x 17" (35.5cm x 43cm).

With multi-film SIERRAs, you can feed multiple films (up to 10), and you can mix film sizes ranging from 8" x 10" (20.5cm x 24.5cm) to 14" x 17" (35.5cm x 43cm) in one stack—as long as you follow the rules below.

> **IMPORTANT:** Remove stickers, tape, staples, paper clips, etc. from films before scanning. These may cause serious film feeding problems. Failure to remove extraneous items from films will void your warranty.

Load films just as you would view them on a light box, with these qualifications:

- Films 8" x 10" (20.5cm x 24.5cm) or larger should be fed in portrait orientation, as shown here:



- Films smaller than 8" x 10" (20.5cm x 24.5cm) must be fed one at a time.

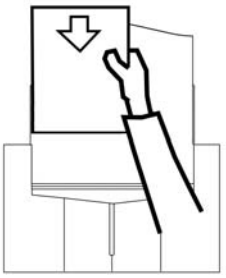
Using the single film feeder

Options for scanning single films

There are two ways to scan a single film:

- By manually inserting the film behind the blue area (as described in this section), or
- By treating the single film as a batch of one (if the scanning application supports this approach); for instructions, see "Using the multi-film feeder" (next section in this manual).

The digitizer cannot scan films smaller than 5" x 7" (12.7cm x 17.8cm).



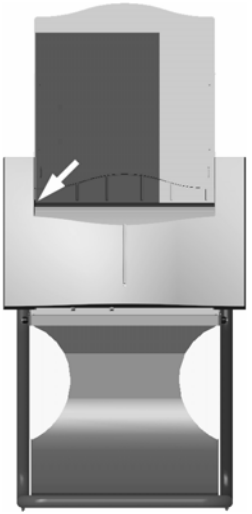
1. Ensure the LED on the front of the digitizer is solid green.

2. Hold the film in front of you as you would view it on a light box.

3. Place the film into the slot **BEHIND the blue area**.

   The blue area is defined by a lip and a groove on the top edge of the digitizer where the feeder is attached. Place a single film directly behind the blue area.

   When the SIERRA™ *plus* detects the film, it *stages* the film—it pulls the film in about 1" (2.5cm), then pushes the film back out about 1/2" (1.25cm).



CAUTION: If the film is not staged properly, do not manually pull the film out of the digitizer. Instead, use the scanning application's "eject" command to remove the film.

continued

Note: When a film has been staged, it is in the digitizer's light path. The ADC (Automatic Digitizer Calibration) feature requires that the light path be clear of the film for proper background calibration of the digitizer. The digitizer will automatically adjust the film's position to properly proceed with ADC. Depending on the location of the film's leading or trailing edge, and the length of time the film has been blocking the light path, the film will be: a) pushed up, b) pushed down, or c) ejected to remove the film from the light path.

4. Using your scanning software, execute the **Scan** command.

   The LED will flash green rapidly, indicating the scan is in progress.

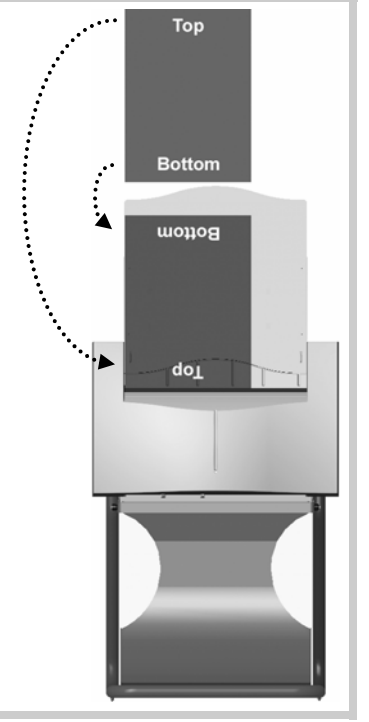
   When the scan is complete, the LED will return to solid green.

Note: After the scan, the film may or may not be ejected—your scanning software determines what happens. If the software's **Auto Eject** function is activated, the film will drop into the exit tray. Otherwise, the lower rollers in the scanner will hold the film until one of the following occurs:

- Another film is detected.
- You manually eject the film from the software.
- The ADC process begins by ejecting the film.

continued

Note: Proper orientation of the film during loading depends on the scanning application program you are using. Some scanning programs rotate images 180° for display. If images appear upside down, you may be able to set the default orientation in the scanning application. If this option isn't available, then insert films into the digitizer upside down, as shown here.



Using the multi-film feeder

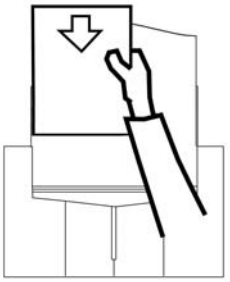
The SIERRA™ *plus* with multi-film feeder can accept stacks of **up to 10** films of mixed sizes. It can also accept single films.

CAUTION: Do not load more than 10 films at one time.

1. Ensure the LED on the front of the digitizer is solid green.

2. Hold the film stack (or single film) in front of you as you would view the films on a light box.

   Films at the back of the stack are digitized first.



Note: The digitizer cannot scan films smaller than 5" x 7" (12.7cm x 17.8cm). When loading small films, the vertical dimension must be at least 7" (17.8cm).

3. Align the left edge of the film stack with the film guide on the left edge of the feeder.

4. Place the film stack **IN the blue area**.

   The blue area is defined by a lip and a groove below the feed tray. Place the film stack in front of the feeder inside the groove of the blue area.

Note: If you are digitizing a single film, place the film **BEHIND the blue area**.

When the SIERRA™ *plus* detects the first film, it *stages* the film—it pulls the film in about 1" (2.5cm), then pushes the film back out about 1/2" (1.25cm).

continued

Note: When a film has been staged, it is in the digitizer's light path. The ADC (Automatic Digitizer Calibration) feature requires that the light path be clear of the film for proper background calibration of the digitizer. The digitizer will automatically adjust the film's position to properly proceed with ADC. Depending on the location of the film's leading or trailing edge, and the length of time the film has been blocking the light path, the film will be: a) pushed up, b) pushed down, or c) ejected to remove the film from the light path.

5. Using your scanning software, execute the **Scan** command.

   The LED will flash green rapidly, indicating the first scan is in progress.

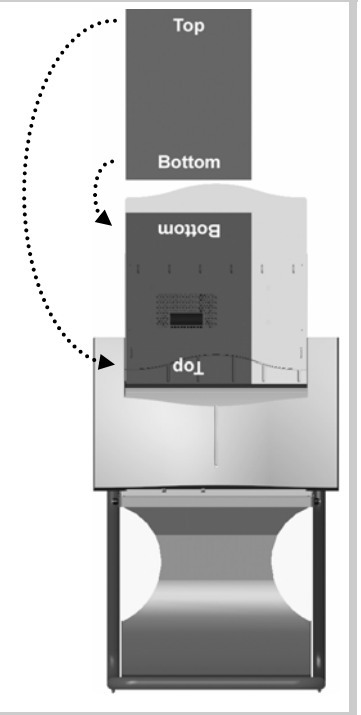
   When the first scan is complete, the second film will be scanned and so forth, until the last film has been scanned.

   When the entire batch has been scanned, the LED will return to solid green.

   Note: After the scan, the last film may or may not be ejected—your scanning software determines what happens. If the software's **Auto Eject** function is activated, the film will drop into the exit tray. Otherwise, the lower rollers in the scanner will hold the film until one of the following occurs:
   - Another film is detected.
   - You manually eject the film from the software.
   - The ADC process begins by ejecting the film.

continued

Note: Proper orientation of the film during loading depends on the scanning application program you are using. Some scanning programs rotate images 180° for display. If images appear upside down, you may be able to set the default orientation in the scanning application. If this option isn't available, then insert films into the digitizer upside down, as shown here.



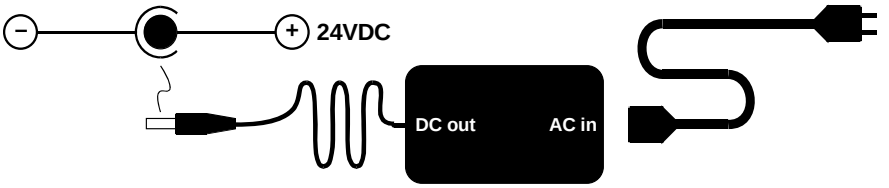
Troubleshooting

the SIERRA™ *plus* film digitizer

Normal operation

LED indication	Condition
Flashing light blue	Digitizer calibrating, please wait
Flashing dark blue	See “Error conditions” in the “In case of difficulty” section, later in this chapter.
Solid green	Ready to scan
Flashing green	Scan in progress

Power adapter information



CAUTION: Only use power adapter VIDAR part number 15468 with SIERRA™ *plus* film digitizers having serial numbers greater than 150,000.

In case of difficulty

How to use this section:

1. Look through the left columns to find a description of the problem you are having.
2. Follow the instructions (in order) in the “Corrective action” column. If the one corrective action doesn’t solve the problem, then carry out the next corrective action.
3. When the instruction is “Get qualified technical help,” then:
   a. Contact your system integration specialist (the company or person that installed your VIDAR film digitizer).
   b. If your system integration specialist isn’t available, then contact VIDAR Customer Support (medtech@vidar.com). Please record system information before calling, and have it available when calling.

Tip: Check www.filmdigitizer.com for current troubleshooting information, tools and software updates.

Error conditions

LED indication	Condition	Corrective action
Flashing dark blue.	Normalization error.	1. Clean lamp diffuser (see “Cleaning the diffuser” in the “Cleaning and maintaining” chapter, later in this manual). ***or if that doesn’t solve the problem...*** 2. Replace lamp (instructions are provided with the Bulb Replacement Cartridge Kit, VIDAR part number 15327). ***or if that doesn’t solve the problem...*** 3. Get qualified technical help.
No LED...	and scanner functions correctly.	Get qualified technical help.

continued

No LED...	and scanner does not function.	1. Ensure that power cable is properly plugged into digitizer (power cable enters below mounting bracket). If digitizer then appears normal, wait for solid green LED, then reboot PC. ***or if that doesn't solve the problem...*** 2. Ensure that electrical power cord is properly plugged into power adapter. If digitizer then appears normal, wait for solid green LED, then reboot PC. ***or if that doesn't solve the problem...*** 3. Get qualified technical help.

Operational problems

Symptom	Corrective action
Film tilts or skews during scanning.	1. Ensure individual films are loaded properly: bottom edge of film parallel to rollers, left edge of film up against digitizer body—as far left as it will go. (Review "Loading a single film" in "Operating" chapter.) 2. (*Multi-film feeder only*) Ensure multiple films are loaded properly: place films in front of blue area. 3. Ensure pickup roller is clean (see "Cleaning the multi-film feed tray," later in this chapter). 4. Ensure idler rollers spin freely. 5. If problem persists, get qualified technical help. 6. Remove any foreign matter from film entrance slot.
After film is loaded and staged properly, a few minutes later film is pushed out of staging area.	When film is staged, it is over digitizer's light path. SIERRA's ADC (Automatic Digitizer Calibration) feature requires that light path be clear for proper background calibration. Thus, if film remains in digitizer for more than 5 minutes, it will be pushed up 1/4" (0.6cm) to clear light path. Later, when you execute your software's **Scan** command, film will be re-staged before it is digitized.

continued

Symptom	Corrective action
Digitizer has been off for several days. First film misfeeds or jams.	Run three or four films through digitizer: load films one at a time, then eject each one (or perform a scan on each film, but this takes longer).
Can't turn digitizer on or off. Can't find power switch.	The on/off switch is located behind the upper right corner of the digitizer body (when viewed from the front). If the digitizer is mounted on the table-top stand, look at the digitizer from the rear to see the switch.
Multi-film feed tray won't feed films.	The multi-film feed tray must be connected to the digitizer with the multi-film feed tray cable. The cable is located above the digitizer body, on the left side (when viewed from the front). Ensure the cable is present. Ensure one end of the cable is plugged into the jack on the multi-film feed tray, and the other end is plugged into the digitizer. After checking cable and connections, restart digitizer, then restart PC after LED turns green.
After applying power, LED on front keeps flashing light blue.	After power is applied, digitizer normally requires about 7 minutes to normalize and calibrate, during which time the LED will flash light blue. If LED flashes light blue for more than 15 minutes, turn digitizer power off and on again (as described later in this chapter), then reboot PC.
Streaks in image	Clean lamp diffuser (see "Cleaning the diffuser" in the "Cleaning and maintaining" chapter, later in this manual).

continued

Symptom	Corrective action
LED is off, in spite of using proper power-on procedure described later in this chapter.	1. Ensure wall outlet is providing AC power: obtain another electrical device known to be working, and plug it into that AC wall outlet. ■ If other device doesn't work, AC power is not available at that wall outlet. Get help from building services. ■ If other device does work, AC power is available from that outlet. Go to step 2. 2. With power applied to digitizer, look into digitizer film entrance slot. If you see light coming from inside digitizer, power is on. For this condition (LED off, internal light on), get qualified technical help. 3. If you have another SIERRA™ *plus* film digitizer, try its power adapter. ■ If digitizer works with other power adapter, original power adapter is defective. Obtain replacement VIDAR SIERRA power adapter from your system integration specialist. SIERRA™ *plus* film digitizers with serial numbers >150,000 require VIDAR part number 15468. **Do not substitute any other power adapter.** ■ If digitizer does not work with a known good power adapter, get qualified technical help. **CAUTION: Using a non-approved power adapter will void the warranty.**
Film starts and stops during scanning.	1. Increase memory allocation for scanning software. (Especially if scanning at high resolutions, memory allocation must be sufficient to accept data stream from digitizer.) 2. If scanning to disk, ensure sufficient space is available on disk drive. 3. Ensure PC has enough memory available to support scanning application. Close applications not needed for image acquisition from digitizer. 4. If problem persists, get qualified technical help.

continued

Symptom	Corrective action
Digitizer stops scanning and PC locks up.	1. Reset entire system. Remember that SCSI protocol requires that digitizer be powered before PC. a. Turn digitizer off. b. Shut down PC and turn it off. c. Turn digitizer on. d. After digitizer LED turns solid green, turn on PC. 2. Launch scanning software on PC, then try scanning again. If problem persists, get qualified technical help. 3. Check for correct device driver installation.
Digitizer was working properly, but after installing (or reinstalling) the scanning application there are Toolkit errors or the digitizer is not detected on the SCSI bus.	1. If you installed a new scanning application, or if you reinstalled the existing application, the older Toolkit (*vscsi32.dll*) may have been installed. Run the VIDAR Drivers and Toolkit Installation CD (see appropriate section in the "Installing device drivers" chapter). 2. If problem persists, contact medtech@vidar.com.
Digitizer is not listed in Windows Control Panel > Scanners and Cameras (Windows 2000 or Windows XP).	1. Update to or reinstall STI drivers. See "Computers with Windows 2000 and Windows XP" in the "Installing device drivers" chapter. 2. Check all SCSI cables and connectors.
Digitizer is not detected on SCSI bus.	1. Set up SCSI card. See the "Installing SCSI hardware" chapter. 2. Check all SCSI cables and connectors.

Turning the digitizer on and off

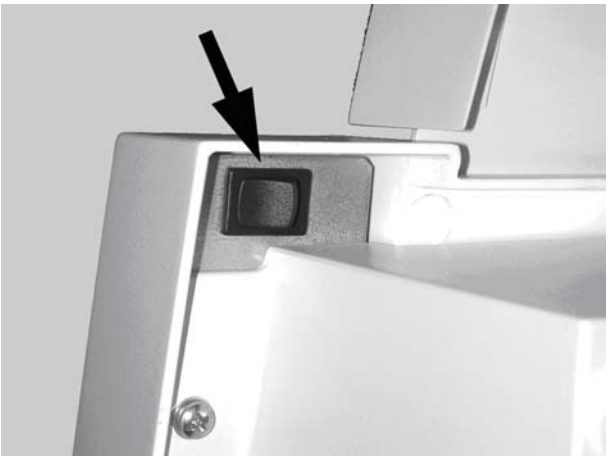
WARNING

Do not apply power by plugging the DC power connector into the digitizer while the power adapter is live. Do not remove power by unplugging the DC power connector from the digitizer while the power adapter is live. Either of these actions could permanently damage the digitizer, the power adapter or both.

Note: SIERRA™ *plus* was designed to be powered continuously. Under normal conditions, the digitizer should remain on at all times.

Use only the power switch to turn the digitizer on or turn it off:

The power switch is located behind the upper right corner of the digitizer (when viewed from the front).



Cleaning and maintaining

the SIERRA™ *plus* film digitizer

Cleaning the multi-film feed tray

After extensive use, dust or lint particles may build up on the feed roller and idler wheels.

To remove residue, loop a piece of light adhesive tape (such as Scotch® Magic™ Tape) around your fingers with the adhesive side out, then gently pat the roller and wheels as you turn them.

CAUTION:

- **Do not** use any type of cleaning solvent on the feed roller and idler wheels, as this could damage these components and cause improper operation.
- **Do not** use tape with a strong adhesive, such as packing tape or strapping tape.
- **Do not** use tape requiring the adhesive to be wetted, such as brown paper packing tape.

Cleaning the diffuser

Note: Use this procedure only when you observe streaks in images, or when the digitizer's LED flashes dark blue.

Note: Use this procedure only for SIERRA™ *plus* digitizers with serial numbers greater than 150,000.

IMPORTANT: You must follow these instructions when cleaning the diffuser. Deviation from these instructions will void the product's warranty and will likely result in costly repairs.

You will need:
- #2 (medium) Phillips screwdriver.
- Soft cloth to protect front of digitizer.
- Lint-free wipes (VIDAR part number 15194).

1. Shut down system.

a. Shut down and turn off PC.

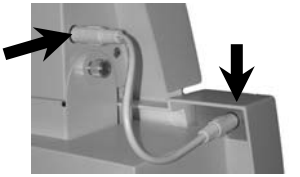
b. Turn digitizer power switch off.

c. Disconnect digitizer power adapter cord from wall outlet.

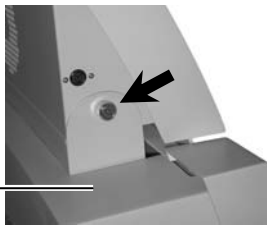
2. Unmount digitizer.

a. Disconnect power cable and SCSI cable from bottom of digitizer.

b. If unit has a multi-film feed tray, disconnect cable from both digitizer and multi-film feed tray.

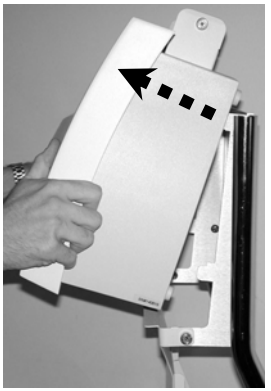


c. Loosen thumbscrews holding feed tray (one on each side, above digitizer body), then remove feed tray: tilt forward and lift up.

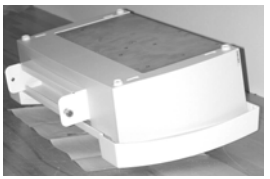


d. Stand in front of digitizer. Grasp digitizer on both sides. Pull bottom of digitizer toward you...

then lift up and off mounting bracket.

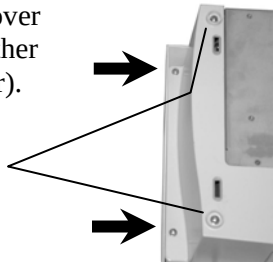


e. Place digitizer face down on soft cloth on table. Top should be toward you.



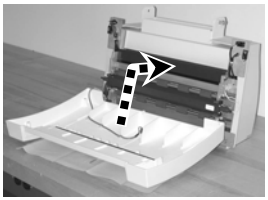
3. Open digitizer.

a. Remove four screws securing front cover (two screws shown here by arrows; other two are on opposite end of front cover).



Do not remove four screws in feet on rear cover.

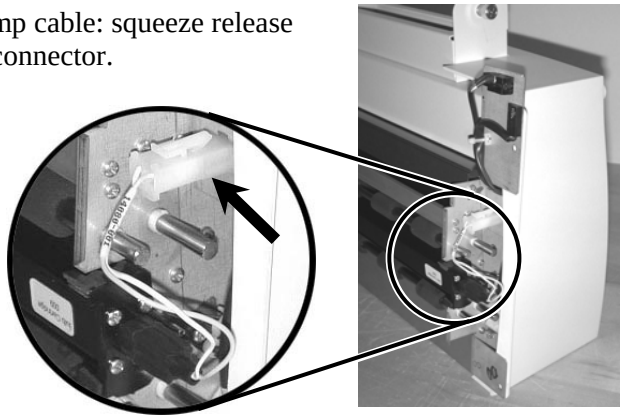
b. Lift main unit up (out of cover) and place on table near cover.



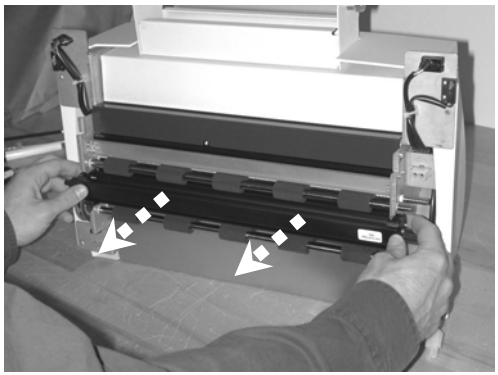
CAUTION: Keep main unit close to cover. A cable extends between them. ***Do not disconnect cable.***

4. Remove lamp cartridge.

a. Disconnect lamp cable: squeeze release tab, then pull connector.



b. Grasp both ends of lamp cartridge, then pull gently toward you until it is free of main unit frame.

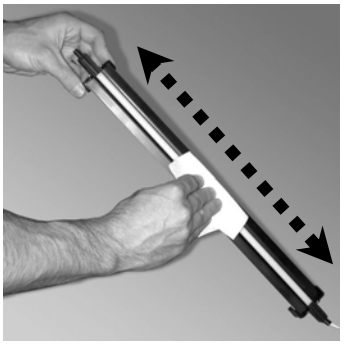


5. Clean diffuser.

Using lint-free wipe, clean entire length of diffuser (white plastic strip) on lamp cartridge.

CAUTION: Clean only with lint-free wipes provided by VIDAR (part number 15194). Other cloth or paper wipes will leave fibers on the diffuser, which can affect performance.

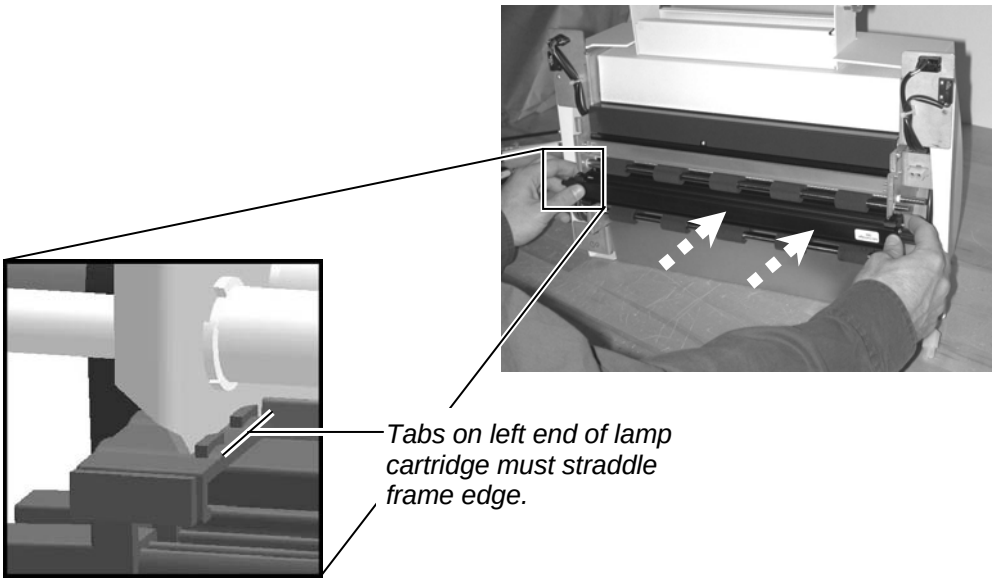
After cleaning, do not touch diffuser.



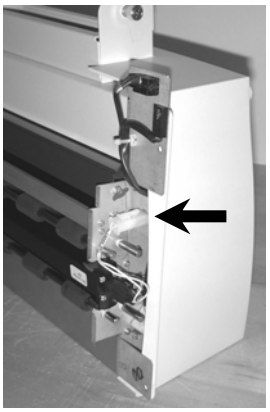
6. Reinstall lamp cartridge.

a. Hold lamp cartridge in both hands with diffuser facing digitizer and lamp cable to right.

b. Slide lamp cartridge into main unit frame—it should snap into place.

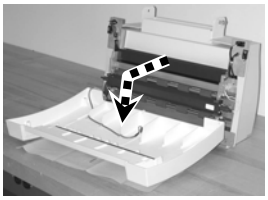


c. Connect lamp cable (see arrow in photo).



7. Close digitizer.

a. Place main unit in cover.

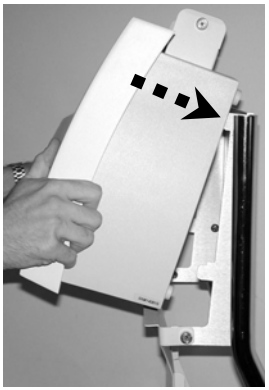


b. Using four screws removed in step 3a, secure front cover to main unit (two screws shown here by arrows; other two are on opposite end of front cover).

8. Mount digitizer.

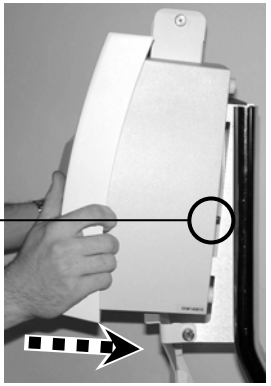
a. Position digitizer with front facing you. Grasp digitizer by both sides.

b. Slide digitizer's upper mounting slots over upper tabs on mounting bracket. Ensure slots drop into notches in tabs.

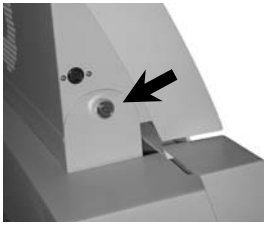


c. Rotate bottom of digitizer toward mounting bracket, so lower mounting slots slide over lower tabs on mounting bracket.

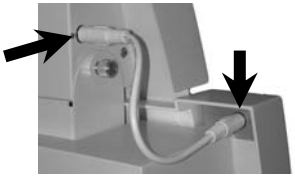
Make sure back side of main unit is parallel to edge of mounting bracket.



d. Place feed tray in position and hold with one hand while securing with two thumbscrews (one on each side).

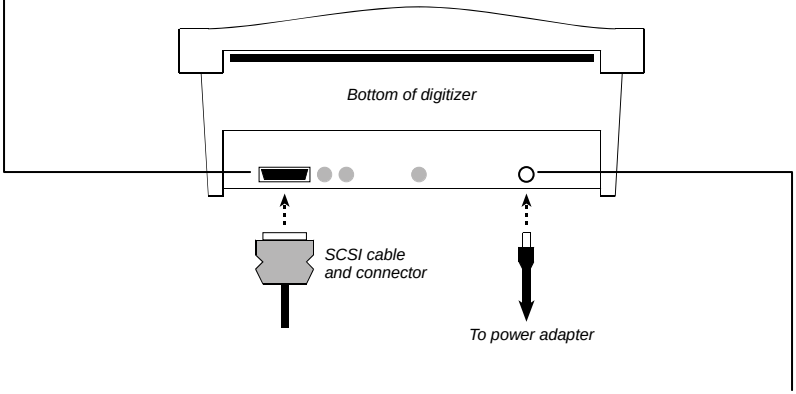


e. If unit has multi-film feed tray, connect feed tray cable to feed tray and to digitizer.



Arrow on connector faces up.

f. **Carefully** plug SCSI cable into SCSI port on bottom of digitizer near left side. **Apply even pressure to avoid bending pins. Do not force connectors together.**



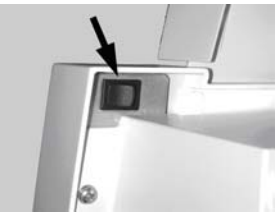
g. Plug power cable into jack on bottom of digitizer near right side.

9. Return digitizer to service.

a. Assure PC is off.

b. Plug digitizer power adapter cord into wall outlet.

c. Turn digitizer power switch on.



d. Observe LED on front of digitizer: it should flash light blue for several minutes (indicating digitizer is performing internal tests and calibration).

e. When LED stops flashing and remains solid green, turn on PC.

Digitizer is now ready to scan films.

Replacing the lamp cartridge

Note: Lamp cartridges can only be replaced on SIERRA™ *plus* digitizers with serial numbers greater than 150,000.

Please contact VIDAR Technical Support to order the Bulb Replacement Cartridge Kit, VIDAR part number 15327:

- Phone: 1-800-471-SCAN (1-800-471-7226)
  1-703-471-7070 outside the U.S.

- E-mail: medtech@vidar.com

Instructions for replacing the lamp cartridge are provided with the kit.

Appendix:
Electromagnetic guidance

Caution: Medical electrical equipment. **EMC (Electro Magnetic Compatibility) must be considered before any medical electrical equipment is installed or put into service. Follow the information in the accompanying documentation when installing and operating the SIERRA *plus* Digitizer.**
Caution: Portable or mobile RF communication equipment can effect Medical Electrical equipment.
Caution: Using the Digitizer adjacent to or stacked with other equipment may cause interference between the equipment. Before utilizing stacked or adjacent equipment, verify proper functionality of all equipment in the actual configuration in which it will operate.
Caution: Connecting the Digitizer to equipment that is not rated CISPR 11 class A or class B may alter the electromagnetic characteristics.
Caution: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Guidance and manufacturer's declaration – electromagnetic equipment

Table 201

The SIERRA *plus* Digitizer is intended for use in the electromagnetic environment specified below. The customer or end user of the SIERRA *plus* Digitizer should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF Emissions CISPR11	Group 1	The SIERRA *plus* Digitizer uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions, CISPR11	Class A	The SIERRA *plus* Digitizer 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	Class A	
Voltage Fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration – electromagnetic immunity

Table 202

The SIERRA *plus* Digitizer is intended for use in the electromagnetic environment specified below. The customer or end user of the SIERRA *plus* Digitizer 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 + 8 kV air	+ 6 kV contact + 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 ±1 kV for input/output lines	±2 kV for power supply lines ±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 differential mode ±2 kV common mode	±1 kV differential mode ±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	<5 % UT (>95 % dip in U_T) for 0,5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles <5 % U_T (>95 % dip in U_T) for 5 sec	<5 % UT (>95 % dip in U_T) for 0,5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles <5 % U_T (>95 % dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the SIERRA *plus* Digitizer requires continued operation during power mains interruptions, it is recommended that the SIERRA *plus* Digitizer be powered from an uninterruptible power supply or a battery
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the a.c. mains voltage prior to application of the test level

Guidance and manufacturer's declaration – electromagnetic immunity

Table 204

The SIERRA *plus* Digitizer is intended for use in the electromagnetic environment specified below. The customer or end user of the SIERRA *plus* Digitizer should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Portable and mobile RF communication equipment should be used no closer to any part of the SIERRA *plus* Digitizer, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz Where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

Note1: At 80MHz and 800MHz, the higher frequency range applies.
Note 2: These guidelines may not be applicable in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the SIERRA *plus* Digitizer is used exceeds the applicable RF compliance level above, the SIERRA *plus* Digitizer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Digitizer.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the SIERRA *plus* Digitizer

Table 206

The SIERRA *plus* Digitizer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the SIERRA *plus* Digitizer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the SIERRA *plus* Digitizer 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 $d = 1.2\sqrt{P}$	80 MHz to 800 Mhz $d = 1.2\sqrt{P}$	800 MHz to 2.5 Ghz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.2	1.2	2.3
10	3.7	3.7	7.4
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (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.

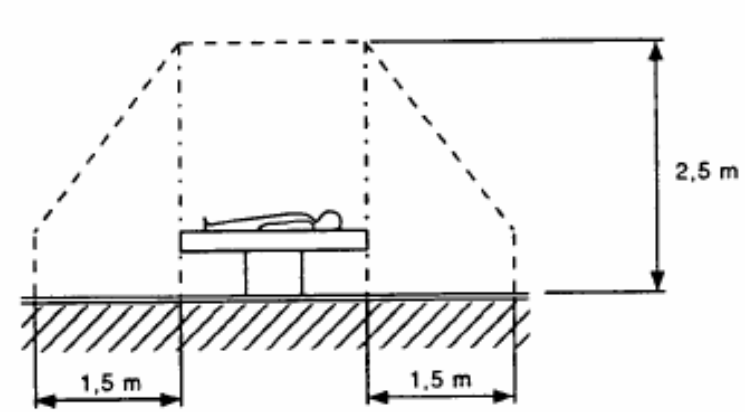
Appendix:
WEEE Disposal

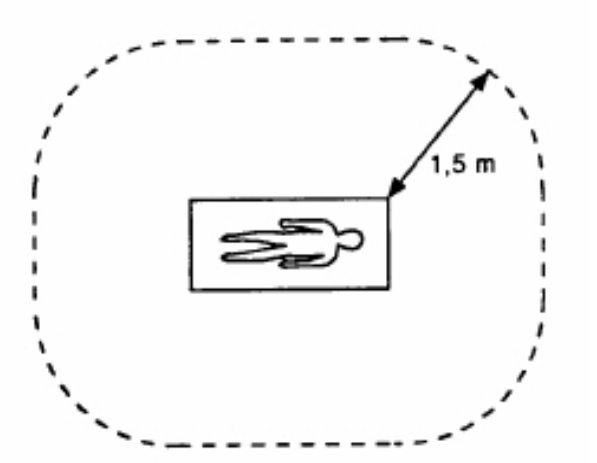
Disposal of Waste Equipment by Users in the European Union

This symbol on the product indicates that this product must not be disposed of as unsorted municipal waste. Instead it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can dispose of your waste equipment for recycling please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Note on WEEE, 6799D237

Appendix:
Patient Vicinity





Note: Dimensions shown are not prescriptive.

365 Herndon Parkway
Herndon, VA 20170 USA
Phone: 1-703-471-7070
Main fax: 1-703-471-1165
Web: www.filmdigitizer.com

Technical Support:
Phone: 1-703-471-7070
1-800-471-7226
Fax: 1-703-471-7665
Email: medtech@vidar.com