SPOT™
PathStand™
40

Hardware
User Guide
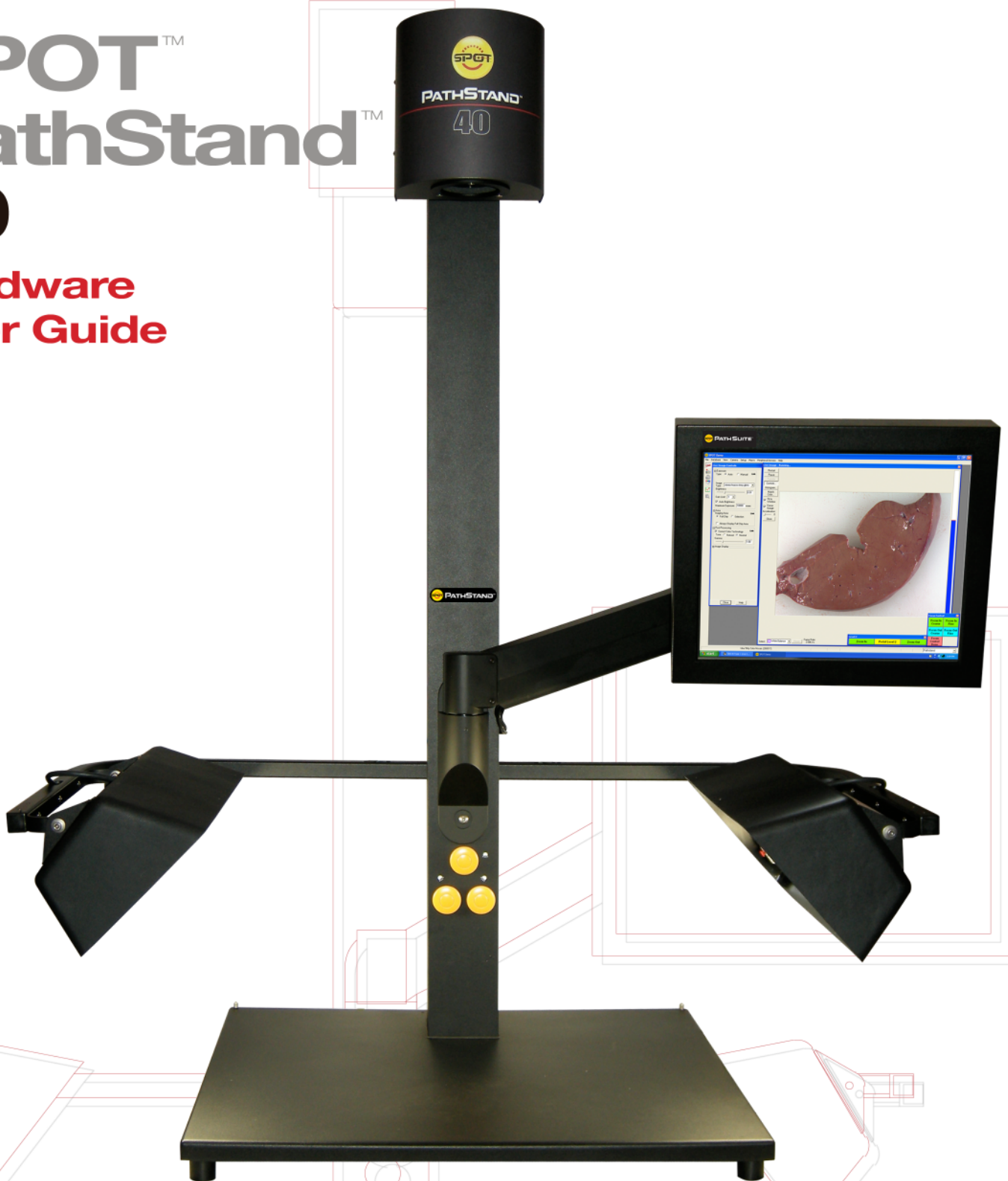
SPOT™ Imaging Solutions
A division of Diagnostic Instruments, Inc.

WARNING / CAUTION

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR EXCESSIVE MOISTURE.

Regulatory and Safety Compliance Notes

This equipment complies 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.

The equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product complies with the CE EN61326 and 61010-1 standards.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING / CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER TO QUALIFIED SERVICE PERSONNEL.

The PathStand is designed for the macro imaging of biological specimens. It is the responsibility of the user to qualify that this product meets the requirements for their application. In no event and under no circumstances shall the manufacturer be liable to an individual or entity for any indirect, special, consequential or incidental losses or damages, including without limitation, lost profits.

CAUTION:

WARNING / CAUTION
RISK OF ELECTRIC SHOCK – DO NOT OPEN

To reduce the risk of electric shock do not remove cover (or back). No user serviceable parts inside. Refer to qualified service personnel.

Do not attempt to modify this product in any way without written authorization from Diagnostic Instruments, Inc. Unauthorized modification will void the warranty and may cause personal injury.

SAFETY INSTRUCTIONS

Read these instructions. Keep these instructions. Heed all warnings. Follow all instructions.

⚠️ **PathStand assembly requires 2 persons. Fully assembled weight: 133 lbs with no accessories.**

• Do not attempt to use this product in any manner not specified by the manufacturer as manufacturer will not be held responsible.

• Clean according to the cleaning instructions in the Maintenance and Cleaning section of this guide.

• This product is designed for indoor use only. Do not expose to rain or excessive moisture.

• Install in accordance with the manufacturer's instructions.

• Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

• Do not defeat the safety purpose of the grounding-type plug. The PathStand uses a grounding type plug which has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

• Only use attachments/accessories specified by the manufacturer.

• When the PathStand is installed on a cart, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

• Unplug this apparatus when it will be unused for long periods of time.

• Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or excessive moisture, does not operate normally, or has been dropped.

• Install this product on a sturdy table or bench to avoid tipping of unit.

• Do not allow an impact shock or any objects to fall into the product or onto the computer touch screen display.

• Do not connect too many appliances to the same AC power outlet as this could result in fire or electric shock.

• Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous. Any of these conditions could result in electric shock or fire.

• Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an

exact replacement part by an authorized servicer. Be sure to grasp the plug when unplugging the power cord. Do not pull on the power cord to unplug the product.

• Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon.

• Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

• Do not move the PathStand with the power cord plugged in. Do not use a damaged or loose power cord.

• Do not expose the top or back of the vertical column or the back of the computer to dripping or splashing. Do not place objects filled with liquids, such as vases, cups, etc. on or over the apparatus (e.g. on shelves above the unit).

DISCONNECTING DEVICE FROM MAIN POWER SOURCE

• The main plug is the disconnecting device. The plug must remain readily accessible to be disconnected during service or maintenance.

• Keep the product away from direct sunlight.

• When cleaning, turn off the computer, all lights, unplug the power cord. Allow spotlight to cool prior to cleaning. Do not spray water or other liquids directly into the openings on the vertical column or rear vents on the computer touch screen display as electric shock may occur. See additional cleaning instructions in the Maintenance and Cleaning section of this guide.

• Before moving, make sure the product is turned off, unplugged and all cables have been removed. It will take two or more people to carry this product. Do not carry by the jointed arm(s) which hold the computer and/or the keyboard and mouse tray. Move by grasping the base while preventing movement of the jointed arm(s).

• Install your PathStand where there is proper and adequate ventilation to minimize the risk of fire when using flammable liquids.

•Do not cover the product with cloth or other materials like plastic while plugged in. Do not install in excessively dusty places. Do not block any ventilation openings.

• If you smell smoke or other odors coming from the PathStand or hear strange sounds, unplug the power cord and contact customer service.

• Do not press strongly upon the computer touch screen display with fingernail or sharp or abrasive object such as nail, pencil or pen, or make a scratch on it. Instead, use a plastic stylus or cotton tipped swab with a cardboard or plastic shaft, NOT a wooden shaft.

• Other than the light bulbs and fuse, there are no consumable materials associated with the PathStand. See replacement part information on page 16.

• Please follow local regulations regarding the disposal of fluorescent bulbs with mercury for disposal of the light bulbs in the XactLight™ system.

ASSEMBLY GUIDELINES

What's in the boxes:

Base Box:
  -PathStand Base

Vertical Column Box:
  -Vertical Column

This space may be used for optional accessories

Light Arm Box:
  -XactLight System
  -Camera housing unit
  -Optional accessories

Computer Support Arm Box:
  -Jointed arm
  -Computer mounting plate
  -Bags #7 and #8

Computer Box:
  -All in one touch screen
   computer
  -Stylus
  -Extra COM port cables
  -Windows recovery CD
  -SPOT CDs and Product
   Registration Cards

Accessory Box:

Accessory Box Contents:

User CD

Daylight Blue Filter

Skylight Filter

Spotlight Bulb

XactLight Bulbs
(4 light bulbs)

Bag #1: Wrenches

Bag #2: Base Feet
(package of 4)

**Bag #3: Column
Top Hardware**
(package of 4 bolts
with matching
washers)

**Bag #4: Column
Bottom Hardware**
(package of 4 star
washers, 4 flat
washers and 4 nuts)

**Bag #5: XactLight
Retainer Clips**
(package of 4)

Bag #6: Power Cord

ASSEMBLY GUIDELINES

Base Assembly:

1. Carefully open the PathStand Base Box, remove the cardboard cover and place the PathStand Base upside down on the sturdy table or countertop where it will be installed.

⚠️ **If you have selected the Keyboard and Mouse Tray option, please refer to the instructions provided with that accessory for how to install and do so before proceeding with assembly.**
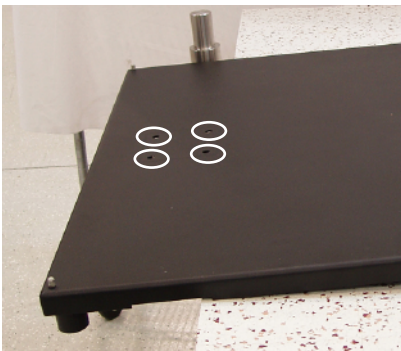

2. Locate the Accessory Box, remove the 3/16" allen wrench (the mid size wrench) from Bag #1 and the four rubber feet from Bag #2.

3. Screw the rubber feet on to the corners of the base by hand and then tighten with the 3/16" allen wrench.

Column and Camera Assembly:

4. Turn the base right side up and move the edge with the four holes off the edge of the table.
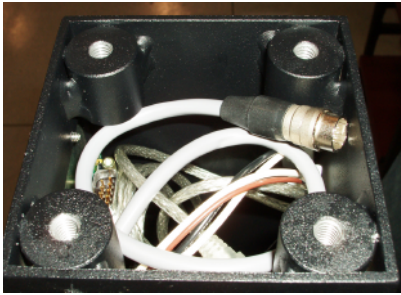
⚠️ **At this point, we strongly recommend that two persons assemble the PathStand.**

5. Locate the box with the vertical column and carefully remove it. Remove the cardboard packing plate that may still be between the bolts on the bottom of the column.

ASSEMBLY GUIDELINES

Column and Camera Assembly: (Cont...)

6. Carefully reach in to the top of the column and remove the 4 cables pictured in the image.
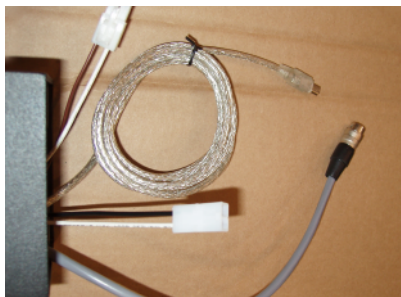
7. Allow the cables to hang free from the top of the column. These cables will be attached to their appropriate connections a little further in the assembly instructions.

8. Locate the Camera Housing Box, (which is inside the Light Arm Box). Carefully remove and place the camera housing unit on a table with some workspace.
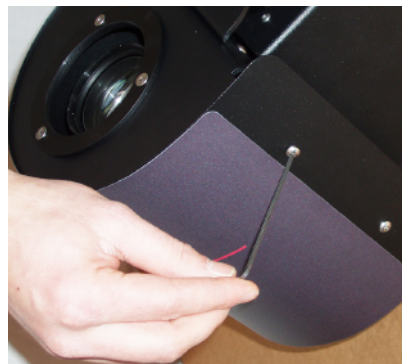

9. Locate the 3/32" allen wrench (the smallest wrench) from Bag #1.

Also find the daylight blue filter in its housing from the accessory box.

Use the 3/32" allen wrench to remove the two small screws indicated by the arrows.

Use these same two screws and allen wrench to install the daylight blue filter as shown here.

10. Use the same 3/32" wrench to remove the four screws which hold the curved face plate onto the camera housing.
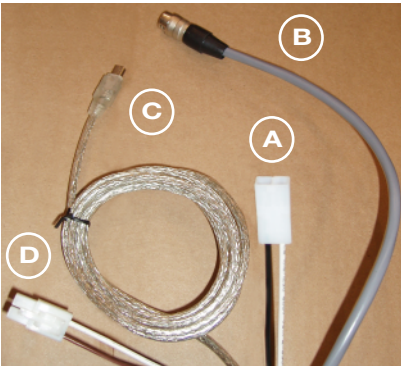

11. Set the curved face plate aside, place the screws in a safe place for later re-installation, carefully remove the grey foam packaging and discard. The unit should look like that pictured above.

Column and Camera Assembly: (Cont...)

12. From the Accessory Box, locate the hardware in Bag #3 and the 1/4" allen wrench (the largest wrench) from Bag #1 and place near the assembly area.

13. Here is an illustration of the cables and their functions.

A) Cable for spotlight connection (white capped black and white wires)

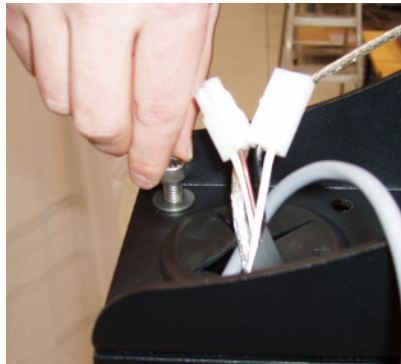**B)** Cable for the lens controller

C) USB cable for the camera

D) Cable for wireless microphone option (white capped with white and reddish-brown wires)

14. Have one person hold the vertical column while the other holds the camera housing.

Feed the 4 cables from the top of the vertical column through the soft rubber opening on the housing.

15. Use the 5/16" bolts and flat washers from Bag #3 to secure the camera housing onto the vertical column.

It may be easier to start with the bolts in the rear of the column first.

**16.** Install first by hand and then tighten with the 1/4" allen wrench from Bag #1.

17. Feed the USB cable through the hole behind the cream camera and black lens assembly and attach to the mini USB port on the side of the camera body.

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ASSEMBLY GUIDELINES

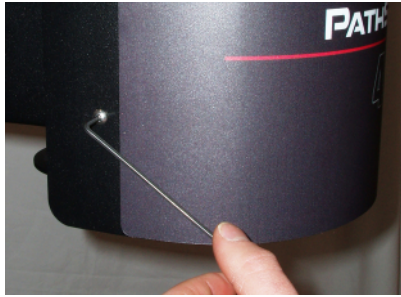## Column and Camera Assembly: (Cont...)

18. Line up the pins on the two ends of the lens controller cables and push until you hear a snap.
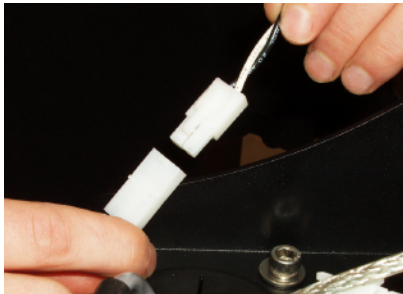
19. Connect the white ends of the spotlight cables (white and black wires).

20. Locate the halogen bulb from the Accessory Box. Carefully line up the brass connectors with the slots and slide the bulb backward to install.

21. Reinstall the curved face plate on the camera housing with the small screws which were removed in step 10. Tighten with the 3/32" allen wrench (the smallest wrench).

22. Locate the skylight filter from the Accessory Box and screw into place in the space provided in the camera housing.

Caution: The filter must thread in freely. If the threads meet resistance, unscrew and try again. If the threads are forced, they may become damaged.

23. Line up the pins on the two ends of the lens controller cables and push until you hear a snap.

ASSEMBLY GUIDELINES

Column and Camera Assembly: (Cont...)

24. Locate the Accessory Box and remove Bag #4.

Also locate the 5/8" and 1/2" combo wrench from Bag #1 and place all items nearby.

25. With two persons, carefully lift the vertical column into place and insert the bolt studs into the arrangement of 4 holes on the PathStand's base.

Continue to support column assembly until installation is complete and PathStand can be fully placed on table. PathStand weight: 133 lbs.
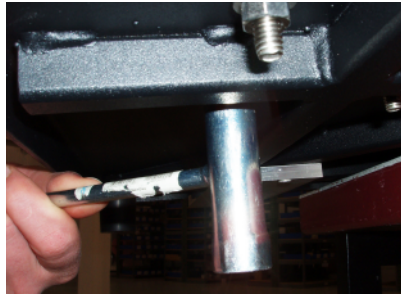
⚠ **Caution! Vertical column is top heavy.**

26. The star washer should go on first, followed by a flat washer and a nut.

⚠ **The order of the washers is important as they ensure proper grounding of the PathStand.**
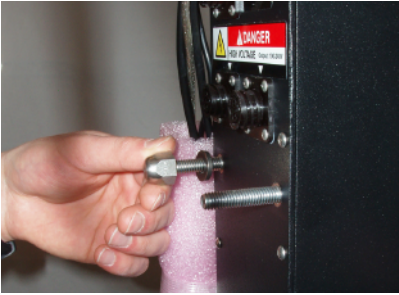
Tighten by hand and then tighten with the 1/2" end of the combo wrench.

Once the vertical column is securely in place, move the PathStand into position on the surface where it will remain for use.

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ASSEMBLY GUIDELINES

XactLight Assembly:

27. On the rear of the PathStand's vertical column, remove the two acorn nuts and their respective washers and place them in a safe place.

28. Locate the Light Arm Box and remove the lighting arm.
This may require two persons.

Locate the Accessory Box, remove the combo wrench from Bag #1 and place nearby.

29. Position the lighting arm so that the cables exit on the top side of the bracket, not the bottom, as illustrated here.

Place the lighting arm on the vertical column's studs from which the acorn nuts were just removed.
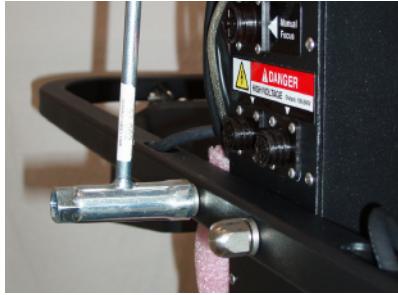
30. Place the washer on each stud followed by the acorn nut and tighten first by hand and then with the 1/2" end of the combo wrench.

It is advisable to support the lighting arms, which reach forward, during the tightening process in order to ensure a secure installation.

31. Connect the cables by carefully aligning the pins on the cable connectors to the mating connectors directly above the acorn nuts on the column and screw the connectors into place.

Computer Support Arm Assembly and Computer Installation:

32. Locate the Computer Support Arm Box and remove the jointed arm, computer mounting plate and Bag #7 from the box.

Install the computer mounting plate by lining up the protrusions on the black washer with the slots on the silver end of the mounting plate and securing in place with the screw and screwdriver also from Bag #7.

33. Slide the large black plastic washer on to the silver end of the support arm.

Install by inserting the silver end into the mating connection on the front of the vertical column.

34. Remove the computer from the Computer Box. Remove the four wing nuts which are on the rear mounted studs and place them somewhere safe and nearby the PathStand.

With the angled edge (as highlighted in photo) of the mounting plate facing forward, carefully place the computer, with ports facing forward, onto the holes in the mounting plate and secure in place with the wing nuts.

ASSEMBLY GUIDELINES

Cable Management:

35. Unwrap the cables which exit the rear of the vertical column.

36. Here is a view of the different cables which will need to be threaded through the computer support arm and connected to the computer.

A) Computer USB

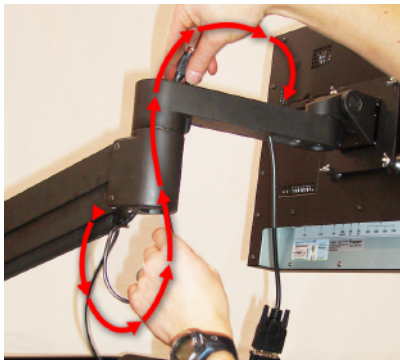**B) Computer Power**

C) Lens Control

37. From the Computer Support Arm Box remove Bag #8 containing the three black plastic cover pieces.

38. Gather the Lens Control, Computer Power, and Computer USB cables and loosely place them in the curved black plastic plate from Bag #7.

Attach the curved black plastic plate to the bottom of the first segment of the support arm.

39. Feed the three cables (start with the largest cable first) up through the center of the first joint and then over to the opening near the computer end of the arm.
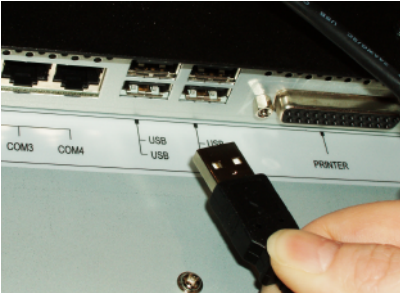

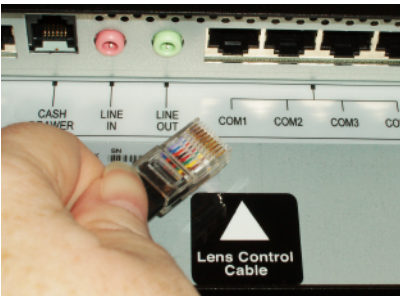**40.** Snap the black round plastic cap onto the bottom of the first joint in the arm.

41. Snap the flat black plastic cover onto the top of the segment closest to the computer.

ASSEMBLY GUIDELINES

Computer Cable Connections:

42. Insert the USB cable into one of the available USB ports on the rear of the computer.

43. Insert the Lens Control cable into COM1 which is identified with an arrow sticker.

⚠️ **Failure to insert the Lens Control cable in to COM1 will result in the loss of the ability to control zoom and focus.**
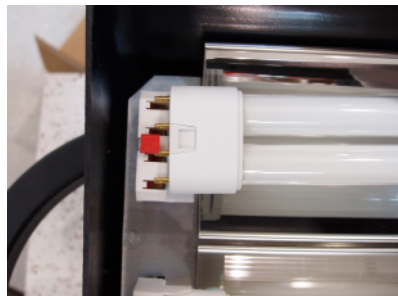

44. Insert the power cable into the port labeled DC IN.

XactLight Bulb Installation:

45. Gently rotate the lamp housing upward to reveal the lamp sockets.

46. Remove the XactLight bulbs from the Accessory Box and carefully insert the brass connector ends into the lamp sockets. Push downward until they snap into place (the red button is used to eject the XactLight bulbs).

47. Gently push the free end of the light bulb into the plastic retainer.

From the Accessory Box, locate the top plastic retainer clips from Bag #5 and secure into place on the ends of the bulbs.

Repeat steps 45 through 47 for the remainder of the light bulbs.

Gently rotate the lamp housings back downward.

Final Power Connections:

48. Insert the Camera USB cable into one of the available ports on the rear of the vertical column.

Remove the power cable from Bag #6 in the Accessory Box and insert into the power connection on the rear of the column near the base.

Plug into an appropriate wall outlet.

The finished PathStand should look as pictured below.

SPOT^{TM} PathStand 40

GENERAL OPERATION

To Get Started:

1. Turn on the main power switch on the bottom rear of the vertical column. The computer will automatically start.


Spot Light

XactLight™ Left   XactLight™ Right

2. Turn on the light switches for the lights which are desired.

SPOT PathSuite

3. Once the computer starts, begin your imaging by double clicking on the SPOT PathSuite icon on the desktop.

Note: For further instructions on how to use the software, please see your PathStand Software User Guide, or contact your SPOT Imaging Specialist.

To turn the PathStand off:
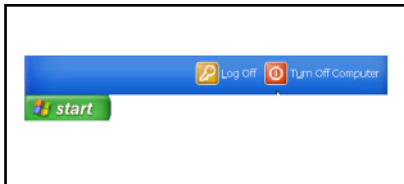
1. First turn off the computer from the Start menu.

2. Turn off the main power switch on the bottom rear of the vertical column.

3. To disconnect the unit, unplug the main power cord from the outlet.

To restart the computer:

1. With the computer already shut down, turn off the main power switch on the bottom rear of the column.

2. Turn on the main power switch.

3. The computer will then restart.

⚠️ **The computer does not have a power switch. Therefore, if the computer is shut down and you wish to restart the computer, please follow above steps.**

MAINTENANCE AND CLEANING

⚠ **Turn off your PathStand prior to conducting maintenance or cleaning.**

Periodically examine the bolts, screws, and nuts that hold the column onto the base, the computer support arm to the column, and the computer to the computer support arm. Tighten if they have loosened over time.

To ensure proper functioning of the PathStand, care should be taken to routinely clean all surfaces and movable parts.

⚠ **Allow the spotlight to cool prior to cleaning the day light blue filter.**

General Cleaning Guidelines

Use a soft cloth dampened with a mild soapy solution to wipe down all surfaces, except the spotlight filters and camera housing window; for those items, please follow the instructions below.

⚠ **Care should be taken not to drip solution into the top and rear of the vertical column and the rear of the computer. Any excess or spillage should be immediately wiped up with an absorbent cloth.**

Approved Disinfection Methods

Sealed Keyboards and Mouse (optional):

70% alcohol or 10% bleach solutions can be sprayed directly on the surface. Allow disinfection solution to sit on the surface for 10 minutes prior to wiping.

The sealed keyboards and mouse can also be autoclaved to disinfect.

Computer Monitor:

Use a soft cloth dampened with 70% isopropyl alcohol to gently wipe the screen and computer housing. Care should be taken not to drip solution into the vents on the rear of the computer. If spillage of the cleaning solution occurs, immediately wipe with an absorbent cloth.

⚠ **Caution: Do NOT use bleach solutions on the computer screen or housing as fogging of the screen will occur with repeated use.**

Base, Vertical Column, and Jointed Arm(s):

70% alcohol or 10% bleach solutions. Allow disinfection solution to sit on the surface for 10 minutes prior to wiping. Care should be taken not to drip the solution into the top or rear of the vertical column.

**Camera Housing Window and Spotlight Day Light Blue Filter:**

Use a cotton swab slightly dampened with 70% alcohol and gently wipe in a circular pattern from the center outward. Follow with a dry cotton swab. Repeat as necessary. Lens tissue can also be used in place of a cotton swab.

For additional information regarding the cleaning and maintenance of any other accessory, please refer to the PathSuite User Guide CD.

PRODUCT SPECIFICATIONS
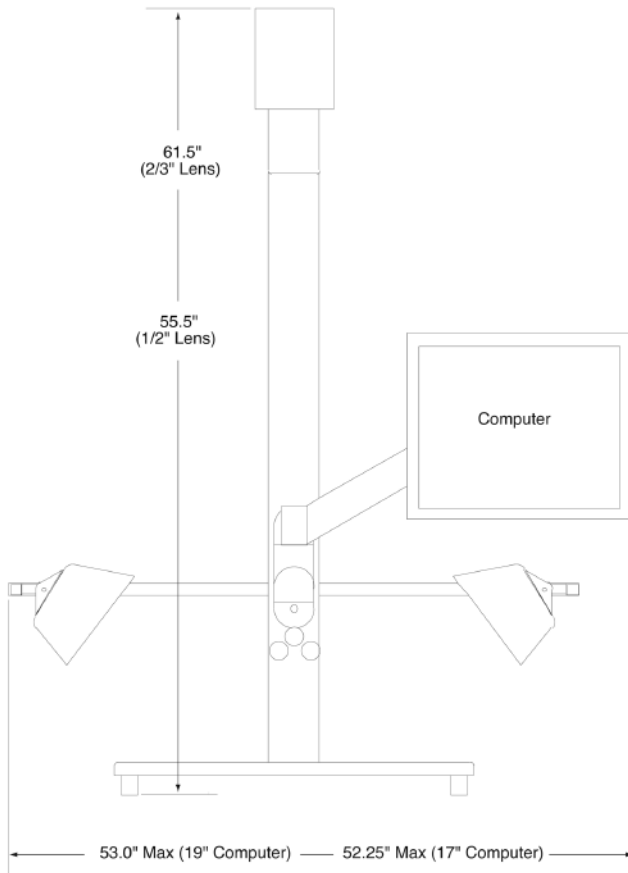
PathStand Dimensions
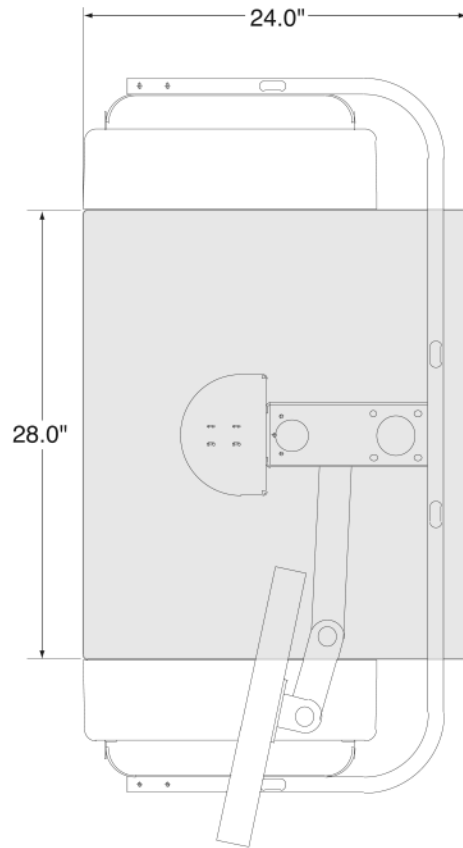
PathStand Top View

The PathStand's height and width dimensions can vary depending on options chosen.

Weight:
Assembled, without accessories and options:
approximately 133 lbs
Shipping: approximately 172 lbs

Power Requirement:
Input: 120-240V @ 5 amps
Output supplied for lighting: 120-240V

Frequency: 47-64Hz

Operating Environment:
0°C – 40°C (32°F – 104°F)
5-95% relative humidity, non-condensing

Fuse: 5 amp/240 V, slow blow, 5 x 20mm

Replacement Parts

Please contact your local SPOT representative or customer service to place your order.

DESCRIPTION	CATALOG NUMBER
XactLight™ Bulbs	XACTBULB
Spotlight Bulbs	SPOTBULB
Fuse	PT40FUSE
Stylus	PTSTYLUS

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