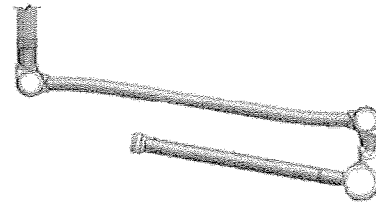
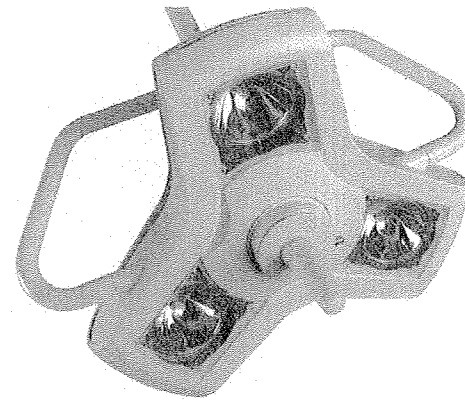
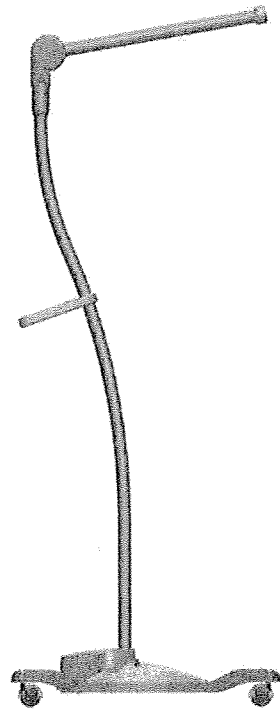


PHILIPS burton

AIM-100®

AIM-200® OR

FLOORSTAND, WALL & CEILING VERSIONS



**INSTALLATION
INSTRUCTIONS**

PERFORMANCE RELIABILITY VALUE

The Right Light

MINOR SURGERY AIM-100®
MAJOR SURGERY AIM-200® OR

Introduction

Congratulations on your purchase of an AIM Series medical light!

Lights in the AIM Series are designed to give the professional health care market superior performance, reliability and value. The lights contain advanced optical and mechanical solutions intended to offering you an optimal working environment for efficient and comfortable procedures, while assisting in enhancing performance.

Built in features of the AIM's include intensity, color correction, shadow reduction, light distribution, spot appearance, maneuverability and focus. The AIM's solid and durable construction ensures many years of trouble-free professional lighting.

Intended Use:

The AIM 100[®] / 200[®] OR surgical light is designed to provide the required illumination for surgeries, procedures, and examinations of patients. The AIM 100[®] / 200[®] OR surgical light is to be used with various mounting configurations in operating rooms, examination rooms, emergency rooms and all other health care facilities where the need for additional illumination exists.

Effective working distance between patient and light head is from 24-39" (0.6 -1.0 m). A removable and autoclavable handle (which also serves as bulb-focus control) accepts pre-sterilized covers.

This manual contains guidance on how to install the AIM 100[®] / AIM 200[®] OR light(s).

Philips Burton Medical is a leading manufacturer of medical lighting. The product lines encompass lights for procedure, examination and surgery applications. You are welcome to find out more on our web site at www.burtonmedical.com.

The following models are covered in this manual:	120V	230V, 240V	100V
AIM-100 [®] Floor Stand	A100FL	A103FL	A101FL
AIM-100 [®] Wall	A100W	A103W	A101W
AIM-100 [®] Single Ceiling	A100SC	A103SC	A101SC
AIM-100 [®] Double Ceiling	A100DC	A103DC	A101DC
AIM 200 [®] OR Floor Stand	A200FL	A203FL	A201FL
AIM 200 [®] OR Wall	A200W	A203W	A201W
AIM 200 [®] OR Single Ceiling	A200SC	A203SC	A201SC
AIM 200 [®] OR Double Ceiling	A200DC	A203DC	A201DC

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Unpacking and Inspection

Carefully unpack the cartons and match the parts received with the parts list enclosed.

Before Reporting Shortages:

Be sure you have received the correct number of boxes, cartons, etc., as shown on the bill of lading.

Check the entire shipment against the enclosed packing slip.

Items indicated in the column headed "Back Order" are not included in the shipment and will follow later.

Be sure that nothing has been removed from the cartons before they are checked by the individual in charge.

Empty all boxes completely, open all inside containers, and examine all packing material to ensure small articles are not overlooked.

If a Shortage or Damage Occurs:

1. You, the receiver, not Philips Burton, is responsible for filing any claim(s) with the delivering carrier within five (5) days after receipt of the shipment.
2. If damage or shortage occurs in transit, the delivering carrier is required by law to make notation of a shortage or damage. This notation is to be made on the bill of lading.
3. If, in your opinion, there may be concealed damage, an agent from the delivering carrier is obligated to make an inspection after the goods are unpacked.
4. Do not destroy packing material until after the agent has made out his report.
5. All claims must be made to the carrier, not Philips Burton.
6. Written authorization must be obtained from Philips Burton before merchandise can be returned.

1.0 Tools List

There will be various tools needed throughout the assembly of the Floor Stand. The various tools needed are as follows:

2.5mm Allen Key (supplied)



3mm Allen Key (supplied)



6mm Allen Key (supplied)

Needle Nose Pliers



2 Phillips Screwdriver

#2 Flathead Screwdriver



2.0 Parts List

The Philips Burton Lights come equipped with several parts, pieces of hardware, and manuals. Ensure your boxes contain all the parts as listed below:

Part	Quantity
Spring Arm with covers	1
Assembly Instructions Manual	1
Operating Manual	1
4mm Allen key	1
5mm Allen key	1
Locking key	1

NOTE: The 4mm and 5mm Allen keys are used for operations and maintenance. In addition to the parts above, you should receive (depending on model):

2.1 Floor Stand

Part	Quantity
Stand Base with cover	1
Upright Post	1
Handle with hardware	1
2.5mm Allen key	1
3mm Allen key	1
6mm Allen key	1

2.2 Wall Mount

Part	Quantity
Extension Arm with covers	1
Wall Mount with cover	1
Safety Washer	1
Retaining Ring Washer	1
Retaining Ring	2
Slip Ring Screws	2

2.3 Single Ceiling Mount

Part	Quantity
Extension Arm with covers	1
Ceiling Mount with cover	1
Safety Washer	1
Retaining Ring Washer	1
Retaining Ring	2
Slip Ring Screws	2

2.4 Double Ceiling Mount

Part	Quantity
Extension Arm with covers	2
Ceiling Mount with cover	2
Safety Washer	2
Retaining Ring Washer	2
Retaining Ring	4
Slip Ring Screws	4

If you are missing any items please contact customer service. See back of manual for contact information.

3.0 Safety Instructions

Please note that assembly of this product must be carried out by a trained service technician. At some points of assembly you may require the assistance of an additional person.

- Please read these assembly instructions carefully before assembling the floor stand. It will protect you and others from potential injuries that may occur.
- Please make sure to follow these instructions when assembling. DO NOT modify any parts on the floor stand before, during, or after assembly.
- If problems are encountered when assembling, please contact Philips Burton's technical support. The contact information can be found at the end of this manual.
- To avoid an electric shock, please make sure the floor stand is not connected to a power supply when assembling.
- These assembly instructions only apply to the products listed here and should not be used for any other products.

3.1 Symbols

In these assembly instructions and on the device, important points have been marked with symbols. The symbols have the following meanings:



CAUTION

Non-compliance with caution notes may cause injuries or material damage.



WARNING

Disregarding this instruction can present the risk of serious or fatal injury.



NOTE

Provides usage tips and useful information.



ELECTRIC SHOCK

The above is an electric shock warning symbol. Non-compliance with this symbol may result in injuries due to electric shock.

3.2 Safety Precautions



CAUTION

Failure to properly follow installation and preventive maintenance instructions may result in mechanical failure.



WARNING

Before undertaking any work, ensure that the main power is off and secured from accidentally being switched on again.



NOTE

This light should only be installed by a qualified electrical contractor.



NOTE

It is the responsibility of the customer to make sure the supporting wall / ceiling and the anchoring is safe, adequately strong and in compliance with all applicable building codes. (See Equipment Anchorage Diagrams.)

4.0 Floor Stand Model

4.1 Base Post Assembly Parts (Refer to Figure 1)

Part #	Qty	Description
A	1	Base Cover
B	4	Base Cover Screws
C	1	Electrical Switch Nut
D	2	M8 Attachment Bar Screw and Lock Washer
E	1	Post Attachment Bar
F	1	Ground Screw and Washers
G	1	Post/Upright (not shown below)
H	1	Push Button Switch

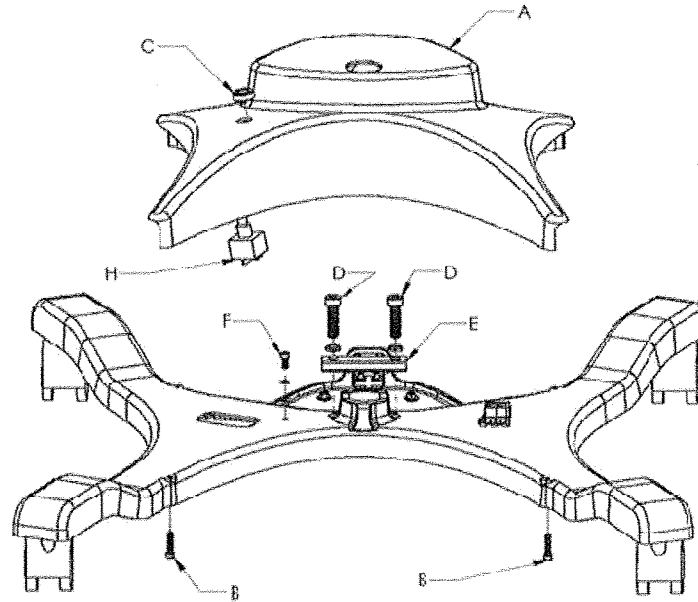


Figure 1

Assembly Instructions:

1. Using your finger release the fuse holder on the power outlet by pushing downward on the tab and pulling outward. Place the fuse holder aside. See Figure 2.

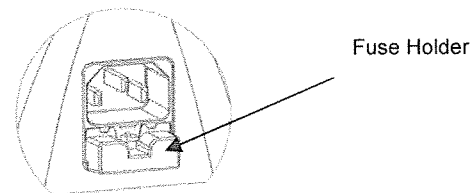


Figure 2

2. Using a 3mm Allen Key, remove four (4) x M4 screws (B) from the underside of the base to release the plastic cover. Place screws aside. Refer to Figure 3.

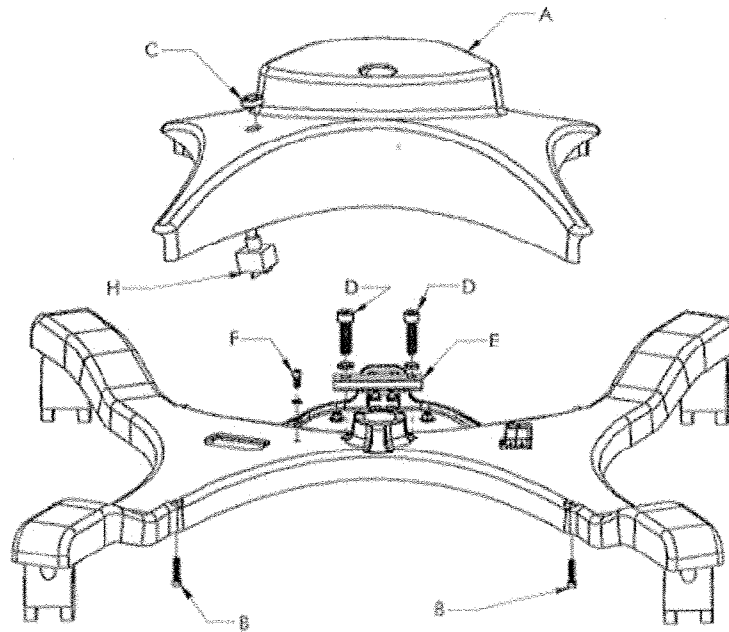


Figure 3: Stand Assembly

3. Remove the electrical switch nut (C) by unthreading it from the push button switch (H). Place it aside. Refer to Figure 3.
4. Carefully pull the bottom of the plastic cover over the power outlet. Remove the base cover (A). Refer to Figure 3.
5. Take the base cover and slide it onto the non-flared end of the post. This can be seen in Figure 4.
6. Using the 2.5mm Allen key, remove the M3 screw on the post. It is located about half way up the post.
7. Slide the cover towards the flared end of the post as far as possible. Then re-install the M3 screw into the post. This is to hold the cover up while other work is done. Refer to Figure 5.

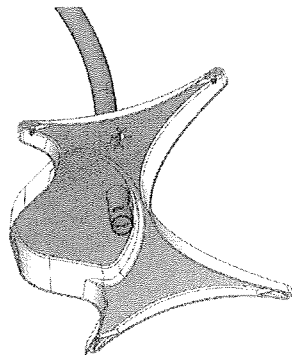


Figure 4: Base Cover to Post Assembly

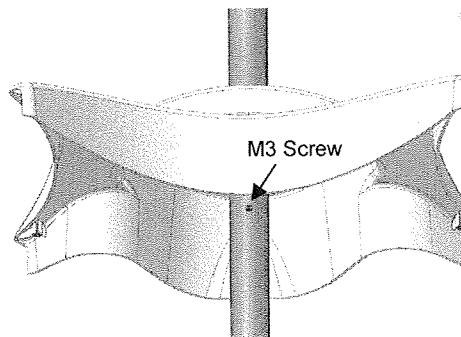


Figure 5: M3 Post Screw

8. Using your fingers or needle nose pliers, feed the wires in the post through the oval hole at the bottom of the post. Refer to Figure 6.
9. Continue to pull the cable through the slotted opening, until the other end of the cable at the top of the post is barely visible (only the connector is protruding outside the other end of the post, about 1"). Refer to Figure 7.

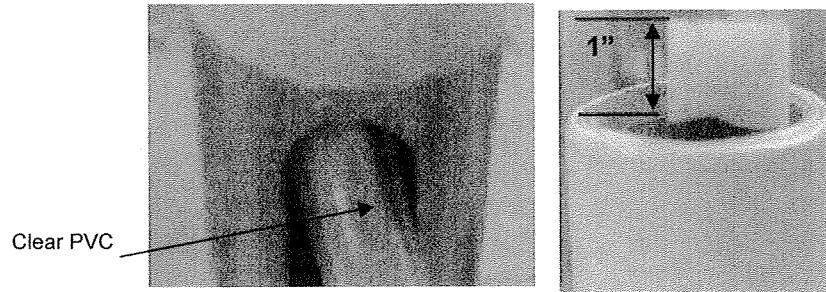


Figure 6: Wiring through Post

Figure 7: Top of the Post

10. Ensure the clear protective tubing is positioned such that it is protecting the wire harness from coming in contact with the slotted opening. Refer to Figure 6.
11. On the base, remove the two (2) M8 screws and washers (D), and attachment bar (E) using the 6mm Allen wrench. Place them aside. Refer to Figure 8.

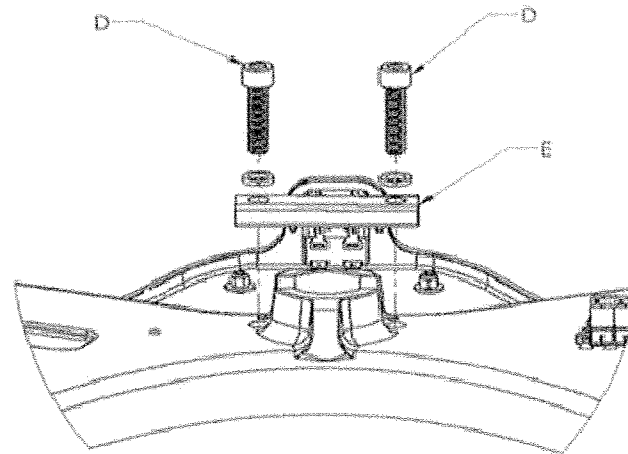


Figure 8: M8 Screws and Attachment Bar



CAUTION

When performing Step 12 to 14, make sure the attachment bar is in proper position in the post, and that it is secure to the base. Failure to do so may cause injury.

12. Insert the post into the hole in the base. Slide the attachment bar through the square slots in the post. When inserting the post, make sure the wires are facing the front of the base and NOT towards the transformer.
13. Align the holes of the attachment bar with the holes on the base. Refer to Figure 9.



Figure 9: Post Attachment bar

14. Secure the attachment bar using the two (2) M8 washers and two (2) M8 screws. Tighten the screws using the 6mm Allen wrench.
15. Ensure that the attachment bar has fully clamped the post and there is no movement of the post.
16. Remove the ground screw and washers (F) using the 3mm Allen wrench. Refer to Figure 10.

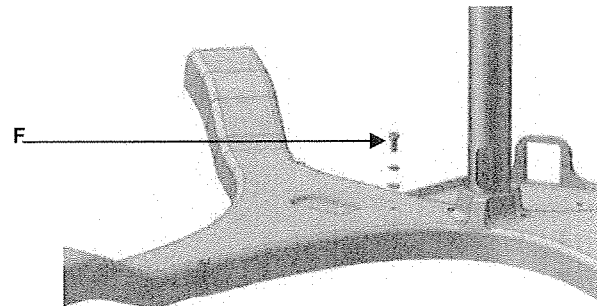


Figure 10: Ground Screw



ELECTRIC SHOCK

Please make sure the electrical connection is made properly in Step 15 and 16. Failure to do so may cause electric shock. If you have any problems or questions with these steps please contact Philips Burton.

17. Align the green and yellow ground spade coming out of the post with the green and yellow ground spade already connected on the base. Align them both with the same hole on the base as before, and re-fasten in the same location. See Figure 11.



Figure 11: Ground Connections

18. Connect the receptacle coming out from the bottom of the post to the transformer harness .
19. Remove the M3 screw holding up the base cover and allow the cover to slide down to the base of the floor stand. Tighten the M3 screw into the post.
20. Re-install the pushbutton switch into the underside of the base cover and secure it using the electrical switch nut. See Figure 9. Ensure proper orientation of the bottom of the switch into the tabs as shown in Figure 12.

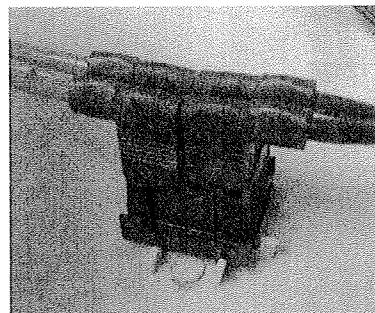


Figure 12: Proper Orientation of Foot Switch

21. Re-install the base cover to the base, by re-inserting the four (4) M4 screws from below, tightening them using the 3mm Allen wrench. Ensure the cover is not pinching any wires.
22. Install the proper amperage fuses as specified by your end device manufacturer into the fuse holder that you removed in step 1. Reinsert the fuse holder into the power outlet ensuring the fuse holder clicks into place and is secure.

4.2 Handle Assembly

Part #	Qty	Description
G	1	Post/ Upright
I	1	Handle

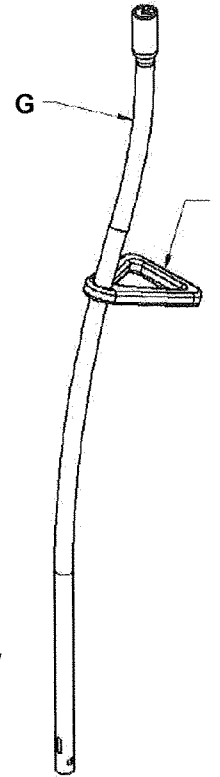


Figure 13: Post and Handle Assembly

Assembly Instructions:

1. Undo the screws in the handle using a Phillips screwdriver to separate it into two pieces, if not already in two pieces.
2. On the smaller portion of the handle there is a little hole. This hole is used for positioning the handle to the post. Ensure the head of the positioning screw (which is located half way up the post) is inserted into this hole. Refer to Figure 14.

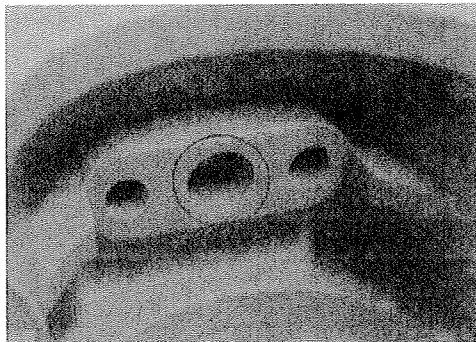


Figure 14: Positioning of Handle

3. After mounting the small piece onto the post overtop the positioning screw, attach the large part of the handle using the two Phillips screws. Refer to Figure 15

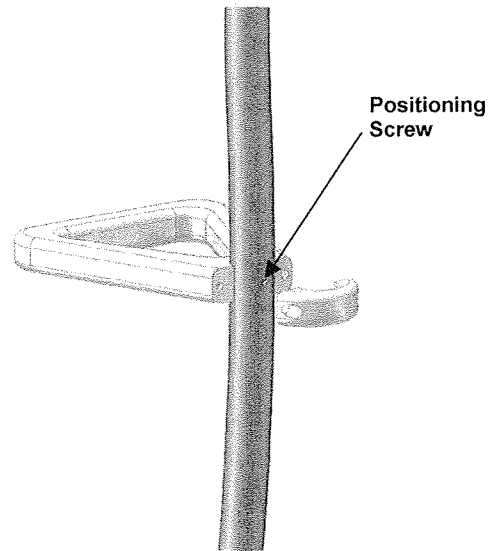


Figure 15: Handle Installation

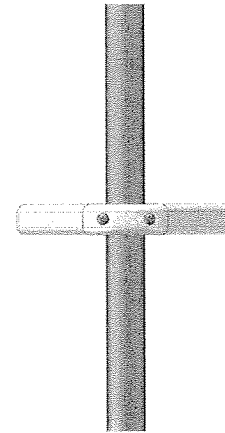


Figure 16: Proper Installation

4. Ensure proper orientation of small piece. See figure 16.
5. Secure the handle using the two screws and the Phillips screwdriver. Screw in each screw evenly to avoid the handle being offset.

4.3 Spring Arm Assembly

Parts (Refer to Figure 17)

Part #	Qty	Description
J	1	Post/Upright Assembly
K	1	Spring Arm Assembly

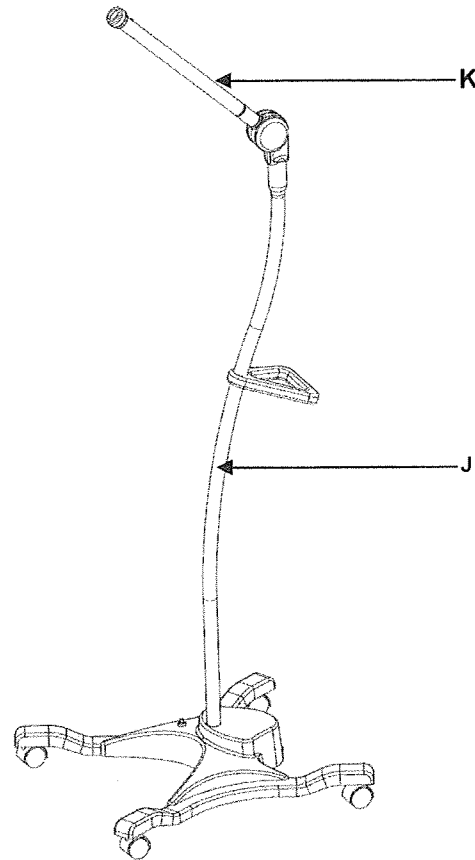


Figure 17: Spring Arm Assembly

Assembly Instructions:

1. Remove the left (LH) and right (RH) hand covers on the spring arm (K). They will un-clip from each other and the spring arm. Figures 18 through 24 show step by step instructions: ►

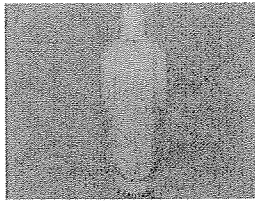


Figure 18: Covers Installed.

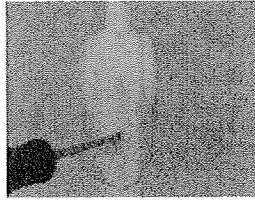


Figure 19: Insert slot driver into the parting line as shown.

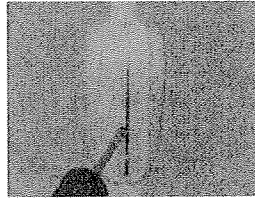


Figure 20: Turn driver 90deg to separate the covers.

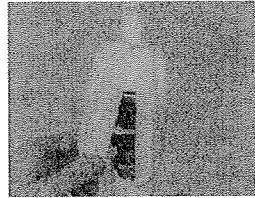


Figure 21: Pry the LH cover up and forward.

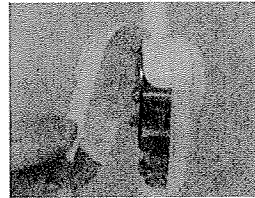


Figure 22: Pry the LH cover up and forward.

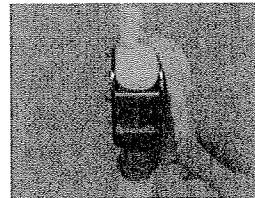


Figure 23: Pry the RH cover up and forward.

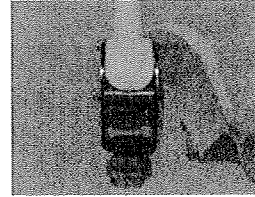


Figure 24: Pry the RH cover up and forward.

2. Once the covers are removed, using a 3mm Allen key remove the rotational stop screw (B) from the back of the spring arm post. Take care to ensure that the lock washer (C) and shim washer (A) do not fall off during this step. See Figure 25.
3. Connect the spring arm electrical connector to the mounting post electrical connector by pushing them together.
4. Slide the spring arm into the mounting post. Ensure the washer (A) is present and did not fall off the spring arm shaft.
5. Using the 3mm Allen wrench, fasten the rotational stop screw with lock washer into the back of the spring arm post. This can be seen in Figure 26 below.

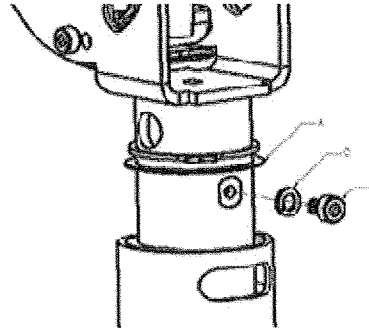


Figure 25: Remove Stop Screw

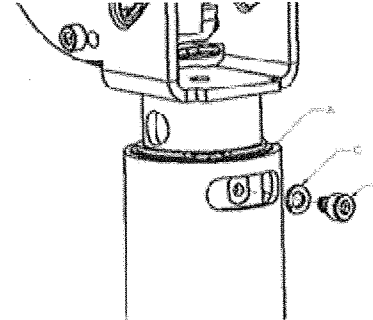


Figure 26: Install Stop Screw



– Always make sure the rotational stop screw is properly fastened to avoid a safety hazard.

6. Gently snap the right hand cover onto the spring arm in reverse to removal instructions described above. When performing this step, ensure that the sliding cover (already on the spring arm) mates with a groove on the inside of the spring arm cover. Refer to Figure 27.
7. Gently snap the left hand cover onto the spring arm in reverse to removal instructions described above. When performing this step, ensure that the sliding cover (already on the spring arm) mates with a groove on the inside of the spring arm cover. Also ensure that both covers mate properly to each other as they are snapped together. Refer to Figure 28 below.

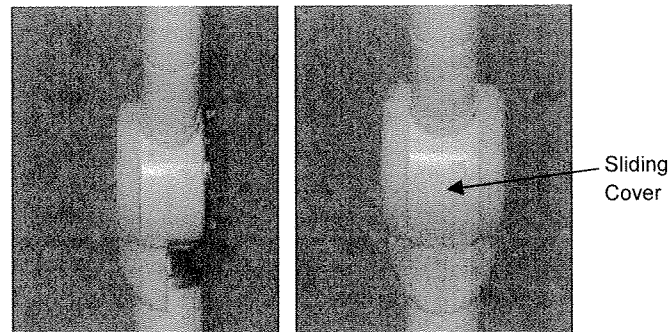


Figure 27 & 28: Left and Right Hand Cover Assembly

5.0 Wall Mount Model

5.1 Mounting Height

The proper height of the light should be set by the end user. This depends on the height of the examination tables, types of procedures and the user's preferences. (See Figure 1 below)

The following table shows the range of the light with the different mounting heights.

Mounting Height A	Pivot Point B	Lower Limit C	Higher Limit D
8.0 ft (2440 mm)	67 in (1702 mm)	43 in (1092 mm)	84 in (2134 mm)
9.0 ft (2745 mm)	79 in (2007 mm)	55 in (1397 mm)	96 in (2438 mm)
10.0 ft (3050 mm)	91 in (2311 mm)	67 in (1702 mm)	108 in (2743 mm)

5.2 Ranges of Motion

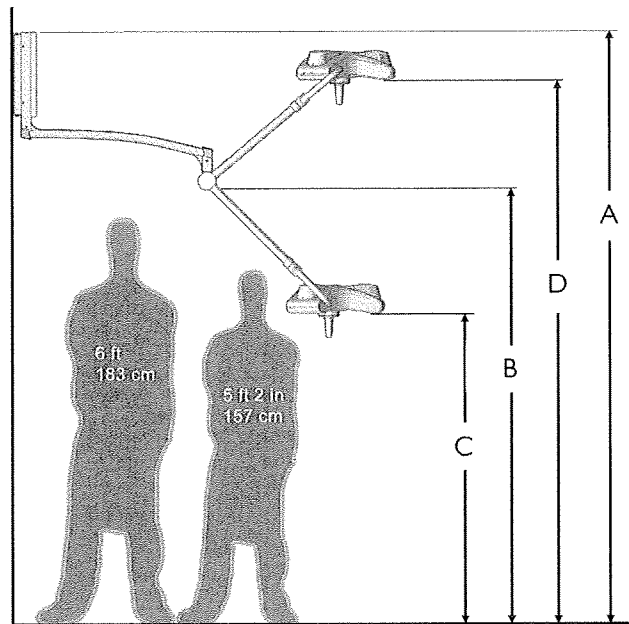


Figure 1: Vertical Range of Motion

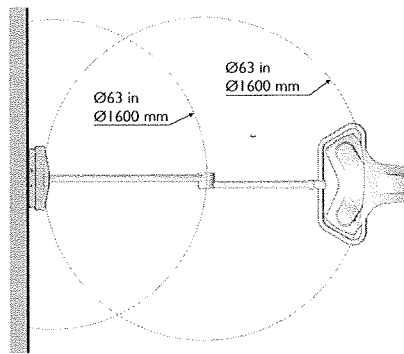


Figure 2: Horizontal Range of Motion

5.3 Installation

Wall Support Structure

The engineer of record for the building shall provide a support structure designed to support weights and forces shown on the Equipment Anchorage Diagrams in this manual. When the support structure is in place the Static Inspection sheet should be filled out.

Assembly Preparations

Tools and Accessories Required:

Drill

Level

9/16" (14,3 mm) open-end wrench (or adjustable wrench)

Wire cutter/stripper

Allen key (3/32 in / 2,4 mm)

Screwdriver, small flat-blade

Screwdriver, small Phillips

Wire nuts and wiring for supply connections

Materials Required: (not supplied with light)

Mounting plate. (See page 19)

Washers and spacers. (For mounting flush with wall)

Special anchors for concrete or brick walls.

Switch box – For wall switch panel.

Electrical wire—To light.

Conduit for electrical lines to wall mount / switch.

Wall switch. (For 100V and 230V, 240V versions only)

Support and Anchorage

To prevent sway and provide proper support of the light, the wall mount must be attached to a structurally-sound wall or similar structure.



Most walls will require adequate reinforcing to hold the light. The installing contractor is responsible for providing this reinforcement to suit the individual requirements for each installation.

A typical reinforcement consists of a 1/4" (6 mm) steel plate. Make certain the mounting plate is vertical, or the arm may "drift".

Equipment anchorage diagrams are supplied with these instructions to help with the installation. The diagrams were prepared by a California-licensed Structural Engineer. If the lights are installed accordingly, the system will meet requirements of the State Seismic Codes.

Installation (con't)

Installing the Wall Mount

	CAUTION	Before cutting in the wall, check with building maintenance so that you do not cut through existing electrical, plumbing or gas lines.
	NOTE	It is the responsibility of the contractor and engineer of record to design and build a suitable structure for mounting the light

1. The following figure shows an example of a mounting plate (not included), of minimum thickness 3/16", which can be used to mount the wall mount. The attachment method (screws), number of screws, and location of the screws will vary depending on the type and structure of the wall, therefore it is not shown.

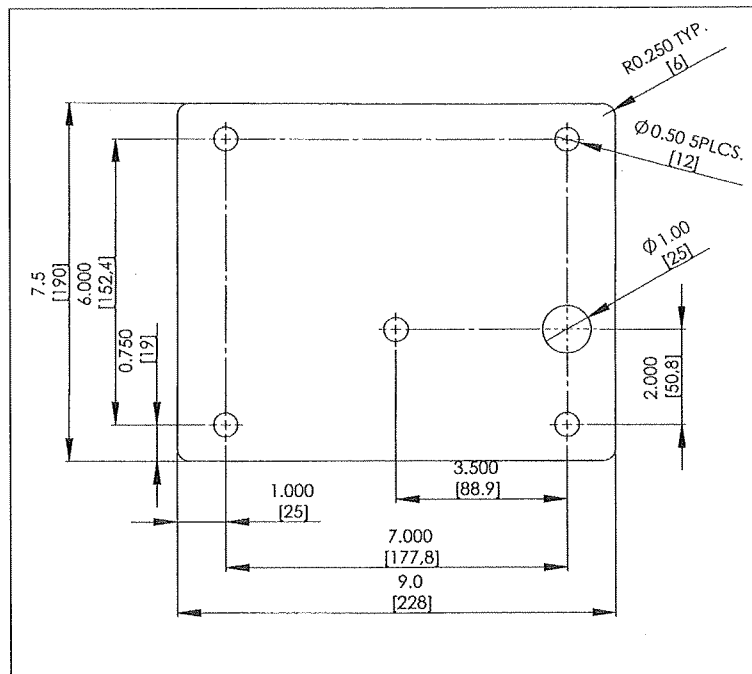
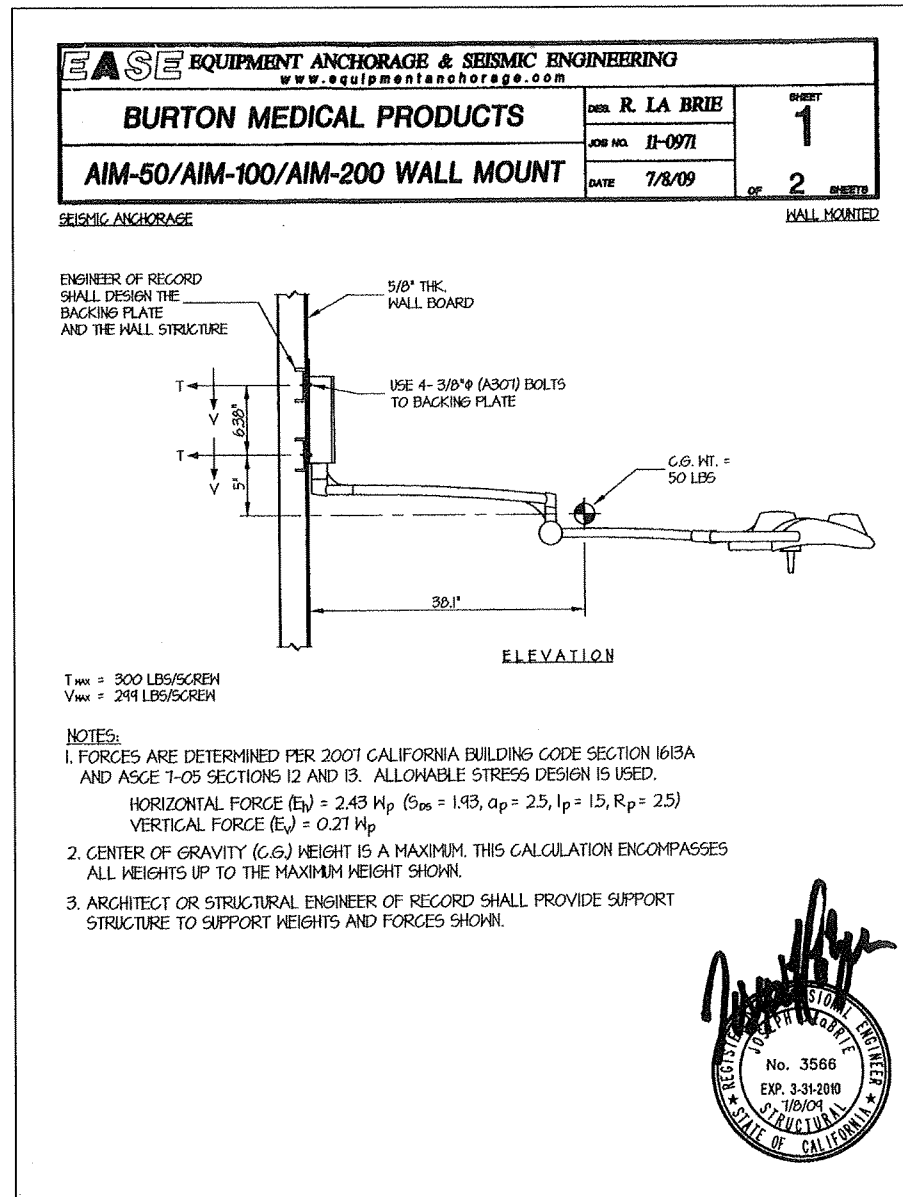


Figure 3: Contractor Supplied Mounting Plate (dimensions are inches [mm])

2. Install the mounting plate (not included) to the bearing structure of the wall.
3. Feed the wires coming through the central hole in the mounting plate into the wall mount assembly.
4. Install the wall enclosure to the mounting plate. Use four (4) 3/8" (10 mm) bolts, flat washers, split lock washers, and nuts.

5.4 Equipment Anchorage Diagrams

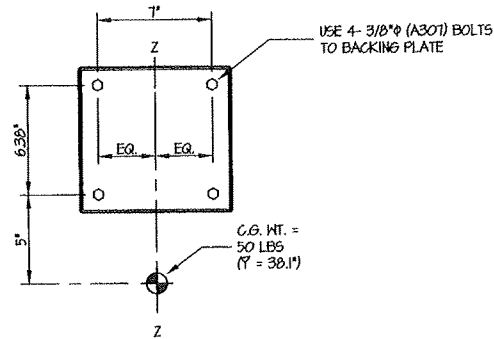


Wall Mount Version – Plan at Wall

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com		
BURTON MEDICAL PRODUCTS	DES. R. LA BRIE	SHEET 2
	JOB NO. 11-0971	OF 2 SHEETS
AIM-50/AIM-100/AIM-200 WALL MOUNT	DATE 7/8/09	

SEISMIC ANCHORAGE

WALL MOUNTED



2 x STUDS OR 4 x BLK6 (DOUGLAS-FIR LARCH NUMBER 2 MIN) (DESIGNED BY ENGINEER OF RECORD)

USE 4- 3/8" x 4" LAG BOLTS TO WOOD STUD OR BLK6. (PRE-DRILL HOLES TO SHANK DIAMETER)

5/8" THK. WALL BOARD

WOOD STUD WALL

CONCRETE WALL (3000 PSI MIN) BY ENGINEER OF RECORD

USE 4- 3/8" HILTI KB-TZ EXPANSION ANCHORS (MIN. EMBED. (h_{ef}) = 2")

CONCRETE WALL

PLAN AT WALL

LOADS

WEIGHT = 50 LBS
 HORIZONTAL FORCE (E_p) = 122 LBS
 VERTICAL FORCE (E_v) = 14 LBS

BOLT FORCES

TENSION (T)

$$T_{\text{VERTICAL}} = \frac{(50\# + 14\#)(38.1")}{2 \text{ screws}(6.38")} = 191 \text{ LBS/BOLT}$$

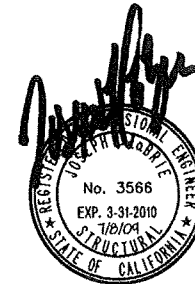
T_{PARALLEL} = 0 LBS/BOLT (UNIT IS FREE TO MOVE SIDE TO SIDE)

$$T_{\text{PEER}} = \frac{122\#(1138")}{2 \text{ screws}(6.38")} = 109 \text{ LBS/BOLT}$$



$$T_{\text{MAXIMUM}} = 191\# + 109\# = 300 \text{ LBS/SCREW (MAX)}$$

SHEAR (V) (OCCURS WHEN UNIT IS FLAT AGAINST THE WALL)

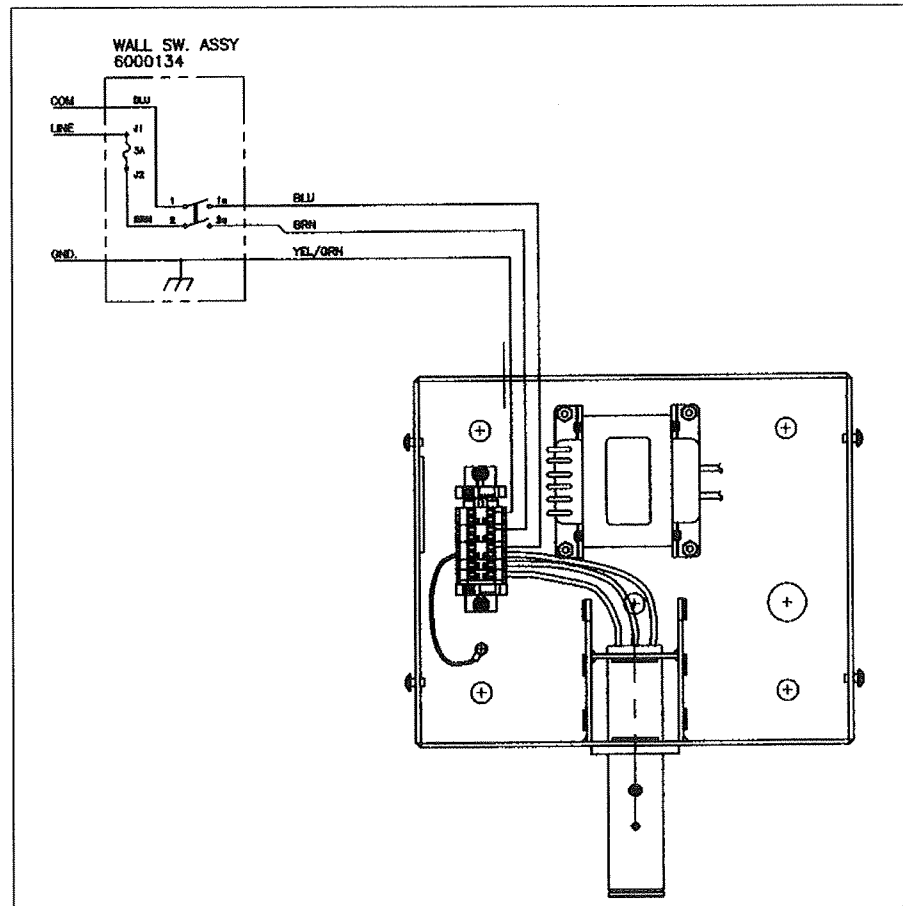
$$V_{\text{MAXIMUM}} = \frac{(50\# + 14\#)(16")}{2 \text{ screws}(7")} + \frac{122\#(1138")}{2 \text{ screws}(6.38")} = 299 \text{ LBS/SCREW (MAX)}$$



5.5 Connecting Power

	NOTE	Wires and cabling to be routed and connected by certified electrical contractor.
	NOTE	Only installation connections are shown. For a complete wiring diagram, please refer to the Instruction for Use & Maintenance manual.

1. Route conduit and electrical lines to wall mount. Use AWG 18 (.75 mm²).
Max AWG 14 (2.5 mm²).



NOTE: To mount arm and lighthead, continue on Section 13.0.

2. Install the cover on the wall mount and secure it by tightening the 4 screws with serrated lock washers on the sides. **NOTE:** Serrated washer must be in place to ensure proper grounding of the cover.

Installing the Wall Switch

120V version: Install wall switch furnished with the product to a standard junction box per local codes. The wires that go to the light fixture are labeled "to light fixture".

100V, 230V, and 240V versions: Wall switch is not furnished with the product. The customer provided switch must disconnect both poles (double pole) and be certified to IEC/EN 60158 (which has superseded IEC 328). Install wall switch per local codes.

6.0 Ceiling Mount Models

Assembly Preparations

Tools and Accessories Required:

- Drill
- Hacksaw
- Level
- 9/16" (14,3 mm) open-end wrench (or adjustable wrench)
- Wire cutter/stripper
- Allen key (3/32 in / 2,4 mm)
- Screwdriver, small flat-blade
- Wire nuts and wiring for supply connections

6.1 Mounting Height

The proper height of the light should be set by the end user. This depends on the ceiling height, the height of the examination tables, types of procedures and the user's preferences. (See Figure 1 on page 25.) Due to the large vertical range of the light head (41 in / 1040 mm), the standard 20" down tube will fit most normal ceiling heights.

The following table gives some recommendations and shows the range of the light with different length down tubes.

Ceiling Height	Down Tube	Pivot Point ¹	Lower Limit Light Head	Higher Limit Light Head
7.0 ft (2134 mm)	Short 8" ²	66 in. (1676 mm)	42 in. (1067 mm)	83 in. (2108 mm)
7.5 ft. (2286 mm)	Standard 20"	60 in. (1524 mm)	36 in. (914 mm)	77 in. (1956 mm)
	Short 8" ²	72 in. (1829 mm)	48 in. (1219 mm)	89 in. (2260 mm)
8.0 ft. (2439 mm)	Standard 20"	66 in. (1676 mm)	42 in. (1067 mm)	83 in. (2108 mm)
9.0 ft. (2743 mm)	Standard 20"	78 in. (1981 mm)	54 in. (1372 mm)	95 in. (2413 mm)
10.0 ft. (3048 mm)	Standard 20"	90 in. (2286 mm)	66 in. (1676 mm)	107 in. (2718 mm)
	Long 42" ³	66 in. (1676 mm)	42 in. (1067 mm)	83 in. (2108 mm)
11.0 ft. (3353 mm)	Long 42" ³	78 in. (1981 mm)	54 in. (1372 mm)	95 in. (2413 mm)
12.0 ft. (3658 mm)	Long 42" ³	90 in. (2286 mm)	66 in. (1676 mm)	107 in. (2718 mm)

¹Distance from the floor to the pivot point of the spring arm.

²Cut the standard down tube (from the top) and drill two new holes. See instructions above.

³Contact Philips Burton Medical to obtain a 42" or 52" down tube (special order).

6.2 Support and Anchorage

To prevent sway and provide proper support of the light, the ceiling mount must be attached to a structurally-sound ceiling. Most ceilings will require adequate reinforcing to hold the light.

The installing contractor is responsible for providing this reinforcement to suit the individual requirements of each installation. A typical reinforcement consists of a ¼" steel plate, the bottom surface of which is flush with the inside surface of the finished ceiling (e.g., acoustical tile) and connected firmly to the structural ceiling. Sway braces (e.g., made of angle iron) are recommended when there is more than 12" between the structural and finished ceilings. Make certain the installed plate is level or the arm(s) may "drift".

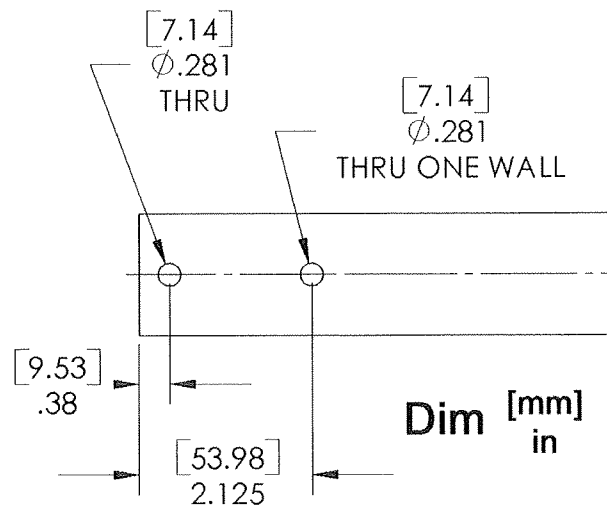
Equipment anchorage diagrams are supplied with these instructions to help with the installation. The diagrams were prepared by a California-licensed Structural Engineer. If the lights are installed accordingly, the systems will meet requirements of the State Seismic Codes.

6.3 Cutting the Down Tube

If shortening the down tube is required, the following procedure applies:

Cut the down tube from the top to the appropriate length (the top of the down tube has 2 holes, the bottom has 6 holes).

Drill new holes on the top of the down tube according to the drawing below.



7.0 Ranges of Motion

Ranges of Motion for Single Ceiling

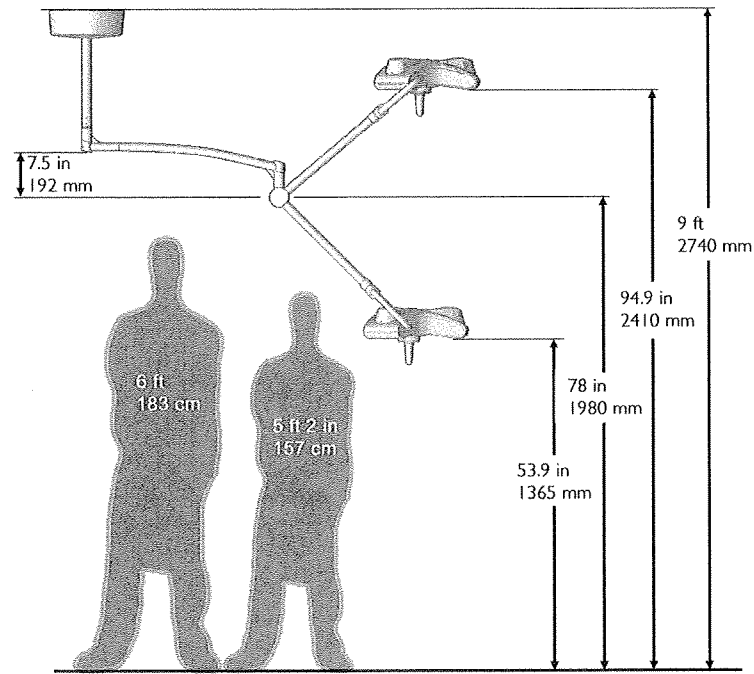


Figure 1: Vertical Range of Motion. Shown for 9 ft. Ceiling Height

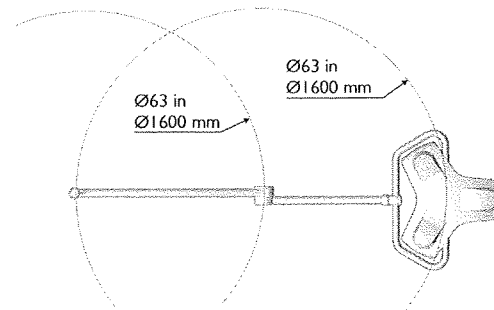


Figure 2: Horizontal Range of Motion (unlimited rotation in both axis)

Ranges of Motion for Double Ceiling

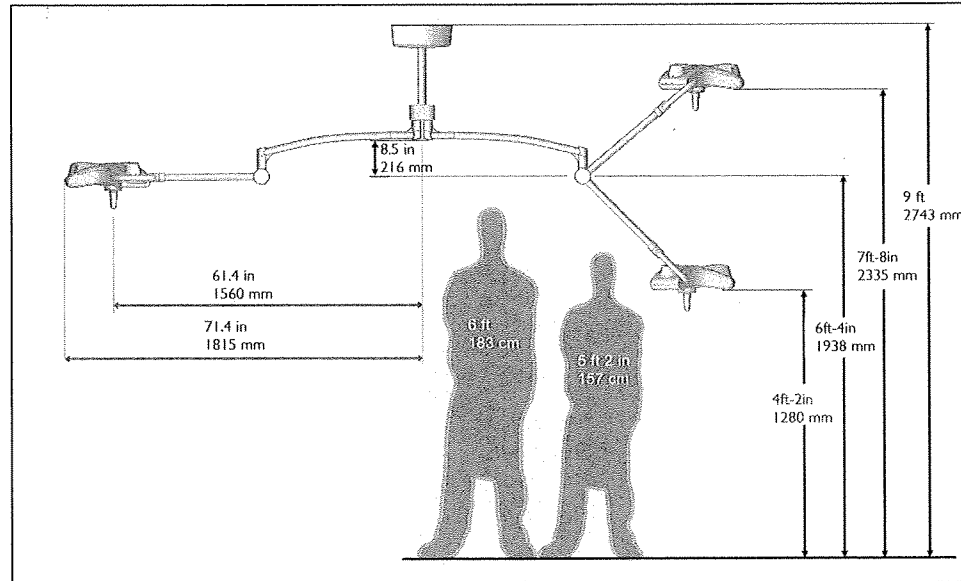


Figure 1: Range of motion shown for 9 ft ceiling and 16 inch down tube

8.0 Ceiling Installation (Single or Double)

Ceiling Support Structure

The engineer of record for the building shall provide a support structure designed to support weights and forces shown on the Equipment Anchorage Diagrams. When the support structure is in place the static inspection sheet should be filled out and stored for future reference.

Installing the Junction Box

The junction box should normally be placed on top of the support structure. Make sure the screw holes on the junction box plate correspond to the holes in the ceiling casting. When the ceiling plate is installed, the bolts will also hold the junction box.

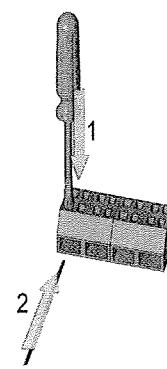
If there isn't space for the junction box on top of the support structure, another suitable location in the ceiling can be used. It is also possible to use a different junction box if that is more convenient.

NOTE: See the wiring diagrams (in the following pages for Single Ceiling and Double Ceiling):

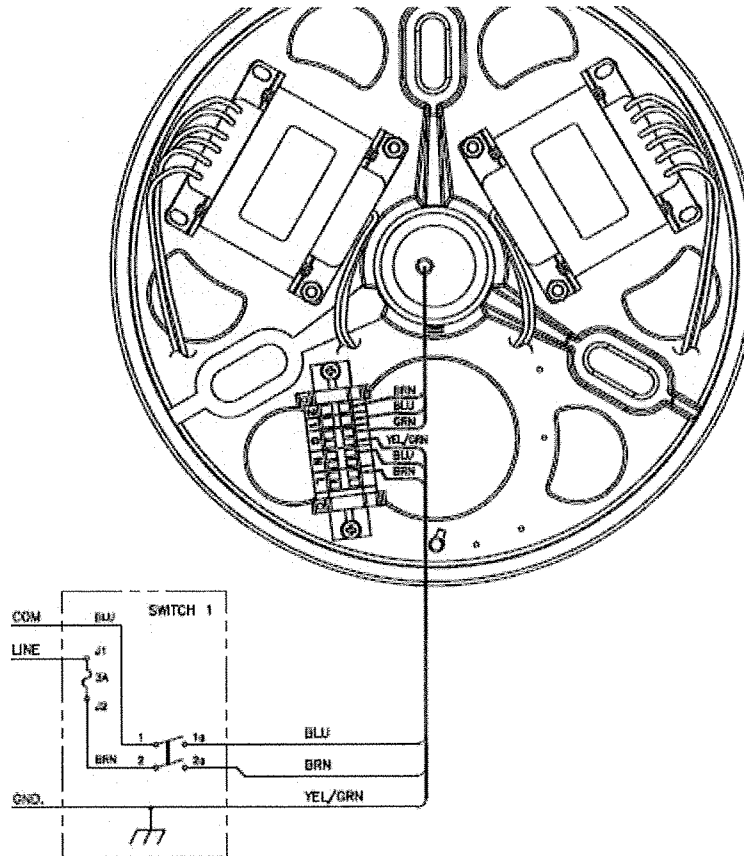
Switch wiring (contractor-supplied) must be three-conductor minimum AWG 18 (0.75mm²) and no more than AWG 14 (2.5mm²) from the terminal block to the switch. Both neutral and line connections must be wired to meet UL standards. Wiring and conduit must meet local and national fire protection codes.

9.0 Connecting Power Ceiling Versions

The input power (from the wall switch) and the wires out of the down tube should now be connected to the terminal block, which is pre-mounted on the ceiling casting. To connect to the terminal block use the technique shown at right: ►



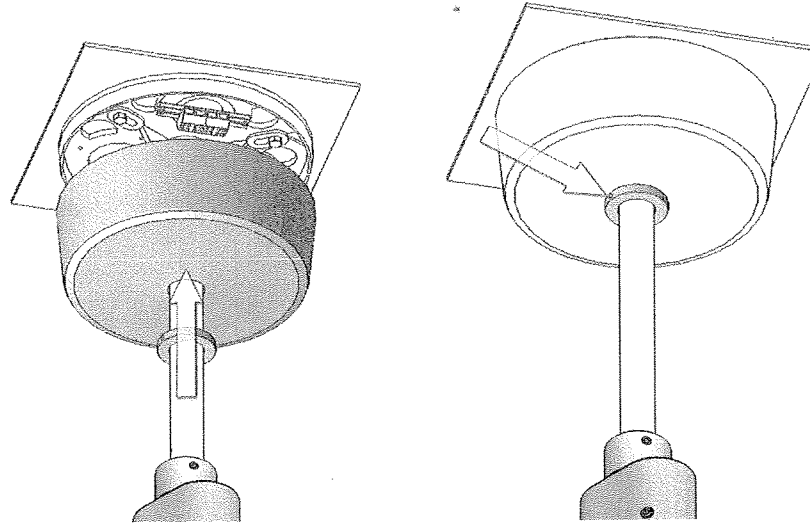
9.1 Wiring Diagram for Single Ceiling Version Only



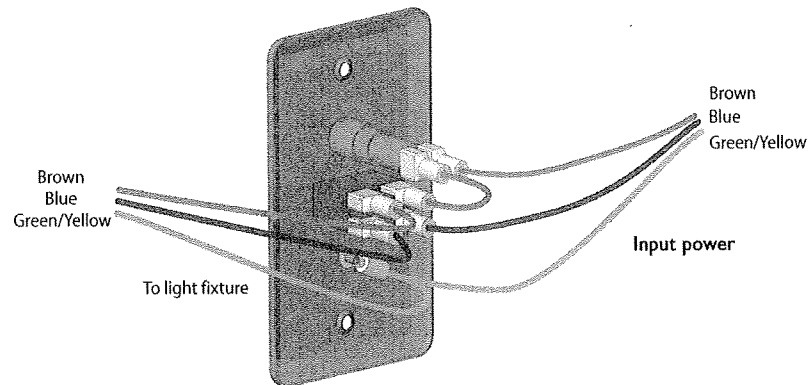
Wire the ceiling light as shown above. Only the installation connections are shown. For a complete wiring diagram, please refer to the Instruction for Use & Maintenance manual.

- a. The terminal block is marked with letters and numbers as follows:
 - Lines up out of the down tube (to light fixture):
 - Connect the green ground wire to the green terminal block.
 - Connect the other two wires to terminals marked "1" and "2".
- b. Input Power:
 - Connect the green/yellow ground wire to the green terminal block.
 - Connect the neutral wire (normally white) to the terminal block marked "N"
 - Connect the live wire (normally black) to the terminal block marked "L"

- c. Connect the ground wire on the bell housing to the green terminal block on the casting. Push the bell housing and the lock ring up until it covers the ceiling plate. Tighten the two set-screws on the lock ring using an Allen key 3/32 in. (2,4 mm).



9.1.1 Wall Switch Installation for Single Ceiling Version



120V version:

Install wall switch furnished with the product to a standard junction box per local codes. The wires that go to the light fixture are labeled "to light fixture".

100V, 230V, and 240V versions:

Wall switch is not furnished with the product. The customer provided switch must disconnect both poles (double pole) and be certified to IEC/EN 60158 (which superseded IEC 328). Install wall switch per local codes.

Connect ground wire from face plate to ground.

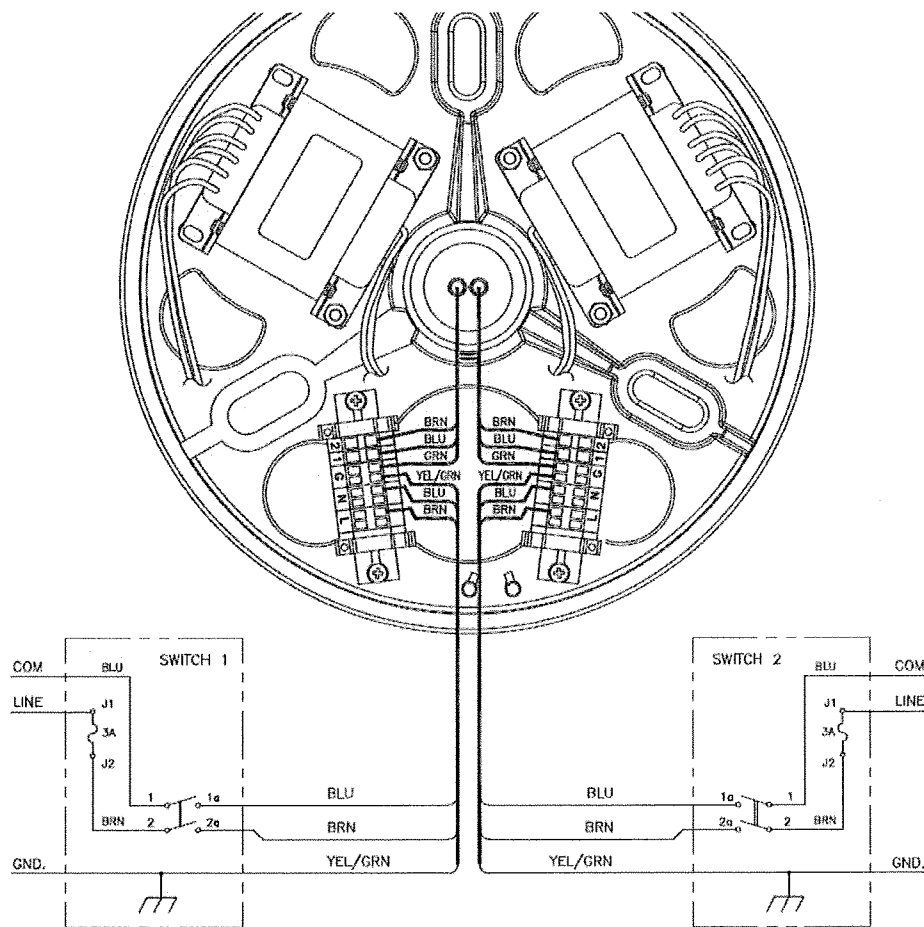
9.2 Wiring Diagram for Double Ceiling Version Only

Wire the ceiling light as shown below. Only installation connections are shown. For a complete wiring diagram, please refer to the Instruction for Use & Maintenance manual. The switches are shown out of place for clarity. In reality, the wires to/from the switches will be coming from the junction box where the power input is shown.

- a. The terminal block is marked with letters and numbers as follows:

Wires from down tube (to lights):

- Connect the green ground wire to the green terminal block.
- Connect the two wires from light one to terminals marked "A"
- Connect the two wires from light two to terminals marked "B".



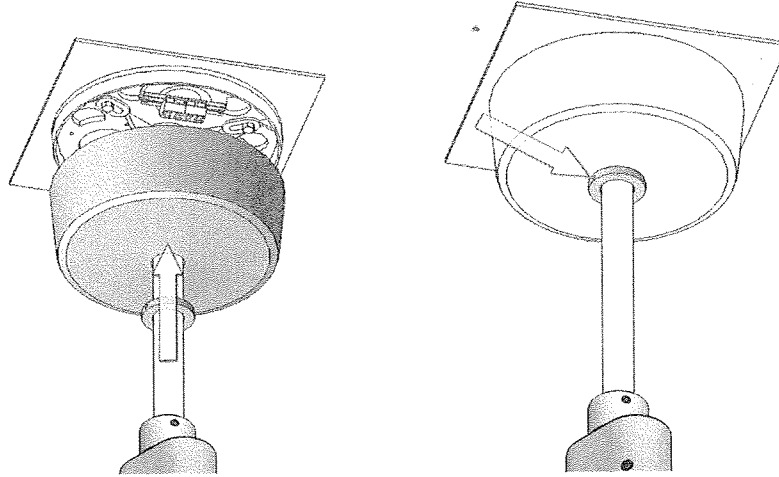
- b. Switches (see also "Installing Wall Switch" next page):
Use 4-conductor cable minimum AWG 18 (.75 mm²). Max AWG 14 (2.5 mm²) for each switch.

Connect one wire to line and one to neutral on the terminal block and run cable to switch.
Connect the remaining two conductors from neutral to "A1" and from line to "A2"
Repeat wiring of second switch, except connect neutral and line to "B1" and "B2"

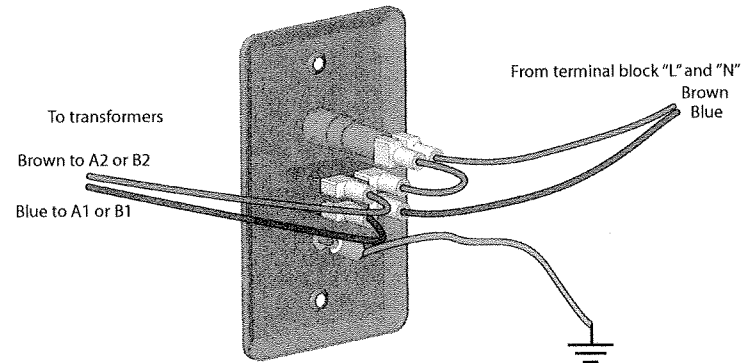
- c. Input Power:

Connect the input power neutral wire (normally white) to the terminal block marked "N"
Connect the input power line wire (normally black) to the terminal block marked "L"

- d. Connect the ground wire on the bell housing to the green terminal block on the casting. Push the bell housing and the lock ring up until it covers the ceiling plate. Tighten the two set-screws on the lock ring using an Allen key 3/32 in. (2,4 mm).



9.2.1 Wall Switch Installation for Double Ceiling Version



NOTE: There is one wall switch for each light head.

120V version:

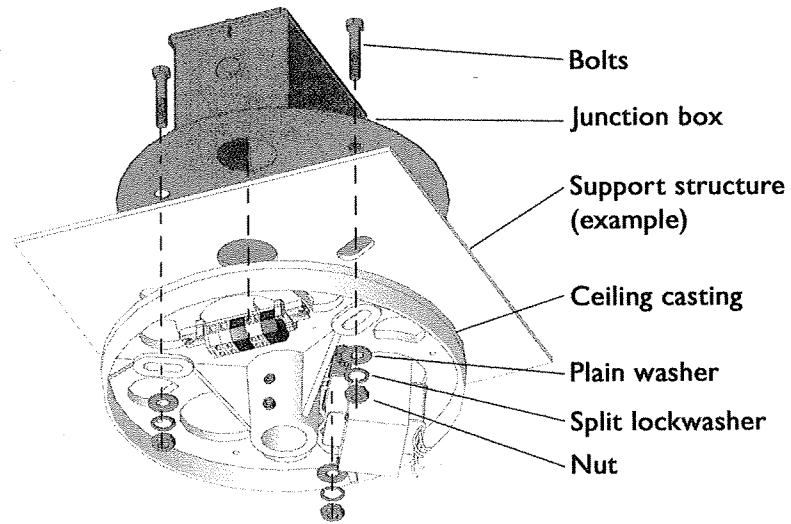
Install the wall switch that is furnished with the product to a standard junction box per local codes. The wires that go to the light fixture are labeled "to light fixture".

100V / 240V versions:

Wall switch is not furnished with the product. The customer provided switch must disconnect both poles (double pole) and be certified to IEC/EN 60158 (which superseded IEC 328). Install wall switch per local codes.

Connect ground wire from face plate to ground.

10.0 Installing the Ceiling Casting

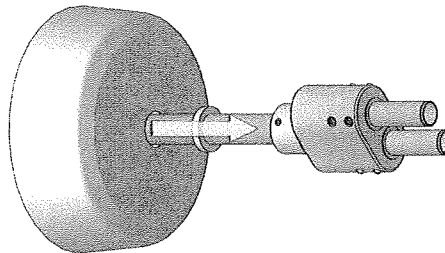


NOTE: Illustration is for single ceiling version, so only one transformer and a smaller terminal block is shown.

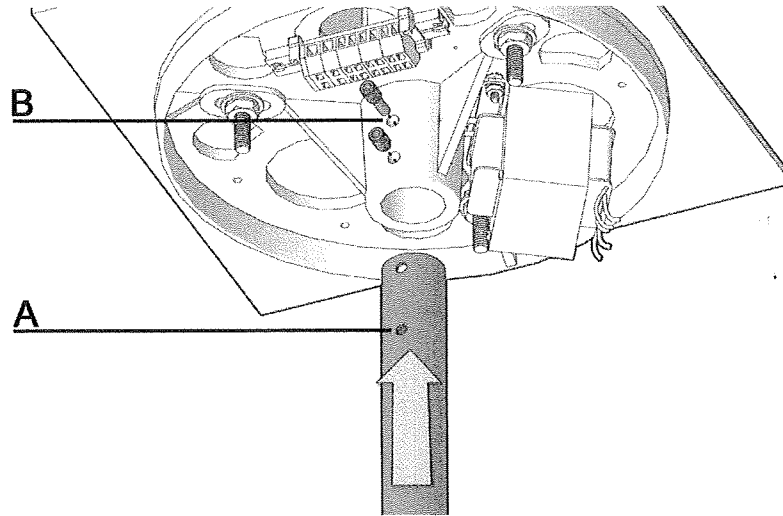
Mount the ceiling casting to the support structure. Make sure the hole in the ceiling casting above the terminal block aligns with the hole in the junction box. Use three (3) 3/8" bolts, plain washers, split lockwashers, and nuts in a triangular pattern. See Equipment Anchorage Diagrams for details.

11.0 Installing the Down Tube (Single or Double)

⚠	NOTE	The down tube is pre-cut and pre-drilled at the factory and will suit most exam rooms with a ceiling height of 8-10 ft. See the section "Mounting Height" for further advice.
⚠	NOTE	Be certain to slide the bell housing and locking ring on the down tube before inserting the down tube into the ceiling casting.

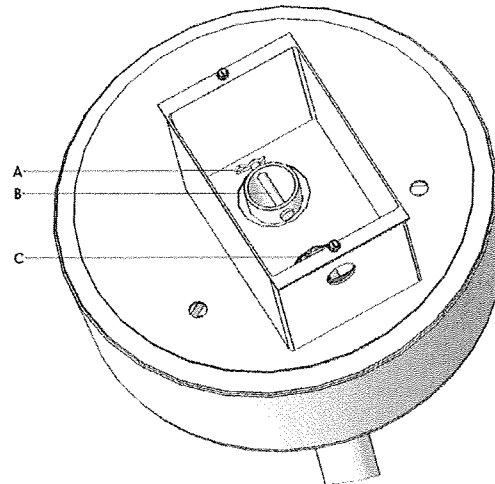


Slip the locking ring and the bell housing onto the down tube.



NOTE: This illustration above is for single ceiling version, so only one transformer and a smaller terminal block is shown.

Assemble the down tube by sliding it up the center hole in the ceiling casting. Position the tube so that the lower hole (A) in the down tube is matching to the upper hole (B) in the ceiling casting. First fasten the upper set-screw, which is a dog-point screw. (Make sure it fully engages the matching hole in the down tube.) Then fasten the lower setscrew. Use Loctite® Threadlocker or similar on the screws to prevent them from becoming loose.



Approximately 1 inch of the down tube should be showing above the ceiling plate. A hole through the down tube will be accessible. Put the clevis pin (B) into the hole. Secure the clevis pin with the hairpin (A).

Feed the wires coming up out of the down tube back down through the hole in the ceiling casting (C). The wires from the wall switch should also go through this hole.

12.0 Extension Arm Assembly
Parts (Refer to Figure 1)

Part #	Qty	Description
A	1	Extension Arm Assembly
B	1	Wall/Ceiling Mount
C	2	Slip Ring Screws
D	1	Safety Washer
E	1	Retaining Ring Washer
F	2	Retaining Rings

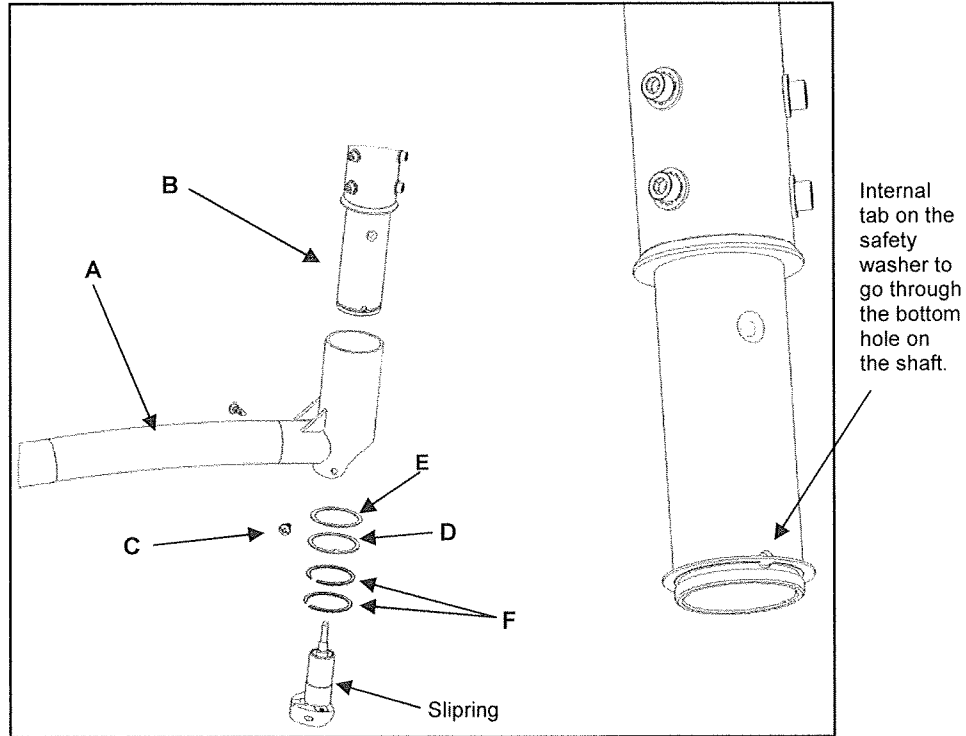


Figure 1: Extension Arm Assembly

NOTE: Plastic covers on extension arm and electrical wire to sliping not shown for clarity.

Assembly Instructions:

1. Remove the covers from each ends of the extension arm. They will un-clip from each other and the arm. Set the covers aside. Figures 2 through 7 (next page) show step by step instructions.

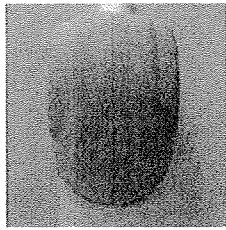


Figure 2: Covers Installed.

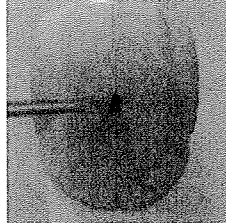


Figure 3: Insert slotted screwdriver into the parting line as shown.

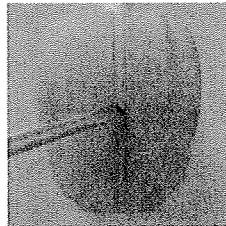


Figure 4: Turn driver 90deg to separate the covers.

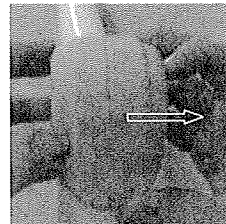


Figure 5: Supporting the LH cover, unsnap the RH cover off the extension arm by pulling straight out.

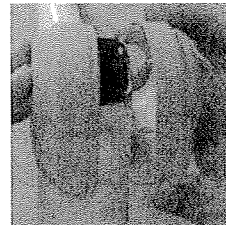


Figure 6: RH Cover removed

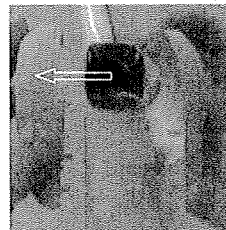


Figure 7: Pull the LH cover off.

- Orientate the extension arm into the position seen in Figure 8 before beginning any work. The precaution stickers and text should be right side up as shown in Figure 8.

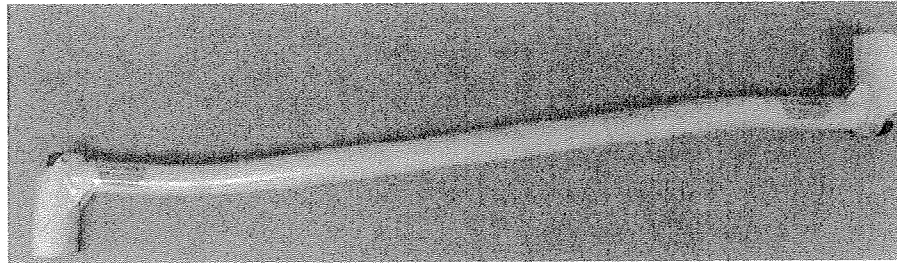


Figure 8: Orientation of Extension Arm

- Remove the electrical connector on the right by unscrewing the two screws and placing them aside. Slide out the electrical connector from the tube and allow it to hang off to the side. Refer to Figures 9 and 10.

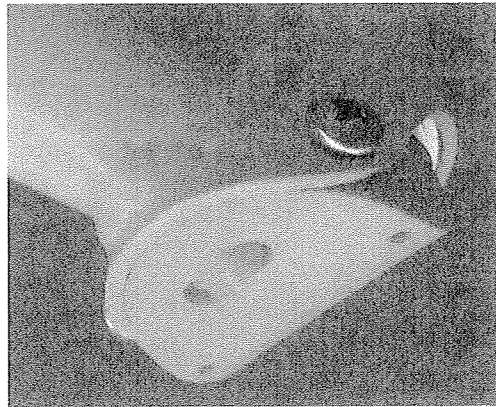


Figure 9: Electrical Harness

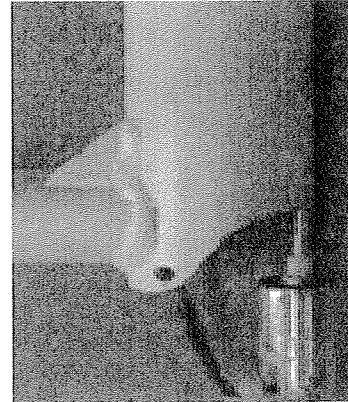


Figure 10: Connector Removed

- Fasten the Wall/Ceiling mount to your wall/ceiling structure by following the instructions of your end device manufacturer.



It is recommended having a second person to assist with assembly of Steps 5-6.

- Have one person slide the extension arm assembly up onto the wall/ceiling mount and hold it into place. Refer to Figure 11.

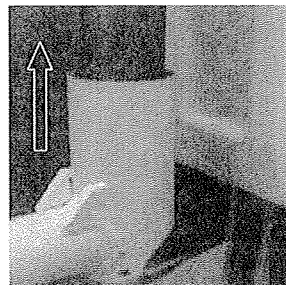


Figure 11: Extension Arm

- Have the second person install the retaining ring washer, then install the safety washer with the notch facing into the hole, and finally snap the two retaining rings into the groove. Refer to Figure 12 and 13.

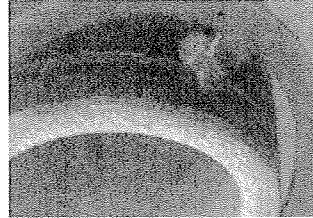


Figure 12: Safety Ring

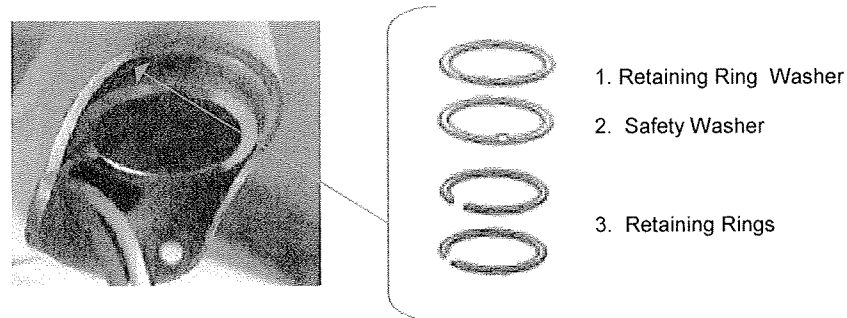


Figure 13: Order of Retaining Ring Assembly



Always ensure the safety washer tooth is properly inserted into the hole to avoid a potential safety hazard. The safety washer acts as a secondary safety support in the case that both retaining rings fail.

- The extension arm is now correctly mounted to the wall/ceiling.
- Re-position the electrical connector up into the extension arm, and secure it into place using the two screws which were set aside.
- Reinstall the covers at the end closest to the mount, by reversing the instructions followed for cover removal. Gently snap the 2 pieces together, and check the parting line to ensure proper fit with no gaps.

12.1 Spring Arm Assembly Parts (Refer to Figure 14)

Part #	Qty	Description
A	1	Mount/Ext. Arm Assembly
B	1	Spring Arm Assembly
C	1	Safety Washer
D	1	Retaining Ring Washer
E	2	Retaining Rings
F	2	Slip Ring Screws

Spring Arm Assembly (con't)

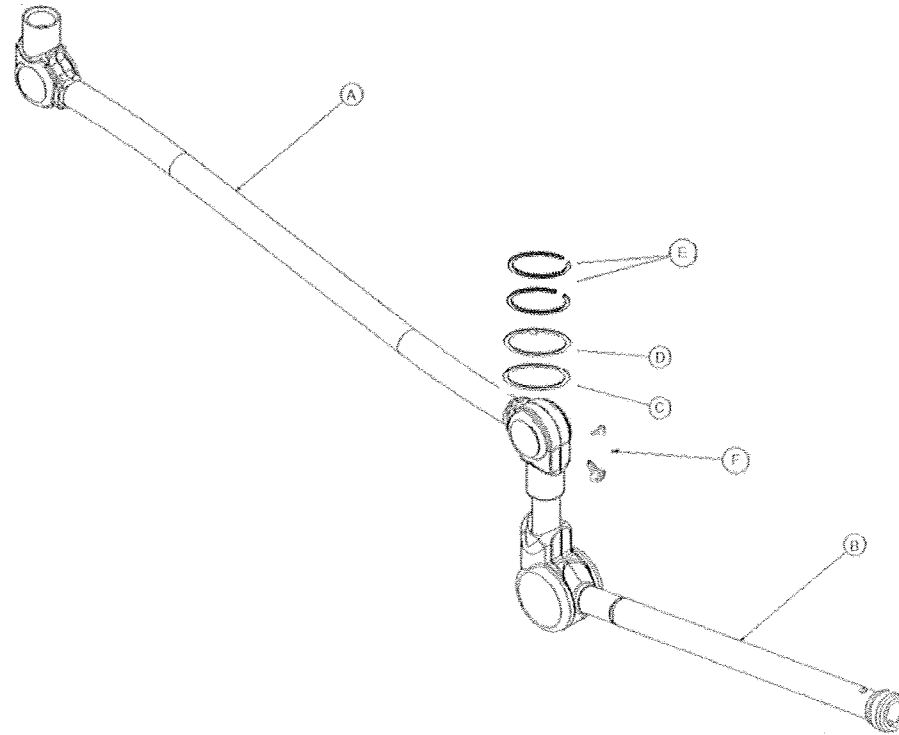


Figure 14: Spring Arm Assembly

Assembly Instructions:

1. The covers should already be removed from the free end of the extension arm.
2. Remove the right hand electrical connector by unscrewing the two screws and placing them aside. Slide out the electrical connector from the tube and allow it to hang off to the side. Refer to Figures 15 and 16 below.

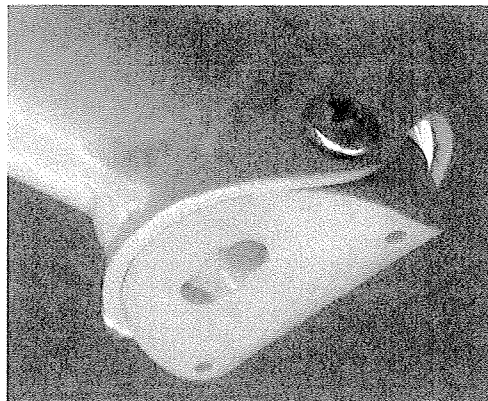


Figure 15: Electrical Harness

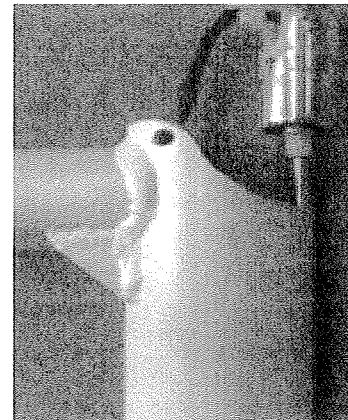


Figure 16: Connector Removed

3. Slide the spring arm assembly up into the end of the extension arm. See Figure 17.

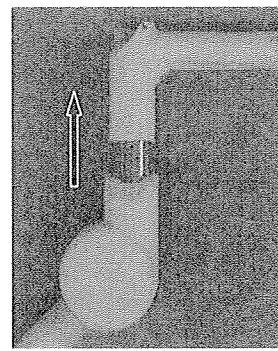


Figure 17: Extension Arm

4. Install the safety washer with the notch facing into the hole, followed by sliding down the retaining ring washer, and finally snap the two retaining rings into the groove. Refer to Figure 18 and 19.

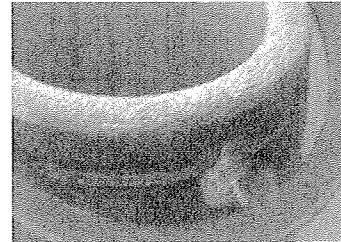


Figure 18: Safety Ring

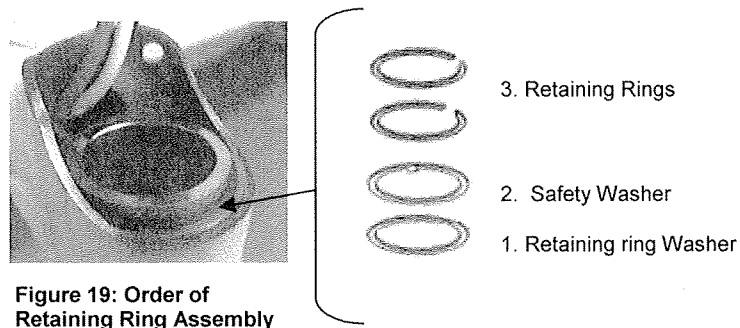





Figure 19: Order of Retaining Ring Assembly

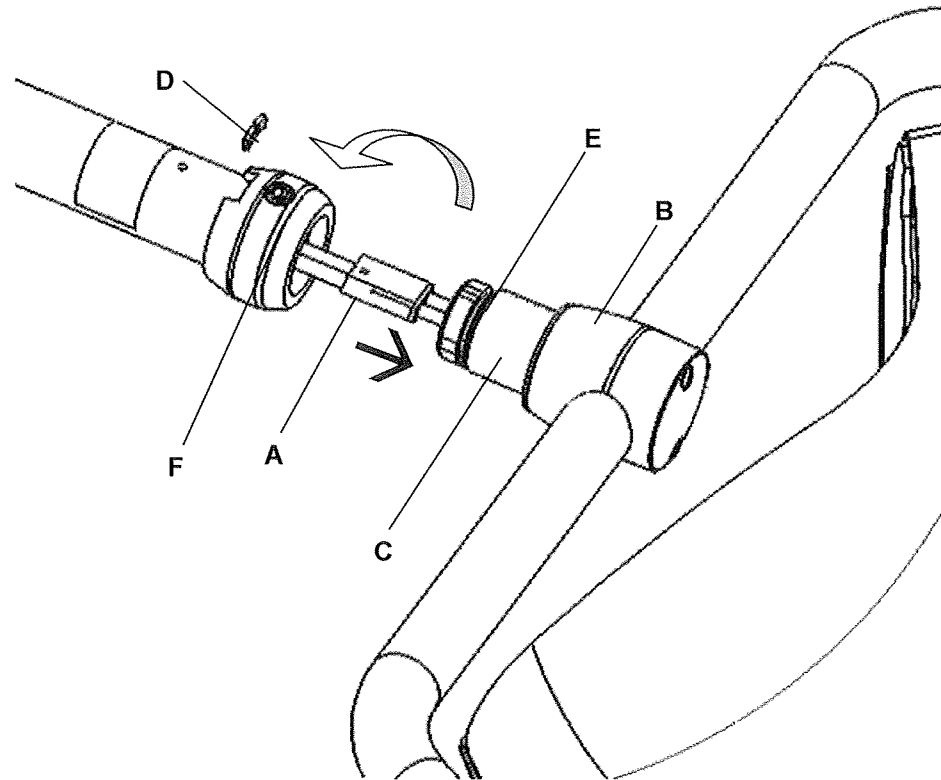


Always ensure the safety washer is properly inserted to avoid a potential safety hazard. The safety washer acts as a secondary safety support in the case that both retaining rings fail.

5. The spring arm is now correctly mounted to the extension arm.
6. Re-position the electrical connector down into the extension arm, and secure it into place using the two screws set aside.
7. Reinstall the covers by reversing the instructions followed for cover removal on page 34. Gently snap the 2 pieces together, and check the parting line to ensure proper fit with no gaps.

13.0 Mounting the Light Head to the Spring Arm

	WARNING – Danger of injury	The spring arm, when pressed downwards, can jump up and cause injuries. During the installation of the light head, no one should be present within swiveling range of the spring arm.
	CAUTION – Electrical shock	Do not have the power connected while mounting the light head. Make sure the mains plug is not connected.
	NOTE	It is best to have two people assembling this product. If you are alone, it is easier to lay the upright down and assemble the light head while it is still in its box.



1. Unite the connectors (A). Then push the joined connectors partially into the yoke head (B). Do not bend or twist.
2. Make sure the plastic bearing (C) is sitting on the yoke (B).
3. Push the yoke into the spring arm.
4. Put the key (D) completely into the slot, so that the key is engaging in the yoke groove (E).
5. Rotate the collar 180 degrees.
6. Tighten the brake screw (F) until the yoke has the desired friction.
7. Check the secure seating of the yoke by pulling and turning it.

14.0 Anchorage & Seismic

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
www.equipmentanchorage.com

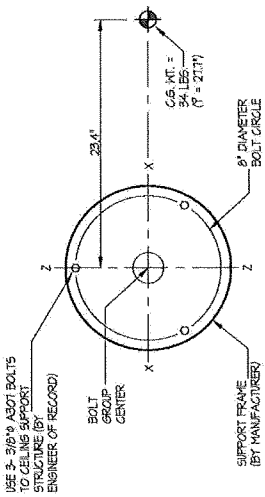
BURTON MEDICAL

AIM-100 SINGLE ARM LIGHT

DESIGNER: R. LA BRIE
JOB NO.: II-0477
DATE: II/9/04

SHEET 2 OF 2

CEILING SUSPENDED



PLAN AT CEILING

LOADS:
HEIGHT = 34 LBS
HORIZONTAL FORCE (H) = 32 LBS
VERTICAL FORCE (V) = 11 LBS

BOLT GROUP PROPERTIES:

$I_x - X = 24 \text{ in.}^4$
 $I_y - Y = 24 \text{ in.}^4$
 $I_T - T = 48 \text{ in.}^4$

BOLT FORCES:

TENSION (T)

$T = \frac{(32)(4)}{24} + \frac{34(11)}{3} = 320 \text{ LBS/BOLT (MAX)}$

SHEAR (V)

$V = \frac{32}{3} + \frac{144(4)}{48} = 78 \text{ LBS/BOLT (MAX)}$

MOMENTS:

MAX = $32(21.17) + (34)(11) = 1934 \text{ #}$
MZY = $32(21.17) + (34)(11) = 1934 \text{ #}$
MAX = $32(23.4) = 1441 \text{ #}$

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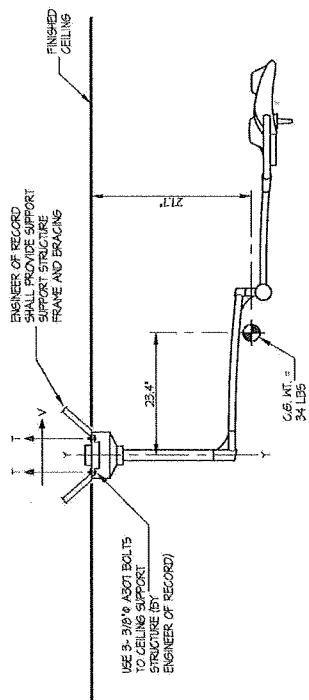
BURTON MEDICAL

AIM-100 SINGLE ARM LIGHT

DESIGNER: R. LA BRIE
JOB NO.: II-0477
DATE: II/9/04

SHEET 1 OF 2

CEILING SUSPENDED

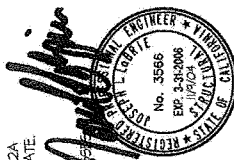


ELEVATION

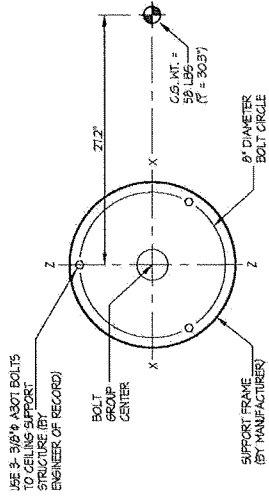
T = 320 LBS/BOLT
V = 78 LBS/BOLT

NOTES:

- FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
HORIZONTAL FORCE (H) = 0.64H - ($C_e = 66, a_p = 1.0, I_p = 1.5, R_p = 3.0$)
VERTICAL FORCE (V) = 0.33(V)
ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.



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	DES. R. LA BRIE	JOB NO. II-0477	
	DATE 11/9/04	CEILING SUSPENDED	
SEISMIC ANCHORAGE			



PLAN AT CEILING

LOADS:

WEIGHT = 59 LBS
 HORIZONTAL FORCE (W_H) = 55 LBS
 VERTICAL FORCE (W_V) = 10 LBS

BOLT GROUP PROPERTIES:

K_x = 24 in. 4
 Z₂ = 24 in. 4
 I_x = 40 in. 4

MOMENTS:

MAX = 55(30.37) + (59 * 18)(27.2) = 3134 in. lbs
 MYZ = 55(30.37) + (59 * 18)(27.2) = 3134 in. lbs
 MYT = 55(27.2) = 1496 in. lbs

BOLT FORCES:

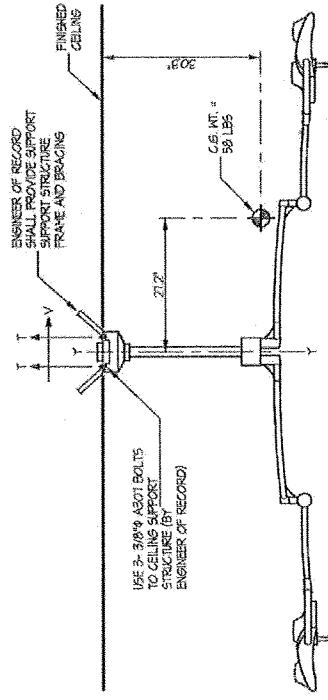
TENSION (T)

$$T = \frac{3134 \frac{\text{in.}^2 \cdot \text{lbs}}{24}}{4} + \frac{59 \text{ lbs} + 10 \text{ lbs}}{3} = 643 \text{ LBS/BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{55 \text{ lbs}}{3} + \frac{1496 \frac{\text{in.}^2 \cdot \text{lbs}}{48}}{48} = 143 \text{ LBS/BOLT (MAX)}$$

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchors.com	BURTON MEDICAL AIM-100 DOUBLE ARM LIGHT		SHEET 1 OF 2 SHEETS
	DES. R. LA BRIE	JOB NO. II-0477	
	DATE 11/9/04	CEILING SUSPENDED	
SEISMIC ANCHORAGE			

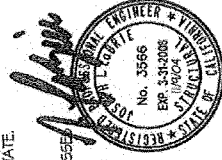


ELEVATION

T_{max} = 643 LBS/BOLT
 V_{max} = 143 LBS/BOLT



NOTES:

- FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1630A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE. HORIZONTAL FORCE (W_H) = 0.4W_V - (C_d = .66, G_p = 1.0, I_p = 1.5, R_p = 3.0) VERTICAL FORCE (W_V) = 0.33W_V
- CENTER OF GRAVITY (C.G.) HEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL HEIGHTS UP TO THE MAXIMUM HEIGHT SHOWN.
- ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT HEIGHTS AND FORCES SHOWN.



15.0 Cleaning

15.1 Normal Cleaning

WARNING 	Electrical shock. For all cleaning work, power off the equipment and secure it from being switched on again. Ensure that no cleaning fluid runs into the equipment.
NOTE 	Damage to equipment. Apart from mild detergents and isopropyl alcohol, no other cleaning agents or chemicals should be used on the product.

A soft cloth dampened with a mild detergent solution may be used for basic cleaning of all surfaces on the AIM luminaries. In some cases, a soft cloth soaked in isopropyl alcohol may be used for stubborn stains.

15.2 Extensive Cleaning

For more thorough cleaning of the light head, the top housing should be removed.

- This is done by first removing the pods to get access to the 3 screws holding the top and bottom housing together. (Steps 1 & 2 in the procedure for replacing bulbs). Remove the screws that has now become visible under the pod and lift the top housing off.

Use a soft cloth to wipe the corners and surfaces hidden when the parts are assembled. Be careful not to bend any components inside the light head. Damaging parts may affect the operation and light output.

Warranty

Mechanical components of Philips Burton's products are warranted to provide the original purchaser five (5) years of free service from defects in material and workmanship. The warranty does not cover the following items: light sources (halogen/fluorescent bulbs), transformers, power supplies, ballasts, handles, fuses, and consumables.


Conditions:


1. This warranty will be granted only when the original invoice or sales receipt is presented together with the product. Philips Burton reserves the right to refuse free-of-charge warranty service if the above documentation cannot be presented, or if the information contained is incomplete or illegible.
2. This warranty will not apply if the serial or lot number on the product has been altered, damaged, removed or made illegible in any way.
3. This warranty does not cover damage or destruction caused by any reason, including but not limited to neglect, deferred maintenance or improper repairs, or any alterations, adaptations or adjustments made to the product to conform to the national or local technical/safety standards in force in any country other than the ones for which the product was originally designed and manufactured.
4. Lights for service under warranty must be either returned to the location instructed by your authorized Philips Burton representative or made available to the authorized Philips Burton field personnel, where they will be replaced or repaired free of charge.
5. This warranty does not cover the following:
 - Periodic maintenance and repair or replacement of parts due to normal wear and tear.
 - Any adaptation or change to upgrade the product from its normal purpose without the written consent of Philips Burton.
 - Abuse or misuse of the product.
 - Repair performed by non-authorized service stations, dealers or the customer.
 - Accidents, lightning, water, fire, improper ventilation or any cause beyond the control of Philips Burton.
 - Defects of any equipment system or fixtures into which the product is incorporated, including installation and modification.
6. This warranty does not affect the customer's statutory rights under applicable state or national laws in force, or the customer's rights against the dealer arising from its sales/purchase contract.

This product was designed and assembled in the U.S.A. by:

Philips Burton Medical

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