



Luxo Medical Products



AIM-50™

INSTALLATION MANUAL
WALL MOUNT VERSION



PERFORMANCE RELIABILITY VALUE

The Right Light

EXAMINATION

Installation Manual

AIM-50™ Wall Mount

The following models are covered in this manual:	
A50W	AIM-50™ Wall mount version 120 V
A51W	AIM-50™ Wall mount version 100 V
A52W	AIM-50™ Wall mount version 240 V
A53W	AIM-50™ Wall mount version 230 V

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

BURTON MEDICAL PRODUCTS CORP.
21100 Lassen St.
Chatsworth, CA 91311
U.S.A.

**This manual to
remain with end user.**

Questions?
Tel. (800) 444-9909
(818) 701-8700
Fax (800) 765-1770
(818) 701-8725
www.burtonmedical.com

Table of Contents

Table of Contents	2
Introduction	3
Symbols Used in This Manual	4
Transportation and Storage	4
Safety Precautions	4
Assembly Preparations	5
Support and Anchorage	5
Mounting Height	6
Range of Motion	6
Unpacking and Inspection	7
Installation.....	8
Wall Support Structure.....	8
Wiring.....	8
Installing the Wall Mount.....	8
Connecting Power	9
Installing the Wall Switch.....	10
Installing the Extender Arm With Spring Arm	11
Mounting the Light Head	12
Final Testing.....	14
Adjusting Arm Tension	14
Static Inspection.....	14
Declaration of Acceptance	14
Equipment Anchorage Diagrams.....	15

This manual contains detailed information on the above, but responsibility for effective installation ultimately rests with skilled and qualified contractors. Products should at all times be handled by qualified staff; it is the responsibility of the user to ensure this is the case.

Introduction

Dear Installer,

Congratulations on your purchase of the AIM-50™ Examination Light!

The installation manual gives instructions on how to install the AIM-50™ Examination Light Wall Mount Version. For instructions on operation, maintenance and further description of the product please refer to the Operation & Maintenance manual.




Please read these installation instructions very carefully and follow the safety instructions and requirements.

This product was designed and manufactured in the U.S.A. by:
Burton Medical Products
21100 Lassen Street
Chatsworth, CA 91311
U.S.A.

Questions?
Tel: (800) 444-9909
(818) 701-8700
Fax: (800) 765-1770
(818) 701-8725
www.burtonmedical.com

Copyright © 2008 Burton Medical Products

Symbols Used in This Manual

	WARNING	Disregarding this instruction can present the risk of a serious or fatal injury.
	CAUTION	Disregarding this instruction can result in medium to light injury and damage to property.
	IMPORTANT	Provides usage tips and useful information.





Transportation and Storage

The following storage conditions apply:

- Temperature: 0 - 70 °C (32-158°F)
- Relative humidity: 10 - 75 % (no condensation)
- Air pressure: 500 - 1060 hPa

Store only in closed or covered spaces; thereafter, the values of the operating conditions in the usage instructions apply.

Safety Precautions

	WARNING	Failure to properly follow installation and preventive maintenance instructions may result in mechanical failure.
	WARNING	Before undertaking any work, ensure that the branch circuit power is off and secured from accidentally being switched on again.
	NOTE	This light should only be installed by qualified electrical and structural contractors*.
	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: Static inspection on page 14 and the section Support and Anchorage below.)

*Approved wiring shall be routed inside conduit between the wall switch junction box and the steel support plate (to the wall mount). The installation shall meet requirements contained in the latest issues of the NEC and NFPA, and other local and national building codes; as they apply to hospitals, clinics, medical offices, and the like.

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 8)
- 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 100 and 240 V 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 (see page 14). 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.

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)

Range of Motion

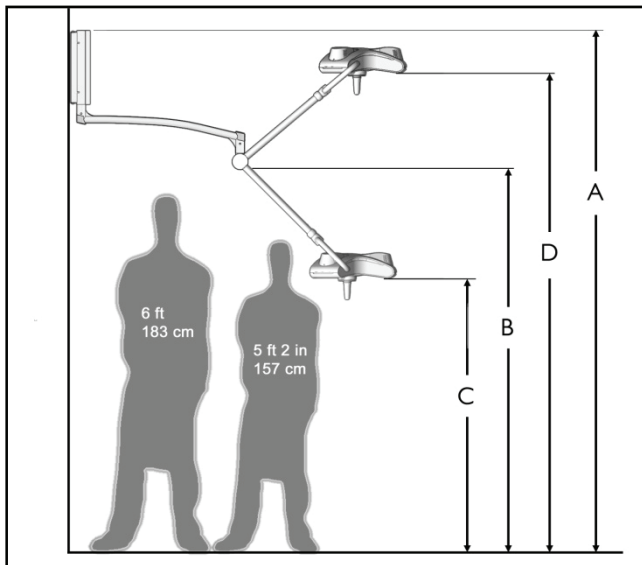


Figure 1: Vertical range of motion

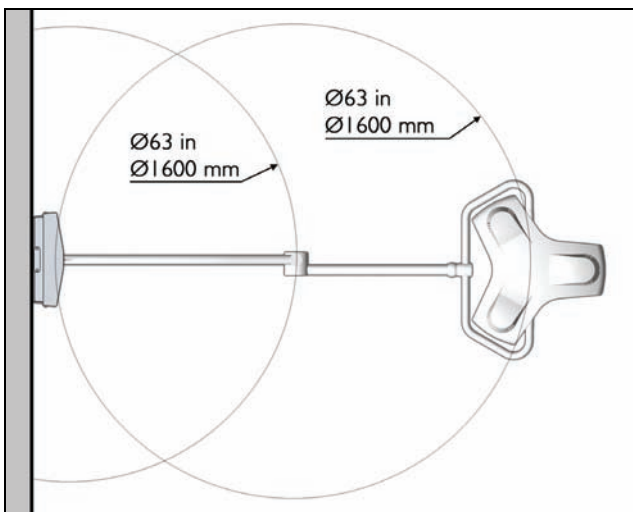


Figure 2: Horizontal range of motion

Unpacking and Inspection

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

Before Reporting Shortages:

1. Be sure you have received the correct number of boxes, cartons, etc., as shown on the bill of lading.
2. Check the entire shipment against the enclosed packing slip.
3. Items indicated in the column headed "Back Order" are not included in the shipment and will follow later.
4. Be sure that nothing has been removed from the cartons before they are checked by the individual in charge.
5. 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 Burton, are 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 Burton.
6. Written authorization must be obtained from Burton before merchandise can be returned.

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 on page 15. When the support structure is in place the static inspection sheet on page 14 should be filled out.

Wiring

Switch wiring (contractor-supplied) must be three-conductor minimum AWG 18 from the switch to the terminal block. Wiring and conduit must meet NEC, local, and national fire protection codes.

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 which can be used to mount the wall mount to a wall. 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.

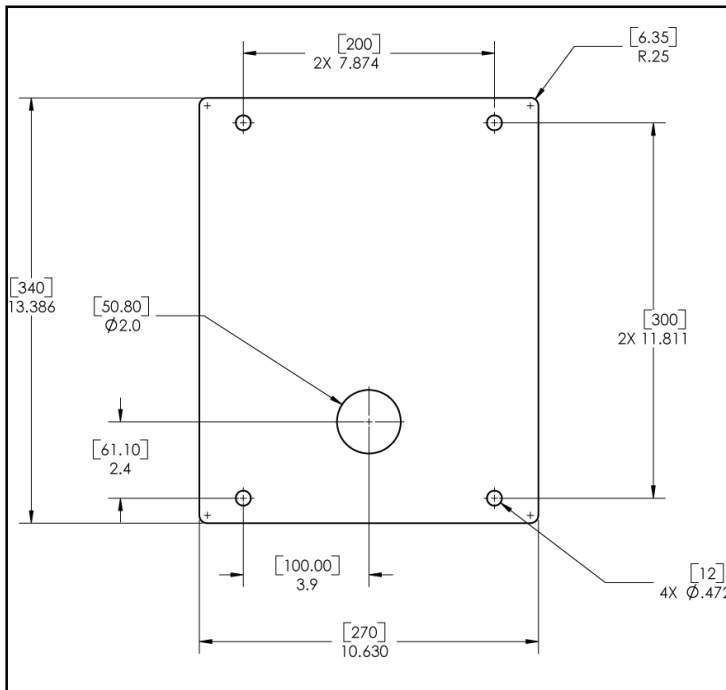
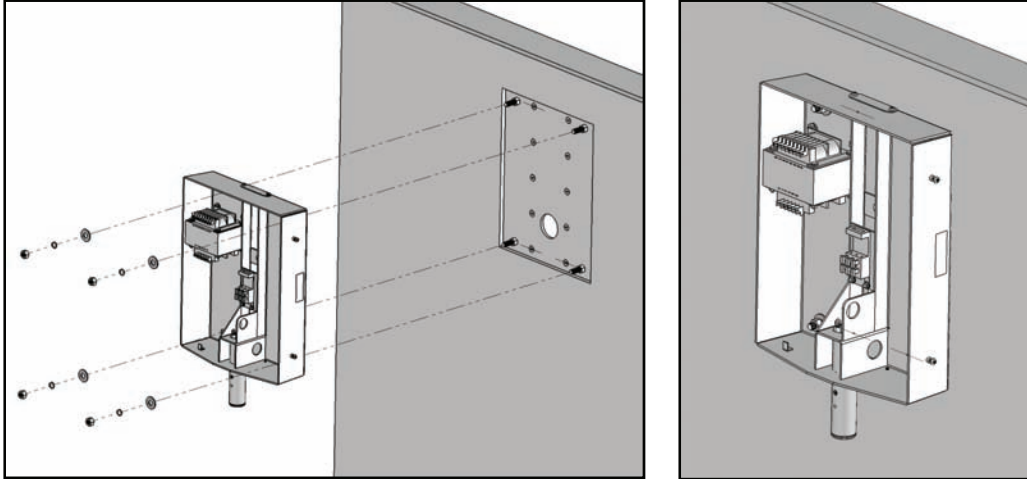


Figure 3: Contractor supplied mounting plate (dimensions are inches [mm])

2. Assemble the mounting plate 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. Mount the wall mount to the mounting plate. Use four (4) 3/8" (10 mm) bolts, plain washers, split lock washers, and nuts.

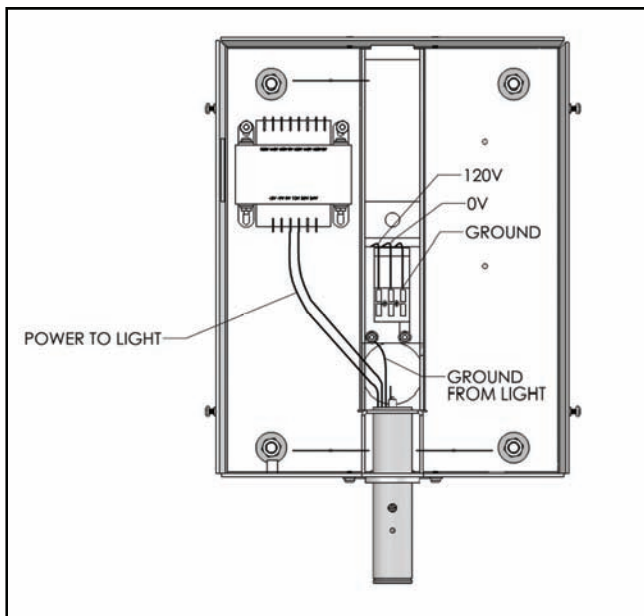


5. Tighten all fasteners and check that the wall mount is secure.

Connecting Power

⚠	NOTE	Wire 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 Operation & Maintenance manual.

1. Route conduit and electrical lines to wall mount. Use AWG 16 (1,5mm²).



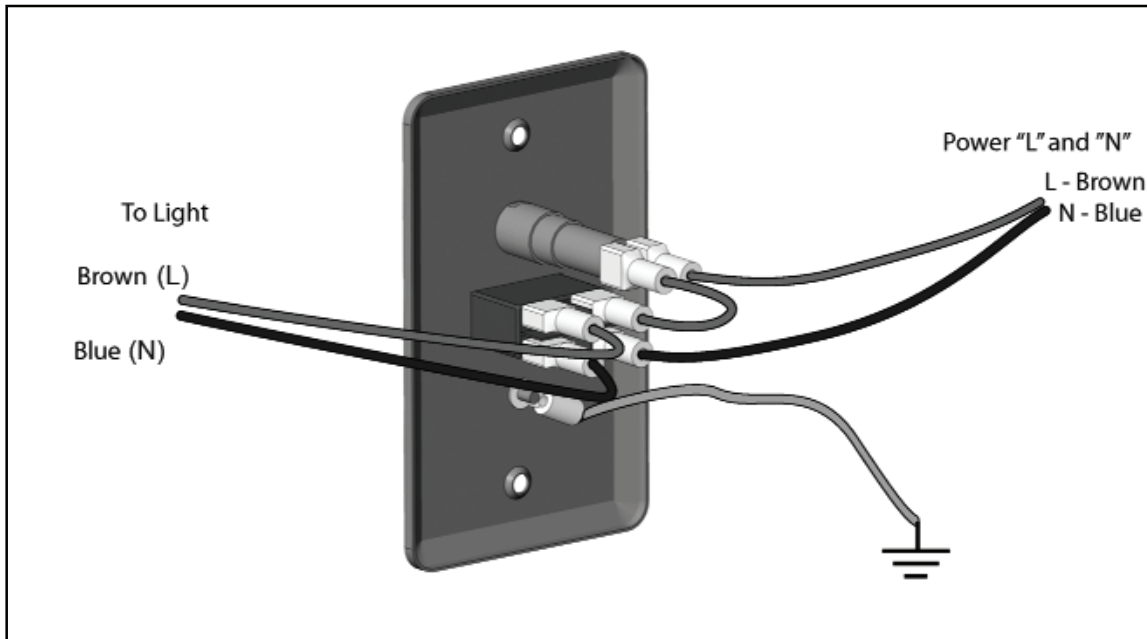
2. Wire the wall mount as shown in the illustration above (120V version is illustrated).

Notes:

- Connect the 0 V neutral wire (normally white) to the terminal block marked “N”.
- Connect the 120V power wire (normally black) to the terminal block marked “L1”. This voltage could be 100V or 240V depending on the type of wall model purchased.
- Connect protective earth to the terminal block marked with the symbol \ominus .
- Secure cable with strain relief.

3. Install the cover on the wall mount and secure it by tightening the 4 screws on the sides.



Installing the Wall Switch

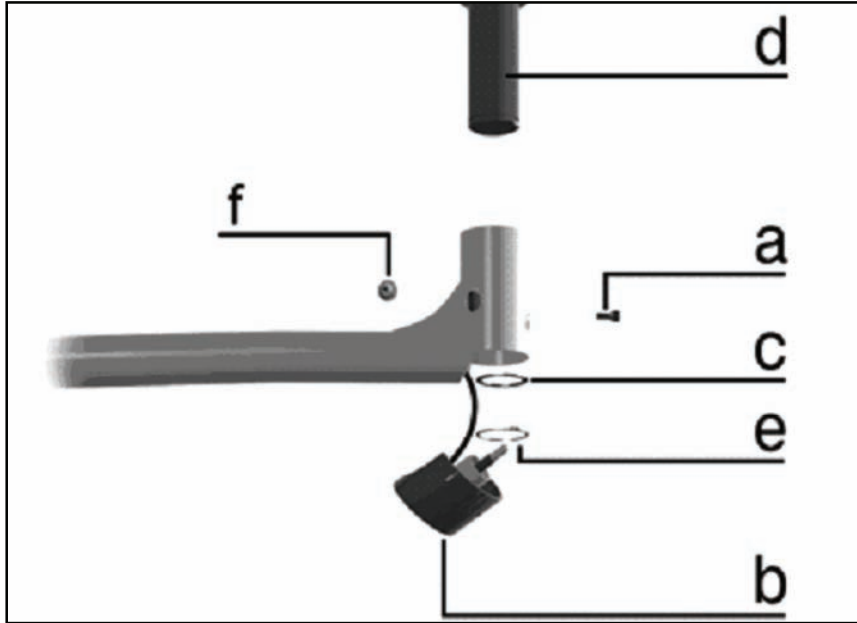


115V / 120 V versions: Install wall switch furnished with the product to a standard junction box per local codes. The wires that go to the light fixture are labeled “to light fixture”.

100V / 230V / 240V versions: Install wall switch per local codes. Wall switch is not furnished with the product.



Installing the Extender Arm With Spring Arm

	WARNING Danger of injury	If the washer is not installed, the retaining ring can get loosened. The equipment can then fall from its fixtures and cause serious injuries. Always install the washer.
	WARNING - Electrical shock	The support system can become live if the power cables are damaged at the plug. The voltage can pose a danger to life. Install the plug carefully.



1. Unscrew the cross-slotted screw (a).
2. Remove the plug cap (b).
3. Lift the arm onto the shaft of wall mount (d).
4. Insert the washer (c) on the shaft and install the retaining ring (e).
5. Check whether the extender arm with spring arm is seated firmly.
6. Insert the safety screw (f) through the hole and thread into the shaft on the wall mount (d) using the included 2.5mm hex key.
7. Make sure the screw is fully seated against the shaft on the wall mount (d). The arm should rotate smoothly.
8. Insert the plug cap (b) into the shaft until it locks into position.
9. Fasten the cross-slotted screw (a) to secure the plug cap.

Mounting the Light Head

	WARNING Danger of injury	The spring arm, when pressed downwards, can spring upwards and result in injuries. During the installation of the light head, no one should be present within swiveling range of the spring arm.
	CAUTION Danger of injury	Key must be properly installed to avoid safety hazard.

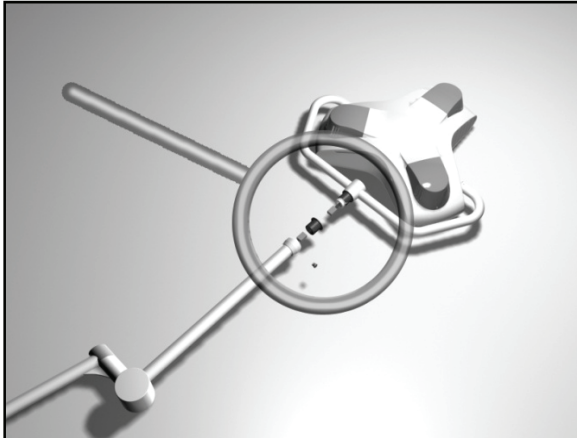


Figure 1

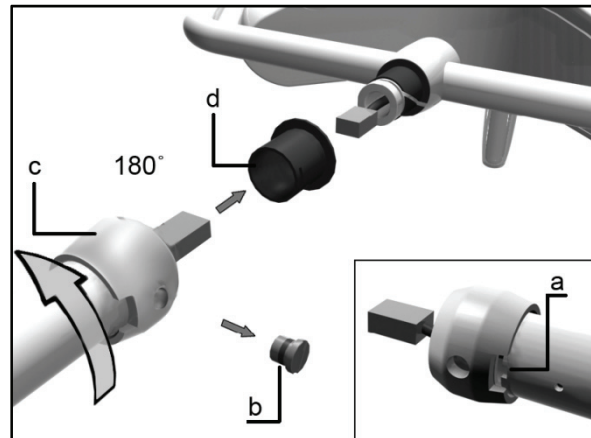


Figure 2

1. Figure 1 above shows the correct orientation of the spring arm to the light head.
2. Loosen the brake screw (b) and remove the protective cover (d) only.
3. Rotate the collar (c) 180° so that the slot in the collar aligns with the slot in the spring arm (a) illustrated in the lower right of figure 2.
4. Unite the electrical connectors.

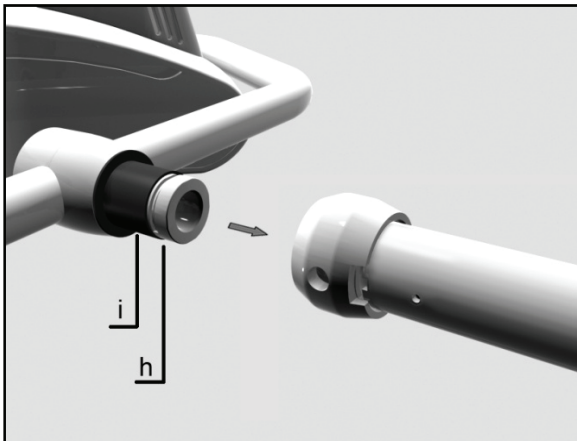


Figure 3

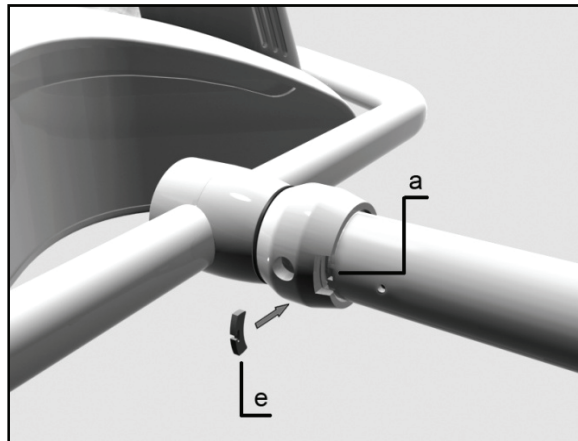



Figure 4

5.  Make sure the plastic bearing (i) is on the yoke and there is grease in the groove (h). The connectors are not shown in figure 3.

6. After the connectors are mated, push the yoke into the spring arm.
7. Put the key (e) completely into the slot (a), so that the key is engaged into the yoke groove (h). See figure 4.

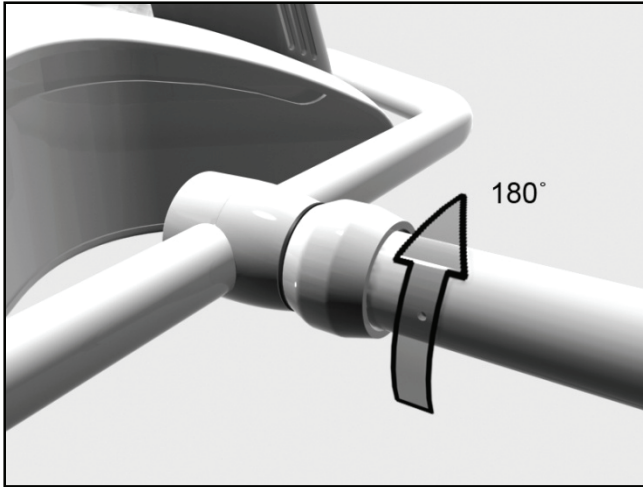



Figure 5

8. Rotate the collar (c) 180 degrees as shown in figure 5.
9.  Before installing the brake screw (b), check the attachment of the light head by pulling and rotating it at the same time. The light head should rotate smoothly and not pull out of the arm.

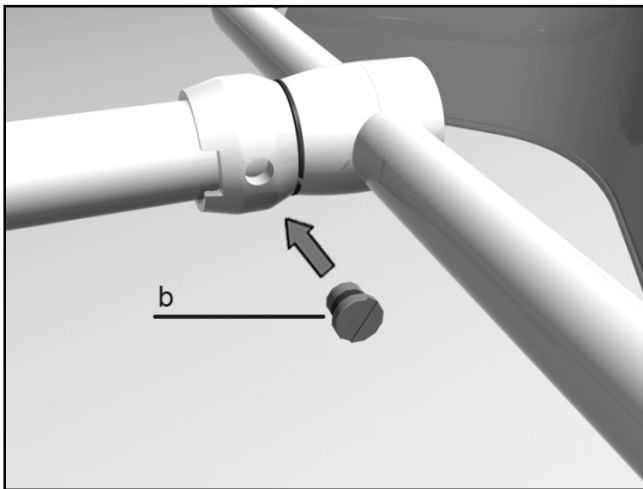


Figure 6

10. Thread the brake screw (b) into the collar as shown in figure 6 and tighten it until the rotating joint has the desired friction.

Final Testing

Energize the light assembly by turning the wall switch on to check proper operation.

The arm system should swing easily within the range of motion as illustrated on page 6.

Adjusting Arm Tension

The spring inside the arm is pre-adjusted from the factory. If, however, the light-head drifts up or down, please refer to the Operation & Maintenance manual for guidance on how to adjust this.

Static Inspection

! NOTE: The static (structural) inspection must be carried out before the installation of the wall or ceiling fastening.

- The strength of the construction must be designed, checked and certified by a structural engineer.
- The respective regional construction regulations that apply must be followed.
- If an erroneous hole is drilled by mistake (e.g. drilling of a reinforcement rod) the structural engineer who is responsible must be contacted, since adequate static load distribution in the ceiling may have been jeopardized.

Declaration of acceptance:

It is hereby certified that the supporting wall/ceiling and the anchoring of the AIM-50™ suspension system is safe and adequately strong.

Project: _____

Anchoring (please check the one that is applicable):

- with counter-plate
- other

Location: _____

Signature/Stamp (Structural Engineer / Construction Authority)

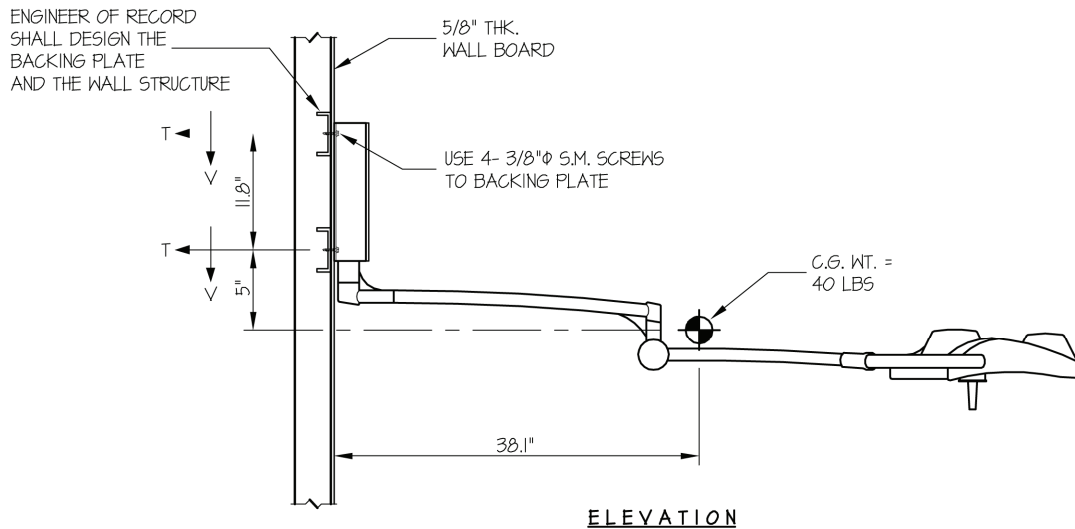
Equipment Anchorage Diagrams

Wall mount Version - overview

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com		
BURTON MEDICAL PRODUCTS	DES. R. LA BRIE	SHEET 1
	JOB NO. 11-0786	
AIM-50/100 SINGLE ARM LIGHT	DATE 1/1/08	OF 2 SHEETS

SEISMIC ANCHORAGE

WALL MOUNTED



$T_{MAX} = 125 \text{ LBS/SCREW}$
 $V_{MAX} = 176 \text{ LBS/SCREW}$

NOTES:

- FORCES ARE DETERMINED PER 2007 CALIFORNIA BUILDING CODE SECTION 1613A AND ASCE 7-05 SECTIONS 12 AND 13. ALLOWABLE STRESS DESIGN IS USED.

HORIZONTAL FORCE (E_H) = $1.7 W_p$ ($S_{DS} = 1.33$, $a_p = 2.5$, $I_p = 1.5$, $R_p = 2.5$)

VERTICAL FORCE (E_V) = $0.19 W_p$

- CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- ARCHITECT OR STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE SUPPORT STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.

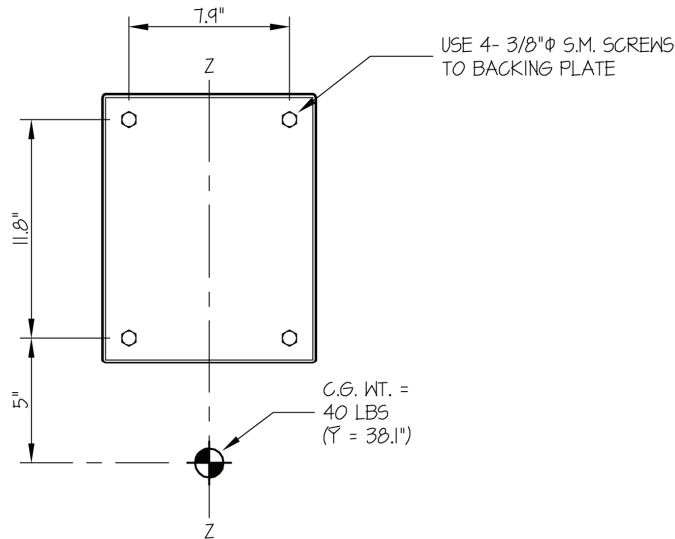


Wall mount Version – plan at wall

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com		
BURTON MEDICAL PRODUCTS	DES. R. LA BRIE	SHEET 2
	JOB NO. 11-0786	OF 2 SHEETS
AIM-50/100 SINGLE ARM LIGHT	DATE 1/1/08	

SEISMIC ANCHORAGE

WALL MOUNTED



PLAN AT WALL

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

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

5/8" THK. WALL BOARD

WOOD STUD WALL

LOADS:

WEIGHT = 40 LBS
 HORIZONTAL FORCE (E_h) = 1.7 W_p = 68 LBS
 VERTICAL FORCE (E_v) = 0.19 W_p = 8 LBS

BOLT FORCES:

TENSION (T)

$$T_{\text{VERTICAL}} = \frac{(40\# + 8\#)38.1"}{2_{\text{SCREWS}}(11.8")} = 77 \text{ LBS/BOLT}$$

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

$$T_{\text{PERP.}} = \frac{68\#(16.8")}{2_{\text{SCREWS}}(11.8")} = 48 \text{ LBS/BOLT}$$

$$T_{\text{MAXIMUM}} = 77\# + 48\# = 125 \text{ LBS/SCREW (MAX)}$$

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

$$V_{\text{MAXIMUM}} = \frac{(40\# + 8\#)42.05"}{2_{\text{SCREWS}}(7.9")} + \frac{68\#(16.8")}{2_{\text{SCREWS}}(11.8")} = 176 \text{ LBS/SCREW (MAX)}$$

CONCRETE WALL (3000 PSI MIN) BY ENGINEER OF RECORD

USE 4- 3/8"φ HILTI KB-III EXPANSION ANCHORS (MIN. EMBED. = 3")

CONCRETE WALL



Luxo Medical Products

BURTON MEDICAL

21100 Lassen Street

Chatsworth, CA 91311 USA

Phone: 800-444-9909, 818-701-8700

Fax: 800-765-1770, 818-701-8725

www.burtonmedical.com



The Right Light

