

ALPHA AIR 6

DENTAL OPERATING MICROSCOPE USER'S MANUAL

Including installation instructions for all mounting options



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This device is restricted to the sale and the use by authorized and trained personnel.

TABLE OF CONTENTS

INTRODUCTION	4
PARTS AND COMPONENTS	5
Microscope components	5
ASSEMBLING THE EQUIPMENT	5
Unpacking	5
Pantographic Arm and Optic Pod Installation	6
Pantographic arm balancing	6
tension knob balancing	6
USING THE MICROSCOPE	6
Switching on the unit	6
ADJUSTING THE MICROSCOPE	6
Interpupillary Distance	6
Parfocalizing	6
Color Filter	7
MAINTENANCE AND HYGIENE	7
Cleaning	7
Cleaning the Rest of the Microscope	7
TROUBLESHOOTING	7
MECHANICAL DATA	7
MAGNIFICATION CHART	8
MOUNTING INSTRUCTIONS	9
WARNINGS	19
LED Illumination	19
SERVICE AND REPAIR	19
Fuse Replacement	19
Limited Warranty	19
Warranty registration	20
END OF PRODUCT LIFE	20
CONTACT INFORMATION	20
OWNER'S RECORD	20
NOTES	20
CERTIFICATE OF COMPLIANCE	21
MODELS LIST	22

INTRODUCTION

To Our Valued Professionals,

On behalf of the Seiler Medical Division, I would like to thank you for your recent purchase. We stand by our products and are thrilled that when choosing one of the most important aspects of your practice, you chose us.

We are proud to say that, as a company, we have over 70 years' experience in the optical field. We have the expertise to provide you with modern, reliable devices that incorporate some of the most advanced optical design tools on the market. This product's intent is to amplify an image while providing the user with an exceptional level of comfort, improved visual acuity, and provide flawless maneuverability for any office or hospital.

All of our products are manufactured according to strict medical and ISO standards. We also ensure all optical components have undergone an anti-reflective, multi-layer treatment; guaranteeing the efficiency of the system and enhancing the longevity of all of our products. Along with strict manufacturing standards and rigorous testing, we also stand behind all of our products by offering a lifetime warranty on all optics and mechanics for microscopes purchased in the United States, as well as a 3-year warranty on all international purchases.

Every Seiler Medical Division team member is here to provide you with outstanding service, quality, and knowledge. Our number one priority is, and always will be, providing 100% customer satisfaction to every one of our customers. If you need any further information about the equipment or just have a question, please contact us using the information below.

Thank you again for your purchase and we look forward to serving all of your optical needs for years to come.

Sincerely,

Dane Carlson
Medical Division Manager

Seiler Medical Division

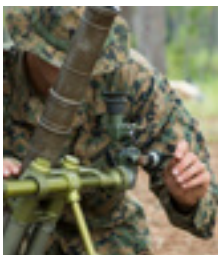
Toll Free: (800) 489-2282

Local: (314) 968-2282

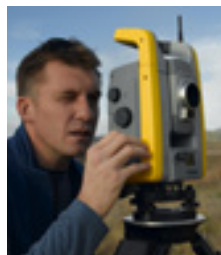
Email: micro@seilerinst.com

Web: www.seilerinst.com

THE DIVISIONS OF SEILER INSTRUMENT



Manufacturing



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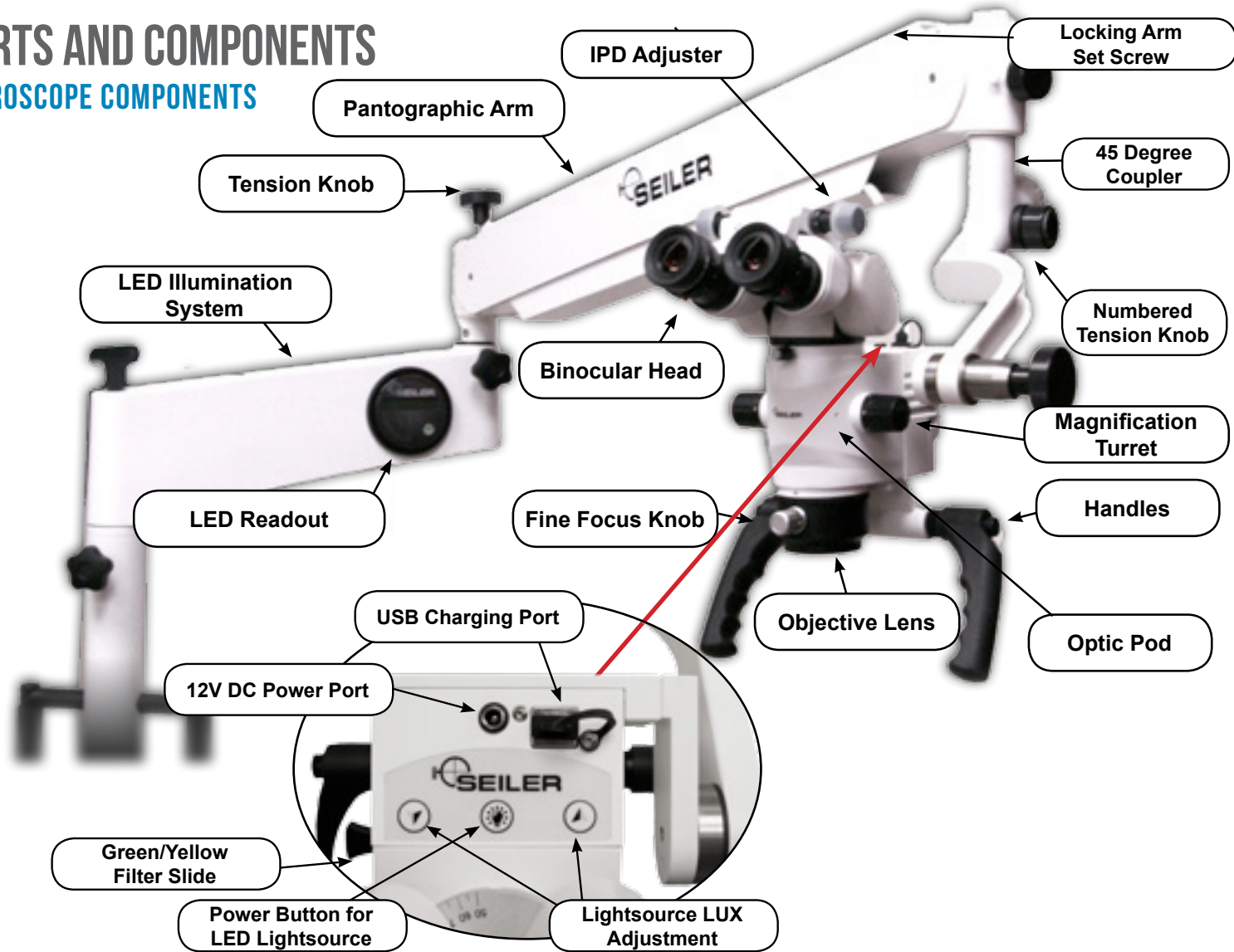
Planetarium



Design Solutions

PARTS AND COMPONENTS

MICROSCOPE COMPONENTS



ASSEMBLING THE EQUIPMENT

UNPACKING

Carefully unpack all components. If necessary, the unit can be cleaned with isopropyl alcohol and a soft cloth. Inspect all components for any signs of damage that may have occurred during shipping.

If shipping damage is suspected, notify Seiler or your authorized dealer immediately.

Please check whether the box contains the items set out below:

- This User Guide
- Mounting Option (Floor, ceiling, wall, high wall, or tabletop)
- LED Illumination System
- Pantographic Arm
- Optic Pod
- Binocular Head
- Additional Accessories Purchased with Microscope



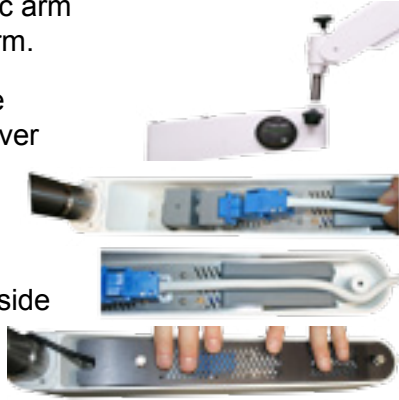
The control box, the illumination box and the pantographic arm must be handled carefully, because the external surfaces of these modules can be easily damaged. A sharp impact on these surfaces may result in scratches or other damages. The optical module is the most delicate part. Take care during use, transportation or handling.



The optical module is assembled in a sealed block. Maintenance activities shall only be performed by the service department at Seiler.

PANTOGRAPHIC ARM AND OPTIC POD INSTALLATION

1. Reference page 9-13 for proper mounting instructions.
2. Insert the pantographic arm into the light source arm.
3. Place the Power cable through the bottom cover and reattached protective plate.
4. Insert the 45 degree coupler into the underside of the pantographic arm. Be sure to unscrew and loosen the black knob and pull the silver plunger out in order to insert the coupler. Finally screw down the white locking nut.
5. Secure the Binocular Head onto the Optical Pod by tightening the thumb screw.



PANTOGRAPHIC ARM BALANCING

Pantographic Arm may need tension adjustment. Turn knob counter-clockwise to add tension, clockwise to release tension on pantographic arm. This may need to be done if camera/video are added to the scope. This will increase or decrease the tension to desired function for user. The Pantographic Arm may have to be in the horizontal position to make adjustments.

White Locking Nut

Groove must line up with black locking knob



TENSION KNOB BALANCING

The numbered knob on the 45 degree coupler is for the balance tension of the optic pod.



Tension Knob For Pantographic Arm Movement

Numbered Tension Knob For Optic Pod Movement on 45 degree coupler



USING THE MICROSCOPE

SWITCHING ON THE UNIT



To operate the LED light source:

turn on the main power by pressing the round blue button atop the LED arm. The switch will illuminate once main power is on. Adjust the illumination using the three momentary buttons atop the microscope. There is one button for decreasing intensity, one for increasing intensity, and the center button for placing the light into a standby mode when the microscope will be idle for 30 minutes or longer. If you intend to leave the microscope idle for more than 30 minutes turn off the main power by depressing the illuminated blue button on the arm. To change intensity press and release either the up or down buttons (do not press both at once) and the light level will increase or decrease approximately 10 percent depending on which button was depressed. If you require fine tuning of the light level press and hold either button and it will slowly scroll through 10 different illumination settings - this can be much slower than press and release. Do not press more than 1 of the 3 buttons at a time." It is important that you turn the main power OFF when the unit will be idle for long periods of time (such as nights and weekends) to avoid unnecessary wear on the electronics.

ADJUSTING THE MICROSCOPE

INTERPUPILLARY DISTANCE

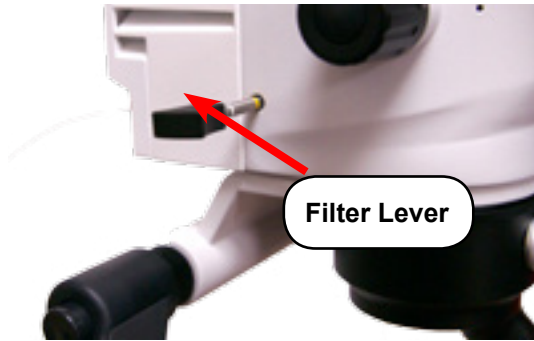
Looking through the eyepieces on the binocular head, adjust the Interpupillary distance until the end user is the Field of View in one single image.

PARFOCALIZING

1. Set both eyepieces at 0.
2. Take a piece of paper and draw an "X" on it. Place that piece of paper onto a flat area at the recommended focal length (10" with 250mm, 12" with 300mm objective). Adjust the eyepiece until you get a single solid image.
3. Set the scope to the highest power and position the scope to where the "X" is as sharp as possible.
4. Then go to the lowest power without moving the microscope's physical position and one eye at a time focus the eyepieces.
5. Look through the scope and focus on the "X" and change the magnification levels to make sure each setting stays in focus. If the scope goes out of focus start the process over again.
6. Once the image is clear in both eyes, this completes the Parfocalizing Process.

COLOR FILTER

There is a lever installed on the side of the microscope body to put in front of the lamp luminous flux and Yellow and Green filter.



MAINTENANCE AND HYGIENE

CLEANING

The objective, placed in front of the field under clinical or surgical treatment, is exposed to blood and topical medicine spots, etc. The spots dim the passage of the light, with loss of brightness in the optical observation.

Keep dust from accumulating on the vent on the head by blowing the vents with compressed air.

Alcohol or ether applied with a clean cotton swab can be used to remove all smudges. Use a soft CIRCULAR movement. Use your laboratory's prescribe procedures to remove blood stains or other contaminants from your equipment.

If the objective is blotched too much, change the cotton swab in each circular friction, avoiding spreading again the impurities.

The Objective lens can be protected by use of an objective protector (6132000). It is placed under pressure in the external margin of the objective lens and protects it against eventual blows of the surgical tools and against contamination.

The metallic parts (chrome-plated or painted) are cleaned with cotton, alcohol and ether.

CLEANING THE REST OF THE MICROSCOPE

Exterior surface cleaning with window cleaner.

Do not attempt to clean any internal components. Keep dust from accumulating on the vents on the head - best is to blow it clean with compressed air or carefully removing the dust with q-tips, as long you don't go too far inside the unit.

TROUBLESHOOTING

The power indicator is not lit.	<ul style="list-style-type: none">Check that the AC power cord is properly connected.Check the unit fuses. If necessary, replace.
Press the blue power button, if the LED will not illuminate.	<ul style="list-style-type: none">Press center power button on optic pod.
Temperature high or exceeded	<ul style="list-style-type: none">Ambient air temp is too high, improve air.Air vents are blocked or restricted.

REPLACING THE FUSES

Use only fuses rated as marked on the under panel.

Replace the fuses as follows:

1. Disconnect the device from the main power supply.
2. Retract fuse holder drawer on mains jack.
3. Measure resistance of each fuse, and replace as necessary.
4. Close fuse holder drawer
5. Re-attach mains power cable.
6. Call Parts and Service for additional assistance.

MECHANICAL DATA

General Details		
Working Distance Minimum Possible	175 mm	6.89 in
Working Distance Maximum Possible	400 mm	15.75 in
Microfocus Vertical Adjustment Range	13 mm	
*Microscope Weight (Floor Model)	73.48 kg	162 lbs
Packaging	3 boxes	

Electrical Details	
Power Supply	Mains Power 96-264 VAC 47-36 Hz
Axillary Power Jack	12 VDC 1.0 A maximum
Fuses	(2) 3 AMP 250V Fast Blow 5x20mm
Illumination Bulb	USB 2 Jack 5.0 VDC 1 AMP
Power Cable	IEC 320/C13 Hospital Grade

Optical Details		
	Standard Setup	Optional Setup
Objective Lens	f=250mm	175-400mm
Eyepieces	10x	12.5x, 16x, 20x
Diopter Setting	-6 to +6	NA
Field of Vision	9-72 mm	*4.95-105.88 mm
Magnification Levels	2.8x, 4.8x, 5.3x, 8.7x, 11x, 17x	**Max low: 1.70x Max high: 48.50x

*Depends on eyepieces and Objective lens

**Max low refers to the lowest power able to be achieved by combination of eyepiece and objective lens magnification.
Max High is the maximum power able to be achieved through combination of eyepiece and objective lens magnification.

LED Illumination Details	
Photometric Specifications and Performance	
Light Source Type	LED (Light Emitting Diode)
Color Temperature	5700 CCT
LED Life	>50,000 Hours
Typical Illuminance	120,000-150,000 LUX Measured at 250mm working distance
Controls	
Brightness Control	Digital - 1024 Resolution
Mode of Operation	On/Off/Standby (Continuous)
Input Voltage	96-264 VAC
Rated Power	80 watts
Regulatory Approvals	
Equipment Class	Class I
EMC	CISPR 11, Class A
EMC	IEC 61000-4-3
Product Safety	IEC 60601-1:2005
Photobiological Safety	IED 62471
Operating Environment	
Water Resistance	IPXO
Temperature	50°-70°F (10°-25°C)
Relative Humidity	30-75%
Air Pressure	700 HPA to 1060 HPA
Flammability	Equipment not suitable for use in presence of flammable mixtures
Storage Environment	
Temperature	38°-122°F (10°-50°C)
Relative Humidity	0-100% Non-Condensing
Air Pressure	700 HPA to 1060 HPA

MAGNIFICATION CHART

eyepiece	position of button	175						200						250						300						400					
		magnification		field		magnification		field		magnification		field		magnification		field		magnification		field		magnification		field		magnification		field		magnification	
		f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170	f135	f170
10x/18mm	1 (0.4x)	3.08	3.88	58.44	46.39	2.70	3.40	66.67	52.94	2.16	2.72	83.33	66.18	1.90	2.27	100.00	79.41	1.35	1.70	133.50	105.88	1.80	2.27	100.00	79.41	1.35	1.70	133.50	105.88	1.80	2.27
	2 (0.6x)	4.62	5.82	39.00	31.00	4.05	5.10	44.45	35.30	3.24	4.08	55.55	44.10	2.70	3.40	66.70	53.00	2.02	2.55	89.10	70.60	3.51	4.42	51.28	40.80	2.63	3.32	68.44	54.30	3.51	4.42
	3 (0.78x)	6.01	7.57	29.95	23.79	5.27	6.63	34.19	27.15	4.21	5.30	42.75	33.96	3.51	4.42	51.28	40.80	2.63	3.32	68.44	54.30	5.76	7.25	31.25	24.83	4.31	5.44	41.76	33.09	5.76	7.25
	4 (1.28x)	9.86	12.42	18.26	14.50	8.64	10.88	20.83	16.54	6.91	8.70	26.05	20.69	5.76	7.25	31.25	24.83	4.31	5.44	41.76	33.09	7.20	9.06	25.00	19.90	6.74	8.50	33.40	26.50	7.20	9.06
	5 (1.6x)	12.32	15.52	14.60	11.60	10.80	13.60	16.66	13.25	8.64	10.88	20.85	16.70	7.20	9.06	25.00	19.90	6.74	8.50	33.40	26.50	11.25	14.17	16.00	12.70	8.42	10.63	21.38	16.94	11.25	14.17
	6 (2.5x)	19.25	24.25	9.35	7.42	16.88	21.25	10.67	8.47	13.50	17.00	13.33	10.59	11.25	14.17	16.00	12.70	8.42	10.63	21.38	16.94	2.25	2.83	100.00	79.50	1.69	2.13	133.50	105.60	2.25	2.83
12.5x/18mm	1 (0.4x)	3.85	4.85	58.44	46.39	3.37	4.25	66.70	52.95	2.70	3.40	83.33	66.18	2.25	2.83	100.00	79.50	1.69	2.13	133.50	105.60	2.88	3.62	88.89	70.72	2.16	2.73	118.60	93.77	2.88	3.62
	2 (0.6x)	5.78	7.28	39.00	31.00	5.06	6.38	44.45	35.30	4.05	5.10	55.55	44.10	3.38	4.25	66.70	53.00	2.53	3.20	90.00	70.50	4.39	5.53	51.25	40.72	3.29	4.16	68.40	54.09	4.39	5.53
	3 (0.78x)	7.51	9.46	29.96	23.79	6.58	8.29	34.20	24.14	5.27	6.63	42.70	33.95	4.39	5.53	51.25	40.72	3.29	4.16	68.40	54.09	7.21	9.07	31.20	24.82	5.40	6.83	41.70	32.96	7.21	9.07
	4 (1.28x)	12.33	15.52	18.25	14.50	10.79	13.61	20.85	16.53	8.64	10.88	26.05	20.68	7.21	9.07	31.20	24.82	5.40	6.83	41.70	32.96	9.00	11.32	25.00	19.90	6.74	8.50	33.40	26.50	9.00	11.32
	5 (1.6x)	15.40	19.40	14.60	11.60	13.50	17.00	16.66	13.25	10.80	13.60	20.85	16.55	9.00	11.32	25.00	19.90	6.74	8.50	33.40	26.50	14.08	17.71	15.98	12.70	10.54	13.33	21.35	16.88	14.08	17.71
	6 (2.5x)	24.06	30.31	9.35	7.42	21.08	26.58	10.67	8.47	16.88	21.25	13.33	10.59	14.08	17.71	15.98	12.70	10.54	13.33	21.35	16.88	2.88	3.62	88.89	70.72	2.16	2.73	118.60	93.77	2.88	3.62
16x/16mm	1 (0.4x)	4.93	6.21	51.95	41.24	4.32	5.44	59.26	47.06	3.47	4.35	73.80	58.90	3.47	4.35	73.80	58.90	3.47	4.35	73.80	58.90	4.32	5.44	59.25	47.15	3.24	4.10	79.00	62.75	4.32	5.44
	2 (0.6x)	7.40	9.31	34.65	27.50	6.48	8.16	39.50	31.40	5.20	6.52	49.40	39.20	4.32	5.44	59.25	47.15	3.24	4.10	79.00	62.75	5.62	7.06	45.58	36.27	4.21	5.33	60.80	48.03	5.62	7.06
	3 (0.78x)	9.62	12.11	26.62	21.15	8.42	10.61	30.40	24.13	6.76	8.48	37.87	30.20	5.62	7.06	45.58	36.27	4.21	5.33	60.80	48.03	7.21	9.07	31.20	24.82	5.40	6.83	41.70	32.96	7.21	9.07
	4 (1.28x)	15.78	19.87	16.23	12.88	13.82	14.41	18.52	14.71	11.09	13.91	23.08	18.40	9.22	11.58	27.78	22.10	6.91	8.75	37.10	29.27	11.52	14.50	22.25	17.70	8.63	10.90	29.70	23.50	11.52	14.50
	5 (1.6x)	19.70	24.83	13.00	10.30	17.28	21.76	14.80	11.75	13.82	17.17	11.82	9.42	11.52	14.50	22.25	17.70	8.63	10.90	29.70	23.50	18.00	22.63	14.22	11.31	13.50	17.08	17.00	14.99	18.00	22.63
	6 (2.5x)	30.80	38.80	8.31	6.60	27.00	34.00	9.48	7.53	21.67	27.17	11.82	9.42	18.00	22.63	14.22	11.31	13.50	17.08	17.00	14.99	3.60	4.53	66.67	52.98	2.69	3.40	89.25	70.59	3.60	4.53
20x/12mm illuminated field	1 (0.4x)	6.16	7.76	38.96	30.93	5.40	6.80	44.44	35.29	4.32	5.44	55.56	44.12	3.60	4.53	66.67	52.98	2.69	3.40	89.25	70.59	6.48	8.16	37.05	29.45	5.40	6.80	44.45	35.35	4.04	5.10
	2 (0.6x)	9.24	11.64	26.00	20.65	8.10	10.20	29.60	23.50	6.48	8.16	37.05	29.45	5.40	6.80	44.45	35.35	4.04	5.10	59.40	47.05	7.02	8.85	34.19	27.15	5.25	6.63	45.71	36.20	7.02	8.85
	3 (0.78x)	12.02	15.13	19.97	15.86	10.53	13.26	22.79	18.10	8.42	10.61	28.50	22.62	7.02	8.85	34.19	27.15	5.25	6.63	45.71	36.20	9.22	11.58	27.78	22.10	6.91	8.75	37.10	29.27	9.22	11.58
	4 (1.28x)	19.72	24.83	12.17	9.67	17.28	21.76	13.89	11.03	13.82	17.41	17.37	13.80	11.52	14.51	20.83	16.54	8.62	10.88	27.85	22.06	18.00	22.63	14.22	11.31	13.50	17.08	17.00	14.99	18.00	22.63
	5 (1.6x)	24.64	31.04	9.75	7.70	21.60	27.20	11.10	8.80	17.28	21.76	13.90	11.05	14.40	18.10	16.70	13.25	10.80	13.60	22.30	17.65	22.50	28.33	10.67	8.47	16.83	21.25	14.26	11.30	22.50	28.33
	6 (2.5x)	38.50	48.50	6.23	4.95	33.75	42.50	7.11	5.65	27.00	34.00	8.99	7.06	22.50	28.33	10.67	8.47	16.83	21.25	14.26	11.30	101	136								

MOUNTING INSTRUCTIONS

FLOOR MOUNTING

1. Start by removing the base from the box and set the base bottom up (casters facing up) on the foam from the box for cushion.
2. Remove the base weights from the weights box and insert the weights one at a time into place by pressing the blue pins in and release once fully seated into base. Be sure they click in.
3. Flip the base back over so that the top center hole is facing upward.
Make sure that the weights are secured before flipping the base over.
4. Remove the pole from the packaging and insert pole into the center post hole in the base. Align the two indentation marks in the pole to the holes in the base center post hole collar.



Once the pole is in the collar and indentions are aligned, use the provided Allen wrench to tighten the two Allen bolts in the base center post to secure the pole.

5. Once the pole is secured into the base, insert the LED Arm portion into the top of the pole. This is where the electrical system is housed.



You are now ready for the Pantographic Arm and Optic Pod Installation.



When moving the microscope, you must transport the scope by the handles mounted on the post.

HIGH WALL MOUNTING

1. Determine suitable location: Wall next to doctor, wall behind doctor, etc. at a distance no greater than 50" and no less than 30" from the wall to the patients mouth
2. Position the wall bracket with the threaded opening facing down and with the lower mounting holes approximately 81" above the floor. Fasten the wall bracket to the wall making sure the wall construction is wood stud (16" on center) or cinder block. All other constructions require wall bracing - contact your building maintenance department or an outside contractor in this case.

3. Remove the arm assembly from the shipping carton and connect this assembly to the bottom of the wall bracket by carefully threading the shaft into the wall bracket using the gray cap on the arm assembly to thread in the shaft.
4. Two holes are used to insert a tool for loading the internal bearings. One hole contains a setscrew which you can adjust to lock the desired tension.
5. After the entire microscope is assembled to the high wall bracket, check for satisfactory rotational movement.
6. After you have set the tension as described previously and checked the rotational movement, tighten the setscrew in the front of the wall bracket.
7. A thru hole is provided to wire the microscope into the wall/ceiling. Check your local electrical code for proper wiring.



Seiler does not supply screws for mounting all brackets. The type of screws and/or anchors used should be determined by a qualified contractor. If mounting to a metal studded wall, there need to be backing such as plywood mounted to each side of the wall and screws to attach the wall bracket through both pieces of plywood so it is structurally sound. For mounting to a wood studded wall, large Lag screws should be sufficient. Again a professional contractor should determine size and length.

WEDGE ANCHORS

Wedge anchors are for attaching fixtures to a solid such as concrete . The installed end of the anchor features a conical segment with a metal clip around it. Upon setting the anchor the cone pulls up through the clip and pushes the clip against the sides of the hole. This gives the anchor its holding power within the hole. Anchor diameter will be equal to the hole size.

Expansion of the wedge anchor creates large point bearing stresses within the hole; therefore, this anchor requires a solid base material to develop its full capacity. For this reason, brick and partially filled mortar joints in brick walls or paving may be unsuitable for wedge anchor usage.

SLEEVE ANCHORS

Sleeve anchors also are used to attach fixtures to solid materials. A bolt is surrounded by a cylindrical metal sleeve. They operate by the expansion of the sleeve into the base material when one tightens the bolt. Expanding the sleeve along the length of the anchor enables a larger bearing surface than that offered by the wedge anchor, and can better adhere to irregular surfaces within the base material than can the wedge anchor. Therefore,

sleeve anchors can be better suited for brick masonry than wedge anchors. Sleeve anchor diameter will be equal to the hole size.

Sleeve Anchors come in models with round-headed bolts, flat-headed bolts, bolts with a hex nut/washer assembly, and bolts with an acorn nut/washer assembly.

DROP-IN ANCHORS

Drop-In Anchors are designed for solid concrete base material, and are not recommended for masonry or brick. Drop-in anchors are a female mating part anchor with coarse threads. The drop-in anchor requires a setting tool for expanding the anchor.

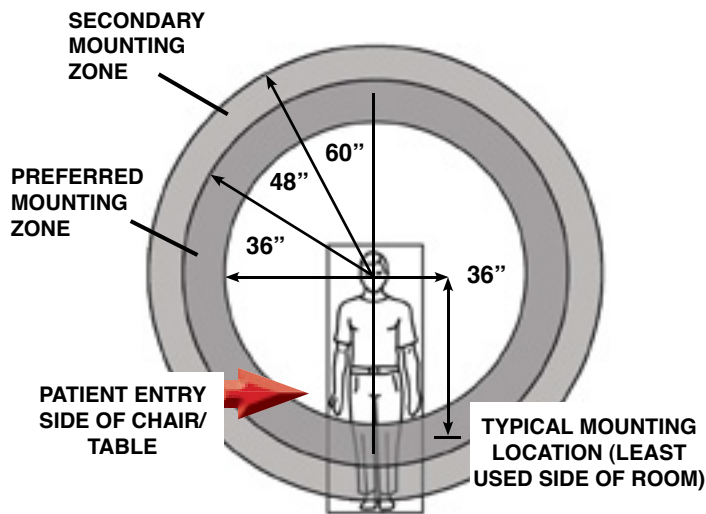
EXPANSION SHIELD

(Single Expansion Shield or Double Expansion Shield)

Expansion shields may be single or double piece design. Both are inserted for shear loads or where the bolt may be under side pressure or vibration. Expansion shields consist of a nut, a cone and a tubular shield that are put together as a single unit. The two-piece tubular shield in either version contains a wedge shaped nut at one end, a wedge shaped hollow cone at the other end and is held in place by two spring bands. The expansion at both ends of the shield spreads the anchored load throughout its length

POSITIONING

High Wall and Ceiling Recommended Mounting Location



NOTE:

If the typical position is not available, locating the microscope within the Preferred Mounting Zone (vertically shaded) will ensure that there is maximum maneuverability of the microscope in all directions. Locating the microscope within the Secondary Mounting Zone (diagonally shaded) is possible, depending upon the specific layout of a room, but may reduce maneuverability.

WALL MOUNTING

1. Determine suitable location: Wall next to doctor, wall behind doctor, etc. at a distance no greater than 50" and no less than 30" from the wall to the patient's mouth.
2. Position the wall bracket with the threaded opening facing down and with the lower mounting holes 50" above the floor. Fasten the wall bracket to the wall making sure the wall construction is wood stud (16" on center) or cinder block. All other constructions require wall bracing - contact your building maintenance department or an outside contractor in this case.
3. After the wall bracket is securely attached to the wall, carefully thread the bearing and microscope holder assembly into the bottom opening of the bracket until it is hand tight.



Seiler does not supply screws for mounting all brackets. The type of screws and/or anchors used should be determined by a qualified contractor. If mounting to a metal studded wall, there need to be backing such as plywood mounted to each side of the wall and screws to attach the wall bracket through both pieces of plywood so it is structurally sound. For mounting to a wood studded wall, large Lag screws should be sufficient. Again a professional contractor should determine size and length.

WEDGE ANCHORS

Wedge anchors are for attaching fixtures to a solid such as concrete . The installed end of the anchor features a conical segment with a metal clip around it. Upon setting the anchor the cone pulls up through the clip and pushes the clip against the sides of the hole. This gives the anchor its holding power within the hole. Anchor diameter will be equal to the hole size.

Expansion of the wedge anchor creates large point bearing stresses within the hole; therefore, this anchor requires a solid base material to develop its full capacity. For this reason, brick and partially filled mortar joints in brick walls or paving may be unsuitable for wedge anchor usage.

SLEEVE ANCHORS

Sleeve anchors also are used to attach fixtures to solid materials. A bolt is surrounded by a cylindrical metal sleeve. They operate by the expansion of the sleeve into the base material when one tightens the bolt. Expanding the sleeve along the length of the anchor enables a larger bearing surface than that offered by the wedge anchor, and can better adhere to irregular surfaces within the base material than can the wedge anchor. Therefore, sleeve anchors can be better suited for brick masonry than wedge anchors. Sleeve anchor diameter will be

equal to the hole size.

Sleeve Anchors come in models with round-headed bolts, flat-headed bolts, bolts with a hex nut/washer assembly, and bolts with an acorn nut/washer assembly.

DROP-IN ANCHORS

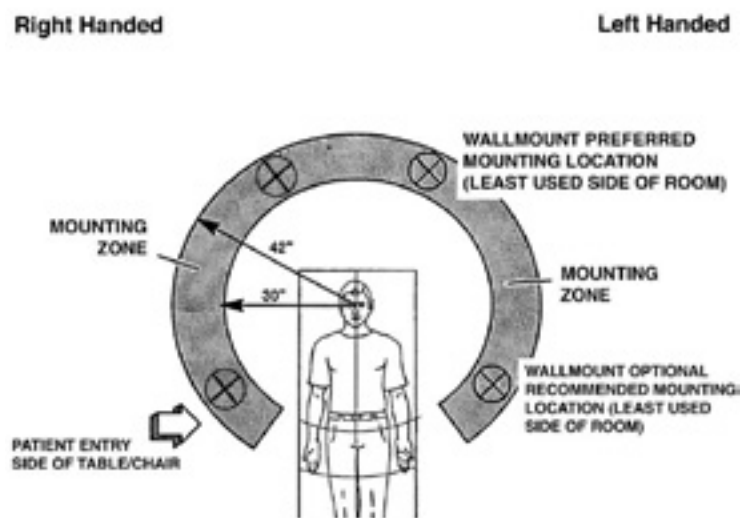
Drop-In Anchors are designed for solid concrete base material, and are not recommended for masonry or brick. Drop-in anchors are a female mating part anchor with coarse threads. The drop-in anchor requires a setting tool for expanding the anchor.

EXPANSION SHIELD

(Single Expansion Shield or Double Expansion Shield)

Expansion shields may be single or double piece design. Both are inserted for shear loads or where the bolt may be under side pressure or vibration. Expansion shields consist of a nut, a cone and a tubular shield that are put together as a single unit. The two-piece tubular shield in either version contains a wedge shaped nut at one end, a wedge shaped hollow cone at the other end and is held in place by two spring bands. The expansion at both ends of the shield spreads the anchored load throughout its length

POSITIONING



NOTE:
If either of the two recommended locations is not available, locating the wall mount within the shaded mounting zone will ensure that there is maximum maneuverability of the microscope in all directions.

Right handed dentists typically should mount the microscope on their right side. This allows for better four-handed dentistry with their assistant. The same theory applies to left hand dentists.

CEILING MOUNTING

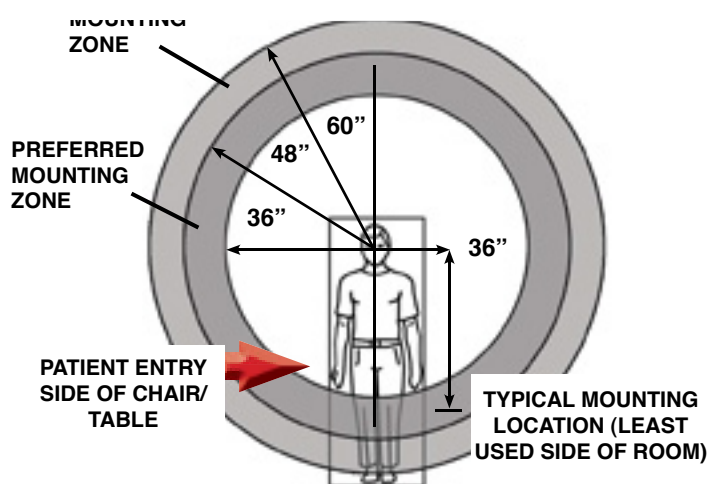
To be sure that the unit is properly secured to the structural members of the building, ensure mounting integrity and stability. Such members will usually be located above a dropped ceiling. If it is necessary to span between members in order to mount the unit the installer must insure that whatever material they elect to use (i.e. lumber, angles, channels, etc.) possesses the strength and rigidity required to provide stability.

Unpack all of the boxes and verify that all of the parts are present, noting that some are in a sub-assembly state. Any loose pieces will be labeled with their corresponding part number.

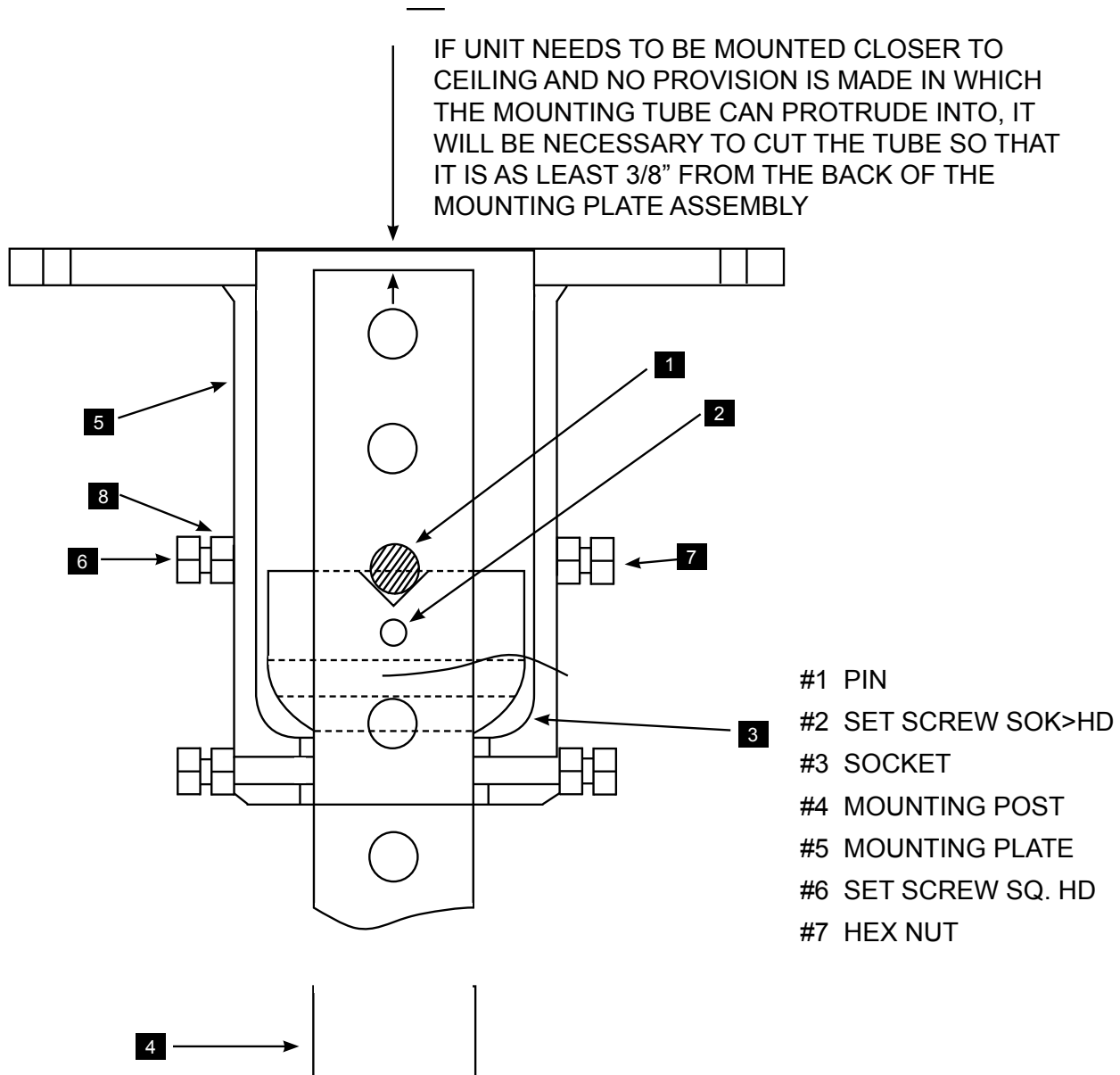
Using the template provided, transfer the hole locations onto the structural members to which the unit will be mounted. It is recommended that the unit be thru-bolted into the member using 1/2" bolts and nuts. In some applications, when thru-bolting is not possible, it may be necessary to use lag bolts or some other type of anchoring.

The unit can be installed at a nominal height with plus/minus adjustment of four inches available in two inch increments. The center hole of the five Pin locating holes in the Mounting Post is the nominal height. If the unit must be mounted closer to the ceiling than the nominal height, it will be necessary for the installer to provide either a four inch diameter opening above the Mounting Plate Assembly for the Mounting Post to protrude into, or cut off any of the Mounting Post material that comes to within 3/8 inch of the back of the Mounting Plate Assembly. This provides the clearance that is necessary to allow for any tilt adjustment.

POSITIONING

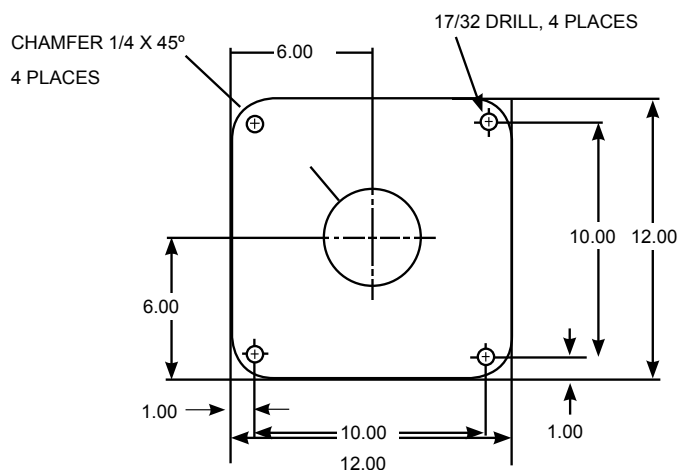
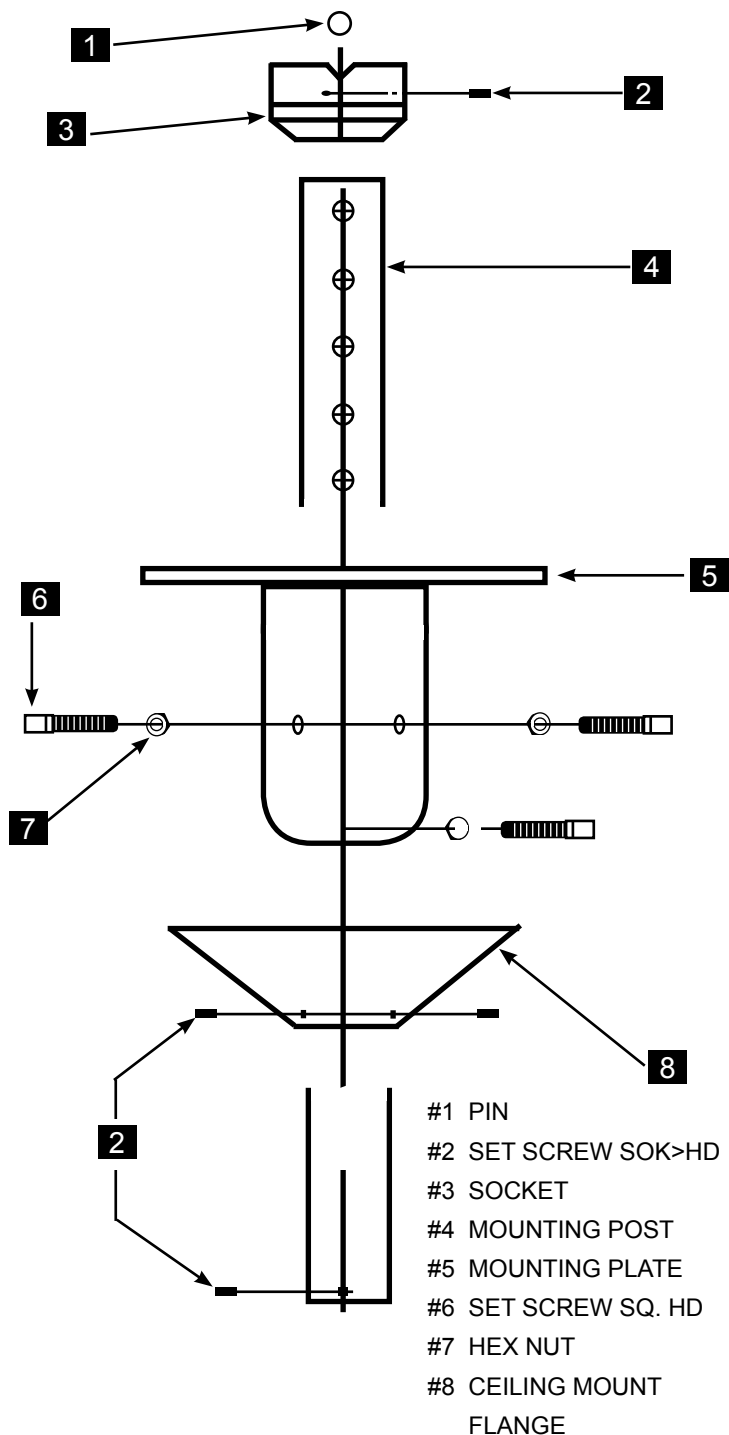


NOTE:
If the typical position is not available, locating the microscope within the Preferred Mounting Zone (vertically shaded) will ensure that there is maximum maneuverability of the microscope in all directions. Locating the microscope within the Secondary Mounting Zone (diagonally shaded) is possible, depending

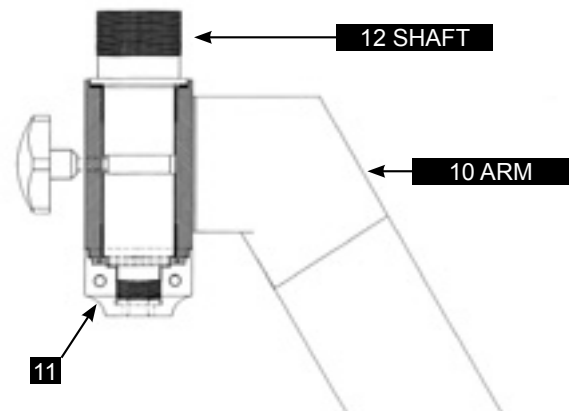


Place the Mounting Plate Assembly **5** on its side to allow parts to be placed into it from both the top and bottom. Back out all Square Head Set Screw **6** in order to insert column **4**. Feed in Mounting Post through the opening of Mounting Plate with the end of the Mounting Post that has the **5** pin mounting holes entering first. Push the Mounting Post through far enough to allow the Socket **3** to be installed onto the Mounting Post in such a position that the Pin **1** can be installed in the proper holes above the Socket. Then slide the Socket back up so that the Pin engages in the "V" groove in the Socket and ensure that the Pin protrudes the same amount from each side of the Post. While holding the Socket firmly against the Pin, tighten the Set Screw **2** (1/8" hex key) in the Socket to lock it to the Post. Then

pull the Mounting Post back through the Mounting Plate Assembly and hand tighten the six Set Screws **6** to hold the Post/Socket Assembly in place while attaching the complete unit to the ceiling structure (Note: loosen the Hex Nuts **7** to allow movement of the Set Screws **6**). Have an assistant lift the Post Assembly into position and fasten the assembly into the structural member. If there is any rocking motion due to a non-flat mounting surface, it will be necessary to shim between the surface and the Assembly to ensure that there is a solid coupling between the two.



The next step is to level and secure the Mounting Post. **4** To do this, loosen the six Set Screws **6** to allow the Mounting Post to tilt (it has a five degree tilt angle in all directions). Using a carpenters level held against the Mounting Post and the Mounting Post is plumb position, continue to tighten the set screws assuring that the column remains plumb. The six Nuts **7** may then be tightened against the Mounting Plate Assembly Tube. In this next step, install the Ceiling Flange Assembly **9** over the Mounting Post with the flat side towards the ceiling. Slide it up the Post approximately two feet and lightly tighten the three Set Screws **2** to hold the Flange Assembly in this temporary position. Thread the Shaft **12** into the Mounting Post **4** until it stops against the shoulder of the Shaft and then insert the Set Screw **2** into the Mounting Post and tighten it (1/8" hex key) to lock the Shaft into place.



Note: Turning the cap **11** clockwise or counter-clockwise will adjust Rotation Tension. Only one hole contains a Set Screw which locks the desired tension. Tighten Set Screw **2** to secure.

Prior to shipping, the set screw was tightened arbitrarily in order to allow previously mentioned assembly procedure.

After the entire microscope is assembled to the Ceiling Mount, check for satisfactory rotational movement.

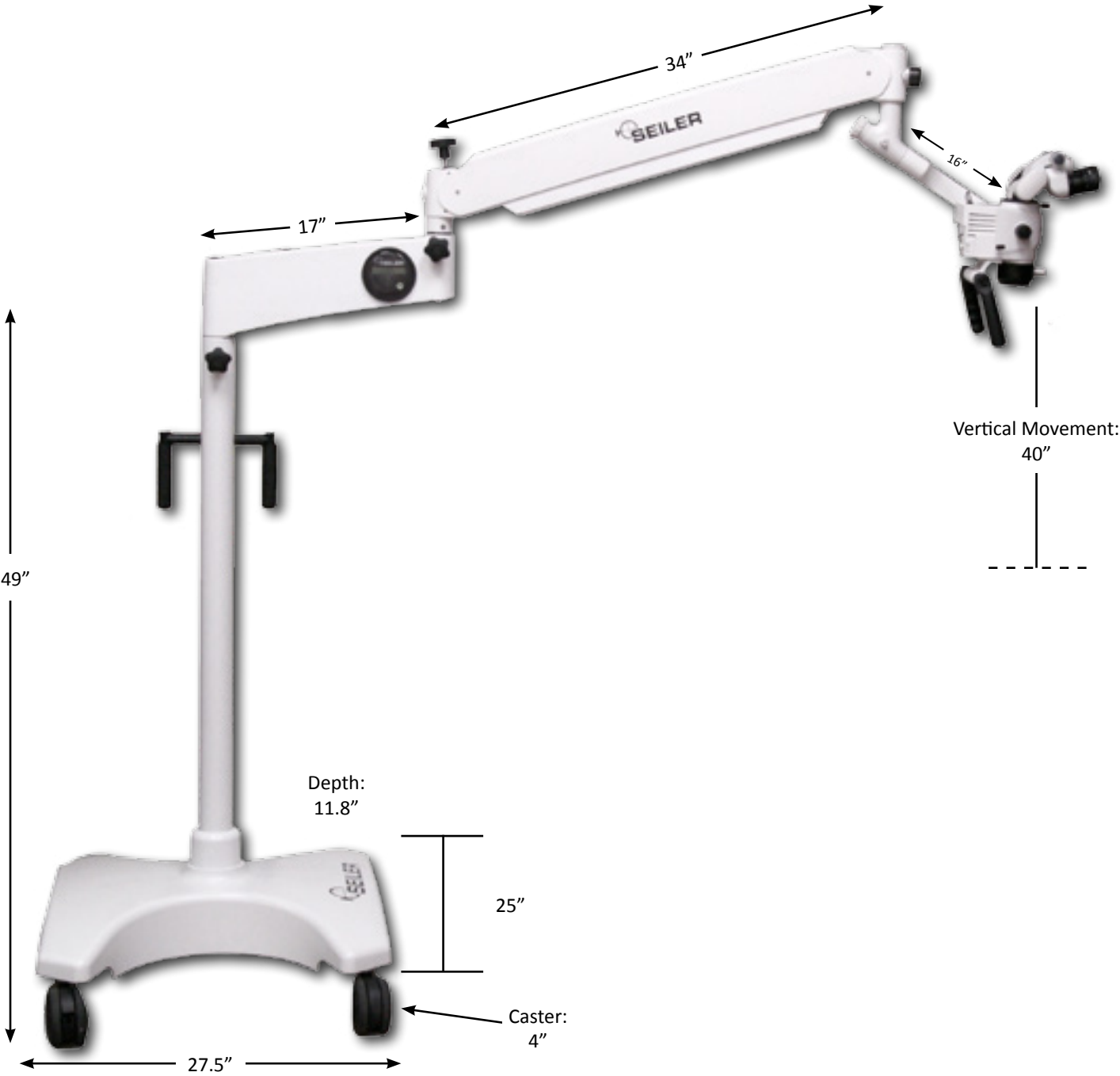
Optional: Cut off male plug from cord and feed up through cap **2** until into ceiling space and install connector

A thru hole is provided to wire the Assembly into the ceiling. Check with the electrical code on how to wire for the ceiling outlet.

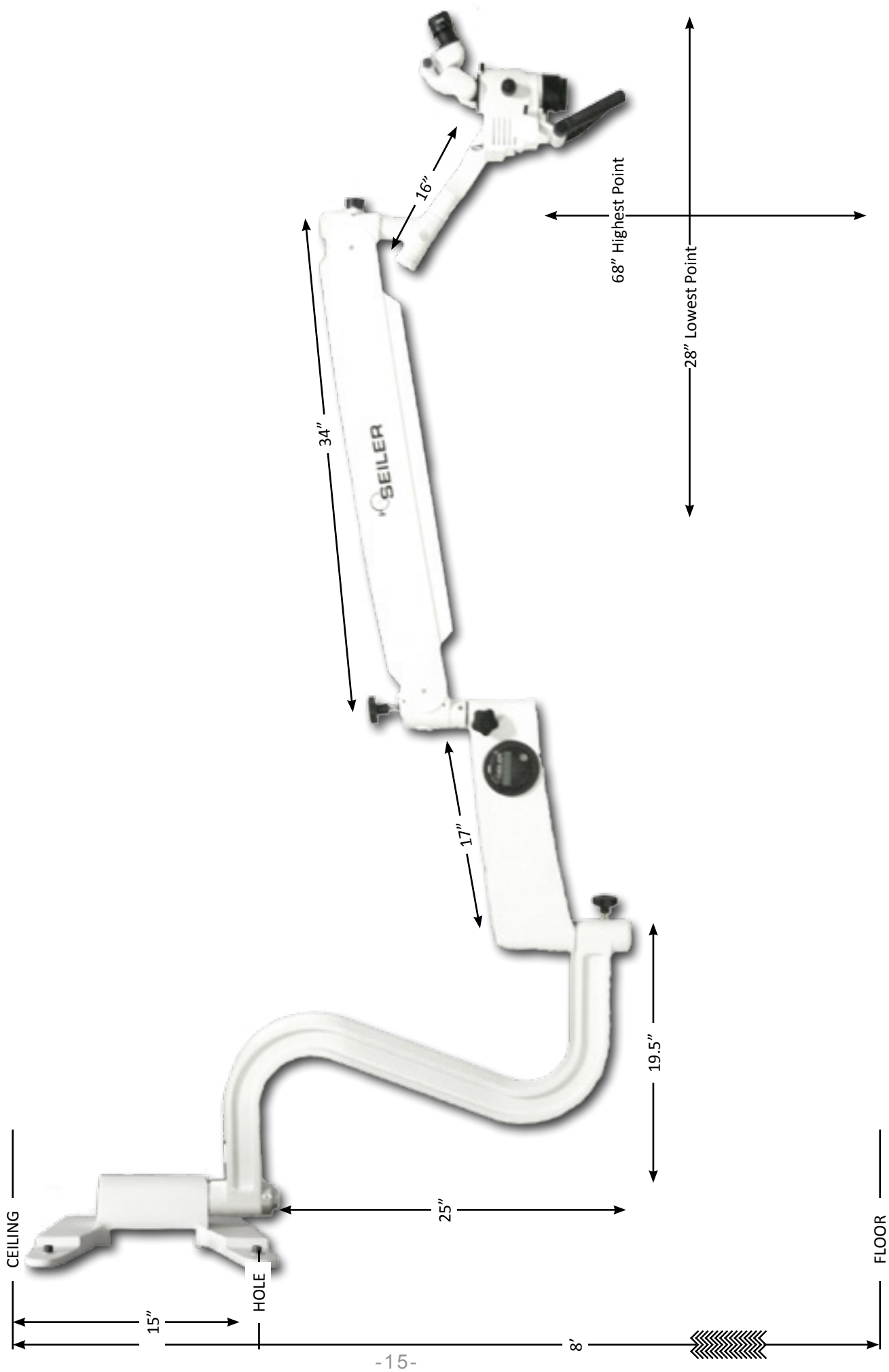
The caps must be tightened to prevent the arm from drifting.

DIMENSIONS

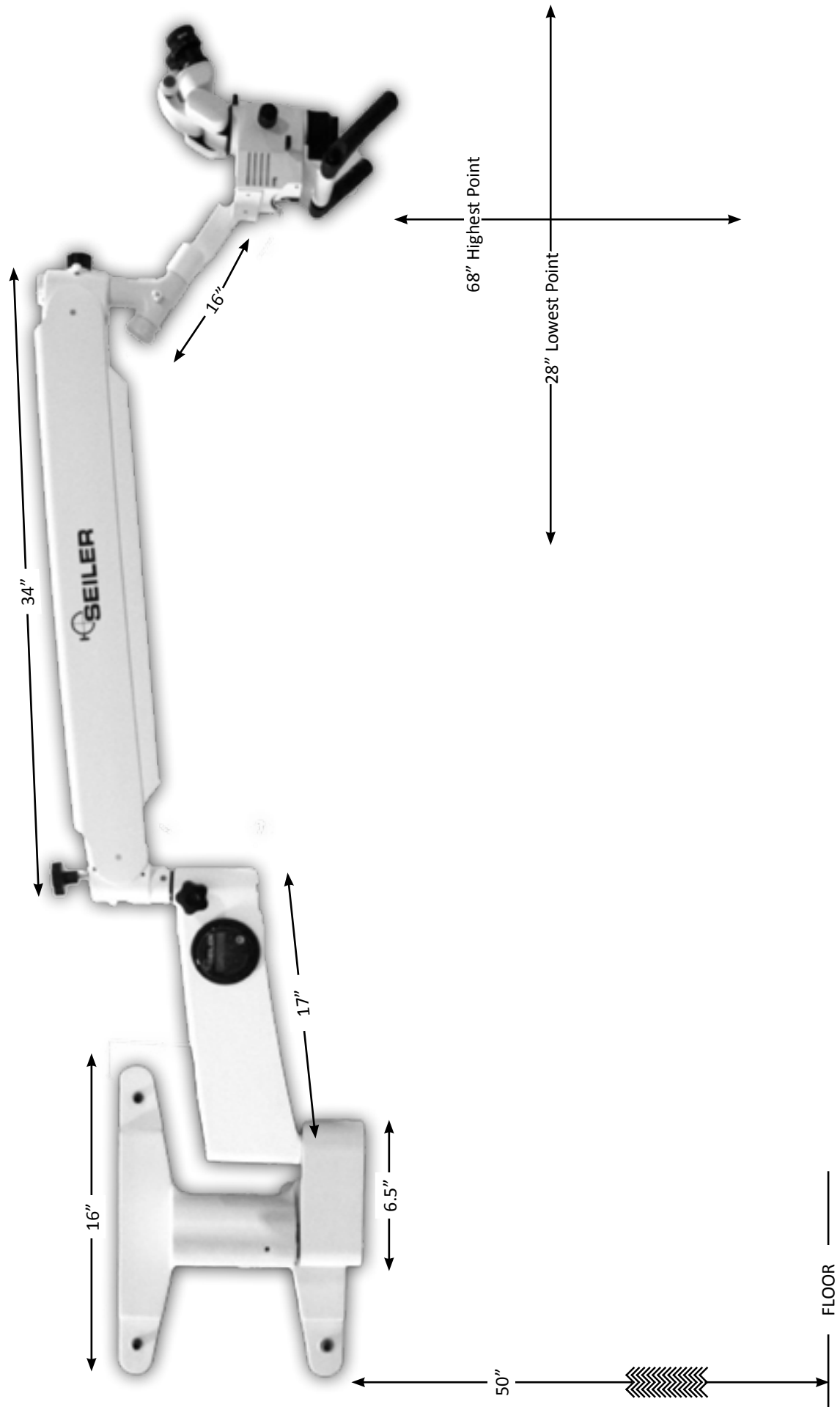
FLOOR MOUNT



HIGH WALL



WALL



CEILING

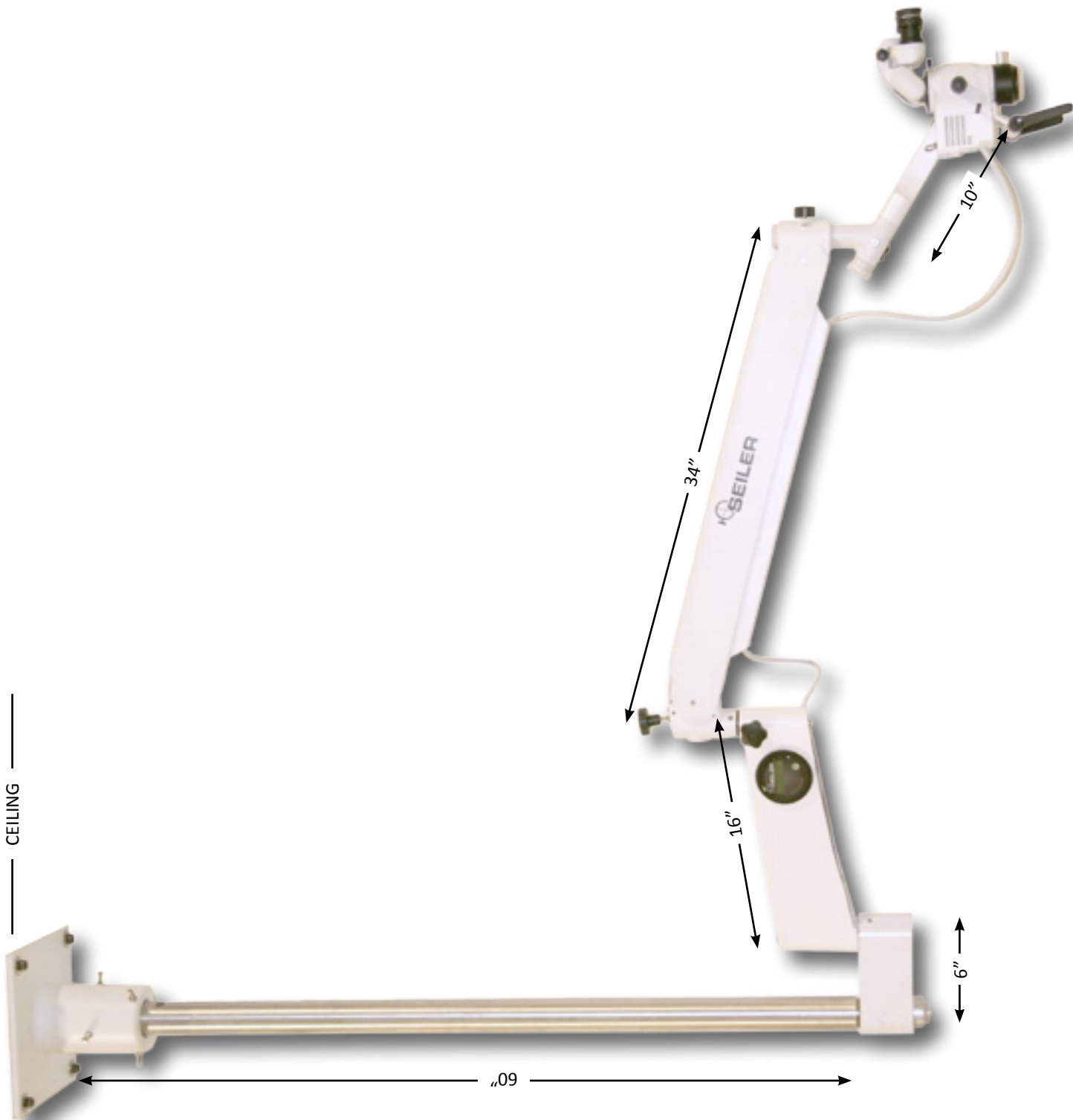


TABLE MOUNT



WARNINGS

LED ILLUMINATION

Symbols Used in this Manual or on the Device

The manual contains important regarding set-up and operation to facilitate ease of use and obtain effective results.

This manual contains critical information regarding safe handling and use of this system. Device malfunction or property damage could result if all instructions are not followed.

WARNINGS

EXPOSURE TO INTENSE BRIGHT LIGHT



Never look directly into the objective lens of the microscope when the unit is turned on as the light intensity can be damaging.

FIRE



Do not operate the unit near flammable materials including flammable gases or liquids.

If the microscope needs to be cleaned with a volatile liquid (such as IPA) turn off the unit before proceeding.

After cleaning allow vapors to disperse before turning on.

UNIT PRODUCES SIGNIFICANT AMOUNTS OF HEAT



Always allow the unit to cool to ambient temperature before attempting any adjustments or replacement of parts.

MICROSCOPE OVERHEATING



Do not block air inlets or outlets (vents) with anything including plastic protection covers.

If the microscope overheats it will turn the light off. If this happens, turn off the unit and allow sufficient time for the unit to cool (approx. 10 minutes) then turn the unit back on.

If the light remains off, turn the unit off and allow more time for cooling.

DEVICE OPERATES AT HIGH ELECTRICAL CURRENTS



Only qualified personnel should inspect the unit for internal damage.

Only operate the equipment in a professional manner as set forth in this manual.

Do not remove interior components from the power supply with the unit connected to a wall outlet.



QUALIFIED PERSONNEL ONLY

Only operate the equipment in a professional manner as set forth in this manual.

Only employ authorized and properly trained personnel to perform maintenance functions.



EMITTING OF ELECTROMAGNETIC ENERGY

This equipment has passed testing for EMI/RFI radiation and susceptibility; however if not installed and used in accordance with

the instructions, interference to other devices in the near vicinity may occur.

Electromagnetic energy can travel through the power cord or through radio transmission.

Ensure there is adequate separation distance between the unit and any device that may be affected by the electromagnetic energy coming from the unit.

Power the illuminator from a separate AC main circuit that does not have a device connected that could be affected by the electromagnetic energy coming from the illuminator.

SERVICE AND REPAIR

Defective items of equipment are to be serviced and repaired exclusively by persons authorized by the manufacturer. All repair work shall employ original manufacturer's parts only.

FUSE REPLACEMENT

Caution: Always disconnect power cord and turn main switch off before fuse replacement.

Turn light source off and unplug power cord. On underneath of unit remove fuse by prying fuse cover and pulling out fuse.

Replace fuse with 3 AMP (5mm x 20mm long) time delay 250V rated fuse. Insert back into fuse housing.

Re-connect the power cord and turn on the LED light source.

LIMITED WARRANTY

Your LED light source carries a LIFETIME Warranty on the LED bulb and three years on the electronic parts such as circuit boards and fans inside the light source. The warranty starts from the date of shipment. Should your product prove to have such manufacturing defects within three years of the shipment, Seiler Instrument will repair or replace the product and/or component part without charge. Should your LED Light Source product(s) need servicing under this warranty, please contact Seiler Instrument for a return authorization documentation. You should carefully pack the unit in a sturdy carton and ship it to the factory. Please include a note describing the defects, your name, telephone number and a return

NOTES

[illegible]

- In the US: 800-489-2282 (toll free)
- FAX number: 314-968-3601
- Customer Service: 314-218-6336

Register your product warranty online:
<http://www.seilmicro.com/warranty-registration/>

We encourage our customers to recycle this product whenever possible. Disposal of this unit must be performed in accordance with the applicable local environmental regulations.

Please contact customer service to issue a return authorization to return product to manufacturer at the end of product life.

Seiler Instrument and Manufacturing Co., Inc.
Medical Division
Toll Free: (800) 489-2282
Local: (314) 968-2282
Fax: (314) 968-3601
Email: micro@seilerinst.com
Web: www.seilerinst.com

Microscope Model Number

Location Purchased



Certificate of Compliance

Application of Council Directive: 2004/108/EC - EMC Directive &
Application of Council Directive: 93/42/EEC - Medical Device Directive

Standards to which Conformity is Declared:

EN 60601-1: 2007 including:
CISPR 11:2015/A1, EN 61000-3-2:2014/A2:2009, EN 61000-3-3:2013,
EN 61000-6-1:2007 including:
EN 61000-4-2:2008, EN 61000-4-3:2006/A1:2007/A2:2010, EN 61000-4-4:2012,
EN 61000-4-5:2014, EN 61000-4-6:2013, EN 61000-4-8:2009, EN 61000-4-11: 2004
EN 62471:2008, EN 60601-1:2007

Applicant:

Seiler Instrument

Address:

*3433 Tree Court Industrial Blvd
St. Louis, MO 63122
Tel: (314) 218-6365*

Product Tested:

Alpha Air Series Microscope (See attached model list)

Equipment Type

Class 1

Tested By:

*ITC Engineering Services, Inc.
9959 Calaveras Road, PO Box 543
Sunol, California 94586-0543
Tel: 925.862.2944 Fax: 925.862.9013
Email: info@itcemc.com
<http://www.itcemc.com>*

Date of Issue:

August 29, 2016

Report Numbers:

*20160610-01-CE (EMC)
20160610-01 (LVD)*

I, the undersigned hereby declare that the model(s) listed above
was tested and conforms to the Directives and Standards listed above.

Certified By:

Date April 21, 2016

Mr. Michael Gbadebo, PE
(California License # 11303)
Chief Engineer/Principal Consultant

Models List

APPENDIX C: ALPHA AIR SERIES MICROSCOPE PART NUMBERS

			Mount Type				
			Binocular Type				
			Magnification Levels				
Dental	Inclinable	6	AA6-100-LED220	AA6-200-LED220	AA6-300-LED220	AA6-400-LED220	AA6-500-LED220
		3	AA3-100-LED220	AA3-200-LED220	AA3-300-LED220	AA3-400-LED220	AA3-500-LED220
	Fixed Incline	6	AA6-100-LED	AA6-200-LED	AA6-300-LED	AA6-400-LED	AA6-500-LED
		3	AA3-100-LED	AA3-200-LED	AA3-300-LED	AA3-400-LED	AA3-500-LED
ENT	Inclinable	6	AA6-ENT1-LED220	AA6-ENT2-LED220	AA6-ENT3-LED220	AA6-ENT4-LED220	AA6-ENT5-LED220
		3	AA3-BNT1-LED220	AA3-BNT2-LED220	AA3-BNT3-LED220	AA3-BNT4-LED220	AA3-BNT5-LED220
	Fixed Incline	6	AA6-ENT1-LED	AA6-ENT2-LED	AA6-ENT3-LED	AA6-ENT4-LED	AA6-ENT5-LED
		3	AA3-ENT1-LED	AA3-ENT2-LED	AA3-ENT3-LED	AA3-ENT4-LED	AA3-ENT5-LED



3433 Tree Court Industrial Blvd.
St. Louis, Missouri 63122
USA

Toll Free: (800) 489-2282
Local: (314) 968-2282
Email: micro@seilerinst.com
Web: www.seilerinst.com