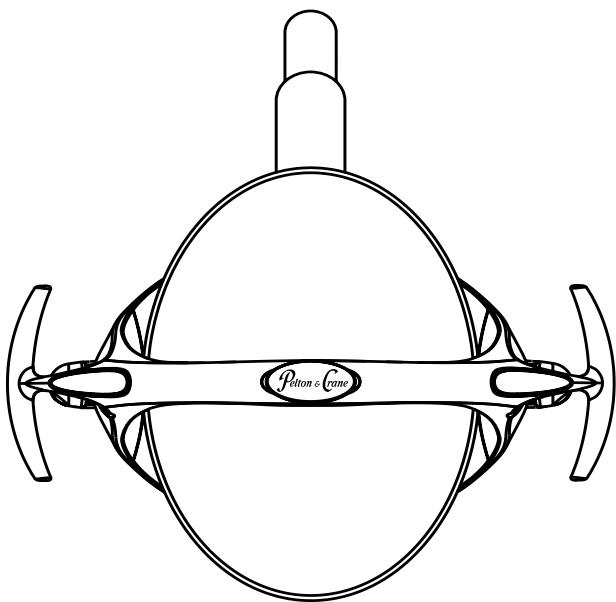
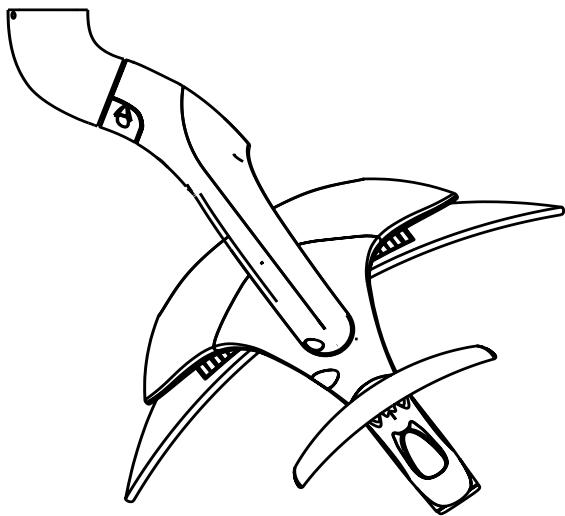


Pelton & Crane



Helios Light

Installation Manual

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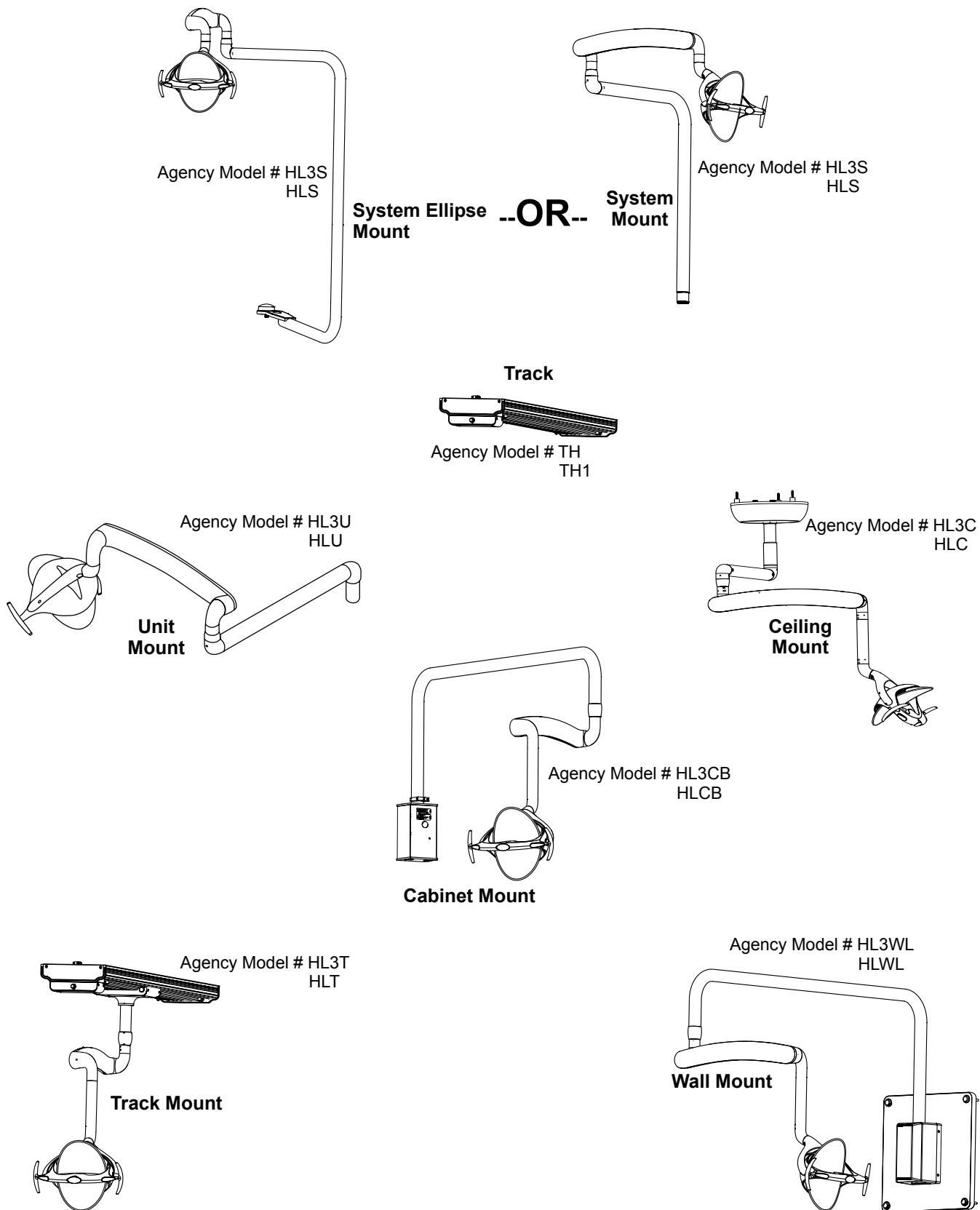
Technical Support

Technical assistance is available Monday through Friday,
8:00 am to 6:00 pm (Eastern Standard Time).

Phone: 800-659-5922
Fax: 800-659-7255
Customer Service: 800-659-6560

SYSTEM OVERVIEW

The Helios dental light uses LEDs to create a beam of light that is reflected and creates a shadow reduced pattern suitable for dentistry. The low voltage light source is mounted in various ways for allowing the user to adjust the position to illuminate the oral cavity. The Helios Dental light is intended for use by dental professionals to illuminate the oral cavity while performing examinations and dental procedures.



GENERAL INFORMATION

DEFINITION OF SYMBOLS

The following symbols and terms may be used throughout this manual:



WARNING: Failure to carefully follow the described procedure may result in damage to the equipment and/or injury to the patient/operator.



Risk of electrical shock present.
Make sure power is disconnected before attempting this procedure.



See operating instructions.



(AC) Alternating current.



Protective earth (Ground)



Manufacturing Date



Waste Electrical and Electronic Equipment.



Type B Applied part.



Conforms with the Essential Requirements of the European Medical Device Directive 93/42/EEC for Class I Devices.



Conforms with the Essential Requirements of the European Medical Device Directive 93/42/EEC for Class IIa Devices.



Indicates conformity to General Requirements for Safety is certified by Intertek Testing Services.



General mandatory action required, important to follow instruction. Not a caution.



Warning, strong magnetic field.



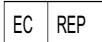
Off



On



Light Switch



European Authorized Representative



PRODUCT DISPOSAL

Contact your local authorized dealer for proper disposal of the device to ensure compliance with your local environmental regulations.

INTERFERENCE WITH ELECTROMEDICAL DEVICES

To guarantee the operational safety of electromedical devices, it is recommended that the operation of mobile radio telephones in the medical practice or hospital be prohibited.

Strong EMI sources such as electro surgery units or x-ray units may affect performance. If performance problems occur, move the unit to another electrical circuit or physical location.

INCOMPATIBLE UNITS OR ACCESSORIES

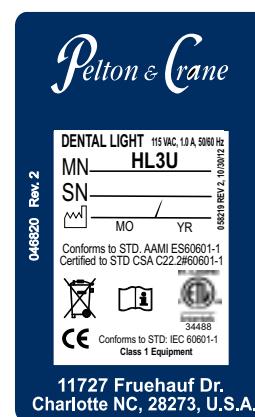
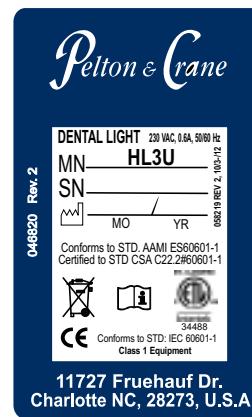
To guarantee the operational safety and function of this device, the use of unapproved unit or accessories is not advised. Doing so could result in potential hazard. Use authorized accessories and devices only.

Working Environment

This dental unit is to be used in an office environment only.

PRODUCT IDENTIFICATION

This product can be identified by its product label. This label states the unit model and serial number, electrical specifications, manufacture date and safety classification. Note the **SAMPLE** labels shown below.



WARNING: This product is intended for use by trained dental professionals only.

WARNING: Use only Pelton & Crane replacement parts. All repairs should be performed by an authorized Pelton & Crane dealer and/or their representatives.

WARNING: Only authorized service technicians should attempt to service this equipment. Use of other than authorized technicians will void the warranty.

Medical Device & QA Services Ltd.
76, Stockport Road,
Timperley.

Cheshire, WA15 7SN.
United Kingdom.

Tel: +44 (0) 845 527 5078 Fax: +44 (0) 161 903 9787
Email: info@mdqas.com www.mdqas.com

SAFETY NOTES

As manufacturers of electro-medical products we can assume responsibility for safety-related performance of the equipment only if maintenance, repair and modifications are carried out only by us or agencies we have authorized for this purpose, and if components affecting safe operation of the unit that may be needed are replaced with original parts.

We suggest that you request a certificate showing the nature and extent of the work performed, from those who carry out such work, and specify that the certificate show any changes in rated parameters or working ranges, as well as the date, the name of the firm and a signature.

Storage Conditions:

-55°C to +50°C
10% to 90% Relative Humidity



WARNING: Rotational stops are designed for a maximum force limit of 25 lbs. If rotational stops are broken, immediately take the equipment out of use and have the equipment serviced. Operation of damaged equipment could result in injury to the operator and/or patient.



WARNING: Failure to install set screws & roll pins per Installation Instructions could result in injury or damage to equipment.



WARNING: The Helios light is not to be used in rooms where an explosion hazard exists.

Electrical Specifications

Volts	Cycles	Amps
115 VAC	60 HZ	1 A ~
230 VAC	50 HZ	.6 A ~

All fuses are labeled at point of use. Replace fuses only with type and rating as indicated.

IEC Medical Device Classification

Classification:	1
Type:	B
Operation Mode:	Continuous
Splash Protection:	IPX0



WARNING: Power cords and their associated parts cannot be substituted without increased risk of electric shock or fire. We recommend the use of Pelton & Crane replacement parts only! Power cords must be installed by qualified personnel. Make sure all service loops, strain reliefs and cord guards are in place and that line, neutral and ground wires are secured.



WARNING: This product must be disinfected before use.



WARNING: Failure to disinfect the dental operating light between patients could expose user/patient to cross contamination and bio-burden/bio-contamination.



WARNING: No modification of this equipment is allowed.

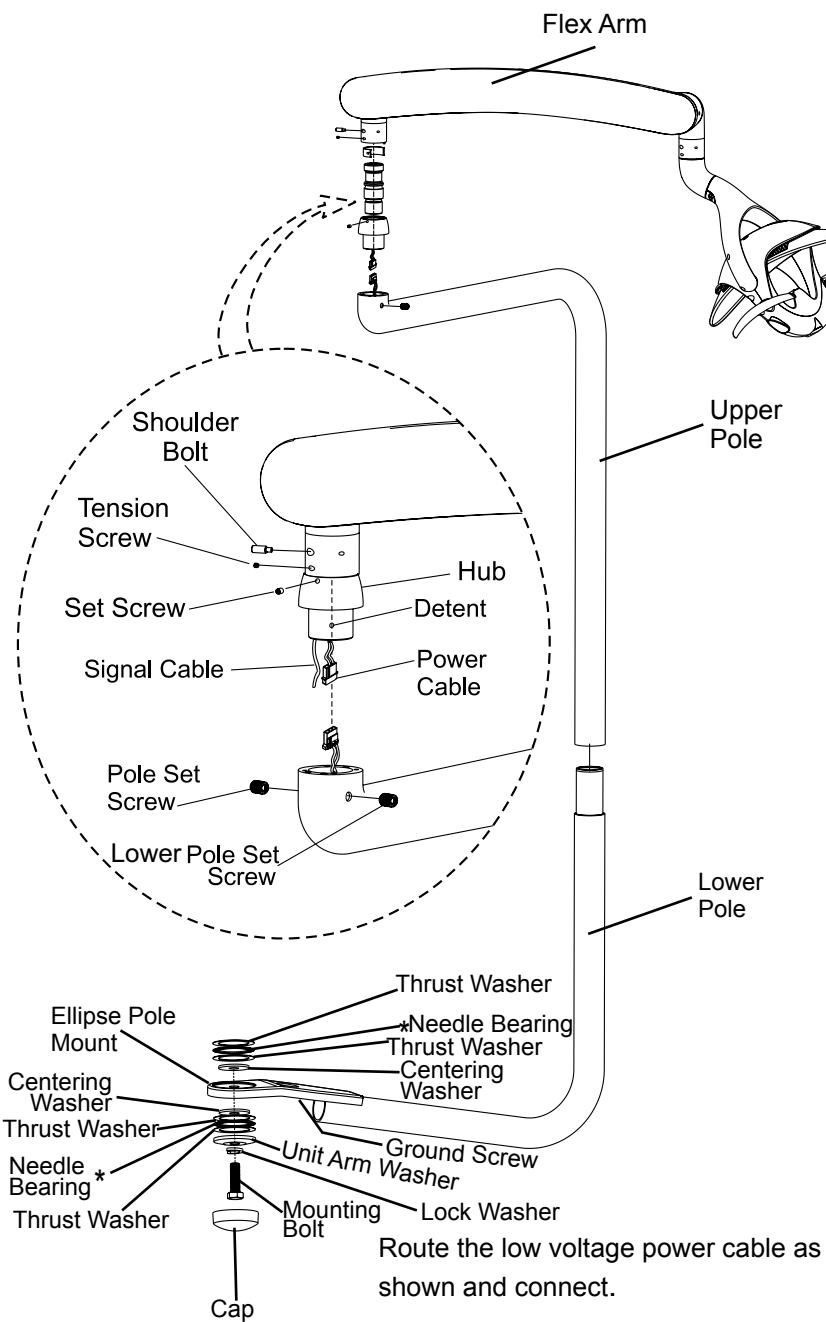


WARNING: Use a licensed electrician for all wiring.



WARNING: To avoid risk of electric shock, this equipment must be connected **only** to supply mains with protective earth.

ELLIPSE POLE INSTALLATION



Remove light from packaging

1. Apply grease to both sides of the two needle bearings.
2. Place one flat thrust washer over the top of a needle bearing and another flat thrust washer over the bottom. Repeat procedure for other needle bearing.
3. Place centering washers onto top and bottom of ellipse. Lower pole mount as show. Assemble needle bearings, thrust washers, unit arm washer, lock washer and mounting bolt onto ellipse pole mount. NOTE: Make sure centering washers are properly centered so that they won't be damaged during tightening of bolt.
4. Install lower ellipse pole mount to the chair ellipse support plate (not shown) by tightening mounting bolt to 26-30 lbs/ft with a 15/16" torque wrench. Mounting bolt must be tightened securely and give adequate resistance through entire pole swing range of motion.
5. Snap on cap over bolt head and unit arm washer.
6. Connect both power and signal cables from Flex Arm to the cables in the upper pole. Install remaining exposed cables into pole.
7. Align detent in flex arm hub with upper pole long set screw. (short set screw is on opposite side of detent). Insert Flex Arm into pole. Verify long set screw is still aligned with detent and tighten both set screws.

NOTE: Detent position can be changed for left or right handed practitioners. If the opposite hand is desired, switch long and short set screws. Rotate detent to opposite side and retighten set screws.

ELLIPSE POLE INSTALLATION

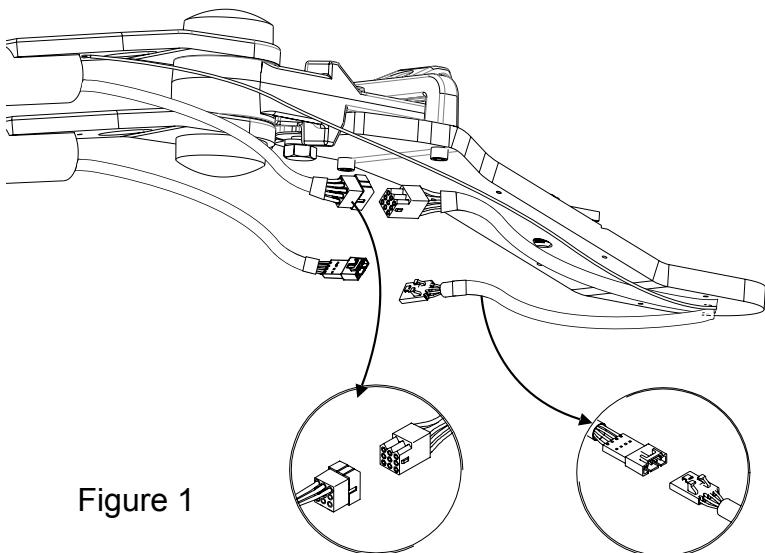
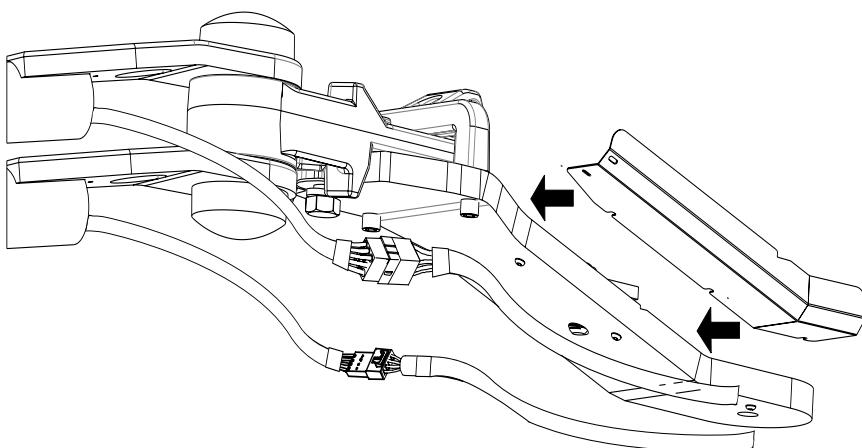


Figure 1

8. Take the plastic packaging sleeving from the light pole, and use it to wrap around and tie together the flex arm and upper light pole (to prevent the flex arm from swinging around during the following assembly step).
9. Lift light and upper pole together, feed wires into lower pole and insert upper pole into lower pole. Pull out cables from other end.
10. Add sleeving braid over ends of cables from umbilical cables going to light (power and ground).
11. Connect both power and signal cables to chair umbilical cables. Connect ground wire to ground screw in lower ellipse pole mount.
12. Route cables properly bayonet as shown. Swing ellipse poles throughout full range of motion and ensure cables move freely with no binding. Route any excess cables inside light pole.
13. Remove plastic packaging sleeving.

See Maintenance & Adjustments for final installation; Check Light for Operation.



ELLIPSE HELIOS INSTALLATION - POLE LEVELING ADJUSTMENT

Figure 1

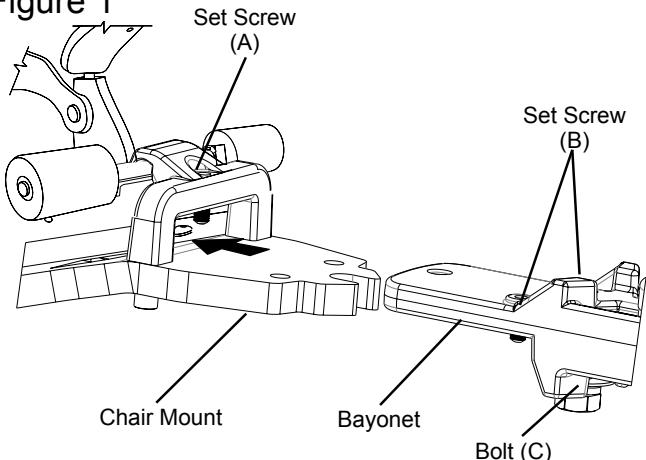


Figure 2

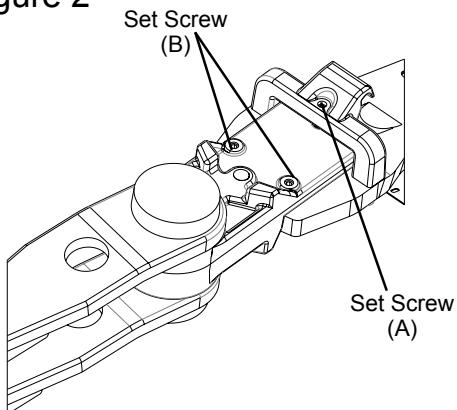


Figure 3

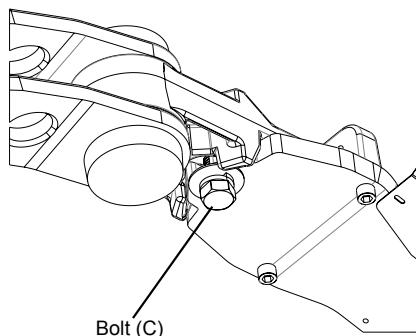
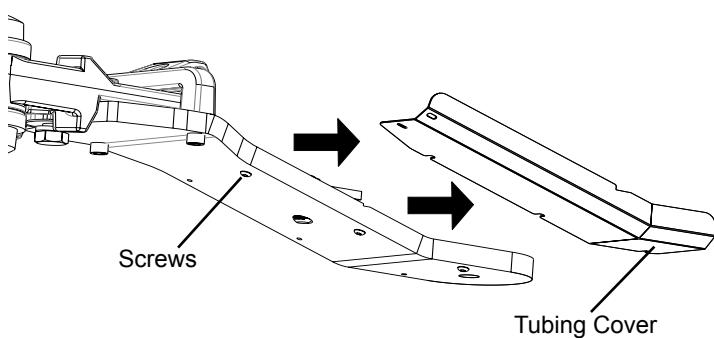


Figure 4



POLE LEVELING ADJUSTMENT

1. Begin by setting up the chair in its final location. Remove poles and arm from shipping box. Leave the strapping tape in place on the flex arm for now. Remove packing on vertical pole only.
2. Take the lower ellipse pole and insert bayonet end into the chair mount until fully engaged (Figure 1). Set screws should be seated in chair mount holes and lower ellipse pole will be supported on its own.
3. Attach levels on vertical posts, 90 degrees apart so they will measure front to rear leveling and side to side leveling. Use a hex tool to adjust front set screw (A) to level the posts from front to back (Figure 2). Adjust the side set screws (B) to level the posts from front to rear. When the post is level in both directions, tighten bolt (C) to secure the unit to the chair mount (Figure 3) (Make sure pole is still level after tightening bolt).
4. Remove all remaining packaging and inspect the unit for damage.
5. Carefully unbundle and unpackaged hand pieces. Attach and hang hand pieces in appropriate slots.
6. Loosen the three screws and slide out the tubing cover from the underside of the chair mount (Figure 4).



WARNING: Before making any connections, be sure all power has been disconnected. Making connections while chair or unit is connected to power source may result in equipment damage or injury.



WARNING: This line is intended for low voltage use only. Use of this line is at the discretion of the end user.

SPIRIT ELLIPSE HELIOS INSTALLATION —POLE LEVELING ADJUSTMENT

7. Install supplied cable braid sleeving over cables.

8. Connect the light communication cable and low voltage cables (Figure 5). These connections should be made with their mating connectors. As with all electrical connections, care should be taken for proper alignment to prevent damage and ensure proper electrical contact.

9. Connect ground wire to bayonet as illustrated (Figure 5).

10. Once all connections are made, put on cable braid sleeving over visible bundles and push any excess lines and cables back into poles. Rotate ellipse poles to their worst case position(s) and make sure cables have enough slack to move properly with rotations.

11. Replace tubing cover and tighten the (3) screws that were loosened earlier (Figure 6).

Figure 5

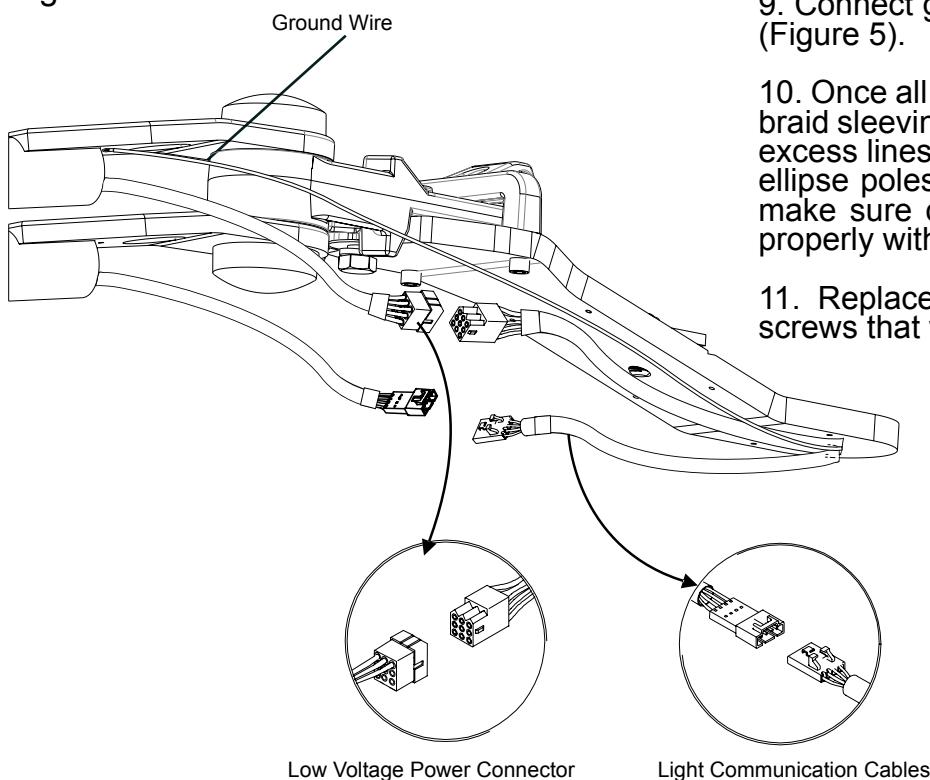
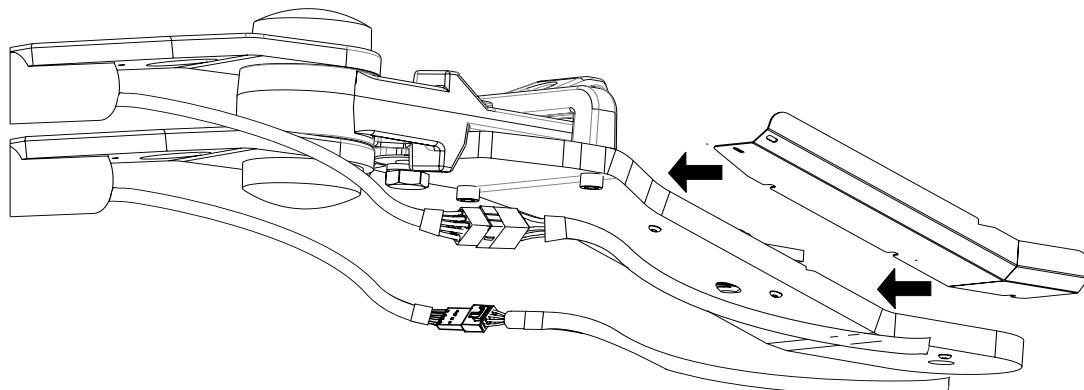


Figure 6

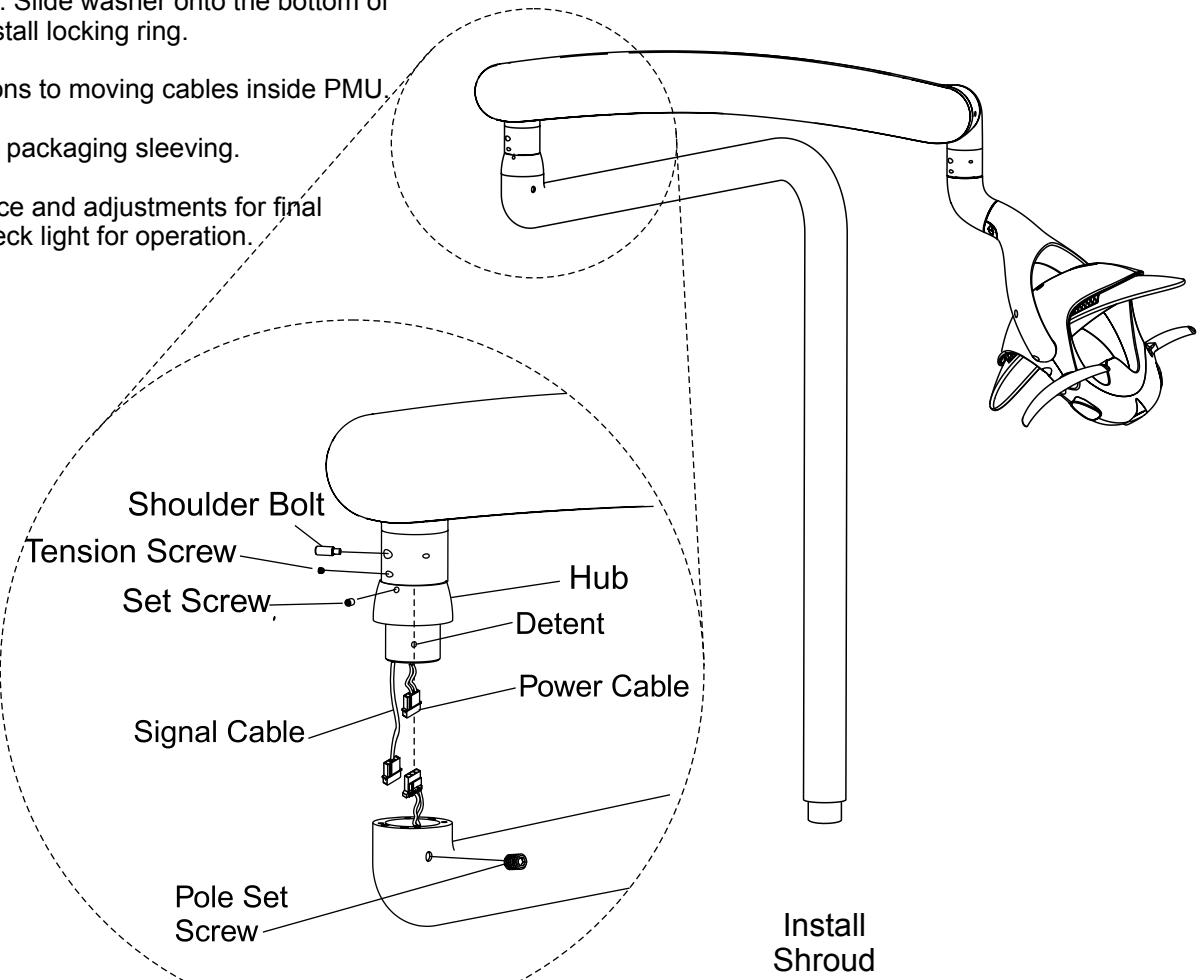


PMU HELIOS POLE INSTALLATION

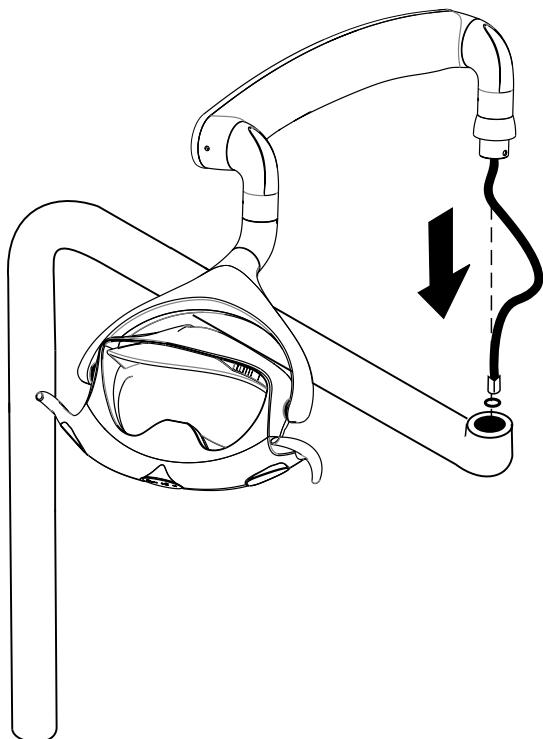
1. Remove lights from packaging. Connect both power and signal cables from flex arm to the cables in the pole. Install remaining exposed cables into pole.
2. Align detent in flex arm hub with upper pole long set screw (small set screw is on opposite side). Insert flex arm into pole. Verify long set screw is still aligned with detent and tighten both pole set screws.

NOTE: Detent position can be changed for left or right handed practitioners. If the opposite hand is desired, switch long and short set screws, rotate detent to opposite side and retighten set screws.

3. Take the plastic packaging sleeving from the light pole and use it to wrap around and tie together the flex arm and the pole (to prevent the flex arm from swinging around during the following assembly steps).
4. Install Dress Ring in proper orientation over bottom of light pole.
5. Lift light and pole together and feed wires into PMU and insert light pole in middle position. For 1500 PMU only: Slide washer onto the bottom of the pole and install locking ring.
6. Make connections to moving cables inside PMU.
7. Remove plastic packaging sleeving.
8. See maintenance and adjustments for final installation. Check light for operation.



LIGHT INSTALLATION FOR PMU MOUNT

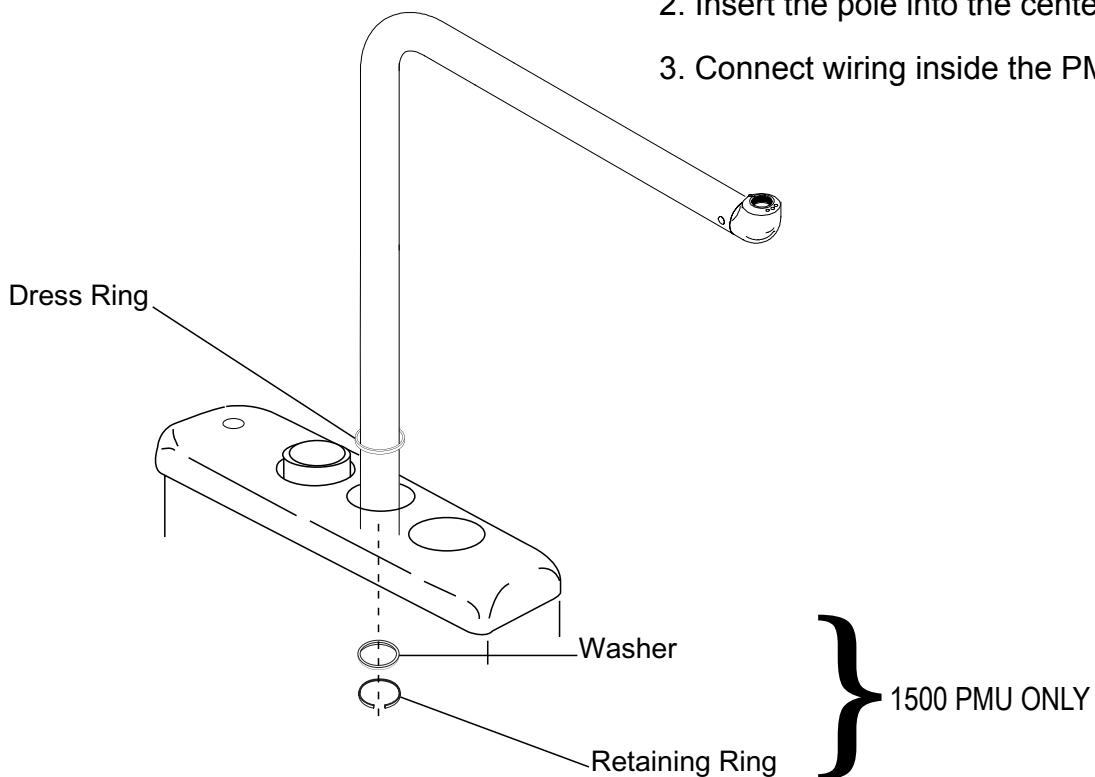


For 1500 PMU

1. Locate and unpack upper light pole and light arm assembly. Have an assistant hold upper pole in place and route light cable through upper pole as shown. Install light arm assembly into top of upper pole.
2. Ensure that the Dress Ring is assembled on the pole
3. Insert pole into the center hole of the PMU.
4. Slide washer onto the bottom of the pole and install locking ring.
5. Connect wiring inside the PMU

For 3000 PMU

1. Ensure that the Dress Ring is assembled on the pole.
2. Insert the pole into the center hole of the PMU
3. Connect wiring inside the PMU



TRACK & TROLLEY HELIOS INSTALLATION



WARNING: Connection to be made by a qualified electrician.

Pre-Installation of Electrical Wiring

1. Stub out a 115 VAC, 60 Hz (or 230 VAC 5DHz) electrical supply. See position of transformer box. Protect circuit with an appropriate fuse or circuit breaker.
2. Stub out wiring 39-3/16" (99.5 cm) from the chair center line along the long axis of the track and trolley assembly.

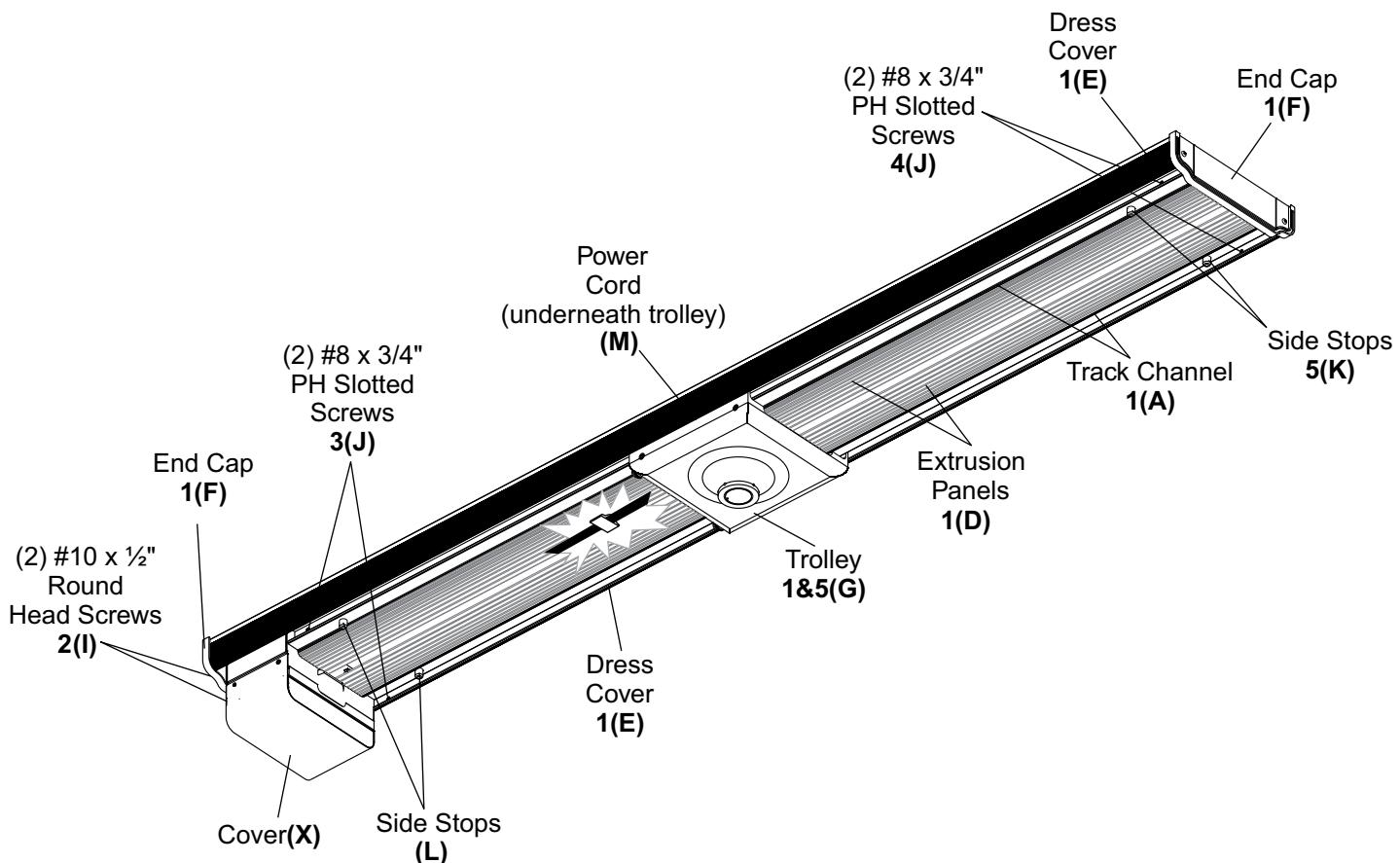
NOTE: For electrical supply connection, use wiring suitable for at least 90°C (194°F).

NOTE: The maximum ceiling height the light may be mounted to is 10 ft.

3. Ensure green/yellow ground wire is grounded at ground screw.
4. Install wall switch between power supply and light power supply transformer. This provides for safety and convenience during installation or service. Wall switch can be switched OFF during electrical storms to prevent transformer damage caused by voltage overloads. Wire nuts are furnished.

* If installing a monitor, See Monitor Installation Manual for correct ceiling height.

TRACK & TROLLEY HELIOS INSTALLATION

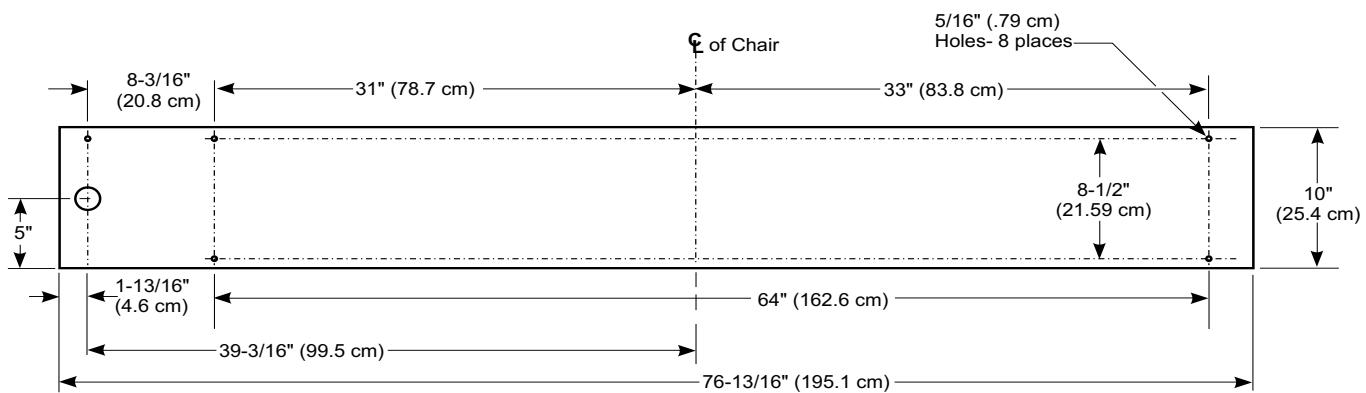
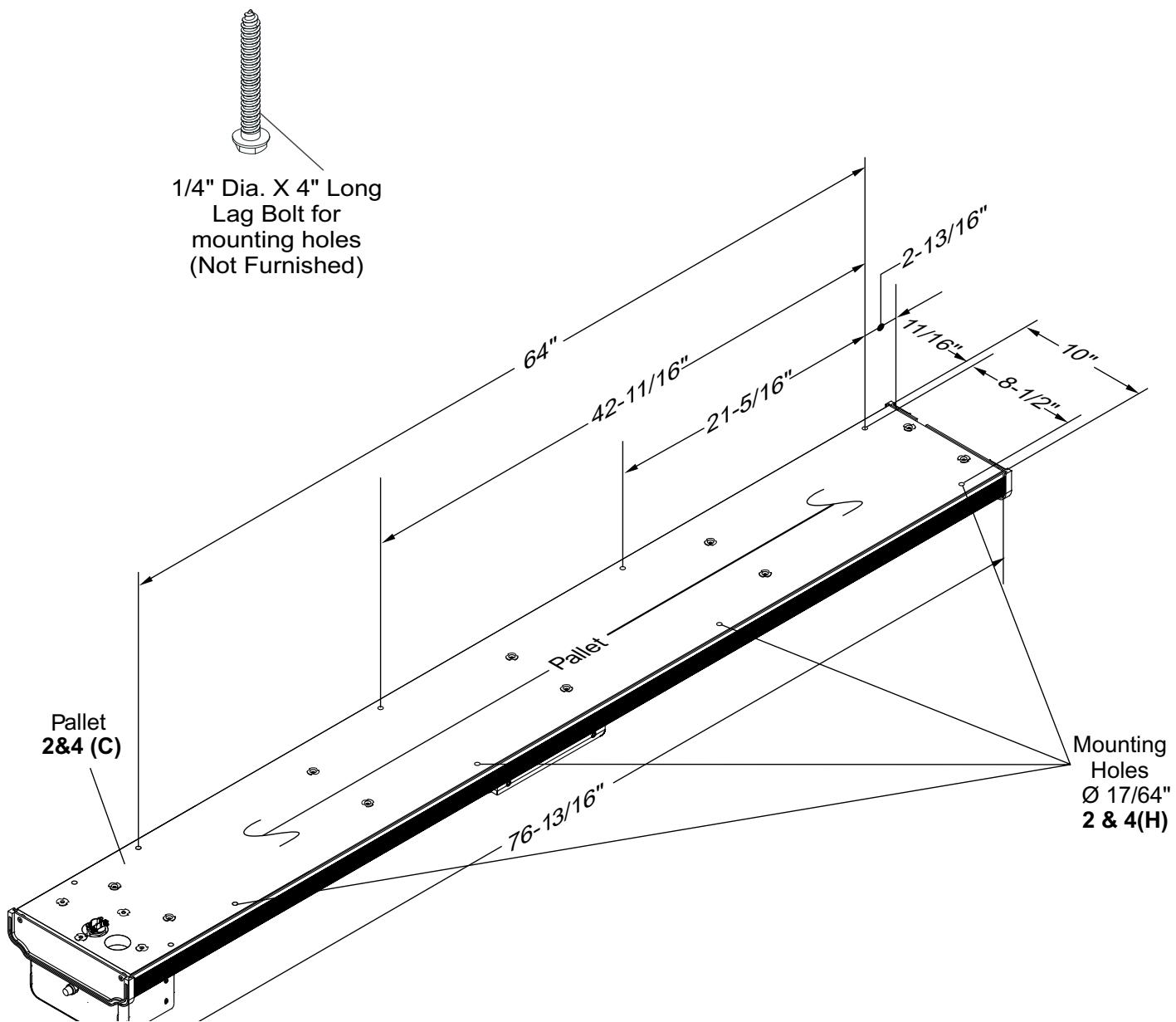


1. The track and trolley are shipped completely assembled. The track channel (**A**) is mounted to a pallet. Two extrusion panels (**D**), two dress covers (**E**), two end caps (**F**) and Light trolley (**G**) are attached to the channel.
2. To reach the eight 17/64" (7mm) diameter pre-drilled mounting holes (**H**) (see next page) in the plywood pallet (**C**), detach the two end caps (**F**) by removing two #10 -24 x 1/2" round head screws (**I**) from each end. Set end caps and screws aside. Remove transformer cover (**X**) from track.
3. Remove two #8 x 3/4" pan head slotted sheet metal screws (**J**) from each dress cover. Lift away dress covers. Set aside the screws.
4. Identify the eight 17/64" (7mm) diameter pre-drilled mounting holes (**H**) in plywood pallet (**C**) on next page.
5. For easier installation, detach the trolley (**G**) from the channel before mounting the pallet. Remove the two stops (**K**) from the end of the track channel opposite the transformer box.

NOTE: DO NOT remove side stops (L**).**

Disconnect power cord (**M**) at trolley bracket leaving cord intact under extrusion panel (**D**). Remove trolley off of track. Set aside.

TRACK & TROLLEY HELIOS INSTALLATION



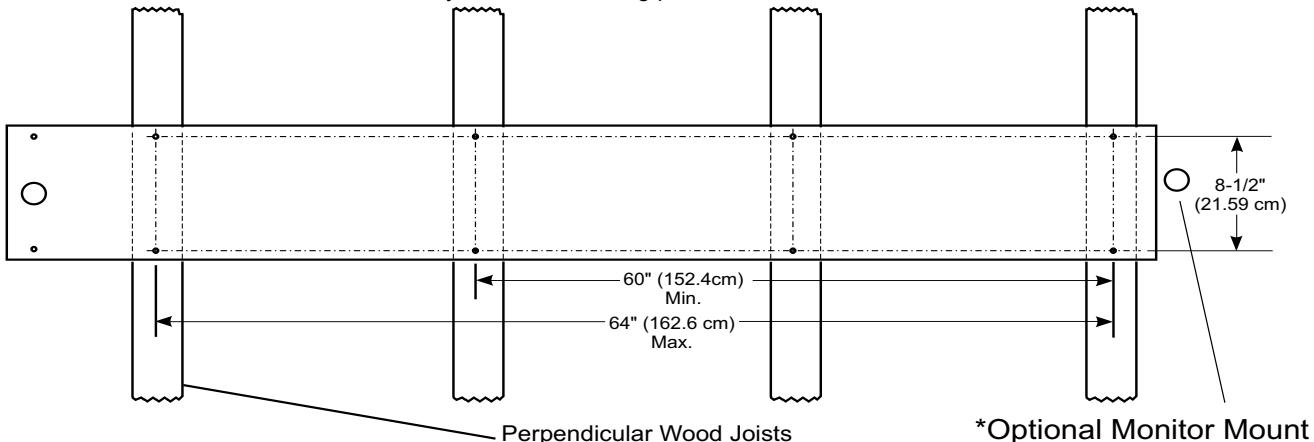
TRACK & TROLLEY HELIOS INSTALLATION

Track Framing and Trolley Installation

Mounting Pallet to Perpendicular Wood Joists

6. Ensure ceiling substructure is firmly secured to support approximately 200 pounds (100 kg) live load.
* If a monitor is being installed with a light, consult monitor literature.
7. Using eight pre-drilled holes in plywood pallet ($3/4" \times 10" \times 76\text{-}13/16"$) mount to perpendicular wood joists with eight $1\text{/}4" \times 4"$ lag bolts.

NOTE: Drill additional holes if necessary. Ensure mounting pallet is level.

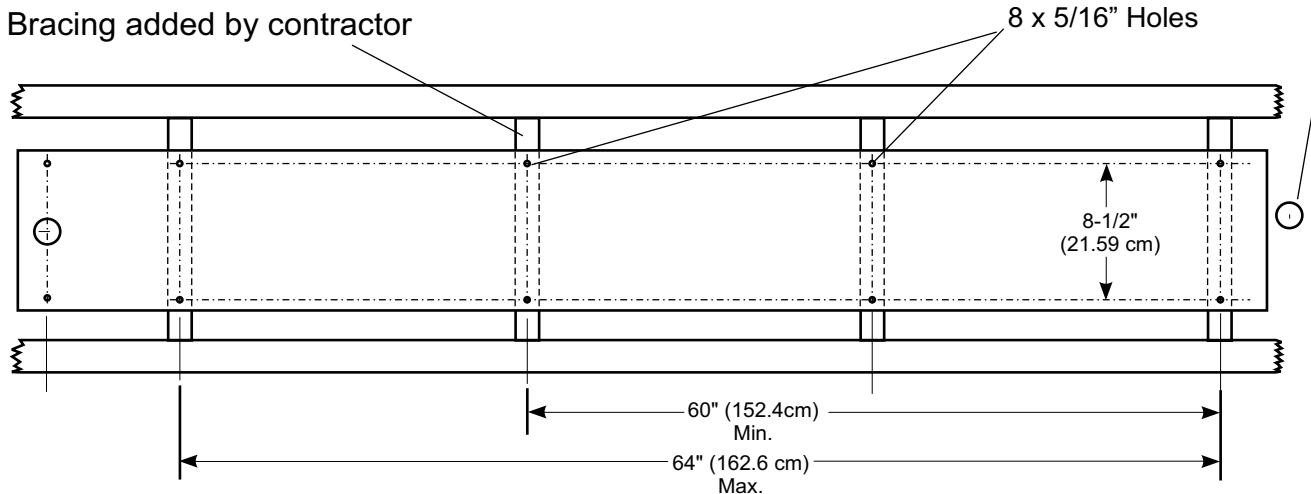


Mounting Pallet to Parallel Wood Joists

8. Contractor to install cross bracing between the parallel joists as shown. Ensure ceiling substructure is firmly secured to support approximately 200 pounds (100kg) live load.
9. Using eight pre-drilled holes in mounting pallet mount to cross bracing with eight $1\text{/}4" \times 4"$ lag screws.
10. Reinstall Trolley on Track, plug in power cable and reinstall side stops (shown on page 9).

NOTE: Drill additional holes if necessary. Ensure mounting pallet is level.

*Optional Monitor Mount



Provide adequate framing to support at least 200 pounds (100kg) live load.

For ceilings constructed using wood joist, the tripod must bolt directly to the ceiling joists and additional framing or cross blocking using the provided hardware (3 bolts must be used).

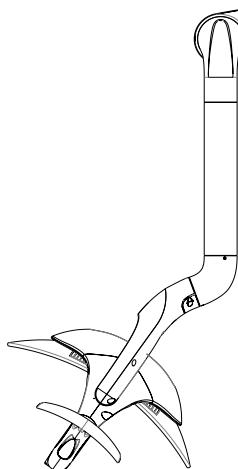
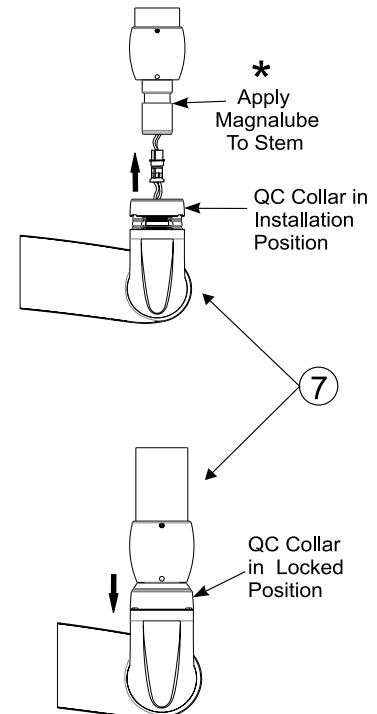
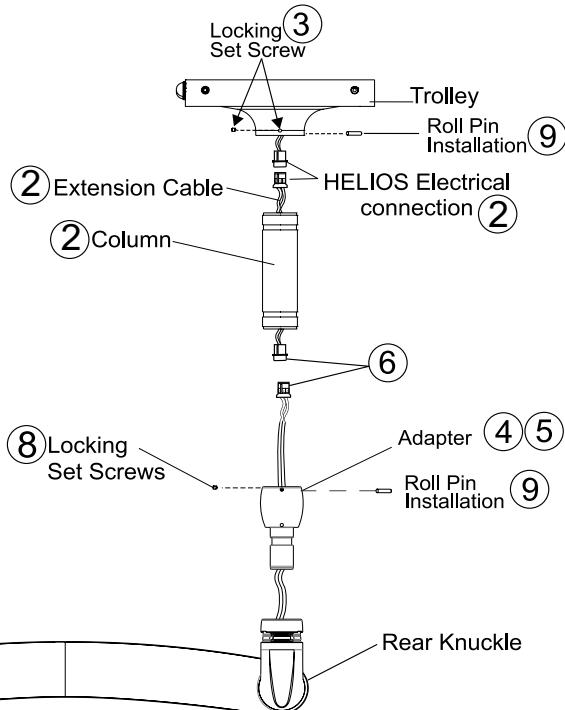
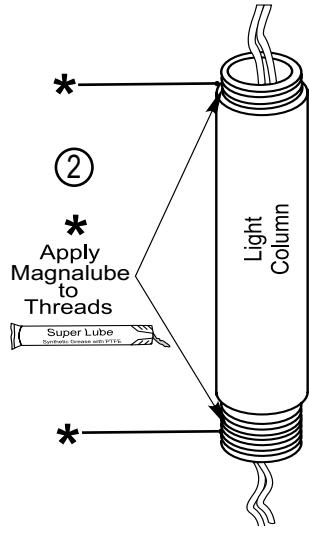
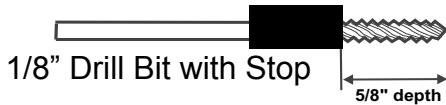
For other types of ceiling construction, such as suspended ceilings, it will be necessary for installer to provide adequate framing to support at least 200 pounds (100kg) live load that will be secured to ceiling structure before attaching the tripod to framing.

If tripod or frame is bolted to concrete or metal, the installer must provide the necessary bolts, anchors and washers to secure frame and/or tripod to ceiling structure.



WARNING: It is the responsibility of the dealer/contractor to provide suitable support framing prior to installation.

TRACK & TROLLEY HELIOS INSTALLATION



NOTE: Ensure column is plumb to prevent trolley from drifting. Adjust pallet with shims if necessary.

NOTE: For quick connect removal see pages 27-28



WARNING: Failure to use the supplied drill bit with stop to control depth of drill bit may result in electrical wiring damage and subsequent electrical shock.



WARNING: Set screws must be tightened securely and roll pins must be installed to prevent column from unscrewing during operation. Failure to install roll pins and tighten set screws securely could result in light falling off trolley.

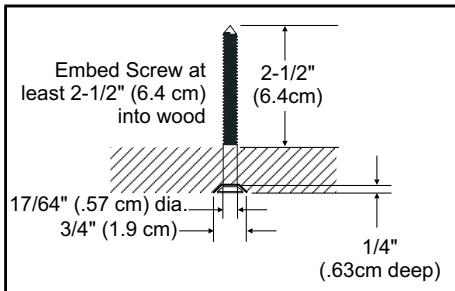
TRACK & TROLLEY HELIOS INSTALLATION

Track Light installation (See page 13 for illustration)

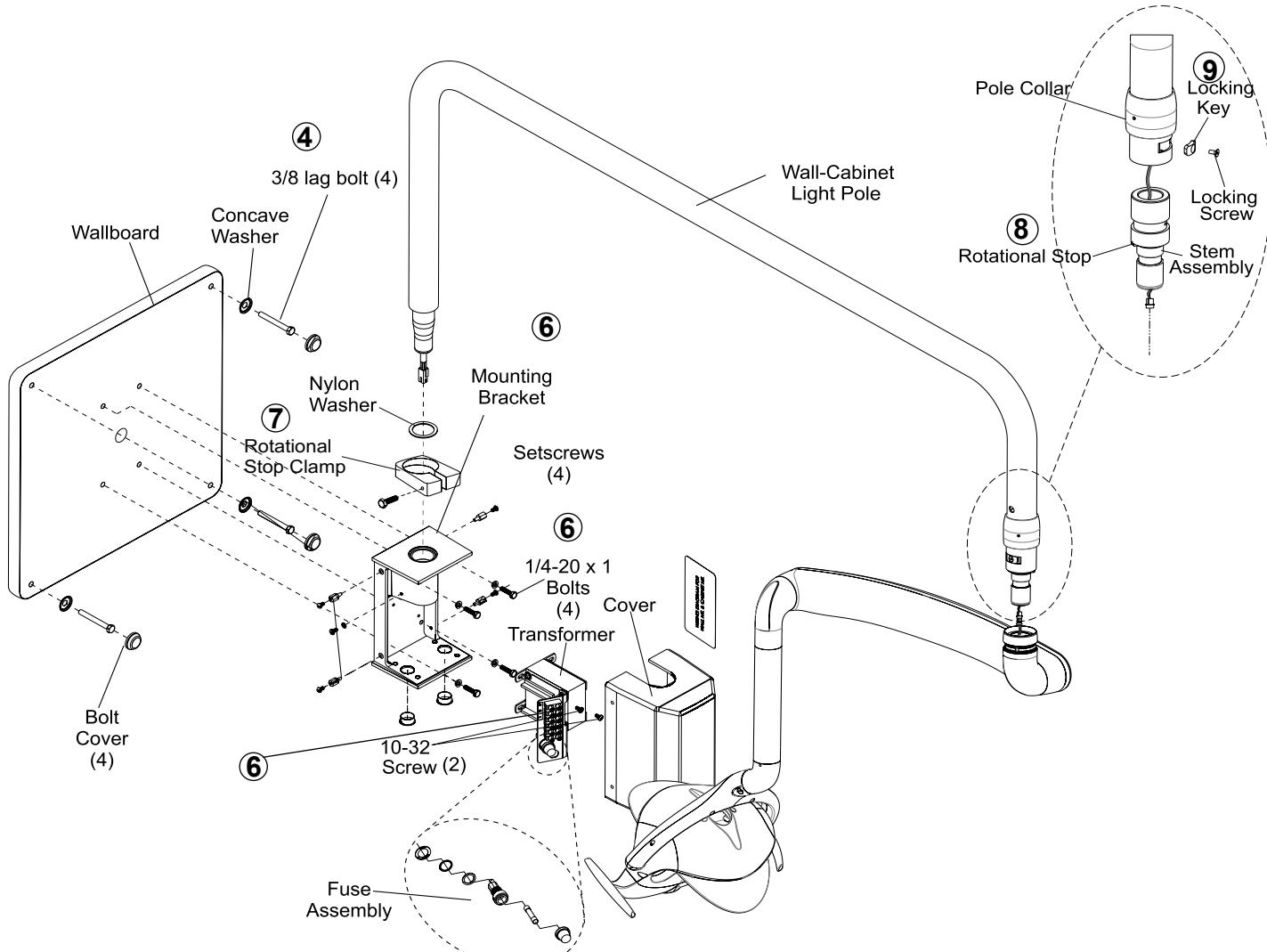
1. Remove the adapter from the column and set aside.
2. Connect power cable from trolley to the power extension cables provided within the column. Apply grease (*) to threads on column. Thread column onto trolley.
3. Insert and tighten two set screws (found within the hardware kit sent inside the column) in trolley to secure column.
4. Using 5/64 Allen Wrench, loosen the two upper set screws on adapter.
5. Apply grease (*) to threads on column. Thread Adapter onto Column and apply Magnalube grease (*) to stem.
6. Connect wire from Column to wire in Flex Arm, push the QC Collar to the installation position and install Stem into Knuckle while pushing wires into Column.
7. Align rotational stop pin (located on flex arm knuckle) with vertical alignment sticker on hub. Slide flex arm knuckle up onto stem until the two clamps in the Knuckle snap into place in the groove on the Stem. Pull the QC Collar to the locked position (it must fully cover the clamps in the Knuckle).
8. Ensure rotational stop is in correct position, and tighten set screws on adapter.
9. Locate two 3/32" pilot holes on the trolley and the adapter; using the supplied drill bit with stop, drill 1/8" hole to a depth of 5/8". Insert roll pins (found within the hardware kit sent inside the column).

See Maintenance & Adjustments for final installation;
Check Light for Operation.

WALL & CABINET MOUNT HELIOS INSTALLATION



NOTE: The wallboard is drilled to mount on 16" centers. Locate two studs and mark the locations.



WARNING: Use a licensed electrician for all wiring.

WALL & CABINET MOUNT HELIOS INSTALLATION

Provide adequate framing to support approximately 200 pounds live load. Framing should allow all four mounting bolts to enter solid wood.

Provide a 1.0 amp, 115VAC, 60HZ supply and protect it with a 15 amp fuse or breaker.

Install wall switch between power supply and light power supply transformer. This provides for safety and convenience during installation of service. Wall switch can be switched OFF during electrical storms to prevent transformer damage caused by voltage overloads. Wire nuts are furnished.

NOTE: Steps 1 through 4 are for Wallboard Installation only:

1. Position wallboard over the located studs with the lower marks 60" from the floor.
2. Position a level over wallboard. Using the centerlines, verify that marks are level. Mark holes using an awl or scribe by piercing the wall through the hole.
3. Drill pilot holes 1/4" diameter in the wall at the marked position.
4. Insert the four 3/8" lag bolts into the concave washers. Be certain the bolt heads fit inside the concave depression on the washer. Mount the wallboard with the lag bolts and snap the bolt head covers on the washer flanges.
5. Connect the power supply to the transformer terminal strip, line, neutral and ground.

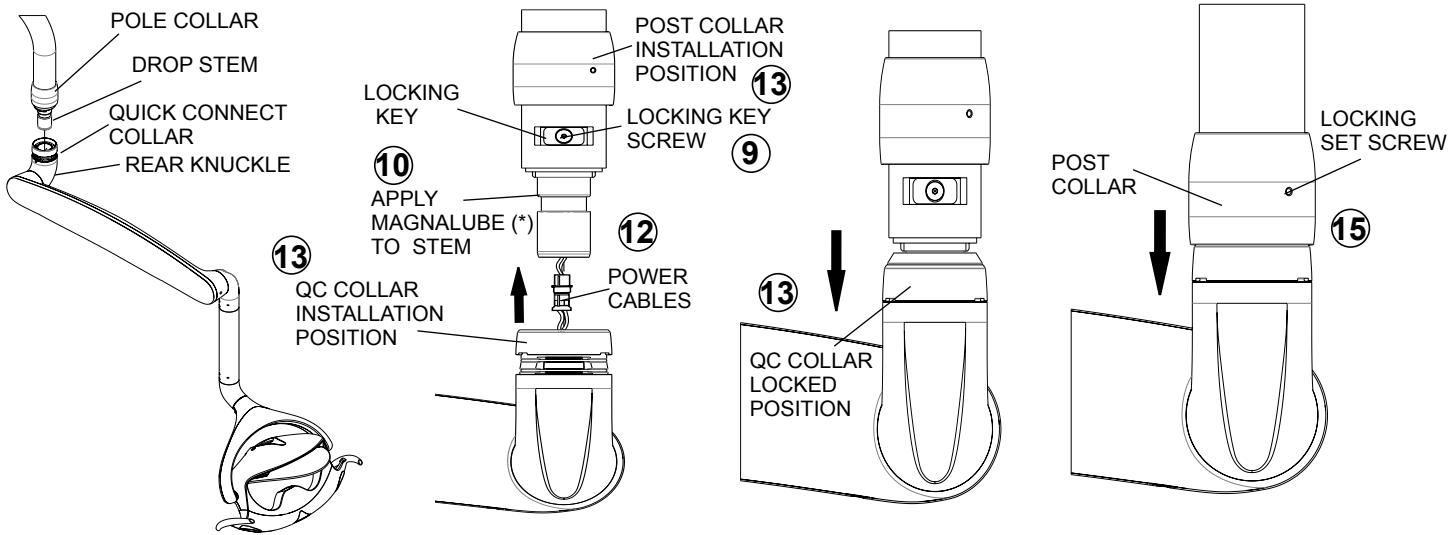
Wall & Cabinet:

6. Locate the mounting bracket. Line up holes in the bracket with the holes drilled in the cabinet wall. Install transformer mounting bracket using the four 1/4-20" bolts and washers making sure the mounting bracket is level.

NOTE: If ceiling clearance is less than 104", slide the Pole into the Mounting Bracket before fastening Mounting Bracket to structural channel.

7. Place nylon washer and rotation stop clamp on pole (mount end) and install pole pivot adapter into the mounting bracket.
8. If required, turn the adapter so the rotational stop feature on the stem assembly is turned toward the head of the chair the light is being installed onto.
9. Install the locking key and secure it with the locking screw.

WALL & CABINET MOUNT HELIOS INSTALLATION

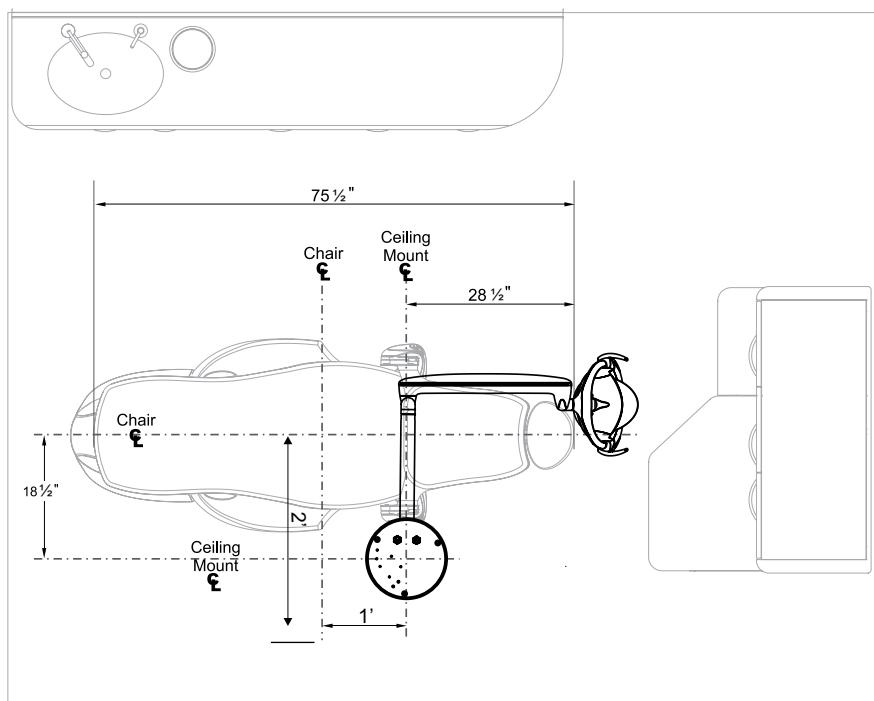


10. Apply Magnalube grease (*) pack to stem.
11. Place cover onto pole and *lightly* tighten set screw (using a 5/64 Allen Wrench) to hold collar above the locking key on the pole.
12. Connect the power cables and push connected power cables up into delivery pole.
13. Push the QC Collar into the installation position. Align rotational stop pin (located on flex arm knuckle) on pole. Slide flex arm knuckle up onto stem until the two clamps in the knuckle snap into place on the groove in the stem. Pull the QC Collar to the locked position (it must fully cover the clamps in the knuckle!).
14. Check rotational stop (rotation stop has two settings 180° apart) and adjust as required.
15. Loosen set screw and slide collar down over locking key until it is just above, but not touching, the QC Collar and tighten set screw.
16. Make final power connection within transformer box. Install transformer box cover.
See Maintenance & Adjustments for final installation; Check Light for Operation.

NOTE: For removal of Quick Disconnect, see pages 27-28.

NOTE: The side removable panel on the cabinet is for access to the plug and receptacle for the light. Do not block this panel; the outlet should be easily accessible for disconnection from main power.

CEILING MOUNTED HELIOS INSTALLATION



Right Hand Installation

Install wall switch between power supply and power supply transformer. This provides for safety and convenience during installation or service. Wall switch can be switched **OFF** during electrical storms to prevent transformer damage caused by voltage overloads. Wire nuts are furnished.

Positioning

The recommended ceiling positions for various methods of operation are shown.

NOTE: The maximum height the ceiling flex arm may be mounted is 10ft. (304.8 cm).

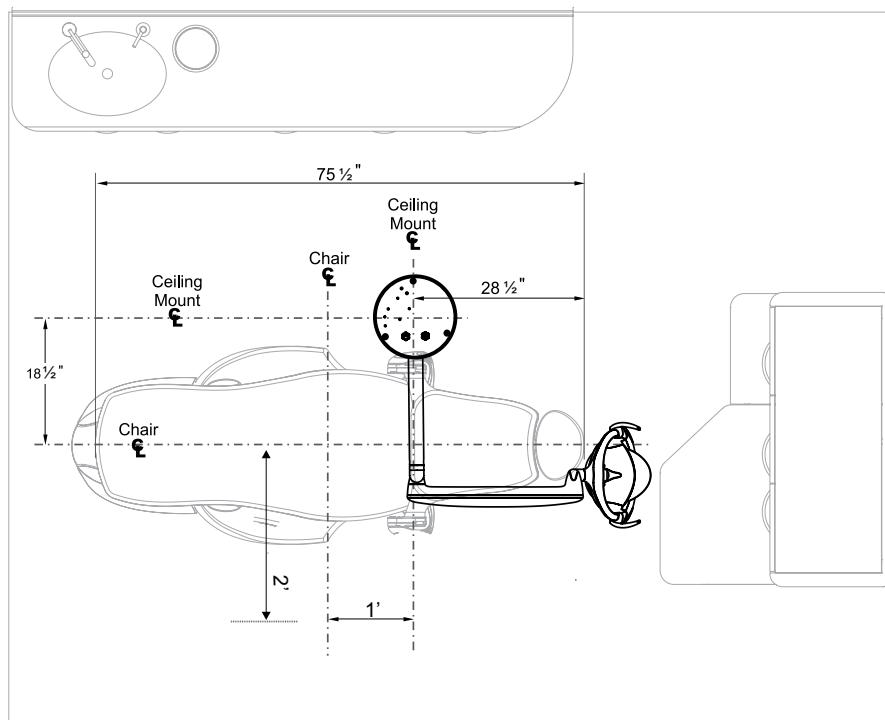
Pre-Installation of Electrical Wiring

Stub out a 115 VAC, 60 Hz. (or 230 VAC 50 Hz) electrical supply. See position of transformer box. Protect circuit with appropriate fuse or circuit breaker (local codes apply).

NOTE: For electrical supply connections, use wiring suitable for at least 90°C (194°F).

Provide adequate framing to support at least 200 pounds (100kg) live load.

- For ceilings constructed using wood joist the tripod must bolt directly to the ceiling joists and additional framing or cross blocking using the provided hardware (3 bolts must be used).
- For other types of ceiling construction such as suspended ceilings, it will be necessary for installer to provide adequate framing to support at least 200 pounds (100kg) live load that will be secured to ceiling structure before attaching the tripod to framing.
- If tripod or frame is bolted to concrete or metal the installer must provide the necessary bolts, anchors and washers to secure frame and/or tripod to ceiling structure.



Left Hand Installation



WARNING: It is the responsibility of the dealer/contractor to provide suitable support framing prior to installation.

CEILING MOUNTED HELIOS INSTALLATION

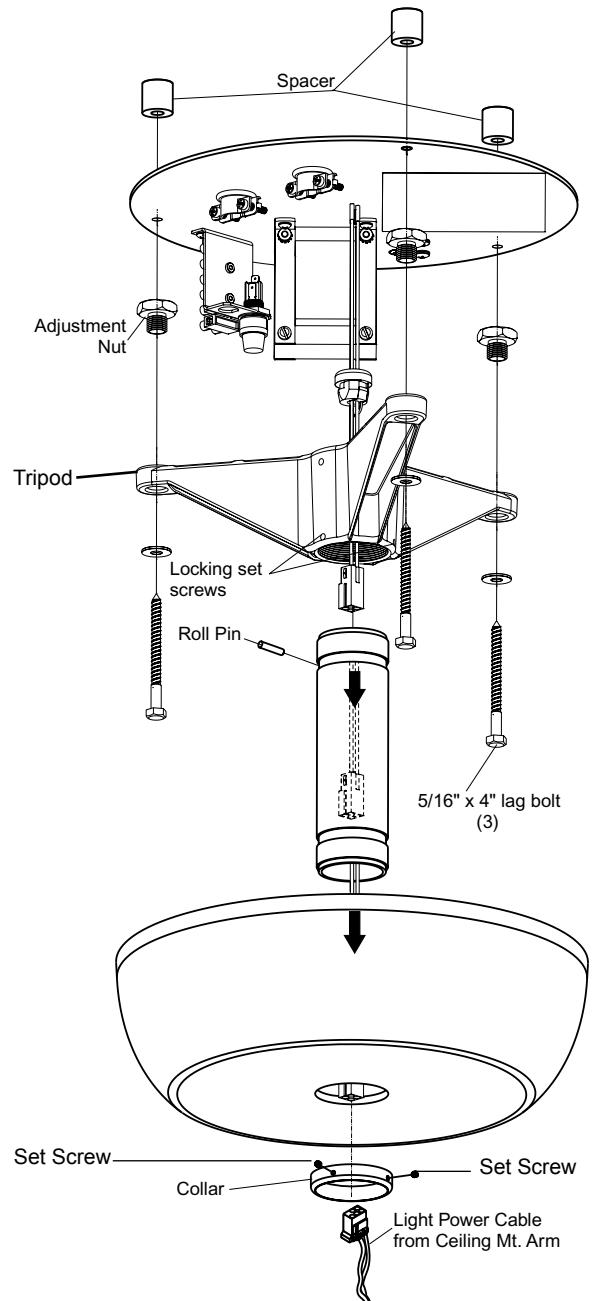
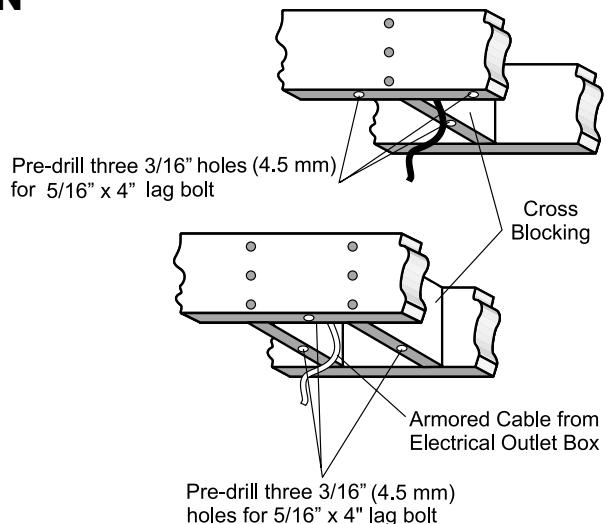
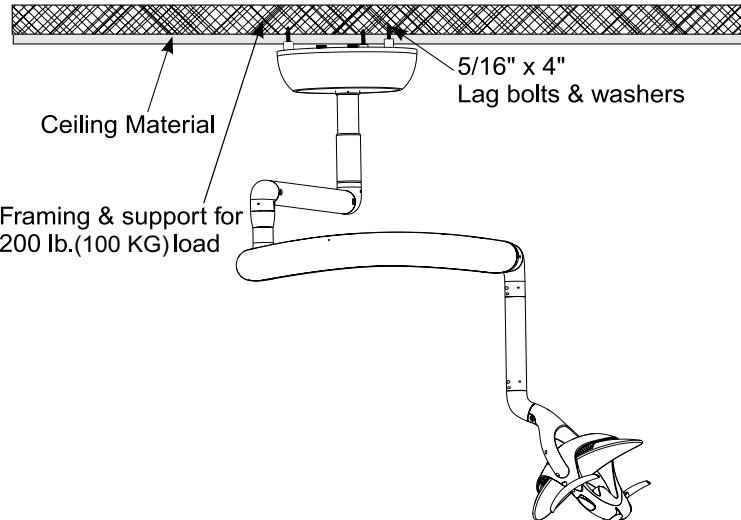
Tripod and Column Installation

Drill three 3/16" (4.5 mm) pilot holes to mount lag bolts.

Drill three 3/4" (19 mm) holes through ceiling.

Secure tripod and ceiling plate to framing with 5/16" x 4" lag bolts and washers. The 3/4" diameter spacers should be in direct contact with the framing. Insert ceiling plate between the 3/4" spacers and adjusting nuts.

NOTE: If spacers rest against soft sheetrock, acoustical tile or plaster, the Helios light may be unstable.

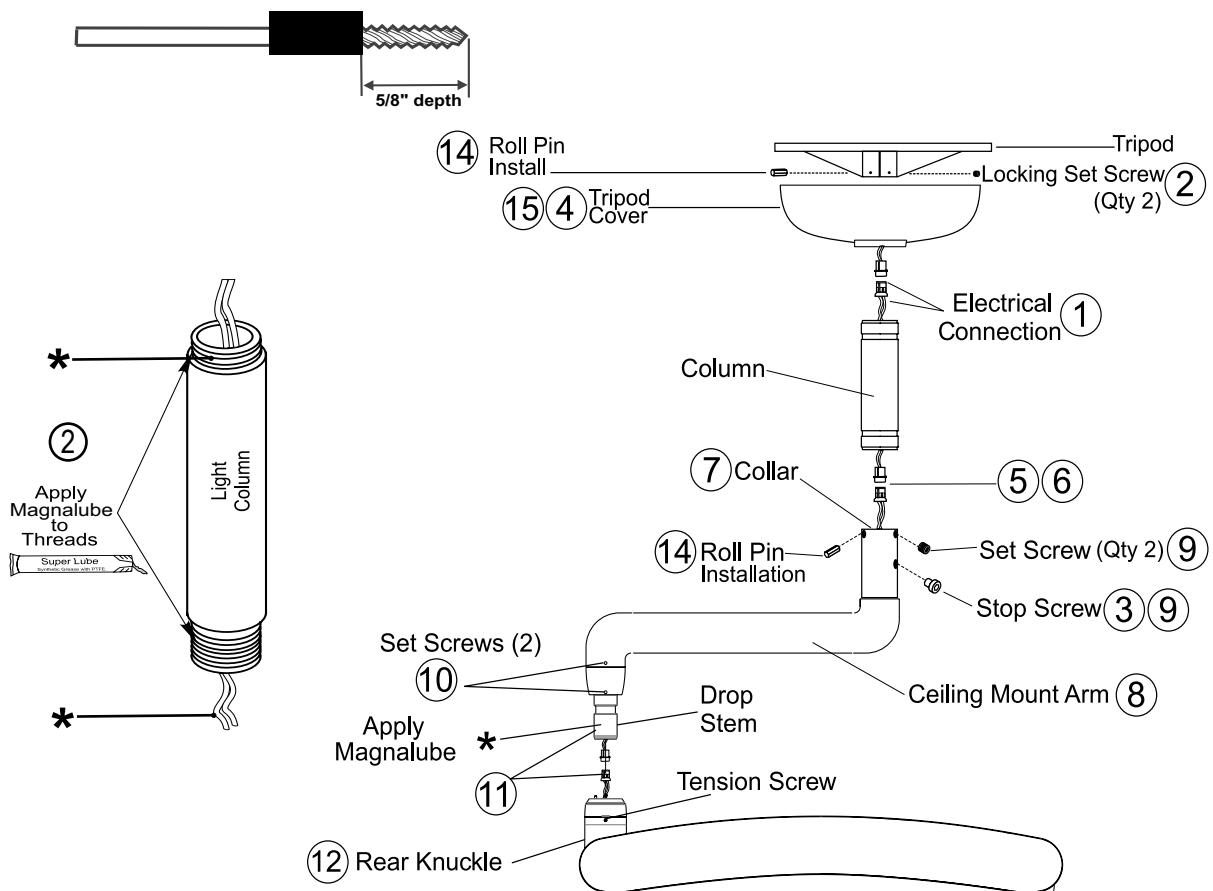


WARNING: Set screws must be tightened securely and roll pins installed to prevent column from unscrewing during operation. Failure to install roll pins and tighten set screws securely could result in the Helios Light falling from ceiling.

Main Power Connection

Route incoming electrical supply through the provided cable clamp. Connect the line, neutral and ground to the appropriate terminals.

CEILING MOUNTED HELIOS INSTALLATION



NOTE: For removal of Quick Disconnect, see pages 27-28.



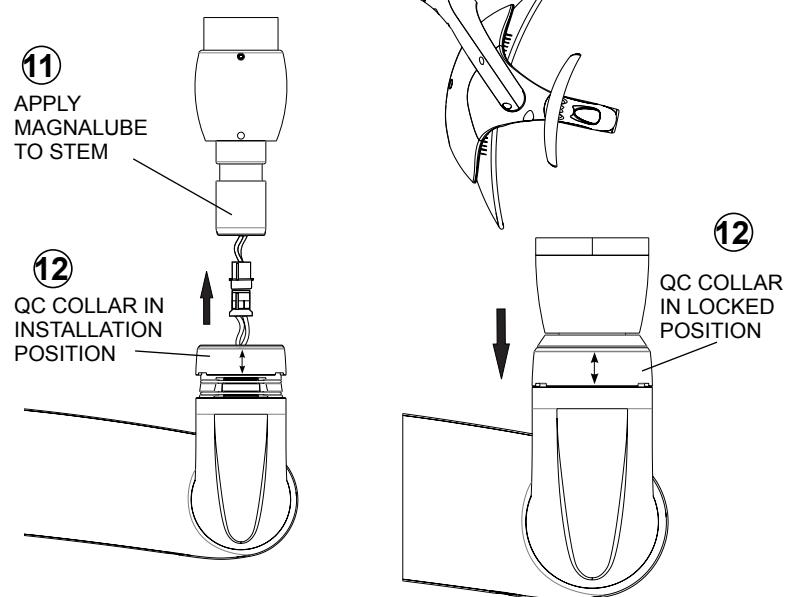
WARNING: Failure to install set screws & roll pins per Installation Instructions could result in injury or damage to equipment.



WARNING: Failure to use the supplied drill bit with stop to control depth of drill bit may result in electrical wiring damage and subsequent electrical shock.



WARNING: Set screws must be tightened securely and roll pins must be installed to prevent column from unscrewing during operation. Failure to install roll pins and tighten set screws securely could result in light falling from ceiling.



COLUMN INSTALL

Column Install (See page 23 for illustration)

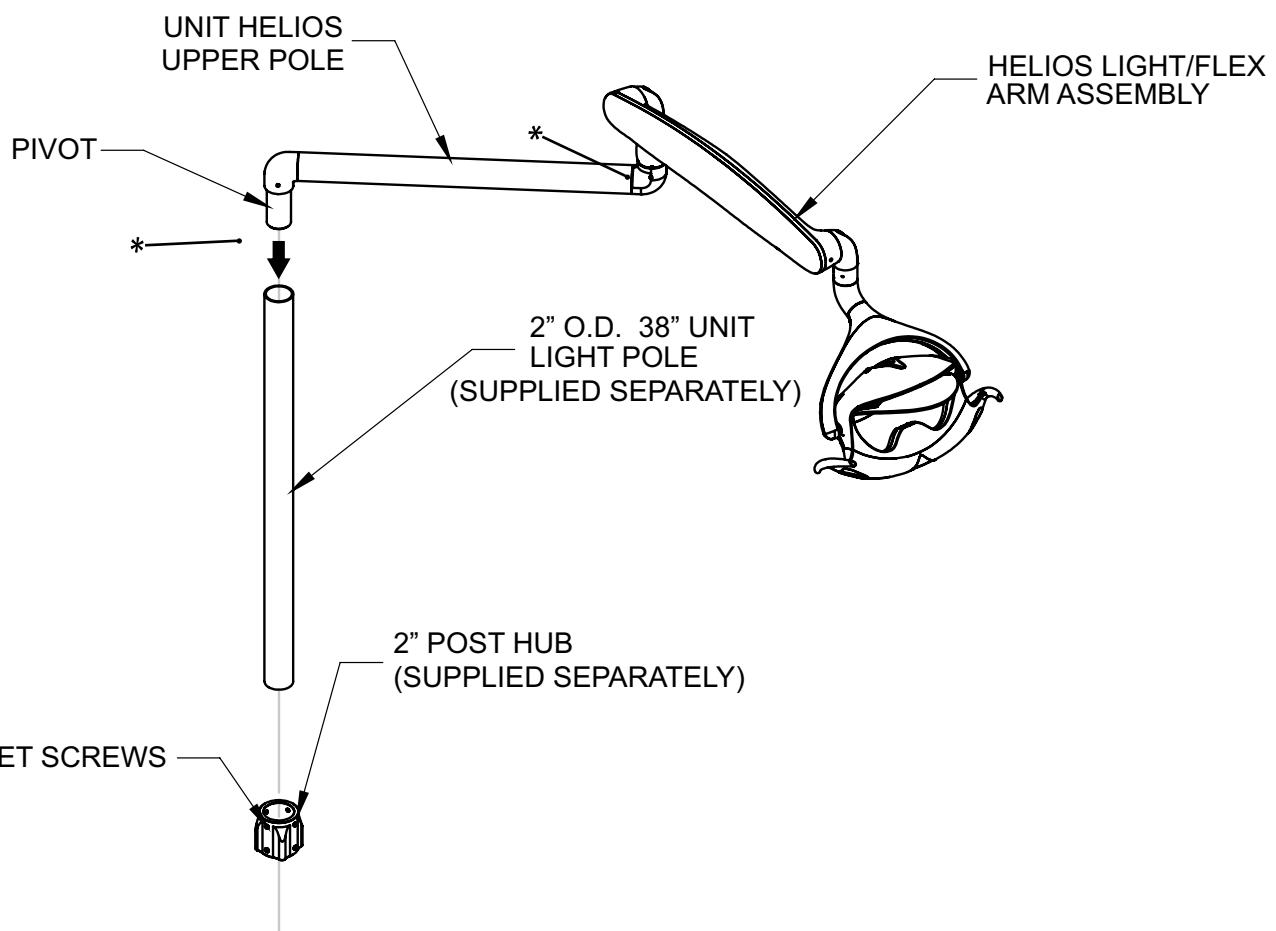
1. Connect power extension provided within the column to the tripod cable.
2. Apply grease (*) to threads on column (both ends). Thread the column into the tripod. Insert and tighten the set screws into the tripod securing the column.
3. Remove stop screw from ceiling mount arm collar. Set aside.
4. Install tripod cover and collar loosely onto column.
5. Connect column power cable to ceiling mount arm cable.
6. Push connected cables up into the column.
7. Thread ceiling mount arm collar onto column.
8. Rotate the ceiling mount arm to locate and position the rotational stop.
9. Secure stop screw and set screws into the ceiling mount arm collar.
10. Remove stem assembly from packaging. Thread stem assembly into ceiling mount arm and secure with set screws in arm.
11. Apply Magnalube to stem and connect cable from ceiling mount arm to cable in flex arm.
12. Push the QC Collar to the installation position. Push rear knuckle of flex arm up onto stem until the two clamps in the knuckle snap into place in the groove in the stem. Pull the QC Collar to the locked position (it must fully cover the clamps in the knuckle).
13. Check to ensure stops are in correct location.
14. Locate two 3/32" pilot holes within tripod and collar, using supplied drill bit with stop, drill 1/8" hole to a depth of 5/8". Insert roll pins (found within the hardware kit sent inside the column).
15. Complete installation of tripod cover and cover collar.
16. Secure stop screw in collar and all set screws.

See Maintenance & Adjustments for final installation.

Check light for operation.

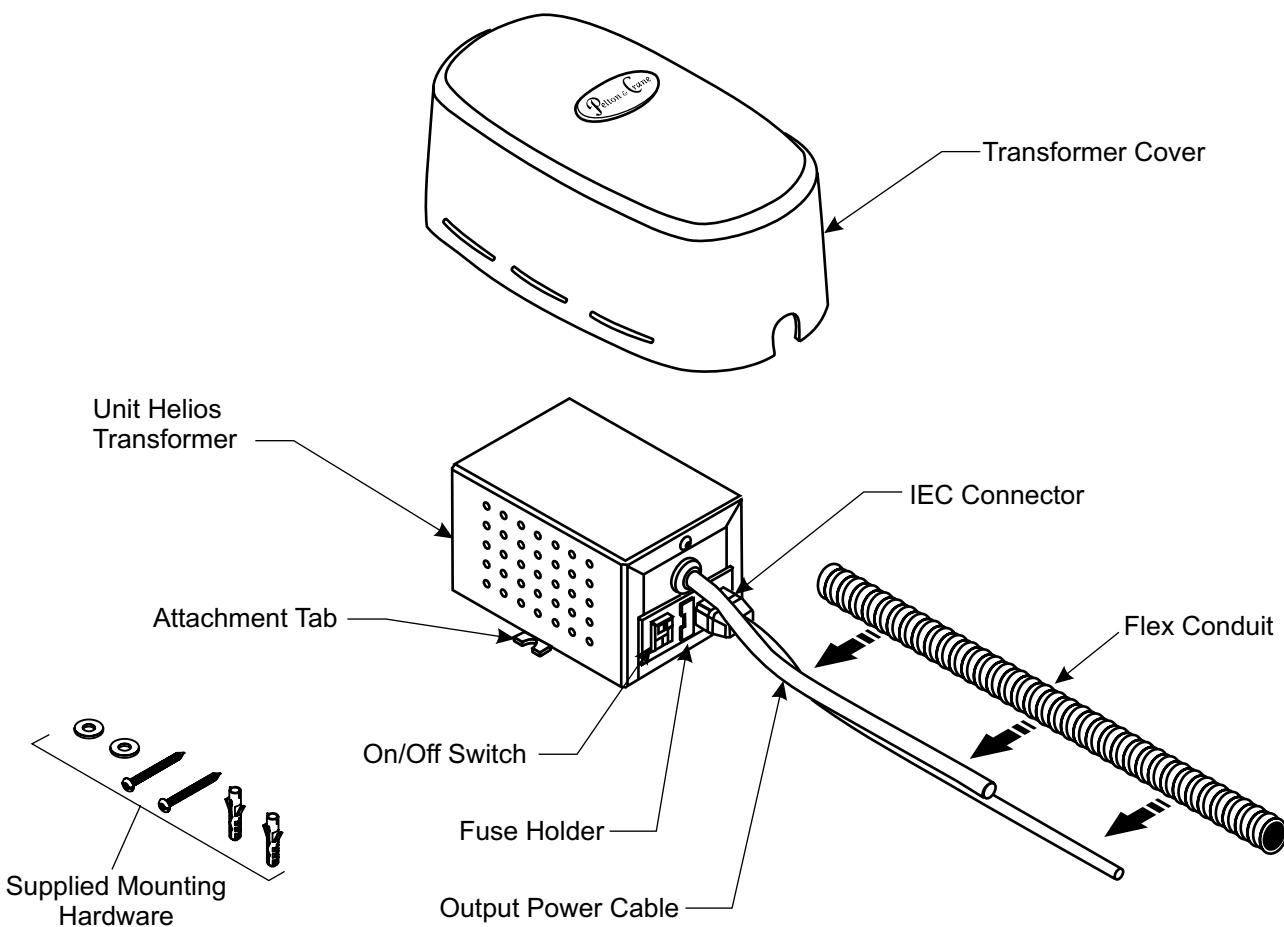
HELIOS LED UNIT INSTALL

1. Install chair mount (supplied separately) with 2" hub adapter onto chair per manufacturer's instructions.
2. Install vertical unit pole (supplied separately) into 2" Pole hub.
3. Level 2" Pole using the set screws located in the hub. Adjust them in or out as needed until the pole is vertical from front to back and side to side.
4. Remove the unit Helios upper pole from packaging. Apply grease (*) to both ends.
5. Feed the power cable down into vertical 2" pole as you lift the upper pole over the vertical pole. Insert the pivot into the bushing in the top of the post until the bottom of the elbow of the horizontal arm is flush with the top of the post.
6. Make sure the connector on the end of the power cable is extending out the hole in the bottom of the 2" pole hub.



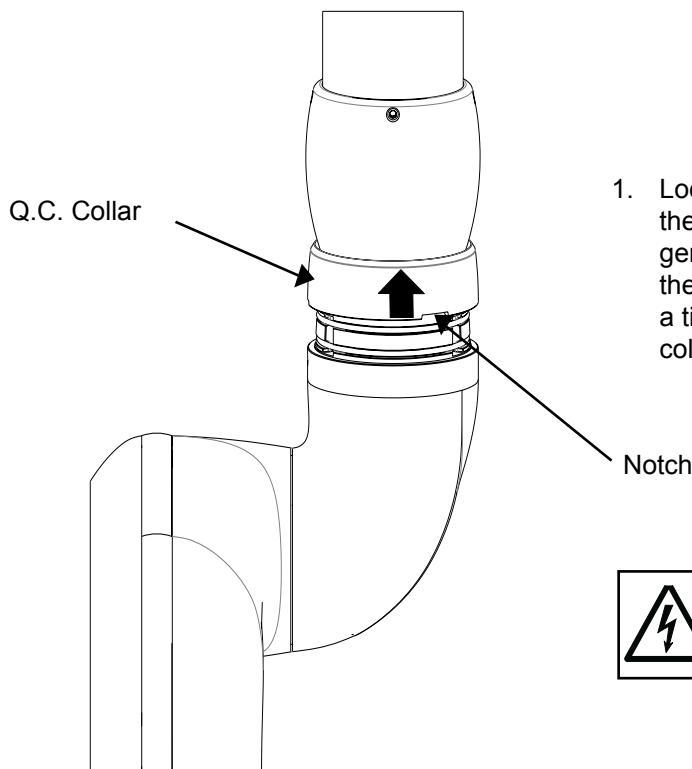
HELIOS LED UNIT TRANSFORMER INSTALL

1. Remove transformer from packaging.
2. If the Helios is installed on a chair with a j-box, remove the j-box cover and place the transformer in it.
3. Route the output power cable through the unit umbilical into the chair, then through the chair to the chair mounted pole adapter.
4. If there is no j-box with the chair, locate the transformer in a suitable location on the floor. Use hardware supplied in the attachment tabs to fasten to the floor.
5. Plug the supplied IEC power cable (if unit is 230 volt this cable is not supplied, the appropriate cord will need to be provided depending on the plug type in the region where it is installed) into the transformer connector and then plug the other end of power cable into a grounded outlet receptacle.
6. Switch on the on/off switch located on the transformer and check Helios Light for proper function.
7. Replace the j-box cover (if applicable) or install the supplied transformer cover as shown.
8. If using the transformer cover, instal the supplied 5/8" I.D. split flex conduit over the power cables to conceal and protect the cables. Trim the split flex conduit to the proper length as needed.



HELIOS QUICK CONNECT REMOVAL

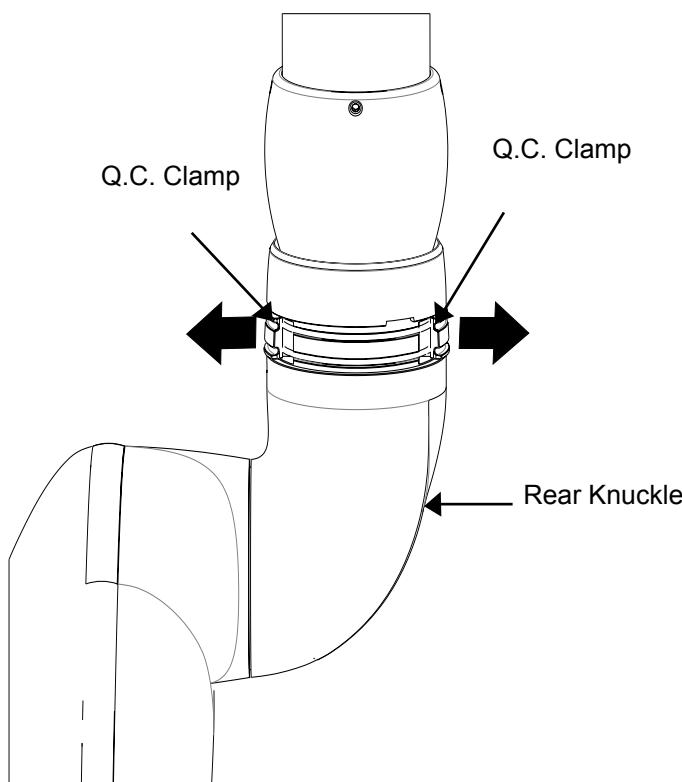
If removal of the Helios light flex arm is required for service use the following procedure.



1. Locate the three notches on the lower edge of the collar. Using a wide-blade, flat screwdriver, gentle pry up on the collar by twisting the tip of the screwdriver blade in the three notches one at a time until the collar is free. Then push up on the collar as shown.



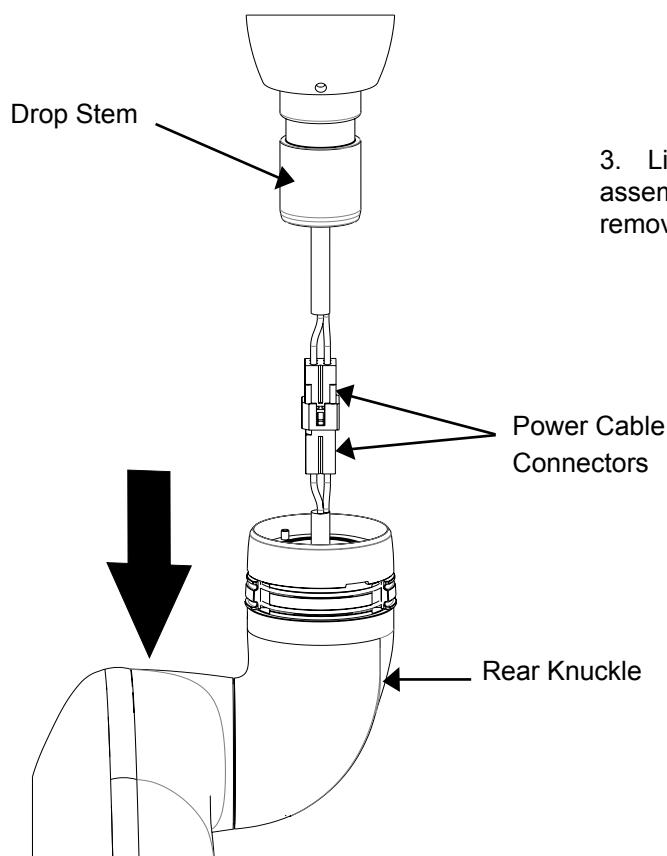
WARNING: Do not pry on collar excessively



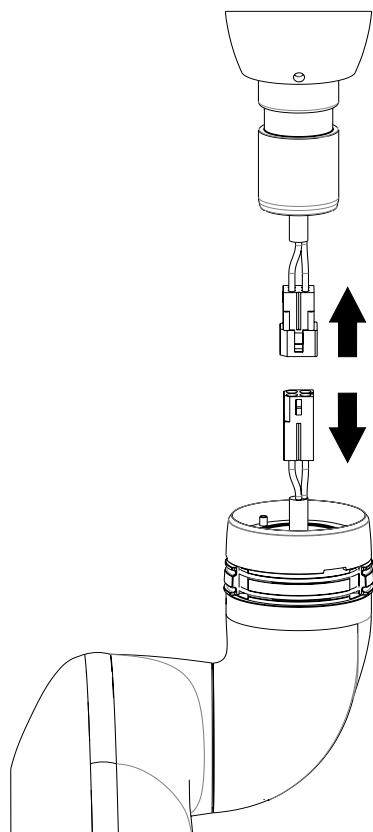
2. Support the light flex arm assembly while performing this step. Either have an assistant support it, or support the flex arm on one shoulder while one hand holds the rear knuckle to balance it.
3. Locate the two Q.C. clamps located in each side of the knuckle. Grasp the clamp on both sides with the tip of the index finger and thumb and pull it straight out to unlock. It may be required to lift up slightly on the light flex arm assembly to get the Q.C. clamps to release.

Pull the clamps out only far enough to allow them to rotate slightly sideways. Once rotated, the clamps will catch on both sides of the slot without retracting back into the slot.

HELIOS QUICK CONNECT REMOVAL, CONT'D



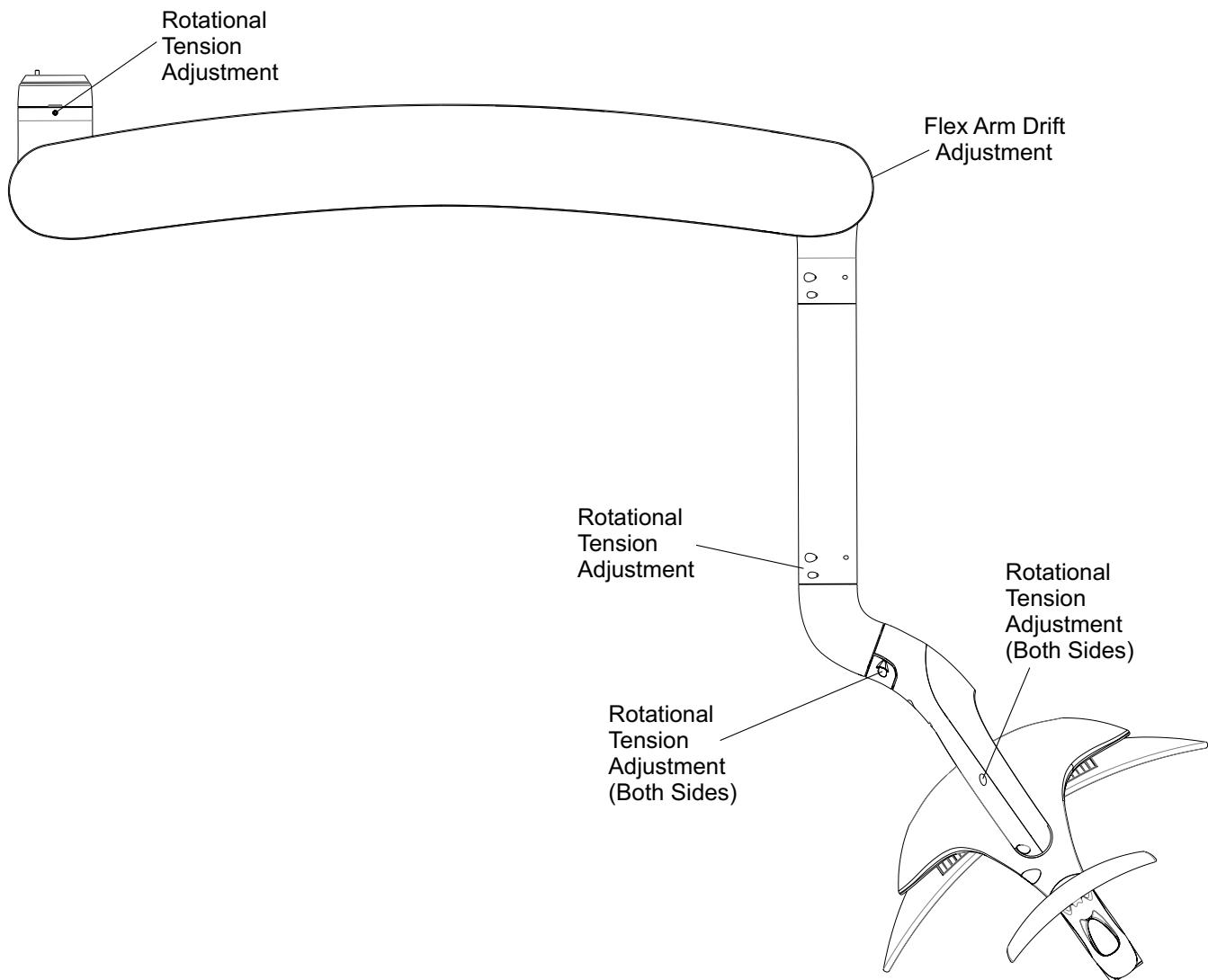
3. Lift up slightly on the outside end of the flex arm assembly while pulling down on the rear knuckle to remove the light from the drop stem.



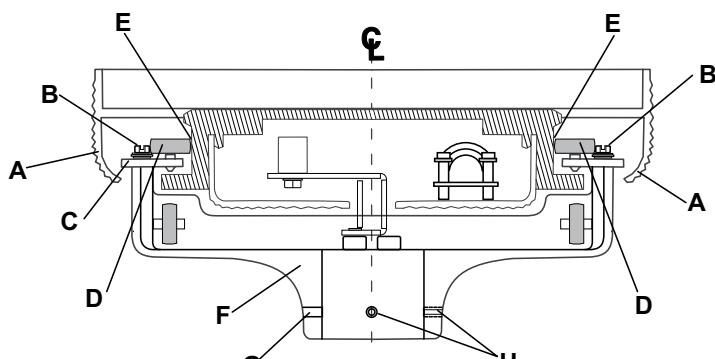
4. Grasp both power cable connectors and pull apart to disconnect. Lower the light flex arm assembly and carefully place it on a suitable surface.
5. Reinstall in reverse order.

MAINTENANCE AND ADJUSTMENTS

Tension Adjustment Locations



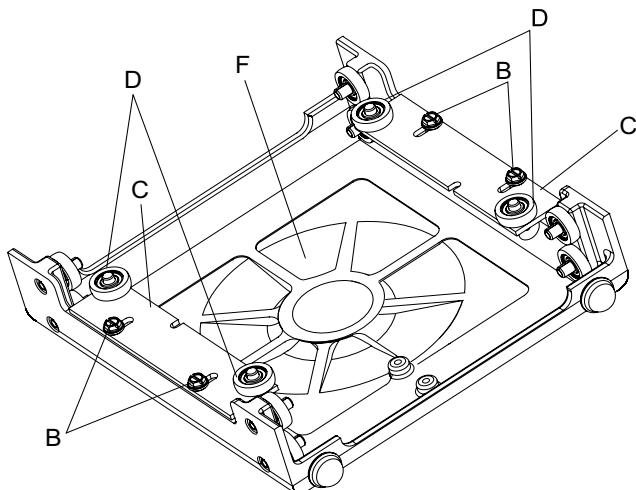
MAINTENANCE AND ADJUSTMENTS



Helios - Trolley Adjustments

If factory-adjusted side rollers become misaligned in shipping, adjustment will be necessary before installing the two side panels (A).

1. Loosen the two adjusting plate screws (B) on adjusting plates (C).
2. Position side rollers (D) against channel (E) and tighten adjusting screws.
3. Inspect trolley (F) for smooth movement and repeat necessary adjustments.

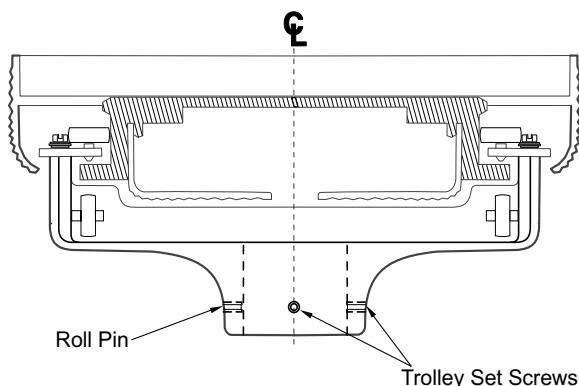


WARNING: Set screws must be tightened securely and roll pins must be installed to prevent column from unscrewing during operation. Failure to install roll pins and tighten set screws securely could result in the Helios Light falling from ceiling.

NOTE: Ensure column is vertical to prevent trolley from drifting. Adjust pallet with shims if necessary.

NOTE: Column stop adjustment must be performed before installation of roll pin (G).

4. Tighten trolley set screws (H) securely.



Main Power Connection

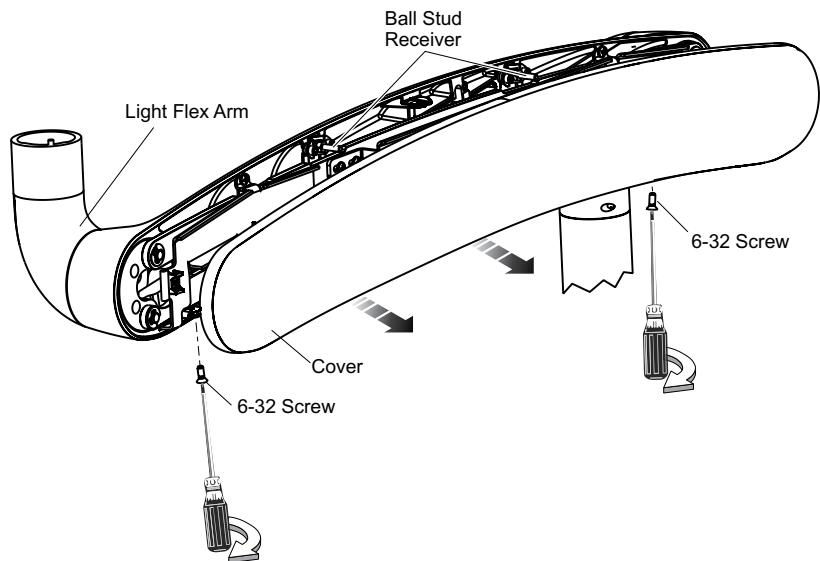
1. Route the incoming electrical supply through the provided cable clamp.
2. Connect the line, neutral and ground to the appropriate terminal in the transformer box.

MAINTENANCE AND ADJUSTMENTS

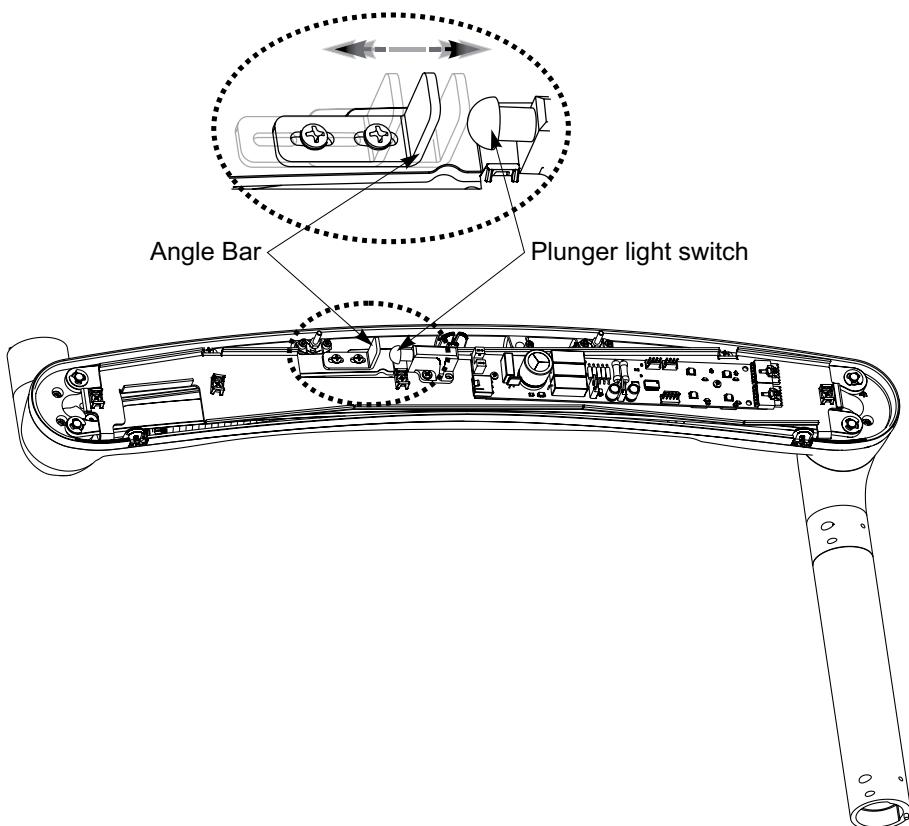
HELIOS Cover Removal

1. Use screw driver to remove 6-32 screws.
2. Pull cover straight out to disengage ball stud and receiver.

NOTE: Rubber gasket will remain on cover.



HELIOS Automatic Light Shutoff Adjustment



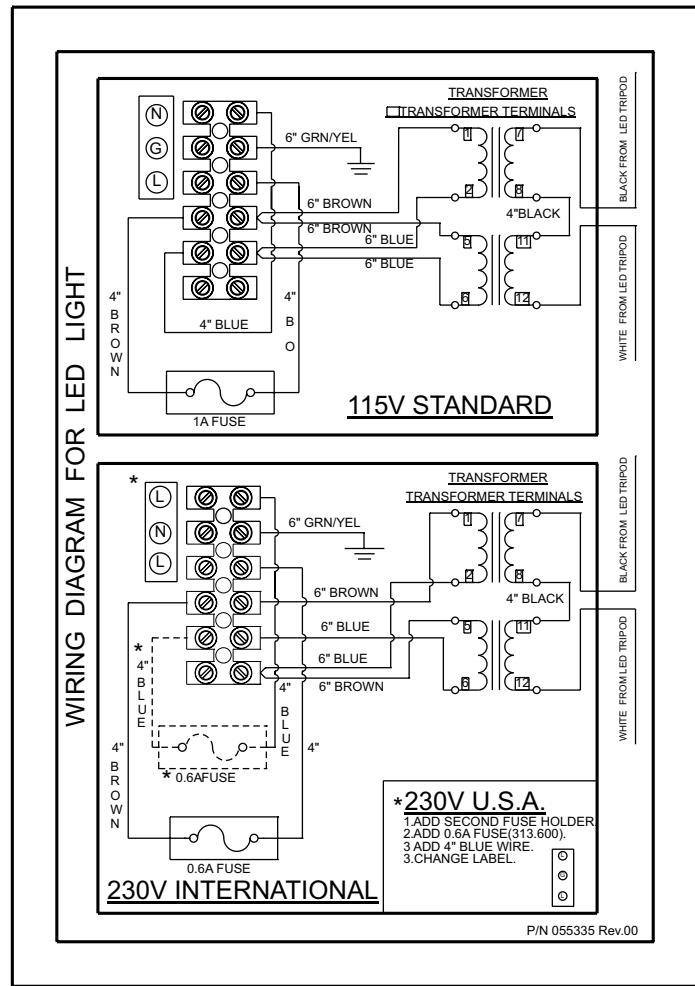
Automatic light shutoff adjustment

1. Light shuts off at a fixed position as the arm is raised.
2. To adjust Position where the light turns off, loosen two phillips head screws in the angle bar.
3. Angle bar will slide left and right.
4. Moving the bar to the left leaves the light on longer as you raise the arm.

ELECTRICAL CONNECTIONS CEILING, WALL, TRACK, CABINET



WARNING: Make sure main power is OFF when connecting to terminal strip.



1. A terminal block is supplied with these configurations for connection of the main power supply.

NOTE: For electrical supply connection, use wiring suitable for at least 90°C (194°F).

NOTE: The maximum ceiling height the light may be mounted to is 10 ft.*

2. Ensure green/yellow ground wire is grounded at ground screw.
3. Install wall switch between power supply and light power supply transformer. This provides for safety and convenience during installation or service. Wall switch can be switched OFF during electrical storms to prevent transformer damage caused by voltage overloads.

* If installing a monitor, see Monitor Installation Manual for correct ceiling height.



WARNING: Connections to be performed only by a qualified electrician.

TECHNICAL DATA		
POWER SUPPLY		
Primary Specifications for Transformer		
Volts	Cycles	Amps
115 VAC	50/60 Hz.	1.0 A ~
230 VAC	50/60 Hz.	0.6 A ~
Secondary POWER SUPPLY		
Volts	Cycles	Amps
24 VAC	50/60 HZ	2.0 A



WARNING: Before making any connections, be sure all power has been disconnected. Making connections while chair or unit is connected to power source may result in equipment damage or injury.

For replacement fuses use:

054926	1.0 amp fuse
053199	0.6 amp fuse

HELIOS CHECKLIST

Verify the following after installation or servicing of the unit:

- All manuals are present.
- All labels are present and legible.
- No mechanical damage on new installations.
- The arm is balanced and the friction adjustment is adjusted so that the Helios Light has no noticeable drift in the upper and lower positions.
- If ceiling mount or track mount, check the column at the tripod, trolley and arm adapter that the roll pins are installed to prevent the column from unscrewing. Verify all set screws are secured.
- The Helios Light can be moved and positioned freely without any drifting.
- The Helios Light is connected to the appropriate power source.
- Dispose of all Helios Light and all respective internal components per applicable codes, regulations and directives.

HELIOS FIELD RETROFIT ADDENDUM

Helios Upgrade Kits



WARNING: The LFII & LFIII power supplies (circuit boards) are not compatible with the Helios Light. Connecting the Helios light to these power supplies will result in damage to the equipment.

Note: Although the power cables are compatible with older LFII and LFIII lights, a complete set of new power cables are supplied with the upgrade kit. Pelton & Crane recommends changing these cables when upgrading to a Helios light.

Upgrade kits are ONLY available for system (Ellipse and PMU) and LFII & LFIII track lights. All others will require replacement of the entire light.

Definitions

Power Supply: Contains both the power circuit board and the associated transformer
Power Circuit Board: Pertains strictly to the circuit board itself and NOT the transformer

General Notes:

All Spirit Series chairs can have either a 150 Watt or 300 Watt Power Supply.

Spirit Series Dental Chair	Power Supply	Location of Power Supply
SP30	150 Watt	Base of Chair
SP30	300 Watt	Base of Chair
SP15, SP18, SP20	150 Watt	Base of Chair
*SP15, SP18, SP20	300 Watt	Junction (Utility) Box

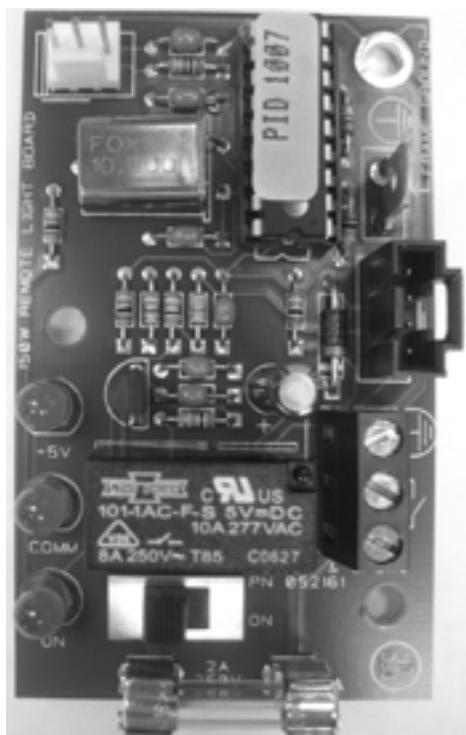
*Requires replacement of the complete power supply. The power supply will be labeled:
“FOR USE WITH HELIOS & LF SERIES”

HELIOS UPGRADE KITS

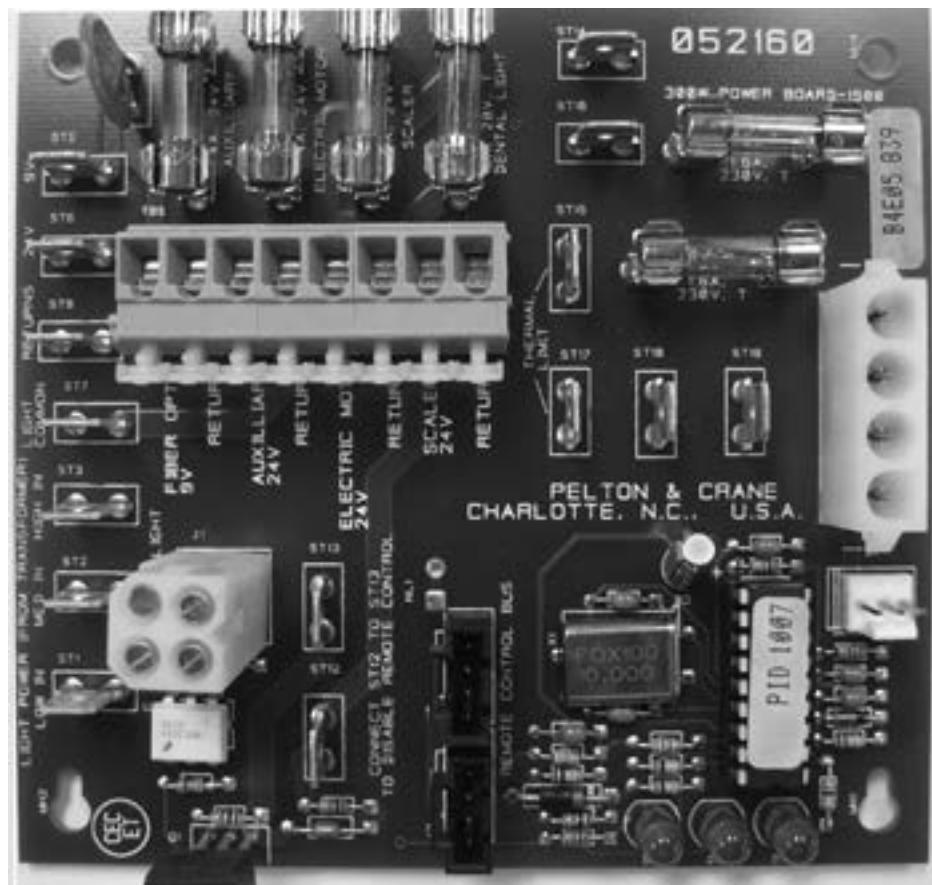
Section 1:

Circuit Board Identification:

150 Watt Circuit Board # 052161

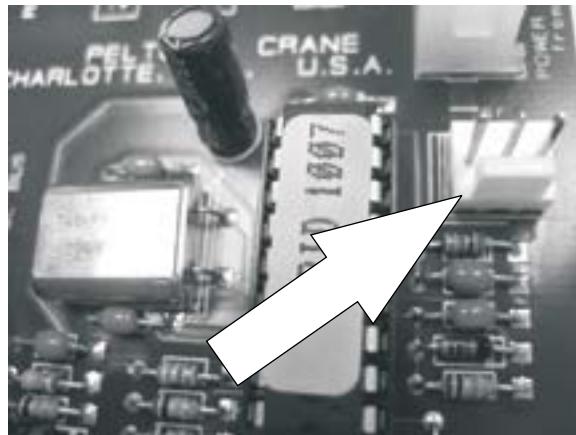
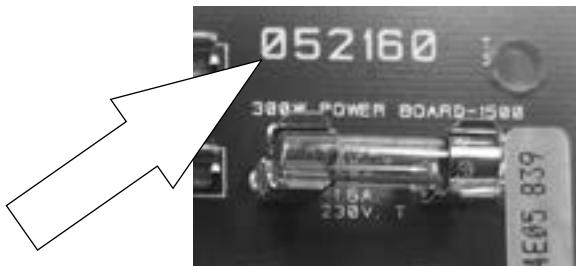


300 Watt Circuit Board # 052160



HELIOS UPGRADE KITS

The Helios compatible circuit boards can be identified by the part number and the white 3 pin connector on the board.



Instructions for Upgrading System Ellipse Lights with power supply in base of chair.

300 Watt 115 Volt Wiring

1. Raise chair to highest position.
2. Ensure power is disconnected to the chair.
3. Remove existing power supply circuit board (note positions of wiring to board).
4. Install new Helios compatible circuit board.
5. Disconnect power cable under chair seat.

Transformer	Power Circuit Board
Black (top)	ST15
Black (top)	ST17
1	ST18
3	ST14
5	ST19
7	ST16
ORANGE	ST5
YELLOW	ST6
BROWN	ST9
BLUE	ST7
VIOLET/WHT	ST3
BLUE/WHT	ST2
BLACK	ST1

6. Replace light power cord in chair umbilical and install 60" signal cable (3 wire).
7. Remove upper ellipse light and power cable.
8. Remove lower ellipse pole.
9. Replace lower ellipse pole with new pole.
10. See Ellipse light installation instructions

300 Watt 230 Volt Wiring

Transformer	Power Circuit Board
Black (top)	ST15
Black (top)	ST17
1	ST18
3	Jumper
5	Jumper
7	ST16
ORANGE	ST5
YELLOW	ST6
BROWN	ST9
BLUE	ST7
VIOLET/WHT	ST3
BLUE/WHT	ST2
BLACK	ST1

INSTRUCTION FOR UPGRADING SYSTEM POST MOUNT (PMU) LIGHTS WITH POWER SUPPLY IN BASE OF CHAIR

1. Raise chair to highest position.
2. Ensure power is disconnected to the chair.
3. Remove existing power supply circuit board (note positions of wiring to board).
(Note: see schematic for 300 watt board).
4. Install new Helios compatible circuit board.
5. Disconnect power cable in PMU.
6. Replace power cable from chair base to PMU and install 60" signal cable (3 wire).
7. Remove upper pole from PMU.

For 1500 PMU remove retaining clip on post inside PMU.

8. See PMU Light installation.

INSTRUCTION FOR UPGRADING SYSTEM ELLIPSE LIGHTS WITH POWER SUPPLY IN JUNCTION BOX

1. Raise chair to highest position.
2. Ensure power is disconnected to the chair.
3. Remove existing power supply from junction box (note positions of wiring to board).
4. Install new Helios compatible power supply.
5. Disconnect power cable under chair seat.
6. Replace light power cord in chair umbilical and install 60" and 24" signal cable (3 wire).
7. Remove upper ellipse light and power cable.
8. Remove lower ellipse pole.
9. Replace lower ellipse pole with new pole.
10. See Ellipse light installation.

300 Watt Wiring

Transformer Power Circuit Board	
Black (top)	ST15
Black (top)	ST17
1	ST18
3	ST14
5	ST19
7	ST16
ORANGE	ST5
YELLOW	ST6
BROWN	ST9
BLUE	ST7
VIOLET/WHT	ST3
BLUE/WHT	ST2
BLACK	ST1

INSTRUCTION FOR UPGRADING SYSTEM POST MOUNT (PMU) LIGHTS WITH POWER SUPPLY IN JUNCTION BOX

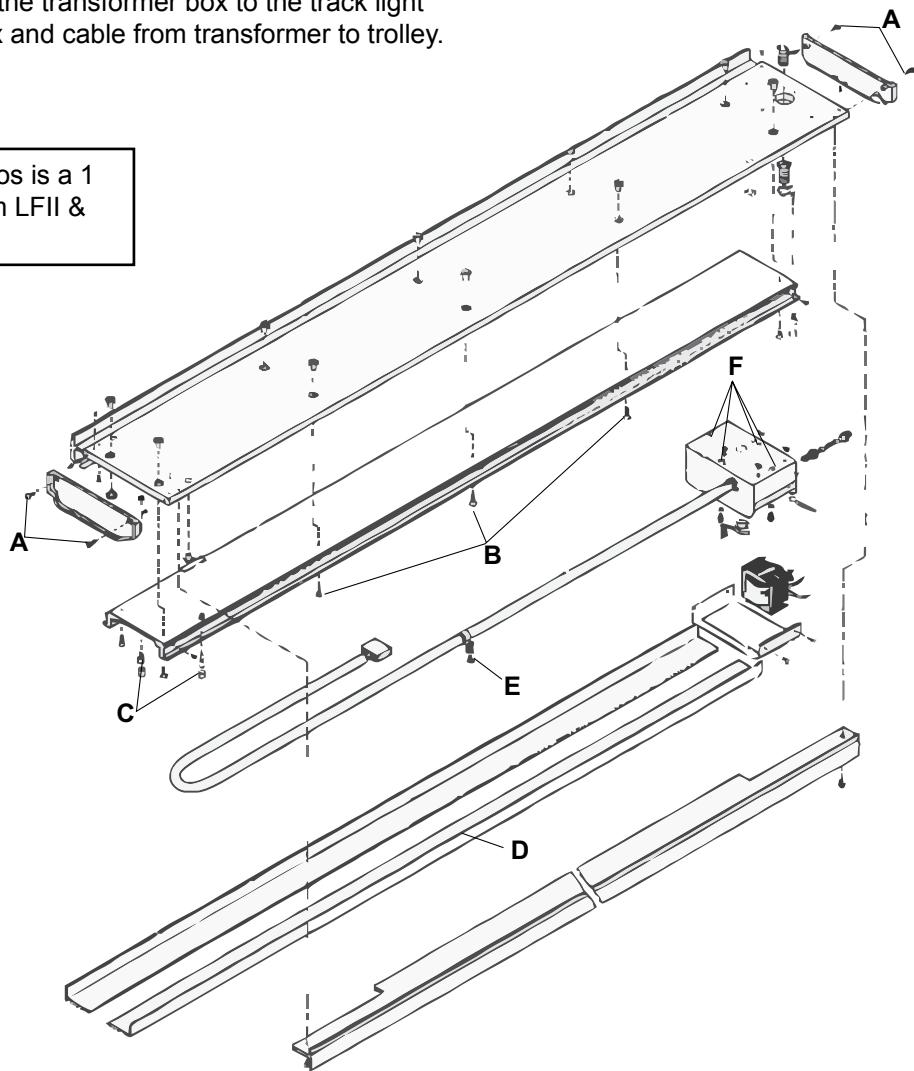
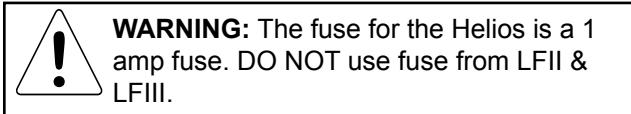
1. Raise chair to highest position.
2. Ensure power is disconnected to the chair.
3. Remove existing power supply (note positions of wiring to board).
4. Install new Helios compatible power supply.
5. Disconnect power cable in PMU.
6. Replace power cable from junction box to PMU and install 60" and 24" signal cable (3 wire).
7. Remove upper pole from PMU.

For 1500 PMU remove retaining clip on post inside PMU.

8. See PMU Light installation.

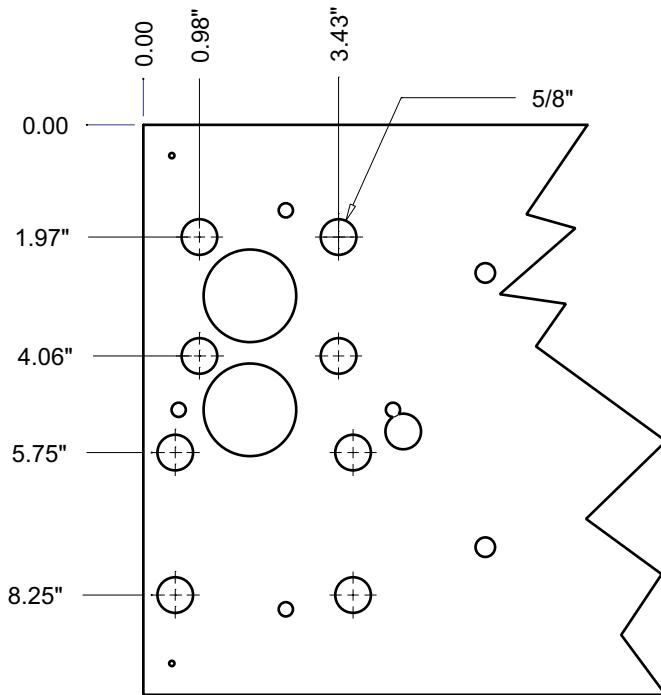
HELIOS TRACK UPGRADE INSTRUCTIONS

1. Turn power off to track light.
2. Remove existing light and column from trolley.
3. Remove both end caps (2 screws **A**) and extrusion panels (outside covers, 3 screws **B**) from track.
4. Remove trolley stops (**C**) from track (opposite end of the transformer).
5. Slide trolley to end of track and unplug the power cable.
6. Remove trolley from track.
7. Remove cover from transformer box.
8. Disconnect main power to transformer.
9. Standing under transformer remove left inside cover (3 screws **D**).
10. Remove cable clamp (**E**).
11. Remove four (**F**) screws securing the transformer box to the track light pallet and remove transformer box and cable from transformer to trolley.



HELIOS TRACK UPGRADE INSTRUCTIONS

12. Countersink 4 holes in pallet using supplied template (inside box lid). Align template with existing countersunk holes.
13. Mount Helios transformer box to pallet.
14. Replace cable clamp and run NEW cable (supplied) from transformer to trolley.
15. Reinstall inside cover.
16. Reconnect main power to transformer via transformer terminal strip.
17. Reinstall cover for transformer box.
18. Assemble light onto trolley (see track light installation section).
19. Raise trolley and light sliding onto end of track.
20. Connect power cable to trolley.
21. Reinstall trolley stops.
22. Reinstall both end caps (2 screws) and extrusion panels (outside covers, 3 screws) onto track.



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We reserve the right to make any alterations which may be due to any technical improvements.



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