SYSTEM ONE™ INSTALLATION & SERVICE MANUAL

Agency Approvals

Medical Electrical Equipment
With respect to electric shock, fire
And mechanical hazards only
In accordance with UL-2601-1/CAN/CSA C22.2 No.601.1
Classifications:

1. Protection against electrical shock(5.1,5.2). Class I permanently connected,
2. Protection against harmful ingress of water (5.3). None.
3. Degree of safety in the presence of flammable anesthetics or oxygen (5.5). Not suitable for use in the presence of flammable anesthetics or oxygen.
4. Mode of operation (5.6). Continuous.
5. Surgical luminaire (IEC60601-2-41) Minor.

Electromagnetic compatibility for immunity
And emissions in accordance with
EN-60601-1-2(2001) Class B and CISPR 22 (1997) Class B
Test report CE02-134

Medical Electrical Equipment
Particular requirements for the safety of surgical
luminaries and luminaires for diagnosis
In accordance with IEC-60601-2-41

Intended use

The System One surgical lighting system is an AC powered device which provides a focusable field of illumination for general examination and surgery.

Surgical Lighting System Installation and Service Manual

Revisions

Revision letter	ECO number	Pages Affected	Date
		Initial Release	7-01-02
A	ECO-365	i,4,12,13,16,17,18,20	7-23-02
B	ECO-420	Cover,10,14,18,25,26,32, 33,34,35,38-48	1-7-03
C	ECO-436	25,	3-6-03
D	ECO-439	25,32,33,	2-21-03
E	ECO-515	Various, Added Orbital mount to manual	1-28-04
F	ECO-531	45	4-6-04

Table of Contents

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List of Figures

Section 1

Definition of Terms

I.E.C.

International Electrotechnical Commission

U.L.

Underwriter's Laboratories

Medical Electrical Equipment

Electrical equipment intended to diagnose, treat the patient under medical supervision. Electrical equipment that transfers energy to the patient**.**

Central Illuminance

Illuminance of light head measured at 1 meter from the light emitting area with no obstructions. Expressed in Foot-candles or Lux.

Light Field Center

Point of maximum illuminance in lighted area. This is the reference point for light field size and light distribution measurements.

Light Field Diameter

Diameter of the circle where illuminance reaches 10% of light field center illuminance.

Depth of Illumination

The overall distance from 1 meter where the central Illuminance is reduced to 20%.

Shadow Dilution

Ability of the equipment to minimize the impact of shadows in the working area due to partial obstruction by the operator or other medical personnel.

Correlated Color Temperature

The color temperature of the light fixture when compared to a blackbody radiator expressed in degrees Kelvin.

Total Irradiance

The total amount of energy imparted to the patient by the lighting system expressed in Watts/meter squared.

Color Rendering Index(CRI)

A method of how well a light source will render other colors when illuminating them based upon eight CIE chromaticity coordinates measured with a spectroradiometer.

Handle Sterilizable

Device when properly sterilized maintains a sterile area in order to handle it under aseptic conditions when attached to the equipment.

Definition of Terms(continued)

Light Head/Articulating Arm Assembly:
That part of the device which includes the light source, heat removal system, light focusing system and light head vertical positioning arm.

Extension Arm
Horizontal section of the positioning arm with pivots on both ends that is used to increase the area covered by the light head and articulating arm.

Light Mounting
Support apparatus used to connect light head/articulating arm assembly to a fixed surface, consisting of either a single, double or triple ceiling mount.

Neutral Conductor
In an AC circuit, the return line for current.

Protective earth ground

The conductor used to connect the non-current-carrying metal parts of equipment, raceways, and other enclosures to the system grounded conductor, the grounding electrode conductor, or both, of the circuit at the service equipment or at the source of a separately derived system.

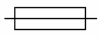
Ft-Lbs
Foot-pounds. The unit of measurement of torque which is caused by an off-center load.

List of symbols

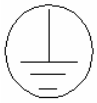
U.L Listing marking

Read accompanying documents

C.E. Marking



Fuse marking



Protective earth ground

Neutral conductor

Caution

Electric shock hazard

Light intensity indicator

Dimming control button

Light head on/off button

Section 2

System One Specifications

Mechanical

Parameter	Value
Weight	
Solo ceiling mount assembly(Traditional)	Approximately 25 lbs(11.3Kg).
Duo ceiling mount assembly(Traditional)	Approximately 32 lbs(14.5Kg).
Solo ceiling mount assembly(Orbital)	Approximately 36 lbs(16.3Kg).
Duo ceiling mount assembly(Orbital)	Approximately 62 lbs(28.1Kg).
Trio ceiling mount assembly(Orbital)	Approximately 88 lbs(39.9Kg).
Arm assembly(Traditional only)	Approximately 15 lbs(6.8Kg)
Light head assembly(all models)	Approximately 17.5 lbs(7.9Kg)
Dimensions	
Ceiling casting	12”(304,8mm) diameter x 6”(152,4mm) deep
Ceiling rod	2.50” (63,5mm)diameter x 8.5”-72.5”(215,9-1841,5mm) long(depending on ceiling height)
Arm(extension, Traditional)	2.50”(304,8mm) Diameter x 33”(838,2) long
Arm(articulated)	3.50”(88,9mm) Diameter(tapered) x 26 “ (660,4mm) long
Light head assembly	23.0”(584,2mm) Diameter x 9.5”(241,3mm) deep
Rotations	
Ceiling mount/extension arm interface(Traditional)	540 Degrees
Ceiling mount/extension arm interface(Orbital)	Continuous
Articulating/extension arm interface	Continuous
Articulating arm vertical movement	+20,-70 Degrees
Articulating arm/Yoke interface	Continuous
Yoke/lamp head interface	+/- 150 Degrees

Electrical

Parameter	Value
Voltages	
Input Voltage	100-125 VAC 50/60 Hz 220-240 VAC 50/60 Hz
Lamp voltage	23-25 VAC 50/60 Hz
Power	
CS2120,SS2120	120 VAC, 50/60 Hz, 170 Watts
CS2230, SS2230	230 VAC, 50/60 Hz, 170 Watts
CS2S2120, SS2S2120	120 VAC, 50/60 Hz, 340 Watts
CS2S2230, SS2S2230	230 VAC, 50/60 Hz, 340 Watts
CS2S2S2120, SS2S2S2120	120 VAC, 50/60 Hz, 510 Watts
CS2S2S2230, SS2S2S2230	230 VAC, 50/60 Hz, 510 Watts
Bulb life	1,000 hours(average)

Section 2

System One Specifications

Optical

Parameter	Value
Reflector	20”(508mm) diameter polished aluminum, facetted
IR/Color correcting filter glass Corrected color Temperature Color Rendering Index	 4000 ° Kelvin 90
Parameter	**Value**
Performance Focal length Central illuminance(adjustable) Maximum illuminance @33” Light field diameter(adjustable) Depth of illumination Diameter (d50) Illuminance(one mask) Illuminance(two masks) Illuminance at bottom of standard tube Illuminance at bottom of standard tube with one mask Illuminance at bottom of standard tube with two masks	 39”(1 meter) 2,000-9,500 foot-candles(21,500-102,257 Lux) 10,700 foot-candles(115,173 Lux) 6.5-9.0” (165-229mm) 48”(1220mm) 4.72”(120mm) 2,340 foot-candles(25,200 Lux) 3,300 foot-candles(35,500 Lux) 7,900 foot-candles(85,000 Lux) 2,340 foot-candles(25,200 Lux) 3,300 foot-candles(35,500 Lux)

Environmental

Parameter	Value
Operating temperature	41-104 deg F (5-45 Degrees Celsius)
Storage temperature Range	41-104 deg F (5-45 Degrees Celsius)
Humidity	10-90% relative humidity

Medical Illumination International, Inc.
Lighting Equipment
Limited Warranty

Medical Illumination International, Inc. Lighting Equipment is warranted against defective material and/or workmanship, excluding normal replacement parts (e.g. bulbs or glass items), for a period of three (3) years from the date of shipment. This warranty applies exclusively to the repair or replacement of parts recognized as defective by Medical Illumination International, Inc., are in normal use, and have not been modified or repaired by unauthorized personnel. This warranty supersedes all other guarantees or warranties, expressed or implied.
In the event of a failure covered under this warranty, please take the following action:

1. Call the Medical Illumination Customer Service Department at (818) 838-3025.

   A. Be prepared to give the model number, serial number, and full description of the failure.

   B. Customer Service will attempt to solve the problem over the phone. If it becomes necessary to send the product to the factory for repair, Customer Service will provide a Return Authorization number. No product should be returned without a Return Authorization number.

2. Carefully package the light component (light head, arm assembly, or mount assembly) and return it, freight prepaid and insured, with the Return Authorization number clearly marked on the box, to:

   Medical Illumination International, Inc.
   547 Library Street
   San Fernando, CA 91340
   RA#

   Damage resulting from inadequate packing is not covered by this warranty and shipping insurance does not cover damage from inadequate packing.

   We recommend that the package be insured against loss or in-transit damage. Medical Illumination can not be responsible for in-transit loss or damage.

3. **DAMAGE TO THE PRODUCT RESULTING FROM TAMPERING, ACCIDENT, ABUSE, NEGLIGENCE, OR OTHER CAUSES UNRELATED TO PROBLEMS WITH MATERIAL AND/OR WORKMANSHIP, ARE NOT COVERED BY THIS WARRANTY.**

4. Warranty may be voided if equipment is found to have been installed incorrectly, resulting in equipment failure.

5. This warranty does not cover any labor costs associated with removing, re-packaging for shipment or reinstalling this product. Such costs are the responsibility of the purchaser.

6. Medical Illumination International, Inc. will evaluate the returned product, repair as appropriate, and ship the product back to you freight paid.

7. In the event non-warranty damage or failure is discovered, you will be contacted before repairs are performed.

Section 3

System One Pre-Installation Guidelines

SPECIAL NOTE: Installation and repair of this equipment should be performed by qualified persons only. Medical Illumination International, Inc. does not warranty any damage occurring as a result of improper installation.
It is recommended that this installation manual be completely reviewed prior to installation.

Before installation, check to insure the following minimum conditions are provided:

- The structural ceiling mount is designed to support a vertical load of 175 lbs and an off center moment of 450 ft-lbs. The structural mount should meet all local building codes.

A structural mount that does not meet these minimum conditions can cause serious injury and/or property damage.

- Use the template provided to drill the six mounting holes for the ceiling casting sub-assembly. If these are going to be through holes drill 7/16" diameter holes. If these will be threaded holes use hole size consistent with fastener being used.
- It is recommended that the System I surgical lighting system be mounted directly over a 4-0 junction box. If this is not possible the input power supply lines should be wired in accordance with all applicable building codes.
- The supply circuit line must be as follows:
  120 VAC lights-110-120 VAC 50/60 Hz, single phase, three wire, capable of supplying 525 watts @ 5 amperes.
  230 VAC lights- 220-240 VAC, 50/60 Hz, single phase, three wire, capable of supplying 525 watts @ 2.5 amperes.
- The power supply circuit must be in compliance with all applicable building codes.
- The light head switches secondary transformer power only. It is recommended that the System One Surgical Lighting System is connected to its own supply circuit with integral circuit breaker. The circuit breaker will act as the supply main disconnect switch.

Failure to provide a circuit meeting these minimum standards or complying with local building codes can cause a shock hazard.

- Check the length of the ceiling rod supplied to make sure that it is the proper length to install and operate the light without interference or over reach.(See ceiling Rod Calculation Pages 8-12)

System One Ceiling Rod Calculation
Solo Mount (Traditional)

Use the following table to select the correct length ceiling rod for your application (See Figure 1).

Ceiling Mounting Height	Ceiling Rod Length	"X" Value	"Y" Value	Head room to bottom of extension arm 23(y value-x value)
8-9'(2,4-2,7m)	7"(177,8mm)	20.5"(520,7mm)	96"(2,4m)	75.5" (1917,7mm)
9-10'(2,7-3,0m)	19"(482,6mm)	32.5"(825,5mm)	108"(2,7m)	75.5" (1917,7mm)
10-11'(3,0-3,3m)	31"(787,4mm)	44.5"(1130,3mm)	120"(3,0m)	75.5" (1917,7mm)
11-12'(3,3-3,6m)	43"(1092,2mm)	56.5"(1435,1mm)	132"(3,3m)	75.5" (1917,7mm)
12-13'(3,6-3,9m)	55"(1397mm)	68.5"(1739,9mm)	144"(3,6m)	75.5" (1917,7mm)

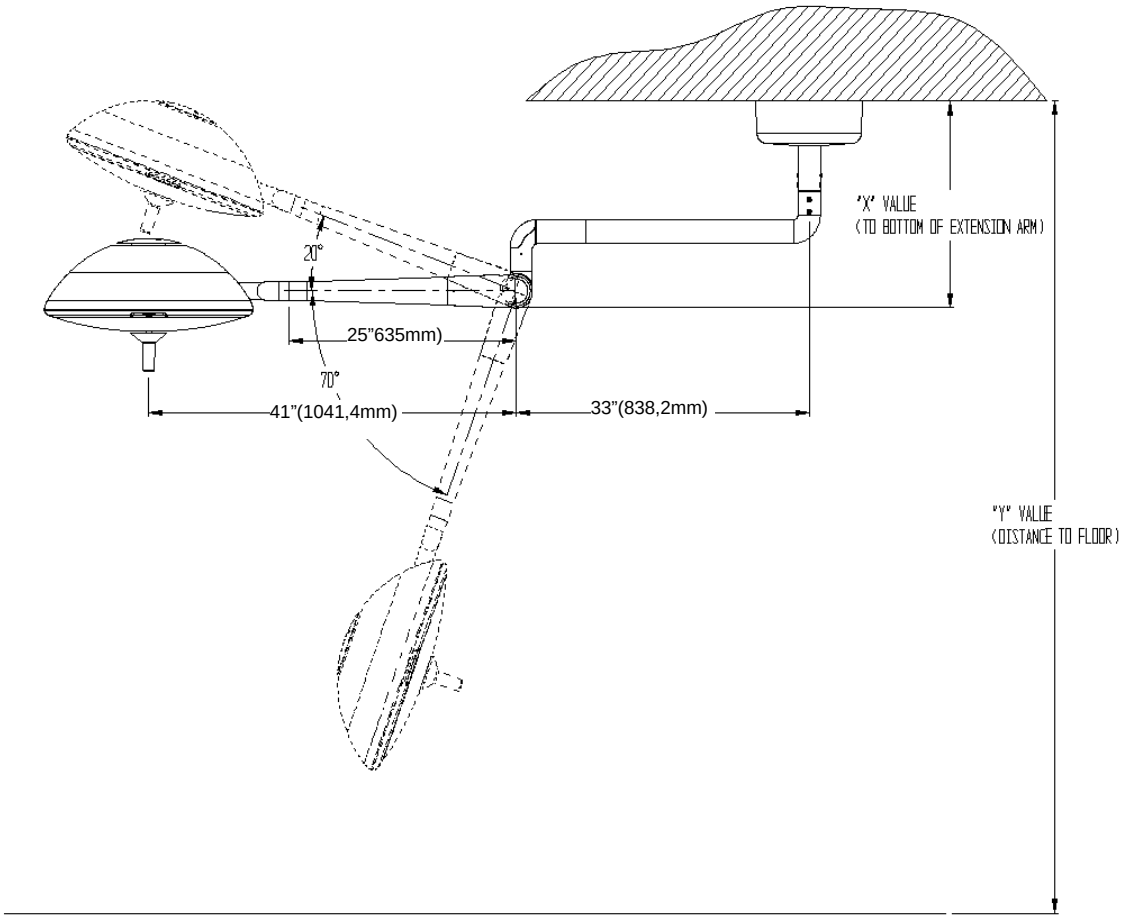


Figure 1
Ceiling Rod Calculation
Solo Ceiling Mount (Traditional)

System One Ceiling Rod Calculation
Duo Mount (Traditional)

Use the following table to select the correct length ceiling rod for your application (See Figure 2).

Ceiling Mounting Height	Ceiling Rod Length	“X” Value	“Y” Value	Head room to bottom of extension arm (y value-x value)
8-9’(2,4-2,7m)	7”(177,8mm)	23”(584,2)	96”(2,4m)	73” (1854,2mm)
9-10’(2,7-3,0m)	19”(482,6mm)	35”(889mm)	108”(2,7m)	73” (1854,2mm)
10-11’(3,0-3,3m)	31”(787,4mm)	47”(1193,8mm)	120”(3,0m)	73” (1854,2mm)
11-12’(3,3-3,6m)	43”(1092,2mm)	59”(1498,6mm)	132”(3,3m)	73” (1854,2mm)
12-13’(3,6-3,9m)	55”(1397mm)	71”(1803,4mm)	144”(3,6m)	73” (1854,2mm)

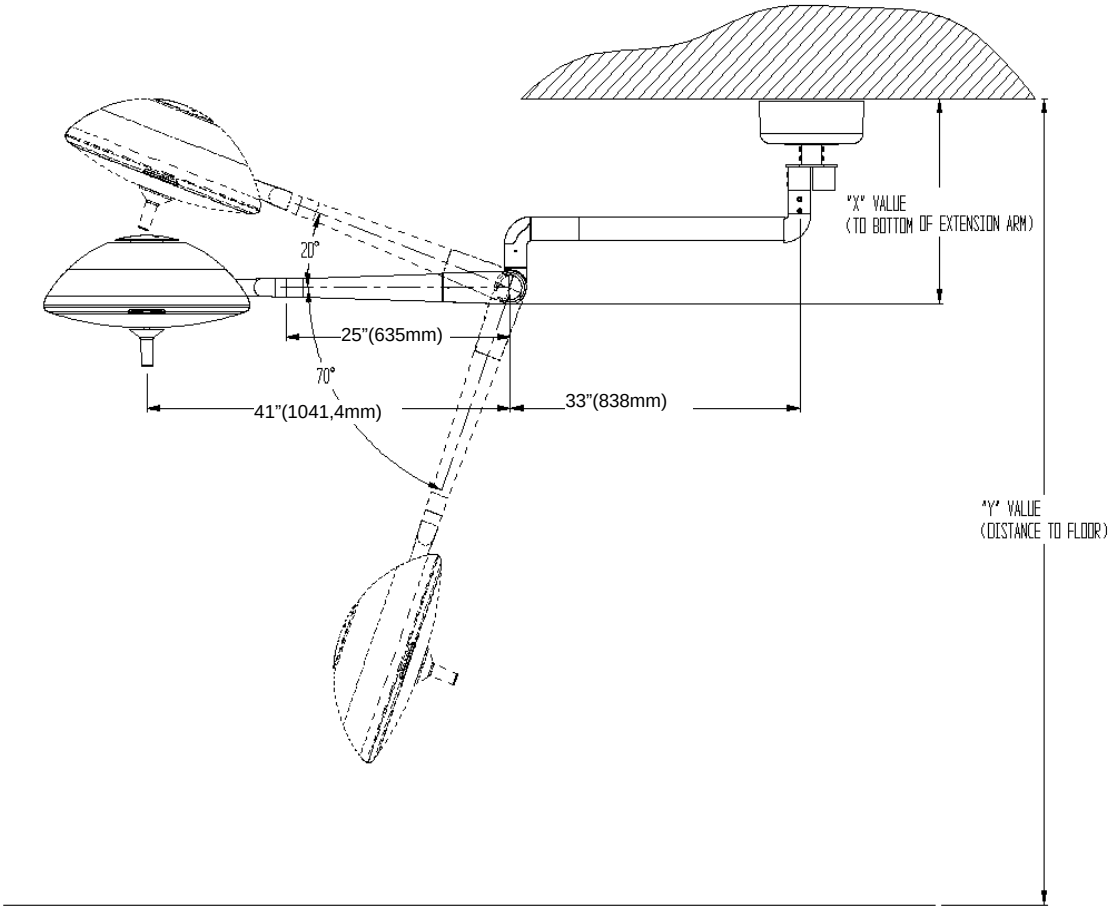


Figure 2
Ceiling Rod Calculation
Duo Ceiling Mount (Traditional)

System One Ceiling Rod Calculation
Solo Mount (Orbital)

Use the following table to select the correct length ceiling rod for your application (See Figure 3).

Ceiling Mounting Height	Ceiling Rod Length	“X” Value	“Y” Value	Head room to bottom of extension arm (y value-x value)
8’(2,4m)	N/A	16”(406mm)	96”(2,4m)	80” (20302mm)
9’ (2,7m)	7”(177,8mm)	23.5”(597mm)	108”(2,7m)	84.5” (20302mm)
10’ (3,0m)	19”(482,6mm)	35.5”(901mm))	120”(3,0m)	84.5” (20302mm)
11’ (3,3m)	31”(787,4mm)	47.5”(1,206mm)	132”(3,3m)	84.5” (20302mm)
12’ (3,6m)	43”(1092,2mm)	59.5”(1,511mm)	144”(3,6m)	84.5” (20302mm)

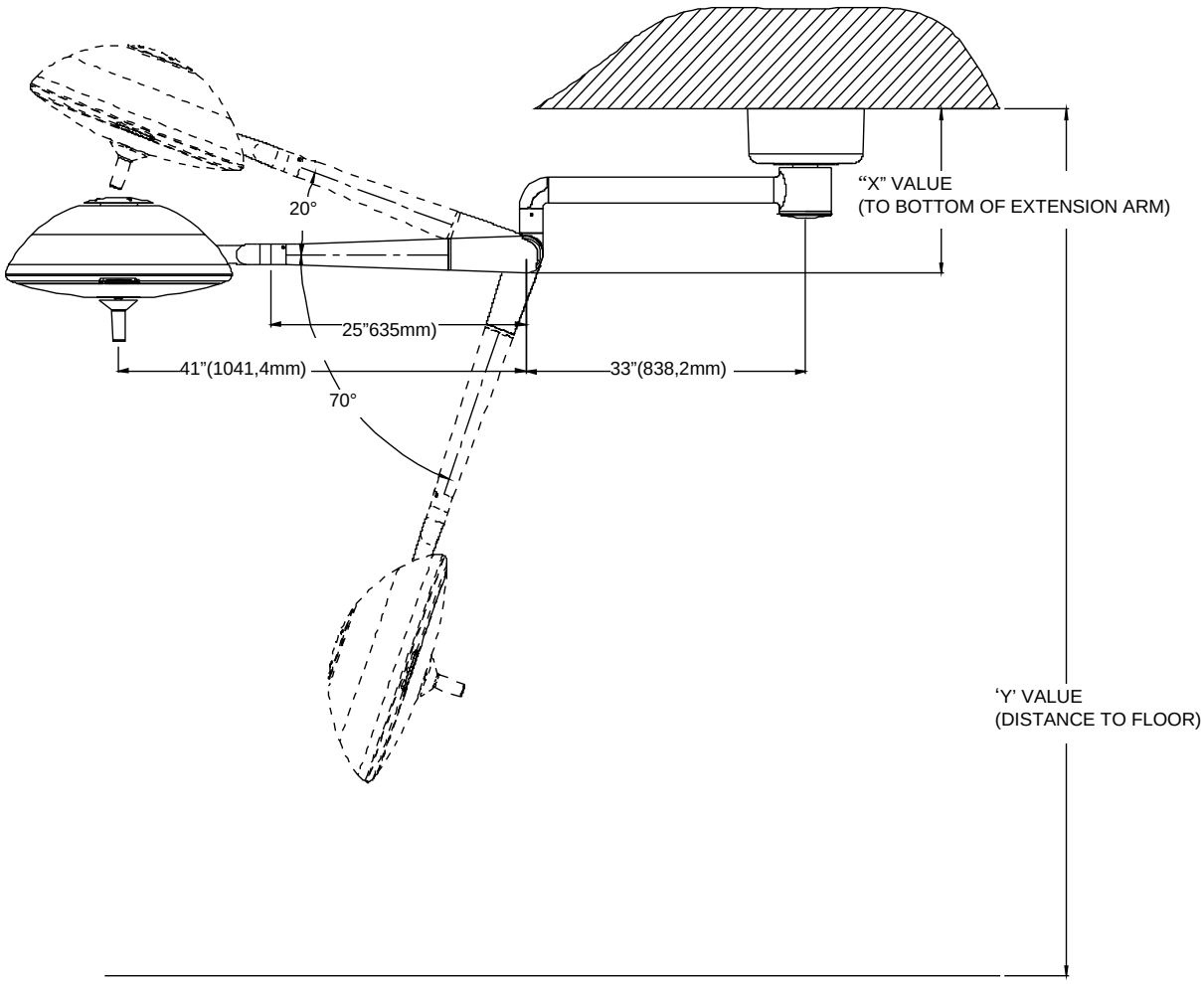


Figure 3
Ceiling Rod Calculation
Solo Mount (Orbital)

System One Ceiling Rod Calculation
Duo Mount (Orbital)

Use the following table to select the correct length ceiling rod for your application (See Figure 4).

Ceiling Mounting Height	Ceiling Rod Length	"X" Value	"Y" Value	Head room to bottom of extension arm (y value-x value)
8'(2,4m)	N/A	20.25"(514mm)	96"(2,4m)	75.75" (1,924mm)
9' (2,7m)	7"(177,8mm)	27.75"(705mm)	108"(2,7m)	80.25 (2038mm)
10' (3,0m)	19"(482,6mm)	39.75"(1,010mm)	120"(3,0m)	80.25 (2038mm)
11' (3,3m)	31"(787,4mm)	51.75"(1,314mm)	132"(3,3m)	80.25 (2038mm)
12' (3,6m)	43"(1092,2mm)	63.75"(1,619mm)	144"(3,6m)	80.25 (2038mm)

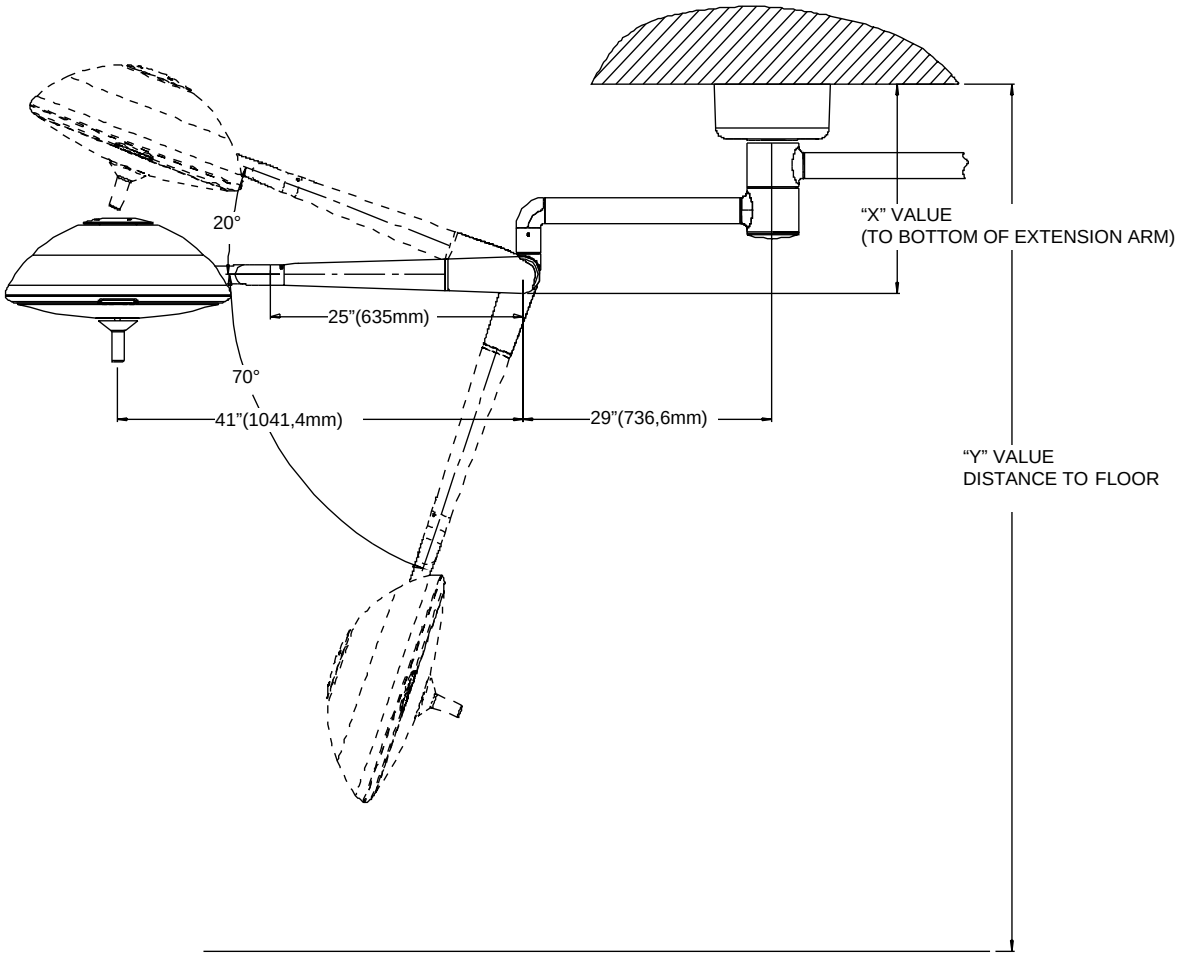


Figure 4
Ceiling Rod Calculation
Duo Mount (Orbital)

System One Ceiling Rod Calculation
Trio Mount (Orbital)

Use the following table to select the correct length ceiling rod for your application (See Figure 5).

Ceiling Mounting Height	Ceiling Rod Length	"X" Value	"Y" Value	Head room to bottom of extension arm (y value-x value)
8'(2,4m)	N/A	24.50"(622mm)	96"(2,4m)	71.5" (1,816mm)
9' (2,7m)	7"(177,8mm)	32.0"(813mm)	108"(2,7m)	76.0" (1,930mm)
10' (3,0m)	19"(482,6mm)	44.0"(1,118mm)	120"(3,0m)	76.0" (1,930mm)
11' (3,3m)	31"(787,4mm)	56.0"(1,422mm)	132"(3,3m)	76.0" (1,930mm)
12' (3,6m)	43"(1092,2mm)	68.0"(1,727mm)	144"(3,6m)	76.0" (1,930mm)

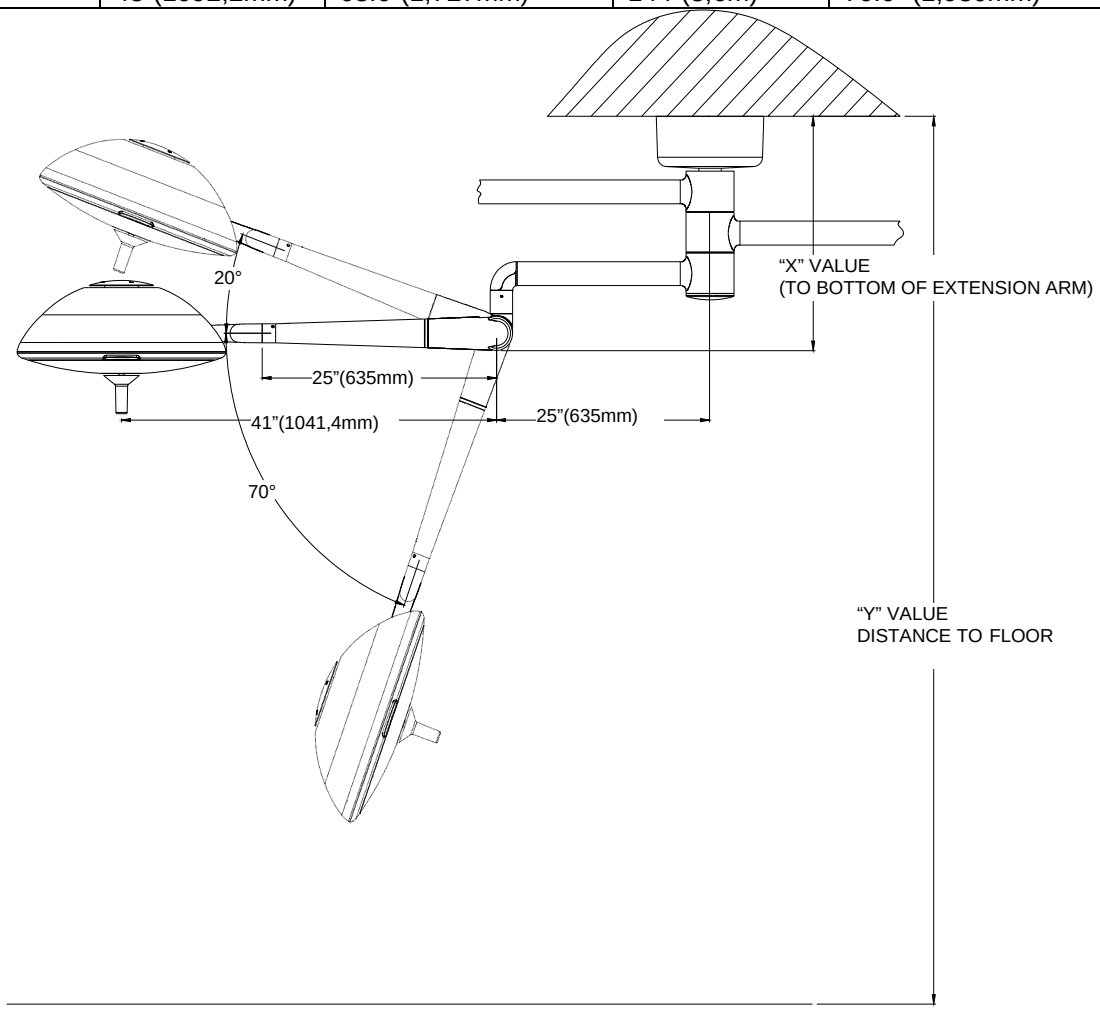


Figure 5
Ceiling Rod Calculation
Trio Mount (Orbital)

System One Installation
Solo Ceiling Mount(Traditional)

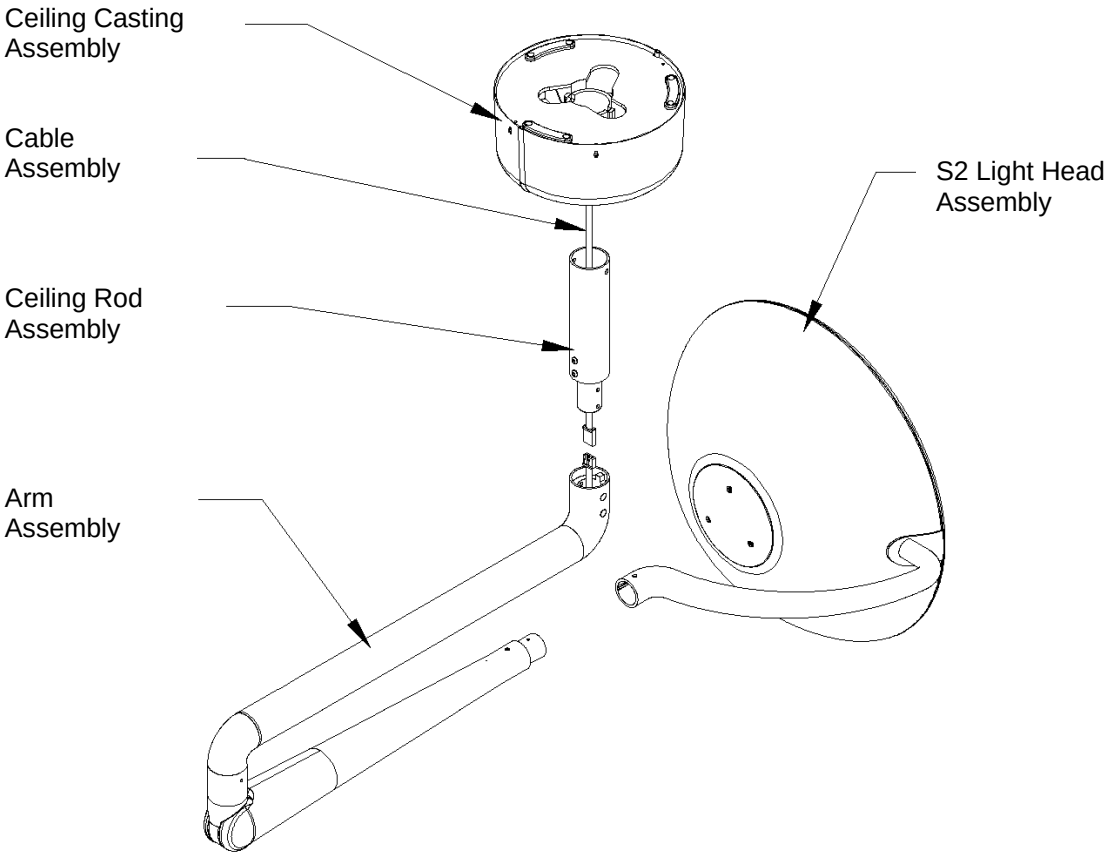


FIGURE 6 Sub-assemblies for System One Solo Ceiling Mount (Traditional)

GENERAL INFORMATION

The System One solo ceiling mount is shipped in three separate cartons. The ceiling casting assembly, hardware kit and installation manual is in one carton. The arm assembly, cable assembly and ceiling rod is in one carton. The head assembly and lamp holder assembly is in the last carton.

Note: There are 5 standard length rods for different ceiling heights. Verify that your ceiling rod length is correct for your ceiling height (See Page 8). If not correct please contact customer service. For ceiling heights greater than 11 feet the ceiling rod will be shipped separately. Prior to installation insure that all components shown in Figure 6 are present.

⚠ WHEN REMOVING PARTS FROM THE SHIPPING CARTONS, BE CAREFUL NOT TO DAMAGE THE COMPONENTS OR BREAK ANY GLASSWARE. IMPORTANT: THOROUGHLY CHECK EACH BOX FOR PARTS THAT MAY BE LOCATED IN AREAS THAT CAN BE OVERLOOKED.

System One Installation
Solo Ceiling Mount(Traditional)

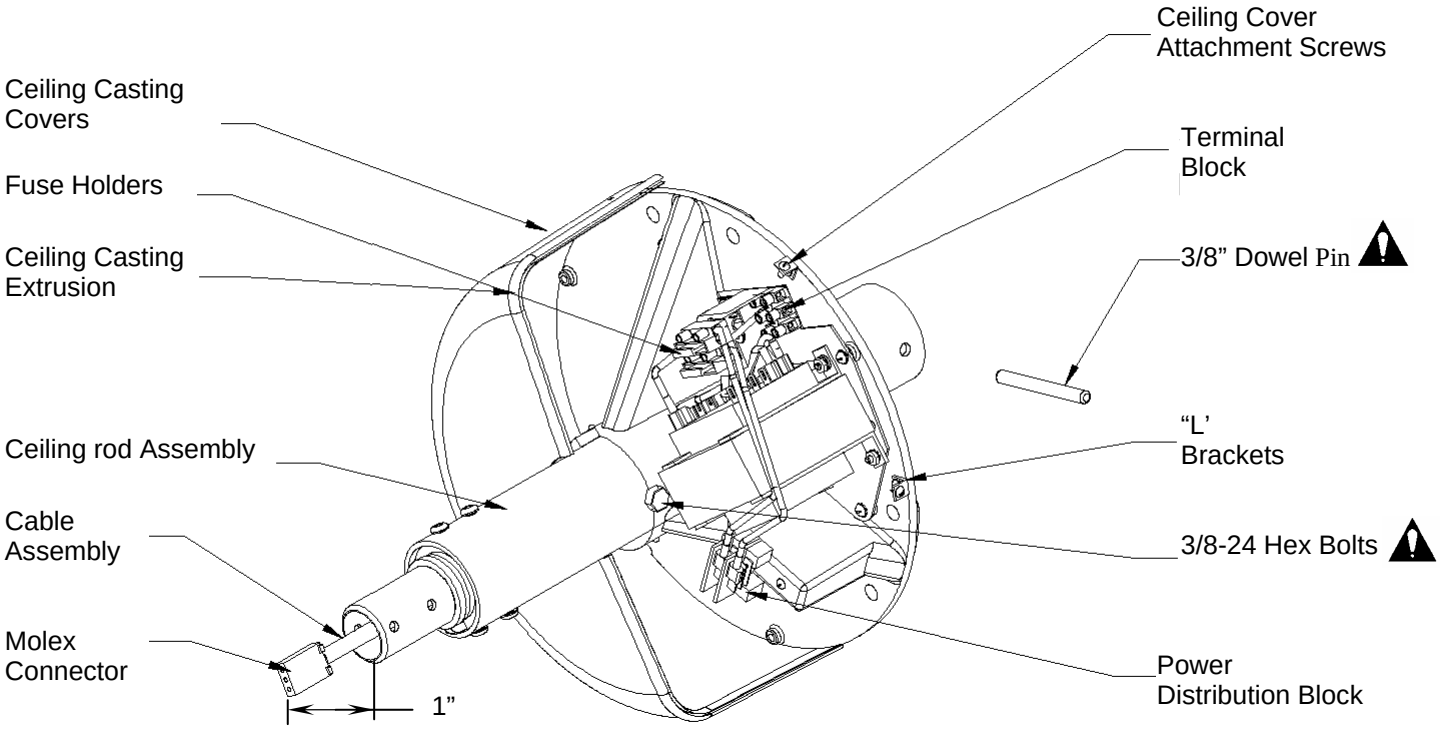


Figure 7-Solo Ceiling Mount (Traditional)

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the ceiling rod into the hole in the ceiling casting in the direction shown in Figure 7. Push the rod through the casting exposing the hole at the end of the rod.
- Install the 3/8" diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8" diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Slide the cable assembly through the center of the ceiling rod with the Molex connector protruding approximately 1" from the shaft protruding from the ceiling rod.

System One Installation
Solo Ceiling Mount (Traditional)

- Route the cable to the ballast sub-assembly. Cut the cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on the ballast sub-assembly.
- Install the ceiling casting on the ceiling using (6) 3/8" bolts(minimum) and washers. It is recommended that only Grade 8 or equivalent fasteners be used for the installation. Note: Fasteners are not provided by Medical Illumination.

The structural ceiling mount must be designed to support a vertical load of 175 lbs and an off center moment of 450 ft-lbs. The structural mount should meet all local building codes. A structural mount that does not meet these minimum conditions can cause serious injury and/or property damage.

Failure to use the correct mounting hardware can cause the arm/head assembly to become unstable, causing serious injury and/or property damage.

- If the ceiling mounting surface is not level, shim the ceiling casting to level the assembly.

Failure to level the ceiling casting may cause unwanted arm "drifting" during use.

- Connect the primary input wires(from the Junction box) to the power distribution block and secure the ground wire to the protective earth terminal(screw). The protective earth screw will be designated with this symbol  . Tie the two primary wires together(near the power distribution block) with the cable tie provided in the hardware kit.
- Install one ceiling casting cover using two #6 screws and star washers provided in the hardware kit.
- Install the 2 rubber trim pieces on the edges of the casting cover.
- Install the other half of the casting cover and secure using two #6 screws and star washers provided in the hardware kit.
- Slide the decorative arm ring onto the arm assembly (arm ring is supplied in hardware kit).
- While supporting the arm assembly connect the two Molex connectors together. Slide the arm assembly over the shaft protruding from the ceiling rod and secure using the four ¼-28 socket head cap screws provided in the hardware kit.(See Figure 8).

Failure to install or tighten the ¼-28 socket head cap screws can cause the arm/head assembly to fall causing serious injury and/or property damage.

- Slide the decorative arm ring over the end of the articulating arm (arm ring is supplied in hardware kit).
- Slide the head assembly over the shaft protruding from the arm and secure using two 8-32 flat head screws provided in the hardware kit.(See Figure 8).

Failure to install or tighten the 8-32 flat head screws can cause the head assembly to fall causing serious injury and/or property damage.

System One Installation
Solo Ceiling Mount(Traditional)

Note: The arm assembly is shipped with a locking pin that prevents the arm from rotating vertically. The pin must be removed before trying to operate the arm. Slightly pull the arm down releasing tension on the pin. The pin should easily pull out. Keep pin in a safe place for further use such as normal maintenance.(See figure 9)

Do not remove the locking pin until light head has been installed onto the arm assembly. Failure to do so can result in serious injury and/or property damage.

- Install the arm cover.
- Installation is now complete. Refer to operation and maintenance sections before trying to operate light and arm mechanism.

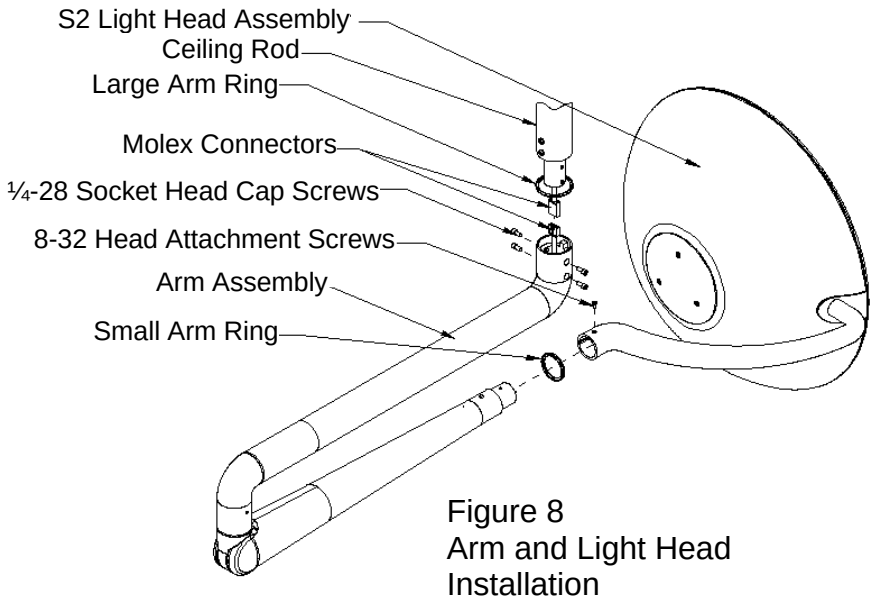


Figure 8
Arm and Light Head Installation

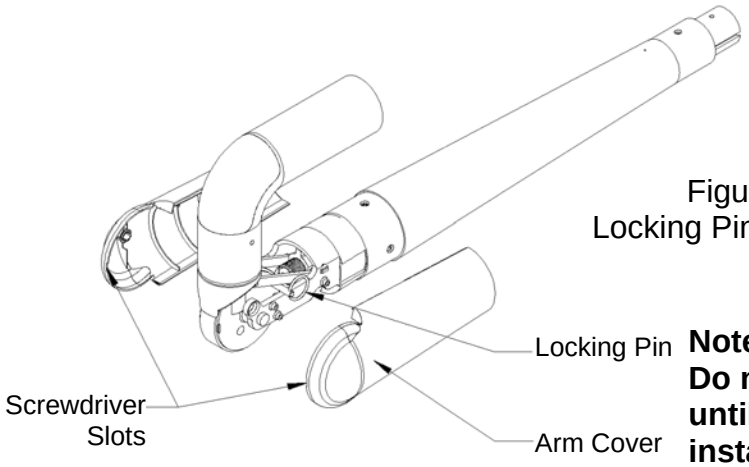


Figure 9
Locking Pin Removal

Note:
Do not remove pin until light head is installed on arm

System One Installation
Duo Ceiling Mount (Traditional)

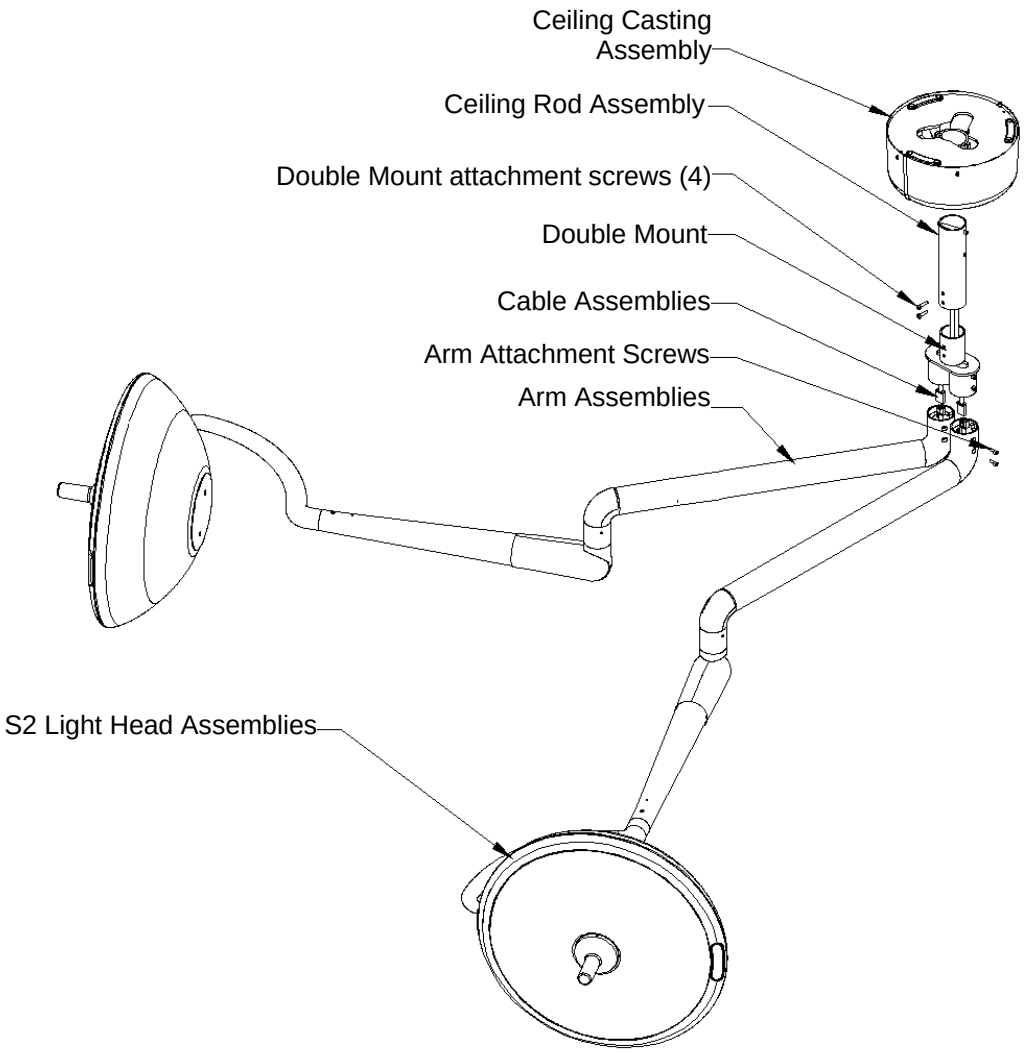


Figure 10
Sub-assemblies for System One Duo Ceiling Mount(Traditional)

GENERAL INFORMATION

The System One Duo ceiling mount is shipped in five separate cartons. The ceiling casting assembly, hardware kit and installation manual is in one carton. The arm assemblies, cable assemblies and ceiling rod are in two cartons. The head assemblies and lamp holders are in the last two cartons.
Note: There are 5 standard length rods for different ceiling heights. Verify that your ceiling rod length is correct for your ceiling height (See Page 9). If not correct please contact customer service. For ceiling heights greater than 11 feet the ceiling rod will be shipped separately.

Prior to installation insure that all components shown in Figure 10 are present.

System One Installation
Duo Ceiling Mount (Traditional)

WHEN REMOVING PARTS FROM THE SHIPPING CARTON, BE CAREFUL NOT TO DAMAGE THE COMPONENTS OR BREAK ANY GLASSWARE. IMPORTANT: THOROUGHLY CHECK EACH BOX FOR PARTS THAT MAY BE LOCATED IN AREAS THAT CAN BE OVERLOOKED.

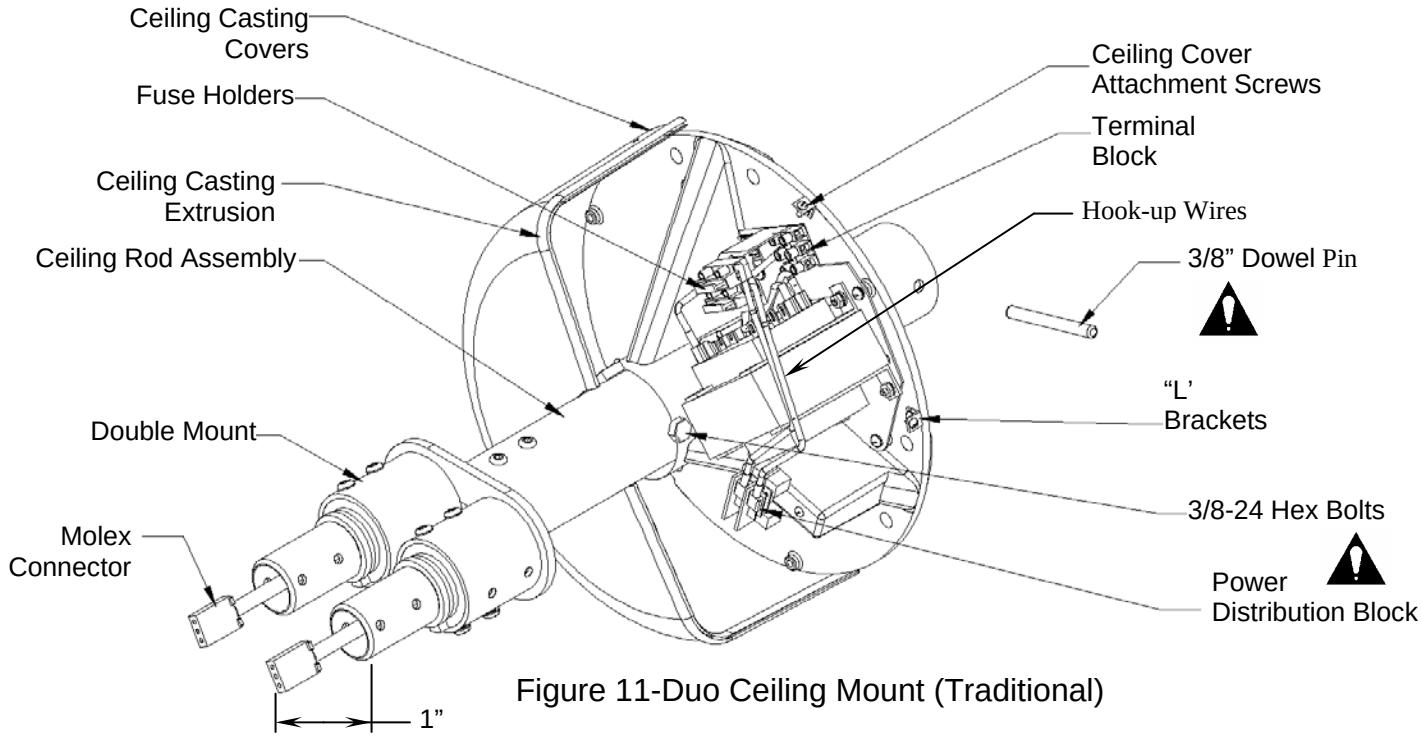


Figure 11-Duo Ceiling Mount (Traditional)

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the ceiling rod into the hole in the ceiling casting in the direction shown in Figure 11. Push the rod through the casting exposing the hole at the end of the rod.
- Install the 3/8” diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8” diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

System One Installation
Duo Ceiling Mount(Traditional)

- Install the double mount into the ceiling rod. Secure using four ¼-28 x3" socket head cap screws provided in the hardware kit.

Failure to install or tighten the ¼-28 socket head cap screws can cause the arm/head assembly to fall causing serious injury and/or property damage.

- Slide the cable assemblies through the double mount and the center of the ceiling rod with the Molex connector protruding approximately 1" from the shafts of the double mounts.
- Route one cable to each ballast sub-assembly. Cut the cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on the ballast sub-assembly.
- Install the ceiling casting on the ceiling using (6) 3/8 " diameter(minimum) bolts and washers. It is recommended that only Grade 8 or equivalent fasteners are used for the installation. Note: Fasteners are not provided by Medical Illumination.

The structural ceiling mount must be designed to support a vertical load of 175 lbs and an off center moment of 450 ft-lbs. The structural mount should meet all local building codes. A structural mount that does not meet these minimum conditions can cause serious injury and/or property damage.

Failure use the correct mounting hardware can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- If the ceiling mounting surface is not level, shim the ceiling casting to level the assembly.

Failure to level the ceiling casting may cause unwanted arm "drifting" during use.

- Connect the primary input wires(from the Junction box) to the power distribution block and secure the ground wire to the protective earth terminal(screw). The protective earth screw will be designated with this symbol.  . Tie the two primary wires together(near the power distribution block) with the cable tie provided in the hardware kit.
- Install one ceiling casting cover using two #6 screws and star washers provided in the hardware kit.
- Install the 2 rubber trim pieces on the edges of the casting cover.
- Install the other half of the casting cover and secure using two #6 screws and star washers provided in the hardware kit.
- Slide the decorative arm rings over the arm assemblies (arm rings are supplied in the hardware kit).
- While supporting each arm assembly connect the two Molex connectors together. Slide the arm assembly over the shaft protruding from the double mount and secure using the four ¼-28 socket head cap screws provided in the hardware kit.(See Figure 12). Repeat for second arm assembly.

System One Installation
Duo Ceiling Mount (Traditional)

Failure to install or tighten the ¼-28 socket head cap screws can cause the arm/head assembly to fall causing serious injury and/or property damage.

- Slide the decorative arm rings over the ends of the articulating arms (arm rings are supplied in the hardware kit).
- Connect the two Molex connectors together and slide the head assembly over the shaft protruding from the arm and secure using two 8-32 flat head screws provided in the hardware kit.(See Figure 12). Repeat for second head assembly.

Failure to install or tighten the 8-32 flat head screws can cause the head assembly to fall causing serious injury and/or property damage.

Note: Each arm assembly is shipped with a locking pin that prevents the arm from rotating vertically. The pin must be removed before trying to operate the arm. Slightly pull the arm down releasing tension on the pin. The pin should easily pull out. Keep pin in a safe place for further use such as normal maintenance.(See figure 13)

Do not remove the locking pin until light head has been installed onto the arm assembly. Failure to do so can result in serious injury and/or property damage.

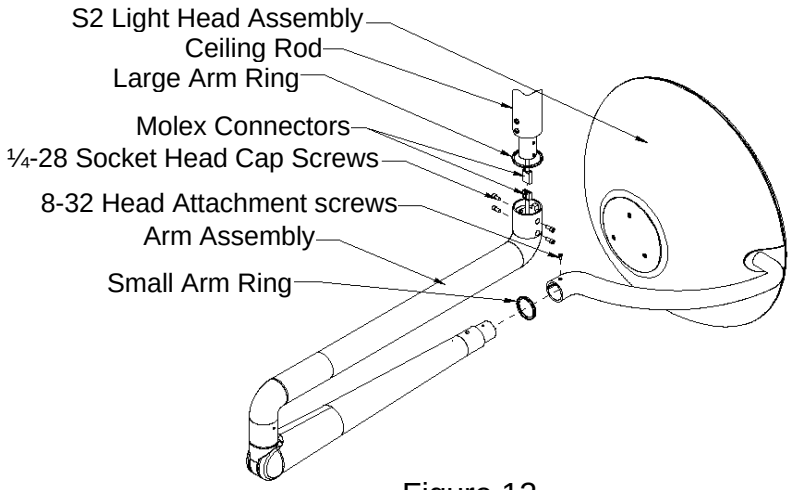
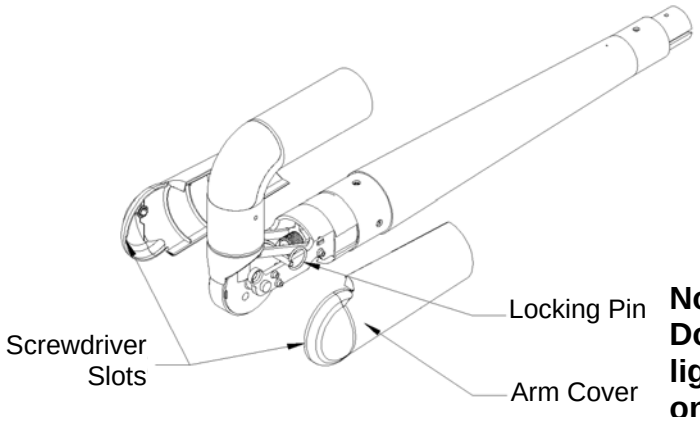


Figure 12
Arm and Light Head Installation

System One Installation
Duo Ceiling Mount(Traditional)



Note:
Do not remove pin until light head is installed on arm

Figure 13
Locking Pin Removal

- Install the arm cover.
- Installation is now complete. Refer to operation and maintenance sections before trying to operate light and arm mechanism.

System One Installation
Duo Ceiling Mount Retrofit(Traditional)

The System One Surgical light system is convertible from a solo mount to a duo mount.

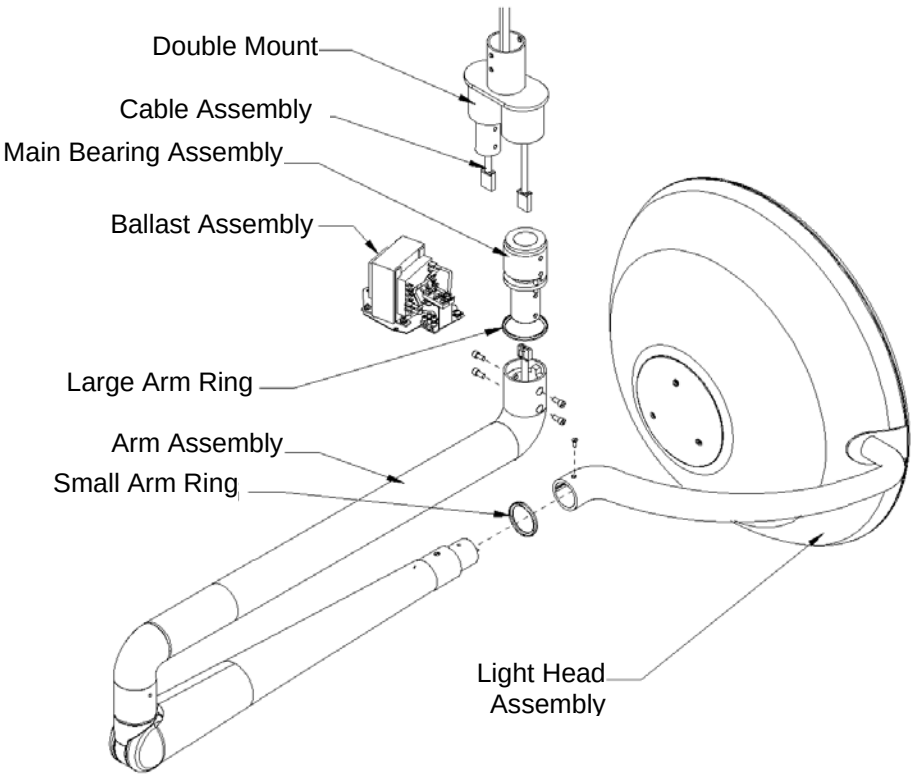


Figure 14-System One Retro-fit Components

GENERAL INFORMATION

The System One Retrofit kit is shipped in three separate cartons. The ballast assembly, main bearing assembly, hardware kit and installation manual are in one carton. The arm assembly, cable assembly and double mount are in one carton. The head assembly and lamp holder assembly are in the last carton.
Notes: Installing the retrofit kit will lower the arm position by approximately 2.5”(see page 9 for arm heights)
Prior to installation insure that all components shown in Figure 14 are present.

WHEN REMOVING PARTS FROM THE SHIPPING CARTON, BE CAREFUL NOT TO DAMAGE THE COMPONENTS OR BREAK ANY GLASSWARE. IMPORTANT: THOROUGHLY CHECK EACH BOX FOR PARTS THAT MAY BE LOCATED IN AREAS THAT CAN BE OVERLOOKED.

System One Installation
Duo Ceiling Mount Retrofit(Traditional)

- Turn off main power to the light (at the circuit breaker).

Failure to turn off main power to the light can result in an electric shock

- Remove plastic arm cover, rotate arm to horizontal and insert locking pin.(See Figure 13 Page 21)

Do not remove the light head until locking pin has been installed into the arm assembly. Failure to do so can result in serious injury and/or property damage.

- Remove the light head from the arm by removing the 8-32 flat head screws. Slide the light head off the yoke shaft. Dis-connect the Molex connector between the light head and yoke.
- Remove the arm from the ceiling casting assembly by removing the four ¼-28 socket head cap screws. Slide the arm assembly off the main bearing shaft. Dis-connect the Molex connector between the arm and ceiling casting assembly.
- Remove main bearing assembly from the ceiling rod by removing four ¼-28 socket head cap screws.
- Remove the ceiling casting covers by removing the four ceiling cover screws.
- Remove the cable assembly from the ballast assembly terminal block and discard.
- Install the main bearings into double mount using the screws previously removed along with the additional screws provided in the hardware kit.

Failure to install or tighten the ¼-28 socket head cap screws can cause the arm/head assembly to fall causing serious injury and/or property damage.

- Install the double mount into the ceiling casting using two ¼-28 x 3” long hex bolts , washers and nuts.

Failure to install or tighten the ¼-28 hex head screws can cause the arm/head assembly to fall causing serious injury and/or property damage.

- Install the ballast assembly on the ceiling casting using three 10-32 pan head screws
- Install hook-up wires from new ballast assembly to power distribution block. These wires are supplied with the hardware kit (See figure 11, Page 18).
- Slide the cable assemblies through the double mount and the center of the ceiling rod leaving the Molex connector protruding approximately 1” from the shaft protruding from the double mount.
- Route the cable assemblies to the ballast sub-assemblies. Cut the cables to the appropriate length(cable are supplied for longest ceiling rod length). Strip back the three wires and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on each ballast sub-assembly.
- Install one ceiling casting cover using two #6 screws and star washers.
- Install the 2 rubber trim pieces on the edges of the casting cover.
- Install the other half of the casting cover and secure using two #6 screws and star washers .

System One Installation
Duo Ceiling Mount Retrofit(Traditional)

- Slide the decorative arm rings over the arm assemblies (arm rings are supplied in the hardware kit).
- While supporting each arm assembly connect the two Molex connectors together. Slide the arm assembly over the shaft protruding from the ceiling rod and secure using the four ¼-28 socket head cap screws provided in the hardware kit.(See Figure 12, page 20). Repeat this for the second arm assembly.

Failure to install or tighten the ¼-28 socket head cap screws can cause the arm/head assembly to fall causing serious injury and/or property damage.

- Slide the decorative arm rings over the ends of the articulating arms (arm rings are supplied in the hardware kit).
- Connect the two Molex connectors together and slide the head assembly over the shaft protruding from the arm and secure using two 8-32 flat head screws provided in the hardware kit.(See Figure 12, page 20). Repeat for the second head assembly.

Failure to install or tighten the 8-32 flat head screws can cause the head assembly to fall causing serious injury and/or property damage.

Note: The arm assembly is shipped with a locking pin that prevents the arm from rotating vertically. The pin must be removed before trying to operate the arm. Slightly pull the arm down releasing tension on the pin. The pin should easily pull out. Keep pin in a safe place for further use such as normal maintenance.(See figure 13, page 20)

Do not remove the locking pin until light head has been installed onto the arm assembly. Failure to do so can result in serious injury and/or property damage.

- Install the arm cover.
- Installation is now complete. Refer to operation and maintenance sections before trying to operate light and arm mechanism.

System One Installation
Solo Ceiling Mount (Orbital)

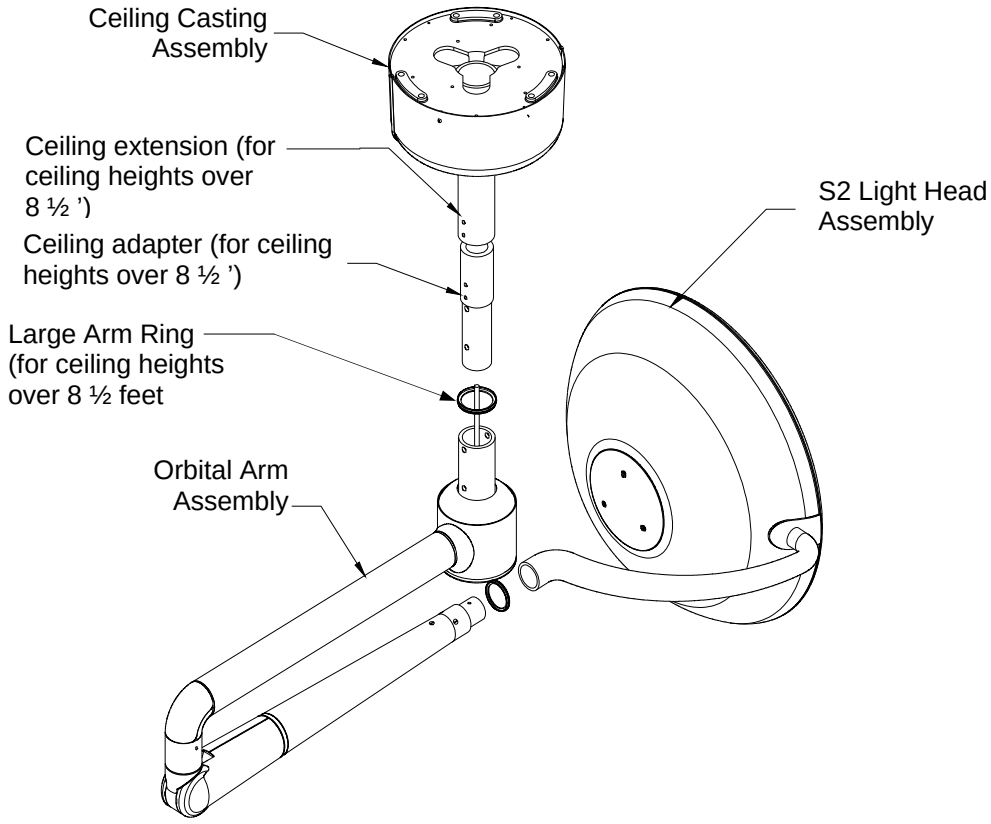


FIGURE 15 Sub-assemblies for System One Solo Ceiling Mount (Orbital)

GENERAL INFORMATION

The System One orbital solo ceiling mount is shipped in three separate cartons. The ceiling casting assembly, hardware kit and this manual are in one carton. The arm assembly and ceiling rod/adapter assembly are in one carton. The head assembly is located in the last carton. **Note**: There are 4 standard length extension rods for different ceiling heights. Verify that your ceiling rod length is correct for your ceiling height (See Page 10). **Note: Ceilings under 8 ½ feet do not require an extension rod and adapter.** If not correct please contact customer service. For ceiling heights greater than 11 feet the ceiling rod/adapter assembly will be shipped separately.

Prior to installation insure that all components shown in Figure 15 are present.

WHEN REMOVING PARTS FROM THE SHIPPING CARTONS, BE CAREFUL NOT TO DAMAGE THE COMPONENTS OR BREAK ANY GLASSWARE. IMPORTANT: THOROUGHLY CHECK EACH BOX FOR PARTS THAT MAY BE LOCATED IN AREAS THAT CAN BE OVERLOOKED.

System One Installation
Solo Ceiling Mount (Orbital)

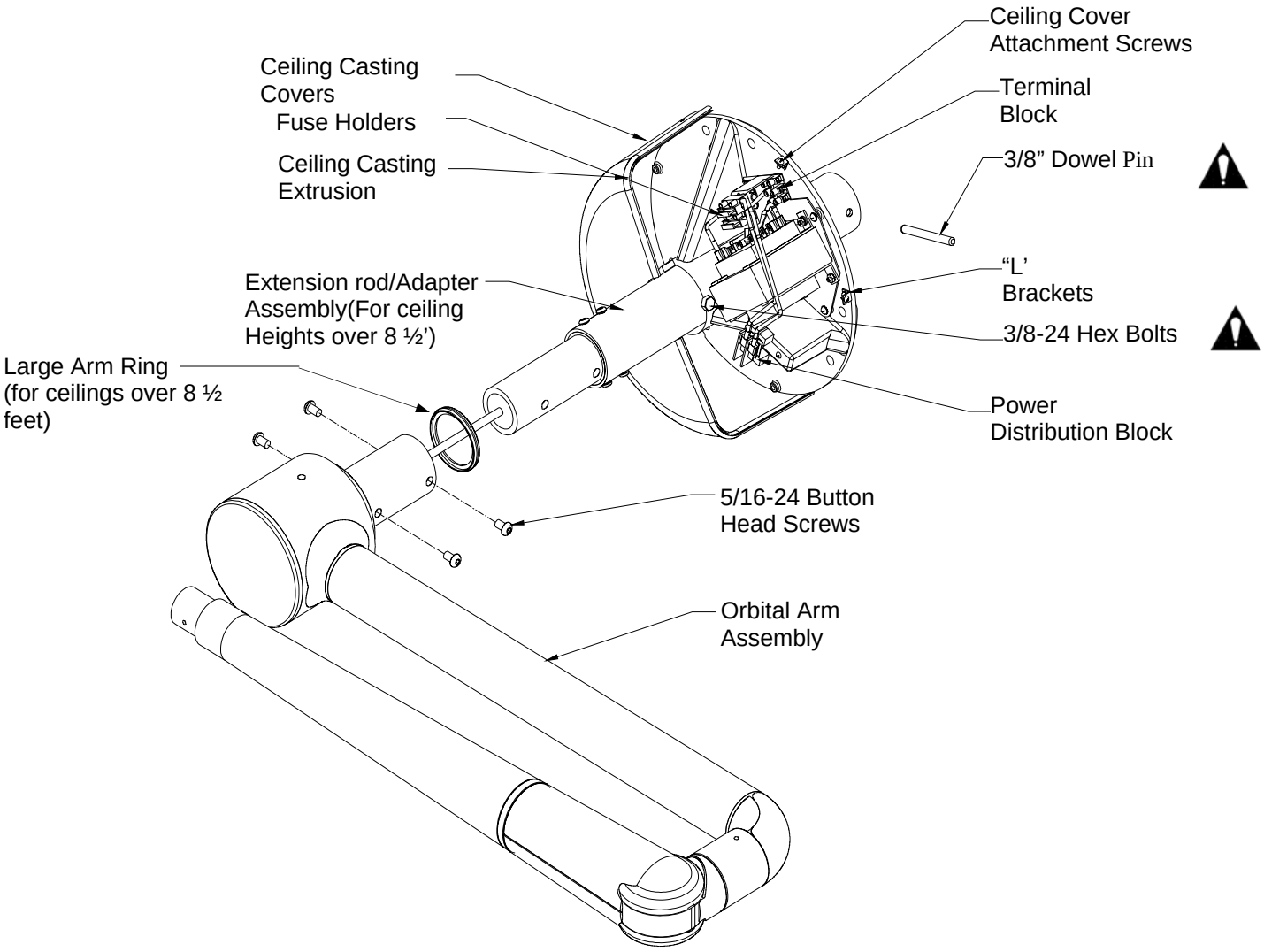


Figure 16-Solo Ceiling Mount (Orbital)

For 8-8 ½ foot ceiling height.

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the arm assembly into the hole in the ceiling casting in the direction shown in Figure 16. Push the rod through the casting exposing the hole at the end of the rod. Make sure to route the cable from the arm assembly to the ballast assembly.
- Install the 3/8" diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8" diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

System One Installation
Solo Ceiling Mount (Orbital)

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Cut the cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on the ballast sub-assembly.

For ceiling heights 8 ½ -12 feet.

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the ceiling extension assembly into the hole in the ceiling casting in the direction shown in Figure 16. Push the rod through the casting exposing the hole at the end of the rod.
- Install the 3/8" diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8" diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Place the decorative arm ring over the ceiling rod/adapter.
- Slide the arm assembly over the ceiling rod/adapter routing the cable to the ballast sub-assembly on the ceiling casting.
- Install four 5/16-24 button head screws to secure the arm to the ceiling rod/adapter.

Failure to tighten the 5/16-24 button head screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Cut the cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on the ballast sub-assembly.

For all ceiling heights.

- Install the ceiling casting on the ceiling using (6) 3/8" bolts(minimum) and washers. It is recommended that only Grade 8 or equivalent fasteners be used for the installation. Note: Fasteners are not provided by Medical Illumination.

The structural ceiling mount must be designed to support a vertical load of 175 lbs and an off center moment of 450 ft-lbs. The structural mount should meet all local building codes. A structural mount that does not meet these minimum conditions can cause serious injury and/or property damage.

System One Installation
Solo Ceiling Mount (Orbital)

Failure to use the correct mounting hardware can cause the arm/head assembly to become unstable, causing serious injury and/or property damage.

- If the ceiling mounting surface is not level, shim the ceiling casting to level the assembly.

Failure to level the ceiling casting may cause unwanted arm "drifting" during use.

- Connect the primary input wires(from the Junction box) to the power distribution block and secure the ground wire to the protective earth terminal(screw). The protective earth screw will be designated with this symbol . Tie the two primary wires together(near the power distribution block) with the cable tie provided in the hardware kit.
- Install one ceiling casting cover using two #6 screws and star washers provided in the hardware kit.
- Install the 2 rubber trim pieces on the edges of the casting cover.
- Install the other half of the casting cover and secure using two #6 screws and star washers provided in the hardware kit.
- Install small arm ring on to arm assembly.
- Slide the head assembly over the shaft protruding from the arm and secure using two 8-32 flat head screws provided in the hardware kit.(See Figure 17).

Failure to install or tighten the 8-32 flat head screws can cause the head assembly to fall causing serious injury and/or property damage.

Note: The arm assembly is shipped with a locking pin that prevents the arm from rotating vertically. The pin must be removed before trying to operate the arm. Slightly pull the arm down releasing tension on the pin. The pin should easily pull out. Keep pin in a safe place for further use such as normal maintenance.(See figure 18)

Do not remove the locking pin until light head has been installed onto the arm assembly. Failure to do so can result in serious injury and/or property damage.

- Remove the arm locking pin and install the plastic arm cover.
- Installation is now complete. Refer to operation and maintenance sections before trying to operate light and arm.

System One Installation
Solo Ceiling Mount (Orbital)

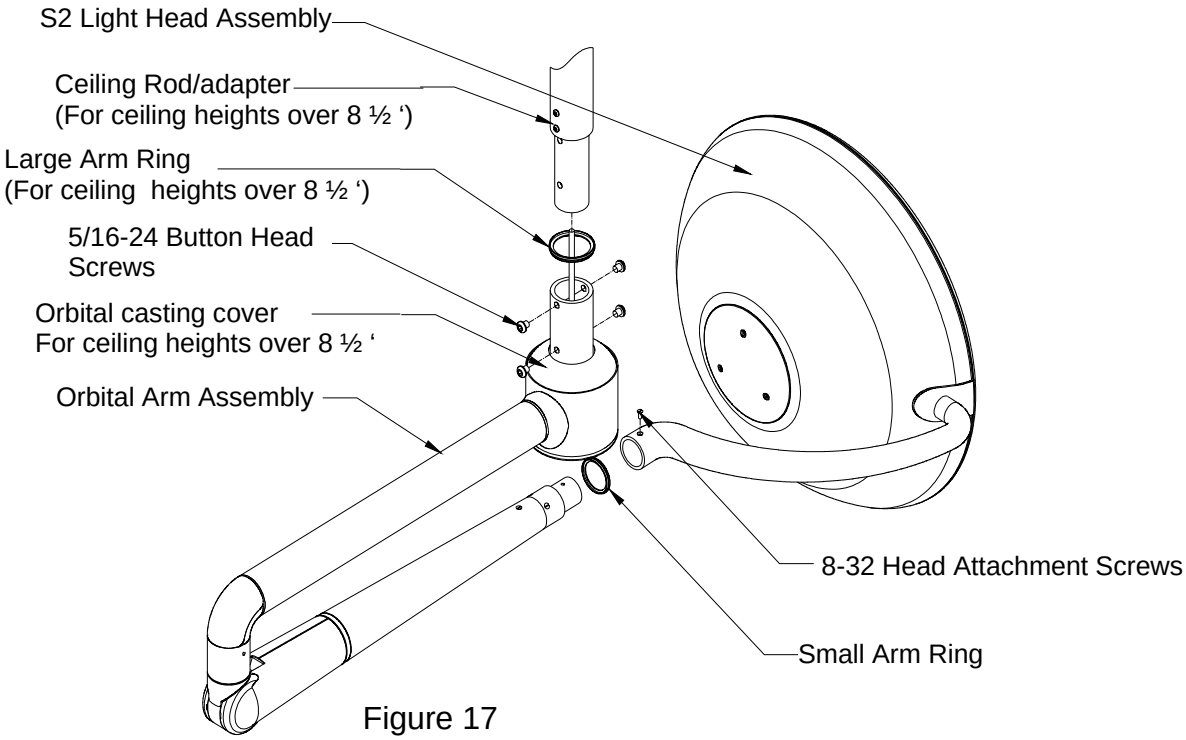
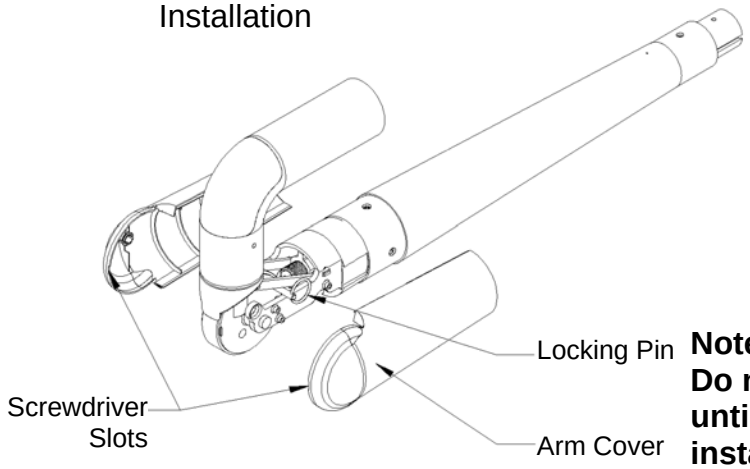


Figure 17
Arm and Light Head
Installation



Note:
Do not remove pin until light head is installed on arm

Figure 18
Locking Pin Removal

System One Installation
Duo Ceiling Mount (Orbital)

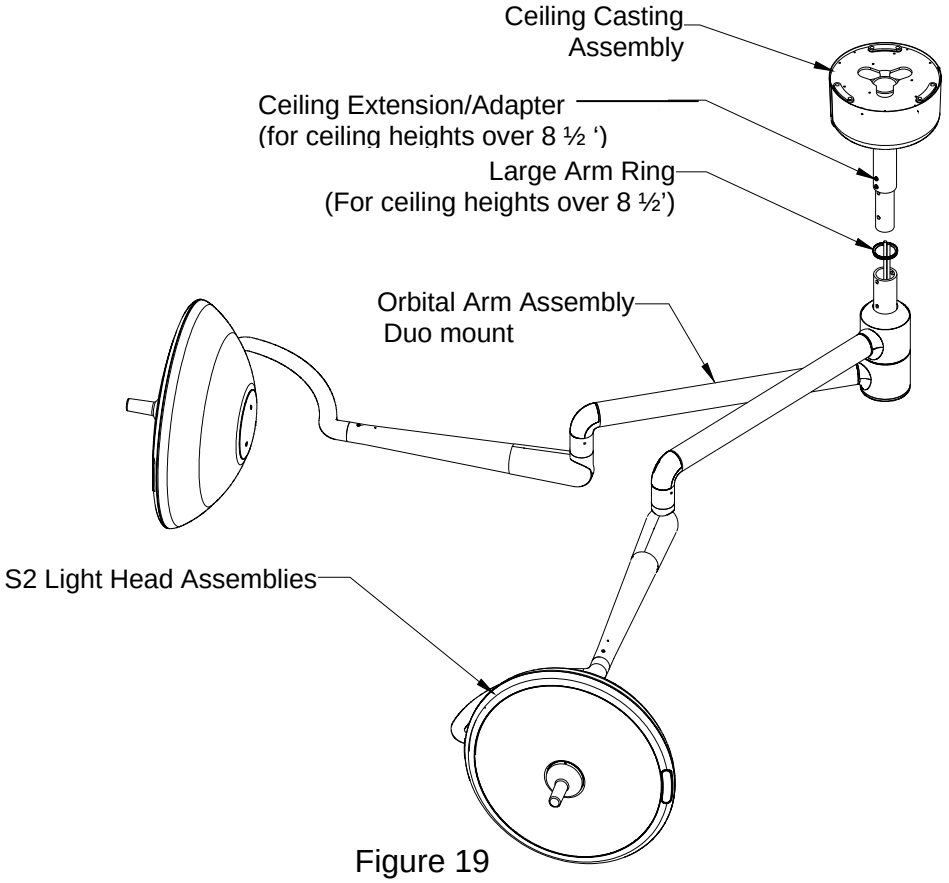


Figure 19
Duo Ceiling Mount (Orbital)

GENERAL INFORMATION

The System One orbital double ceiling mount is shipped in four separate cartons. The ceiling casting assembly, hardware kit and installation manual are in one carton. The arm assemblies and ceiling rod/adapter assembly are in one carton. The head assemblies are in the last cartons.

Note: There are 4 standard length extension rods for different ceiling heights. Verify that your ceiling rod length is correct for your ceiling height (See Page 11). **Note: Ceilings under 8 ½ feet do not require an extension rod and adapter.** If not correct please contact customer service. For ceiling heights greater than 11 feet the ceiling rod/adapter assembly will be shipped separately.

Prior to installation insure that all components shown in Figure 19 are present.

WHEN REMOVING PARTS FROM THE SHIPPING CARTONS, BE CAREFUL NOT TO DAMAGE THE COMPONENTS OR BREAK ANY GLASSWARE. IMPORTANT: THOROUGHLY CHECK EACH BOX FOR PARTS THAT MAY BE LOCATED IN AREAS THAT CAN BE OVERLOOKED.

System One Installation
Duo Ceiling Mount (Orbital)

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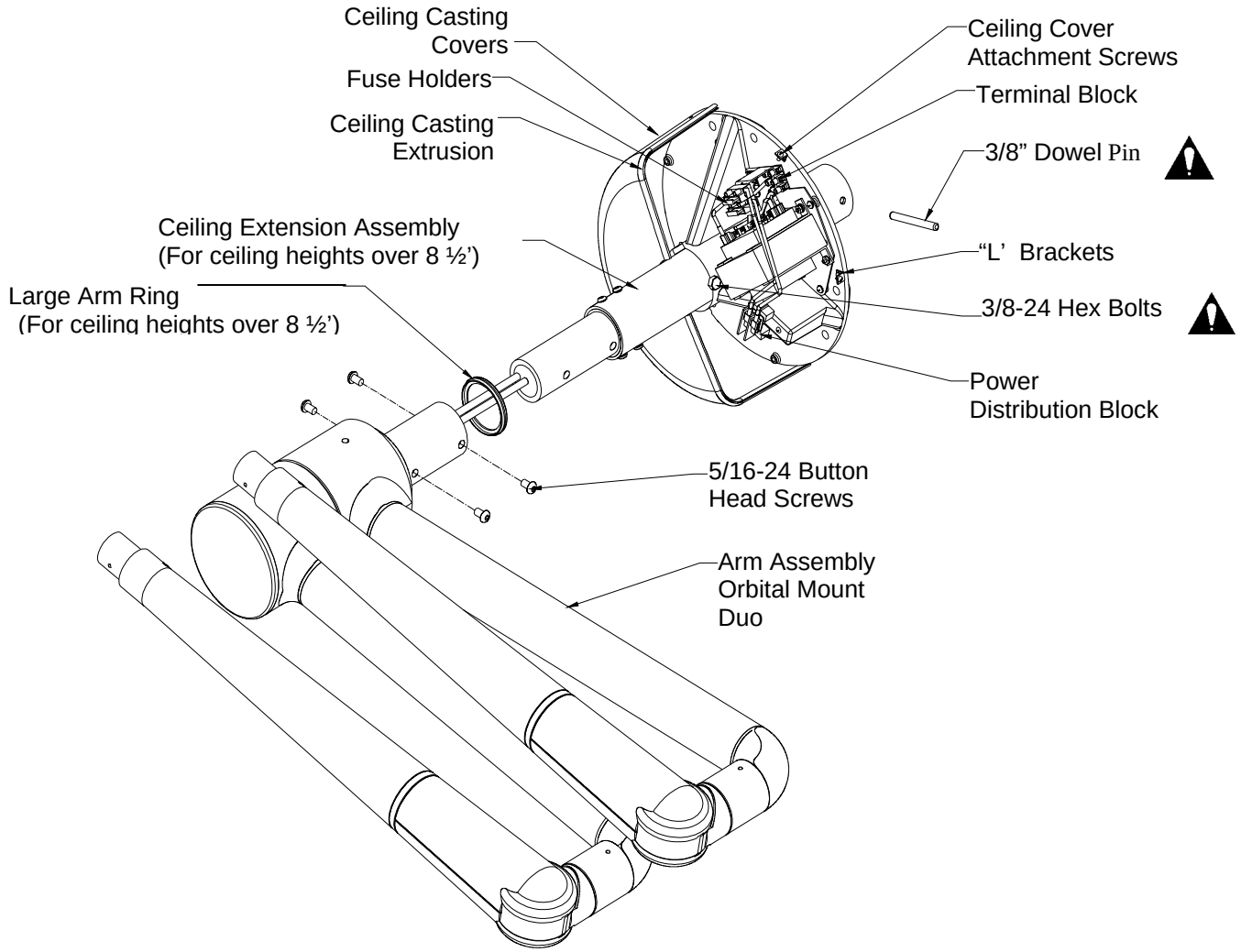

Figure 20- Duo Ceiling Mount (Orbital)

For 8-8 ½ foot ceiling height.

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the arm assembly into the hole in the ceiling casting in the direction shown in Figure 20. Push the rod through the casting exposing the hole at the end of the rod. Make sure to route the cables from the arm assemblies to the ballast assemblies.
- Install the 3/8" diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8" diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

System One Installation
Duo Ceiling Mount (Orbital)

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Cut each cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires from one arm and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on each ballast sub-assembly. One ballast sub-assembly is provided for each light head.

For 8 ½ -12 foot ceilings.

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the ceiling extension assembly into the hole in the ceiling casting in the direction shown in Figure 20. Push the rod through the casting exposing the hole at the end of the rod.
- Install the 3/8" diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8" diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Place the decorative arm ring over the ceiling rod/adapter.
- Slide the arm assembly over the ceiling rod/adapter routing the cable to the ballast sub-assembly on the ceiling casting.
- Install four 5/16-24 button head screws to secure the arm to the ceiling rod/adapter.

Failure to tighten the 5/16-24 button head screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Cut each cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires from one arm and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on each ballast sub-assembly. One ballast sub-assembly is provided for each light head..

For all ceiling heights.

- Install the ceiling casting on the ceiling using (6) 3/8" bolts(minimum) and washers. It is recommended that only Grade 8 or equivalent fasteners be used for the installation. Note: Fasteners are not provided by Medical Illumination.

The structural ceiling mount must be designed to support a vertical load of 175 lbs and an off center moment of 450 ft-lbs. The structural mount should meet all local building codes. A structural mount that does not meet these minimum conditions can cause serious injury and/or property damage.

System One Installation
Duo Ceiling Mount (Orbital)

Failure to use the correct mounting hardware can cause the arm/head assembly to become unstable, causing serious injury and/or property damage.

- If the ceiling mounting surface is not level, shim the ceiling casting to level the assembly.

Failure to level the ceiling casting may cause unwanted arm "drifting" during use.

- Connect the primary input wires(from the Junction box) to the power distribution block and secure the ground wire to the protective earth terminal(screw). The protective earth screw will be designated with this symbol . Tie the two primary wires together(near the power distribution block) with the cable tie provided in the hardware kit.
- Install one ceiling casting cover using two #6 screws and star washers provided in the hardware kit.
- Install the 2 rubber trim pieces on the edges of the casting cover.
- Install the other half of the casting cover and secure using two #6 screws and star washers provided in the hardware kit.
- Remove any tie wraps that may be holding the arms together.
- Install the small arm ring onto the arm assembly.
- Slide the head assembly over the shaft protruding from the arm and secure using two 8-32 flat head screws provided in the hardware kit.(See Figure 21).
- Repeat the above steps for the second head assembly.

Failure to install or tighten the 8-32 flat head screws can cause the head assembly to fall causing serious injury and/or property damage.

Note: The arm assembly is shipped with a locking pin that prevents the arm from rotating vertically. The pin must be removed before trying to operate the arm. Slightly pull the arm down releasing tension on the pin. The pin should easily pull out. Keep pin in a safe place for further use such as normal maintenance.(See figure 22)

Do not remove the locking pin until light head has been installed on to the arm assembly. Failure to do so can result in serious injury and/or property damage.

- Remove the arm locking pins and install the plastic arm covers.
- Installation is now complete. Refer to operation and maintenance sections before trying to operate light and arm.

System One Installation
Duo Ceiling Mount (Orbital)

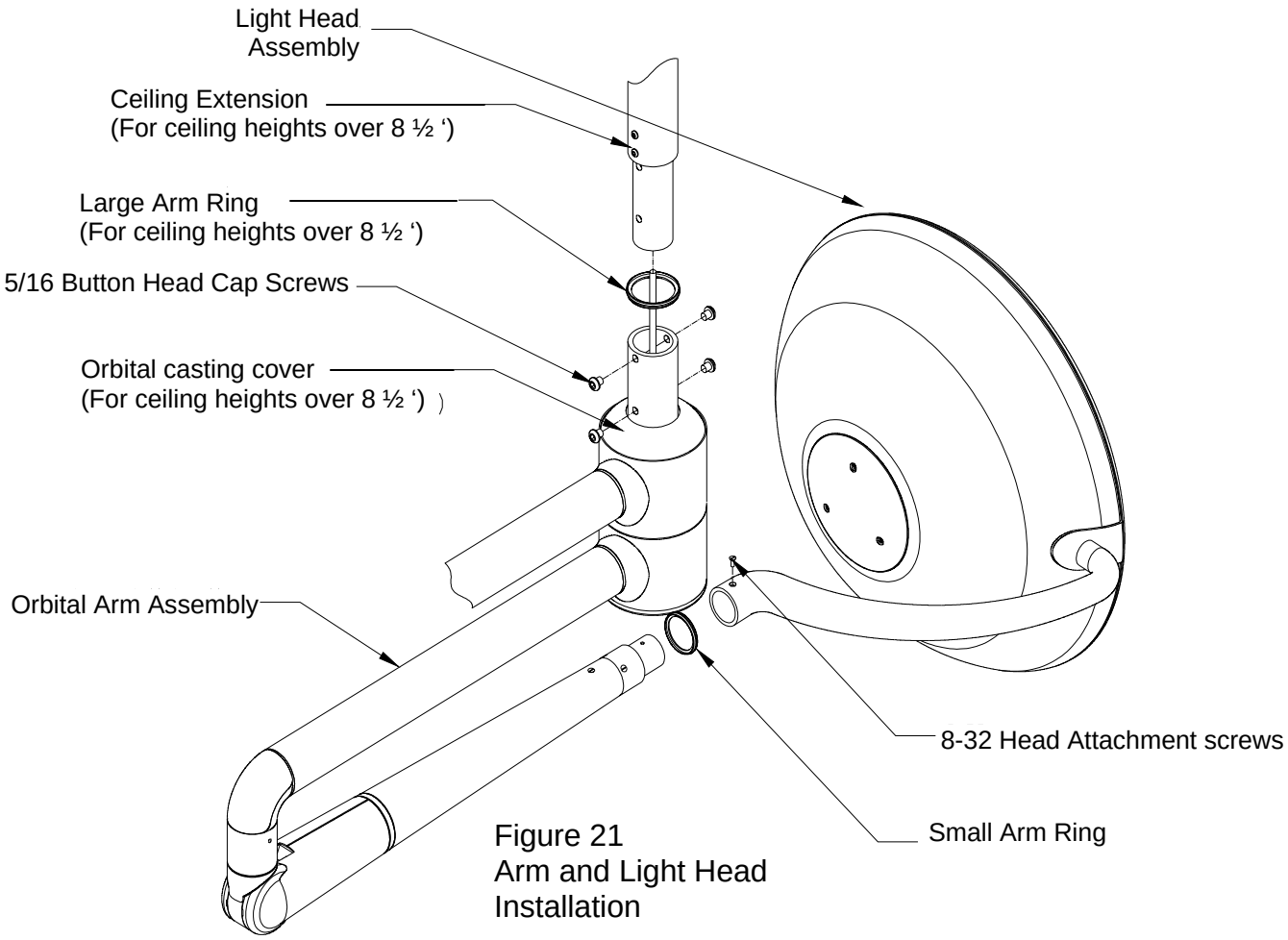

Figure 21
Arm and Light Head Installation

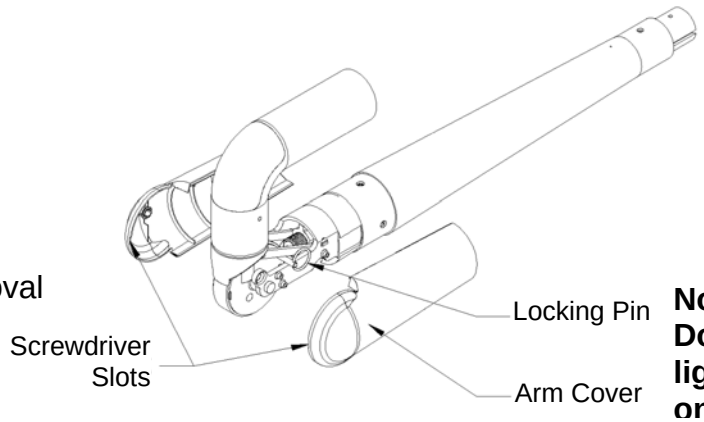

Figure 22
Locking Pin Removal

Note:
Do not remove pin until light head is installed on arm

System One Installation
Trio Ceiling Mount (Orbital)

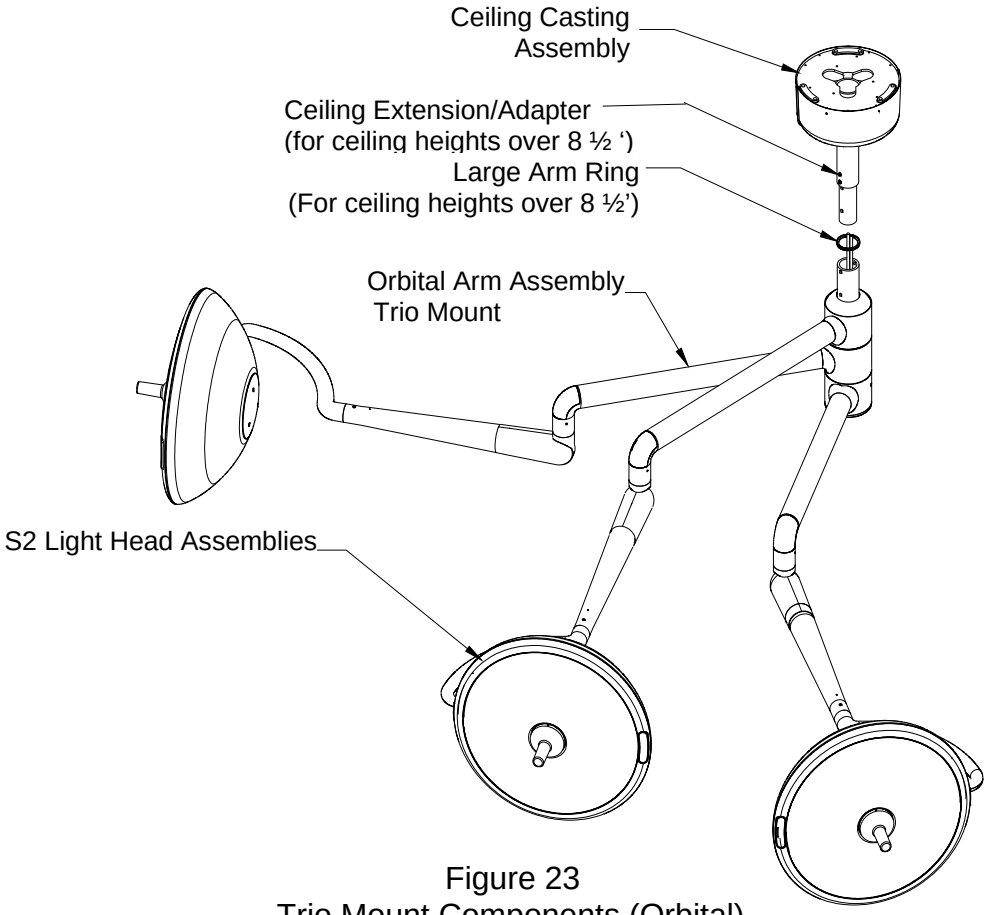

Figure 23
Trio Mount Components (Orbital)

GENERAL INFORMATION

The System One orbital triple ceiling mount is shipped in five separate cartons. The ceiling casting assembly, hardware kit and installation manual are in one carton. The arm assemblies and ceiling rod/adapter assembly are in one carton. The head assemblies are in the last three cartons.

Note: There are 4 standard length extension rods for different ceiling heights. Verify that your ceiling rod length is correct for your ceiling height (See Page 12). **Note: Ceilings under 8 ½ feet do not require an extension rod and adapter.** If not correct please contact customer service. For ceiling heights greater than 11 feet the ceiling rod/adapter assembly will be shipped separately.

Prior to installation insure that all components shown in Figure 23 are present.

WHEN REMOVING PARTS FROM THE SHIPPING CARTONS, BE CAREFUL NOT TO DAMAGE THE COMPONENTS OR BREAK ANY GLASSWARE. IMPORTANT: THOROUGHLY CHECK EACH BOX FOR PARTS THAT MAY BE LOCATED IN AREAS THAT CAN BE OVERLOOKED

System One Installation
Trio Ceiling Mount (Orbital)

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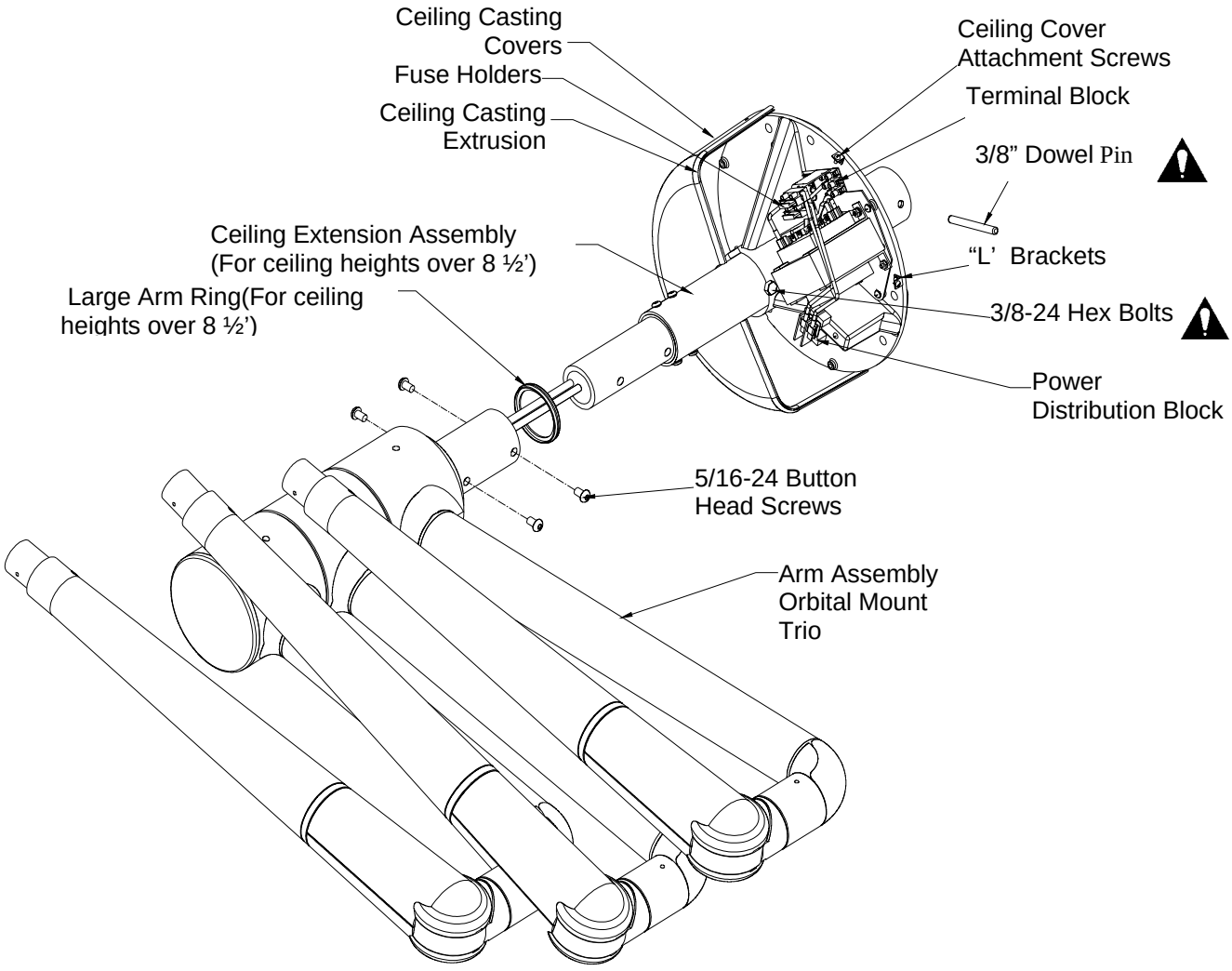


Figure 24-Trio Ceiling Mount (Orbital)

For 8-8 ½ foot ceiling height.

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the arm assembly into the hole in the ceiling casting in the direction shown in Figure 24. Push the rod through the casting exposing the hole at the end of the rod. Make sure to route the cables from the arm assemblies to the ballast assemblies.
- Install the 3/8" diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8" diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

System One Installation
Trio Ceiling Mount (Orbital)

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Cut each cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires from one arm and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on each ballast sub-assembly. One ballast sub-assembly is provided for each light head.

For 8 ½ -12 foot ceilings.

- Loosen the three 3/8-24 hex screws in the ceiling casting.
- With the ceiling casting laying on the floor or on a bench, slide the ceiling extension assembly into the hole in the ceiling casting in the direction shown in Figure 24. Push the rod through the casting exposing the hole at the end of the rod.
- Install the 3/8" diameter dowel pin through the ceiling rod and seat inside the groove provided in the ceiling casting.

Failure to install the 3/8" diameter dowel pin can cause the arm to fall from the ceiling causing serious injury and/or property damage.

- Tighten the three 3/8-24 Hex head screws to secure the ceiling rod into place.

Failure to tighten the 3/8-24 hex screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Place the decorative arm ring over the ceiling rod/adapter.
- Slide the arm assembly over the ceiling rod/adapter routing the cable to the ballast sub-assembly on the ceiling casting.
- Install four 5/16-24 button head screws to secure the arm to the ceiling rod/adapter.

Failure to tighten the 5/16-24 button head screws can cause the arm/head assembly to become unstable causing serious injury and/or property damage.

- Cut each cable to the appropriate length(cable is supplied for longest ceiling rod length available). Strip back the three wires from one arm and install in the correct positions (i.e. blue wire to blue wire, brown wire to brown wire, etc) into the terminal block located on each ballast sub-assembly. One ballast sub-assembly is provided for each light head..

For all ceiling heights.

- Install the ceiling casting on the ceiling using (6) 3/8" bolts(minimum) and washers. It is recommended that only Grade 8 or equivalent fasteners be used for the installation. Note: Fasteners are not provided by Medical Illumination.

The structural ceiling mount must be designed to support a vertical load of 175 lbs and an off center moment of 450 ft-lbs. The structural mount should meet all local building codes. A structural mount that does not meet these minimum conditions can cause serious injury and/or property damage.

System One Installation
Trio Ceiling Mount (Orbital)

Failure to use the correct mounting hardware can cause the arm/head assembly to become unstable, causing serious injury and/or property damage.

- If the ceiling mounting surface is not level, shim the ceiling casting to level the assembly.

Failure to level the ceiling casting may cause unwanted arm "drifting" during use.

- Connect the primary input wires(from the Junction box) to the power distribution block and secure the ground wire to the protective earth terminal(screw). The protective earth screw will be designated with this symbol . Tie the two primary wires together(near the power distribution block) with the cable tie provided in the hardware kit.
- Install one ceiling casting cover using two #6 screws and star washers provided in the hardware kit.
- Install the 2 rubber trim pieces on the edges of the casting cover.
- Install the other half of the casting cover and secure using two #6 screws and star washers provided in the hardware kit.
- Remove any tie wraps that may be holding the arms together.
- Install the small arm ring onto the arm assembly.
- Slide the head assembly over the shaft protruding from the arm and secure using two 8-32 flat head screws provided in the hardware kit.(See Figure 25).
- Repeat the above steps for the second and third head assemblies.

Failure to install or tighten the 8-32 flat head screws can cause the head assembly to fall causing serious injury and/or property damage.

Note: The arm assembly is shipped with a locking pin that prevents the arm from rotating vertically. The pin must be removed before trying to operate the arm. Slightly pull the arm down releasing tension on the pin. The pin should easily pull out. Keep pin in a safe place for further use such as normal maintenance.(See figure 26)

Do not remove the locking pin until light head has been installed onto the arm assembly. Failure to do so can result in serious injury and/or property damage.

- Remove the arm locking pins and install the plastic arm covers.
- Installation is now complete. Refer to operation and maintenance sections before trying to operate light and arm.

System One Installation
Trio Ceiling Mount (Orbital)

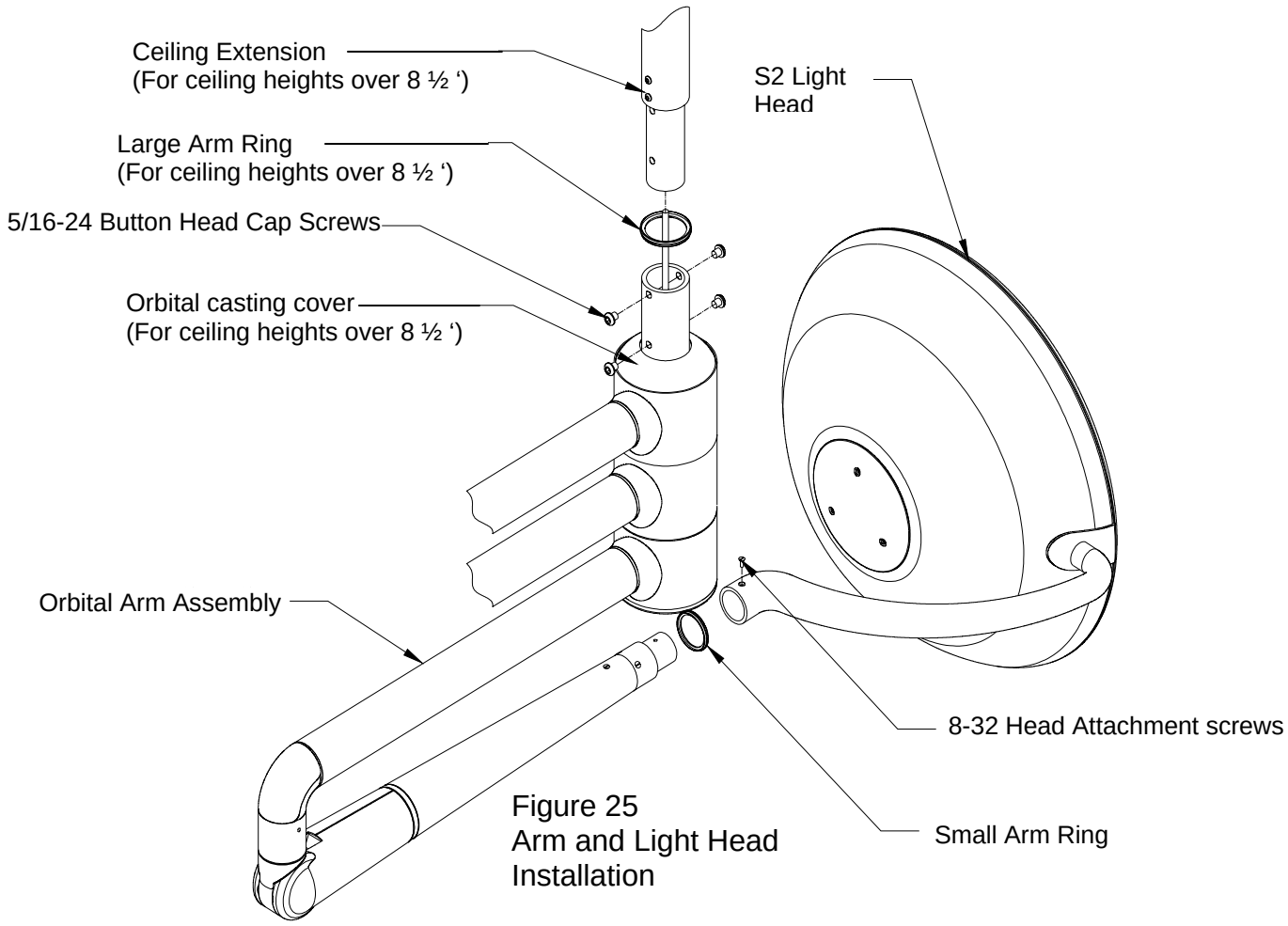


Figure 25
Arm and Light Head Installation

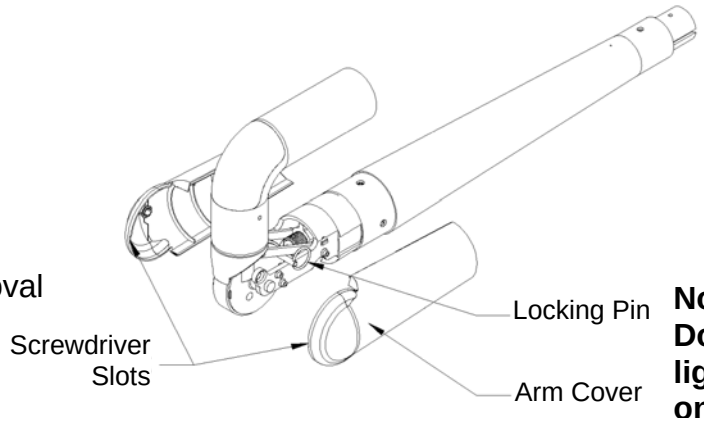


Figure 26
Locking Pin Removal

Note:
Do not remove pin until light head is installed on arm

Section 4

System One Operating Instructions

- To position the light head and arm, firmly grasp the sterilizable handle and move the light head or arm to the desired location. (See Figure 27 for arm and head movements).

The light head has been designed to be operated with the lens always facing downward. If the light head is operated with the lens facing upward, the light head may overheat causing the light head to automatically turn off. This will occur when a thermal fuse has reached it's maximum temperature thus preventing damage to the light head. The light head can be used again after it has cooled sufficiently.

- On/off: To turn the light on or off depress the on/off button on the touch pad located at the side of the light.
- To dim the bulb intensity depress the dimming button on the touch pad. To dim further depress the button again. The dimming consists of four distinct increments with dimming values of 100, 85, 65 and 50% of total illuminance. The light head will automatically reset to full mode if the dimming button is depressed with the light on its lowest setting.
- To adjust the light pattern(spot size) grasp the sterilizable handle and rotate. Rotating the handle counterclockwise will increase the spot size. Rotating the handle clockwise will focus or tighten the spot. Note: Increasing the spot size can act as a dimmer as it will spread out the light pattern reducing intensity.

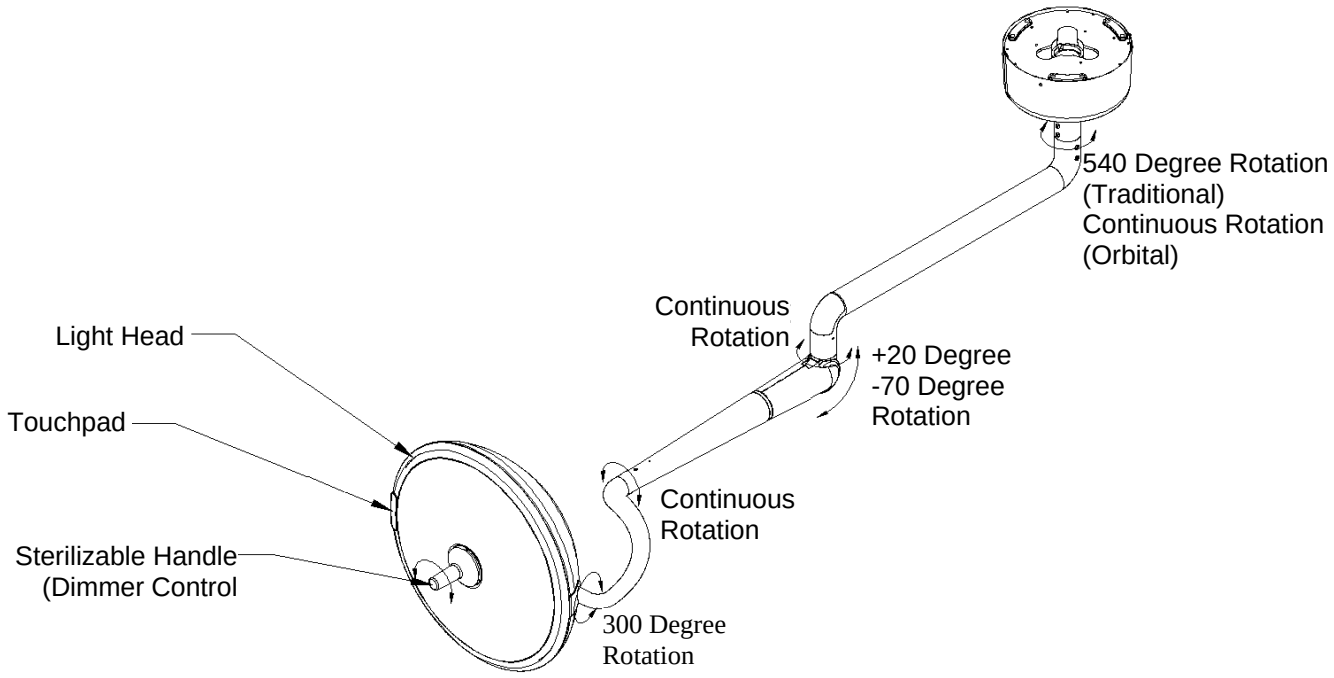


Figure 27 System One Head and Arm Movements

Section 5

System One Safety Tips

 **Only facility authorized maintenance personnel should troubleshoot the System One Surgical Lighting System. Troubleshooting by unauthorized personnel could result in personal injury and/or property damage.**

 **Only facility authorized personnel should repair the System One Surgical Lighting System. Repair by unauthorized personnel could result in personal injury and/or property damage and could void warranty.**

 **After completing a repair of the System One Surgical Lighting System make sure the unit is in proper working order. Failure to do so could result in personal injury and/or property damage**

 **The System One Surgical Lighting System operates at high temperatures. Allow the unit to cool at least 30 minutes before performing any troubleshooting, maintenance or repairs. Failure to do so could result in personal injury.**

 **Use only Medical Illumination approved replacement lamps. Failure to do so will affect the operating specifications. Use of a higher wattage lamp may cause a fire hazard, resulting in personal injury and/or property damage.**

 **Do not touch the lamp, inner glass lens, or the inner surface of the reflector directly. Body oils may significantly lower the life expectancy of these parts and cause equipment damage.**

 **The articulating arm is spring loaded. When removing the head/yoke ensure that the arm lock pin has been installed. Failure to do so could result in personal injury and/or property damage.**

 **The articulating arm is spring loaded. Never remove the arm lock pin until the head/yoke has been installed . Failure to do so could result in personal injury and/or property damage.**

 **The System One Surgical Lighting System comes with an internal I.R. filtering system. Never operate the light with this filter system removed. Failure to do so could result in personal or patient injury.**

 **The System One Surgical Lighting System comes with an internal I.R. filtering system. If the filter appears damaged in any way repair immediately before use on any patient. Failure to do so could result in personal or patient injury.**

Section 5

System One Safety Tips

Follow the product manufacturer's instructions . Failure to do so could result in personal injury and/or property damage.

If the unit fails any part of the preventive maintenance functional checks, repair the unit before use on any patient . Failure to do so could result in personal injury and/or property damage.

Do not use harsh cleaners, solvents, or detergents. Failure to do so could result in equipment damage.

Do not use silicone based lubricants. Equipment damage could occur.

The front lens is supplied with a protective hard coat to resist scratching. Never use abrasive cleaners on the front lens. Failure to do so could result in equipment damage.

Turn off main power before any repairs are started. Failure to do so could result in personal injury and/or property damage.

Do not pinch any wires during installation. Pinched wires can cause an electrical shock hazard, resulting in personal injury and/or property damage.

Use only Medical Illumination fuses p/n-0003082(120 VAC) or 0003083(230 VAC) if replacement is necessary . Failure to do so could result in personal injury and/or property damage.

Do not expose the unit to excessive moisture. Failure to do so could result in personal injury and/or property damage.

Do not rest articles or liquids on top of the System One Surgical Lighting System. Spilled liquids will damage the light head and arm assemblies causing an electric shock hazard.

System One Maintenance
Lamp Replacement

The System One Surgical Lighting System is equipped with a secondary lamp that will automatically illuminate if the primary lamp fails. The secondary bulb will provide adequate illumination until time is available to replace the primary lamp. When bulb replacement is necessary a yellow indicator located on the touch pad will illuminate. It is important to replace the primary lamp as soon as possible to ensure optimum performance and safety.

The System One Surgical Lighting System operates at high temperatures. Allow the unit to cool at least 30 minutes before performing any maintenance. Failure to do so could result in personal injury.

- Remove the sterilizable handle.
- Using a flat bladed screw driver loosen the three screws that hold the lamp holder on to the front lens.
- Remove the lamp holder assembly from the light head by pulling downward on the handle post.
- Grasp the primary bulb by its base and carefully remove it from the lamp holder assembly. The primary lamp is the lamp which is centered in the lamp holder assembly.
- Replace the bulb with Medical Illumination International, Inc. P/N-0003042.
- At this time inspect the secondary bulb to ensure that it is in good condition.

. **Do not touch the lamp directly. Body oils may significantly lower the life expectancy of the lamp and cause equipment damage.**

- Carefully insert lamp holder assembly into the fixture head aligning the keyway on the lamp holder assembly with the key on the lens. Care should be taken not to bump the lamp against any internal components. Tighten the three screws to secure the lamp holder assembly in place.

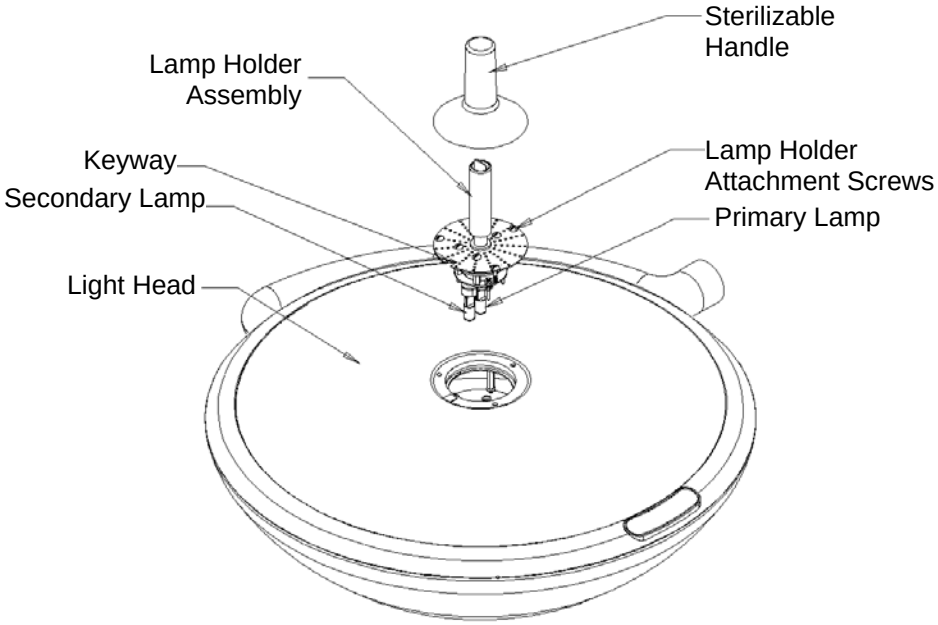


Figure 28-Lamp Replacement

System One Fuse Replacement

Turn off main power before fuses are replaced. Failure to do so could result in personal injury and/or property damage.

- Remove ceiling covers by loosening the (4) attachment screws.
- Locate the fuse holders. They will be on the ballast mounting plates.
- All ballast assemblies come with dual fuses . Determine which fuse has failed and replace with Medical Illumination P/n-0003082 or P/n-0003083. For 120 VAC applications use only a 2.5 amp slo-blow fuse (0003082). For 230 VAC applications use only a 1.25 amp slo-blow fuse (0003083).

Use only Medical Illumination fuses p/n's-0003082 and 0003083 if replacement is necessary . Failure to do so could result in personal injury and/or property damage.

- Replace ceiling covers and restore main power to the unit.

Note: Do not use light should it continue to blow fuses. Contact the factory immediately.

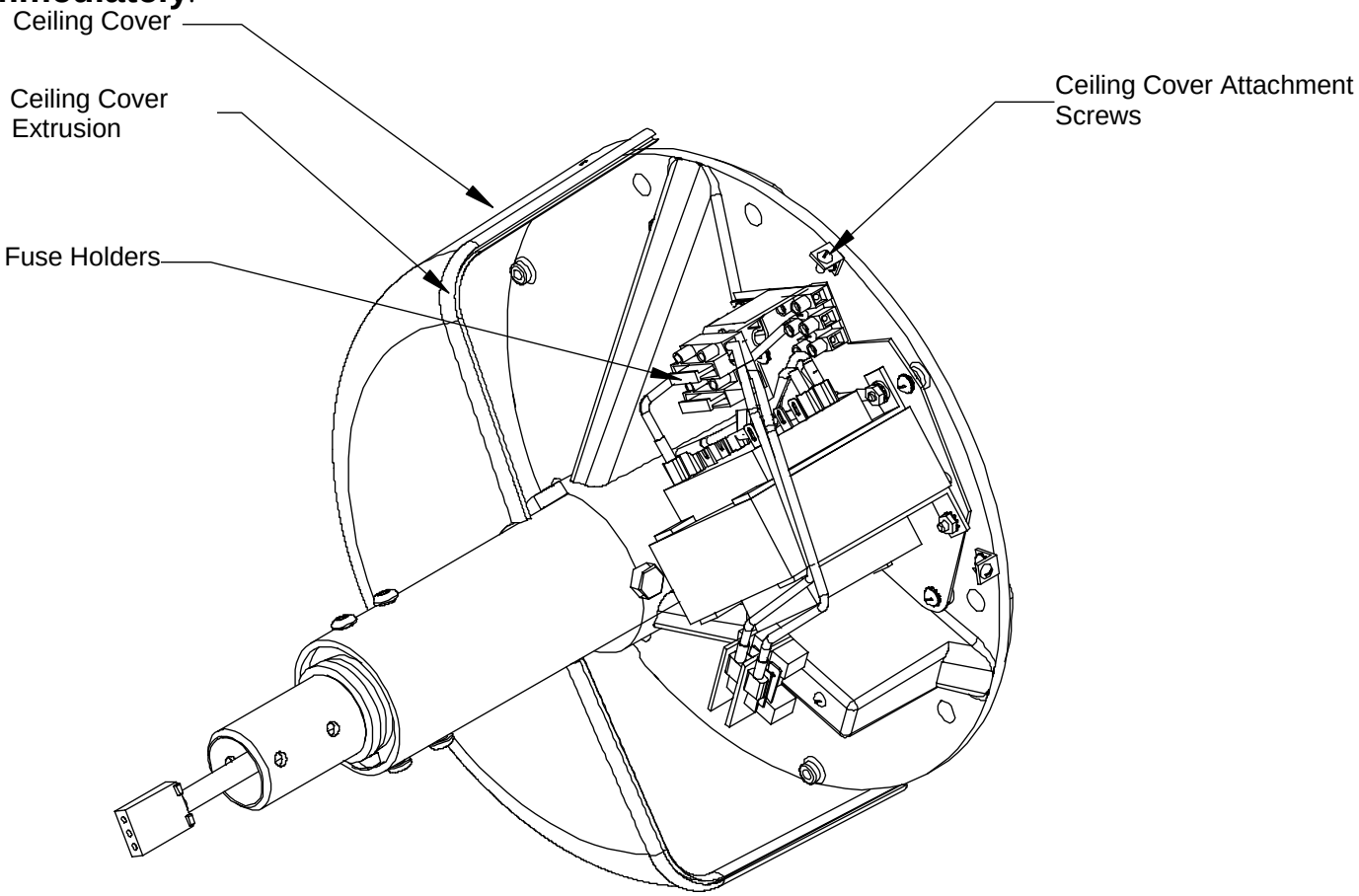


Figure 29- Fuse Replacement (Wires Pictorially Omitted For Clarity)

System One Arm Adjustment

- To remove the two arm covers insert a flat bladed screwdriver in to the slots in the covers. Gently pry the covers off with the screw driver.
- Lower the arm and head until the adjustment holes in the spring rod are accessible.
- Insert the adjustment rod into the holes in the spring rod(adjustment rod is supplied in the hardware kit).

Make sure the adjustment rod goes through both sides of the spring rod before adjusting spring. Failure to do so could result in personal injury and/or property damage.

- Turn the spring rod counter clockwise to increase the tension in the spring (needed when light head tends to droop on arm). Turn the spring rod clockwise to decrease the tension in the spring. Continue to adjust until light head is again balanced.
- Replace the arm covers by snapping them into position.
- Friction adjustment: Should the articulating arm need a friction adjustment insert the 3/32" Allen wrench(supplied in hardware kit) into the top hole located in the pivot casting and turn clockwise to tighten or counter clockwise to loosen. (See Figure 30).

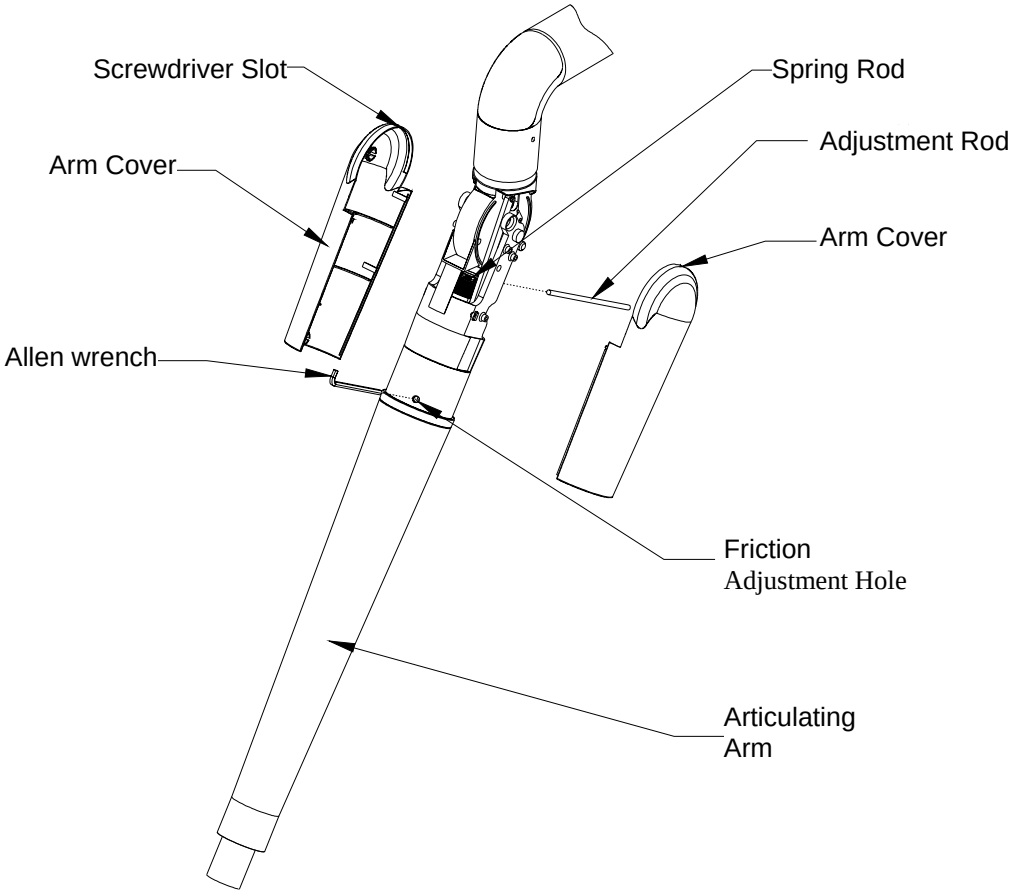


Figure 30-Arm Adjustment

System One Head Adjustment

- To adjust the friction between the head and the yoke, rotate the head until the hole and in the yoke is exposed, as shown below.
- Insert the 5/16” Allen wrench into the hole and tighten the set screw to increase the head friction or loosen the set screw to decrease head friction.

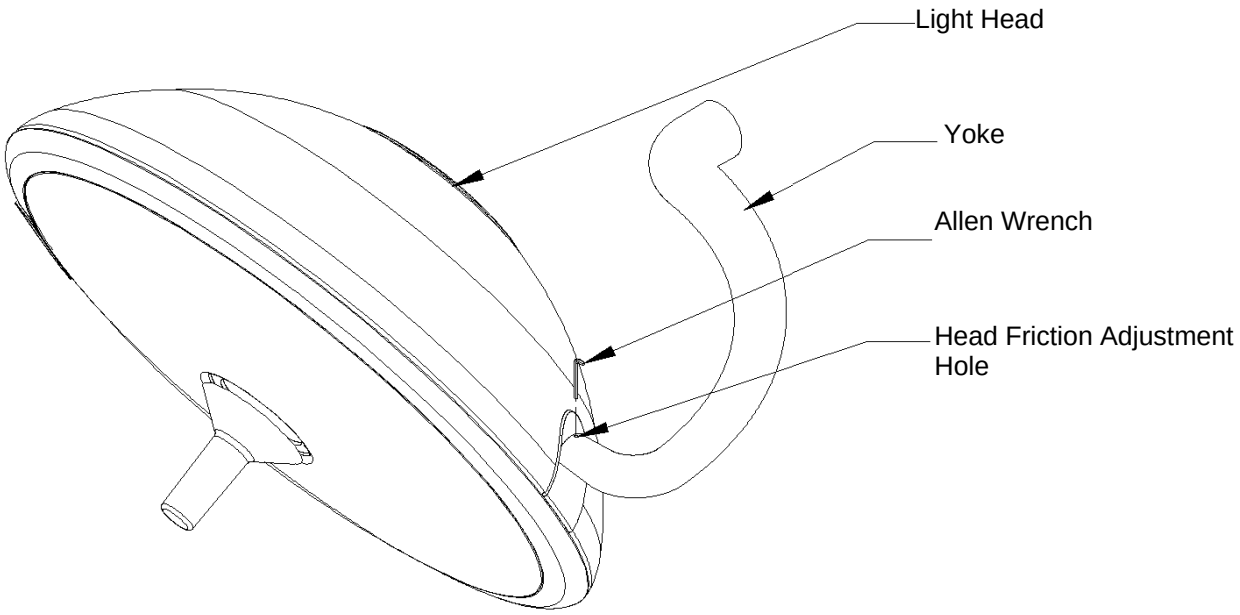


Figure 31- Light Head Friction Adjustment

Arm/Head Friction Adjustment
Orbital System One

All orbital arm/head assemblies have an internal brake to eliminate arm/head drifting during use. The brake is pre-adjusted at the factory. Should field adjustment become necessary (i.e. The arm/head assembly drifts while in use), the following procedure should be used.

- Using the 3/16” Allen wrench (supplied in the hardware kit) turn the set screw located on the arm housing clockwise to increase friction or counterclockwise to decrease friction. (See Figure 32 for adjustment location)

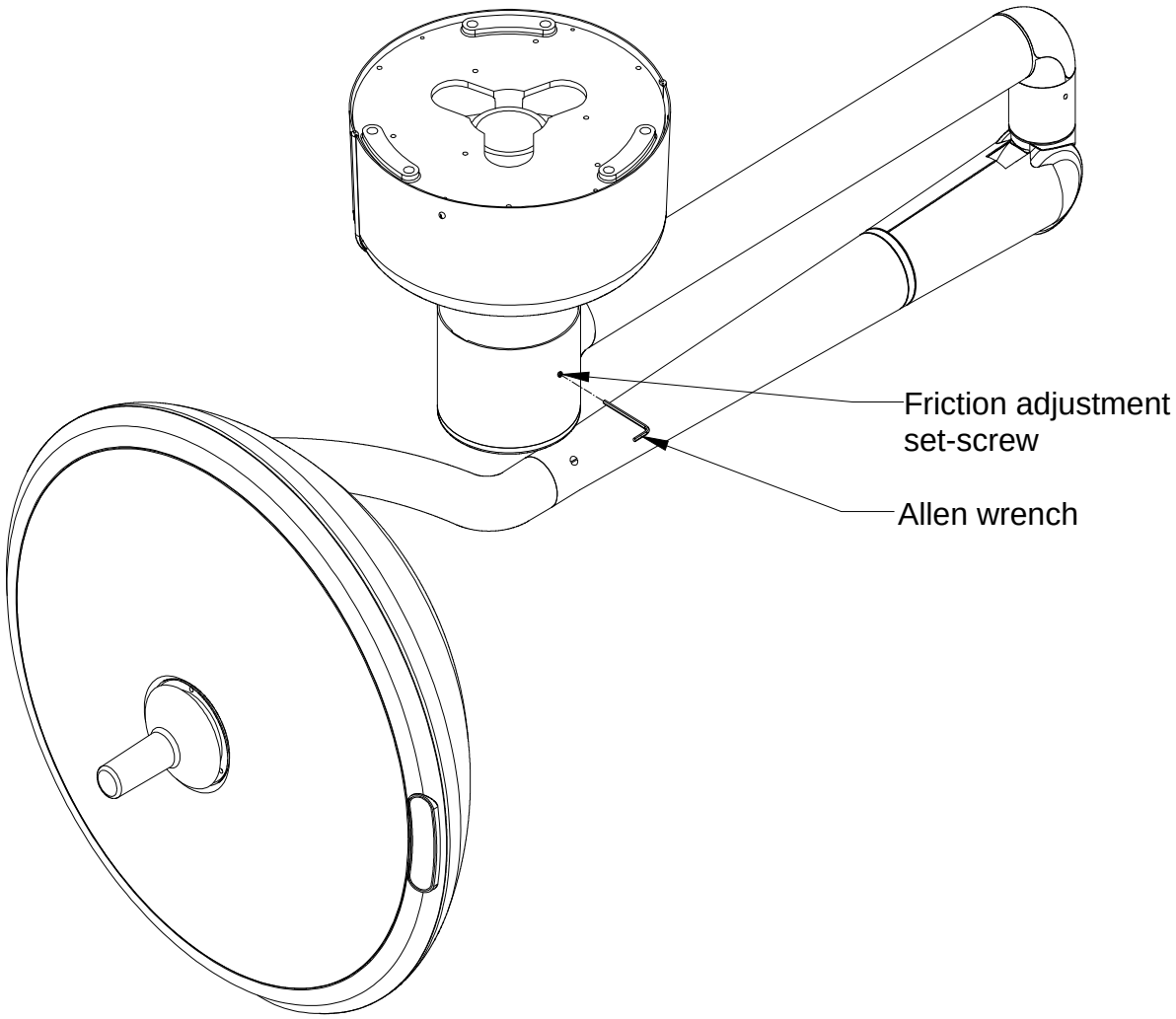


Figure 32- Arm/Head Friction Adjustment

System One Handle Sterilization

- Remove sterilizable handle by pressing the button near the base of the handle and pulling the handle off the handle post(See Figure 33).
- Sterilize the handle utilizing steam sterilization of minimum 250° Fahrenheit for a minimum of 30 minutes in compliance with AAMI-SSSa-1988 Good Hospital Practices, Steam Sterilization and Sterility Assurance, or equivalent method.

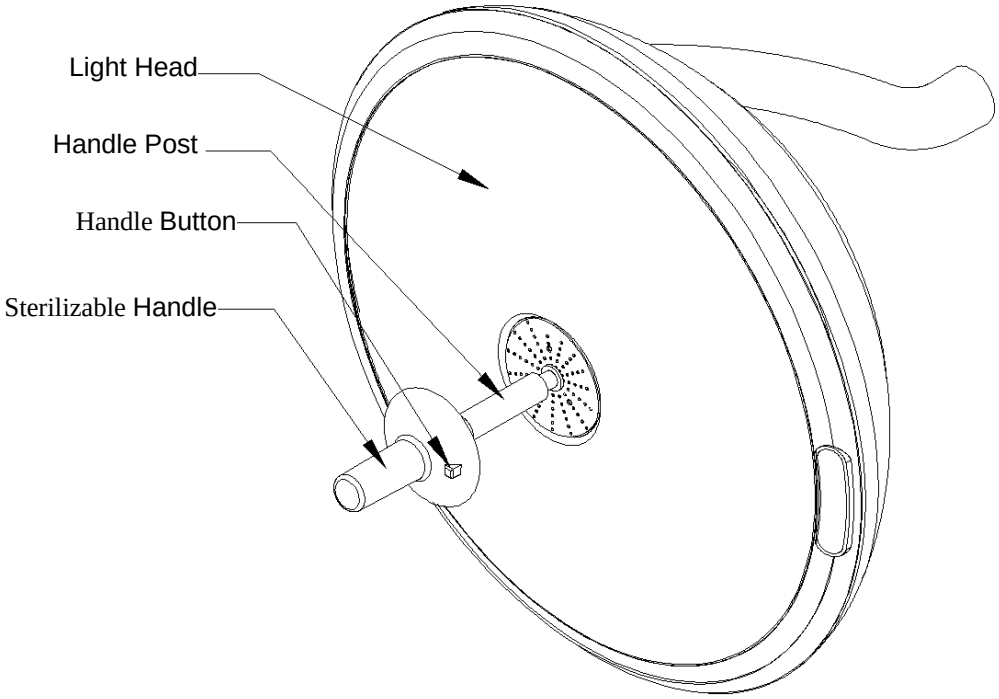


Figure 33- Handle Sterilization

System One Cleaning Instructions

- The front lens is made from a UV resistant polycarbonate plastic that has an external hard coating to resist scratching. Clean the lens using glass/plastic cleaner or mild soap and water mix. It is very important to use a clean, soft cloth to avoid any scratching of the diffuser. Never spray the cleaning fluid directly onto the lens surface, but instead spray into clean cloth and then wipe the lens.
- Clean the light housing and arm using mild soap and water mixture. Apply this mixture to a clean cloth and wipe down the light head and arm. Never spray the cleaning fluid directly onto the light head or arm, but instead spray onto clean cloth and then wipe the light head and arm.

Do not use harsh cleaners, solvents, or detergents. Failure to do so could result in equipment damage.

The front lens is supplied with a protective hard coat to resist scratching. Never use abrasive cleaners on the front lens. Failure to do so could result in equipment damage.

Do not expose the unit to excessive moisture. Failure to do so could result in personal injury and/or property damage.

System One Maintenance Schedule

Table 1 Preventative Maintenance Schedule

Function	Procedure
Light bulb/Lamp Holder	Ensure that light bulb is seated properly in socket. Examine socket and wiring for signs of heat degradation. Inspect wiring for signs of chafing. Check that both the primary and secondary lamps are in good condition. Replace any damaged parts.
Bolts and nuts	Check to see that all mounting and attachment bolts, set screws, pins, etc. are in place and securely tightened. Replace any missing bolts and re-tighten as required.
Glassware/Reflector	Inspect the fronts lens, reflector and heat absorbing glass cylinder(bluish cylinder located inside light head). Check for chips, cracks, deep scratches or other defects that could affect the safety or performance of the light head. Replace these items as required
Moving joints/Adjustments	Check to make sure all moving joints function properly along the mounting system and head and arm system. If the articulating arm does not position properly(drifts from original position) refer to arm adjustment on Page 45. If the light head drifts refer to light head friction adjustment Page 46. If this does not solve the problem contact customer service as the unit may require factory repair
Overall appearance	Check the general aesthetics of the System One Surgical Lighting System. The unit should be kept clean and dust free. Clean and dust as necessary.

Note: Maintenance schedules vary for each light depending on usage and operating instructions. An annual inspection of the equipment is recommended.

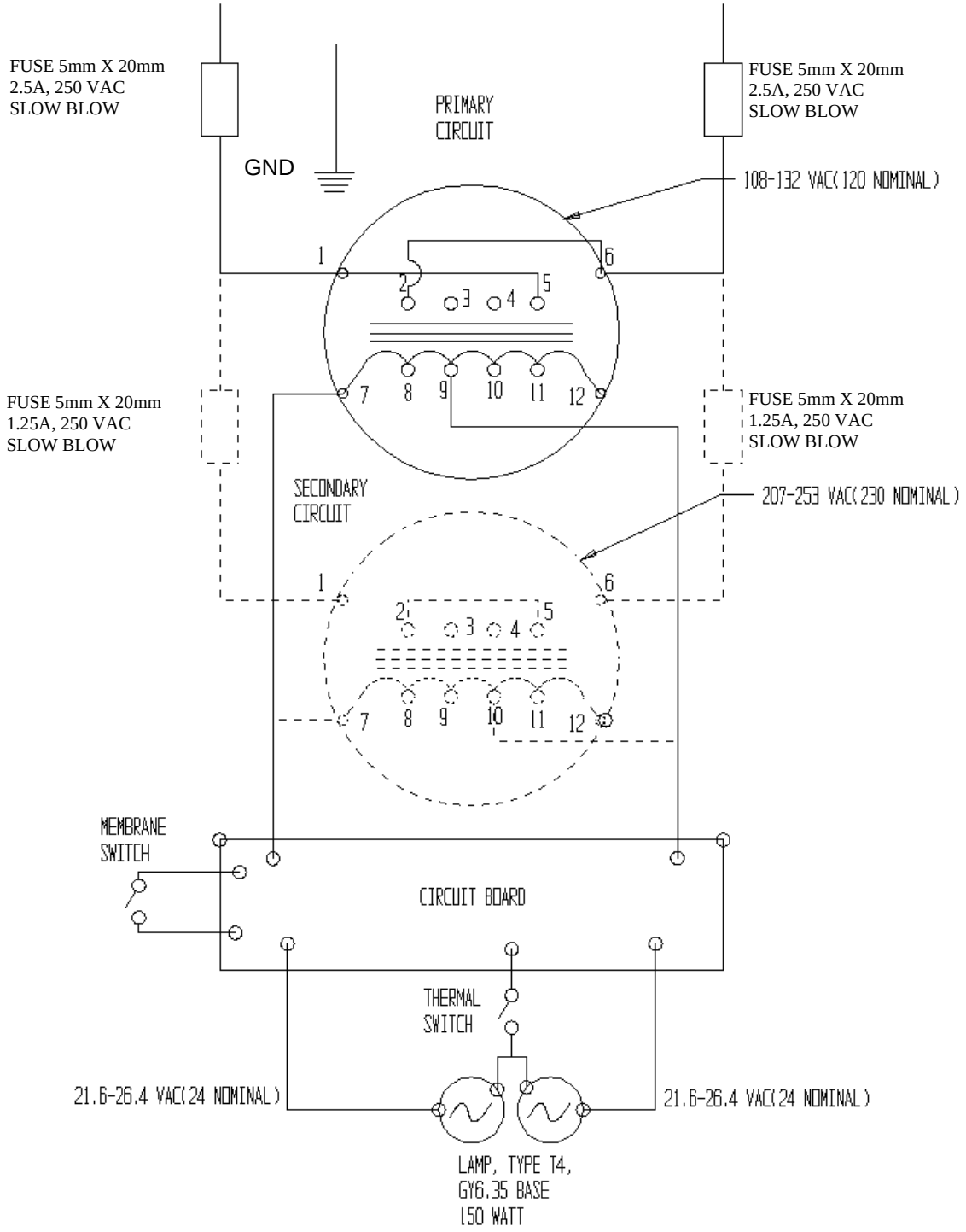
Note: Medical Illumination International Inc., recommends that the maintenance records for this equipment be kept on file at the health care facility.

System One Troubleshooting

Problem	Cause	Remedy
Light will not turn on	• No power to light • Fuse is blown • Both primary and secondary bulbs have failed	• Check circuit breaker • Replace fuse/fuses • Replace bulbs
Bulb burns out quickly**	• Incorrect bulb installed in light head • Supply voltage does not correspond to ratings label • Voltage spikes from supply voltage • Transformer failure	• Install correct bulb • Check supply circuit to which light was installed to verify correct voltage • Make sure lights are wired to supply circuit described in installation recommendations • Replace faulty transformer
Light head turns off in certain positions	• Light head position is abnormal position causing overheating	• Move light head to different orientation (i.e. lens always facing slightly downward)
Light does not maintain its position vertically	• Spring tension or friction is incorrect • Additional equipment was added to unit	• Adjust spring(see arm adjustment Page 45) • Remove additional equipment from arm
Arm/Head Assembly does not maintain its position horizontally (Traditional)	• Ceiling casting mount is not level. • Ceiling casting mounting screw are loose • Additional equipment was added to unit	• Level ceiling casting mount by shimming • Tighten ceiling casting mounting fasteners • Remove additional equipment from arm
Arm/Head assembly does not maintain its position horizontally (Orbital)	• Ceiling casting mount is not level. • Ceiling casting mounting screw are loose • Arm/Head needs friction adjustment	• Level ceiling casting mount by shimming • Tighten ceiling casting mounting fasteners • Adjust Arm/Head (see Arm/Head friction adjustment Page 47)
Light head is loose(drifts) at yoke interface	• Head needs friction adjustment	• Adjust light head (see light head friction adjustment Page 46)
Extension arm only rotates in one direction	• Extension arm is against internal stop(**Traditional models only**)	• Rotate extension arm 360° in direction arm will rotate
Light head will not rotate at yoke interface	• Light head is against internal stop	• Rotate head in opposite direction
Articulating arm cannot be moved any lower	• Arm is against internal stop	• Rotate arm in opposite direction
Articulating arm cannot be raised any higher	• Arm is against internal stop	• Rotate arm in opposite direction

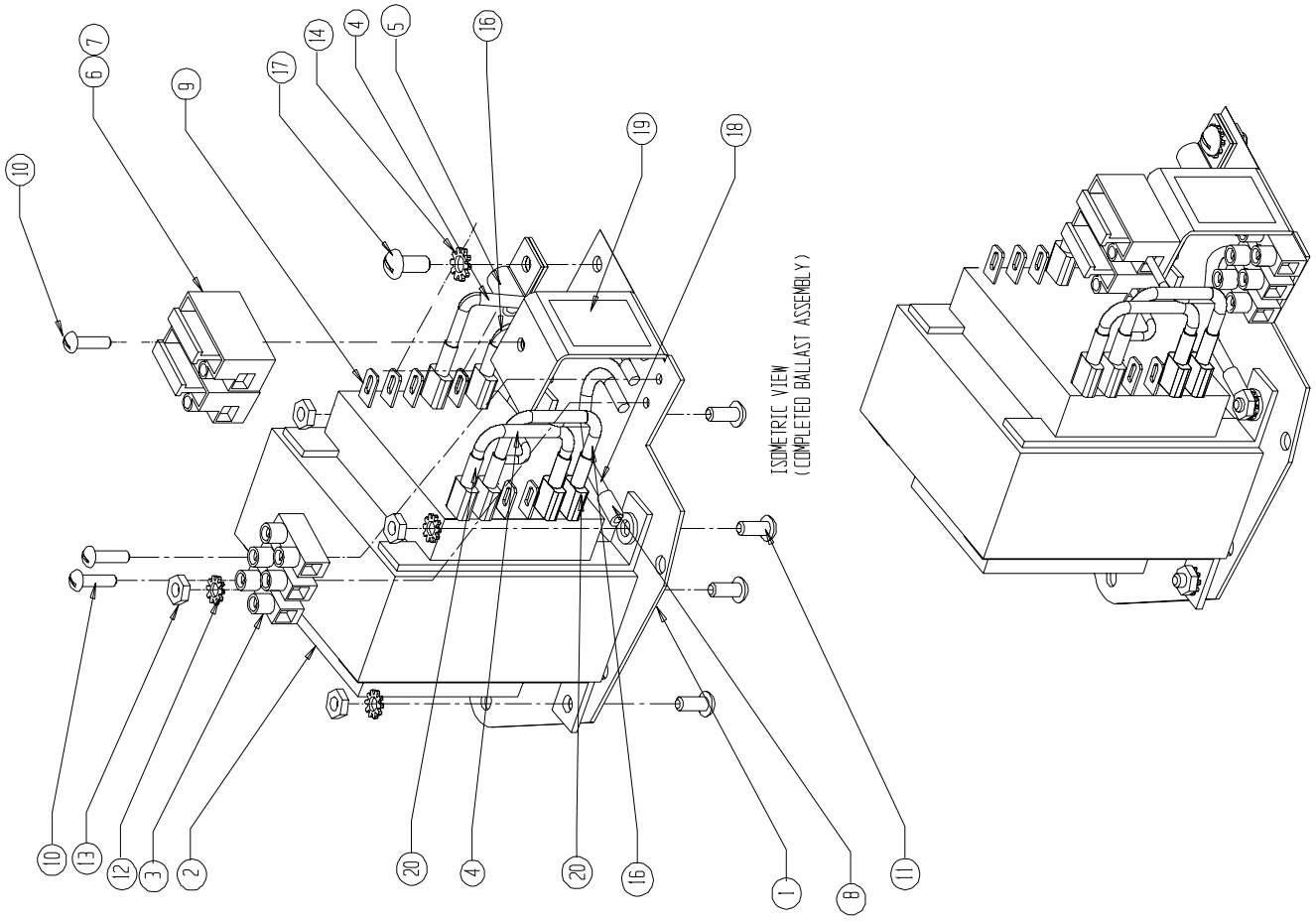
**Note: Rated bulb life is the average published by bulb manufacturers. Actual bulb life varies dependant upon bulb manufacturer and/or operating conditions.

System One Exploded View and Part lists
Electrical Schematic



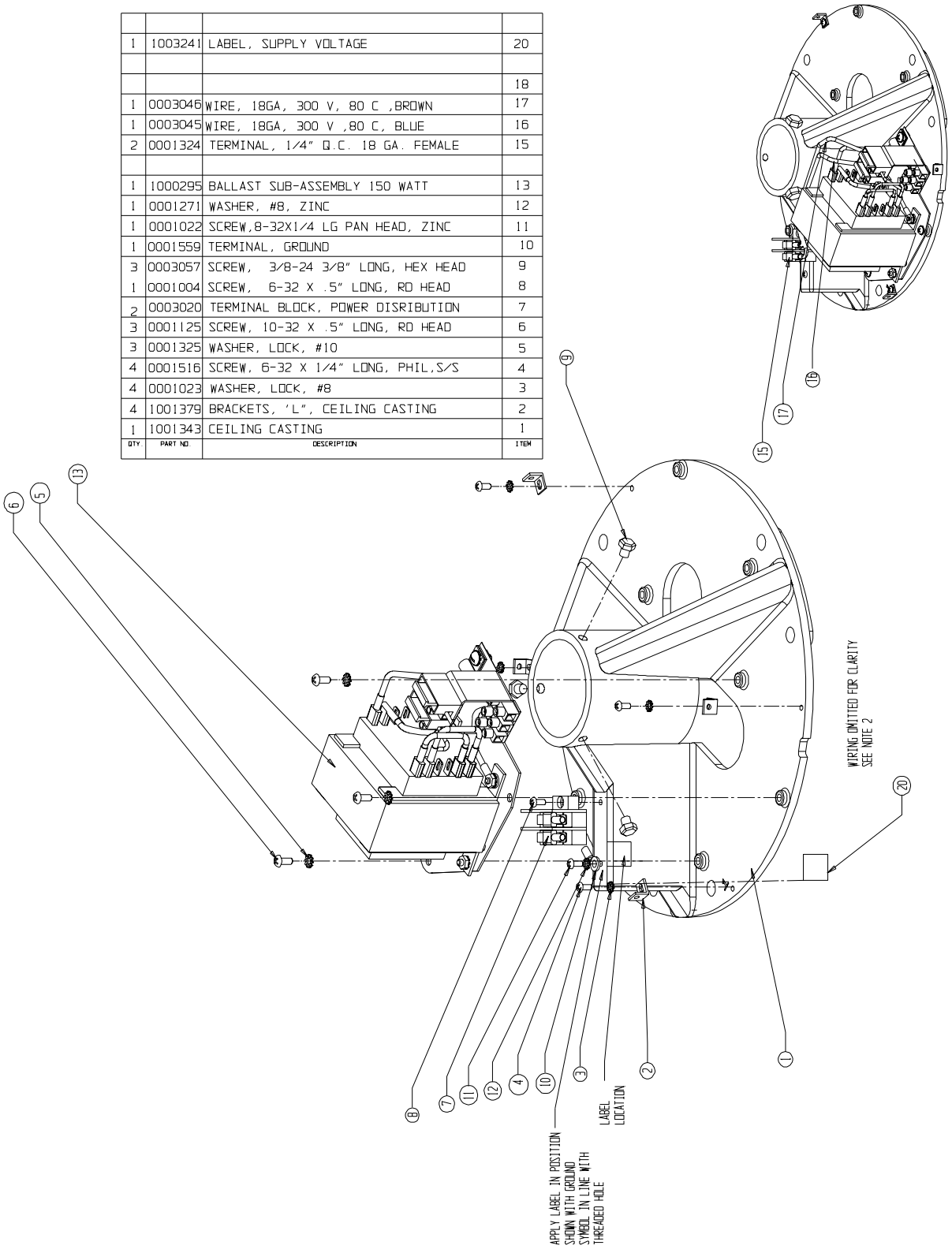
System One Exploded View and Part lists
Ballast Assembly-P/N-1000295

ITEM	DESCRIPTION	PART NO.	QTY.
1	BALLAST MOUNTING PLATE	1001344	1
2	BALLAST, 150 WATT, 120/24 VAC	0003079	1
3	TERMINAL BLOCK(TUV)	0001495	1
4	WIRE, 18GA,LIGHT BLUE	0003045	3
5	CABLE CLAMP, 6/6 WHITE NYLON	0003018	1
6	FUSE HOLDER WITH TERMINAL BLOCK	0001716	2
7	FUSE, 2.5 AMP, 5mm X 20mm, SLO BLO	0003082	2
8	TERMINAL,GROUND LUG, #8 CLOSED	0001021	1
9	CONNECTOR, 1/4" INSULATED, QUICK CONNECT	0001324	4
10	SCREW, 8-32 X 3/4" LONG,SS	0003065	3
11	SCREW, 8-32 X 3/8" LONG, PHIL, PAN HD, SS, BLACK OXIDE	0001273	4
12	WASHER, #8, TOOTH LOCK, BLACK OXIDE	0001023	4
13	NUT, HEX, 8-32, SS, BLACK OXIDE	0001159	4
14	WASHER, #10,TOOTH LOCK, ZINC	0001325	1
15	TIE,CABLE,4-33/64" LONG,NATURAL	0001424	2
16	WIRE, 18 GAUGE COLOR, BROWN	0003046	3
17	SCREW,10-32 X 1/2" LONG, PHIL PAN HD,SS,ZINC	0001125	1
18	WIRE, 18 GAUGE COLOR, GREEN/YELLOW	0003047	1
19	LABEL, FUSE RATING	1003243	1
20	TERMINAL, 1/4 Q.C, 14GA, FEMALE	0001322	2



System One Exploded View and Parts List
Ceiling Casting Assembly-P/N-1000296

QTY	PART NO.	DESCRIPTION	ITEM
1	1003241	LABEL, SUPPLY VOLTAGE	20
			18
1	0003046	WIRE, 18GA, 300 V, 80 C ,BROWN	17
1	0003045	WIRE, 18GA, 300 V ,80 C, BLUE	16
2	0001324	TERMINAL, 1/4" Q.C. 18 GA. FEMALE	15
1	1000295	BALLAST SUB-ASSEMBLY 150 WATT	13
1	0001271	WASHER, #8, ZINC	12
1	0001022	SCREW,8-32X1/4 LG PAN HEAD, ZINC	11
1	0001559	TERMINAL, GROUND	10
3	0003057	SCREW, 3/8-24 3/8" LONG, HEX HEAD	9
1	0001004	SCREW, 6-32 X .5" LONG, RD HEAD	8
2	0003020	TERMINAL BLOCK, POWER DISRIBUTION	7
3	0001125	SCREW, 10-32 X .5" LONG, RD HEAD	6
3	0001325	WASHER, LOCK, #10	5
4	0001516	SCREW, 6-32 X 1/4" LONG, PHIL,S/S	4
4	0001023	WASHER, LOCK, #8	3
4	1001379	BRACKETS, 'L", CEILING CASTING	2
1	1001343	CEILING CASTING	1

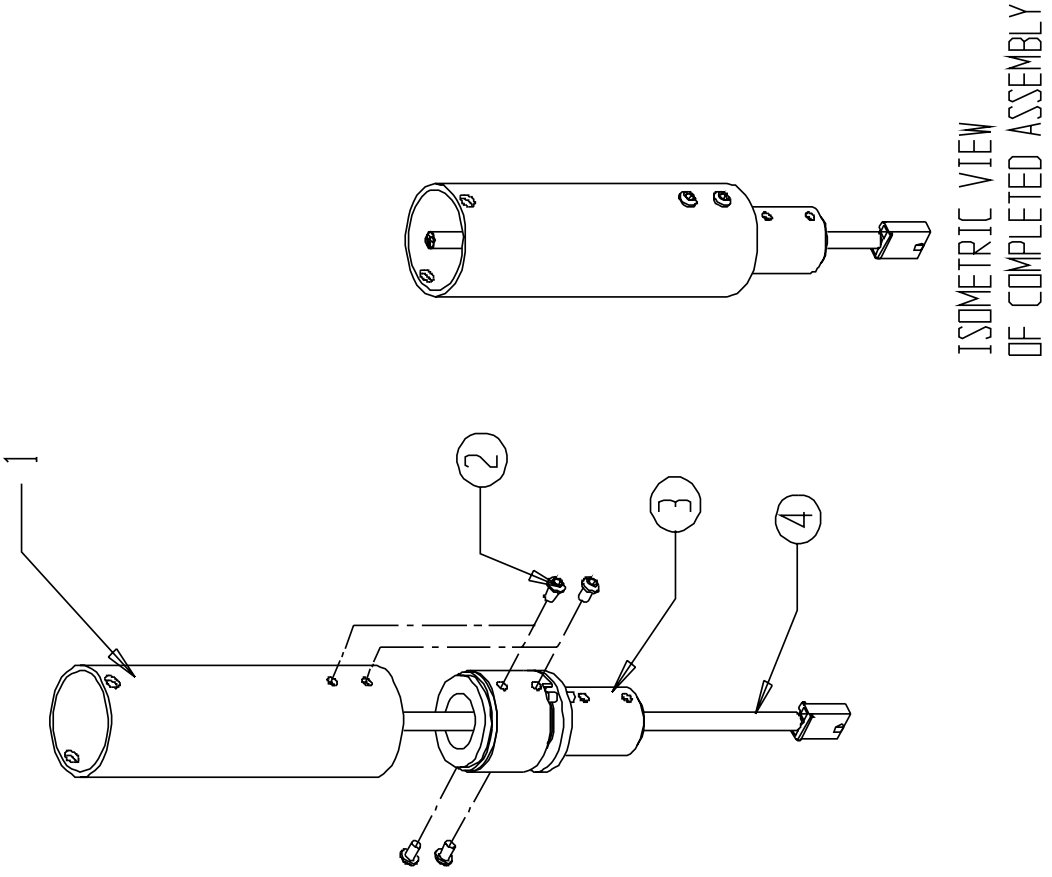


System One Exploded View and Parts List
Ceiling Rod Assembly-P/N-1000306,100317-320(Traditional)

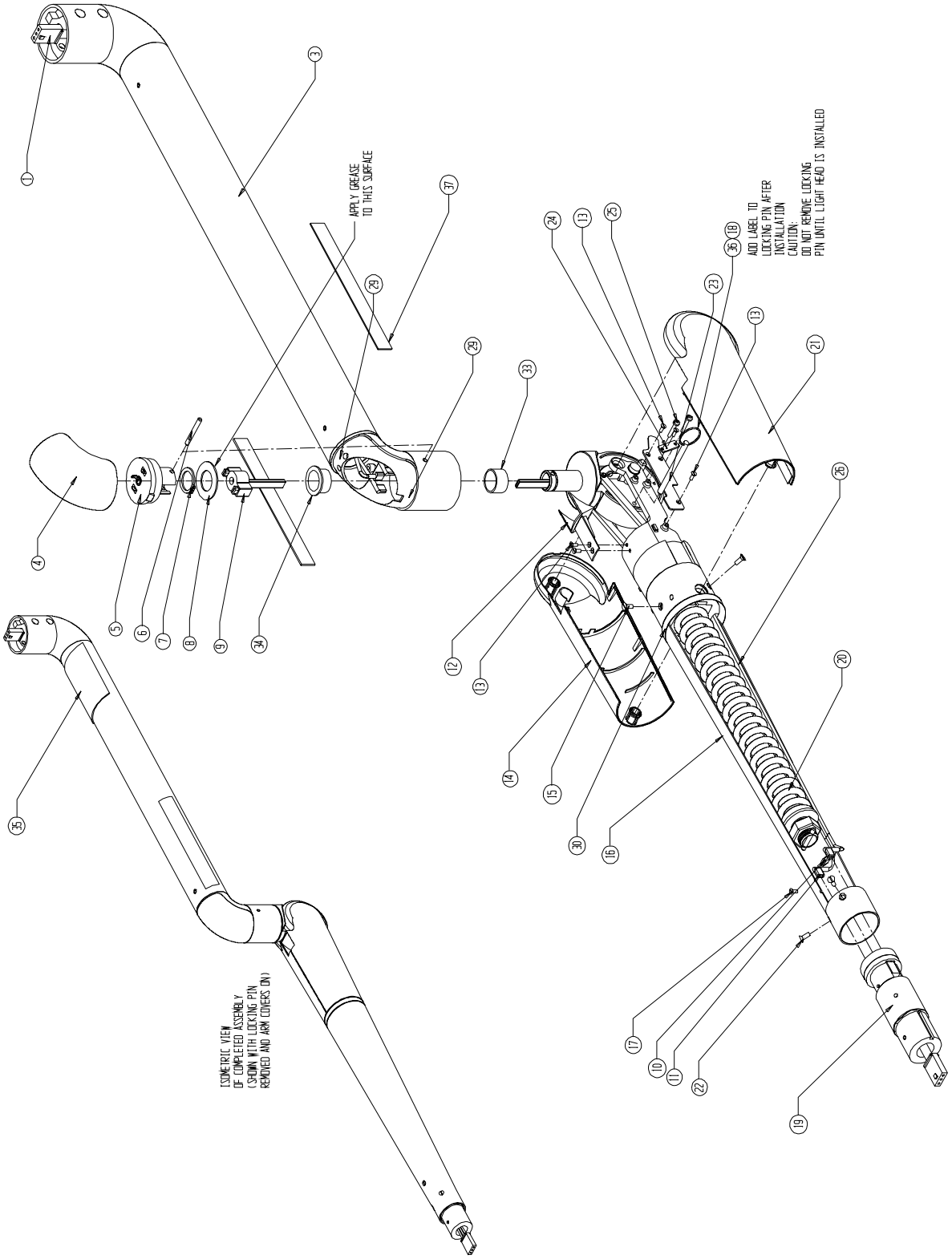
CEILING HEIGHT	SUB-ASSY P/N	CEILING ROD P/N
8' (2438mm)	1000306	1001350
9' (2743mm)	1000317	1001351
10' (3048mm)	1000318	1001352
11' (3352mm)	1000319	1001353
12' (3657mm)	1000320	1001354

BILL OF MATERIALS

ITEM	DESCRIPTION	PART NO.	QTY.
1	CEILING ROD	SEE TABLE 1	1
2	SCREW, SOCKET HEAD, 1/4-20 X .375 LONG, CHROME	0003061	4
3	MAIN BEARING SUB-ASSEMBLY	1000299	1
4	CABLE, MAIN, SUB-ASSEMBLY	1000316	1



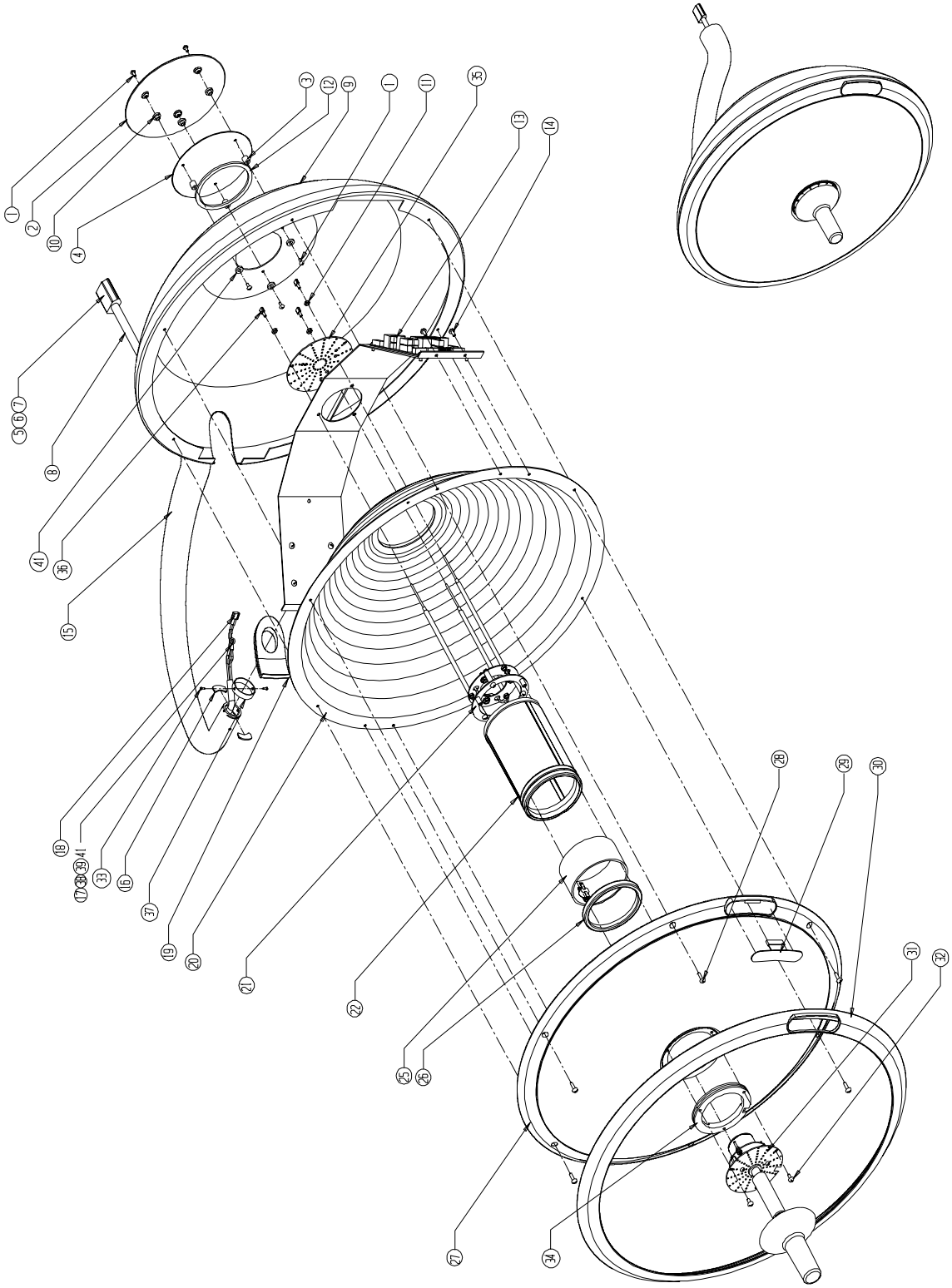
System One Exploded View and Parts List
Arm Assembly-P/N-1000305(Traditional)



System One Exploded View and Parts List
Arm Assembly-p/n-1000305(Traditional)

QTY	PART NO.	DESCRIPTION	ITEM
2	1003259	LABEL, LOGO, SYSTEM ONE	37
1	0003058	LOCKING PIN	36
1	1003240	MODEL/SERIAL NUMBER LABEL	35
1	0003053	BEARING, I-GLIDE FLANGED	34
1	0003052	BEARING, I-GLIDE	33
AR	0001316	ADHESIVE, THREAD LOCKER	32
AR	0001226	LUBRICANT, TEFLON GREASE	31
1	1001526	RING, ARM	30
2	0003044	ADHESIVE, DOUBLE SIDED TAPE	29
			28
			27
1	1001454	EXTRUSION, WIRE PROTECTOR	26
2	0001004	SCREW, 6-32 X ½" LONG, SLOT HEAD	25
1	1001537	PLATE, WIRE LOOP, HOLD DOWN	24
1	1001538	PLATE, WIRE HOLD DOWN	23
2	0003073	SCREW, 6-32 X 3/16" LONG, TAMPER PROOF	22
1	1001371-2	ARM COVER, LEFT SIDE	21
1	1000301	ARTICULATING ARM SUB-ASSEMBLY	20
1	1000302	BEARING, YOKE, SUB-ASSEMBLY	19
1	1003246	LABEL, WARNING PIN REMOVAL	18
1	0001114	SCREW, 6-32 X 3/16" LONG	17
1	1001366	ARM, SWAGED	16
3	0003008	SCREW, 8-32 X 3/8" LONG C-SINK	15
1	1001371-1	ARM COVER, RIGHT SIDE	14
5	0003007	SCREW, 6-32 X 3/8" LONG, C-SINK	13
1	1001525	WHEEL COVER	12
2	0001572	TERMINAL, ¼ FLAG, FEMALE	11
1	0003022	TERMINAL, QUICK DIS-CONNECT, GROUND	10
1	1001458	CONNECTOR, CUSTOM	9
1	0003015	WASHER, STEEL, 1.510 O.D.X .89 I.D. X .09 THICK	8
1	0003009	RING, RETAINER FOR .875 DIA SHAFT	7
1	0003004	PIN, DOWEL, 3/16 DIA X 1.5" LONG	6
1	1000303	ROTATIONAL CONTACT SUB-ASSEMBLY, EXT ARM	5
1	1001358	ELBOW COVER	4
1	1000300	EXTENSION ARM SUB-ASSEMBLY	3
			2
1	1000354	CABLE SUB-ASSEMBLY, EXTENSION ARM	1

System One Exploded View and Parts List
Light Head Assembly-p/n-1000311



System One Exploded View and Parts List
Light Head Assembly-p/n-1000311

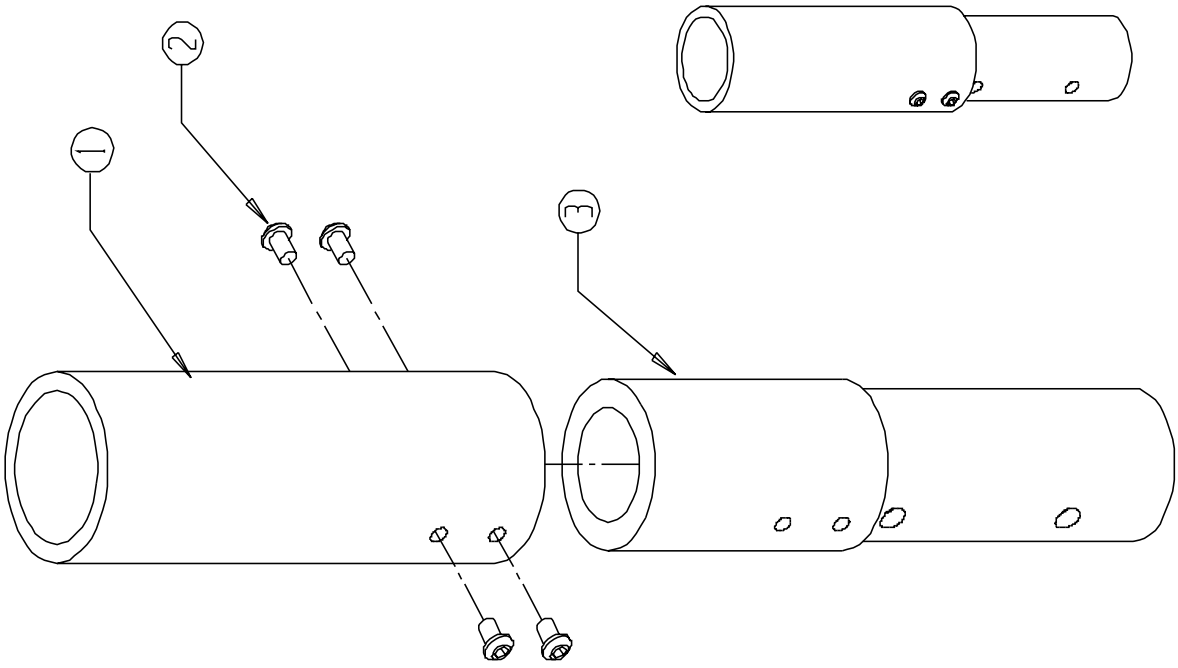
QTY	PART NO.	DESCRIPTION	ITEM
4	0001057	WASHER, #6 TOOTH LOCK, ZINC	41
4	0001424	CABLE TIE, NATURAL	40
1	0001497	NUT,6-32	39
1	0001056	SCREW, 6-32 X ¼” LONG, PHIL HEAD	38
1	1001566	SLEEVE, YOKE	37
3	0001531	TERMINAL ¼’ QC, 14 GAUGE, MALE, INSULATED	36
1	1001543	LAMP BARRIER	35
1	1001480	GASKET, HANDLE MOUNT	34
2	0003080	SCREW, 2-56 X ¼”, PHIL TRUSS HEAD	33
3	0001516	SCREW, 6-32 X ¼”, PHIL TRUSS HEAD, BLACK OX.	32
1	1000307	LAMP HOLDER SUB-ASSEMBLY	31
1	1001498	RUBBER RING, LENS/BEZEL	30
1	1001499	MEMBRANE SWITCH	29
6	0001233	SCREW, 8-32 X ¾”, PHIL PAN HEAD, BLACK OXIDE	28
1	1001361	LENS/BEZEL	27
1	1001477	GASKET, BOTTOM, IR CYLINDER	26
1	1000314	THERMO-STAT SUB-ASSEMBLY	25
			24
			23
1	1000334	IR/COLOR CORRECTING CYLINDER SUB-ASSEMBLY	22
1	1000309	LAMP POWER SUB-ASSEMBLY	21
1	1001342	REFLECTOR, 20” S2	20
1	1001467	YOKE GROMMET	19
2	0001324	TERMINAL, 1/4’”, Q.C., 18 GA., FEMALE, INSULATED	18
1	0001021	TERMINAL, GROUND LUG #8, CLOSED LOOP	17
2	1001555	RETAINER, YOKE	16
1	1000308	YOKE SUB-ASSEMBLY	15
4	0001273	SCREW, 8-32 X 3/8”, PHIL PAN HEAD, BLACK OXIDE	14
1	1000310	MAIN BRACKET SUB-ASSEMBLY	13
1	1001476	WATER BARRIER	12
3	0003038	NUT,12-24	11
3	0003071	WASHER, SHOULDER, #6 SCREW	10
1	1001471	HOUSING, REAR, M20	9
1	0001550	CABLE, 18-3, HARMONIZED, BLACK, 30” LONG	8
1	0001554	HEAT SHRINK, ½” VERSA-FIT 2” LONG	7
3	0001135	TERMINAL, FEMALE, MOLEX	6
1	0001328	PLUG, MOLEX, SMALL	5
1	1001542	PLATE, HEAT DEFLECTION	4
3	0003043	SCREW, 6-32X 3/8” LONG, HEX HEAD	3
1	1001473	COVER, HOUSING	2
6	0001056	SCREW, 8-32 X ¼”, PHIL TRUSS HEAD, ZINC	1

System One Exploded View and Parts List
Extension/Adapter -p/n-1000360-363,1000369(Orbital)

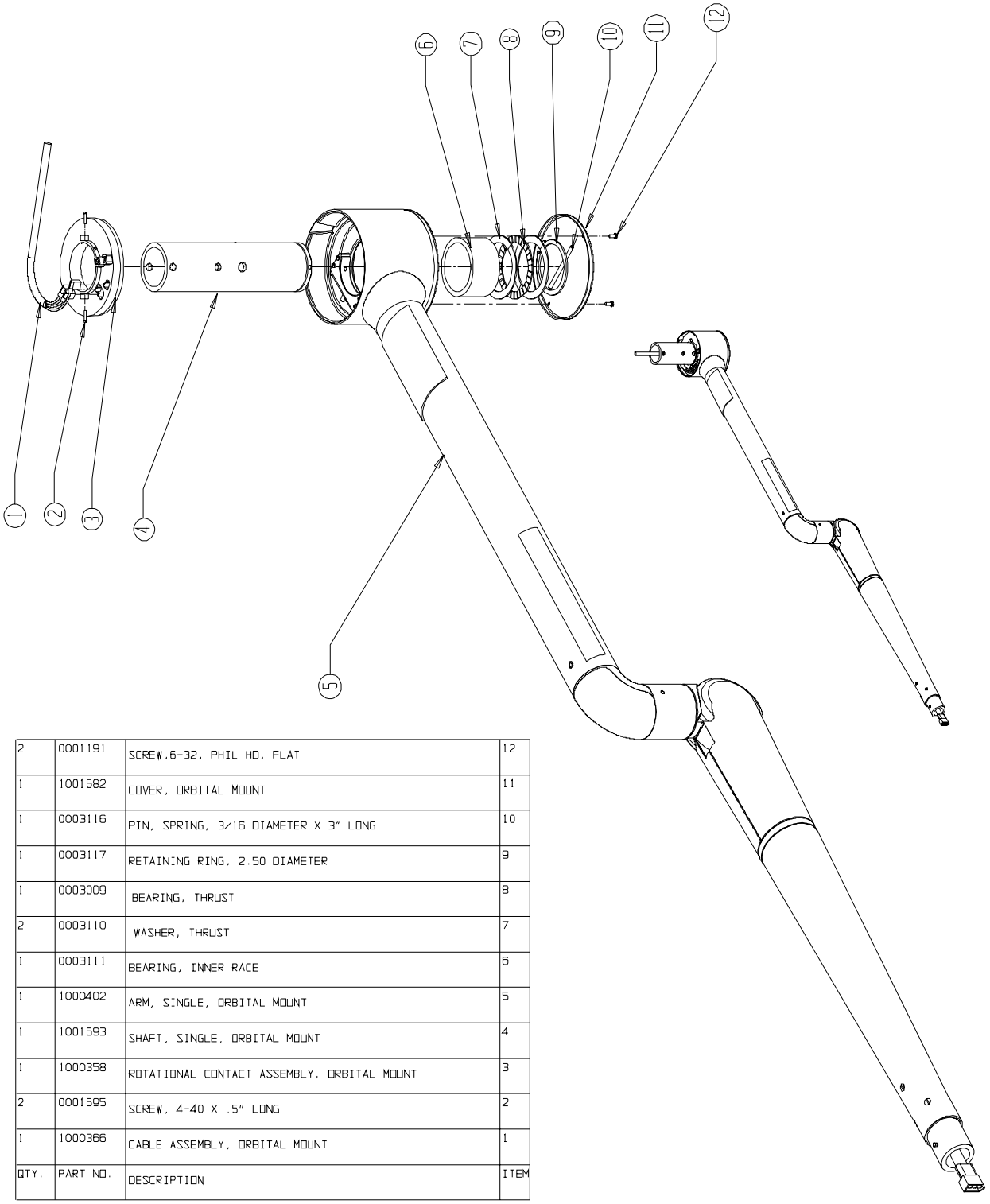
CEILING ADAPTER P/N	CEILING ROD P/N
1000360	1001350
1000361	1001351
1000362	1001352
1000363	1001353
1000369	1001355

BILL OF MATERIALS

ITEM	PART NO.	QTY.	DESCRIPTION
4	0001316	AR	ADHESIVE, THREADLOCKER
3	1001623	1	ADAPTER, CEILING, ORBITAL
2	0003061	4	SCREW 1/4-28 BUTTON HEAD
1	SEE TABLE 1	1	CEILING ROD

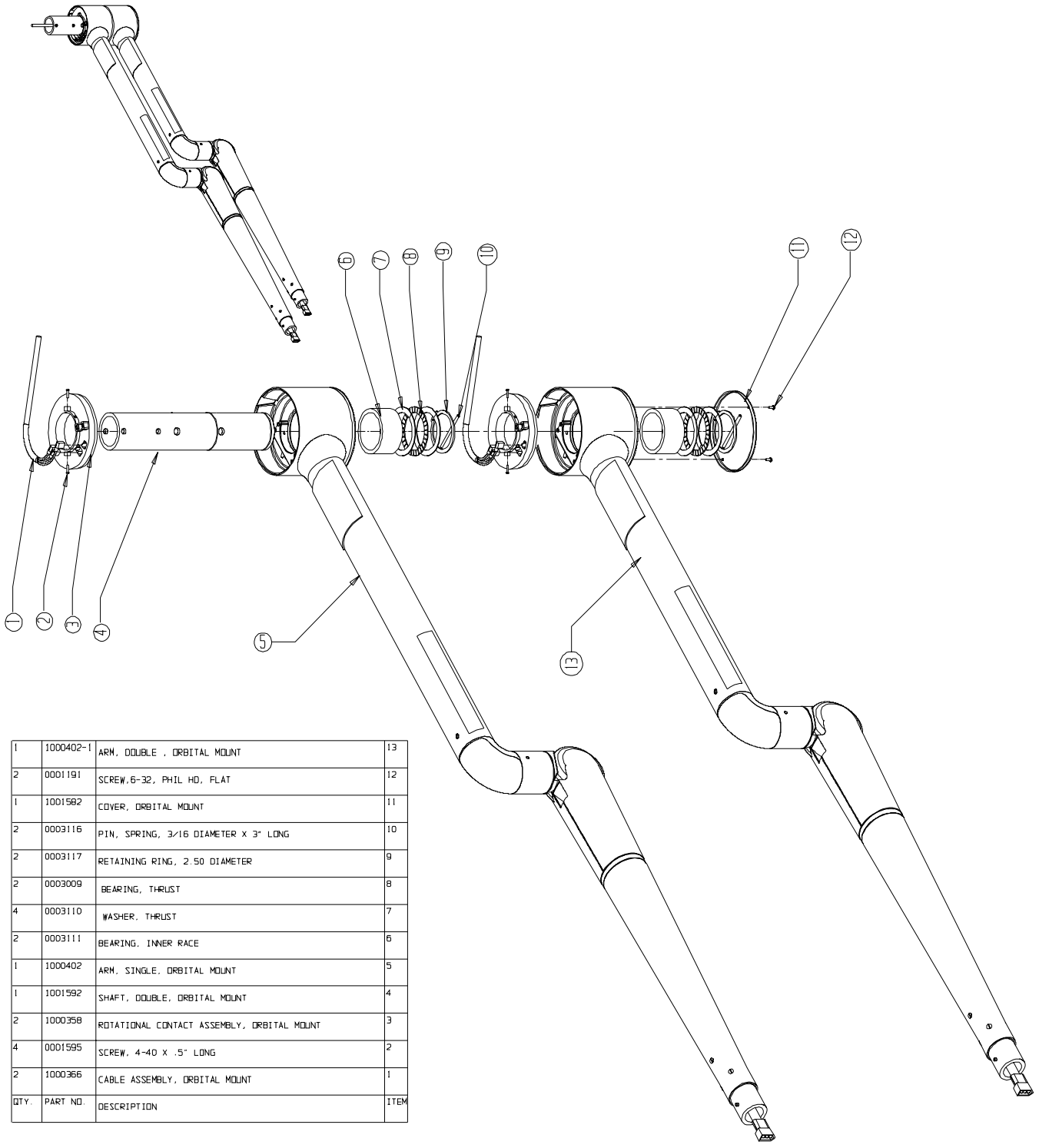


System One Exploded View and Parts List
Solo Assembly-P/n-1000408(Orbital)



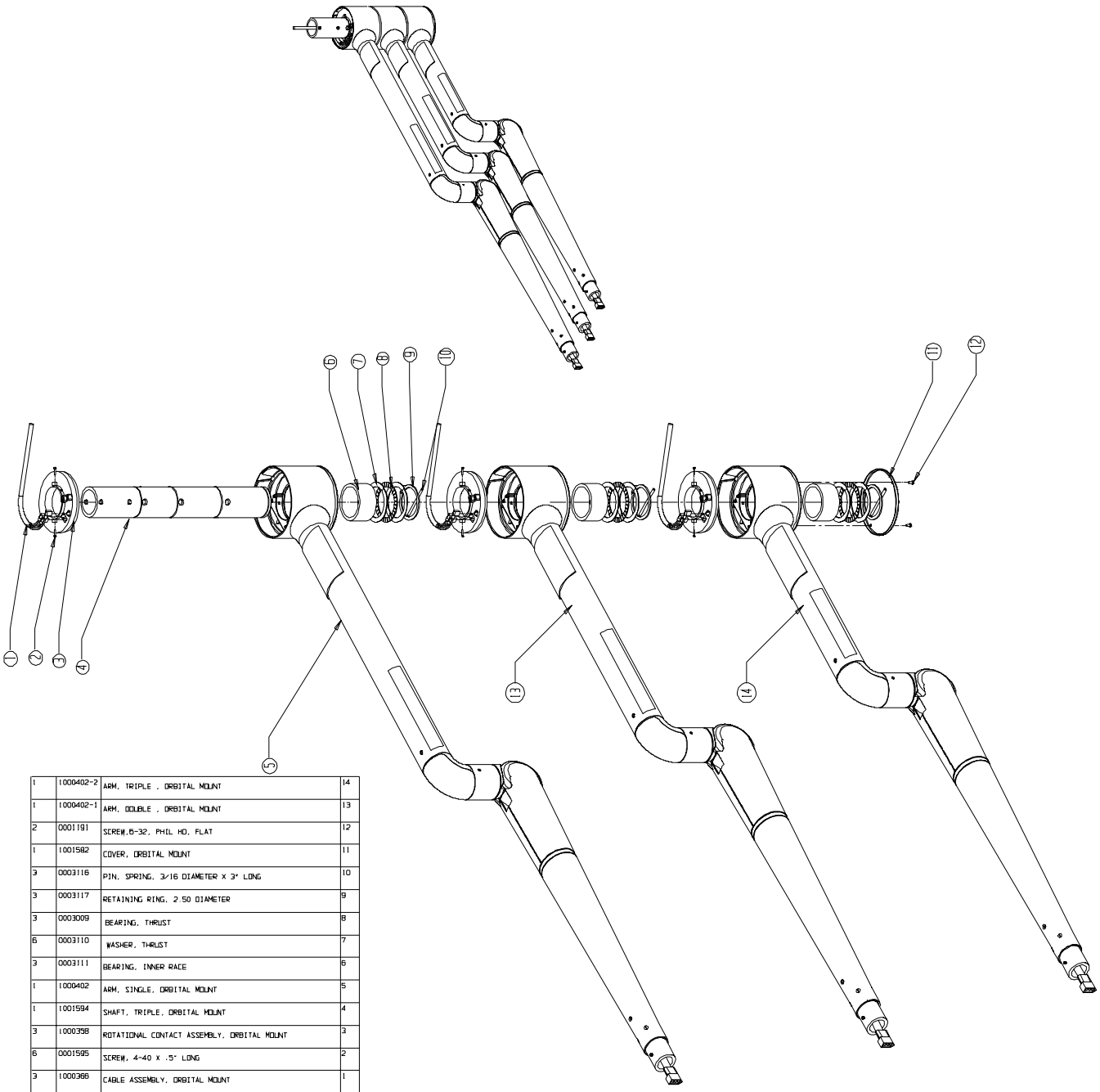
QTY.	PART NO.	DESCRIPTION	ITEM
2	0001191	SCREW,6-32, PHIL HD, FLAT	12
1	1001582	COVER, ORBITAL MOUNT	11
1	0003116	PIN, SPRING, 3/16 DIAMETER X 3" LONG	10
1	0003117	RETAINING RING, 2.50 DIAMETER	9
1	0003009	BEARING, THRUST	8
2	0003110	WASHER, THRUST	7
1	0003111	BEARING, INNER RACE	6
1	1000402	ARM, SINGLE, ORBITAL MOUNT	5
1	1001593	SHAFT, SINGLE, ORBITAL MOUNT	4
1	1000358	ROTATIONAL CONTACT ASSEMBLY, ORBITAL MOUNT	3
2	0001595	SCREW, 4-40 X .5" LONG	2
1	1000366	CABLE ASSEMBLY, ORBITAL MOUNT	1

System One Exploded View and Parts List
Duo Assembly-P/n-1000409(Orbital)



ITEM	DESCRIPTION	PART NO.	QTY.
13	ARM, DOUBLE , ORBITAL MOUNT	1000402-1	1
12	SCREW,6-32, PHIL HD, FLAT	0001191	2
11	COVER, ORBITAL MOUNT	1001582	1
10	PIN, SPRING, 3/16 DIAMETER X 3" LONG	0003116	2
9	RETAINING RING, 2.50 DIAMETER	0003117	2
8	BEARING, THRUST	0003009	2
7	WASHER, THRUST	0003110	4
6	BEARING, INNER RACE	0003111	2
5	ARM, SINGLE, ORBITAL MOUNT	1000402	1
4	SHAFT, DOUBLE, ORBITAL MOUNT	1001592	1
3	ROTATIONAL CONTACT ASSEMBLY, ORBITAL MOUNT	1000358	2
2	SCREW, 4-40 X .5" LONG	0001595	4
1	CABLE ASSEMBLY, ORBITAL MOUNT	1000366	2

System One Exploded View and Parts List
Trio Assembly-P/n-1000410 (Orbital)



QTY.	PART NO.	DESCRIPTION	ITEM
1	1000402-2	ARM, TRIPLE , ORBITAL MOUNT	14
1	1000402-1	ARM, DOUBLE , ORBITAL MOUNT	13
2	0001191	SCREW,6-32, PHIL HD, FLAT	12
1	1001582	COVER, ORBITAL MOUNT	11
3	0003116	PIN, SPRING, 3/16 DIAMETER X 3" LONG	10
3	0003117	RETAINING RING, 2.50 DIAMETER	9
3	0003009	BEARING, THRUST	8
6	0003110	WASHER, THRUST	7
3	0003111	BEARING, INNER RACE	6
1	1000402	ARM, SINGLE, ORBITAL MOUNT	5
1	1001594	SHAFT, TRIPLE, ORBITAL MOUNT	4
3	1000398	ROTATIONAL CONTACT ASSEMBLY, ORBITAL MOUNT	3
6	0001595	SCREW, 4-40 X .5" LONG	2
3	1000366	CABLE ASSEMBLY, ORBITAL MOUNT	1