

**stryker**<sup>®</sup>

# Operations/ Maintenance Manual

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Medical

**Important  
Information**

File in your  
maintenance  
records

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Visum Exam Light  
Model LL305

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For parts or technical  
assistance call  
800 327 0770 (option 2)



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# Introduction

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## Introduction

Whether in the doctor's office, examination rooms, emergency facilities, intensive care clinics, pre- or post-operative rooms, the Stryker LL305 Visum Examination Light provides high intensity light wherever it's needed.

Outstanding features of this light include the unique shape of the lamp housing, the combination faceted and parabolic technology of its reflector, and its smooth operating and spring-loaded articulating arm.

Highlights of the Examination Lamp:

- Smooth operation and adjustability
- Precise positioning
- Compact and enclosed articulation system with counterbalance system.
- A specially designed reflector system to ensure a precise light source that renders true colors.

## Intended use:

Examination light for use in the patient's surroundings, to illuminate the body of the patient locally to support diagnosis or treatment. It has not been designed as a surgery light or for use by the patient.

## Operating Mode:

This light is designed for continuous service.

## Warning / Caution / Note Definition

The words WARNING, CAUTION and NOTE carry special meanings and should be carefully reviewed.

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### **WARNING**

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The personal safety of the patient or user may be involved. Disregarding this information could result in injury to the patient or user.

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### **CAUTION**

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These instructions point out special procedures or precautions that must be followed to avoid damaging the equipment.

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### **NOTE**

This provides special information to make maintenance easier or important instructions clearer.

# Safety Tips and Guidelines

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## **WARNING**

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Maintenance must be performed by qualified service personnel. Always verify the power cord is unplugged from the wall outlet before performing service.

The Stryker LL305 Visum Examination Light is equipped with a hospital grade plug for protection against shock hazard. It must be plugged directly into a properly grounded three-prong receptacle. Grounding reliability can be achieved only when a hospital grade receptacle is used.

For use only in dry rooms not subject to risk of explosion.

Maintain a distance of at least 24 inches between the patient and the light head.

Maintain a distance of at least 24 inches from flammable objects when operating the light.

Do not leave the light unattended while in operation.

The light is hot while in operation. Do not touch the protective glass, reflector, or bulb while the light is turned on or immediately after turning it off. Allow the light to cool before attempting maintenance.

Do not operate the light if any components are damaged.

When replacing the halogen light bulb, use only the bulb specified in this manual.

Use only manufacturer approved replacement parts.

Do not add additional weight on the Exam Light.

Do not place items on or over the hood of the Exam Light.

Do not look directly into the Exam Light while powered on.

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## **CAUTION**

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Potential electromagnetic interference can cause steady, momentary, or intermittent disruption of medical devices. Prevent known sources of interference (i.e cell phones) from coming too close to patient monitors and other medical devices.

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# Symbols and Definitions

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Warning, Refer to Operations / Maintenance Manual



Risk of burns.



Hazardous Voltage.



Explosion Hazard.

**Oxygen forms explosive mixtures with oils, grease and lubricants.  
The presence of oxygen presents an explosion hazard.**



Medical Equipment Classified by ETL with Respect to Electric Shock, Fire, Mechanical and Other Specified Hazards Only in Accordance with UL 60601-1 and CAN/CSA C22.2 No. 601.1

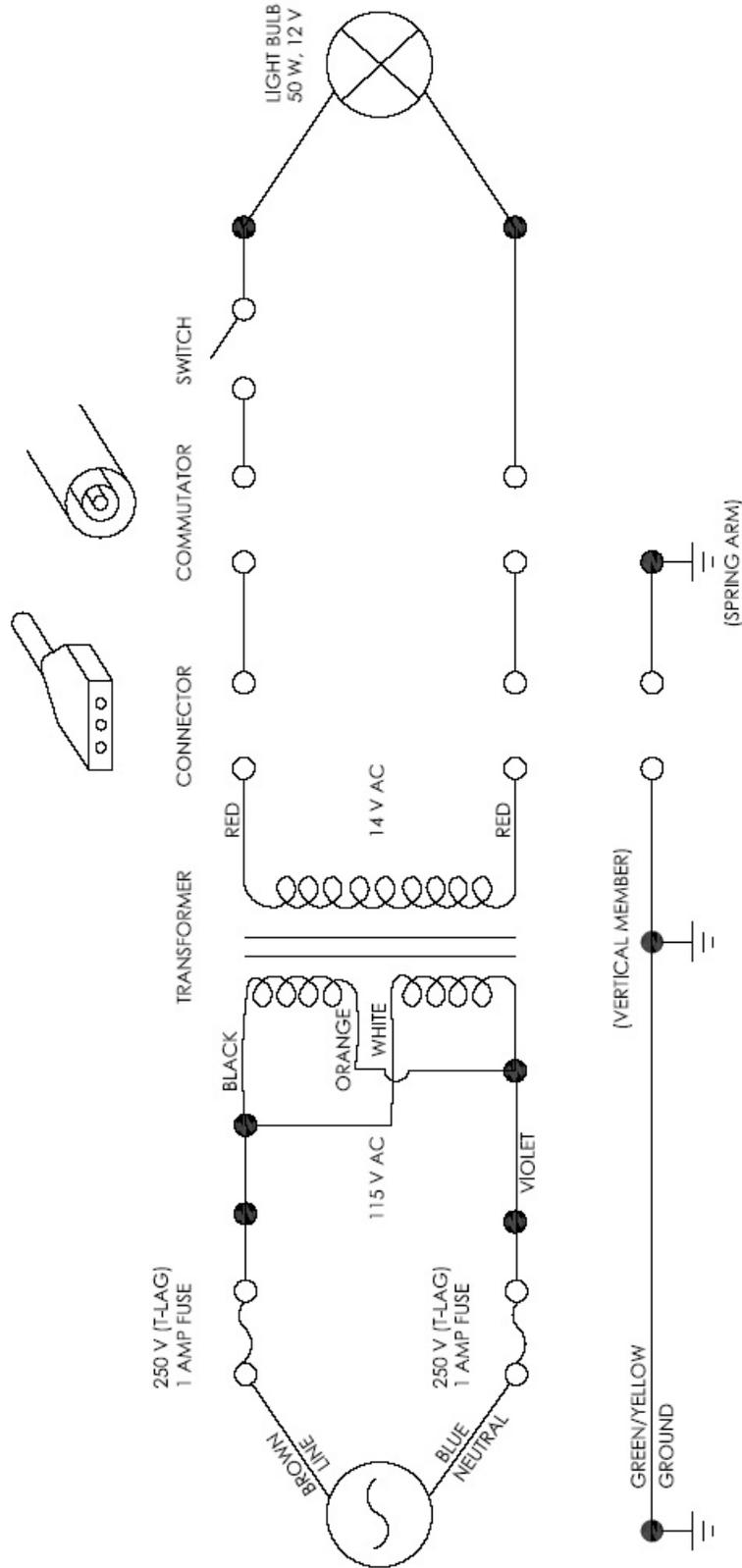
# Specifications

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Fitted with:	1 halogen bulb 12V/ 50W	
Luminous power Ec	approximately 3484 ft. candle (37,500 Lux)	
Illuminated field size 30 inches (.8 m) distance D10	Ø = 6.8" (17 cm)	
Color temperature	approximately 3978 K	
Color rendering index, central light field size, light field ø	92	
Supply voltage	115 VAC, 60Hz, .5A	
Power Cord	15 feet with hospital grade plug	
Net weight	approximately 55.6lbs (25.3kg)	
Power consumption	approximately 60VA	
Environmental Conditions	Operation	Storage and Transportation
Temperature	10 – 40 degrees C	–20 – 40 degrees C
Relative Humidity	30% – 75%	10% – 75%
Protection class	I (with hospital grade plug)	
Standards	IEC 60601–2–41, IEC 60601–1–2, IEC 60601–1 CAN/CSA C22.2 No. 601.1–M90, UL 60601–1	

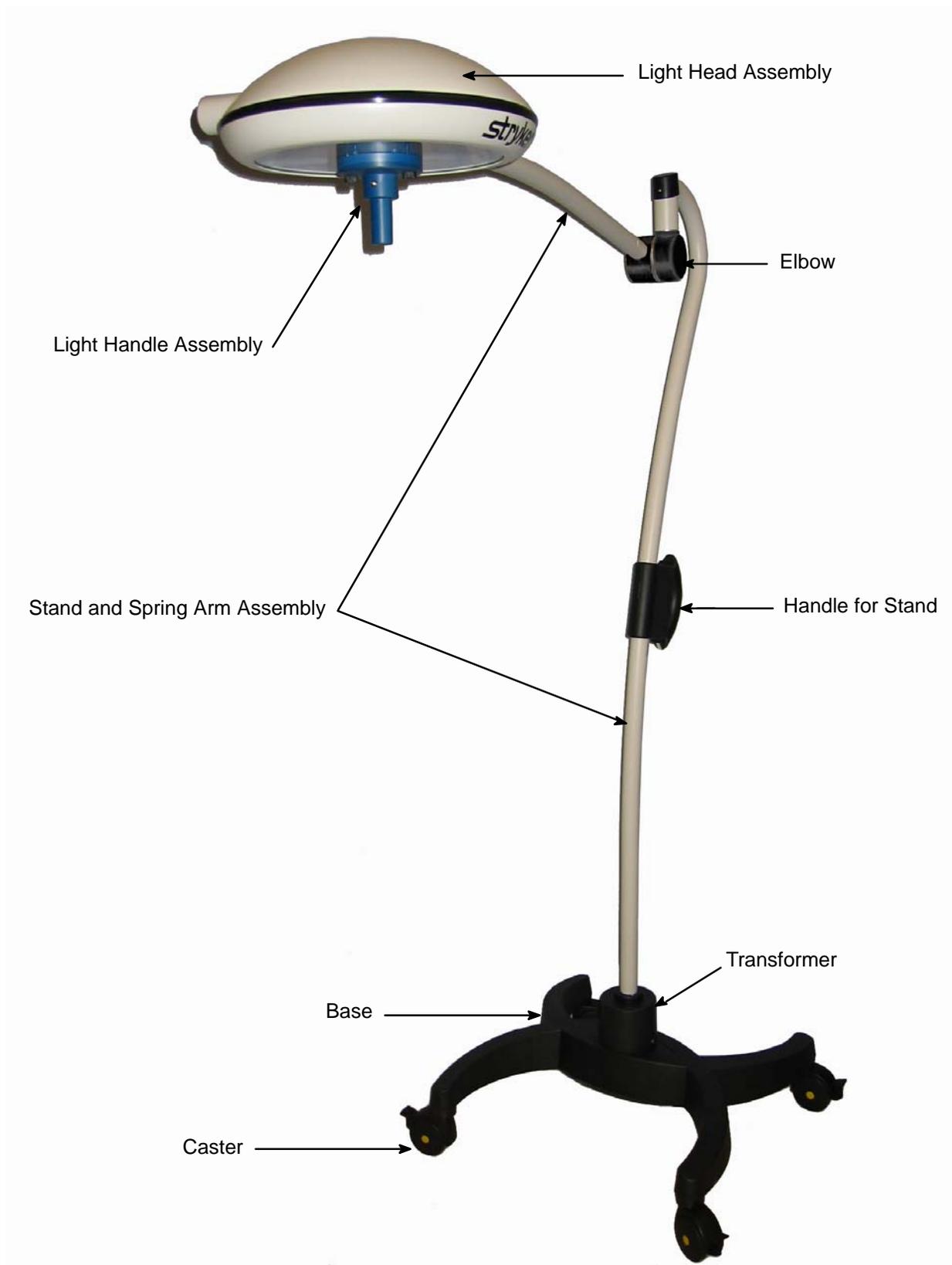
# Electrical Schematic

## Visum 300 Electrical Schematic



# Assembling the Light

Examination Light: Part Number 8500-000-001



# Assembling the Light

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## Mounting the Casters

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**Static Charge** – If the grounding cable is not installed, the mobile stand may get statically charged and the charge may get transferred to the user. Install the grounding cable.

1. Open the packaging of the base so that the bottom is upside down on the floor or bench.
2. Make sure the grounding cable is installed as shown in Figure 1. There are two grounding cables per base.

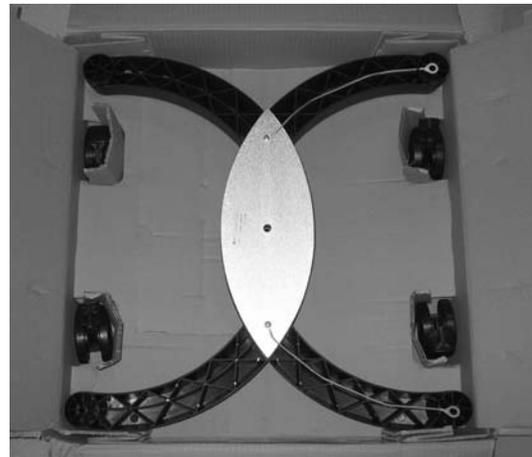


Figure 1.

Proper positioning of grounding cable.

3. Guide the caster through the ring cable lug of the grounding cable and into the base. Press in firmly until the caster is snug. (Figure 2)

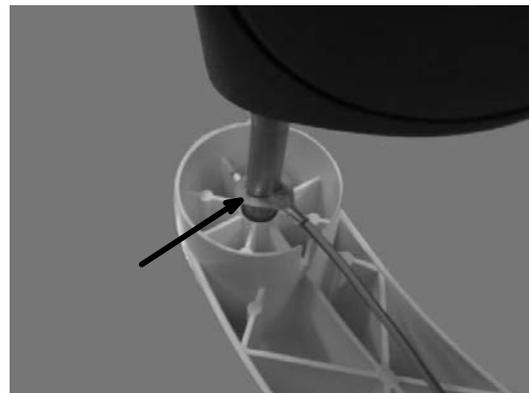


Figure 2.

4. Repeat for the other grounding cable and caster assembly.
5. Completely insert the two other casters into the base.
6. Check for firm seating of the casters by turning base over and pressing down firmly on each corner.

# Assembling the Light

## Mounting the Stand

Tools Required:

Slip Joint Pliers

### WARNING

When unpacking the Spring Arm, do not cut the tape right away. Assemble the stand to the base first. Hold onto the Spring Arm prior to cutting the tape to prevent sudden release. Failure to do so may cause injury to the user.

**Note where the locking key feature is located inside the base. (Figure 3)**

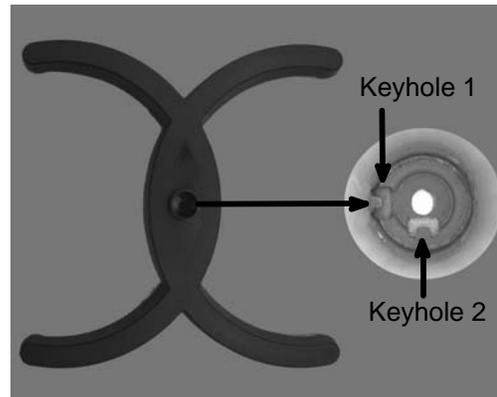


Figure 3.

1. Remove the stand and position the key hole on the stand so that it aligns with keyhole 1 of the base and inset until the stand is fully seated. (figure 4)

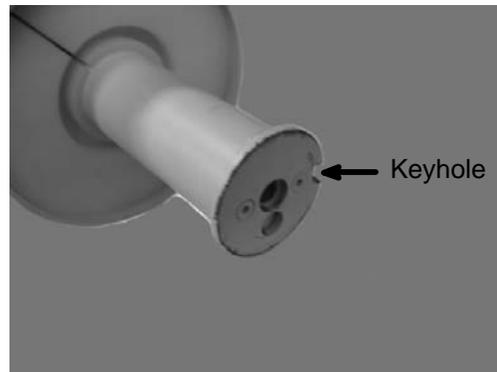


Figure 4.

2. Locate the wing screw from the accessory bag and insert it through the bottom of the stand. Turn the wing screw by hand until the screw is fully threaded and finger tight. Using slip joint pliers, turn the wing screw one full rotation. (Figure 5)

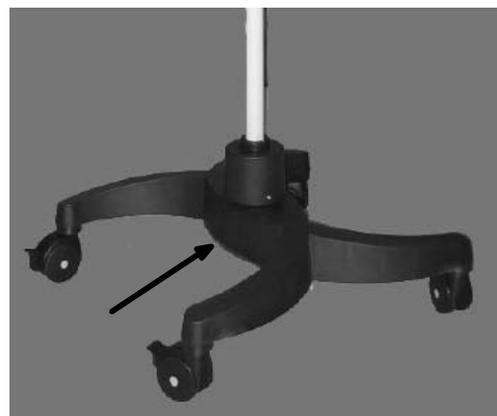


Figure 5.

# Assembling the Light

## Mounting the Light Head

Tools Required:

Regular Screwdriver

1. Using a regular screwdriver, remove the brake screw at the end of the spring arm as shown in Figure 6 and set aside for later use. Remove the white plastic cap from the spring arm. Rotate the locking cover 180 degrees in either direction so that the keeper slot is exposed.

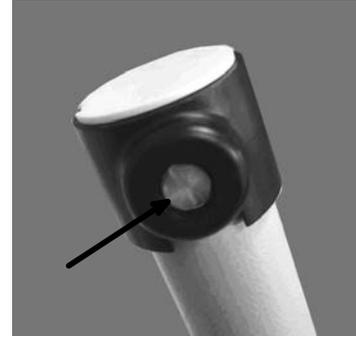


Figure 6.

2. Align the end of the light head to the end of the spring arm and push together until fully seated. (Figure 7)



Figure 7.

3. Place the keeper clip from the accessory bag into the fitted slot and push down until the clip is flushed with the arm. (Figure 8)



Figure 8.

4. Rotate the locking cover 180 degrees in either direction until the brake opening is faced down. (Figure 9)



Figure 9.

5. Using a regular screwdriver, insert the brake screw into the brake opening and check to make sure assembly of light head is secure. (Figure 10)



Figure 10.

# Assembling the Light

## Attaching the Light Handle Assembly

1. Position the system as shown in Figure 11.



Figure 11.

2. Lock the system into position by pressing down the tab on the end of each roller. (Figure 12)



Figure 12.

3. Connect the light bulb into the socket of the light handle assembly. (Figure 13)



Figure 13.

4. With one hand on the light handle assembly and one hand on the back of the light head, carefully insert the light handle assembly into the light head. Align the banana clips to the power receptacles and the screws to the threaded holes as shown in figure 14. Screw the two thumbscrews until fully seated.

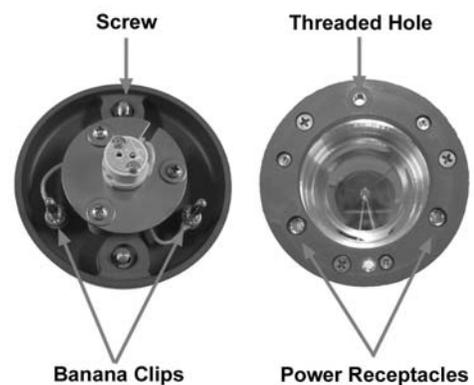


Figure 14.

# Operations Guide

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## Adjusting the Light Head

The light can be used with or without a sterilizable handle.  
Position the light in the following manner.

1. 360 degrees of rotation. (Figure 15)

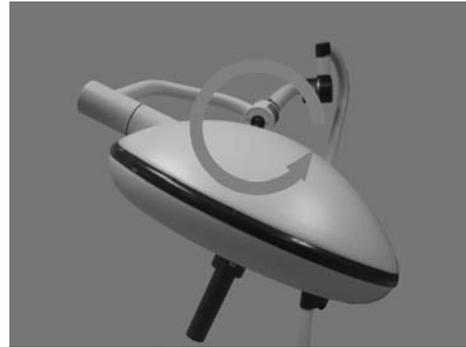


Figure 15.

2. 180 degrees of rotation. (Figure 16)



Figure 16.

3. 90 degrees of rotation. (Figure 17)

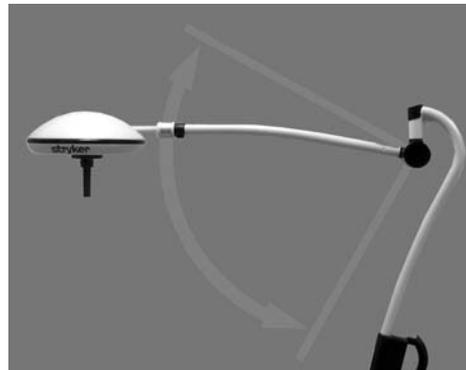


Figure 17.

4. 60 degrees of rotation (Figure 18)

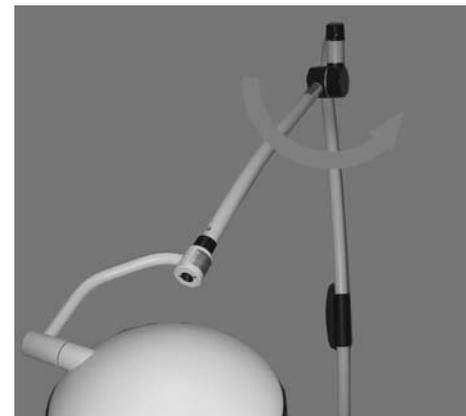


Figure 18.

# Operations Guide

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## Moving the Light

Before moving the light, put the light head down to its lowest position. Make sure the casters are released from locked position.

### NOTE

It is important to move the light only by the handle on the stand.

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### CAUTION – Instruction

Do not push, or pull the stand in any other areas other than the handle on the stand, otherwise tipping of the stand may occur.

## Turning On and Off

1. Light is shown in the Off position. (Figure 19)

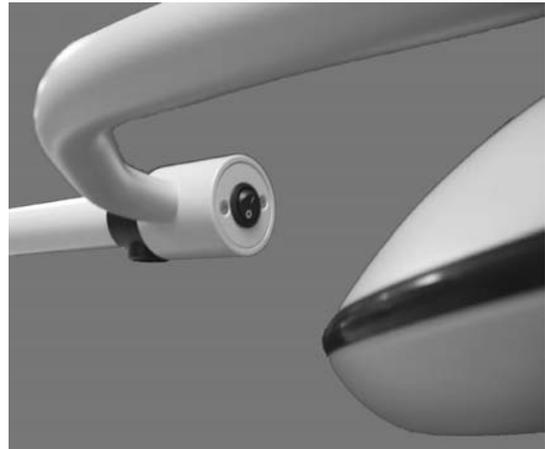


Figure 19.

## Locking the Exam Light

1. To lock the exam light into position, simply press down the tab on the end of each caster. (Figure 20)



Figure 20.

# Preventative Maintenance

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## **WARNING**

Maintenance must be performed by qualified service personnel. Always verify the power cord is unplugged from the wall outlet before performing service.

The Stryker LL305 Visum Examination Light is equipped with a hospital grade plug for protection against shock hazard. It must be plugged directly into a properly grounded three-prong receptacle. Grounding reliability can be achieved only when a hospital grade receptacle is used.

The light is hot while in operation. Do not touch the protective glass, reflector, or bulb while the light is turned on or immediately after turning it off.

When replacing the halogen light bulb, use only the bulb specified in this manual. Allow the light to cool before attempting maintenance. Do not touch the glass surface of the either the old or the new bulb. Use a soft cloth to remove the old bulb and install the new one

Use only manufacturer approved replacement parts.

---

## **Preventative Maintenance Checklist**

Preventative maintenance should be performed at a minimum of annually.

- All fasteners secure on the lamp head and column
- All casters secure and swivelling properly
- Casters lock properly
- Power cord not frayed
- On/Off switch functions properly
- Ground impedance not more than 100 milliohms
- Current leakage not more than 300 microamps
- Verify the spring force of arm and light head are proper.
- Lubricate keeper clip.

# Preventative Maintenance

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## Cleaning And Disinfecting

### NOTE – Qualifications of the personnel:

Cleaning and disinfecting must only be carried out by trained personnel.

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### **WARNING – Electrical Shock**

For all cleaning work, power off equipment, disconnect power cord from outlet. Take care that no fluid runs into the equipment.

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### **CAUTION – Damage to the product:**

To avoid damage to plastic parts, do not use scouring agents, alkali, acidic or alcohol-containing cleaning agents. Do not use disinfectant alcohol.

---

### Cleaning

- Turn the light off
- Disconnect from power outlet
- Wipe the surfaces with a lightly moistened piece of cloth, if required, add a mild solution of soap (washing agent).

### Disinfecting

- Disinfect the equipment only when it is cool.

## Sterile Handle

### NOTE

The handle can easily be removed for cleaning or sterilization.

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 **CAUTION** – Handles are shipped non-sterile. Please clean and sterilize the handles prior to use.

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### Cleaning

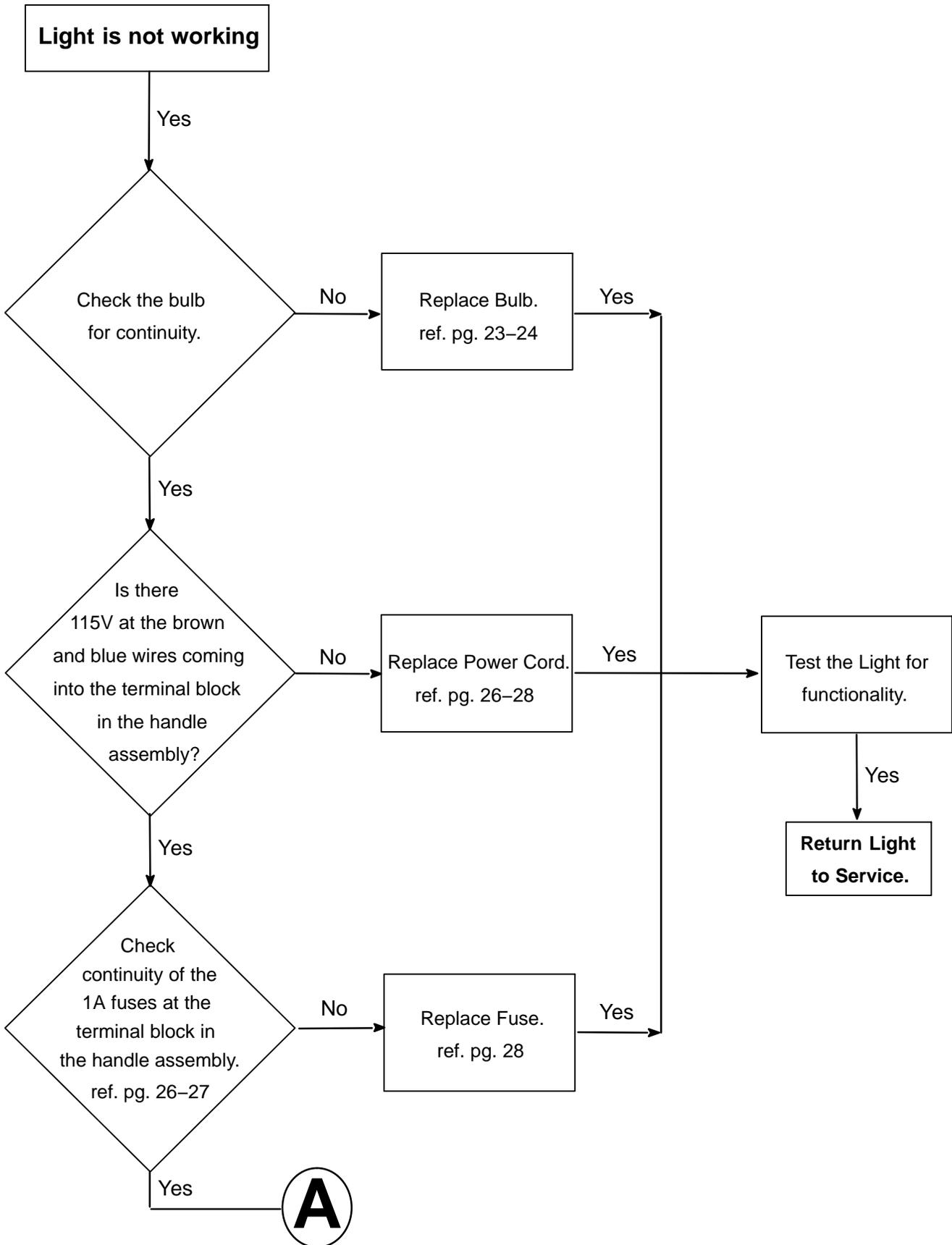
- Rinse handle under running lukewarm water, flushing water through all passages.
- Submerge entire handle in an enzyme action detergent prepared according to the manufacturer's recommendations. Remove debris and bioburden from all surfaces using a soft brush.
- Rinse handle thoroughly under running lukewarm water, flushing water through all passages.
- Dry handle with a lint free cloth. Inspect handle to make sure it is free of debris.

### Sterilization

The following sterilization methods have been validated:

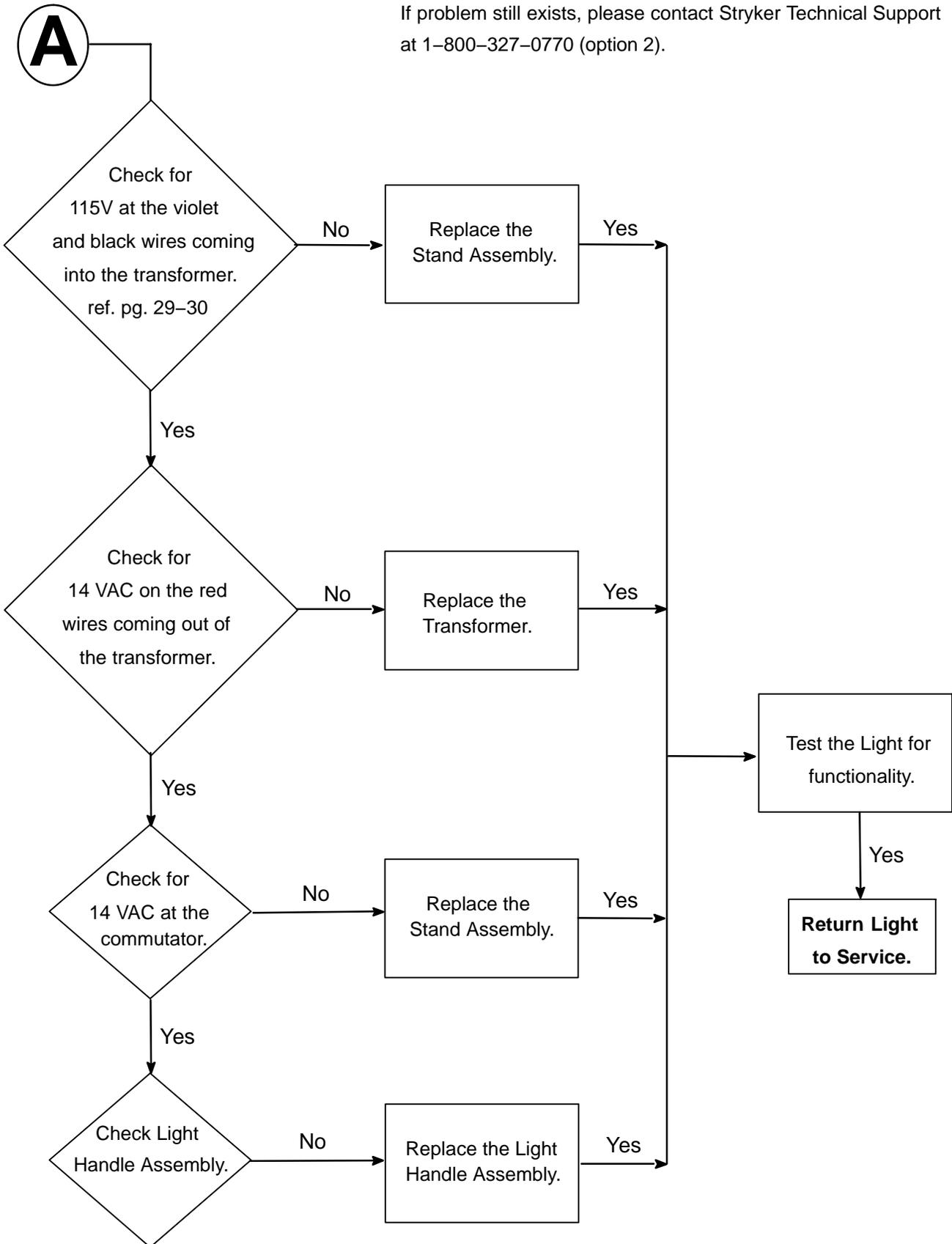
- Gravity Displacement Steam sterilization(single wrapped)
  - Temperature: 132 degrees C (270 degrees F)
  - Exposure Time: 10 minutes
- Gravity Displacement Steam sterilization (double wrapped)
  - Temperature: 121 degrees C (250 degrees F)
  - Exposure Time: 25 minutes
- Pre-Vacuum Cycle (double wrapped)
  - Temperature: 134 degrees C (273 degrees F)
  - Exposure Time: 4 minutes

# Troubleshooting Guide



# Troubleshooting

If problem still exists, please contact Stryker Technical Support at 1-800-327-0770 (option 2).



# Service Information

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## Setting the Spring Force

### Tools Required

Regular Screwdriver

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### CAUTION – Instruction

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Make sure to lock the casters before adjusting the spring tension.

### NOTE

Adjust the spring force such that the spring arm with the light head assembly does not drift when placed in any desired position.

1. Pull off the elbow cap as shown in Figure 21.

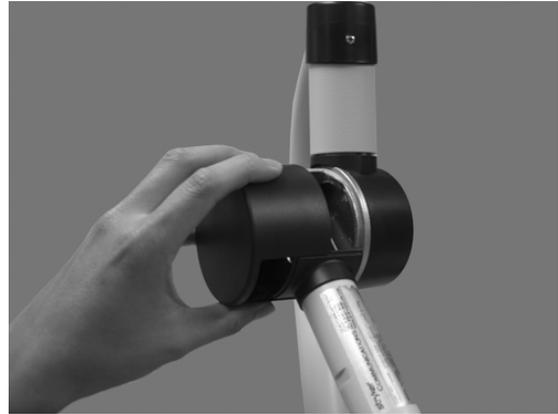


Figure 21.

2. Using a regular screwdriver, turn the knob shown until the desired tension is reached. (Figure 22)

### NOTE

If the spring arm drops, the spring force is too low and the screw must be rotated counter-clockwise.

If the spring arm rised, the spring force is too high and the screw must be rotated clockwise.



Figure 22.

## Attaching/Removing the Sterilizable Light Handle Cover

1. To remove the optional sterilizable handle, press the metal button and pull down on the handle. To attach the handle, align the locking tab feature on the light handle assembly and the optional sterilizable handle. Slide the handle onto the light handle assembly and twist until the button secures the sterilizable handle into place. A locking click will be heard when secured. (Figure 23)

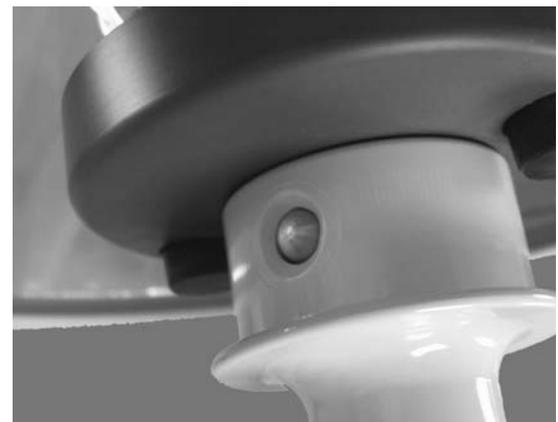


Figure 23

# Service Information

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## Changing the Halogen Light

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### **WARNING – High Temperature**

Allow the light to cool before attempting maintenance. The light is hot while in operation. **Do not** touch the protective glass or bulb while the light is turned on or immediately after turning it off.

---

### **CAUTION – Instruction**

If the optional sterile handle is on the light handle assembly, remove the sterile handle first (refer to section **Attaching/Removing the Sterilizable Light Handle Cover**).

Only use the bulb specified in the **Spare Parts** section. The use of a bulb other than the one specified may result in poor color reproduction or higher operating temperatures.

---

1. Turn off the light and disconnect from the power outlet. Set the braking mechanism on the casters. For easy access, place the light head in the position as shown in Figure 24.



Figure 24.

2. Unscrew the two thumbscrews simultaneously until the screws spin freely without resistance. Carefully pull the light handle assembly straight out. (Figure 25)



Figure 25.

3. Firmly grasp the bulb and pull straight out to remove it. Connect the replacement bulb into the socket of the light handle assembly. (Figure 26)



Figure 26.

# Service Information

## Changing the Halogen Light (continued)

1. With one hand on the light handle assembly and one hand on the back of the light head, carefully insert the light handle assembly into the light head. Align the banana clips to the power receptacles and the screws to the threaded holes as shown in Figure 27. Screw the two thumbscrews until fully seated.

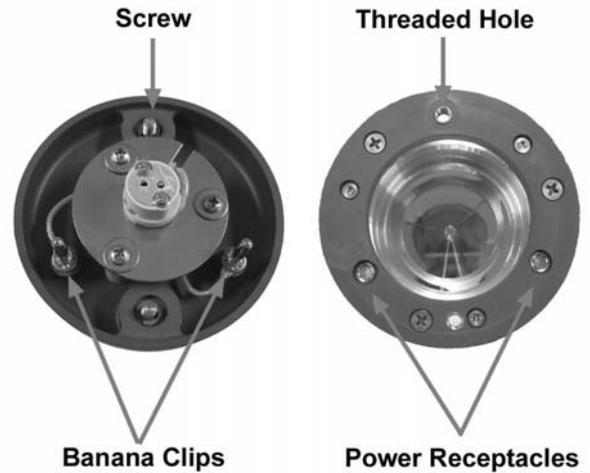


Figure 27.

## Replacing the Aesthetics Kit

### Tools Required

- Regular Screwdriver
- Regular Screwdriver (small tip for removing Keeper Clip)
- Phillips Head Screwdriver
- Snap Ring Pliers (supplied)

1. Turn off the light and disconnect from the power outlet. Remove the brake screw at the end of the spring arm as shown in Figure 28. Set aside for later use.

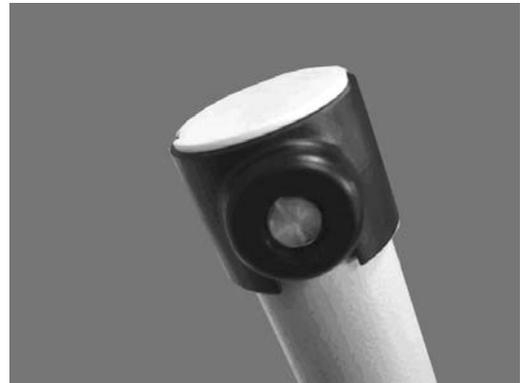


Figure 28.

2. Rotate the brake cover 180 degrees and remove the keeper clip. Remove the light head and set aside for later use. Remove brake cover from the end of the spring arm. (Figure 29)

**NOTE:** If replacing brake cover only, then install new brake cover and do not proceed to following steps.



Figure 29.

# Service Information

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## Replacing the Aesthetics Kit (continued)

3. Remove the top end cap by removing the small screw. If replacing top end cap only, install new end cap and do not proceed to following steps. (Figure 30)



Figure 30.

4. Remove elbow caps. (Figure 31)



Figure 31.

5. Pull the cables out from the spring arm and disconnect the cables. (Figure 32)



Figure 32.

6. Using the supplied snap ring pliers, remove the snap ring from the spring arm. Remove the flat washer and pull the spring arm from the stand. (Figure 33)

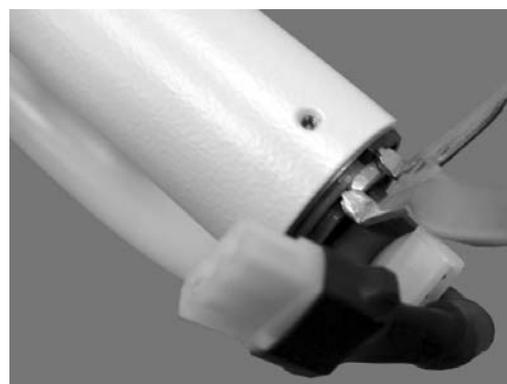


Figure 33.

# Service Information

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## Replacing the Aesthetics Kit (continued)

7. Remove the elbow collars by sliding them off of the spring arm. Slide new collars into place. Re-assemble the spring arm following steps in reverse order. Place new elbow caps on if required. (Figure 34)

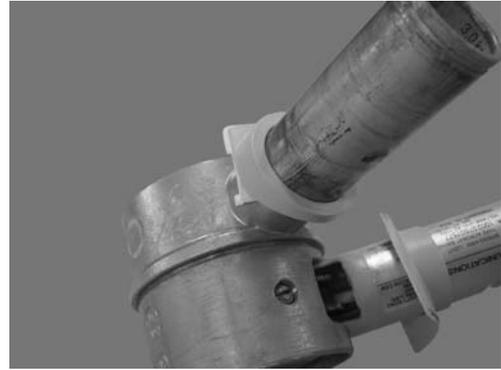


Figure 34.

8. Slide the elbow cover completely off by removing the grounding screws shown in Figure 35 and the brake cover from the end of the spring arm.

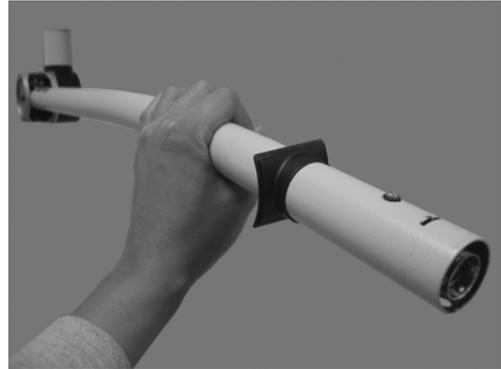


Figure 35.

## Replacing the Electrical Kit

### Tools Required

- Regular Screwdriver (small tip)
- Phillips Head Screwdriver
- Torx Screwdriver



### **WARNING – Electrical Shock**

Disconnect from power outlet to prevent electrical shock.

---

1. Turn off the light and disconnect it from the power outlet. Using a Torx Screwdriver, remove the two screws from the handle as shown in Figure 36.
2. Pull handle apart as shown in Figure 37.

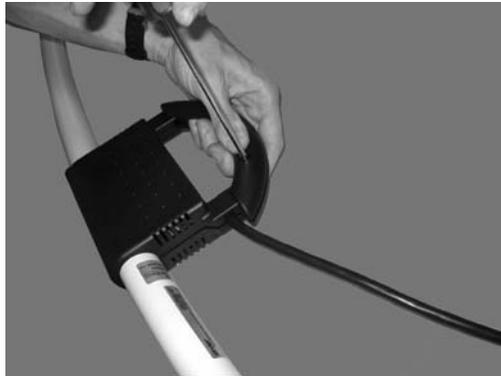


Figure 36.



Figure 37.

# Service Information

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## Replacing the Electrical Kit (continued)

3. Remove the screws to release cord. (Figure 38)

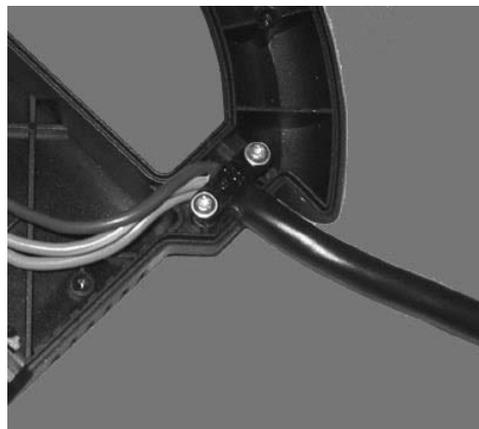


Figure 38.

4. Loosen the three screws from the fuse holder to release the cord entirely from the handle. (Figure 39)



Figure 39.

5. The Electrical Kit comes with an extra connector and fuse holder. If replacing the handle and/or fuse holder, remove the screw holding the fuse holder in. Loosen the screws holding the wires to the fuse holder if replacing with a new fuse holder. (Figure 40)

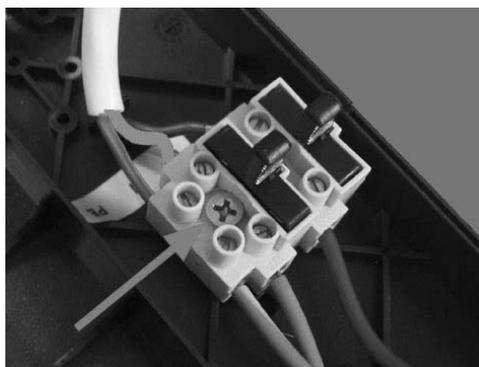


Figure 40.

6. Insert the line wire (brown) through the fuse holder and the neutral wire (blue) through the other connection. Insert the ground wire (green/yellow) through the connector. (Figure 41)

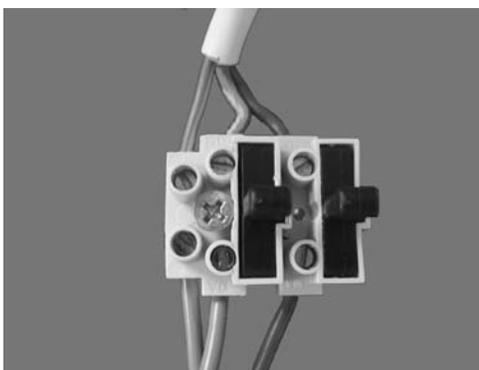


Figure 41.

# Service Information

## Replacing the Electrical Kit (continued)

7. Attach the fuse holder to the stand. Insert two 1-amp fuses into the fuse holder as shown in Figure 42.

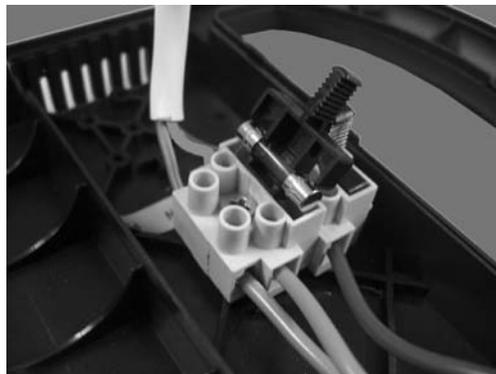


Figure 42.

8. Secure power cord with the strain relief and two screws. (Figure 43)



Figure 43.

9. Place the new handle on and ensure the two extrusions fit into the two openings of the stand. The cord should be coming down. Snap back into place and screw handle together. (Figure 44)



Figure 44.

# Service Information

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## Replacing the Transformer

### Tools Required

Regular Screwdriver (small tip)  
Phillips Head Screwdriver  
Phillips Head Screwdriver (small tip)  
2mm Allen wrench



### **WARNING – Electrical Shock**

Disconnect from power outlet to prevent electrical shock.

---

1. Turn off the light and disconnect it from the power outlet. Remove the brake screw at the end of the spring arm as shown in Figure 45. Set the brake screw aside for later use.
2. Rotate the brake cover 180 degrees and remove the keeper clip. Remove the light head. (Figure 46)
3. Remove the wing screw from the bottom of the stand. Pull off the stand from the base. (Figure 47)
4. Place the stand on a flat surface on a piece of cardboard or cloth to prevent surface damage. Remove the two small screws from the collars as shown in Figure 48. Detach the collars.



Figure 45.



Figure 46.



Figure 47.

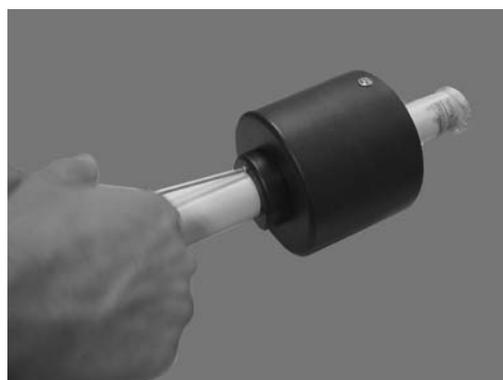


Figure 48.

# Service Information

## Replacing the Transformer (continued)

5. Remove the two side screws on the transformer cover. Once removed, push the cover up towards the spring arm to expose the transformer. (Figure 49)



Figure 49.

6. Unscrew the grounding cable from the stand. (Figure 50)



Figure 50.

7. Loosen the three screws on the top plate of the transformer with an Allen wrench. Ensure the screws are not exposed on either end. There should be enough space in the top plate for the screw to remain inside the plate. (Figure 51)



Figure 51.

8. Disconnect the wires from the connector as shown in Figure 52. Refer to wiring diagram below.

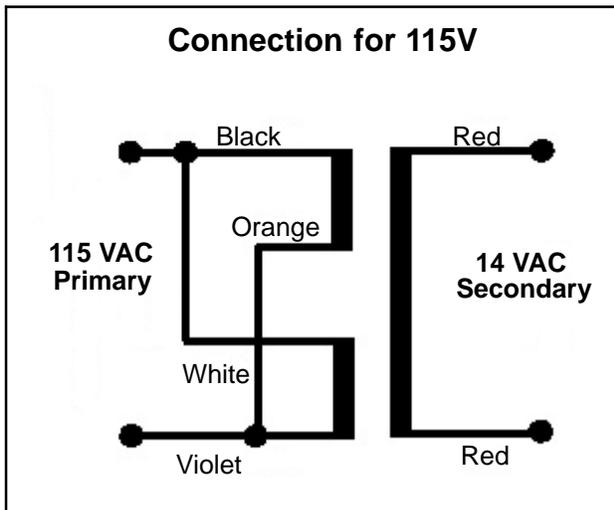


Figure 52.

# Service Information

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## Replacing the Transformer (continued)

9. Carefully slide the top plate and the top rubber grommet up around the wires. Slide the transformer and the bottom rubber grommet up afterwards. (Figure 53)

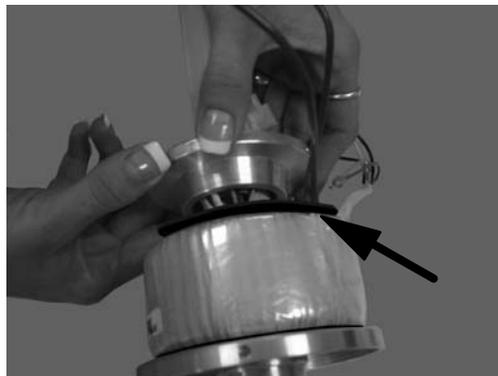


Figure 53.

10. Using a Phillips screwdriver, remove the screw that holds the bottom plates together. (Figure 54)

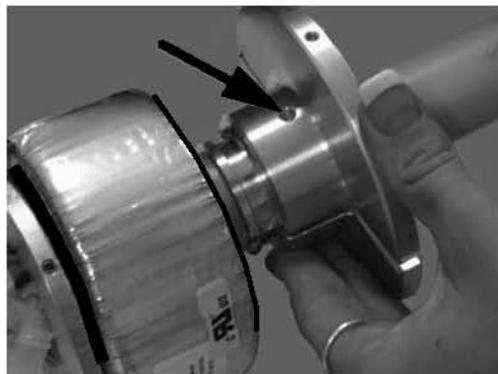


Figure 54.

11. Pull apart the bottom plates from the stand. Slide the transformer and the bottom grommet off of the stand. If installing a new transformer cover, slide the top plate, top grommet, and existing cover off. Slide the new cover on, followed by the top plate and the top grommet. If installing a new transformer, slide new transformer on. Place bottom grommet on, re-attach bottom plates, and put back together using steps above in reverse order. (Figure 55)



Figure 55.

## Greasing the Keeper Clip

1. Dismantle the light head.
2. Check the keeper clip for a minimum thickness of 1.5 mm and if required, replace it.
3. Grease the keeper clip and the pin of the light head.
4. Assemble the light head.

# Replacement Parts

## Replacement Parts

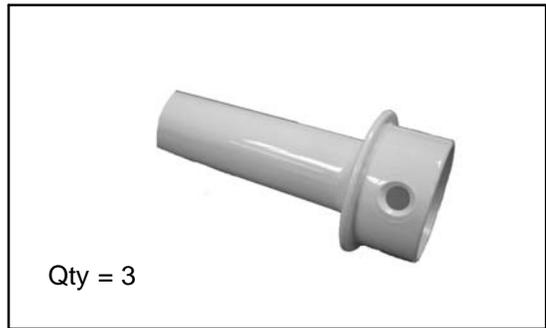
For the following or any other replacement parts, please contact Stryker Customer Service at 1-800-327-0770 (Option 1).

Dispose of all removed light bulbs and parts in accordance with local regulations.

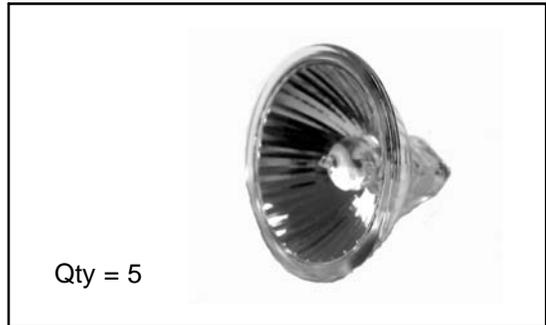
8500-000-010 ..... Light Handle Assembly



8500-000-009 ..... Sterile Handle



8500-000-008 ..... Light Bulb



8500-000-011 ..... Hardware Kit



# Replacement Parts

## Replacement Parts (continued)

8500-000-007 ..... Anti-Static Casters



8500-000-012 ..... Aesthetics Kit



8500-000-013 ..... Electrical Kit



# Replacement Parts

## Replacement Parts (continued)

8500-000-006 . . . . . Transformer Cover



8500-000-005 . . . . . Transformer, 115V

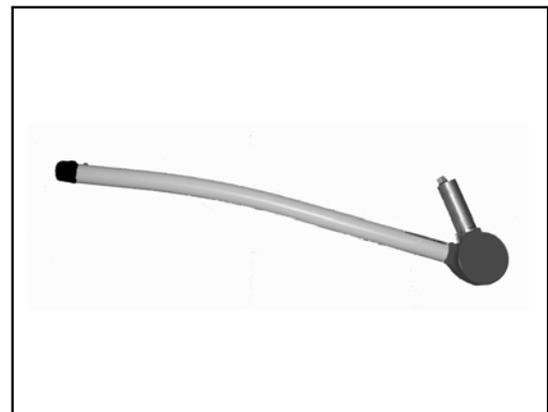


8500-000-004 . . . . . Fuse, 1 Amp



Qty = 5 Pack

8500-000-060 . . . . . Spring Arm  
with Brake Cover



# Replacement Parts

## Replacement Parts (continued)

8500-000-030 . . . . . Base Assembly



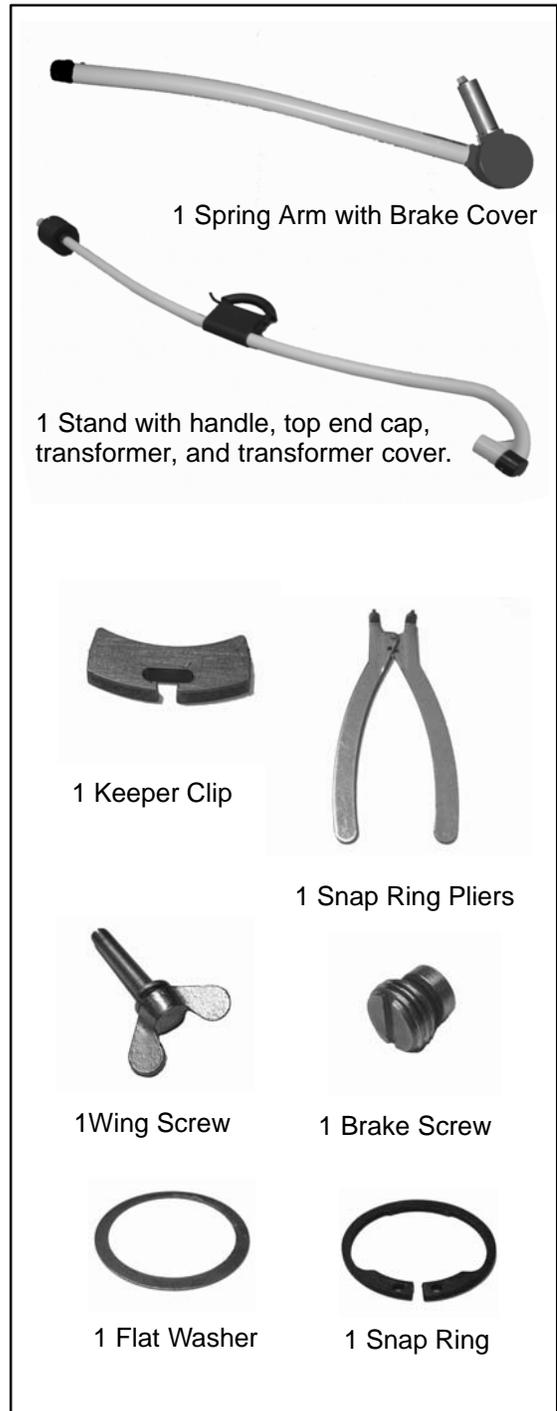
8500-000-050 . . . . . Light Head Assembly



# Replacement Parts

## Replacement Parts (continued)

8500-000-040 ..... Spring Arm Assembly



# Troubleshooting

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## Warranty

Stryker warrants that its Examination Lights are warranted against defective materials and workmanship for two years from the date of purchase. Warranty applies to normal usage and does not apply to any product that has been subject to alteration, abuse, negligence or use (including voltage and/or current) other than that for which the product was designed. This warranty is limited to replacement, repair or refund at Stryker's option. Lamps (bulbs) are not covered by this warranty.

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**stryker**<sup>®</sup>

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