

SERVICE MANUAL

Prima™ Procedural Light From Hill-Rom



Product No. P7925D

**For Parts Or Technical Assistance
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man247ra

Prima™ Procedural Light Service Manual

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Chapter 1

Introduction

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NOTES:

Purpose

This manual provides requirements for the Prima™ Procedural Light normal operation and maintenance. It also includes parts lists (in chapter 5) for ordering replacement components.

Audience

This manual is intended for use by only facility-authorized maintenance personnel. Failure to observe this restriction can result in severe injury to people and serious damage to equipment.

Organization

This manual contains seven chapters.

Chapter 1: Introduction

In addition to a brief description of this service manual, chapter 1 also provides a product overview.

Chapter 2: Troubleshooting Procedures

Repair analysis procedures are contained in this chapter. These procedures are used to gather information, identify the maintenance need, and verify the effectiveness of the repair.

Chapter 3: Theory of Operation

This chapter describes the application of the mechanical and electrical systems employed in this product.

Chapter 4: Removal, Replacement, and Adjustment Procedures

Chapter 4 contains the detailed maintenance procedures determined necessary in chapter 2.

Chapter 5: Parts List

This chapter contains the warranty, part-ordering procedure, and illustrated parts lists.

Chapter 6: General Procedures

Cleaning, preventive maintenance, and other general procedures are described in this chapter.

Chapter 7: Accessories

There are no accessories for the Prima™ Procedural Light.

Typographical Conventions

This manual contains different typefaces and icons designed to improve readability and increase understanding of its content. Note the following examples:

- Standard text—used for regular information.
- **Boldface text**—emphasizes a word or phrase.
- **NOTE:**—sets apart special information or important instruction clarification.
- The symbol below highlights a WARNING or CAUTION:

Figure 1-1. Warning and Caution



- A WARNING identifies situations or actions that may affect patient or user safety. Disregarding a warning could result in patient or user injury.
- A CAUTION points out special procedures or precautions that personnel must follow to avoid equipment damage.
- The symbol below highlights a CAUGHT HAZARD WARNING:

Figure 1-2. Caught Hazard Warning



- The symbol below highlights a CHEMICAL HAZARD WARNING:

Figure 1-3. Chemical Hazard Warning



- The symbol below highlights an ELECTRICAL SHOCK HAZARD WARNING:

Figure 1-4. Electrical Shock Hazard Warning



Introduction

Overview

The Prima™ Procedural Light provides shadow-free illumination for patient examination procedures. It is designed for use with the Affinity® II Bed and Affinity® Three Birthing Bed from Hill-Rom and is available in 120V and 230V models.

Operating Precautions

Before operating the Prima™ Procedural Light, be sure that you have read and understand in detail the contents of this manual. It is important that you read and strictly adhere to the safety information contained in this manual.



WARNING:

After completing a repair of the Prima™ Procedural Light, make sure the unit is in proper operating condition. Failure to do so could result in personal injury or equipment damage.

After completing a repair of the Prima™ Procedural Light, perform the preventive maintenance checks to make sure the unit is in proper operating condition. See “Preventive Maintenance Schedule” on page 6-7.

Specifications

Physical Description

See tables 1-1 through 1-3 on pages 1-7 through 1-8 for Prima™ Procedural Light specifications.

Table 1-1. Physical Specifications

Feature	Dimension
Overall height, all articulations at lowest point	69" (175 cm)
Overall height, all articulations at highest point	84" (213 cm)
Base	22" (56 cm) long x 22" (56 cm) wide
Lamp head diameter	6.25" (15.86 cm)
Reach	40" (102 cm)
Weight	30 lb (14 kg)

Table 1-2. Lighting Specifications

Feature	Dimension
Central Illuminance	4000 fc (43,000 Lux) at 24" (61 cm) from source 1600 fc (17,000 Lux) at 39.4" (1 m) from source
Color temperature	4300°K at 39.4" (1 m) from source
Irradiance	<5 μ W/cm ² /nm at 800 to 1100 nm at 39.4" (1 m) from source
Light field diameter	3" (8 cm) minimum at 39.4" (1 m) from source
Bulb type	Quartz halogen, 10.7V, 70W, bi-pin, tubular
Bulb life	1000 h
Color rendering index	87

Electrical Description

Table 1-3. Electrical Specifications

Feature	Dimension
Light rating, 120 volt model only	115V, 60 Hz, 1 A, 75 W
Light rating, 230 volt model only	230V, 50 Hz, 0.5 A, 75 W
AC leakage current to ground	65 μ A maximum

Regulations, Standards, and Codes

P7925D120 (120 V) = UL 2601-1 and CSA C22.2 No. 601.1.

P7925D230 (230 V) = IEC 601-1, second edition

Model Identification

See table 1-4 on page 1-9 for Prima™ Procedural Light model identification.

Table 1-4. Model Identification

Model Number	Description
P7925D120	Prima™ Procedural Light, 120V
P7925D230	Prima™ Procedural Light, 230V

Safety Tips



WARNING:

After completing a repair of the Prima™ Procedural Light, make sure the unit is in proper operating condition. Failure to do so could result in personal injury or equipment damage.



WARNING:

Only facility-authorized maintenance personnel should troubleshoot the Prima™ Procedural Light. Troubleshooting by unauthorized personnel could result in personal injury or equipment damage.



WARNING:

The Prima™ Procedural Light operates at a high temperature. Allow the unit to cool for at least 30 minutes before performing any preventive maintenance or repair procedures. Failure to do so could result in personal injury.



WARNING:

Use only Hill-Rom approved replacement lamps. Failure to do so will affect the operating specifications of the Prima™ Procedural Light. Use of a higher wattage and/or lower voltage lamp may also cause a fire hazard, resulting in personal injury or equipment damage.



WARNING:

The rotating arm is spring loaded. When removing the lamp head/yoke assembly, ensure that the rotating arm is restrained. Failure to do so could result in personal injury or equipment damage.



WARNING:

Ensure the rotating arm is supported before removing the retaining ring. Failure to do so could result in personal injury or equipment damage.



WARNING:

Operate the Prima™ Procedural Light only with the lens assembly in place. Failure to do so could result in personal injury.

**WARNING:**

When positioning the Prima™ Procedural Light to gain access to the casters, ensure that the unit is placed in a stable position. Failure to do so could result in personal injury or equipment damage.

**WARNING:**

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

**WARNING:**

Adhere to the "Infection Control Policies and Procedures" outlined in the Safety Coordinator Reference Guide. Failure to do so could result in the spread of infection.

**WARNING:**

Only facility-authorized maintenance personnel should perform preventive maintenance on the Prima™ Procedural Light. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.

**WARNING:**

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 or equipment damage.

**SHOCK HAZARD:**

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

**SHOCK HAZARD:**

Do not pinch the wires during installation. Pinched wires can cause an electrical shock hazard, resulting in personal injury or equipment damage.

**SHOCK HAZARD:**

Do not expose the unit to excessive moisture. Personal injury or equipment damage could occur.



SHOCK HAZARD:

Do not rest articles or liquids on top of the Prima™ Procedural Light. Spilled liquids will damage the lamp head and power supply assemblies causing an electrical shock hazard.



CAUTION:

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



CAUTION:

Do not overtighten the adjusting screw. Overtightening the adjusting screw could result in equipment damage.



CAUTION:

Do not use harsh cleaners, solvents, or detergents. Equipment damage could occur.



CAUTION:

Use only a lens cleaner or a similar, non-residual cleaning agent on the lens. Failure to do so could result in equipment damage.



CAUTION:

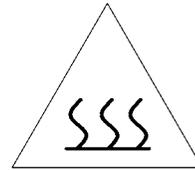
Do not use silicone-based lubricants. Equipment damage could occur.

Warning and Caution Labels

Figure 1-5. Warning and Caution Labels

CAUTION: TO REDUCE THE RISK OF FIRE, USE ONLY TYPE T4, GY6.35 BASE, 10.7 VOLT QUARTZ HALOGEN LAMP 70 WATTS MAX.

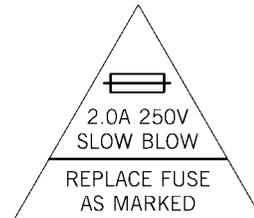
Lamp replacement label



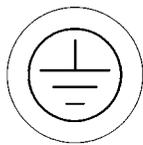
Hot surfaces marking

IMPORTANT: GROUNDING RELIABILITY CAN ONLY BE ACHIEVED WHEN THIS EQUIPMENT IS CONNECTED TO AN EQUIVALENT RECEPTACLE MARKED "HOSPITAL GRADE" OR "HOSPITAL ONLY"

Grounding reliability label
(120V unit only)



Fuse replacement label
(120V unit only)



Protective earth marking
(120V unit only)

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NOTES:

Chapter 2

Troubleshooting Procedures

2

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Getting Started

**WARNING:**

Only facility-authorized maintenance personnel should troubleshoot the Prima™ Procedural Light. Troubleshooting by unauthorized personnel could result in personal injury or equipment damage.

Begin each procedure in this chapter with step 1. Follow the sequence outlined (each step assumes the previous step has been completed). In each step, the normal operation of the product can be confirmed by answering **Yes** or **No** to the statement. Your response will lead to another step in the procedure, a repair analysis procedure (RAP), or a component replacement. If more than one component is listed, replace them in the given order.

Start with **Initial Actions** to begin gathering information about the problem.

Perform the **Function Checks** to isolate or identify a problem and to verify the repair after completing each corrective action (replacing or adjusting a part, seating a connector, etc.).

Perform the **Final Actions** after the Function Checks to verify the repair.

If troubleshooting procedures do not isolate the problem, call Hill-Rom Technical Support at (800) 445-3720 for assistance.

2

Initial Actions

Use Initial Actions to gather information from operators concerning problems with the Prima™ Procedural Light. Note symptoms or other information concerning the problem that the operator describes. This information helps identify the probable cause.

1. Someone who can explain the problem is available.

Yes **No**

↓ → Go to “Function Checks” on page 2-4.

2. Ask that person to demonstrate or explain the problem. The problem can be duplicated.

Yes **No**

↓ → Go to “Function Checks” on page 2-4.

3. The problem is a result of improper operator action.

Yes **No**

↓ → Go to “Function Checks” on page 2-4.

4. Perform the “Function Checks” on page 2-4 to ensure proper operation of the Prima™ Procedural Light.

Function Checks

1. Initial Actions have been performed.

Yes **No**

↓ → Go to “Initial Actions” on page 2-3.

2. Place the switch to the “ON” position. The Prima™ Procedural Light works properly.

Yes **No**

↓ → Go to RAP 2.1.

3. Move the rotating arm into different positions. The rotating arm retains its position once moved.

Yes **No**

↓ → Go to RAP 2.2.

4. Go to “Final Actions” on page 2-4.

Final Actions

1. Complete the required preventive maintenance procedures. See “Preventive Maintenance” on page 6-6.
2. Complete all required administration tasks.

2.1 Lamp Malfunction

1. The Prima™ Procedural Light is plugged into an appropriate power source.
Yes **No**
↓ → Plug the Prima™ Procedural Light into an appropriate power source. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 2.
2. The power switch is in the “ON” position.
Yes **No**
↓ → Turn the power switch to the “ON” position. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 3.
3. Inspect the lamp for damage or wear. The lamp is in proper working condition.
Yes **No**
↓ → Replace the lamp. See “Lamp” on page 4-7. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 4.
4. The socket is in proper working condition.
Yes **No**
↓ → Replace the lamp holder assembly See “Lamp” on page 4-7. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 9.
5. Inspect the power cord for wear or damage. The power cord is in proper working condition.
Yes **No**
↓ → Replace the power cord. Go to “Power Cord” on page 4-20. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 5.
6. Check the wire connections in the transformer housing. All wires are securely connected.
Yes **No**
↓ → Remove the transformer housing, and secure the loose connections See “Transformer” on page 4-22. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 7.

7. Inspect the wires for damage. The wires are in proper working condition.

Yes **No**

↓ → Replace the damaged wire. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 8.

8. Inspect the transformer for proper voltage output. The voltage output of the transformer is 13 volts.

Yes **No**

↓ → Replace the transformer. See “Transformer” on page 4-22. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, go to step 9.

9. Activate the power switch to the “ON” and “OFF” position. The power switch is in proper working condition.

Yes **No**

↓ → Replace the lamp head/yoke assembly. See “Lamp Head/Yoke Assembly” on page 4-13. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

10. Go to “Final Actions” on page 2-4.

2.2 Rotating Arm Malfunction

1. Move the rotating arm to the desired position. The rotating arm retains its position once moved.

Yes **No**

↓

→ Adjust the spring tension in the rotating arm. See “Rotating Arm” on page 4-15. If this solves the problem, go to “Final Actions” on page 2-4. Otherwise, call Hill-Rom Technical Support at (800) 445-3720.

2. Go to “Final Actions” on page 2-4.

2

NOTES:

Chapter 3

Theory of Operation

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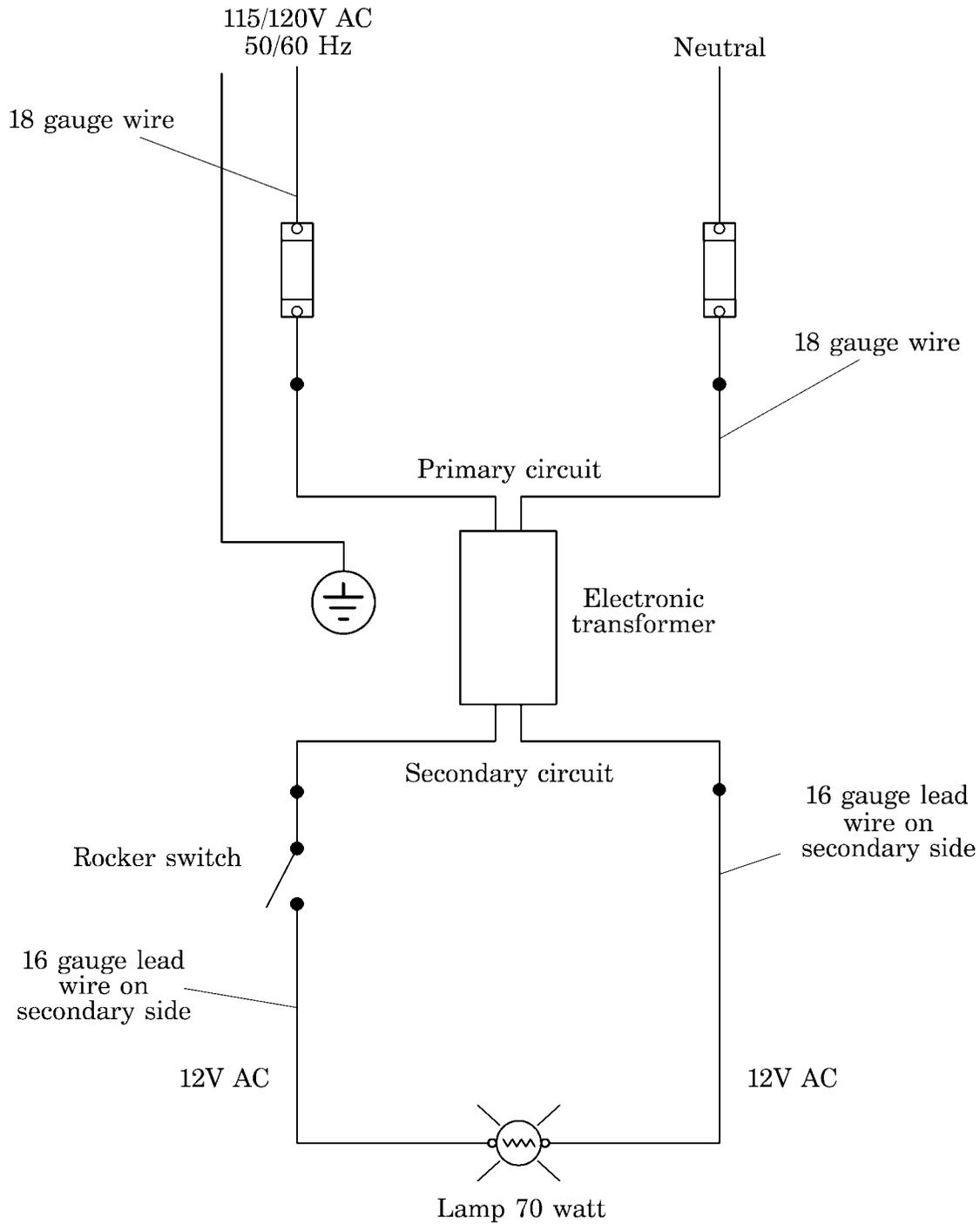
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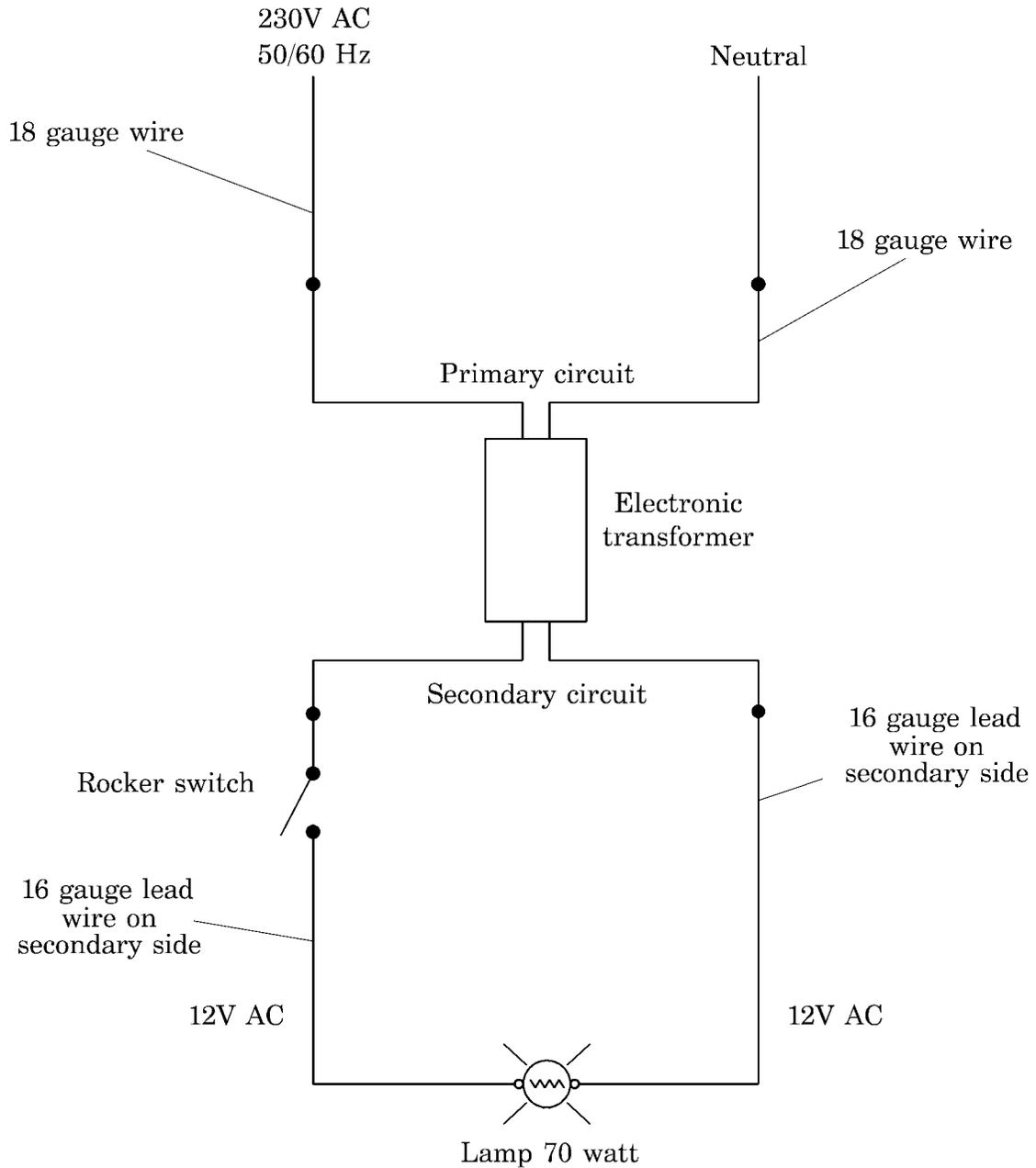
Electrical System

Figure 3-1. Wiring Diagram (120V Model Only)



m247a002

Figure 3-2. Wiring Diagram (230V Model Only)



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Theory of Operation

The Prima™ Procedural Light is a self-contained lighting unit intended to provide illumination during patient examination. The 120V model light operates at 115/120V AC, 50/60 Hz, 1 A. The 230V model light operates at 230/240V AC, 50/60 Hz, 0.5 A.

Lamp Head/Yoke Assembly

The lamp head provides housing for the color correcting filter lens, the reflector, and the quartz halogen lamp. A handle attached to the lamp head allows the lamp head/yoke assembly to be rotated continuously 360°. The handle is removable for sterilization purposes. The on/off switch is located on the yoke that connects the lamp head to the rotating arm.

Rotating Arm

Located between the upright pole and the lamp head/yoke assembly, the rotating arm moves both vertically and horizontally. The rotating arm provides the wiring conduit for the low voltage AC between the transformer housing and the lamp head/yoke assembly.

Transformer Housing

The transformer is located in the molded transformer housing which is fastened to the upright pole. The transformer housing is the location for the AC power cord inlet. It also acts as a handle for moving the Prima™ Procedural Light.

Upright Pole

The upright pole supports the rotating arm and provides a location for the transformer housing. The upright pole houses the wiring for the AC voltage that runs from the transformer to the rotating arm.

Base

The base for the Prima™ Procedural Light has four casters: two with brakes, and two free swivel. The base is weighted to provide a stable foundation for the positioning of the light.

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Removal, Replacement, and Adjustment Procedures

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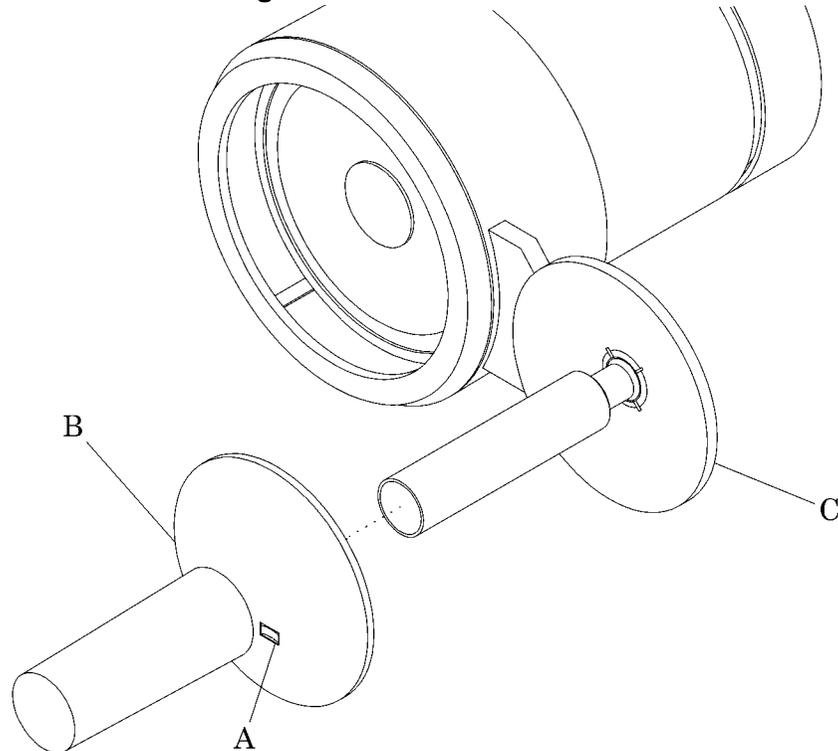
4.1 Sterile Handle

Tools required: None

Removal

1. Press the button (A) on the sterile handle (B) (see figure 4-1 on page 4-3).

Figure 4-1. Sterile Handle



m247a004

2. Pull the handle (B) away from the handle mounting post (C), and release the button (A).

NOTE:

For sterilization procedures, see “Steam Cleaning” on page 6-3.

Replacement

1. Press the button (A), and slide the handle (B) onto the handle mounting post (C).
2. Release the button (A) when the handle (B) is in position.
3. Pull lightly on the handle (B) to ensure that it is properly secured to the mounting post (C).

4.2 Caster

Tools required: None

Removal



SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

1. Unplug the unit from its power source.

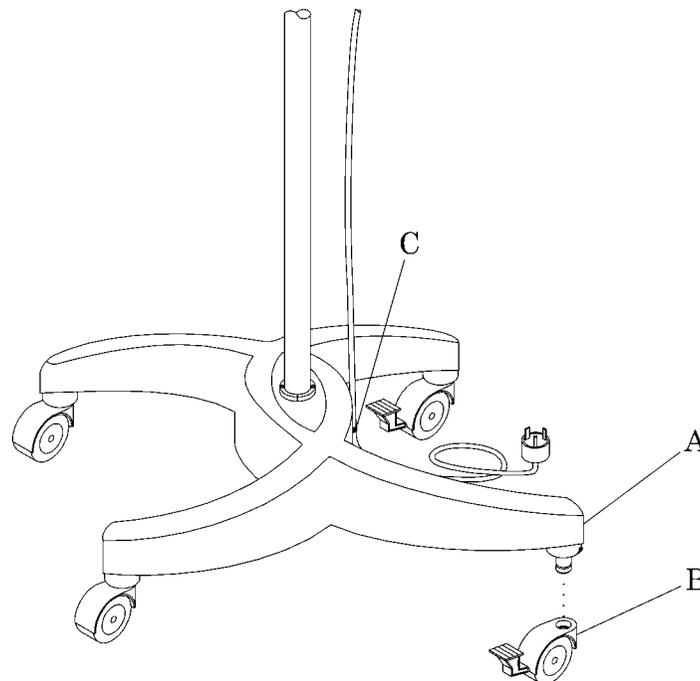


WARNING:

When positioning the Prima™ Procedural Light to gain access to the casters, ensure that the unit is placed in a stable position. Failure to do so could result in personal injury or equipment damage.

2. Lay the Prima™ Procedural Light on its side, in order to gain access to the bottom of the base (A) (see figure 4-2 on page 4-5).

Figure 4-2. Caster



m247a013

3. Pulling firmly, remove the caster (B) from the base (A).

Replacement

1. Pressing firmly, install the caster (B) onto the base (A).

NOTE:

There are four casters mounted to the base, two with brakes and two free swivel. The casters with brakes are positioned to the back of the base nearest the power cord retainer clip (C). When replacing a caster (B), make sure to place the free swivel casters to the front, and the casters with brakes to the back.

2. Return the Prima™ Procedural Light to its upright operational position.

4.3 Lamp

Tools required: Clean, dry cloth

Removal

**SHOCK HAZARD:**

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

1. Unplug the unit from its power source.

**WARNING:**

The Prima™ Procedural Light operates at a high temperature. Allow the unit to cool for at least 30 minutes before performing any preventive maintenance or repair procedures. Failure to do so could result in personal injury.

2. Allow the unit to cool for at least 30 minutes.
3. Remove the rear housing cover (A) from the lamp head (B) by pulling the cover (A) away from the lamp head (B) (see figure 4-3 on page 4-8).
4. Pull the knob (C) on the lamp holder subassembly (D), and remove the lamp holder subassembly (D) from the lamp head (B).

**CAUTION:**

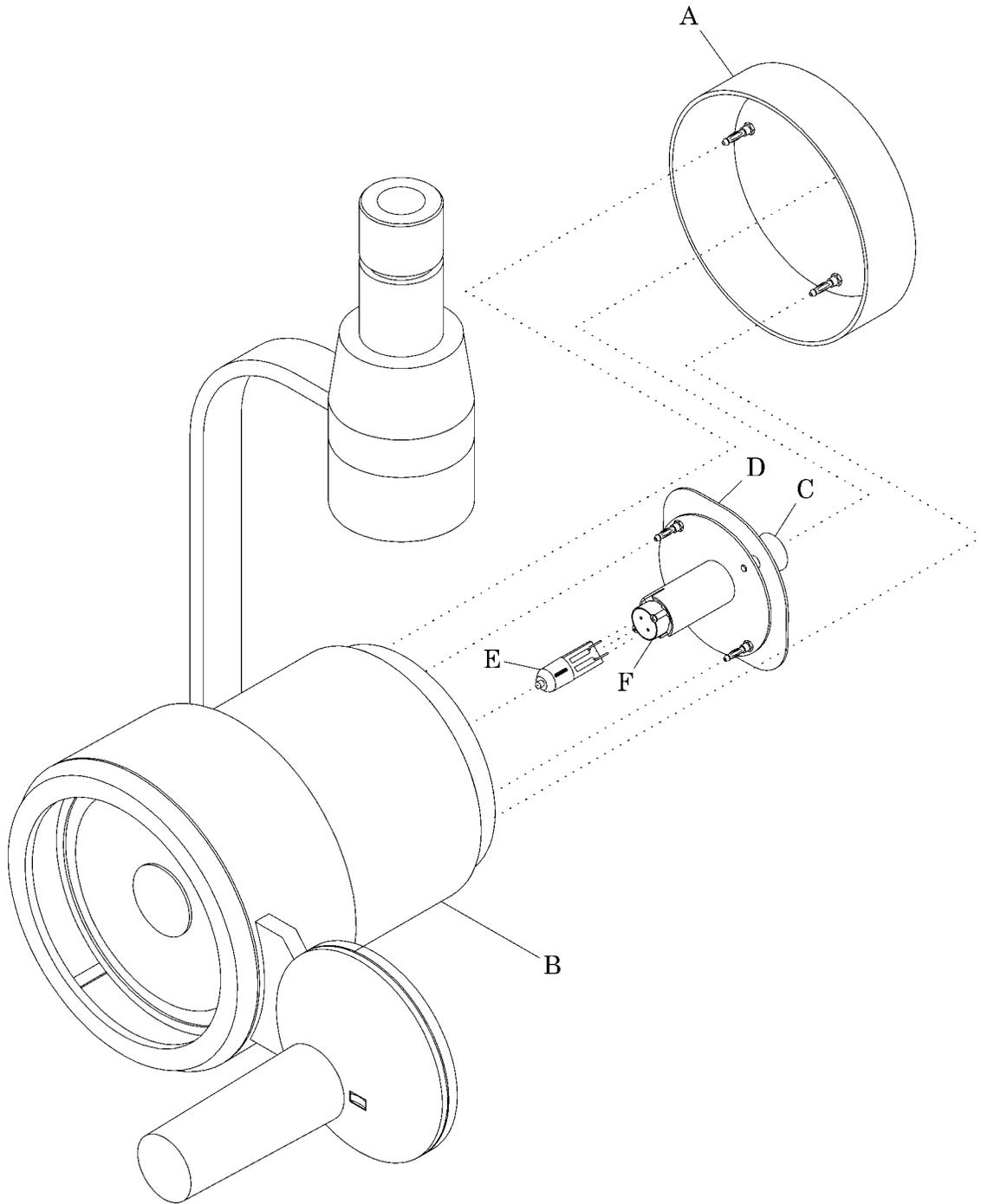
Do not touch the lamp, the lens, or the inner surface of the reflector directly. Body oils may significantly lower the life expectancy of these parts and cause equipment damage.

5. Using a clean, dry cloth, remove the lamp (E) from the socket (F).

NOTE:

It may help to wiggle the lamp (E) slightly during removal.

Figure 4-3. Lamp Assembly



m247a005

Replacement

**WARNING:**

Use only Hill-Rom approved replacement lamps. Failure to do so will affect the operating specifications of the Prima™ Procedural Light. Use of a higher wattage and/or lower voltage lamp may also cause a fire hazard, resulting in personal injury or equipment damage.

1. Make sure the replacement lamp to be used is approved by Hill-Rom, and is the correct wattage and voltage.

**CAUTION:**

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

2. Holding the lamp with a clean, dry cloth, align the pins on the lamp (E) with the two small holes in the socket (F), and insert the lamp (E) into the socket (F).
3. Holding the knob (C) of the lamp holder subassembly (D), install the lamp holder subassembly (D) into the lamp head (B).
4. Install the rear housing cover (A) on the lamp head (B).

**WARNING:**

After completing a repair of the Prima™ Procedural Light, make sure the unit is in proper operating condition. Failure to do so could result in personal injury or equipment damage.

5. After completing a repair of the Prima™ Procedural Light, perform the preventive maintenance checks to make sure the unit is in proper operating condition. See “Preventive Maintenance Schedule” on page 6-7.

4.4 Lens

Tools required: Screwdriver
Clean, dry cloth

Removal

**SHOCK HAZARD:**

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

1. Unplug the unit from its power source.

**WARNING:**

The Prima™ Procedural Light operates at a high temperature. Allow the unit to cool for at least 30 minutes before performing any preventive maintenance or repair procedures. Failure to do so could result in personal injury.

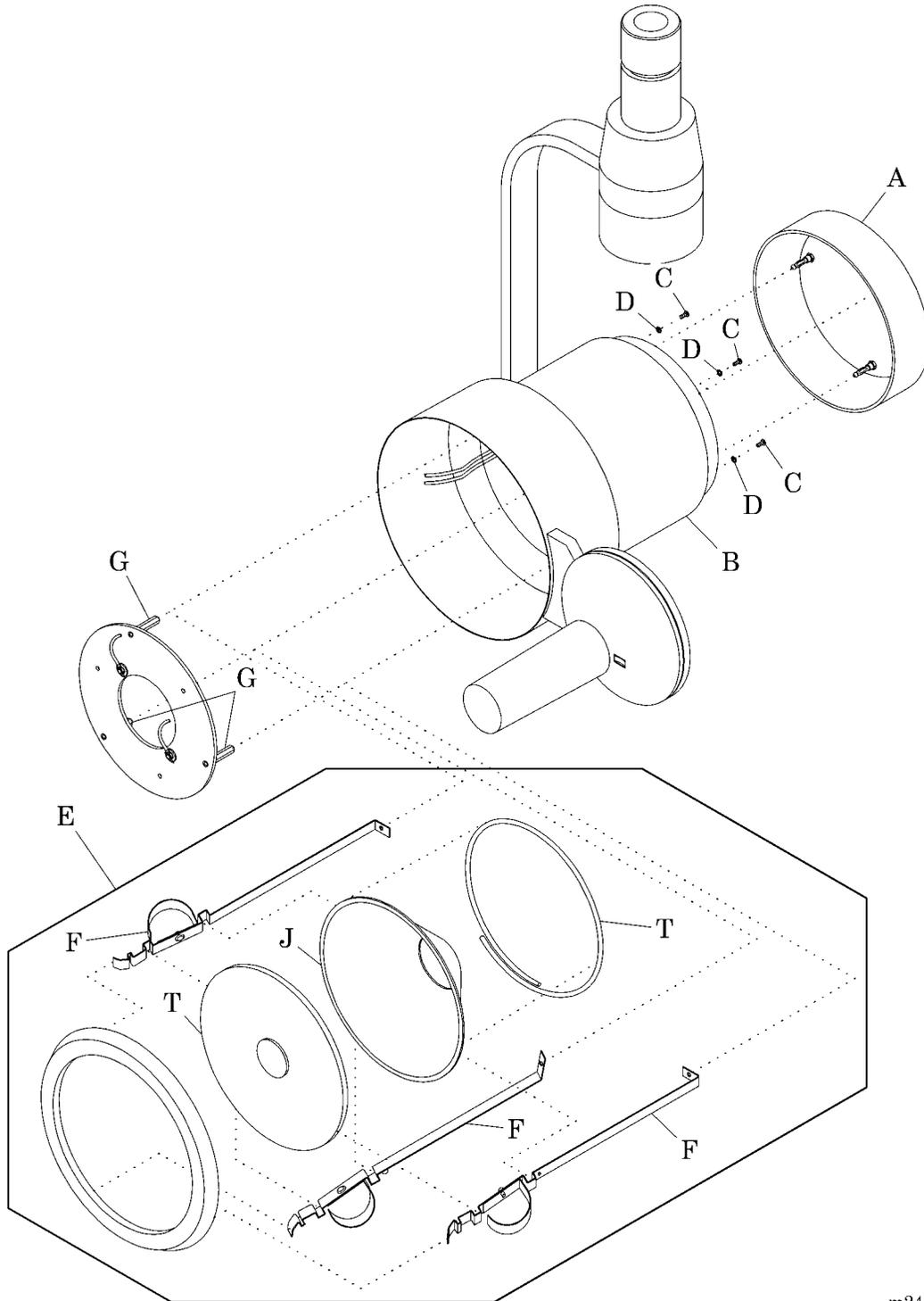
2. Allow the unit to cool for at least 30 minutes.
3. Remove the rear housing cover (A) from the lamp head (B) (see figure 4-4 on page 4-11).
4. Using a screwdriver, remove the screws (C) and lockwashers (D) from the lamp head (B).
5. Rotate the lens subassembly (E) within the lamp head (B) to free the clips (F) from the spacers (G).
6. Remove the lens subassembly (E) from the lamp head (B).
7. Remove the clamping ring (H) from the lens subassembly (E).

**CAUTION:**

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

8. Using a clean, dry cloth, remove the reflector (J) and the lens (K) from the clips (F).

Figure 4-4. Lens



m247a006

Replacement



CAUTION:

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

1. Using a clean, dry cloth, install the lens (K) and the reflector (J) into the clips (F).
2. Install the clamping ring (H) on the lens subassembly (E).
3. Install the lens subassembly (E) into the lamp head (B).
4. Rotate the lens subassembly (E) within the lamp head (B) to align the clips (F) with the spacers (G).
5. Using a screwdriver, install the screws (C) and lockwashers (D) into the lamp head (B).
6. Install the rear housing cover (A) onto the lamp head (B).



WARNING:

After completing a repair of the Prima™ Procedural Light, make sure the unit is in proper operating condition. Failure to do so could result in personal injury or equipment damage.



WARNING:

Operate the Prima™ Procedural Light only with the lens assembly in place. Failure to do so could result in personal injury.

7. After completing a repair of the Prima™ Procedural Light, perform the preventive maintenance checks to make sure the unit is in proper operating condition. See “Preventive Maintenance Schedule” on page 6-7.

4.5 Lamp Head/Yoke Assembly

Tools required: Small screwdriver

Removal



SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

1. Unplug the unit from its power source.



WARNING:

The Prima™ Procedural Light operates at a high temperature. Allow the unit to cool for at least 30 minutes before performing any preventive maintenance or repair procedures. Failure to do so could result in personal injury.

2. Allow the unit to cool for at least 30 minutes.
3. Using a small screwdriver, pry the keeper tab (A) on the plastic collar (B) from the rotating arm (C) (see figure 4-5 on page 4-14).
4. Rotate the plastic collar (B) until the metal keeper lock (D) is visible in the slot (E).
5. Remove the metal keeper lock (D) from the slot (E) in the rotating arm (C).

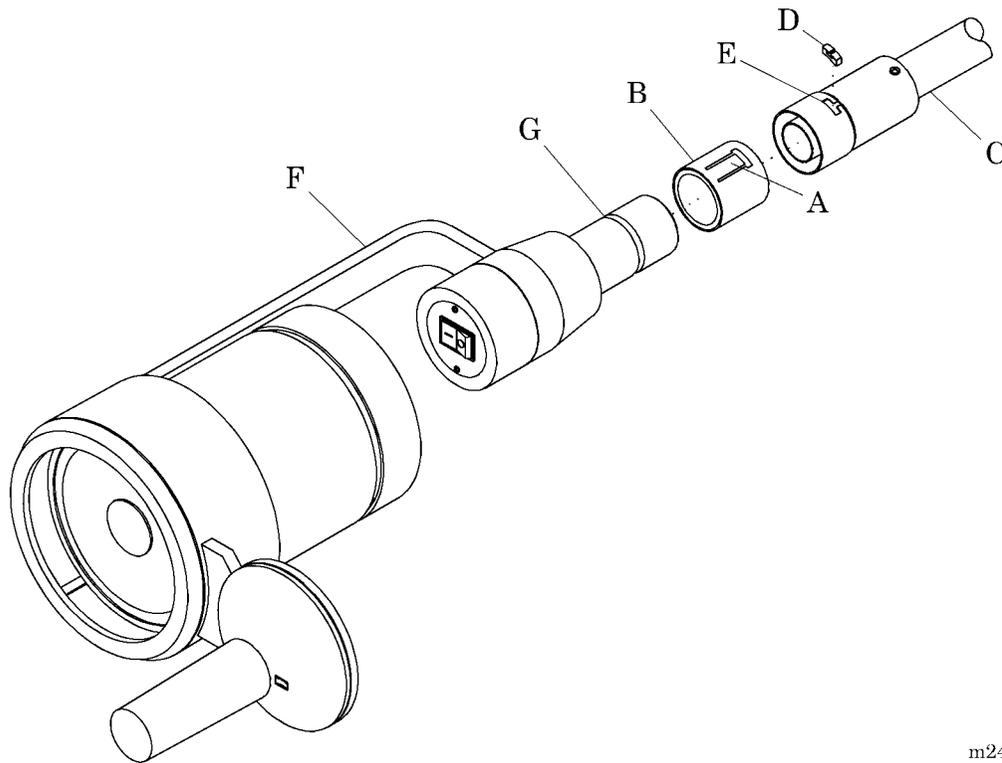


WARNING:

The rotating arm is spring loaded. When removing the lamp head/yoke assembly, ensure that the rotating arm is restrained. Failure to do so could result in personal injury or equipment damage.

6. Make sure the rotating arm (C) is restrained, and remove the lamp head/yoke assembly (F) from the rotating arm (C).

Figure 4-5. Lamp Head/Yoke Assembly



m247a007

Replacement

1. Install the lamp head/yoke assembly (F) into the rotating arm (C).
2. Align the groove (G) in the lamp head/yoke assembly (F) with the slot (E) in the rotating arm (C).
3. Install the metal keeper lock (D) into the slot (E).
4. Rotate the plastic collar (B) until the keeper tab (A) snaps into place in the rotating arm (C).



WARNING:

After completing a repair of the Prima™ Procedural Light, make sure the unit is in proper operating condition. Failure to do so could result in personal injury or equipment damage.

5. After completing a repair of the Prima™ Procedural Light, perform the preventive maintenance checks to make sure the unit is in proper operating condition. See “Preventive Maintenance Schedule” on page 6-7.

4.6 Rotating Arm

Tools required: Phillips head screwdriver
Retaining ring removal/installation tool
Screwdriver

Removal

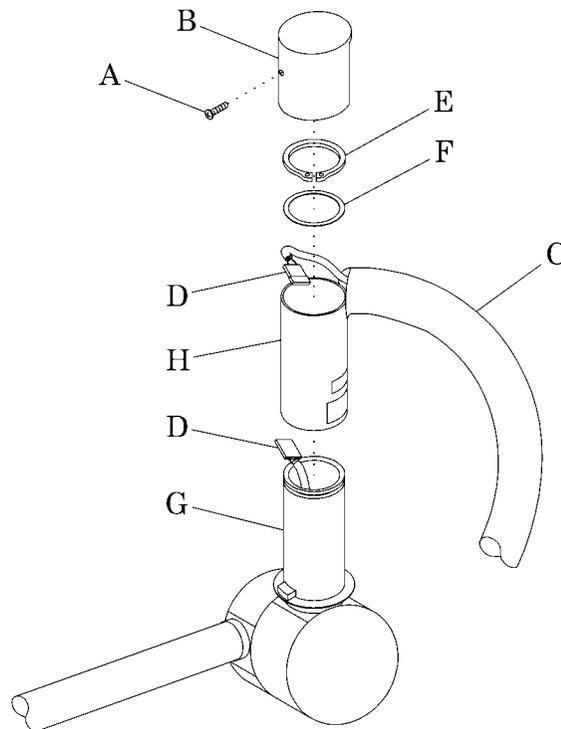


SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

1. Unplug the unit from its power source.
2. Remove the lamp head/yoke assembly. See “Lamp Head/Yoke Assembly” on page 4-13.
3. Using the phillips head screwdriver, remove the screw (A) and the plastic cover (B) from the top of the upright pole (C) (see figure 4-6 on page 4-15).

Figure 4-6. Rotating Arm



m247a008

4. Disconnect the electrical connectors (D).



WARNING:

Ensure the rotating arm is supported before removing the retaining ring. Failure to do so could result in personal injury or equipment damage.

5. Before removing the retaining ring (E), support the rotating arm (F) to prevent it from falling through the vertical tube (G).
6. Using the retaining ring removal/installation tool, remove the retaining ring (E) and the flat washer (H).
7. Remove the rotating arm (F) from the vertical tube (G).

Replacement

1. Install the rotating arm (F) into the vertical tube (G).
2. Install the flat washer (H).
3. Using the retaining ring removal/installation tool, install the retaining ring (E).



SHOCK HAZARD:

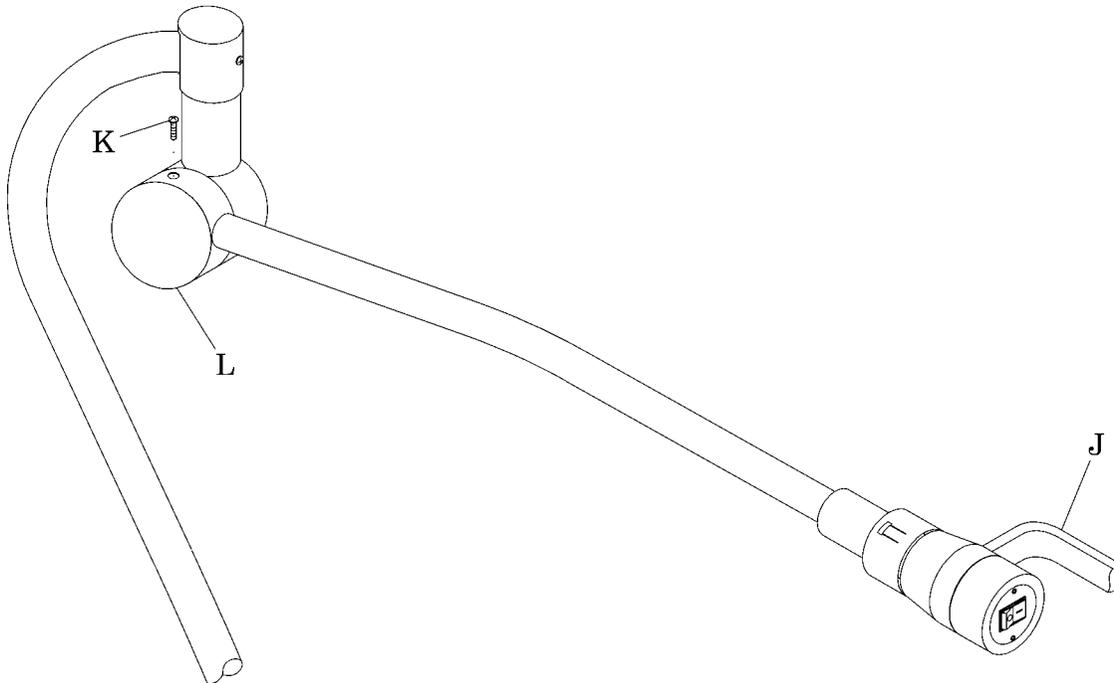
Do not pinch the wires during installation. Pinched wires can cause an electrical shock hazard, resulting in personal injury or equipment damage.

4. Connect the electrical connectors (D), and push them into the vertical tube (G) to prevent pinching them.
5. Using a phillips head screwdriver, install the screw (A) and the plastic cover (B) to the top of the upright pole (C).
6. Install the lamp head/yoke assembly. See “Lamp Head/Yoke Assembly” on page 4-13.

Adjustment

1. Pull the lamp head (J) downward about 20° until the adjusting screw (K) is visible through the hole in the plastic arm cover (L) (see figure 4-7 on page 4-17).

Figure 4-7. Rotating Arm Tension Adjustment



m247a009



CAUTION:

Do not overtighten the adjusting screw. Overtightening the adjusting screw could result in equipment damage.

2. In order to modify the spring tension, use a screwdriver to turn the adjusting screw (K) as follows:
 - If the rotating arm drifts upward after being positioned, turn the adjusting screw (K) clockwise to decrease the spring tension.
 - If the rotating arm drifts downward after being positioned, turn the adjusting screw (K) counterclockwise to increase the spring tension.

4.7 Upright Pole

Tools required: Small phillips head screwdriver

Removal

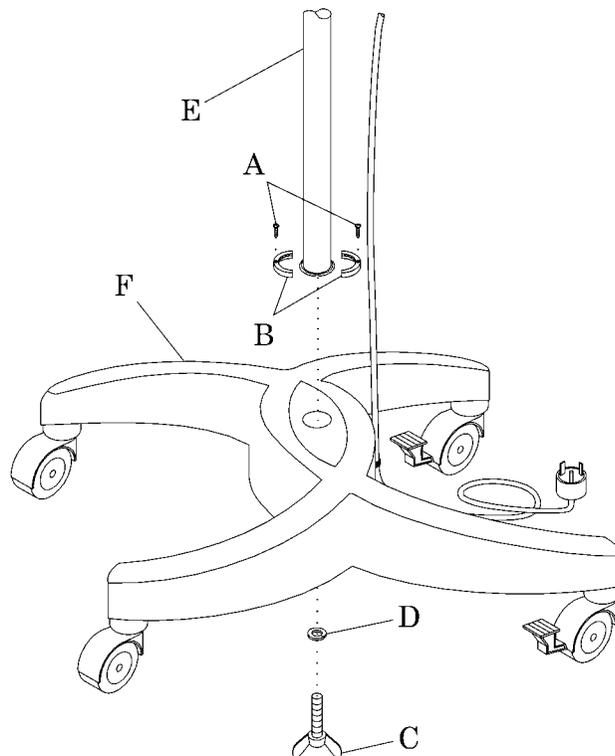


SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

1. Unplug the unit from its power source.
2. Remove the lamp head/yoke assembly. See “Lamp Head/Yoke Assembly” on page 4-13.
3. Remove the rotating arm. See “Rotating Arm” on page 4-15.
4. Using a small phillips head screwdriver, remove the screws (A) from the upright locks (B) (see figure 4-8 on page 4-18).

Figure 4-8. Upright Pole



m247a010

5. Remove the wing bolt (C) and lockwasher (D).
6. Remove the upright pole (E) from the base (F).

Replacement

1. Install the upright pole (E) into the base (F).
2. Install the wing bolt (C) and lockwasher (D).
3. Install the upright locks (B) and the screws (A), using a small phillips head screwdriver.
4. Replace the rotating arm. See “Rotating Arm” on page 4-15.
5. Replace the lamp head/yoke assembly. See “Lamp Head/Yoke Assembly” on page 4-13.

4.8 Power Cord

Tools required: T10 Torx®¹ wrench
Small phillips head screwdriver
Small screwdriver

Removal

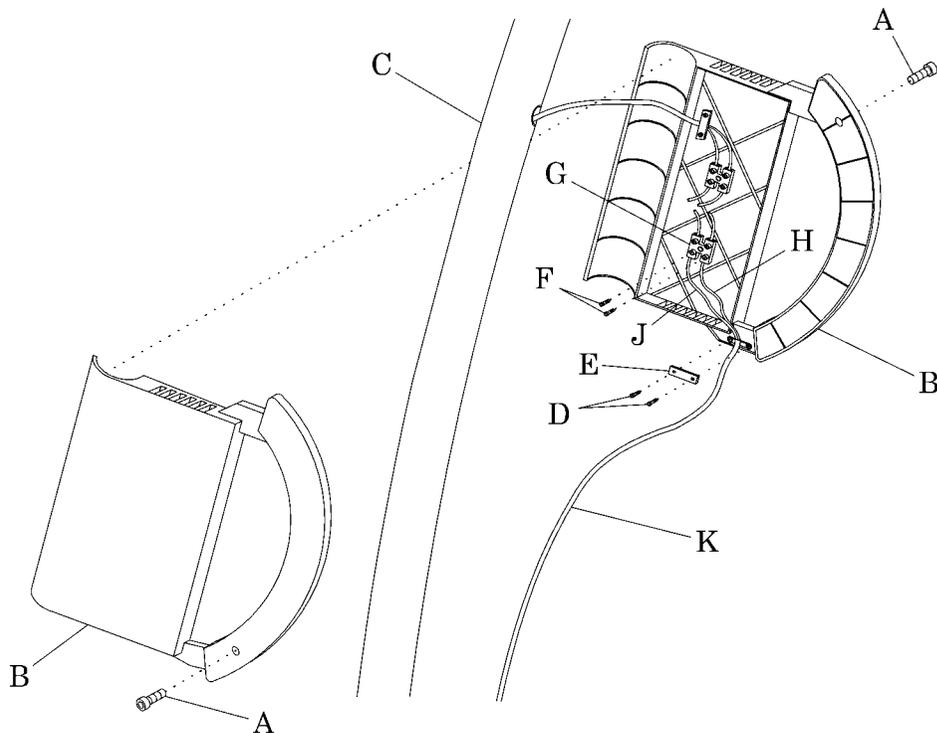


SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury and equipment damage.

1. Unplug the unit from its power source.
2. Using a T10 Torx® wrench, remove the screws (A) from the transformer housing (B) (see figure 4-9 on page 4-20).

Figure 4-9. Power Cord



m247a011

3. Remove both halves of the transformer housing (B) from the upright pole (C).

1. Torx® is a registered trademark of Textron, Inc.

4. Using a small phillips head screwdriver, remove the screws (D) and the wire clamp (E).
5. Using a small screwdriver, loosen the screws (F) on the connector (G).
6. Note the position of the brown wire (H) and the blue wire (J) before removing the power cord (K).
7. Remove the brown wire (H) and the blue wire (J) from the connector (G).
8. Remove the power cord (K) from the transformer housing (B).

Replacement

1. Install the brown wire (H) and the blue wire (J) to the connector (G), as noted in the removal procedure.
2. Using a small screwdriver, tighten the screws (F) on the connector (G).
3. Properly position the power cord (K) to exit the transformer housing (B).
4. Install the wire clamp (E) and screws (D), using a small phillips head screwdriver.



SHOCK HAZARD:

Do not pinch the wires during installation. Pinched wires can cause an electrical shock hazard, resulting in personal injury or equipment damage.

5. Taking care not to pinch wires, install both halves of the transformer housing (B) to the upright pole (C).
6. Using a small screwdriver, install the screws (A) to the transformer housing (B).



WARNING:

After completing a repair of the Prima™ Procedural Light, make sure the unit is in proper operating condition. Failure to do so could result in personal injury or equipment damage.

7. After completing a repair of the Prima™ Procedural Light, perform the preventive maintenance checks to make sure the unit is in proper operating condition. See “Preventive Maintenance Schedule” on page 6-7.

4. Remove the terminal block covers (H).
5. Using a small screwdriver, loosen the screws (D) on the connectors (E).
6. Note the positioning of the brown and the blue wires before removing them from the connectors (E).
7. Remove the wires (F) from the connectors (E).
8. Remove the transformer (G) from the transformer housing (B).

NOTE:

The transformer is held in place with double sided tape.

Replacement

1. Install the transformer (G) into the transformer housing (B).
2. Install the wires (F) to the connectors (E), as noted in the removal procedure.
3. Using a small screwdriver, tighten the screws (D) on the connectors (E).
4. Install the terminal block cover (H).

**SHOCK HAZARD:**

Do not pinch the wires during installation. Pinched wires can cause an electrical shock hazard, resulting in personal injury or equipment damage.

5. Taking care not to pinch wires, install both halves of the transformer housing (B) to the upright pole (C).
6. Using a T10 Torx®¹ wrench, install the screws (A) to the transformer housing (B).

1. Torx® is a registered trademark of Textron, Inc.



WARNING:

After completing a repair of the Prima™ Procedural Light, make sure the unit is in proper operating condition. Failure to do so could result in personal injury or equipment damage.

7. After completing a repair of the Prima™ Procedural Light, perform the preventive maintenance checks to make sure the unit is in proper operating condition. See “Preventive Maintenance Schedule” on page 6-7.

4.10 Fuse

Tools required: T10 Torx®¹ head screwdriver

Removal

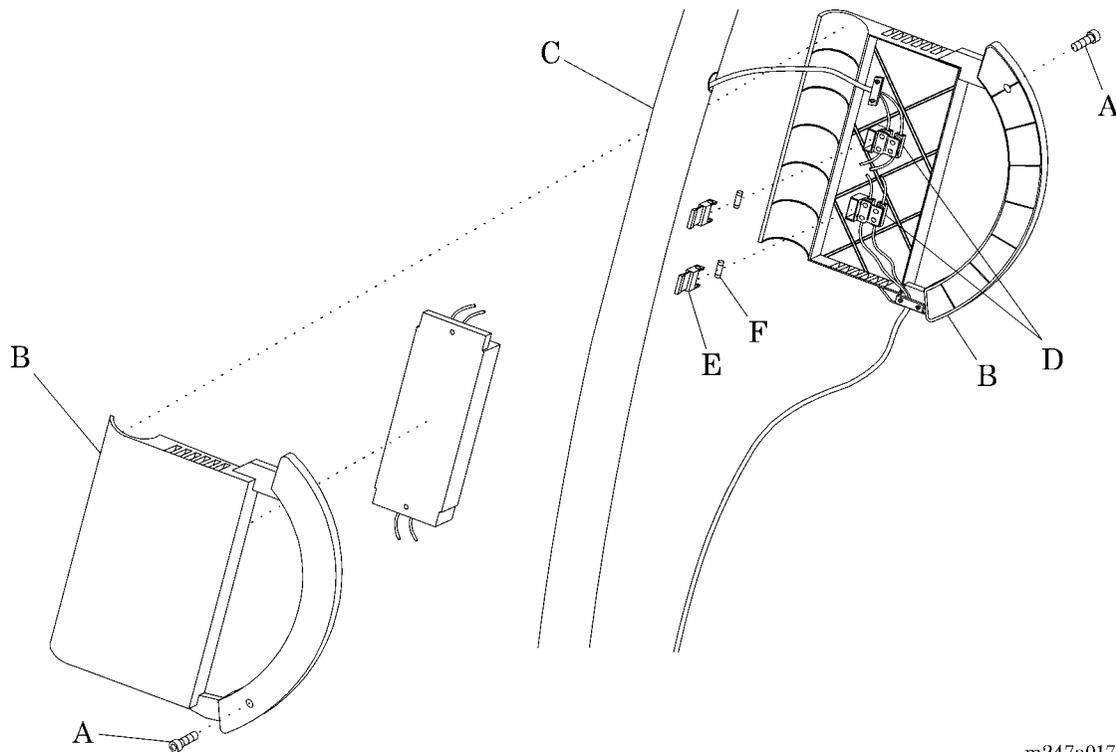


SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.

1. Unplug the unit from its power source.
2. Using a T10 Torx® wrench, remove the two screws (A) from the transformer housing (B).
3. Remove both halves of the transformer housing (B) from the upright pole (C).
4. Remove the fuse holder (E) from the terminal block (D).

Figure 4-11. Fuse



m247a017

1. Torx® is a registered trademark of Textron, Inc.

5. Remove the fuse (F) from the fuse holder (E).

Replacement

1. Assemble in reverse order.
2. After completing a repair of the Prima™ Procedural Light, perform the preventive maintenance checks to make sure the unit is in proper operating condition. See “Preventive Maintenance Schedule” on page 6-7.

Chapter 5

Parts List

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NOTES:

Warranty

HILL-ROM, INC. LIMITED WARRANTY

Hill-Rom, Inc. (Hill-Rom) has a long tradition of providing superior products and service to our customer. Our goal is "Total Customer Satisfaction". In that spirit, Hill-Rom is proud to offer the following warranty.

GENERAL WARRANTY (APPLICABLE UNLESS A SPECIFIC WARRANTY IS LISTED)

Hill-Rom warrants to the original purchaser that its products and replacement parts shall be free from defects in material and workmanship for a period of one (1) year from date of delivery. Hill-Rom's obligation under this warranty is expressly limited to supplying replacement parts and/or service for, or replacing, at its option, any product which is, in the sole discretion of Hill-Rom, found to be defective. In addition to the foregoing one year warranty, Hill-Rom warrants to the original purchaser that the frame and welds on its products will be free from structural defects for the life of the product. Any product upgrade or modification initiated by Hill-Rom does not affect the original product warranty.

SPECIFIC WARRANTIES

MATTRESS WARRANTIES

Hill-Rom warrants to the original purchaser that its mattress product shall be free from defects in material and workmanship for a period of two (2) years from date of delivery. However, electro mechanical mattress components (compressors, valves, printed circuit boards, hoses, and couplers) are covered by the general one (1) year warranty.

EXPENDABLES WARRANTIES

A sixty (60) day limited warranty from date of delivery applies to expendable parts such as cushions, coverlets, software diskettes, locator badge batteries, dome light incandescent bulbs, overhead fluorescent tubes, heating elements, temperature probes, filter sheets, and microspheres. This warranty is limited to replacement of the parts covered.

TO OBTAIN PARTS AND SERVICE

In the United States, call Hill-Rom Technical Support Department at (800) 445-3720, Monday through Friday. In Canada, call Hill-Rom Technical Support Department at (800) 267-2337, Monday through Friday. Outside the United States and Canada, call your authorized Hill-Rom Distributor. In order to expedite service, we request you furnish the following information: customer identification number, product model number, serial number, and description of problem. A qualified specialist will provide, via telephone (United States and Canada), or FAX (Outside the United States and Canada), troubleshooting assistance for facility personnel and provide necessary parts to make repairs. If troubleshooting determines the need for on-site technical service, a qualified service representative will be dispatched. Replacement of non-technical items will be the responsibility of the customer. If requested by Hill-Rom, products or parts for which a warranty claim is made shall be returned prepaid to Hill-Rom's factory.

OUT OF WARRANTY EXCHANGE POLICY

After the expiration of the original warranty, upon request, Hill-Rom will ship as a replacement, components such as selected: motors and printed circuit boards, for like units returned to Hill-Rom by the original purchaser at a substantial savings. Please call Hill-Rom Technical Support Department for current pricing.

PARTS AVAILABILITY POLICY

Hill-Rom will offer parts for new and remanufactured products for ten (10) years from date of sale; for communications products for five (5) years from date of sale.

Note: Some original component parts and assemblies may not be available; functional equivalents may be substituted.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE. HILL-ROM'S OBLIGATION UNDER THESE WARRANTIES SHALL NOT INCLUDE ANY LIABILITY FOR LOSS OF PROFITS, DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES OR DELAYS.

Some states, provinces, or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply. Any improper or negligent use, any alterations or repairs not in accordance with Hill-Rom's manuals or performed by others in such manner as in Hill-Rom's sole judgment affects the product materially and adversely, shall void these warranties. These warranties do not cover failures due to misuse, abuse, neglect, or lack of routine maintenance. No employee or representative of Hill-Rom is authorized to change these warranties in any way or grant any other warranty unless in writing and signed by a Hill-Rom officer. These warranties provide specific legal rights; but, there may be other available rights, which vary from state to state, province to province, or country to country.

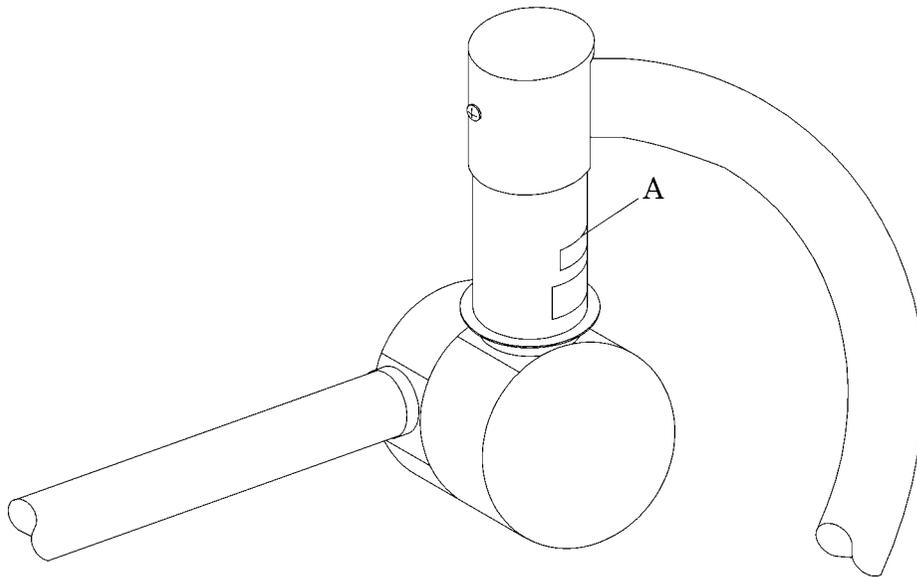
Revised October 20, 1998

NOTES:

Service Parts Ordering

Using the parts lists in this manual, identify the part number(s) you require. Find the product number and serial number on the product identification label (A) (see figure 5-1 on page 5-5).

Figure 5-1. Product Identification Label Location



m247a014

Call Hill-Rom Technical Support at (800) 445-3720 with the following information:

- Six-digit customer account number
- Purchase order number
- Product number
- Serial number
- Part number(s)

Hill-Rom also provides a fax number to promptly order parts, request part prices and availability, or follow up on a service order. The fax number is (812) 934-8472.

To order parts, a \$40.00 minimum will prevent a charge for processing your order.

Terms:

- Net 30 days
- F.O.B. Batesville, IN
- Prepaid shipping charges added to invoice
- All orders shipped UPS ground unless specified

Address all inquiries to:

ATTN TECHNICAL SUPPORT—PARTS
HILL-ROM, INC.
1069 STATE ROUTE 46 E
BATESVILLE IN 47006-9167

Address all return goods to:

ATTN SERVICE STORES
DISTRIBUTION CENTER DOOR D23
HILL-ROM, INC.
COUNTY ROAD 300E
BATESVILLE IN 47006-9167

NOTE:

To reduce the possibility of delays or incorrect billings, **do not** return any items without a Return Material Authorization (RMA) number. When a return is requested, an RMA packet is included with each order. This packet includes an RMA number, instructions, and a shipping label. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

Exchange Policy

The following are policies for in-warranty and out-of-warranty exchanges from Hill-Rom.

In-Warranty Exchanges

In some cases, Hill-Rom will request that parts/products be returned for inspection. When this occurs, you are expected to return parts/products within 30 days of receipt of the exchange part. If you fail to return the inoperative parts/products within the 30 day period, Hill-Rom will invoice your facility for the full selling price of the parts/products.

NOTE:

The preceding billing procedure pertains **only** to parts/products that Hill-Rom requests to be returned.

In some cases, the invoice accompanying the parts will show the full selling price (only for internal use at Hill-Rom). Do not confuse this price with your price.

Do not return any parts without an RMA number. When parts/products have been requested to be returned, Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720.

Out-of-Warranty Exchanges

You are expected to return the inoperative parts/products within 30 days of receipt of the exchange part. Hill-Rom will include an RMA packet with the parts/products shipment. If an RMA number is not available, obtain one by phoning Hill-Rom Technical Support at (800) 445-3720. If you fail to return the inoperative parts/products within 30 days, Hill-Rom will invoice your facility for the full selling price of the parts/products. Upon return of the inoperative parts/products, Hill-Rom will issue a credit for the discounted price.

Recommended Spare Parts

See table 5-1 on page 5-8 for a recommended spare parts list to service one unit.

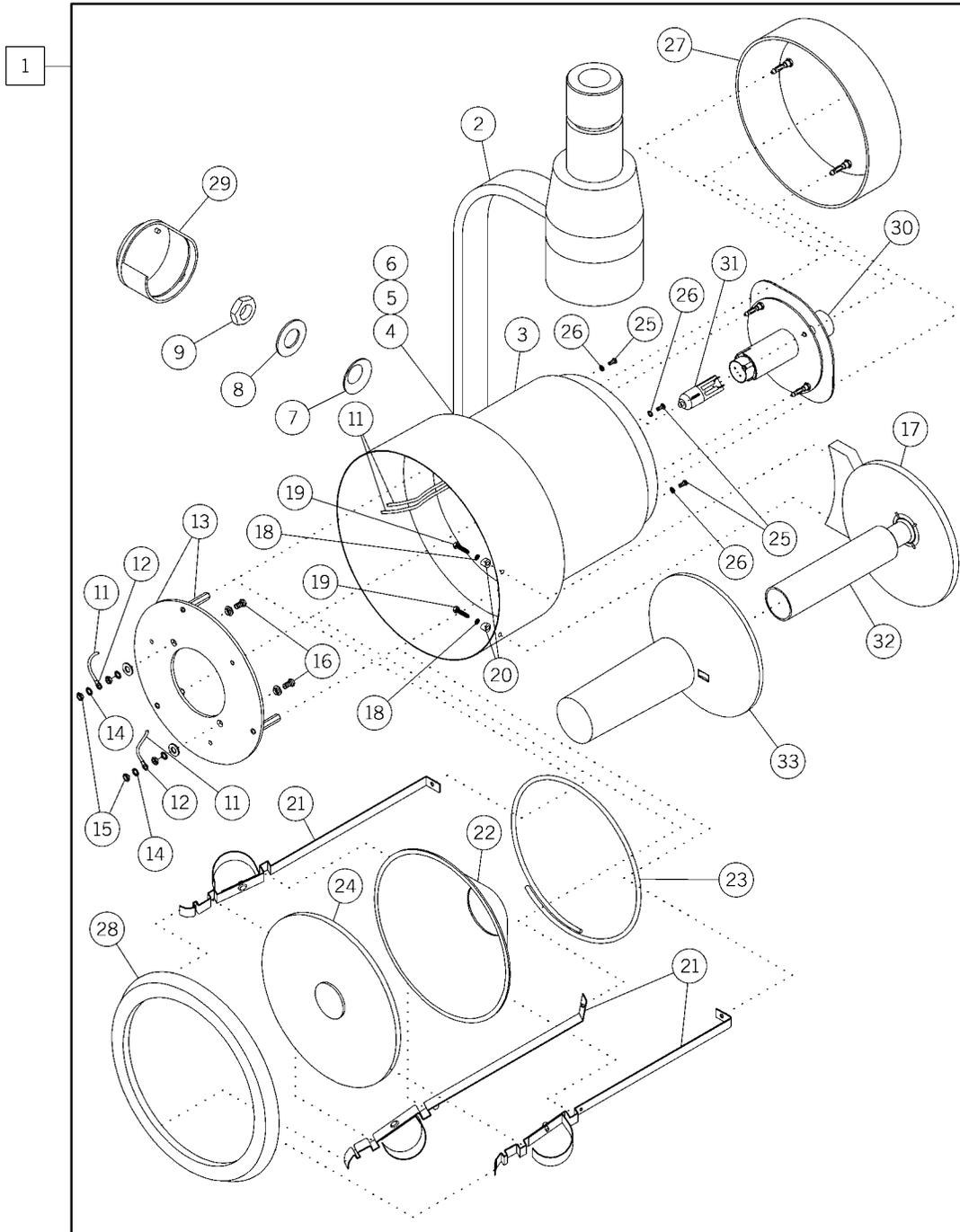
Table 5-1. Recommended Spare Parts

Part Number	Quantity	Description
69141 (7925)	1	Lamp, quartz halogen
420823 (7925)	1	Retaining ring removal/installation tool

NOTES:

Lamp Head/Yoke Assembly

Figure 5-2. Lamp Head/Yoke Assembly



m247a015

Table 5-2. Lamp Head/Yoke Assembly

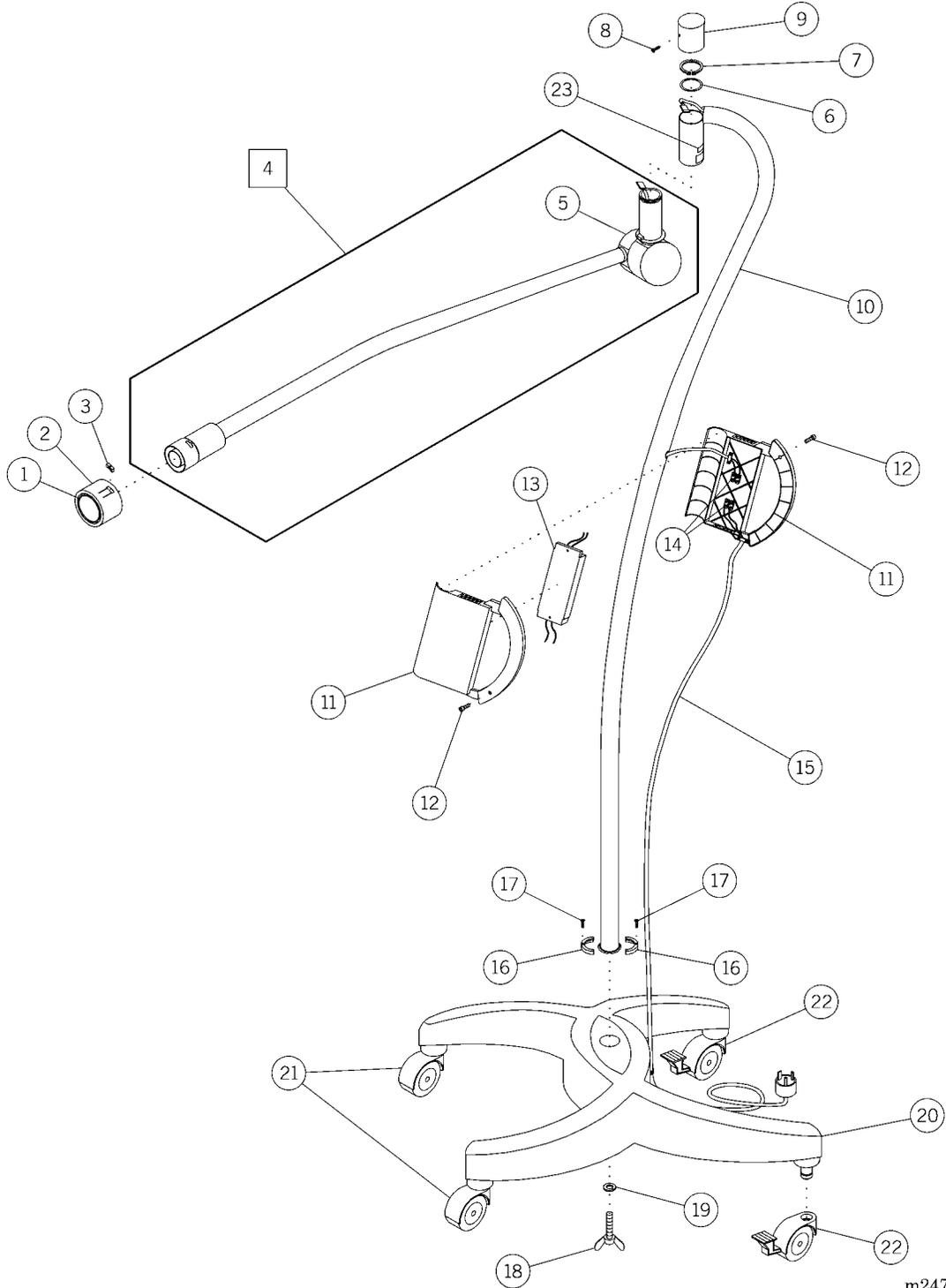
Item Number	Part Number	Quantity	Description
1	64927 (7925)	1	Lamp head/yoke assembly
2	64954 (7925)	1	Yoke subassembly
3	64955 (7925)	1	Housing subassembly
4	64956 (7925)	1	Pivot, lower yoke, small
5	64985 (7925)	1	Washer
6	64957 (7925)	1	Washer, cap retention, small
7	64958 (7925)	1	Washer, belleville, spring
8	64959 (7925)	1	Washer
9	64960 (7925)	1	Nut, hex
10			
11	64962 (7925)	2	Insulation, #8 fiberglass sleeve
12	64963 (7925)	2	Connector, crimp, 1/4" closed loop
13	64964 (7925)	1	Main support plate subassembly
14	64965 (7925)	5	Lockwasher
15	64966 (7925)	3	Nut, 1/4"—32 hex
16	64967 (7925)	3	Banana jack
17	64968 (7925)	1	Handle mount
18	64969 (7925)	2	Lockwasher
19	64970 (7925)	2	Screw
20	64971 (7925)	2	Spacer
21	64972 (7925)	3	Clip subassembly
22	64973 (7925)	1	Reflector, dichroic glass
23	64974 (7925)	1	Clamping ring
24	64975 (7925)	1	Lens subassembly
25	64976 (7925)	3	Screw, pan head
26	64977 (7925)	3	Lockwasher, external tooth
27	64978 (7925)	1	Rear cover subassembly
28	64979 (7925)	1	Bezel
29	64980 (7925)	1	Cap, yoke, small
30	64981 (7925)	1	Lamp holder subassembly
31	69141 (7925)	1	Lamp, quartz halogen

Item Number	Part Number	Quantity	Description
32	64983 (7925)	1	Handle mount post
33	64984 (7925)	1	Handle, removable sterile

NOTES:

Floor Stand

Figure 5-3. Floor Stand



m247a016

Table 5-3. Floor Stand

Item Number	Part Number	Quantity	Description
1	64925 (7925)	1	O-ring
2	64926 (7925)	1	Collar, plastic
3	64928 (7925)	1	Keeper lock, metal
4	64906 (7925)	1	Rotating arm assembly
5	64907 (7925)	1	Arm cover, plastic
6	64923 (7925)	1	Washer, flat
7	64922 (7925)	1	Retaining ring
8	64921 (7925)	1	Screw, oval head
9	64924 (7925)	1	Cover, upright pole
10	64908 (7925)	1	Upright pole assembly
11	64952 (7925)	1	Transformer housing
12	64953 (7925)	2	Screw
13	69145 (7925) or 69144 (7925)	1 1	Transformer, 120 VAC model Transformer, 230 VAC model
14	64911 (7925) or 69142	1 2	Terminal block, 230 VAC model Terminal block, 120 VAC model
15	69143 (7925) or 64914 (7925)	1 1	Power cord, 120 VAC model, grounded Power cord, 230 VAC model
16	64919 (7925)	2	Upright locks, plastic
17	64920 (7925)	2	Screw
18	64918 (7925)	1	Wing bolt
19	64917 (7925)	1	Lockwasher
20	64912 (7925)	1	Base assembly
21	64915 (7925)	2	Caster, free swivel
22	64916 (7925)	2	Caster, with brake
23	69146 (7925)	1	Label, product identification

NOTES:

Chapter 6

General Procedures

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NOTES:

Cleaning and Care



SHOCK HAZARD:

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



SHOCK HAZARD:

Unplug the unit from its power source. Failure to do so could result in personal injury or equipment damage.



SHOCK HAZARD:

Do not expose the unit to excessive moisture that would allow for liquid pooling. Personal injury or equipment damage could occur.



WARNING:

The Prima™ Procedural Light operates at a high temperature. Allow the unit to cool for at least 30 minutes before performing any preventive maintenance or repair procedures. Failure to do so could result in personal injury.



CAUTION:

Do not use harsh cleansers/detergents, such as scouring pads and heavy duty grease removers, or solvents, such as toluene, xylene, and acetone. Equipment damage could occur.

If there is no visible soilage with possible body fluids, we recommend that you clean the unit with a mild detergent and warm water. If disinfection is desired, you may use a combination cleanser/disinfectant as explained in "Disinfecting" on page 6-4.

Steam Cleaning

Do not use any steam cleaning device on the Prima™ Procedural Light with the exception of the sterile handle. Excessive moisture can damage mechanisms in this unit.

Sterile Handle

Sterilize the handle utilizing steam at a minimum of 250°F (121°C) for at least 30 minutes in accordance with *ANSI/AAMI ST46 (1993): Good hospital practices, Steam sterilization and sterility assurance*, or equivalent method.

Cleaning Hard to Clean Spots

To remove difficult spots or stains, we recommend that you use standard household cleansers and a soft-bristled brush. To loosen heavy, dried-on soil, you may first need to saturate the spot.

Disinfecting

When there is visible soilage and between patients, we recommend that you disinfect the unit with a tuberculocidal disinfectant. (For customers in the US, the disinfectant should be registered with the Environmental Protection Agency.)

Dilute and use the disinfectant according to the manufacturer's instructions.

Component Handling



WARNING:

The Prima™ Procedural Light operates at a high temperature. Allow the unit to cool for at least 30 minutes before performing any preventive maintenance or repair procedures. Failure to do so could result in personal injury.



CAUTION:

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

Good handling practices must be followed when servicing the Prima™ Procedural Light. Mishandling can result in personal injury or damage to components. The following rules for handling should always be observed:

Allow the unit to cool for at least 30 minutes before performing any preventive maintenance or repair procedures.

Use a clean, dry cloth, when handling the lamp, the lens, and the reflector.

Lubrication Requirements



WARNING:

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



CAUTION:

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

Hill-Rom lubricates all joint and bearing surfaces on the Prima™ Procedural Light before each unit leaves the factory. If lubrication is required, use the following lubricant:

P/N SA0646 Teflon®¹ spray lubricant (dry aerosol spray can). Use anywhere light needs lubrication.

1. Teflon® is a registered trademark of E. I. du Pont and de Nemours and Company.

Preventive Maintenance



WARNING:

Only facility-authorized maintenance personnel should perform preventive maintenance on the Prima™ Procedural Light. Preventive maintenance performed by unauthorized personnel could result in personal injury or equipment damage.



WARNING:

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 or equipment damage.

The Prima™ Procedural Light requires an effective maintenance program. We recommend that you perform annual preventive maintenance (PM) and testing for Joint Commission on Accreditation of Healthcare Organizations (JCAHO). PM and testing not only meet JCAHO requirements but will help ensure a long, operative life for the Prima™ Procedural Light. PM will minimize downtime due to excessive wear.

The following PM schedule guides the technician through a normal PM procedure on the Prima™ Procedural Light. During this PM process, check each item on the schedule, and make the necessary adjustments.

Follow the PM schedule with the corresponding PM checklist. This checklist is designed to keep a running maintenance history and subsequent repair costs for one Prima™ Procedural Light. However, your facility can modify this checklist or design another to fit your needs. Keeping close records and maintaining the Prima™ Procedural Light are two effective ways to reduce downtime and ensure the patient remains comfortable.

Preventive Maintenance Schedule

Table 6-1. Preventive Maintenance Schedule

Function	Procedure
Lamp	Ensure that the lamp is seated properly into the socket. See “Lamp” on page 4-7.
Lamp head/yoke assembly	Rotate and reposition the lamp head assembly. Verify that the assembly moves freely and stays in position.
Lens	Ensure the lens is mounted securely in the housing. Check the lens for cracks or breaks, and replace if necessary. See “Lens” on page 4-10.
Rotating arm	Move the rotating arm in all directions. Verify that the arm moves freely and stays in position. Adjust the spring tension if the arm drifts after positioning. See “Rotating Arm” on page 4-15.
Power cord	Check for frayed power cord and components. Replace the damaged parts if necessary. See “Power Cord” on page 4-20.
Performance	Plug the unit into an appropriate power source. Turn the switch to the <i>on</i> position. Check illumination of the lamp.
Electrical safety	Check the unit for normal appearance and operation. Remove the unit from service if it does not meet specifications.
Leakage Current Test	With the ground wire open, the Prima™ Procedural Light must be less than 65 microamperes to continue in service.
General appearance	Check the cleanliness and aesthetics of the Prima™ Procedural Light. See “Cleaning and Care” on page 6-3.

Preventive Maintenance Checklist

Table 6-2. Preventive Maintenance Checklist

Date														Function
Hill-Rom Company, Inc.	Manufacturer													Lamp
														Lamp head/yoke assembly
														Lens
														Rotating arm
														Performance
														Power cord
														Electrical safety
														Leakage Current Test
	Model Number													General appearance
	Serial Number													
Total Cost for This Page													Labor Time:	
													Repair Cost:	
													Inspected By:	
												Legend L=Lube C=Clean A=Adjust R=Repair or Replace O=Okay N=Not Applicable Remarks:		

Tool and Supply Requirements

The following tools are required to service the Prima™ Procedural Light:

- Phillips head screwdriver
- Small phillips head screwdriver
- Screwdriver
- Small screwdriver
- T10 Torx®¹ wrench
- Retaining ring removal/installation tool (provided)

1. Torx® is a registered trademark of Textron, Inc.

NOTES:

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Accessories

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Accessories

No accessories are available for the Prima™ Procedural Light.

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