XCEL® 400/700
Slit Lamp

User's Guide



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Contents

Warnings and Cautions 4
Symbol Information 6
Introduction
  Indications for Use 7
  Contraindications 7
Instrument Setup
  Unpacking Instructions 8
  Installation 9
    Voltage Selection 12
    Connect to Power Source 13
  Parts Identification 14
Instructions for Use
  Operating Procedure 16
    Focusing Eyepieces 16
    Magnification 17
    Slit Length 17
    Slit Width 18
    Slit Angle 18
    Filters 18
    Slit Rotation 19
    Illumination Inclination 19
    Performing and Examination 20
Cleaning & Maintenance
  Cleaning 21
    Forehead Band 21
    Chinrest 21
    Glide Plate 21
    Mirror 21
  Changing Bulbs 22
  Fuse Replacement 23
Troubleshooting
  Chart of Common Errors 24
Specifications
  Disposal 25
Warranty 26

Warnings & Cautions

Reichert Technologies (Reichert) is not responsible for the safety and reliability of this instrument when:

- Assembly, disassembly, repair, or modification is made by unauthorized dealers or persons.
- Instrument is not used in accordance with this User's Guide.

WARNING: AN INSTRUCTION THAT DRAWS ATTENTION TO THE RISK OF INJURY OR DEATH.



WARNING: UNITED STATES FEDERAL LAW AND EUROPEAN REGULATIONS REQUIRE THAT THIS DEVICE BE PURCHASED ONLY BY A PHYSICIAN OR A PERSON ACTING ON BEHALF OF A PHYSICIAN.

WARNING: THIS INSTRUMENT SHOULD BE USED IN STRICT ACCORDANCE WITH THE INSTRUCTIONS OUTLINED IN THIS USER'S GUIDE. THE SAFETY OF THE OPERATOR AND THE PERFORMANCE OF THE INSTRUMENT CANNOT BE GUARANTEED IF USED IN A MANNER NOT SPECIFIED BY REICHERT TECHNOLOGIES.

WARNING: DO NOT REPAIR OR SERVICE THIS INSTRUMENT WITHOUT AUTHORIZATION FROM THE MANUFACTURER. ANY REPAIR OR SERVICE TO THIS INSTRUMENT MUST BE PERFORMED BY EXPERIENCED PERSONNEL OR DEALERS WHO ARE TRAINED BY REICHERT SO THAT CORRECT OPERATION OF THIS INSTRUMENT IS MAINTAINED.

WARNING: MODIFICATIONS TO THIS INSTRUMENT ARE NOT ALLOWED. ANY MODIFICATION TO THIS UNIT MUST BE AUTHORIZED BY REICHERT SO THAT CORRECT OPERATION IS MAINTAINED OR SERIOUS INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: IF THIS INSTRUMENT IS MODIFIED, APPROPRIATE INSPECTION AND TESTING MUST BE CONDUCTED TO ENSURE CONTINUED SAFE USE OF THIS INSTRUMENT.

WARNING: TO AVOID RISK OF ELECTRIC SHOCK, THIS EQUIPMENT MUST ONLY BE CONNECTED TO A SUPPLY MAINS WITH PROTECTIVE EARTH OR DAMAGE TO THIS INSTRUMENT AND/OR INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: ENSURE THAT THE VOLTAGE APPLIED TO THE UNIT IS THE SAME AS THE VOLTAGE THAT IS INDICATED ON THE DATA PLATE OR DAMAGE TO THE INSTRUMENT AND/OR INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: THE INSTRUMENT MUST BE PLUGGED INTO AN OUTLET WITH AN EARTH GROUND. DO NOT REMOVE OR DEFEAT THE EARTH GROUND CONNECTION ON POWER INPUT CONNECTOR OR THE UNIT'S POWER CORD OF THIS INSTRUMENT OR DAMAGE TO IT AND/OR INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: THE EQUIPMENT OR SYSTEM SHOULD NOT BE USED ADJACENT TO OR STACKED WITH OTHER EQUIPMENT AND THAT IF ADJACENT OR STACKED USE IS NECESSARY, THE EQUIPMENT OR SYSTEM SHOULD BE OBSERVED TO VERIFY NORMAL OPERATION IN THE CONFIGURATION IN WHICH IT WILL BE USED.

WARNING: THIS INSTRUMENT IS NOT SUITABLE FOR USE IN THE PRESENCE OF FLAMMABLE ANESTHETIC MIXTURES, SUCH AS OXYGEN OR NITROUS OXIDE.

WARNING: BECAUSE PROLONGED INTENSE LIGHT EXPOSURE CAN DAMAGE THE RETINA, THE USE OF THE DEVICE FOR OCULAR EXAMINATION SHOULD NOT BE UNNECESSARILY PROLONGED, AND THE BRIGHTNESS SETTING SHOULD NOT EXCEED WHAT IS NEEDED TO PROVIDE CLEAR VISUALIZATION OF THE TARGET STRUCTURES. THIS DEVICE SHOULD BE USED WITH FILTERS THAT ELIMINATE UV RADIATION <400 NM) AND, WHENEVER POSSIBLE, FILTERS THAT ELIMINATE SHORT-WAVELENGTH BLUE LIGHT <420 NM).

Warnings & Cautions (continued)

CAUTION: AN INSTRUCTION THAT DRAWS ATTENTION TO THE RISK OF DAMAGE TO THE PRODUCT.



CAUTION: THE INTERNAL CIRCUITRY OF THE INSTRUMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESDS) THAT MAY BE SENSITIVE TO STATIC CHARGES PRODUCED BY THE HUMAN BODY. DO NOT REMOVE THE COVERS WITHOUT TAKING PROPER ESDS PRECAUTIONS.

CAUTION: PORTABLE AND MOBILE RF COMMUNICATIONS EQUIPMENT CAN AFFECT MEDICAL ELECTRICAL EQUIPMENT.
CAUTION: THIS INSTRUMENT IS NOT INTENDED TO BE CONNECTED TO EQUIPMENT OUTSIDE THE CONTROL OF REICHERT TECHNOLOGIES OR MUST BE TESTED TO AN APPLICABLE IEC OR ISO STANDARDS.

CAUTION: DO NOT USE SOLVENTS OR STRONG CLEANING SOLUTIONS ON ANY PART OF THIS INSTRUMENT AS DAMAGE TO THE UNIT MAY OCCUR. SEE MAINTENANCE SECTION FOR DETAILED CLEANING INSTRUCTION.

CAUTION: THIS INSTRUMENT IS NOT TO BE USED NEAR HIGH-FREQUENCY EMITTING SURGICAL EQUIPMENT.

CAUTION: THE USE OF ACCESSORIES OR CABLES OTHER THAN THOSE SPECIFIED, WITH THE EXCEPTION OF THOSE SOLD BY THE MANUFACTURER AS REPLACEMENT PARTS FOR THE INTERNAL COMPONENTS, MAY RESULT IN INCREASED EMISSIONS OR DECREASED IMMUNITY OF THE EQUIPMENT OR SYSTEM.

Symbol Information

Symbol Information

The following symbols appear on the instrument:


Consult Instructions for Use symbol indicating important operating and maintenance instructions that are included in this User's Guide


Caution Symbol indicating important information and maintenance instructions that are included in the User's Guide


Type B Applied Part


Protective Earth


Alternating Current Power


ON / OFF



Date of Manufacture

REF Catalog Number

SN Serial Number


Waste of Electrical and Electronic Equipment


Compliance to Medical Device Directive 93/42/EEC


Fragile Contents in Shipping Container - handle with care


Keep Dry - Package shall be kept away from rain



Authorized Representative in European Community


This Way Up - Indicates the correct upright position of package

Introduction

Congratulations on your purchase of the Xcel® 400/700 Slit Lamp.

This User's guide is designed as a training and reference manual for the operation and maintenance of the instrument. We recommend that you read it carefully prior to use and follow the instructions to ensure optimum performance of your new instrument. Properly trained eyecare professionals such as ophthalmologists, optometrists, opticians and eye care technicians should operate this instrument.

Please retain this manual for future reference and to share with other users. Additional copies can be obtained from your authorized Reichert dealer or from the Reichert Customer Service Department at:

Tel:716-686-4500
Fax:716-686-4555
Email: reichert.information@ametek.com

Indications for use

The Xcel 400/700 Slit Lamp is an AC-powered slit lamp biomicroscope that is intended for use in examining the anterior segment, from the corneal epithelium to the posterior capsule. It is used to aid in the diagnosis of diseases or trauma, which affect the structural properties of the anterior segment of the eye.

Contraindications

None.

Instrument Setup

Great care has been taken to deliver your new Xcel Slit Lamp to you safely. The container and packaging was specially designed to transport this unit. Please retain the packaging if future transportation is required.

Unpacking Instructions

1. The Slit Lamp has been carefully packaged to prevent damage in shipping.

Note: If transportation of the Slit Lamp is required in the future, package the Slit Lamp in the same way it was received.

2. Open the box and remove the piece of Top Foam and the User's Guide that is sitting in it.

Note: If the Slit Lamp is purchased for 230V use, there will be a 230V power cord in the top foam along with the User's Guide.

3. Remove the following parts from the first layer of packing foam:
   - Base
   - Illumination Assembly and Arm (attached)
   - Headrest Assembly
   - Microscope Body
   - All Accessories (packaged in a bag)

Note: The Headrest Assembly and Microscope Body are packaged in separate cardboard boxes.

4. Remove the first layer of packing foam.
5. Remove the protective layer of square foam.
6. Remove the following parts from the second layer of packing foam:
   - Table Assembly (with Power Supply attached)
   - Power Cord

Note: The following parts should come with your Slit Lamp:

XCEL 400/700 Box Contents
- XCEL 400/700 Slit Lamp (P/N 12580/12562)
- User's Guide (P/N 12560-101)

Accessories
- Focusing Rod (P/N 100202034)
- 5mm Hex Wrench (P/N X54398)
- Dust Cover (P/N 4013100)
- Breath-shield (P/N 100206117)
- Halogen Lamp (P/N 12588)
- Guide-rail Covers (P/N 100101135)
- 2-Time-Lag (T 0.40 A L 250V), 5x20mm, RoHS replacement fuses (P/N WFAG20038)
- 2-Packages Chin Rest Paper (P/N 12570)
- Swivel Post Cover (P/N 12550)

7. Place the packing materials in a safe place so that if transportation is required in the future, it will be available.
8. Read the User's Guide before operating this instrument.

Instrument Setup (continued)

Installation

1. Turn the Table Top face down on a secure surface.
2. Place the Head Rest Assembly on the bottom of the Table Top so that the screw holes line up with the threaded screw holes in the Table Top. Refer to Figure IN-01.
3. Secure the Head Rest Assembly to the Table Top with the two Allen Cap Screws. Refer to Figure IN-01.

Note: Secure the Ground Wire that is attached to the Power Supply Assembly to the Allen Cap Screw that is closes to the Power Supply. Refer to Figure IN-01.

4. Place the Table Top right side up on to the Slit Lamp Arm of the Stand it is being installed on, and secure it to the Stand.

Note: Refer to the User's Guide and Installation Instructions of the Stand you are using for information regarding securing the Table Top to the arm.

5. Remove the Allen Screw on the bottom of the Illumination Assembly and Arm. Refer to Figure IN-02.

Note: The Illumination Assembly and Arm are connected as one piece.

6. Mount the Illumination Assembly and Arm onto the Base and secure it with the Allen Screw. Tighten it using the 5mm Hex Wrench. Refer to Figure IN-02.

Note: There is a Notch in the Base, and a Slot in the Illumination Assembly. Align the Illumination Assembly and Arm so the Notch goes into the Slot. If the Notch is not aligned properly, the Slit Lamp will not sit flush, and won't be able to focus properly. Refer to Figure IN-03.

-continued-

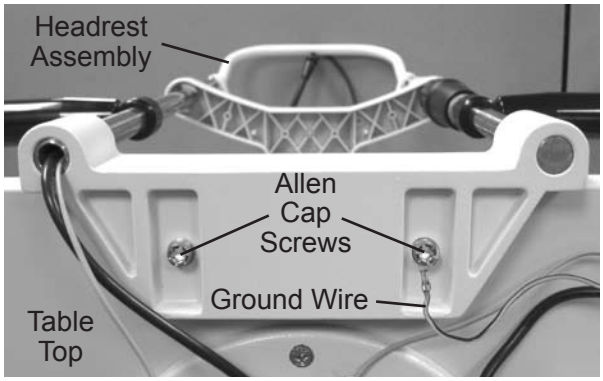

Figure IN-01 Allen Cap Screws

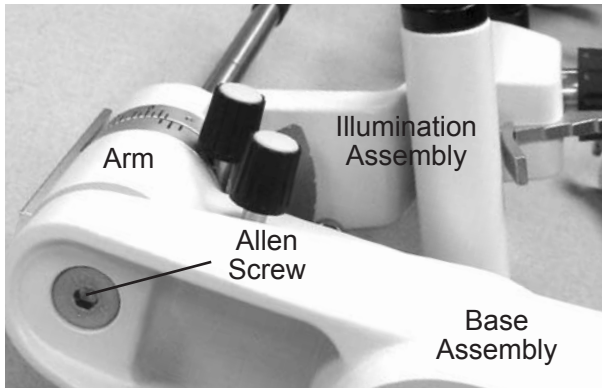

Figure IN-02 Allen Screw

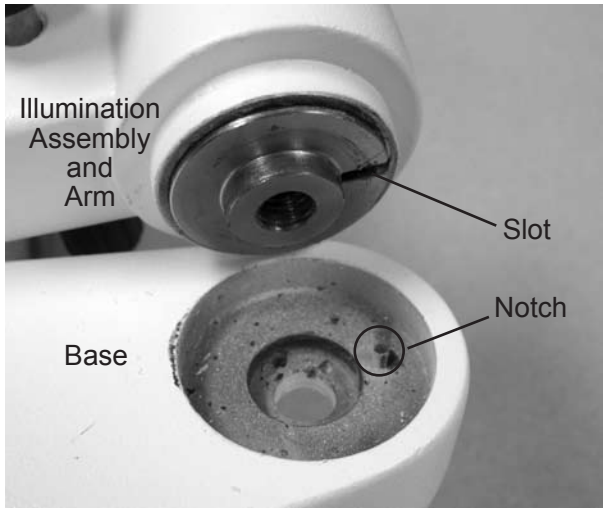

Figure IN-03 Line Up Notch

Instrument Setup (continued)

Installation (continued)

7. Position the Base on the Table so that the toothed wheels mate with the teeth on the guide rails. Refer to Figure IN-04.

Note: When the instrument is pushed forward or pulled backwards, the wheels should roll freely and evenly over the guide-rails.

8. Install the Guide Rail Covers by sliding them into the bottom of the Guide Rails. Refer to Figure IN-04.
9. Install the Microscope Assembly by sliding it onto the Microscope Arm until it reaches the Microscope Stop. Refer to Figures IN-05 and IN-06.

Note: The Microscope Stop is calibrated when the instrument is manufactured. Do **NOT** adjust the Microscope Stop or your Slit Lamp will not be able to focus properly.

10. Secure the Microscope Assembly by tightening the Microscope Lock Knob. Refer to Figure IN-05.

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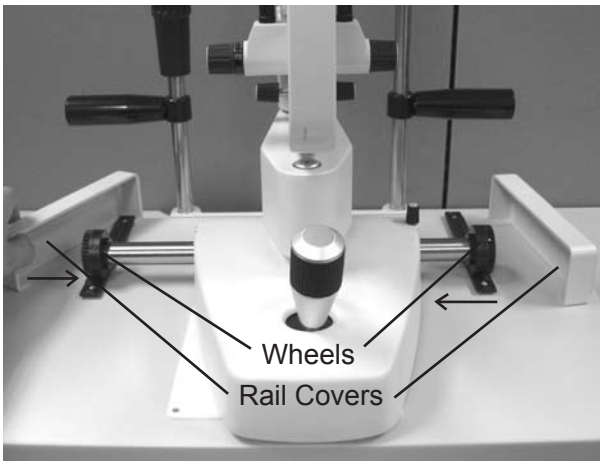

Figure IN-04 Rail Covers Installed

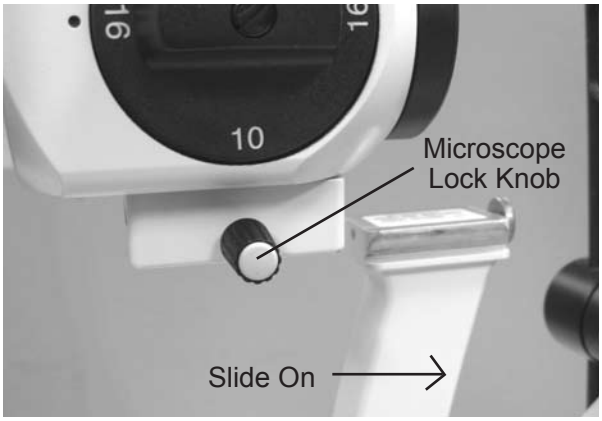

Figure IN-05 Pull Assembly Off/On



Figure IN-06 Microscope Stop

Instrument Setup (continued)

Installation (continued)

11. Connect the Lamp Assembly to the Head Rest Assembly by connecting the Lamp Assembly Harness to the Lamp Assembly. Refer to Figure IN-07.

Note: Line up the prongs in the Lamp Assembly with the holes in the Harness when connecting. Secure it by turning the metal Collar clockwise. Refer to Figure IN-08.

12. Connect the Lamp Assembly Plug to the Power Supply Assembly by plugging it in, then turning the plastic collar clockwise, securing the plug. Refer to Figure IN-09.
13. Connect the Fixation Light Plug to the Power Supply Assembly by plugging it in. Refer to Figure IN-09.

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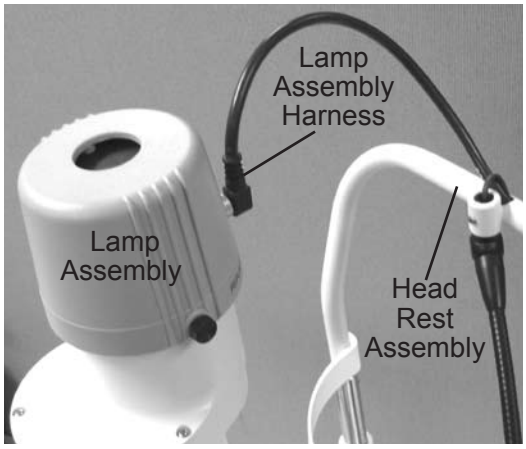

Figure IN-07 Harness Connected

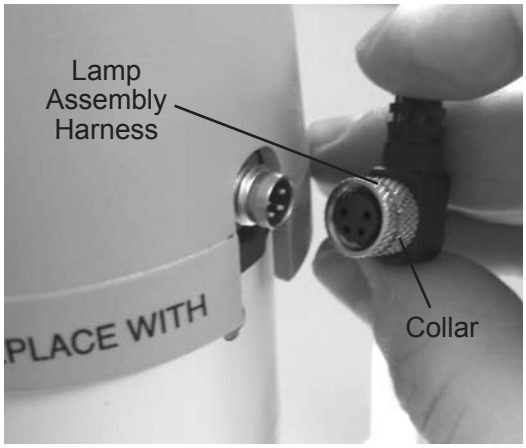

Figure IN-08 Harness Connection



Figure IN-09 Plugs

Instrument Setup (continued)

Installation (continued)

Voltage Selection

The XCEL slit lamps can be operated at 120 or 230 VAC. However, in order to ensure proper protection of the internal circuitry, the installed fuses should correspond with the operating voltage.

For 120V operation, the fuses are Time-Lag (T 0.40 A L 250V), 5x20mm, RoHS fuses. For operation at 230VAC, the fuses are Time-Lag (T 0.20 A L 250V), 5x20mm, RoHS. Check the fuse holder to ensure the correct operating voltage shows in the window.

To ensure proper operation, check the fuse voltage setting on the power input module. The factory setting is 120V. If 230V operation is desired, follow the procedure below.

1. Remove the Fuse Holder by pressing in on the left tab to release the Fuse Holder from the Power Cord Holder. Refer to Figures IN-10 and IN-11.

Note: It is easiest to remove the Fuse Holder with a pair of tweezers to press in the tab.

Note: There are two identical fuses in the fuse holder. Both fuses are Time-Lag (T 0.40 A L 250V), 5x20mm, RoHS fuses. Refer to Figure IN-12.

2. Remove the white Power Selector from the Fuse Holder and rotate the Power Selector to the desired max power value. Refer to Figure IN-13.

Note: There are four Max Power settings; 100, 120, 230 and 240. Refer to Figure IN-13.

3. Install the Power Selector fuse holder.

Note: Ensure the desired max power is displayed in the window on the Fuse Holder. Refer to Figure IN-14.

4. Install the Fuse Holder in the Power Cord Holder.

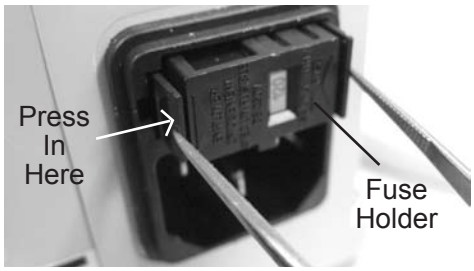

Figure IN-10 Remove Holder

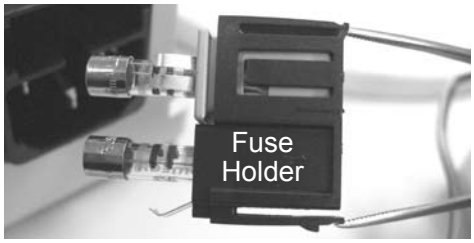

Figure IN-11 Holder Removed

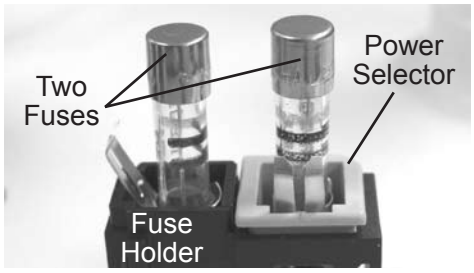

Figure IN-12 Two Fuses

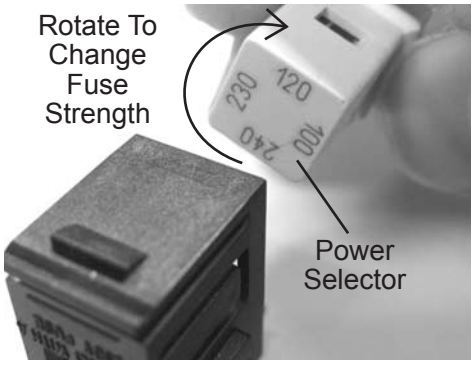

Figure IN-13 Power Selector

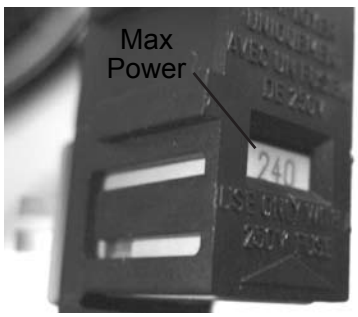

Figure IN-14 Max Power

Instrument Setup (continued)

Installation (continued)

Connect to Power Source

WARNING: CARE MUST BE TAKEN TO ARRANGE THE CABLES FOR THE ACCESSORIES SUCH THAT THEY DO NOT PRESENT A TRIPPING HAZARD TO THE EXAMINER OR A DANGER TO THE PATIENT.

WARNING: POSITION THIS INSTRUMENT SO THAT IT IS NOT DIFFICULT TO OPERATE THE DISCONNECTION DEVICE (PLUG).

1. Connect the Power Cord to the Power Supply.
2. Plug the Power Cord into a properly volted outlet.
3. Turn the power on by setting the On/Off switch to on.

Note: At any point, the power can be shut off by setting the On/Off switch to Off.

Instrument Setup (continued)

Parts Identification

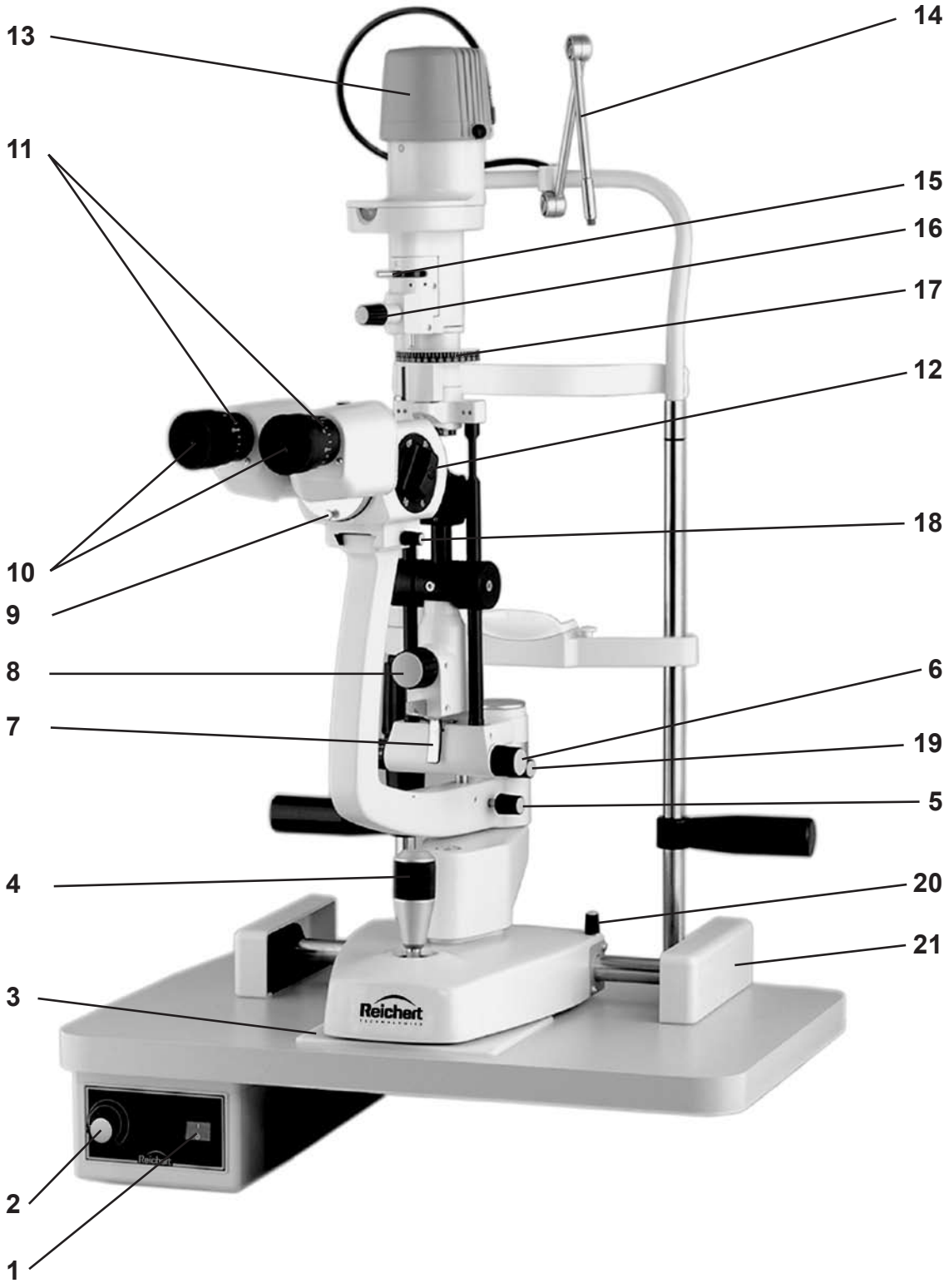

Figure PL-1 Parts List Xcel 400/700

Instrument Setup (continued)

Parts Identification (continued)

1. **On/Off Switch**
   Turns the power to the Slit Lamp on or off.
2. **Continuous Voltage Adjustment Knob**
   Adjusts the amount of power going to the Slit Lamp Bulb, therefore adjusting the intensity of the light.
3. **Glide Plate**
   Allows for free movement of the base.
4. **Joystick**
   Adjusts the horizontal and vertical movement of the Slit Lamp.
5. **Microscope Arm Lock-Knob**
   Secures the Microscope Arm in place.
6. **Slit Width Control**
   Adjusts the width of the slit.
7. **Inclination Angle Latch Release**
   Releases the Illumination Tower from a locked, angled position and allows it to go back to rest.
8. **Centering Knob**
   Adjusts the projected light.
9. **Breath-Shield Mount**
   Where the Breath Shield is hung.
10. **Eyepieces**
    Where the operator would look through to perform an examination.
11. **Focusing Rings**
    Allow the operator to focus properly on the eye.
12. **Magnification Dial**
    Adjusts the level of magnification.
13. **Lamp Housing Cover**
    Cover that protects the bulb.
14. **Fixation Light**
    Provides something for the patient to focus on so the eyes do not move during examination.
15. **Filter Lever**
    Allows for the changing of the filers.
16. **Slit Rotation/Length Dial**
    Changes the angle and length of the Slit.
17. **Slit Rotation Scale**
    Displays the angle of the rotation of the light being projected.
18. **Microscope Lock-Knob**
    Secures the microscope in place.
19. **Illumination Arm Lock-Knob**
    Secures the Illumination Arm in place.
20. **Instrument Base Lock-Knob**
    Secures the Base in place.
21. **Guide-Rail Covers**
    Secures the Base to the Rails by not allowing the base to move off of the Rails.

Instructions for Use

Operating Procedure

Focusing Eyepieces

Before the Slit Lamp can be used for an examination, the microscope must be focused on the Fixation Rod in order to properly focus on the eye during an examination.

Note: Anytime there is a new User for the Slit Lamp, the microscope must be focused on the Fixation Rod. Each User will have different eyesight, and the Microscope must be focused accordingly.

1. Install the Fixation Rod into the slit lamp by seating it fully into the Fixation Rod Holder. Refer to Figure IU-01.

Note: Orient the Fixation Rod with the flat side facing the User. Refer to Figure IU-01.

2. Turn on the slit lamp and adjust the slit so that the thinnest slit it projected onto the Fixation Rod. Refer to Figure IU-02.

Note: The thinnest line will allow for greater accuracy.

3. Adjust the Slit Lamp so that the light can be viewed through the Oculars.

Note: The height of the Slit Lamp may need to be adjusted. Rotate the Joystick to adjust the height of the Microscope until the proper height is reached. Refer to Figure IU-03.

4. When the Slit Lamp is in position, lock the Base to prevent movement. Refer to Figure IU-03.
5. Look through the Oculars and focus each Eyepiece onto the Slit.

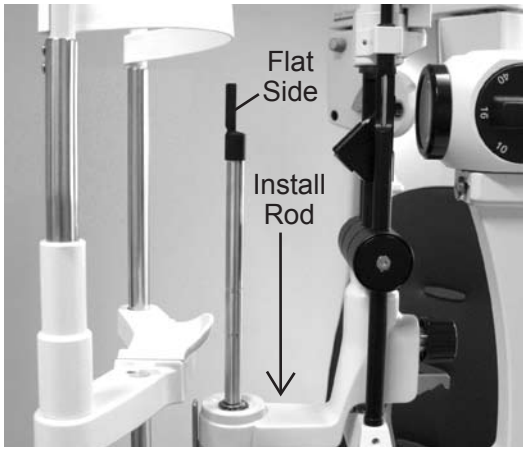

Figure IU-01 Install Fixation Rod

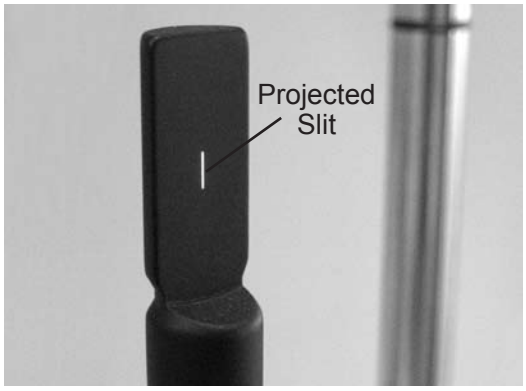

Figure IU-2 Focus on Slit

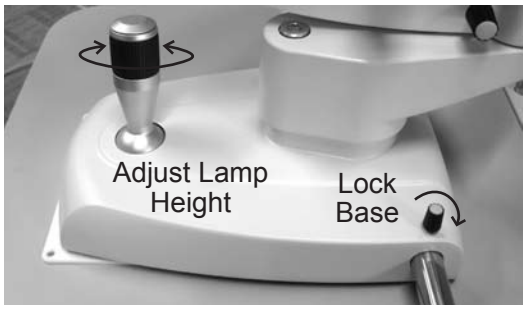

Figure IU-03 Adjust Height

Operating Procedure (continued)

Magnification

Adjust the magnification settings by dialing in the desired setting. Refer to Figure IU-04.

Note: There are three different magnification settings for the Xcel 400 (10X, 16X, and 25X) lamps and 5 different settings for the Xcel 700 (6X, 10X, 16X, 25X and 40X). The settings are engraved numbers on the Galilean Dial on the on the microscope, and index when set properly.

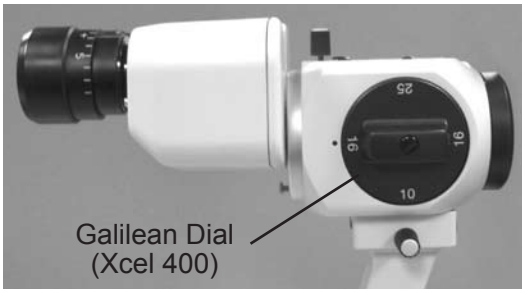

Figure IU-04 Galilean Dial

Slit Length

The slit length can be adjusted by turning the Slit Length/Rotation Dial. Refer to Figure IU-05.

Note: The continuous length adjustment shows the changing length in mm on the dial.

Note: The slit length options are 12mm, 9mm, 5mm, 3mm, 1mm, .03mm, continuous, and 12mm with a Cobalt Blue filter.

Note: After the 12mm setting in the continuous slit length setting, there will be a 12mm slit with a cobalt blue filter in place.

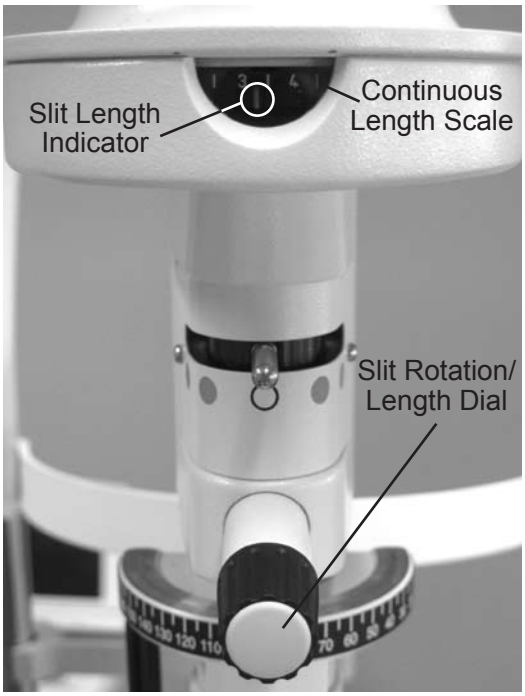

Figure IU-05 Slit Length 400/700

Instructions for Use (continued)

Operating Procedure (continued)

Slit Width

The slit width can be adjusted by turning the Slit Width Knobs which are located on either side of the lamp. Refer to Figure IU-06.

Note: The Slit Width Knob is located right above the Slit Lamp Arm.

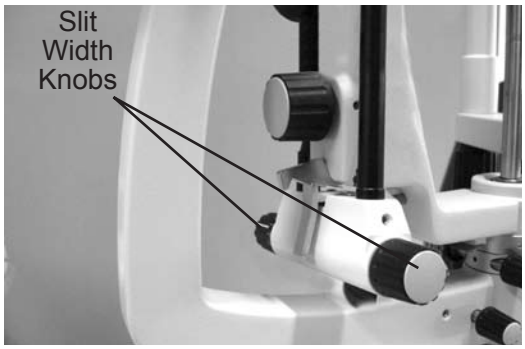

Figure IU-06 Slit Width 400/700

Slit Angle

By grasping the Slit Rotation/Length Dial, the slit can be rotated from 0^0 to 180^0. Refer to Figures IU-07 and IU-08.

Note: The slit positions are click-stopped in 45^0 increments and stopped at 0^0 and 180^0, but you can stop at any angle.

Note: This rotates the slit from the vertical position to the horizontal position in either direction. Refer to Figure IU-08.

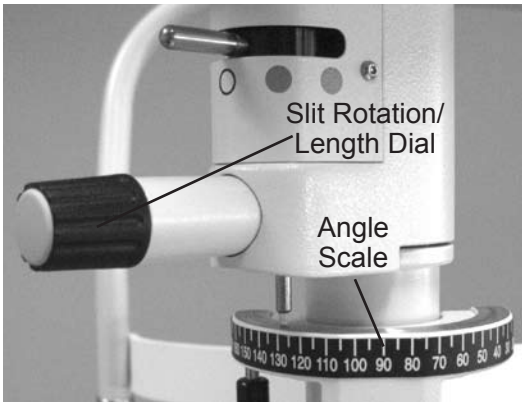

Figure IU-07 Slit Angle 400/700

Filters

The filters can be changed by moving the Filter Knob either right or left. Refer to Figure IU-09.

Note: When moving the Filter Knob, the filters will fully index, ensuring the Filters are properly in place.

COLOR INDICATOR	ACTIVE FILTER
BLUE	Cobalt Blue
ORANGE	None
WHITE	Heat Absorbing
GRAY	Neutral Density
GREEN	Red-Free

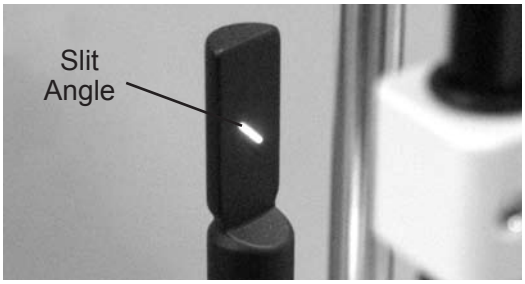

Figure IU-08 Slit Angle

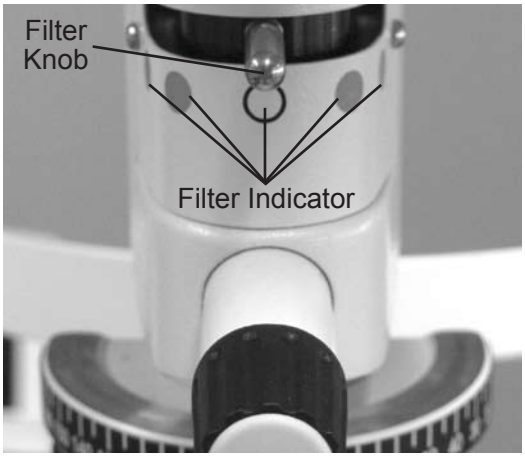

Figure IU-09 Filters

-continued-

Operating Procedure (continued)

Slit Rotation

Slit rotation is achieved by swinging the Lamp Arm to the left or right. Refer to Figure IU-10.

Note: The degree of rotation is indicated by the scale above the Arm. Refer to Figure IU-11.

Illumination Inclination

Tilt the Illumination Assembly by pressing the Inclination Latch Release and pulling the base of the Illumination Assembly toward the operator. Refer to Figure IU-12.

Note: The illumination unit can be inclined in the horizontal plane in 5^0 steps for a total of 20^0. Refer to Figure IU-12.

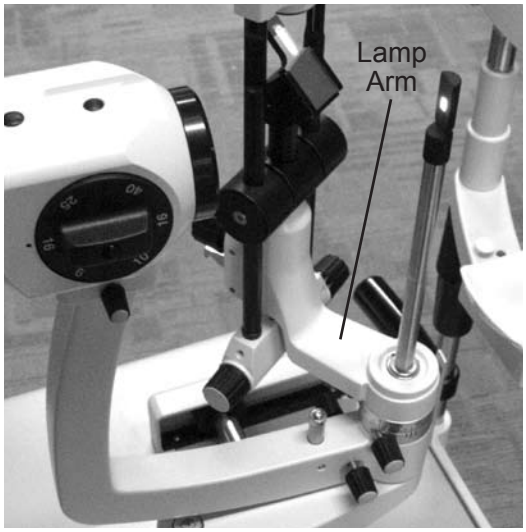

Figure IU-10 Slit Rotation

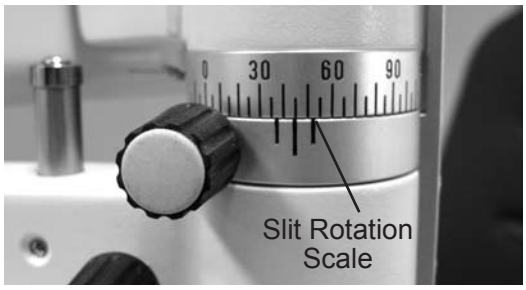

Figure IU-11 Slit Rotation Scale

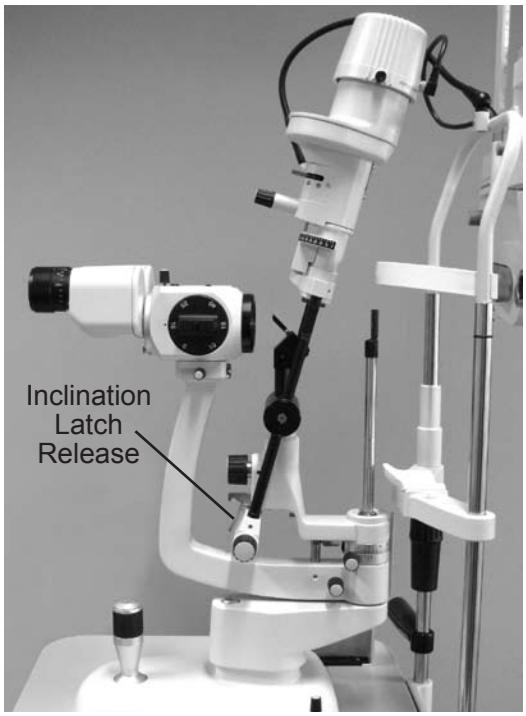

Figure IU-12 Inclination

Operating Procedure (continued)

Performing an Examination

The following should be done after proper focusing of the Eyepieces on the Focusing Rod is done.

1. Position the patient by adjusting the chinrest height by turning the Control Knob on the post of the Headrest Assembly until the patient's canthus is in line with the canthus mark on the Headrest Post. Refer to Figures IU-13 and IU-14.
2. Turn the power on by setting the On/Off switch to on. Refer to Figure IU-15.

Note: Brightness can be adjusted by rotating the Continuous Voltage Adjustment Knob. Refer to Figure IU-15.

Note: The maximum position is for intermittent use only. Continuous use will shorten the bulb life.

Note: To increase the life of the bulb, always turn the Illumination Level all the way down before turning on the lamp.

3. Adjust the Microscope elevation by rotating the Joystick and observing the slit image through the microscope until the slit is centered on the patient's cornea.
4. Hold the Joystick firmly and at a slight forward angle to move the Slit Lamp forward until the slit appears sharply on the cornea.

Note: The accuracy of this rough adjustment should be checked by the naked eye. The fine adjustment is performed while observing the slit through the microscope.

5. When the Slit Lamp is in position, lock the Base by tightening the Base Locking Screw.

Note: Lock the base whenever the lamp is not in use.

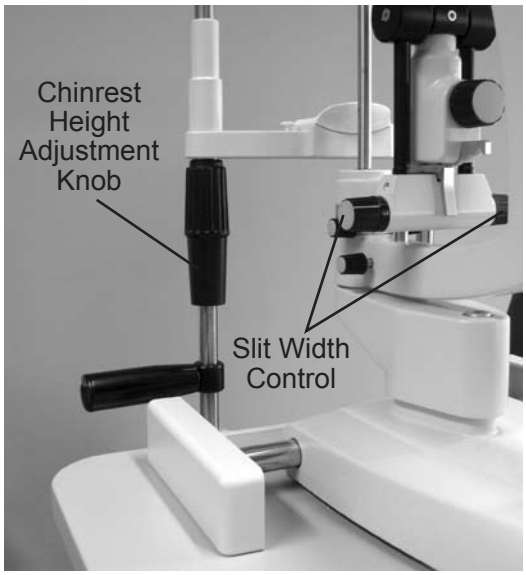

Figure IU-13 Adjust Chinrest

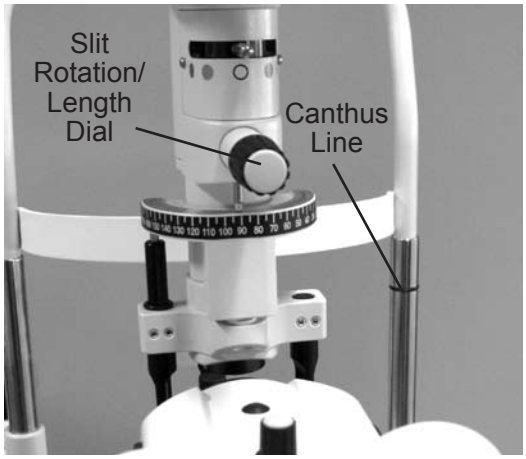

Figure IU-14 Canthus Line



Figure IU-15 Power Supply

Cleaning & Maintenance

Cleaning

Forehead Band
To sterilize the Xcel slit lamp for the next patient, clean the Forehead Band with an alcohol wipe. Refer to Figure MM-01.

Chinrest
To sterilize the Xcel slit lamp for the next patient, clean the Chinrest with an alcohol wipe. Refer to Figure MM-02.

Glide Plate
Clean the Glide Plate with a soft cloth moistened with a mild soap solution (1 cc of liquid dish soap to one liter of clean, filtered water (filtered below 5 microns)).

Mirror
To clean the mirror of dust, spray the mirror with canned air. If the Mirror has hard to remove deposits on it, gently wipe it with a cotton swap moistened with a water based cleaning solution. Refer to Figure MM-03.

Note: This is a first surface mirror. The surface is fragile and should only be cleaned with a water based cleaning solution when absolutely necessary.

Note: If the mirror requires replacement, remove the Mirror by gently pulling it up at the same angle it is installed, and replace it with a new one. Refer to Figure MM-04.

-continued-



Figure MM-01 Forehead Band



Figure MM-02 Chinrest

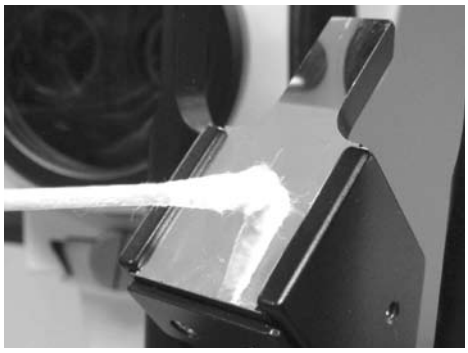

Figure MM-03 Mirror

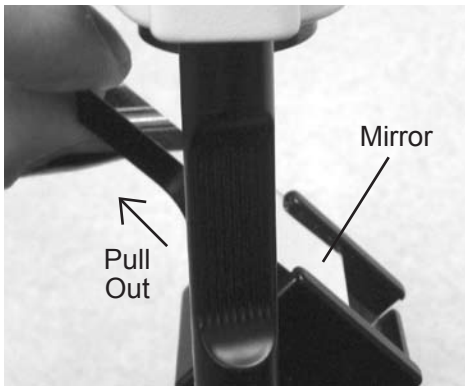

Figure MM-04 Remove Mirror

Cleaning & Maintenance (continued)

Changing Bulbs

CAUTION: ENSURE THE SLIT LAMP IS SWITCHED OFF AND REMEMBER THAT SOME PARTS MAY BE HOT. DO NOT TOUCH THE GLASS OF THE NEW BULB!

1. Remove the Illumination Assembly Cover by unscrewing the Two Screws securing the Cover and lifting it straight off. Refer to Figure MM-05.
2. Unscrew the Screw securing the Metal Tab holding the Bulb Holder in place. Refer to Figure MM-06.
3. Gently pull out the Bulb Holder and Bulb. Refer to Figure MM-07.
4. Grip the Bulb by the Metal Disk that is attached to it, and pull it out of the Bulb Holder. Refer to Figure MM-08.

WARNING: DO NOT TOUCH THE BULB WITH YOUR BARE HANDS. ONLY TOUCH THE METAL DISK. IF YOU NEED TO TOUCH THE BULB, USE A CLEAN, COTTON CLOTH. OILS ON YOUR HANDS MAY CAUSE PREMATURE BURNING OUT OF THE BULB.

5. Replace the Bulb with a new one and install it by pushing the Prongs into the Bulb Holder so that the Notch is positioned to the left. Refer to Figures MM-08 and MM-09.

Note: There is a Cut Out in the Metal Disk on the Bulb. Ensure that the Bulb is placed properly so that the Cut Out fits into the Notch. Refer to Figure MM-09.

6. Secure the Bulb with the Metal Tab and Screw. Refer to Figure MM-06.
7. Install the Illumination Assembly Cover and secure it with the Two Screws. Refer to Figure MM-05.

-continued-



Figure MM-05 Remove Cover

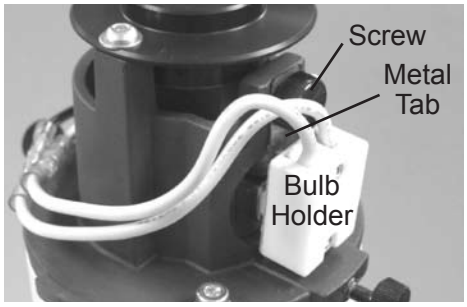

Figure MM-06 Securing Screw

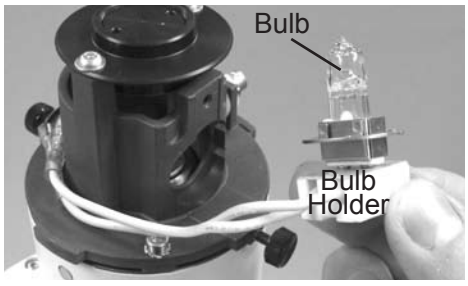

Figure MM-07 Bulb

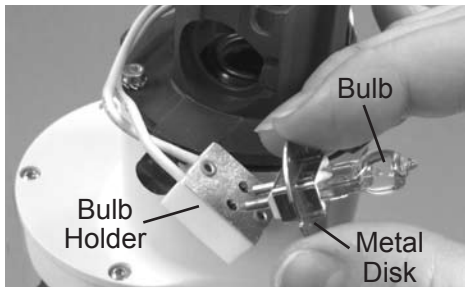

Figure MM-08 New Bulb

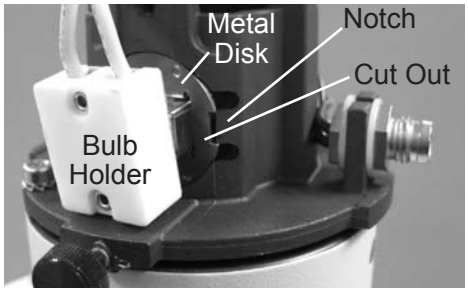

Figure MM-09 Notch

Cleaning & Maintenance (continued)

Fuse Replacement

1. Remove the Fuse Holder by pressing in on the left tab to release the Fuse Holder from the Power Cord Holder. Refer to Figures MM-10 and MM-11.

Note: It is easiest to remove the Fuse Holder with a pair of tweezers to press in the tab.

2. Replace fuses with the same type and rating. Refer to Figure MM-12.

REPLACEMENT FUSE GUIDE	
120V Operation	Time-Lag (T 0.40 A L 250V), 5x20mm, RoHS
230V Operation	Time-Lag (T 0.20 A L 250V), 5x20mm, RoHS

3. Install the Fuse Holder in the Power Cord Holder.

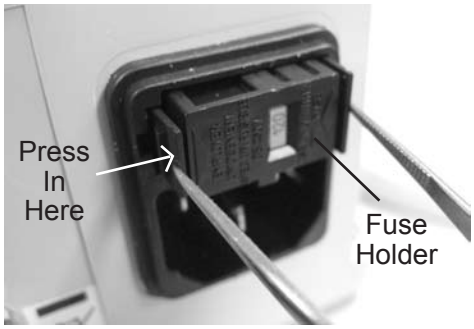

Figure MM-10 Remove Holder

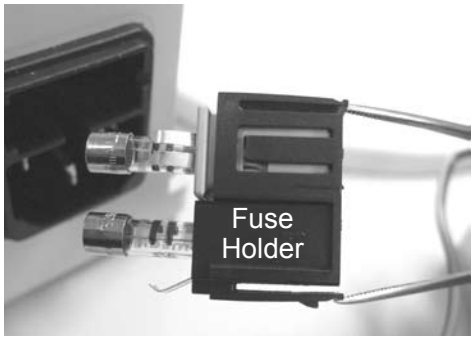

Figure MM-11 Holder Removed

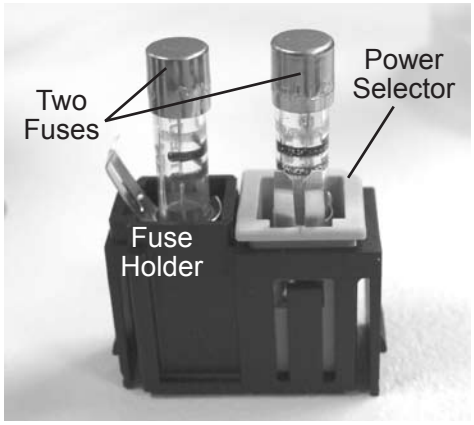

Figure MM-12 Two Fuses

Troubleshooting

The following chart outlines some common issues with the Xcel Slit Lamp and some steps you can take to correct the issue. If problems persist, please contact the Reichert Service Department as listed in the ***Introduction*** section of this manual.

Chart of Common Errors

ISSUE	PROBABLE CAUSE	POSSIBLE SOLUTION
Lamp won't turn on.	Incorrect input power supplied to the Xcel Slit Lamp.	Check the outlet to ensure proper power in being supplied.
	Defective Power Cord.	Replace the Power Cord.
	Bulb may be blown out.	Replace Bulb.
	Defective Power Supply.	Replace the Power Supply.
Slit Lamp won't move.	Rubber stopper may be attached under the joystick.	Remove the rubber stopper.
	Base Lock Screw may be tightened.	Loosen the Base Lock Screw.
Rough base movement.	Rubber stopper may be attached under the joystick.	Remove the rubber stopper.
	Bearings may be damaged.	Replace the base.
	Shaft may be damaged.	Replace the base.
Fixation light does not light up.	Fixation Light Harness not plugged into the Power Supply Assembly.	Ensure the Fixation Light Harness is properly seated in the Power Supply Assembly.
	Defective Power Supply.	Replace the Power Supply.
Light too dim.	Incorrect wattage for bulb being used.	Replace with the proper Bulb.
	Bulb not installed properly.	Check bulb and ensure notch lines up with bulb housing.
Double slit visible in microscope.	Microscope not focused on focusing rod before use.	Install focusing rod and check to ensure microscope is focused on it.
	Bulb not installed properly.	Check bulb and ensure notch lines up with bulb housing.

The following is a checklist of items that need to be assessed in order to determine if the Xcel Slit Lamp requires servicing.

- Check the outside of the slit lamp for any damage or missing components.
- Inspect the power cord for damage.
- Test the lamp by turning the lamp on and turning the light all the way to it's brightest setting, and all the way down to it's lowest setting.
- Check to ensure all switches are functioning properly.
- Check the Filters by cycling through all the options.
- Check the Slit Wheel by cycling through all the options.
- Check the base movement.

Specifications

Catalog Number 12580 (Xcel 400), 12562 (Xcel 700)

Physical Dimensions

Size:
Height: 26.3 in. (66.7 cm)
Width: 18.5 in. (46.9 cm)
Depth: 12.6 in. (47.5 cm)

Weight, packed: 42.0lbs (19.1kg)

Electrical

120 V Operation

Voltage: 100-120 VAC 50/60 Hz
Current: 0.4 A
Fuses: 120V Operation: Time-Lag (T 0.40 A L 250V), 5x20mm, RoHS

230 V Operation

Voltage: 230-240 VAC 50/60 Hz
Current: 0.2 A
Fuses: 230V Operation: Time-Lag (T 0.20 A L 250V), 5x20mm, RoHS

Microscope	Galilean
Mag Change	3 Step Drum Rotation (Xcel 400) or 5 Step Drum Rotation (Xcel 700)
Eyepiece	12.5X
Mag Ratio	10X 16X 25X (Xcel 400) or 6X 10X 16X 25X 40X (Xcel 700)
PD Range	48.5 - 80mm
Diopter Adjustment	+/- 6
Slit Illumination	6V 20W Halogen
Slit Width	0 - 12mm
Slit Length	1.5 - 12.5mm
Slit Apertures	0.3, 1, 3, 5, 9, 12mm
Slit Rotation	00 - 1800
Slit Inclinations	50 -100-150 -200
Filters	Red Free, Heat Absorbing, Cobalt Blue, Neutral Density
Movement Ranges	
Longitudinal (In/Out)	90mm
Lateral (Left/Right)	100mm
Vertical (Up/Down)	30mm
Chinrest Range	80mm
Table Dimensions	18 1/2” x 12 10/16” 465mm x 316mm
Eyepiece Focusing	+7D to -10 D

Disposal

This product does not generate any environmentally hazardous residues. At the end of its product life, follow your local laws and ordinances regarding the proper disposal of this equipment.

Warranty

This product is warranted by Reichert Technologies (“Reichert”) against defective material and workmanship under normal use for a period of one year from the date of invoice to the original purchaser. (An authorized dealer shall not be considered an original purchaser.) Under this warranty, Reichert’s sole obligation is to repair or replace the defective part or product at Reichert’s discretion.

This warranty applies to new products and does not apply to a product that has been tampered with, altered in any way, misused, damaged by accident or negligence, or that has the serial number removed, altered or effaced. Nor shall this warranty be extended to a product installed or operated in a manner not in accordance with the applicable Reichert instruction manual, nor to a product that has been sold, serviced, installed or repaired other than by a Reichert factory, Technical Service Center, or authorized Reichert Technologies Dealer.

Lamps, bulbs, charts, cards and other expendable items are not covered by this warranty.

All claims under this warranty must be in writing directed to the Reichert factory, Technical Service Center, or authorized instrument dealer making the original sale and must be accompanied by a copy of the purchaser’s invoice.

This warranty is in lieu of all other warranties implied or expressed. All implied warranties of merchantability or fitness for a particular use are hereby disclaimed. No representative or other person is authorized to make any other obligations for Reichert. Reichert shall not be liable for any special, incidental, or consequent damages for any negligence, breach of warranty, strict liability or any other damages resulting from or relating to design, manufacture, sale, use or handling of the product.

PATENT WARRANTY
If notified promptly in writing of any action brought against the purchaser based on a claim that the instrument infringes a U.S. Patent, Reichert will defend such action at its expense and will pay costs and damages awarded in any such action, provided that Reichert shall have sole control of the defense of any such action with information and assistance (at Reichert’s expense) for such defense, and of all negotiation for the settlement and compromise thereof.

PRODUCT CHANGES
Reichert reserves the right to make changes in design or to make additions to or improvements in its products without obligation to add such to products previously manufactured.

CLAIMS FOR SHORTAGES
We use extreme care in selection, checking, rechecking and packing to eliminate the possibility of error. If any shipping errors are discovered:

1. Carefully go through the packing materials to be sure nothing was inadvertently overlooked when the unit was unpacked.
2. Call the dealer you purchased the product from and report the shortage. The materials are packed at the factory and none should be missing if the box has never been opened.
3. Claims should be filed within 30 days.

CLAIMS FOR DAMAGES IN TRANSIT
Our shipping responsibility ceases with the safe delivery in good condition to the transportation company. Claims for loss or damage in transit should be made promptly and directly to the transportation company.

If, upon delivery, the outside of the packing case shows evidence of rough handling or damage, the transportation company’s agent should be requested to make a “Received in Bad Order” notation on the delivery receipt. If within 48 hours of delivery, concealed damage is noted upon unpacking the shipment and no exterior evidence of rough handling is apparent, the transportation company should be requested to make out a “Bad Order” report. This procedure is necessary in order for the dealer to maintain the right of recovery from the carrier.

Notes

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