



XCEL 250



XCEL 400/700

Xcel Slit Lamp

USER'S GUIDE

Reichert
Ophthalmic Instruments

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Introduction

Congratulations on the purchase of your new Xcel 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.

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. Contact information is provided at the end of this guide.

XCEL 250 PACKAGE CONTENTS

- 1 XCEL 250 Slit Lamp**
- 1 User's Guide

Accessories:

- 1 Focusing Rod
- 1 Hex Wrench
- 1 Dust Cover
- 1 Breath-shield
- 1 Halogen Lamp (main)
- 2 Guide-rail Covers
- 2 400mA replacement fuses
- 2 Packages Chin Rest Paper

** Transformers having a voltage selector style transformer (Click-stops) use 125mA fuses for 230V operation.

SYMBOLS

The following symbols appear on all XCEL Slit Lamps:



Indicates that important operating and maintenance instructions are included in this instruction manual.



Type B
Class I equipment

XCEL 400/700 PACKAGE CONTENTS

- 1 XCEL 400/700 Slit Lamp**
- 1 User's Guide

Accessories:

- 1 Focusing Rod
- 1 Hex Wrench
- 1 Dust Cover
- 1 Breath-shield
- 1 Swivel Post Cover
- 1 Spare Halogen Lamp
- 2 Guide-rail Covers
- 2 400 mA replacement fuses
- 2 Packages Chin Rest Paper

** Transformers having a voltage selector style transformer (Click-stops) use 125mA fuses for 230V operation.

SETTING THE VOLTAGE - 120 / 230 VAC

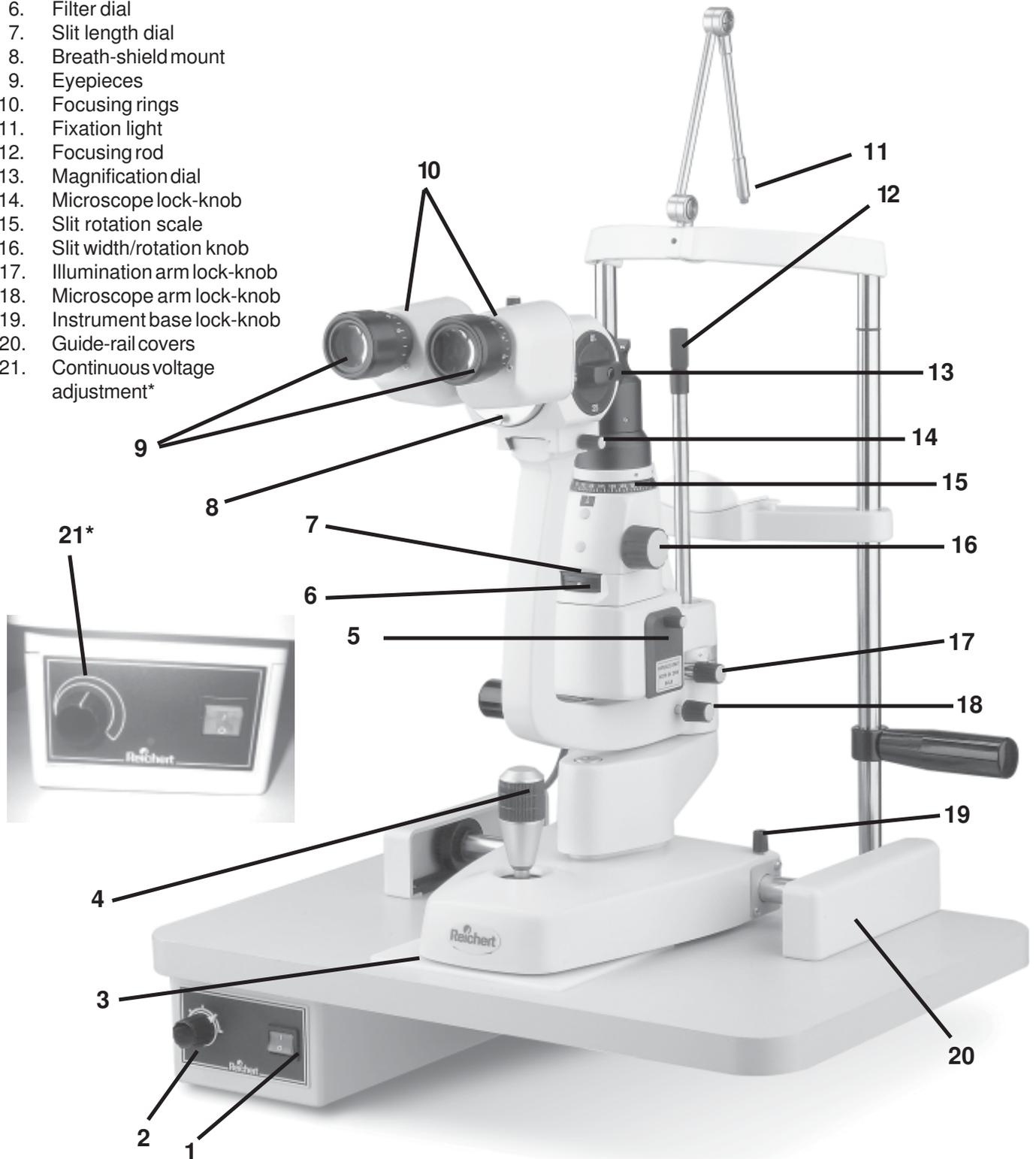
The XCEL slit lamps can be operated at 120 or 230 VAC. However, in order to ensure proper protection of the internal circuitry, the installed fuses should correspond with the operating voltage. For 120V operation, the fuses are T400mA, 250V (5X20mm) fuses. For operation at 230VAC, the fuses are T200mA, 250V (5X20mm). Check the fuse holder to ensure the correct operating voltage shows in the window.

NOTE: Some older slit lamps have a voltage selector type power supply. The fuses for this power supply are T250mA, 250V (5X20mm) for 120V operation and T125mA, 250V (5X20mm) for 230V operation.

More information on replacing the fuses can be found in the maintenance section on page 9 of this guide.

XCEL 250 Slit Lamp Components

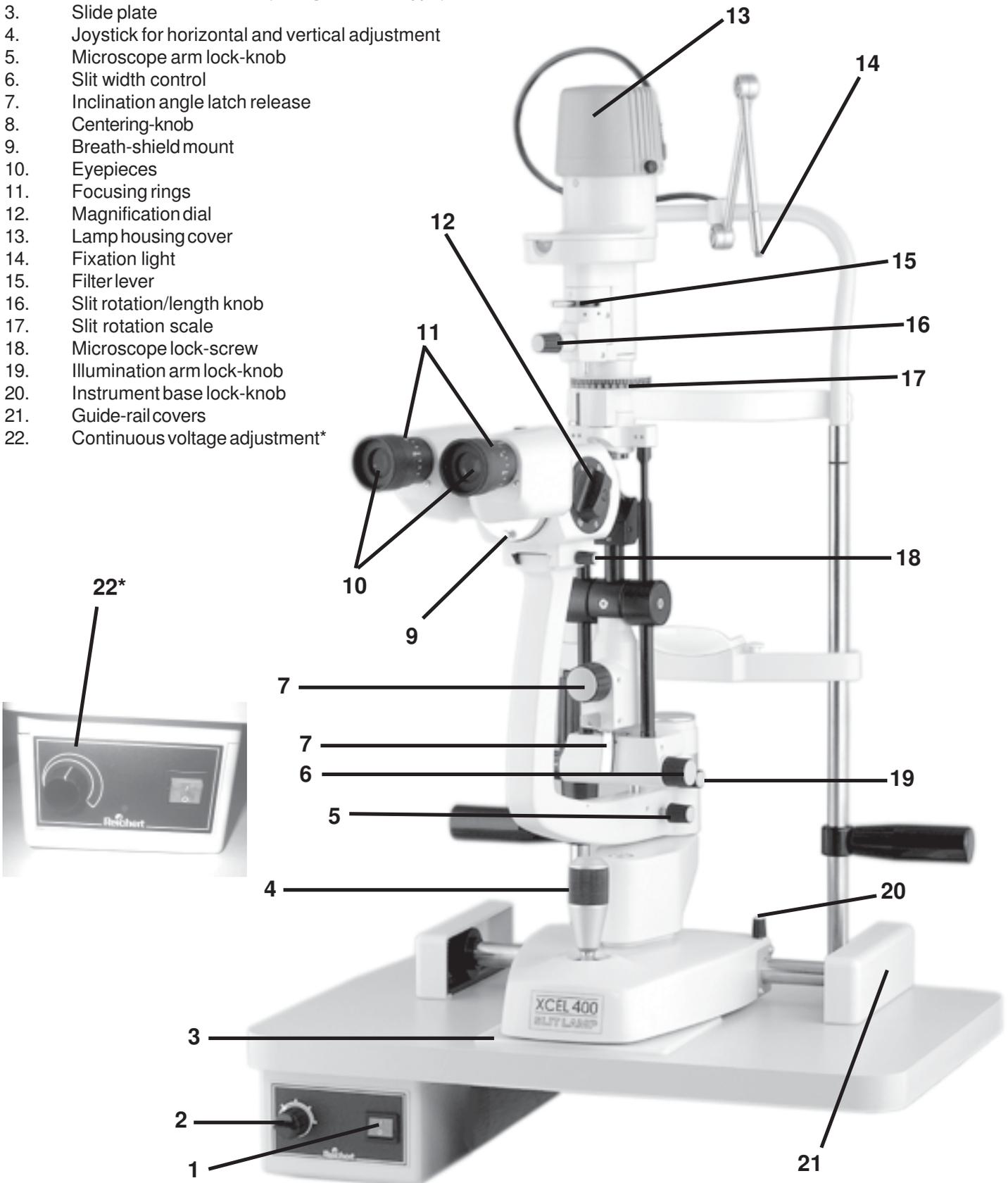
1. On/Off switch
2. Illumination level control (voltage selector-type)*
3. Slide plate
4. Joystick for horizontal and vertical movement
5. Bulb access door
6. Filter dial
7. Slit length dial
8. Breath-shield mount
9. Eyepieces
10. Focusing rings
11. Fixation light
12. Focusing rod
13. Magnification dial
14. Microscope lock-knob
15. Slit rotation scale
16. Slit width/rotation knob
17. Illumination arm lock-knob
18. Microscope arm lock-knob
19. Instrument base lock-knob
20. Guide-rail covers
21. Continuous voltage adjustment*



* Older slit lamps have the voltage selector, newer instruments have the continuous voltage adjustment.

XCEL 400 & 700 Components

1. On/Off switch
2. Illumination level control (voltage selector-type)*
3. Slide plate
4. Joystick for horizontal and vertical adjustment
5. Microscope arm lock-knob
6. Slit width control
7. Inclination angle latch release
8. Centering-knob
9. Breath-shield mount
10. Eyepieces
11. Focusing rings
12. Magnification dial
13. Lamp housing cover
14. Fixation light
15. Filter lever
16. Slit rotation/length knob
17. Slit rotation scale
18. Microscope lock-screw
19. Illumination arm lock-knob
20. Instrument base lock-knob
21. Guide-rail covers
22. Continuous voltage adjustment*

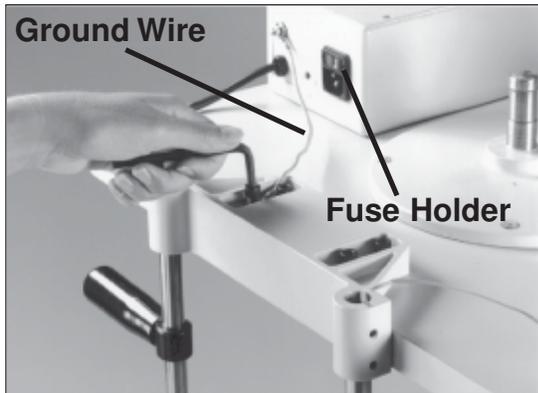


* Older instruments have the voltage selector, newer instruments have the continuous voltage adjustment.

INSTALLATION

The slit lamp is shipped in a multi-layer foam container and it is divided into major components: Microscope, Instrument Body, Illumination Column, Table Top and Chin Rest Assembly.

1. Take out the various parts. Remove the wrapping. Make sure the wrapping does not contain parts belonging to the instrument. Save the packing.
2. Mount the headrest with the socket-head screws and hexagonal wrench (provided). Connect the transformer ground wire under one of the screws.



Mounting the headrest and grounding wire

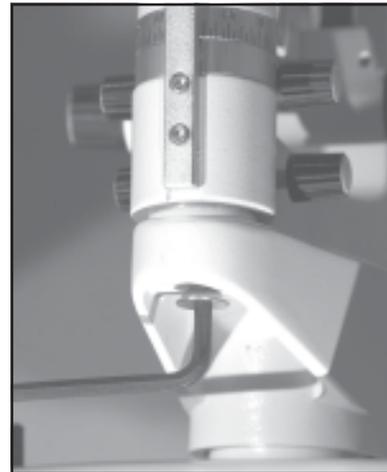
3. Plug the wire from the headrest assembly into the connector on the back of the transformer.
4. **To ensure proper operation, check the fuse voltage setting on the power input module.** The factory setting is 120V. If 230V operation is desired, remove the fuse holder and pull out the white plastic insert. Rotate the insert so "230" appears in the window when inserted in the fuse holder. Remove the 400 mA fuses and replace them with 200 mA fuses. **See page 9 for fuse types.** Install the fuse holder in the power input connector.



Changing the fuses

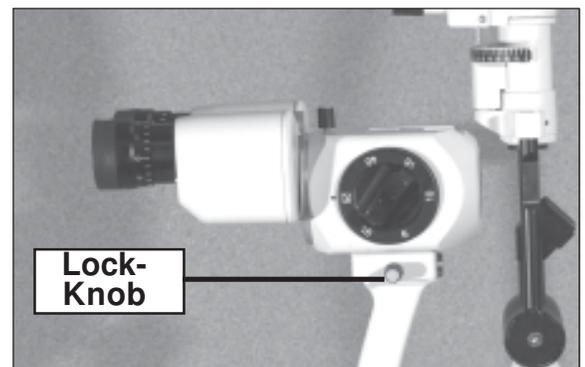
5. Mount the table-top on appropriate instrument stand arm or table base.

6. Position the slit lamp body on the table so that the geared rollers mate with the teeth on the guide rails. When the instrument is pushed forward or pulled backwards, the wheels should roll freely and evenly over the guide-rails.
7. Place the guide-rail covers over the guide-rails. Tightening the instrument base locking screw.
8. **XCEL 400 / 700** - Mount the illumination column onto the instrument body. To secure, insert screw and tighten with hex wrench.



Attaching the illumination column

8. Mount the microscope head on the microscope arm by sliding it into position, making sure it is up against the stop. Then, tighten lock-knob located on the right side of the microscope.



Securing the Microscope

9. **XCEL 400 / 700** - Connect wire lead from top of headrest assembly into lamp housing.
10. **XCEL 250** - Plug the cable from the lamp arm into the connector on the back of the transformer.
12. Connect the power cord to power supply and plug into a wall outlet or the instrument arm.

OPERATING PROCEDURES

1. Turn on the power using the On/Off switch located on the front of the power supply. Brightness can be adjusted by rotating the illumination level knob.

NOTE: The maximum position is for intermittent use only. Continuous use will shorten lamp life.

2. Insert the focusing rod in the pivot post of the instrument body to make rough PD and focus adjustments. Position the light onto the flat surface of the focusing rod and adjust the pupillary distance and focus of the eyepieces to suit the needs of the operator. Remove the focusing rod.
3. To position a patient, adjust 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.
4. Microscope elevation is adjusted by rotating the joystick and observing the slit image through the microscope until the slit is centered on the patient's cornea.
5. Move the slit lamp with the joystick held firmly and slightly angled toward the patient, until the slit appears sharply on the cornea. 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.
6. Tilt the joystick, which is now held lightly at its upper end, until the slit appears sharply at the depth of the eye which is to be observed. The horizontal motion of the base can be locked by tightening the base locking screw. Lock the base whenever the lamp is not in use.
7. The slit width can be adjusted by rotating the slit-width control on either side of the instrument.
8. The angle between the illumination system and the microscope can be varied between 0° and 90° to either the left or to the right. The angle is indicated on the scale of the slit lamp arm.
9. Magnification is altered by rotating the dial on the microscope head. The magnification of each click-stop position is engraved on the dial.

Adjusting Slit Length - XCEL 400 / 700

The slit length is adjusted by rotating the slit length knob. The dial has seven stops for adjustments of 12, 9, 5, 3, 1 and 0.3mm diameter and a continuous length adjustment.

Adjusting Slit Length - XCEL 250

The slit length is adjusted by rotating the slit length dial. The dial has five stops for adjustments of 13, 10, 6 and 0.3mm diameter and a continuous length adjustment.

Filter Dial - XCEL 400/700

The filter dial has five positions which are color coded as follows:

Blue dot = cobalt blue
Orange dot = open
White dot = heat absorbing
Gray dot = neutral density
Green dot = red-free

Filter Dial - XCEL 250

The filter dial has four positions which are color coded as follows:

Blue dot = cobalt blue
Orange dot = open
White dot = heat absorbing
Green dot = red-free

Slit Rotation - XCEL 400/700

By grasping the slit rotation knob, the lamp housing can be rotated. This, in turn, rotates the slit from vertical to horizontal in either direction. The slit positions are click-stopped in 45° increments and stopped at 0° and 180° and is indicated by the scale.

Slit Rotation - XCEL 250

Slit rotation is achieved by twisting the slit body to the left or right. The degree of rotation is indicated by the scale above the slit body.

Illumination Inclination - XCEL 400/700

The illumination unit can be inclined in the horizontal plane in 5° steps for a total of 20°. Tilt the illumination assembly by depressing the inclination latch release and pulling the base of the illumination assembly toward the operator.

Slit Centration - XCEL 400/700

When the centering screw is loosened, the slit can be scanned away from the center of the field of vision for retro-illumination, scleral scatter, etc. The slit image is centered again by tightening the screw.

MAINTENANCE

Forehead / Chinrest

For hygienic reasons, wipe the forehead rest and chin rest with an alcohol wipe after each patient.

Changing Bulbs

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

XCEL 400/700

To replace the bulb in the Xcel 400/700, loosen the lamp house locking knobs and lift off lamp housing cover. Disconnect the 2 wires connected to the bulb. Remove the screw and bulb retaining clip and remove the bulb. Insert the new bulb and secure it with the bulb retaining clip and screw. Connect the 2 wires to the pins on the bulb base and replace the lamp housing.

XCEL 250

Open the bulb access door. Swing the retaining spring toward the arm pivot and pull the socket and bulb from the housing. Note the position of the notch in the metal collar of the bulb. Replace the bulb with a new one. Make sure the notch is in the same position. Insert the bulb and socket into the lamp housing and move the retaining spring back into position. Close the bulb access door.

Mirror Cleaning / Replacement XCEL 400/700

Grasp the narrow shank of the mirror and pull upwards. When cleaning the mirror, blast with clean, dry air, then gently wipe with a soft linen cloth.

Fixation Lamp Replacement

Unscrew the red cap. Pull the old bulb straight out. Insert a new lamp and replace the red cap.

Cleaning the Slide Plate

If the plate is dirty it may cause a rough feeling when maneuvering the base of the slit lamp. Clean the slide plate with a soft cloth lightly dampened with a mild soap and water solution.

Fuse Replacement

Locate the black fuse holder in the rear of the power supply. Insert small screwdriver at each side of fuse holder and gently pry edges to dislodge. Replace fuses with the same type and rating.

Voltage Selector Style Transformer:

T250 mA (5X20 mm) for 120V

T125 mA (5X20 mm) for 230V

Continuous Variable Brightness Control Transformer:

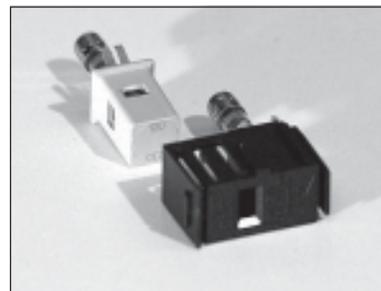
T400 mA (5X20 mm) for 120V

T200 mA (5X20 mm) for 230V



OPTIONAL ACCESSORIES/PARTS

12585	Beamsplitter with integrated C-step adapter
12586	1-port beamsplitter
12587	2-port beamsplitter
12572	52 mm SLR camera tube
12573	C-step video camera adapter
12574	Observation tube
12595	Tonometer prism
12563	6V 20W halogen lamp
12566	Hruby lens
12576	CT200 Tonometer mount
12567	T900 Tonometer plate
12591	C100 Tonometer
12590	CT200 Tonometer



Changing the fuses

Specifications

SPECIFICATIONS	XCEL 250	XCEL 400	XCEL 700
Catalog	12550	12580	12562
Microscope	Galilean	Galilean	Galilean
Magnification Change	3 Step Drum Rotation	3 Step Drum Rotation	5 Step Drum Rotation
Eyepiece	12.5X	12.5X	12.5X
Magnification Ratio	10X 16X 25X	10X 16X 25X	6X 10X 16X 25X 40X
PD Range	48.5 - 80mm	48.5 - 80mm	48.5 - 80mm
Diopter Adjustment	+/- 6	+/- 6	+/- 6
Slit Illumination	6V 20W Halogen	6V 20W Halogen	6V 20W Halogen
Slit Width	0 - 13mm	0 - 12mm	0 - 12mm
Slit Length	2 - 12.5mm	1.5 - 12.5mm	1.5 - 12.5mm
Slit Apertures	0.3, 5.5, 9, 14mm	0.3, 1, 3, 5, 9, 12mm	0.3, 1, 3, 5, 9, 12mm
Slit Rotation	0° - 180°	0° - 180°	0° - 180°
Slit Inclinations	NA	5° -10° -15° -20°	5° -10° -15° -20°
Filters:	Red Free	Red Free	Red Free
	Heat Absorbing	Heat Absorbing	Heat Absorbing
	Cobalt Blue	Cobalt Blue	Cobalt Blue
		Neutral Density	Neutral Density
Movement Ranges:			
Longitudinal (In/Out)	90mm	90mm	90mm
Lateral (Left/Right)	100mm	100mm	100mm
Vertical (Up/Down)	30mm	30mm	30mm
Chinrest Range	80mm	80mm	80mm
Voltage	110, 220 VAC	110, 220 VAC	110, 220 VAC
Frequency	50 / 60Hz	50 / 60Hz	50 / 60Hz
Table Base Dimensions	465mm x 316mm (18 1/2" x 12 10/16")	465mm x 316mm (18 1/2" x 12 10/16")	465mm x 316mm (18 1/2" x 12 10/16")
Weight (Packed)	52lbs (23.64kg)	52lbs (23.64kg)	52lbs (23.64kg)

Due to a policy of continuous development, we reserve the right to change specifications without notice.

XCEL Slit Lamp Warranty

This product is warranted by Reichert, Inc. 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 which has had 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 which has been sold, serviced, installed or repaired other than by a Reichert factory, Technical Service Center, or authorized Reichert Dealer.

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

All claims under this warranty must be in writing and 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 must be filed within 30 days of purchase.

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.

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