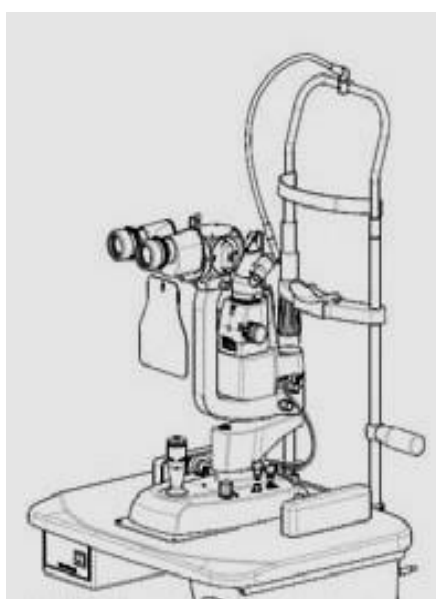


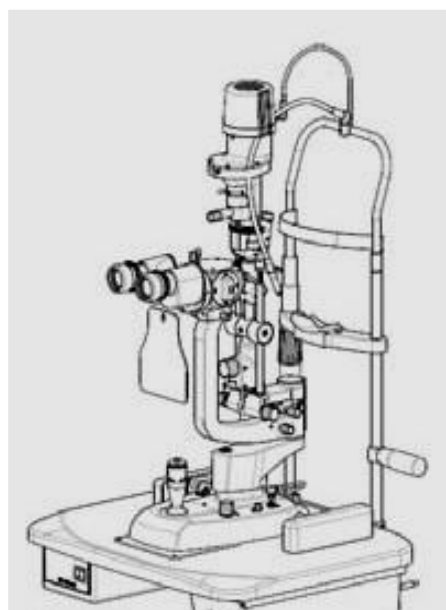
USER MANUAL

SLIT LAMP

SL500-SL550



SL
500L 



SL
550L 

1. GENERAL WARNINGS

**WARNING!**

Please carefully read this manual before using the device.

All our products have been manufactured with the greatest attention to safety. To use the device effectively and safely please read this user manual carefully before installing and using the device, and follow the warnings reported in the manual and on the outside of device itself. Operators, who have used the device previously, should check again the instructions reported in this manual. The manual must be readily available for consultation.

**WARNING!**

The user must take into account the potentially harmful effects to the environment or human health due the improper disposal of the equipment or of parts of it.

To prevent the release of hazardous substances into the environment and to promote conservation of natural resources, the manufacturer, in case the user wishes to dispose of the device used at the end of its useful life, facilitates the possibility of its reuse and the recovery and recycling of the materials contained therein.



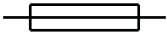





1.2.4 SAFETY MEASURES AS PER ISO 15004-2:2007 STANDARDS (E)

WARNING!

The light emitted by this device is potentially harmful. The risk of eye damage is directly proportional to the time of exposure. When the device is operating at maximum intensity, exposure to the light emitted by this device exceeds the threshold set by the safety guidelines after (e.g.see above).

- Model SL 500L, when operating at maximum intensity, exceeds the threshold set by the safety guidelines after 160 seconds.
- Model SL 550L, when operating at maximum intensity, exceeds the threshold set by the safety guidelines after 160 seconds.

THE SAFETY MARKS, PICTURES USED IN THIS INSTRUMENT

No.	mark	Description
1		Type b applied parts, in compliance with EN 60601-1 standards.
2		«Class II device (in compliance with EN 60601-1 standards). This means that the isolation from the mains supply is highly reliable, therefore no safety earthing connection is necessary.
3		Fuse
4		disposal symbol in compliance with directives 2012/19/UE WEEE and 2011/65/UE RohS II
5		"CE marking", indicates that the product is compliant with the EC directive 93/42/EEC and subsequent amendments
6		"please refer to the instruction manual." It signify that, for safety reasons, you need to consult the instruction manual before using
7		Symbol to point out attention on further information written in the Instruction for Use of the device.
8		manufacturer

Useful life : 10 years

Complies with  marking

Date of first marking: 2015

2. GUIDANCE AND MANUFACTURER'S DECLARATION

7.1 ELECROMAGNETIC EMISSION

Table 1-Guidance and manufacturer's declaration – electromagnetic emission		
The equipment SL 500- SL 550Lis intended for use in the electromagnetic environment specified below. The customer or the end user of the SL 500L- SL 550Lshould assure that it is used in such an environment.		
Emission test	compliance	Electromagnetic environment - guidance
RF emission – CISpR 11	group 1	the SL 500L- SL 550Luses RF energy only for its internal function. Therefore its emissions are very low and are not likely to cause any interference in nearby electronic equipment
RF emission – CISpR 11	Classb	The SL 500L- SL 550Lis suitable for use in all establishments including domestic establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes
harmonic emission IEC 61000-3-2	Class A	The SL 500L- SL 550Lis suitable for use in all establishments including domestic establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes
Voltage fluctuation/flicker emission IEC 61000-3-3	Complies	The SL SL 500L- SL 550L is suitable for use in all establishments including domestic establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes

7.2 ELECTROMAGNETIC IMMUNITY.

Table 2 -Guidance and manufacturer's declaration – electromagnetic immunity			
The equipment SL500-550L is intended for use in the electromagnetic environment specified below. The customer or the end user of the SL 500-550L should assure that it is used in such an environment			
Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESd) IEC 61000-4-2	±6 kv contact ±8 kv air	±6 kv contact ±8 kv air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical Fast Transient/burst IEC 61000-4-4	±2 kv for power supply lines ±1 kv for I/O lines	±2 kv for power supply lines Not applicable	mains power quality should be that of a typical commercial or hospital environment
Surge IEC 61000-4-5	±1 kv differential mode ±2 kv common mode	±1 kv differential mode ±2 kv common mode	mains power quality should be that of a typical commercial or hospital environment
voltage dips, Short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% Ut for 0,5 cycle 40% Ut for 5 cycles 70% Ut for 25 cycles <5% Ut for 5 sec	<5% Ut for 0,5 cycle 40% Ut for 5 cycles 70% Ut for 25 cycles <5% Ut for 5 sec	mains power quality should be that of a typical commercial or hospital environment. If the user of the SL 500-550 requires continued operation during power mains interruptions, it is recommended that the SL 500-550 be powered from an Uninterruptible power Supply or battery
power frequency (50/60hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment

Note: Ut is the AC mains voltage prior to application of the test level

Table 3- Guidance and manufacturer’s declaration – electromagnetic immunity

The equipment SL 500-550L is intended for use in the electromagnetic environment specified below. The customer or the end user of the SL 500-550L should assure that it is used in such an environment

Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3vrms 150khz to 80mhz	3 v rms	portable and mobile RF communication equipment should be used no closer to any part of the SL500-550, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance. $d=1,167*\sqrt{P}$
Radiated RF IEC 61000-4-3	3v/m 80 mhz to 2,5 ghz	3 v/m	$d=1,167*\sqrt{P}$ 80 MHz to 800 MHz $d=2,333*\sqrt{P}$ 800 MHz to 2,5 GHz Where p is the maximum output power rating of the transmitter in watts(W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m) Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol:

Note 1: at 80 mhz and 800 mhz, the higher frequency range applies

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

CONTENTS

1.	TECHNICAL DATA	9
	1.1. TECHNICAL SPECIFICATIONS - MODEL SL 500.....	9
	1.2. TECHNICAL SPECIFICATIONS - MODEL SL 550	10
	1.3. ENVIRONMENTAL CONDITIONS.....	11
	1.4. REFERENCE STANDARDS	11
2.	SUPPLY PACKAGE	12
	2.1. MODEL SL 500.....	12,13,14
	2.2. MODEL SL 550.....	15,16,17,18
3.	CLEANING	19
4.	OPERATING PROCEDURES	19
5.	MAINTENANCE	20
	5.1. INSTALLATION AND COMMISSIONING	22
	5.2. TRANSPORT AND STORAGE	22
	5.3. ASSEMBLY.....	22
	5.4. CONNECTION	23,24
	5.5. ASSEMBLY OF THE LED LIGHTING SYSTEM.....	25
	5.6. ASSEMBLY OF MANUFACTURER VIDEO CAMERA MOUNTS.....	26
	5.7. INSTALLING USB 3.0 DIGITAL BEAM SPLITTER.....	27,28
	5.8. ASSEMBLY OF THE EXTERNAL ILLUMINATOR.....	29

1 TECHNICAL DATA

1.1 TECHNICAL SPECIFICATIONS - MODEL SL 500L

Slit lamp general specifications	SL 500Lwith prisma-holder head	SL 500Lwith split head
Slit projection index	1.16x	1.3x
Slit width (continuous setting) (mm)	0 – 14 continuous variable	0 – 16 continuous variable
Slit length (continuous setting) (mm)	1.8 – 14 continuous variable	2 – 15 continuous variable
Slit maximum length (mm)	14	16
Aperture Diameter (mm)	14 , 9, 5.5, 0.3	16, 10.5, 6.5, 0.4
Filters	blue, green (red-free), red	blue, green (red-free), red
Slit rotation angle	± 90° continuous on Tabo system	± 90° continuous on Tabo system
Incidence angle	0° horizontal	0° horizontal
Operation distance (prisma outlet /patient's eye distance)	68 mm	68 mm

Chinrest module specifications		
Fixation mire:	Red, luminous, articulating	Red, luminous, articulating
Chinrest height adjustment	76 ± 1 mm	76 ± 1 mm

Electrical lamp specifications

Device operating voltage	12v CA: -10%+20%-15v dC ±5%	12v CA: -10%+20%-15v dC ±5%
--------------------------	-----------------------------	-----------------------------

Transformer specifications

Table top standard size	380 x 500Lmm	380 x 500Lmm
Power supply voltage	100v/120v/230v/240v CA ±10%	100v/120v/230v/240v CA ±10%
FUSES: 5x20 mm	100-120v CA --- 1 A 230-240v CA --- 0.5 A	100-120v CA --- 1 A 230-240v CA --- 0.5 A
Maximum power absorbed	25 vA	25 vA

Other features

Lamp size	296x313x(433±15)mm	296x313x(433±15)mm
Lamp weight	7.4 kg	7.4 kg
Digital lamp weight	8.1 kg	8.1 kg

1.2 TECHNICAL SPECIFICATIONS - MODEL SL 550L

minimum slit aperture / Tyndall Scattering	0.2 mm
Slit width (continuous setting) (mm)	0 - 12 mm
Slit length (continuous setting) (mm)	1.0 – 12 mm
Slit maximum length (mm)	12 mm
Slit projection index	1x
Aperture diaphragm	0.2/ 1 / 3 / 5 / 9 / 12 mm
Filters	blue, green (red-free), grey and red.
Slit rotation	± 90° continuous, with Tabo system
Tilting slit vertical angles	0° - 5° - 10° - 15° - 20°
Patient's eye / mirror surface operation distance	88 mm
Fixation point	Articulating light
Chinrest module : chinrest height adjustment	66 ± 1 mm

Electrical lamp specifications

Device operating voltage	-10% +20% 12v CA: - 15v dC ±5%
--------------------------	--------------------------------

Transformer specifications

Table top standard size	380 x 500Lmm
Power supply voltage	100v / 120v / 230v / 240v CA ±10%
Fuses: 5x20 mm	100-120v CA --- 1 A 230-240v CA --- 0.5A
Mains frequency	50-60hz
Maximum power absorbed	25 vA

Other features

Lamp size	299x313x(644±15) mm
Lamp weight	8.7 kg
Digital lamp weight	9.4 kg

1.3 ENVIRONMENTAL CONDITIONS

As long as the endothelial microscope is kept in its original packaging, it can be exposed to the following environmental conditions without being damaged, and for a maximum period of 15 weeks during shipping and storage:

Operating conditions of use:

Temperature between +10 °C and +35 °C;
Atmospheric pressure 800 hPa to 1060 hPa;
Relative humidity between 30% to 90%.

Storage conditions:

Temperature -10 °C to +55 °C;
Atmospheric pressure 700 hPa to 1060 hPa;
Relative humidity 10% to 95%.

Transport conditions:

Temperature -40 °C to +70 °C;
Atmospheric pressure 500LhPa to 1060 hPa;
Relative humidity 10% to 95%.

vibration, sinewave 10 hz to 500Lhz, 0.5g

Shock 30g. time: 6ms

bumb 10g. time: 6ms

1.4 REFERENCE STANDARDS

The following reference standards have been applied for product design, production and control: Community directives

- DIRECTIVE 93/42/EEC "MEDICAL DEVICES" OF 14/06/1993 AND SUBSEQUENT AMENDMENTS
- DIRECTIVE 2002/96/EC "Waste Electrical and Electronic Equipment".

Quality Management System Standards

- UNI EN ISO 9001:2008 "Quality management systems - Requirements"
- UNI EN ISO 13485:2012 "Medical devices - Quality Management Systems - Regulatory Requirements"

Technical Standards

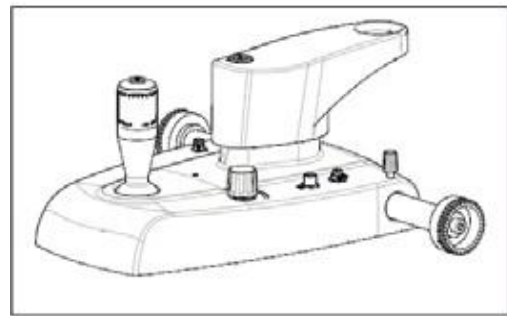
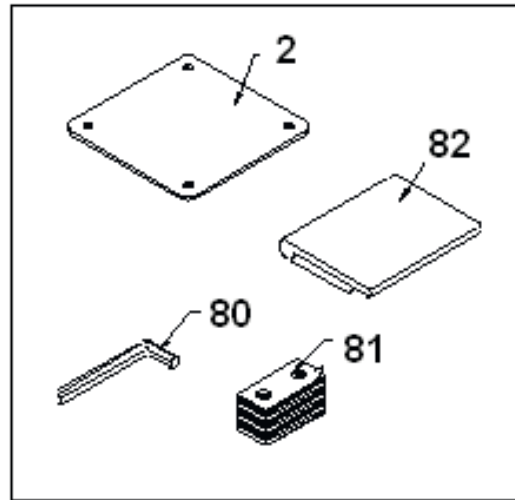
- EN 60601:1 STANDARDS - "PART 1: MEDICAL ELECTRICAL EQUIPMENT: GENERAL REQUIREMENTS FOR SAFETY", third edition;
- EN 60601-1-2 - "Collateral standard: Electromagnetic Compatibility of Medical Electrical Equipment, 2001 edition;
- UNI EN ISO 15004-1: "Ophthalmic Instruments - Fundamental Requirements and Testing Methods, Part 1: General requirements applicable to all Ophthalmic Instruments", 2009 edition;
- UNI EN ISO 15004-2: "Ophthalmic Instruments - Fundamental Requirements and Testing Methods - Part 2: Protection against light-related hazards", 2007 edition;
- UNI EN ISO 14971:2012 "Application of risk management to medical device

2 SUPPLY PACKAGE

2.1 MODEL SL 500

The device is delivered packaged. When removing the device from the packaging, check that all the following components are present:

- a) One table top (NOTE: the table top is not included with the slit lamp for twin or joint tables) on which are mounted:
- one transformer box (6) with main illuminated switch (7), socket for fixation point (32), mains socket (30) with voltage switch (31) and built-in fuses;
 - one power cable;
 - two orthogonally moving slide guides for the base (3);
 - one sliding plate for the positioning device(2);
 - one drawer (5).
- b) One complete base with orthogonal movements (9).
- c) One stereoscopic microscope with 2 magnifications or one Galilean system (15) with 3, 5 magnifications or with progressive zoom, complete with screw-out eyepieces (38).
- d) One slit projector optical unit.
- e) One chinrest module (17).
- f) These instructions for use.
- g) A series of accessories including;
- two guards for the slide guides (4);
 - one calibration rod (13);
 - one protection cover (82);
 - one Allen wrench (80);
 - two protection fuses;
 - one shielding glass (14).



Base with Brightness Button and adjuster on the Base

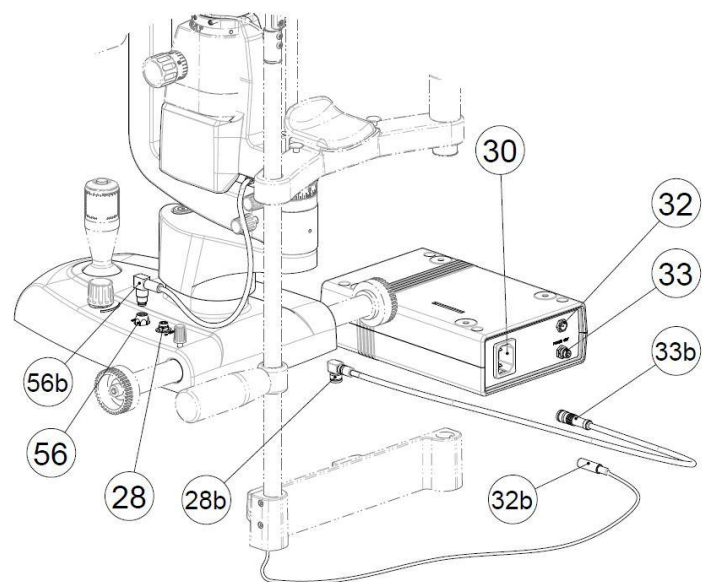
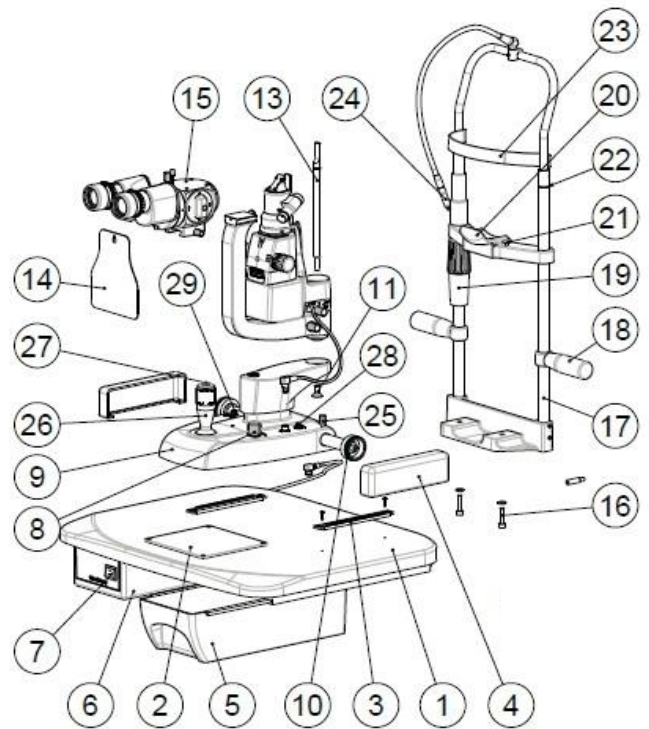
The following accessories can be supplied upon request:

- photo camera mount (with beam splitter);
- video camera C mount (with beam splitter);
- second observer tube (with beam splitter);
- separator with digital video camera;
- beam splitter /separator;
- Hruby lens;
- Micrometric eyepiece;
- built-in fl ∞ microscope (36);
- brightness regulation rheostat on the base (8);
- capturing trigger button on the standard joystick (27);
- Z800 tonometer mounting plates.
- Volk lens.
- External illuminator (54) (standard on D digital systems)

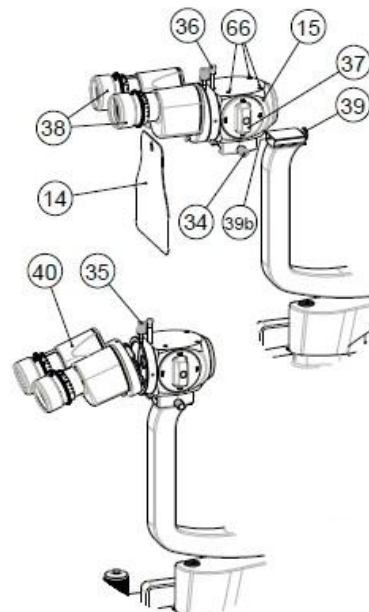
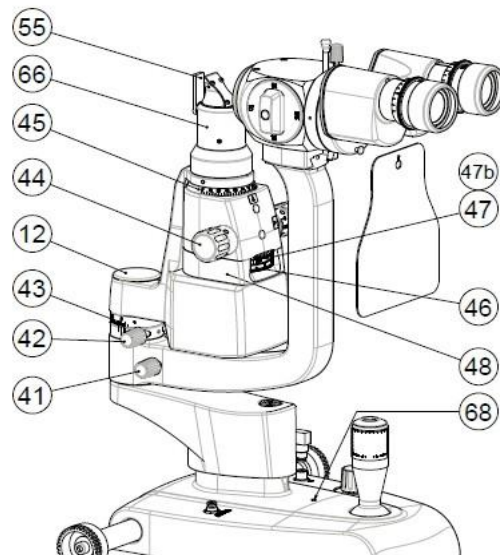
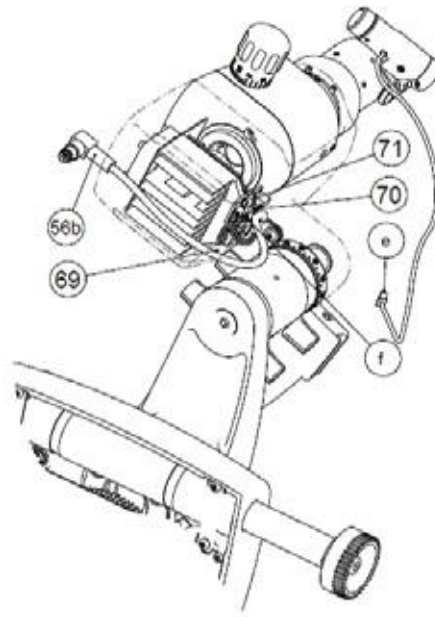


Hruby lens

- 1) Shaped table top.
- 2) Tefl ansliding plate.
- 3) Geared guides.
- 4) Wheel shields.
- 5) Accessory drawer with guides.
- 6) Transformer.
- 7) Main switch with light indicator.
- 8) Brightness control knob.
- 9) Orthogonally moving base.
- 10) Geared wheel.
- 11) Lamp holder / LED-holder fastening screw.
- 12) Mounts plug: calibration rod.
- 13) Calibration rod.
- 14) Shielding glass.
- 15) Microscope.
- 16) Chinrest module fastening screw.
- 17) Chinrest module.
- 18) Patient's handle.
- 19) Chinrest height adjusting ring nut.
- 20) Chinrest.
- 21) Chinrest paper fixation pivots.
- 22) Eye positioning reference index.
- 23) Headrest.
- 24) Fixation point.
- 25) Device base locking knob.
- 26) Joystick for lateral, longitudinal and vertical movements (x,y,z).
- 27) Capturing trigger button
- 28) Base-to-transformer connection socket.
- 28b) Connector for base-to-transformer socket
- 29) Video camera connection socket.
- 30) Mains socket.
- 31) Voltage switch and fuse seat.
- 32) Fixation point power socket.
- 32b) Fixation point power supply connector
- 33) Low-voltage transformer output socket.
- 33b) Connector for transformer output.
- 34) Microscope locking knob.
- 35) Microscope splitter knob.
- 36) Fluorescein filter insertion rod.
- 37) Magnification tuner.
- 38) Extractable eyepieces.
- 39) Microscope positioning lock.
- 39b) Microscope positioning locking grub screw.
- 40) Binocular.
- 41) Projector arm fixation knob.
- 42) Projector arm fixation knob.
- 43) Projector positioning scale.
- 44) Slit width adjusting knobs.
- 45) Graduated scale 90°-0°-90° to calculate slit inclination during rotation.



- 46) Filter insertion control.
- 47) Slit height adjuster.
- 47b) Slit height value index.
- 48) Slit rotation 90°-0°-90°.
- 49) Light bulb / LED compartment cover
- 50) Cover locking screw.
- 52) Light bulb fixation spring.
- 54) External illuminator.
- 55) Light diffuser.
- 56) LED light power socket.
- 56b) LED light plug.
- 57) Tower power supply outlet.
- 57b) Tower power supply cable.
- 58) Transformer nameplate.
- 59) Digital video camera
Splitter
- 60) Video camera splitter knob.
- 61) Video camera-to-base connection socket.
- 62) USB 3 port for computer connection.
- 62b) USB 3 cable for computer connection.
- 63) Standard splitter
- 64) Horizontal tilting tuner.
- 65) Vertical tilting lever.
- 66) Slit projector head
- 67) Fixing holes for R900 plate or laser support
- 68) Base LED for diagnostics
- 69) Lighting card red LED refl
- 70) Lighting card green LED
- 71) Lighting card reset
button.
- 80) Allen wrench.
- 81) Chinrest paper 100 pc.
- 82) Dust cover.



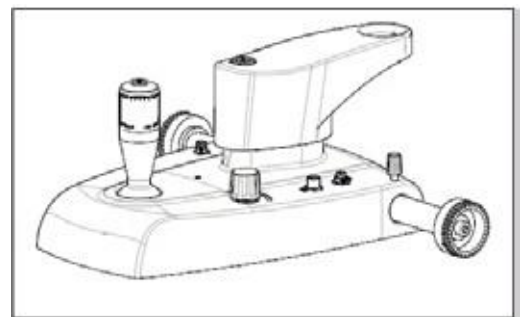
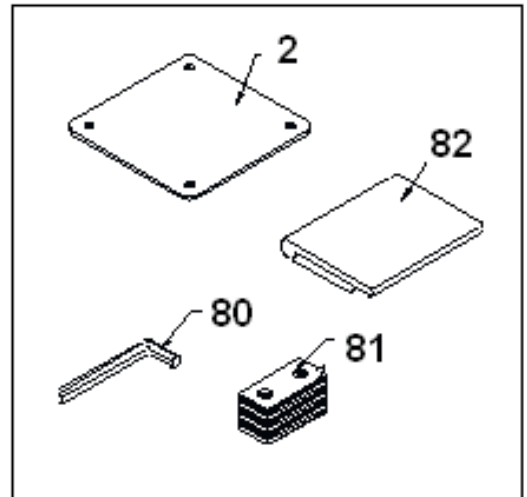
2.2 MODEL SL 550

The device is delivered packaged. When removing the device from the packaging, check that all the following components are present:

- a) One table top (NOTE: the table top is not included with the slit lamp for twin or joint tables) on which are mounted:
- one transformer box (6) with main illuminated switch (7), socket for fixation point (32), mains socket (30) with voltage switch (31) and built-in fuses;
 - one mains cable;
 - two orthogonally moving slide guides for the base (3);
 - one sliding plate for the positioning device(2);
 - one drawer (5).
- b) One complete base with orthogonal movements (9)
- c) One stereoscopic microscope with 2 magnifications or one Galilean system (15) with 3, 5 magnifications or with progressive zoom, complete with screw-out eyepieces (38).
- d) One slit projector optical unit.
- e) One chinrest module (17).
- f) These instructions for use.
- g) A series of accessories including;
- two guards for the slide guides (4);
 - one calibration rod (13);
 - one protection cover (82);
 - one Allen wrench (80);
 - two protection fuses;
 - one shielding glass (14).

The following accessories can be supplied upon request:

- photo camera mount (with beam splitter);
- video camera C mount (with beam splitter);
- second observer tube (with beam splitter);
- separator with digital video camera;
- beam splitter /separator;
- Hruby lens;
- Micrometric eyepiece;
- brightness regulation rheostat on the base (8);
- capturing trigger button on the standard Joystick
- F900 and A900 tonometer mounting plates.
- Volk lens.
- External illuminator (54) (standard on D digital systems)

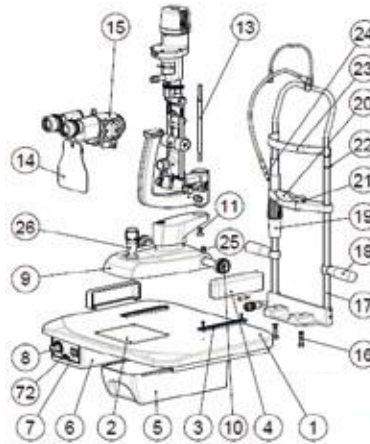


Base with Brightness Button and adjuster on the Base

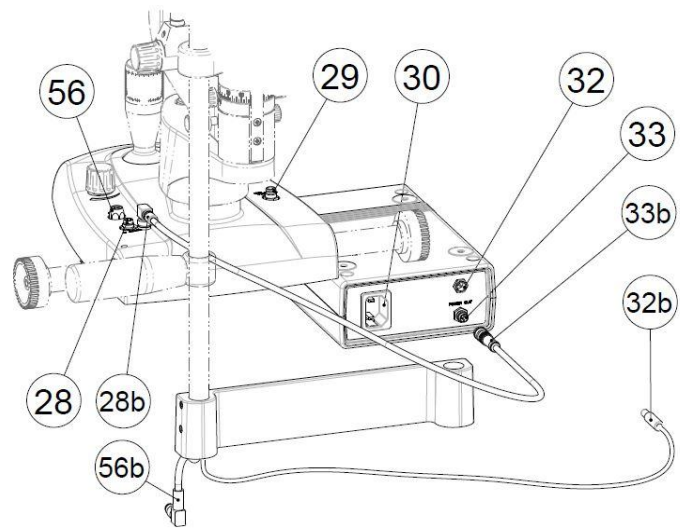


Hbury

- 1) Shaped table top.
- 2) Tefl ansliding plate.
- 3) Geared guides.
- 4) Wheel shields.
- 5) Accessory drawer with guides.
- 6) Transformer.
- 7) Main switch with light indicator.
- 8) Brightness control knob.
- 9) Orthogonally moving base.
- 10) Geared wheel.
- 11) Lamp holder / LED-holder fastening screw.
- 12) Mounts plug: calibration rod.

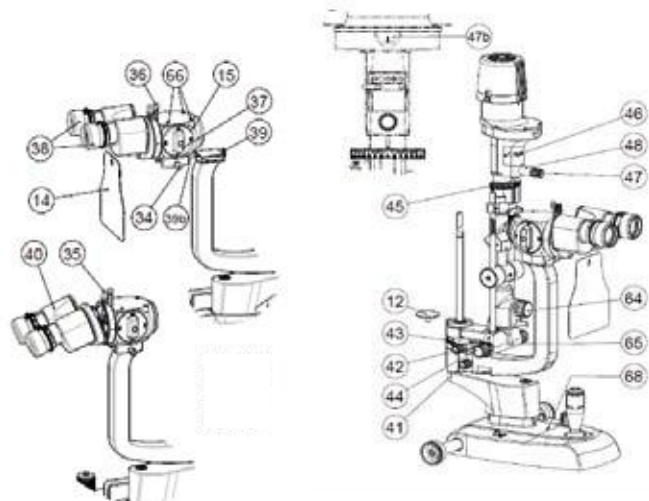


- 13) Tonometer plate
- 14) Calibration rod.
- 15) Shielding glass.
- 16) Microscope.
- 17) Chinrest module fastening screw.
- 18) Chinrest module.
- 19) Patient's handle.
- 20) Chinrest height adjusting ring nut.
- 21) Chinrest.
- 22) Chinrest paper fixation pivots.
- 23) Eye positioning reference index.
- 24) Headrest.
- 25) Fixation point.
- 26) Device base locking knob.
- 27) Joystick for lateral, longitudinal and vertical move- ments (x,y,z).

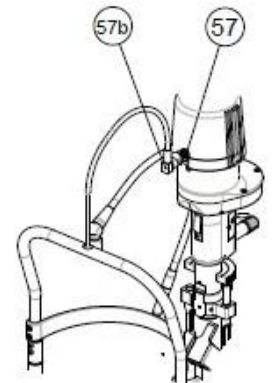
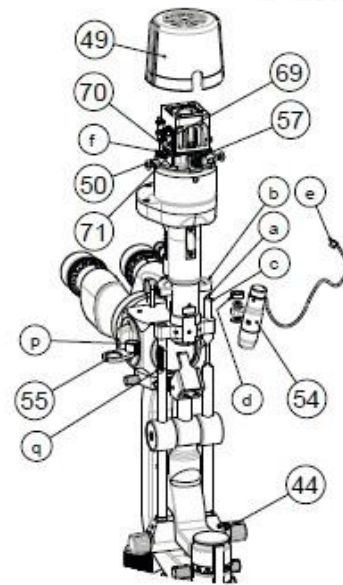
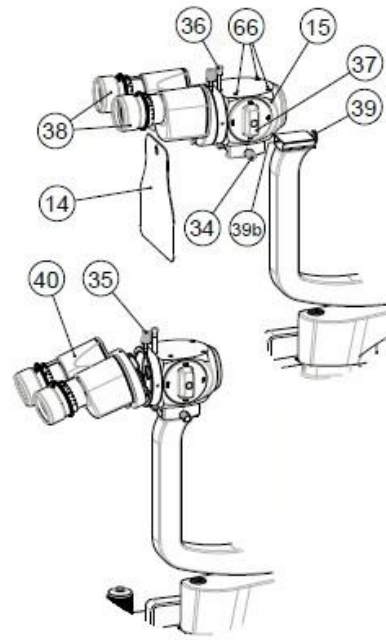


- 28) Capturing trigger button
- 28b) Base-to-transformer connection socket.
- 28b) Connector for base-to-transformer socket

- 29) Video camera connection socket.
- 30) Mains socket.
- 31) Voltage switch and fuse seat.
- 32) Fixation point power socket.
- 32b) Fixation point power supply connector
- 33) Low-voltage transformer output socket.
- 33b) Connector for transformer output.
- 34) Microscope locking knob.
- 35) Microscope splitter knob.
- 36) Fluorescein filter insertion rod.
- 37) Magnification tuner.
- 38) Extractable eyepieces.
- 39) Microscope positioning lock.
- 39b) Microscope positioning locking grub screw.
- 40) Binocular.
- 41) Microscope arm fixation knob.



- 42) Projector arm fixation knob.
- 43) Projector positioning scale.
- 44) Slit width adjusting knobs.
- 45) Graduated scale 90° - 0° - 90° to calculate slit inclination during rotation.
- 46) Filter insertion control.
Lever
- 47) Slit height adjuster.
Tuner
- 47b) Slit height value index.
- 48) Slit rotation 90° - 0° - 90° .
- 49) Light bulb / LED compartment cover
- 50) Cover locking screw.
- 52) Light bulb fixation spring.
- 54) External illuminator.
- 55) Light diffuser.
- 56) LED light power socket.
- 56b) LED light plug.
- 57) Tower power supply outlet.
- 57b) Tower power supply cable.
- 58) Transformer nameplate.
- 59) Digital video camera Splitter
- 60) Video camera splitter knob.
- 61) Video camera-to-base connection socket.
- 62) USB 3 port for computer connection.
- 62b) USB 3 cable for computer connection.
- 63) Standard splitter
- 64) Horizontal tilting tuner.
- 65) Vertical tilting lever.
- 66) Slit projector head
- 67) Fixing holes for R900 plate or laser support
- 68) Base LED for diagnostics
- 69) Lighting card red LED refl
- 70) Lighting card green LED
- 71) Lighting card reset button.
- 80) Allen wrench.
- 81) Chinrest paper 100 pc.
- 82) Dust cover.



3 CLEANING

When the device is not operating, cover it with the plastic cover provided to protect it from dust. dust accumulating on the eyepiece and on the examination lenses during use must be regularly removed with a soft cloth and rubber bellow. To clean the external surfaces simply use a cloth slightly dampened with water. do not use any thinners or solvents.

4 OPERATING PROCEDURES

- a) have the patient comfortably sit down with his/her chin on the chinrest (20) and the forehead against the headrest (23).
- b) Lift and lower the chinrest (20) using the handle (19) to align the patient's eyes with the pre-marked signs on the chinrest (22).
- c) Turn on the instrument using the illuminated switch (7), the indicator light on the base (68) (SL500/SL550) will switch on.
- d) Adjust brightness as desired using the tuner (8) (on the transformer or on the base depending on the model).
- e) Use the joystick (26) to aim and focus the eye to be examined.

For further information and access to all image elaborations, please refer to the user manual of the AnaEyes software.

5 MAINTENANCE

All repair operations described below must be performed with the power cable of the unit disconnected from the mains outlet. In the event of faults that cannot be solved with the operations described below, please contact the installer company.

LED LAMPS OPERATING ALARM (68) ON SLIT LAMP BASE

FAULT		EFFECT	CAUSE	ACTION
1	base LED (68)	green LED always on	powered base. powered LED-holder. White light emission.	Fault-free operation.
	projector LED			
2	base LED (68)	Red LED continuously ON	White power LED in the LED-holder is not powered or maximum operating temperature was exceeded.	Switch off, wait for the red LED to turn off. Check connection between base and LED-holder. Restore and switch back on.
	projector LED	White LED always OFF		
3	base LED (68)	Red LED emits two equal flashes plus one pause.	The +5v of the control card in the LED-holder is missing.	Switch off, check connections between the base and the LED-holder, (also inside the LED-holder, green LED off). Restore and switch
	projector LED	Intermittent white LED		
4	base LED (68)	Fast intermittent Red LED (approx. 2 pulses per second)	Input voltage exceeds maximum voltage	Switch off. Reduce input voltage to below maximum voltage, (12vac + 30%), as measured on the base input connector, namely 15.6vac. Turn back on.
	projector LED	Intermittent white LED		
5	base LED (68)	Slow intermittent Red LED (approx. 1 pulse every 3 seconds.)	Input voltage is lower than the required voltage	Switch off. Increase input voltage to above minimum voltage, (12vac - 10%), as measured on the base input connector, namely 10.8vac. Turn back on.
	projector LED	Intermittent white LED		
6	base LED (68)	Intermittent Orange and green LEDs, 2 pulses plus one pause	base or LED-holder output power supply +5v in short-circuit.	Switch off, eliminate short-circuit and turn back on.
	projector LED	White LED with minimum intermittent value:		
7	base LED (68)	Steady Orange LED	White LED in short-circuit	Switch off, remove short-circuit and turn back on
	projector LED	White LED off		

5.1. INSTALLATION AND COMMISSIONING

5.2 TRANSPORT AND STORAGE

All equipment is always delivered packaged in optimal conditions to withstand standard transport and storage conditions. In the event that, when removing the device from its packaging, damages due to transport are detected, please contact the installer company or the manufacturer directly.

5.3 ASSEMBLY

- 1) Secure the tabletop to a sound base. If the slit lamp was ordered together with a table base, the instrument table will be ready for assembly. In this case follow the instructions below:

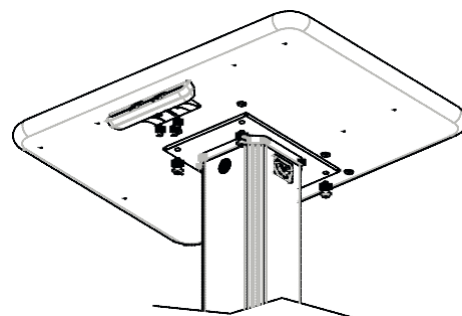
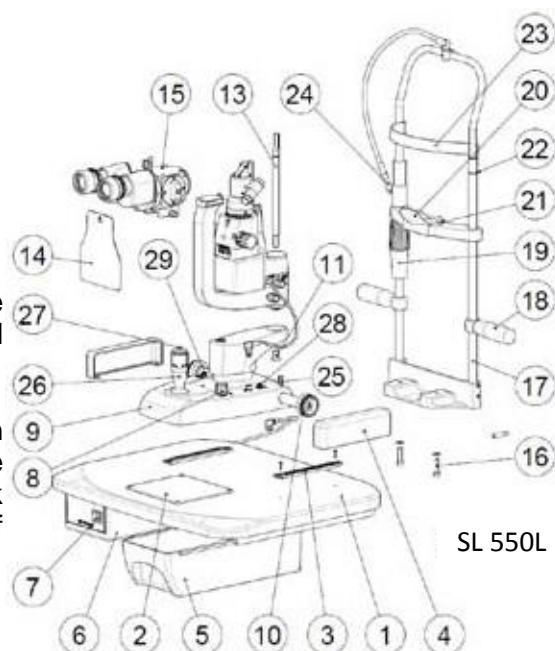
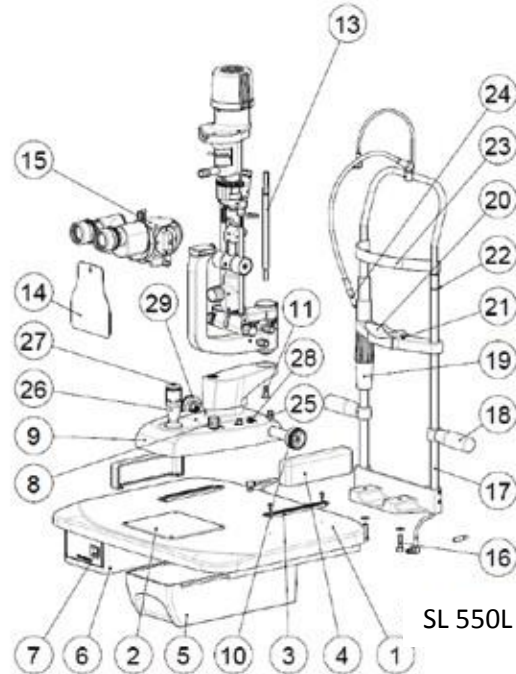
For three-legged table bases:

- a) Place the table shaft in the three-legged base;
- b) Lock the two parts together with the two socket head screws using the socket wrench supplied with the three-legged base;
- c) Insert the plate under the instrument table onto the pivot coming out of the shaft;
- b) Fix the top to the bottom by tightening the two socket head screws.

For self-balanced or electric table base (see the fixation the right):

The table top will be ready for assembly to the table base. In this case, follow the instructions below:

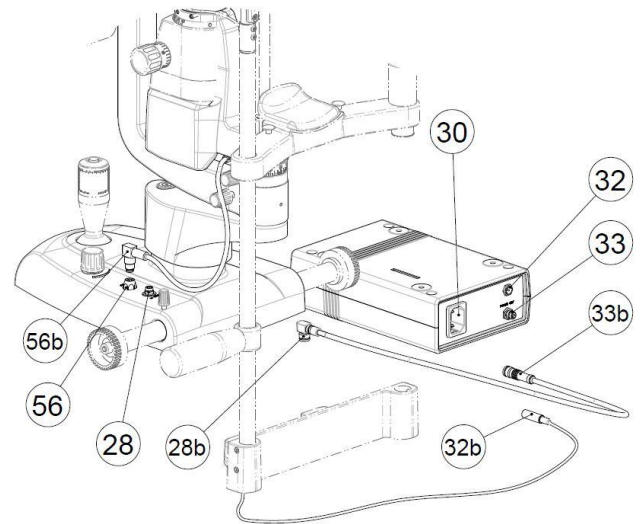
- a) position the table on the base plate and insert the screws supplied;
 - b) Fix the assembled unit by tightening the 4 socket head screws.
- 2) Unscrew the two socket head screws (16) under the chinrest. Insert the screws in the chinrest module (17) and align its holes with the holes of the table top. Tighten the screws using the wrench provided with the device (80).
 - 3) place the base with orthogonal movements (9) on the slides (3) on top of the instrument holder table (1); make sure the wheels are aligned (10). Lock the device with the knob (25) on the right side of the base, above the wheel axis.
 - 4) Fix the lamp top by tightening the screw (11).
 - 5) Fix the guards (4) along the slides by inserting the tags into their slots.
 - 6) put the microscope in place (15) making sure it is abut against the lock (39), then fi it with the knob (34) on the right of the microscope.
 - 7) Fix the shielding glass (14) to the pivot.



5.4 CONNECTION

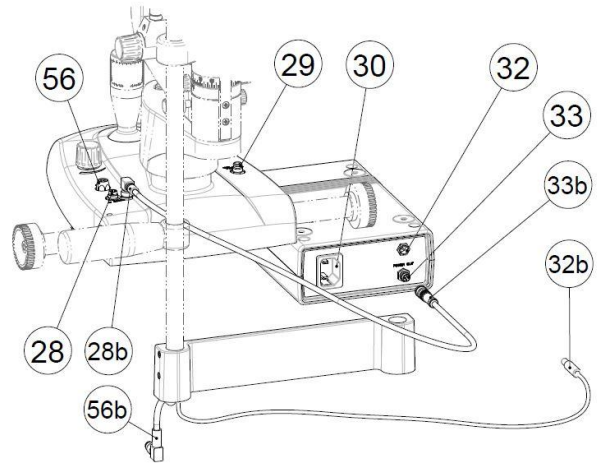
MODEL SL500L

- 1) Plug the Lamp power supply cable into the socket on the table (see the chapter on MAINTENANCE).
- 2) Plug the fixation point supply cable (32b) in the socket on the back of the transformer (32).
- 3) Make sure the voltage switch (31) on the mains socket is set to the proper voltage for the device to be connected. If this is not the case, remove the small drawer and turn the switch until the required voltage value is displayed. **Warning!!** If the Slit lamp is supplied without a transformer box, make sure the mains supply meets the technical requirements described in these user instructions.
- 4) Plug the mains supply cable into the mains socket.
 - make sure the electric system power supply voltage matches the voltage indicated on the computer data label. If the voltage does not match, contact the customer service or the manufacturer itself. The whole system must comply with CEI 64-4 standards or with the most recent CEI 64-8 standards sect. 710 (electrical systems for medical practices). Should you have any doubts, please contact the electrical installation and maintenance company in charge of your electrical system.
 - do not use multiple sockets, adapters or extension cables to connect the device plug to the mains socket.
 - To disconnect the device from the power supply, also in case of emergency, grab the plug of the power cable; do not pull the power cable to unplug the device.



MODEL SL 550L

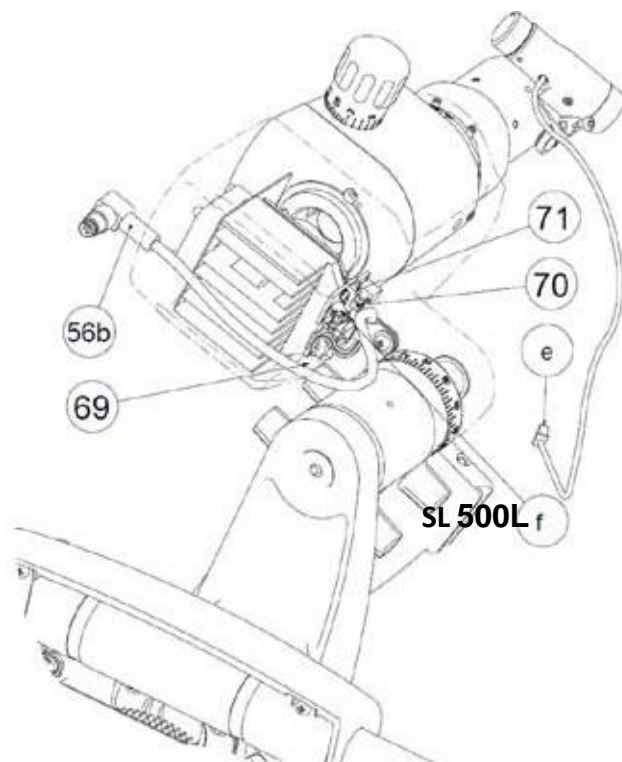
- 1) Plug the supply cable from the chinrest module, into the socket on the head of the slit lamp (see also the chapter on maintenance).
- 2) Plug the fixation point supply cable (32b) in the socket on the back of the transformer (32).
- 3) Make sure the voltage switch (31) on the mains socket is set to the proper voltage for the device to be connected. If this is not the case, remove the small drawer and turn the switch until the required voltage value is displayed. **Warning!!** If the Slit lamp is supplied without a transformer box, make sure the mains supply meets the technical requirements described in these user instructions.
- 4) Plug the mains supply cable into the mains socket.
 - make sure the electric system power supply voltage matches the voltage indicated on the computer data label. If the voltage does not match, contact the customer service or the manufacturer itself. The whole system must comply with CEI 64-4 standards or with the most recent CEI 64-8 sect. standards. 710 (electrical systems for medical practices). Should you have any doubts, please contact the electrical installation and maintenance company in charge of your electrical system.
 - do not use multiple sockets, adapters or extension cables to connect the mains plug to the mains socket.
 - To disconnect the device from the power supply, also in case of emergency, grab the plug of the power cable; do not pull the power cable to unplug the device.



5.5 ASSEMBLY OF THE LED LIGHTING SYSTEM

MODEL SL 500L

- 1) Place the external illuminator support on the prisma-holder head (66).
- 2) Fix the support with the screw supplied.
- 3) Connect the plug (and) to the LED card outlet (f).



5.6 ASSEMBLY OF MANUFACTURER VIDEO CAMERA MOUNTS

Remove the slit lamp from packaging; Remove the computer (if present) from packaging; Also remove the monitor and keyboard (if present) from the packaging. After proper assembly and connection (see the slit lamp user manual annexed) place the slit lamp on the table top.

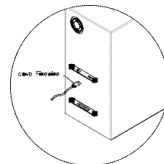
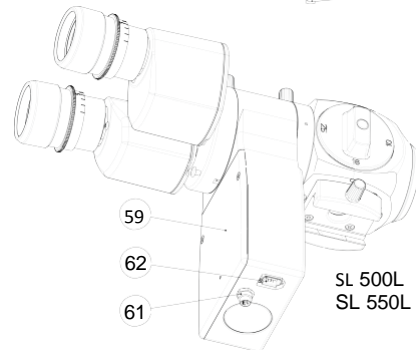
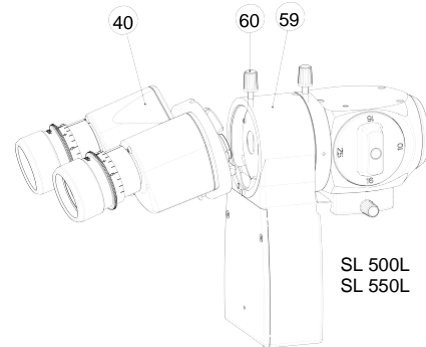
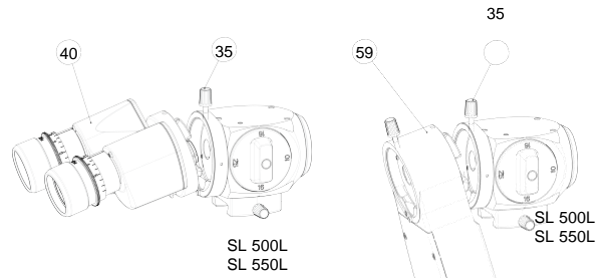
Install the splitter as shown in the drawings on the right. Unlock the knob (35) and remove the binocular (40), then insert the digital camera splitter (59) and fix it by locking the knob (35).

put the binocular back in place (40) in the camera separator compartment (59) and fix it by locking the knob (60).

Connect the socket (61) under the digital camera (59) to the socket at the base of the device (29), using the cable supplied.

Connect the USB 3 cable supplied (62b) to the USB 3 port (62) under the digital video camera (59), connect the plug on the other end of the USB 3 cable to the port on the back of the computer.

Turn on the pC, the monitor and then the slit lamp. The digital camera does not have a switch and it is automatically powered via the USB 3 cable.



WARNING!

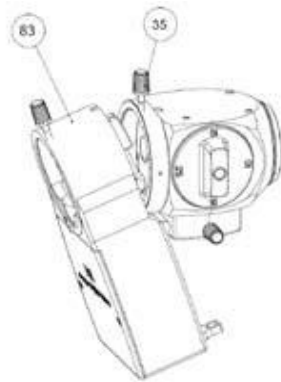
The software requires a minimum display resolution of 1024 x 768 pixel to run.

5.7 INSTALLING USB3.0 DIGITAL BEAM SPLITTER

note: please be sure that the PC you are using is equipped with an USB 3.0 connection. If you will connect USB 3.0 digital camera to an USB 2.0 port, the digital camera will not work.

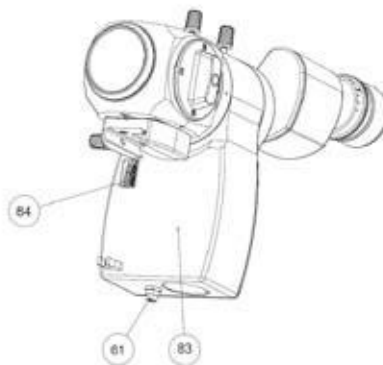
Remove the slit lamp from packaging; Remove the computer (if present) from packaging; Also remove the monitor and keyboard (if present) from the packaging. After proper assembly and connection (see the slit lamp user manual annexed) place the slit lamp on the table top.

Install the splitter as shown in the drawings on the right. Unlock the knob (35) and remove the binocular (40), then insert the USB 3.0 digital camera splitter (83) and fix it by locking the knob (35).



put the binocular back in place (40) in the camera separator compartment (59) and fix it by locking the knob (60).

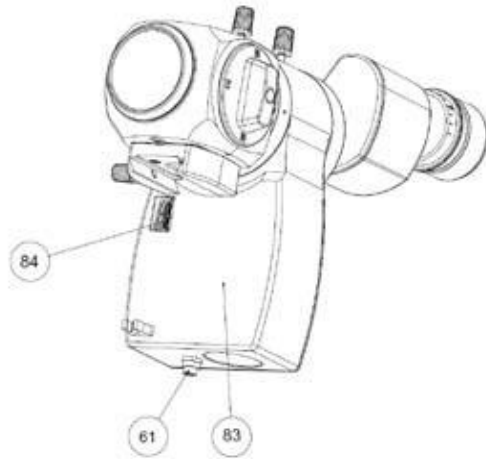
Connect the socket (61) under the digital camera (59) to the socket at the base of the device (29), using the cable supplied.



Connect the USB 3.0 cable supplied to the USB 3.0 port (84) on the side of the digital video camera; connect the plug on the other end of the USB 3.0 cable to the USB 3.0 port on computer.



Turn on the pC, the monitor and then the slit lamp. The digital camera does not have a switch and it is automatically powered via the USb 3.0 cable.



5.8 ASSEMBLY OF THE EXTERNAL ILLUMINATOR

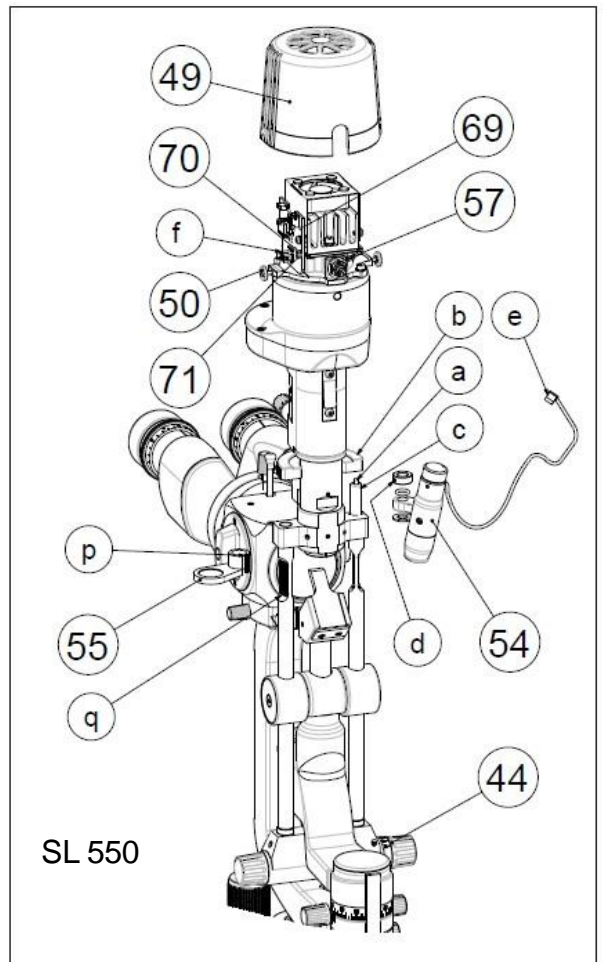
MODEL SL 550L

Assembly instructions for the external illuminator:

- 1) Turn the knob (44) so that the rod (a) is as low as possible.
- 2) push the part (b) upwards .
- 3) Insert the light (54) in the tube (c).
- 4) Tighten the locking grub screw (d).
- 5) Insert the illuminator (54) cable (e) into the LED card outlet (f).

Assembly instructions for the diffuser:

- 1) Insert the diffuser (55) through the opening (p) on the rod (q) as shown in the figure





Essilor International
147 rue de Paris
94227 Charenton-le-Pont
FRANCE