
ESL-7800 Slit Lamp

Operation Manual

ESL-7800

Slit Lamp



ELI
EZer

Preface

Thank you for purchasing our ESL-7800 slit lamp. The slit lamp will have another capability of photography, if you purchase the appliance with the photography accessories. At the same time, in order to meet the needs of the customs, we provide sorts of accessories, which can be used widely. Please read this manual carefully for the sake of your best use.

General Requirements for Safety

Please read carefully about following precautions to avoid unexpected personal injury as well as the product being damaged and other possible dangers.

Precautions

1. Do not use this instrument in the environment prone to fire and blast or where there is much dust and with high temperature. Use it in the room and simultaneously be careful to keep it clean and dry.
2. Check that all the wires are correctly and firmly connected before using. Ensure that the instrument is well grounded.
3. Please pay attention to all the ratings of the electrical connecting terminal.
4. Only use fuse according to the specifications and rated values stipulated by our product.
5. Use the power cable supplied with this instrument.
6. Don't touch the surface of the lens and prism with hand or hard objects.
7. Turn off the main power first before replacing the main bulb, flash lamp and fuse.
8. To prevent the instrument from falling down to floor, it should be placed on the floor where the inclination angle is less than 10° .
9. Turn off the power and cover the instrument with dust-prove hood when it is not in use.
10. In case there is any trouble, please first refer to the trouble-shooting guide. If it still can't work, please contact with the authorized distributor or our Repair Department.

✧ THE SAFETY MARKS USED IN THIS INSTRUMENT



TYPE B



ATTENTION PLEASE
REFER TO THIS MANUAL



TERMINAL OF
THE PROTECTIVE GROUNDING

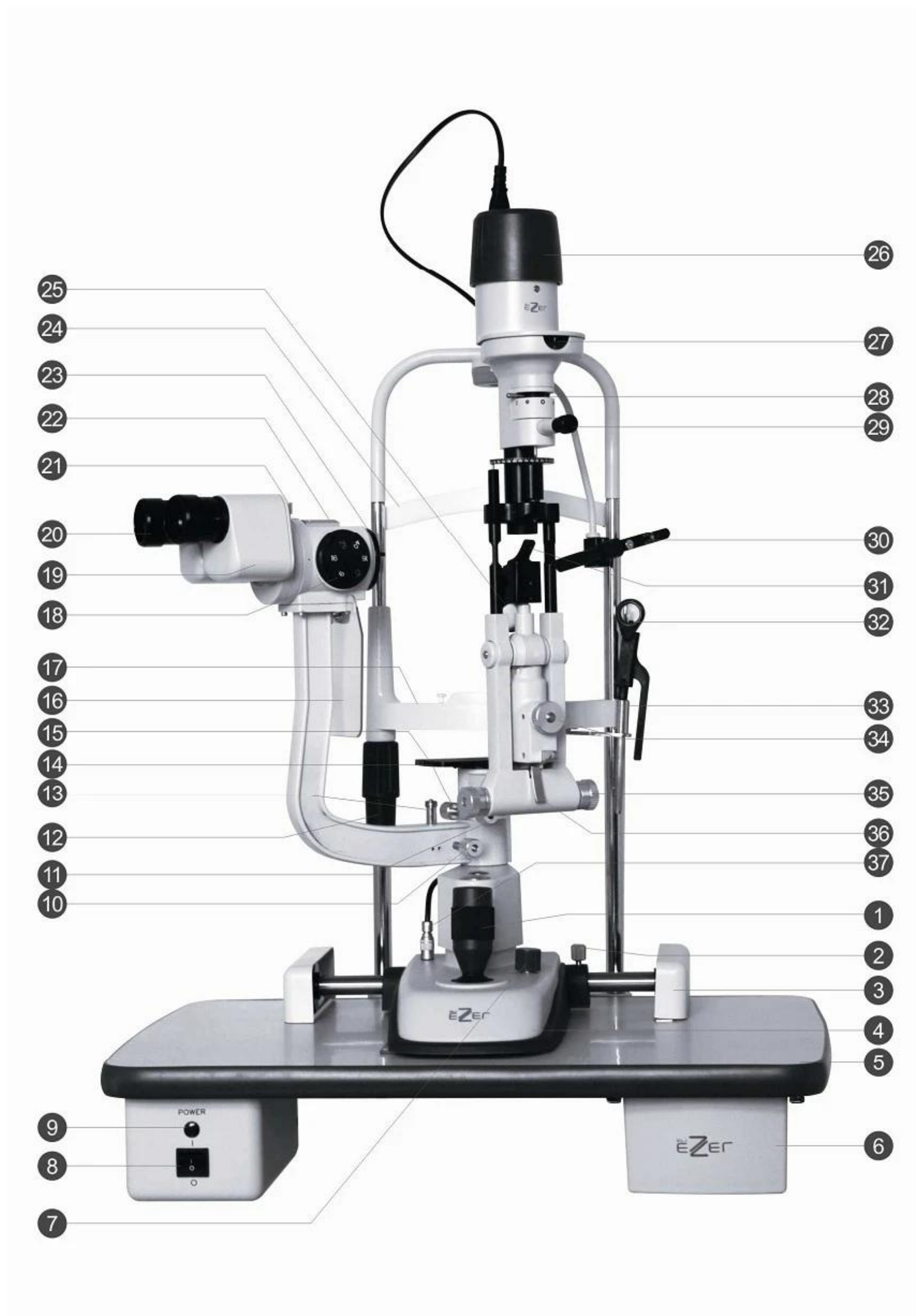


Fig.1

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1 Nomenclature

- 1 Joystick**
Incline joystick to move the instrument slightly on the horizontal surface and rotate it to adjust the elevation of the microscope.
- 2 Base Locking Screw**
The base will be locked when fastening this screw.
- 3 Rail Cover**
Protect the rail surface.
- 4 Base**
Support the microscope and the illumination arms with the joystick controlling its movement.
- 5 Work Table**
- 6 Accessory Drawer**
Store the focusing test rod and other accessories.
- 7 Brightness Control Switch**
The brightness can be continuous adjusted. Avoid working continuously at high setting, as the service life of the bulb will be shortened.
- 8 Main Power Switch**
- 9 Pilot Lamp**
- 10 Microscope Arm Locking Knob**
Lock the rotational movement of the microscope arm.
- 11 Angle Mark Ring**
Marks on the angle mark ring of the illumination arm, which relates to the long mark of the microscope arm, represent the two arms' angle. When the '0' on the ring relates to the short mark at one side of the operator, the right eyepiece may be blocked, and the side of the patient the left eyepiece.
- 12 Chin-rest Elevation Adjustment Knob**
Rotate the knob to adjust the elevation of the chin-rest
- 13 Location Roller**
When it is in the middle, it stands for included angle of 0° between the microscope arm and the illumination arm. And the right or left side the included angle of 10° .
- 14 Microscope and Illumination Arm Couple Bolt**
Fasten this bolt and the illumination arm and the microscope arm could rotate together in couple state. Loosen it and the illumination arm then can rotate separately.
- 15 Hruby Lens Guide Plate**
Also used as an assembly plate for the applanation tonometer.
- 16 Breath Shield**
- 17 Chin-rest**
- 18 Magnification Select Dial**
Five different magnifications are provided.
- 19 Prism Box**
Separate the prism box to adjust the interpupillar distance.
- 20 12.5X Eyepiece**
Before using the slit lamp, adjust the proper diopter for each eyepiece to obtain a

definite image.

21 Microscope Fixation Screw

22 Accessories Mount

Accept the model R-900 Goldmann applanation tonometer as well as other accessories

23 Horizontal Mark

When the horizontal center of the patient's eye is in line with this mark, the elevation of the microscope controlled by joystick is also in its center position.

24 Forehead Belt

25 Diffusion Lens

Used for observing and photographing at a low magnification, and for enlarging the illumination field.

26 Lamp Cap

27 Aperture Slit Height and Display Window

28 Filter Selection Lever

There are four filters for selection

29 Aperture and Slit Height Control Knob

Rotate this knob to adjust the spot and the slit height. Swing the knob horizontally to revolve the slit.

30 Fixation target

Two kinds of fixation targets are available. One is for diopter adjustment to help the patient to see the target clearly while the other is an illuminated fixed spot.

31 Reflecting Mirror

Both long and short reflecting mirrors are provided. The long mirror is routinely used for most examination procedures. The short mirror is used when the long mirror interferes with the observation pathway, such as during funduscopy.

32 Hruby Lens

Used for observation of fundus and the posterior segment of vitreous body.

33 Hruby Lens Holder

34 Centering Knob

Loosening the knob allows the illumination light to be moved from the center of the vision field for indirect retro-illumination. Fastening the knob brings the illumination light back to the center.

35 Slit Width Control Knob

The slit width is continuously adjustable within the range from 0 to 9mm. The marks on the left knob stand for the approximate value of the width.

36 Illumination Inclination Lever

Four 5° inclination stops are available—up to 20°.

37 Brightness Control Connector

2 Assembly

This section of the manual describes how to assemble ESL-7800 slit lamp. All parts should be taken out with great care from the packing case before assembling.

2.1 Components



Fig2-1



Fig.2-2

	Name	Quantity
A	Illumination Part	1
B	Converging Binocular Tubes and base part	1
C	Head-rest Part	1
D	Breath Shield	1
E	Worktable with Power Box	1
F	Rail Cover	2
G	Input Power Cable	1
H	Hruby Lens	1*
I	Hruby Lens Guide Plate	1*
J	Spare Illumination Bulb	1
K	Chin-rest Paper	1
L	Focusing Test Rod	1
M	Protection Cap	2
N	Dust-proof Cover	1
O	Fixation Target	1
P	Spare Long Reflecting Mirror	1
Q	Spare Short Reflecting Mirror	1
R	Brush	1
S	Spare Fuse	2
T	Cross Screw Driver with Wood Handle	1
U	Watch Screw Driver	1
V	Spanner	1
W	Hexagonal wrench	1

(*Optionally available in some region.)

2.2 Assembly procedure-----

Necessary tools are as follows:

Cross screwdriver with wood handle (U)
Watch screwdriver (V)
Spanner (X)

1) Selecting Voltage and Fuse



Fig.3

- ✧ Check the setting on the voltage selector located on the bottom of the power box (Fig3). If it doesn't match with the input voltage, slide it to the proper position with watch screw driver (V).
- ✧ Open the fuse holder with screw driver (U) and take out the fuse, check and ensure that its rated value is corresponding to the mains voltage:
110V-----1A
220V-----0.5A
It has been set to 220V, 0.5A before leaving our factory.

▽Attention: Set the input voltage and frequency of the instrument according to that of the mains.

2) Assembling the Worktable (F)

- ✧ To attach the worktable on the motorized instrument table, please screw off four M8x20mm bolts with spring washers with the spanner (X).
- ✧ Lift the worktable to aim its screw hole at the assembly hole of the

instrument table.

- ✧ Put down the worktable, with the power panel facing the operator, refasten the bolt securely with the spanner (Fig.4).

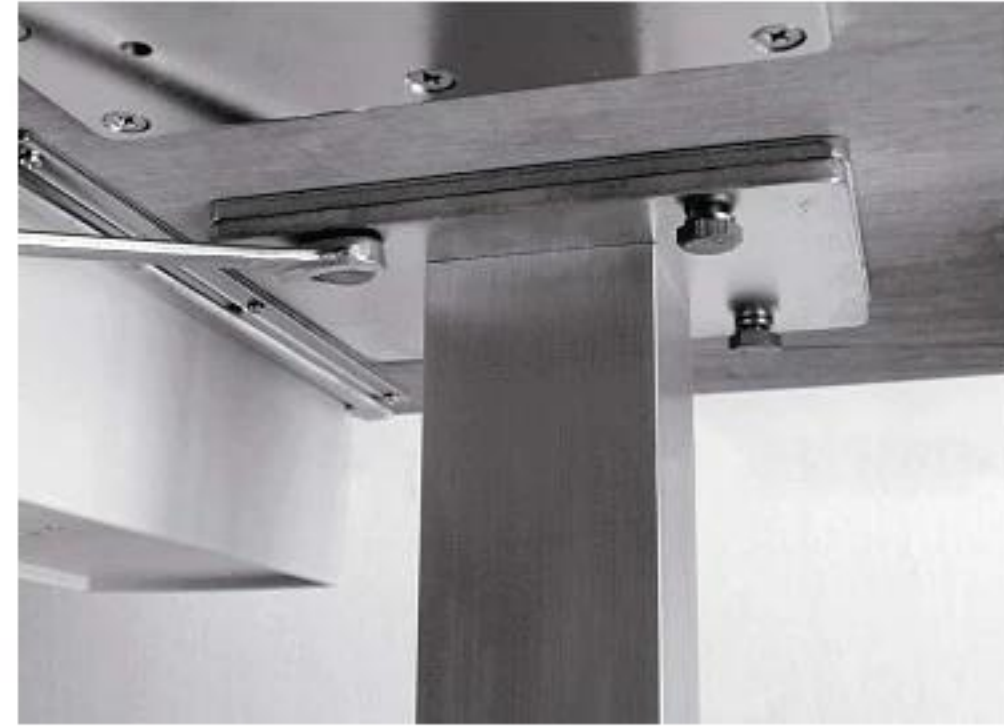


Fig.4

3) Assembling the Head-rest Part (D)

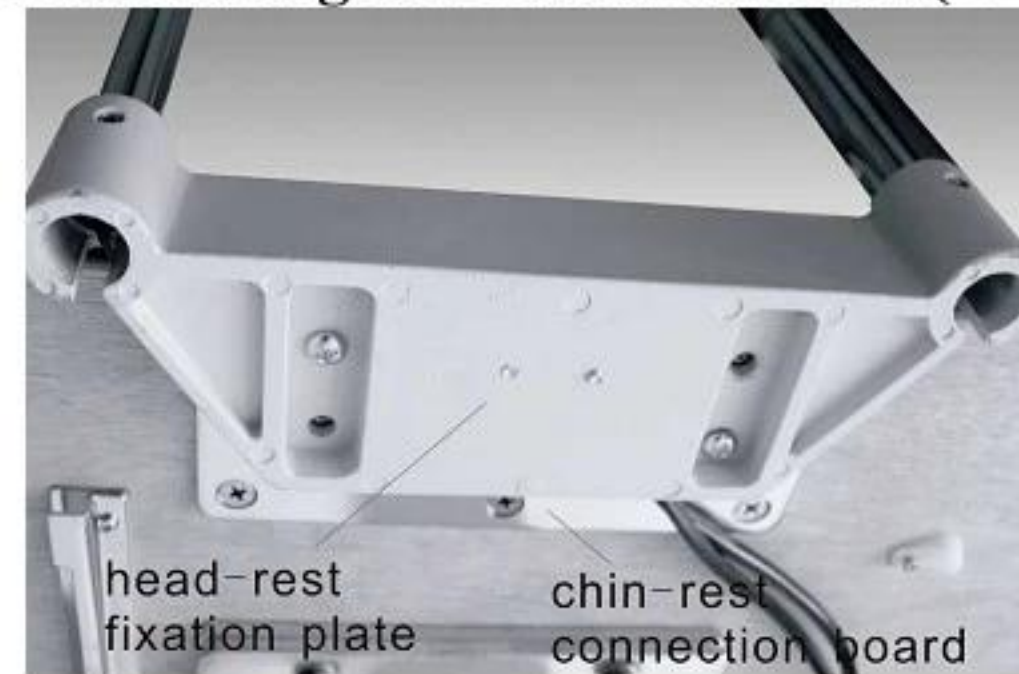


Fig.5

- ✧ Remove the four screws attached to the chin-rest connection board with the screw driver (U).
- ✧ Put two cables in the gap between the headrest fixation plate and the chin-rest connection board (Fig.5).
- ✧ While ensuring they are not clamped, retighten the previously removed screws (Fig.6).

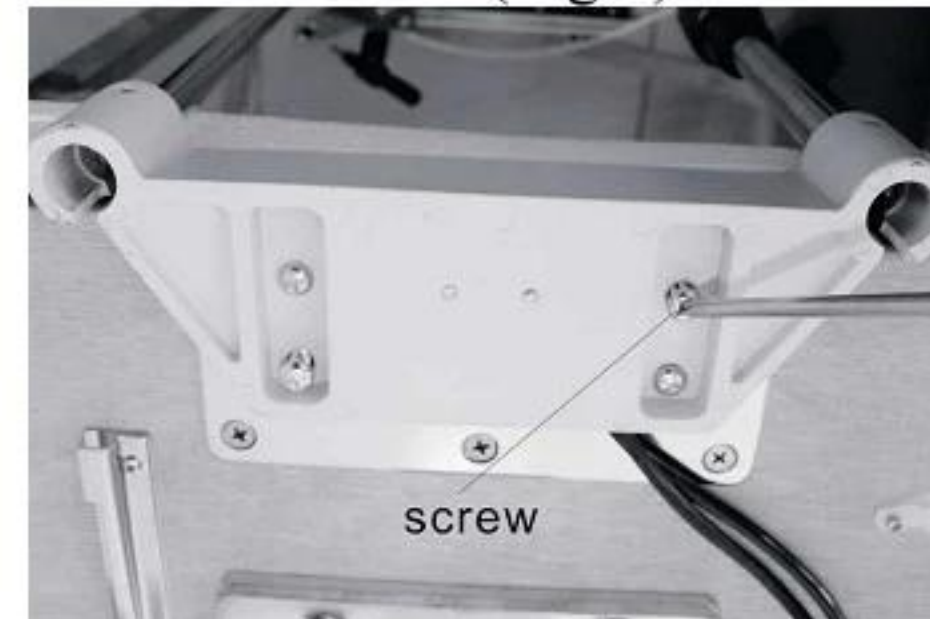


Fig.6

4) Assembling the base part (C) and the rail covers (G)

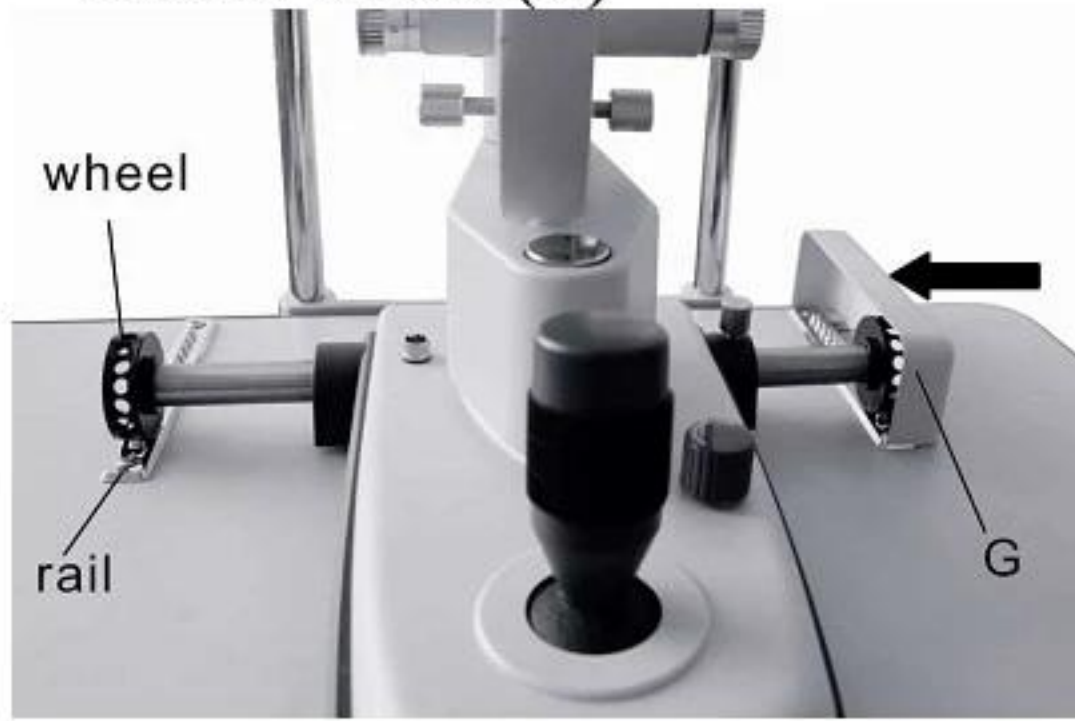


Fig.7

- ✧ Place the wheels of both sides of the base (C) on the rails on the worktable (Fig.7).
- ✧ Check whether the wheels can be rolled steadily on the rails.
- ✧ Insert the bottom of the rail covers into the gap below the both sides of the rails respectively in the direction of the arrow (Fig.7).

5) Assembling illumination part (A)

- ✧ Loosen the illumination arm couple bolt (14).
- ✧ Rotate the brass shaft sleeve so that the red mark is 30 to 90 degree from the limiting board (Fig.8).

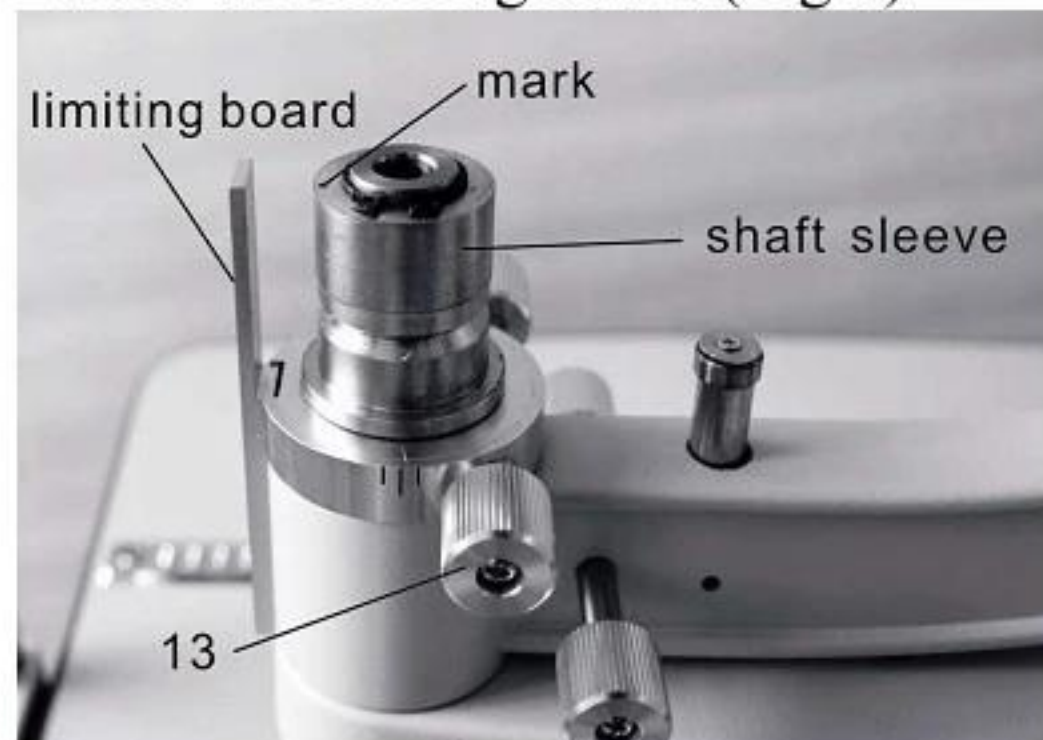


Fig.8

- ✧ Loosen the setscrews in the illumination arm with the screwdriver (V). Aim the assembly hole of the illumination arm at the brass shaft sleeve with care then put down, let the shaft keeping close to the bottom surface well and

simultaneously the two red marks stretch in one line (Fig.9).

- ✧ After the two red marks accurately aligned, retighten the setscrews (Fig.9).

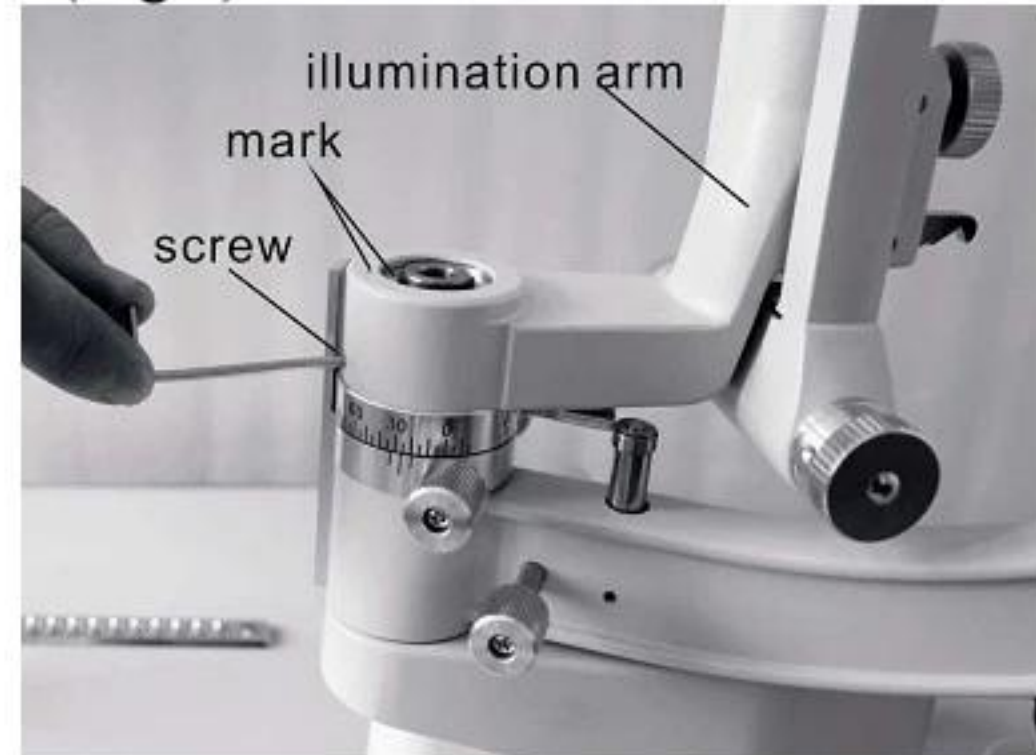


Fig.9

6) Assembling the Converging Binocular Tubes (B)

- ✧ Match the groove on the binocular tubes with the pin on the microscope body. (Fig.10)

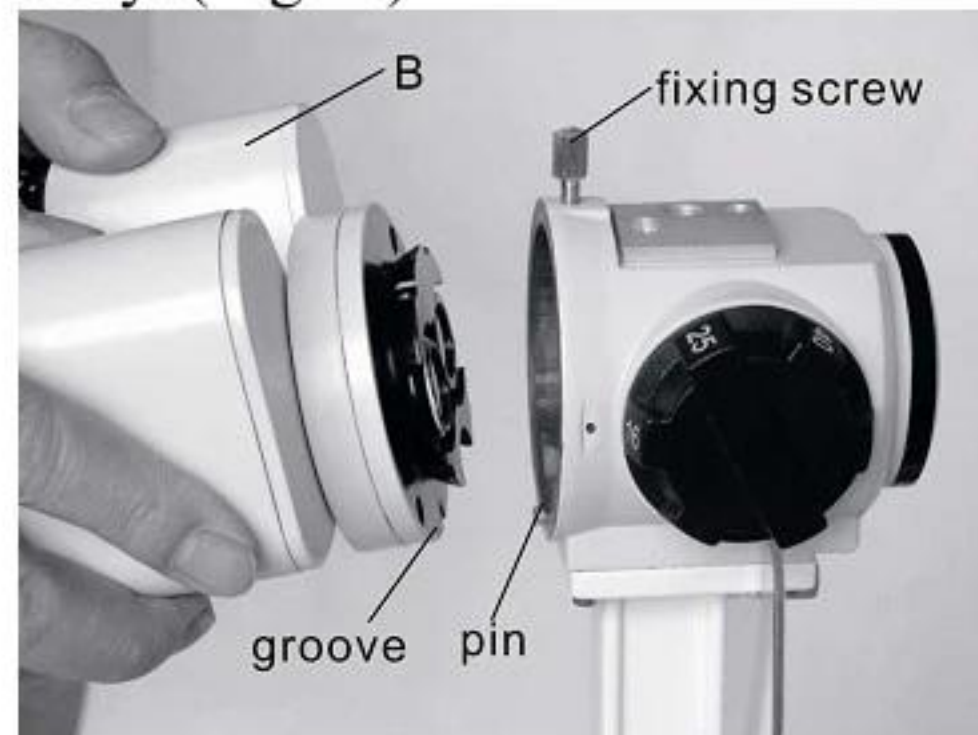


Fig.10

- ✧ Fasten the fixing screw on the body to the microscope.

⚠ Attention: Avoid touching any lens surface.

7) Assembling the breath shield (E)

- ✧ Remove the breath shield fixation screw from the microscope arm.
- ✧ Pass the removed screw through the hole of the breath shield then re-screw it into the arm (Fig.11).



Fig11

8) Removing the illumination part shipping pad

- ✧ This pad is used to protect the slit mechanism of the illumination part during shipping.
- ✧ Remove the rubber band and gently pull the pad out (Fig.12).

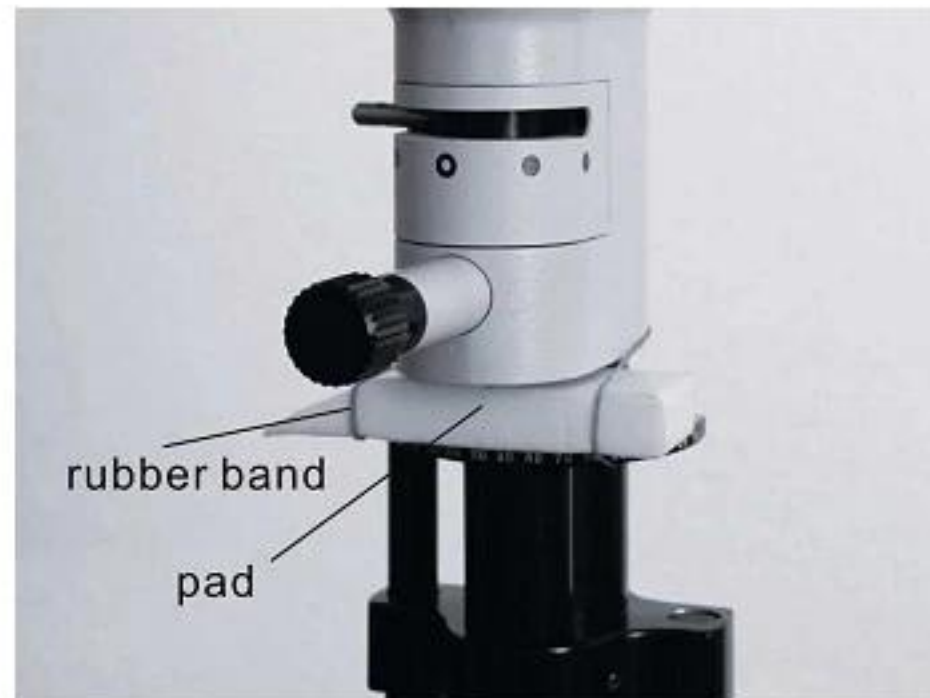


Fig.12

9) Connecting plug



Fig.13

- ✧ Insert the plug on the top of the headrest part (D) into the socket of the lamp cap (26) on the illumination part (A) (Fig.13).

- ✧ Connect the two plugs below the headrest part with the corresponding output socket of the power box.
- ✧ Insert the plug of the input power cable (H) into the input socket of the power box. .
- ✧ Remove the cable clips from the bottom of the work table with screw driver (U) and wrap the output and input cables respectively, then reattach them to the bottom of the work table. (Fig14).

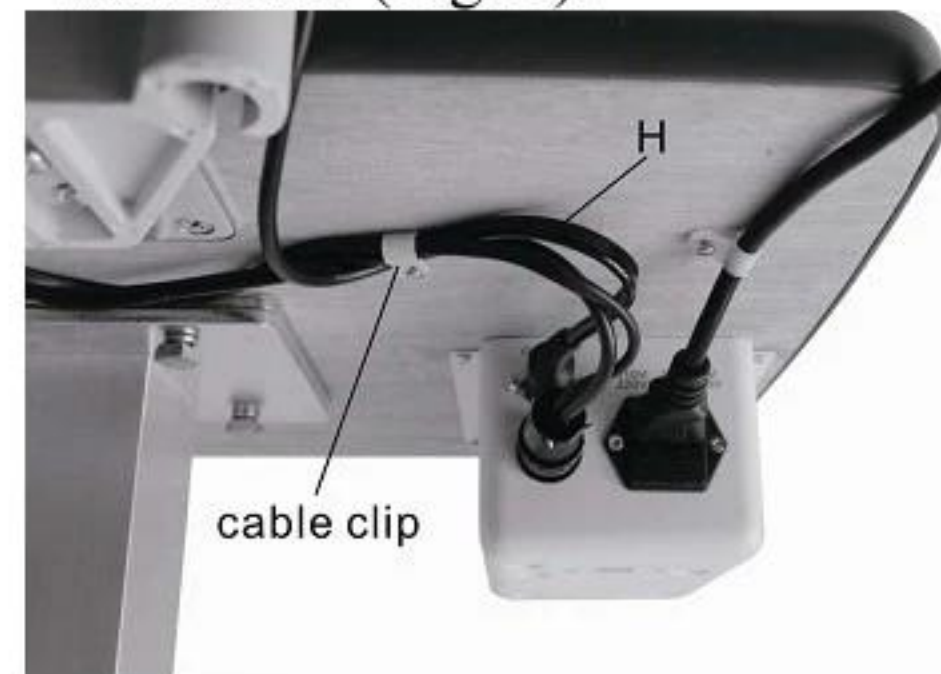


Fig.14

10) Assembling the Hrubby lens (I) and the Hrubby lens guide plate (J)

- ✧ Insert the Hrubby lens (I) into the Hrubby lens holder (35) on the headrest part. Be careful not to touch the lens surface (Fig15.).

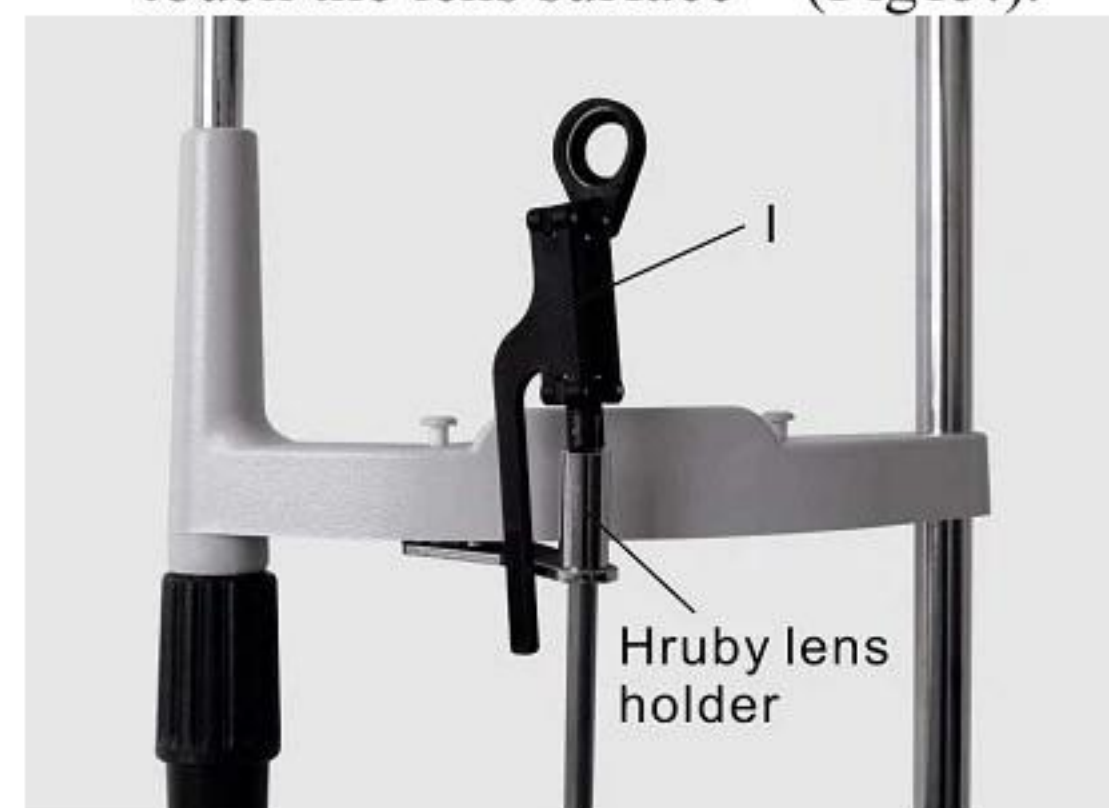


Fig.15

- ✧ Place the Hrubby lens guide plate (J) into the main shaft hole of the base part with the small end pointing to the headrest part (Fig16).

11) Assembling the chin-rest paper (L)



Fig.16

- ✧ Pull out the two fixing pins from the chin-rest.
- ✧ Get rid of the paper package and let the pins go through its holes.
- ✧ Insert the fixing pins into the hole again (Fig.17).

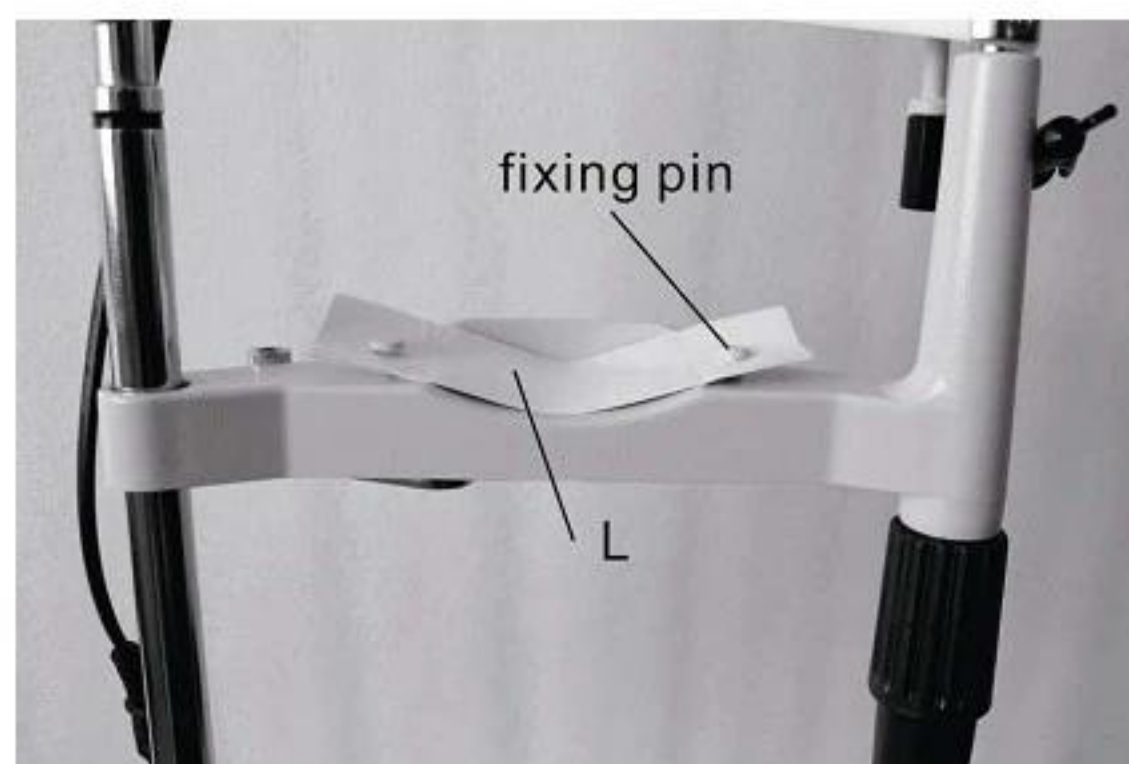


Fig.17

12) Placing spare parts

- ✧ Some spare parts could be stored in the accessory drawer (6) (Fig.18).



Fig.18

2.3 Checking procedure after assembling-----

1) Power plug

- ✧ This instrument supplies a 3-wire cable. Please select a proper power socket as matched.
- ✧ Ensure that the instrument is grounded well.

⚠Attention: Please use the special cable supplied with this instrument.

2) The power box and the illumination part

- ✧ When the main power switch (8) of the power box is placed at 'I', it turns on, and 'O' for turn off. The main power switch should be set at the 'O' position before connecting the input cable with the power socket.
- ✧ Turn on the main power switch, and the pilot lamp (9) will be lighted. Open the slit width

control knob (35) to examine the illumination.

- ✧ Rotate the brightness control switch (7) respectively at three positions and the brightness should be changed accordingly.
- ✧ Check the fixation target device to confirm it is lighted.
- ✧ Check whether all those moveable parts such as aperture and slit height control knob (29), filter selection lever (28), and magnification changer lever (18) etc. could be operated freely.
- ✧ After examining, turn off the main power and cover the instrument with the dust-proof cover (O).

3 Operation procedures

3.1 Diopter compensation and Pupil Distance adjustment-----

1) Use of the focusing text rod (M)

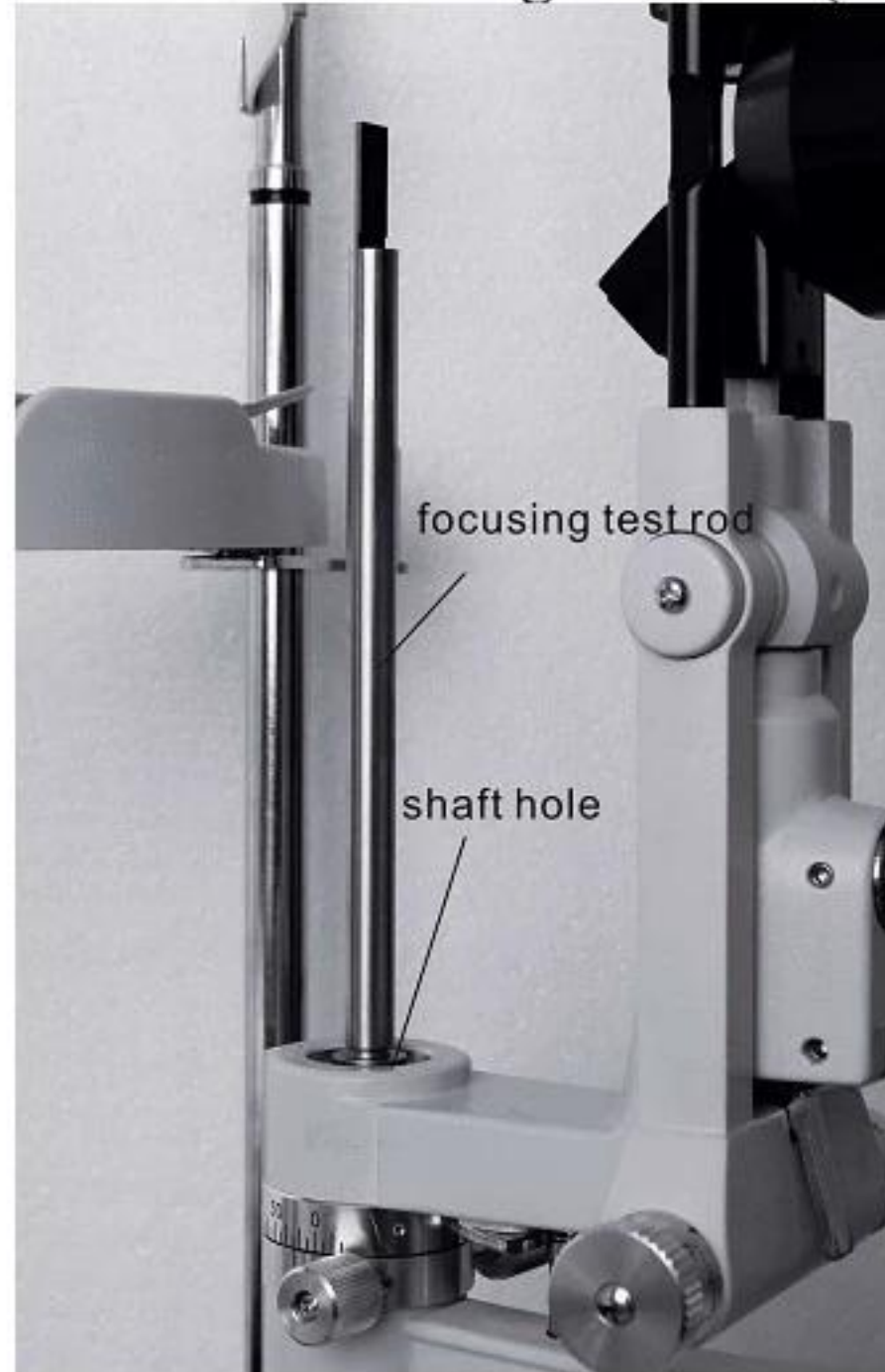


Fig.19

The rod is supplied as one of standard accessories for confirming the microscope's accurate adjustment. Insert it into the main shaft hole with the flat surface facing the objective lens the direction of the operator (Fig.19).

⚠ Attention: After adjusting, remember to take out the rod.

2) Brightness adjustment

Switch on the main power switch and set the brightness control switch (7) at 'N' position. Turn the slit width control knob (35) to make the slit width to be 2~3mm.

3) Diopter compensation

The focus of the microscope is calibrated according to the emmetropia. If the operator is an ametropia, he should adjust the eyepiece diopter. One eyepiece with four short reticle lines which is usually placed at the right side

helps to focus accurately after accessories being attached.

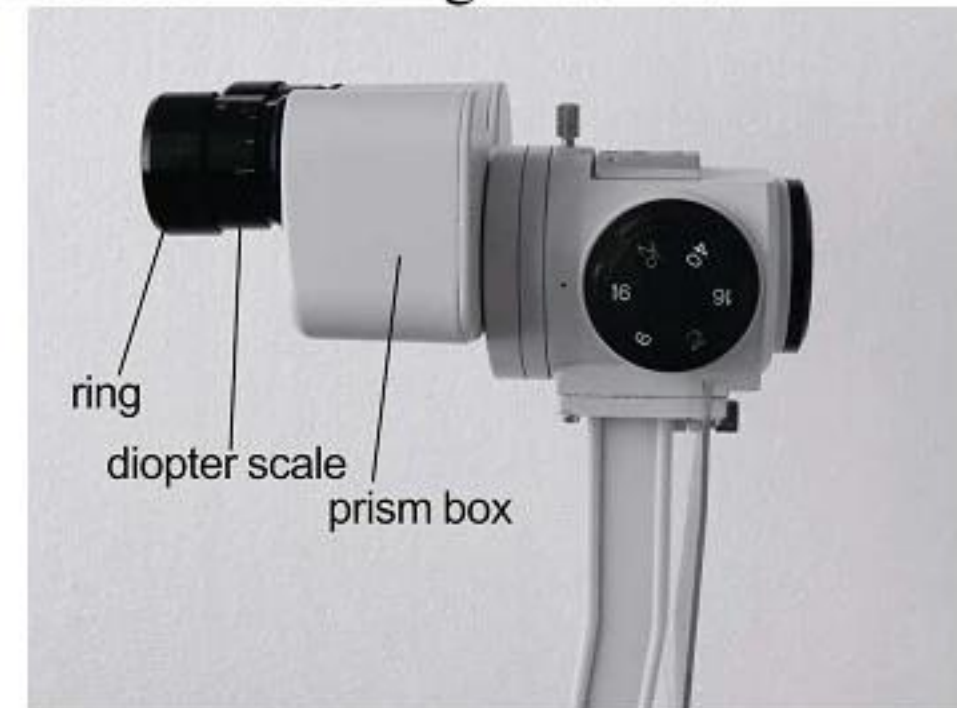


Fig.20

Suggest adjusting the diopter as following procedures

- ✧ First, rotate the diopter adjustment ring (19) counter clockwise down to the end. (Fig.20).
- ✧ Second, rotate the ring clockwise until a sharp slit image appears on the focusing text rod.. At this time, it is also the clearest observation of the reticule in the eyepiece
- ✧ Adjust another eyepiece in the same procedure.
- ✧ Record the diopter value on each eyepiece for future reference.

4) Interpupillary distance adjustment

Separate the prism box of the microscope with both hands to adjust the P.D. until both eyes could see the same image on the focusing test rod through the eyepieces, and at the same time a stereovision will be obtained.

3.2 Patient position and fixation target-----

1) Positioning the patient's head

Have the patient place his chin on the chin-rest (17) and the forehead against the forehead-rest belt (24). Adjust the chin-rest elevation adjustment knob (12) below the chin-rest until the patient's canthus aligns with the horizontal mark (23) (Fig.21).



Fig.21

2) Use of the fixation target

- ✧ For fixing the patient's eyesight, just make him look at the fixation target (30) with the eye not to be examined. To change fixing position, move the lamp bar, as well as move the curved lever around the forehead.
- ✧ The fixation target with diopter compensation supplies a dot and

concentric circles target. Slide the knob to adjust the diopter compensation within the range from -15D to +10D (Fig.22).

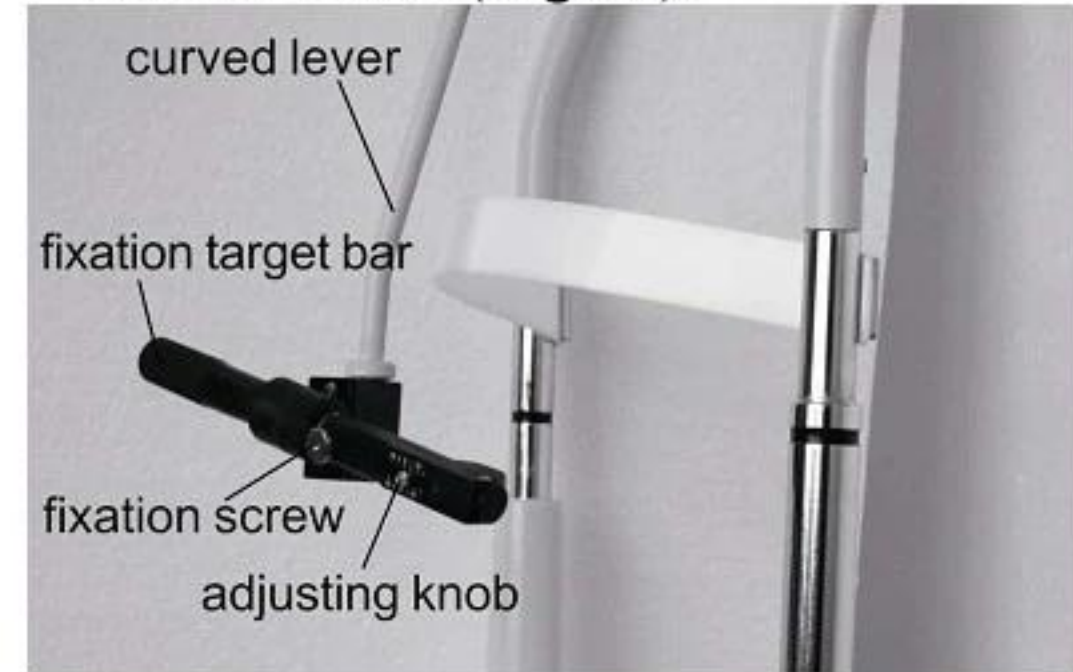


Fig.22

- ✧ The fixation target with spot light is especially for the patient whose diopter exceeds -15D (Fig.23). When changing, just loosen the fixation screw, replace the fixation target with the spot light source and refasten the fixation screw.



Fig.23

3.3 Base operation -----

1) Horizontal rough adjustment

Keep the joystick (1) erect and move the base (4) to make the microscope move on the horizontal surface to aim at the object roughly. (Fig.24).

2) Vertical adjustment

Rotate the joystick to adjust the

microscope's height until it aligns with the target. Turn the joystick clockwise to raise the microscope and counter clockwise to lower it.

3) Horizontal Fine adjustment

Tilt the joystick to make the microscope move slightly on the horizontal surface. While watching

through the eyepieces, tilt the joystick to aim accurately at the object for a sharp image.

4) **Locking the base**

When finishing the adjustment, fasten the base locking screw (2) to lock the base (4) and prevent it from sliding.



Fig.24

3.4 **Operation illumination unit**

1) **Changing the slit width**

Turn the slit width control knob (35) and the slit width will be changed from 0mm to 9mm. The slit becomes a circle at the 9mm size. The scale on the knob indicates the width value approximately (Fig.25).



Fig.25

2) **Changing the aperture and slit height**

Turn the aperture and slit height control knob (29) and 6 different circular beams of light are available at full aperture: 9, 8, 5, 3, 1, 0.2 dia respectively. With a slit image, the slit height can be changed continuously from 1 to 9mm, which is indicated through the display window (27) (Fig.26).

3) **Rotating the slit image**

Swing the aperture and slit height control knob (29) horizontally to revolve the slit image at any angle

in the vertical or horizontal direction. The rotation angle scale indicates the angle of image rotation with small division for 5° and big division for 10° (Fig.27).



Fig.26



Fig.27

4) **Deflecting the illumination light**

Loosen the centering knob (34) and swing the slit width control knob (35) back and forth so the light spot moves away from the center of the microscope vision field. It is mainly used to examine the eyes by indirect retro-illumination. Fasten the

centering knob and the slit light will return to the center of the microscope vision field (Fig.28).

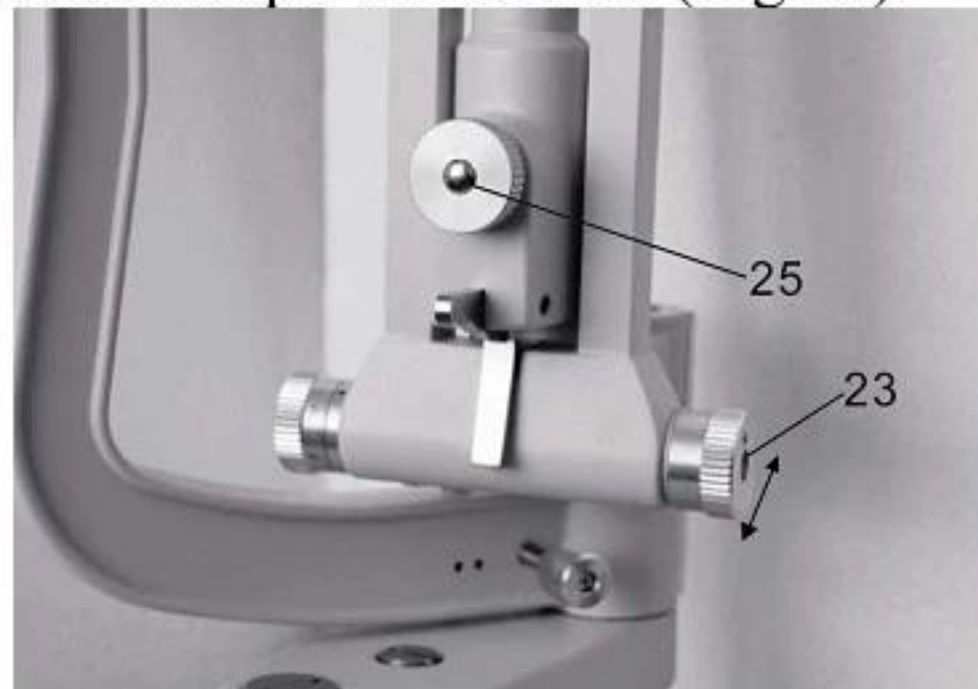


Fig.28

5) Oblique illumination

Oblique illumination is used for sectional or fundus examination by use of a contact lens. Press down the inclination lever (36) so that the illumination part may incline to 20° , (5° of each division). Since the illumination part may touch the patient's head, operate carefully (Fig.29).



Fig.29

6) Reflecting mirror

Both short and long reflecting mirror are available in this instrument. Use the long mirror in normal examination. When the angle

between the illumination part and the microscope is within 3° to 10° , the examined image might be obstructed. In this case, use the short mirror. The short mirror is also used when the illumination part is inclined over 10° (Fig.30).

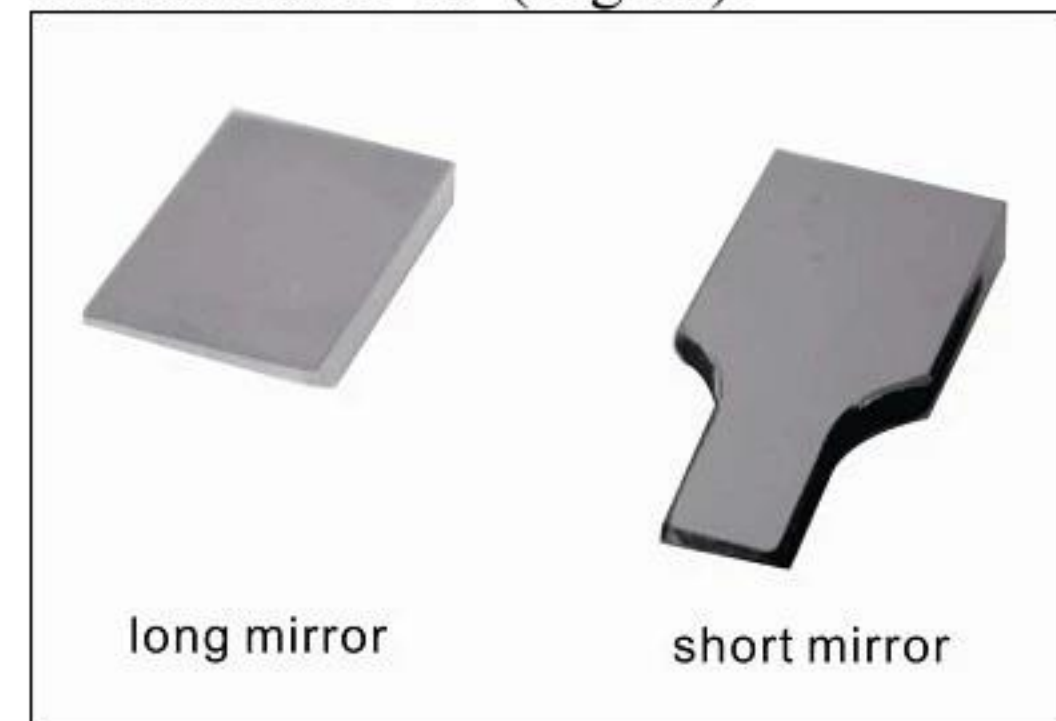


Fig.30

7) Filter selection

By shifting the filter selection lever (28) four different filters can be inserted into the illumination pathway. Usually the heat absorption filter is used for patient comfort. (Fig.31).

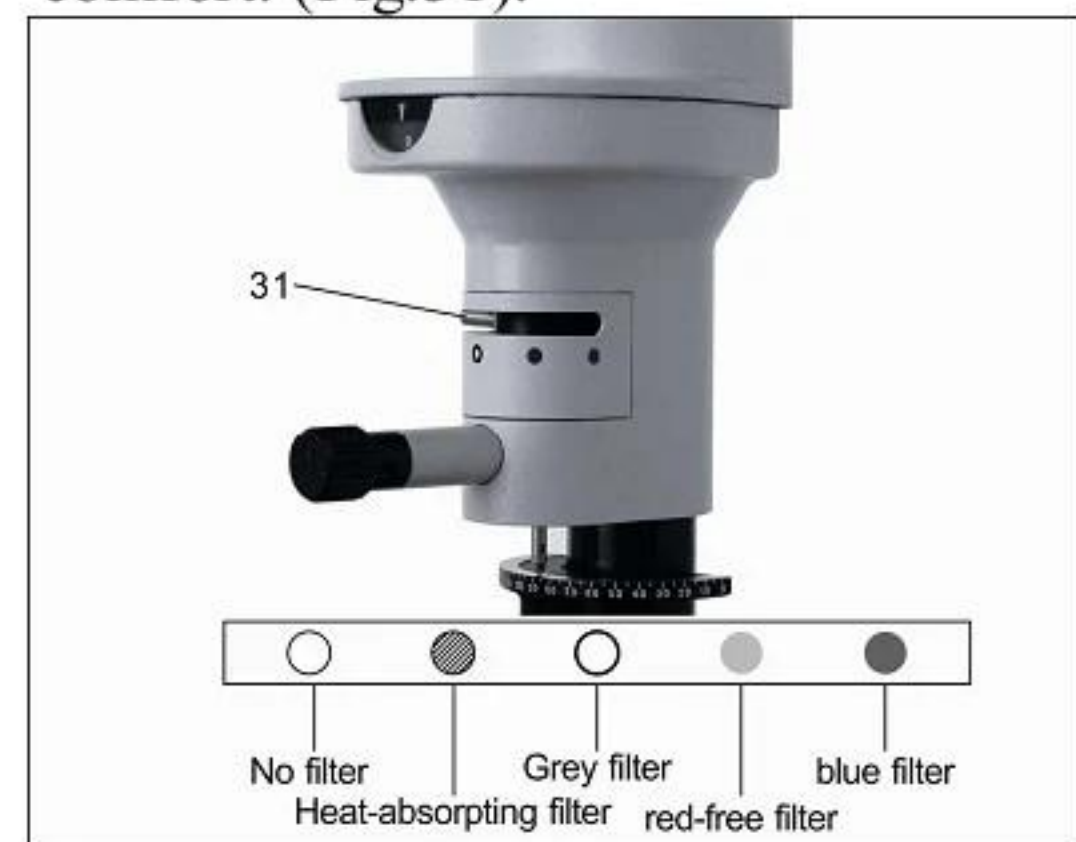


Fig.31

3.5 Fundus observation with Hruby lens (optional)-----

In routine applications, only the anterior segment of the vitreous body can be examined because of the refraction effects of the cornea and crystalline lens. However, with the Hruby Lens, examination of the vitreous body is possible.

Operation procedure:

- 1) The pupil should be dilated for about 20 minutes.
- 2) Insert the Hruby lens guide plate (15) into the main shaft hole of the illumination and the microscope arm.
- 3) Pull out the Hruby lens holder from one side of the headrest as shown in Fig.32. Move the Hruby lens holder toward the operator so that it can slide freely to the left and right below the chin-rest. Insert the lower end of Hruby lens lever into the groove on the guide plate.
- 4) Move the focus of the illumination light and the microscope to the patient's eye.
- 5) Move the lever to locate the Hruby lens at the center of the vision field and near the patient's eye, as shown in Fig.32.
- 6) Move the lever to focus the Hruby lens at the fundus, and then adjust the slit height and width to reduce the unnecessary interference light in the field-of-view.
- 7) To examine different parts, either

turn the microscope and the illumination arm or change the patient's fixation by manipulating the fixation target.

- 8) If the long mirror interference in the examination, just replace it with the short mirror.
- 9) After examination, move the Hruby lens back to the original position on one side of the chin-rest.

⚠ Attention: before moving the Hruby lens to the right and left, first have the patient's head move away from the chin-rest to avoid his nose touching the Hruby lens.

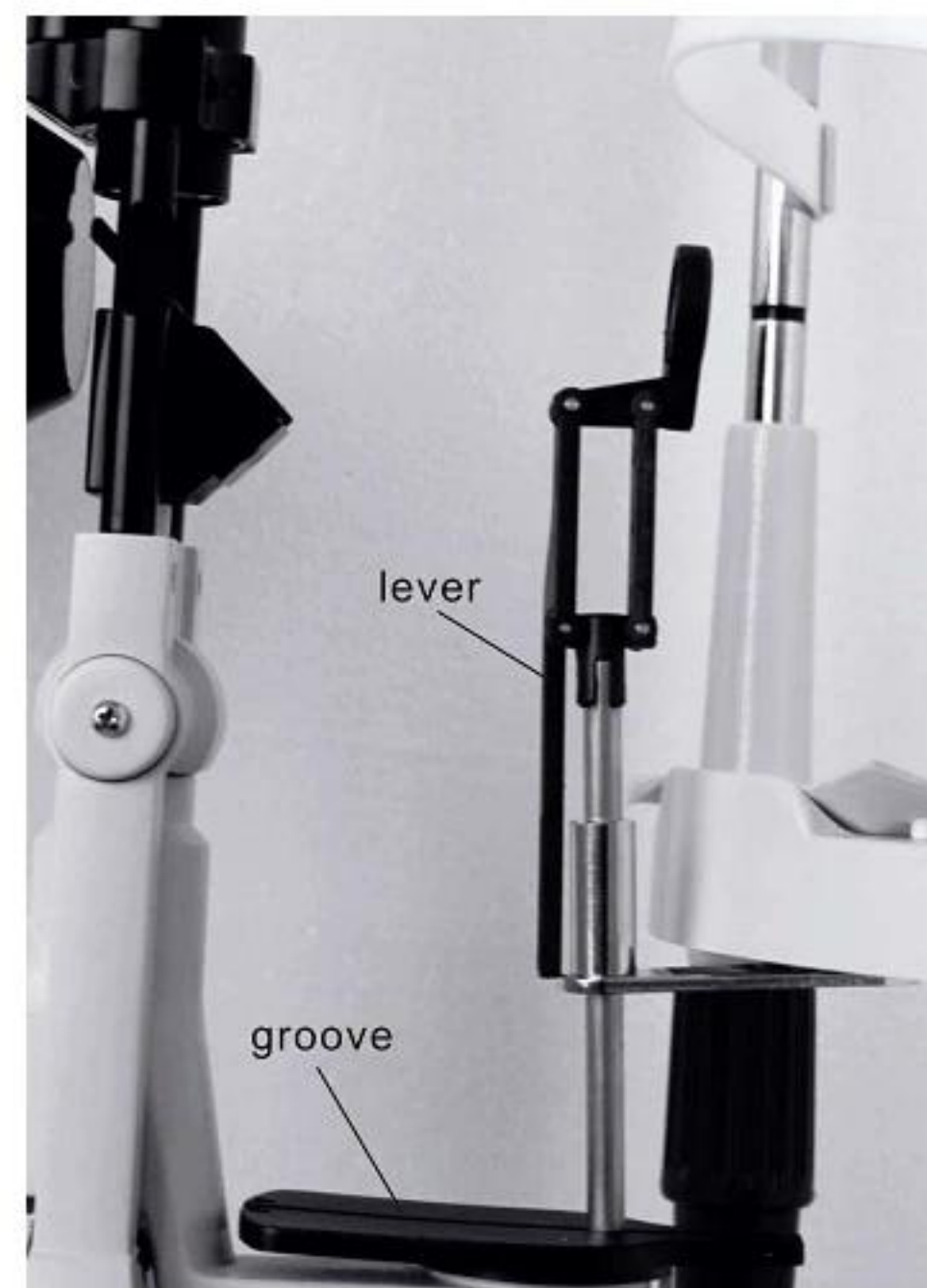


Fig.32

4 Maintenance

⚠ Attention: The replaced waste materials should be treated as industrial rubbish.

4.1 Replacing the illumination bulb

- ✧ Turn the main power switch (8) off.
- ✧ Pull out the plug attached to the lamp house, turn the lamp cap (26) counter clockwise and remove it from the illumination part (A) (Fig.33).



Fig.33

- ✧ Remove the old bulb and replace it with a new one. The groove in the bulb fixation disc should be aligned with the flange of the lamp base; otherwise the illumination may be

uneven (Fig.34.).

⚠ Attention: The bulb is hot

- ✧ Place the lamp cap in the original position and rotate it clockwise and insert the connecting plugs.
- ✧ Turn on the main power switch and check whether the new bulb is illuminated.

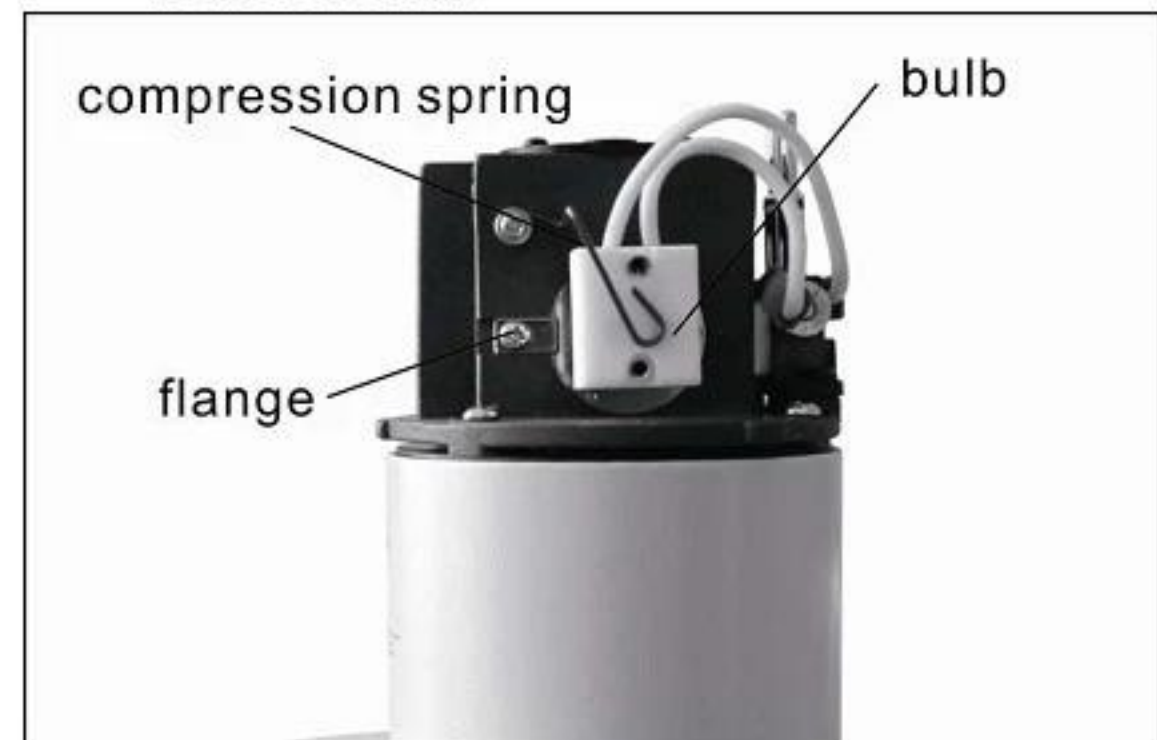


Fig.34

4.2 Replacing the reflecting mirror

- ✧ Set the angle between the microscope and the illumination arm to exceed 30° .
- ✧ Incline the illumination arm by more than 10° .
- ✧ Remove the long mirror by holding the extended surface (Fig.36).

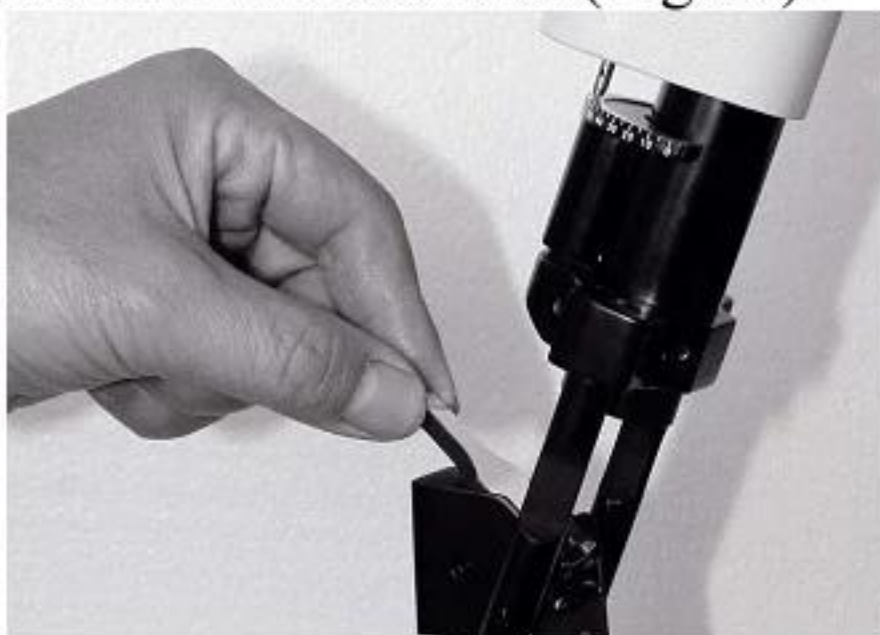


Fig.35

- ✧ Insert new long or short reflecting mirror.
- ✧ When replacing the short mirror, just push the bottom of the mirror by using an object with a sharp end (Fig.36).



Fig.36

4.3 Replacing the fuse -----

- ✧ Turn off the main power switch (8) and remove the power cable from the outlet.
- ✧ With the screw driver (U), turn the center of the fuse holder (Fig.37).
- ✧ Replace it with a new fuse, and then tighten the fuse holder.
- ✧ The fuse specifications and rated values are as follows:

110V	1A / 125V
220V	0.5A / 250V

⚠Attention: Please select the fuse of the same type, specification and rate value.



Fig.37

4.4 Replacing the chin-rest paper -----

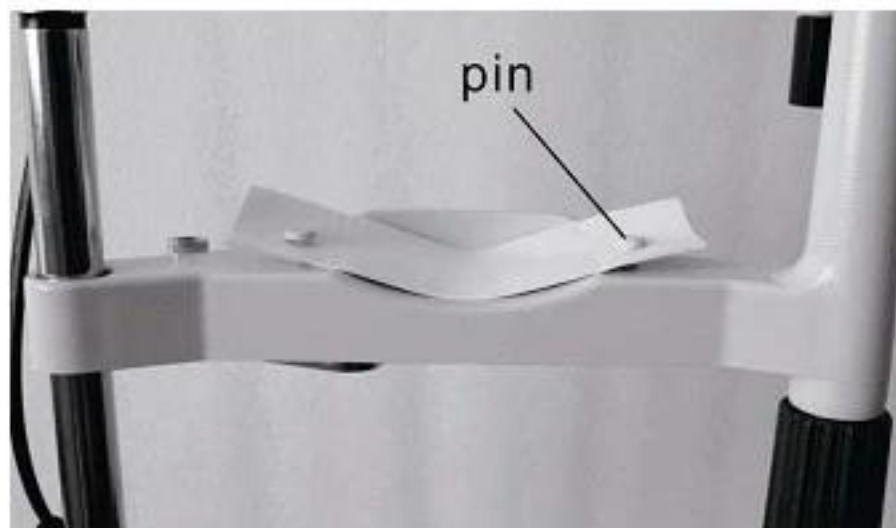


Fig.38

When the paper is depleted, pull upward two fixing pins of the chin-rest and place a new package of paper, then fix the fixing pins again. (Fig.38).

4.5 Adjusting the tightness of the slit width knob -----

If the slit width control knob is too loose, the slit width may be out of control. Rotate the screw clock-wise on the right knob to adjust its tightness with the screw driver (V), When it is appropriate, stop doing it. (Fig.39).



Fig.39

4.6 Adjusting the inclination of the illumination part -----

If the inclination mechanism of the illumination part is too loose, fasten the screws on both sides of the pivot point with the screw driver (U) (Fig. 40).

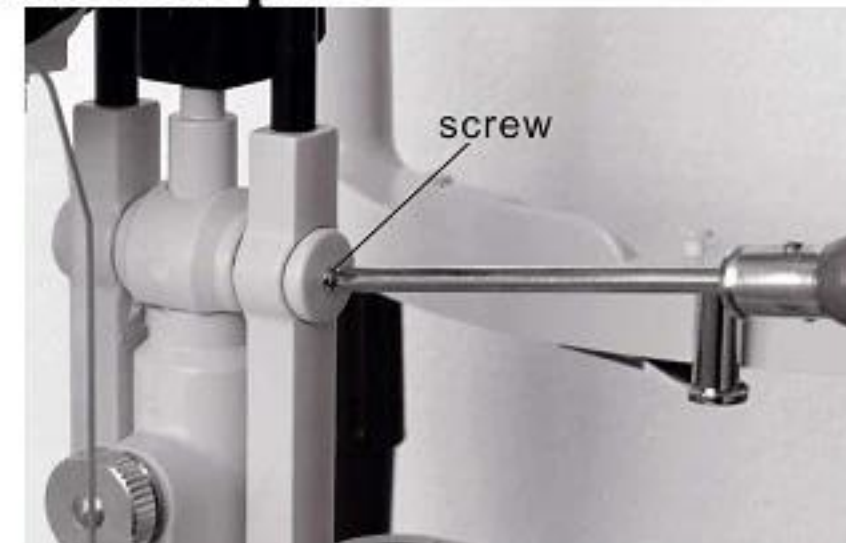


Fig.40

4.7 Cleaning -----

1) Cleaning the lens and mirror

If any dust stick on the lenses or reflecting mirrors, brush them with the brush (S) supplied in the standard accessories. In case any dust still remains, wipe it off with soft cotton dipped with absolute alcohol.

⚠ Attention: Never scratch with fingers or any other hard materials.

2) Cleaning the slide plate, rails and shaft

If the slide plate, rails and shaft are dirty, the vertical and horizontal movement will be unsteady. Wipe them with clean soft cloth. (Fig.41)

3) Cleaning and sterilizing the plastic parts

Clean the plastic parts such as chin-rest bracket, forehead-rest belt with soft cloth dipped with soluble detergent or water, sterilize with medicinal alcohol.

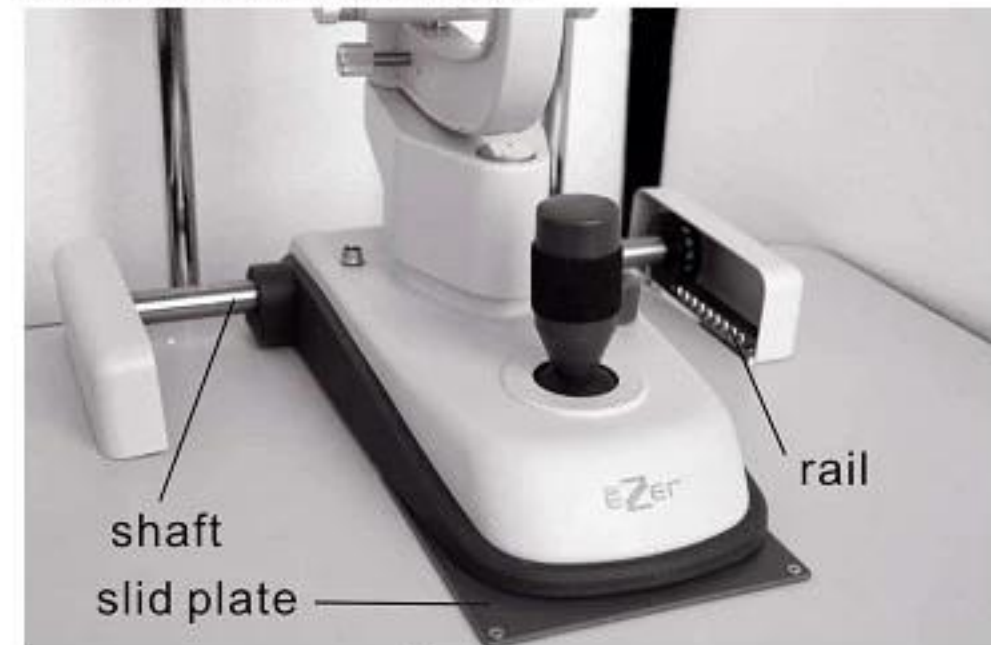


Fig.41

⚠ Attention: Don't wipe with any corrosive detergent lest that the surface should be damaged.

4.8 Protecting -----

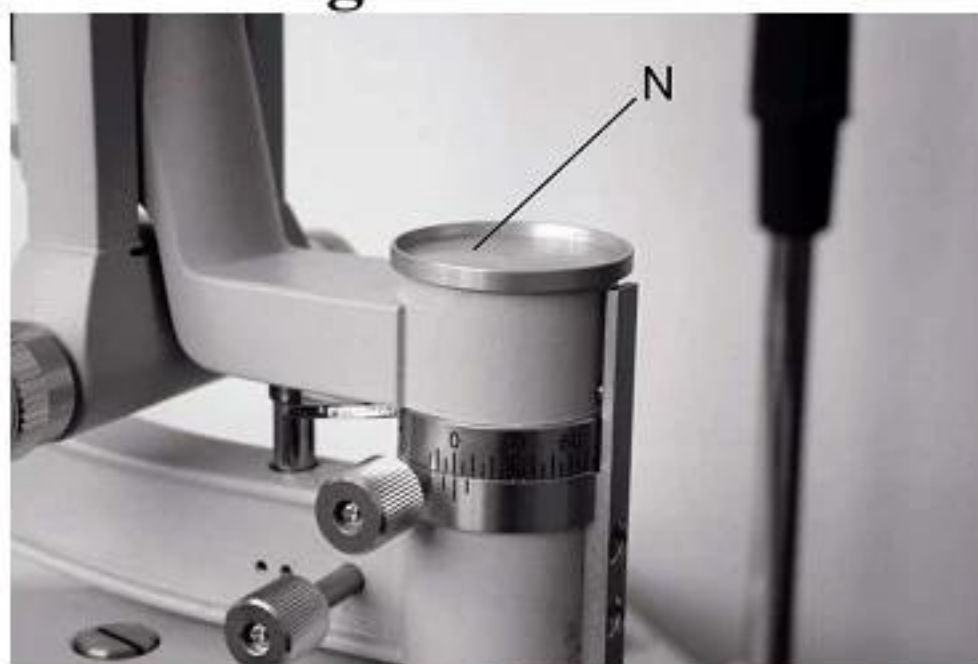


Fig.42

There always are dusts and physiological salt solution dropping

into the main shaft hole of the illumination arm during the operation. Please cover the main shaft hole with the protection cap lest that the instrument would be damaged. Take off the cap when the guide plate needs to be assembled (Fig.42).

4.9 Consumables-----

Please specify names and quantities when ordering following consumables.

ESL-7800 Slit Lamp	Part name	Outlook
	Illumination bulb	
	Long reflecting mirror	
	Chin-rest paper	
	Fuse 1A (110V) 0.5A (220V)	

5 Trouble shooting guide

In case there is any trouble, please check according to the following table for reference. If it still cannot work, please contact our Repair Department or an authorized distributor.

Trouble	Possible cause	Remedy	Refer to
No illumination	The cable isn't connected correctly with the power socket	Connect the power cable correctly	P7
	The main power switch is on ' O ' position	Place the switch on ' I ' position	P9
	The plug on the power box is loose	Insert the plug firmly	P7
	The plug on the lamp cap is loose	Insert the plug firmly	P7
	The bulb has burnt out	Change the bulb	P15
	The fuse has blown	Change the fuse	P16
Slit is too dark	The bulb is not assembled properly	Assemble the bulb properly	P15
	The filter lever is in the middle position or in the position of gray filter	Set the filter lever to the correct position	P13
	Voltage selector is wrongly set	Set the voltage selector correctly	P5
	The coat of the reflecting mirror is oxidized	Change the reflecting mirror	P15
	Too much dust on the reflecting surface	Clean the surface with the brush	P17
Fuse has blown	Voltage selector is wrongly set	Set the voltage selector properly	P5
	The fuse doesn't comply with the specification	Replace it with a suitable fuse	P16
Slit width closes automatically	The slit width control knob is too loose	Adjust the tightness of the control knob	P16
Fixation bulb is off	The output plug is loose	Insert the output plug firmly	P7

6 Responsibility

We will supply the circuit diagram of the instrument, electric component list, drawing annotation and calibration details according to the customer's need for repair.

If there is any need for inquiry of relative information and relative service or some questions, please contact with us directly or authorized distributors.

7 Transportation and storage

During the transportation, be careful to protect it from wetness, upside down and violent vibration. The relative humidity should be 10% to 90%, and environment temperature -25°C to 40 °C.

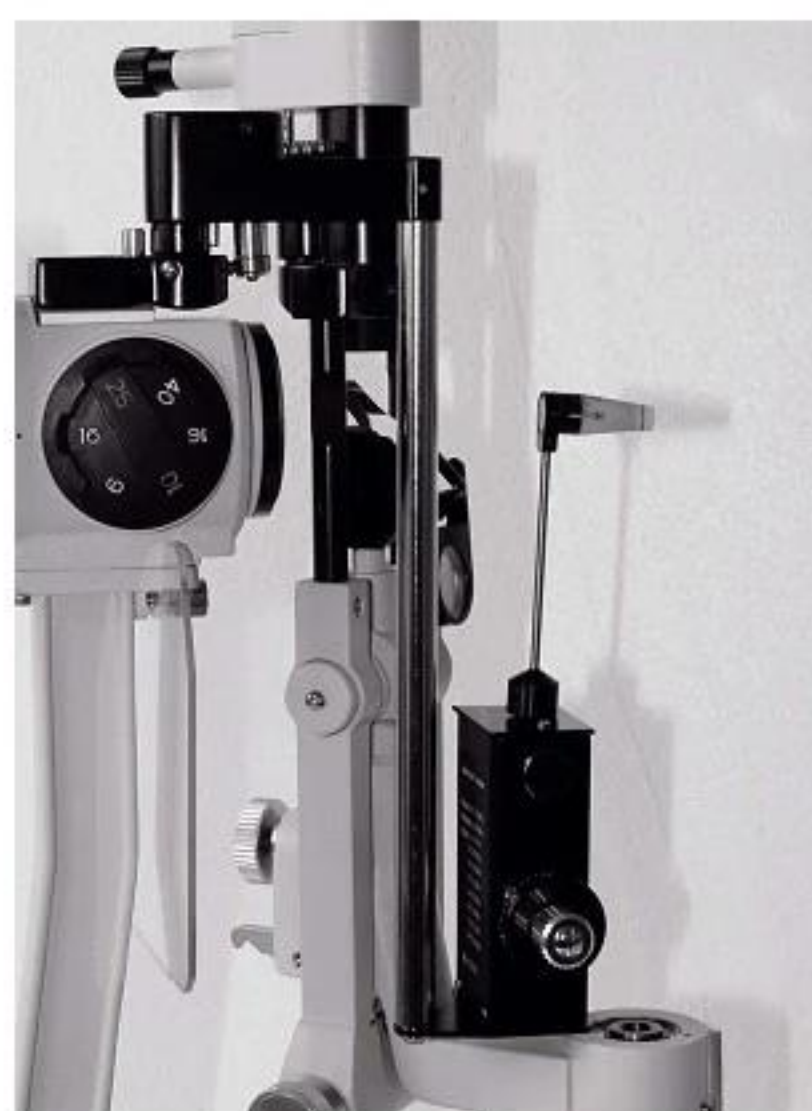
This instrument should be stored in a well-ventilated room without corrosive gas where the relative humidity should be 10% to 80% and environment temperature -10°C to 40°C.

If the assembled instrument should be moved or transported in short distance, please lock all the movable parts. Move this instrument carefully with hands pushing or carrying its table. If for long distance transportation, please repack it with original package.

8 Optional accessories (purchase in addition)

8.1 Applanation tonometer-----

This ESL-7800 slit lamp could be equipped with TN-150, Haag-Streit AG Model R-900 or Model T-900 applanation tonometer for measuring the intraocular pressure. (Fig.43and Fig.44)



TN-150、Model R-900
Fig.43



Model T-900
Fig.44

9 Specifications

Microscope -----

Type	Galileo magnification changer with converging				
Model of magnifying	5 steps by drum rotation				
Eyepiece	12.5X				
Total magnification rate	6x	10x	16x	25x	40x
(Field-of-view)	(Ø33mm)	(Ø 22.5mm)	(Ø 14mm)	(Ø .8mm)	(Ø 5.5mm)
Range of P.D. adjustment	55mm to 75mm				
Diopter adjustment	-5D to +3D				

Illumination -----

Slit projection magnification	2/3x
Slit width	continuous from 0mm to 9mm(at 9mm, slit becomes a circle)
Slit height	continuous from 1mm to 8mm
Aperture diameter	Ø9mm,Ø8mm,Ø5mm,Ø3mm, Ø2mm, Ø1mm,Ø0.2mm
Slit angle	0° to 180° continuously adjustable from vertical to horizontal
Slit inclination	5°, 10°, 15°, 20° four steps
Filter piece	Heat-absorbing, gray, red-free, blue
Illumination bulb	6V20W halogen bulb

Movement base -----

Fore and back movement	90mm
Left and right movement	100mm
Fine movement	15mm
Vertical movement	30mm

Chin-rest parts-----

Vertical movement	80mm
Fixation target	Red LED

Hruby lens-----

Hruby lens	-58.7D (optionally available in some regions)
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Power source-----

Input voltage	100/220V~±10%
Input frequency	50/60 Hz±1Hz
Input power	30VA
Output voltage	Illumination bulb 0V~6V / Fixation target6V
Electric safe standard	Conform to Standard IEC601 -1, Class I Type B

Dimension and weight-----

Packing box	720mm x 495mm x 480mm
Total weight	24 Kg
Net weight	21 Kg

✧ Subject to change in design or specifications without advance notice.

ESL-7800 Slit Lamp



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