

# SLIT LAMP BIOMICROSCOPE

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# Slit Lamp Biomicroscope

- A unique instrument that permits magnified examination of transparent or translucent tissues of the eye in cross section.

# Slit Lamp Biomicroscope

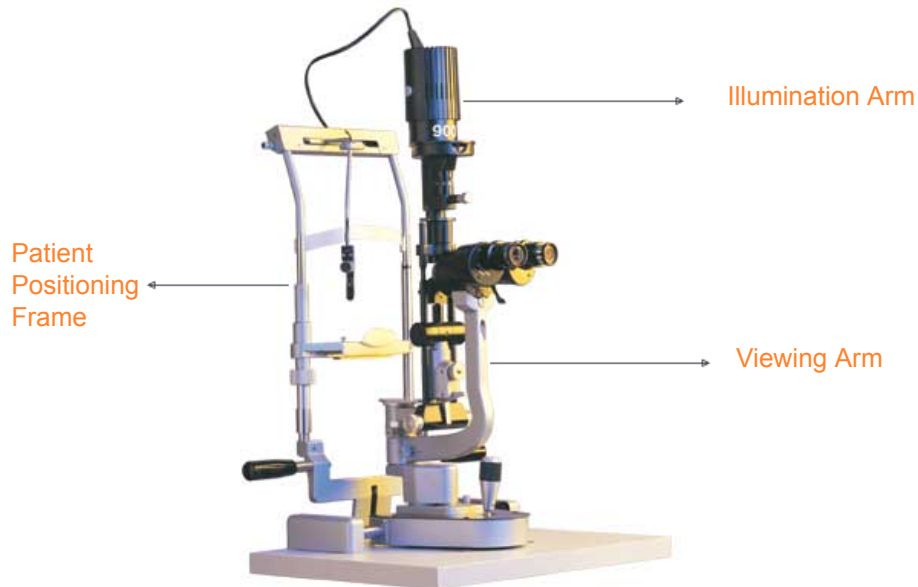
- Enhances the external examination by allowing a **binocular, stereoscopic** view; a wide range of **magnification**; and **illumination** of variable shapes and intensities.
- Using specialized attachments and lenses, also permits **applanation tonometry**, **fundus exam** and **gonioscopy**.

# Slit Lamp Biomicroscope

- It is used for examination of the anterior segment (A/S), which includes the anterior vitreous and those structures anterior to it.
- Most of A/S tissues except the anterior chamber angle and the posterior surface of the iris are directly visible with the slit lamp alone.

# Parts of the SL

- 1. **The Viewing Arm**; containing the eye piece and the magnifying elements.
- 2. **The Illumination Arm**; containing the light source and its many controls.
- 3. **The Patient Positioning Frame**



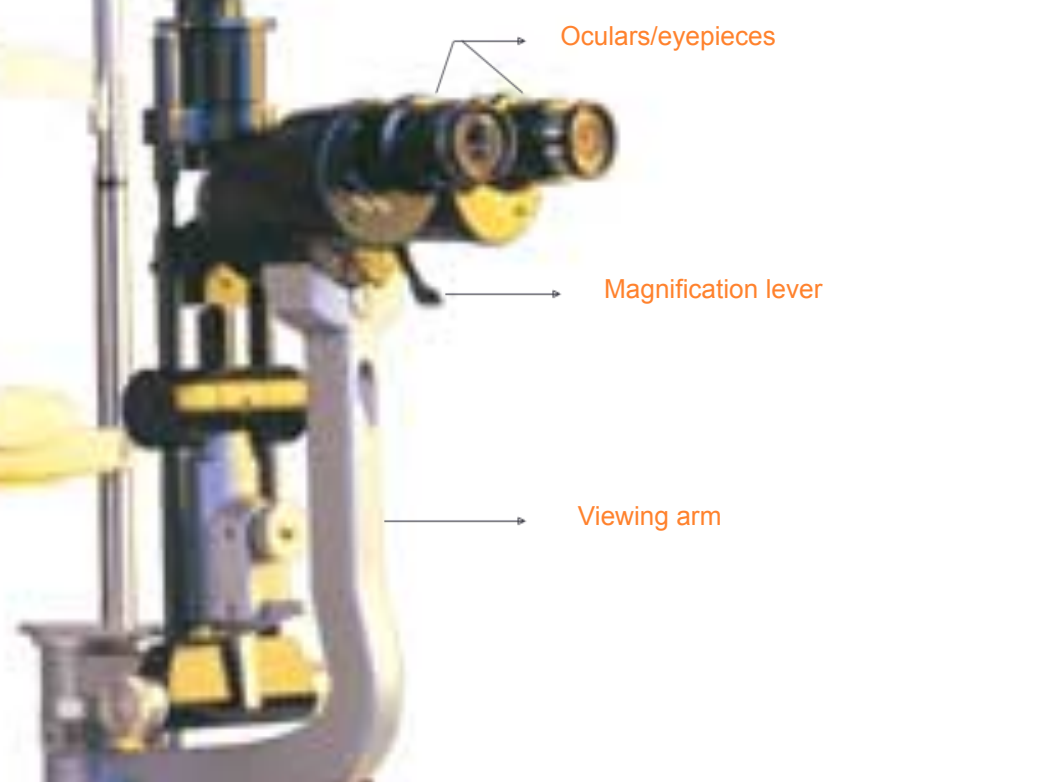
Patient  
Positioning  
Frame

Illumination Arm

Viewing Arm

# The Viewing Arm

- The examiner looks through a pair of eyepieces/oculars.
- A focusing ring around each ocular can be twisted to suit the examiners refractive error, and the two oculars can be pushed together or spread apart, to accommodate the interpupillary distance (IPD)
- Below the oculars is a lever or sometimes a knob for adjusting the magnification.



Oculars/eyepieces

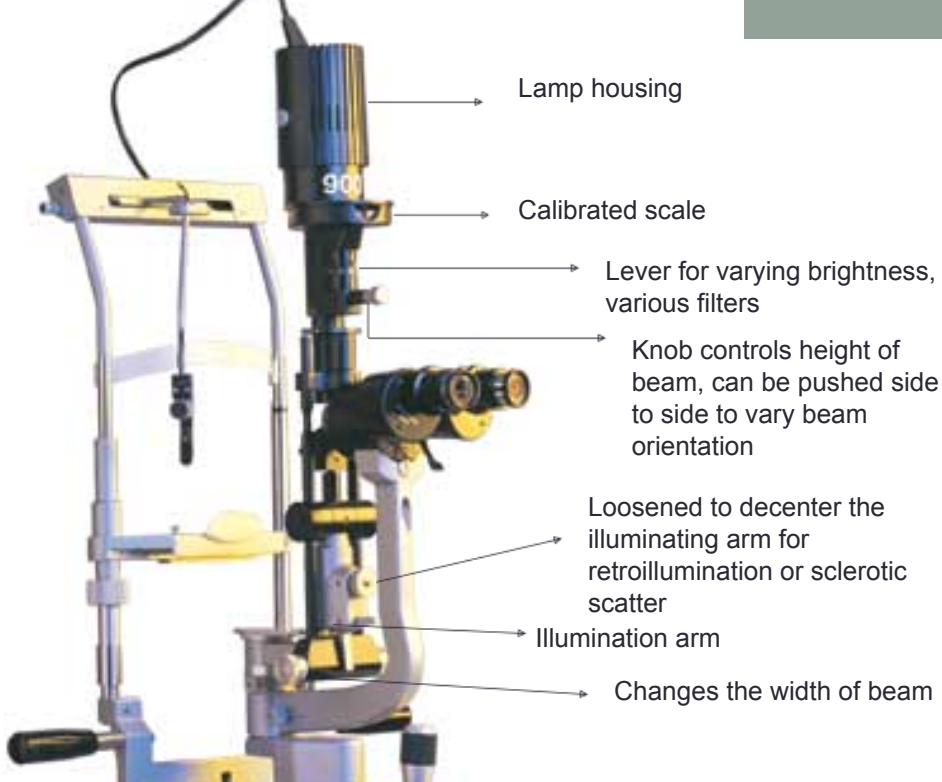
Magnification lever

Viewing arm



# The Illumination Arm

- The illumination arm and the viewing arm are parfocal; the image of the source of illumination and the image being viewed by the examiner are both in focus at the same location at any given time when focus for viewing has been established
- Can be swung 180° side to side



Lamp housing

Calibrated scale

Lever for varying brightness,  
various filters

Knob controls height of  
beam, can be pushed side  
to side to vary beam  
orientation

Loosened to decenter the  
illuminating arm for  
retroillumination or sclerotic  
scatter

Illumination arm

Changes the width of beam

# The Patient Positioning Frame

- Consists of 2 upright metal rods to which are attached the forehead strap and the chin rest.

Forehead strap

Fixation light

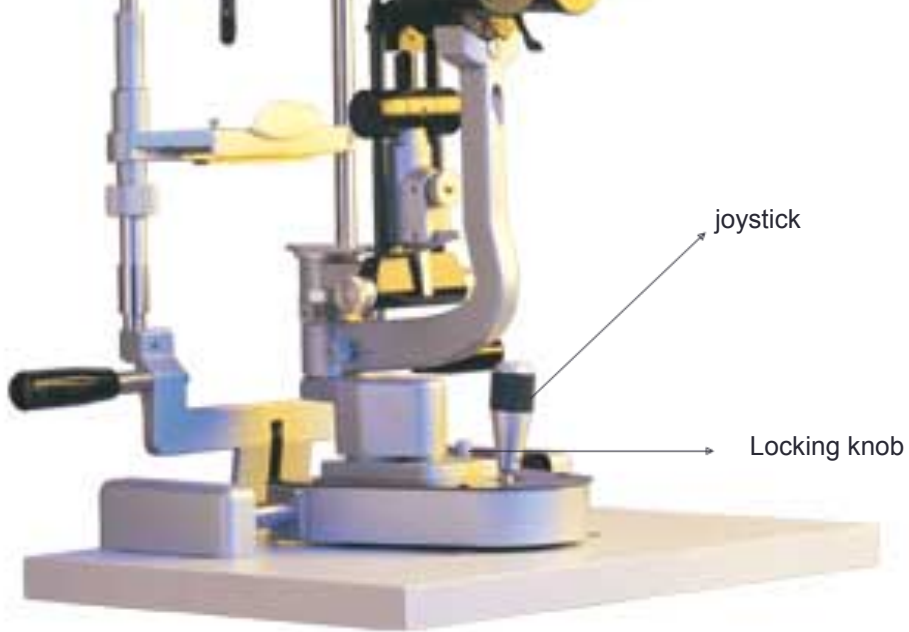
Chin rest

Knob for changing chin rest height



## The Base

- Used to shift the viewing and the illumination arms forward, backward, laterally, or diagonally.
- In some instruments joystick can be twisted and rotated to lower or elevate the light beam.



joystick

Locking knob

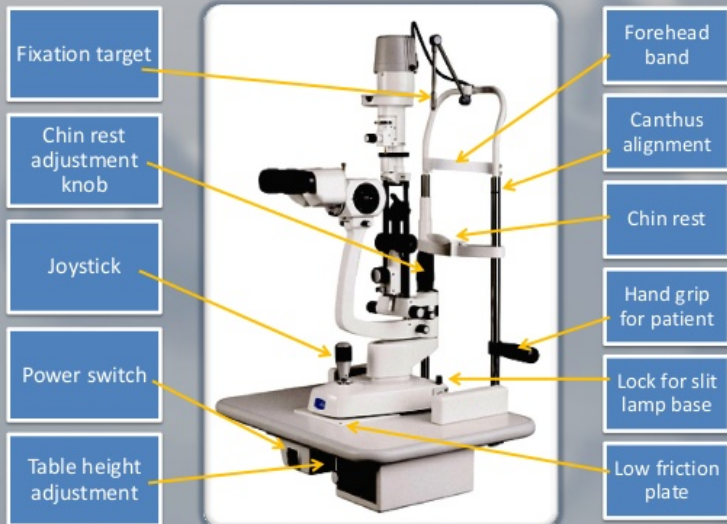
# Other Attachments

- Applanation tonometer



Cont...

Parts of mechanical system :





The End