

NexiusZoom

gemological



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1. General safety instructions

Intended use: a non-medical device

This microscope is intended for general observation of cells and tissues, with transmitted/reflected illumination and with the specimen fixed on a slide

1.1 Dangers associated with the operation

- Improper use could result in injury, malfunction or damage to property. It must be ensured that the operator informs every user of existing hazards
- Danger of electrocution. Disconnect the power to the entire lighting system before installing, adding or changing any component
- Not to be used in corrosive or explosive environments
- Avoid direct exposure of eyes to the collimated light beam or direct light from the light guides or fibres
- To avoid a hazard to children, account for all parts and keep all packing materials in a safe place

1.2 Photobiological safety LED, important safety instructions

- Avoid direct eye exposure to any LED light source while switched on
- Before looking through the eyepieces of the microscope, lower the intensity of the LED illumination
- Avoid long and high-intensity exposure to LED light because this may cause acute damage to the retina of the eye

1.3 Prevention of biological and infectious hazards

Infectious, bacterial or viral biohazard substances under observation may be a risk to the health of humans and other living organisms. Special precautions should be taken during in vitro medical procedures:

- **Biological hazards:** keep a logbook of all the biological substances or pathogenic microorganisms that were under observation with the microscope and show it to everybody before they use the microscope or before they do some maintenance work on the microscope! Agents can be bacterial, spores, enveloped or non-enveloped virus particles, fungi or protozoa
- **Contamination hazard:**
 - A sample that is properly enclosed with a cover glass never comes in direct contact with the microscope parts. In that case prevention of contamination lies in the handling of the slides; as long as the slides are decontaminated before use and are undamaged and treated normally, there is virtually zero risk of contamination
 - A sample that is mounted on a slide without cover glass, can come in contact with components of the microscope and may be a hazard to humans and/or the environment. Therefore, check the microscope and accessories on possible contaminations. Clean the microscope surfaces and its components as thoroughly as possible. Should you identify a possible contamination, inform the local responsible person in your organisation
 - Microscope operators could be contaminated from other activities and cross-contaminate components of the microscope. Therefore, check the microscope and accessories on possible contaminations. Clean the microscope surfaces and its components as thoroughly as possible. Should you identify a possible contamination, inform the local responsible person in your organisation. It is recommended to wear sterile gloves when preparing the slides and handling the microscope in order to reduce contamination by the operator
- **Infection hazard:** direct contact with the focusing knobs, stage adjustments, stage and eyepieces/tubes of the microscope can be a potential source of bacterial and/or viral infections. The risk can be limited by using personal eyeshades or eyepieces. You can also use personal protections such as operation gloves and/or safety goggles, which should be changed frequently to minimize the risk
- **Disinfectant hazards:** before cleaning or disinfecting, check if the room is adequately ventilated. If not, wear respiratory protective gear. Exposure to chemicals and aerosols can harm human eyes, skin and respiratory system. Do not inhale vapours. During disinfection, do not eat, drink or smoke. Used disinfectants must be disposed of according to local or national regulations for health and safety

1.4 Disinfection and decontamination:

- Exterior casing and mechanical surfaces must be wiped with a clean cloth, dampened with a disinfectant
- Soft plastic parts and rubber surfaces can be cleaned by gently wiping a clean cloth, dampened with a disinfectant. Discoloration can occur if alcohol is used
- The front lens of eyepieces and objectives are sensitive to chemicals. We recommend not to use aggressive disinfectants but to use lens paper or a soft fibre-free tissue, dampened in cleaning solution. Cotton swabs may also be used. We recommend you use personal eyepieces without eyeshades in order to minimize risk
- Never immerse or dip the eyepiece or objective into a disinfectant liquid! This will damage the component
- Never use abrasive compounds or cleaners that may damage and scratch optical coatings
- Properly clean and disinfect all possible contaminated surfaces of the microscope or contaminated accessories before storing for future use. Disinfection procedures must be effective and appropriate
- Leave the disinfectant on the surface for the required exposure time, as specified by the manufacturer. If the disinfectant evaporates before the full exposure time, reapply disinfectant on the surface
- For disinfection against bacteria, use a 70% aqueous solution of isopropanol (isopropyl alcohol) and apply for at least 30 seconds. Against viruses, we recommend to refer to specific alcohol or non-alcohol based disinfection products for laboratories

Before returning a microscope for repair or maintenance through a Euromex dealer, an RMA (return authorization form) together with a decontamination statement must be filled in! This document - available from Euromex for any reseller- must be shipped together with the microscope at all times

Reference documents:

World Health Organisation:

<https://www.who.int/ihr/publications/biosafety-video-series/en/>

Robert Koch Institut:

<https://link.springer.com/content/pdf/10.1007/s00103-013-1863-6.pdf>

US Centre for Disease Control and prevention

<https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html>

Handle with care

- This product is a high quality optical instrument. Delicate handling is required
- Avoid subjecting it to sudden shocks and impacts
- Impacts, even small ones, can affect the precision of the instrument

Handling the LED

Note: Always disconnect the power cord from your microscope before handling the LED bulb and power unit and allow the system to cool down approximately 35 minutes to avoid burns

- Never touch the LED with your bare hands
- Dirt or fingerprints will reduce the life span and can result in uneven illumination, lowering the optical performance
- Use only original Euromex replacement LEDs
- The use of other products may cause malfunctions and will void warranty
- During use of the microscope the power unit will get hot; never touch it while in operation and allow the system to cool down approximately 35 minutes to avoid burns

Dirt on the lenses

- Dirt on or inside the optical components, such as eyepieces, lenses, etc., affects the image quality of your system negatively
- Always try to prevent your microscope from getting dirty by using the dust cover, prevent leaving fingerprints on the lenses and clean the outer surface of the lens regularly
- Cleaning optical components is a delicate matter. Please, read the cleaning instructions further on in this manual

1.5 Environment, storage and use

- This product is a precision instrument and it should be used in a proper environment for optimal use
- Install your product indoors on a stable, vibration free and level surface in order to prevent this instrument to fall thereby harming the operator
- Do not place the product in direct sunlight
- The ambient temperature should be between 5 to +40°C and humidity should be within 80% and 50%
- Although the system is anti-mold treated, installing this product in a hot, humid location may still result in the formation of mold or condensation on lenses, impairing performance or causing malfunctions
- Never turn the right and left focus knobs in opposite directions at the same time or turn the coarse focus knob past its farthest point as this will damage this product
- Never use undue force when turning the knobs
- Make sure that the microscope system can dissipate its heat (fire hazard)
- Keep the microscope away from walls and obstructions for at least approximately 15 cm
- Never turn the microscope on when the dust cover is in place or when items are placed on the microscope
- Keep flammable fluids, fabric, etc. well out of the way

Disconnect power

Always disconnect your microscope from power before doing any maintenance, cleaning, assembling or replacing LEDs to prevent electric shocks

Prevent contact with water and other fluids

Never allow water or other fluids to come in contact with your microscope, this can cause short circuiting your device, causing malfunction and damage to your system

Moving and assembling

- This microscope is a relatively heavy system, consider this when moving and installing the system
- Always lift the microscope by holding the main body and base of the microscope
- Never lift or move the microscope by its focusing knobs, stage or head
- When needed, move the microscope with two persons instead of one

2. Introduction

- With your purchase of a Euromex GEM stand for Euromex microscopes you have chosen for a quality product. This manual is an additional manual to the manual you receive with your microscope head
- This stand allows users to obtain dark-and bright field images using their microscope. Ideal for gemmological applications. The maintenance requirement is limited when using the microscope in a decent manner
- This manual describes the construction and how to use the stand. The stereomicroscope head shown in this manual is from the Euromex NexiusZoom series. The microscope head comes with its own manual, please refer to that manual for detailed use

Note, the stands are available as LED and Fluorescence (top)illumination versions. This manual uses images of the fluorescence type, but functions for both models are identical

3.0 Construction of the microscope stand



A. Eyepiece
B. Zoom knob
C. Microscope head
D. Objective
E. Focusing knobs
F. Ergonomical stand
G. Power switch
H. Power socket
I. Fuse
J. Base
K. Brightness adjustment knob

L. Lock screw (not visible)
M. Switch for top light
N. Knob for maintenance
O. Stage
P. Gem clamp
Q. Iris transmitted illumination
R. Knob for darkfield/brightfield
S. Switch for iris diaphragm
T. Lock screw for lamp house (not visible)
U. Screw for rotatable axle

4.0 Assembly

Fig. 1

Below is the assembly scheme for the gem stand with a NexusZoom stereo head

Note: Before assembly, please make sure that every part of the stand and microscope are clean. And keep them clean during assembly

- A. Eyepieces
- B. Microscope head
- C. Stand
- D. Gem clamp

5.0 Use of the gem stand

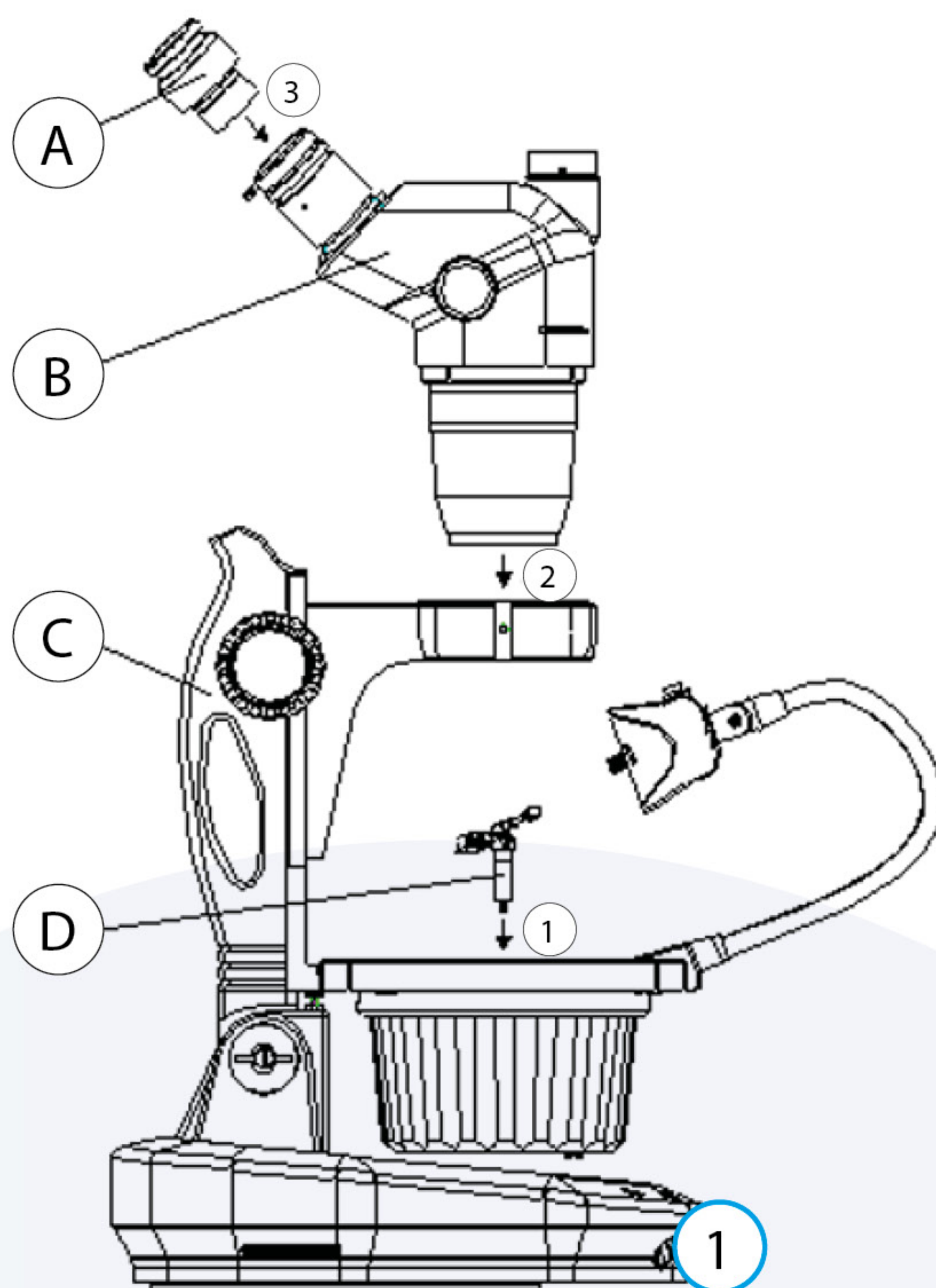
5.1 Illumination

- Connect main power supply and turn main switch on (G)
- Use bottom light: Turn brightness adjusting knob to a comfortable level (K)
- 7W fluorescent bulb for top light. This illumination has a fixed brightness. It has a separate power switch (M). The LED version can be adjusted in brightness, the potentiometer is found on top of the LED light itself

5.2 Adjust observation tube & base

Fig. 2

- Hold the front of the base (A) and arm (B) to turn to suitable position for observation. If necessary tighten the screw of the rotatable axial (C)
- The plastic disc under base can make the whole microscope 360° rotatable



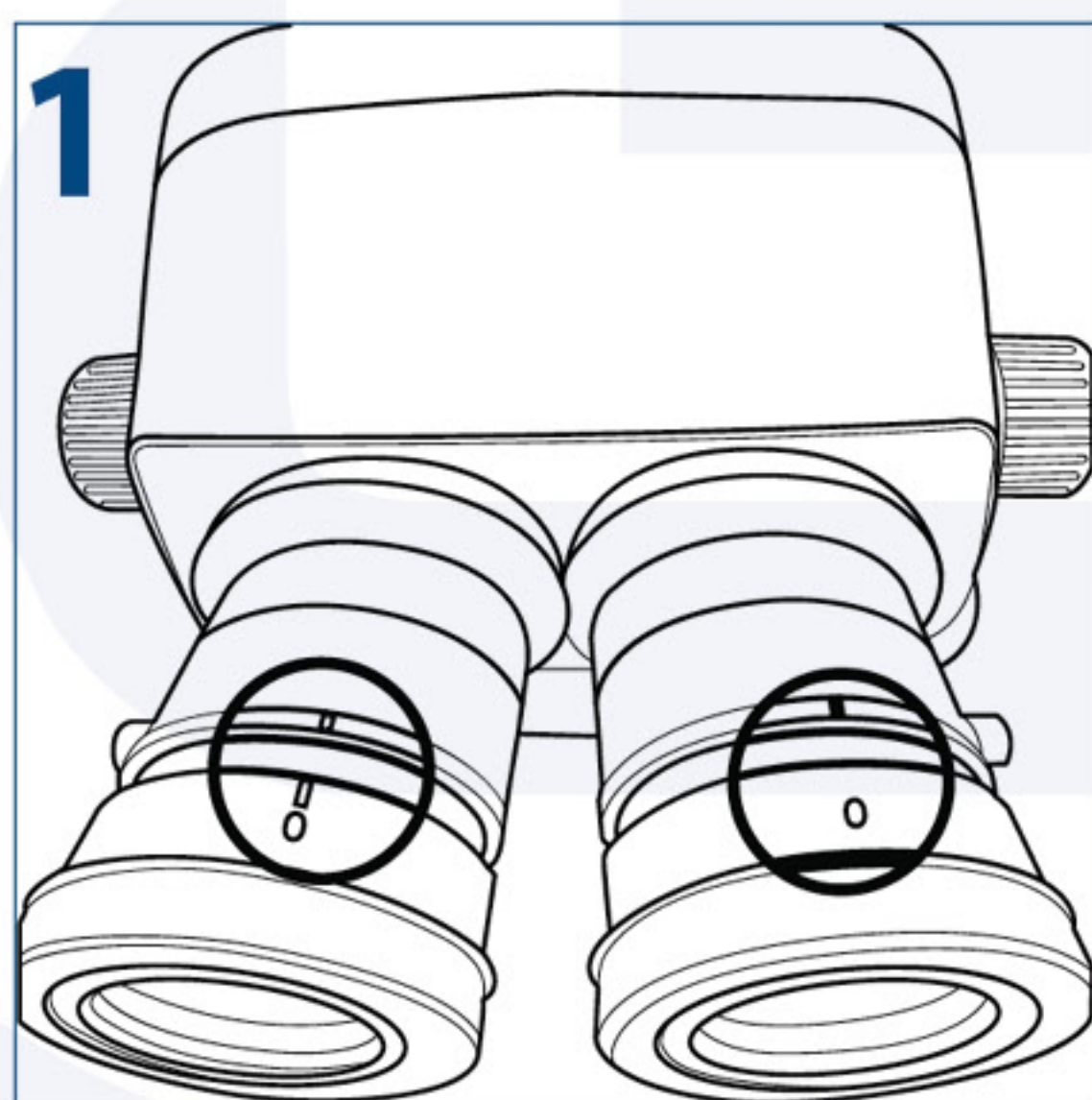
5.3 Adjusting focusing tightness

Fig. 3

- Hold one knob (A) and turn the other (B) to achieve adjustment of tightness. Tightness is base on turn direction
- Adjustment may be needed to make observation more comfortable and prevent stage from slipping down



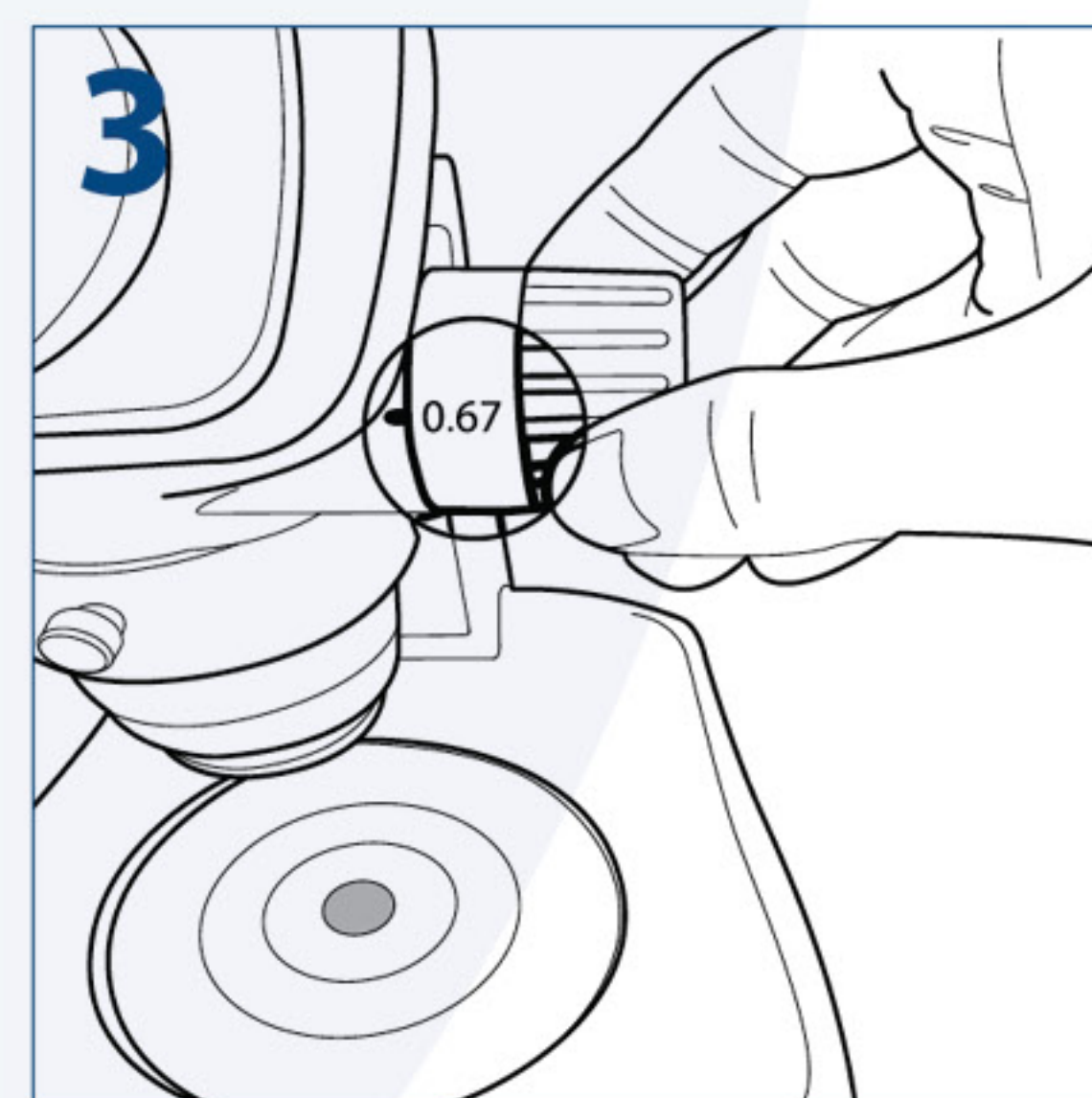
5.4 Diopter & focusing



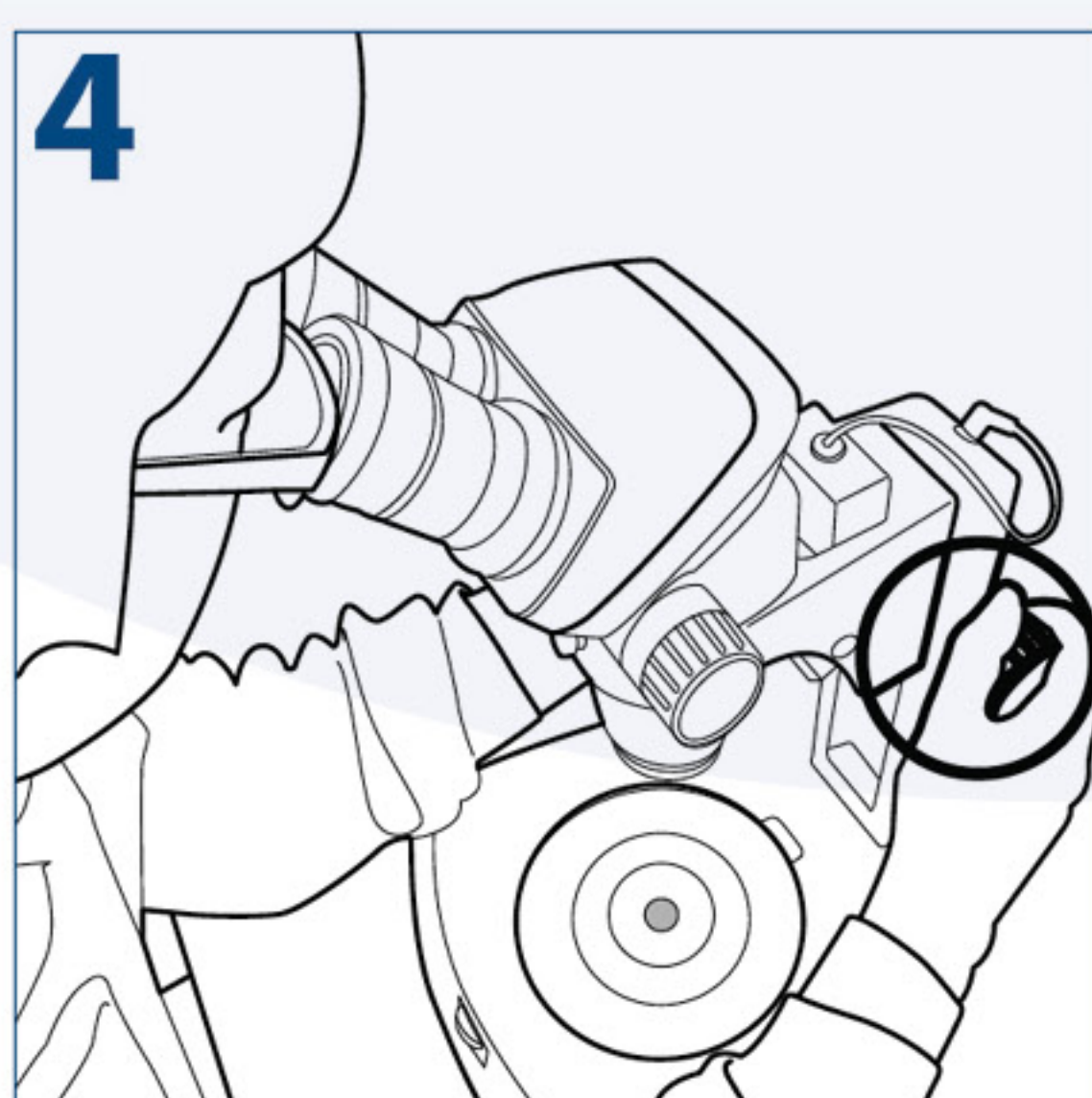
Turn the diopter adjustment rings of both eyepieces to position "0"



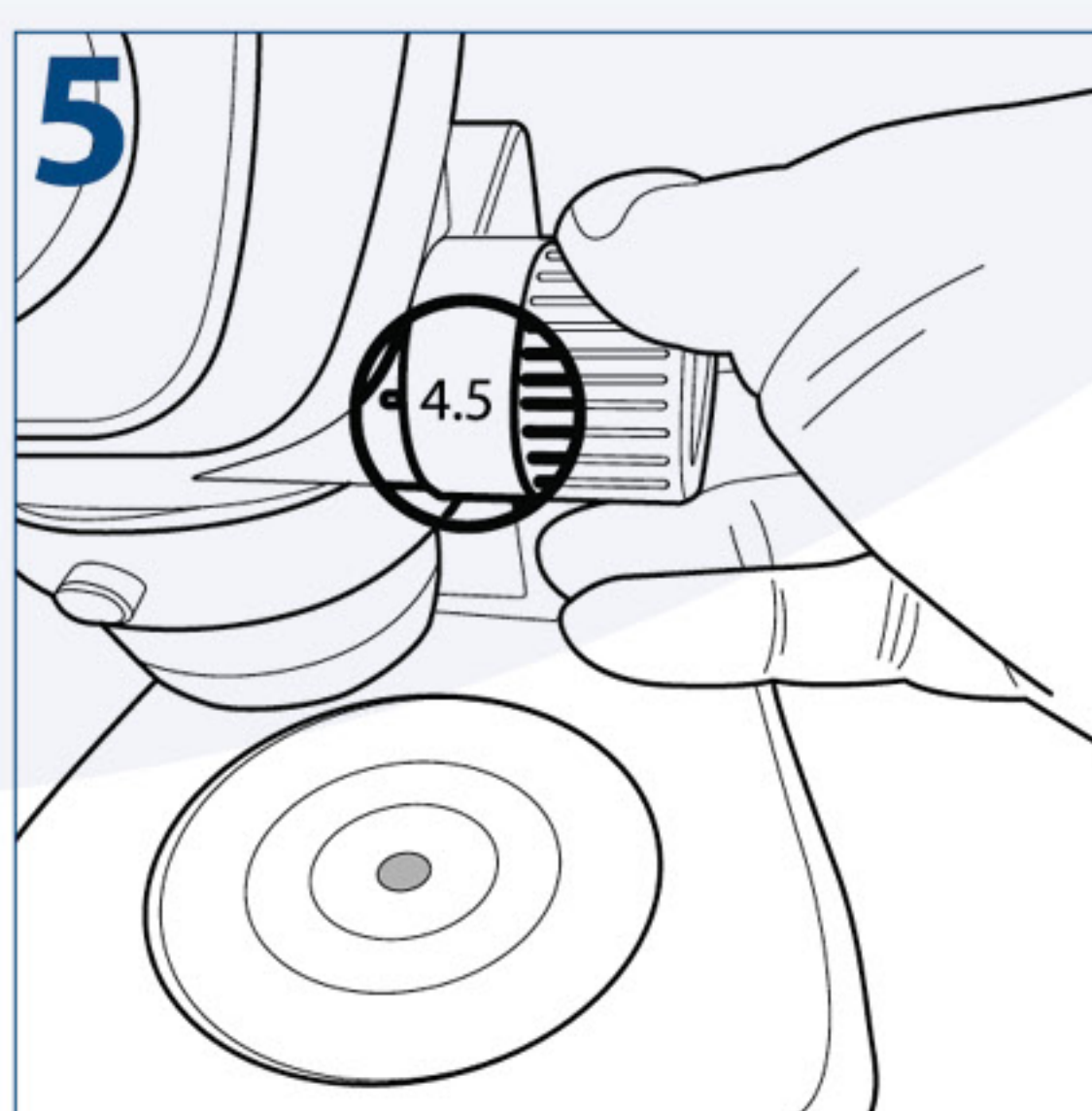
Put a specimen on the stage plate



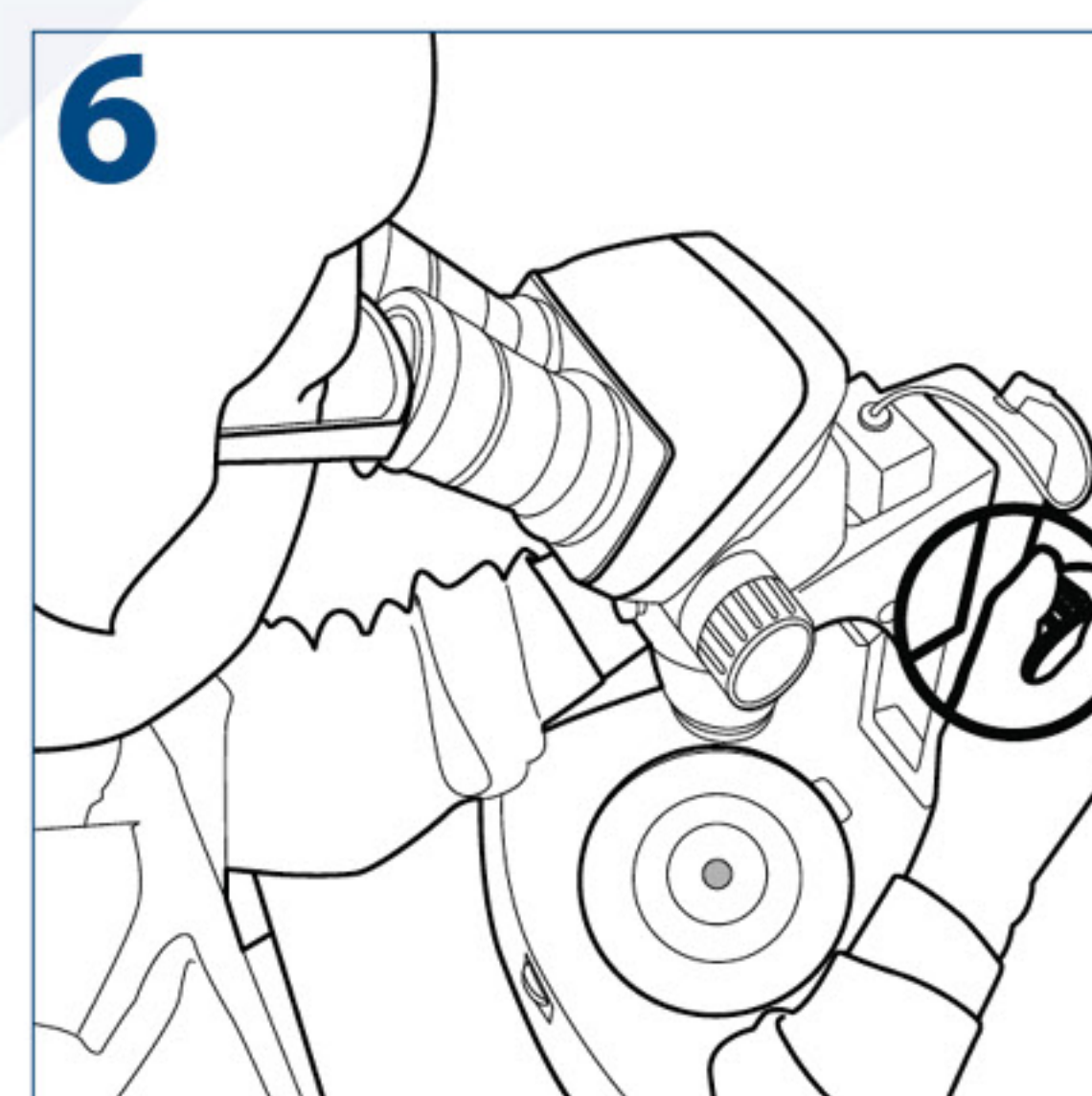
Turn the zoom adjustment knob to the lowest magnification



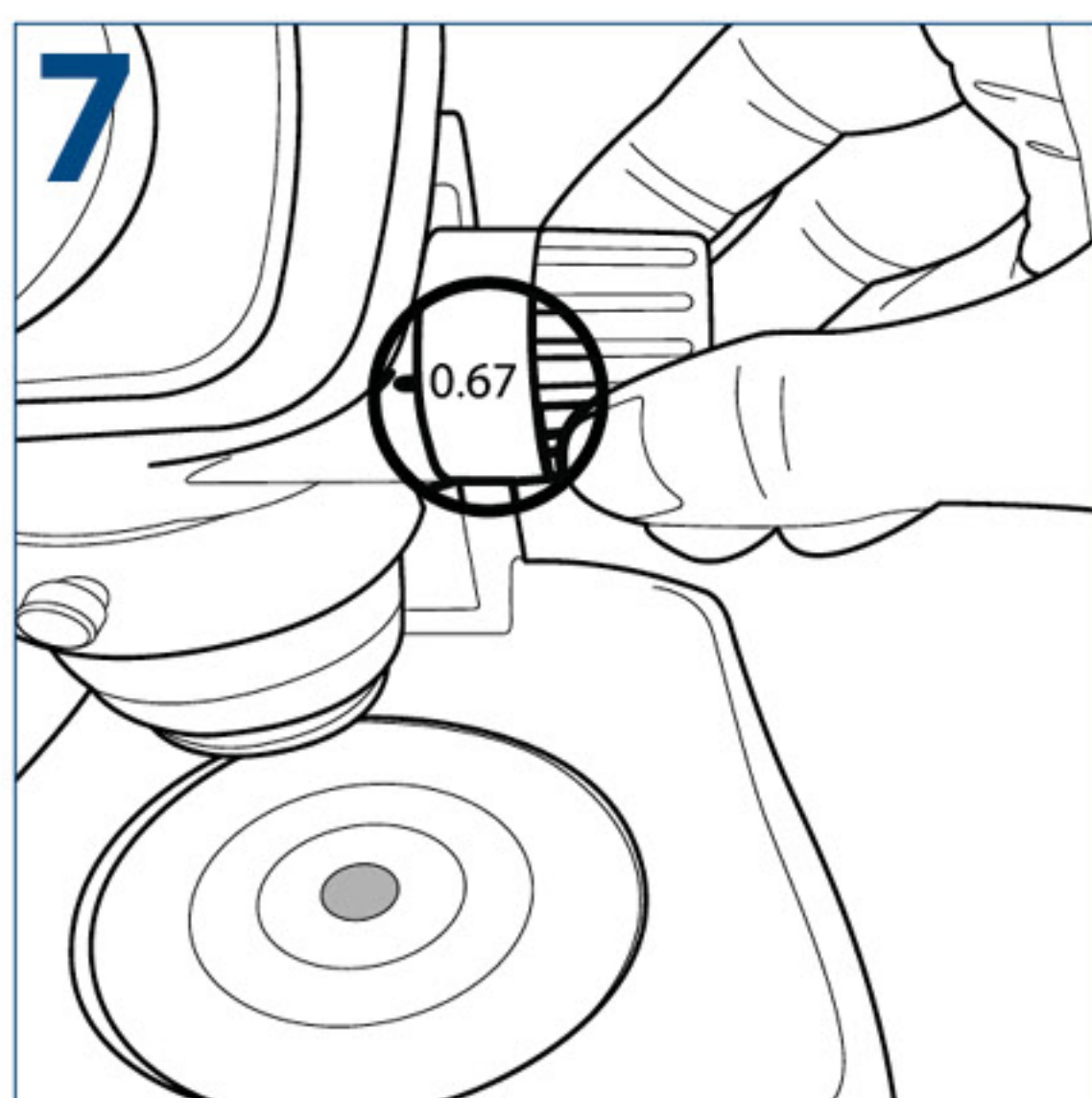
Rotate the focusing knob to bring the specimen into focus



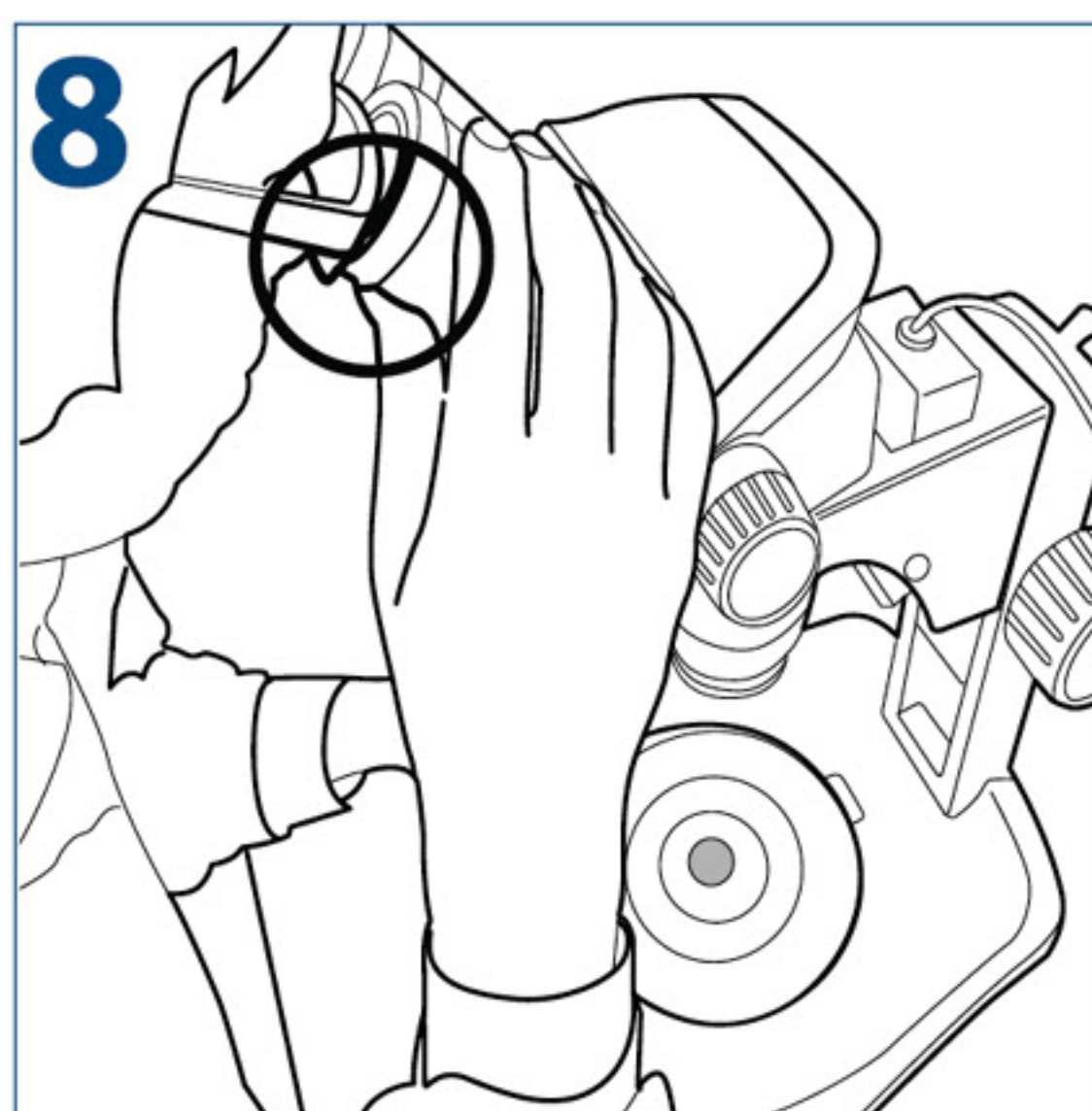
Turn the zoom adjustment knob to the highest magnification



Rotate the focusing knob to bring the specimen into focus



Turn the zoom adjustment knob to the lowest magnification



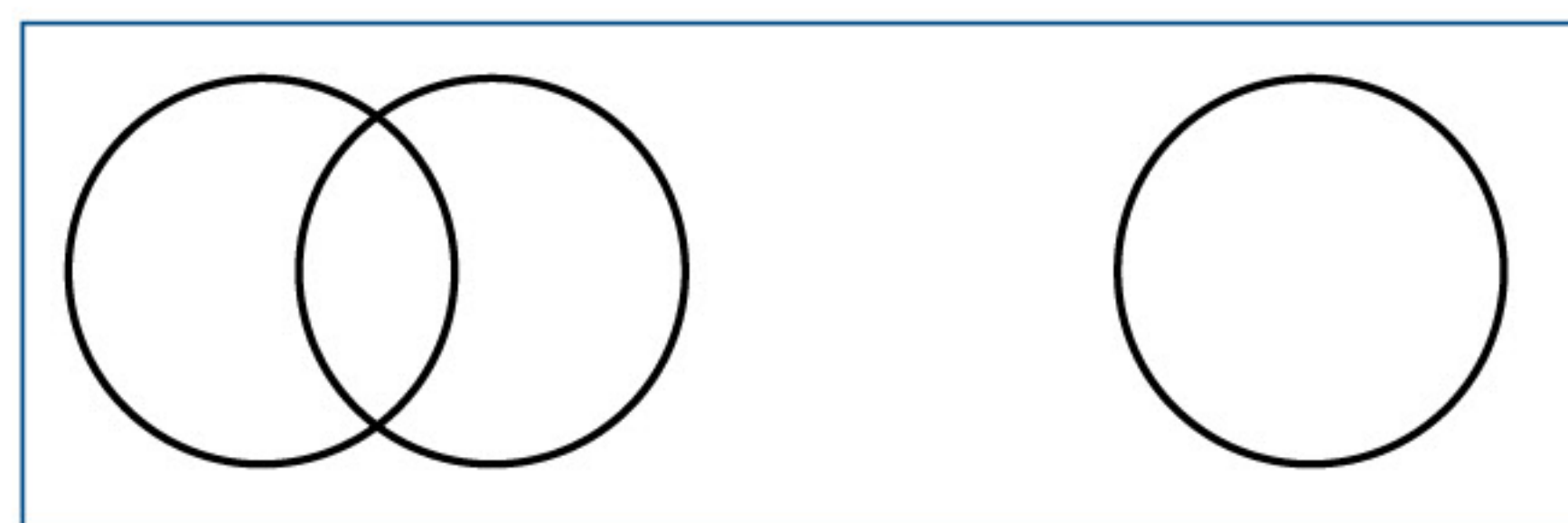
Rotate the diopter adjustment rings of the left and right eyepiece to bring the specimen into focus

Please note:

Put the zoom adjustment knob at the highest magnification again and check the image focusing. The diopter adjustment is complete when the image is accurately focused during zooming. If not, please repeat steps 3 to 8

5.5 Interpupillary distance

Hold both eyepiece tube to turn as the direction to suitable position (4)



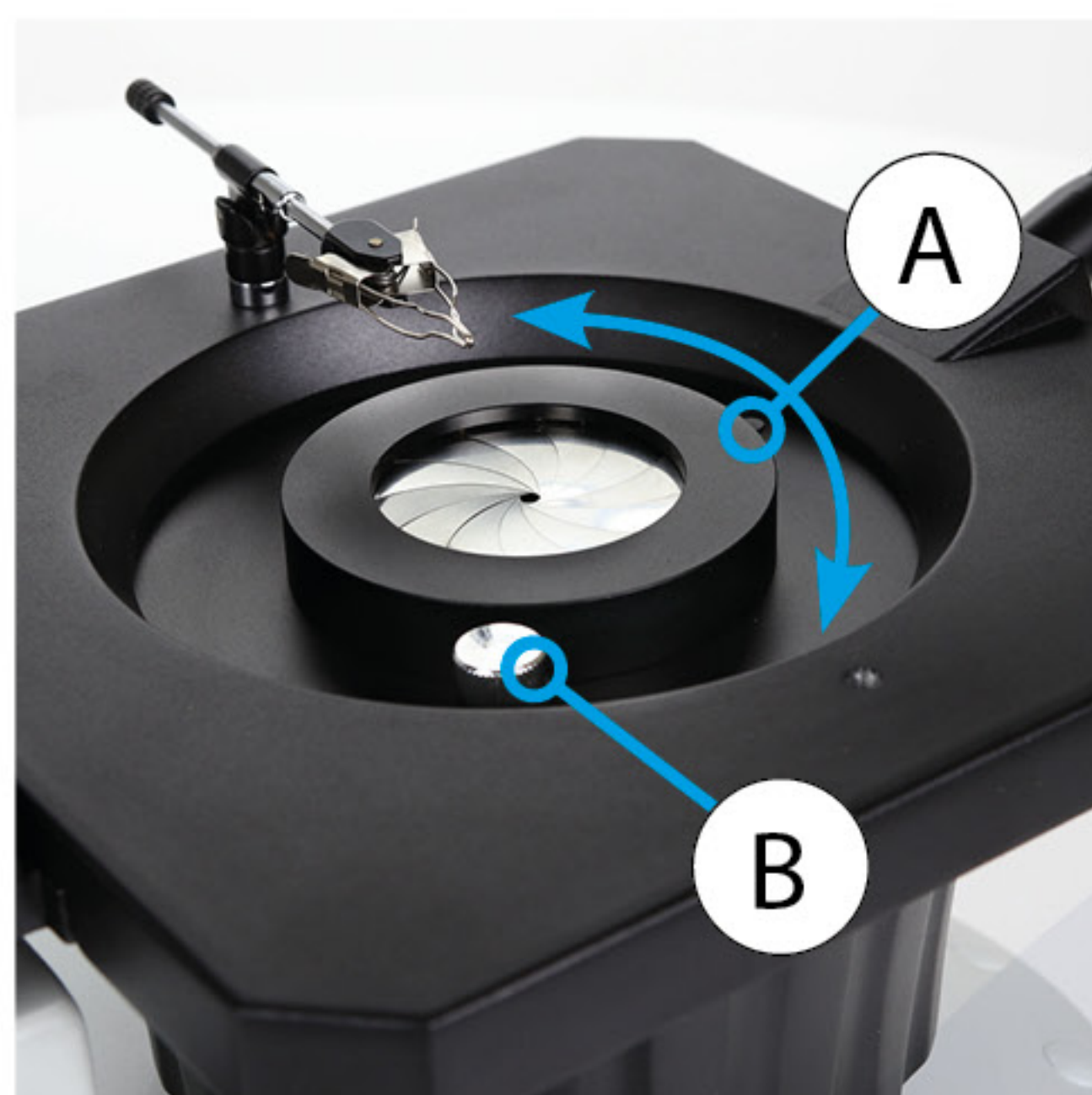
Field of view
before adjustment

Field of view
after adjustment



5.6 Iris diaphragm

Fig. 5



Move lever (A) to change the aperture of iris diaphragm, regulating bottom light. The aperture is $\varnothing$ 3mm - $\varnothing$ 44mm

5.7 Switch Brightfield & Darkfield

Fig. 5

Turn knob (B) to select brightfield or darkfield



Note:

The knob needs to be turned thoroughly

5.8 Adjust top light

Fig. 6

The top light is either a 7W fluorescent bulb or a 1W LED. Both are supported by a gooseneck. The LED light can be turned on and adjusted by turning the potentiometer (A)

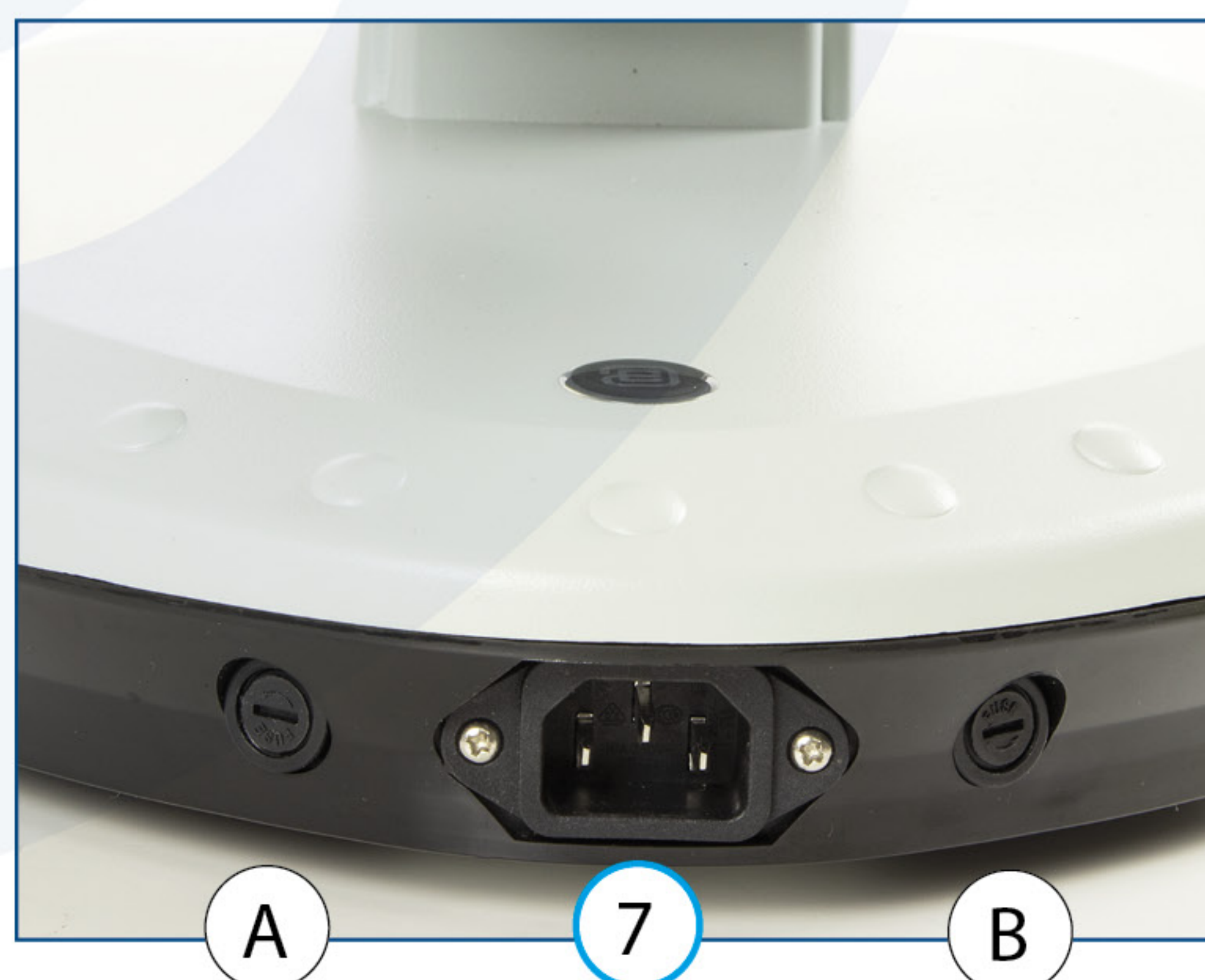


5.9 Replacing the fuse

Fig. 7

- Please turn the power switch to "O" before replacing either one of the fuses
- Use a flathead screwdriver to take out the fuse holder (A or B) and replace the fuse. then replace the fuse holder

Fuse: 250V 3A



5.10 Replacing bulb for bottom light

Fig. 8

Please turn the power switch to "O" before replacing bulb. Turn the microscope stand in a 45° position and loosen the screw under stage (A)



Note: Please, wait for the bulb to cool down before replacement



Note: Do not touch the bulb directly by hand



5.11 Replace bulb for top light

Fig. 9

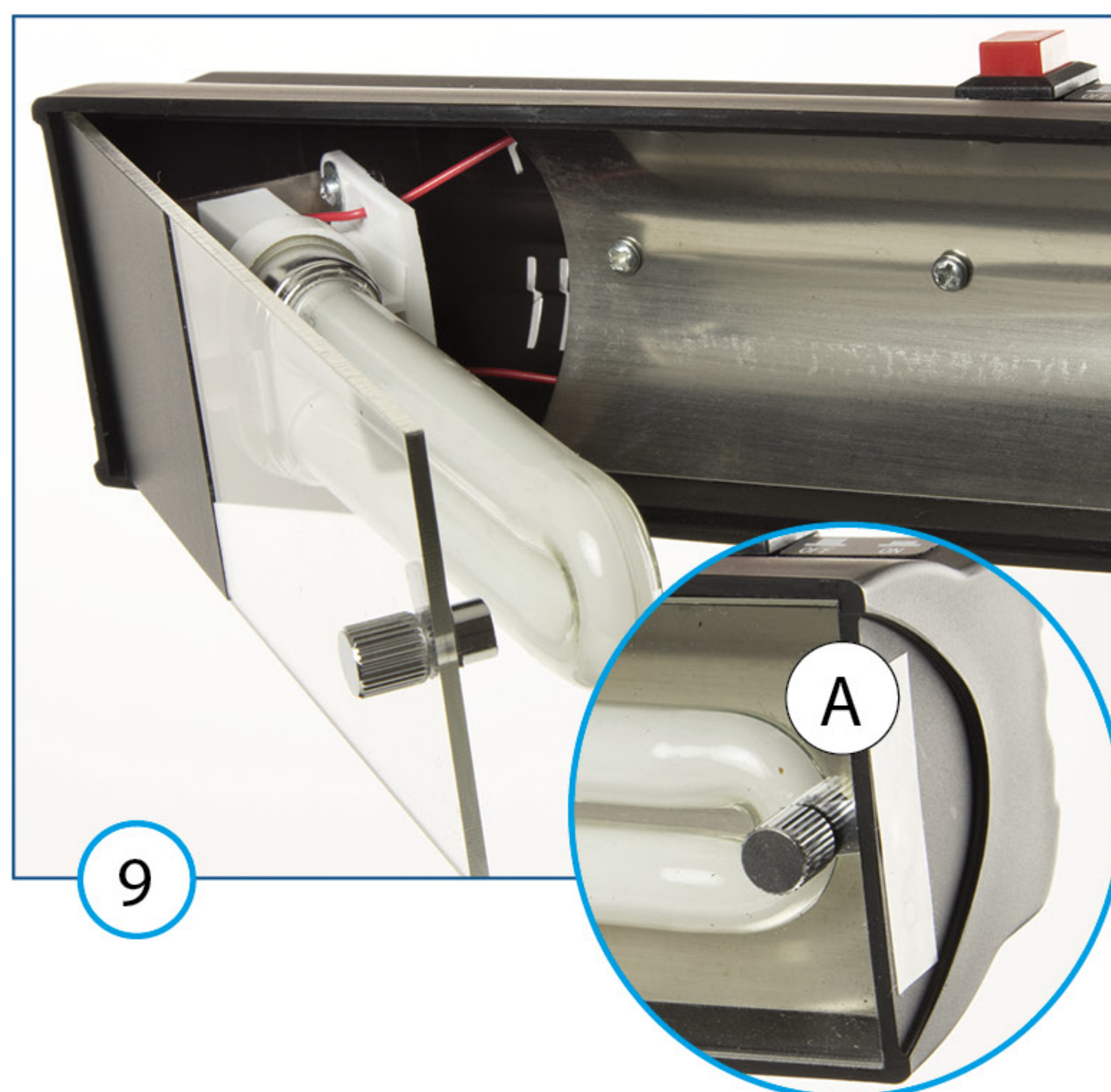
Please turn the power switch to "O" before replacing bulb. Loosen the screw on cover (A) and open it. Pull out the bulb for replacement



Note: Please, wait for the bulb to cool down before replacement



Note:
Do not touch the bulb directly by hand



6. Notes

A light blue background with a large, faint, stylized letter 'E' in the center. The 'E' is composed of several rounded rectangular shapes, giving it a modern, geometric appearance. The overall design is minimalist and clean.



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