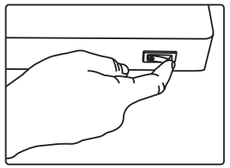
WARNING: Make sure to follow the "Laboratory Conduct and Safety" guidelines provided by the class before using microscope.

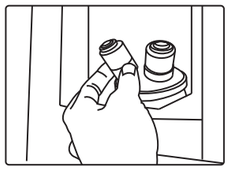
Instructional Video Link: *http://www.youtube.com/watch?v=BRK3zlQSUbA*

Steps for Bright Field:

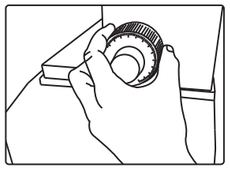
Bright field microscopy is the simplest setting with contrast that allows basic visibility of certain structures of a specimen.



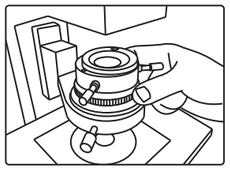
1. Push **power switch (20)** into "I" which turns it on. Adjust the two eyepieces to comfort.



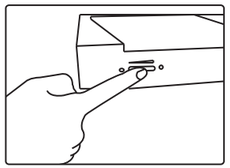
2. Turn **objective (10)** with the yellow band labeled "*PL L 10/0.25 PHP 160/1.2*" until it is centered under **stage (11)** in working position.



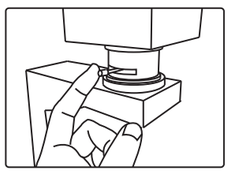
3. Turn **coarse focusing knob (8)** until **objective (10)** has moved all the way to the top position just underneath the **stage (11)**. Avoid touching **stage (11)** to make sure to prevent it from naturally sliding over the objective lens.



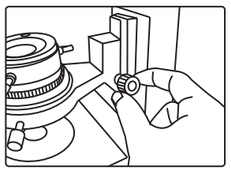
4. Turn the **aperture dial (13)** counterclockwise all the way to the left in order to open the aperture for the light to pass through.



5. While looking into the **eyepiece (5)**, adjust the **light control (21)** to observe the brightness at a comfortable setting.

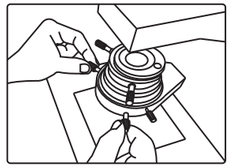


6. Turn **field diaphragm adjustment handle (25)** to diminish the field light image. If the field of light is not detected, adjust both **condenser adjustment screws (12)** until the field light is visible.

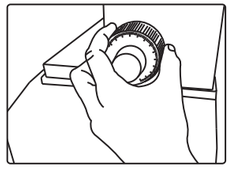


7. While looking into the **eyepiece (5)**, turn the **condenser up/down knob (17)** to gain focus of the field light image.

Diminished Field Light Image



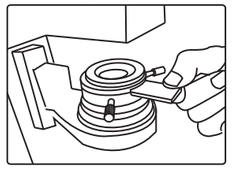
8. Then adjust both **condenser adjustment screws (12)** to center the field light image and turn **field diaphragm adjustment screw (25)** to fill field light image to the eyepiece view.



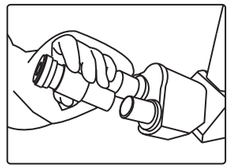
9. Place specimen at the center of the **stage (11)** and focus the specimen using the **coarse focusing knob (8)** and the **fine focusing knob (9)** to observe the bright field.

Steps for Phase Contrast:

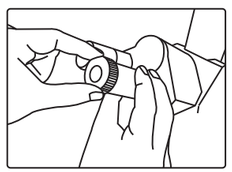
Phase contrast microscopy increases the color contrast with the surrounding mounting medium.



10. Insert the **annular diaphragm slab (4)** into the annular diaphragm slot, and make sure to turn **aperture dial (13)** to maximal aperture. (The annular diaphragm slab can be found near the microscope station. If not, ask the lab professor or teaching assistant)

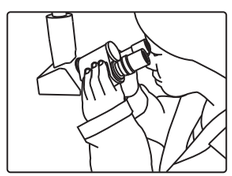


11. Take out one **eyepiece (5)** and insert the *center telescope* into the eyepiece tube. (The center telescope can be found near the microscope station. If not, ask the lab professor or teaching assistant)



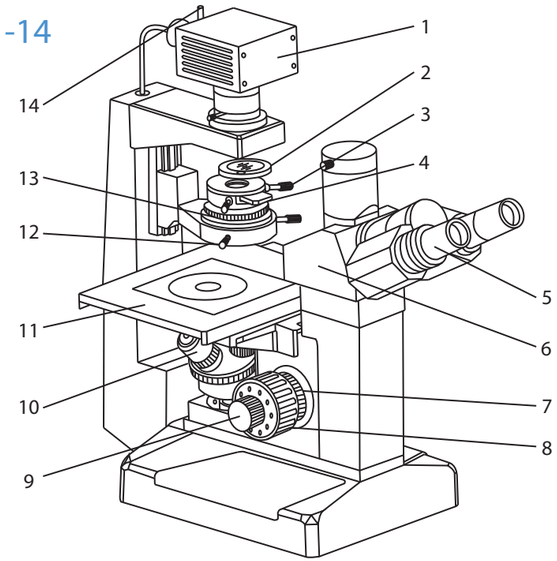
12. While looking through the *center telescope*, bring the image of the ring of light to focus by holding the base of the center telescope and turning the lens.

13. There will be a light halo and a dark halo. Use both of the **annular diaphragm adjustment screws (3)** until the two rings are completely overlapped.



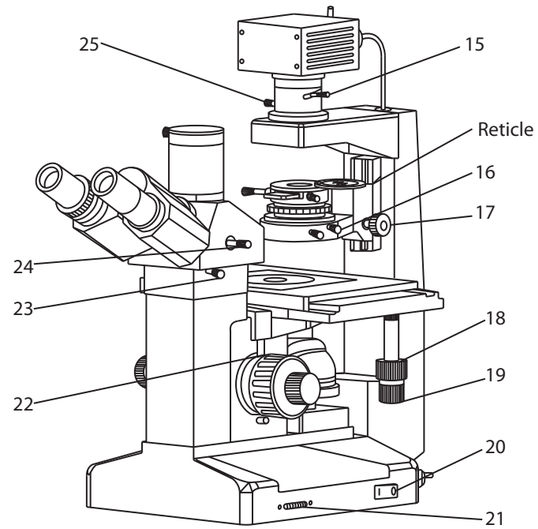
14. Take out center telescope and insert **eyepiece (5)** to observe phase contrast.

Parts 1-14



1. Lamp Box 2. Filter Seat 3. Annular Diaphragm Adjustment Screw 4. Annular Diaphragm Slab 5.Eye Piece 6. Trinocular 7. Adjustable Tensional Knob 8. Coarse Focusing Knob 9. Fine Focusing Knob 10. Objective 11. Stage 12. Condenser Adjustment Screw 13. Aperture Dial 14. Lamp Holder Adjustment Screw

Parts 15-25



15. Collector Adjustment Handle 16. Condenser Holding Screw 17. Condenser Up/Down Knob 18. Plate Lengthwise Knob 19. Plate Cross Knob 20. Power Switch 21. Light Brightness Control 22. Limit Knob 23. Tube Holding Screw 24. Observation or Photograph Lever 25. Field Diaphragm Adjustment Screw

Mightex