

*User's Manual*

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## Introduction

Darkfield microscopy is an advanced microscopy method that allows the user to view images that are typically difficult to see (offer low contrast against the background they are viewed against) using normal brightfield methods.

Darkfield essentially uses a reflective cone of some kind to reflect light from the transmitted light (bottom light) within the condenser to a sloped reflective panel. This panel is angled in such a manner as to where the light is bent around a black coin shaped section, and hits the sample from the sides, rather than through the sample.

This system provides a dark background on which the sample is contrasted against, while still being illuminated by the light source.

Darkfield microscopy is primarily used in live blood analysis, however a variety of other applications are also viable.

For any further information about our products or availability, please visit us at:

**[www.iScopeCorp.com](http://www.iScopeCorp.com)**

We highly recommend you study this manual thoroughly before operating the microscope, and that you keep it on hand for future reference.

If you have additional questions or need assistance, please send us an email at:

**[info@amscope.com](mailto:info@amscope.com)**

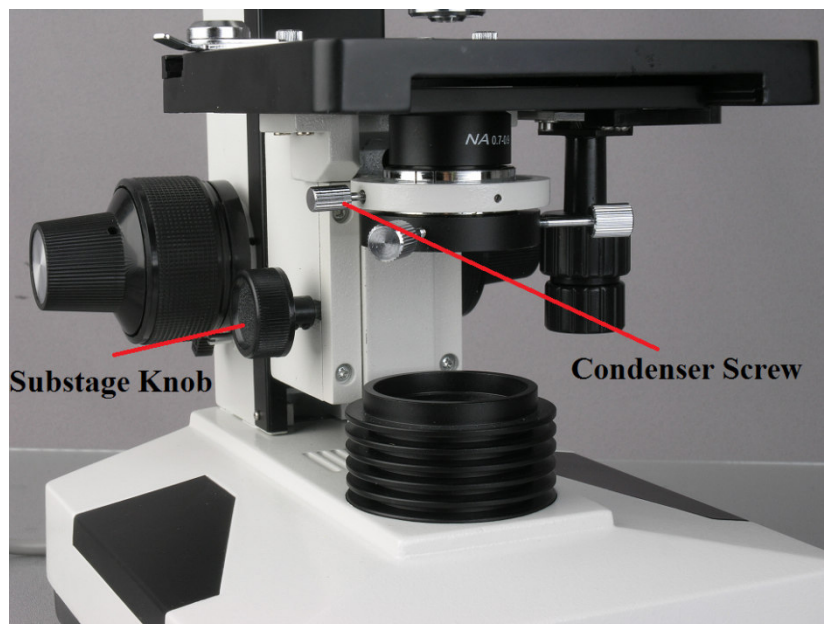
## Instructions

1. First, get to know your condenser. Dry darkfield condenser is for low power microscope use, such as for objective 4x, 10x or 40x. Oil darkfield condenser is for high power microscope use, such as for objective 40x, 100x or above.

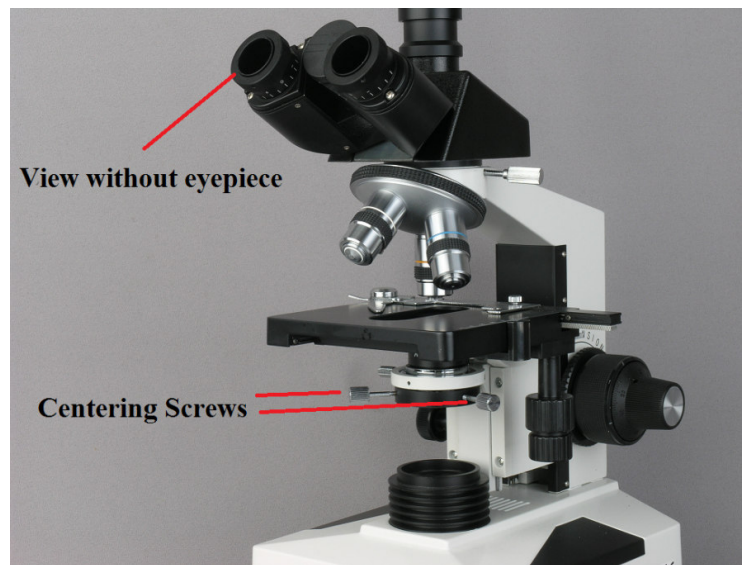


2. You may need to remove Abbe condenser from your microscope. This can vary from model to model. If not sure how to remove your substage condenser, refer to your microscope user's manual. Here is an example of model T490.

- Lower the substage for easy access to the condenser knob. Loose the condenser hand screw and then raise the substage to remove the condenser.
- Replace with darkfield condenser.
- Lower the substage and tightening the condenser hand screw.



3. Centering the darkfield condenser. Move 10X objective into the light path. Remove the eyepieces and view the rear focal plane of the objective by peering down the eyepiece tube. Lower the substage gradually and you should see a light ring when the substage is almost at the lowest point (fig a). Use centering screws to adjust the ring to the center (fig b). After centering, place the eyepieces back.



4. Raise the condenser to the top of the travel distance just short of the slide on the stage. This is the optimal position for darkfield viewing, but can be adjusted later if needed.

5. Place your sample on the stage and focus the microscope as normally. You may need to adjust the height of the stage up or down slightly for optimal viewing, but generally it should be very close to your sample.

6. If using an oil darkfield condenser, an extra step is required. You will need to place a drop of immersion oil on the darkfield condenser, then slide it to contact the bottom of the slide. This provides optimal resolution for your darkfield image, ultimately resulting in more detail in the sample.

## Proper Techniques

1. If oil used, once you have finished using the oil darkfield lens, you will need to clean the lens and sample of the oil before it dries.
2. You can wipe the lens with a soft nonabrasive cloth to remove the oil. If desiring to use cleaner, you can use cigarette lighter fluid to safely remove the oil as it will break it down. Do NOT use alcohol based solvents, as it will dissolve the cement used to in assembly of the lens (thus breaking your objective).
3. The sample itself can be discarded, or if desired, you may clean it up and store it for later use. The sample may also be left with the oil on it, as you will still need to apply more for use later, however it may dry up and cloud your sample if not. Cleaning is suggested.