



PHASE MICROSCOPE

OPERATION MANUAL

FOR USE WITH MRG# G380PHT and G383PHT



G383PHT Microscope with optional Digital Camera

United Products & Instruments, Inc.
182 Ridge Road, Suite E Dayton NJ USA
(732) 274-1155 * info@unicosci.com

Thank you for choosing the G380PHT Microscope. This precisely built, durable microscope will give years of service to even the busiest office practice. Our technical and customer support departments are ready to assist you with any questions or comments you may have. If ever you require an additional accessory or spare part, please contact your local distributor, or you can contact for the name of the nearest distributor.

UNPACKING G380PHT MICROSCOPE

Each microscope has been packed with utmost care. Please take a moment to examine the outer and inner cartons for any visual damage. We recommend that you keep all of the packing material until you have fully assembled, examined and tested your new microscope. If you note any damage, please contact the shipping company or your distributor.

- (1) Microscope body with phase condenser
- (1) Binocular or Trinocular Head (G383PHT)
- (2) 10x High-Eyepoint eyepieces
- (4) Plan phase objectives 10x, 40x 100x and 4x Plan objective.
- (2) Replacement fuses (1.5A)
- (1) Dust cover
- (1) Operation manual

If any parts are missing, please contact your representative.

ELECTRONICS

G380PHT microscope uses UL and CSA approved electrical components. The circuit board in the base of the unit contains all the electrical functions. There are no user repairable parts on the circuit board.

Power Input: AC 115V/60Hz - 220V/50Hz universal.

Output: LED , 3 Watt

Fuse: A 1.5 Amp

INSTALLATION AND OPERATION GUIDE

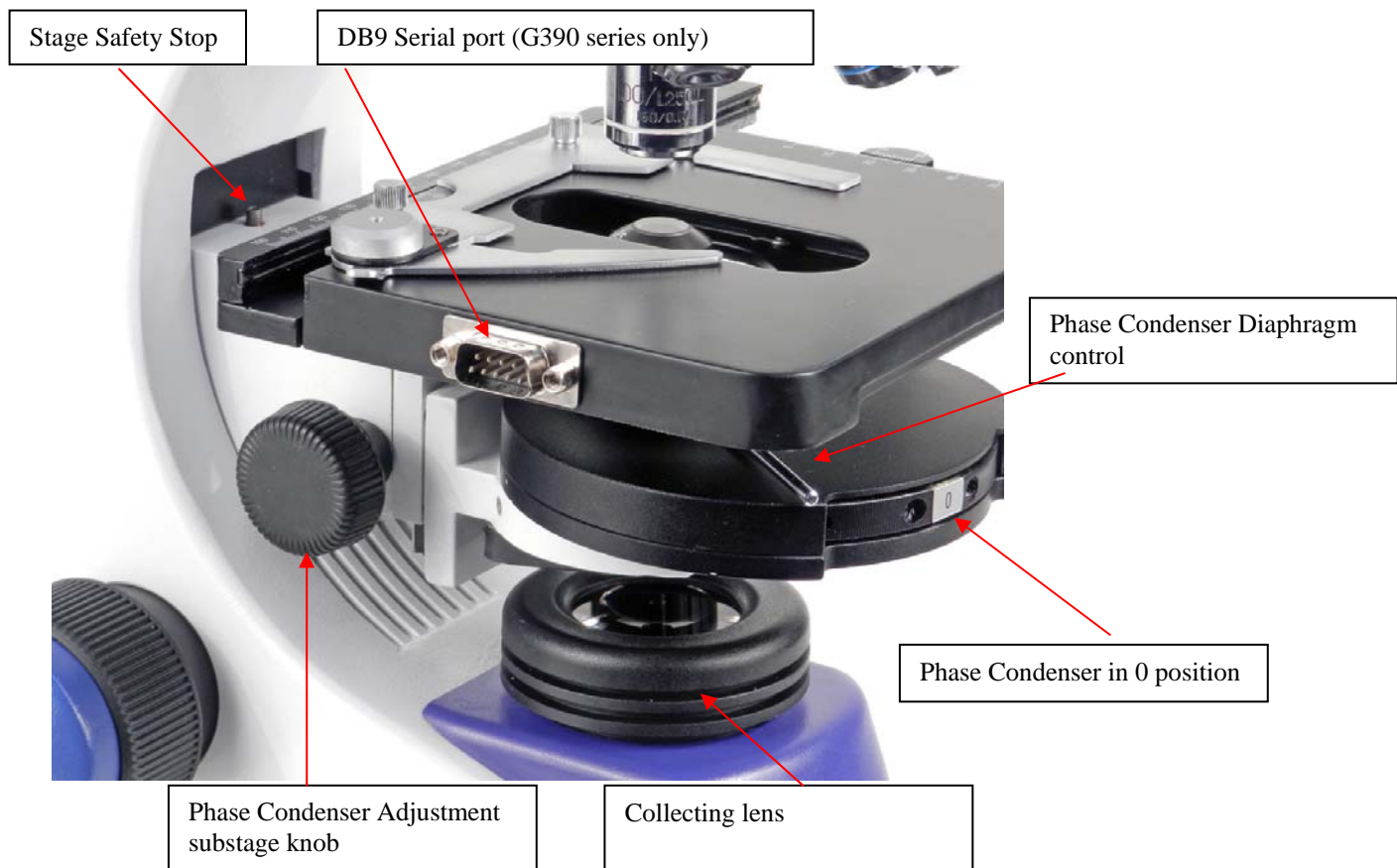
 <p>Phase condenser & Centering Allen Key</p>	 <p>Centering Telescope</p>	 <p>Phase Contrast Objectives</p>
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The phase condenser and objectives on your microscope have been pre-installed and pre-centered by UNICO technicians.

- Remove the stand of the microscope and place it on a sturdy, dust free surface.
- Remove the microscope head from the Styrofoam carton. Remove the plastic dust plugs from the eyepiece tubes as well as the protective plastic cover from the head (save the protective plastic parts). Plug on base the upper part of the arm and secure with the retention screw. Note: Don't over tighten.
- Unwrap the protective tissue from the eyepieces carefully and slide in each eye tube.

The following phase installation and centering instructions are for your information only and can be omitted with the new microscope.

- Install the turret phase condenser into the condenser holder. Lock the phase condenser with the condenser locking screw
- Raise the phase condenser to its highest position by turning the substage knob on the left side
- Install the phase objectives into the revolving nosepiece in clockwise order.



1. Phase Annulus Ring Alignment

Note: The phase annulus rings have been properly aligned at UNICO facility.

- Follow this instruction to check and/or realign if necessary. Turn 10X phase objective into working position. Put slide on mechanical stage and hold it with slide holder. Rotate the phase condenser disc to "0" position. After bringing the slide into focus, remove the slide. The mechanical stage is now in working position.
- Remove the right eyepiece from eyepiece tube. Insert the centering telescope in the right eyepiece tube and loosen the locking screw.
- Look through the telescope and see the dark ring in the 10X objective. If the phase ring is not in sharp focus, push or pull the top portion of the telescope until you see a sharp ring image. Lock the telescope with the locking screw. Turn the phase condenser disc to "10X". This will bring the 10x phase annulus ring into optical system (working position).
- Look through the telescope. If the phase annulus ring is overlapping with the phase ring in the objective, you will only see a dark ring in a light-dark background and there is no direct bright light coming through. If you see a bright ring, and the ring is not centered, you need to align the phase annulus. See below instructions.
- Repeat the same procedures for all objectives.

2. Centering Phase Annulus Ring

- The phase annulus centering Allen screw holes are located in the back of the phase condenser at 10 o'clock and 2 o'clock. Insert the long centering Allen keys into the holes.
- Check once again that the power on the phase condenser disc matches the power of the phase objective. The mechanical stage is in working position.
- Look through the centering telescope. Rotate the Allen keys until the dark phase ring overlaps with the bright annulus ring. (Minor adjustments may only be required. Turn the Allen key slowly and see the direction the ring is moving. This can avoid moving the annulus ring to wrong direction)
- Repeat the above procedures for any other phase annulus alignments.
- Remove the Allen keys and centering telescope. Store them in a safe place for future use.
- Remove the telescope and insert the 10X eyepiece into eyepiece tube.

The phase system is ready to use. Make sure your phase annulus ring always matches the phase objective. If you use brightfield observation, turn the turret to "0" position and the phase condenser becomes a brightfield Abbe condenser.

USING THE G380PHT MICROSCOPE

1. Plug the power cord into the power inlet at the rear of the arm and plug another end of the power cord into the AC outlet.

2. The illumination control wheel is located on the left side of the base. It turns the illuminator On/Off. Turn the control wheel to the brightness desired. To turn off the illumination, simply reverse the turning until you hear a click stop.
3. In order to speed your familiarity with controls, choose a specimen slide you are familiar with, such as an old hematology slide or a commercially prepared slide. Place the slide into the slide holder by pushing back on the thumb guard and placing the slide toward the back of the holder. Allow the metal slide holder to gently hold the slide in place.
4. Move the slide to the center of the stage, by turning the mechanical stage control knobs, just below the stage on the right side. These knobs allow you to move the slide in the X-Y axis (left-right and forward-backward).
5. Open the aperture of the iris diaphragm on the Abbe condenser (controlled by the small black lever on the condenser).
6. Once you are comfortably seated, look into the oculars and move the eyepiece tubes together or apart until you see only one complete circle of light. You have now adjusted your interpupillary distance. The interpupillary distance range is 55-75mm.
7. **Focusing procedures:**
 - 7.1 Bring the 4x objective into working position. As you bring the objective into place, will feel a “stop” (clicking) when the objective is seated properly. Use the coarse and fine adjustment knobs to locate the image and bring the 4x objective into focus.
 - 7.2 Move the 10x objective into place. Minor coarse adjustment may be needed yet the fine focusing knob is needed to bring the 10x objective into focus.
 - 7.3 Rotate to the 40x objective. Focus with fine focusing knob for the best image.
 - 7.4 You will now be in the middle of the focus range. You may have to adjust the aperture diaphragm (on the condenser) for the best contrast.
 - 7.5 Immersion oil is required when 100X oil objective is used. Never allow 40X or other dry objectives to touch immersion oil!
8. **Diopter adjustment:**

If you are using a binocular, back-to-back dual binocular or trinocular microscope, you have to adjust for the normal difference in vision between your two eyes. This is a simple but critical adjustment! G380PHT microscope has dual diopter adjustment rings located on each eye tube of the Seidentopf head. Follow the following procedures:

 - Set both diopters at “0”.
 - Close your left eye and with your right eye open, look into the right ocular.
 - Adjust the fine focus to give you the best image. Do not touch the diopter on the right eye tube.
 - Close your right eye and look with your left eye into the left ocular.
 - Rotate the adjustment (diopter) ring on the left ocular tube until you see a clear focused field.
9. **Focus Tension Control:**

Focus tension has been pre-adjusted. If needed, the focus tension can be adjusted at any time without tools. To adjust the tension of your focusing controls, simply turn

the tension control ring. This knurled ring is located on the right side between the microscope stand and the focusing knob.

10. Mechanical Stage Safety Stop (Upper Limit Setting)

The safety stop is provided to help prevent objectives and slide damage. The safety stop sets the upper limit movement of the mechanical stage. The safety stop setting screw is located on top of stage driving block (behind the mechanical stage).

You are now ready to use your **G380PHT** microscope.

FUSE REPLACEMENT

The fuse case is part of the power inlet socket located in the back of the microscope.

Unplug the power cord. Turn the illuminator control wheel to “off”

- Remove the power cord from the power inlet on the back of the microscope.
- Locate the fuse holder. The fuse holder is a part of the power inlet.
- Use a flat head type screwdriver to take the snap-in type holder cover off. Remove the blown fuse and replace it with the same type and rating: 250V 1.5A
- Put the snap-in fuse holder back.

MAINTENANCE

1. Always cover your microscope with the dust cover when not in use.
2. When cleaning the lenses, use lens paper or a Q-tip dipped in lens cleaning solution.
3. Excess immersion oil should be cleaned of at once. An alcohol pad is best for removing oil from the stage and on the other metal parts, but is not recommended for use on the lenses.
4. Dust in the nosepiece or ocular tubes should be blown out using only filtered air. Canned air dusters work well for this job.
5. Whenever you remove an objective, we recommend that you place the plastic cap over the hole and put the objective back into the original plastic shipping vial until ready to be placed back on the microscope. This will keep the objective safe from dust and other foreign matter.
6. To keep your microscope in top condition for years, we recommend that you have the microscope professionally serviced once a year.