UNICO POLARIZING MICROSCOPE
OPERATION MANUAL
FOR USE WITH THE MFR#G384

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Thank you for choosing the UNICO Polarizing 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.

UNPACKING UNICO POLARIZING MICROSCOPE

Each UNICO Polarizing 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.

The UNICO Polarizing Microscope package includes:

• Microscope body with mechanical stage and NA 1.25 Abbe condenser		1
• Binocular head		1
• 10x High-Eyepoint eyepieces		2
• PLAN Achromatic objectives	4x	1
	10x	1
	40xr	1
	100xr (oil)	1
• Polarizing Compensator		1
• Polarizing Uric Acid Control Slide		1
• Replacement fuse 250V 1.5A		2
• Dust cover		1
• Operation manual		1

If any parts are missing, please contact your distributor right away. Do not discard any packaging in case the instrument needs to be serviced.

UNICO POLARIZING MICROSCOPE COMPONENTS

OBJECTIVES

Each UNICO Polarizing Microscope comes equipped with 4 Plan Achromatic DIN flat-field objectives color-coded, polished objectives are parfocal and parcentered. The 100X (oil) and the 40X (high dry) are spring loaded to prevent damage.

EYEPIECES

Two Widefield 10X 18mm “High-Eyepoint” eyepieces are included with each UNICO Polarizing Microscope. The tube size is standard 23.2mm. The specialized High- Eyepoint eyepieces are designed to reduce eyestrain while wearing glasses.

HEAD

UNICO Polarizing Microscope Seidentoph binocular inclined 45° style. Each can be set for individual requirements and comfort. The inner diameter of the eyepiece tube size is standard 23.2mm.

CONDENSER
Focusable Abbe condenser N.A. 1.25 with iris diaphragm features especially designed slot were the Polarizing compensator will be insert during polarizing microscopy.

MICROSCOPE BODY
Cast metal body assures durability and stable performance of the UNICO Polarizing Microscope. Large mechanical stage (135mm x 150mm) featuring low mounted coaxial controls. The stage upper-movement limit (safety lock) can be set as desired to protect slides as well as objectives.
Coaxial coarse and graduated fine focusing knobs with tension adjustment control
Pre-aligned LED illumination with universal power input from 110V/60Hz to 230V/50Hz, detachable power cord.

POLARIZATION COMPONENTS
The Analyzer lens is permanently built in to the body of the UNICO Polarizing Microscope.
The 360° Rotating Polarizer is mounted on top of the light housing and can be easily rotated into polarizing or bright field position.
The Compensator with 90° rotational wheel should be inserted into the special slot at the bottom of the condenser.

ELECTRICAL
UNICO Polarizing 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.
The fuse case is part of the power inlet socket located in the back of the microscope. When replacing the fuse, always install a new one of the same size and amperage.

Power Input:	AC 115V/60Hz - 220V/50Hz universal.
Output:	LED , 3 Watt
Fuse:	250v 1.5 Amp

ASSEMBLING UNICO POLARIZING MICROSCOPE
1. Place the microscope body on the benchtop so that the UNICO label faces you.
2. If the objectives are pre-installed please go to step 4. If not, remove the plastic dust plugs from the nosepiece. Save these in individual objective containers.
3. Install the objectives. Each objective is packed in an individual plastic container. Remove each objective from its container. Install the objectives in the following order: 4x, 10x, 40x, and 100x. Make certain that they are screwed in all of the way. Save the individual containers in case you need to send the objective for service.
4. Remove the microscope head from the package. Remove the plastic dust plugs from the eyepiece tubes as well as the protective plastic cover from the head (save the protective plastic parts). Insert the head into the upper part of the arm and secure with the retention screw. Don’t over tighten.
5. Unwrap the protective tissue from the eyepieces and slide in each eye tube.

USING UNICO POLARIZING SCOPE

Your microscope can be used for standard brightfield microscopy or as a polarizing instrument. Please follow the instructions below.

BRIGHTFIELD MICROSCOPY

1. The ON/OFF switch is integrated with the brightness control wheel located on the left side of the base. Turn the control wheel to the brightness desired. To turn off the illumination, simply reverse the turning until you hear a click.
2. 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.
3. 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).
4. Open the aperture of the iris diaphragm on the Abbe condenser, controlled by the small black lever on the condenser.
5. 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.
6. Rotate the polarizer above the light housing until the filed of view is pure white color.
7. **Focusing procedures**.

7.1 Bring the 4x objective into working position. As you bring the objective into place, will feel a click-stop 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.**
   UNICO Polarizing Microscope has dual diopter adjustment rings located on each eye tube of the Seidentopf head. Follow the following procedures:

8.1 Set both diopters at “0”.

8.2 Close your left eye and with your right eye open, look into the right ocular.

8.3 Adjust the fine focus to give you the best image.

8.4 Close your right eye and look with your left eye into the left ocular.

8.5 Rotate the adjustment ring on the left ocular tube until you see a clear focused field.

9. 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.

POLARIZED MICROSCOPY

1. Rotate the polarizer mounted above the light housing until the field of view is deepest red color possible.
2. Place the control slide on the stage.
3. Insert the compensator in to the special slot at the bottom of the condenser.
4. Rotate the compensator wheel to observe the polarization effect.

FUSE REPLACEMENT

A 1.5 Amp fuse protects the circuit board from electrical overload. The fuse case is part of the power inlet socket located in the back of the microscope. When replacing the fuse, always install a new one of the same size and amperage.

1. Unplug the power cord. Turn the illuminator control wheel to “off”
2. Remove the power cord from the power inlet on the back of the microscope.
3. Locate the fuse holder. The fuse holder is a part of the power inlet.
4. Use a flat head type screwdriver to take the snap-in type holder cover off. Remove the blown fuse and replace it.
5. Put the snap-in fuse holder back.

MAITENANCE

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.


Built in Analyzer
Removable Compensator
Rotatable 90°
Built in Polarizer
Rotatable 360°
UNICO