UNICO®

M260 BINOCULAR MICROSCOPE OPERATION MANUAL

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UNICO® M260 Series Microscope.

Thank you for choosing the **UNICO®** M260 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 **UNICO®** for the name of the nearest distributor.

Unpacking M260 Microscope.

Each **UNICO®** 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.

Unpack your M260 microscope using the following checklist for the parts and accessories. (Your specific order may vary)

(1) Microscope stand with NA 1.25 Abbe condenser
(1) Binocular head
(2) 10x widefield eyepieces
(4) Achromatic objectives 4x, 10x, 40xr and 100xr (oil)
(1) Dust cover
(1) Operation manual

If any parts are missing, please contact your dealer or call **UNICO®** customer service at 800-588-9776 or e-mail us at unicosupport@unicosci.com

M260 Series Microscope Features.

Objectives:
Each M260 microscope comes equipped with 4 achromatic DIN flatfield objectives (optional ***Semi-plan and Plan objectives are available***). The 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 eyepieces are included with each M260 microscope. The tube size is standard 23.2mm.

Head:
The binocular head is a 30° inclined Siedentopf style. It can be set for individual requirements and comfort. The inner diameter of the eyepiece tube size is standard 23.2mm.

Additional M260 microscope features:

- Double-layer mechanical stage, 115mmX125mm; N.A.1.25 Abbe condenser with iris diaphragm and filter holder.
- Low-position coarse and fine adjustment with stop and tighten structure, coarse range: 13mm (combine with fixed stage), 7mm (combine with mechanical stage); fine precision 0.002mm.
- 0.2W LED illumination (color temperature 5700-6500K), intensity adjustable.

- Camera accessory: 0.35X/0.5X/0.65X/1X C-mount.
- Locking mechanism for eyepieces.

Electronics.

UNICO® M260 microscope uses high quality 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.

AC/DC Adapter Power Input: AC 115V/60Hz - 220V/50Hz universal.
AC/DC Adapter Output: 6V 2A

M260 Microscope Assembly Instructions.

1. Remove the stand of the microscope and place it on a sturdy, dust free surface. Set the base so that the **UNICO®** label faces you.
2. The objectives are usually preinstalled for you. If not locate the 4-hole nosepiece and remove the plastic dust plugs. Save these in individual objective containers. Install the objectives. Each objective is packed in an individual plastic container. Remove each objective from its container, save the containers in the Styrofoam carton. Install the objectives in the following order: 4x, 10x, 40x, and 100x. Make certain that they are screwed in all of the way.
3. 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). Place it into the mount on the top of the arm and secure with the retention screw. Note: Don't over tighten.
4. Unwrap the protective tissue from the eyepieces carefully and slide in each eye tube.
5. Slide holder: The slide holder has already been installed on the mechanical stage. If you ever need to remove the slide holder, locate the holding screws. Loosen the two holding screws and remove the slide holder by sliding forward. When you replace the slide holder, do not over tighten the holding screws.

Using M260 Microscope.

Note: If your microscope has been exposed to extremes of temperature, please allow time for all the parts to come to room temperature before turning on the power. Excess cold can fog the lenses and may cause the bulb to fail.

1. Once you have assembled all the parts, 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 (110V/60Hz – 230V/50Hz). Turn the power switch on
2. The illumination control (intensity rheostat) wheel is 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 stop.
   Note: Rapid repeated changes in light intensity would dramatically shorten the life of the LED.
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.

Note: Do not allow the slide holder to "snap-back" against the slide, this could cause the slide to chip or shatter.

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!

Note: Make sure the slide cover glass is 0.17mm or less in thickness.

8. **Diopter adjustment:**

When you use a binocular microscope, you have to adjust for the normal difference in vision between your two eyes. This is a simple but critical adjustment! M260 microscope has one diopter adjustment ring located on left eye tube of the Seidentopf head. Follow the following procedures:

8.1 Set the diopter on the left eye tube 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 (diopter) ring on the left ocular tube until you see a clear focused field.

9. Focus Tension Control:

Focus tension has been pre-adjusted at **UNICO®**. 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.

Note: Removing too much tension may cause the stage to drift down.

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.

The stage upper limit is preset at **UNICO®**. If adjustment is needed, turn the setting screw with a screwdriver to set the desired upper limit.

Note: Improper stage upper limit setting may cause high power objective unable to focus. (The slide should almost touch the top lens of 40X objective (the top lens of the 40X objective is retractable). when the stage is raised to its highest limit)

You are now ready to use your **UNICO® M260** microscope.

LED Illumination and Replacement

M280 series microscopes use long lifetime LED illumination. There is no need to replace the LED. If the LED does not turn on please check the power supply, the brightness control first. Should there be a need to replace the LED illumination system simply follow the steps below to replace the illumination base:

1. Unplug the power cord from the power inlet;
2. Remove the entire illumination base (black bottom base) by loosening the four locking screws.
3. Install the new illumination base. MAKE SURE the earthing-wire is securely put back. Lock the base with the four locking screws.

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.