

VetOne G380 Series

Microscope

Operation Manual

Thank you for choosing the VetOne G380 series microscope. This precisely built, durable microscope will give years of service to even the busiest practice.

For service, accessories and replacement parts, please contact Unico directly at 1-800-588-9776 or info@unicosci.com.

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Features

The VetOne G380 microscopes were designed with the user in mind. Designed for viewing comfort and reliability, the G380 is a great investment for your practice.

Objectives

Your microscope comes equipped with four achromatic DIN Semi-Plan (G380SP) or Plan Achromat (G380) objectives. The color-coded, polished objectives are parfocal and parcentric. The 100X (oil) and the 40X (high dry) are spring loaded to prevent damage.

Semi-Plan objectives provide you with approximately 85% flat-field viewing.

Oculars

Two widefield 10X 18 mm High-Eyepoint eyepieces are included with each G380 microscope. The tube size is standard 23.2 mm. The specialized High-Eyepoint eyepieces are designed to allow those users wearing glasses to wear them while viewing and to reduce eyestrain while wearing glasses.

Filter Holder

A swing-out filter holder is installed under the condenser for holding a blue (or other color) filter to sharpen contrast, which is recommended for routine hematology or urine analysis.

Head

The head is a Seidentopf binocular, a German optical design. The binocular eyetubes are inclined 45°. Each can be set for individual requirements and comfort. The inner diameter of the eyepiece tube size is standard 23.2 mm.

Additional Features

- Large mechanical stage (135 mm x 150 mm) with low mounted coaxial controls
- Stage upper-movement limit (safety stop) to protect slides and objectives
- Coaxial coarse and fine focusing knobs with tension adjustment control to prevent stage drift
- Focusable Abbe condenser (N.A. 1.25) with iris diaphragm
- Pre-aligned illumination and easy lamp replacement

Electronics

The VetOne G380 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

The microscope is preset to the voltage requirements of the U.S. and Canada, AC 115V/60Hz.

Output

The lamp is a 6V/20W G4 pin type quartz halogen bulb (replacement part #019719, available from MWI).

Fuse

A 250V 1.5A fuse (replacement part #036500, available from MWI) protects the circuit board from electrical overload. The fuse case is part of the power inlet socket located in the back of the microscope.

Unpacking the Microscope

Each microscope has been packed with utmost care. Please take a moment to examine the outer and inner cartons for any visual damage. The warranty excludes any damage caused by shipping.

We recommend that you keep all the packing material until you have fully assembled, examined and tested your new microscope. If you note any damage, contact the shipping company or MWI.

Unpack your G380 microscope using the following checklist for the parts and accessories (your specific order may vary).

Item	Quantity
Microscope body with NA 1.25 Abbe condenser	1
Seidentopf binocular head	1
10X widefield High-Eyepoint eyepieces	2
Objectives: 4X, 10X, 40XR, 100XR (oil)	4
Replacement fuses (1.5A)	2
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Assembling the Microscope

Place the microscope base on a sturdy, dust-free surface with the VetOne label facing you.

Remove the four plastic dust plugs from the nosepiece.

Install the objectives in the following order: 4X, 10X, 40X, 100X. Make certain that they are screwed in all the way but **do not over-tighten**. Save the individual objective containers for storing the plastic dust plugs that you removed from the nosepiece.

Remove the plastic dust plugs from the eyepiece tubes as well as the protective plastic cover from the microscope head (save the protective plastic parts). With the eyepiece tubes facing toward you, place the base of the head onto the socket in the base (you may need to first loosen the retention screw on the right side of the socket). Once the head is securely seated, gently tighten the retention screw just far enough to hold the head in place but not prevent it from rotating. **Do not over-tighten**.

Unwrap the eyepieces and slide one into each eye tube.

The slide holder has already been installed on the mechanical stage. To remove the slide holder, loosen the two holding screws and pull the slide holder forward. When you replace the slide holder, do not over-tighten the holding screws.

Using the Microscope

Note: If your microscope has been exposed to extreme temperatures, 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.

Once you have assembled all the parts, plug one end of the power cord into the power inlet at the rear of the arm and plug the other end of the power cord into an AC outlet.

The illumination control (intensity rheostat) wheel is located on the left side of the base. It turns the illuminator on and off. Roll the control wheel toward you to bring the lamp to the brightness desired. To turn off the illuminator, roll the control wheel in the reverse direction until you hear a click stop.

Note: Rapid repeated changes in light intensity will dramatically shorten the life of the quartz halogen lamp.

In order to help you become familiar with the microscope's 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 on the left side 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, as this could cause the slide to chip or shatter.

Move the slide to the center of the stage by turning the mechanical stage control knobs, which are located 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).

Open the aperture of the iris diaphragm on the Abbe condenser by moving the small black lever on the front of the condenser all the way to the left.

Once you are comfortably seated in front of the microscope, 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 to 75 mm.

Focusing Procedures

Move the 4X objective into the working position (directly over the iris diaphragm). As you bring the objective into place, you will hear the nosepiece click when the objective is seated properly.

Use the coarse and fine adjustment knobs (located on either side of the microscope base below and behind the stage) to locate the image and bring the 4X objective into focus. Rotate the outer rings of the knobs for coarse adjustment, and the inner rings for fine adjustment.

Rotate the nosepiece one-quarter turn to move the 10X objective into place. Use the coarse and fine adjustment knobs to again bring the image into focus.

Rotate the nosepiece one-quarter turn to move the 40X objective into place. Use the fine focusing knob to adjust for the best image. You will now be in the middle of the focus range. You may have to adjust the aperture diaphragm (located on the condenser) for the best contrast.

Immersion oil is required when using the 100X oil objective. **Never allow 40X or other dry objectives to touch immersion oil.**

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

Diopter Adjustment

When you use a binocular microscope, you have to adjust it for the normal difference in vision between your two eyes. This simple but critical adjustment is made using the dual diopter adjustment rings located on each eye tube of the Seidentopf head.

1. Rotate both diopter rings until the line at 0 on the diopter aligns with the line on the head.
2. Close your left eye and look with your right eye into the right ocular.
3. Adjust the fine focus to give you the best image. Do not touch the diopter ring on the right eye tube.
4. Close your right eye and look with your left eye into the left ocular.
5. Rotate the diopter ring on the left ocular tube until you see a clear focused field.

Focus Tension Control

Focus tension has been preset. To adjust the tension of your focusing controls, simply turn the tension control ring. This is the innermost knurled ring of the focusing knob on the right side of the microscope stand.

Note: Relieving too much tension may cause the stage to drift downward.

Mechanical Stage Safety Stop (Upper Limit Setting)

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

When the stop is properly set, the slide should almost touch the top lens of 40X objective (which is retractable) when the stage is raised to its highest limit. The stage upper limit is pre-set in the factory and should not require any adjustment. However, if you believe that the stop on your microscope needs to be adjusted, please contact Unico.

Bulb Replacement

Caution: Always unplug the microscope before changing the bulb.

Allow the microscope to cool down if it has been recently used. Use only a 6V/20W halogen bulb (replacement item #607015, available from MWI).

Note: When handling a new bulb, do not touch the glass portion with your fingers. Oil and sweat on the bulb may cause it to explode or shatter as it heats up.

Turn the microscope on its side. On the underside of the base, you will see a knurled knob labeled Lamp Access. Loosen this knob to release the collecting lens assembly.

Turn the microscope upright. Pull the collecting lens housing upward to remove it from the base for access to the bulb compartment.

Pull out the old bulb and discard it.

Holding the new bulb with a lint-free tissue or piece of cloth, gently insert the two metal pins on the base of the bulb into the lamp holder. This is a friction fit and you may have to very gently rock the bulb back and forth as you insert it into the holder.

Caution: Never attempt to spread the pins, as this will result in immediate damage to the new bulb.

Snap in the collecting lens housing back onto the base and gently tighten the knob on the bottom of the base to secure the housing. Do not over-tighten.

The bulb should be centered. If it is not, adjust the lamp socket locking screws and bring the bulb to center.

Fuse Replacement

Caution: Always unplug the microscope before changing the fuse.

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

Turn the illuminator control wheel to the full "off" position (roll it toward the back of the microscope body until you hear a click).

Remove the power cord from the power inlet socket on the back of the microscope and locate the fuse holder, which is a part of the socket.

Carefully slide the tip of a flat head screwdriver between the power inlet socket and the microscope body and work around the edge of the socket to lever the socket out of the microscope body. The socket is firmly in place and this step must be done with care to avoid damaging either the socket or the microscope body.

Remove the blown fuse and replace it with a fuse of the same type and rating (250V, 1.5A). Replacement fuses are available from Unico.

Replace the power inlet socket by pushing it firmly back into the microscope body.

Maintenance

Always cover your microscope with the dust cover when it is not in use.

When cleaning the lenses, use lens paper or a lens cloth that has been wetted in lens cleaning solution. Always use an optical lens cleaning solution designed for coated optics to avoid damaging the coating on the optics. These cleaners are typically available from camera stores.

Excess immersion oil should be cleaned off at once. An alcohol pad is best for removing oil from the stage and other metal parts, but is not recommended for use on the lenses.

Dust in the nosepiece or ocular tubes should be blown out using only filtered air. Canned air dusters work well for this job.

Whenever you remove an objective, place the plastic dust cover cap over the hole and put the objective back into its original plastic shipping vial until it is ready to be placed back on the microscope. This will keep the objective safe from dust and other foreign matter.

To keep your microscope in top condition for years, have it professionally serviced once a year.

Keep an optical cleaning kit on hand for routine cleaning.

Warranty

This instrument is warranted against defects in materials and workmanship for a period of one (1) year from the date of shipment to the customer.

This warranty is limited to the repair and replacement of parts that prove to be defective during the warranty period.

This warranty is not valid for parts damaged, lost, or that fail because of accident, fire, theft, acts of nature, negligence, or the use of chemicals that have a deleterious effect.

This warranty is conditioned upon the manufacturer retaining the option of replacing parts up to and including the entire instrument.

This warranty will not extend to any repairs or modifications made to the instrument by some party other than the manufacturer or a party authorized by MWI Veterinary Supply and the VetOne brand.

This warranty shall be in effect only upon the notice of the defect to the manufacturer or its authorized distributor, or dealer, within five (5) days after the occurrence of said defect.

No other warranty of any kind is made, expressed or implied. The warranty described above shall be the sole and exclusive remedy available to the purchaser. Correction of defects, in the manner and for the period of time described above, shall constitute complete fulfillment of all liabilities and responsibilities of the manufacturer to the purchaser with respect to the product, and shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise.

In no event shall the manufacturer, MWI Veterinary Supply, or the VetOne brand be liable, or in any way responsible for any damages or defects in the product that were caused by repairs or attempted repairs performed by anyone other than the manufacturer's dealer or station, nor shall the manufacturer, MWI Veterinary Supply, or VetOne brand be liable or in any way responsible for any incidental or consequential economic or property damages. Some states do not allow the exclusion of incidental or consequential damage, so the above exclusion may not apply to you.

Parts Diagram

