Stereo Microscopes to BUY and to AVOID

Absolute Clarity & Calibration, LLC is in the business of optical sales, service, repair, refurbish and calibration. We service and repair all makes and models from the early 1900's to present day production. ACC is qualified to judge the quality of a microscope because we know them from the inside out!

When we refurbish a stereo microscope, the optics are removed, all mechanical assemblies are vapor phase degreased, optics cleaned and reassembled, mechanical assemblies are relubricated with synthetics and the scope is stereoscopically realigned. We can help you choose or avoid scopes based on our extensive service and repair experience. Before purchasing a used scope, be sure to use the diagnostic procedures on the back of our brochure for evaluation.

In our opinion -- Buy them if you can! (used or new)

- Buy – Genuine Meiji new or old EMZ series, EMT series and EMX series. Be careful of look alikes such as the Scienscope™ EM or XTL series. All genuine Meiji models will have the Meiji name and symbol on them.
- Buy - B & L (Bausch & Lomb), Cambridge Instruments, American Optical (AO) or AO Spencer & Leica older models Stereo1, Stereo2, SZ-3, SZ-4, SZ-5, SZ-7. These can almost always be refurbished to like new condition. But be advised that parts are no longer available for American Optical.
- Buy - Nikon older models SMZ-1, SMZ-1B, SMZ-2, SMZ-2B, SMZ-

2T, SMZ-10, SMZ-U

♦ Buy - Genuine Olympus microscopes. Be careful of look alikes such as the
Scienscope ™ Model CO-SZ300, SZ400, SZ500, SZ600. Genuine Olympus microscopes will have the Olympus name on them and use genuine Olympus GSWH10x/22 eyepieces.

♦ Buy - any genuine Zeiss, Leitz, Wild or Aus Jena scopes if they are reasonably priced and the controls move smoothly.

♦ Buy - Unitron ZSB (not LSB) and Swift are your last choices for this BUY list.

A good used scope is better than a mediocre new one!!

Over the years ACC has repaired and serviced all of the following makes and models. The reasons to avoid these have become obvious to us through years of experience. Even though we still service these models, we can help prospective buyers to understand the limitations and problems associated with these models. If you own one of these scopes already, we may be able to improve the performance but we cannot improve the equipment beyond the limitations of quality in optics and mechanical assemblies.*

* The exceptions to this rule are Scienscope™ and the Russian zoom models. In most cases, these are not worth repairing or servicing. We would be willing to take your junk in trade and for a credit on any one of our refurbished or new Meiji model scopes.

In our opinion -- Avoid them "NO MATTER HOW LOW THEY GO!" with their prices.

Please understand that our aim is to educate and inform the end users of optical equipment. An educated shopper will not be an easy mark for the dealers of fancy junk with a lot of bells and whistles or used equipment with potential problems. Our expert advice is always free of charge. Call if you have questions.

Even though the seemingly great features and unbelievable low cost may tempt you, do not get stuck with one of these. The resale mark up is often too tempting for unknowledgeable vendors to turn down, so these low quality or non-durable scopes are widely circulated.

♦ Avoid - Any and all Scienscope™ models. The optics and mechanical assemblies on the older models are seriously downgraded from the Meiji

original that they were copied from. The latest Scienscope™ model appears to be an attempt to copy of the Olympus SZ-30 and SZ-40 binocular and trinocular models, but our testing and viewing indicated distortion and an out-of-focus hazy condition around the entire field of view in both eyes. These problems were also clearly evident through the trinocular (photography) port. There were many poor image quality issues with these units. Spend just slightly more and buy a quality scope.

- Avoid - Leica SZ-6, GZ-6, all new Leica GZ models sometimes marketed under the GIA name. The flat cam design fails to provide accurate tracking left to right. The gears also fail after a very short period of use.
- Avoid - GIA Gemscope. They are based on the Leica SZ-6 or GZ-6 body (nearly all the new GIA scopes are).
- Avoid - Any B & L, Cambridge or Leica stereo scopes with eyepieces that cannot be removed. These are "student scopes" and cannot be fully adjusted. They also tend to wear prematurely.
- Avoid - Unitron LSB and Trinocular models. These are no longer made and are not easily realigned.
- Avoid - New Nikon SMZ series. Overpriced for what the assemblies consist of. Internal workings have been cheapened in the new designs.
- Avoid- Russian Scopes! – any and all Russian made scope models marketed under the name of Mikon, Lomo, Geck and MBS. We have attempted to refurbish and adjust scopes as new as 1 & 2 year old models with no success due to the following reasons:
    - Many assemblies and subassemblies are press fit together and cannot be repaired.
    - Optical adjustments not possible on most models. If magnification left to right, focus or alignment goes out from wear or being knocked, in most cases the scope will not be repairable or adjustable.
    - Parts not readily available.
    - No manufacturer drawings or documentation available.

- (Russian, Leica, GIA scopes) Internal workings are over simplified from German, Japanese and older US models. Over simplification means poor optical tracking between left & right side optics. Premature deterioration of wear surfaces and unstable alignment are the inevitable result of poorly machined surfaces. Once worn out, they cannot be fixed from our experience.
- Avoid Motic, Gemoro, Mark IV, Mark V Scopes, Tasco, Parco, Bushnell, Lomo and Geck brand names.
- Avoid scopes without a representative who will back their product personally unless you get a real good deal on an auction table. Always check these scopes using ACC's diagnostic procedures to evaluate before purchasing.

We encourage people to learn for themselves how microscopes work and how to determine if their scope has internal problems from the start. We provide this information on the back of our informational brochure which is available free of charge.

We encourage pre-scheduling for demonstrations and educational sessions. Please call ahead of time to make sure that we are not on the road performing field service or scheduled fully in the lab.

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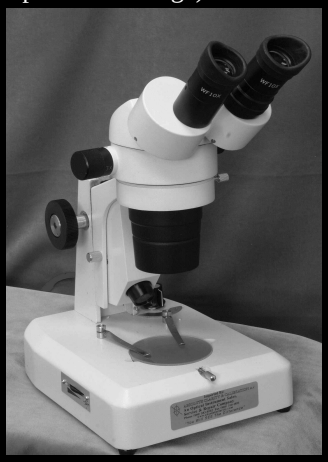
Absolute Clarity & Calibration's

Imported Microscope Systems

Each system has been quality assured and ACC custom engineered with modifications that bring these scopes up to our stringent quality and performance requirements.

Stereo microscopes systems

(Click on photo to enlarge)

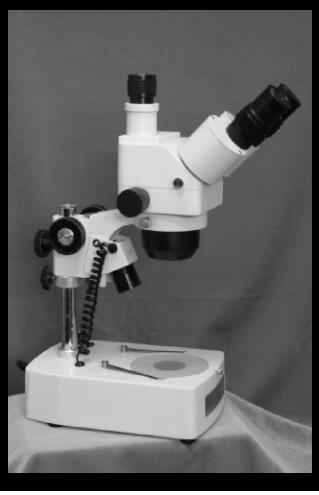


Flip turret style (Model # IFT2040 or IFT1030)- $ 330.00 ea.
2x/4x or 1x/3x objectives, 10x WF eyepieces, 45 degree inclined binocular head, working distance of 110mm, incident and transmitted light 6v-15w halogen lamp.

Replacement bulbs for Flip Turret #787 $ 12.00 ea.

Stereo zoom microscope (Model # ISZ1040) $ 450.00 ea
1x-4x zoom objective, 10x WF eyepieces, 45 degree inclined binocular head, transmitted/incident halogen lamp - transmitted light 12v12w, incident light 12v15w. (Total magnification 10x to 40x)

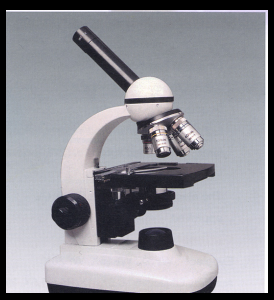
NOW available in Trinocular (ISZ1040T) --- $850.00 ea.
1x-4x zoom objective, 10x WF eyepieces, 45 degree inclined binocular head, transmitted/incident halogen lamp - transmitted light 12v12w, incident light 12v15w. (Total magnification 10x to 40x)



Replacement bulbs for Stereo zoom #64425 $ 12.00 ea.

Biological (Flatfield) microscope systems

Monocular - IFF128 $ 296.00
Monocular head included 45 degrees, WF 10x (18mm) eyepieces, Achromatic Objectives 4x, 10x, 40x(S), 100x (S, Oil) in Quadruple nosepiece, Double layers mechanical stage, Abbe NA 1.25 condenser with Iris Diaphragm and Filter Holder, Coaxial Coarse & Fine Focus adjustment, 6v20w T-H lamp with adjustable brightness.



Binocular - IFF136 $ 440.00
Binocular head included 45 degrees, WF 10x (18mm) eyepieces, Achromatic Objectives 4x, 10x, 40x(S), 100x (S, Oil) in Quadruple nosepiece, Mechanical stage (60mm X movement, 32mm Y movement), Abbe NA 1.25 condenser with Iris Diaphragm and Filter Holder, Coaxial Coarse & Fine Focus adjustment, 6v20w T-H lamp with adjustable brightness.

Polarizing microscope systems

Trinocular - $ 2,400.00
Binocular - $ 1,800.00
Monocular head - $ 1,500.00
Binocular head, Mechanical stage - moving range 30mm x 40mm; 40x - 630x total magnification; Stress less Achromatic objectives 4x, 10x, 25x, S40x, S63x; 10x crosshair eyepiece; Complementer: Gyps 1, Mica 1/4, Quartz Wedge; Blue filter.

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The following steps are critical in evaluating the extent of repair that your microscope needs. Please feel free to contact us if you have any questions or concerns.

Observe for contamination:

1. Remove both eyepieces and with your head approximately 10 inches away, look for haziness on the glass elements as you look down the eyepiece tubes.

2. Remove the head from the stand.

3. Pick up the scope head and aim the eyepiece tubes towards a light source. Put your eye up to the objective lens on the bottom of the scope.

4. While slowly rotating the zoom, look for haze, hairs, crystals and oil contamination. As you rotate the zoom, each side of each of the internal optical elements surfaces will come into focus one at a time.

Follow ACC's Proper set-up procedure

If this procedure does not clarify the microscope out-of-focus problems and eye strain is evident, then it is badly in need of service and Absolute Clarity should be contacted at your earliest convenience.

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Proper User Set-up for Stereozoom Binocular Microscopes

1. Set cross-line target on stage. Best results are achieved with 0.0006" cross-line reticle of 30 mm diameter. Focus and center cross-line image at highest magnification setting. (If no glass cross-line is available try making your own cross-line with a very fine pen.) It may become obvious to you that your eyes must strain in order to focus on the center of the very fine cross-line. Continue with the rest of this procedure.

* This eye strain effect may be the cause of user complaints and can be corrected by a LASER alignment performed at ACC's facility.

2. If your microscope has dual diopter adjusters (one on each eyepiece tube) they should both be set at the zero mark or line. If there is only one diopter adjuster, please see line #3.

3. Focus at highest magnification using the stand focus knob. "Best focus" preference should be given to the fixed eyepiece side (usually under the right eyepiece). Do not move the stand focus knob from here on.

4. Looking through the fixed eyepiece side check focus of the cross-line target image at lowest zoom magnification setting. The fixed eyepiece image should still be clear. If not, the scope needs other adjustments.

5. Focus the other eyepiece also at lowest magnification using the adjustable diopter collar under the eyepiece itself (usually under the left eyepiece). Again, do not use the stand focus knob. If dual diopters are available - each eyepiece should be adjusted for best focus individually. Using a jewelers screwdriver, now set each diopter adjuster to its zero mark. This will ensure that you will always be able to quickly reset your scope to your best parfocal setting very quickly and easily even if other people use it.

6. Scope should now stay focused when going from maximum to minimum magnification as long as the stand focus was set at highest magnification, and eyepieces were focused correctly (and matched) at lowest magnification setting.

7. Recheck by setting scope at highest magnification, focus image using the stand knob then go to the lowest magnification. Both images should be clear. Use this procedure before starting your work under the microscope at the beginning of each day or after someone else has adjusted your microscope.

** Once this procedure has been completed, the diopter adjuster(s) should not be moved.