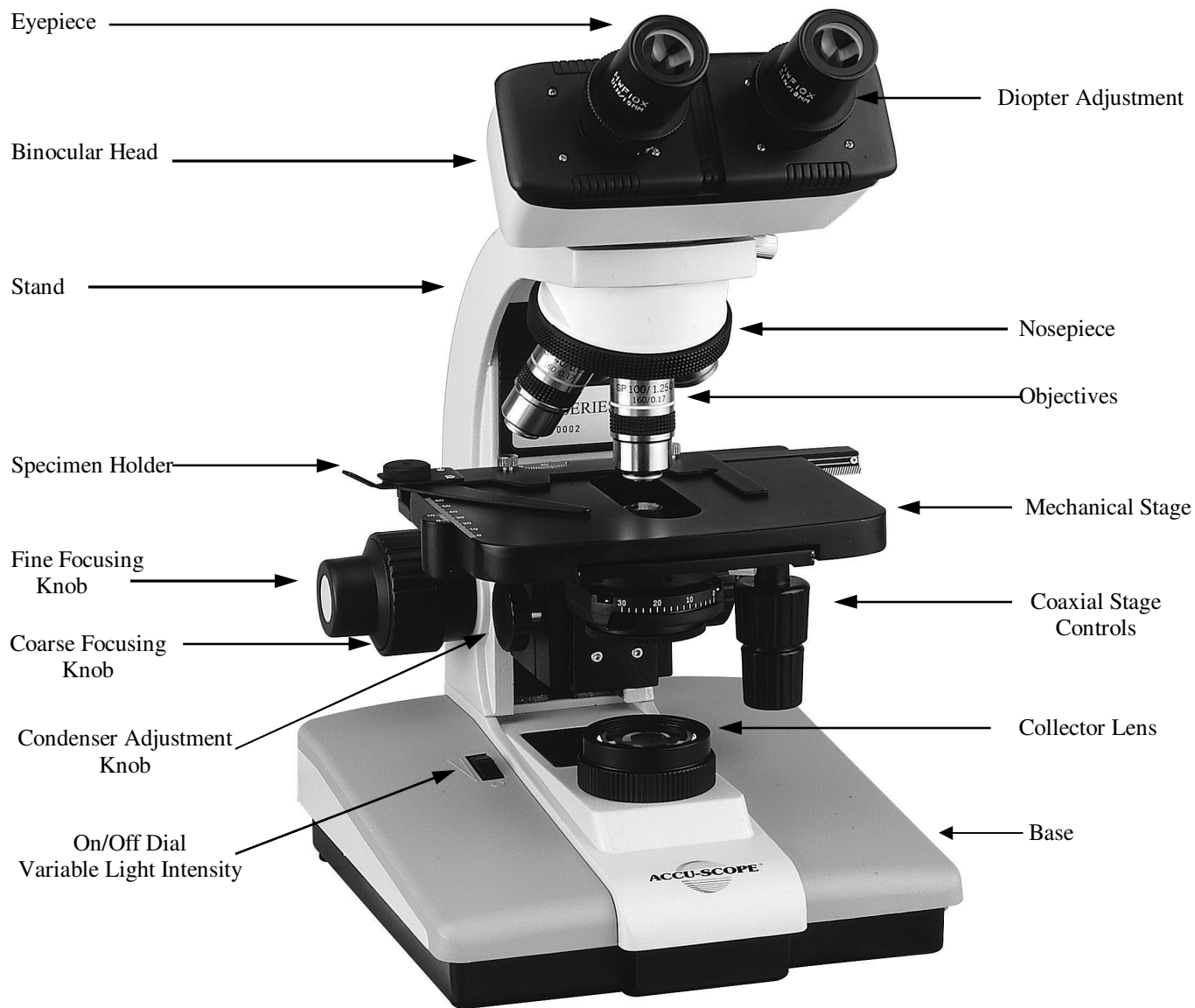


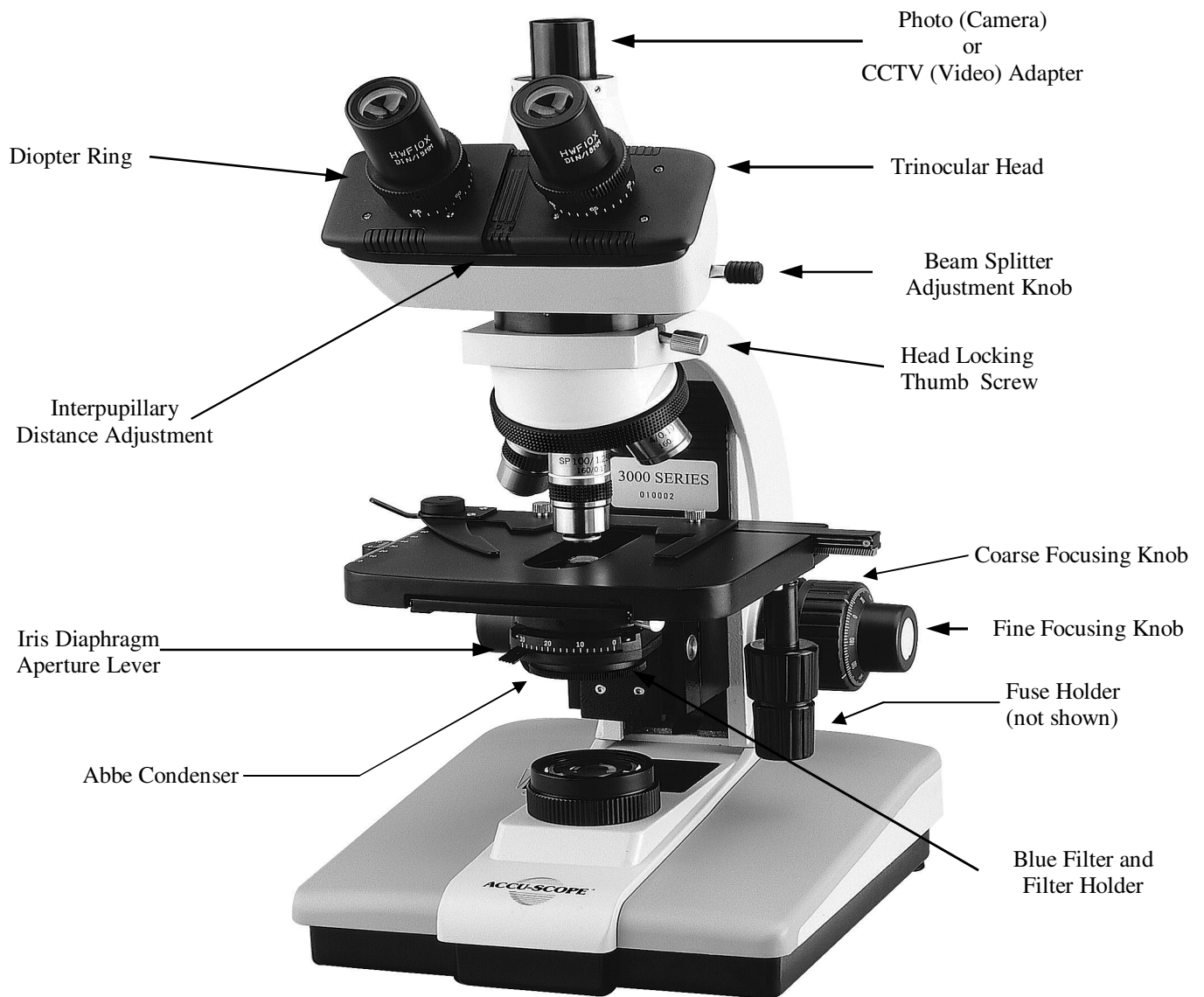
3000 MICROSCOPE SERIES INSTRUCTIONS

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3000 BINOCULAR MICROSCOPE SERIES



3000 TRINOCULAR MICROSCOPE SERIES

1.0 INTRODUCTION TO THE ACCU-SCOPE 3000 SERIES

Congratulations on the purchase of your new ACCU-SCOPE® microscope. ACCU-SCOPE microscopes are engineered and manufactured to the highest quality standards. Your microscope will last a lifetime if used and maintained properly. ACCU-SCOPE microscopes are carefully assembled, inspected and tested by ACCU-SCOPE personnel in our New York facility. Careful quality control procedures ensure each microscope is of the highest quality prior to shipment.

2.0 UNPACKING

Your microscope arrived packed in a molded styrofoam container. **Do not discard the container;** the styrofoam container should be retained for reshipment of your microscope if needed. Avoid placing the microscope in dusty surroundings or in high temperature, humid areas, as mold and mildew will form. Carefully remove the microscope from the styrofoam container by its arm and base. Place the microscope on a flat vibration-free surface. Now check the components against the following standard equipment list:

1. Stand, which includes the supporting arm, focusing mechanism, mechanical stage, nosepiece, N.A. 1.25 Abbe Condenser with iris diaphragm and illumination system.
2. Viewing head (binocular, trinocular or monocular depending upon the model ordered).
3. Eyepieces as ordered.
4. Objectives as ordered.
5. Immersion oil, blue filter with filter holder and dust cover.
6. Optional accessories (simple polarizer/analyzer, darkfield condenser, phase telescope, etc.)

Optional accessories such as phase contrast and microscope carry cases are not shipped as part of the standard equipment. These items, if ordered, are shipped separately.

ASSEMBLING YOUR MICROSCOPE

3.1 OBJECTIVES

Lower the stage to its full limit. Remove the objectives from their plastic vials, taking precaution not to drop them or allow your fingers to touch the lenses. Install the objectives in a clockwise direction from the lowest to the highest power (i.e., 4X, 10X, 40xR and 100xR). Always rotate the nosepiece by using the knurled nosepiece ring.

Each time the 100xR oil immersion objective is used you must wipe the objective and the specimen cover glass clean of all traces of oil with a lens tissue or soft cloth. Doing so will prevent oil from accidental contact with the 40xR objective, thereby damaging the objective and distorting its optical performance. The 100xR objective is warranted only if proper immersion oil is used (i.e. Cargille or E-Merck). Liquid paraffin or cedar wood oils are highly corrosive to the front lens elements and should never be used.

3.2 VIEWING HEAD

The microscope viewing head is installed on the microscope stand by our factory technicians. To remove the viewing head from the microscope stand simply loosen the viewing head lock screw. Be sure support the viewing head as you are doing so to avoid the viewing from falling off of the microscope stand.

3.3 EYEPIECES

The eyepieces are preinstalled into the microscope head by our factory technicians.

3.4 CONDENSER

The condenser was installed and centered by our technicians prior to shipment. If the condenser needs to be re-installed or adjusted in the future please follow the following procedure: Lower the condenser holder to its full limit by rotating the condenser focus knob. Slide the condenser into the condenser holder with the aperture control lever facing forward. Raise the condenser holder to its full limit by rotating the condenser focus knob. Focus the condenser so that light passing through the condenser focuses the image on the correct position of the specimen (center of the optical path).

3.5 FILTER

A clear blue filter was installed in the filter holder by our factory technicians for your convenience. The filter holder was installed into the bottom of the condenser by our factory technicians prior to shipment.

3.6 VOLTAGE CHECK

Confirm that the input voltage indication at the rear or bottom of the microscope corresponds to your line voltage. The use of a different input voltage indication will cause severe damage to your microscope. After confirming the correct voltage, plug the 3-prong line cord into an electrical outlet.

OPERATION

4.1 BINOCULAR OR TRINOCULAR VIEWING HEAD

To set the interpupillary distance, using both hands, move the eyepiece tubes together or apart until the full field of view is visible by both eyes simultaneously. An improper adjustment will cause operator fatigue and will disrupt the objective parfocality. When the proper setting is reached, determine the reading on the interpupillary scale. Set each eyepiece diopter to the same number as your interpupillary distance by matching it with the engraved base line. Monocular viewing heads do not require any adjustments, as there is only a single eyetube. When viewing a specimen slide a complete circle should be seen in the viewing field. Beginners may take awhile to see a complete circular image field.

4.2 ILLUMINATION

Depending upon specimen density and objective magnification the light level may need adjustment. Adjust the light intensity for comfortable viewing. The illumination level may vary when changing from one objective to another. To eliminate irregular light when using low power objectives (4X, 10X) raise or lower the condenser using the condenser adjustment knob. The iris diaphragm should be slightly opened or closed to obtain optimal contrast of the specimen being observed. Adjust the iris diaphragm to the smallest size allowable for a clear, sharp image of the specimen. The setting for the iris diaphragm will vary depending on the specimen being viewed.

4.3 FOCUSING AND EYEPIECE DIOPTER ADJUSTMENTS

To ensure that you obtain sharp images with both eyes (since eyes vary, especially for those wearing glasses) any eyesight variation can be corrected in the following manner. Position the 10x objective into the optical path. Raise the stage to its upper limit using the coarse focus knob. Looking into the eyepieces, slowly rotate the coarse focus knob to lower the mechanical stage. Stop rotating the knob when the specimen image appears. Using the fine focus adjustment, refine the image to its sharpest focus. If you wish to use a high power objective, first focus on the image using either the 4x or 10x objective. Once in focus using a lower power objective switch to a high power objective and use the fine focus adjustment to refine the image.

To compensate for differences between your left and right eye the microscope is equipped with dual diopter adjustments. Using the 40xR objective bring the specimen into focus. Rotate the 10x objective into the optical path. Using your right eye only and looking through the right eyepiece only focus on the

specimen by rotating the diopter ring only. Do not use the coarse or fine focus knobs to refine the image. Switch to the left eyepiece and using your left eye only, focus on the specimen by rotating the left diopter ring only. Repeat this procedure several times to check if necessary.

4.4 APERTURE DIAPHRAGM ADJUSTMENT

The aperture size is increased or decreased by rotating the condenser aperture diaphragm lever. When the aperture is closed the brightness and resolution are decreased but the contrast and range of focus are increased. If the aperture diaphragm is opened, the brightness and resolution are increased; however the contrast and range of focus are diminished. For optimal viewing conditions set the condenser aperture diaphragm lever to match the magnification of the objective in the optical path.

4.5 FOCUS STOP

The focus stop on the ACCU-SCOPE 3000 Series is built-in for ease of use.

4.6 ADJUSTABLE TENSION CONTROL

Located on the right side of the stand between the coarse adjustment knob and the arm there is an adjustable tension control knob that is preset at our facility and ready to use. To adjust the tension to your individual preference simply rotate the knob according to the directional arrow on the microscope stand to increase or decrease the tension for your individual preference.

CARE AND MAINTENANCE

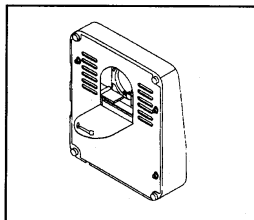
5.0 MAINTENANCE

Please remember to **never** leave the microscope with any of the objectives or eyepieces removed and always protect the microscope with the dust cover when not in use.

5.1 LAMP REPLACEMENT

The illuminator lamp is the only item on your ACCU-SCOPE microscope, which requires periodic replacement. UNPLUG the microscope. Move the mechanical stage to the right position and carefully place the microscope on the back of its arm so the bottom base of the microscope is facing towards you. Open the lamp-housing door on the bottom plate by pulling the window knob. After the lamp has cooled, remove the existing bulb from the socket. Without directly touching the surface of the new bulb with your fingers carefully place it into the socket. Direct contact with your fingers on the new bulb will leave grease/stains on the new bulb which will diminish the performance of the bulb. Close the lamp-housing door when completed. Return the microscope to its upright position.

Replacement Bulb: Catalog #3256 (6 volt 20 watt halogen)



5.2 CLEANING THE MICROSCOPE

Accumulated dirt on the metal surface should be cleaned with a damp cloth. More persistent dirt should be removed using a mild soap solution. The outer surface of the optics should be inspected and cleaned periodically using an air stream from an air bulb. If dirt remains on the optical surface use a soft cloth or cotton swab dampened with a lens cleaning solution (available from any camera store). All optical lenses

should be swabbed in a circular motion. A small amount of absorbent cotton wound on the end of a tapered stick makes a useful tool for cleaning recessed optical surfaces. Avoid using an excessive amount of solvents, as this may cause problems with optical coatings or cemented optics or the flowing solvent may pick up grease from the mounts making cleaning more difficult. Immersion objectives should be cleaned immediately after use by removing the oil with lens tissues or a clean, soft cloth.

5.3 SERVICE

ACCU-SCOPE microscopes are precision instruments which require periodic servicing to keep them performing properly and to compensate for normal wear. A regular schedule of preventative maintenance by qualified personnel is highly recommended. Your authorized ACCU-SCOPE distributor can arrange for this service.

Should unexpected problems be experienced with your instrument, proceed as follows:

1. Contact the ACCU-SCOPE distributor from whom you purchased the microscope. Some problems can be resolved simply over the telephone.
2. If it is determined that the microscope should be returned to your ACCU-SCOPE distributor or to ACCU-SCOPE for warranty repair, pack the instrument in its original styrofoam shipping carton. If you no longer have this carton, pack the microscope in a crush-resistant carton with a minimum of three inches of a shock absorbing material surrounding it to prevent in-transit damage. The microscope should be wrapped in a plastic bag to prevent styrofoam dust from damaging the microscope. The microscope must be shipped in an upright position; never on its side. The microscope or part should be shipped prepaid and insured.

LIMITED MICROSCOPE WARRANTY

This microscope is warranted to be free from defects in material and workmanship for a period of five years from the date of invoice to the original (end user) purchaser. This warranty does not cover damage caused in-transit, misuse, neglect, abuse or damage resulting from improper servicing or modification by other than ACCU-SCOPE approved service personnel. This warranty does not cover any routine maintenance work or any other work, which is reasonably expected to be performed by the purchaser. Normal wear is excluded from this warranty. No responsibility is assumed for unsatisfactory operating performance due to environmental conditions such as humidity, dust, corrosive chemicals, deposition of oil or other foreign matter, spillage or other conditions beyond the control of ACCU-SCOPE INC. This warranty expressly excludes any liability by ACCU-SCOPE INC. for consequential loss or damage on any grounds, such as (but not limited to) the non-availability to the End User of the product(s) under warranty or the need to repair work processes. Should any defect in material, workmanship or electronic component occur under this warranty contact your ACCU-SCOPE distributor or ACCU-SCOPE at (516) 759-1000. This warranty is limited to the continental United States of America. All items returned for warranty repair must be sent freight prepaid and insured to ACCU-SCOPE INC., 73 Mall Drive, Commack, NY 11725 – USA. All warranty repairs will be returned freight prepaid to any destination within the continental United States of America, for all foreign warranty repairs return freight charges are the responsibility of the individual/company who returned the merchandise for repair.

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TROUBLESHOOTING TABLES

If a problem occurs during the course of use, please refer to the tables below before contacting your ACCU-SCOPE distributor.

OPTICAL		
Problem	Cause	Corrective Measure
Darkness at the periphery or uneven brightness in the field of view	Revolving nosepiece not in clickstop position	Revolve the nosepiece to click-stop position by swinging the objective correctly into the optical path
Dirt or dust in the field of view	Dirt or dust on the lens - eyepiece, condenser, objective, collector lens or specimen	Clean the lens
Poor image quality	No coverglass attached to the slide	Attach a 0.17mm coverglass
	Coverglass is too thick or thin	Use a coverglass of the appropriate thickness (0.17mm)
	Slide maybe upside down	Turn slide over so the cover-glass faces up
	Immersion oil is on a dry objective (especially the 40xR)	Check the objectives, clean if necessary
	No immersion oil used with 100xR objective	Use immersion oil
	Air bubbles in immersion oil	Remove bubbles
	Condenser aperture is closed or open too much	Open or close properly
	Condenser is positioned too low	Position the condenser at the upper limit
IMAGE PROBLEMS		
Image moves while focusing	Specimen rises from stage surface	Secure the specimen in the slide holder
	Revolving nosepiece is not in the click-stop position	Revolve the nosepiece to the click-stop position
Image tinged yellow	Blue filter not used	Use daylight blue filter

IMAGE PROBLEMS		
Problem	Cause	Corrective Measure
Image tinged yellow	Lamp intensity is too low	Adjust the light intensity by rotating the intensity control dial and/or iris diaphragm
Image is too bright	Lamp intensity is too high	Adjust the light intensity by rotating the intensity control dial and/or iris diaphragm
Insufficient brightness	Lamp intensity is too low	Adjust the light intensity by rotating the intensity control dial and/or iris diaphragm
	Aperture diaphragm closed too far	Open to the proper setting
	Condenser position too low	Position the condenser at the upper limit
MECHANICAL PROBLEMS		
Image will not focus with high power objectives	Slide upside down	Turn the slide over so the cover glass faces up
	Cover glass is too thick	Use a 0.17mm cover glass
High power objective contacts slide when changed from low power objective	Slide upside down	Turn the slide over so the cover glass faces up
	Cover glass is too thick	Use a 0.17mm cover glass
	Diopter adjustment is not set properly	Readjust the diopter settings as outlined in section 4.3
Lamp does not light when switched on	No electrical power	Check power cord connection
	Lamp bulb burnt out	Replace bulb
	Fuse blown out	Replace fuse
Slippage of focus when using the coarse focusing knob	Tension adjustment is set too low	Increase the tension on the focusing knobs
Fine focus is ineffective	Tension adjustment is set too high	Loosen the tension on the focusing knobs