



The #1 Microscope & Accessories Supplier

OPERATOR'S MANUAL

(Please Read This Manual Before Using the Microscope)



T670 Microscope
Compound Microscope

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Before Use

Introduction

Congratulations on the purchase of your new AmScope Microscope! This manual is designed for the T670 microscope.

Please take a few minutes to familiarize yourself with the features and functions of your new microscope. If you want more information on microscope, parts, and accessories, please visit our website at:

www.AmScope.com



We recommend that you study this manual thoroughly before operating the microscope and that you keep it on hand for future reference. If you have additional questions or need assistance, please send us an email at:

info@AmScope.com

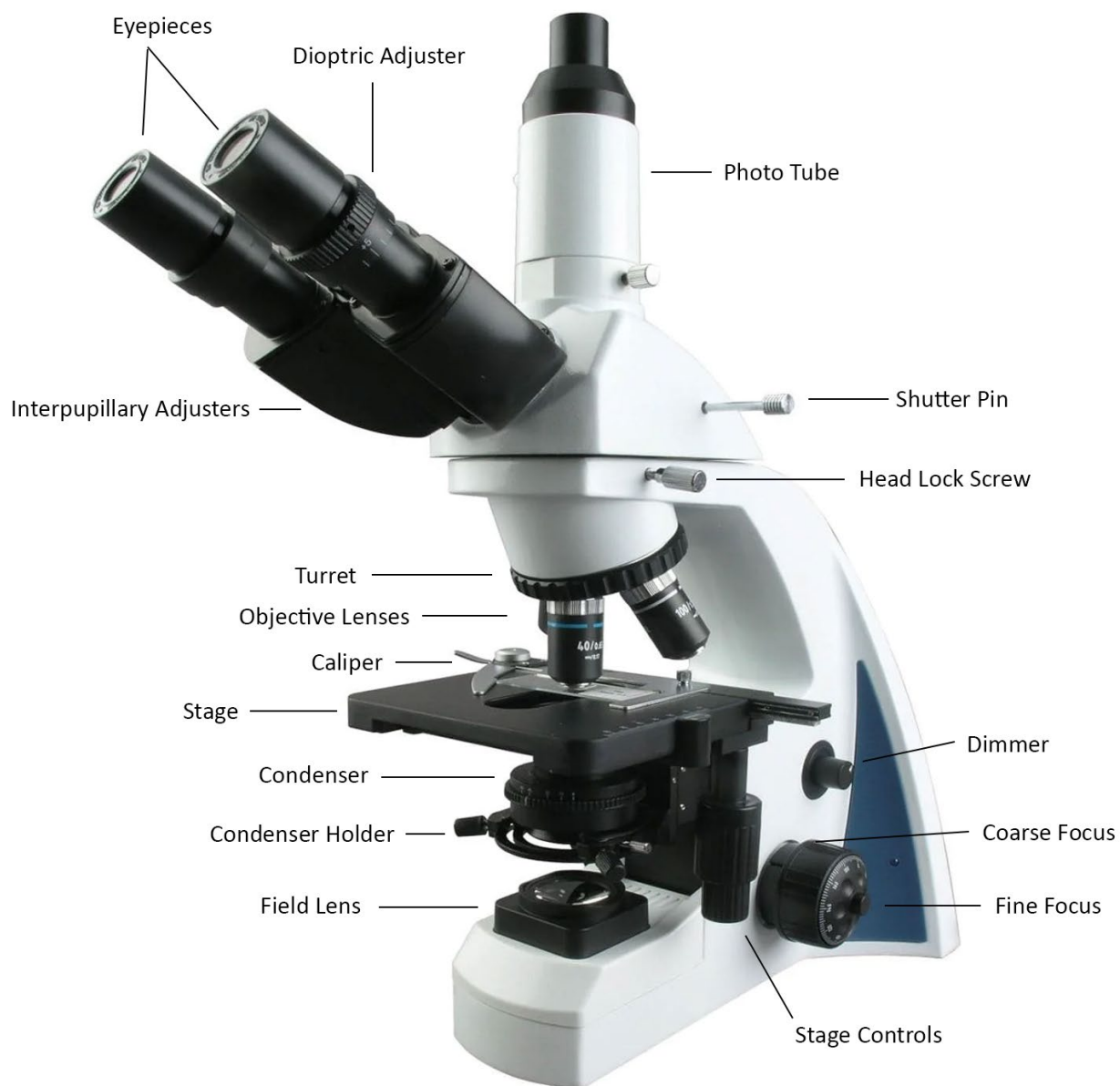
Please include the microscope model number in your email so that we can identify your model and provide immediate help.

Precautions

1. As the microscope is a precision instrument, always handle it with care, avoiding impact or abrupt movement during transportation. Do not shake the package.
2. Do not place the microscope in direct sunlight or in high heat. Keep it indoors in a dry and clean place with temperatures between 32°-100° F (0°-40°C), maximum relative humidity: 85%
3. Avoid touching the lenses on the objective and the eyepiece so that oil and dirt from your fingerprints do not obstruct your view.
4. Before turning the power on, make sure that the power supply voltage is consistent with the voltage of your microscope.

1. Microscope Parts

1.1 Parts Diagram



2. Operation

2.1 Unpacking

2.1.1 Unpack the Box

1. Very carefully slide the Styrofoam container out of the cardboard carton.
2. Lay the Styrofoam container on its side. Make sure the side labeled up is up.
3. Remove the tape.
4. Carefully open the Styrofoam container, avoid dropping and damaging the optical items.

2.1.2 Verify Contents

Check the packing list to ensure that you're received all items:

- (1) microscope body
- (1) trinocular head
- (4) objective lenses: 4X, 10X, 40X and 100X
- (2) 10X eyepieces
- (1) power cord
- (1) dust cover

2.2 Assembly

2.2.1 Carefully Remove Microscope from Box



Remove the microscope body from the box and remove the plastic protective covering.

2.2.2 Loosen the Head Lock Screw



Loosen the metal knob located directly above the nosepiece (the head lock screw) completely.

2.2.3 Install the Microscope Head

Carefully take the microscope head out of the plastic bag, making sure not to touch glass.

Place the bottom side of the microscope head (flat, circular side down) into the circular opening on top of the arm (just above the nosepiece and lock screw).

Tighten the head lock screw to secure the head in place.

2.2.4 Install the Trinocular Port and C-Mount (For Trinocular Microscopes Only)



Remove the photo port cap from the top of the microscope head.



Insert the photo port, then tighten the locking screw at the base.

2.2.5 Insert Eyepieces



Remove the dust caps from the ocular ports.

Place the desired eyepieces into the empty ocular tubes.

2.2.6 Insert Objective Lenses



Unpack the objective lenses. Screw the objectives into the microscope nosepiece.

Start with the lowest magnification, and in order of magnification, insert each lens, without touching the glass.

2.2.7 Plug it in, turn it on, and adjust the dimmer if more light is needed.



Plug in the microscope and turn it on.



If no light is emitted from the field lens, adjust the dimmer knob on the side of the base.

2.3 Adjusting the View

2.3.1 Choose forward or reverse viewing

The microscope head rotates to allow for forward or reverse viewing.

There is no difference optically; it depends on what's comfortable. In forward position you are looking over the stage, in reverse position you are looking at the stage.

Once you've chosen your preferred microscope head position, lock the head-lock screw.

2.3.2 Focus the distance between your eyes.

(The interpupillary distance, the distance between your eye pupils.)

With both eyes open, look into the eyepieces. Adjust the interpupillary distance by holding the eyetubes and rotating the tubes either towards or away from each other until only one circle of light is seen by both eyes.

2.4 Specimen Set Up

2.4.1 Prepare the Specimen



Place the specimen to be studied on a glass slide (or use a prepared slide, sold separately).

2.4.2 Secure the Slide



Place the slide on the stage, holding it snugly in place with the metal slide holders (clips) of the mechanical stage.

2.4.3 Center the Specimen



Using the mechanical stage controls, center the slide over the stage opening, lining it up with the light and the objective lens.

The top ring moves the stage forward and backward. The bottom ring moves the stage from left to right

2.4.4 Adjust the dimmer if more light is needed.



To adjust the illumination, slowly turn the dimmer on the right side of the base until the desired intensity of light is achieved.

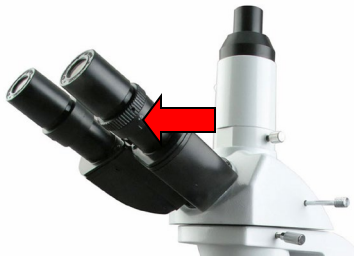
2.5 Focusing

2.5.1 Choose an Objective Lens



Turn the nosepiece to choose an objective. It is easiest to use the lowest magnification first to locate and focus on the specimen. As you move up in magnification you will need to refocus the image a little each time.

2.5.2 Parfocal



Under the diopter on the eyepiece, there are numbered rings. Set these rings to 0 and the image should remain in focus for the entire magnification range. This will enable you to stay more in focus when you add a camera or switch objective lenses.

2.5.3 Focus one eye at time



1. Look with one eye through the eyetube without the diopter. Or, if you have two diopters, select either eyepiece.
2. Close your other eye.
3. Focus the image using the coarse focusing knob. Adjust the height of the stage until the sample comes into clear focus.

2.5.4 Focus your other eye



1. Close the first eye. Open the other one.
2. Look with the second eye through the eyepiece with the diopter.
3. Turn the diopter until the image is clear through the side as well. Do not turn the focusing knob when you are adjusting the diopter or you will have difficulty focusing properly.

2.5.5 Re-center Specimen and Re-focus

When you change magnification levels, you may need to re-center the specimen. When you change magnification levels, you will need to re-focus.

2.6 Attaching a Camera



Most AmScope cameras come with a reduction lens. Reduction lenses align the magnification of the microscope's image with the capacity of the digital camera's sensor.

The specimen's image seen through the magnified objective lens is very large. The reduction lens renders the image in a size compatible with the smaller size of the digital camera's sensor.



1. Place the camera (mounted on a reduction lens) directly into the photo port. It should slide in without issue.
2. Adjust focus of the photo port by first loosening the lock screw on the side of the photo port, then rotating the upper black section.

2.7 Setting the Stage's Stop-Limit



1. Unlock the stop-limit on the stage.
2. Adjust the stage to the desired maximum height.
3. Lock the stop-limit. This allows you to limit the movement of the stage from the bottom of the range up to the point it is set at.
4. To reset it, unlock the stage and reset the stage to the new height.

If no limit is desired, simply unlock the stop-limit.

2.8 Adjusting Focus Tension



1. To adjust the tension of the focusing knobs, first locate the black ridged tension knob on the inside of the coarse focusing knob.
2. To decrease tension, rotate the adjustment forward, towards the stage (counterclockwise). To increase, rotate away from the stage (clockwise).

Note: If your stage is slipping down after setting the focus, you need to increase the tension.

2.9 Setting the Condenser Lens Adjustment Knob



The condenser adjustment knob raises and lowers the condenser's distance to the base lens, varying light delivery.

2.10 Adjusting the Iris



By changing the aperture of the condenser's diaphragm, you can adjust the background brightness. Adjust the aperture of the diaphragm by rotating the ring.

2.11 Changing the Fuse (older versions only)

For older models with built-in transformers, the fuse port is on the back of the microscope on the base between the on/off switch and the power inlet.



1. Turn off and unplug the microscope.
2. Be sure to remove the eyepieces from the unit before turning the microscope over to prevent them from falling and breaking.
3. Carefully turn the microscope on its side, exposing the base.
4. Using a flat head screwdriver, unscrew the cover and replace the T1A fuse.
5. Screw the fuse cover back in.

2.12 Using Oil Immersion



When using the 100X objective, a drop of immersion oil should be placed between the cover slip and the objective to minimize distortion caused by air.



1. Place the slide on the stage and center the specimen.



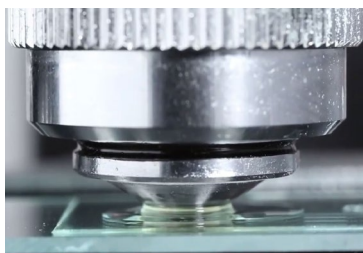
2. Close the condenser's aperture iris and ensure that the specimen is focused and centered as possible. Increase light intensity once the specimen is clearly illuminated.



3. Move the objectives out of the way to enable access to the slide. Place a drop of immersion oil directly onto the slide's cover slip, not directly on the specimen; a cover slip MUST be used.



4. Release the stage stop limit.



5. Lower your oil immersion lens (100X objective) into position so that the front lens is immersed in the oil. If your lens is not immersed, use the coarse focusing knobs to adjust the height of the stage to the proper levels. The oil lens should be immersed in oil, but not touching the slide.



6. Adjust the focusing knob, watch for the field of view to come into focus. This is best seen when the iris of the condenser is smaller than the field of the objective. Use the fine focusing knob to make adjustments.



7. Re-engage the stage stop limit.



8. When the specimen is in focus, adjust the iris to open just larger than the condenser's diameter.

9. After using the oil immersion lens, you will need to clean the lens and specimen before the oil dries.

Note: Please be careful when using the stage stop limit. The stage limit stop is designed to prevent impact between objective and slide, so when it is off you can damage the microscope or the slide.