

 **NAVITAR**

**ZOOM 6000 & 12X
INSTRUCTIONS FOR USE**



ASSEMBLY

1. Connect the bottom of the adapter tube to the dove tail on top of the zoom lens, and tighten the set screws lightly – do NOT over tighten these screws. You will need a Regular Hex Key 5/64, 0.050" (provided).

2. Thread the C-mount coupler onto your camera, and once in position, slide the top dove tail of the Adapter Tube into the bottom of the C-mount coupler, and again tighten these screws carefully. Should you need to change the orientation you see on screen, loosen these screws on the C-mount coupler and rotate the camera.

3. If you are using an UltraZoom or a standard Zoom, you may screw on the optional lens attachment or an objective coupler with microscope objective.

Please note the location of the zoom function and fine focus (may not be on all systems) for adjustment after assembly.

MOUNTING

The two most important characteristics of any mounting system are stability and ease of movement. Stability minimizes any relative motion (vibration) between the object and the lens which degrades the image. Ease of movement relates to the ability to critically focus the lens at high magnification.

There are three common methods to mount the lens:

1. Mount the Universal Mounting Clamp (1-6270) (purchased separately) over the adapter. This is the most rigid method – best for areas with severe vibrations.
2. Use any of the stand adapter plates offered for use with common microscope focus blocks.
3. If mounting to the zoom lens itself is required, please reference the mounting location (A) towards the top of the zoom assembly.



PARFOCAL ZOOM INSTRUCTIONS

Navitar Zoom lenses have the ability to be adjusted and keep the image in focus throughout the entire travel of the zoom range. This is called parfocal or parfocusing the system.

1. Zoom to the high magnification position (4.5X on the Zoom 6000, 7X on the 12X Zoom).
2. Set the fine focus (if present) to center of the allowable movement.
3. Adjust the working distance of the entire lens system to produce the best focus.
 - a. Do NOT change this position of the lens system for steps 4 and 5.
4. Zoom to the low magnification position (0.7X on the Zoom 6000, 0.58X on the 12X Zoom)
5. Adjust the rear conjugate (the distance from the rear of the lens to the camera's sensor).
 - a. Some cameras have a focus screw to adjust this distance (see camera documentation).
 - b. Most Navitar adapter tubes have adjustable back ends to allow for this adjustment.
 - c. The adjustable lenses in Navitar's adapter tubes are locked into place by a thumb screw on the adapter tube. Do NOT attempt to open the adapter tube to gain access to this lens.
 - i. When adjusting the optics, loosen the thumb screw only to the point where the optics move freely. If the screw comes free from the inner cell, it is difficult to get back into place properly.
6. Check to see that the system now stays in focus throughout the entire zoom range travel.

PARCENTER ZOOM INSTRUCTIONS

Navitar Zoom lenses can be adjusted to line up the center of the sensor in the camera with the center of the optical zoom. This allows the lens to provide an image on the screen that does not wander laterally when the zoom is changed. This is called parcentricity, or parcentering the zoom.

1. Use an object with many details that will provide many points of interest on screen at the same time.
2. To determine the optical center of the zoom lens, watch the entire image on screen while rotating the zoom ring back and forth quickly, so the image expands and contracts.
3. You should observe a spot or point on the overall image that does not move laterally as the magnification increases and decreases. This is the optical center.
4. Adjust the 3 set screws on the C-Mount Coupler so the camera moves over the optical center of the zoom
5. This process may require a few adjustments to dial precisely in the center.

LIFETIME WARRANTY

All Navitar products are warranted to be free from defects in materials and workmanship for life. If the product is found to be defective in materials or workmanship, Navitar will, at its option, repair or replace it without charge, subject to the following limitations and exclusions:

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- Proof-of-purchase must accompany returned product.
- Warranty shall not apply to any product which has, in Navitar's judgment, been subject to misuse, abuse, negligence, accident or unauthorized repair.
- No responsibility is assumed for unsatisfactory operating performance due to environmental conditions such as humidity, dust, corrosive chemicals, deposition or oil or other foreign matter, spillage or other conditions beyond the control of Navitar.

For service, repair or returns contact your distributor or Navitar directly at (585) 359-4000 or (800) 828-6778 in the United States. Contact Navitar to obtain RMA #. Return product, prepaid with RMA# referenced, to:

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