

- Note also that as the magnification increases, the diameter of the field will decrease, requiring you to use either the floating stage, mechanical stage or both to keep the exact portion of the specimen you are interested in observing, in focus.



### Care and Maintenance of your X2000 Microprojector:

Follow normal practice for any high quality optical instrument:

- Unplug Power to unit
- Immediately clean up any spills you might have on the X2000. Particularly any corrosive agents should be wiped off, and/or neutralized as necessary.
- Store the X2000 with the cover provided.
- Clean the Zoom Objective Lens only with standard lens paper to preventing scratching.
- Do not use any liquids to clean the lens, except water. (dampen a piece of lens paper if oils or fingerprints are on the lens)
- Store in a clean, dry location away from corrosive agents and dust.



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# Microprojector 2

## Instruction Manual

**X2000**  
**X2000-1**



You have acquired one of the most unique and innovative changes in microscopy in the last 50 years - A microscope which is capable of projecting an XGA (resolution 1024 X 768) image onto a screen, interactive board or even a wall. Dependent upon the quality of your projector and the distance the projector is from the screen or wall, you can magnify the image as much as 300X and enlarge that image to greater than 5000 times original size!

### **Getting started:**

1. Plug X2000 into your power source, using the Ken-A-Vision power supply provided with the unit.
2. Connect a VGA cable (not provided by Ken-A-Vision) into the VGA plug at the rear of the X2000, and then plug the VGA connector into the VGA input of your projector.
3. Turn on X2000 with the switch at the rear of the unit and turn on your projector, being sure correct button is activated.
4. If possible, be sure that your projector is sharply focused, by utilizing any text or symbols that can be activated using the menu button on the projector.
5. What ever the camera of the X2000 sees at that point should be visible on the screen, and if you have centered correctly it should be some part of the slide or Petri dish (hereafter referred to as "specimen") you have placed on the stage.

### **Placing things on the stage:**

The X2000 is provided with a floating stage and mechanical stage. A floating stage allows you to reposition the stage by grasping the side of the stage using your thumb and fingers, and moving the stage to any position you wish. Center the slide or object you wish to view with the X2000 by easy to use mechanical stage installed on the unit.

Place the slide (specimen) in the mechanical stage , by pulling back on the retractable spring arm, placing the slide against the straight edge at the right side (as you face the front of the X2000 Microprojector), and then gently releasing the spring loaded retractable arm so that the specimen is locked into place.

Now the specimen may be manipulated into place, by either moving the floating stage, or using the knurled controls of the Mechanical Stage or both.

### **Light Source:**

Light for our X2000 is provided by a variable light source at the top of the microscope. Turning the orange dial will increase or decrease the amount of light hitting the stage, as indicated by bar meter.

### **The Zoom Objective Lens:**

The Zoom Objective Lens is located below the stage. On the front side (as you face the front of the X2000 Microprojector) of the tube of the Zoom Object Lens, there is an arrow pointer to set each point. On the moveable part of the Zoom Objective Lens are a series of numbers (3X, 4.5X, 7.5X, 11X, 16X, 20X, 26X, 30X) indicating the approximate magnification achieved when the Zoom Objective Lens is in that position. Turning the moveable portion of the Zoom Objective Lens counter-clockwise increases the magnification from approximately 3X to 30X. In doing so the magnification achieved is approximately going from 30X to 300X.

### **Best Practice Focusing - Zooming:**

1. Place the specimen to be observed on the stage, and center as well as possible with your naked eye.
2. Be sure that the Zoom Objective Lens is set on 3X, with the light dimmer set to minimum and included filter is screwed in) Note: the filter is designed to be used between 3X-4.5X only. It MUST BE REMOVED above 4.5X magnification.
3. Using the Coarse and Fine Adjust knobs and observing the picture on the screen, bring the specimen into focus, similarly to the way one focuses a standard microscope. (Be sure that your projector's focus previously was sharply set for the conditions under which you are using it).
4. Change the light impinging on the specimen using the orange dial at the top of the X2000. Please note that often objects are better viewed in less light than at maximum incident light, so experiment with the light at 4X to see if there is an optimum light point.
5. Now slowly turn the Zoom Objective Lens counter-clockwise, increasing the magnification as you do this. You may have to read just the focus of the X2000 Microprojector using the fine and coarse adjust knobs.
6. As you increase magnification, you may also have to increase the intensity of the light, as just like regular microscopes, as the magnification power of an objective lens increase, the amount of light necessary must also increase.