

## INFORMATION & INSTRUCTIONS

### MODEL SME-F8BH BINOCULAR MICROSCOPE

This information manual will identify, in a general way, the various parts and functions 1000X Biological microscope. It is intended to familiarize the first time user with their instrument.

These microscope are ruggedly built for classroom and laboratory use. The instruments feature fully-coated achromatic optics and international standard DIN objectives and eyepieces. Optically, they are excellent systems with good resolution, centering, and paragon features. Mechanical movements are smooth and positive. Mechanical stage, and rack stop serve to minimize damage.

#### SPECIFICATIONS

##### 1. Objectives

Type	Magnification	N.A.	Working Range
Achromatic Objective	4X	0.1	37.5mm
	10X	0.25	7.35mm
	40X(S)	0.65	0.29mm
	100(S,oil)	1.25	0.18mm

## 2. Eyepieces

Type	Magnification	Vision field's diameter
WF	10X	18mm

3. Viewing Angle: Binocular head inclined at 30°

4. Illumination: Built-in 110V/220V6V/20W Halogen lamp and adjustable brightness. With condenser (N.A 1.25), variable iris diaphragm.

5. Mechanical stage size: 110mm \*126mm. Moving rang 30mm \* 70mm.

6. Focusing: Coaxial coarse and fine focus adjustment, and rack & pinion with built in.

## *SET-UP*

### 1. GETTING THE MICROSCOPE READY FOR USE

First, familiarize yourself both visually and physically with the mechanical parts of your microscope. Gently operate each part by hand (no tools required) to see how it behaves and what result it produces.

### 2. MOUNTING THE OBJECTIVE AND EYEPIECE

To put the eyepiece in place simply slide it into the eyepiece tube. The objective lenses screw into the rotating nosepiece. If the four objectives are already mounted in the nosepiece, check to see if they are tightly in place. To do this, grip the knurled ring on the objectives with your fingers and turn it to the right. Do not tighten them with tools; they need only to be "finger tight". With all four objectives mounted in the nosepiece the entire nosepiece can be rotated by hand. As you rotate the nosepiece you

will notice that each objective lens has a "click stop" which stops and holds the objective lens being used in its proper position relative to the optical axis of the microscope.

### **3. ILLUMINATION**

In order to provide illumination for your new microscope, simple plug the power cord into an electrical socket and switch your microscope "ON", and you are ready to begin working.

### ***OPERATION***

Once you have set up your microscope for use, follow the steps below to prepare the specimen to be studied for viewing:

Place the slide to be viewed onto the stage so that the stage clips hold it firmly in place. Position the slide so that the portion of the specimen that you wish to observe is below the 4X objective.

Slowly rotate the coarse focus knob until the stage is approximately 1/8" from the objective, being sure not to let the slide come in contact with the objective, for damage to either or both may occur. When using the coarse focus knob, start with the objective as close to the stage as possible and focus from the bottom up. This will help to prevent any contact between the objective and the stage.

Adjust the iris diaphragm attached to the condenser to control the angle of light illumination the specimen.

To change the magnification, first draw the objective to the position furthest from the stage. Then turn the objective turret until the desired objective is in place. Return the objective to the point closest to the stage and focus once again backing away from the stage.

To determine the total magnification, multiply the magnification of the objective with that of the eyepiece.(e.g.,10X objective X 10X eyepiece = 100X magnification).

When using objective 100X to observe, lift condenser to the highest position, then drop a little cedar oil on surface of 100X objective and slide, so as to keep full of cedar oil between the objective and the slide.(clear the cedar oil with xylene after observing)

### ***MAINTENANCE***

1. Keep the instrument in dry and cool place, and keep it away from acid or alkali. Put the dust cover over it when it is not used.
2. Keep lenses clean, dust on it is moved with soft brush.