Motic®

STEREO MICROSCOPE
MODEL K400 / K500 / K700

INSTRUCTION MANUAL

Contents

1. Introduction

A simple change in magnification for still objects has been provided in stereomicroscopes developed in the recent past i.e. with a common primary objective for the light in both tubes. The light beams do not project co-axially, but diverge from the optical axis. Thus the two images produced are not identical, giving a truly three–dimentional appearance.

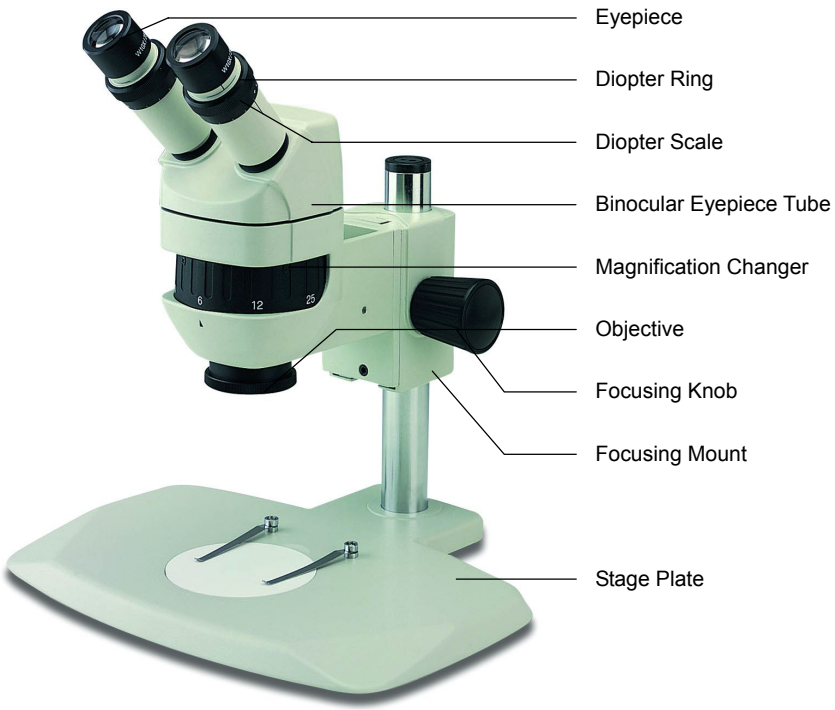
In this adaptation, separated intermediate objectives are placed above the common primary objective to produce the two beams and a magnified image. The intermediate objectives, placed above the main objective in the tube, can be easily manipulated to facilitate the change in magnification. It is important that the distance from the object is not altered when the magnification is changed.

A further refinement to this design is provided with the introduction of pancratic intermediate objectives in the tube. The use of graduated changes in magnification provides a continuous progression of magnification. The most significant advantage of stereomicroscopes, with a common primary objective, is that the distance between the objective and the object remains constant at all magnifications.

To ensure correct usage, please read this manual completely before operating the instrument.

2. Nomenclature and Function

Model K 400 Stereo Microscope



Model K 500 Stereo Microscope

Model K 700 Stereo Microscope

3. Assembly

1. The base plate of the incident light stand (and the base of the transmitted light stand with light source) with support column, in their standard variants, are a typical working stand. The focusing mount moves along the vertical column and is fixed in position by the focusing mount clamp screw. The safety support collar maintains the adjusted height and is secured below the focusing mount by the clamp screw along the vertical column.

2. Tilt the binocular eyepiece tube and mount it on the optical head with the magnification changer - aligning the groove with the positioning pin and fasten the eyepiece tube clamp screw.

   The binocular tube may be turned through 180° and each eyepiece tube is equipped with a diopter adjustment ring.

3. Insert the eyepieces into the eyepiece tubes. Set the diopter scale on each eyepiece to “0”.

4. Fit the stage plate, while pushing it against the clip, in the rim of the opening in the base.

   The black or opal surface is to be used according to the specimen to be observed. For transmitted light base, use the ground glass plate.

4.1 Interpupillary Distance Adjustment

This adjustment should be performed every time the observer changes as the interpupillary distance differs between the individuals. Interpupillary distance is changed by simply spreading the eyepiece tubes. They will hold their position at the selected setting.

This will allow the view field of each eye to merge into one. Interpupillary distance values range from 54mm and 76mm.

4.2 Diopter Adjustment

Both eyepieces can be focussed independently to compensate for refractive differences of the eyes.

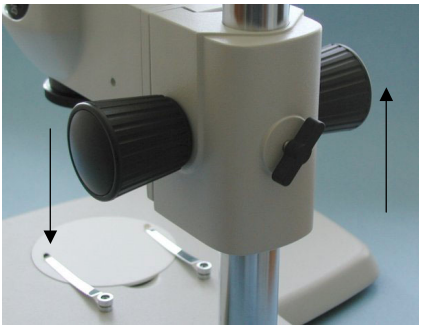
a. Turn the diopter rings on both eyepieces to set them at the “0” position.

b. Turn the magnification changer to maximum. Focus on the sample using the focus knob.

c. Turn the magnification changer to minimum. Look through the left eyepiece with the left eye, focus on the specimen using the diopter ring on the left eyepiece. Then, look through the right eyepiece with the right eye and focus on the specimen using the diopter ring on the right eyepiece.

d. Repeat steps 2.2 and 2.3 until the image is kept focused even though the magnification is changed. This adjustment ensures sharp image throughout the magnification change.

4.3 Focusing



The focus knobs are conveniently shaped and allow accurate focusing over a 50mm range. The ease of movement can be matched to the load and to your personal needs.

Focus knob torque adjustment
It is possible to adjust the torque "tension" of the focus knob.
To increase the torque, turn either of the torque adjustment rings located behind the focus knobs - after slackening the Hex set screw turn the right ring in the clockwise direction - turn the left ring in the counter clockwise direction after slackening the Hex set screw. To reduce the torque turn the rings in the direction opposite to the above. Do not reduce the torque too much since the optical body will fall of its own weight.

The roller bearing slide of the focusing mount is maintenance free.

4.4 Working Distance

The distance between the upper surface of the specimen and the bottom of the objective, when the specimen is in focus, is called the working distance of that objective. The working distance changes when the objective magnification changes and when auxiliary objectives are attached. Generally, the working distance becomes shorter as the objective magnification increases.

When observing a particularly thick specimen, the distance between the upper surface of the specimen and the objective may be shorter than the working distance of the objective. If this occurs, loosen the focusing mount clamp screw and slide the focusing mount to the upper end of the column.

5. Care of the Microscope

Keeping all optical components clean is important for good optical performance. The microscope should always be covered with the vinyl dust cover provided with the instrument when not in use.

Dust on the surface of lenses may be removed by the use of a soft lens brush i.e. before attempting to wipe the surface clean.

Persistent fingerprints and oily smears on eyepieces and other microscope body parts may be removed with soft cloth moistened with absolute alcohol.

Painted and plastic surfaces should be cleaned with mild detergent solution.

Store the microscope in a room free from humidity and corrosive fumes.

6. Accessories

Eyepieces	6.25X/F.N.23, 10/X/F.N.21, 15X/F.N.17.6, 20X/F.N.13.4, UW10XF.N./23, 32X/F.N.12.
Micrometer Eyepieces	10X/F.N.23 360° Protractor, 10X/F.N.23 14mm:0.2mm 10X/F.N.23 14mm:0.1mm 20XF.N.13.4 10mm:0.1mm
Auxiliary Objectives	0.3X, 0.5x, 0.625X, 1.5X, 2.0X,
Base/Stand	Plan stand, Transmitted light stand, Universal table stand, Universal clamp stand, Articulating arm table stand, Articulating clamp stand.
Stage Inserts	Gliding Stage
Photographic and CCTV	Beam Splitter with Double iris for Photography K400 Beam Splitter with Double iris for Photography K500/K700 Beam Splitter with Double iris for CCTV K400 Beam Splitter with Double iris for CCTV K500/K700
Drawing Tube	For K400 can be mounted in two positions 180° apart thus suitable for left and right-hand observers. For K500/K700 can be mounted in two positions 180° apart thus suitable for left and right-hand observers.
Observation Options	Dual Teaching Head with Electronic pointer
Illuminators	Epi-illuminator, Fluorescent ring light, Fiber-Optics bifurcated illuminator

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