



EM-30 Series

Turret Stereo and Zoom

INSTRUCTION MANUAL



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Introduction

With your purchase of a EM-30 (zoom) stereo microscope you have chosen for a quality product. The EM-30 is developed for use at schools, and by collectors of minerals, stamps etc.

The stereo microscope consists of two separate microscope tubes which are combined as a unit, in order to focus them simultaneously on the object. Each tube has prisms, achromatic objectives and a widefield eyepiece in order to obtain a large, flat field of view. Both eyes are looking at the object under a different angle to reach a deep stereoscopic image.

The maintenance requirement is limited when using the microscope in a decent manner.

This manual describes the construction of the microscope, how to use the microscope and maintenance of the microscope.

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Construction of the Microscope

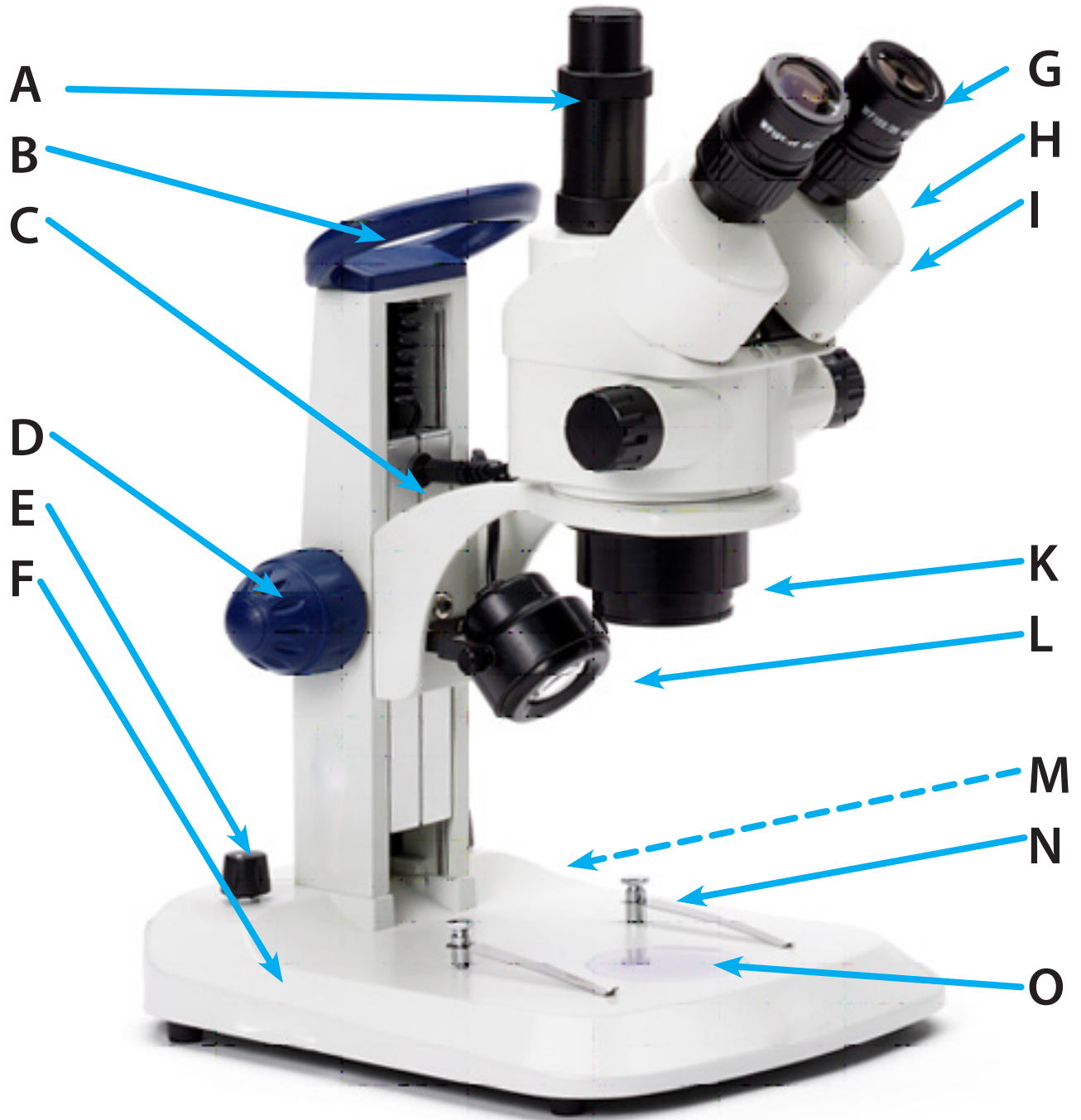
The names of the several parts are listed below and are indicated in the picture on the next page:

- A) Photo tube with focussing (trinocular models)**
- B) Carrying Handle**
- C) Connector incident illuminator**
- D) Focusing knob(s)**
- E) Intensity controller for incident illumination**
- F) Stand foot with transmitted illumination**
- G) Eyepiece**
- H) Diopter correction**
- I) Prism housing**
- J) Zoom knob(s)**
- K) Objective cover / revolver**
- L) Incident illumination**
- M) Intensity controller transmitted illumination**
- N) Object clip**
- O) Object plate**

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Functions of the Microscope

The stereo microscope consists of a stand with holder/focusing system, in which the stereo head is placed and locked with set screw .

Always hold the microscope at its arm and grip when moving it.

Tube

The zoom stereo microscope heads of the EM-30 are equipped with a 45 degrees tube, which is rotatable over 360 degrees. Each type has a diopter adjustment ring on both eyepiece tubes.

Optical specifications of the MT-30/MT-90 series range

The zoom stereo microscopes of the EM-30 are equipped with 2 zoom objectives and a pair of wide field WF10x eyepieces. The stereo microscopes of the EM-30 are equipped with a revolving nosepiece in which 2 pairs of achromatic objectives are mounted, and a wide field WF10x pair of eyepieces. In the tabel below some available models are listed.

Eyepieces	Objectives	Magnifications	Execution	Tube
WF10x	1x / 3x	10x / 30x	binocular	45 degrees
WF10x	2x / 4x	20x / 40x	binocular	45 degrees
WF10x	0.7x ~ 4.5x	7x ~ 45x	binocular	45 degrees
WF10x	0.7x ~ 4.5x	7x ~ 45x	trinocular	45 degrees
10x	100x	1000x		

Object stage

The stand is equipped with an object stage with a semi transparent stage plate (O) and 2 object clips (N).

Focusing

With the focusing knobs (D) the object can be sharply focussed.

Magnification adjustment

The zoom stereo microscopes of the EM-30 are equipped with 2 achromatic zoom objectives. By using the zoom knobs (J) the magnification can be adjusted in a smooth, stepless way.

Magnification adjustment

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The stereo versions(1/3x or 2/4x) are equipped with 2 pairs of achromatic objectives in a revolving nosepiece (K). By rotating this nosepiece over 180 degrees another magnification is set. Turn the nosepiece until it clearly “clicks” into position.

Illumination

The stand is equipped with transmitted and incident LED illumination of 3 Watt. The illuminators can be used simultaneously. On the side of the foot the transmitted light intensity can be adjusted with a small wheel (M) (not visible in the picture). At the back of the base the Intensity controller for incident illumination can be found (E).

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Preparing the Microscope for Use

Take the stereo microscope out of its packing and put it on a firm stable table. Connect the power cable to the mains supply and switch on the microscope. Place the eyeshades onto the eyepieces. Sit comfortably down behind the microscope and take a relaxed position while viewing through the eyepieces (G). The third (photo) tube of the trinocular models is packed in the lid of the styrofoam packing. Take it out and place it onto the microscope.

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Working with the Microscope

- Place an object onto the stage plate and adjust the height of the holder randomly with the focussing knobs (D) at the backside of the stand.
- Set both diopter adjustment rings(H) to the "O" position
- Adjust the interpupillary distance by moving both prism housings (I) towards each other until one round image is seen with both eyes.

Setting the eyepieces in order to have a sharp image over the complete zoom range

- Set the magnification at the highest position by means of the zoom knob (J) and sharply focus on a flat specimen.
- Now bring the magnification down to the lowest position.
- First correct the sharpness with only the left hand diopter adjustment ring (H), and than for the right hand one.

Photo and video

Taking pictures with an normal or digital SLR camera with the trinocular zoom types is done with the help of microscope adapter set (optional).

One can adjust the height of the tube of the trinocular models by turning the ring of the tube in order to reach the same focus point between the the eyepieces and the photo tube.

For showing images on a monitor or PC, by means of a CCD or CMOS camera, one needs an optional C-mount adapter . Having the same focal point between eyepieces and the screen is reached by following above mentioned procedure.

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