

XSP-104

**BIOLOGICAL MICROSCOPE
OPERATION MANUAL**



READ THIS MANUAL BEFORE USING THE MICROSCOPE

BIOLOGICAL MICROSCOPE OPERATION MANUAL

I. Application

Bio-microscopes mainly used for observing and testing biological clips in agricultural research institutes and middle schools. It is also used for routine test, clinical test and teaching demonstration in medical and health establishments and laboratories and so on . The magnification is from 40X to 400X,

II. Principle and Structure

The optical imaging and illumination principle of bio-microscope are showed as diagram1:

1. The imaging system is composed of objective6, prism7 and eyepiece9. The objective6 magnify the specimen0 primarily, and the light rays are refracted to 45° by prism7 and get the image on eyepiece image plan0', then magnify it secondarily to observe by you eyes. The total magnification is educed by the product of magnification of objective and that of eyepiece.

2. The illumination system is composed of lamp1, collector2, diaphragm3 and condenser4. The light rays from lamp1 go pass the collector2 and illuminate diaphragm3, then they will be converged by condenser4. This system can illuminate the observed specimen0 on the stage5 for visual observation . You can illuminate by reflector to take the place of lamp1.

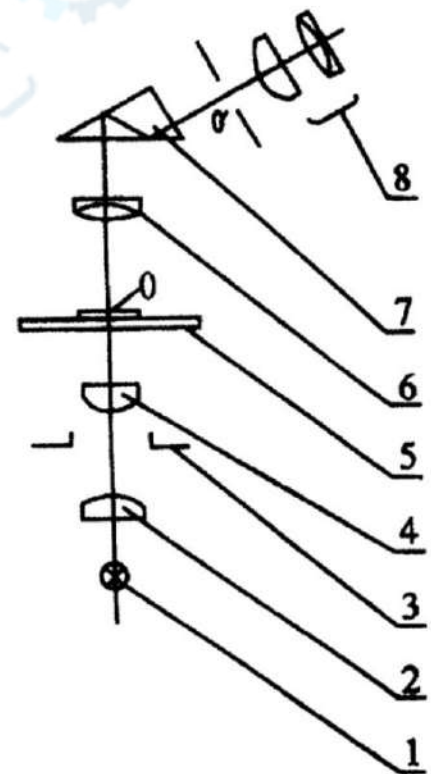


Diagram 1

Structure as diagram2

1.EYEPIECE

2.EYEYIECE HEAD

3.ARM

4.COARSE FOCUS KNOB

5.FINE FOCUS KNOB

6.STAND

7.NOSEPIECE

8.OBJECTIVE

9. DOUBLE LAYER MECHANICAL STAGE

10.CULLECTOR

11.POWER SWITCH

12.MOVING SCALE

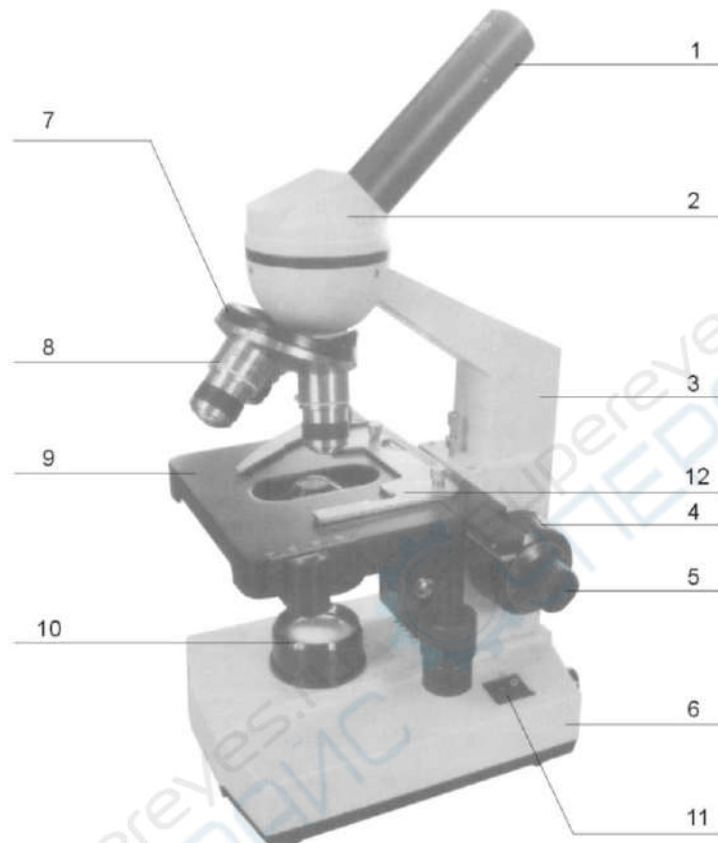


Diagram2

III. Specification

1. Mechanical tube length: 160mm

2. Objectives

Magnification	Numerical aperture(NA)	Working distance	Remark
4X	0.10	37.5	
10X	0.25	7.63	
40XS	0.65	0.63	Spring
100XS	1.25	0.198	Spring,oil, Optional

3. Total magnification

eyepieces	Objectives	4x	10x	40xs	100XS
	Total magnification				
WF10x		40x	100x	400x	1000X

5. Stage size: 110mm X 125(mm)
6. Condenser:
ABBE NA1.25 condenser with Changeable diaphragm and filter
7. Illumination:
Can refresh to illuminate LED, 110V/220V~5V/0.75W
8. Net weight: approx. 2.5kg
9. Measurement: 180 (L) X 180(W) X 340mm(H)

V. Operation Instruction and Notes

1. Preparation for observation: Install the objectives and eyepieces. Put the specimen on the middle of the stage, then move to the center of circular orifice of stage and pin it in the position with slide clips. Turn on the lamp or adjust the reflector to illuminate the specimen equally and filled up view-field.
2. Turn to the 4X objective and adjust the coarse focus knob to find an image in the view-field of eyepiece, then adjust the position of specimen until a clear image can be observed in the center of eyepiece view-field.
3. Transform the objectives to high magnification in sequence, and adjust the coarse/fine focus knob and the position of specimen, the position of collector and aperture of diaphragm will also be adjusted until obtaining a satisfactory image.
4. After operation, the instrument must be put in order, Moreover, don't hit the objective of high magnification against the glass under the specimen

VI. Maintenance

1. Exam the connection of every component part is firm when opening the package and installing the microscope. Be careful not overexert to break the instrument.
2. Operate correctly and put the dust cover on the microscope after work to prevent from the dust and oil stain.
3. Do't dismantle the instrument rashly besides the replaceable components to avoid changing the correct position.
4. Please keep the microscope in a dry and cool place and away from the pollution and corrosion. When the objectives and eyepieces won't be used for a long time, please put them into a dry box.
5. Please send the instrument to the special repair shop if it goes out of order.