FS-1 series of microscopes

Monocular model
077420/077421

Monocular with vertical tube
077422

Binocular
077425/077430

Trinokular
077433

OPERATION MANUAL

Principle and Structure

The optical imaging and illumination principle of FS-1 series of microscope are showed as diagram:

I. The imaging system is composed of objective, prism and eyepiece. The objective magnify the specimen primarily, and the light rays are refracted to 45° by prism and get the image on eyepiece image plan, then magnification is educed by the product of magnification of objective and that of eyepiece.

2. The illumination system is composed of lamp, collector, diaphragm and condenser. The light rays from lamp go pass the collector and illuminate diaphragm, then they will be converged by condenser. This system can illuminate the observed specimen on the stage for visual observation. You can illuminate by reflector to take the place of lamp.

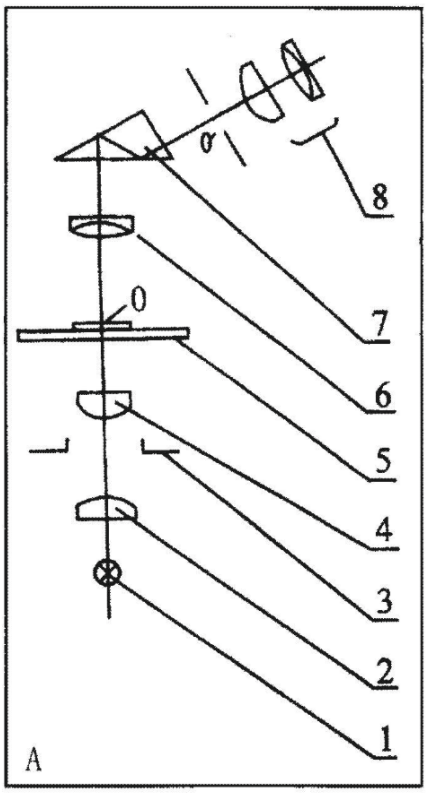
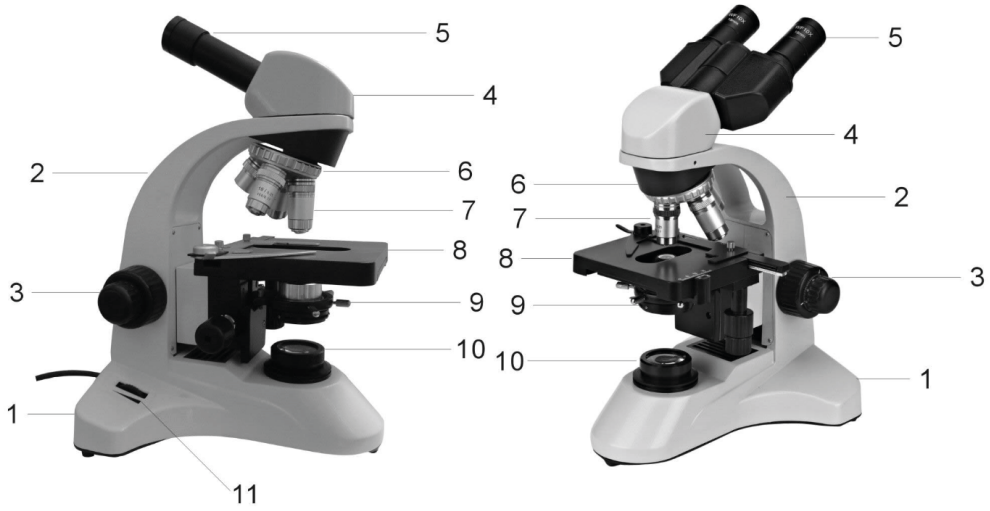


Diagram1

FS-1 series of microscopes



I: STAND 2: ARM 3: RISE AND FALL SUPPORT 4: EYEPIECE HEAD
5: EYEPIECE 6: NOSEPIECE 7: 0BJECTIVE 8: STAGE 9: CONDENSER
10: COLLECTOR OF LIGHTSOURCE 11: BRIGHTNESS ADJUSTING

Specification

I. Mechanical tube length: 160 mm

2. Objectives

Magnification	Numerical aperture (NA)	Working distance
4X	0.1	37.5
10X	0.25	7.63
40X	0.65	0.63
60X	0.85	0.3
1OOX	1.25	0.2

3. Eyepieces

Magnification	Focal distance	Diameter of View-field (mm)
10X	25	

4. Total magnification

Objectives / Eyepieces / Total Magninfication	4X	10X	40X	60X	100X
10X	40X	100X	400X	600X	1000X

5. Coarse focal range: 8 mm
6. Stage size: 140 mm x 135 mm
7. Condenser:
   NA 1.25 ABBE condenser with iris diaphragm and filter
8. Illumination : LED
9. Net weight: approx 4 kg
10. Measurement (including binocular head): 240 mm (L) x 210 mm (B) x 380 mm (H)

OVERVIEW OF FS-1 SERIES OF MICROSCOPES

Name	Item no.	Objectives 4/10/40x	60x	100x	Achromatic	Semi-plan	Plan objective	Monocular	Binocular	Extra tube for camera use	LED	Battery	Mechanical XY Cross Table
Microscope FS-1, monocular, 60x	077420	✓	✓		✓			✓			✓		✓
Microscope FS-1, monocular, 100x	077421	✓		✓	✓			✓			✓		✓
Microscope FS-1, monocular, 60x, vertical tube	077422	✓	✓		✓			✓		✓	✓		✓
Microscope FS-1, binocular, 60x	077425	✓	✓		✓				✓		✓		✓
Microscope FS-1, binocular, 100x	077430	✓		✓	✓				✓		✓		✓
Microscope FS-1, trinocular, 60x	077433	✓	✓		✓				✓	✓	✓		✓

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 on 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 an 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 diaphrahm will also be adjusted until obtaining a satisfactory image.
4. After operation, the instrument must be put in order, if I00X (oil) objective is used, you should wipe it clearly immediately. Moreover, don't hit the objective of high magnification against the glass under the specimen.

Maintenance

I. Exam the connection of entry component part is fine 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. Don'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.