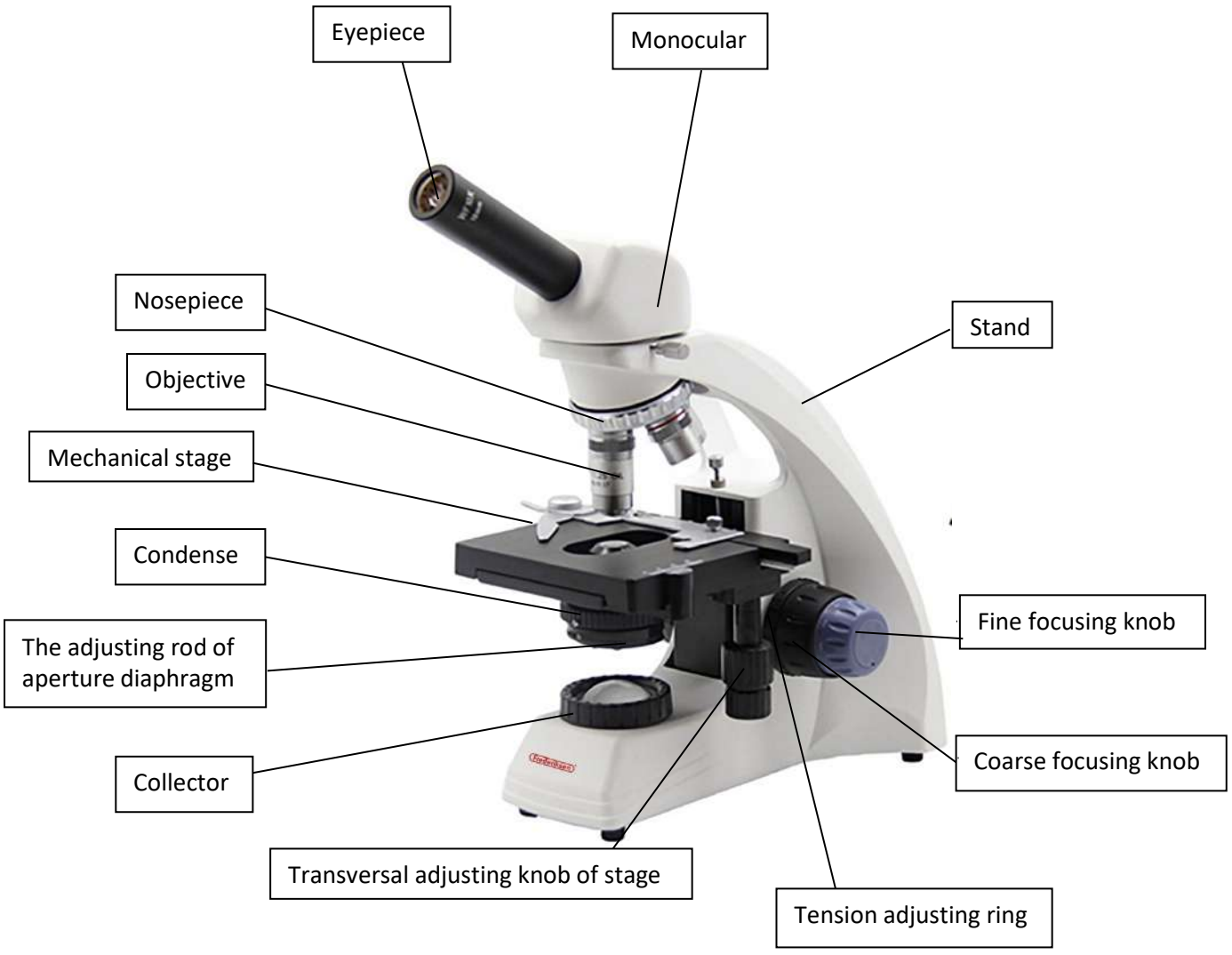
OPERATING INSTRUCTION FOR BIOLOGICAL MICROSCOPE

In order to exert performance of this microscope and to ensure the safety, please read the operating instruction carefully before use.

1. APPLICATION :

This microscope is widely used in Biology, Bacteriology, Histology, Pathology, Medicament Chemistry research and clinical examination, Also be used for education and experiment in universities and technical secondary schools.

2. CONFIGURATION :



3. SPECIFICATION :

	Specification
Viewing head	Compensation free monocular head, inclined sat 30°
Eyepiece	WF10x
Nosepiece	Quadruple nosepiece
Objective	Art. Nr. 077450: Achromatic objective : 4x, 10x, and 40x (S) Art. Nr. 077455: Semi-plan: 4x, 10x and 40x (S)
Stage	Double layers mechanical stage Stage size : 115mm × 125 mm Moving range : 75mm × 30 mm
Condenser	N.A.1.25 Abbe condenser with iris diaphragm and filter
Focusing	Coaxial coarse and fine focusing adjustment with rack and pinion mechanism. Fine focusing scale value 0.002 mm
Light source	LED 3W/4V 220V/110V Adjustable brightness, with replaceable batteries
Collector	High brightness fixed illumination
Optional accessory	
	Achromatic objective: 60x (S), 100x (S) Oil

Type	Magnification	Numerical aperture (N.A.)	Working distance (mm)	Thickness of the cover slip (mm)
Achromatic objective	4x	0.1	37.5	0.17
	10x	0.25	6.54	0.17
	40x (S)	0.65	0.63	0.17
	60x (Optional)	0.85	0.3	0.17
	100x (S) Oil	1.25	0.195	0.17

4. OPERATION :

1. *Instrument installation*

(1) Remove microscope with both hands hold stand and bottom from box and Styrofoam packing, put it on a stable work table carefully.

(2) Remove plastic bags and dustproof cover of each adapter.

(3) Put the monocular head into the adapter of stand in place, tighten the knurled screw with finger.

(4) Familiarize yourself the mechanical parts of your microscope. Gently operate each part by hand to see how it behaves and what result it produces.

(5) Insert the plug in to the socket in back of microscope. Insert another end of the power wire to the supply socket.

Note:
(1) The microscope must be earthed.
(2) Make sure the power voltage in accordance with the microscope's marking voltage.
(3) If battery-use, make sure that batteries are charged properly before use. Plug in the socket, put the power switch ON, and power for some hours.
(4) If battery needs to be replaced, unplug the power and insert ONLY rechargeable batteries.
If unsuitable batteries explosive risk!

2. *Using the instrument*

(1) Turn on the power switch, adjust the brightness adjusting knob to make the brightness 70% of the full load.

(2) Place the specimen (slide) to be viewed smoothly onto the stage, cover slip to face to the objective. Clamp specimen (slide) carefully with the movable spring clip.

(3) The magnitude of incident beam of light can be changed when adjusting the aperture diaphragm. The highest resolution of the objectives can reach when the fitted aperture diaphragm is adjusted. When the objectives is changed, in order to get the best resolution of the objective, please take off the eyepiece to observe the size of aperture diaphragm in the eyepiece tube. It is better to adjust aperture diaphragm till it is a little smaller than the aperture of the objective.

Note: Aperture diaphragm is not for adjusting the brightness, the brightness is adjusted through brightness adjusting knob.

(4) Swing out the filter holder, according to user's needs put filter in the filter holder and then backtrack.

(5) Turn the nosepiece when changing the objective 4x or 10x, and make sure the objective is shift in the light path until hear a "click". When adjusting the focus in order to prevent objective touch the specimen, turn the coarse focusing knob until the specimen is approximately 3 mm from the objective.

Slowly turn the coarse focusing knob until a clear image is obtained, then use the fine focusing knob to enhance the observation of the specimen to it's clearest image. If the magnification is increased, here you can obtain clear image under other higher magnification objectives with a little fine adjustment.

(6) When using objective 100x to observe, lift the condenser to the highest position, then drop a little immersionsoil on surface of objective 100x and specimen (cover slip). If there's air bulb in oil, it will influence observation. Take out air bulb by swinging nosepiece several times. The 100x oil immersion objective and specimen should be wiped off with a piece of soft clean cloth or lens tissue to remove the cedar oil with xylene immediately after using.

If you find to lift the mechanical stage too tension or loosen in use. Turn the tension adjusting ring. Coarse focusing knob would be tightening if it turns in the direction of the arrow, on the other hand it would be loosen.

(7) Turn transversal and longitudinal direction adjusting knobs located just below the stage, the specimen may be moved to the center of the eyepiece's viewing field for observation.

(8) Turn coarse and fine focusing knob to focus the specimen till you see clear image of specimen.

(9) Bulb and fuse replacement:
(the power wire must be disconnected)

Fuse replacement: Open the fuse holder with a"—" screwdriver in the direction of the arrow. Remove the old fuse and install a new fusewith the same specification. Replace fuse holder and screw in place.

5. MAINTENANCE

(1) The microscope must be placed in where is shady, dry, clean and there is no acid, alkaline & steam. Don't let it expose under sun light directly.
(2) Working environment: Indoor temperature:
0℃ -40℃. Maximum relative humidity: 85%.
(3) The microscope has be calibrated and inspected strictly before leaving factory, the users must not knock down the instrument discretionally.
(4) If there's dust on the lens, blow it by rubber ball blower or dry compressed air. After that clean the lens gently with a soft brush pen, carefully wipe off oil or fingerprints on the lens surface with lens tissue or absorbent cotton moistened with a few Xylen-rinse (894200-05) or ethanol.
(5) Don't wipe the lens surface regularly, or else the lens will be scraped, reduce the quality of the transmission and imaging. Please keep the instrument clean.
(6) Keep the mechanical parts clean and wipe regularly.
(7) Shut off the power and pull out the plug when the microscope is not used, adjust the brightness adjusting knob to the minimum, cover the microscope with a dust cover.
(8) If the microscope is not used for a longer period of time, then remove the batteries.