

**MICROSCOPIO PROFESIONAL
PROFESSIONAL MICROSCOPE
MICROSCOPE PROFESSIONNEL**

REF. - CODE - RÉF. HBC025 y HBC026

Zuzi



Este manual es parte inseparable del aparato por lo que debe estar disponible a todos los usuarios del equipo. Le recomendamos leer atentamente el presente manual y seguir rigurosamente los procedimientos de uso para obtener las máximas prestaciones y una mayor duración del mismo.

This manual should be available for all users of these equipments. To get the best results and a higher duration of this equipment it is advisable to read carefully this manual and follow the processes of use.

Ce manuel est une partie indissociable de l'appareil et doit être mis à la disposition de tous les utilisateurs de l'équipement. Nous vous recommandons de lire attentivement ce manuel et de suivre scrupuleusement les procédures d'utilisation afin d'obtenir des performances maximales et une plus longue durée de vie de l'appareil.

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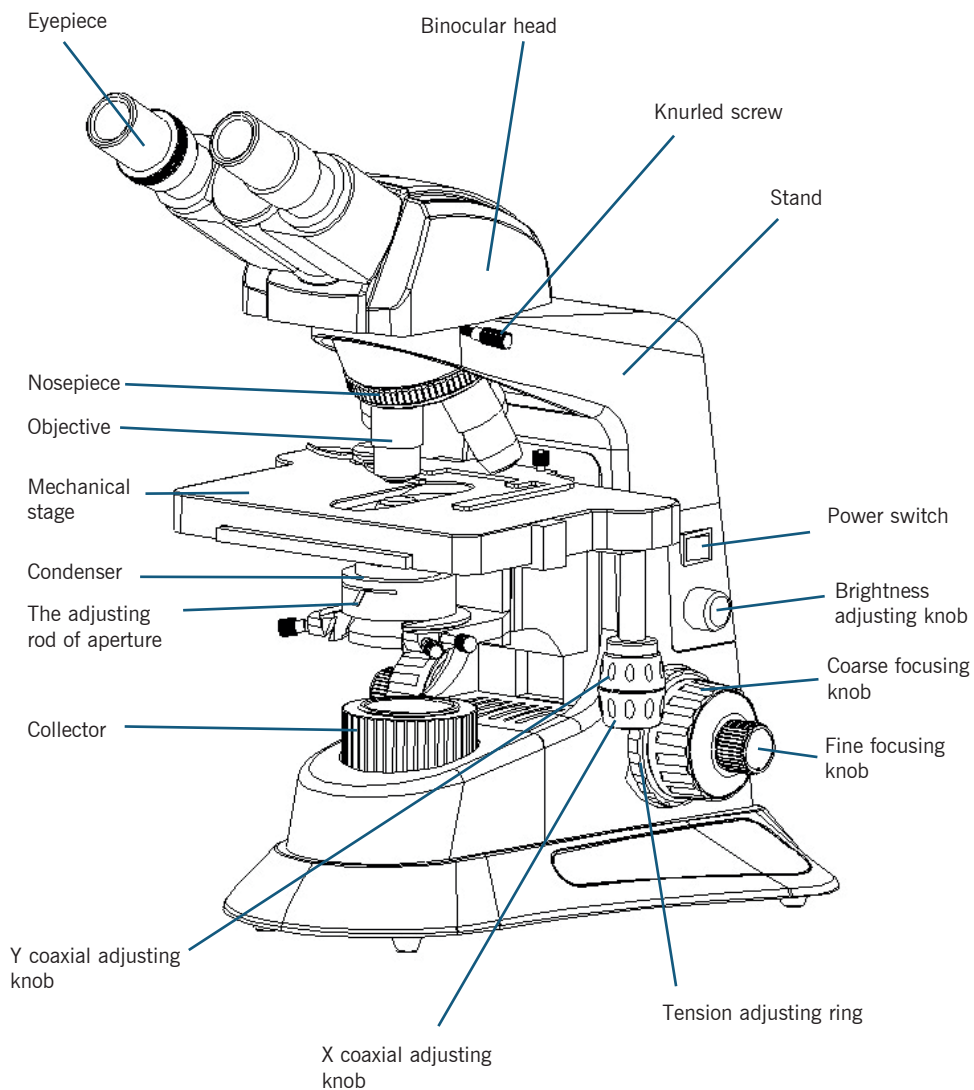
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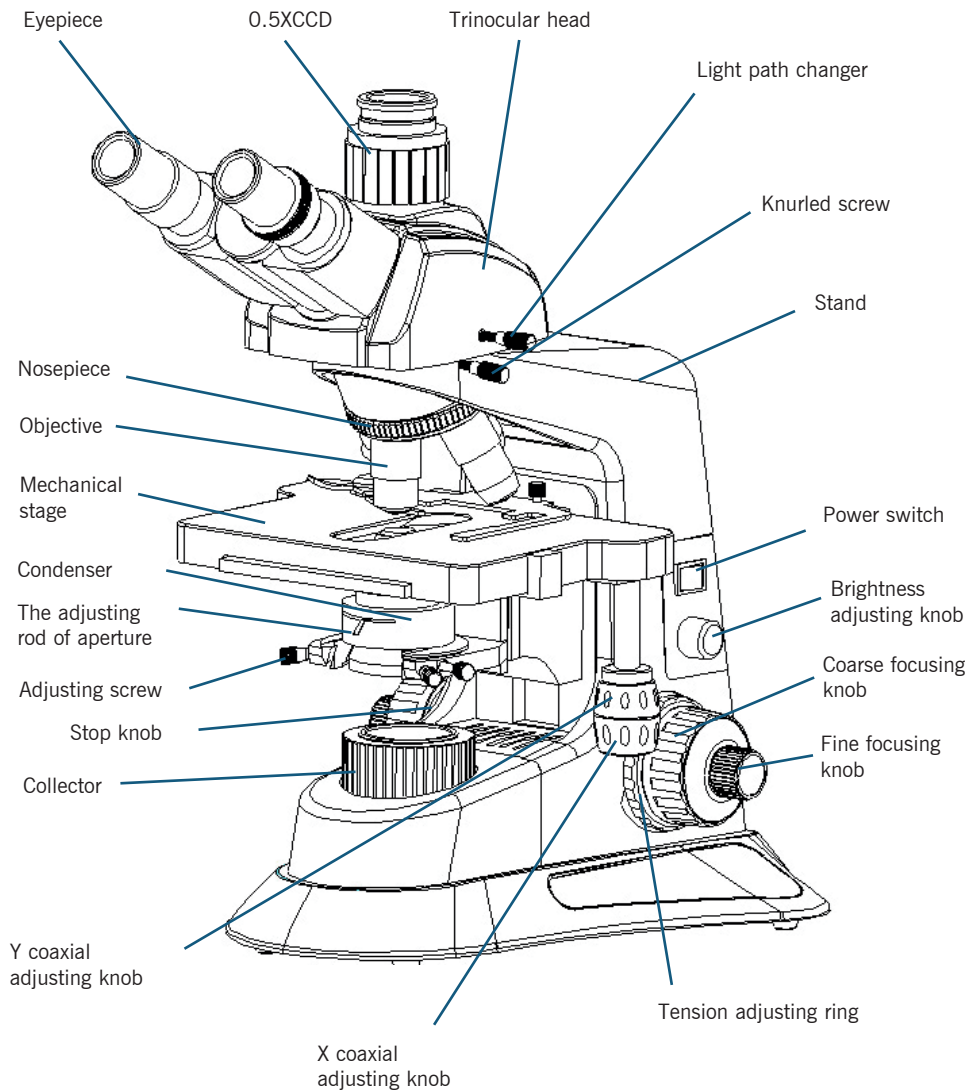
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I. APPLICATION

This microscope is widely used in Biology, Bacteriology, Histology, Pathology, etc. Can be used also for education/research in universities and other schools.

II. STRUCTURE**Model 222B**

Model 222T



III. SPECIFICATIONS

	SPECIFICATION	Model	
		222B	222T
Viewing head	Binocular head, inclined at 30° Interpupillary distance adjustment (48-75 mm)	✓	
	Trinocular head, inclined at 30° Interpupillary distance adjustment (48-75 mm)		✓
Eyepiece	WF10X/22	✓	✓
Nosepiece	Quadruple nosepiece	✓	✓
Objectives	Infinity plan achromatic objectives: 4X, 10X, 40X (R), 100X (R) Oil	✓	✓
Stage	Double layers mechanical stage Stage size: 185 mm x 142 mm Moving range: 75 mm x 50 mm	✓	✓
Condenser	N.A.1.25Abbe condenser with iris diaphragm & filter	✓	✓
Focusing	Coaxial coarse & fine focusing adjustment with rack and pinion mechanism	✓	✓
Light source	LED 5W, 100-240VAC, 50/60Hz Brightness adjustable	✓	✓
Collector	Kohler illumination	✓	✓

Objectives

Type	Magnification	Numerica aperture (N.A.)	Working distance (mm)	Thickness of the cover glass (mm)
Infinity plan achromatic objectives	4X	0.10	12,30	0,17
	10X	0.30	7,00	0,17
	40X (R)	0.70	0,75	0,17
	100X (R) Oil	1.25	0,28	0,17

IV. OPERATION

1. Instalation

- Remove the microscope from the foam box with both hands and place it carefully on a stable work table.
- Remove plastic bags and dustproof cover of each adapter.
- Put the binocular head or the trinocular head into the adapter of stand in place, tighten the knurled screw with your hand.
- Familiarize yourself with the mechanical parts of your microscope. Gently operate each part by hand to see how it behaves and what result it produces.
- Insert the plug into the socket in the back part of microscope. Insert another end of the power cable into the power supply socket.

Notes

- 1) The microscope must be earthed.
- 2) Make sure the power voltage is in accordance with the microscope's marking voltage.

2. Using the instrument

- Turn on the power switch, adjust the brightness adjusting knob to make the brightness 70% of the full load.
- 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.
- 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 are changed, to get the best resolution of the objective, please take off the eyepiece to observe the size of the 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.
- Swing out the filter holder, according to user's needs put filter in the filter holder and then backtrack.
- 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, to prevent objective touch the specimen, turn the coarse focusing knob until the specimen is approximately 1/8" 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.

■ When using objective 100X to observe, lift the condenser to the highest position, then drop a little cedar oil on surface of objective 100X and specimen (cover glass). If there's air bubble in oil, it will influence observation. Take out air bubble 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 clockwise direction, on the other hand it would be loosen.

■ You may lock up the focusing stopper on the other side of the microscope, when you see the image of the specimen clearly. Then the mechanical stage only will be able to rise and fall below the focusing position. When you do not find the location, you can turn the flange of the focusing stopper and loose it.

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

■ Turn coarse & fine focusing knob to focus the specimen till you see clear image of specimen when observing the fixed eyepiece with eye. Then rotate the diopter adjusting ring, if the image is unclear when observing the another eyepiece with another eye, also still you see clear image of specimen (remember your eye's diopter, so that you could use next time).

■ Remove dustproof cover from the trinocular head, put the CMOS electronic eyepiece, camera and CCD attachment into the trinocular tube. You may be ready to begin working after shifting the light path by moving the light path shifting rod into the working position.

■ Bulb and fuse replacement (the power cable must be disconnected):

1) Bulb replacement: Loosen the knurled screw on the underside of microscope and open the panel to expose the bulb. Remove the old bulb after it cools (the bulb will become very hot when using or after using). Don't touch the new bulb with finger, if there is a fingerprint and dirt, that will decrease the brightness and shorten the life of the bulb, wipe it with clean and soft cloth. Hold the new bulb with the same specification with clean gloves or gauze and vertically insert the pins into the jack. Close the panel and tighten the knurled screw with finger.

2) Fuse replacement: Open the fuse holder with a flat screwdriver in the back of the microscope. Remove the old fuse and install a new fuse with the same specification. Replace fuse holder in place.

V. MAINTENANCE

1. The microscope must be placed where it is shady, dry, clean and there is no acid, alkaline & steam. Don't let it expose under sun light directly.

2. Working environment:

Environment temperature: 0°C - 40°C

Maximum relative humidity: 85%

3. The microscope has been calibrated and inspected strictly before leaving the factory, the users must not knock down the instrument discretionally.

4. If there's dust on the lens, blow it with a rubber ball blower, 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 organic solvent (mixture of ether and alcohol 7:3).

5. Don't wipe the lens surface regularly, or else the lens will be scraped, reducing the quality of 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.