MICROSCOPIOS ZUZI SERIE 400, MODELOS 400M-P, 400B-P
400 SERIES ZUZI MICROSCOPES, 400M-P, 400B-P MODELS
MICROSCOPES ZUZI DE LA SÉRIE 400, MODÈLES 400M-P, 400B-P

REF. - CODE - RÉF. HBB024, HBB025

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.

LANGUAGE INDEX

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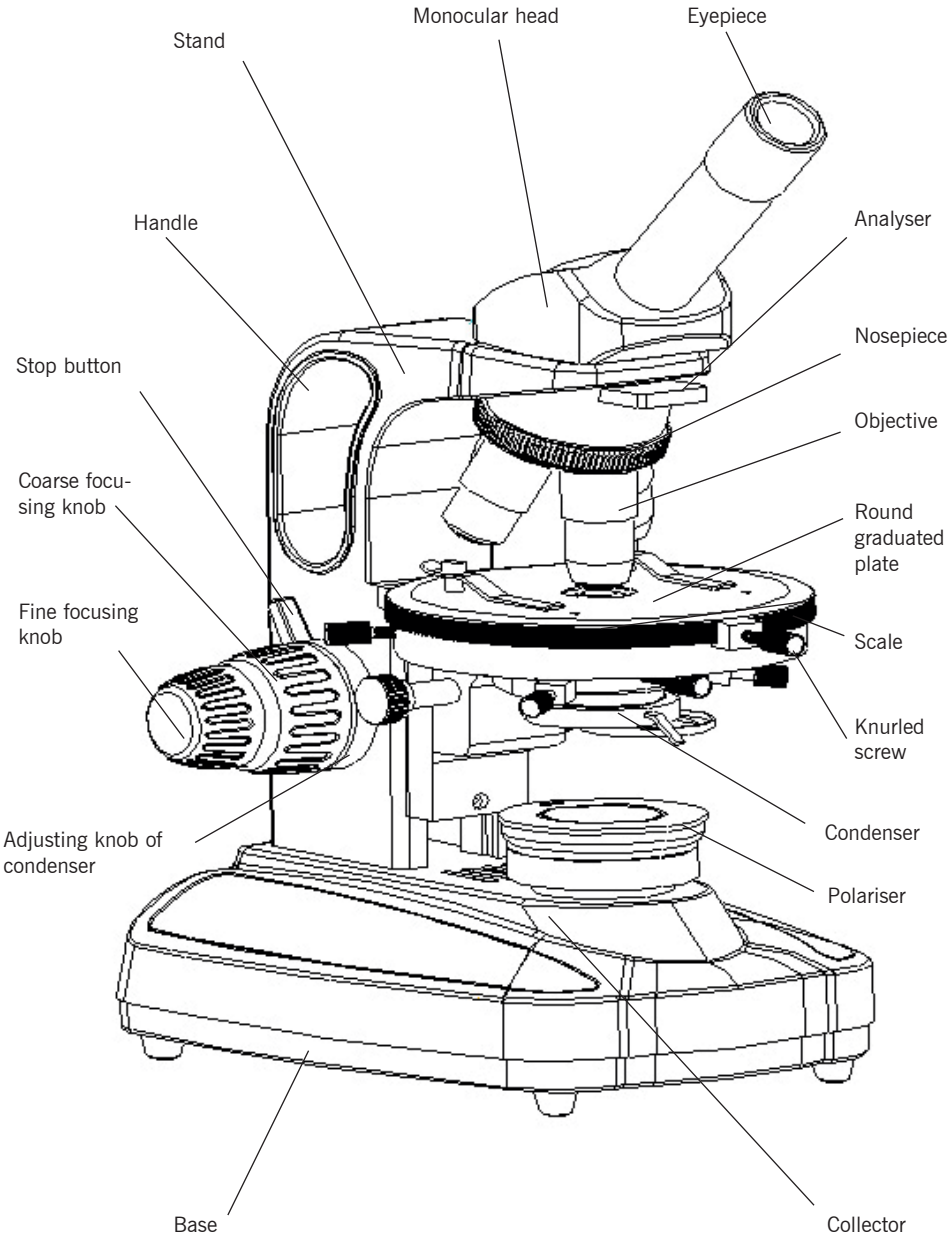
1. APPLICATION

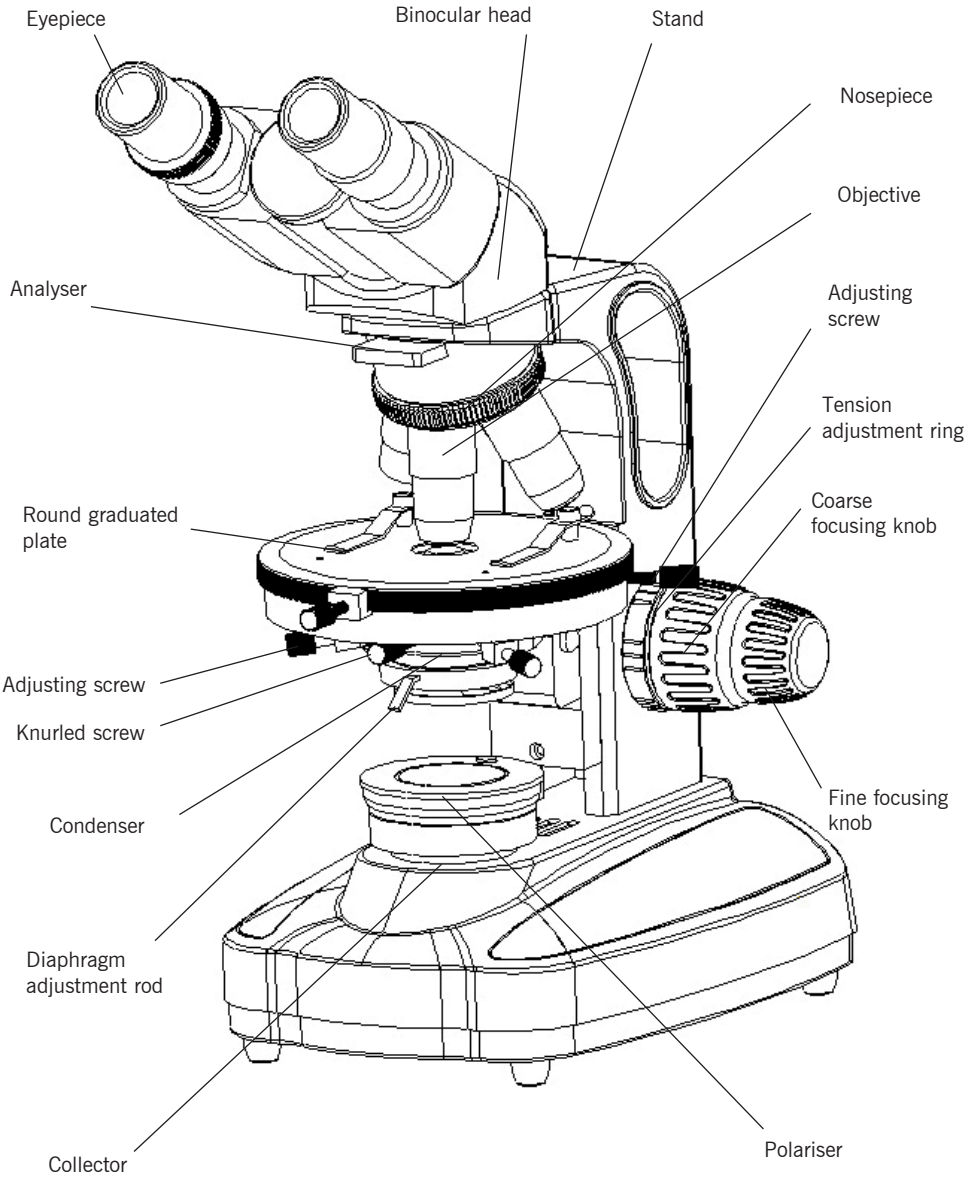
This series of polarised transmission microscopes is designed for routine inspection applications and educational purposes. Its use is widely recognised in fields such as crystal analysis, analytical chemistry, medicine, biosciences, environmental sciences, pharmacology, toxicology and others.

2. CONFIGURATION

REF.: HBB024 MODEL: 400M-P



CODE: HBB022 MODEL: 400B



3. SPECIFICATIONS

Head	**Code: HBB023 model 400M-P:** 45º inclined monocular **Code: HBB024 model 400B-P:** uncompensated binocular, 30º inclined, 360º rotatable	
Eyepiece	WF10X (20 mm)	
Revolver	Quadruple	
Objectives	Semi-flat achromatic: 4X, 10X, 40Xs, 100Xs (oil)	
Platina	Round graduated plate diam.135mm	
Capacitor	Abbe Condenser N.A. 1.25 with diaphragm and filter	
Approach	Coaxial coarse and fine adjustment with rack and pinion mechanism	
Light source	LED 1W	
Optional accessories	Eyepieces: WF16X, WF20X, WF25X	
	Objectives	Achromatics: 20X, 60Xs
		Achromatic plane: 4X, 10X, 20Xs, 40Xs, 60Xs, 100Xs (oil)
	Dark body condenser	

Objectives

Type	Magnification	Numerical aperture (N.A.)	Working distance (mm)	Thickness of coverslip (mm)
Achromatic lenses	4X	0.1	37.5	0.17
	10X	0.25	6.54	0.17
	40Xs	0.65	0.63	0.17
	100Xs (oil)	1.25	0.195	0.17

4. OPERATION

1. Installation:

■ Place the microscope carefully on a stable work surface.
■ Remove the plastic bags and dust cover from each adapter.
■ Place the head on the bracket adapter, tighten the fixing screw.
■ Familiarise yourself with the mechanical parts of the microscope. Gently operate each part by hand to see how it behaves and what results it produces.
■ Connect the power cord to the power outlet.

Notes:
- The microscope must be grounded.
- Make sure that the supply voltage matches the voltage indicated on the microscope label.

2. Use of the instrument:

■ Turn on the power switch, turn the brightness adjustment knob to make the brightness 70% of full load.
■ Place the specimen (slide) to be observed gently on the stage, cover slip facing the objective. Hold the specimen (slide) carefully with the movable spring forceps.
■ The magnitude of the incident light beam can be changed by adjusting the aperture diaphragm. The maximum resolution of the objectives can be achieved when the installed aperture diaphragm is adjusted. When changing lenses, to obtain the best lens resolution, remove the eyepiece to observe the size of the aperture diaphragm on the eyepiece tube. It is best to adjust the aperture diaphragm until it is slightly smaller than the lens aperture.
Note: The aperture diaphragm is not for adjusting the brightness, the brightness is adjusted by the brightness adjustment knob.
■ Swing out the filter holder, according to the user's needs, place the filter in the filter holder and then swing back.
■ Rotate the revolver to change the target and ensure that the target moves into the path of the light until you hear a click.
■ When adjusting the focus, to prevent the lens from touching the specimen, turn the coarse focus knob until the specimen is approximately 3.2 mm from the lens.
■ Slowly rotate the coarse focus knob until a sharp image is obtained, and then use the fine focus knob to enhance the observation of the sample until the sharpest image is obtained.
■ If the magnification is increased, a sharp image can be obtained with a small fine adjustment.
■ When using the 100X objective for observation, raise the condenser to the highest position and then drop some cedar oil on the surface of the 100X objective and the sample (coverslip). If there is an air bubble in the oil, it will influence the observation. Remove the air bubble by rocking the revolver several times. The 100X oil immersion objective and the sample should be wiped with a clean, soft cloth or lens tissue to remove xylene cedar oil immediately after use.
■ By turning the transverse and longitudinal direction adjustment knobs just below the stage, the specimen can be moved to the centre of the eyepiece field of view for observation.
■ Replacement of bulbs and fuses (power cable must be disconnected):

1) Bulb replacement: Loosen the serrated screw at the bottom of the microscope and open the panel to expose the bulb. Remove the old bulb after it cools down (the bulb is very hot during use and immediately after use). Do not touch the new bulb with your fingers, if there is a fingerprint and dirt, this will diminish the brightness and shorten the life of the bulb, wipe it with a clean, soft cloth. Hold

the new bulb of the same specification with clean gloves or gauze and insert the pins vertically into the socket. Close the panel and tighten the toothed screw by hand.
2) Fuse replacement: Open the fuse holder with a flat screwdriver in the direction of the arrow. Remove the old fuse and install a new one with the same specification. Replace the fuse holder and screw it into place.

3. Use of polarised lighting:

■ Turn on the microscope illumination, place the prepared sample on the stage.
■ Check whether the polariser is positioned over the microscope illumination.
■ Check whether the analyser is placed in the optical path.
■ Turn the polarizer until maximum light attenuation is obtained.
■ Centre the sample in the region of interest. Polarisation-sensitive material can be observed as a function of colour.
■ By rotating the stage, colour changes and angles are observed for the identification of the materials.

5. MAINTENANCE

■ The microscope should be placed in a shaded, dry, clean place, free from the presence of acids, alkalis and water vapour in the environment. Do not expose it to direct sunlight.
■ Working environment: indoor temperature 0-40ºC and maximum relative humidity: 85%.
■ The microscope has been calibrated and strictly inspected before leaving the factory, users should not disassemble the equipment.
■ If there is dust on the lens, blow it off with a rubber ball blower, then clean the lens gently with a soft brush. Carefully wipe off any oil or fingerprints on the lens surface with a lens tissue or cotton wool dampened with a little organic solvent (7:3 ether/alcohol mixture).
■ Do not clean the lens surface regularly, as this may scratch the lens surface, reducing transmission and image quality. Please keep the instrument clean.
■ Keep mechanical parts clean and clean them regularly.
■ Turn the microscope off and unplug it when not in use, set the brightness knob to minimum and cover it with a dust cover.