3B SCIENTIFIC® PHYSICS

...going one step further

Stereo-Zoom Microscope, 45x Trinocular
115 V, 50/60 Hz: 1013377 / 230 V, 50/60 Hz: 1013378

Instruction Manual

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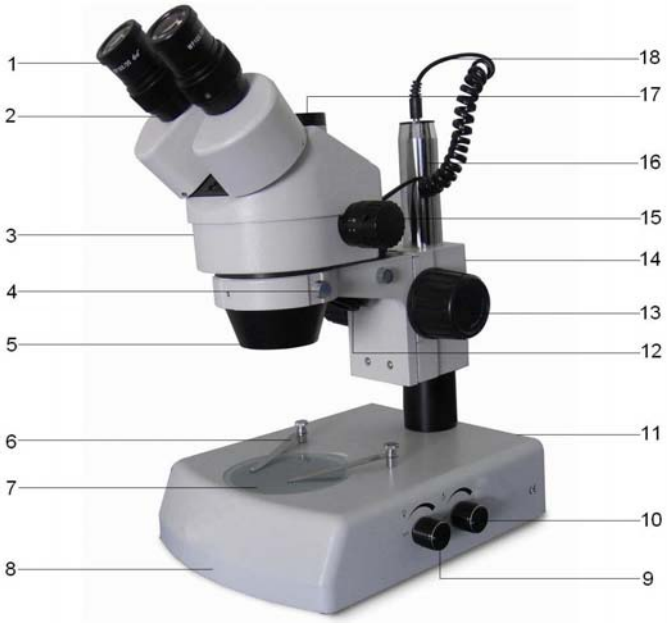

1 Eyepiece
2 Tube
3 Slider for changing beam path (not visible)
4 Head lock screw
5 Zoom objective
6 Specimen clips
7 Object plate
8 Base
9 Rotary switch for transmitted light
10 Rotary switch for top light
11 Mains switch (not visible)
12 Top light housing
13 Adjustment knob for focusing
14 Lock-screw (not visible)
15 Adjustment knob for zoom objective
16 Pillar
17 Vertical tube
18 Power supply for top light

1. Safety notes

- For power supply use only electrical sockets with ground contact.

Caution! The Stirling engine becomes hot during use. Risk of burns!

- Do not touch the lamp during or immediately after use.

2. Description, technical data

The stereo zoom microscope allows three-dimensional viewing of objects in 7x to 45x magnification and a eyepiece camera (e.g. 1003259, 1013379 and 1013380) to be attached for documenting work in the form of photographs and videos.

The microscope 1013377 is for operation with a mains voltage of 115 V (±10%), and the 1013378 unit is for operation with 230 V (±10%).

Stand: Metal stand, column firmly connected with base, pinion knobs attached on both sides of the stand for coarse and fine focusing

Tube: Binocular inclined 45° and vertical tube, interocular distance adjustable between 54 and 75 mm, head rotatable by 360°

Eyepieces: Pair of wide field eyepieces WF 10x 20 mm, rubber eyepiece cups

Objectives: Zoom objective, 0.7x to 4.5x

Enlargement: 7x to 45x

Diameter of Image Field: 4.4 mm to 28.6 mm

Distance from Specimen: 100 mm

Maximum Height of Object: 80 mm

Object Plate: Base with detachable object plates (plastic, black/white and glass) 95 mm diam. and 2 specimen clips

Illumination: Top, transmitted and mixed light illumination, adjustable 12 V, 15 W halogen lamp, power supply 115 V resp. 230 V 50/60 Hz

Dimensions: 250 x 220 x 350 mm³ approx.

Weight: 6kg approx.

3. Unpacking and assembly

The microscope is packed in a molded styro-foam container.

- Take the container out of the carton remove the tape and carefully lift the top half off the container. Be careful not to let the optical items (objectives and eyepieces) drop down.
- To avoid condensation on the optical components, leave the microscope in the original packing to allow it to adjust to room temperature.
- Using both hands (one around the pillar and one around the base), lift the microscope from the container and put it on a stable desk.
- Put the head onto the top of the stand and tighten the head-lock-screw. Insert the eyepieces into the tube.
- Screw the housing for the top light into its holder and plug the power supply connector into the socket on the stand pillar.
- Insert the object plate into the stage opening in the base.

4. Operation

4.1 General information

- Set the microscope on a level table.
- Place the object to be observed in the center of the object plate. Use the clips to fasten it into place.
- Connect the mains cable to the net and turn on the switch to get the object illuminated.
- When using transmitted- or mixed-light illumination replace black and white plate with the glass plate.
- Adjust the interpupillary distance between the eyepieces by grasping the two prism-housings with both hands and moving them until one circle of light can be seen.
- Use the knob for the zoom objective to set the required magnification.
- Focus the object by turning the side knobs.
- It might be necessary to loosen the lock-screw and raise or lower the entire stereo head-bracket until the outline of the object is found in the field of view.
- Be sure to tighten the lock-screw to fix the height of the stereo head on the pillar.
- Always turn off the light immediately after use.
- Be careful not to spill any liquids on the microscope.
- Do not mishandle or impose unnecessary force on the microscope.
- Do not wipe the optics with your hands.
- Do not attempt to service the microscope yourself.

4.2 Changing the lamps

- Turn off the power switch, unplug the mains plug and let the lamp cool down.
- In order to change the bulb for the top light, undo the screw at the side, remove the lamp housing and remove the plug from the stand pillar.
- Use a flat tool (e.g. screwdriver) to gently (!) lift the clip and pull the lap socket out of the housing (see Fig.1).
- Replace the faulty bulb with a new one.
- Screw the lamp housing back into the holder and connect the power supply again.

Fig. 1 Changing the bulb in the top light

- To change the lamp of bottom light remove the cover from the base opening.
- Replace the defect the lamp by a new one.
- Remount the cover.

4.3 Changing the fuse

- Turn off the power switch and unplug the mains plug.
- Unscrew the fuse holder on the back of the stand base with a screwdriver.
- Replace the fuse and reinsert the holder in its socket.

4.4 Fitting an ocular camera

- Screw the camera adapter onto the vertical eyepiece.
- Put the ocular camera in the adapter and connect it to a computer.

The camera can be put into use by means of the slider for changing the beam path.

When the slider is pushed all the way in, the object can be viewed through the binocular eyepiece.

When the slider is all the way out, the camera is activated so that photos or videos can be recorded.

5. Storage, cleaning, disposal

- Keep the microscope in a clean, dry and dust free place.
- When not in use always cover the microscope with the dust cover.
- Do not expose it to temperatures below 0°C and above 40°C and a max. relative humidity of over 85%.
- Always unplug the mains plug before cleaning or maintenance.
- Do not clean the unit with volatile solvents or abrasive cleaners.
- Do not disassemble objective or eyepieces to attempt to clean them.
- Use a soft linen cloth and some ethanol to clean the microscope.
- Use a soft lens tissue to clean the optics.
- The packaging should be disposed of at local recycling points.
- Should you need to dispose of the equipment itself, never throw it away in normal domestic waste. Local regulations for the disposal of electrical equipment will apply.