

**Binocular Course Microscope Model 300 LED (115 V) 1013368**  
**Binocular Course Microscope Model 300 LED (230 V) 1013144**

## Instruction Manual

01/14 ALF



- 1 Eyepiece
- 2 Tube
- 3 Revolver with objectives
- 4 Object guide
- 5 Object stage
- 6 Condenser with iris diaphragm and filter holder
- 7 Lamp housing
- 8 Illumination control
- 9 Mains switch
- 10 Adjustment knob for mechanical stage
- 11 Adjustment knob for fine and coarse focusing
- 12 Lock screw for object stage
- 13 Head lock screw
- 14 Stand

### 1. Safety notes

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

### 2. Description, technical data

The binocular course microscope allows two-dimensional viewing of objects (thin sections of plant or animal specimen) in 40x to 1000x magnification.

The microscope 1013368 is for operation with a mains voltage of 115 V ( $\pm 10\%$ ), and the 1013144 unit is for operation with 230 V ( $\pm 10\%$ ).

**Stand:** Robust, all metal stand with arm permanently connect to the base. Focussing by means of separate knobs for coarse and fine adjustment located on either side of the stand and operated by rack and pinion drive with ball bearings, adjustable stopper for protecting the object slides and objective

**Tube:** Binocular Siedentopf head, 30° viewing angle, 360° rotatable head, viewing distance adjustable between 54 and 75 mm,  $\pm 5$  dioptic

compensation for both eyepieces

**Eyepiece:** Pair of wide field eyepieces WF 10x 18 mm

**Objectives:** Revolver with 4 DIN achromatic objectives 4x / 0.10, 10x / 0.25, 40x / 0.65, 100x / 1.25 oil (with specimen protection)

**Magnification:** 40x, 100x, 400x, 1000x

**Object stage:** x-y cross table, 125 x 130 mm<sup>2</sup>, with object guide and coaxial adjustment knobs perpendicular to the object stage, adjustment range 70 x 30 mm<sup>2</sup>

**Illumination:** Adjustable LED lighting integrated in base

**Power supply:** Via plug-in power supply 6 V DC, 200 mA

**Mains connection:** 1013368: 115 V, 50/60 Hz; 1013144: 230 V, 50/60 Hz

**Condenser:** Abbe condenser N.A.1.25 NA 0.65 with iris diaphragm, filter holder and blue filter, focussed via rack and pinion drive

**Dimensions:** 282 x 148 x 357 mm<sup>3</sup> approx.

**Weight:** 5.2 kg 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.
- The objectives will be found within individual protective vials. Install the objectives into the microscope nosepiece from the lowest magnification to the highest, in a clockwise direction from the rear.
- Put the head onto the top of the stand and tighten the head-lock-screw. Insert the eyepieces into the tube.

### 4. Operation

- 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. Make certain that the specimen is centered over the opening in the stage.
- Connect the mains cable to the net and turn on the switch to get the object illuminated.
- Make certain that the specimen is centered over the opening in the stage.
- Adjust the interpupillary distance so that one circle of light can be seen.
- Make the necessary eyepiece dioptre adjustments to suit your eyes.
- To obtain a high contrast, adjust the background illumination by means of the iris diaphragm and the variable illumination control.
- Rotate the nosepiece until the objective with the lowest magnification is pointed at the specimen. There is a definite "click" when each objective is lined up properly.

**NOTE:** It is best to begin with the lowest power objective. This is important to reveal general structural details with the largest field of view first. Then you may increase the magnification as needed to reveal small details. To determine the magnification at which you are viewing a specimen, multiply the power of the eyepiece by the power of the objective.

- Adjust the coarse-focusing-knob which moves the stage up until the specimen is fo-

cused. Be careful that the objective does not make contact with the slide at any time. This may cause damage to the objective and/or crack your slide.

- Adjust the fine-focusing-knob to get the image more sharp and more clear.
- Colour filters may be inserted into the filter holder for definition of specimen parts. Swing the filter holder out and insert colour filters.
- Use the knobs of the mechanical stage to move the slide side-, back- and forwards. The vernier provides accurate location of the specimen area.
- 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.

### 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.

