



Mikroskop Technik Rathenow

# College-Stereo-Zoom Microscope

The Stereo-Zoom-Microscope for the simple way to  
modern stereo-microscopy



Short manual

## For your Safety!

**WARNING!** Read the following information before using the unit and its supplemental equipment !

1. This unit was constructed and checked according to the safety regulations for electronic measuring devices of publication IEC 348 and VDE 041, and was delivered in a secure fashion. This user's manual contains information and warning notices that should be heeded by the operator.
2. The unit is a light microscope, drafted according to the newest scientific and technical knowledge for the visual, micro photographic and video-technical investigation of microscopic objects. The unit should only be used for the designated purpose. All other uses (also the insertion of single components not designated by the manufacturer) constitute a misuse of the product. We are not liable for any damages caused by this misuse. This unit is not meant for unattended continuous operation.
3. The microscope does not have any special safeguards against samples with caustic toxic, radioactive or other hazardous materials. The allowed sample amount may not be exceeded.
4. The unit may only be operated on the voltages indicated on the unit. Please heed the instructions in the user's manual! We are not liable for any damages caused by the disregard of these instructions.
5. The following regulation apply to units of Safety Class II with the symbol.... . The plug has no grounded wire and may be inserted in an underground outlet. The safety measures are guaranteed as long as the unit is unopened and none of the isolation coverings are damaged or have been removed.
6. If the unit is connected to voltage, contact clamps can lead to dangerous voltages and opening the coverings or removing parts can uncover a piece under a dangerous voltage. The unit must be disconnected from power before it can be opened for adjustments, replacements, servicing or repairs.
7. Existing ventilation slits should not be obstructed. This also applies for ventilation slits on the bottom of the unit. No tools, loose objects or liquids should enter the unit through ventilation slits or other openings in the unit.

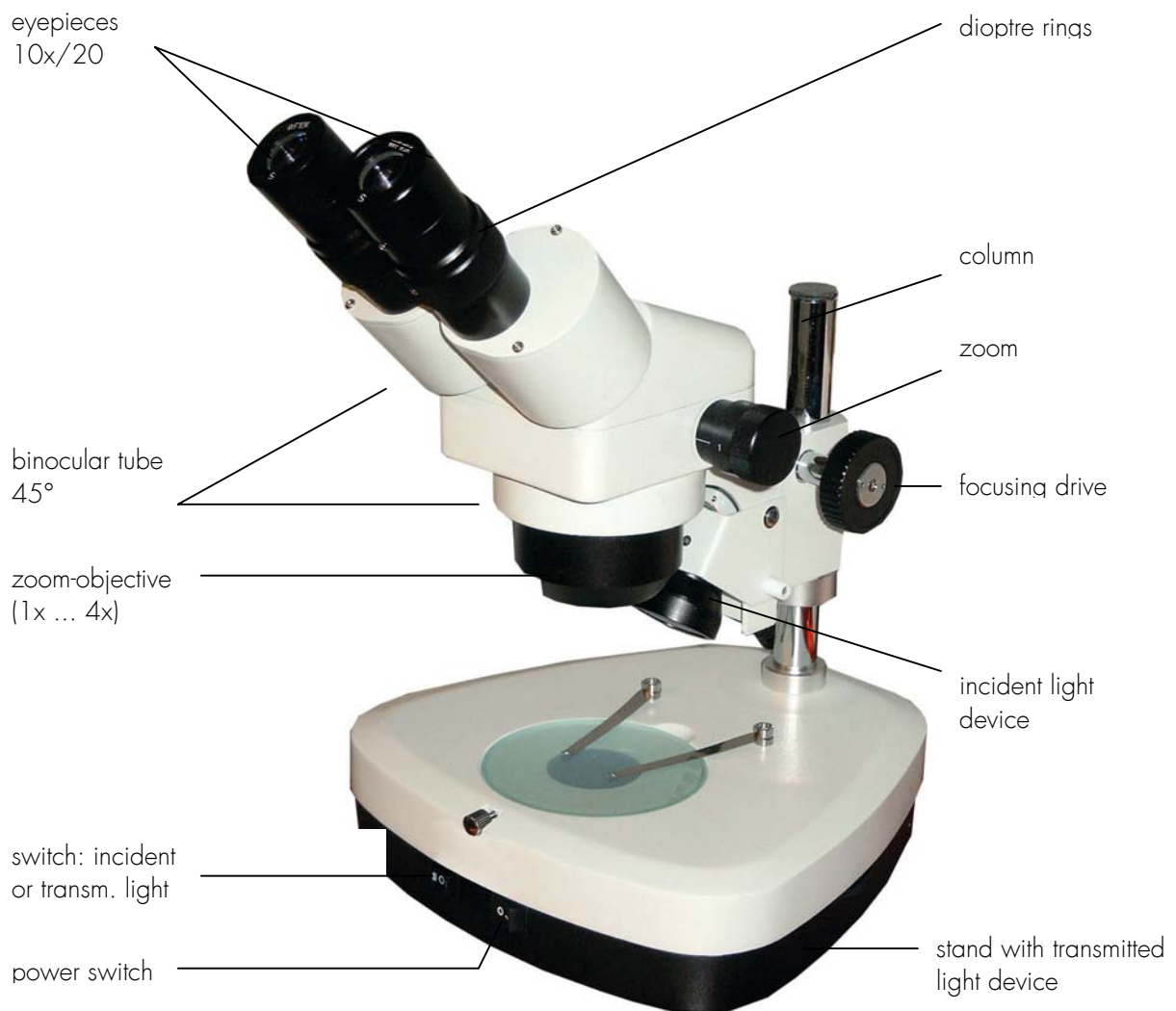
**Do not touch ventilation slits or light cases when operating the unit as these tend to become extremely hot.** This is especially true for the lamp and surrounding area of open lights. When changing lamps, allow the lights to first cool to room temperature.

8. Only fuses with the required nominal current may be used as substitutes for the prescribed use. It is prohibited to use makeshift fuses or short-circuit the fuse support.
9. If safety is endangered, the unit must be removed from use and secured against unattended operation. The unit should then be sent to the production factory or a competent service technician.
10. Before switching on the unit, set the controller for the illumination intensity to the rear position in order to prevent blinding.

## Technical data:

- total magnification = 10x ... 40x
- objective magnification = 1x ... 4x
- object field = 20 mm ... 5 mm
- eyepieces = 10x / 20 (magn./field of view)
- tube = binocular, eye distance adjustable
- working distance = 80 mm
- max. object height = 100 mm
- illumination = transmitted + incident light 12V/10W
- voltage = 230V 50/60Hz

## Microscope - overview:



## 1. Equipment

- stand with column
- binocular viewing tube 45°
- zoom objective 1x – 4x
- 2 eyepieces 10x/20 with eyecups
- object plate black/white + glass for transmitted light
- illumination incident light: OSRAM DECOSTAR 12V 10W 36°;  
transmitted light: OSRAM HALOSTAR 12V 10W
- protection cover
- short manual

## 2. Working with the SM 20

- Put the object under the stereo microscope und use the focusing drive to get a clear picture.
- The magnification (10x...40x) can be changed by using the zoom.
- Turn the object plate (black or white) for better image contrast.
- Use the glass object plate for transmitted light.

## 2. Adjusting the sharpness

- Put both dioptre rings in middle position.
- Look into the right eyepiece with your right eye and use the focusing drive to get a clear picture.
- Use the dioptre ring of the left eyepiece to get clear picture for your left eye.

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