BRESSER

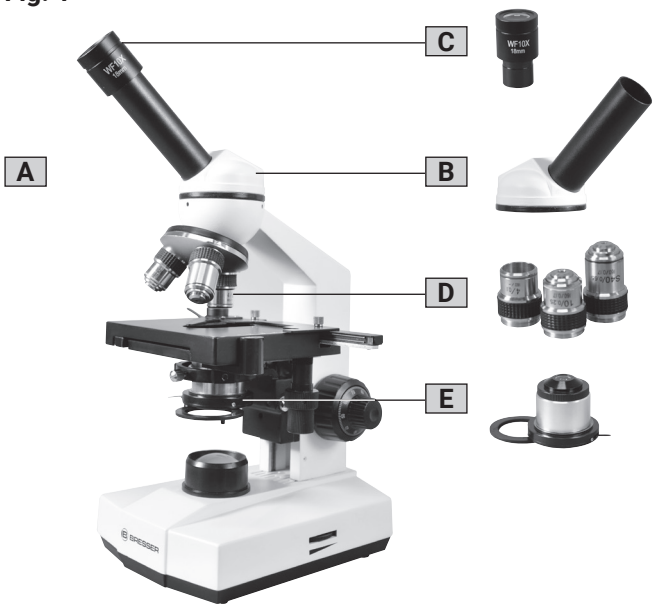
ERUDIT Basic

Art. No.
5102100
5102200

Transmitted light Microscope

GB **INSTRUCTION MANUAL**

Fig. 1



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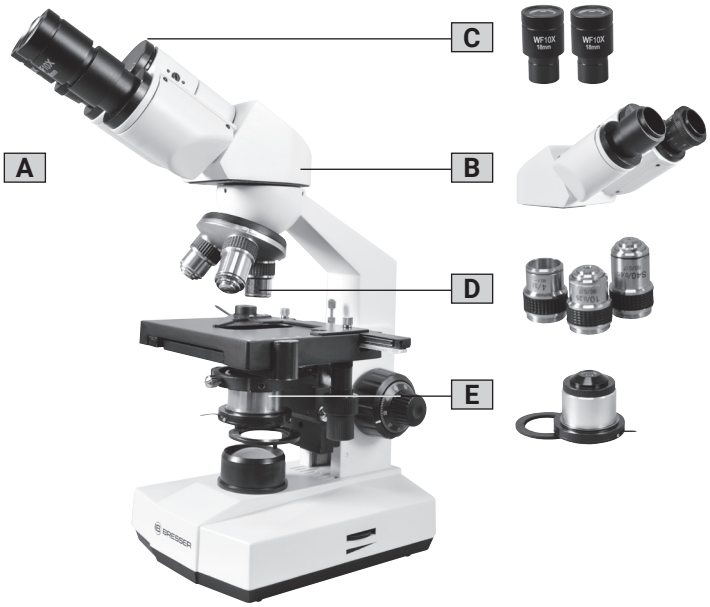

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Fig. 2

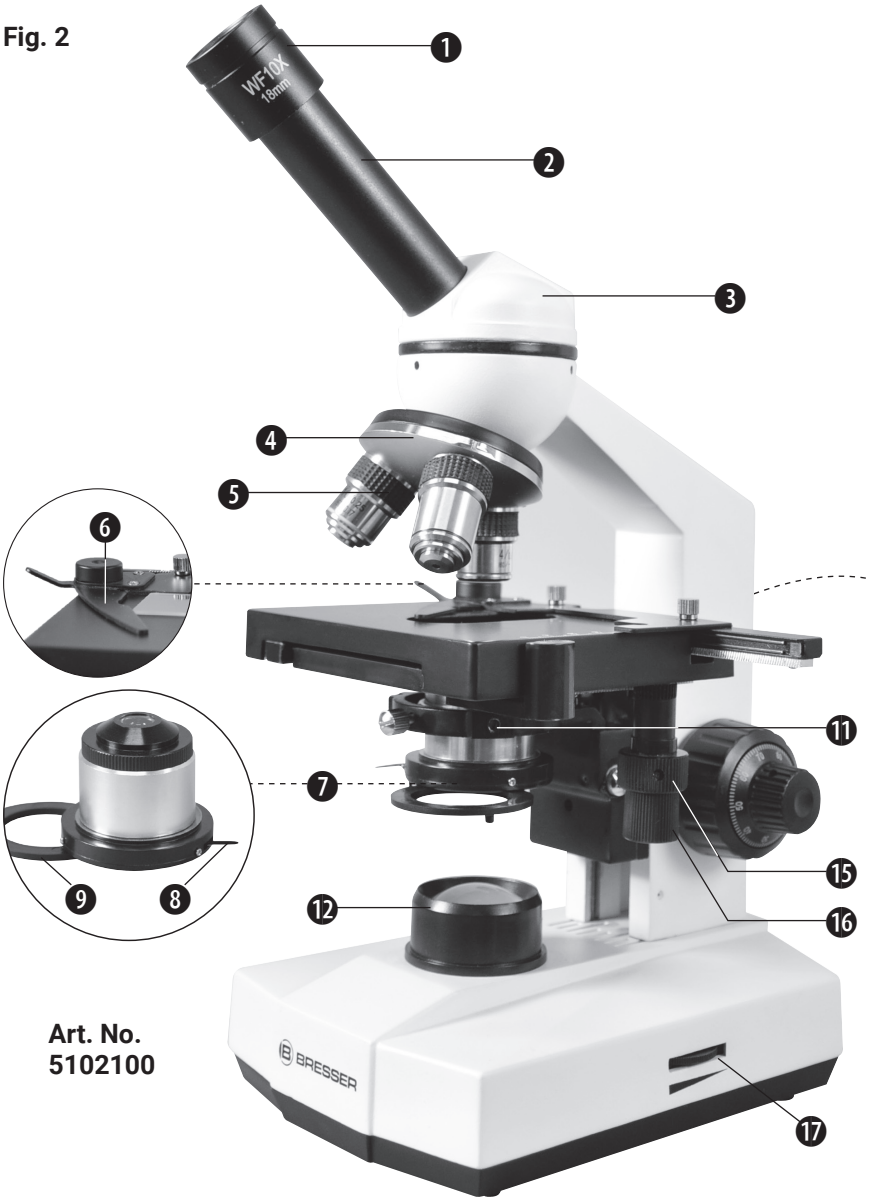

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Fig. 3

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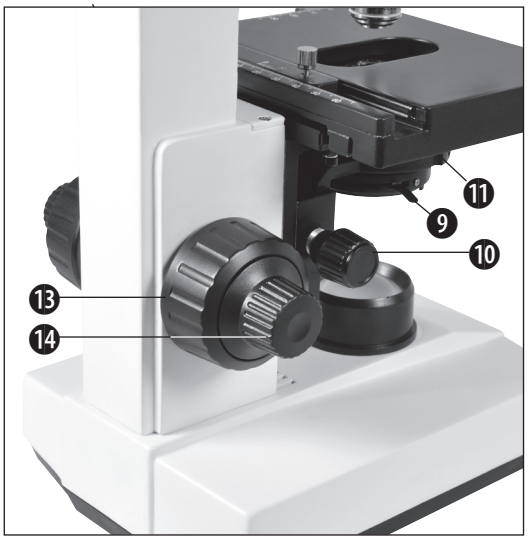

Fig. 4

Fig. 5

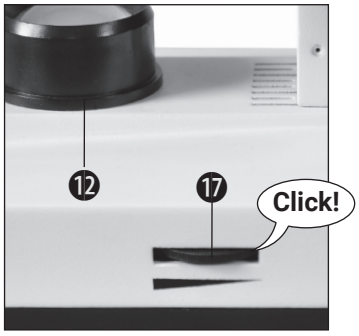

Fig. 6

Fig. 7

ABOUT THIS INSTRUCTION MANUAL

These operating instructions are to be considered a component of the device. Please read the safety instructions and the operating instructions carefully before use. Keep these instructions for renewed use at a later date. When the device is sold or given to someone else, the instruction manual must be provided to the new owner/ user of the product.

INTENDED USE

This product is intended only for private use.
It was developed for the magnified display of things in nature.

This device is not intended for use by individuals (including children) with limited physical, sensory or mental capabilities or those lacking in experience and/or knowledge, unless they are supervised by an individual responsible for their safety or have received instructions from them regarding the use of the device.
Children must be supervised to ensure that they do not play with the device.

GENERAL WARNING

⚠ RISK OF CHOKING!
Keep packaging material, like plastic bags and rubber bands, out of the reach of children, as these materials pose a choking hazard.

⚠ RISK of BODILY INJURY!
Contains functional sharp edges and points!

Tools with sharp edges and points are often used when working with this device. Because there is a risk of injury from such tools, store this device and all tools and accessories in a location that is out of the reach of children.

⚠ RISK of ELECTRIC SHOCK!
This device contains electronic components that operate via a power source (batteries). Children should only use the device under adult supervision. Only use the device as described in the manual; otherwise, you run the risk of an electric shock.

Before operating, check the device, cables and connections for damage. Never use a damaged unit or a unit with damaged power cables. Damaged parts must be exchanged immediately by an authorised service centre.

⚠ RISK of FIRE/EXPLOSION!
Do not expose the device to high temperatures. Use only the recommended batteries. Do not short-circuit the device or batteries, or throw them into a fire. Excessive heat or improper handling could trigger a short-circuit, a fire or an explosion.

! RISK of PROPERTY DAMAGE!
Protect the device from severe shocks!

The manufacturer is not liable for damage related to improperly installed batteries!

Do not disassemble the device. In the event of a defect, please contact your dealer. The dealer will contact the Service Centre and can send the device in to be repaired, if necessary.

1. PACKAGE CONTENTS (FIG. 1)

(several accessory parts are premounted)

(A) Microscope with
- (B) Microscope head
- (C) 10x WF eyepiece
- (D) Objectives: 4x, 10x, 40x
- (E) Condenser

(F) Box with 5 prepared slides, blank slides and cover glasses
(G) Smartphone holder
(H) Transport case

2. PARTS OVERVIEW FOR ALL MODELS (FIG. 2)

1 Eyepiece
2 Eyepiece holder
3 Microscope head
4 Objective revolver
5 Objectives (4x, 10x or 40x)
6 Slide clamp
7 Condenser
8 Adjusting lever for iris diaphragm
9 Filter holder
10 Condenser height adjustment
11 Condenser adjustment screws
12 Illumination
13 Coarse-adjusting wheel
14 Fine-adjusting wheel
15 Lengthwise knob of mechanical desk
16 Cross knob of mechanical desk
17 Rotary switch (On/Off switch with dimmer)
18 Battery compartment
19 Locking screw for battery compartment
20 Smartphone holder

only for model Erudit Basic Bino (Fig. 3)
21 Eyepiece tubes with foldable center axis
22 Diopter setting

3. LOCATION

Before you set up the microscope, you must choose a suitable location.
First you must make sure that your microscope is on a stable and solid surface.

4. INSERTING BATTERIES (FIG. 4)

The battery compartment (18) is located at the bottom of the microscope. Loosen the locking screw (19) of the battery compartment cover. Remove the cover. Insert three AA type batteries (Mignon LR6). Make sure that the poles of the batteries are in the correct position as marked on the inner side of the battery compartment. Re-insert the battery compartment cover and tighten the locking screw (19) only hand-tight to avoid any damage to the cover.
You can also use accumulators of the same type instead of normal batteries. Due to the lower voltage of accumulators, a lower illumination can occur.

5. ELECTRIC ILLUMINATION (FIG. 5)

The microscope is equipped with a battery-powered LED

illumination. Therefore the usage with an off-grid power supply (e.g. outside) is possible.

On/Off switch and dimmer are combined in one rotary switch (17). To power on the device turn the rotary switch (17) until you hear a ‚click'. Starting at this point, the brightness can be adjusted. Always use a light intensity that allows for a good illumination of the object.

! NOTE!
Do not operate the microscope with maximum brightness over a longer time. This will reduce the LED lifetime.

The battery runtime is up to 30 hours (at minimum illumination power).

6. OBSERVATION (FIG. 6)
You begin each observation with the lowest magnification (eyepiece 10x and objective 4x). So, the object to be viewed can easy be centred and properly focussed. The higher the magnification the more light is required for good image quality. Turn the objective revolver (4) onto the smallest magnification and insert the 10x eyepiece. Now place a preparation directly under the objective on the microscope table and fix it with the slide clamps (6). Move the preparation on the table with the lengthwise knob (15) and cross knob (16) of the mechanical desk. look through the eyepiece (1) and turn the coarse adjustment (13) carefully until the image becomes visible. The optimal sharpness is achieved by the fine adjustment (14).

! NOTE!
Make sure that you never overtighten the fine adjustment.

7. ADJUSTING THE INTERPUPILLAR DISTANCE
(only Erudit Basic Bino)

Place the preparation on the mechanical desk and bring it into the exact focus. Adjust the interpupillar distance by folding the eyepiece tubes (21) over its center axis at the microscope head (3) until the right and the left field of view can be composed to one.

8. DIOPTER SETTING
(only Erudit Basic Bino)

Place the preparation on the mechanical desk. Turn the 40x objective (5) to the working position. Look through the right eyepiece with the right eye first. Bring the image into focus by turning the the coarse and fine focusing knob. Then look through the left eyepiece with the left eye. Focus on the image by turning the diopter setting (22).

9. CONDENSER
The condenser (7) is used to properly bundle the light of the illumination to the viewed object. Turn the height adjustment knob (10) to adjust the condensor.
Moreover the condenser can be adjusted by its two adjustment screws (11). Use a small slot screwdriver or an Allen wrench (depending on the model). Close the iris diaphragm (8) completely and focus on an object with the 4x objective (5). Turn the height adjustment (10) to move the condenser (7) downwards until you clearly see the edge of the aperture. If the light area is not centered, you can adjust the condenser (7) over the two adjustment screws (11). When done this, move the condenser (7) back into an optimal position and re-open the iris diaphragm (8).

10. IRIS DIAPHRAGM
An iris diaphragm (8) is used to enlarge the depth of focus. The larger the aperture the more light you will get, but with a minor depth of focus. A partly closed aperture will provide a better depth of focus but it is therefore neccessary to increase the lighting.
Do not close the aperture (8) to much when working with a higher magnification, because of a decreasing image resolution.

11. FILTER HOLDER
The filter holder (9) can be used for filters with a diameter of 32 mm and a thickness of approx. 1.5 mm (available optionally).

12. SMARTPHONE HOLDER (FIG. 7)
Put the Smartphone holder (20) over the eyepiece and fix it with the knurled screw.
When using a device with binocular head (5102200), install the holder to the left or right eyepiece.

! NOTE!
The suction cups must be free of dust and dirt. It may help to slightly dampen them.
Make sure that the Smartphone holder is mounted securely and the Smartphone is firmly fixed on the plate.
Smartphones with a rough surface can not be fixed as good as that one with flat surfaces. Make sure that it will not slip down.

Start the camera App on your Smartphone. The camera lens must be placed directly over the eyepiece to get the image centered in the middle of the LCD.
It can be neccessary to enlarge the image to the full LCD size by using the camera zoom. A shadowing at the edges is possible.

Remove the Smartphone from the holder after use.

13. MAINTENANCE AND STORAGE

Use only the recommended batteries!
Always replace weak or empty batteries with a new, complete set of batteries at full capacity. Do not use batteries from different brands or with different capacities. Remove the batteries from the unit if it has not been used for a long time.

Do not disassembe the microscope!
Because of being a precise optical instrument, do not disassemble the microscope casually. That may cause serious damage to its performance. Do not disassemble the objectives.

Avoid contamination!
You should make sure that dust or moisture do not come in contact with your microscope. Avoid putting fingerprints on any optical surfaces! If dust or dirt nevertheless have gotten onto your microscope, or the accessories, remove it as described below.

Cleaning non-optical parts
Remove batteries from the device before cleaning non-optical parts (e.g. housing, mechanical desk). Remove dust and dirt from your microscope or its accessories by using a soft brush. Clean the soiled area with a soft, lint-free cloth; the cloth may be moistened with a mild detergent solution. Be sure that the microscope is dry before using it. For cleaning the painted parts or plastic components, do NOT use organic solvents such as alcohol, ether, acetone, xylene or other thinner etc.!

Cleaning optical parts
In order to enhance the optical quality, the lenses of eyepieces or objectives are coated. They should not be wiped because dry dirt or dust may scratch the coating. It is best to remove the parts to be cleaned from the frame prior to cleaning. Always blow loose dust away first. Use lens tissue of good quality or soft fabric moistened with a small amount of pure alcohol (available in the chemist's shop); wipe the lens surface clean.

Being not used
Store the microscope in the transport case when not using ist and keep it in a dry and fungus-free place. In the case of non-use for a longer time, you should stow the microscope and the accessories in their correct containers again. We suggest the storage of all objectives and eyepieces in a closed container with drying agent.
Remove the batteries from the unit if it is not used for a longer time.

Remember:
A well maintained microscope will keep its optical quality for years and thus maintain its value.

14. INTERESTING FACTS

Aperture:
The numerical Aperture (the unit of measurement for the resolution factor of the objectives) is engraved beside the magnification-sign on the objectives.

Calculating the magnification:

Formula:
Eyepiece magnification x Objective magnification = Total magnification

Example:
10x (Eyepiece) x 10x (Objective) = 100x Total magnification

15. DISPOSAL


Dispose of the packaging materials properly, according to their type, such as paper or cardboard. Please take the current legal regulations into account when disposing of your device. You can get more information on the proper disposal from your local waste-disposal service or environmental authority.


Do not dispose of electronic devices in the household garbage!
As per Directive 2002/96/EC of the European Parliament on waste electrical and electronic equipment and its adaptation into German law, used electronic devices must be collected separately and recycled in an environmentally friendly manner.


In accordance with the regulations concerning batteries and rechargeable batteries, disposing of them in the normal household waste is explicitly forbidden. Please make sure to dispose of your used batteries as required by law — at a local collection point or in the retail market. Disposal in domestic waste violates the Battery Directive.
Batteries that contain toxins are marked with a sign and a chemical symbol. "Cd" = cadmium, "Hg" = mercury, "Pb" = lead.

16. EC DECLARATION OF CONFORMITY

Product type: Transmission-type microscope
Product description: Erudit Basic Mono/Bino
Art. No.: 5102100 / 5102200

Bresser GmbH has issued a "Declaration of Conformity" in accordance with applicable guidelines and corresponding standards. This can be viewed any time upon request.

17. TECHNICAL DATA

	Model Erudit Basic Mono (Art. No. 5102100)	Model Erudit Basic Bino (Art. No. 5102200)
Microscope head	monocular	binocular
Mechanical desk	with Nonius setting	
Eyepiece(s)	1 piece DIN WF 10x	1 pair DIN WF 10x
Objektives	4x / 10x / 40x	
Magnification	40x / 100x / 400x	
Power supply	4.5V (3 batteries, AA/LR6 type)	
Illumination	LED* (battery-powered)	

* The LED illumination used in this device has a very long lifespan and does not need to be changed. It can not be changed due to technical reasons!

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www.bresser.de/download/5102100_200

GB WARRANTY & SERVICE

The regular guarantee period is 2 years and begins on the day of purchase. To benefit from an extended voluntary guarantee period as stated on the gift box, registration on our website is required. You can consult the full guarantee terms as well as information on extending the guarantee period and details of our services at www.bresser.de/warranty_terms.

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