

Model: 3803



e-Science®

2-IN-1 CONVERTIBLE MICROSCOPE & TELESCOPE SET

WARNING! Only for use by children over 8 years old. Only for use under the supervision of adult. This toy contains functional edge.

CAUTION! Read the instructions before use, follow them and keep them for reference. Keep small children and animals away from experiments. Store the telescope/microscope set out of reach of small children. Eye protection for supervising adults is not included.

Warning! Batteries included for demonstration purposes only.

1. Uses two AG13/LR44 batteries (included)
2. Only adults should install and replace batteries.
3. Alkaline batteries are recommended.
4. Do not use rechargeable batteries.
5. Non-rechargeable batteries are not to be recharged.
6. If the device has not been used for a long time, remove the batteries.
7. Rechargeable batteries are to be removed from the toy before being charged.
8. Rechargeable batteries are only to be charged under adult supervision.
9. Do not mix old and new batteries.
10. Do not mix alkaline, standard (carbon zinc) or rechargeable (nickel cadmium) batteries.
11. Exhausted batteries are to be removed from the toy.
12. The supply terminals are not to be short-circuited.
13. Only batteries of the same or equivalent type as recommended are to be used.
14. Batteries are to be inserted with the correct polarity.
15. Do not dispose of batteries in fire, batteries may explode or leak.
16. Batteries may explode or leak if misused.

M-3803-ENG V.3

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2-IN-1 CONVERTIBLE MICROSCOPE & TELESCOPE SET

Attention

The following information should be read carefully in order to overcome confusions.

This telescope/microscope set is appropriate for children over 8 years old. If not applied, supervision of adult is required as this set comprises of functional sharp edge.

Before using the unit, attentively and carefully read the instructions, follow the guide, and keep them for future direction in case you need further helpful hints.

In any situation, be extremely cautious not to allow chemicals to come into contact with any part of the body, especially the eyes and mouth. Keep away young infants and animals from the experiment. Always, keep the unit in a place where young infant is out of reach.

Eye protection is not provided, it can be obtained from any science departments, and major shopping outlets. Remember, in case of accidents please seek medical advice.

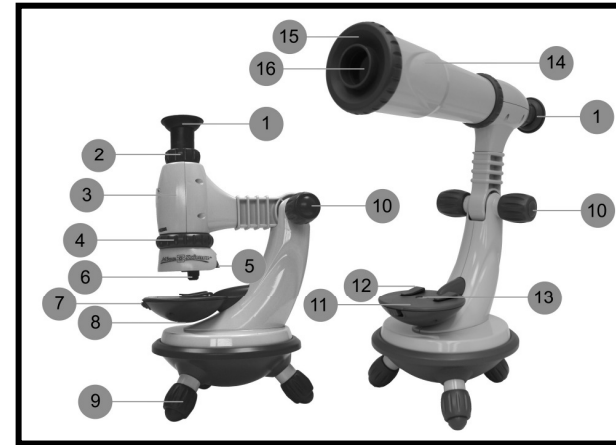
Helpful Hints

- The essential component of the telescope/microscope is the lens. Consequently, adequate care must be exercised when dealing with the lens.
- This telescope/microscope should be stored in a moisture free place. Because moisture build up on the lenses will reduce the light intensity.
- After it is utilized, protect the unit from dust by covering it or putting it back into the box.
- If the lens gets dusty or dirty, it is suggested to clear off the lens surface with a soft cotton cloth or tissue. Do not rub the lens with a finger or unclean cloth.
- If the microscope is not used for a long period of time, discharge the light source batteries.

Always keep instructions to hand.

Converting Your Microscope into Telescope (and vice versa)

1. Before removing the microscope objective tube, adjust the focusing knob (2) until the eyepiece (1) is at the most extended position.
2. Loosen the arm adjustment knob (10) and flip the main body (3) to the horizontal position. Tighten the knob.
3. Turn the objective release knob (4) in the direction marked "Release" until the microscope objective tube is completely separated.
4. Mount the telescope tube (14) into the main body (3) and tighten it by turning the objective release knob (4) in the "LOCK" direction. Note the orientation of the protrusion at the mouth of the tube must match that in the main body.
5. To convert the telescope back into a microscope, follow similar procedures to replace the telescope tube with the microscope objective tube.

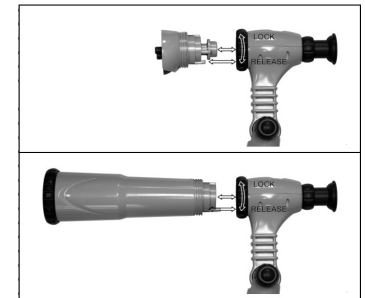


Contents

- 1 Telescope/Microscope base
- 1 Microscope objective tube w/ cover
- 1 Telescope tube (20X) w/ lens cover
- 10 Blank slides
- 2 Prepared slides
- 24 Cover glasses
- 24 Blank labels
- 24 Slide covers
- 1 Pair of tweezers
- 1 Screwdriver
- 2 Collecting vials
- 1 Plastic pipette
- 1 Manual

Components

- 1) Eyepiece
- 2) Focusing knob
- 3) Main body
- 4) Objective release knob
- 5) Magnification revolving turret
- 6) Microscope objective
- 7) Microscope illuminator switch
- 8) Battery compartment
- 9) Tripod leg
- 10) Arm adjustment knob
- 11) Microscope stage
- 12) Clip
- 13) Microscope illuminator
- 14) Telescope tube
- 15) Lens hood
- 16) Telescope objective



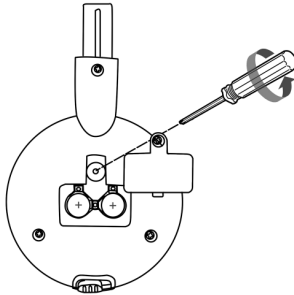
How to use your telescope

1. Glance through the main telescope's eyepiece (1) for your object. (Note: You may have to alter the angle of the telescope slightly.) The object will most likely seem to be blurry at this stage, but that is normal. You are just trying to get the object in the viewing field of your telescope lens. Once you have accomplished this task, fasten the arm adjustment knob (10) to keep the accuracy of your telescope steady.

- Now adjust the focusing knob (2) slowly back and forth until the blurred object becomes precise. Note that the object will appear reversed (upside down), this is normal as this telescope is design for viewing astronomical objects.

Using the Microscope

- Firstly, insert 2 AG13/LR44 batteries at the bottom of the microscope stage. You will need to use a screwdriver to open the battery case cover.



- Now put the prepared slide on the stage, and fasten it in place with the clip.



- Next, choose the magnification strength you desire. In general, it is recommended to begin with lower magnification for easier focusing. To change the magnification setting, turn the magnification revolving turret (5), which is on the opposite side of the magnification indicating window, until you hear a click.



- Turn on the illuminator for viewing.

- Look through the eyepiece and slowly adjust the focusing knob until the object on the slide becomes clear. To view different part of the slide, adjust the slide position until the desired object appears through the eyepiece.



How To Make a Prepared Slide

Please note that if the given specimen is not thin and crystalline, it cannot be inspected by the microscope. This is due to the fact that light from the light source does not advance through.

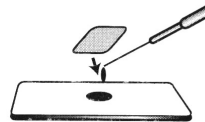
- Fibres of wool, pollen, or salt will be simple to see, and will not need a cover glass.
- Crystal-clear specimen are stain first with a drop or two drops of methylene blue. Eosin or other dyeing solutions are available on the market.

Also note these are dyeing solutions, and thus could induce staining of clothing, fabrics, and carpets. Extreme care should be handled with when dealing with these solutions.

1. Temporary Mount

- Wipe the slide and cover glass clean
- Thin the sample with a razor blade. (Be extremely careful)
- Then pick it up with tweezers, and put it on the centre part of the glass slide.
- Next, add one drop of water on the sample with a dissecting needle. If the sample is clear, add one drop of methylene blue or eosin solutions. (Be extremely careful)
- Gently put the cover glass on top of it, be sure not to let any air bubbles go in.
- Remove any excess water or dyeing solutions with blotting paper.
- Now, it is ready for observation.

Remember to wash your hands immediately after doing the preparations and dispose the dyeing solutions down the drain but not into a sink.



2. Permanent Mount

- Wipe the slide and cover glass clean.
- Continue as above but before covering the slide with the cover glass, add few drops of gum media (or Canada balsam) solution or transparent adhesive glue with a dissecting needle to the slide.
- Place the cover glass on top with tweezers, and leave it to dry for about a day.

Safety Recommendations:

Always seek medical attention in case of any doubts.

In case of:

- Eye contact: Wash the eye with plenty of water, and if necessary hold the eye open.
- Inhalation: Remove person to fresh air.
- Cut: The wound should be washed in antiseptic solution, or clean water. Next, put on a bandage.
- Swallowed: Do not encourage vomiting. Wash mouth with water, and drink fresh water.

In any of the above situations, please contact a doctor.

CARE OF YOUR TELESCOPE

Your telescope should be kept away from dust and moisture. If the lenses get dirty, blow any dust particles off before cleaning. Clean the lenses with a moistened lens tissue. Always store your telescope in the box when not in use.

DO NOT VIEW SUN THROUGH TELESCOPE AS SERIOUS INJURY TO EYE MAY RESULT.

**IMPORTANT:
Keep these instructions.
DO NOT DISCARD.**



If at any time in the future you should need to dispose of this product please note that Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice. (Waste Electrical and Electronic Equipment Directive)