



CAUTION

WARNING

Nickel Metal Hydride Battery
 Regular charge 8 hours / Maximum 12 hours
 Do not use non-rechargeable batteries. Only use the rechargeable NIMH battery and power supply/charger provided by Ken-A-Vision.
 Replacement Power supply - catalog no. VFPS1209300R (110v)
 VFPS230R-2 (230v)
 Replacement Battery - catalog no. SCBATBU2

Do Not put battery pack in fire or mutilate, battery may burst or release toxic materials that may cause burns!

WARRANTY: TEN YEAR WARRANTY AGAINST DEFECTIVE PARTS AND WORKMANSHIP. EXCLUDES BULB AND BATTERY.

Ken-A-Vision has quality technicians on staff to repair or service your microscope. **Contact us at 1.816.353.4787 for more details.**

Ken-A-Vision reserves the right to make design improvements and other changes in accordance with the latest technology. There is no obligation to make changes in products already manufactured. Patents Pending Copy Right 2002 Ken-A-Vision Corporation.

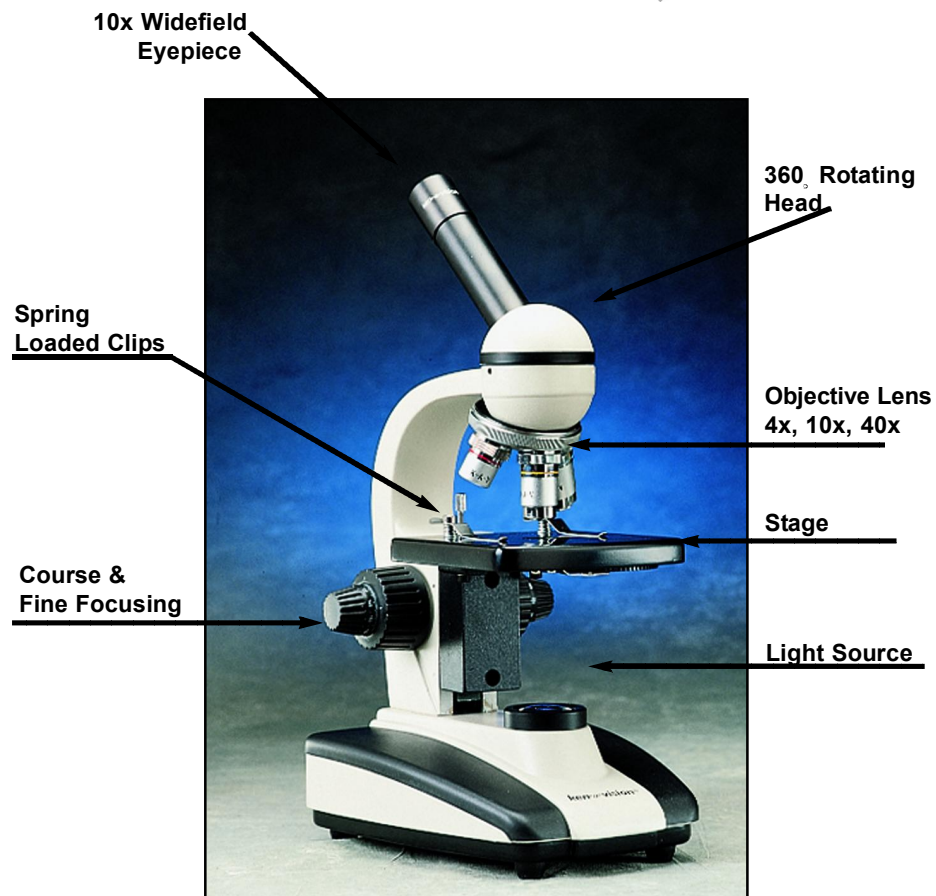


KEN-A-VISION MANUFACTURING Co., Inc.

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kav.instcman.cordless.pc.v2
Part# INS-SC8C



Cordless Comprehensive

Supplemental Instruction Manual

T-1901C

T-1902C

T-1903C

INSTRUCTIONS FOR USE OF YOUR KEN-A-VISION CORDLESS MICROSCOPE

1. Plug in the round pin adapter from the battery charger to the back of your microscope.
2. Then connect the opposite end to a 110v (220v international) electrical outlet.
3. With 1 over-night charge you can use your microscope for up to 40 hours of continuous operation.
4. *You do not have to fully discharge or drain the battery to recharge.*

TECHNICAL SPECIFICATIONS FOR MODEL NO. T-1900C SERIES

- Power Source Life: 500 Cycles (approximately 4-5 years depending on usage)
- Light Source Technology Equivalent to a 20 Watt Bulb
- Power Source: Built-in rechargeable NIMH (Nickel Metal Hydride)
- Light Board Life 100,000 Hours
- Cool Operating Temperature Less Than 25°C (75°F)
- 10 year warranty on microscope. Warranty does not apply to battery.

EQUIPMENT RATING:

DESCRIPTION OF INPUT OUTPUT CONNECTION

Should you need a replacement power supply, contact Ken-A-Vision or your dealer. When using internationally, be sure to use the correct AC voltage either 110v, 220v, or 240v output voltage. (catalog # VFPS230R-2 (230v) or VFPS1209300R (110v). Output voltage is 9 volt DC 300mA and a 2.5 mmV barreled styled center position plug connection of



INPUT: 9VDC, 300 MA

The power supply/charger are made exclusively for the Ken-A-Vision Cordless Microscope. Failure to use non-Ken-A-Vision parts will void the warranty of your microscope.

Note: This equipment has been tested and found to comply with the limits for UL Standard 61010A-1.

ENVIRONMENTAL CONDITIONS

This equipment is designed to be safe at least under the following conditions:

- indoor use;
- altitude up to 2 000 m, or above 2 000 m if specified by the manufacturer
- temperature 5° to 40°C;
- maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C;
- main supply voltage fluctuations not to exceed +/- 10% of the nominal voltage;
- other supply voltage fluctuations as stated by the manufacturer;
- transient overvoltages according to installation categories;
- Pollution Degree 2 in accordance with IEC661
Normally non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation must be expected.

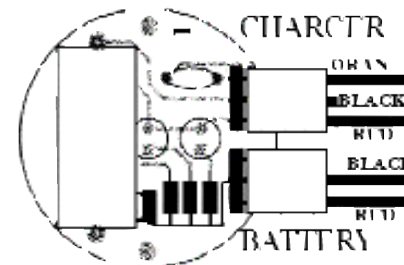
EQUIPMENT MAINTENANCE

The battery type is NIMH (Nickel Metal Hydride) part # VFBATBU2
Should you need a replacement power supply/charger, or battery, contact your nearest Ken-A-Vision dealer.

INSTRUCTIONS FOR REPLACEMENT OF CHARGER

Remove the connector cable marked battery from the light board. Next remove the old NIMH battery and properly discard.

To replace the NIMH battery simply plug in the cables to the appropriate color codes indicated. below. Secure the velcro strips to the battery and affix to the bottom of your microscope.



CONNECTOR COLOR CODE

Mechanical Stage (included on model T-1903)

The mechanical stage is a mechanical way to move the slide around on your stage. It consists of a slide holder and two knobs. The knobs are located on side below the stage. One knob moves the slide forward and backward. The other knob moves the slide from left to right.

BULB REPLACEMENT

- a. Before changing the bulb, make sure that the power switch is off and the power cord has been disconnected from the main supply.
- b. On the bottom of your microscope use a slotted screw driver to remove the screw on the lamp door. Pull open the lamp door and carefully remove the old light bulb from the socket by gently pushing in and turning bulb one quarter turn counter clockwise using the lens paper to hold the bulb. Put in new bulb and push, and turn clockwise .
- c. Avoid touching the glass surface of the bulb with bare hand. Any oil brought onto the bulb by the bare hand will negatively affect the heat dissipation and shorten the life of the bulb. Use two fingers and pull the bulb out touching the metal part of the bulb. Clean the bulb surface with alcohol and lens paper if the user has touched the bulb surface accidentally.
- e. Specification of the bulb can be found on the surface of the microscope. Replacement bulbs may be purchased on Ken-A-Vision web site under accessories at www.ken-a-vision.com

INTERCHANGING THE HEAD

Using an allen wrench, insert into arm next to head. Loosen screw to remove plastic dust cap. Set desired microscope head on arm. Tighten screw with allen wrench until snug. No need to over tighten.

The 100x Objective lens can be installed simply by removing nosepiece plug from hole and screwing 100x Objective into place, until snug.

CARE AND MAINTENANCE

Your microscope is a fine precision instrument and should be treated with care. When not in use it should be protected from dust by the plastic cover provided. Lenses and eyepieces should be cleaned periodically with optical lens tissue which is soft and lint free. Painted surfaces can be cleaned with a moistened cloth.

When using a 100xR objective oil emersion lens, be sure not to leave any oil on the lens after use. Dip a cotton swab or lens paper with a small amount of denatured alcohol, and clean the lens surface carefully. Do not use aggressive solvents to clean lens.

Ken-A-Vision has quality technicians on staff to repair or service your microscopes. Ken-A-Vision recommends service every two years for optimal life of the product. Contact us at 1.816.353.4787 for more details.

WARRANTY: TEN YEAR LIMITED WARRANTY AGAINST DEFECTIVE PARTS AND WORKMANSHIP.



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part# INS-SC8



Comprehensive Scope

Instruction Manual

T-1901

T-1902

T-1903

T-1901F

T-1902F

T-1903F

COMPREHENSIVE SCOPE

Application

The Comprehensive microscope is so versatile it allows you to transform your microscope. Simply add a different head, objective lens and mechanical stage with Abbe condenser to create a completely different microscope. The contour metal base is covered with high-density plastic to prevent chipping under normal use.

SPECIFICATIONS

Catalog#	T- 1901	T-1902	T-1903
10x Widefield Eyepiece w/ pointer	•	•	•
Monocular Interchangeable Head	•		
Dual View Interchangeable Head		•	
Binocular Interchangeable Head			•
4 Hole Reversed Nosepiece	•	•	•
4x, 10x, 40xR Objective lens	•	•	
4x, 10x, 40xR, 100xR Objective lens			•
Coarse and Fine Focal Adjustment	•	•	•
Built-in 20 watt Illuminator	•	•	•
Built-in Abbe Condenser			•
Interchangeable Mechanical Stage			•
Contour Base	•	•	•

*All models are available with fluorescent lighting (110-volt 5-watt fluorescent lamp)

MICROSCOPE PREPARATION

For shipping purposes your Comprehensive Microscope has been shipped with a restraining strap. **Please Cut the strap prior to use as you will not need it again.**

Check the coarse focus tension. The knobs are oversized were designed for better gripping. The coarse focus knob should turn easily to change the focus, but the stage should not drift or slip on its own.

Check the stage stop safety feature. Be sure the stage moves up and down when turning the focusing knob. The stage stop is a thumb screw with a lock nut found just behind the stage. To check the stop, first place a prepared slide in position for viewing. Move the coarse focus until the object and stage are as close together as they can be. Look at the slide and turn the 40x objective into place. This objective should be very close to the slide, but not touching.

Operation

Built-In Illuminator

Turn off the power switch before connecting the power cord located at the rear of the microscope. An in-base illuminator is built into the base of the microscope and cannot be removed. Bulb replacement can be done from the underneath side. See Bulb Replacement instructions. The built-in 20 watt bayonet incandescent bulb or 5 watt fluorescent provides all the light needed for illumination. **Do Not Use Any Other Bulb As It Will Damage The Unit.**

Eyepiece

The widefield eyepiece is locked in to place to avoid loss of eyepiece. The eyepointer is built-in to the eyepiece.

(T-1902) The dual viewing head allows two people to look at the same specimen at the same time or connect a camera to one eyepiece for group presentation. One of the dual viewing eyepieces has a diopter on the tube for focusing. This allows focusing for each person's individual eye correction.

(T-1903) The binocular eyepiece has a diopter on both eyetubes for focusing.

Interpupillary Adjustment (included on model T-1903) When using the binocular microscope there is an adjustment for the distance between the viewer's eyes called interpupillary adjustment. The eyepiece lenses will spread apart or get closer together to fit each individual. Place one hand on each side of the binocular head next to the eyepieces and push in and out until the distance between the eyes is comfortably positioned. You will see one image.

Focus

Place a specimen slide under the stage clips or in mechanical stage and move into position for viewing. Use the 4x objective first. Raise the stage until it will go no higher. Then lower the stage to bring into focus. Use the fine focus knob to achieve optimum resolution. Once the image is sharp you should be able to simply turn the nosepiece to the next objective lens and do minor adjustments with the fine focus knob.

With Coaxial focusing both the coarse and fine focus knobs are on the same axis. The coarse focus knob is the larger knob located next to the arm of the microscope. The fine focus knob is the smaller knob mounted on the outside of the coarse focus knob. Having both sets of knobs on the same axis makes it easier to switch from one focus knob to the other without removing your attention from your prepared slide.

Disk Diaphragm (T-1901 & T-1902)

The rotating disk is located under the stage (1=Smallest 6=Largest). The different sized holes are used to control the amount of light that is projected upward into the slide. Simply bring one of the five different sized holes in line with the stage opening. There is no set rule regarding which setting to use with a particular lens.

Abbe Condenser 1.25 N.A. (included on model T-1903)

The purpose of the condenser lens is to focus the light onto the specimen. (adjust the amount of light needed on a specimen) The N.A. of 1.25 gives it the ability to be used with higher magnification 100x objective lens. Movement of the condenser is controlled by a lever that moves from side to side.