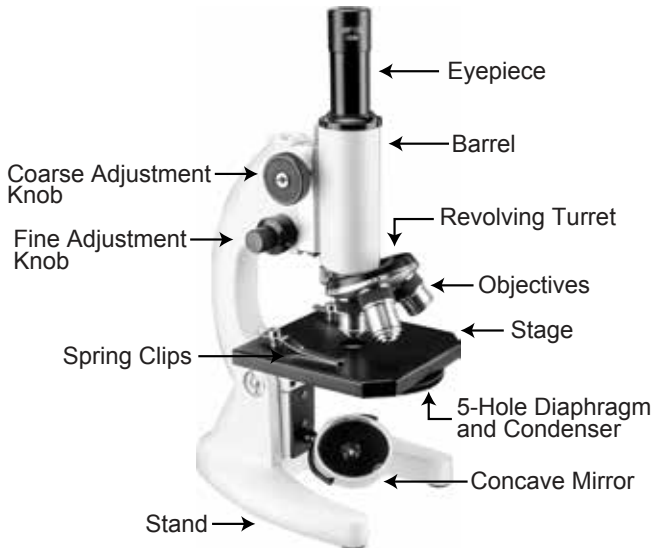




Microscopes



AY13070 and AY13072 are designed for general research of biology and bacteriology in hospitals, labs, research institutions and universities as well as for clinical testing and teaching demonstrations. By choosing the difference objective and eyepiece, different magnifications can be obtained. The maximum magnifications are 40x, 100x, 400x.

Specifications

1. Mechanical tube length: 160mm.

2. Objectives:

Magnification	NA	Working Distance (mm)	Sytem
4x	0.1	36.6	Dry
10x	0.25	7.634	Dry
40x	0.65	0.530	Dry

3. Eyepiece Magnification: 10x

4. Field of View (mm): 16 mm

5. Magnification:

Objective	Magnification		Eyepiece
	4x		10x
	10x		40x
	10x		100x
	40x(s)		400x

6. Coarse Adjustment: 50mm

7. Fine Adjustment: 1.8-2.2mm

8. Stage: 120x100 mm

9. Mirror (plane and concave) 50mm diameter

## Operation

1. Place the specimen slide on the stage and clamp it with clips.
2. Mount objectives on revolving nosepiece and eyepiece on body tube respectively.
3. Use low power objective to observe the object first and then move the objective to the center of the bright field of view, then with a high power objective to observe.
4. When focusing, first adjust knob forward until a sharp image is obtained. When using high power objective raise the objective from the lowest position gradually to make it not in contact with the specimen slide to avoid any possible damage.
5. Turn reflecting mirror until the illuminating light reflects into the tube and bright field of view is visible, then adjust the aperture of iris diaphragm (disc) to secure clear image. Note: DO NOT REFLECT THE SUN WITH THE MIRROR. This can cause serious eye injury or permanent eye damage.
6. Observe the specimen using the lowest magnification objective first. The 4x objective provides a larger field of view to search specimen.
7. To clearly see the outline of the specimen, rotate the coarse adjustment knob and lower the barrel to the space limiter.
8. Rotate the fine adjustment knob until the image is in sharp focus. When using other objectives, rotate the fine focus adjustment until the image is in focus.

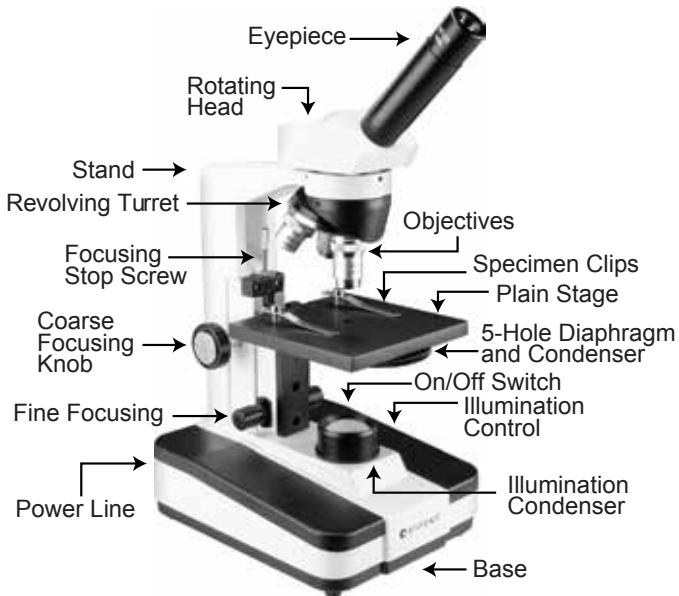
## Diaphragm

1. To obtain the best contrast for observing, match the hole size to the objective that is being used to view the specimen.
2. Each hole has a corresponding number from 1 to 5. 1 is the smallest hole; 5 is the largest hole Use the following guidelines to match the hole number to the objective that you have selected
  - 40x objective: Use #5 hole
  - 10x objective: Use #4 or #3 hole
  - 4x objective Use #2 or #1 hole

## Maintenance

Proper care and storage of this instrument is essential. Please read the following guidelines

1. Keep the instrument in a dry and moisture-free location.
2. Do not expose to acid, alkali fumes or moisture.
3. Keep optical parts clean and free of dust. To clean optical parts gently wipe with lens cleaning tissue and a mixture of alcohol and diethyl ether. Depending the weather conditions the following is the recommended mixture ratios.
  - Wet weather 1:2
  - Dry weather 1:1
4. After use, cover the instrument with the plastic dust cover.
5. If instrument is to be store for an extended period of time remove the eyepiece and oculars and store in moisture proof container.



### Specifications

1. Mechanical tube length: 160mm.

2. Objectives:

Magnification	NA	Working Distance (mm)	Sytem
4x	0.1	36.6	Dry
10x	0.25	7.634	Dry
40x	0.65	0.530	Dry

3. Eyepiece Magnification: 10x

4. Field of View: 18mm

5. Magnification:

Objective	Magnification	Eyepiece
		10x
	4x	40x
	10x	100x
	40x(s)	400x

6. Conjugated Distance Between Object and Image: 195mm

7. 5 Hold Diaphragm and Condenser: N.A 0.65

8. Stage: 120x100 mm

9. Fine Focusing Adjustment Range: 2 mm

10. Coarse Focusing Adjustment Range: 20 mm

11. Lamp: 6V/20W Halogen lamp

### Operation

1. Remove components from package. Identify all parts before assembling.

2. Attach 4x, 10x and 40x objectives to revolving turret.

3. Place the specimen on the stage and secure with spring clips. NOTE: The cover glass must face upward (the thinner glass is the cover glass), otherwise when the 40x objective is used the specimen cannot be observed. Observation is best when the thickness of the cover glass is 0.1-1.1mm and the cover glass is 0.17mm.
4. Plug power cord into an electrical outlet. Turn microscope lamp ON.
5. Observe the specimen using the lowest magnification objective first. The 4x objective provides a larger field of view to search specimen.
6. To clearly see the outline of the specimen, rotate the coarse adjustment knob and lower the barrel to the space limiter.
7. Rotate the fine adjustment knob until the image is in sharp focus. When using other objectives, rotate the fine focus adjustment until the image is in focus.

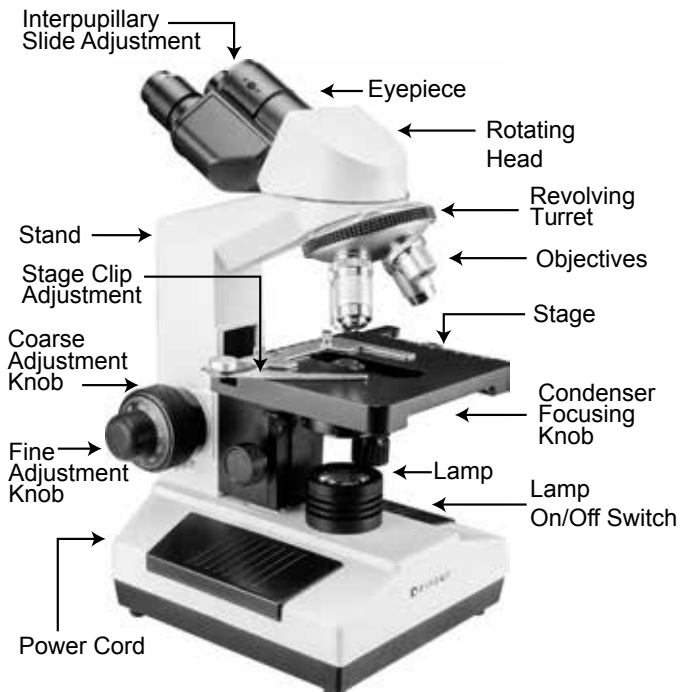
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### Maintenance

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1. Keep the instrument in a dry and moisture-free location.
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  - Wet weather 1:2
  - Dry weather 1:1
4. After use, cover the instrument with the plastic dust cover.
5. If instrument is to be store for an extended period of time remove the eyepiece and oculars and store in moisture proof container.



## Applications

The biological microscope model AY13074, can be widely used in medical and sanitary establishments, laboratories, institutes, network of agricultural research, colleges and universities for clinical microscope inspections and used as instructional equipment. They also can be used in research work such as biology, bacteriology, cytology, histology and pharmaceutical chemistry.

## Specifications

### 1. Eyepiece

Designation	Magnification	The Field Of View	Focal
Wide Field	10x	18mm	24.94mm
Wide Field	20x	10mm	12.53mm

### 2. Objective:

Designation	Magnification	Numerical Aperture	Working Distance
Achromatic	4x	0.10	17.912mm
	10x	0.25	2.04mm
	40x	0.65	0.65mm
	100x (Oil)	1.25	0.09mm

### 3. Total Magnification:

Total Magnification Eyepiece	Objective	4x	10x	40x	100x
10x	40x	400x	1000x		
20x	80x	200x	800x	2000x	

4. Abbe Type Condenser N.A.=1.25 With An Adjustable Iris Diaphragm
5. Coarse Focusing Range: 30mm With A Coarse Focusing Stopper
6. Fine Focusing Range: 30mm Fine Focusing Division Interval: 0.002mm
7. Area Of The Stage: 130X 140mm  
Specimen Shifting Range: Transversal 75mm  
Longitudinal 50mm
8. 0.5W/LED Built-In Brightness Variable Lamp

### Structure

#### Mounting

Mounting is the base of the microscope. It supports the all weight of the microscope. This mounting has four rubber foots and that makes the instrument stable.

#### Illumination System

In order to make the observed specimen have enough brightness and make the resolving power of the objectives be used fully, this instrument adopt 6V20W built-in brightness variable lamp. Turn the iris of the condenser and make the aperture of condenser suitable for the aperture of objective. The condenser is composed of two parts. One is installed on trestle. This trestle can move up and down by rack and gear. The light axis of the condenser must coincide with the light axis of this instrument. When they diverge, adjust 3 screws in the trestle of the condenser. The other is installed on the mounting.

#### Mechanical Stage

The mechanical stage can make the specimen move transversely and longitudinally.

#### Eyepiece, Objective and Nosepiece

The microscope imaging system is composed of eyepiece and objective. According to their magnifications, rotate the objectives into the threaded holes of the nosepiece so that when turning the nosepiece, you can change the objectives and get the needed magnification swiftly. The nosepiece adopts precise and advanced structure. When changing the objectives, the center area of the field view always locates within the range of observing and satisfies the focusing requirement. The eyepiece tube that the eyepieces are inserted into is inclined 45° and so observing is comfortable and convenient.

#### Coarse and Fine Focusing Equipment

This instrument adopts coaxial coarse and fine focusing equipment. The knobs

are located below the stage. So it is easy to operate. Coarse and fine focusing range is 30mm. There is knob beside each coarse focusing knob. Right one is used as tightness adjustment for coarse focusing knob. The other is used as coarse focusing stopper. When you see the specimen clearly, you may lock up the stopper. When you lower the stage and raise it again the stage is at the same level. When you do not need the location, you can turn the flange of the stopper and loose it.

Warning: When using high power objective, move adjustment knob slowly. Moving the adjustment quickly may cause the objective to break the slide.

Usage

1. Rotate the objectives in sequence, according to their magnification, into the thread holes of the nosepiece. Insert the eyepieces into the inclined eyepiece tube.
2. Put the specimen on the stage. Adjust it and make the specimen in the center of the hole of the stage. Use adjustment knobs located on the left side of the microscope.
3. First use objective 10x, turn the coarse focusing knob and make the objective near specimen and then observe the image through eyepiece and turn the coarse focusing knob down until you can see the specimen image. After that turn the fine focusing knob until you get a sharp image. Because this instrument adopts precise and reliable nosepiece, you can always observe a clear image with different objectives.
4. Take out the lower condenser and put a plan-concave reflecting mirror and you can also observe the specimen image.

Includes

Qty	Description
1	Main Body
2	Eyepiece WF10x, 20x
1	Objective 4x, 10x, 40x, 100x
1	Spare Lamp
1	Spare Fuse
1	Cedar Oil
1	Operation Instrument

Maintenance

- The microscope is the same as other optical instrument. Need to be kept in cool, dry, dustless and aidless place. The instrument should be covered with dust guard after using.
- Never disassemble the lens because they are corrected stringently. If there is stain on the lens, it can wipe out by alcohol, but you should pay attention not seep it into the inside of objectives so as not dissolve glues. Dust on the lens can be wiped away by clean brush.
- Coarse and fine focusing equipment and nosepiece are precisely constructed and should not be dismantled without authorization.



- When not in use, keep the objectives in the objective box and cover the eyepiece tube with eyepiece tube cover.



## 1 YEAR LIMITED WARRANTY

### MICROSCOPES

BARSKA warrants your microscope to be free from defects in materials and workmanship for one (1) year. BARSKA will repair or replace such product or part thereof which, upon inspection by BARSKA, is found to be defective in materials or workmanship. As a condition to the obligation of BARSKA to repair or replace such product, the product must be returned to BARSKA together with proof-of-purchase satisfactory to BARSKA.

The proper Return Merchandise Authorization Number (RMA) must be obtained from BARSKA in advance of return. Please e-mail [info@barska.com](mailto:info@barska.com) or call 1.888.666.6769 for Return Merchandise Authorization number (RMA) before any returns. NOTE: All merchandise received without a valid RMA number will be returned to shipper at his/her own expense.

BARSKA products should be sent to the following address for warranty repairs. Products must be packed carefully and sturdily to prevent damage in transit, and returned freight prepaid to:

BARSKA  
855 Towne Center Drive  
Pomona, CA 91767

For additional and updated information  
please visit our website at [www.barska.com](http://www.barska.com)

Please include all of the following when returning BARSKA products for service and/or replacement:

1. Please write your complete details (Name, Address, Telephone#, E-mail address, RMA#, etc.)
  2. Purchase receipt or Proof of Purchase. (Original/Copy)
  3. A brief explanation of the defect.
  4. A Check/Money Order for \$50.00 to cover inspection, shipping and handling.
- \*Please allow 6-8 weeks for delivery.

The customer shall be responsible for all costs of transportation and insurance, both to and from BARSKA, and shall be required to prepay such costs.

BARSKA shall use reasonable efforts to repair or replace any microscope covered by this warranty within 30 days of receipt. In the event repair or replacement shall require more than 30 days, BARSKA shall notify the customer accordingly. BARSKA reserves the right to replace any product which has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void and of no force or effect in the event a covered product has been modified in design or function, or subjected to abuse, misuse, mishandling or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

BARSKA DISCLAIMS ANY WARRANTIES, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR USE, EXCEPT AS EXPRESSLY SET FORTH HEREIN. THE SOLE OBLIGATION OF BARSKA UNDER THIS LIMITED WARRANTY SHALL BE TO REPAIR OR REPLACE THE COVERED PRODUCT, IN ACCORDANCE WITH THE TERMS SET FORTH HEREIN. BARSKA EXPRESSLY DISCLAIMS ANY LOST PROFITS, GENERAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM BREACH OF ANY WARRANTY, OR ARISING OUT OF THE USE OR INABILITY TO USE ANY BARSKA PRODUCT. ANY WARRANTIES WHICH ARE IMPLIED AND WHICH CANNOT BE DISCLAIMED SHALL BE LIMITED IN DURATION TO A TERM OF ONE YEAR FROM THE DATE OF ORIGINAL RETAIL PURCHASE.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

BARSKA reserves the right to modify or discontinue, without prior notice to you, any model or style microscope.

If warranty problems arise, or if you need assistance in using your microscope contact:

BARSKA Customer Service Department Tel. 1.888.666.6769 Fax. 909.445.8169  
Monday-Friday 8:30AM-5:30PM PST or e-mail: [service@barska.com](mailto:service@barska.com)

NOTE: This warranty is valid to U.S.A. customers who have purchased this product from an authorized BARSKA dealer in the U.S.A. This warranty is limited to the original purchaser and is not transferable.

BARSKA shall not be liable for any consequential, incidental and/or contingent damages whatsoever and is not responsible for damage to personal property. We will not pay shipping, insurance or transportation charges from you to us, or any import fees, duties and or taxes. This warranty supersedes all previous BARSKA warranties.