

- 1 Never clean lenses with anything other than an optical lens cloth or lens paper and lens cleaning solution. You can purchase these at any store that sells eyeglasses or cameras. Using any other cloth or tissue can damage and scratch the glass. Make every effort not to touch the glass optics with your finger. This will leave oils on the lens that will attract dust. Dust in the nosepiece, or in the ocular tube, should be blown out using only filtered air (canned air dusters work well).
- 2 Do not attempt to clean any internal optics on your own. Internal maintenance should be performed only by a qualified service technician.
- 3 Always cover your stereo microscope with the dust cover when not in use.
- 4 Any spilled liquid or powder should be cleaned up at once.
- 5 To keep your stereoscope in top condition for years, LW Scientific recommends that you have the scope professionally serviced once a year.

Achiever / Paragon Specifications

Construction
Acid and reagent resistant finish

Binocular Head
Inclined binocular rotates 360 degrees
Dual 10x wide field eyepieces
Interpupillary distance adjustment 51-81mm

Illumination**
Cool fluorescent dual illumination - top and bottom
Four-way switch allows for both incident and/or transmitted light
Five watt bright fluorescent bulb
**Achiever only, illumination for Paragon available for purchase separately

Objectives
1x and 2x, 1x and 3x, or 2x and 4x paired objectives
Working distance 90mm

Adjustment Controls
Helical rack and pinion focusing with tension adjustment and slip clutch
Pole mount allows for samples of up to 170 mm in height

Stage
Achiever: Stage plate diameter 75mm
Paragon: Stage plate diameter 95mm

Power - Achiever
110v (220v available)

Dimensions and Weight - Achiever
Height: 12.8" (325 mm)
Length: 9" (228 mm)
Width: 6.5" (165 mm)
Weight: 9 lbs (4.08 kg)

Dimensions and Weight - Paragon
Height: 15" (381 mm)
Length: 9" (228 mm)
Width: 5.9" (149 mm)
Weight: 6 lbs. (2.72 kg)



Achiever / Paragon

Instruction Manual



Models pictured:
Achiever, Paragon and Paragon Flex Arm
Not all features available on all models - see back page for model specifications.

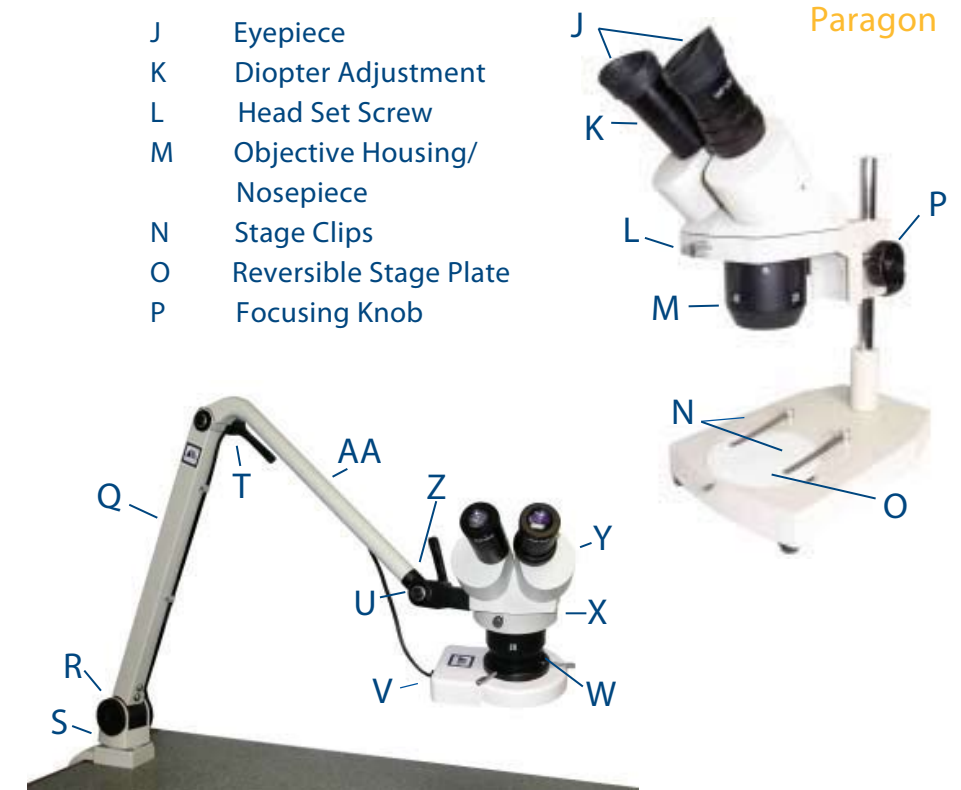


Achiever

- | | | | |
|---|---------------------------------|---|-------------------|
| A | Eyeiece | E | On/Off Switch |
| B | Diopter Adjustment | F | Transmitted Light |
| C | Objective Housing/
Nosepiece | G | Stage Clips |
| D | Incident Light | H | Focusing Knob |
| | | I | Head Set Screws |

Paragon Flex Arm

- | | |
|----|---|
| Q | Arm A |
| R | Hinge 1 |
| S | Swivel 1 |
| T | Hinge 2 |
| U | Hinge 3 |
| V | Optional Illumination |
| W | Supplementary Lens,
or Mounting Ring |
| X | Head Holder Ring |
| Y | Microscope Head |
| Z | Swivel 2 |
| AA | Arm B |



Paragon



Fluor. Ring Light Supplementary Lens*
*not compatible with Achiever LED Ring Light Eyepieces
(10x/22, 15x, or 25x)

Recommended
Upgrades:



Assembly and Operation

Your stereo microscope has been packed with utmost care to avoid damage in shipping. Retain all of the packing material. If there is damage, please contact the shipping company, as our warranty does not cover shipping damage. If you are uncertain who the shipping company was, please contact the distributor where you purchased the microscope.

Note: If your microscope has been exposed to cold weather, please allow time for all the parts to come to room temperature before use. Excess cold can fog the lenses and cause the lamp to fail.

- 1 Carefully remove the head and the body of the microscope and place on a secure surface. All parts are packed in the Styrofoam packaging.
- 2 Remove the protective tissue and plastic wrap from the head and body of the microscope. Save the plastic wrap in the Styrofoam container.
- 3 Set the microscope base/stand upright and locate the circular headholder. (If you have the Flex Arm system please see the included sheet for setup). Notice the one or two silver colored thumb screws on the head holder. The Paragon has one screw in the front. The Achiever has two screws (one on each side). Loosen these screws enough to allow free passage of the objective nosepiece (the black housing that holds the objective lenses) into the circular head holder.
- 4 Bring the head and body together by inserting the black objective nosepiece into the circular area of the upright arm. Once the head is completely seated, tighten the thumbscrews to secure the head in place. Note: Do not over-tighten.
- 5 Interpupillary Distance Adjustment: Once you are comfortably seated, adjust the oculars (eyepieces) by moving the eyepiece tubes together or apart until you see only one circle of light. You have now adjusted your interpupillary distance.
- 6 Diopter Adjustment: Since you are using a binocular stereoscope, you have to adjust for the normal difference in vision between your two eyes. This is a simple but important adjustment! Close your right eye; look into the left ocular with your left eye; adjust the focus to give you the best image. Now, look at the ocular tube on the right. You will see that the right ocular tube has an adjustment ring built in. Close your left eye, and look into the right ocular with your right eye. Using the diopter adjustment ring on the right ocular tube, adjust until you see a clear, in-focus field.
- 7 Objective Settings: On the side of the objective housing, you will notice a 1x and a 2x, a 1x and a 3x, or a 2x and a 4x marked in white. A simple twist of the black objective housing will change the objective setting. The objective setting you wish to use should be on the front of the housing. Magnification is calculated in the following manner:
 $2x (\text{objective setting}) \times 10x (\text{power of the oculars}) = 20x \text{ magnification}$

Achiever Illumination*

- 1 After plugging the Achiever into an appropriate wall outlet, turn on both power switches located on the base. The front switch operates the "transmitted light" which is beneath the stage. The rear switch operates the "incident light" which is on the neck. The two fluorescent bulbs will flicker several times before illuminating. If one of the lights does not come on, check to ensure that the bulb has not come loose during shipping. If this is not the case, contact LW Scientific for technical assistance.
- 2 To view non-transparent specimens, use the incident light on with the rear switch. Then, position a solid object such as a coin on the glass stage. For viewing semi-transparent specimens, turn the transmitted light beneath the stage. Try looking at a leaf or a dollar bill.

*If you are using the Paragon stereoscope, a variety of illumination options are available for purchase.

Achiever Lamp Replacement

Note: In order to prolong lamp life and reduce unwanted heat, LW Scientific uses fluorescent lamps. There are two (2) lamps installed in your Achiever stereoscope. Each lamp is rated at 5w, which is equivalent to a 25w incandescent bulb.

To replace the transmitted lamp in the base of the unit:

- 1 Unplug the microscope and lay the scope on its side.
- 2 Using a screwdriver, remove the four (4) screws on the bottom of the unit and remove the base plate cover. Do not remove the screws holding the feet.
- 3 With a left/right wiggling motion, grasp the old bulb and pull it out. It is a simple friction fit designed to come out easily. You may have to lift the plastic locking tab slightly with a small screwdriver.
- 4 Using a lint-free tissue or cloth to grasp the new lamp, push gently until it is seated in the lamp assembly and the locking tab clicks into place.
- 5 Replace the base plate cover, and replace the four (4) screws.

To replace the incident lamp in the neck:

- 1 Locate the incident light. On each side of the upright unit, you will see a silver screw. Both screws must be removed and saved.
- 2 Pull down and out on the lamp housing and set aside. The old lamp will now be visible.
- 3 With a left/right wiggling motion, grasp the old bulb by the base and pull it out. You may have to lift the plastic locking tab slightly with a small screwdriver.
- 4 Using a lint-free tissue or cloth to grasp the new lamp, push gently until it is seated in the lamp assembly.
- 5 Replace the lamp housing, and replace the two (2) screws.

Note: Your Achiever uses a common bulb found at many local home improvement warehouses and lighting supply stores. Carry your bulb with you, and ask for a G-23 5 watt fluorescent bulb, or call LW Scientific for a new bulb.

Optional Eyepiece Replacement

If you have purchased the optional 10x/22, 15x, or 25x eyepieces, you will need a small flat head screwdriver to install them.

- 1 Locate the set screw on the 10x eyepieces (standard on your microscope). The set screw is inside the hole on the eye tube; spin the eyepiece to find the set screw.
- 2 Remove the set screw; then remove the 10x eyepieces. Screw the set screw back into the 10x eyepieces to save for future use.
- 3 Slide the 10x/22, 15x, or 25x eyepieces into the eyepiece tube. The optional eyepieces do not have a screw and will not lock in place.

