Flinn Standard Stereoscope Owner's Manual

Flinn Economy stereoscopes are used for viewing 3-dimensional objects, such as leaves, insects, rocks and minerals and dissection specimens. They provide a magnified view that is not inverted, as it is with a compound stereoscope. The top light allows for viewing of solid objects, while the bottom light transmits light through a transparent object.

Please read and adhere to all recommendations in this manual to ensure the best experience and to maintain your stereoscope in good working order. This owner's manual is for the following models: MS1160 and MS1161.

Unpacking, Assembly and Storage

1. The stereoscope and accessories have been carefully packed to ensure they arrive in good working order. Retain the styrofoam container in case you need to transport, store, or return the stereoscope for service. If it becomes necessary to ship the stereoscope for any reason, pack it in the styrofoam container and in another box, secured for transport. Inadequate shipping may result in damage to your stereoscope.
2. Lay the molded stereoscope container with the UP sign facing you. Remove the top piece and inspect the contents and container. Each stereoscope comes with the following:
   a. Stereoscope head.
   b. Bracket.
   c. Pillar stand.
   d. Top LED fixture.
   e. Two WF 10X highpoint eyepieces.
   f. Rubber eyepiece shields.
   g. Dust cover.
   h. Opaque stage plate.
   i. Frosted glass stage plate.
   j. 12V/3.3 Amp power.

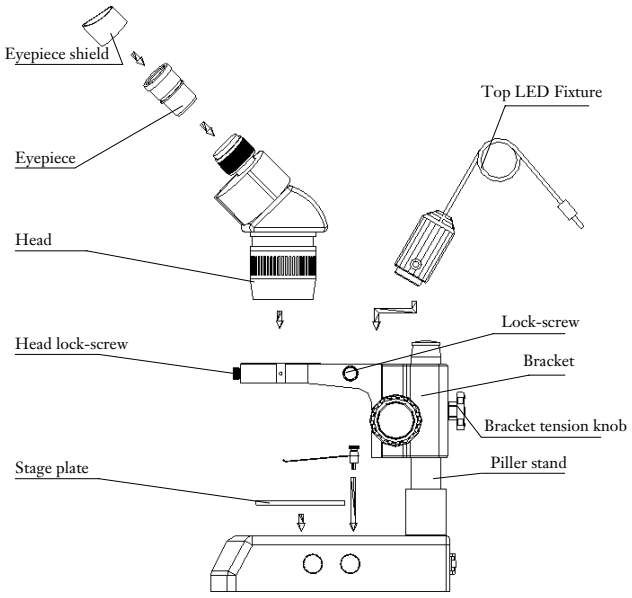


Figure 1.

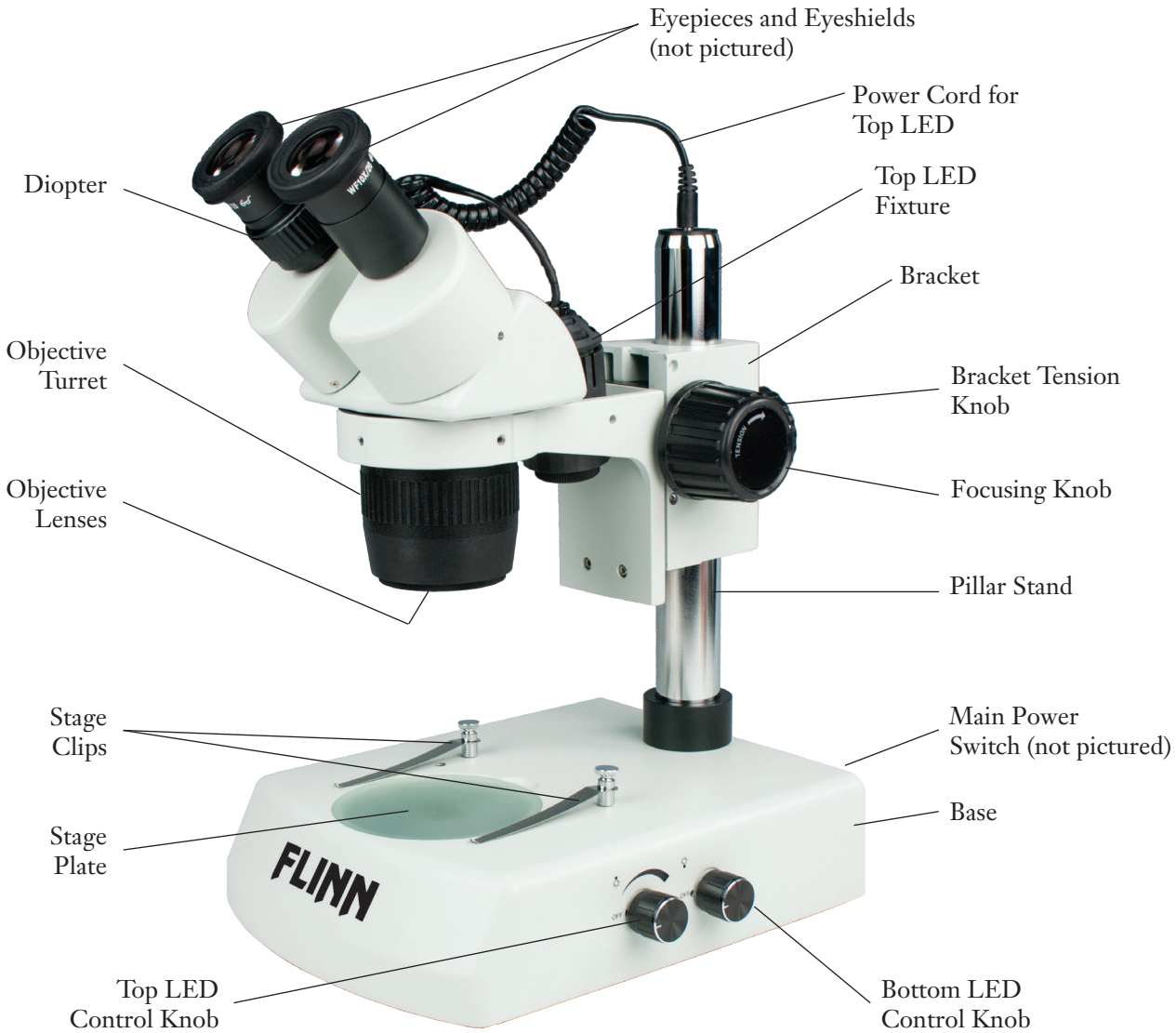
Note: Refer to Figure 1 when assembling the stereoscope.

3. Slide the bracket over the pillar stand and secure with the bracket tension knob. Ensure the bracket is aligned over the base.
4. Place the head in the bracket and secure with the head-lock screw.
5. Insert the eyepieces into the binocular head and install the rubber eyepiece shields over top of the eyepieces.
6. Position the top LED fixture between the pillar and the head and secure with the lock screw. Connect the power cord to the top of the pillar.
7. Place the stage plate on the stage.
8. Connect the included power supply. Many similar looking power supplies have different voltages. Before each use, examine the power supply to ensure the voltage is consistent with the rating voltage printed on the stereoscope. Flinn Standard Stereoscope power supplies have an output voltage rating of 12V/3.3 Amp.
9. Always handle and move stereoscope carefully by securely holding the arm and base of the stereoscope. Avoid impact or abrupt movements during transport. *Note:* carrying the stereoscope head or focus knobs will damage the stereoscope.
10. Store stereoscopes in a dry, clean place away from direct sunlight with the dust cover in place. A stereoscope storage cabinet such as Flinn's Stereoscope Storage Cabinets (catalog no. AP7133 and AP7142) will protect stereoscopes from dust and damage from UV rays.

Publication No. 11326
IN11326 / 110615

Description of Components *(Refer to diagram below.)*

1. **Eyepieces (ocular lens):** Lens closest to the eye, magnifies the primary image formed by the objective lens. This model comes equipped with (WF) 10X eyepieces.
2. **Eyeshields:** Rubber guards that help position the user's eyes and blocks incidental light.
3. **Diopter:** Focusing knob on the left eyepiece. Used to compensate for differences in vision between the right and left eye.
4. **Objective turret:** The turret rotates to alternate between the two pairs of objective lenses.
5. **Objective lenses:** Two paired objectives allow for two-step magnification of either 1X and 3X (MS1160) or 2X and 4X (MS1161).
6. **Pillar stand and bracket:** Independent parts allow for movement of the bracket to accommodate a large variety of sample sizes.
7. **Stage:** Platform of the stereoscope where the sample is placed. 95 mm diameter.
8. **Focusing knob:** Single focusing knob raises or lowers the viewing head to bring the sample into focus.
9. **Illumination:** Top and bottom LED illumination provides constant and reliable illumination with adjustable brightness. They can be used independently or together.



Operation

1. Place stereoscope in front of you with the eyepiece in a comfortable position.
2. Turn on the stereoscope using the power switch on the back. Use the light control knobs to independently control the incidental light (top) or transmitting light (bottom).
3. Choose a stage plate to best illuminate the sample. Choose the glass plate to view very thin or transparent samples using the bottom light. Choose the opaque plate with the top light to view solid objects.
4. Adjust the head height by moving the bracket so the sample is approximately 10 cm from the objective lenses. Tighten the bracket tension knob to secure.
5. Set interpupillary distance by rotating both eye pieces together until a single image is formed.
6. Adjust the diopter by first looking at the sample with only the right eye and focusing. Next, observe through the left eyepiece and rotate the diopter adjustment ring until the image is clear.
7. Choose the lower magnification by rotating the objective turret so that the smaller number faces the front of the stereoscope (away from the arm) and it "clicks" into place.
8. Ensure that the sample is in the center of the viewing area before increasing the magnification. Increase the magnification to view the sample with more detail.

Objective Specifications

Stereoscope Model	Turret Objectives	Object Field (diameter mm)	Working Distance (mm)	Total Magnification with WF10X eyepiece
MS1160	1X	20.00	100.00	10X
	3X	6.70	100.00	30X
MS1161	2X	10.00	100.00	20X
	4X	5.00	100.00	40X

Maintenance

WARNING: For your own safety, make certain that the power supply is unplugged and the power switch is off before maintaining your stereoscope.

1. Optical maintenance

   Note: Do not attempt to disassemble any lens components. Consult a stereoscope service technician when any repairs not covered by instructions are needed.

   a. Fingerprints or other matter on the front lens element of the objective lens is the single most common reason that you will have difficulty in focusing the microscope. Before having costly servicing done, make certain to examine the front lens element with a magnifying glass.

   b. Prior to cleaning any lens surface, brush dust or dirt off lens surfaces using a camel hair brush or compressed air.

   c. Clean only the outer lens surface. Breathe on lens to dampen surface, then wipe with lens paper or lint free tissue. You may also use a cotton swab moistened with distilled water. Wipe lenses with a circular motion, applying as little pressure as possible. Avoid wiping a dry lens surface as lenses are scratched easily. If excessive dirt or grease gets on lens surfaces, a small amount of lens cleaner can be used on a cotton swab or lens tissue.

2. Mechanical maintenance

   a. The focus tension adjustment prevents the head from drifting down from its own weight and causing the image to move out of focus. This has been adjusted at the factory, but over the course of time it may loosen and cause the head of the microscope to slip downward on the focusing block.

   b. To adjust the tension, move the head to its highest position. Hold the right focus adjustment knob still while turning the left focus knob. Turning clockwise tightens the tension while turning counter-clockwise loosens the tension.

c. Metal parts: Use a clean, damp cloth to remove dust or dirt from metal parts, followed by a dry cloth.

Troubleshooting

Symptom	Cause	Solution
The side of the field of view is dark or not even.	The turret is not in the right position.	Turn the turret until it clicks into place.
	Lenses are dirty.	Clean the lens.
Double image.	Interpupillary distance is incorrect.	Adjust eyepieces to change interpupillary distance.
	Diopter adjustment is incorrect.	See step 5 under Operation to correct diopter adjustment.
Unclear image.	Dirt on objective lens or eyepiece.	Clean according Optical Maintenance instructions.
Image does not stay in focus.	Head drifts down from own weight.	Adjust the tension control.
The specimen looks dark and the background is bright.	The bottom light is in use.	Use the top light.
The field of view is not bright enough.	Stains or dust have accumulated on the objective or eyepieces.	Clean lens.
	Dimmer is too low.	Adjust the dimmer switch.
The light does not work.	No power to the light.	Check the connection of the power cable or the charge of the batteries. Check the rating on the power supply.
	Top light is not connected to power.	Check the connection of the top light power cord to the top of the pillar.
	The bulb burned out too soon.	The voltage is too high.
The stereoscope will not charge.	Power supply malfunction.	Replace power supply.
	Batteries will not charge.	Replace rechargeable batteries with new rechargeable batteries. Not alkaline batteries.

Limited 5-year Warranty

Flinn Scientific warrants the stereoscope against manufacturers defect for five years from the date of purchase. Please contact Flinn Scientific at flinn@flinnsci.com or 1-800-452-1261.