

Swift M27LED Series Stereo Microscope

Use and Care Manual

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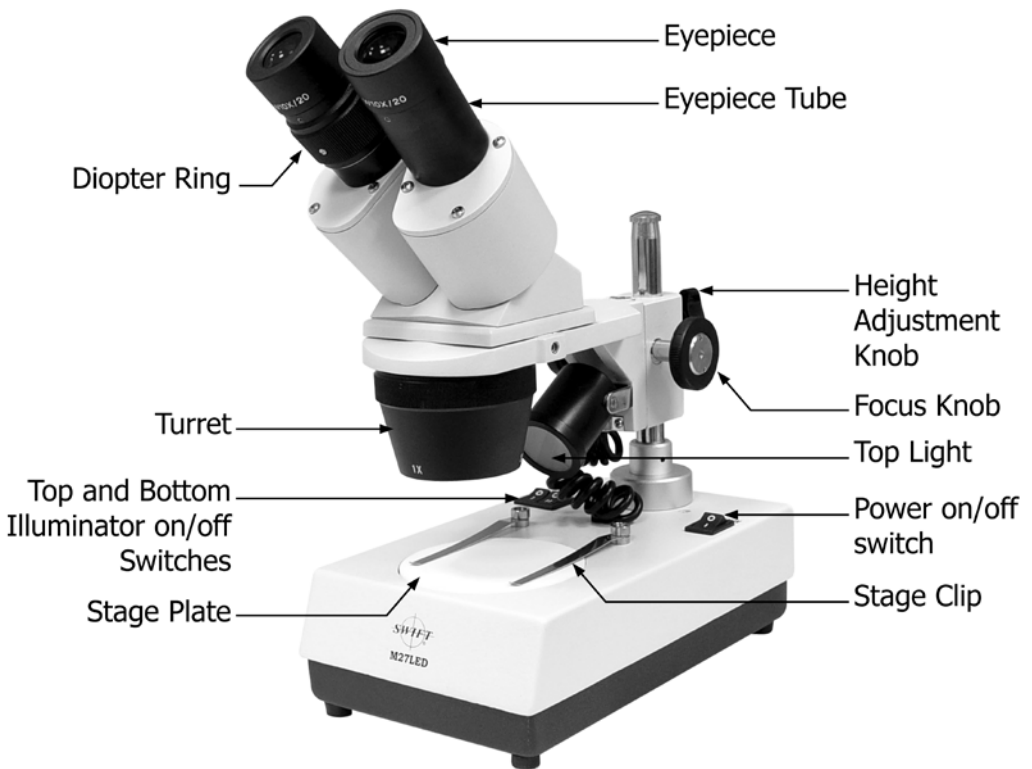
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SWIFT M27LED STEREO MICROSCOPE

The Swift M27LED Tri-Power Stereo Microscope is a stereoscopic instrument that produces an erect, three-dimensional image with a large, comfortable field of view. The M27LED incorporates features to enhance and provide maximum versatility of the instrument for classroom use. It is built to rigid optical and mechanical standards. The scope is the result of the continuing progress of Swift Optical Instruments, Inc. to provide a durable, modern instrument that meets the requirements of heavy classroom use.



PICTURED M27LED

FEATURES OF YOUR SWIFT M27LED TRI-POWER STEREO MICROSCOPE

OPTICAL SYSTEM: Only the highest quality prisms are used in Swift optical systems. All optical surfaces are hard coated to reduce reflection and increase light transmission.

EYEPIECES: The M27LED Stereo Microscope comes with 10XD widefield eyepieces. The interpupillary distance between these eyepieces can be adjusted to the user's preferred distance.

FOCUS CONTROLS: The focus knobs are located on both sides of the microscope and may be used with either hand. The focus mechanism incorporates stops to prevent the rack and pinion from disengaging at either end of the focus range. When either limit is reached, the clutch system will slip to prevent damage to mechanical parts.

ILLUMINATION: The top (incident) and bottom (trans-base) illuminators are controlled by two on/off switches located on the base of the microscope. The top illuminator is used for opaque specimens, while the bottom illuminator effectively illuminates internal structures of transparent specimens. Translucent specimens may be more accurately studied if both illuminators are operated simultaneously.

Note that the entire stage plate is illuminated which prevents shadows and more evenly exposes the specimen.

All wiring is tamper-proof. The three-wire, grounded system which includes a molded plug is UL/CUL approval pending.

OBJECTIVES: The M27LED Tri-Power Stereo Microscope has three different magnifications: 1X, 2X, 3X (model M27LED-123) or 1X, 2X, 4X (model M27LED-124). All objectives are parfocal and parcentered.

OPERATING YOUR SWIFT M27LED TRI-POWER STEREO MICROSCOPE

1. Place the specimen on the stage plate.
2. Rotate the objective turret to the lowest magnification and move the specimen in the field of view. Grasp the eyepiece tubes and move them either closer together or farther apart, until you see one field of view.
3. Rotate the focus knobs until the specimen image is in focus. (If you cannot get the specimen in focus, you may have to use the height adjustment knob to raise or lower the optics to alter the working distance to the specimen).
4. Close your right eye and adjust the diopter ring on the left eyepiece tube to bring the image in focus with your left eye. The optical system is now adjusted to your particular vision.
5. Turn the turret to a higher power for increased magnification.

SERVICE

Always unplug the microscope from the power outlet while performing service and maintenance on the microscope.

Your Swift M27LED Stereo Microscope is designed to function satisfactorily with only ordinary maintenance. The instrument should be periodically serviced by a qualified, authorized service technician who will clean, re-lubricate and perform routine adjustments. Unauthorized personnel should never disassemble lens assemblies or other precision components. For information regarding service, contact your local Swift authorized repair dealer, or call Swift customer service at (800) 523-4544.

Replacement top LED illuminator (incident illuminator)-
Part # MA14773, 3.4V/0.3W

Replacement bottom LED illuminator (trans-illuminator)-
Part # MA14774, 3.4V/0.06W

To change the top LED illuminator:

1. Unscrew the top illuminator housing cover that also holds the light filter in place.
2. Remove the metal ring spacer and pull the LED bulb and round circuit card assembly out of the illuminator housing.
3. Turn the LED/circuit card over and unplug the connector to separate the wires from the assembly.
4. Reverse the previous steps to install the new LED bulb.

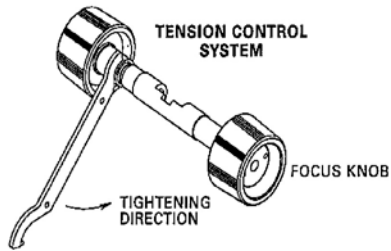
To change the bottom LED illuminator:

1. Push the stage clips to the side of the stage plate and remove the stage plate that is covering the bottom illuminator.
2. Pull the LED bulb out of the bulb socket.
3. Insert the metal pins of the new bulb into the bulb socket.
4. Reverse the previous steps to install the new LED bulb.

Note: If the new bulb does not work after installation, the polarity of the bulb may have been reversed when installing the new bulb. Simply unplug the new bulb from the bulb socket and turn the bulb to insert the bulb's metal pins into the opposite bulb housing connections.

FOCUS TENSION ADJUSTMENT:

The focus tension adjustment is easily adjusted by using the C-Wrench (Part MT202). This wrench fits the tension collar found on the focusing control spindle, between the adjustment knob and body of the microscope. A clockwise turn of this collar moves it toward the upright support and increases tension, while a counter-clockwise turn moves the collar toward the knob and decreases tension.



CLEANING

Eyepieces should be cleaned as often as necessary to keep them in good condition. Clean the eyepieces by brushing away the dirt particles, with a soft camel-hair brush; then moisten the lens by breathing onto it. Wipe the lens carefully with a quality lens cleaning tissue. If dirt or other foreign matter still remains, it may be necessary to use a mild solvent such as Windex. Note, the lens tissue should be moistened, not saturated, with Windex for cleaning, which then the lens should be dried with a lens tissue. Painted surfaces should be cleaned frequently with mild detergent and a soft cloth.

TROUBLE SHOOTING

- A. **PROBLEM:** The image does not stay in focus.
CORRECTION: Use Swift C-Wrench #MT202 to tighten the tension collar found on the spindle of the focus controls.

- B. **PROBLEM:** Inability to eliminate double image.
CORRECTION: Try to adjust the interpupillary distance of the eyepieces. If the problem persists, the objective lenses may need to be re-aligned. Please contact Swift or your local Swift authorized repair dealer.

- C. **PROBLEM:** The focus knobs slip at either upper or lower limits of travel.
CORRECTION: This is normal. A unique slip-clutch is built in to prevent damage to precision gears. This is activated at both the upper or lower limits of travel.

SPECIFICATIONS

Model #	Objective	M27LED-123	M27LED-124
Total Magnification	1X	10X	10X
	2X	20X	20X
	3X	30X	NA
	4X	NA	40X
Field of View	1X	20 mm	20 mm
	2X	10 mm	10 mm
	3X	6.7 mm	NA
	4X	NA	5 mm
Working Distance	1X	57 mm	48 mm
	2X	57 mm	48 mm
	3X	57 mm	NA
	4X	NA	48 mm
Depth of View		0.17 - 1.05mm	0.13 - 1.05mm

Dimensions: 10" (L) X 5" (W) X 12.5" (H)

Weight: 6.6 lbs

Illumination: Top (Incident) LED 3.4V/0.3W
 Bottom (Trans-base) LED 3.4V/0.06W

PARTS AND ACCESSORIES

MA14773	LED Bulb for Top Light, 3.4V/0.3W
MA14774	LED Bulb for Bottom Light, 3.4V/0.06W
MA2609	W15X Eyepieces, (pair)
MA2610	W10X Eyepieces, (pair)
MA2615	Stage Clips, (pair)
MA2616	Eyeshields, (pair)
MA2620	Black & White Stage Plate
MA2621	Frosted Stage Plate

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Please see our website, www.swiftoptical.com, for complete warranty details and exclusions.

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