



User Guide: SS110



Welcome to your National Optical SS110 microscope! National is the wholesale arm of the Swift Optical brand, and we are pleased to now offer some of our National products directly to our customers. Whether you are a seasoned professional or a beginner hobbyist, Swift has the perfect microscope for you.

This quick-start guide will introduce you to the components of your new microscope and help you begin to use it. For more information about our microscopes or customer service requests, please visit www.swiftoptical.com.

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I. Specifications

Model	SS110
Observation tube	Monocular, 360° rotatable
Inclination	45°
Eyepiece	Wide-field 10X (Some kits include Wide-field 25X)
Nosepiece	Triple revolving
Objectives	Achromatic 4X, 10X, and 40X
Magnifications	40X, 100X, and 400X (Kits with the WF25X eyepiece can magnify up to 1000X)
Stage	Plain stage with slide clips
Stage size	90mmx90mm
Condenser	6-hole disc diaphragm
Focusing	Coaxial coarse and fine focus knobs
Illumination	Dimmable bottom LED light
Power	100-240V AC adapter or 3 AA batteries (included)
Accessories	Varies by kit

II. Parts of the microscope



III. Assembly and set up

Carefully remove the microscope from the box and set it on a sturdy, flat surface. If the microscope was shipped with eyepiece unassembled, remove the plastic cover from the eyepiece holder on the microscope's head, then place an eyepiece into the holder. Plug the power adapter into the back of the microscope or Insert the included batteries into the battery compartment. Turn the microscope on by pressing the power button.

IV. Using the microscope

Turn the microscope on. Use the dimming handwheel to set the illumination on the lowest brightness setting.

Secure a slide via the slide clips on the stage.

Rotate the monocular head to either the forward- or backward-facing position, depending on what is most comfortable for viewing. Look through the eyepiece and adjust the bulb brightness to a comfortable intensity with the dimming handwheel.

Always start with the lowest magnification objective lens centered over the stage, in this case the 4x objective. Look through the eyepiece and bring the image into focus by slowly turning the larger coarse adjustment focus knob to bring the stage closer to the objective.

Once an image forms, switch to the blue fine adjustment focus knob to fine-tune for clarity. Manually move the slide across the stage to look at different parts of the specimen slide.

Increase magnification by rotating the nosepiece clockwise to a higher magnification objective, taking care not to strike the slide with the objective. If you cannot move the objective into place without making contact with the slide, use the coarse focus knob to move the stage down and away to make room before changing magnification.

V. Caring for your microscope

As with any quality instrument, your microscope should be stored in a cool, dry place. Use the dust cover to protect the microscope when not in use. If necessary, clean the lenses with a soft brush or compressed air to gently remove dust. Avoid touching the optical surfaces directly and never disassemble the optical components of the microscope. When not using an eyepiece, use the plastic cover to protect the eyepiece holder and ocular lens.

VI. Troubleshooting

If you have a problem, you may be able to correct it yourself. Here are some common issues and easy solutions you can try before calling customer support for service.

*Caution: Never disassemble the electrical, mechanical, or optical components. This servicing should only be done by a Swift technician.

Issue	Possible cause	Solution
Visual field is uneven, or image is dark at the edges	Nosepiece is not locked in place to center the objective lens	Turn nosepiece until you hear a click to center the objective lens
	Slide is not centered over the bulb, leaving part of the specimen unilluminated	Center the slide over the bulb with the X-Y translational control knobs
	Dirty objective or eyepiece lens	Clean with compressed air or soft brush
	Iris aperture is closed too far	Open the iris aperture wider
Visual field is blurry or dirty	Dirty objective or eyepiece lens	Clean with compressed air or soft brush
	The slide is dirty	Clean the slide with glass cleaner
	Eyepiece or objective lens not fully screwed into place	Tighten eyepiece or objective lenses
Poor image quality	No cover slip on the specimen	Place glass cover slip over the specimen
	Slide is too thick or too thin	Use a lab-quality slide
	Slide is placed upside down on the stage	Flip the slide over so that the cover slip is facing up
	Oil on objective lens	Wipe the lens off with soft cloth and glass cleaner
	Iris aperture is too narrow or too wide	Adjust the iris aperture

Image moves while adjusting focus	Slide is shifting on the stage	Reposition slide more securely in the slide holder
Light is too dim	Iris aperture is closed too far	Open the iris aperture wider
	Lamp setting is too low	Increase intensity on the control knob
	Condenser lens is dirty	Wipe the condenser lens off with a soft cloth
	Voltage is too low	Use the supplied power adapter
Objective lens collides with the slide when switching from a lower to a higher power objective	Slide is upside down or too thick	Use a lab-quality slide or flip the slide over so the cover slip is facing up
	Stage is set too close to the objectives	Lower the stage with the coarse focus knob
	Safety rack stop needs adjustment	Adjust the safety rack stop to stop the stage farther from the objectives
Image won't come into focus when using a high-powered objective	Slide is upside down	Flip the slide over so the cover slip is facing up
Slide is not moving when using the X-Y translational control knob	Slide has come unclipped from the holder	Reposition slide in the holder and secure with clip
Lamp does not turn on	No power source	Check that the adapter is fully connected or that batteries are installed
	Bulb has burned out	Replace the bulb

Lamp flickers while on	Bulb is not inserted into the socket correctly	Check to make sure the bulb is fully screwed into the socket
	Power adapter is not fully plugged in	Check to make sure that the adapter is fully connected to wall socket and to the microscope

VII. Warranty information and customer support

Our microscopes are manufactured to meet ISO 9001 standards. Swift warranties are as follows:

- Five (5) Year Warranty for Microscopes: Microscopes come with a five (5) year warranty against manufacturing defects. Does not cover normal wear, routine maintenance, add-on accessories, damage resulting from repair by unauthorized parties, accident, alteration, shipping, misuse or abuse is not covered.
- One (1) Year Warranty for Electrical and Video components. Does not cover light bulbs, batteries, fuses, or electrical cords.

All warranties start from the original date of purchase. Swift provides the repair or replacement of warranted parts for free, including labor, during the warranty period. Proof of original purchase is required. Buyers are responsible for shipping to and from our warehouse for warranty services. The warranty does not cover damages resulting from normal wear and tear, abuse, or unauthorized repairs. Warranty service is provided by Swift Optical Instruments, Inc.'s authorized technicians. Determination of warranty is at the technician's discretion.

*For customers living outside the United States, Swift Optical Instruments, Inc. will provide standard warranty service. Both inbound and outbound shipping costs (including duties and taxes) is the responsibility of the consumer.

For more information or to submit a repair request, please contact our Customer Support department:

Tel: 877-967-9438, option 1

Email: customersupport@swiftoptical.com

Disclaimer: We are constantly working to improve our instruments and to adapt them in response to customer feedback. These improvements occasionally involve small modifications to the mechanical structure and optical design of our microscopes. Therefore, some descriptions, illustrations, and specifications in this instruction manual may vary slightly from the microscope you receive.

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