



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 guide will introduce you to the components of your new microscope and help you begin using it. For more information about our microscopes, software downloads, product manuals, or customer service requests, please visit www.swiftoptical.com.

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I. Specifications

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| 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 |
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| 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 |

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| 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 |

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| | 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 |

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| 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.

*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:

North America

Tel: (+1) 877-967-9438, option 1 (USA)

Email: customersupport@swiftoptical.com

Europe

Tel: (+44) 208-638-8819 (UK)

Email: customersupport@swiftoptical.com

*In order to serve Europe customers efficiently, we recommend to call the hotline during working hours 8 AM – 4 PM (London Time).

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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