

SWIFT SW380T

SWIFT Compound Trinocular Microscope SW380T User Manual

Model: SW380T-SC2503-CK-BSC with Swiftcam 25 Megapixel Camera

1. INTRODUCTION

This manual provides detailed instructions for the assembly, operation, and maintenance of your SWIFT Compound Trinocular Microscope SW380T. This instrument is designed for observing microscopic specimens with magnifications ranging from 40X to 2500X, and includes a 25 Megapixel Swiftcam for digital imaging. Please read this manual thoroughly before use to ensure proper function and longevity of your microscope.

2. PRODUCT OVERVIEW

The SWIFT SW380T is a versatile compound trinocular microscope featuring a Siedentopf head, a two-layer mechanical stage, and a powerful LED illumination system. It is equipped with a Swiftcam 25 Megapixel camera for digital capture and live viewing.

2.1 Key Components



Figure 2.1: Main components of the SWIFT SW380T microscope. This image highlights the mechanical stage for precise slide movement, the Abbe condenser for illumination control, the fine and coarse adjustment knobs for focusing, and the integrated LED light source.



Figure 2.2: Head and optical components. This image illustrates the wide-field eyepieces (WF10X, 25X), the 360-degree rotatable head for comfortable viewing, and the objective lenses.

STRUCTRE OF THE MICROSCOPE



Figure 2.3: Comprehensive structural diagram of the SWIFT SW380T microscope, indicating all major parts and their locations for easy identification.

2.2 Features

- **Magnification:** 4 DIN Achromatic objectives (4X, 10X, 40X, 100X) combined with 10X and 25X eyepieces provide 6 magnification levels: 40X, 100X, 250X, 400X, 1000X, and 2500X.
- **Head:** Professional Siedentopf trinocular head, fully rotatable (360 degrees) for shared viewing, with an ergonomic 30-degree tilt to reduce neck strain. Interpupillary distance is easily adjustable.
- **Focusing System:** Ultra-precise focusing system with separate coarse and fine adjustment knobs for clear imaging at all magnifications.
- **Stage:** Two-layer mechanical stage with X-Y translational control knob for precise slide movement.
- **Illumination:** Transmitted LED light with adjustable brightness, utilizing a standard NA 1.25 Abbe condenser and iris diaphragm.
- **Digital Camera:** Includes a Swiftcam 25 Megapixel camera (3.0 USB) for viewing, livestreaming, recording, and capturing magnified images on a computer (Windows, Mac, Linux compatible software included).

3. WHAT'S IN THE BOX

Verify that all components listed below are present in your package:

Mechanical stage, while the x-y translational control knob controls the stage

And moves the slide holder from left to right and front to back so that slides do not have to be re-clipped to see the entire sample.



Figure 3.1: Package contents display, showing the microscope and all included accessories.

- 1 x SW380T Microscope Body
- 1 x Pair of WF10X Eyepieces
- 1 x Pair of WF25X Eyepieces
- 4 x Objective Lenses (4X, 10X, 40X, 100X)
- 1 x Swiftcam SC2503-CK 25 Megapixel Camera (3.0 USB)
- 1 x Sample Immersion Oil
- 1 x Blue Filter
- 1 x Dust Cover
- 1 x Spare Fuse
- 1 x User Manual
- 100 x Blank Slides and Cover Slips (BSC)

4. SETUP

Follow these steps to set up your microscope for first use:

1. **Unpacking:** Carefully remove all components from the packaging. Retain the original packaging for future transport or storage.
2. **Placement:** Place the microscope on a stable, level surface away from direct sunlight, heat sources, and excessive dust.
3. **Head Installation:** Loosen the head fastening screw on the microscope body. Gently insert the trinocular head into the top opening, ensuring it is seated firmly. Tighten the screw to secure the head.
4. **Eyepiece Installation:** Insert the desired eyepieces (WF10X or WF25X) into the eyepiece tubes of the Siedentopf head.
5. **Objective Lens Installation:** Rotate the revolving nosepiece until the 4X objective is positioned directly above the stage. Ensure all objective lenses are securely screwed into the nosepiece.
6. **Power Connection:** Connect the power cord to the microscope's power input and then to a standard 110V electrical outlet.
7. **Camera Installation (if applicable):** Insert the Swiftcam into the trinocular port on top of the microscope head. Connect the camera to your computer using the provided USB 3.0 cable. Install the Swiftcam software from the included CD or manufacturer's website.

5. OPERATING INSTRUCTIONS

This section details the steps for operating your SWIFT SW380T microscope.

5.1 Basic Observation

1. **Power On:** Turn on the microscope's power switch. Adjust the dimming handwheel to set the desired illumination intensity.
2. **Prepare Specimen:** Place a prepared slide onto the mechanical stage. Use the slide holder clips to secure it.
3. **Position Specimen:** Use the X-Y translational control knob to move the mechanical stage and center the area of interest directly under the 4X objective lens.



Figure 5.1: Mechanical stage and X-Y translational control knob for precise slide positioning.

4. Focusing:

- While looking through the eyepieces, slowly turn the **coarse adjustment knob** to bring the specimen into approximate focus.
- Then, use the **fine adjustment knob** for precise focusing until the image is sharp and clear.



Figure 5.2: Fine focus knob for making precise adjustments to achieve the clearest image.

5. **Adjusting Illumination:** Use the Abbe condenser height adjustment wheel and the iris diaphragm adjustment to optimize contrast and resolution for your specimen. The LED lamp under the stage transmits light through the NA 1.25 Abbe condenser.



Figure 5.3: LED lamp and Abbe condenser for controlling illumination and contrast.

6. **Changing Magnification:** Rotate the revolving nosepiece to select a higher power objective lens (e.g., 10X, 40X). Re-adjust the fine focus as needed. For 100X objective, apply a small drop of immersion oil to the slide before rotating the 100X objective into place. Ensure the objective lens makes contact with the oil. After use, clean the 100X objective and slide thoroughly to remove all oil.

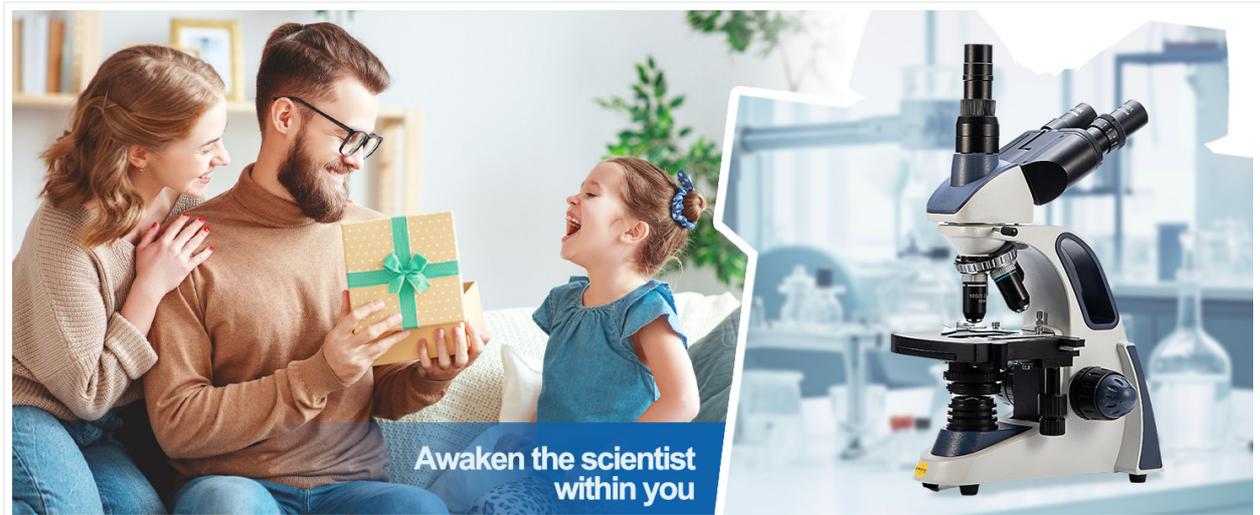


Figure 5.4: Achromatic DIN objective lenses and corresponding magnification examples.

5.2 Using the Swiftcam 25 Megapixel Camera

The included Swiftcam allows for digital observation and image capture.

1. **Software Installation:** Install the Swiftcam software on your computer (Windows, Mac, or Linux) using the provided CD or by downloading the latest version from the SWIFT official website.
2. **Connect Camera:** Ensure the Swiftcam is securely inserted into the trinocular port and connected to your computer via the USB 3.0 cable.
3. **Launch Software:** Open the Swiftcam software on your computer. The live view from the microscope camera should appear on your screen.
4. **Adjust Settings:** Use the software interface to adjust camera settings such as exposure, white balance, and resolution for optimal image quality.
5. **Capture Images/Videos:** The software allows you to capture still images, record videos, and perform basic measurements or annotations. Refer to the Swiftcam software manual for detailed instructions on its features.

6. MAINTENANCE

Proper maintenance ensures the longevity and performance of your microscope.

- **Cleaning Lenses:** Use only specialized lens cleaning paper and lens cleaning solution. Gently wipe objective lenses and eyepieces. Never use abrasive materials or harsh chemicals.
- **Cleaning Body:** Wipe the microscope body with a soft, damp cloth. Avoid getting moisture into electrical components.
- **Dust Protection:** Always cover the microscope with the provided dust cover when not in use.
- **Immersion Oil:** After using the 100X objective, clean all traces of immersion oil from the lens and slide immediately.
- **Storage:** Store the microscope in a cool, dry place, away from direct sunlight and vibrations.

7. TROUBLESHOOTING

Refer to the table below for common issues and their solutions.

Problem	Possible Cause	Solution
No illumination	Power cord disconnected, power switch off, bulb burnt out, fuse blown.	Check power connection, turn on switch, replace LED bulb (contact support), replace fuse.
Image blurry/out of focus	Incorrect focusing, objective lens dirty, slide upside down, diopter not adjusted.	Use coarse and fine adjustment knobs, clean objective lens, ensure slide cover slip is up, adjust diopter on eyepiece.
Dark field not working (if applicable)	Condenser not at highest position, incorrect objective, patch stop filter missing/incorrect.	Ensure condenser is fully raised, use appropriate objective (e.g., 4X, 10X), verify patch stop filter is correctly installed.
Dust or spots in view	Dust on eyepiece, objective, or slide.	Clean eyepieces, objectives, and slide. Rotate eyepiece to determine if dust is on eyepiece.
Swiftcam not connecting/displaying image	USB cable disconnected, software not installed, driver issue, camera not seated properly.	Check USB connection, install Swiftcam software and drivers, ensure camera is fully inserted into trinocular port.

8. SPECIFICATIONS

Feature	Detail
Model Name	SW380T-SC2503-CK-BSC
Magnification Range	40X - 2500X
Eyepieces	WF10X, WF25X (Wide-Field)
Objective Lenses	4X, 10X, 40X (Spring), 100X (Spring, Oil) DIN Achromatic
Head Type	Siedentopf Trinocular, 30-degree incline, 360-degree rotatable
Interpupillary Distance	48-75 mm
Focusing System	Coaxial Coarse and Fine Adjustment Knobs
Stage	Two-Layer Mechanical Stage, 130 x 130 mm
X-Y Travel Range	70 x 30 mm
Condenser	NA 1.25 Abbe Condenser with Iris Diaphragm
Illumination	Transmitted LED Light, Adjustable Brightness
Power Supply	Built-in 110-240V Power Supply
Digital Camera	Swiftcam SC2503-CK 25 Megapixel (3.0 USB)
Material	Glass optics, Metal body
Item Weight	14.3 pounds (6.5 kg)

Feature	Detail
Package Dimensions	18.9 x 12.99 x 9.84 inches

9. WARRANTY AND SUPPORT

SWIFT provides support for its products. For warranty information, technical assistance, or to inquire about replacement parts, please refer to the official SWIFT website or contact their customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.

Manufacturer: Swift