

# ROLS<sup>®</sup>

## USER MANUAL

Re-Inverting Operating Lens System



## **REMOVING THE ROLS FROM THE CARRYING CASE**

When first opening the ROLS Carrying Case to remove the system components, place it on a flat surface with the ROLS case label facing upward, and with the case handle toward you. Locate the two slide bars on each side of the case. Push both slide bars away from the case handle, toward the case hinge. This will release the locks and allow the case to be opened.



### **Caution**

To avoid re-inverter damage, do not pick up or carry the ROLS Re-inverter by its handles.

To lock the case, fully close the case halves and slide the locks toward the case handle. Be sure that the case is locked on both sides by testing its security before lifting or carrying it.

## 1. UNDERSTANDING THE FLANGE STYLES

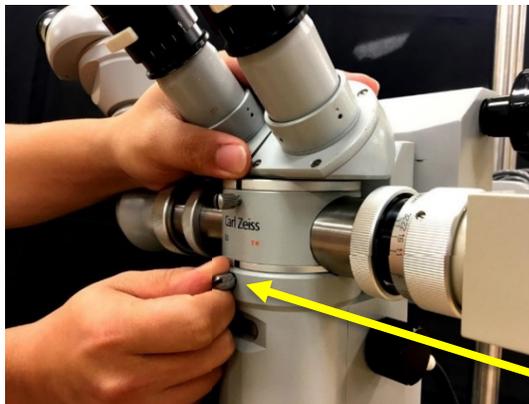
The ROLS Re-inverter is easy to install on your operating microscope and is available in two flange styles. If you ordered a Zeiss Flange Style unit, it will only fit on Zeiss microscopes or microscopes manufactured by Alcon, Haag Streit, Inami, Möller-Wedel, Topcon, and Takagi that accept Zeiss compatible accessories. If your ROLS unit is a Leica Flange Style, it will only fit Leica, Huvitz, or Wild microscopes. If you are uncertain of compatibility, please contact Volk Optical Inc.



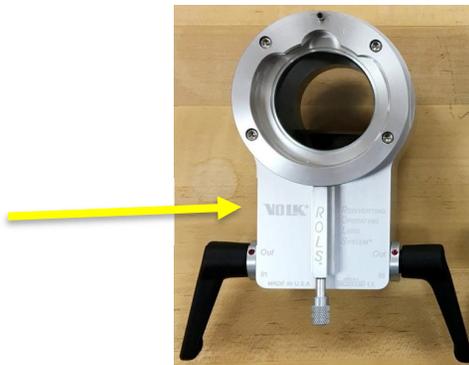
## 2. INSTALLING THE RE-INVERTER ON A SINGLE SCOPE UNIT

To install the ROLS Re-inverter on a microscope containing only a Surgeon's Scope:

1. Turn off the electrical power to the microscope and attached microscope accessories.
2. Lock the microscope in an easily accessible position.
3. Unplug any accessories attached to the Beam Splitter, including the Observer's Tube.
4. Loosen the thumbscrew to remove the Upper Microscope Assembly. Do not completely back out the thumbscrew.



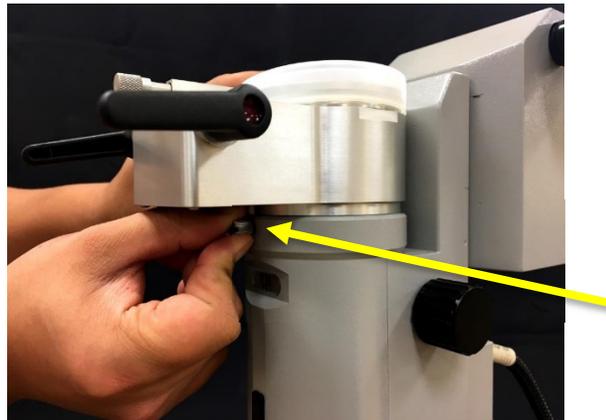
5. Remove the entire Upper Microscope Assembly (Binoculars, Beam Splitter, Laser Safety Filter Attachment) from the base portion of the microscope.
6. Hold the ROLS Re-inverter in a horizontal position with the Volk lettering readable from the surgeon's position.



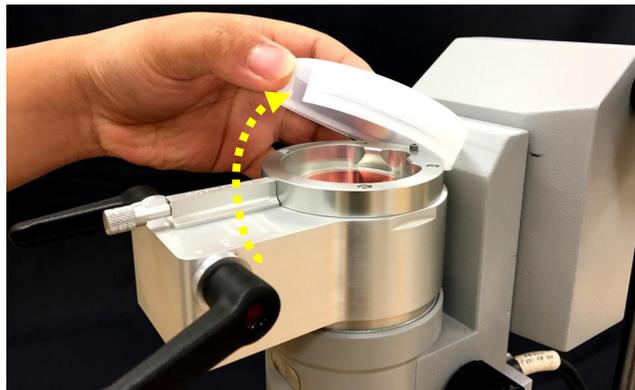
- Slide the lower Male Flange Lock on the ROLS into the upper Female Flange Lock of the base portion of the microscope.



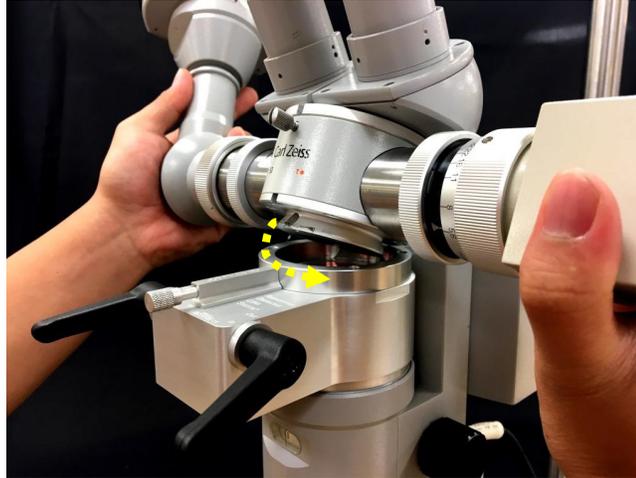
- Verify that the two flanges are seated flush together. If necessary, slightly rotate the ROLS unit left and right until the exact fit is achieved.
- Tighten the thumbscrew on the microscope base. The ROLS unit is now locked to the base portion of the microscope.



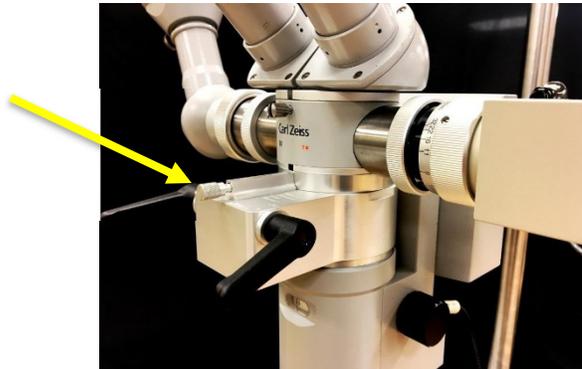
- Remove the Protective Plastic Cover from the top of the ROLS.



11. Slide the lower Male Flange Lock on the Upper Microscope Assembly into the upper Female Flange Lock on the ROLS while observing the assembly in the correct orientation.



12. Verify that the two flanges are seated flush together. If necessary, slightly rotate the Upper Microscope Assembly left and right until the exact fit is achieved.
13. Tighten the thumbscrew on the top of the ROLS unit. The Upper Microscope Assembly is now locked to the base portion of the microscope.



14. Reattach accessories to the beam splitter, unlock the operating microscope and turn on the electrical power to the microscope and accessories.

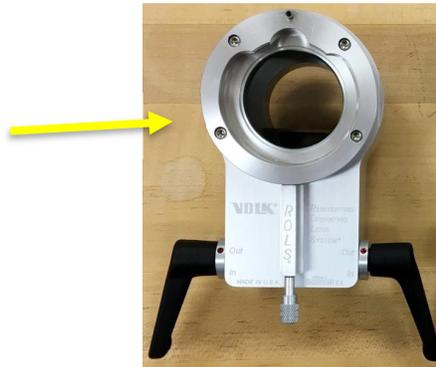
### 3. INSTALLING THE RE-INVERTER ON A MULTIPLE SCOPE UNIT

To install the ROLS Re-inverter on a microscope containing a Surgeon's Scope and Assistant Scope:

1. Turn off the electrical power to the microscope and attached microscope accessories.
2. Lock the microscope in an easily accessible position.
3. Unplug any accessories attached to the Beam Splitter, including the Observer's Tube.
4. Remove the Surgeon's Binoculars and the laser filter.
5. Hold the ROLS Re-inverter in a horizontal position with the Volk lettering readable from the surgeon's position.

**Important**

Do not remove the Assistant's Scope. For proper operation, the ROLS must be positioned below the Surgeon's Scope but above the Assistant's Scope.



6. Slide the lower Male Flange Lock on the ROLS into the upper Female Flange Lock of the base portion of the microscope.



7. Verify that the two flanges are seated flush together. If necessary, slightly rotate the re-inverter unit left and right until the exact fit is achieved.
8. Tighten the thumbscrew on the microscope base. The ROLS unit is now locked to the base portion of the microscope.
9. Remove the Protective Plastic Cover from the top of the ROLS.
10. Slide the lower Male Flange Lock on the Surgeon's Binoculars into the upper Female Flange Lock on the ROLS while observing the assembly is in the correct orientation.
11. Verify that the two flanges are seated flush together. If necessary, slightly rotate the Surgeon's Binoculars left and right until the exact fit is achieved.

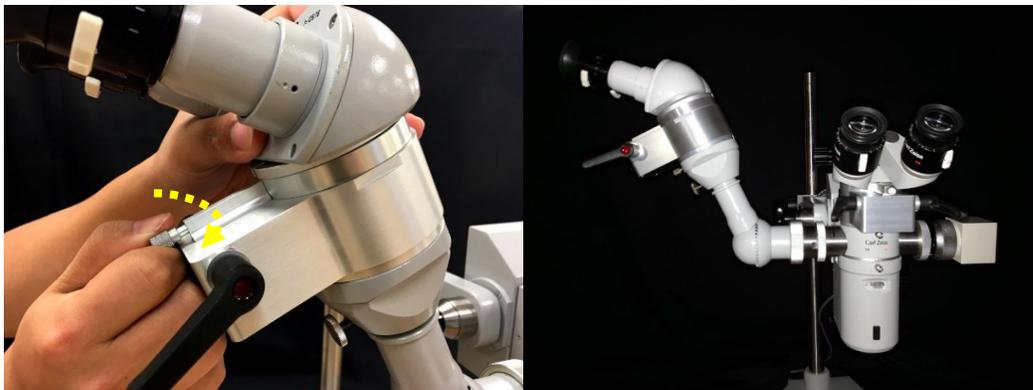
12. Tighten the thumbscrew. The Upper Microscope Assembly is now locked to the base portion of the microscope.



13. Remove the Assistant's Binoculars and laser filter.
14. Slide the lower Male Flange Lock on the ROLS into the upper Female Flange Lock of the assistant scope arm.



15. Verify that the two flanges are seated flush together. If necessary, slightly rotate the re-inverter unit left and right until the exact fit is achieved.
16. Tighten the thumbscrew on the end of the assistant scope arm. The ROLS unit is now locked in place.
17. Remove the Protective Plastic Cover from the top of the ROLS.
18. Slide the lower Male Flange Lock on the Assistant's Binoculars into the upper Female Flange Lock on the ROLS while observing the assembly is in the correct orientation.
19. Verify that the two flanges are seated flush together. If necessary, slightly rotate the Surgeon's Binoculars left and right until the exact fit is achieved.
20. Tighten the thumbscrew. The Upper Microscope Assembly is now locked to the base portion of the microscope.



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#### 4. USING THE RE-INVERTER

The ROLS Re-inverter does not interfere with the microscope's functions. To switch between an inverted and upright image, rotate either of the black handles on the sides of the ROLS.

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#### 5. IN/OUT INDICATOR

The In/Out Indicator of the ROLS Re-inverter visually indicates when the prism is introduced or removed from the optical pathway.

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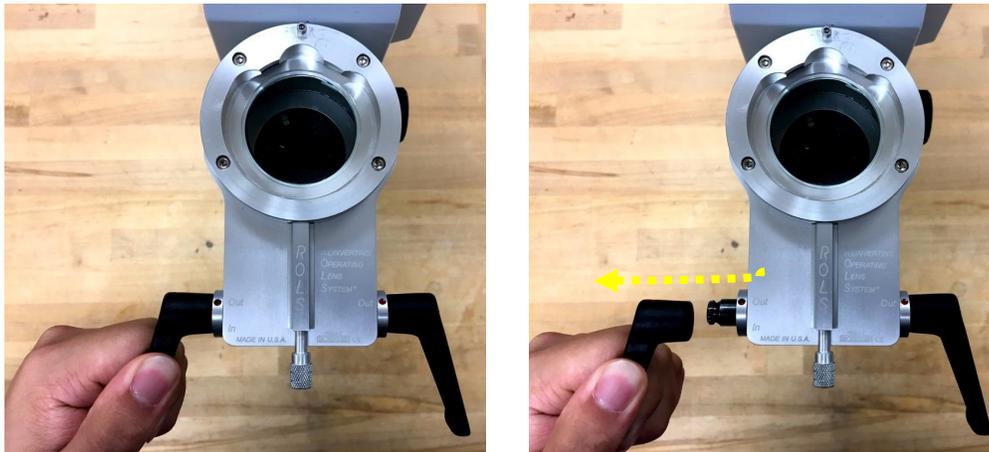
#### 6. MAGNETIC LATCHING HANDLES

The Magnetic Latching Handles of the ROLS unit have been designed to be easily removed, adjusted and sterilized by autoclaving or other methods.

**Adjustment:**

*Each handle may be independently adjusted to any angle by:*

1. Pulling the handle from the unit, rotating it to the desired angle, and then reinstalling the handle on the splined end.
2. Verify the edge of the handle and the edge of the In/Out Indicator are seated flush together. If necessary, adjust each handle position slightly until you hear a "click" sound, which will indicate the handle is in place.



**Operation:**

When using a plano/concave lens or when the operating microscope is used in other applications, use the re-inverter in the Out position. To remove the prism from the optical pathway, rotate either handle 60° until the In/Out Indicator reads Out. When using any of the vitrectomy contact lenses, use the re-inverter in the In position. To introduce the re-inverter prism, rotate either handle 60° until the In/Out Indicator reads In.

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#### 7. ILLUMINATION

It is suggested that an appropriate diffusion or bullet-type fiberoptic light pipe and a high intensity light source be used to provide wide-angle illumination of the retina.

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## 8. FOCUSING THE IMAGE

The Indirect Aerial Image produced by Volk Vitrectomy Lenses is located external to the eye and anterior to the contact lens. This is in contrast to the Direct Image, located within the eye, as produced by a plano/concave lens.

**Protocol:**

1. Place the ROLS Re-inverter in the Out position.
2. Follow the appropriate instructions for using the plano/convex lens.
3. Adjust the microscope until the fundus is in focus.
4. Remove the plano/convex lens.
5. Select the appropriate Volk Vitrectomy Contact or Self Stabilizing Lens.
6. Follow the appropriate instructions for using the selected lens.
7. Place the ROLS Re-inverter in the In position.
8. Readjust the microscope until the fundus is in focus.

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## 9. CENTERING THE IMAGE

When the prism is engaged and the surgical procedure is being performed, you will find that in order to center the image, reverse microscope motion will be required. For example, if there is a peripheral tear at the 11:00 position and the physician wishes to bring the tear to a more central position of the microscope field, it will be necessary to move the microscope towards the 5:00 position and not toward the tear which lies at the 11:00 position. Again, microscope motions should be made opposite to what is normally done.

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## 10. CLEANING OF HOUSING

**Caution**

To avoid damage to the re-inverter, do not submerge the housing in any solution or clean the ROLS Prism.

### INSPECTION / FUNCTION CHECK

1. Carefully check to ensure that all visible blood and soil has been removed.
2. Visually check for damage and/or wear.
3. Check the assembly and action of the moving joints to ensure operation throughout the range of motion. If damage or wear is apparent, contact Volk Optical or your distributor for return.

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### PREPARATION AT THE POINT OF USE

1. New, used or contaminated units must be cleaned.
2. The external surface of the ROLS housing may be cleaned with a slightly moist cloth.
3. Universal precautions for handling contaminated materials should be observed.
4. Instruments should be cleaned as soon as possible after use to minimize drying of any body fluids and tissue.
5. **Body fluids and/or tissue should not be allowed to dry on the device prior to cleaning.** Remove excess body fluids and tissue.

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## **11. CLEANING OF REMOVABLE HANDLES**

### **PREPARATION OF CLEANING AGENT**

1. Prepare a neutral pH enzyme and cleaning agent according to manufacturer's recommendations.

### **MANUAL CLEANING INSTRUCTIONS FOR REMOVABLE HANDLE**

1. Use a lint free tissue dampened with an antibacterial, aldehyde-free solution to remove macroscopic visible deposits from the handles. Pay special attention to any uneven surfaces, lumens, crevices, joints, corners and other hard-to-reach areas, e.g.: The interior of the removable handle;
2. Prepare fresh solution of enzymatic cleaner (1 ounce per gallon) using warm (30-43°C) sterile de-ionized water.
3. Soak handles in enzymatic solution for 20 minutes. Actuate handles while submersed in the cleaner. Use a syringe to "deliver" Enzol solution to hard-to-reach areas prior to soaking.
4. After soaking, aggressively brush handles with a soft-bristle brush until all traces of cleaner and soil are removed. Pay special attention to any uneven surfaces, lumens, crevices, joints, corners and other hard-to-reach areas, e.g.: The interior of the removable handle;
5. After brushing thoroughly rinse the handles in a room temperature sterile de-ionized water bath (not under running water) until all visible cleaner has been removed. Actuate the handles while submersed in the rinse bath. Use a syringe to "deliver" rinse water to the hard-to-reach areas of each device. Repeat rinsing cycle 5 times, changing water between cycles.
6. Transfer the handles to a freshly prepared enzymatic solution (per step 1 above) and sonicate for 20 minutes.
7. After sonication, thoroughly rinse the handles in a room temperature sterile de-ionized water bath (not under running water) until all visible cleaner has been removed. Use a syringe to "deliver" rinse water to the hard-to-reach areas of each device. Repeat rinsing cycle 5 times, changing water between cycles.
8. Inspect each handle for remaining debris. If any is observed, repeat the cleaning procedure with freshly prepared cleaning solutions until debris is removed.
9. The rinsing will be conducted under the water level to prevent aerosolization. Rinsing will be performed by:
  - Agitating the handle under water;
  - Bringing the handle above the water level;
  - Re-immersing handle under water.

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### **STERILIZATION INSTRUCTIONS FOR REMOVABLE HANDLE**

1. If applicable, use standard medical grade steam sterilization wrap following the double wrap method.
2. Steam sterilize using a pre-vacuum cycle for 4 minutes at a minimum temperature of 132°C.



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## 12. WARRANTY INFORMATION

- Volk Optical warrants its ROLS Re-Inverter against defects in materials or workmanship for a period of 1 year from receipt by end user.
- Customers shall be responsible for returning products for warranty service to:

Volk Optical Inc.  
7893 Enterprise Drive  
Mentor, OH 44060  
USA
- Warranty repairs will include all labor, adjustments and replacement parts.
- Replacement parts may be remanufactured or contain remanufactured materials.

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## 13. WARRANTY LIMITATIONS

- Warranty service may not be provided without proof the product was purchased from Volk Optical Inc., or an Authorized Volk Distributor.
- The Warranty becomes null and void if the customer fails to return the product in packaging consistent with the original protective packaging and it results in shipping damage.
- This Warranty becomes null and void if the customer fails to follow the recommended cleaning, disinfection, and sterilization instructions and/or cautions contained in the product instruction manual.
- This Warranty does not cover service required because of disassembly, unauthorized modification or service, misuse and abuse.

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## 14. LIMIT OF LIABILITY

- Volk shall not be responsible for loss of income or profit resulting from downtime costs or loss of equipment use. If you have questions regarding Volk's Warranty, please contact:

Volk Optical Inc.  
United States: 800-345-8655  
International: 440-942-6161  
Fax: 440-942-2257  
Email: [volk@volk.com](mailto:volk@volk.com)