

# OSCOPE

INTEGRATED CONVERGED BINOCULARS & LED ILLUMINATION

## Technical Manual

### Cleaning

- Unplug the Vorotek Scope or Light from power source prior to cleaning.
- Visually inspect the Vorotek Scope or Light for soiling.
- Remove all visible soiling by first wiping external surfaces & cables with a soft cloth slightly dampened with mild detergent and water (mixed to the manufacturer's instructions).
- Wipe all external surfaces\*, including Headband model comfort pads & velcro straps using a soft cloth slightly dampened with 70% isopropyl Alcohol (IPA). \*SpecFrame model cables should be wiped with a hospital approved disinfectant wipe.
- Allow all surfaces to air dry for at least 60 seconds.
- Re-wipe all surfaces with a lint free soft cloth to remove any residue from cleaning products.
- Ensure all surfaces & cables are dry before operating the Vorotek Scope or Light.
- Caution: Do not immerse or saturate any component of the Vorotek Scope or Light in a cleaning solution.
- Caution: Do not autoclave any component of the Vorotek Scope or Light.

### Maintenance

- Before every procedure, carefully inspect the Vorotek Scope or Light to ensure it is fully functional. DO NOT use if inspection reveals any damage.
- The Vorotek Scope & Light Range does not require any other routine maintenance.
- For repair or warranty, refer to the support & repair page on Vorotek's website.

### Warranty

- **Scopes & Lights** - 3 years for any component defect or manufacturing failure.
- **Battery Pack** - 18 months for any component defect or manufacturing failure.
- Warranty does not cover abuse, misuse or transit damage.
- Please contact VOROTEK prior to sending for repair.



RubyHill  
Distribution Co.

VOROTEK

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## Set Up

### Converged Binocular Optics Alignment

Converged binocular optics with 2 or 3 dioptre magnification. Without this, binocular vision in narrow cavities (e.g. ears and noses) is not possible.

The best guide to precise set up is to look into a mirror (with light switched off!) and look back through the converged binocular optics at the position of your eyes. You should be able to see both of your pupils clearly. (Refer illustration below)



Correct Alignment



IPD – slide tabs in



IPD – Slide tabs out



Tilt



Height – too high



Height – too low

### Interpupillary Distance (IPD) – Custom models

The mirrors in the converged binocular optics of the Custom IPD Model are laser aligned and fixed in place to suit a specific IPD and require no adjustment.

### Interpupillary Distance (IPD) – Adjustable Models

The IPD can be adjusted by sliding the tabs located at each end of the converged binocular optics. Slide the tabs to move the mirrors to match your eye width (IPD). (Refer illustration above)

### Tilt Adjustment – SpecFrame Model

If the converged binocular optics are tilted, adjust the nose pads & temple tips/arms on spectacle frame until level.

### Tilt Adjustment – HeadBand Model

If the converged binocular optics are tilted, adjust the HeadBand position until level.

### Height Adjustment - SpecFrame Model

The height of the converged binocular / illumination system is adjusted by moving the system up or down on the SpecFrame bracket:

- Loosen the screw that connects the converged binocular / illumination system to the SpecFrame, 1 turn and adjust.
- Do not leave screw loose, always re-tighten.

### Height Adjustment - HeadBand Model

The height of the converged binocular / illumination system is adjusted by moving the HeadBand up or down on the forehead.

### Illumination Adjustment

If the light spot seems too high, the height adjustment will be too low. (i.e. the user is looking down through the converged binocular optics and below the light spot) The converged binocular optics will need to be positioned higher to correct.

If the light seems too low the reverse will apply. See 'Height Adjustment'.

### HeadBand Bracket Adjustment

The HeadBand mounting bracket has 2 adjustable links allowing separate adjustment of viewing angle and forward positioning of the converged binocular / illumination system:

- The converged binocular optics must be positioned as close to the eyes as possible i.e. almost touching the nose or spectacles.
- For ENT use, the viewing direction should be almost horizontal.
- If the converged binocular optics are not in use (rotated up) then the illumination can be angled further downwards.

### SpecFrame Toggle

- The toggle on wiring lead should be used for all lengthy procedures, e.g. Operating:
- To prevent SpecFrame sliding down the nose when head is tilted down.
- To take pressure off the nose.

### Working with Corrective Lenses

Corrective Lenses can be fitted to the SpecFrame of the O Scope by an Optometrist.

- There is no need to unscrew the illumination system or dismantle the O Scope in any way, other than the frame screws for the lenses.

### Reading Lenses (used for close work)

- Should be fitted to the SpecFrame Model.
- The HeadBand model should be used over the individuals own corrective spectacles.
- When reading lenses are installed and used, the working distance becomes closer.
- If the working distance is not close enough then an extra 0.5 or 1.0 dioptres in the corrective lens should be tried.
- The opposite may be encountered – especially for users with intrinsic short sight

### Bifocal Lenses

- Can be fitted effectively, so long as the converged binocular optics sits in front of the reading section and below the distance section.
- To achieve this, the reading section must be larger (i.e. lower two thirds) and the distance section must be smaller (i.e. upper one third only).
- The height of the nose bridge may need to be adjusted to sit the SpecFrame higher on the face. This extra frame height allows lower positioning of the converged binoculars so that they are in front of the reading section.
- Alternative nose bridges are available from most optometrists.

### Multifocal Lenses

- Are best avoided because it is difficult to achieve sharp focus.

### LED Illumination

- Caution: Hot surface. Avoid direct skin contact with aluminium heat sink during extended periods of use.
- Caution: Do not look directly into the LED Light.
- High efficiency LED (Light Emitting Diodes) are rated at 50,000 hours operating life.
- 6,000 Degrees Kelvin Colour Temperature (Daylight).
- Colour Rendering Index: CRI 75.

### Battery Pack

- Caution: Do not expose the battery to heat, fire or mechanical shock
- Caution: Do not open or dismantle the battery pack.
- Caution: Only use approved batteries supplied by Vorotek.
- Batteries are Lithium Ion: 11.1 Volts, 2,900 mAh.
- The Battery Pack provides 10hrs of "on time".
- The Battery Pack features short circuit protection and charging control circuitry.
- Two position switch - ON/OFF.
- Designed to be worn in the breast pocket or to be clipped to a belt. It can also be clipped to the back of a surgical gown.

### Charger - Charging Battery Pack

- Caution: Use the supplied 12.6V Charger only.
- Caution: Do not attempt to operate the charger if the cord and/or plug appear to be damaged.
- Caution: Do not use charger in the patient vicinity.
- Connect Battery Pack to Charger.
- The Battery Pack can be charged in either the ON or OFF position.
- RED INDICATORS – Charging (takes up to 5 hours).
- GREEN INDICATORS – 100% Charged.

- Charging is best done overnight, frequently and before the Battery Pack runs flat.

## Troubleshooting

### LED illumination cuts out and resets repeatedly

- The LED illumination does not fade, but the protective circuit breaker keeps switching off (and resetting) when the Battery Pack requires recharging. See section on 'Charger'.
- LED's rarely need replacing, but if this is necessary it must be done by VOROTEK.

### Battery Pack will not charge

- See section on 'Charger'.

### SpecFrame damage

- Most problems can be dealt with by an optometrist e.g. missing screws, lenses, new nose pads and bent frames.
- For SpecFrame replacement contact VOROTEK.

### Working distance

- Not close enough or too close – see section on 'Working with Corrective Lenses'.

### Optical Alignment is out

- See section on 'Set Up'.

### Light is to High/Low

- See section on 'Set Up'.

### Focusing

- Difficulty focusing i.e. Seeing two images. See section on 'Set Up'.
- Tip: Focus on an object (such as thumb nail) at arm's length and slowly bring the object closer to your eyes. Switch between each eye, one at a time.

## General Cautions

- Only to be used by qualified health professionals
- Do not use in the presence of flammable anaesthetics
- Before every procedure, carefully inspect the Scope to ensure it is fully functional. DO NOT use if inspection reveals any damage.
- Do not expose electrical equipment to liquids or excessive moisture.