
OCUTECH®
Vision
Enhancing
Systems

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About Ocutech

Ocutech was founded in 1984 to develop the original VES design concept which was invented and patented by Ocutech founder, J. Pekar, who is himself visually impaired. Since then, Ocutech has become a worldwide leader in developing innovative hi-quality bioptic telescopes for the visually impaired. With grant support totaling over $1.5 million from the National Eye Institute (NIH) and the Ontario (Canada) Ministry of Health, Ocutech bioptic systems have been carefully developed and tested and have been preferred 3 to 1 in independent clinical trials. Ocutech VES-bioptic telescopes are used by many thousands of visually impaired individuals throughout the world.

In 1996, Ocutech received worldwide attention when it created the first and only autofocusing bioptic telescope. The VES- AutoFocus (VES-AF) development project took over 6 years and almost $1 million to complete. Now, thousands throughout the world wear the VES-AF and experience the closest-to-natural magnified vision possible from a low vision aid. Individuals who had never been successful with bioptic telescopes gained new-found freedom with the VES-AF. "It changed my life" many have said. In 1999 Ocutech received the prestigious Winston Gordon Award from the Canadian National Institute for the Blind in honor of its innovative work to create the VES- AutoFocus.

Ocutech is committed to the needs of the visually impaired and supports its products with generous limited warranties. Ocutech Low Vision Aids are available through doctors and clinics throughout the world specializing in low vision care.

Three reasons to prescribe Ocutech VES Systems!

1. Designed to optimize optics, appearance, comfort and ease of use!

Studies have shown that the most important features of bioptic telescopes are field of view, weight, appearance and ease of focus. Ocutech VES bioptic telescopes are the only bioptic telescopes that are designed with ergonomics in mind to provide the combination of wide field of view, light weight, compactness and wearing comfort that users prefer. Ocutech's VES bioptic telescopes use the highest-quality Keplerian optical designs to provide the widest field of view possible in a bioptic telescope. Our innovative engineering, including the world's only autofocus bioptic telescope, provides the easiest and most convenient focusing available in any bioptic telescope system.

2. Designed to be easy to fit, demonstrate and prescribe!

Ocutech's VES II, K, Sport and AutoFocus systems are completely adjustable for pupillary distance and angle of inclination, making the fitting of a high-quality bioptic system quick and easy! And, they can be readjusted at any time.

3. Backed by great, personal service and product warranties!

Have a question, a special need or a rush order? For over 25 years, Ocutech has been known for its expertise, customer service, attention to detail, and commitment to quality. Whatever you need, Ocutech is ready to help. Join the many hundreds of devoted prescribers and tens of thousands of users worldwide who have helped to make Ocutech a worldwide leader in bioptic telescope innovation.

Prescribing Guide

Determining a promising candidate

Ocutech has developed a clinical prescribing protocol that is helpful in determining the likely success of your patient.

1. **Visual acuity:** Best corrected visual acuity with conventional lenses is between 20/70 and 20/300.
2. **Ocular dominance:** The better seeing eye is the dominant eye, OR, that while looking through the telescope the dominant eye sees better than the non-dominant eye.
3. **Contrast sensitivity:** Patient is able to see facial features while looking through a 4x Keplerian telescope at a distance of 12 feet under normal room illumination.
4. **Goals:** The patient has appropriate activity goals for the use of the device- primarily for midrange and distance activities.
5. **Dexterity:** The patient shows promising dexterity when using the demonstrator device.
6. **Enthusiasm:** The patient is enthusiastic and motivated to use the device.

Frequently Asked Questions

Which eye should the Ocutech VES be prescribed for?

It is desirable to prescribe for the dominant eye, so long as the acuity through the Ocutech VES is significantly better than the acuity of the non-dominant eye with the normal distance correction (if any). If the non-dominant eye is the significantly better seeing eye, it is often necessary to at least partially occlude the dominant eye to aid sighting through the telescope.

What power should be prescribed?

For general, non-demanding visual activities telescope power should be selected to provide at least 20/40 (6/12) acuity through the device. For more demanding, higher resolution activities, telescope power should be selected to provide at least 20/30 (6/9) through the device.

When should I consider prescribing the VES-AF?

The VES- AutoFocus is the first low vision aid to provide comfortable, convenient, natural vision at normal near distances which allows the visually impaired to work much more efficiently and in a much more relaxed and comfortable posture.

The VES-AF is most valuable for visual activities from 15 feet (4.5m) and closer or when visual attention will be frequently alternated from near to distance such as from the desk to the blackboard, or when extended near-point activities are required such as playing cards, musical instruments, or using the computer. If the primary application of the bioptic is for activities 15 feet (4.5m) or further away, manual focus devices will be as effective, since bioptics require little if any focusing when looking at objects beyond 15 feet (4.5m) away.

When should I consider eyepiece corrections?

All Ocutech manual focus telescopes have sufficient focusing range to correct internally for prescriptions as high as +/- 12 D. Since you can adjust the telescope focus for the spherical equivalent, astigmatic corrections aren't usually required below 3D cylinder. All telescopes can be ordered with eyepiece corrections in any power. For very high prescriptions, prescribers often suggest that the user wear contact lenses when using their Ocutech telescope systems.

The Ocutech VES-Autofocus has a focusing eyepiece which must be set for the user's individual prescription. For spherical corrections above +/-8 and cylinders above 3D an eyepiece correction is recommended.

Ocutech Product Guide

Ocutech's innovative Horizontal Light Path (HLP) VES optical design provides the wide field of view of Keplerian telescopes with a physical design that is appealing, lightweight, comfortable to wear and easy to demonstrate, fit and prescribe.

Most Ocutech VES systems have a mechanical mounting—either across a top-plate with a bracket (VES-II) or a bridge mounting (VES K, Sport, Autofocus) that provides complete control of the adjustment of the telescope system. The VES-Mini uses a traditional through-the-lens mounting system.

VES Autofocus (VES-AF)

- **4x, 12.5 deg**
- **Right and left eye versions**
- **Adjustable bridge mounting assembly**
- **Focuses to 12 inches**
- **Eyepiece corrections available**
- **Weighs only 2.5 oz!**

The world's only autofocusing bioptic telescope, developed with funding from the NIH, and proven effective in clinical studies.

The VES-AF provides the closest-to natural magnified vision as the image is clear almost immediately at any distance from 12 inches to infinity making it especially ideal for midrange and hands-free needs. The VES-AF is the easiest bioptic telescope to use. It operates for 8 hours on a single battery charge.

Uses Ocutech's special metal frames available in assorted styles, colors and sizes.

VES-Sport

- **4x, 12.5 deg**
- **6x, 9.6 deg**
- **Adjustable bridge mounting assembly**
- **Focusable to as close as 9 inches**
- **Interchangeable for right or left eye**
- **Eyepiece corrections available**
- **Weighs less than an ounce!**

The newest manual focusing Ocutech bioptic telescope with a modern hi-tech design, light weight, with bright, sharp, parallax corrected optics. The VES-Sport makes near visual activities easier to do than ever before. Available in colors. Ideal for the full range of bioptic applications. It uses the same mounting system as the VES K.

Internal focusing for refractive error.

Uses Ocutech's special metal frames in assorted styles, colors and sizes.

VES-K

- **3x, 12.5 deg**
- **4x, 12.5 deg**
- **6x, 9.6 deg**
- **Focusable to as close as 7 inches**
- **Adjustable bridge mounting assembly**
- **Interchangeable for right or left eye**
- **Weighs less than an ounce!**

The top-quality standard in bioptic telescopes since 1996. Its wide field of view, and completely adjustable mounting system makes the VES-K easy to demonstrate, fit and dispense.

Internal focusing for refractive error.

Uses Ocutech's special metal frames in assorted styles, colors and sizes.

VES II

- **3x, 12.5 deg**
- **4x, 12.5 deg**
- **6x, 9.6 deg**
- **Focusable to as close as 7 inches**
- **Bracket Mounting assembly**
- **Interchangeable for right or left eye**
- **Eyepiece corrections available**
- **Weighs less than an ounce!**

The original and still popular VES-II was the first cosmetically appealing, expanded field telescope available. Now in its improved second version, the VES- II offers a wider field of view and brighter image. Funded with grants by the NIH, it was preferred 3 to 1 over conventional telescope systems in independent clinical research studies.

The VES II can be easily assembled and have carrier lenses installed by any optical establishment anywhere eyeglasses are made.

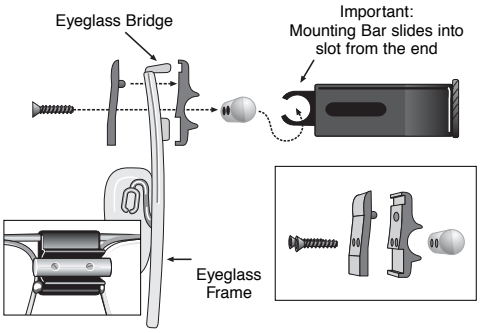
VES Mini

- **3x, 15 deg**
- **Traditional through-the-lens mounting system.**
- **Focusable to as close as 9 inches**
- **Eyepiece corrections available.**
- **Reading and filter caps available.**
- **Weighs less than an ounce!**

The VES-Mini provides the widest field of view and the smallest size all in one device! Its very quick focusing adjusts for most refractive errors. It can be prescribed for one or both eyes, for distance or near.

Uses Ocutech's special metal frames in assorted styles, colors and sizes, or you can provide sturdy frames with adjustable nose-pads of your choice.

Bridge Mounting System



The Bridge Mounting System

(VES K, Sport, AutoFocus)

The VES K, Sport and Autofocus attach to the frame using a bridge mounting assembly which allows for complete control of the positioning of the telescope. Manual focus telescopes are interchangeable for right and left eye by simply removing it from the bridge mounting assembly and flipping it over and reinstalling it. The VES Autofocus is not interchangeable for right and left eye.

Carrier lens is slotted to allow eyepiece to pass through.

Basic Fitting Steps for Bridge Mounted VES Systems

(Download complete instruction manual at www.ocutech.com)

1. Loosen the 2 large bridge mounting screws and align the eyepiece with the sighting eye by sliding it right or left. You can also slide the VES K and Sport telescope completely off the bridge assembly and flip it over to reposition for use by the other eye.

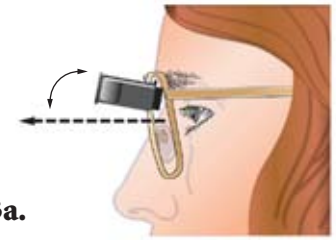
2. Adjust nosepads to position bottom of eyepiece to align with top of pupil or bottom of upper lid.

3. (a & b) Adjust the angle of inclination of the telescope to make certain that when the user tilts their head down their line of sight goes straight through the telescope eyepiece.

4. Retighten bridge mounting screws to secure the telescope in place. DO NOT OVERTIGHTEN!

1.

2.



3a.

3b.

Just Five Simple Steps…

1. Determine the eye that will use the telescope
2. Position the telescope eyepiece to align with that eye
3. Adjust the bridge so that the bottom of the eyepiece aligns with the top of the pupil
4. Adjust the telescope angle of inclination to site straight through the eyepiece when the head is tilted down
5. Set the focus... *That's it!*

Bracket Mounting System

The Bracket Mounting System (VES II)

Standard top position:

The telescope is attached to the top mounting bracket with two Allen "side" screws which allows for in-and-out (vertex) control and up-and-down angling control. Removing the side screws will allow you to switch the telescope to be used by either eye by simply flipping the telescope over. By loosening the "bottom" screws the telescope can be slid right-and-left to align with the sighting eye.

Bottom mounting position:

The VES II can also be positioned in a lower position when physical or ergonomic needs make it desirable. In bottom mountings the carrier lens must be slotted to allow eyepiece to pass through. See the complete instructions for this fitting method at www.ocutech.com.

Basic Fitting Steps for VES II Bracket Mount System:

(Download complete instruction manual at www.ocutech.com)

1. The telescope is attached to the mounting bracket with two Allen "side" screws which allows for in-and-out (vertex) control and up-and-down angling control. Removing the side screws will allow you to switch the telescope to be used by either the right or left eye.
2. Once attached to the bracket loosen the "bottom screws" to allow the telescope to slide right and left to align the eyepiece with the user's eye. Once in the proper position re-tighten bottom screws.
3. Adjust the nose pads so the top of the frame aligns with the top of the pupil
4. **(a, b, c)** Loosen the side Allen screws and adjust the tilt of the telescope so that when the patient dips their head to look into the eyepiece their line of sight goes straight through the telescope eyepiece and they see a full and round field of view. Then tighten the side screws.

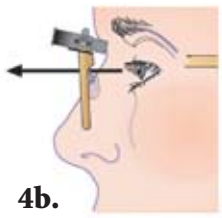
1.

2.

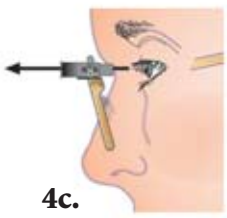
3.

Spread the nose pads to allow the frame to fit as low as possible while keeping a short vertex distance. Align top of eyewire of frame with top of pupil or bottom of upper lid – whichever is lowest.

4a.



4b.



4c.

Traditional Mounting System

Traditional Through-the-Lens Bioptic Systems (VES-Mini)

VES-Mini in standard bioptic position

Mounted into and through the carrier lens, the Ocutech VES- Mini offers a combination of the widest field of view and smallest size of any bioptic telescope. It can be prescribed monocularly or binocularly and for distance and near applications.

Fitting Traditional Through-the-Lens Systems (VES-Mini)

(Download complete instruction manual at www.ocutech.com)

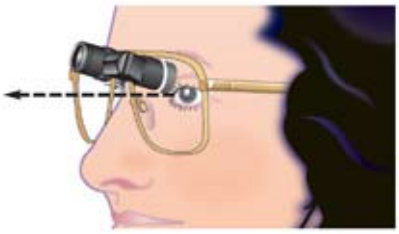
The Ocutech VES-Mini can be prescribed monocularly or bionocularly and for distance or near. The Ocutech VES® Mini is available in a demonstrator kit that uses a special adjustable frame.

When using the demonstrator frame, you can control the height of the telescope by raising and lowering the bridge piece. You can slide the telescope right and left to position the eyepiece directly above the pupil of the eye chosen to sight through the device. Confirm that the patient can see a full, round field through the telescope, and that the image is not cut-off to the right or left, or up or down. You may even want to allow the patient to slide the telescope slightly right or left themselves to position it best.

Once the position is finalized, remove the frame and measure the distance between the center of the eyepiece and the center of the bridge to determine the proper PD for ordering the telescope system.

Select the frame you wish to have the VES-Mini installed into. We recommend stiff frames for binocular systems. Use the step-by-step ordering form to confirm the vertical placement and angle of inclination of the telescope. Feel free to call Ocutech consultations for support.

VES-Mini on adjustable demonstrator frame.



The telescope is positioned at an upward angle so the user can view normally beneath it

Simply drop the head and look into the eyepiece to sight through the telescope

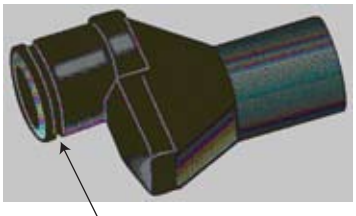
Setting Telescope Focus

Manual Focus Systems

Manual focus HLP systems are adjusted by turning the central focusing knob right or left which will correct for both the refractive error of the user and also for the working distance of the target.

Eyepiece corrections are rarely needed as the telescopes are designed to correct for refractive errors between +12 to -12D. Astigmatic corrections are usually not required for powers below 3D cylinder.

Focusing manual focus-VES systems



Focus knob for VES-Mini

Setting VES-AF Eyepiece Focus

1. **(a & b)** To set the focus of the eyepiece. Snap the eyepiece focusing wrench onto the back of the eyepiece with the handle pointing to twelve o'clock. (You can also have the patient use their fingers to set the eyepiece focus.)
2. Turn the VES-AF on and ask the patient to look at an acuity chart more than 15 feet away. Ask the patient to watch the smallest legible line and rotate the eyepiece right or left to sharpen the focus.
3. Confirm that the eyepiece is not over focused: Rotate the handle to the patient's left until the image blurs, and then to the right until it just becomes clear. This should be the best focus for the patient both for distance and near.
4. Check the focus at near. Hold a large near chart between 12 and 15 inches from the patient (as measured from the front of the telescope). The image should become clear momentarily. If it is, the eyepiece focus is satisfactory. If not, repeat the distance focus adjustment again. It should only require a small refinement. Depending upon your patient you may have to balance the eyepiece focus between distance and near to obtain the best overall adjustment.
5. There is a small Allen set screw at the top of the eyepiece that can be tightened to fix the eyepiece adjustment in place.

Notes About Setting The AF Eyepiece

If you are emmetropic set the eyepiece focus for yourself first. If your patient is myopic turn the eyepiece in (clockwise as seen from the back of the telescope) a 1/4 turn for each 4 diopters. If your patient is hyperopic turn the eyepiece out 1/4 turn (counter clockwise) for each 4 diopters. This should give you a good starting point for the final eyepiece focus adjustment.

1a. *Focus spanner wrench*

1b. *Spanner wrench on eyepiece*

2.

Frames and Accessories

OCUTECH Zyl Standard Frame

For use with VES II

EYE	DBL	TEMPLES	MAX SEG HT.
50	26	140 & 150mm	6mm
54	26	140 & 150mm	6mm

Standard Colors: Grey, Crystal, Demi Amber, Tan

EYE	DBL	TEMPLES	MAX SEG HT.
46	20	135mm	NR

Pediatric Colors: Grey, Crystal, Demi Amber, Tan

OCUTECH Zyl Unisex Frame

For use with VES II

EYE	DBL	TEMPLES	MAX SEG HT.
50	23.5	140mm	NR

Unisex Colors: Grey, Crystal, Demi Amber, Tan

OCUTECH "K" Metal Frame

For use with VES AF,K, Sport, Mini

EYE	DBL	TEMPLES	MAX SEG HT.
51	18	135mm	14mm
53	18	140mm	16mm
55	18	140mm	19mm
57	18	145mm	21mm
59	18	145mm	23mm

"K" Metal Colors: Gold, Natural, Bronze

OCUTECH Unisex Metal Frame

For use with VES AF,K, Sport, Mini

EYE	DBL	TEMPLES	MAX SEG HT.
49	18	135mm	9mm
51	18	140mm	12mm

Unisex Metal Colors: Gold, Natural, Bronze

OCUTECH Sleek Metal Frame

For use with VES K, Sport, Mini

EYE	DBL	TEMPLES	MAX SEG HT.
50	18	140mm	NR
53	18	145mm	NR

Unisex Metal Colors: Gun Metal, Natural

Filters

Available for all Ocutech frames (also available as filter caps for the telescope)

Colors available:
Grey, Brown, Blue-blocker, Yellow

Ordering options:
With aperture- the filter will not cover the eyepiece
Without aperture- the filter will cover the eyepiece

Patient Cases:

Patient cases are reinforced and designed to protect the system.

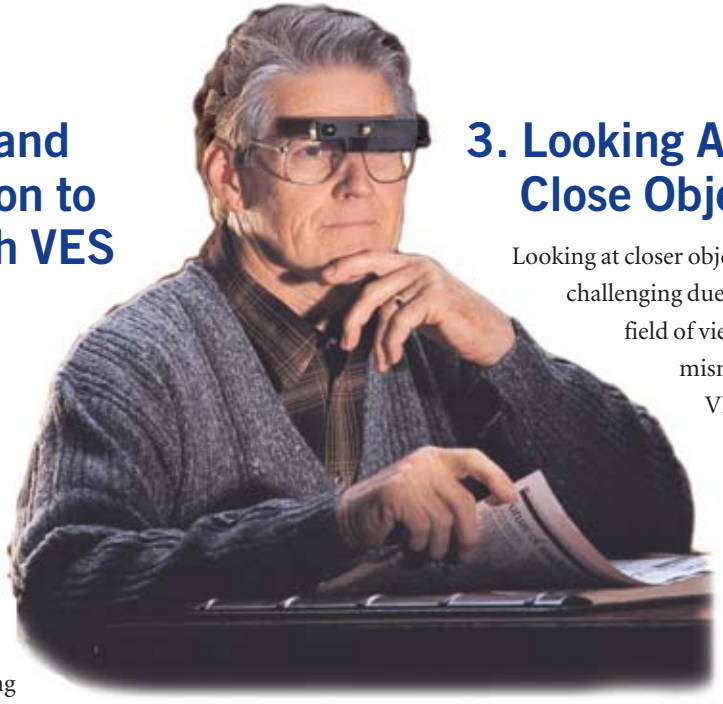
Fitting Tools

Each patient system is provided with instructions and the fitting tools necessary to dispense the system.

Head Straps

Filter/Reading Caps

Training Suggestions



1. Proper Head and Eye Translation to Sight Through VES

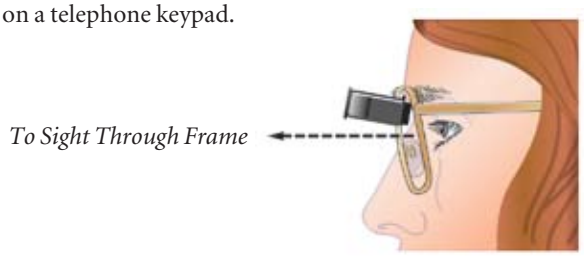
Look first through the regular eyeglass lens (carrier lens) of the VES. It should provide your customary distance vision. Look directly at the object you want to magnify. Drop your head slightly and look up into the eyepiece. You should see a full, round magnified image. You may have to focus it to get the image clear. Practice switching between the carrier lens and the telescope until you can do it easily and without losing your target.

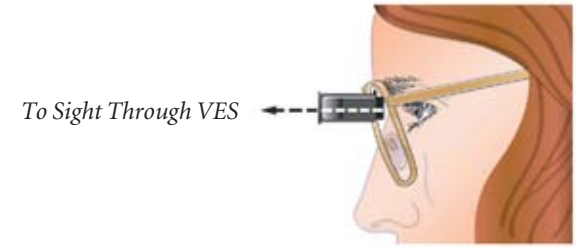
2. Locating What You Want To See

Since the field of view through the VES is narrow, like a tunnel, it can at first be challenging to find what you want to see. To be successful, one must first look with your "normal" vision through the regular eyeglass lenses, aiming directly at the object you want to see better. While looking directly at the target, slowly dip your head down, and look into the eyepiece of the VES. With practice you should be able to switch between your normal vision and the telescope image quickly and accurately. Practice this at home while looking at objects on walls, faces of family, or the TV, until it becomes natural and you can do it easily. With time you can learn to ignore the tunnel field of view.

3. Looking At Close Objects

Looking at closer objects can be more challenging due both to the narrow field of view and the parallax (visual mismatch) produced by the VES. To learn to find and touch objects within your arm's range, first find the object in the VES field of view, and while looking at it, pass your upraised finger across the field of view several inches in front of the target. Once you can see both your finger and the target at the same time, watch your finger as it moves in to touch it. You MUST watch your finger while looking through the telescope to learn to do this. A convenient technique is to practice this while trying to touch the buttons on a telephone keypad.





Helpful Hints

Clinical Suggestions for Prescribing Bioptic Telescopes

1. Acuity goals though bioptic telescopes should be 20/40 for normal visual activities, or 20/30 or higher for demanding visual needs.
2. Carrier lenses: Order the eyeglass prescription the patient normally wears for distance vision. Prescribe a bifocal if that is what the patient usually wears. We recommend flat-top designs.
3. Maintain at least 10mm between the top of the bifocal and the bottom of the eyepiece.
4. Eyepiece Corrections: Consider eyepiece corrections for sphere power above +/- 12D, or 3D cylinder.
5. Illumination Control: Slip-behind sun filters are available in a selection of colors. Filter caps and internal filters can also be ordered.
6. Prescribe bioptic telescopes to be used by the dominant eye if at all possible.

Trouble shooting VES systems

1. **The patient does not see a full field.**
   Check to see that the telescope is properly aligned and inclined for the patient. Review the eyepiece position fitting method. Loosen the mounting screws slightly and allow the patient to reposition the aid for their line of sight.
2. **The image is not clear.**
   Check to see that the telescope is properly focused, that the eyepiece and front lenses are clean, and that there is not significant refractive error that might preclude clear vision through the telescope. Also check that the patient is using the appropriate eye to sight through the telescope.
3. **The patient complains that the field of view is small.**
   Check to see if shortening the vertex distance is possible by adjusting the frame or sliding the telescope backward on the VES II mounting bracket. Also explain that all telescopes produce a narrow field of view, but that the patient will adapt over time. Also discuss that the VES® field of view is the widest available.
4. **The patient complains that they have to drop their head too much to see through the telescope.**
   Check to see that the frame is as low as possible on the bridge, that the telescope is as low as possible on the mounting bracket (VES II), and that the angle of inclination of the telescope is as low as possible.
5. **The image through the telescope is too dim.**
   Recheck the pupillary distance adjustment. Slight misalignment can significantly decrease image brightness.
   Loosen the positioning screws and allow the patient to slide the telescope right and left until the image is brightest.
   If this is still not adequate, check that the front and back lenses are clean and free of grease and oil.
   Check also that the internal optics are not fogged by holding the telescope to a light and looking through it backwards (through the front lens).