



To see,  
or not to  
see...

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MWST. 399 436

## General Information

### Cleaning

- The same procedure should be adopted as with any other precision made optical system.
  - The magnifying lenses are washable under the faucet. Use glass lens cleaning solution and lens paper or the cloth provided to remove debris or fingerprints.
  - Detach the glasses from the frame when lenses should be cleaned. When inserting: Move the slide again toward the „nose“. Push the rim to the upmost position. Check correct fit and lock of the rim by pulling back slightly.
  - Disinfection is possible by rubbing with a moist disinfectant cloth.
- Keep an eye on your SandyGrendel System!

### Important notes

- Never look directly at the sun with your magnifying lenses, as this could lead to eye injury.
- If handled improperly, particularly if subjected to severe mechanical stress, e. g. knocks and bangs, dropping or pressure, the magnifying system may be damaged. In doubt please send it back to the manufacturer.

**If you have any problems with our products, please contact us immediately.**

The SandyGrendel System is protected by at least two of the following patents:

Land	Anmelde-#	Patent-#	Schutzdauer
Europe	97810104.6		2017
USA	027347	5943114	2017
Japan	10-43524	2983950	
Austria	91920849.6	E 1108600514514	2011
Belgium	91920849.6	0514514	
Switzerland	91920849.6	0514514	
Germany	91920849.6	59102746.1	
France	91920849.6	0514514	
Europe	99810500.1		2019

**SandyGrendel Design - Idea, Function and Form in Harmony.**

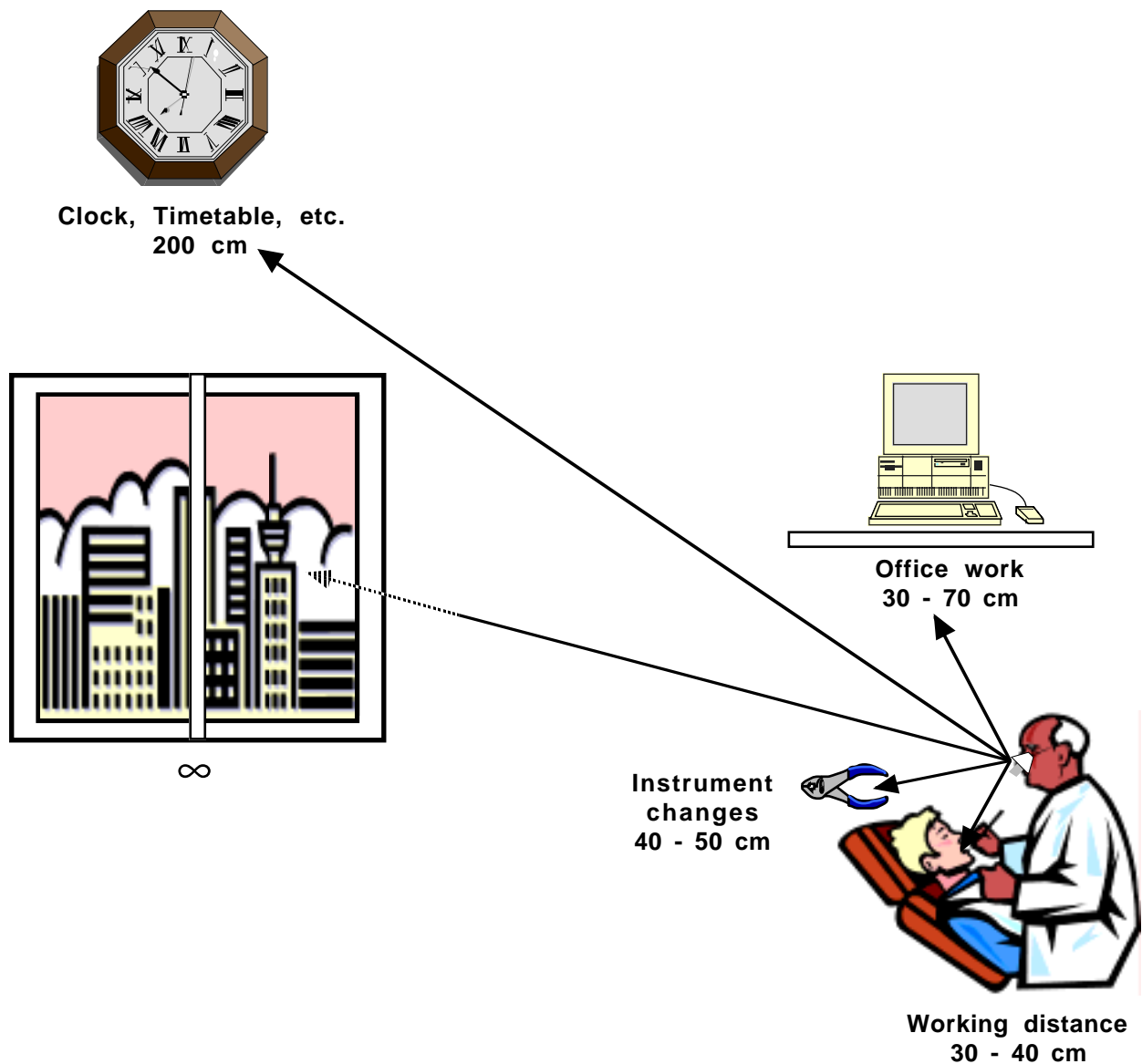
Dr. Alex Grendelmeier

# Distances

In the drawing below the distances that are important for the work of a dentist are demonstrated. These depend on body size, vision, age and other individual factors.

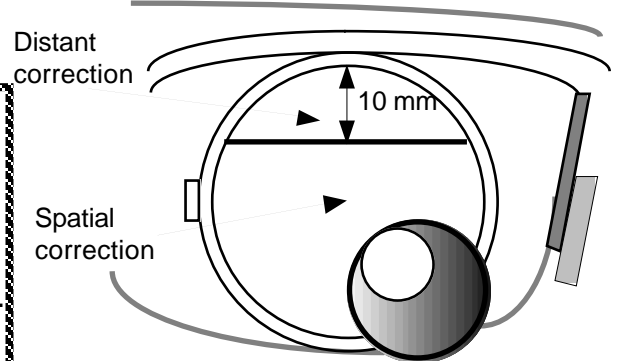
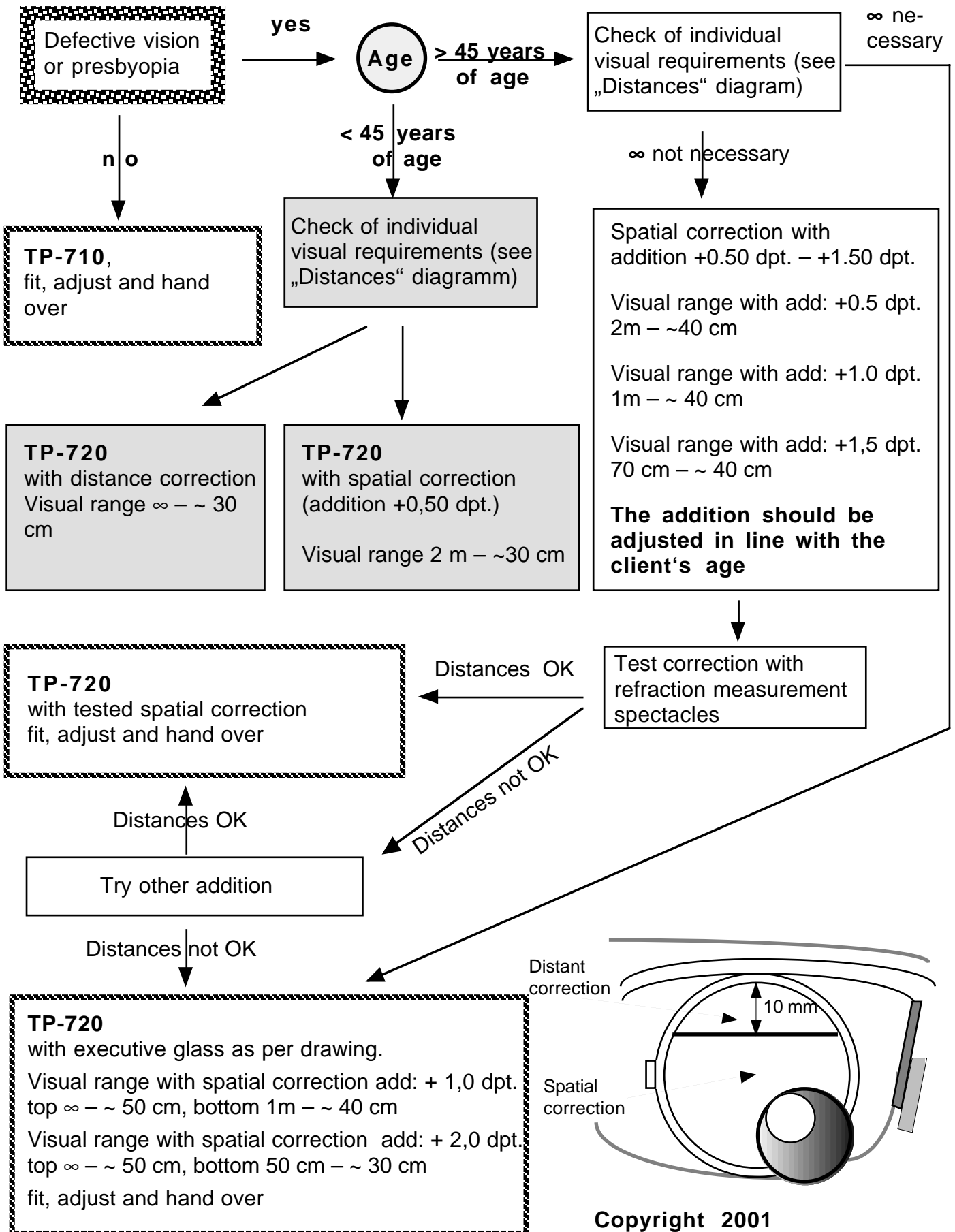
By the selection of the correct working distance of telescopes the posture of the user at work and thus coherent problems can be crucially improved in many cases.

The use of progressive lenses is not possible in combination with surgical telescopes.



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# Recommendations for determining the individual spectacle lenses for the SandyGrendel System



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## Adjusting the SandyGrendel Design spectacle frame to the individual head shape

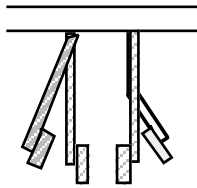
The SandyGrende Titanium-Pro spectacle frame is provided with various features which enables it to be optimally adjusted to suit individual head and nose shapes.

### 1. The material

The Titanium-Pro is made of pure Titanium. Titanium is not only extremely light and non-allergenic, it can also be shaped easily without the risk of breakage.

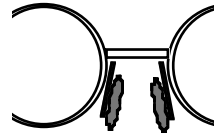
### 2. The bridge

This is made of titanium. It is long and fitted directly to the the spectacle frame and thus not attached to the lens rims.



Virtually unlimited adjustment range to suit almost any nose shape. The saddle bridge should rest fully on the ridge of the nose.

Abb. 1



Restricted adjustment range to different nose shapes.

Abb. 2

**In addition, the vertical position of the surgical telescopes in relation to the viewing point can also be controlled by using different saddle bridge sizes.**

### 3. The front bar

It must be parallel to the interpupillar line. Therefore the temples have to be bent up- or downwards in the hinge to get the desired result.

The front bar should also be symmetrical to the face (Abb. 7)

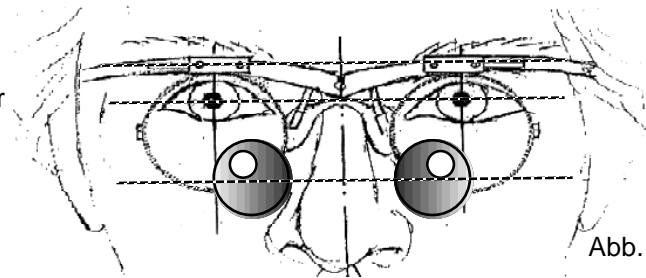


Abb. 3

### 4. The temples

The Titanium-Pro functions in principle like a spring-fitting spectacle frame. The entire titanium-frame acts as a spring. On the one hand, this results in an excellent fit without elastic straps, etc. and on the other guarantees exceptional wearer comfort.

- The temple ends are **not bent down** behind the ear in the usual way. It is important to ensure that the round ends lied **flat** against the head (processus mastoideus).

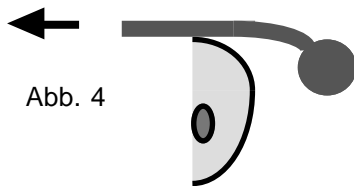


Abb. 4

The spectacles can be removed from the head in a linear motion.

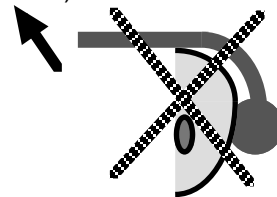


Abb. 5

Pressure on sensitive nerves behind the ear. The spectacles must be removed in an upward direction.

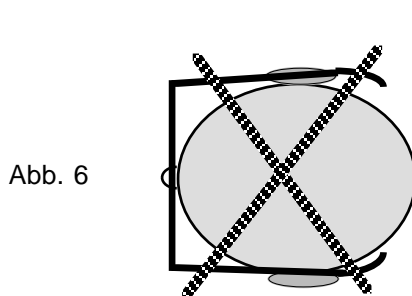


Abb. 6

If the spring effect is too weak, reduce the angle in the corner (→)

Front bar symmetrical to the face

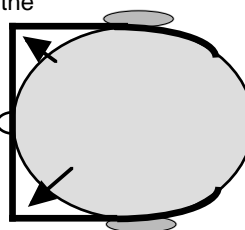


Abb. 7

Allow temple to wrap around the head.

# Notes for the optician

Preliminary and fine adjustment of the telescopes are carried out as described on information sheets 1 and 2. The following explanations only apply if **corrective lenses** are required.

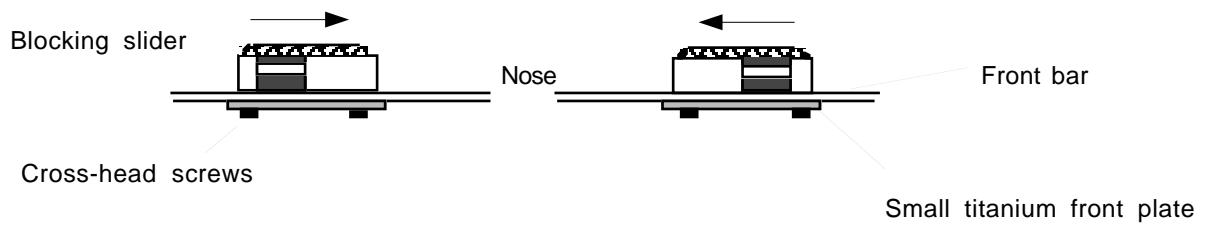
## 1. General

On the SandyGrendel System the rims for the corrective lenses are secured to the bar with a removable slider unit (patented). This enables the user to wear the telescopes **with** or **without** correcting lenses or contact lenses respectively. A slider unit consists essentially of a female part (described here as carriage) and a male part (pin on the rim).

## 2. Fixing the carriage

First attach the carriage to the bar. To do this the small cross-head screws are inserted through the small titanium front plates and through the slots in the bar into the threads of the carriage. They are then tightened just sufficiently that the carriage can still slide.

**Important!** The carriages are fitted as shown in the drawing. They are positioned **symmetrically** in relation to the nose. Check: Both blocking sliders can be moved towards the nose.

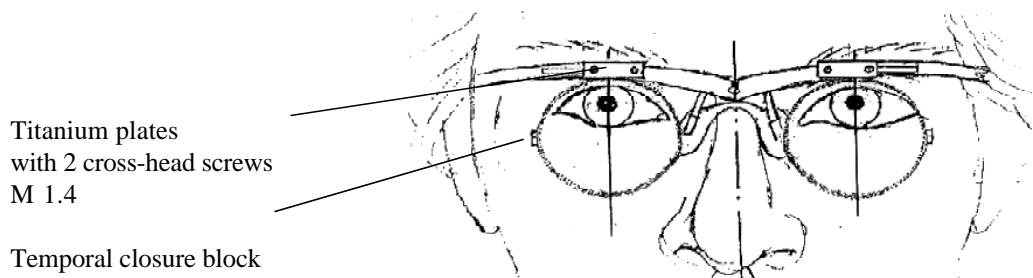


## 3. Positioning the rim

Insert male part of the rim (**temporal closure block!**) in the corresponding slot on the carriage - press the slider against the nose - push the rim fully upwards - release the slider - pull back the rim slightly as check.

## 4. Adjusting the rims

The carriages with rims are now moved until the imaginary vertical axes of symmetry of the rims correspond exactly to the centers of the pupils (Distant PD). Now finally tighten the cross-head screws.

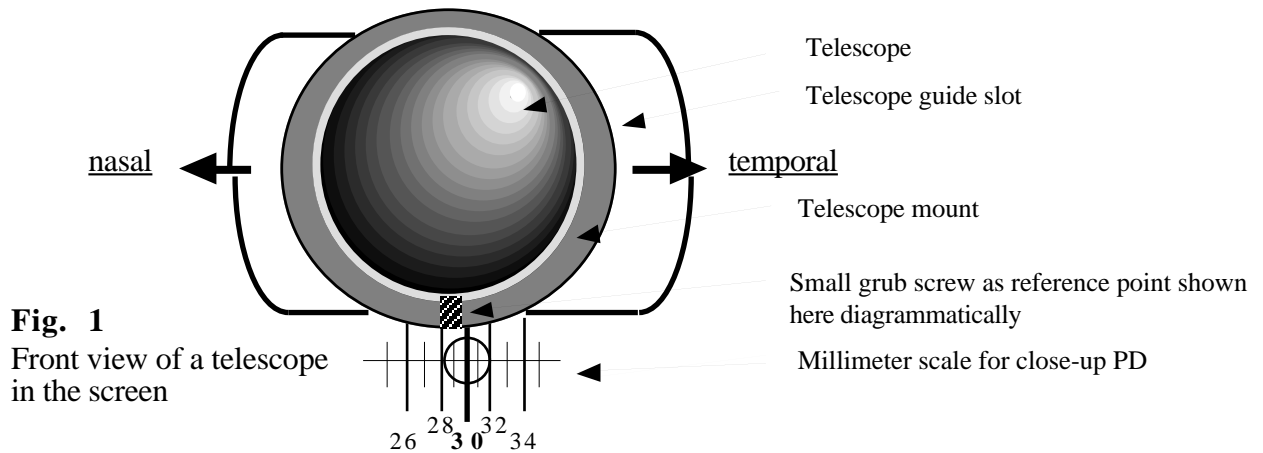


# Preliminary adjustment of the telescopes SandyGrendel

Explained by means of an example for the left eye in semi-diagrammatic representation

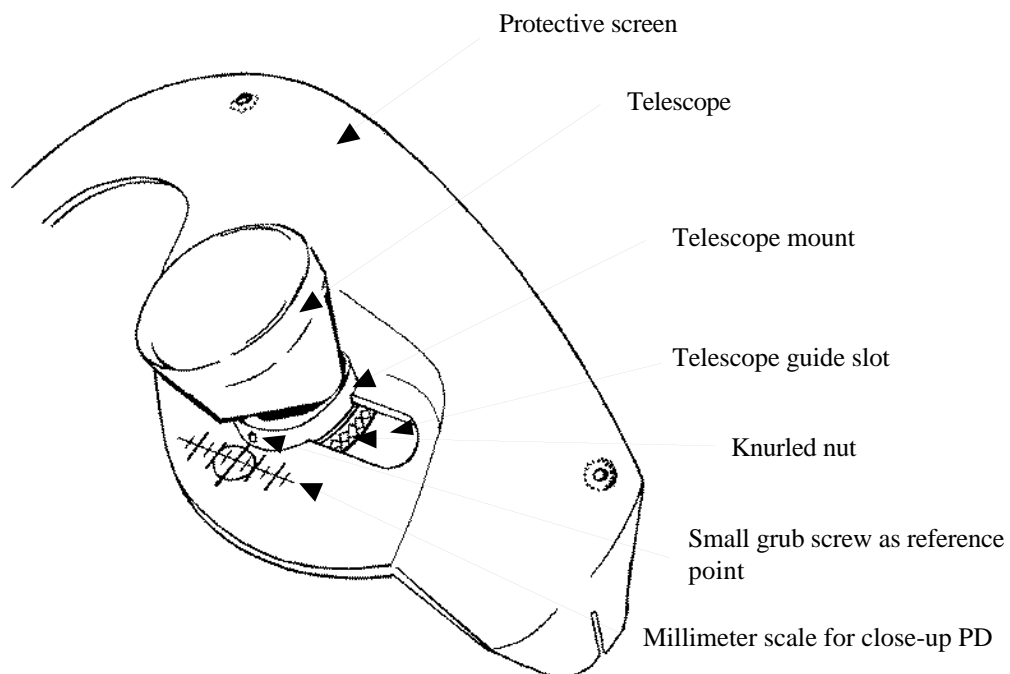
Assumption:

The close-up PD 350 mm measurement for the left eye is **29 mm**



**Fig. 1**  
Front view of a telescope  
in the screen

1. Turn the knurled nut of the left telescope mount counter-clockwise from the rear of the protective screen: telescope and mount can be slid sideways in the lens mount slot.
2. Slide the telescope and mount in the telescope guide slot of the protective screen until the small grub screw comes to rest above the measured close-up PD mm value on the millimeter scale, 29 mm in the case assumed here. The small grub screw is thus between 28 mm and 30 mm (Fig. 1).
3. Turned the knurled nut clockwise: telescope is fixed in the preliminary position.
4. Cut the acetate protective film which projects towards the nose using a pair of scissors.
5. Carry out the same procedure on the right-hand side. **Important:** Often the left and right-hand close-up PD values are different!



This completes the individual preliminary adjustment of the left and right-hand telescopes. The fine adjustment is as follows.

# Fine-adjustment of the telescopes

Once the **preliminary adjustment** of the telescopes is complete, the fine adjustment takes place.

## Important information:

- Focusing is obtained from the correct distance (= working distance) between the observer's eye and the object being observed. In order to obtain the optimum focus, the upper body – and thus head and eyes – is moved backwards and forward slightly.
- If the small grub screw is loosened counter-clockwise, this enables the telescopes to be rotated in their mounts. This has no bearing on the focusing.
- The telescopes are positioned at an angle of 5° in their mounts. This has the following purpose:

If e.g. a cross is viewed through **one** telescope (=monocular) and the latter is simultaneously rotated, the cross in the field of view describes a circle (Fig. 1).

If this cross on the table is now viewed simultaneously with both eyes (=binocular), in certain circumstances the small object may appear as a double image (Fig. 2). By rotating one or if necessary both telescopes, the double image can be made to coincide. (Fig. 3).

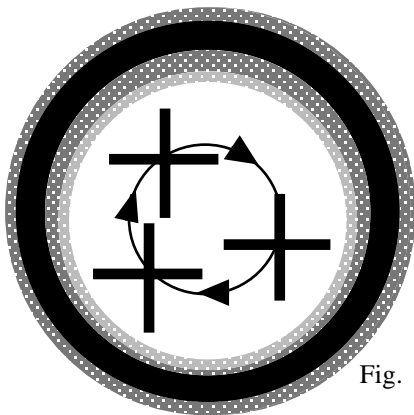


Fig. 1

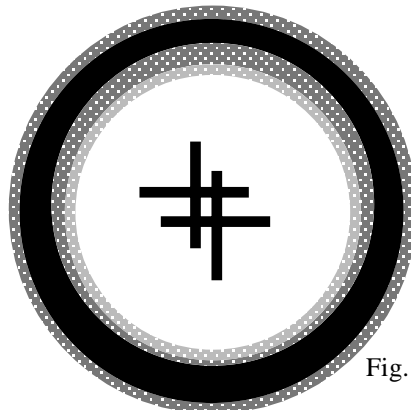


Fig. 2

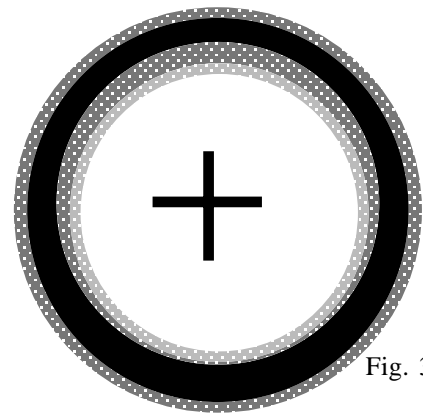


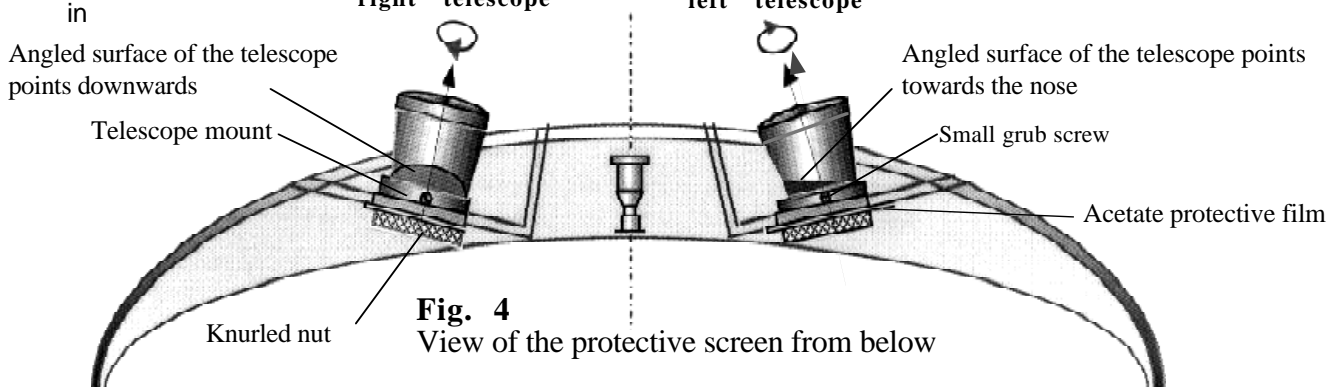
Fig. 3

## Practical procedure for fine adjustment of the telescopes:

- Draw a black cross (side length ~ 1 cm) on a white piece of paper!
- As a starting position for **both telescopes**, the angled lens surfaces are pointed downwards (Fig. 4, „right telescope“)
- The cross is now observed at maximum sharpness, i.e. viewed at optimum working distance **through both telescopes simultaneously (=binocular)**. If this cross appears as shown in Fig. 3, no further fine adjustment is required. The small grub screws are screwed in and gently tightened.
- If a double image (Fig. 2) appears, the two visible crosses are made to coincide by turning one or if necessary both telescopes (Fig. 3).
- Optimum: a single cross can be seen in binocular vision and the angled surface of the telescopes are approx. symmetrical in relation to the nose. Fig. 4 shows a situation which is capable of improvement in this respect: the left and right angled surfaces of the telescopes are not symmetrical!

### Final check: it must be possible to read a text through the telescopes.

- Screw in both grub screws **clockwise** and tighten gently. This prevents the telescopes from moving in



**Fig. 4**  
View of the protective screen from below

# How to determine distant IPD and close-up IPD

Do-it-yourself-Procedure by SandyGrendel Design

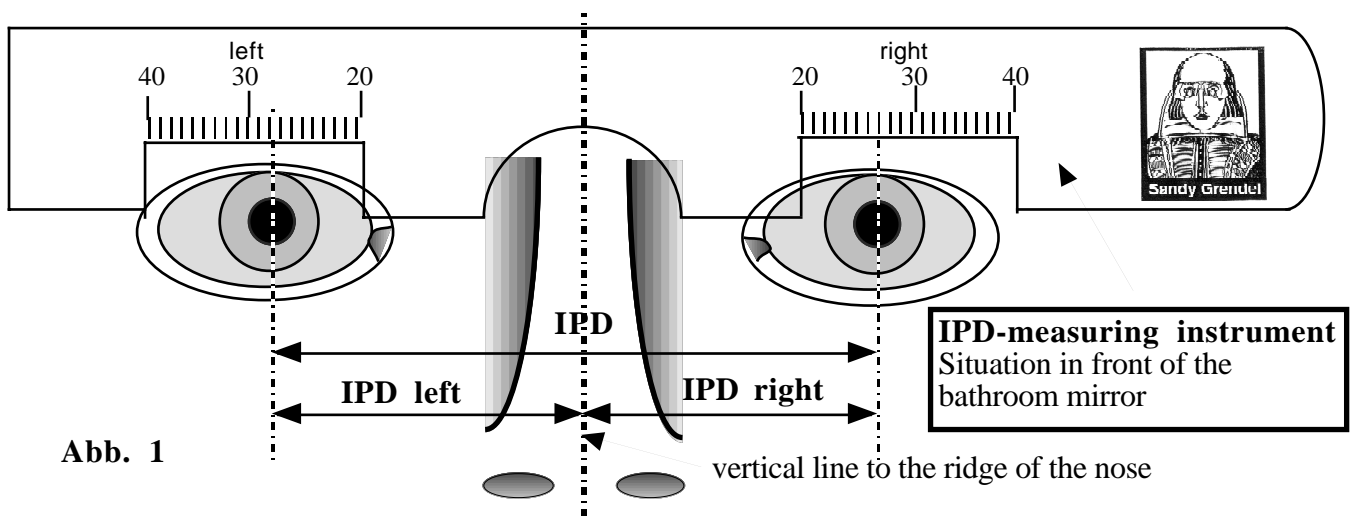


Abb. 1

Distant IPD left:	28 mm	Distant IPD right:	27 mm
Close-up IPD left:	$28 \text{ mm} - 3 \text{ mm} = 25 \text{ mm}$	Close-up IPD right:	$27 \text{ mm} - 3 \text{ mm} = 24 \text{ mm}$

You will find the explanation for the „close-up IPD“ and their calculation in the following text!

## Definition of the interpupillar distance (IPD):

The distance between the two centers of the pupils is called interpupillar distance (IPD). Because the human face is often asymmetrical this distance becomes usually divided in a right IPD and a left IPD, which refers to the vertical line to the ridge of the nose.  $IPD = IPD \text{ right} + IPD \text{ left}$  (Abb. 1). This IPD changes with an individual depending on, at what distance an object is regarded.

**Distant IPD:** The regarded object is far away.

**Close-up IPD:** The regarded object is in the proximity. The eyeballs (and concomitantly the pupils) rotate in a nasal direction and thus the IPD is reduced. The closer the object, the smaller the IPD. The close-up PD is usually indicated together with the distance to the regarded object (working distance), for example: Close-up IPD 350 mm right 32 mm / left 34 mm.

Based on a multiplicity of measurements we found out that with the working distance, which is relevant for the telescope wearer (range 300 mm - 400 mm) **3 mm** must be taken off from the distant IPD on each side to get the close-up IPD.

## Determination of the distant IPD and calculation of the close-up IPD:

1. Cut out the IPD measuring instrument below
2. Place up yourself in the distance of approx. 1 meter before the well lit bathroom mirror.
3. Hold the measuring instrument over the eyes (Abb. 1). **Important:** The symmetry axis of the measuring instrument must be in correspondence with the vertical line to the ridge of the nose.
4. Read off distance on the right and left millimeter scale and note value. Repeat measurement several times and take average. This value corresponds to the distant IPD.
5. **Close-up IPD right/left = Distant IPD right/left minus 3 mm on each side.** Note value.
6. Go on with the guidance „Preliminary adjustment of the telescopes“.

**If you have a problem with this guidance, please ask your optician. He will determine the IPD values with modern device fast and exactly.**



A help for perfect adjustment:



1. looking from the eye to the object you have to think of a line (optical axis, blue in the picture) the telescopes have to be parallel to this line and also centered. This has to be perfect from the front and from the sides.



2. look from the object side, you have to be in the working distance (the loup wearer sees your eye in focus) if the pupils you see in the telescopes are centered the adjustment is perfect.



## Warranty

Dr. A. Grendelmeier & Co. (DAG) warrants to you against defects in material and workmanship for a period of ONE (1) year after the date of purchase. During the applicable warranty period DAG will repair (or at its option replace) free of charge any DAG Products that prove defective provided you return them properly packaged to DAG, all transportation charges prepaid, together with your name, address, E-mail address, telephone and fax number.

This warranty does not apply if, in the opinion of DAG, the Warranted Product has been damaged by accident, abuse, misuse or misapplication.

In the event that any claim presented under warranty is found on investigation by DAG either to be outside the scope or duration of this warranty, then the costs of such investigation and repair shall be borne by you.

Prescription lenses, made from incorrect information supplied by the customer or the customer's optical professional, are not refundable by DAG.

## Liability

Dr. A. Grendelmeier & Co. (DAG) expressly disclaims all liability for damages, whatever their cause, including direct or indirect damage, such as consequential damage, amongst others caused by the non functioning or malfunctioning of the DAG Products or connected to the use of DAG Products, and all damage resulting from a temporary inability to use the DAG Products.

DAG's liability will in no event exceed the amount paid by you for the DAG Product that either directly or indirectly caused this damage, or was either directly or indirectly connected to the damage, as indicated by the DAG invoice for the DAG Products.

If the recipient of DAG Products does not accept the above stated warranty and liability conditions, DAG Products have to be returned properly packaged to DAG. DAG will refund total amount of invoice.

## Materials:

Frame:	Pure Titanium, uncoated		
Rims:	Pure Titanium, uncoated		
Loupes:	Mineral glass/Aluminum		
Loupe Attachment	Aluminum		
Lenses:	free choice of user (mineral, Polycarbonat etc.)		
Attachment:	Box: Plastic, Zytel 280g 33hsl	Spring: Inox	Lever: Inox
	Screws: Inox		

Standard screen (not subject of the above declaimed warranty)

Screen:	Polycarbonat (not scratchproof). Remove screen from frame when not in use (over night etc.) Continuous stress will result in fatigue cracks.		
Attachments:	Inox		

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