

Gehmann Cylindrical Lens System Art.579 (CLS)



Dear customer,

You have just bought one of our newest outstanding innovations (art. 579, abbrev.: **CLS**). Once again this new product development underlines the exceptional status of Gehmann as an innovative target shooting equipment manufacturer. The **CLS** is able to compensate for astigmatism and to balance size and optical axis of the eye up to 2.0 completely. In combination with our magnifying diopter (-4,5dpt. to +4,5dpt.) for spherical disorders our revolutionary product is now able to replace a shooting frame completely. The **CLS** has the outstanding advantage of individual adjustments of the cylindrical lens system to specific visual disorders and imperfections of the single shooter. Shooting frames have the disadvantage of having to buy a new lens in order to adapt to even small changes of defective vision. Vision depends on daily changing factors such as light level, fluctuations of blood pressure and blood glucose or stress-related factors. Our new **CLS** provides the shooter with the possibility to balance small and great changes of your vision through simple adjustment. It is this individual adjustment possibility to make our cylindrical lens system superior to the use of a standard shooting frame. Once again Gehmann paves the way for extraordinary shooting performances. Gehmann have always been a byword for innovative products bringing success to shooters around the world.

Assembly instructions:

The two relevant astigmatism figures

- a) optical axis with angle degrees of up to 180° and
- b) cylindrical figure in dpt. of the aiming eye can be taken from the spectacle documents.

An optician can find out the value if there is no data available.

Three assembly groups have to be brought into alignment when it comes to the assembly of a rearsight iris with magnifying diopter +/-4,5dpt. and the **CLS**. We recommend the following approach in order to assemble our optical unit:

Step 1 Attachment of adaptor to rearsight iris:

Adaptor 579-I and 579-II (1) will be attached to the body of the rearsight iris after removal of the thread adaptor (2) or magnifying diopter and in exchange with the locking collar (3)



The adaptor 579-III (1) will be screwed directly into the thread of the rearsight iris (2).



In the end of the assembly instructions you will find a list showing you which adaptor to choose.

Step 2 Assembly of the different assembly groups:

screw the magnifying diopter (1) into the **CLS** (2) and fix lightly with locking spanner (3) which has been provided with the rearsight iris



Insert rearsight iris and adaptor (1) into the **CLS** (2) and tighten the three fastening screws with enclosed Allen key (3) (SW 1,3) lightly.



Step 3 Positioning of CLS:

screw rearsight iris, magnifying diopter and **CLS** into the rearsight unit such as to ensure that the sized value of the optical axis shows the 12 o'clock position (180° on the scale). Fix the position of your rearsight iris with locking collar (scale position of the magnifying diopter is irrelevant).



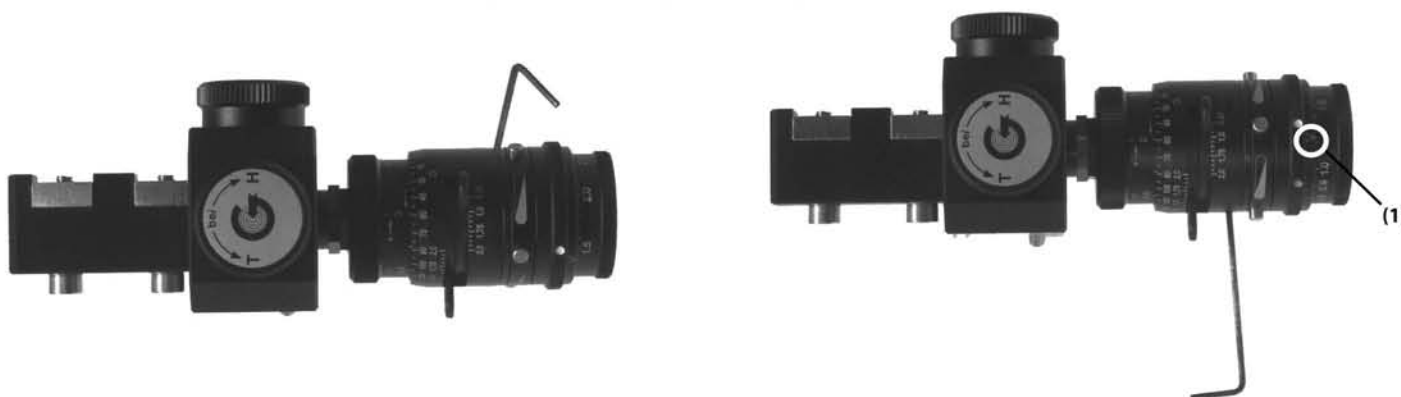
Step 4 Position magnifying diopter at 0 dpt.:

turn knurled ring counter-clockwise as far as it will go. Use enclosed rubber ring to grasp only the 360° pivotable scale and to turn it counter-clockwise as well, such as to have the scale value of -4.5 together with the previously adjusted value of the optical axis at the 12 o'clock position. Turn back knurled ring clockwise into position 0 (= 0 dpt. position).



Step 5 Positioning rearsight iris:

loosen the 3 hexagon bolts (fastening screws) of the **CLS** with Allen key (SW 1,3) lightly, position the rearsight iris with the zero marking (white triangle or point (1)) of the diaphragm scale at the 12 o'clock position and retighten the fastening screws lightly. Basic adjustments have now been set.



You can now adjust the CLS system to your specific visual disorders (prescription)

(Please use the ray diagram on the last page)

When setting up the 579 **CLS** we would ask you not to ignore what your optician has told you, but by the same token do not take it as written in stone.

1. Adjustment of the spherical defect

You can correct the "spherical" defect by adjustment of your magnifying diopter from +4,5 to -4,5 dpt. Slowly turn knurled ring of the magnifying diopter until getting maximum target picture clarity. The diopters of the cylindrical values can be adjusted with the help of the two levers of the + and - cylindrical lens. Start at the zero marking (levers are one upon the other) to turn **both** levers in **equal** increments, one to the left and one to the right, until reaching necessary value.

2. Adjustment of cylindrical defect

There are two steps to set the basic adjustments of your Gehmann **CLS** (art. 579)

1. Adjustment of cylindrical axis:

a. Adjust the cylindrical value of the two levers at first roughly. You don't need to know the exact cylindrical values, a rough adjustment will do. Precise value will follow with the adjustment using the ray diagram (see last page). Relocate the two levers symmetrically (i.e. in equal steps), the raster will be of great help to you. The cylindrical values are engraved on the **CLS**. Below picture shows the adjustment of 1,0 dpt. as an example.



- b. Loosen the locking collar of the complete system lightly now, in order to ensure comfortable clockwise and anti-clockwise movement.
- c. You can now have a trial look through the **CLS** at the ray diagram and turn it clockwise as well as anticlockwise until achieving optimum sharpness.
- d. Retighten the locking collar lightly.

2. Adjustment of cylindrical value:

- a. Through symmetrical adjustment of the levers against each other you can now carry out fine adjustment of the cylindrical value.
- b. Examine the ray diagram through the **CLS** once again and adjust both levers slowly, in symmetrical alignment (incrementing value) or divergent manner (value reduction).

You now have set the basic adjustments of your CLS.

Fine tuning of your Gehmann cylindrical lens system (art.579):

The system allows you to balance fluctuations of your vision immediately. Please always follow the same chronological order.

1. Turn knurled ring of the spherical correction very slowly counter-clockwise until getting a slightly blurred picture, then turn carefully clockwise until achieving maximum clarity.
2. Adjustment of axis: the position of the axis has already been adjusted by you. Please repeat this step, by now the fine-tuning of the system. Loosen the locking collar lightly and adjust maximum sharpness through small torsions. Retighten the system afterwards (You seldom have to repeat this step).
In the future you will be able to compensate slight axis rotations through adjustment of both levers into the same direction, i.e. you have to turn both levers clockwise or anti-clockwise by way of trial.
3. After rough adjustment of the cylindrical value – you had twisted both levers symmetrically or against each other by increments – it is now enough to adjust optimum sharpness with the help of one lever and the raster by way of trial. As a consequence of the one-sided adjustment of one lever small axis rotations are now also taken into consideration.

examples
spherical -2,5
cylindrical - 1,0
axis 60°



The ray diagram finally shows if all values have been adjusted correctly. You should attach the ray diagram against the wall. All testing bars have preferably to be black and uniformly shaped. Adjusted cylindrical values are not correct if the radially-shaped bars are partially black and grey. The different values can be varied for correction accordingly.

Your **CLS** is being supplied with a ray diagram, but you can download the target also on our website:
www.gehmann.com

For the usage of your **CLS** in combination with a rearsight iris you need to have an adaptor.
Please note the following list of available adaptors:

Adaptor 579-I:

For use of our art. 579 together with art. 566, 567, 570, & PH570



Adaptor 579-II:

For use of our art. 579 together with art. 550, 551, PH551, 568, 565, 575, 512MC, 545MC, 568MC, 546MC, 569 & 563



Adaptor 579-III + 577:

For use of our art. 579 together with art. 510, 501MC, 564 & 500 as well as for all other brands and older Gehmann rearsight irises



For use of art. 530, PH530 and 544MC you will need the adaptor 579-III and Art.577



For use of Art.562, SB566 and SB565 you don't need any adaptor



There will be a short video available on our website www.gehmann.com
if you require any further information about this product.

**We wish you good luck and
high level scores with your new high-quality
579 cylindrical lens system.**

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