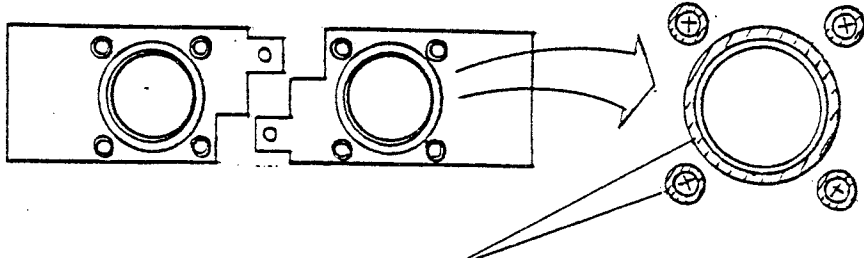


1. BASIC PROCEDURE OF ADJUSTMENT OF BH-BI

For the procedure up to the tentative assembling of the whole unit, refer to the Repair Manual for BH-BI30/TR30./CH-BI

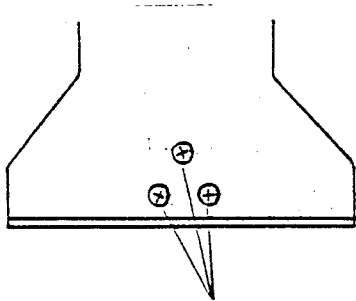
- * Before starting the adjustment, verify that the adhesive is not remained around the tentatively fastened screws and the prism is completely cleaned.

1-1.

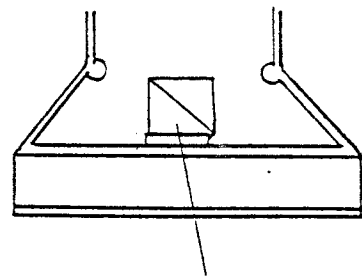


Make the clearance uniform.

- 1-2. Move the center prism to adjust the optical center in the horizontal direction and the center of exit pupil.



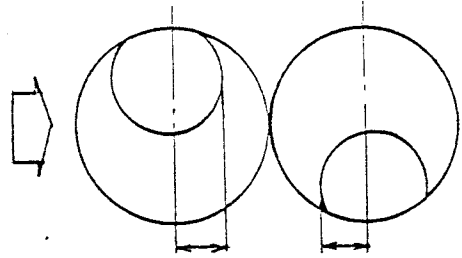
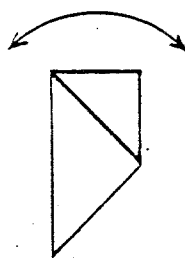
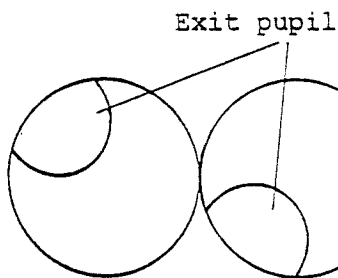
Loosen these screws.



Move the center prism.

1-2-1.

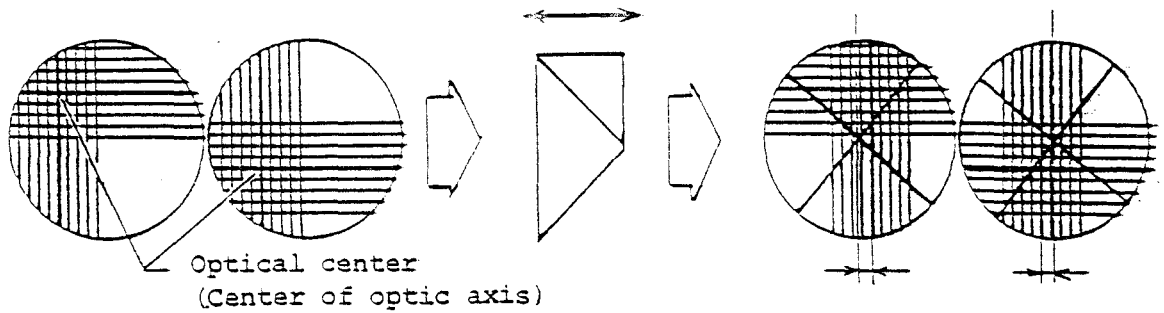
Swing the center prism end to adjust the exit pupil to almost the center.



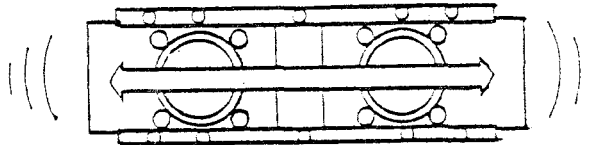
Separate the displacement of left and right exit pupils.

Now, the exit pupil position in the horizontal direction is determined! Thereafter, whenever moving the center prism for adjusting the optical center, exit pupil to this position.

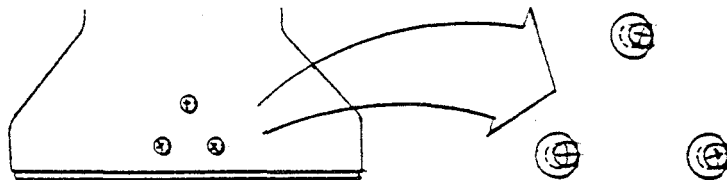
- 1-2-2. Move the whole center prism in parallel to approach the lateral optical center to the center uniformly for left and right sleeves.



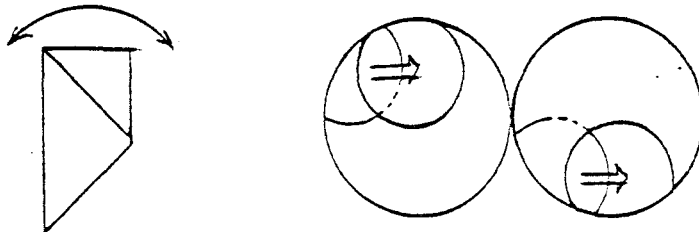
- ① Verify the optical center and exit pupil, and move the center prism.
(It is recommendable to hold left and right sleeves for moving the prism.)



- ② Verify that the screw fastening the center prism moves.



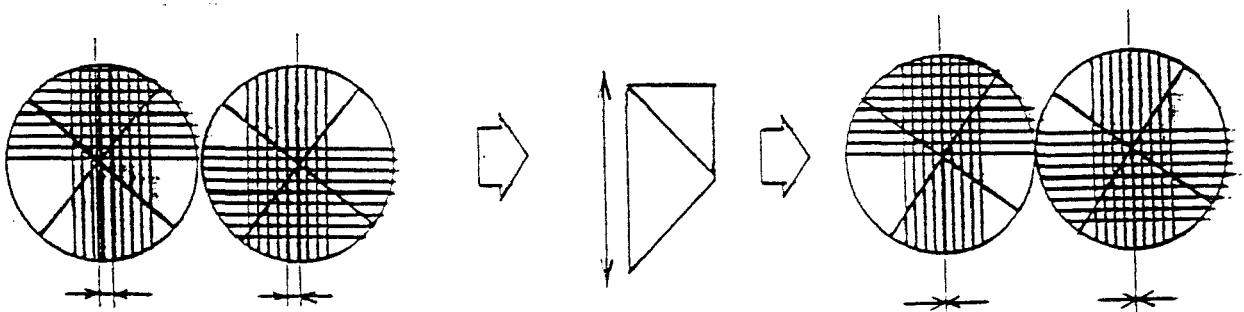
- ③ The exit pupil should be displaced. Return the exit pupil taking care not to change the center prism position.



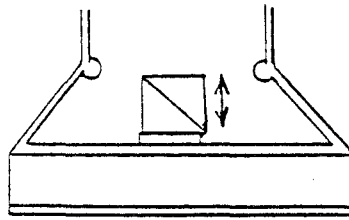
- ④ Verify the optical center, and repeat the steps 1 ~ 3 if necessary.

Now, the optical center in the horizontal direction is adjusted for left and right sleeves, or the displacement becomes to be equal for left and right sleeves.

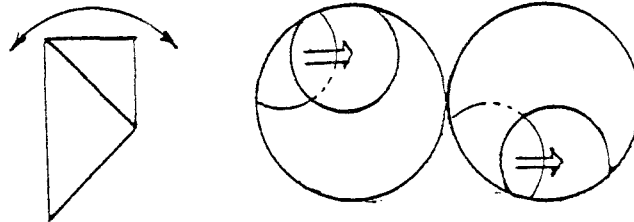
- 1-2-3. Move the whole prism forward and rearward to approach the optical center in the horizontal direction to the center.



- ① Verify that the exit pupil position is not changed, and determine the way of moving the prism by watching the optical center.
- ② Move the center prism.



- ③ The optical center should be displaced from the exit pupil. Return the exit pupil to the original position.

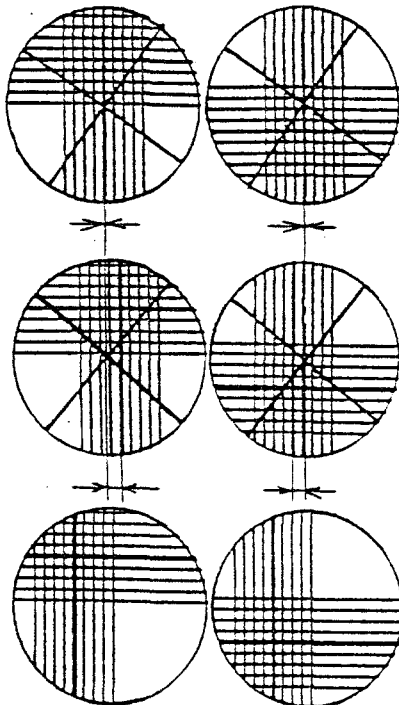


- ④ Verify the optical center. The following state is considerable. Continue the adjustment until the optical center in the horizontal direction meet the standard.

Standard: Displacement of the sleeve center against the optical center: 0.25mm maximum on picture surface

Displacement of the center of left and right sleeves:

- 0.20 maximum on picture surface in the outward direction
- 0.40 maximum on picture surface in the inward direction



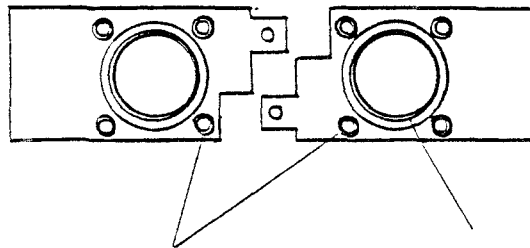
The optical center in the horizontal direction is matched. Go to the next step.

The center prism is excessively or insufficiently moved forward and rearward. Return to 1-2-3 to move the prism appropriately.

The center prism is moved in the horizontal direction. Return to 1-2-2 to move the center prism appropriately in the horizontal direction and longitudinal direction.

Now, the optical center is matched with the center of left and right sleeves in the horizontal direction, or at least the displacement meets the standard.

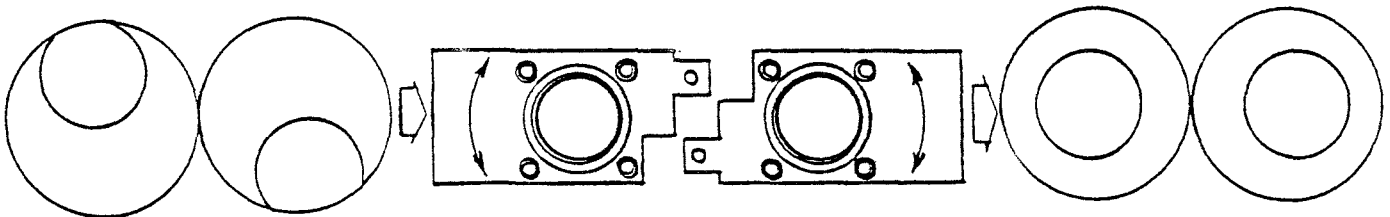
- 1-3 Move the left and right sleeves to adjust the optical center in the horizontal direction and the center of exit pupil,



Loosen these screws.

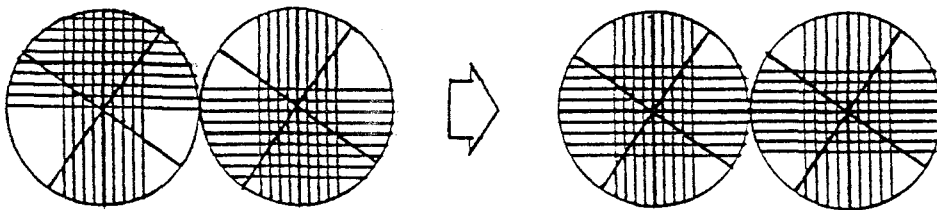
Move the sleeve.

- 1-3-1 Rotate the sleeve to adjust the center of exit pupil in the vertical direction.

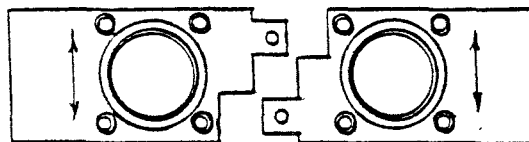


Now, the exit pupil position in the vertical direction is determined. Thereafter, whenever the sleeve is moved to adjust the optical center, return the exit pupil to this position.

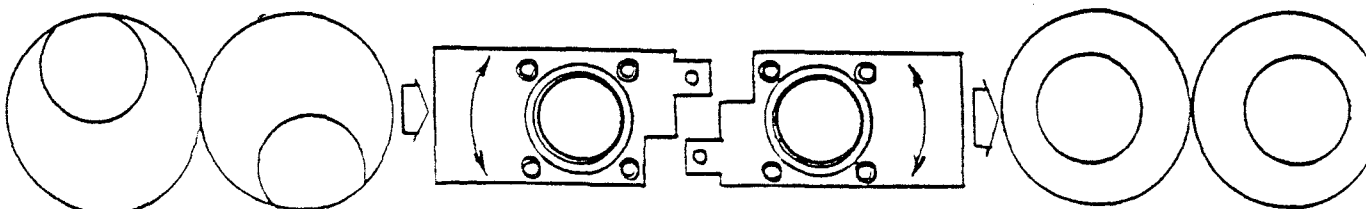
- 1-3-2 The optical center is still displaced in the vertical direction. Move the sleeve up and down to approach the optical center in the horizontal direction to the center.



- ① Verify that the exit pupil position is not changed. Observe the optical center and determine the way of moving the prism.
- ② Move the sleeve up and down.



- ③ The exit pupil should be displaced. Return the exit pupil to the original position.



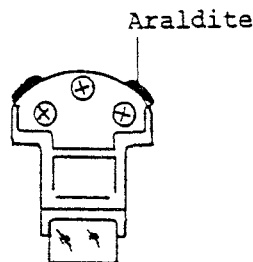
- ④ Repeat the steps ① ③ to continue the adjustment until the optical center meets the standard.

Standard: Displacement of the sleeve center against the optical center: 0.25mm maximum on picture surface

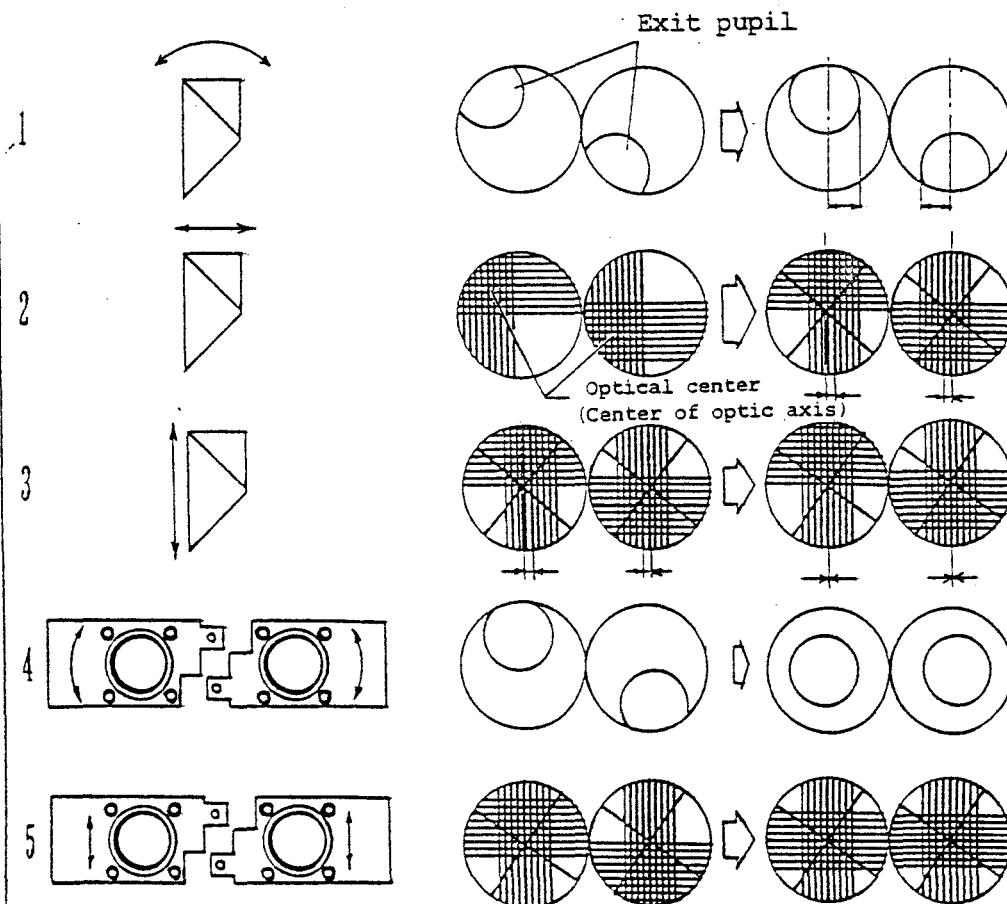
Displacement of the center of left and right sleeves: 0.20 maximum on picture surface in the vertical direction.

The optical center adjustment is completed by the above steps. If the adjustment fails, refer to "3. Hints for Adjustment".

- 1-4 For the inclined prism, bond the prism base to the main unit with Araldite and apply Cerac to all the screws tightened in the adjustment of optical center.



DIGEST OF OPTICAL CENTER ADJUSTMENT



2. MOTION OF OPTICAL CENTER AND EXIT PUPIL BY MOVEMENT OF BH-BI PRISM

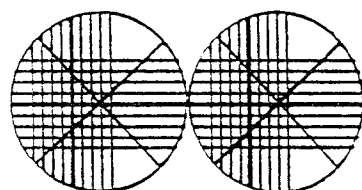
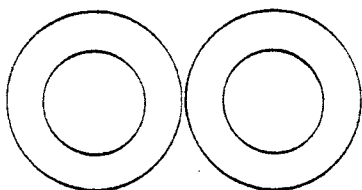
Motion of prism	Optical center	Exit pupil
	 3 graduations max.	
	 60 graduations max.	 10 graduations max.
	 40 graduations max.	 30 graduations max.
	 5 graduations max.	
	 6 graduations max.	
	 9 graduations max.	
	 20 graduations max.	 15 graduations max.
	 15 graduations max.	 15 graduation max.
	 6 graduations max.	

3. HINTS FOR ADJUSTMENT

The optical center or exit pupil is displaced in the horizontal direction.

Symptom 1

The optical center is displaced in the horizontal direction when the exit pupil is returned to the original position, even if the center prism is moved to adjust the optical center in the horizontal direction.

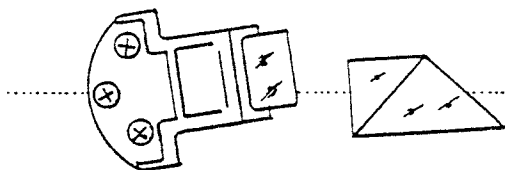


When adjusting the exit pupil ...

The center can not be adjusted any more

Cause

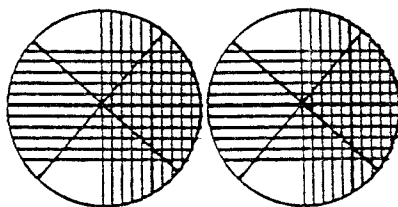
The positions of the inclined prism and center prism are displaced.



Displaced like this when illustrated extremely.

Adjustment example 1

When the exit pupil is adjusted, the optical center can not be adjusted to the center from the position shown below.



Displaced by 5 graduations

As for the inclined and center prisms, the travels of optical center of each prism are as shown below when the prism is swung so that the exit pupil is moved by one graduation of CT.

	Exit pupil	Optical center
Inclined prism	1st time	6 graduations
Center prism	1st time	Approx. 1 graduation

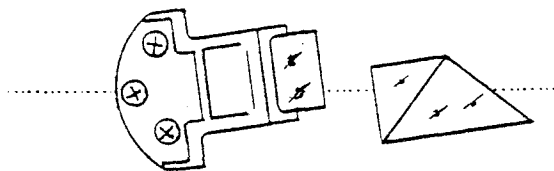
When the inclined prism is moved, the optical center is moved larger than the exit pupil. When the center

prism is moved, the optical center and exit pupil are moved by almost the same distance.

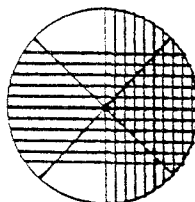
To move only the optical center by 5 graduations without moving the exit pupil:

When the optical center is moved by 6 graduations in the inclined prism (the exit pupil moves by one graduation), the optical center is displaced one graduation to the opposite side. If this one graduation is adjusted to the center by moving the center prism, the exit pupil returns to the original position and as a result, only the optical center is moved by 5 graduations.

When the prism is displaced like this:

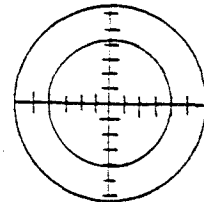


Optical center

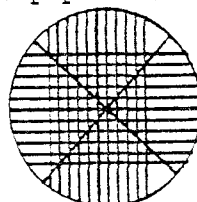
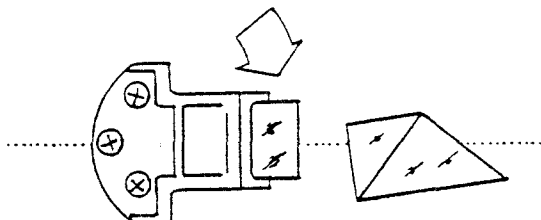


Displaced 5 graduations.

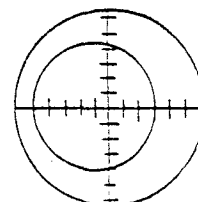
Exit pupil



First, move the prism unit located at the deep position.

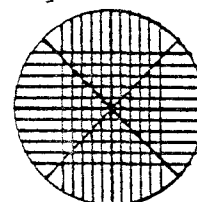
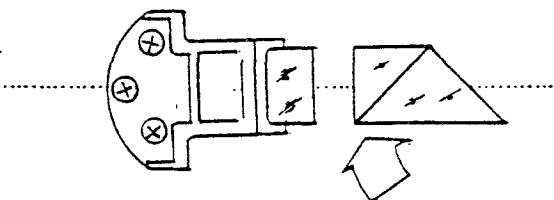


Displace one graduation in the reverse direction.

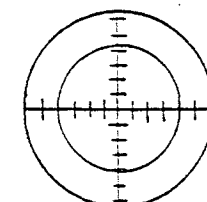


Displaced one graduation.

Then, move the center prism.



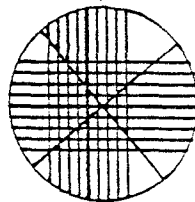
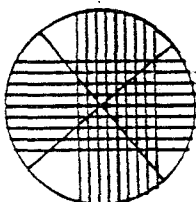
Adjust exactly.



Adjusted almost exactly.

Symptom 2

The optical center is displaced inversely in left and right directions, and can not be adjusted by moving the center prism forward and rearward.

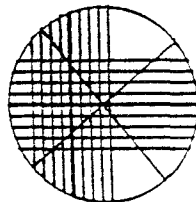
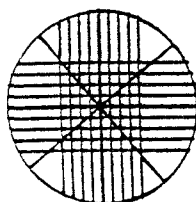
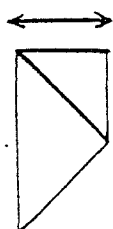


The center can not be adjusted any more.

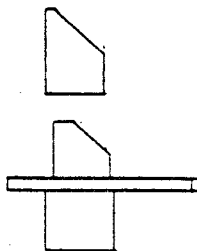
Adjustment example 2

Adjust the optical center of the left sleeve, peel off the adhesive of the right prism, remove the prism (mark the prism), and move the prism in parallel.

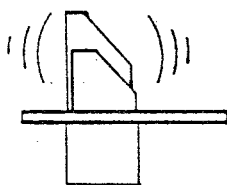
- ① Move the center prism in parallel to adjust the optical center of the left sleeve without moving the exit pupil.



- ② Remove the prism of the right sleeve. (Before removing it, mark between the prism and the frame.)

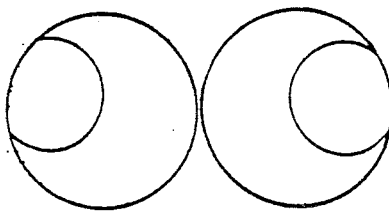


- ③ Move the removed prism to adjust the optical center and exit pupil of the right sleeve.



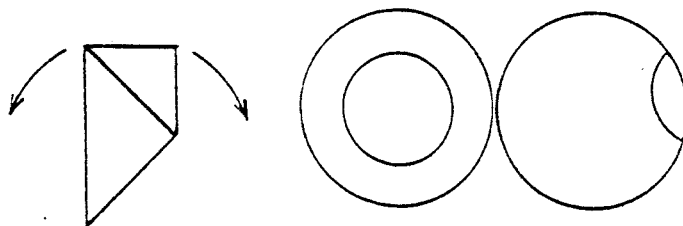
Symptom 3

The exit pupil is displaced inversely in left and right directions, and can not be adjusted to meet the standard by swinging the center prism.



Adjustment example 3

Swing the center prism end to adjust the exit pupil of the left sleeve.

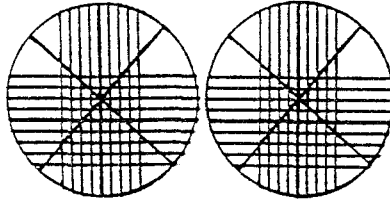


For the subsequent steps, refer to
Example of adjustment 2 .

THE OPTICAL AXIS IS DISPLACED UP AND DOWN WHEN THE EXIT PUPIL IS ADJUSTED.

Symptom 4

The optical center in the vertical direction can not be completely adjusted to the center merely by adjusting the screw looseness of the sleeve.



The center can not be adjusted any more.

Adjustment example 4

Loosen the screws fastening the upper and lower devetails, and move the whole sleeve up and down.

