



**OPERATOR'S**

**MAINTENANCE MANUAL**



# **STEINER BINOCULARS**

**Military ruggedness  
and precision**

**WARNING!!**

**DON'T DO IT!**

*When using the binocular, never point it directly at the sun.*

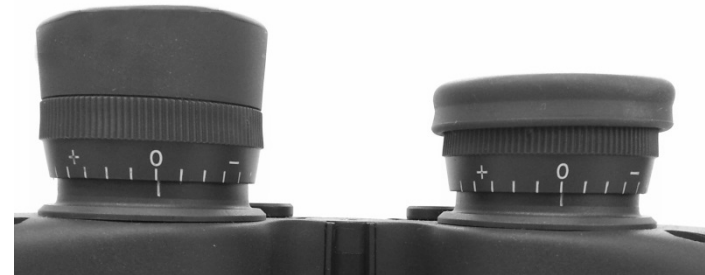
*The heat generated by the focused rays of the sun may cause serious damage to your eyes.*



# DESCRIPTION & SPECIAL FEATURES

STEINER binoculars provide long eye relief for eyeglass or gasmask users.

By folding the rubber eyecups (1) down and over the eyepiece you will increase the eye relief of the binocular.



**NORMAL**

**FOLD DOWN**

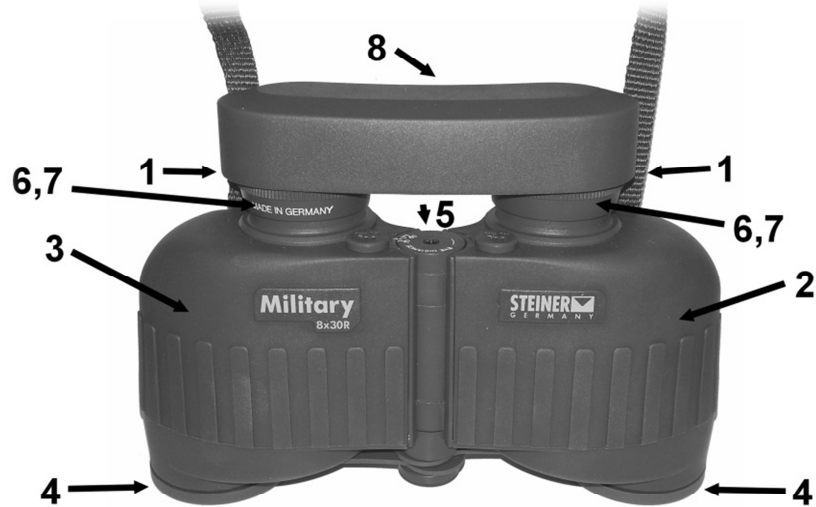
The binoculars are lightweight, compact instruments intended for use in general field observation and fire direction. The left side of the binocular includes a reticle graduated in mils.

The objective (2) and eye piece covers (3) provide protection for the binocular. The binocular is equipped with a carrying strap for easy portability.

The binocular consists of two telescopes hinged at the center by an index pin and sleeve arrangement.

*All images in this manual are for illustration purposes only*

## DESCRIPTION & SPECIAL FEATURES *(cont)*



- |                   |                         |
|-------------------|-------------------------|
| 1. Rubber Eyecups | 5. Interpupillary Scale |
| 2. Housing, left  | 6. Knurled Adapter Ring |
| 3. Housing, right | 7. Diopter Scaler       |
| 4. Objective Caps | 8. Eyepiece Cover       |

Each telescope is comprised of eyecups (1), a housing assembly (2 or 3) and objective covers (4). The binoculars are optically pre-aligned at the factory and must not be disassembled.

The friction necessary to maintain the proper interpupillary distance (distance between the eyes) is created by rubber O-rings installed in the grooves of the index pin.

Once this distance is set for your eye spacing, the reading on the interpupillary scale (5) can be noted for future reference.

By rotating the knurled adapter ring (6) of the eyepieces, you can focus each telescope to accommodate your particular optical characteristics. The reading on each diopter scale (7) should then be noted for future reference. The eyepiece cover (8) should be placed over the eyepiece when the binocular is not in use.

# HANDLING PRECAUTIONS

## Do's ✓

Handle the binocular with care. Dropping or jarring the binocular can damage or misalign the optics. Use the neck strap to protect against accidental dropping of the binocular. Keep the binocular as clean and dry as possible and always store in clean, dry place when not actually in use. Follow the instructions outlined in this manual to obtain the best possible usage and service from the binocular.

## Don'ts ✗

Do not use a dry cloth to clean the glass surface of the binocular. See also "*Cleaning Instructions*".

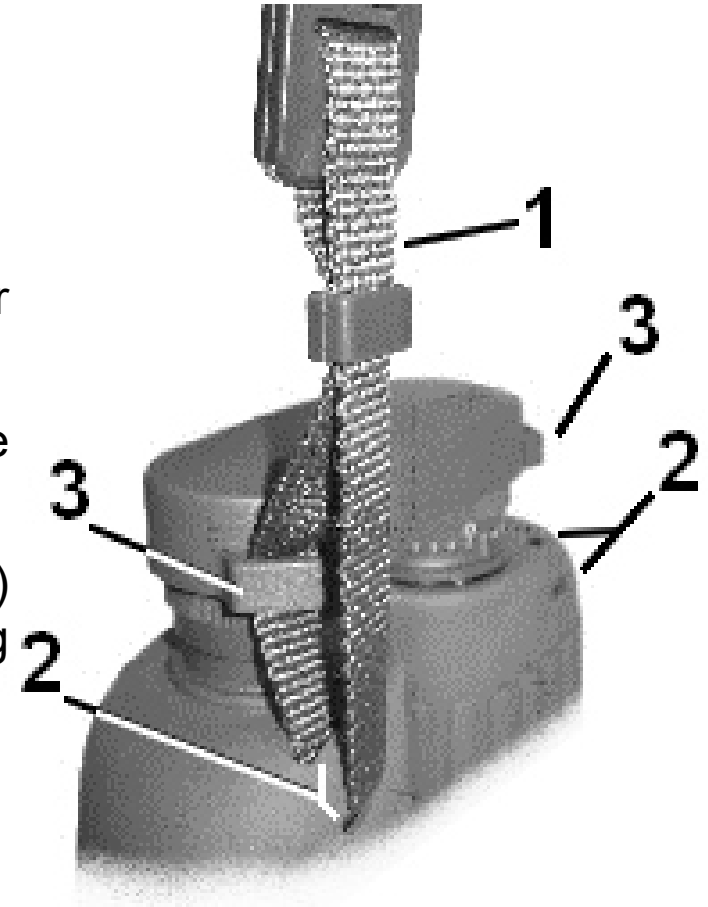
Do not attempt to open or close the binocular beyond its stop limits as this may damage internal and external parts. Do not unnecessarily expose the binocular to severe weather elements.

For special precautions see also "Extreme Cold / Heat" and "Other Extreme Conditions".

Do not force the knurled adapter rings beyond marked diopter scale readings as this may damage internal parts.

# HOW TO REMOVE / INSTALL CARRYING STRAP

1. Loosen loops from neck strap (1)
2. Slide strap out of binocular holding loops (2)
3. Slide strap out of eyepiece cover holding loop (3, left or right)
4. Install one end of carrying strap through eyepiece cover holding loop (3, left or right).
5. Slide end of carrying strap (1) through holding loop (2) on bottom of binocular and fix the loop of the carrying strap.
6. Repeat procedure for other end of carrying strap.



# OPERATING ADJUSTMENTS

## Adjusting and Using Your Binocular

Adjusting the binocular begins by setting the interpupillary distance. This is the distance between the pupils of your eyes. The binocular tubes pivot on a hinge, moving the tubes closer or further apart. Pivot the binocular tubes until you see a single image when looking through the binocular.

### How to Focus

- Choose an image, sign or a tree approx. 50 m away to view.
- Cover one of the objective lenses.
- Look through the binocular with both eyes open.
- Turn the eyepiece (1) of the uncovered lens until the image appears clear and sharp.
- Now repeat the procedure with the opposite lens.
- When viewing through both lenses, all images from 20 m to infinity will be bright, clear and sharp.
- Make note of your diopter setting as it can be unique to each user.



# NORMAL OPERATION

1. Place carrying strap around your neck.
2. Remove eyepiece cover by first rotating binocular telescopes inward and then lifting off eye lens cover.
3. Unsnap objective caps from front of binocular and let them hang down from binocular.
4. Close telescopes of the binocular until the interpupillary index scale is at the proper setting for use.
5. Rotate the eyepiece adapter rings to obtain the proper diopter settings on the diopter scale.
6. When sighting through the binocular, hold it in a comfortable and stable position.
7. Refer to "Extreme Cold/Heat" and "Other Extreme Conditions" for precautions to be observed when unusual weather or atmosphere conditions prevail.
8. Under the special conditions when direct sunlight enters the binocular a portion of this light will be reflected back producing a glitter effect which may be detectable at positions in the general target field. The use of Anti-Reflection Devices (ARDs) are recommended.





# CLEANING INSTRUCTIONS

## **BINOCULAR EXTERIOR**

Clean the exterior of the binoculars (but not the lenses) with a lint-free cloth. Remove grease spots, fingerprints and other soil with soap and water and a well wrung-out cloth; then dry with clean, lint-free cloth. Remove dirt and lint from objective and eye lens cover interior surfaces with a blower.

## **OPTICAL SURFACES**

Blow as much dust and dirt as possible from the exposed lens surfaces. then, using soft brush, brush across the surface with light, quick strokes, flicking the brush after each stroke to dislodge the dust it has picked up. When all visible particles of dust and dirt have been removed,



# EXTREME COLD / EXTREME HEAT

## EXTREME COLD

1. Avoid breathing directly on the optical elements of the binocular. The breath may condense and freeze.
2. Do not expose the binocular to sudden and extreme temperature changes, such as carrying it directly from a well-heated area into sub-zero temperatures. Extreme temperature changes may cause the optical elements to crack.



## EXTREME HEAT

1. Do not allow the binocular to lie unprotected from direct rays of the sun. The intensified heat may damage the binocular mechanisms.
2. Place the binocular objective and eye lens covers on the binocular before entering an air-conditioned area. This will permit the binocular to cool down gradually and prevent condensation from forming.



# OTHER EXTREME CONDITIONS

## **SAND AND DUST**

1. Always keep the binocular objective and eye lens covers on when not actually in use. Sand and dust will etch glass surfaces.
2. Upon completion of operations, remove all particles of sand and dust from optical elements as per "Cleaning Instructions" before installing protective objective and eye lens covers.

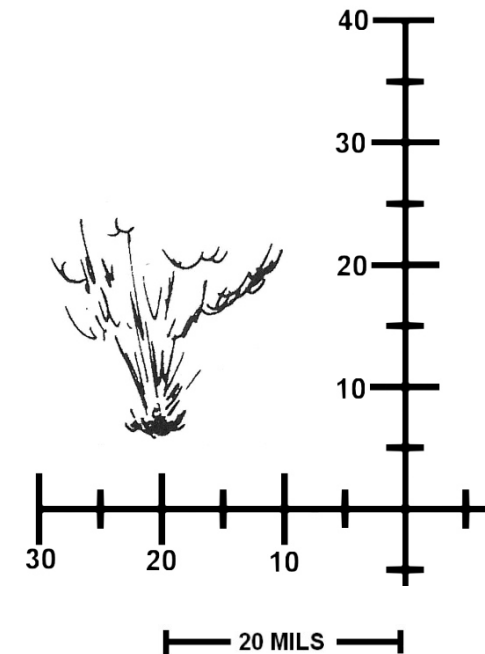
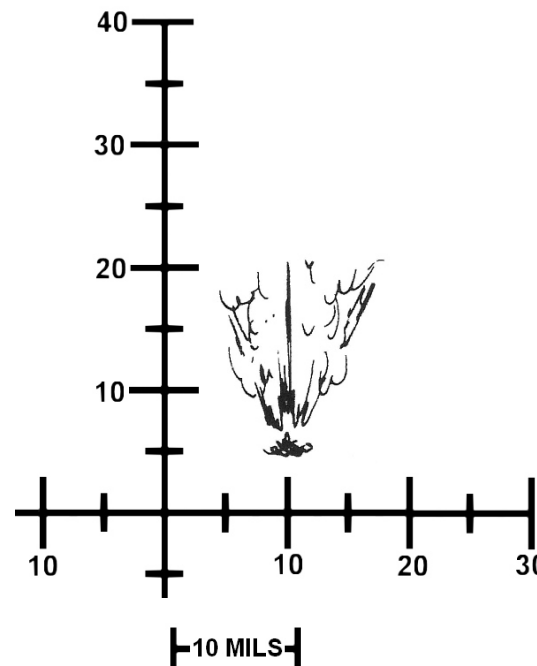
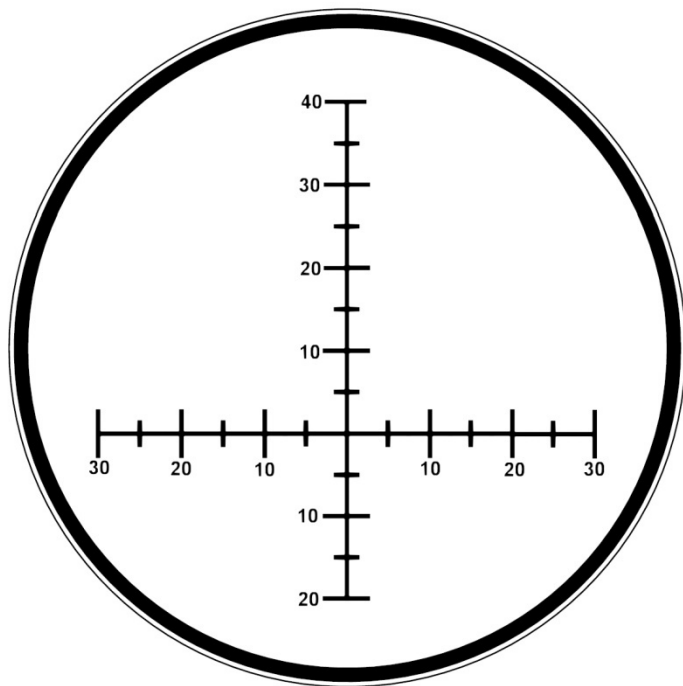


## **HIGH HUMIDITY OR SALTY CONDITIONS**

1. Avoid exposing the binocular to direct salt spray. Salt water is extremely corrosive and may cause irreparable damage to the binocular.
2. Always dry the binocular thoroughly after use and immediately clean lens as per "Cleaning Instruction" and install objective and eye lens covers.

# USE of RETICLE

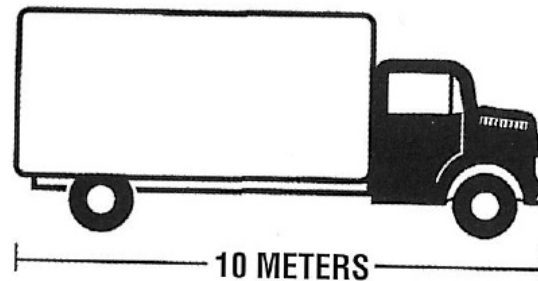
One of the telescopes of the binocular includes a horizontal and vertical scale reticle graduated in 10-mil increment unit markings. The pattern of the reticle might differ from the one shown here, but it works the same way.



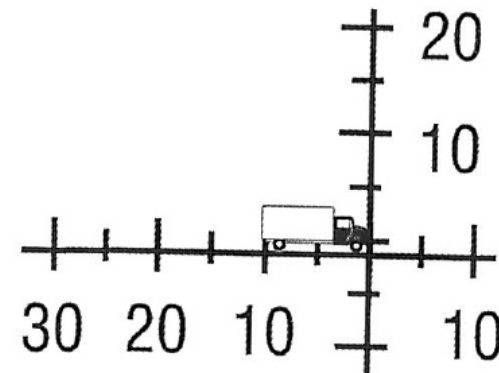
Fire corrections can be made by viewing the impact area and determining angular corrections by use of the left or right horizontal reticle scale.

## USE of RETICLE (cont)

In determining range, if an object fills one 10 mil unit marking on the horizontal reticle scale and it is known to be 10 meters wide, the object is 1.000 meters away. If the same size object fills two unit markings (20 mils), it would be 500 meters away. When this formula is used, the distance will be given in the same units of measurement (feet, meters, etc.) as is used in estimating the known size of the object. The same formula can be used to determine range with the vertical reticle scale when the height of an object is known. The use of the vertical scale preferred (especially on level terrain), since objects are often viewed obliquely along the horizontal axis.

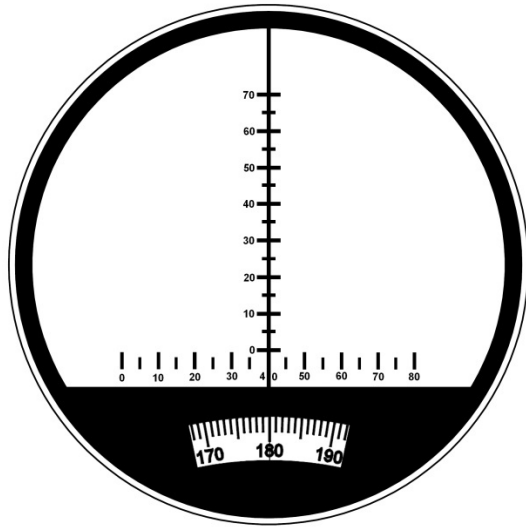


$$\text{DISTANCE} = \frac{\text{Known size}}{\text{Scale Size}} \times 1.000$$



$$\text{Size} = \frac{\text{Distance} \times \text{Scale Size}}{1.000}$$

# Use of Compass



## Compass:

The integrated compass is an instrument to determine a given direction, e.g. geographic direction, navigation, boresight direction.

The compass is subdivided in 360° (or optional in 6.400 mils) and visible at the low edge of the field of view.

North (0°, 6400), East (90°, 1600), South (180°, 3200), West (270°, 4800).

**Compass Illumination:** There is a button (1) on the side of the compass housing to illuminate the compass in the dark.

**Changing Batteries:** Batteries are used to illuminate the compass. Use a coin to open the battery case (2) by turning counterclockwise. Exchange the used batteries with new ones (CR1025, 3V). Replace the cover and close by turning clockwise.



# REPLACEABLE PARTS



No	Description	Qty
1	Binocular	1
2	Rubber Eyecup	1
3	Eyepiece Cover	1
4	Carrying Strap	1
5	Objective Cap, right	1
6	Objective Cap, left	1

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**STEINER-OPTIK GmbH**

**Dr.-Hans-Frisch-Str. 9**

**D-95448 Bayreuth**

**GERMANY**

**Tel No. +49-921-7879-0**

**Fax No. +49-921-7879-88**

**e-mail [military@steiner.de](mailto:military@steiner.de)**

**[www.steiner-defense.com](http://www.steiner-defense.com)**