

# BSA®

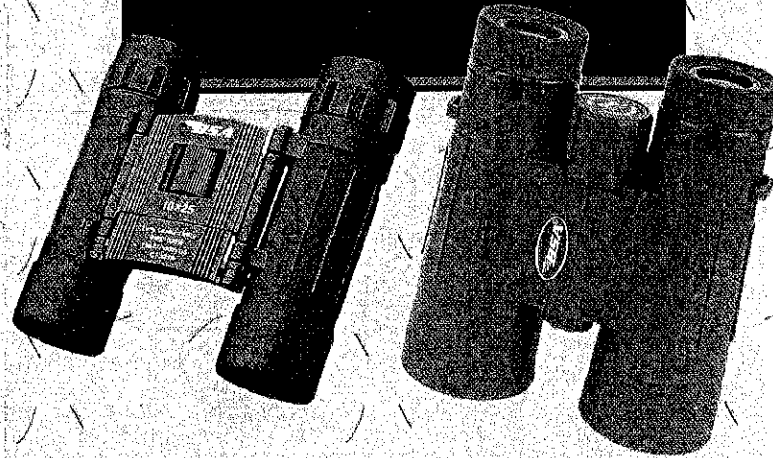
## BINOCULARS

©2012 BSA Optics,  
A division of GAMO OUTDOOR USA, Inc.  
Ft. Lauderdale, FL 33314 USA  
RD040710 • REDDOTS-UNIV-MANUAL.indd  
Made in PRC • Printed in PRC  
bsaoptics.com



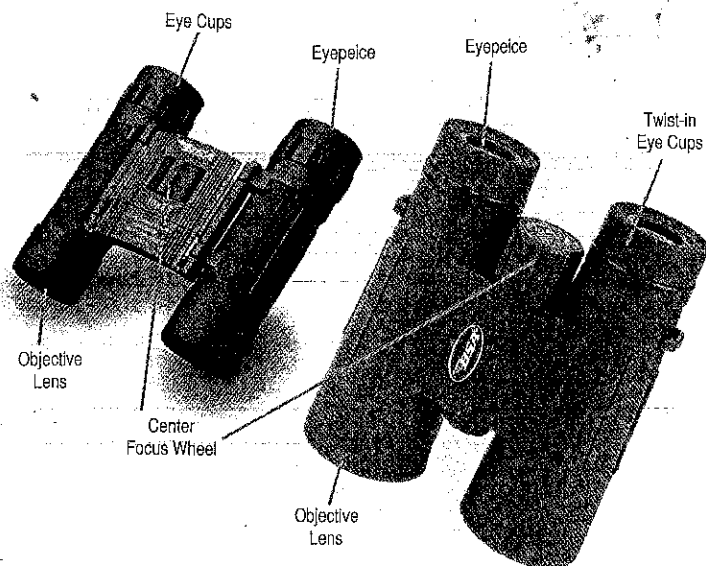
# BSA®

## BINOCULARS INSTRUCTION MANUAL



### TABLE OF CONTENTS:

1. FUNDAMENTALS OF A BINOCULAR.
2. BINOCULAR TYPES AND USE.
3. HOW TO USE YOUR BINOCULARS
4. HOW TO MAINTAIN YOUR BINOCULARS.



### 1. FUNDAMENTALS OF A BINOCULAR

#### a) Objective lens.

This lens is responsible for creating the first image and above all, it's responsible for the resolution, brightness, and general quality of the image and also, the first step of the magnification process.

#### b) Prisms.

The first function of the prisms is to erect the image created by the objective lens. The second is to properly capture and transfer the larger amount of light.

#### c) Ocular lenses or eyepiece.

Is a combination of two to five elements depending on the eyepiece design, however the standard eyepiece consist of a double lens or achromatic and a single element. These lenses are responsible for the final magnification and the eye relief of the binocular.

#### d) Focus

This is a mechanical and optical function. Focus on a binocular is obtained usually by turning a knob that regulates a center axis moving the ocular lenses back and forth in order to sharpen the image. Focus that is more precise is obtained by adjusting the right diopter or eyepiece, this allows to focus each eye individually.

### 2. BINOCULAR TYPES AND USE

The binoculars are grouped in two different families, Porro prism and Roof prism: The Porro prisms are always used in medium to large size binoculars. This system has better light transmission and resolution than the Roof prism type because the prism receiving surfaces are bigger and the light transmission is shorter and more direct. This means that the light travels through less surfaces and reaches the ocular in more quantity and intensity.

This binocular system is used in Astronomy, hunting, aquatic sports, navigation (Only low power ones) and general use.

The larger and more powerful models may require the use of a tripod to make the image more stable.

The Roof prism binoculars are usually compact or small and in general the image quality is not as good as the Porro ones. The image in this optical system needs to travel through many surfaces inside the roof prism cluster in order to provide the proper focal length in a smaller size unit.

These binoculars are lighter and smaller than the Porro ones and are used mainly in hunting, sporting events, games, theater and general use.

The Porro and Roof prisms are subdivided in two quality groups. BK7 low density or light transmission (lower quality) and the BAK4 high density or light transmission.

Taking in consideration all mentioned before, we can conclude that the binoculars are divided into two basic groups: by the properties inherent in its prism design, and by how large and heavy the design is.

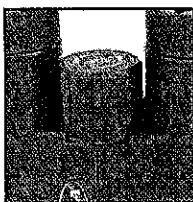
### 3. HOW TO USE THE BINOCULARS

**CAUTION** DIRECT VIEWING OF THE SUN CAN CAUSE PERMANENT EYE DAMAGE. DO NOT ATTEMPT TO VIEW THE SUN WITH EITHER THIS PRODUCT OR THE NAKED EYE.

#### Focusing your binoculars

##### Center focus:

The majority of the binoculars are center focused, this means that the regulating or adjusting knob is located at the center axis between the binocular bodies. The individual eye focus is located in the right ocular assembly or eyepiece. To focus the binocular, look through the unit at an object situated 100 ft away from your position, close the right eye and turn the center focus knob until a clear and sharp image is obtained for the left eye. Open the right eye and rotate the right ocular or eyepiece until you find the desired sharpness for the right eye. Now that the unit is adjusted to accommodate for any variation of vision between your eyes, the center focus knob can be used to do corrections at different distances.



4

##### Tripod adaptor:

Commonly, the high power binoculars or larger and heavier ones (astronomical or panoramic) come with tripod adaptor fitting. This device is located at the base of the center post or hinge. This fitting allows the binocular to be attached to a standard camera tripod.

#### HOW TO MAINTAIN YOUR BINOCULARS

Do not attempt to disassemble or clean the binoculars internally. This will void the warranty. If the unit requires repair or adjustment, complete instructions may be found on the warranty card.

The external optical surfaces should occasionally be wiped clean with the lens cloth provided, a soft lintless cloth, or an optical quality lens paper. Keep the protective lens covers in place when the scope is not in use. Remove any external dirt or sand with a soft brush. Wipe the scope with a damp cloth, following with a dry cloth. Store the unit in a moisture-free environment.

#### SPECIFICATIONS

Model	Magnification & Obj. Lens	Prism System	Prism Glass	Lens Coating	Field of View ft. @ 1000 yds	Tripod Adapter	Weight oz.
CBX21ACP	8x21mm	Roof	BAK-7	Coated	383	N/A	5.16
C10X25ACP	10x25mm	Roof	BAK-7	Coated	288	N/A	7.25
C12X25ACP	12x25mm	Roof	BAK-7	Coated	240	N/A	7.25
C10X50ACP	10x50mm	Porro	BAK-7	Coated	366	Yes	23.88
C12X50ACP	12x50mm	Porro	BAK-7	Coated	275	Yes	23.88
MB8x42	8x42mm	Roof	BAK-4	Fully Multi	314	Yes	21.78
MB10x42	10x42mm	Roof	BAK-4	Fully Multi	304	Yes	21.78
MB12x42	12x42mm	Roof	BAK-4	Fully Multi	275	Yes	21.78
CB1030x60	10x30@60mm	Roof	BK-7	Coated	195	Yes	36

6

#### Secured Center Focus:

Some binoculars provide a click focus system, this helps to maintain and secure the focus position even when the binocular is not in use. Inside the focus knob, an indented housing with a ball and spring system keeps the focus setting in position.

#### Zoom:

Zoom binoculars need to be focused at high power. While looking through the binoculars, adjust up or down the zoom lever located in the right ocular or eyepiece to change magnification.

Once the higher magnification is reached, you can start focusing procedures. Minor adjustments of the focus knob will be necessary as power levels and distances change during observations.

#### Individual focus binocular:

In this design, the binocular does not have a center focus adjustment or knob. Focus is obtained by turning each individual eye piece or ocular until the image of each eye is properly sharp and clear. This system is used in high quality binoculars and professional ones, like military or marine units, where water and fog proof standards are superior and demand extreme system hermetic capabilities.

#### Fixed focus binocular:

This type of binocular does not have any focus adjustments, the binoculars have been set to focus from a minimum distance to infinity.

#### Eyecups:

The majority of the binoculars come with rubber folding eyecups to protect the eyes and accommodate people wearing eyeglasses.



#### Twist Up Eyecups (If Equipped):

The same results can be obtained with the use of this system that adjusts the eye relief distance by a twisting motion to accommodate any type of eyeglasses and still provide a full field of view.

5

#### FOR RETURNING PRODUCTS

Return products following the warranty guidelines.

A brief description is included below.

1. Remove any accessories and rings
2. Include a note with a brief description of the problem, address, telephone number, and email address
3. A \$10 check for return shipping and processing fees and proof of purchase.
4. We recommend using a shipping method with a tracking number (Fedex, UPS ect.).

BSA optics cannot be held liable for lost or damaged items.

\*Please note if your product is not registered you must have proof of original purchase, or you will be subject to repair fees. (see warranty)

#### Ship Products To:

BSA Optics  
1475 S. Sam Houston Blvd.  
Houston, MO 65483

**NOTE:** KEEP ALL INSTRUCTIONS FOR FUTURE REFERENCE.

7