

# Vixen®

## Instruction Manual for BT81S-A Binocular Telescope

Thank you for your purchase of a Vixen BT81S-A Binocular Telescope. This manual applies to the BT81S-A Binocular Telescope. Be sure to read instructions for the mount and tripod along with this manual if you purchased the product as a complete package.

\*For observing, two 31.7mm (1.25-inch) eyepieces of the same focal length are required as they are not included.

\*A pair of the eyepieces are included if you purchase a complete package consisting of the BT81S-A, HF2 Altazimuth Fork Mount and SXG-HAL130 tripod.

**⚠ WARNING!** Never look directly at the sun with your naked eyes or through this product or its finder scope available. Permanent and irreversible eye damage may result.

### CAUTION

Do not leave the product uncapped in daytime. It may cause passing sunlight through the objective lens of the optical tube, resulting in fire.

Do not use the product while transporting or walking, as injuries may arise from stumbling, falling or collision with objects.

Keep plastic and vinyl packing materials away from children; these may cause danger from swallowing or suffocation.

### HANDLING • STORAGE

Do not leave the product inside a car in bright sunshine, or in hot places. Keep any strong heat radiation sources away from the product.

Do not expose the product to rain, water drops, dirt or sand.

When cleaning, do not use solvent such as paint thinners. Avoid touching any lens surfaces directly with fingers. If a lens becomes dirty with fingerprints or general smears, gently wipe it using a commercially available lens cleaner and a lens cleaning paper, or consult your local Vixen dealer.

For storage, keep the product in dry places, and do not expose to direct sunlight.

## SPECIFICATIONS

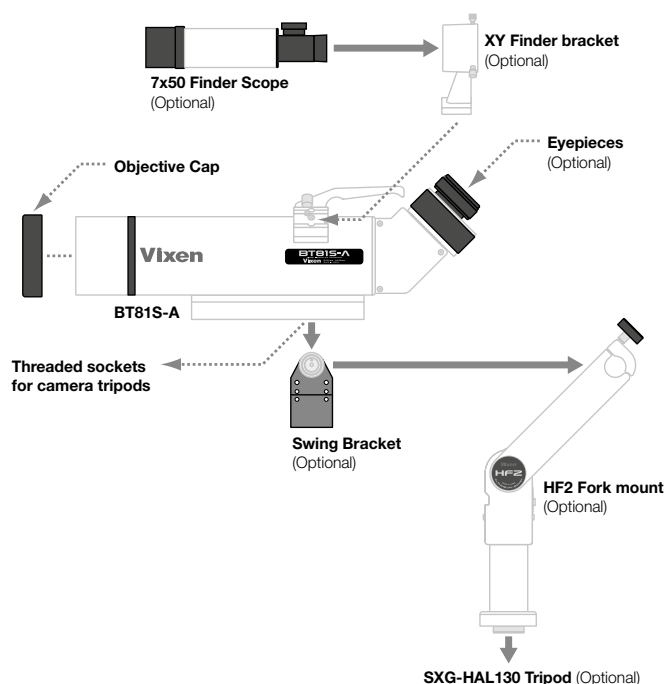
The specifications are subject to change without notice.

Objective lens	<b>Air-spaced doublet achromatic</b>
Optical coating	<b>Magnesium fluoride coating</b>
Effective aperture	<b>81mm</b>
Focal length (Focal ratio)	<b>480mm (F/5.9)</b>
Resolving power	<b>1.43 arc seconds</b>
Limiting magnitude	<b>11.3</b>
Light gathering power	<b>134x</b>
Eyepiece holders	<b>Friction fit type</b>
Eyepieces applicable (Optional)	<b>SLV series of 31.7mm size or LWV series of 31.7mm size or SSW series of 31.7mm size</b>
Interpupillary distance	<b>58mm to 102mm</b>
Optional Accessories	<b>7x50mm finder scope &amp; bracket or X-Y red dot finder</b>
Mount block / Threads	<b>Dovetail bar for SX/GP</b>
Threaded sockets	<b>1/4-inch x 2 &amp; 3/8-inch x 1</b>
Size & weight	<b>480mm L x 190mm W x 155mm H, 4.1kg (9 lbs)</b>

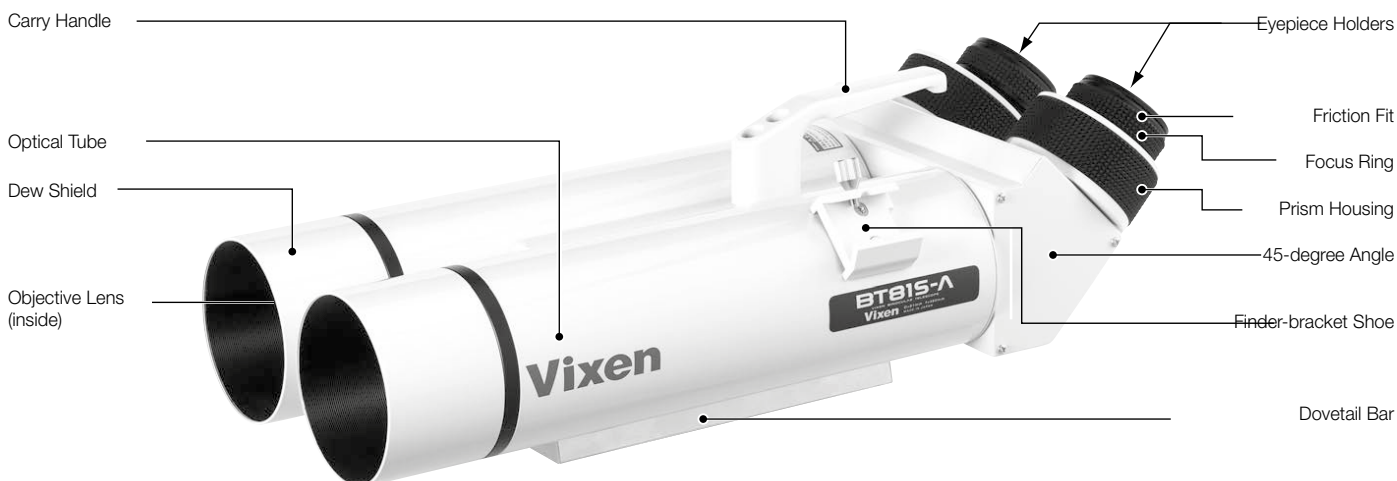
About eyepieces applicable to BT81S-A

The detachable eyepieces can be swapped for other Vixen SLV or LWV or SSW series of 31.7mm-size eyepieces, but if the eyepieces with high magnification are used, it may give rise to misalignment that is become detectable due to its high magnification. It is always recommendable to use the eyepieces with focal length longer than 10mm for observing to avoid it.

### BT81S-A Shown with the Fork Mount, Tripod and other Optional Accessories available separately

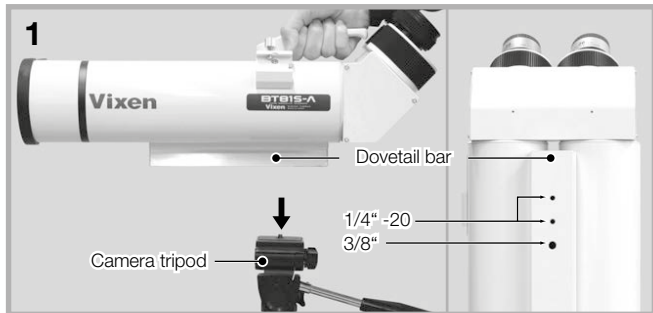


## COMPONENTS



# USING YOUR BT81S-A BINOCULAR TELESCOPE

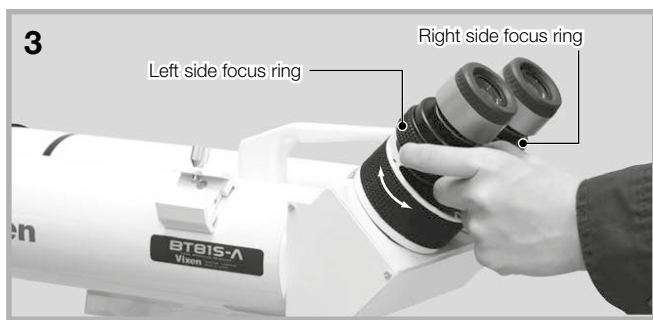
**1** The BT81S-A has threaded sockets of 1/4"-20 and a 3/8" on the bottom of the dovetail bar that fit directly to a camera tripod.



**2** Attach the eyepieces so that the chrome barrel of the eyepiece is pushed into the eyepiece holder and fixed by friction. When you exchange the eyepieces, you should align the optical axis of left side and right side eyepieces in the procedure stated in ALIGNMENT.



**3** While looking through the right side eyepiece, turn the focus ring on the right side prism housing until the image appears in sharp focus. Next, look through the left side eyepiece and adjust the focus of the left side eyepiece in the same way by turning the left side focus ring.



**4** Adjust the interpupillary width to your eyes. Hold the left and right side prism housings with both hands and rotate them inward equally so that the both eyepieces come to a position that fits your eyes. It is a point that circles of field of view in the left and right eyepieces become one completely.



## ALIGNMENT

It may be possible that a double vision occurs from the character of binoculars when you attach the eyepieces without a consideration for optical alignment. In this case, make adjustments of the optical axis in the following procedure.

### How to Adjust a Double Vision

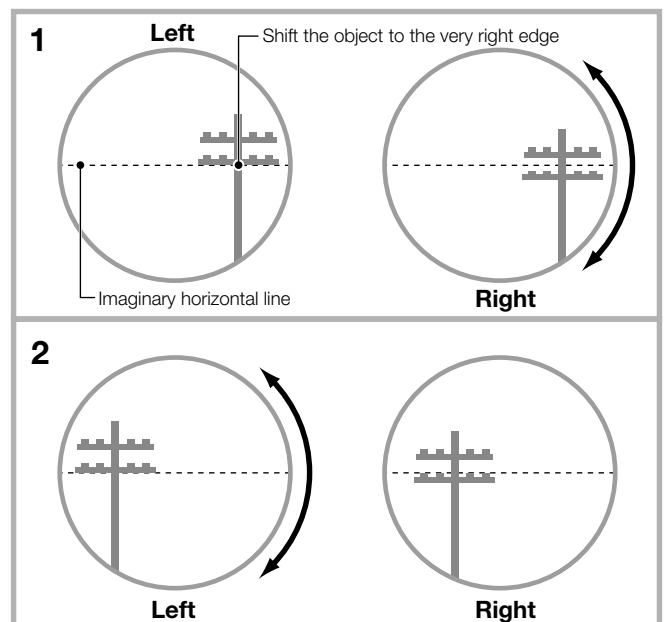
**1** Look through the left side eyepiece and find an object further than 1,000m distant. Put the object in the field of view so that it lies on the imaginary horizontal center line of the field of view, and shift it to the very right edge. An electric pole is shown here as a sample.

The object near the edge of the field of view makes your recognition of a position of the object against the field of view circle easier.

If the object is seen at the same level and position on the right side eyepiece as seen with the left side eyepiece, it shows that the eyepieces are aligned correctly.

If not, rotate the right side eyepiece slowly clockwise or counterclockwise until the object moves toward the same position.

**2** If the above does not align the optics correctly, then rotate the left side eyepiece slowly while keeping the right side eyepiece as it is.



### TIPS ON GENERAL OBSERVATION WITH BT81S-A

The object can be seen more clear and brighter at low magnification. It is desirable to start with a pair of eyepieces with low magnification and exchange them for eyepieces with medium magnification. It will be hard to align the optical axis at high magnification due to the structure of binocular telescopes. (It is advisable to use with the Vixen SLV or LVW eyepieces with focal length longer than 10mm at high magnification.)