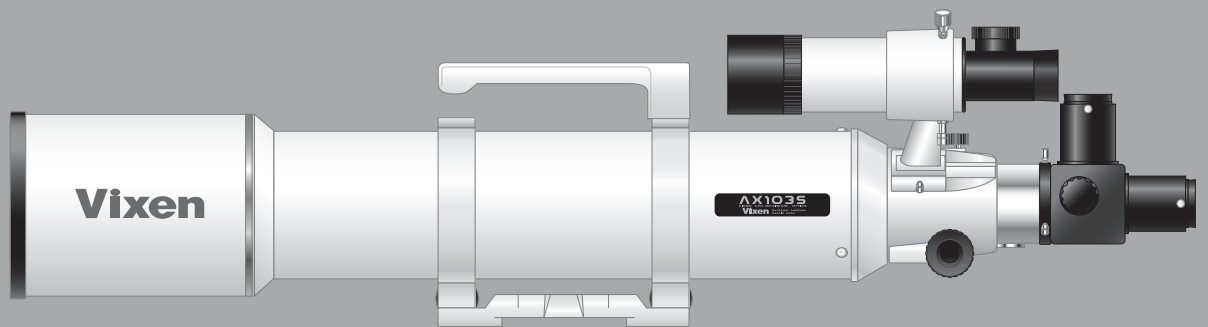


**Vixen®**

# Instruction Manual for the AX1035

APOMAXIMUM



Thank you very much for your purchase of a Vixen astronomical telescope. This manual describes the AX103S refractors. You may occasionally find descriptions in the text not relevant to your particular model. The specifications in English are for export models and supplied accessories may be different from the Japanese domestic models. Read the instructions for your mount along with this manual if you purchased the telescope as a complete package.

**⚠ WARNING!**

**Never look directly at the sun with the telescope or its finder or guide scope. Permanent and irreversible eye damage may result.**

**⊘ CAUTION**

- ⊘ Do not leave the optical tube uncapped in the daytime. Sunlight passing through the telescope or finder scope may cause a fire.
- ⊘ Do not use the product while moving or walking, injuries could result from a collision with objects or from stumbling or falling.
- ⊘ Keep small caps, plastic bags, or plastic packing materials away from children. These may cause a danger of swallowing or suffocation.
- ⊘ Do not use the product in a wet environment and do not handle with wet hands.

**HANDLING AND STORAGE**

- Do not leave the product inside a car in bright sunshine, or in other hot places. Keep any strong heat sources away from the product.
- When cleaning, do not use solvents such as paint thinner or similar products.
- Do not expose the product to rain, water, dirt or sand.
- Avoid touching any lens or mirror surfaces directly with your hands. In case a lens or mirror becomes dirty with fingerprints or general smears, gently wipe it using a commercially available lens cleaner and a lens cleaning paper or cloth, or consult your local Vixen dealer.
- Blow off dust on lenses using a commercially available blower brush.
- For storage, keep the product in a dry place and do not expose to direct sunlight.

**SETTING UP THE TELESCOPE**

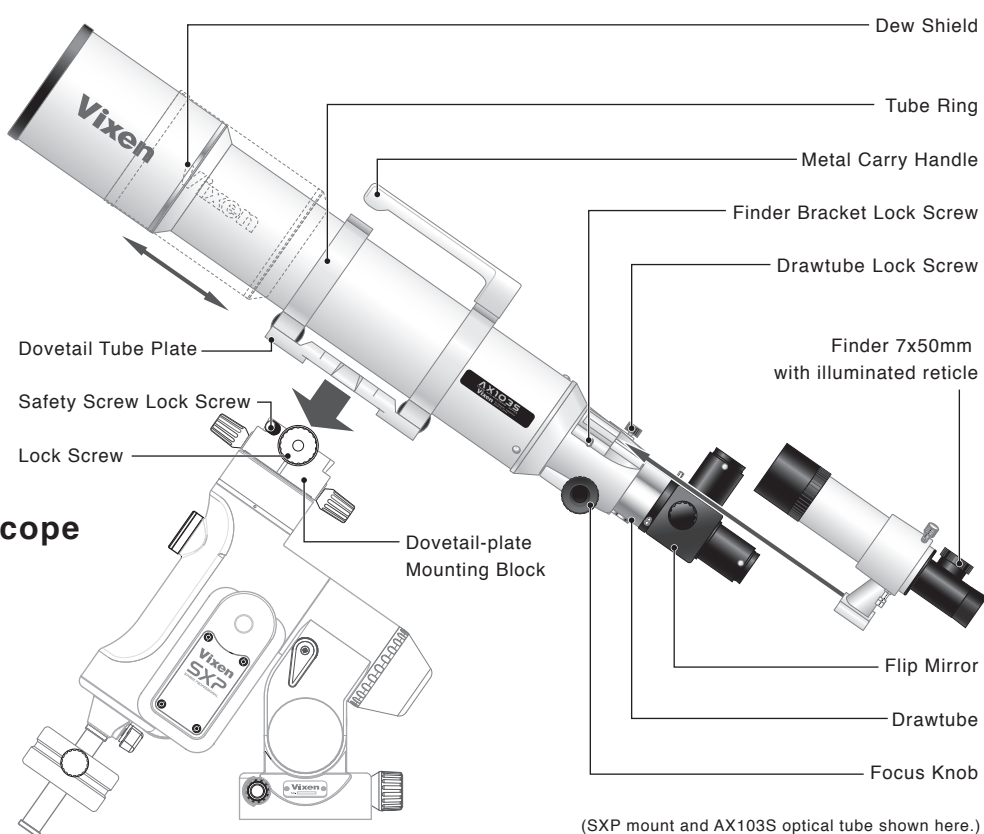
Refer to your mount instructions along with this manual.

**Attaching the Telescope to the Mount**

Loosen both the dovetail-plate lock screw and safety screw until the tips of these screws no longer extended into the inner part of the dovetail block.

Slide the dovetail mounted scope into the dovetail mounting block as shown in the figure. Tighten the dovetail lock screw (centered on the notch) onto the dovetail tube plate until snug.

First tighten the dovetail lock screw, and then tighten the small chrome safety screw onto the dovetail mounting block until snug.



(SXP mount and AX103S optical tube shown here.)

**Attaching the Finder Scope**

(Finder Scope may be optional at your particular model.)

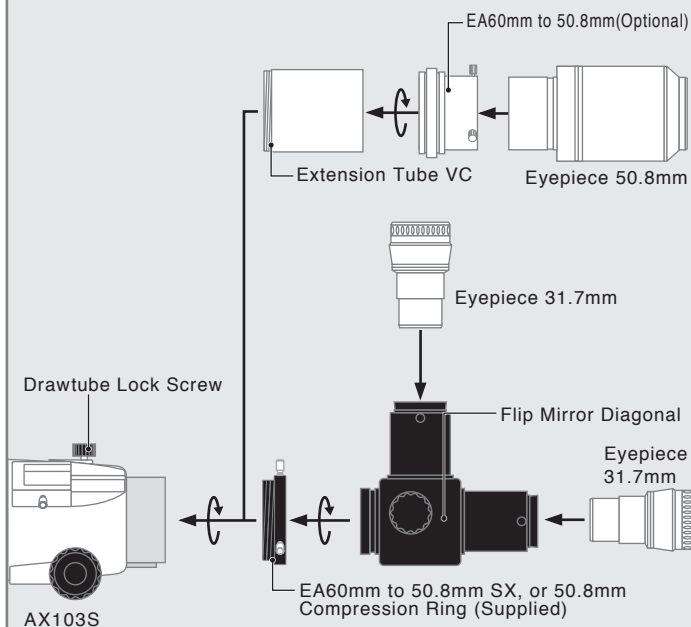
Loosen the finder bracket lock screw on the telescope's finder bracket shoe. Attach the finder scope as shown in the figure and tighten the finder bracket lock screw securely.

Refer to the finder scope instructions as to assembling the finder.

## OPTIONAL ACCESSORY CHART

### Visual Configuration

The telescope does not come with the eyepiece as standard accessory unless you purchased a package.



### Magnification of the Telescope

When using an eyepiece with short focal length (small number in millimeters), the image will be dim and the range of sharp focus will be small.

The image will be harder to see so begin with an eyepiece with long focal length (low magnification). Dividing the focal length of the telescope by the focal length of the eyepiece gives the magnification.

Example: Calculating the eyepiece magnification of a telescope with 825mm focal length.

Eyepiece	Focal length of telescope	÷	Focal length of eyepiece	=	Magnification
SLV20mm	825mm	÷	20mm	=	41x
SLV 5mm	825mm	÷	5 mm	=	165x

### Focusing the Telescope

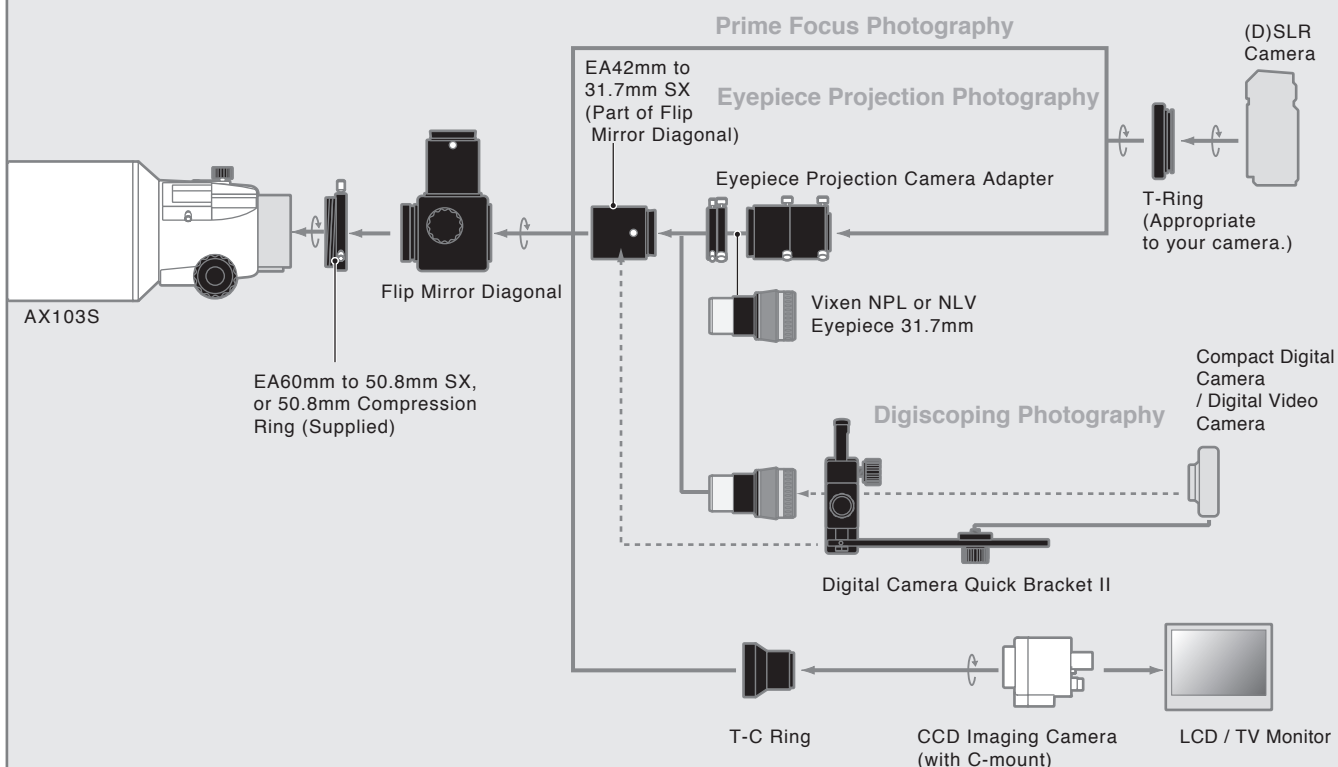
Look into the eyepiece. The image will likely be out of focus at first. Turn the focus knob slowly clockwise or counterclockwise to find a point where the image in the field of view of the eyepiece becomes sharpest.



## OPTIONAL ACCESSORY CHART

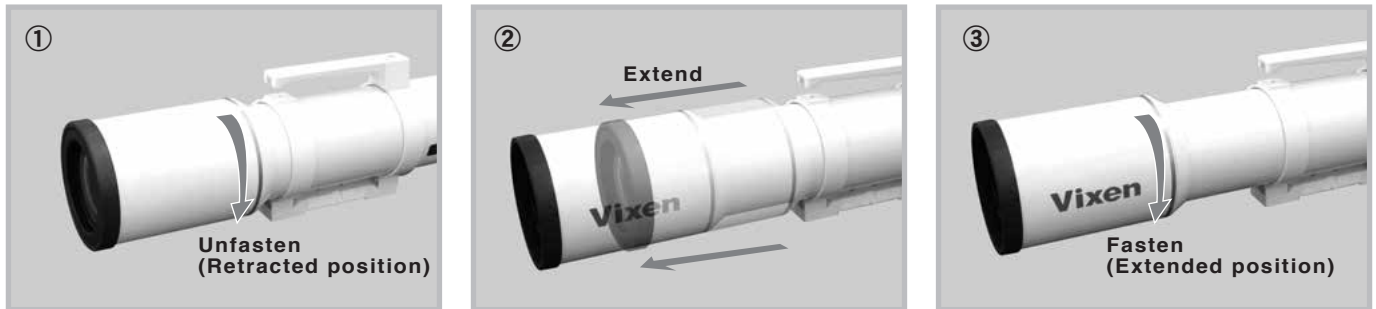
### Photographic Configuration

Some of the optional accessories shown in this chart will be needed if you take pictures with (D)SLR camera, compact digital camera or CCD video camera.



## RETRACTABLE DEW SHIELD

Turning the dew shield clockwise (when viewing it from the objective side) will release the lock and it can be manually extended in front. Extend the dew shield fully and turn it clockwise to fasten the lock when using the AX103S optical tube. Reverse the above procedure when storing it.



## SPECIFICATIONS

Model	AX103S
Optical Design	Quadruplet SD Apochromatic Refractor / Multicoated
Effective Aperture (D)	103mm
Focal Length (F)	825mm
Focal Ratio	1 : 8
Light Gathering Power	217x
Resolving Power	1.13 arc. seconds
Limiting Magnitude	11.8
Drawtube Diameter	64mm
Threads	60mm
Push fit	50.8mm, 31.7mm*(37mm is available if Flip Mirror Diagonal is supplied as standard accessory)
Tube Length	670~762mm
Outer Tube Diameter	115mm
Tube Weight	6.4 kg (w/o accessories)
Accessories	7x50mm Finder w/illuminated reticle* Tube Rings Dovetail tube plate* Carry handle*

The specifications are subject to change without notice.

The supplied accessories may differ what we describe here, if you purchase a telescope with dual speed focuser.

The telescope tube with dual speed focuser come standard with 50.8mm Compression Ring, however, the accessories asterisked are optional and they are not included.

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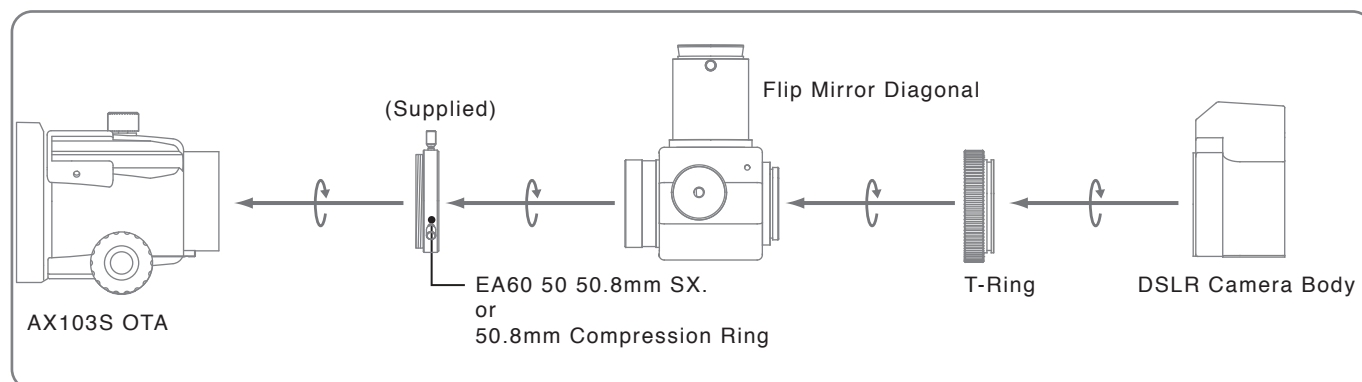
## Supplementary Explanations to the AX103S Instructions

### How to connect your DSLR camera in prime focus photography

It is necessary to use one of the methods below when using your DSLR camera with the AX103S optical tube for prime focus photography. If the camera is attached in a different configuration, the distance from the fourth lens element in the drawtube to the focal plane or imager (\*1) of your camera will change. This could result in deteriorated image.

#### 1. Photographic Configuration with Use of Flip Mirror Diagonal

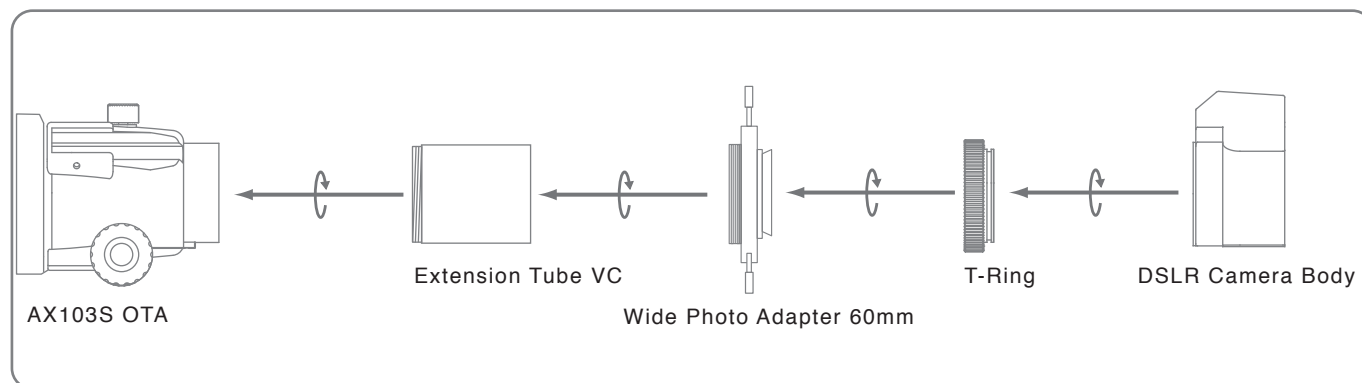
This method is recommended for a DSLR camera with APS-C (\*2) or smaller format imager.



Note: If your DSLR camera has an imager that is equal to the APS-C size or smaller than the APS-C size, vignetting will generally not occur in this configuration. However, there is possibility that the vignetting may arise from the orientation of the attached camera. In this case, repositioning the inner ring of the T-ring will eliminate the vignetting. The inner ring of the T-ring can be turned by loosening the setscrews on the T-ring.

#### 2. Photographic Configuration with Use of Wide Photo Adapter 60mm

This method is recommended for a DSLR camera with full 24mm x 36mm size format (\*4) imager.



Note: If your DSLR camera has an imager that is equal to the full format size or smaller, any vignetting (\*5) will not occur in this configuration.

(\*1) Imager: The surface of imaging sensors on a digital camera or to film on a SLR camera.

(\*2) APS-C size format: The size of imagers is 23.6mm x 15.8mm. The size may differ slightly depending on types of digital cameras.

(\*3) Vignetting: Only the center of the viewing (imaging) field and the area near the center are seen (in a photo taken) but the outer area is blackened due to loss of light.

(\*4) Full size format: The size of imagers is about 24mm x 36mm. It is equal to a camera with 35mm film format.

(\*5) The image circle illumination may not become uniformly bright due to a reduction of the illumination at the four corners of the imager. This will often appears on a DSLR with full size format imager.