Vixen

Space eye
VIXEN ASTRONOMICAL TELESCOPES

SPACE EYE 50M / 70M MANUAL

Thank you very much for purchasing a Vixen astronomical telescope. We highly recommend that you read this manual thoroughly.

Safety Notes

⚠ Warning!

Never look at the sun through a telescope / finder scope.
Permanent and irreversible eye damage may result.

⚠ Caution

Do not place a telescope or an eyepiece under direct sunlight.
There is a possibility of a fire.

Parts Description

- Dew Shield
- Objective Lens (inside)
- Optical Tube
- Optical Tube Lock Screw (large)
- Vertical Motion Clamp
- Mount
- Adjustable Tripod
  Pull the legs apart until the support arms for the accessory tray have been fully extended.
- Leg Extension Clamp
  Pull out the legs until at the desired height by loosening the clamps.
- Optical Tube Lock Screw (small)(underneath)
- Finder Scope
- Finder Scope Adjustment Screws (3)
- Eyepiece (ocular)
- Diagonal Mirror
- Focus Knob
- Vertical Fine Motion Handle
- Horizontal Fine Motion Handle
- Horizontal Clamp
- Accessory Tray
- Extension Leg
- Leg Tips

* The picture shows Space Eye 50M.

Specifications

The Specifications are subject to change without notice.

	Space Eye 50M / Space Eye 70M
■ Optical Tube	Objective Lens
Effective Aperture	2"(50mm) / 2.75"(70mm)
Focal Length	23.6"(600mm) / 27.5"(700mm)
Focal Ratio	1:12 / 1:10
Light Gathering Power	51x / 100x
Resolving Power	2.32 arc sec / 1.66 arc sec
Limiting Magnitude	10.3 / 11.0
Optical Tube Length	22.8"(Approx 580mm) / 27.3"(Approx 695mm)
Optical Tube Outer Diameter	2"(Approx 52mm) / 2.75"(Approx 70mm)
Optical Tube Weight	15.3 oz(Approx 435g) / 28.2 oz(Approx 800g)

	Space Eye 50M / Space Eye 70M
■ Eyepiece	Eyepiece
	PL 4mm 150x / PL 4mm 175x
	PL 20mm 30x / PL 20mm 35x
Eyepiece Diameter	1.25"(31.7mm)
Finder Scope	0.2"(5mm)x0.75"(20mm)
■ Tripod / Mount	
Altazimuth Mount, With Vertical Fine Motion and Horizontal fine Motion Handle	
2 Section Aluminum Adjustable Tripod (70 ~ 127cm)	
Tripod / mount weight	4.4 lbs(Approx. 2kg)

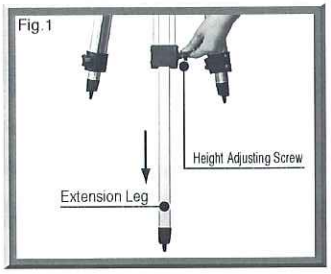
	Space Eye 50M / Space Eye 70M
■ Accessory	
Eyepiece (PL 20mm / PL 4mm)	
Diagonal Mirror	
5x20 Finder Scope	
Accessory Tray	
User Manual	
Total Weight	6 lbs(Approx 2.8kg) / 6.8 lbs(Approx 3.1kg)

Setting Up

Setting Up the Tripod / Mount

1. Take out the mount with tripod from the box.

   Loosen the extension clamp and extend the legs until at the desired height. (Set the height of all three of the legs to be equal and tighten the extension clamp.)

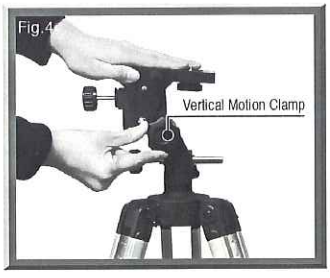


2. Stand the tripod uptight and pull the tripod legs apart until the support arms for the accessory tray have been fully extended.

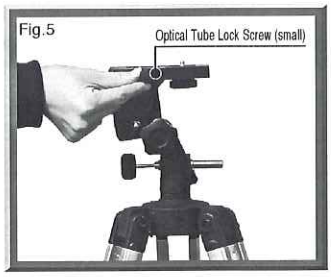
3. Push the accessory tray down at the center of the support arms.

Attaching the Optical Tube

1. Loosen the vertical motion clamp and set the mount head to a level position. Then, tighten the vertical motion clamp.

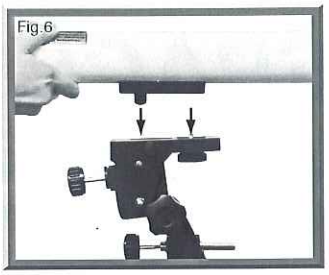


2. Loosen the small optical tube lock screw.



Attaching the Optical Tube

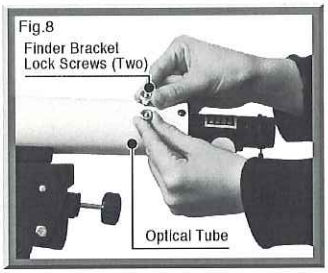
3. Place the optical tube over the mount head and attach it so the screws protrude in the holes in the mount head.



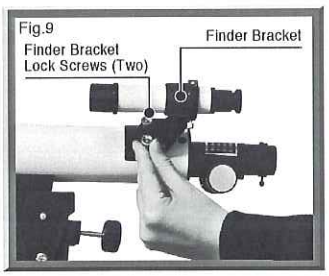
4. Tighten up the optical tube lock screw to fix the telescope in place.

Attaching the Finder Scope

1. Remove the finder bracket lock screws (2 screws) from the optical tube.



2. As shown in Fig. 9, attach the finder scope and secure the bracket onto the optical tube with the finder bracket screws.



* Please refer to the section "Adjusting the Finder Scope" for more information.

Using the Telescope

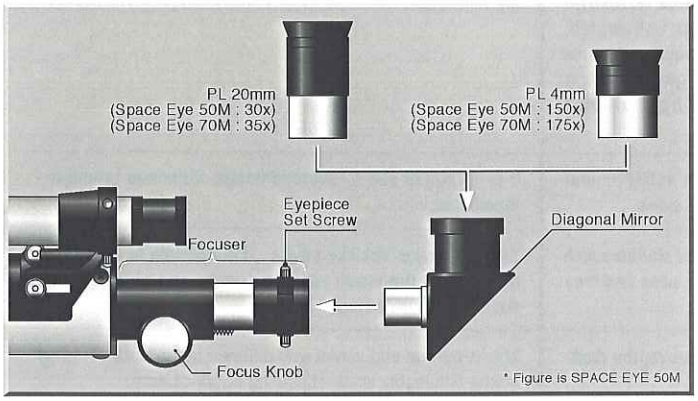
Attaching the Eyepiece

An eyepiece must be used when viewing through the Space Eye. The Space Eye 50M/70M come standard with 2 eyepieces and a Diagonal Mirror. (See Diagram Below) Insert the eyepiece into the Diagonal Mirror. The numbers on each eyepiece indicate the focal length of that eyepiece. The magnification is obtained by dividing the focal length of the telescope by the focal length of the eyepiece.

Space Eye 50M					
Eyepiece	Focal Length of Telescope	÷	Focal Length of Eyepiece	=	Power
PL 20mm	23.6"(600mm)	÷	20mm	=	30x
PL 4mm	23.6"(600mm)	÷	4mm	=	150x

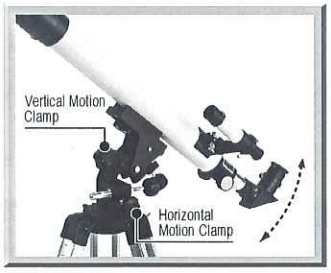
Space Eye 70M					
Eyepiece	Focal Length of Telescope	÷	Focal Length of Eyepiece	=	Power
PL 20mm	27.5"(700mm)	÷	20mm	=	35x
PL 4mm	27.5"(700mm)	÷	4mm	=	175x

Diagonal Mirror



Vertical and Horizontal Motion Clamps

Track objects by loosening the vertical and horizontal clamps and moving the telescope.



Vertical and Horizontal Fine Motion Handle

Use the finder scope to locate the direction of your target object. Then, tighten the vertical and horizontal motion clamps. Use the vertical and horizontal fine motion knobs to place your target object in the center of the field of view of the telescope.

Finder Scope

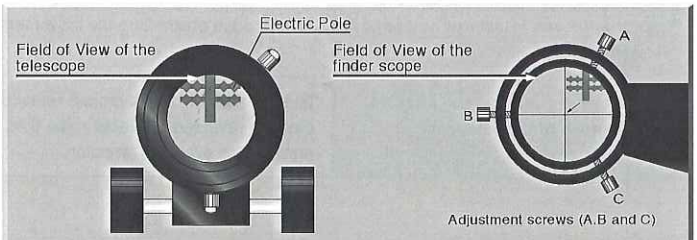
The Finder Scope helps to align the target celestial object by centering the object in the center crosshair of the finder scope. The object will then be centered in the telescope view.

Adjusting the Finder Scope

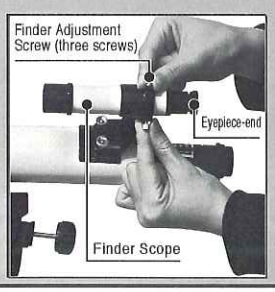
Adjust the finder scope in daylight prior to using the Space Eye.

1. Attach the eyepiece (PL20mm) to the diagonal mirror and point the telescope at a target object (ex. A chimney, an antenna or electric pole at least 219 yds (200m) away) in the distance. Center the target object in the field of view of the eyepiece and focus it by turning the focus knob slowly.
2. Look through the finder scope and center the same target object on the crosshairs in the finder's field of view with the three adjustment screws.

* Each finder scope is pre-adjusted before shipment, but individual eyesight varies. If an adjustment is necessary, rotate the eyepiece on the finder scope.



1. Center the target object in the field of view.



2. Adjust so that the target object comes to the center of the crosshairs by loosening or tightening the setscrews. (ex. The top of the electric pole can be moved toward the center of the crosshairs by loosening the adjustment screws A and C, then tightening the adjustment screw B.)
3. No adjustment is necessary unless the finder scope is removed. However, it should be done as needed.

* The image viewed through the telescope is upside down or reversed.

FAQ

Question	Answer
Is it possible to change the magnification?	Magnification can be changed by changing the eyepiece. Purchase additional 1.25" eyepieces as needed.
What celestial objects will I be able to view?	In a metropolitan area, with many ground lights, you will have wonderful views of the moon, planets, and nearby stars. In a darker location you might view nebula. These will appear as a "fuzzy" patch in the sky. Remember, the published images of nebula are enhanced with photographic software.

Trouble Shooting

Observation

Trouble	Cause	Solution
Cannot see anything.	The lens cap is attached to the telescope.	Remove the lens cap.
	The finder scope is not adjusted correctly.	Refer to this manual to adjust the finderscope accurately during the daytime. If it is adjusted properly, you should be able to insert a target object in the field of view.
	Eyepiece is not attached.	Insert the eyepiece.
	The view is not focused.	Focus by turning the knob and follow directions in this manual. The object should be at least 215 yards away.
The star is twinkling.	Air turbulence and temperature can affect the appearance of stars. They may not look sharp on a windy or hazy day.	Observe outdoors on calm, clear days.
Image is upside down.	An image seen through an astronomical telescope looks upside down because of its design. * Unlike terrestrial images, it is unnecessary to specify the top, bottom, left, or right of a celestial object. A prism is required to view an erect image, but this model is not designed to use a prism in order to minimize the loss of light of faint objects.	It is normal to see an upside-down image. Continue to use the telescope.
The sides of an image are reversed.	When a diagonal mirror is attached to this astronomical telescope, the object image has reversed sides.	It is normal to see a reversed image. Continue to use the telescope.
A star only looks like a point and does not magnify.	The stars and objects other than the moon and planets reach far into our galaxy. It is difficult to distinguish sizes and they will look like points of light.	Stars normally look like points. It is possible to distinguish features on the moon such as craters and of the planets such as Saturn's rings.
Dust in the field of view is gradually moving.	Rotate the eyepiece. If the object does not move, the dust-like image is from your eye.	This is normal and varies with different individuals. This will not be noticeable when observing bright objects.

Operation

Trouble	Cause	Solution
Cannot point the telescope to zenith. (Straight up)	The tripod is obstructing the movement.	Turn the telescope horizontally until it is not touching the tripod. You should now be able to point to zenith.
Stars move in the opposite direction of the motion of the telescope.	Images seen in astronomical telescopes are often upside down or reversed. Objects in the field of view do not always move in the expected direction.	As you become familiar with the path of stars, you will be able to track them successfully with the Space Eye.

Vixen Co., Ltd. 5-17-3 Higashitokorozawa,Tokorozawa,Saitama359-0021, Japan
Phone 04-2944-4000
http://www.vixen.co.jp Fax 04-2944-4045