

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.
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®

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!

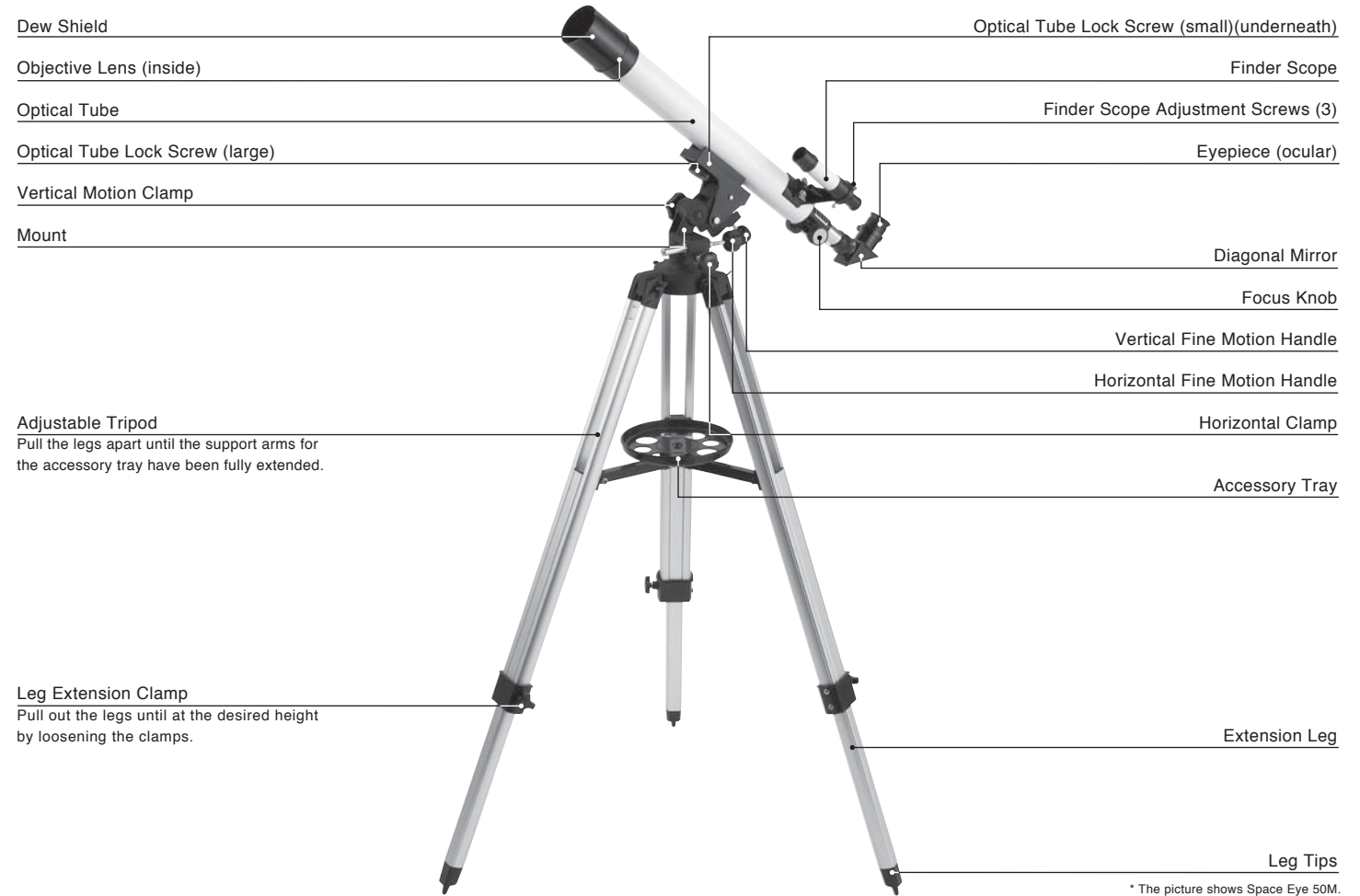
Never look at the sun through a telescope / finder scope. Permanent and irreversible eye damage may result.



Caution

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

Parts Description



Specifications

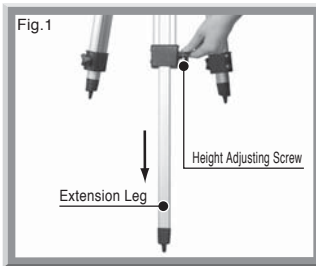
	Space Eye 50M / Space Eye 70M		Space Eye 50M / Space Eye 70M		Space Eye 50M / Space Eye 70M
Optical Tube	Objective Lens	Eyepiece	Eyepiece	Accessory	
Effective Aperture	2"(50mm) / 2.75"(70mm)		PL 10mm 60x / PL 10mm 70x		Eyepiece (PL 20mm / PL 10mm)
Focal Length	23.6"(600mm) / 27.5"(700mm)		PL 20mm 30x / PL 20mm 35x		Diagonal Mirror
Focal Ratio	1:12 / 1:10		Eyepiece Diameter	1.25"(31.7mm)	5x20 Finder Scope
Light Gathering Power	51x / 100x		Finder Scope	0.2"(5mm)x0.75"(20mm)	Accessory Tray
Resolving Power	2.32 arc sec / 1.66 arc sec		Tripod / Mount		User Manual
Limiting Magnitude	10.3 / 11.0		Altazimuth Mount, With Vertical Fine Motion and Horizontal fine Motion Handle		
Optical Tube Length	22.8"(Approx 580mm) / 27.3"(Approx 695mm)		2 Section Aluminum Adjustable Tripod (70 ~ 127cm)		
Optical Tube Outer Diameter	2"(Approx 52mm) / 2.75"(Approx 70mm)		Tripod / mount weight	4.4 lbs(Approx. 2kg)	
Optical Tube Weight	15.3 oz(Approx 435g) / 28.2 oz(Approx 800g)				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.

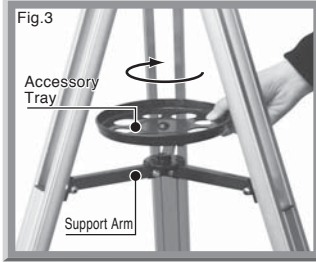
Loosen the extension clamp and extend the legs until at the desired height. (Set the height of all three of the legs to be equal and tighten the extension clamp.)



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

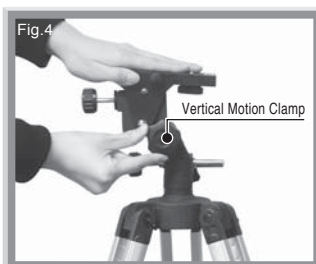


3. Push the accessory tray down at the center of the support arms.

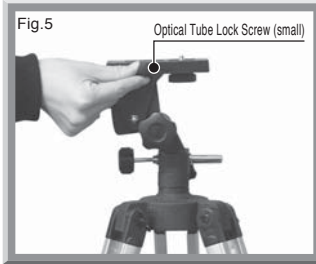


Attaching the Optical Tube

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

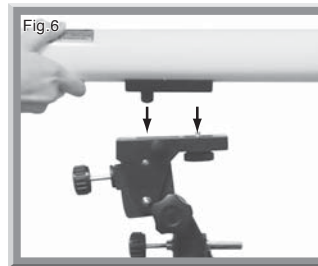


2. Loosen the small optical tube lock screw.

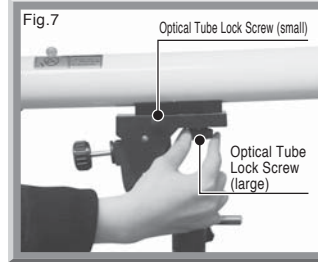


Attaching the Optical Tube

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

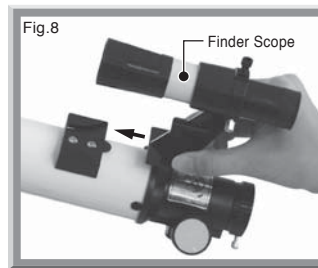


4. Tighten up the optical tube lock screw to fix the telescope in place.



Attaching the Finder Scope

1. The finder scope comes equipped with the finder scope bracket. Slide the finder scope bracket leg into the finder bracket shoe on the optical tube as shown in the figure until it snugs.



You are not ready to use the finder scope unless you finish aligning it with the telescope. Please refer to "Aligning the Finder Scope" described in the Using the Telescope section.

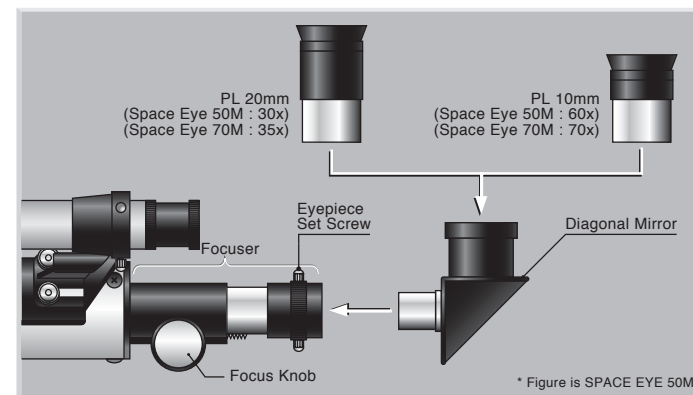
Using the Telescope

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.

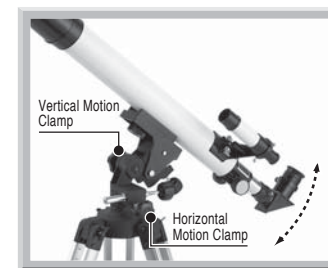
Space Eye 50M				
Eyepiece	Focal Length of Telescope	÷	Focal Length of Eyepiece	= Power
PL 20mm	23.6"(600mm)	÷	20mm	= 30x
PL 10mm	23.6"(600mm)	÷	10mm	= 60x

Space Eye 70M				
Eyepiece	Focal Length of Telescope	÷	Focal Length of Eyepiece	= Power
PL 20mm	27.5"(700mm)	÷	20mm	= 35x
PL 10mm	27.5"(700mm)	÷	10mm	= 70x



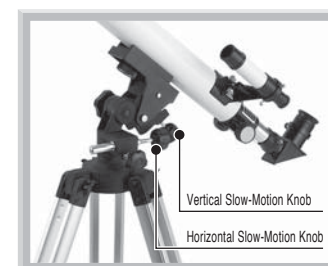
Vertical / Horizontal Motion Clamp

You can point the telescope to the desired direction by turning the vertical / horizontal clamps.



Vertical / Horizontal Slow-Motion Knob

Adjust the direction of the telescope roughly with the finder scope, and tighten the vertical and horizontal motion clamps. Insert the target in the center of the field of view with the vertical / horizontal slow-motion knob.



(Note) The slow-motion knobs turn within the limited range. If you want to turn them further, loosen the vertical / horizontal motion clamp and move them to the desired point and re-tighten the clamp. Then, adjust the direction with the slow-motion knobs.

Finder Scope

Finder Scope is a telescope supplement which helps aligning the target object by centering the object on the crosshair in the finder scope so that it can be seen through the telescope. An adjustment is necessary upon purchase or if not yet done.

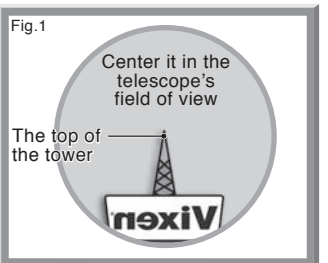
Aligning the Finder Scope

It is very difficult for the telescope user to locate a target object through the telescope's field of view at high magnification, especially as the field of view narrows.

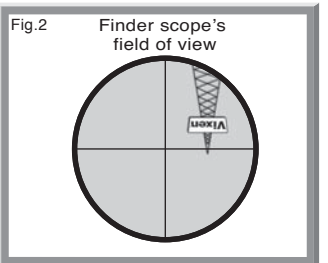
The finder scope allows you to find your target object easier by means of its much wider field of view.

There is a cross hairs in the field of view of the finder scope. Adjust the direction of the finder scope with the setscrews so that the object seen in the center of the telescope's field of view comes close to the crossing of the cross hairs in the finder's field of view.

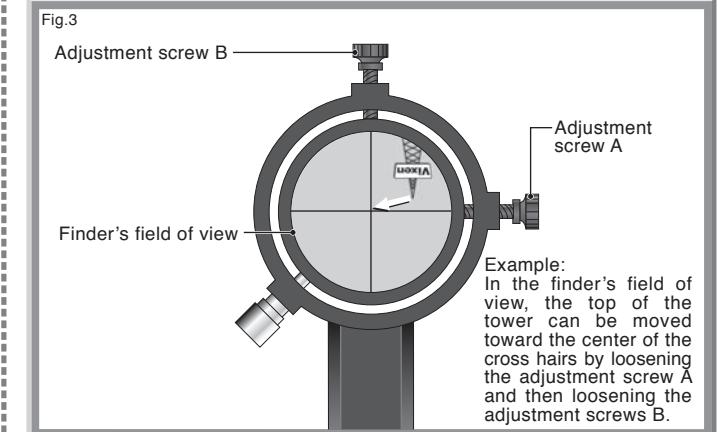
1. Choose a conspicuous target in the distance (over 200m away) and place the target toward the center of a field of view of the telescope. The image in the telescope's field of view is mirror-reversed as used together with the supplied diagonal mirror. It is recommended to start the adjustments using an eyepiece of low magnification.



2. Next, look through the finder scope. You should probably see the same target somewhere within the finder's field of view. The tower shown in the finder's field of view is reversed as illustrated in the figure. The center of the cross hairs does not fall on the target at this stage.



3. While looking through the finder scope, align the field of view with the telescope's field of view by loosening or tightening the setscrews on the finder bracket so that the target comes to the center of the finder's field of view.



Try Using the Finder Scope!

Try finding a distant object in the center of the finder scope's field of view with the slow motion control handles. Make sure that the object is seen in the telescope's field of view. Finish aligning the finder scope if the same objects are seen in the center of the telescope's field of view and at the center of the finder scope's cross hairs.

When the object that is seen at the center of the finder scope's cross hairs disappears in the telescope's field of view, you fail in aligning the finder scope. Carefully repeat the procedures 1 to 3 of the Aligning the Finder Scope. Use the PL10mm eyepiece (an eyepiece with short focal length) for more precise adjustments.