

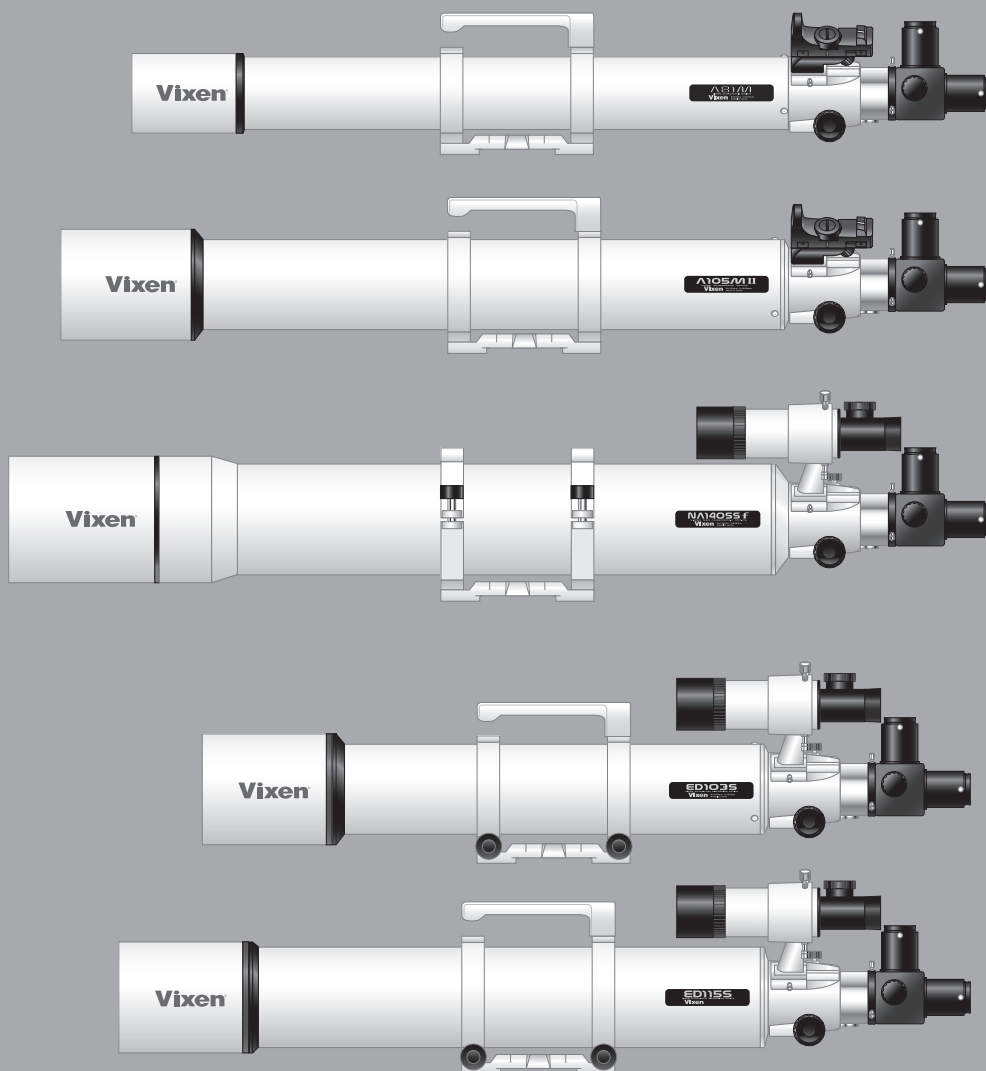
# Vixen®

## Instruction Manual for the A81M, A105MII, NA140SS, ED103S and ED115S

### 屈折式鏡筒ユニット取扱説明書

(※)輸出専用モデル

REFLECTOR



Thank you very much for your purchase of a Vixen astronomical telescope. This manual describes the A80M, A105MII, NA140SS, ED103S and ED115S 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.

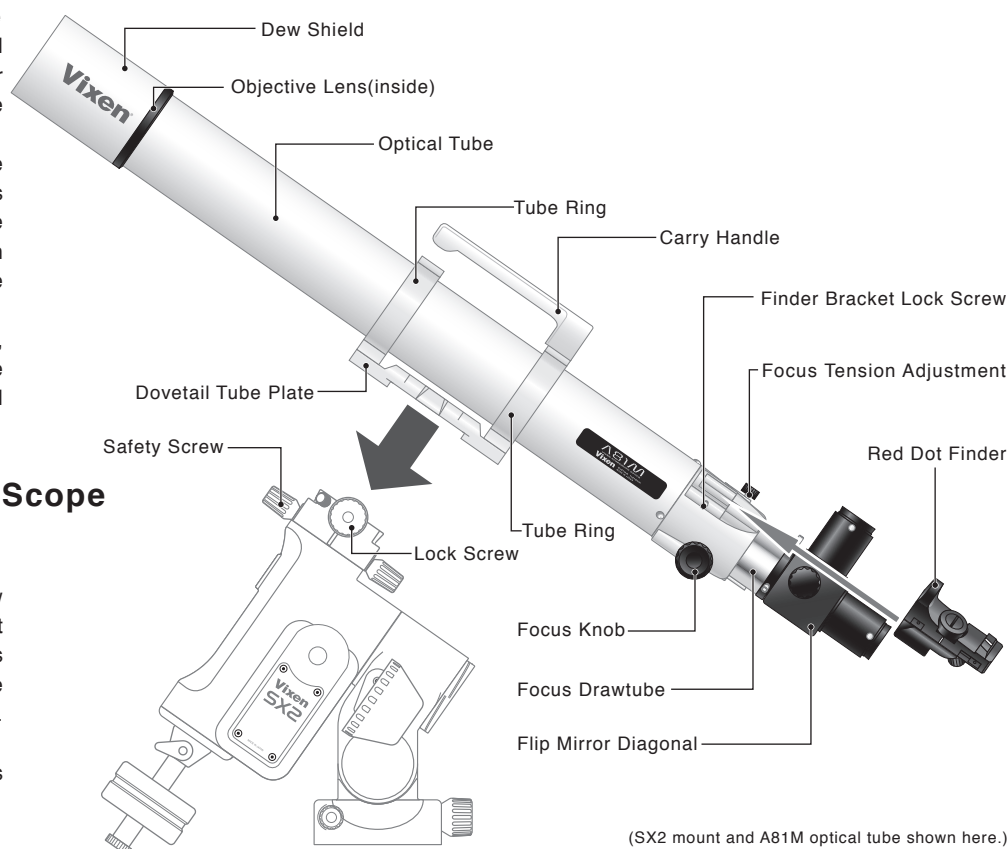
First tighten the dovetail lock screw, and then tighten the small chrome safety screw onto the dovetail mounting block until snug.

**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.

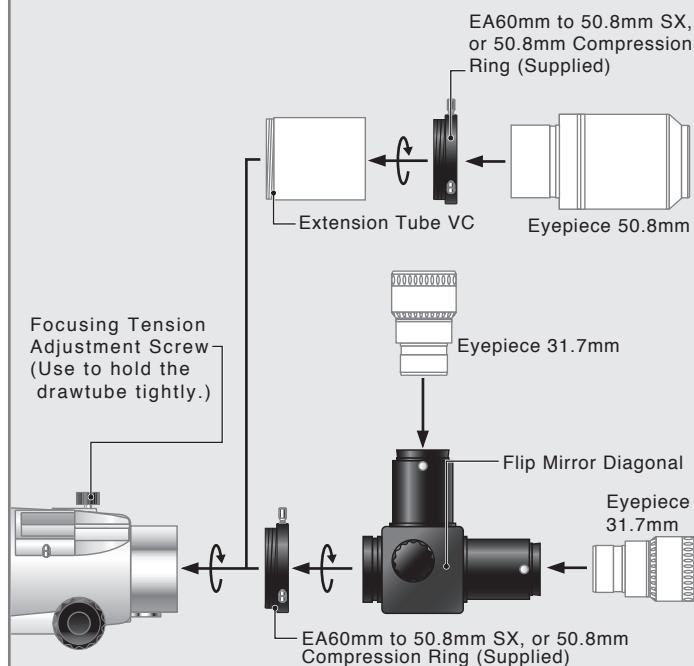
Refer to the finder scope instructions as to assembling the finder.



## 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 1000mm focal length.

Eyepiece	Focal length of telescope	÷	Focal length of eyepiece	=	Magnification
SLV20mm	1000mm	÷	20mm	=	50x
SLV 5mm	1000mm	÷	5 mm	=	200x

### Focusing the Telescope

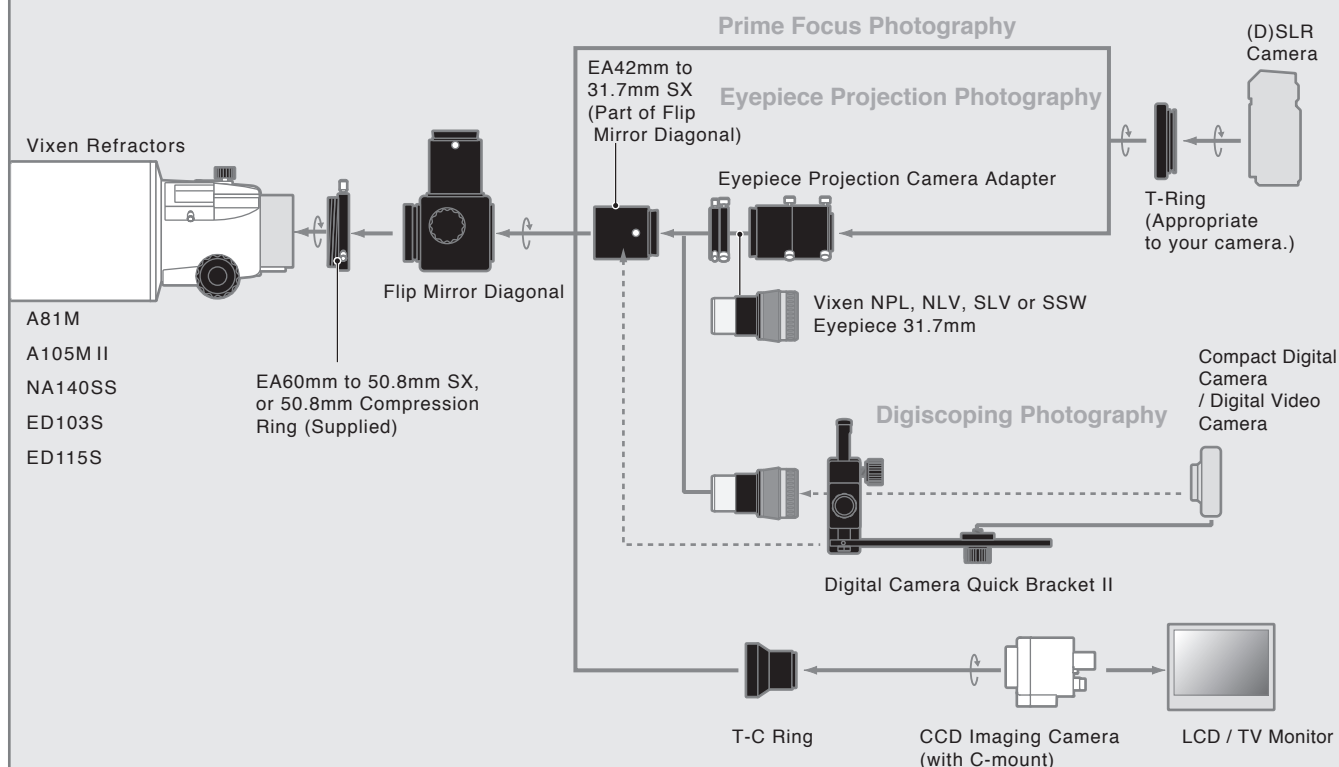
Look into the eyepiece. The image will likely be out of focus at first. Turn the focus knob slowly clockwise or counterclockwise to find a point where the image in the field of view of the eyepiece becomes sharpest.



## 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.



## SPECIFICATIONS

Model	A81M	A105MII	NA140SS
Optical Design	Achromatic / Multicoated	Achromatic / Multicoated	4-element Neo-Achromatic / Multicoated
Effective Aperture (D)	81mm	105mm	140mm
Focal Length (F)	910mm	1000mm	800mm
Focal Raito	1 : 11.2	1 : 9.5	1 : 5.7
Light Gathering Power	134x	225x	400x
Resolving Power	1.43 arc. seconds	1.1 arc. seconds	0.82 arc. seconds
Limiting Magnitude	11,3	11,9	12.5
Drawtube Diameter	64mm		64mm
Threads	60mm, 42mm for T-ring		60mm
Push fit	50.8mm, 31.7mm*(37mm is available if Flip Mirror Diagonal is supplied as standard accessory)		
Tube Length	890mm	1010mm	1040mm
Outer Tube Diameter	90mm	115mm	140mm
Tube Weight	3.5kg (2.5kgw/o accessories)	4.8kg (3.8kgw/o accessories)	6.7kg (5.5kgw/o accessories)
Accessories	Red Dot Finder Flip Mirror Diagonal Tube Rings Dovetail Tube Plate Carry Handle	Red Dot Finder Flip Mirror Diagonal Tube Rings Dovetail Tube Plate Carry Handle	50.8mm Compression Ring Tube Rings Dual Speed Focuser

Model	ED103S	ED115S
Optical Design	SD Apochromatic / Multicoated	SD Apochromatic / Multicoated
Effective Aperture (D)	103mm	115mm
Focal Length (F)	795mm	7890mm
Focal Raito	1 : 7.7	11 : 7.7
Light Gathering Power	217x	270x
Resolving Power	1.13 arc. seconds	1.01 arc. seconds
Limiting Magnitude	11.8	12.1
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	810mm	930mm
Outer Tube Diameter	115mm	125mm
Tube Weight	5.4kg (3.6kgw/o accessories)	6.2kg (4.4kgw/o accessories)
Accessories	7x50mm Finder W/illumi Flip Mirror Diagonal Tube Rings Dovetail Tube Plate Carry Handle	7x50mm Finder W/illumi Flip Mirror Diagonal 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.

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## 製品についてのお問い合わせについて

弊社ホームページのお問い合わせメールフォームにて受け付けております。

<http://www.vixen.co.jp/>

またお電話によるお問い合わせも受け付けております。

カスタマーサポートセンター

電話番号：04-2969-0222 (カスタマーサポートセンター専用番号)

受付時間：9:00～12:00、13:00～17:30

(土・日・祝日、夏季休業・年末年始休業など弊社休業日を除く)

※上記電話は都合によりビクセン代表電話に転送されることもあります。

※お電話によるお問い合わせは、時間帯によってつながりにくい場合もございます。

お客様のご質問にスムーズに回答させていただくためにも、上記のお問い合わせフォームのご利用をお薦めいたします。

※受付時間は変更になる場合もございます。弊社ホームページなどでご確認ください。

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