



**SPECTRUM**  
OPTICAL INSTRUMENTS

# ST-AZ60 SERIES INSTRUCTION MANUAL



# **WARNING!!!**

**Please remember that never look at the Sun through a telescope without proper solar filter, doing so may permanently damage your eyes.**

# INTRODUCTION



Spectrum Optical Instruments' AZ60 series telescope line is the perfect telescope to start your night sky adventure. It has everything for users from a beginner to intermediate user and with the included items, you are able to view some of the most well-known celestial objects as well as near-ground objects.

The AZ60 series comes with a variety of apertures including 70, 80, and 90 refractors. The 70mm refractor comes with two different focal lengths and each serve a different purpose.

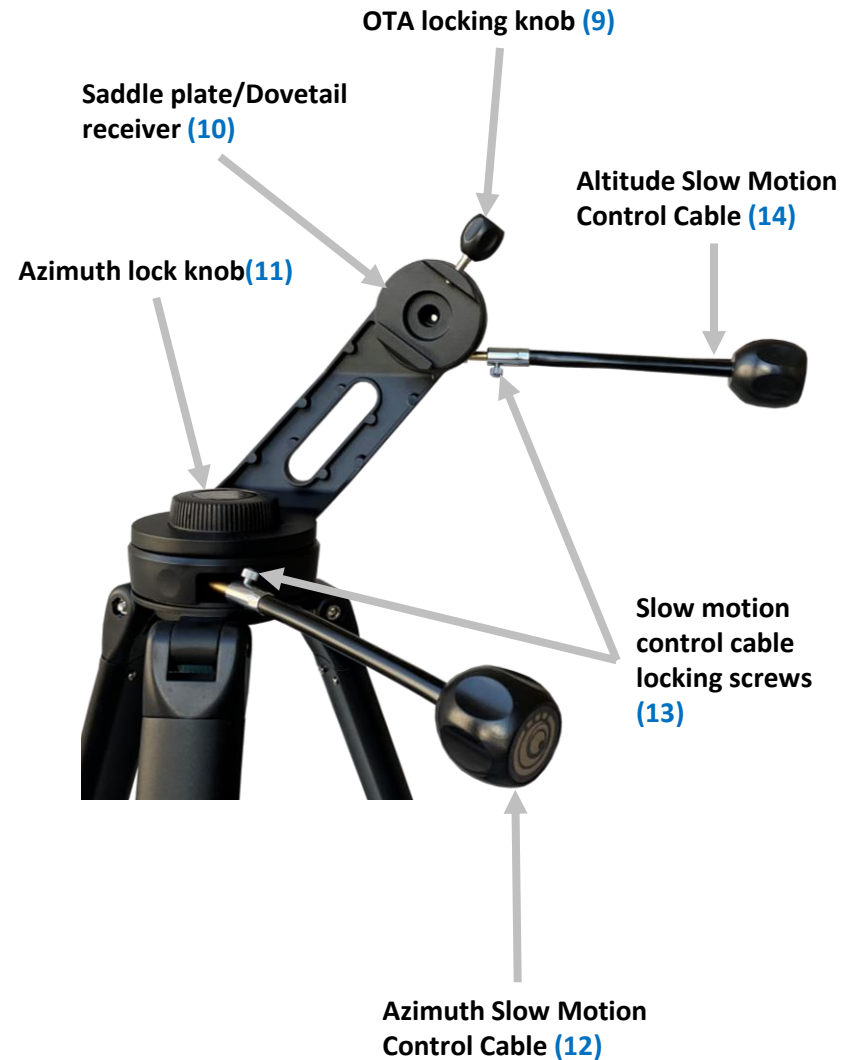
# SPECIFICATIONS



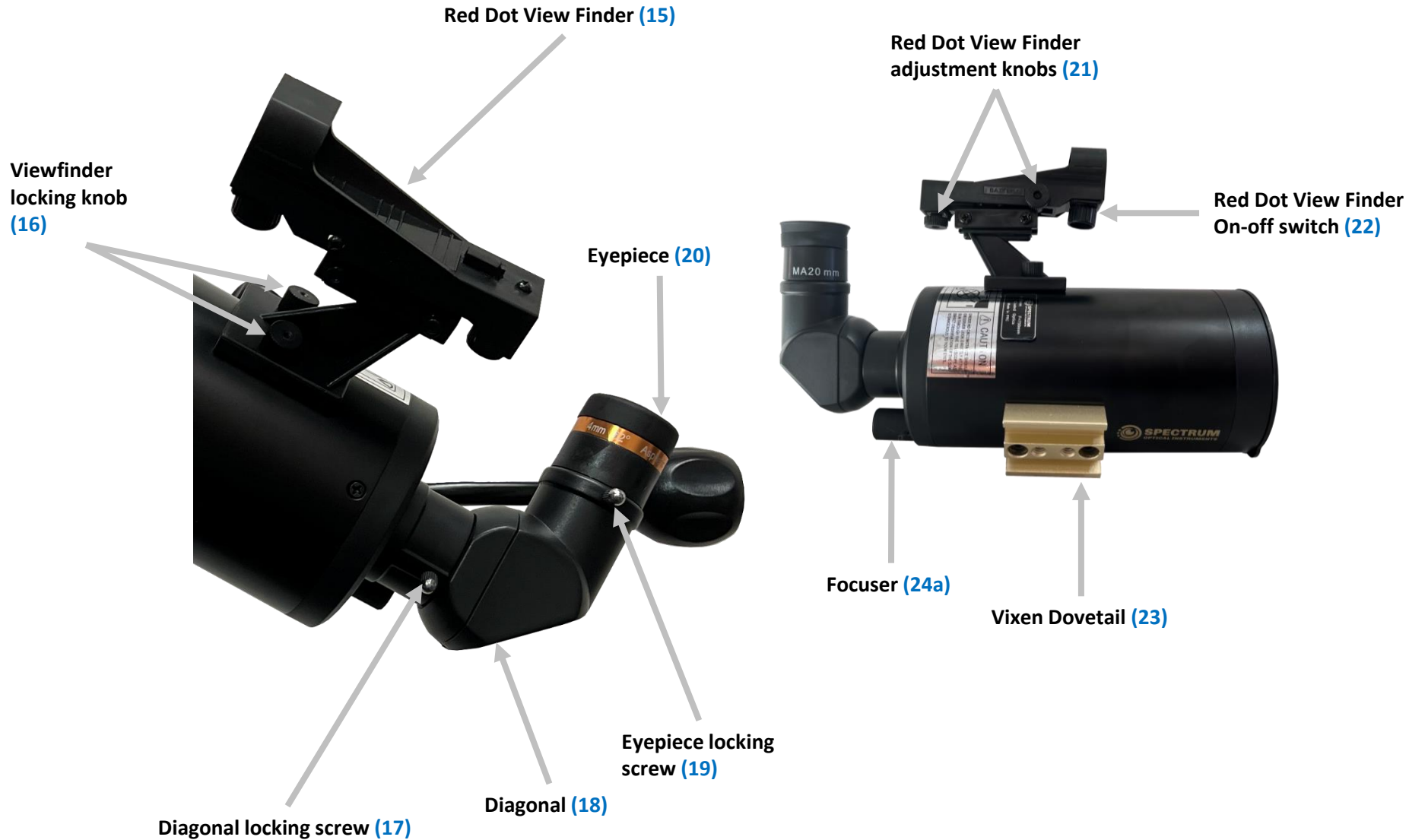
SKU	ST-AZ60-70700	ST-AZ60-80900	ST-AZ60-90660	ST-AZ60-70750
Aperture (MM)	70	80	90	70
Focal Length (MM)	700	900	660	750
Telescope Type	Refractor			Mak Refractor
f/Ratio	f/10	f/11.3	f/7.33	f/10.71
Magnification	35X – 215X	45X – 277X	33X – 203X	37.5X – 230X
Optical Coatings	Fully Coated			Multiple coatings
Tube Mounting	Vixen Dovetail			
View Finder	Red Dot View Finder			
Mount Type	AZ60 Alt-AZ			
Tripod	Full size Aluminum adjustable Tripod with Accessory Tray			
Eyepieces	1.25" 6.5mm, 10mm, 20mm			
Other Accessories	1.25" 90° Erect-image Diagonal, 1.25" 2X Barlow lens, Bonus Smart Phone Adapter, Bonus Bluetooth Shutter			

Please DO NOT look at the Sun through your telescope without a proper filter. This may damage your eyes permanently.

# MAJOR PARTS & NAMES



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# SET UP INSTRUCTION

Set up video for ST-AZ60 series is available on our YouTube channel and TikTok, feel free to check those out!

## Tripod & Mount

1. Release the tripod leg lock (6) and fully extend the spread tripod legs (7) to set the proper height
2. Place the tripod (3) on a relatively flat ground where you have a clear view to the sky (if you are viewing celestial objects) or distanced ground (if you are viewing land objects).
3. Adjust the height of the legs to level the top of the tripod.
4. Attach the accessory tray (4) onto the center spreader bars (5) and temporarily place all the accessories there.
5. To install the slow motion control cables (12) and (14), first loosen the slow motion locking screws (13) and locate the flat attachment area on the shaft.
6. Once the slow motion control cable is on the shaft, tighten the locking screw to a firm feel.
7. With these steps done properly, your tripod and mount are now set up correctly.

## OTA

1. Locate the Vixen dovetail (23) and slide the Optical Tube Assembly (OTA) (1) onto the saddle plate (10) located on the mount (2) and tighten the OTA lock knob (9) to a firm feel.
2. Install the red dot view finder (15) and secure it by tightening the lock knob (16) to a firm feel.
3. Install the diagonal (18) into the optical tube, and secure the diagonal by tightening the diagonal lock knob (17).
4. Selectively install the Barlow Lens per desire
5. Slide an eyepiece (20) into the diagonal and secure it by tightening the eyepiece locking screw (19).

## View Finder Alignment

1. Point the OTA at a distanced land object during the daytime, such as a distanced light pole.
2. Look through the lower-power eyepiece first and center the object in the eyepiece
3. Focus the telescope by turning the focus knob (24a) of (24b) till the object is sharp and clear.
4. Turn on the red dot viewfinder by turning the view finder on-off switch (22) and look through it. Adjust the red dot by turning one of the two view finder alignment knobs (21) till the red dot is overlapping the same object centered in the eyepiece.
5. Repeating the same process at night by pointing at a celestial object such as the Moon will further align your viewfinder and OTA.

# FAQs

## What is aperture of a telescope?

Aperture of a telescope refers to the diameter of the objective lens (for refracting telescope) or the primary mirror (for reflecting telescopes). The aperture of the telescope determines how light the telescope and observe hence how much detail you can see. **The rule of thumb:** the bigger the aperture, the more detail you can see.

## Should I choose the larger aperture?

Aperture of a telescope is what determines how much light can a telescope observe. The larger the aperture, the more light can be collected, which results in greater image resolution. In short, with a telescope with a larger aperture, you can see more detail and better detail than the one with a smaller aperture. However, the larger the aperture, the more expensive the telescope is.

## How to calculate the magnification of a telescope?

The magnification of a telescope is equal to the telescope's focal length divided by the eyepiece's focal length. Focal length of a telescope and an eyepiece can be found on the specification sheet, on our telescope, the two are actually printed onto the body of the OTA and the eyepieces for easier access. For example, with a 20mm eyepiece, a 900mm OTA will give you 45X magnification; with a 10mm eyepiece, a 900mm OTA will give you 90X magnification.

## What does the number on an eyepiece mean?

The number on an eyepiece refers to the focal length of the eyepiece which is usually measured in millimeter (MM). For example, a 25mm eyepiece has a focal distance of 25mm. The bigger the number, the longer the focal which results in a lower magnification.



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## How to take an image through a telescope with a phone?

Our telescopes are perfect for taking image of bright objects such as the moon. To take an image through a telescope with your phone is very easy. Point the telescope at and focus on the object you want to take an image of, then use our included bonus smartphone holder to hold your phone with, then simply take a picture.

Better yet, you can use our included Bluetooth shutter to control your phone to avoid any potential shaking induced by touching the screen of your phone directly. You can of course simply hold your phone next to the eyepiece and take a picture.

## Why is my OTA pointing at one object and my view finder is pointing at another?

In this case, there is a high possibility that your OTA is not properly aligned with the viewfinder.

We recommend aligning the two in the morning first. Point your telescope at a land object that is at a far distance, such as a street light or a "STOP" sign, and center the object in the eyepiece. Adjust view finder alignment screws till the viewfinder is pointing at the same object you have centered in your eyepiece.

Then, repeat the same procedure at night by pointing at a large and bright celestial object such as the moon. Small adjustments may be required at this point.

After these two steps. Your OTA and view finder are aligned properly.

# FAQs

## **What can be observed by my telescope?**

With the included eyepieces, you can observe the crater of the moon, planets of our solar system (Saturn), as well as Orion Nebula. You can also observe terrestrial objects such as sail boat. However, please keep in mind that never look at the Sun without a proper solar filter, this may permanently damage your eyes.

## **There are 3 included eyepieces, which one should I start with?**

Best practice is to start with lower power eyepiece because the lower magnification gives you a large Field of View (FOV) of the sky making locating the object easier. After centering the object in the eyepiece, you may switch to a higher power eyepiece to see more detail.

## **Will this telescope work with my 1.25" eyepieces?**

Yes, by default, this telescope has a 1.25" eyepiece adapter so it will work with all the 1.25" accessories.

## **What is a Barlow lens?**

A Barlow in astronomy is a lens to increase the magnification of a telescope. Usually, a Barlow would be labelled "2X," "3X," and etc. a 2X Barlow doubles the magnification of your telescope and a 3X Barlow trebles the magnification. For example, using a 2X Barlow on a setup that originally give you 150X magnification will double your magnification making the overall magnification 300X

# CUSTOMER SOLUTIONS

If you have a question concerning your telescope, please reach out to Spectrum Optical Instruments via any of the social media platforms below. You can also contact us via email at [customer@spectrumoi.com](mailto:customer@spectrumoi.com). We will get back to you as soon as we can.



spectrumoi



Spectrum\_oi



Spectrum Optical Instruments

# LIMITED WARRANTY

Every Spectrum Optical Instruments telescope and product is warranted by Spectrum Optical Instruments to be free of defects in materials and workmanship for a period of ONE YEAR from the date of purchase in the US. If a defect is identified on a new product, Spectrum Optical Instruments will repair or replace a product with proof of original purchase. This warranty only applies to the original purchaser and it is not transferable.

This warranty is not valid where the product has been damaged due to abused or mishandled, attempted or performed unauthorized repairs, or depreciation due to normal wear-and-tear. Spectrum Optical Instruments specifically disclaims special, indirect, or consequential damages or lost profit which may result from a breach of this warranty. Any implied warranties which cannot be disclaimed are hereby limited to a term of one year from the date of original retail purchase.

This warranty gives specific rights. You may have other rights which vary from state to state.

Spectrum Optical Instruments reserves the right to change product specifications or to discontinue products without notice.

A claim is required to be filed before return of a product. A claim can be filed by obtained from Spectrum Optical Instruments by email. Each return product must include a written statement detailing the nature of the claimed defect. As well as the original purchaser's name, address, and contact information.

NOTE: buyers are responsible for return shipping and handling cost for warranty services after 30 days of original purchase. Our warranty covers parts and labor only.

# CONTACT



For other products and best deals, visit our website  
**[spectrumoi.com](https://spectrumoi.com)**

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