

# INSTRUCTION MANUAL

## Orion® GrandView™ 65mm and 80mm ED Spotting Scopes

#51852 65mm, #51853 80mm



Congratulations on your purchase of the GrandView ED Spotting Scope with interchangeable 1.25" eyepieces. The ED glass in the objective lens means you'll enjoy images with far less color distortion than those seen in a standard scope. Your spotting scope is a high-quality optical instrument for viewing birds, wildlife, sports events, or anything else you want to see more closely. It will provide many years of enjoyable viewing. Before using your spotting scope, we recommend that you read through the following instructions.

### Attaching the eyepieces

Your spotting scope is capable of accepting most all 1.25" standard astronomical eyepieces. The GrandView ED includes a 1.25" zoom eyepiece that should fit most needs, but optional non zoom eyepieces are available through Orion should you desire them. To attach your eyepieces, loosen the large knurled collar on the eyepiece end of the spotting scope by rotating it counter-clockwise. Insert the eyepiece until it is fully seated, and then tighten down the collar by rotating clockwise until snug. The GrandView utilizes a compression style locking mechanism to clamp the eyepiece by way of this collar, in order to hold it securely and also not scratch the side of the eyepiece barrel. To remove the eyepiece, simply loosen the collar enough to allow the eyepiece to slide out by hand.



Figure 1. The eyepiece and locking ring

### Calculating the magnification

If you decide to use your own 1.25" eyepiece in the GrandView ED, you can determine the power using the following formula by plugging in the focal length of the GrandView along with the focal length of the eyepiece you want to use:

$$\text{Spotting Scope F.L.} \div \text{Eyepiece F.L.} = \text{Magnification}$$

The GrandView 65mm has a focal length of 345.8mm, and the 80mm is 432mm. So for example, the GrandView 80mm, used in combination with a 25mm eyepiece, yields a power of:

$$432\text{mm} \div 25\text{mm} = 17\text{x}$$

We don't recommend going over a magnification of 60x during the day, as atmospheric disturbances due to the sun heating the atmosphere above hot surfaces such as roads, sidewalks and buildings, can severely distort the image, and higher magnification will just magnify this distortion.

### Focusing

The GrandView ED spotting scopes are equipped with a dual speed focusing knob, capable of 1:1 gross focus, and 9:1 fine focus. Point the spotting scope so that it is aiming in the general direction of an object at least 12' away (65mm) or 18' away (80mm). Turn the larger focus knob (1:1 gross focus) with your fingers until the object comes into focus. Go a little bit beyond sharp focus until the image just starts to blur again, then reverse the rotation of the knob, just to make sure you've hit the exact focus point. You can switch to the smaller focus knob (9:1 fine focus) in order to more finely control the focus shift and hit the exact focus of your subject. When you zoom in and out using the included zoom eyepiece, you may have to slightly adjust the focus position.

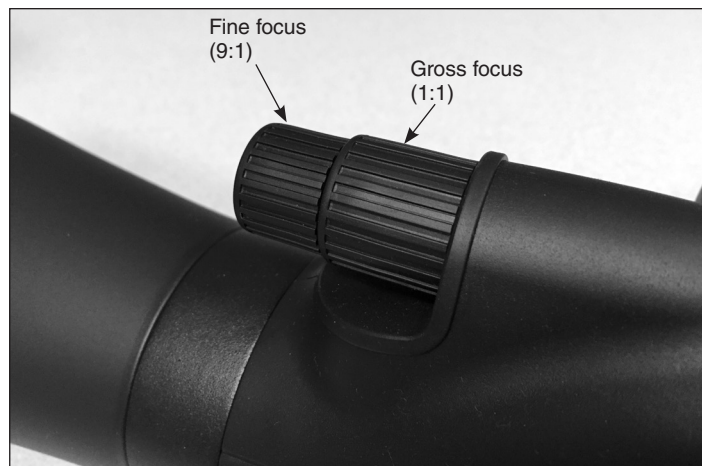


Figure 2. Dual speed focus knob

### Using the included zoom eyepiece

The magnification is adjusted to the desired level by rotating the middle section of the zoom eyepiece body. The arrow indicator and magnification scale shows the magnification setting based on the objective size of your GrandView (65mm or 80mm). Changing the magnification may also require a slight refocusing of the spotting scope to achieve the sharpest image. For general use, it's a good idea to start viewing at the lowest magnification until you've acquired your viewing target. Then you can zoom in to a higher magnification to see more detail. Note that as magnification increases, the images will not be as bright as they are at lower powers.



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## Zoom eyepiece eyecups

Your spotting scope features a rotating adjustment of the eyecup on the eyepiece. This eyecup is usually left in the up position for use without eyeglasses. To use the spotting scope with eyeglasses, simply rotate the eyeguard downwards towards the lens. If when viewing through the eyepiece, you see dark shadows floating around the edges of the image when your eye is centered, you're probably a little too close to the lens, so try rotating the eyecup up slightly to a position somewhere in the middle of the range.

## Using the GrandView inside its case

The case for the GrandView ED spotters is designed so it can be used on the spotter while in use. There are "doors" sewn into the case so the tripod can be attached, the focus knob can be accessed, and the eyepiece can be viewed through. This aids in using the spotting scopes in more inclement weather, and helps protect the surface of the spotter from scuffs and scratches.



**Figure 3.** The GrandView with case

## Waterproof

The GrandView ED Spotting scopes are waterproof, and can be used in inclement weather. However, this does not mean they can be left outside when not in use, and they are not rated for submersion in water. If it is raining, it's best to use the spotters inside their case for added protection, but the body itself will protect against rain. Also note that the spotters are waterproof only when using the included zoom eyepiece, and may not be waterproof if a different eyepiece is used that is not rated for wet conditions. Please bring the spotting scopes back inside when not in use, and always store indoors.

## Cleaning the lenses

The lens surfaces are coated with anti-reflection coatings, which can be damaged with careless handling. Avoid touching lens surfaces with your fingers or any coarse material. Always use lens cleaning tissue and fluid designed specifically for telescope optical coatings. Do not use regular tissue or fluids made for eyeglasses or household use. Do not disassemble the spotting scope to clean it. To clean the lenses, first blow air on the lens with a blower bulb or compressed air to remove any large particles. Then brush the lens with a soft lens brush and blow air again to remove any dislodged particles. Put two drops of lens cleaning fluid on a sheet of lens tissue (never directly on the lens). Wipe the lens gently in a circular motion, taking care to avoid undue pressure or rubbing. Quickly remove the excess fluid by wiping with a clean, dry lens tissue. Microfiber cloth works well, too. On the objective lens, clean only a small area at a time, using a fresh lens tissue on each area.

## Specifications

### GrandView 65mm ED Spotting Scope

Objective lens diameter	65mm
Focal length	345.8mm
Lens coatings	Fully multi-coated
Eyepiece included	16x - 48x zoom, multicoated optics
Field of view (degrees)	2.6° - 1.4°
Field of view (linear)	138 ft. - 73.5 ft. @ 1000 yds.
Exit pupil	4mm - 1.4mm
Eye relief	20mm - 18mm
Minimum focusing distance	11.5 ft.
Eyepiece angle	45°
Tripod mounting	1/4"-20 socket
Case	Soft case
Weight	2.9 lbs.
Dimensions, spotting scope	14" x 3.5" x 7" (with eyepiece included)

### GrandView 80mm ED Spotting Scope

Objective lens diameter	80mm
Focal length	432mm
Lens coatings	Fully multi-coated
Eyepiece included	20x - 60x zoom, multicoated optics
Field of view (degrees)	2.1° - 1.1°
Field of view (linear)	108 ft. - 60 ft. @ 1000 yds.
Exit pupil	4mm - 1.3mm
Eye relief	20mm - 18mm
Minimum focusing distance	18 ft.
Eyepiece angle	45°
Tripod mounting	1/4"-20 socket
Case	Soft case
Weight	3.5 lbs.
Dimensions, spotting scope	15.75" x 4" x 7" (with eyepiece included)



# WARNING!



**Do not look at the Sun through this instrument! Concentrated sunlight may cause serious eye injury. Children should use only with adult supervision.**

## One Year Limited Warranty

This Orion product is warranted against defects in materials or workmanship for a period of one year from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Orion Telescopes & Binoculars will repair or replace, at Orion's option, any warranted instrument that proves to be defective, provided it is returned postage paid. Proof of purchase (such as a copy of the original receipt) is required. This warranty is only valid in the country of purchase.

This warranty does not apply if, in Orion's judgment, the instrument has been abused, mishandled, or modified, nor does it apply to normal wear and tear. This warranty gives you specific legal rights. It is not intended to remove or restrict your other legal rights under applicable local consumer law; your state or national statutory consumer rights governing the sale of consumer goods remain fully applicable.

For further warranty information, please visit [www.OrionTelescopes.com/warranty](http://www.OrionTelescopes.com/warranty).