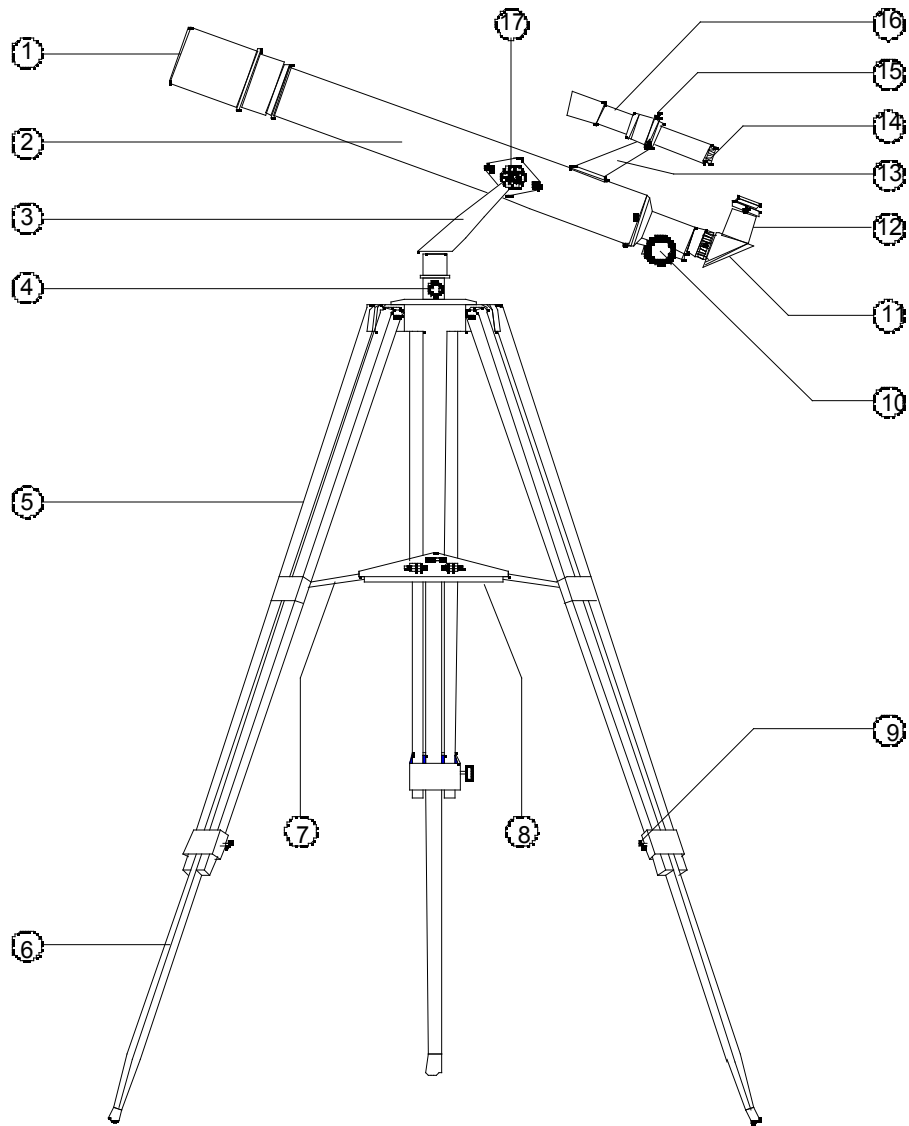


Bushnell®

DEEP SPACE SERIES

420 x 60 Refractor Telescope

Model 78-9512



- | | | | |
|----|---------------------------|-----|-------------------------------|
| 1. | 60mm Objective Lens | 9. | Tripod Leg - Lock Screws |
| 2. | Telescope Main Tube | 10. | Rack & Pinion Focus Mechanism |
| 3. | Altazimuth Yoke Mount | 11. | Diagonal Mirror |
| 4. | Azimuth Lock Knob | 12. | Eyepiece |
| 5. | Tripod Legs | 13. | Finderscope Mount |
| 6. | Tripod Leg Middle Section | 14. | Finderscope Focus Adjustment |
| 7. | Accessory Tray Brace | 15. | Finderscope Adjustment Screws |
| 8. | Accessory Tray | 16. | Finderscope |
| | | 17. | Altitude Lock Knobs |

STANDARD EQUIPMENT

- Complete Main Telescope Assembly
- Full Length Variable-Height Hardwood Tripod
- Altazimuth Yoke Mount
- 5mm, 20mm focal length - Eyepieces
- Diagonal Mirror, 3x Barlow Lens, Erecting Lens
- 5 x 24mm Finderscope w/focus adjustment, Accessory Tray
- Hardware Pack:
 - Tripod leg: 3-2" bolts, 6-¹¹/₁₆ washers and 3-wingnuts
 - Accessory tray: 3-¹/₂" bolts, 6-¹/₂" washers and 3-wingnuts
 - Tripod Leg Lock Screws: 3 pc.

TELESCOPE ASSEMBLY

1. Remove all components from the carton and identify all components. READ THROUGH ASSEMBLY INSTRUCTION BEFORE YOU ASSEMBLE YOUR TELESCOPE

2. Set-Up Tripod, Mount and Accessory Tray

- Select one *Tripod Leg (5)* and extend the *Tripod Leg Middle Section (6)*. Using *Tripod Leg Lock Screws (9)* included in the hardware pack, insert the *Tripod Leg Lock Screw* into the lower brackets on the *Tripod Leg*. Tighten the *Tripod Leg Lock Screws* so that the middle section is securely in place. Repeat on remaining two legs.

- Locate the *Altazimuth Yoke Mount (3)*. **Note: Before assembling tripod legs to Altazimuth Yoke Mount, make sure the Accessory Tray Braces(7) face inward.** Locate the long bolts and washers from the hardware pack. Position the mount over the *Tripod Leg (5)* as shown (fig. 1) and align the holes in the *Tripod Leg* with the holes in the mount. Insert the bolts through the holes at the top of a *Tripod Leg*. A washer should be positioned on both outer sides of the *Tripod Leg*. Attach a wing nut to the bolt, but do not tighten it all the way. Repeat on the remaining two *Tripod Legs*. Once you have attached all *Tripod Legs* to the mount, securely tighten all wing nuts.

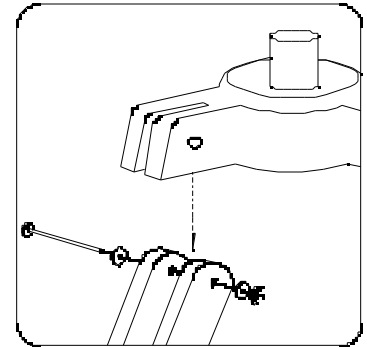


fig. 1

- Locate the *Accessory Tray (8)*. Using the accessory tray bolts, wingnuts and washers (3-¹/₂" bolts, 6-¹/₂" washers and 3 - wingnuts) connect the *Accessory Tray* to the *Accessory Tray Braces (7)*. Start with one *Tripod Leg* and attach wingnut. Wingnuts should be positioned beneath the *Accessory Tray*. Do not tighten wingnuts until all *Accessory Tray Braces* are attached as some adjustments may be required.

1. Attach Telescope and Finderscope

- Locate *Telescope Main Tube (2)*. Secure telescope to *Altazimuth Yoke Mount (3)* by removing *Altitude Lock Knobs (17)* and positioning the telescope between yoke. Carefully replace the *Altitude Lock Knobs* and remove lens cover from *60mm Objective Lens (1)*
- Locate the *Finderscope(16)* with pre-assembled *Finderscope Mount (13)*. Remove the two nuts located near the back of the *Telescope Main Tube (2)* and place the *Finderscope* and *Mount* assembly over the exposed screws. Replace the nuts, and securely tighten the *Finderscope Mount* in place.

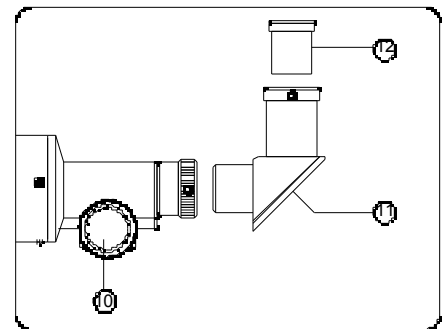


fig 2.

1. Attach Eyepiece and Diagonal Mirror

- Locate an *Eyepiece (12)* (either the 5mm or 20mm) and *Diagonal Mirror (11)*. Attach the *Diagonal Mirror* as shown (fig. 2). Insert an *Eyepiece* into the *Diagonal Mirror*.

Your Bushnell Telescope is now ready to be used. To obtain the fullest enjoyment from your telescope, please refer to the additional information below.

HOW TO USE YOUR NEW TELESCOPE

*Astronomical telescopes are designed such that the image you see will appear **UPSIDE DOWN** and **REVERSED**, this is acceptable for viewing celestial bodies. For land-based viewing an "Erecting Lens" is used to properly re-orient the image.*

Selecting an eyepiece:

1. You should always start viewing with the lowest power eyepiece, which in this case is the 20 mm lens. Note: the base power of each eyepiece is determined by the focal length of the telescope objective lens, which for this model is 700 mm. A formula can be used to determine the power of each eyepiece lenses: **telescope OBJECTIVE lens focal length ÷ EYEPIECE focal length = MAGNIFICATION** (e.g. Using the 20 mm lens, the calculation would look like this: 700 mm ÷ 20mm = 35x or 35 power.)
2. Included with this telescope is a Barlow lens. Barlow lenses are used to double or triple the power of your telescope. Place your Barlow between the focusing tube and the eyepiece. Using the example above, your 3x Barlow lens would give you a total power of 105x or 105 power. (35 x 3 = 105x or 105 power)
3. Also included with this telescope is an Erecting lens. An Erecting lens is used to view land-based object where the correct image orientation is important. The Erecting lens re-oriens the telescope image so that the image you see is properly oriented. Place your Erecting lens between the focusing tube and the eyepiece (fig. 3). It is not recommended to use the **Diagonal Mirror (11)** with the Erecting lens. The **Diagonal Mirror** will make the erected image appear to be "flipped" depending on the orientation of the diagonal mirror- relative to the telescope.

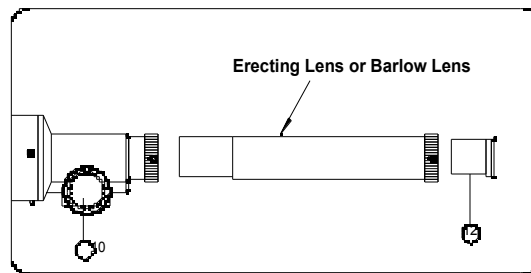


fig. 3

Focusing Telescope:

1. After selecting the desired eyepiece, aim **Main Telescope Tube (2)** at a land-based target at least 200 yards away (e.g. A telephone pole or building). Fully extend focusing tube by turning **Rack and Pinion Focusing Mechanism. (10)**
2. While looking through selected eyepiece (in this case the 20 mm), slowly retract focusing tube by turning **Rack and Pinion Focusing Mechanism (10)** until object comes into focus.

Aligning Finderscope:

1. Look through **Main Telescope Tube (2)** and establish a well-defined target. (see focusing telescope section) Tighten the **Altitude Lock Knob (17)** and **Azimuth Lock Screw (4)** so that telescope's aim is not disturbed.
- Looking through **Finderscope (16)**, alternate tightening each **Finderscope Adjustment Screw (15)** until crosshairs of **Finderscope** are precisely centered on the same object already centered in main telescope tube's field of view.
2. Now, objects located first with the **Finderscope (16)** will be centered in the field of view of the **main telescope**.

***Never Look Directly At The Sun With Your Telescope
Permanent Damage To Your Eyes May Result.***

Telescope LIFETIME LIMITED WARRANTY

Your telescope is warranted to be free of defects in materials and workmanship for the lifetime of the original owner. The Lifetime Limited Warranty is an expression of our confidence in the materials and mechanical workmanship of our products and is your assurance of a lifetime of dependable service.

If your telescope contains electrical components the electronic components are warranted to be free of defects in materials and workmanship for one year after the date of purchase.

In the event of a defect under this warranty, we will, at our option, repair or replace the product, provided that you return the product postage prepaid. This warranty does not cover damages caused by misuse or improper handling, installation or maintenance of the product. Any return made under this warranty must be accompanied by the items listed below:

- 1) A check in the amount of \$15.00 to cover the cost of handling
- 2) Name and address for product return
- 3) An explanation of the defect
- 4) Product should be well packed in a sturdy outside shipping carton to prevent damage in transit and return postage prepaid to the address listed below:

IN U.S.A. Send To:

Bushnell * 8500 Marshall Drive * Lenexa, Kansas 66214

IN CANADA Send To:

Bushnell * 25A East Pearce Street, Unit 1 * Richmond Hill, Ontario L4B 2M9

For products purchased outside the United States and Canada please contact your local dealer for applicable warranty information. This warranty gives you specific legal rights. You may have other rights which vary from country to country.

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