

HOROX

INSTRUCTION MANUAL

70/400mm Telescope



One Step Closer To The Galaxy

Kindly Noted:

1. PLEASE read through this manual before using this product.
2. PLEASE keep this manual handy until you have fully mastered your telescope's operation.

Warning:

- **Risk of blindness** — Never use this device to look directly at the sun or in the direct proximity of the sun. Doing so may result in a risk of blindness.
- **Choking hazard** — Children should only use the device under adult supervision. Keep packaging material, like plastic bags and rubber bands, out of the reach of children, as these materials pose a choking hazard.
- **Risk of fire** — Do not place the device, particularly the lenses, in direct sunlight. The concentration of light could cause a fire.
- Do not disassemble the device. In the event of a defect, please contact the seller. The seller will contact the Service Centre to solve your problem.
- Do not expose the device to high temperatures.
- The device is intended only for private use. Please heed the privacy of other people. Do not use this device to look into apartments, for example.

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1. Telescope Parts List



- | | |
|---------------------------|------------------|
| 1. Tripod | 6. 20mm eyepiece |
| 2. Telescope optical tube | 7. Diagnal |
| 3. 5 X 24 Finderscope | 8. Phone adapter |
| 4. Finderscope bracket | 9. Backpack |
| 5. 9mm eyepiece | |

NOTE:

- 1.Unpack the box carefully as some parts are small.
- 2.Use the parts list above to verify that all parts and accessories are present.
- 3.We recommend saving your telescope box so it can be used to store the telescope when it's not in use.

2. Finished telescope display



1. Objective Lens
2. Telescope optical tube
3. Tripod Head Platform
4. Azimuth Locking Knob
5. Central Column Locking Knob
6. Tripod

7. Finderscope
8. Diagonal
9. Eyepiece
10. Focus Knob
11. Pan Handle

3. Assembling The Telescope

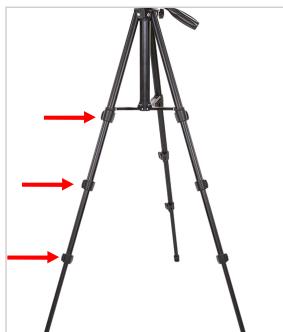
The telescope comes in one box. The pieces in the box are telescope optical tube, tripod, erect image diagonal, 20 mm eyepiece, 9 mm eyepiece, 5x24 finderscope with bracket, smartphone adapter and a backpack.

(1) Setting up the Tripod

1. Spread the legs outward until they are fully extended and push down on the center leg brace.



2. Extend the legs of the tripod by unlocking the three tripod lock levers on each leg. Pull each leg section all the way out and push the lever on each lock downward to secure it in place.



3. To extend the tripod's central column, turn the locking knob counterclockwise, lift up the tripod head until it is at the desired height and turn the locking knob clockwise to secure.



(2) Attaching the Telescope Tube to the Tripod

- 1 . Loosen the knob on the side of the tripod head mounting platform and rotate the platform 90 degrees so it can stand vertically.



2. Point the objective lens to the outside. Match the threaded bolt in the mounting platform to the threaded hole on the bottom and thread the two together. Do not overtighten. This should be snug, but not tight.



3. Rotate the platform for 90 degrees so it is horizontal and can be back to the old place.

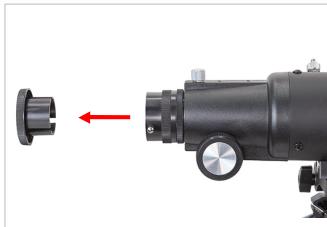


4. Tighten the knob to secure it.

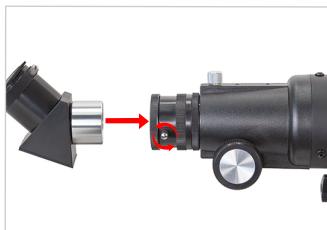


(3) Installing the Diagonal & Eyepiece

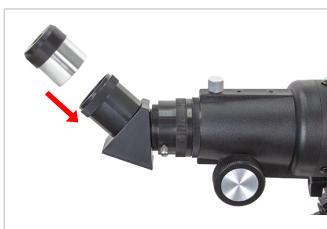
1. Remove the cap from the focuser end of the telescope tube and make sure the two thumbscrews do not protrude into the opening.



2. Locate the erect image diagonal and remove the plastic covers. Insert the barrel of the diagonal into the focuser and secure it in place by tightening the set screw.

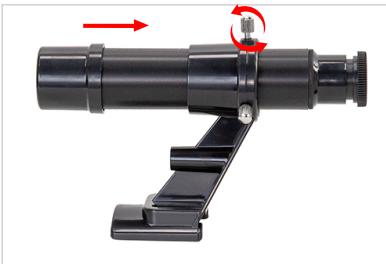


3. Insert the barrel of the 20mm eyepiece into the diagonal and tighten the set screw.



(4) Installing the Finderscope

1. Loosen the screws on the finderscope beacket. Orient the finderscope so that the larger lens is facing towards the front of the tube and insert the finderscope tube.



2. Remove the knurled nuts on the threaded posts at the focuser end of the telescope tube.



3. Locate the finderscope and remove the plastic caps on the front and back lens. Orient the finderscope so that the larger lens is facing towards the front of the tube as shown. Place the finderscope over the posts on the tube and rotate the knurled nuts to secure it in place



3. Remove the lens cap from the front of the telescope. To observe, look through eyepiece as shown. Focus the image by turning the knobs below the focuser.



(5) Moving the Telescope Manually

1. To move the scope right and left, hold a tripod leg with one hand while the other hand uses the panning handle to move the scope. The azimuth locking screw can be loosened or tightened to adjust the tension to your preference.



2. To move the scope up and down, rotate the entire pan handle counterclockwise and use the handle to point the scope in the direction you want to view. Rotate the pan handle clockwise to lock it in place.



Notice:

This telescope is easy to target to wherever you want. The up and down (altitude) is controlled by the Pan Handle Control Knob. The side-to-side (azimuth) is controlled by the Azimuth Locking Knob. Both knobs are loosened when turned counterclockwise and tightened when turned clockwise. When both knobs are loose you can find your objects easily (through the finderscope which is discussed shortly) and then lock the controls.

(6) Aligning the Finderscope

The finder is one of the most important parts of your telescope. It helps you to locate objects and center them in the eyepiece. The first time you assemble your telescope, you need to align the finder to the telescope's main optics. It would be better to do this during the day.

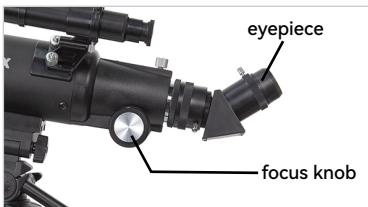
1. Choose a Target

Take the telescope outside during the day and find an easily recognizable object, like a streetlight, license plate or sign. The object should be as far away as possible, but at least a quarter-mile away.



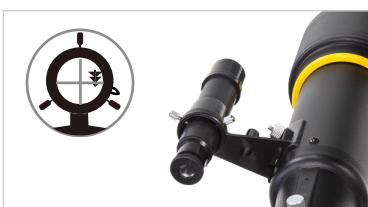
2. Center the Target in the Eyepiece

Look through the telescope with your eyepiece. Move the telescope until the object you chose lies in the center of the view. If the image is blurry, gently turn the focus knob until it comes into sharp focus.



3. Look through Finderscope

Once the object is centered in your 20mm eyepiece, look through the finderscope and locate the crosshair reticle.



4. Adjust the Finderscope

Without moving the telescope, use the three-finger knobs on the finderscope bracket to move the finder around in the bracket until the crosshair appears over the same object you are observing in the telescope's 20mm eyepiece.



ATTENTION: PLEASE hold the finderscope when you loosen the knobs, in case it falls down. We recommend you adjusting one screw at a time. Loosen one screw by half a turn and tighten another by the same amount to ensure the finderscope is securely held in place.

5. Your Finderscope is Now Aligned

It should not require realignment unless it is bumped or dropped.

(7) The Using of Smartphone Adapter

ATTENTION:

PLEASE use the appropriate eyepiece according to the sign marked on both sides.



1. Pull the clamp to the appropriate width indicated by the arrow.



2. Put the phone into the appropriate position of the phone clip and clamp the phone.



3. Align the light hole to main camera and rotate the knob to lock it.



4. Loosen the screw indicated by the arrow.



5. Insert the 20mm eyepiece.



6. Rotate the screw and lock the eyepiece.

Attention: Please don't rotate too hard, in case the plastic components inside will break.



7. Insert the eyepiece sleeve into the diagonal and lock the screw in the telescope indicated by the arrow.



8. Turn on the phone camera and adjust the position till you can see the whole white halo and image. Then lock the screw and ready for view.



9. Focus the image by turning the focus knob until you see the sharp image.



(8) Observing the Moon

The best and easiest target for you to try to view first is the Moon. Try observing the Moon at different points in its phase cycle. The best time to view the Moon is from two days after a New Moon up to a few days before a Full Moon. During this period, you will be able to see the most detail in the craters and lunar mountain ranges.

1. With the Moon visible in the sky, set up your telescope with the 20mm eyepiece installed.



2. Move the telescope so that it is roughly pointing toward the Moon.



3. Look through the finderscope and locate the crosshair reticle. Continue moving the telescope until the crosshair appears over the Moon.



4. Look through the telescope's 20mm eyepiece. Gently turn the focus knobs to adjust the sharpness of the image.



5. To get a closer view of the Moon, loosen the set screws on the focuser and remove the 20mm eyepiece. Replace it with your 9mm eyepiece and tighten the set screws to secure it in place. The 9mm eyepiece will give you significantly more magnification, making the Moon appear much larger.



4. Theory of the Telescope

(1) About Focusing

To focus your telescope, turn the focus knob located near the rear of the telescope.

1. Turning the knob counterclockwise allows you to focus on an object that is farther than the one you are currently observing.
2. Turning the knob clockwise from you allows you to focus on an object closer than the one you are currently observing.

NOTE:

1. Remove the front lens cap of the telescope optical tube prior to attempting your observation.
2. If you wear corrective lenses or glasses, you may want to remove them when observing with an eyepiece attached to the telescope.
3. If you have astigmatism, corrective lenses should be worn at all times.

(2) About Magnification

You can change the magnification of your telescope just by changing the eyepiece.

To determine the magnification of your telescope, simply divide the focal length of the telescope by the focal length of the eyepiece used.

In equation format, the formula looks like this:

$$\text{Magnification} = \frac{\text{Focal length of Telescope (mm)}}{\text{Focal length of Eyepiece (mm)}}$$

1. For example, you are using the 20mm eyepiece that came with your telescope. To determine the magnification you divide the focal length of your telescope (the focal length of this telescope is 400mm) by the focal length of the eyepiece, 20mm. Dividing 400 by 20 yields a magnification of 20x.

2. Also, kindly noted that the contrast and brightness will be very low due to the high magnification. You can purchase optional eyepieces to give you a range of powers you can observe with.

(3) General Observing Hints

When using an optical instrument, there are a few things to remember to ensure you get the best possible image.

1. Never look through window glass. The glass of the windows is optically imperfect, which may vary in thickness from one part of a window to the other. This inconsistency will affect the ability of your telescope to focus. In most cases, you will not be able to achieve a truly sharp image, while in some cases you may actually see a blur image. This inconsistency can and will affect the ability to focus your telescope. In most cases, you will not be able to achieve a truly sharp image, while in some cases you may actually see a blur image.
2. Never look across or over objects that are producing heatwaves. This includes asphalt parking lots on hot summer days or building rooftops.
3. Hazy skies, fog, and mist can also make it difficult to focus when viewing terrestrially. The amount of detail seen under these conditions is greatly reduced.

5. Maintenance

Generally, dust or moisture may build up on the objective lens of your telescope. Special care should be taken when cleaning any instrument so as not to damage the optics.

1. If dust has built upon the optics, it's better to remove it with a brush made of camel's hair, also you can use a commercially made lens cleaner or mix your own. All in all, do NOT scratch the inner circles.
2. Sometimes, you may experience dew build-up on the optics of your telescope during observing. If you want to continue observing, the dew must be removed, either with a hairdryer (on low setting) or by pointing the telescope at the ground until the dew has evaporated.
3. If moisture condenses on the inside of the optics, remove the accessories from the telescope. Place the telescope in a dust-free environment and point it down. This will remove the moisture from the telescope tube.
4. To minimize the need to clean your telescope, cover all lens caps once you have finished using them. The caps should be placed in the openings when not in use; this will prevent contaminants from entering the optical tube.

6. Warranty

1. **30 Day Money Back Guarantee:** HOROX shall replace or refund any telescope covered by this warranty within 30 days of receipt.
2. **2 Year Warranty:** HOROX warrants this telescope to be free from defects in materials and workmanship for two years. We will repair or replace such product or part, of which upon inspection by HOROX, is found to be defective in materials or workmanship.
3. The guarantee shall expire if defects that have developed on the purchase item can be traced back to the following circumstances:
 - inappropriate use
 - negligent or intentional damage due to personal negligence and/or unauthorised third parties
 - careless or intentional damage by the purchaser and/or third parties
 - repairs or alteration undertaken by a third party without our instructions
 - changes or damage resulting from force majeure (storm, hail, fire, power failure, lightning strike, flood, snow damage, frost action and other influences by animals etc.)The guarantee shall also expire if a damaged and/or illegible or incomplete proof of purchase is presented.
4. HOROX disclaims any warranties, express or implied, whether of merchantability or fitness for a particular use, except as expressly set forth herein.

HOROX expressly disclaims any lost profits, general, special, indirect or consequential damages which may result from breach of any warranty, or arising out of the use or inability to use any HOROX product. Any warranties which are implied and which cannot be disclaimed shall be limited in duration to a term of 2 years from the date of original retail purchase.

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Made in PRC

HOROX

-70/400mm-

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