VARIO FINDER 10 X 60
ERECT IMAGE



#2957460 / #2957465

# Manual and Application Tipps

Thank you for your purchase of the Vario-Finder 10×60. It is a 61mm aperture doublet based on the renowned Carl Zeiss C Lens. The optics tested to provide sharp images at up to 120x with good eyepieces, and it can be used also for photography both as guide scope or imaging optic.

To find out about all its possibilities and use cases, we recommend that you spend a few minutes reading this manual before using the Vario Finder.



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# The Baader Vario-Finder 10x60

When designing the 10x60 Vario-Finder, we did not want to create simply another finderscope with a 1¼" eyepiece clamp which can only be used for low magnifications. The Vario-Finder is based on the legendary C-Lens by Carl Zeiss Jena, an achromatic doublet lens which lets you use much higher magnifications than a regular finder, when you combine it with an optional star diagonal.

The Vario-Finder can therefore be used both as a viewfinder and as a high-quality spotting scope, a handy travel telescope or as a camera lens for use as a guide scope, for photography or a compact setup for livestacking/EAA.

It is set apart from simpler optical finders not only in its image quality, but also in its connection options and sturdy mechanics: The sliding focuser enables the tilt-free adaptation of even heavy cameras, which can be precisely focused via the movable lens. Alternatively, star diagonals for the use of common 1¼” eyepieces or small rotary focusers, especially for visual use, can be connected via the T-2 thread.

# Technical Data

Aperture: 61 mm

Focal Length: 250 mm (f/4)

Lens: Baader Phantom Group Coating, based on Carl Zeiss C Lens

Field of View: ~4,5°

Backfocus with T-2-thread: ~101 mm*)

Travel of Sliding Focuser: 35 mm

Thread inside of the Dew Shield: M71x0,75

Eyepiece/Camera Adaptation: T-2, 1¼"

Weight of Vario-Finder: 880 g

Weight of MQR-IV: 350 g

Focal Length of Eyepiece: 25 mm

Field of View of Eyepiece: 40°

Field Stop of Eyepiece: 18 mm

Eye Relief: 15,5 mm

Battery of Illumination Unit: CR2032

*) when the focuser tube is in the most oinward position, depending on the position of the objecive lens

# Scope of Delivery




Vario-Finder #*2957460*

The Vario-Finder #*2957460* contains the 61/250 mm OTA 1 with T-2-thread, the Ultrashort 1¼" / T-2 eyepiece clamp #*2458121* 2, a 45° Amici-Prism for an erect image 3 and the illuminated Polaris I Measuring and Guiding Eyepiece 25 mm #*2954325* 4.

An EQ dovetail bar 5 with three standard ¼" photo threads for using theVario-Finder on a photo-tripod is pre-installed. It can be removed to use the Vario-Finder with the MQR IV Quick-Release Finder Bracket 9x60 #*2457030* 6 – either in full height or in a low-profile-configuration.

The MQR IV is also available seperately.




MQR IV Finder Holder #*2457030*, part of the Vario-Finder #*2957465*

The set #*2957465* contains both the Vario-Finder as described above and the MQR IV Finder Bracket. The Vario-Finder is also compatible with the TEC Finder Bracket and Base #*1353115*.

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# The MQR Finder Bracket



The stable guidescope rings of the MQR are connected by a solid rail. This finder bracket with the 70 mm high Universal Red Dot Mount (RDM) *#2457010* on a standard dovetail fits into the included Baader Standard-Base *#2457000* as well as into many other viewfinder mounts (Vixen, Synta, Celestron).

The standard base can be attached with one or two screws to telescopes with diameters between 130 and 400 mm. The sinusoidal base adapts to the telescope tube in a non-rotating manner and always has two stable, linear areas of contact.

Remove the EQ dovetail from the Vario-Finder to insert the finder into the brackets, and use the screws with plastic tips to align the Vario-Finder to your telescope, as usual.



Guidescope rings and base plate without the RDM, e.g. for rails with Mini-Weaver-dovetail.

## Removal of the dovetail to use the Mini-Weaver compatible dovetail

You can remove the RDM from the base plate of the guidescope rings by loosening the two upper M5 hexagon socket screws. This requires a 4 mm hex wrench. Then you can fasten the pipe clamps with suitable screws on standard visor rails with Mini- Weaver dovetail as well as on flat surfaces.



The RDM with dovetail for standard finder bases.

## Removing the RDM Adapter for low profile mounting

The dovetail can also be removed from the RDM by loosening the two lower hexagon socket screws.

Using two M5x12 screws, you can now screw the dovetail directly to the base plate of the pipe clamps. This allows a very low-profile viewfinder mounting.



Low-Profile-Mount: The dovetail can be attached directly to the base plate.



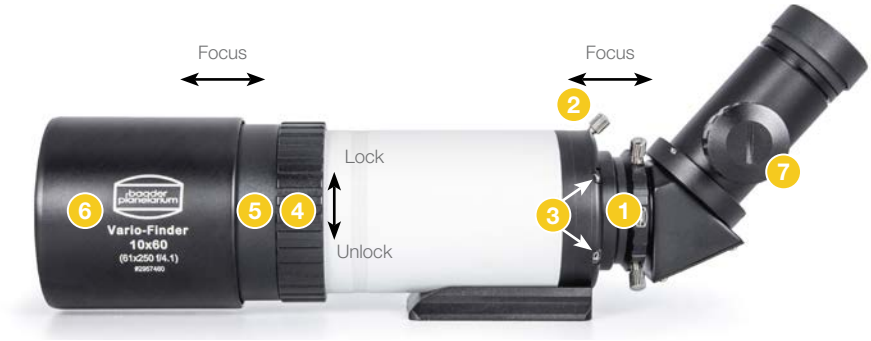
Removing the dovetail from the RDM.



Example of use: Baader Variofinder with MQR IV in Low-Profile-Configuration.

# Visual Use

With the included crosshair eyepiece, the Vario-Finder is ready to be used as a classic finder scope. For focussing, use the sliding focuser drawtube with the eyepiece clamp 1. Just unlock the thumb screw 2 and move the eyepiece until you can see a sharp image. Then lock the thumb screw again.




If you want, you can lock the focus permanently in position with the four hexagon socket screws 3. The main purpose of these screws is to set how easily the sliding tube moves. This way, the focus can be set with the same precision as with a with a helical focuser, but is much more stable – there is no lateral movement even under load. This is another reason why we do not offer such a helical focuser, as it is not possible to manufacture a sufficiently stable and backlash-free solution in this price range due to the design. When using 1¼” eyepieces on T-2 star diagonals, you can use the focusing eyepiece clamp *#2458125* to the star diagonal (see below) to focus the eyepiece easily.

Fine adjustment of the focus is also possible by moving the objective lens 5. To do so, unlock the curled ring 4, then you can move the lens by turning it. When you are finished, lock it again with the curled ring. It may also be necessary to move the front lens to reach focus with a flip mirror or when using an eyepiece for straight viewing.

You may have to push the dew shield 6 to the front to access and rotate the lens cell.

## The Polaris Measuring- and Guiding-Eyepiece

The illumination of the Polaris crosshair eyepiece *#2954325* is acivated and regulated by turning the large knob 7. To insert or replace the CR2032 battery, you can use e.g. a coin to unscrew the cover of the battery compartment.

The twin cross hair with 0.5 mm marks can be focused by rotating the focuser ring at the back of the eyepiece.

The eyepiece has got a female T-2-thread, so that it fits onto the Amici-prism. This way, the optical length is short enough to reach focus. You can use the optional 1¼" / T-2 nose piece *#2458106* to convert the eyepiece into a regular 1¼" crosshair eyepiece.

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## Use as Solar Finder



Vario-Finder with ASSF 65 solar filter #*2458125* as solar finder with angled view
mit Schrägeinblick.

With the optional AstroSolar solar filter ASSF 65 #*2459336*, you can also use the Vario-Finder as safe, high-quality solar finder. The front filter is placed over the dew shield with rubberized bolts and secured with safety straps.

In contrast to straight optical finders, the angled view means you don't look at the sun when you point the telescope at the sun! Thanks to the focal length of 250 mm, the sun also fills the sensor of a planetary camera if, for example, you want to film or live-stream a solar or lunar eclipse.

## Use with Star Diagonals

Just like most Amici-prisms (with the exception of e.g. our Baader T-2 / 90° Astro Amici-Prism with BBHS® coating #*2456130*), the included prism is made for the typical magnifications used for terresrial observations. For higher magnifications, you should use an astronomical star diagonal.

To do so, simply replace the original star diagonal by a 1¼" star diagonal of your choice, e.g. the T-2 prism diagonal #*2456005K* with focusing eyepiece clamp. With this eyepiece clamp, you can fine-focus the eyepiece simply by rotating the eyepiece clamp. You can use most 1¼" eyepieces to achieve higher magnifications.

You can even attach a bino-viewer. To reach focus, you need the glasspath corrector 1:2,60 #*2456317*.

To reach focus with a star diagonal, you may have to move the front lens inwards. Alternatively, you can remove the 1¼" eyepiece clamp (1) to directly connect a T-2 star diagonal. Remember: Prism diagonals have got a shorter optical length than mirror diagonals.



Vario-Finder with prism diagonal #*2456005*, focusing T-2 eyepiece clamp #*2458125* and 17,5 mm Morpheus eyepiece #*2954217*

## User for Straight Views

The Vario-Finder can also be used for straight viewing. To reach focus without a star diagonal, you need an additional 40 mm T-2 extension tube #*1508153*. You may have to move the front lens forward, if you can't reach focus by using only the sliding tube. We also recommend either the focusing eyepiece clamp #*2458125* or the Clicklock eyepiece clamp #*2458100*.



Vario-Finder for straigh viewing with 40 mm T-2 extension #*1508153* and 10 mm Classic Ortho eyepiece #*2954110*

# Photographic Use

You can connect any astronomical camera to the T-2 thread, as well as system cameras with a T-2 adapter. The backfocus is approximately 101 mm from the bottom of the T-2 thread (when the objective is fully screwed in and the focuser is fully retracted); the focuser can be extended by 35 mm.



Vario-Finder with 40 mm T-2 extension *# 1508153* between sliding tube and eyepiece clamp to attach a camera with 1¼" nose piece.

To reach focus, you need a 40 mm T-2 extension tube *# 1508153* to compensate the length of the Amici prism, which is usually removed for photography. Larger cameras can be attached directly to the T-2-thread of the extension tube; for cameras with 1¼" nose piece, you can attach the eyepiece clamp of the Vario-Finder to the extension tube.

Please note that you may need another extension tube for those planetary cameras where the sensor is inide the 1¼" nose piece. You may either use additional T-2 extension tubes or the 1¼" extension tube *# 1905130*, if your camera has got a 1¼" filter thread.

## The Sliding Focuser Tube

In most cases, you'll probably focus by moving the sliding focuser tube. Especially for fine-focusing a camera, you can also use the focusing mechanism of the front lens.

This type of focusing was chosen to enable a tilt-free and stable camera adaptation, which is essential for the use as a guide scope as well as for photography or EAA. With the four hexagon socket screws 3, the focuser tube can not only be permanently locked in place, but also adjusted so that it can move backlash-free and without tilting. The common small helical focusers, which can be connected via the T-2 thread and in which the camera does not rotate, are convenient – but our many years of experience have unfortunately shown that they cannot reliably support significant loads without play or tilting. The moving parts introduce too much play due to the design. At f/4, the tolerance for the focus setting is only 0.03 mm, so that tilting quickly becomes noticeable in the form of out-of-focus stars!

With this combination of sliding focuser and focusing lens, it is possible to set the focus very precise – and to keep focus for a long time. The four clamping screws do not simply press on the sliding tube, but onto a compressing ring, so that the pressure is equally distributed. In newer Vario-Finders, the locking screw 2 is tilted, so that the pressure can be set very sensitive.

To use other eyepieces instead of the Polaris crosshair eyepiece, we recommend a T-2-prism with the focusing eyepiece clamp *# 2458125*, as described on page 6.

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# Combined Photograhic and Visual Use

It is very handy to combine the Vario-Finder with the FlipMirror II #*2458055*, so that you can easily switch between eyepiece and camera. With the turn of a knob the optical finder becomes a photographic lens, without the need to re-focus. You can focus your eyepieces independently with the focusing eyepiece clamp #*2458125,* without changing the focus of the camera. With a camera with the fitting sensor size, you can e.g. show the same field of view as in the eyepiece of your main telescope on a computer monitor, which provides through live stacking (EAA) a nice comparison to the visual apperance of the object in the larger main telescope.



Vario-Finder with FlipMirror II #*2458055*, focusing T-2 eyepiece clamp #*2458125* and a CMOS-camera with T-2-adaptation.

The images below show Vario-Finder and FlipMirror II in an extreme configuration: At the back of the Flip Mirror, there is a CMOS-Kamera attached through the VariLock 46 #*2956946* (Lockable T-2 extension tube 29-46mm). This way, it can be set to the same focus as the MaxBright II bino-viewer #*2456460*, which is adapted using the 2,6x glasspath corrector #*2456317* and a T-2 quick changer #*2456313*. The black centering ring of the glasspath corrector is not used for this configuration.



Vario-Finder with FlipMirror II #*2458055*, MaxBright II Bino-Viewer with 2,6x glasspath corrector and a CMOS-camera with T-2-connection.

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