

# Standard Phone Adapter User Guide

## Connecting To Your Eyepiece

Your new adapter is shipped with a COMPRESSION RING preinstalled designed to attach to small optical EYEPIECES from 39 mm to 44mm. Five optional COMPRESSION RINGS are included (see Figure 1) for larger EYEPIECES. All COMPRESSION RINGS operate in the same manner, though the two for the largest diameter EYEPIECES look somewhat different. (The 56mm to 60mm range COMPRESSION RING is specifically designed to accommodate EYEPIECES that have a slightly larger lip near the end). Please refer to Figure 1 for the intended range for each COMPRESSION RING.



Figure 1 COMPRESSION RINGS



Figure 2 Test Fit on EYEPIECE

**STEP 1:** To determine which COMPRESSION RING to use simply attempt to slip the adapter onto your EYEPIECE as shown in Figure 2 (first with the 39mm-44mm COMPRESSION RING installed).

**STEP 2:** If the adapter does not slip over the EYEPIECE the COMPRESSION RING is too small and proceed to **STEP 3**. If it slips over the EYEPIECE easily then skip to **STEP 7**.

**STEP 3:** Remove the COLLAR by unscrewing it in a counterclockwise direction until the COLLAR and COMPRESSION RING are free from the adapter as shown in Figure 3.



Figure 3 Small diameter COMPRESSION RING in COLLAR

**STEP 6:** Attempt to slip the adapter back onto the EYEPIECE. If it fits easily go to **STEP 7**; if not repeat **STEPS 3- 6** until the correct COMPRESSION RING is identified.



Figure 5 ADAPTER securely installed on EYEPIECE

**STEP 4:** Remove the COMPRESSION RING and insert the next larger size into the COLLAR, thicker side into COLLAR first. See Figure 3.

**STEP 5:** Screw the COLLAR back on the adapter with just one or two rotations.



Figure 4 Installing large diameter COMPRESSION RING

**STEP 7:** Once adapter is fully seated on the EYEPIECE<sup>1</sup> tighten COLLAR until the COMPRESSION RING grasps the EYEPIECE firmly.

<sup>1</sup> The ADAPTER requires a minimum of 22mm (7/8") engagement with the EYEPIECE. It may be necessary to unscrew the EYEPIECE eyecup to provide the necessary engagement length.

## Connecting To Your Phone

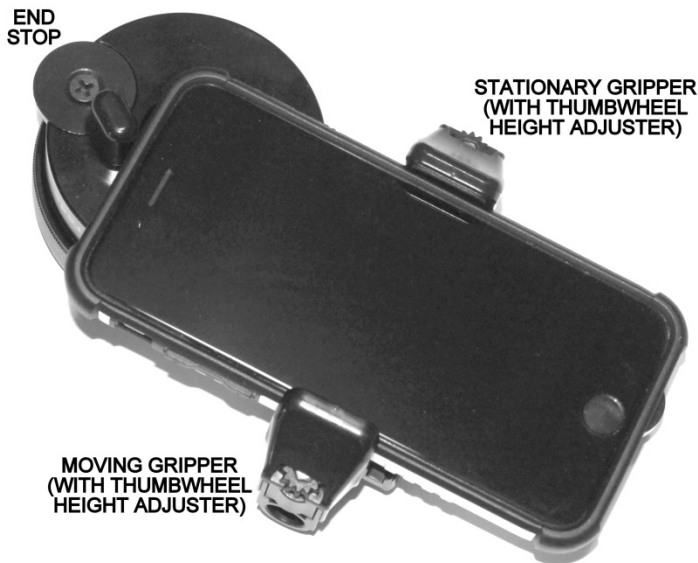


Figure 6 Phone fully positioned by GRIPPERS & END STOP

Your adapter is designed to accept phones with every size, shape and button/camera location either in a protective case or without.

The phone is held securely to the adapter by a SPRING mechanism between two opposing GRIPPERS.

One of the GRIPPERS is stationary and the other moves allowing the phone to be quickly installed or removed. The GRIPPER HOUSING itself is able to be adjusted both up and down and side to side. This dual axis adjustment enables the phone camera to be precisely aligned in the APERTURE.

A single knurled ALIGNMENT KNOB can be loosened to move the phone relative to the APERTURE and then tightened so that subsequent insertions and removals result in consistent camera placement.

At the top of the adapter there is an END STOP that can be rotated such that

it touches the top of the phone and used as a stop to remember the position. Finally a THUMBWHEEL is set inside each GRIPPER which allows for independent height adjustment of the GRIPPERS. This adjustment is seldom used but is available to ensure proper camera alignment only for phones that do not have flat back surfaces.

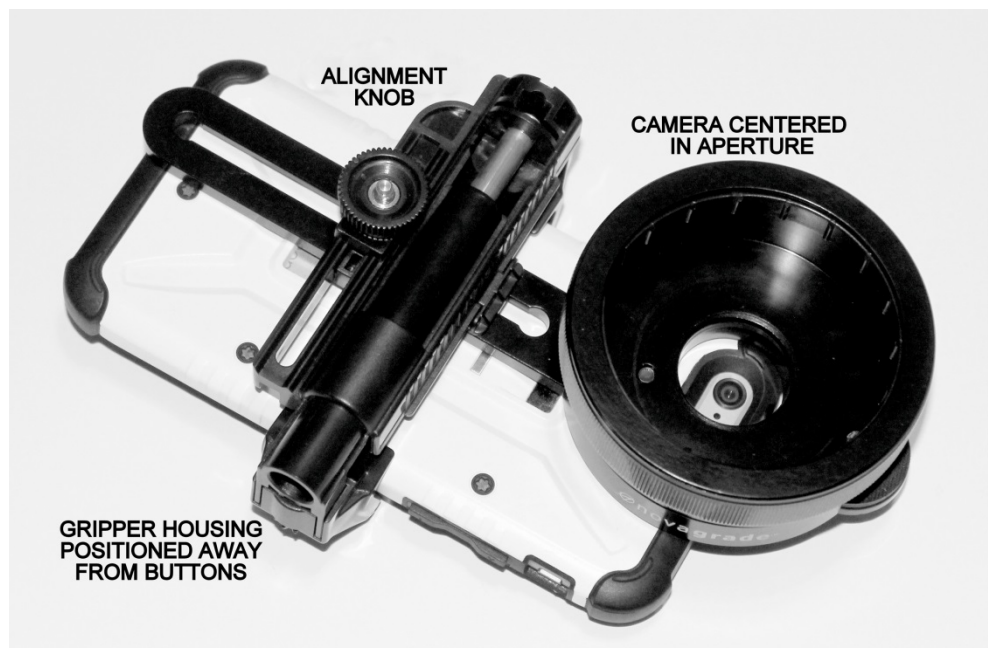


Figure 7 Camera properly centered in APERTURE

**STEP 1:** Grasp the adapter in your left hand as shown in Figure 8.

**STEP 2:** Grasp the phone in your right hand noting the location of the buttons on the phone.

**STEP 3:** Position the phone so that it touches the MOVING GRIPPER just below the lowest observed button.

**STEP 4:** Using the phone, PULL the MOVING GRIPPER against the spring pressure and away from the stationary gripper thereby creating an opening large enough to allow the phone to rotate down flat onto the adapter. Gradually release your phone as the adapter should firmly have it in its grasp.



Figure 8 Pull the phone towards you to open MOVING GRIPPER

**STEP 5:** Turn over the adapter (with phone still in place) and LOOSEN the ALIGNMENT KNOB.

**STEP 6:** Position the phone such that the CAMERA lens is centered in the APERTURE and TIGHTEN ALIGNMENT KNOB (See Figure 7).

**STEP 7:** Turn the adapter (with phone still in place) over. ROTATE the END STOP until it just touches the phone (position the END STOP to avoid contact with any buttons) (See Figure 9).



Figure 9 Rotate END STOP till it just touches phone

**STEP 8:** Turn the adapter and phone on edge to determine if the phone is sitting flat on the adapter (See Figure 10). If it is not (due to a curved or complex geometry) you may need to rotate one or both THUMBWHEEL HEIGHT ADJUSTERS until it is. (Note: most phones/ cases will not require this step)

## Connecting to your EYEPIECE in the field

To make connecting your phone and adapter to your EYEPIECE as quick as possible it is recommended that the phone and adapter be carried coupled together. When ready to capture an image or video hold the adapter in your right hand, with fingers covering the “novagrade®” logos. Use your left hand to rotate the COLLAR approximately 180 degrees until it the adapter is firmly clamped on the EYEPIECE.



Figure 10 Phone sitting flat on ADAPTER

## Aligning the image



Figure 11 Test that image is centered

**STEP 1:** Select an object that will be used to view during camera final alignment and testing such as a tree outside your window. Look through the optics and adjust the focus.

**STEP 2:** Place the adapter (with phone attached) onto the EYEPIECE and tighten COLLAR. Turn on camera and point at test object. (Make sure the adapter is fully seated onto the EYEPIECE to ensure the camera lens is parallel to the EYEPIECE)

**STEP3:** If the phone camera is properly positioned you should observe a circular image centered on the screen. If the image is not centered you may need to LOOSEN the ALIGNMENT KNOB and make a slight adjustment. Retighten and check the image again.

## Digiscoping Tips

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### Turn Flash OFF

**TIP:** Flash will just bounce off of EYEPIECE glass.

### Use a REMOTE SHUTTER RELEASE to reduce vibration.

**TIP:** The “+” button on your iPhone earbuds is a remote shutter release for pictures and video.

**TIP:** Many Android phones can be set up to take pictures using voice commands like “SHOOT” or “SMILE”

### Wear a HAT

**TIP:** Shade your digiscoping setup to eliminate extraneous light from bouncing off the EYEPIECE as well as make it easier to see the phones LCD screen.

**TIP:** Early morning or evening light typically provide better lighting conditions for any type of photography.

### Keep the phone and adapter coupled

**TIP:** Keep your phone in place in the adapter with the remote shutter release connected so it can be quickly pulled out and connected to the EYEPIECE.

### Sun to your back

**TIP:** Position your digiscoping setup and yourself with the sun at your back. This ensures sunlight will not directly hit the objective lens of your optics and is easier to use your body or hat to shade the EYEPIECE area.

### Start at lowest magnification

**TIP:** The lower the magnification the easier it is to digiscope. Higher magnification powers mean less light is collected; also vibrations and distortions are magnified.

**TIP:** If attempting to photograph wildlife in distance set optics at lowest magnification, focus, attach adapter and take a few pictures. If subject has not moved away now increase magnification, refocus and take more pictures. Continue this until reaching maximum magnification. When back home download and compare results at different magnifications. This will provide valuable insights into the capabilities of your digiscoping setup as a whole.

### Start by taking video

**TIP:** Camera phones have tremendous autofocus capabilities in video mode. Many find it easier to learn to digiscope in video mode before attempting to take still pictures.

**TIP:** Features such as SLO-MOTION and TIME LAPSE work quite well with digiscoping setups.

## Troubleshooting

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### The image on my screen is not centered.

**Likely Cause:** This is most likely caused by the camera not being centered on the adapter or the adapter is not fully seated on the EYEPIECE.

**Fix:** Check that phone is flat on the adapter, check that adapter is fully seated on EYEPIECE, check that camera lens is centered in APERTURE.

### I tightened the COLLAR down with the 39mm-44mm COMPRESSION RING installed and it still was too large to firmly grasp my EYEPIECE.

**Likely Cause:** The EYEPIECE is less than 39mm in diameter.

**Fix:** Order the SMALL EYEPIECE ACCESSORY kit which accommodates EYEPIECES from 23mm to 40mm.

### I don't get a full image just a small circle

**Likely Cause:** This is due to "VIGNETTING" which is due to the image coming through and not fully covering the camera sensor. Several things can contribute to how much VIGNETTING occurs including the design of the EYEPIECE itself (exit pupil diameter and focal plane distance), the size and position of the camera sensor element in the phone, the thickness of any protective case and how much optical zoom is selected.

**Fixes:** Make sure adapter is seated on EYEPIECE and the eyecup is fully retracted unless needed for engagement. The standard method to eliminate is to simply use a slight amount of digital zoom on the phone camera. Note that a thinner protective case will incrementally reduce any VIGNETTING.

## Additional Help

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Please refer to our online support at [www.novagrade.com](http://www.novagrade.com) . If you still are having any difficulty, do not hesitate to contact us via email or by phone.