

BlurFix Air Instructions

Introduction

Congratulations on your purchase of the BlurFix Air with filter (CP, ND4, or ND8/CP)! You have purchased a quality filter for your GoPro Hero3 or Hero3+ camera. The BlurFix Air is intended for lightweight applications or applications where the GoPro camera is used without the housing so that a microphone can be linked to the camera (i.e. airplane cockpit during instruction, race car dashboard, etc.) The BlurFix Air with filter weighs only 7.6 grams making it ideal for quadcopter use. If used with a gimbal, you must check with your gimbal manufacturer to ensure the additional weight is allowable and the BlurFix Air will not cause damage to the gimbal or cause it to over correct and go limp. Like many of our filter adapters, the BlurFix Air is CNC machined out of Delrin® which is more expensive than billet aluminum by volume - this is not just another cheap injection molded product. Delrin was selected so that the BlurFix Air will precisely slip over the lens flange on your camera. We've included an optional o-ring which can be installed to allow for a tighter fit should you choose to use it, as the lens flange can vary slightly from camera to camera. We recommend installing the BlurFix Air without the o-ring. If the fit is acceptable for your needs then o-ring installation is not necessary. If you desire a tighter fit or know that you are using the filter in an extreme vibration environment then you should install the provided o-ring according to the instructions in one of the following sections. Be sure to tighten the BlurFix Air before your first installation (see Pre-installation Instructions for details).

Filter Selection

The BlurFix Air comes with your choice of filters. These include a circular polarizer (CP), neutral density 4 (ND4), or combination neutral density 8 (ND8) with CP filter. Filters are used with the GoPro to combat one or both of the following issues: glare and rolling shutter effects. Glare is commonly found on the surface of water and windshields/windows. A CP filter can be adjusted to cut down on glare and is commonly used in fishing videos or on the dash of a race car. The effect can be dramatic. For instance, in fishing videos a CP filter can make the difference between seeing your catch just below the surface or seeing only sunlight reflected off the water's surface. In addition, CP filters will make the sky appear bluer and cause clouds to have more contrast. When used in snowy conditions, a CP filter will add contrast, allowing the viewer to distinguish features that would normally be over-exposed.

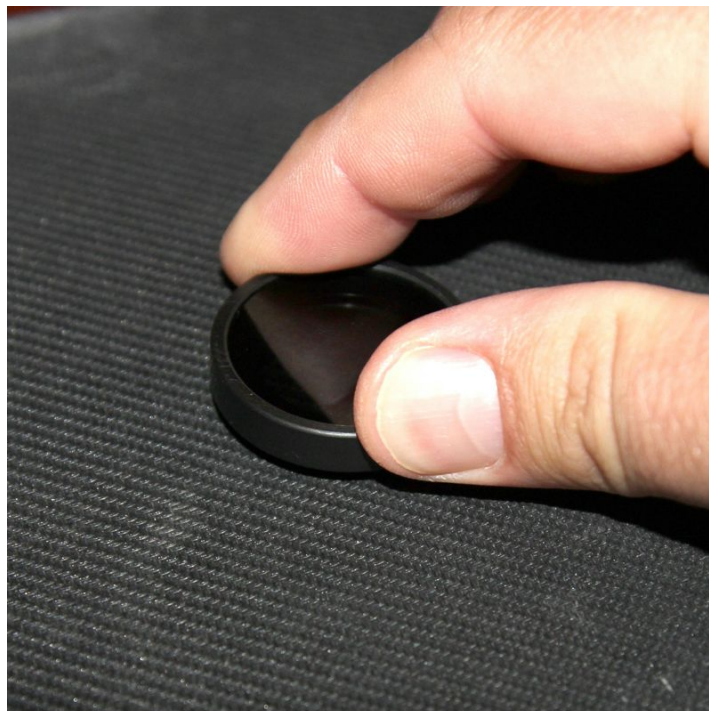
Neutral Density filters reduce or eliminate the effects of rolling shutter, such as the jello effect and prop blur. In high vibration environments like a quadcopter platform, the video commonly appears to be shot through a bowl of clear jello. An ND filter slows down the automatic shutter speed by reducing the amount of light that the camera detects. This will significantly reduce the jello effect. ND filters come in different levels of light

reduction. Darker ND filters should be used on brighter days (i.e. ND8) and less dark ND filters are used on moderately bright days (i.e. ND4). Experimenting with different filters in different light conditions is the best way to determine which filter is right. Prop blur refers to the artifacts that commonly occur when filming a propeller or rotor using a stock camera. The propeller often is fragmented and is not what's seen by the operator in real life. An ND filter used in these situations slows down the shutter speed and reduces or eliminates these artifacts. Again, this reduction depends on the ND filter rating and the lighting conditions. Experimentation is recommended to select the optimal ND filter.

Pre-Installation Instructions

Before installing the BlurFix Air, it is important to make sure that the two pieces of the BlurFix Air are screwed together tightly. The BlurFix Air is a two piece design that allows you to take the filter frame apart in order to clean the filter glass completely. If the two pieces are not screwed together tightly then the pieces can unscrew themselves in a high vibration environment (i.e. quadcopter or airplane use). To ensure the two pieces do not come apart in mid-film, it is important that you screw the pieces together BEFORE installing the BlurFix Air on your camera. This is done by pressing the smallest diameter piece against the bottom of a rubber soled shoe using the palm of your hand and then turning the unit clockwise. After touching the surface of the filter glass with your hand you should clean the outside surface using the provided microfiber cloth and a lens cleaning solution. Never use the camera as a "wrench" to hold the BlurFix Air while you turn the outside piece of the frame -- this can damage your camera.

The following image shows using the backside of a mouse pad to tighten the BlurFix Air.



Installing the BlurFix Air

To install the BlurFix Air, push it onto the GoPro until the frame bottoms out on the camera body. Never rotate the BlurFix Air while it is on the camera. The diameter of the GoPro lens body may vary slightly. If the fit is not as tight as desired, install the included o-ring in the o-ring groove. This is done by first taking the two pieces of the BlurFix Air frame apart (see Disassembly of BlurFix Air). Take the provided o-ring and install it in the o-ring groove located on the inside of the smaller frame piece. Use your index finger to press the o-ring into the groove. Slide your finger all the way around the inside of the BlurFix Air to make sure that the o-ring is seated. Before putting the BlurFix Air back together, install the smaller piece on the camera by itself. Make sure the o-ring is not pinched and slips over the camera lens flange. Once it slips over, the o-ring will be seated properly and you can reassemble the unit.

Disassembly of the BlurFix Air

The BlurFix Air can be disassembled so that the filter glass can be removed and cleaned. To disassemble, press the smallest diameter piece against the bottom of a rubber soled shoe using the palm of your hand and then turn the unit counter-clockwise. It may take a lot of pressure to get enough friction to spin the pieces apart, so don't be shy. Once the two pieces are apart the filter glass will fall out of the female piece, so make sure you disassemble the BlurFix Air over a surface that is conducive to the filter glass dropping out.

Assembly of the BlurFix Air

The BlurFix Air is assembled in just the reverse as the disassembly instructions. First, clean the filter thoroughly (see Cleaning the Filter). Next, if the filter is a CP filter, make sure it is oriented properly (see Determining Circular Polarizer Orientation). Using care not to touch the surface of the filter, drop the filter into the female piece of the BlurFix Air. Finally, screw the two pieces of the filter frame together. Tighten the two pieces thoroughly. This is done by pressing the smallest diameter piece against the bottom of a rubber soled shoe using the palm of your hand and then turning the unit clockwise. After touching the surface of the filter glass with your hand, you should clean the outside surface using the provided microfiber cloth and a lens cleaning solution.

Cleaning the Filter

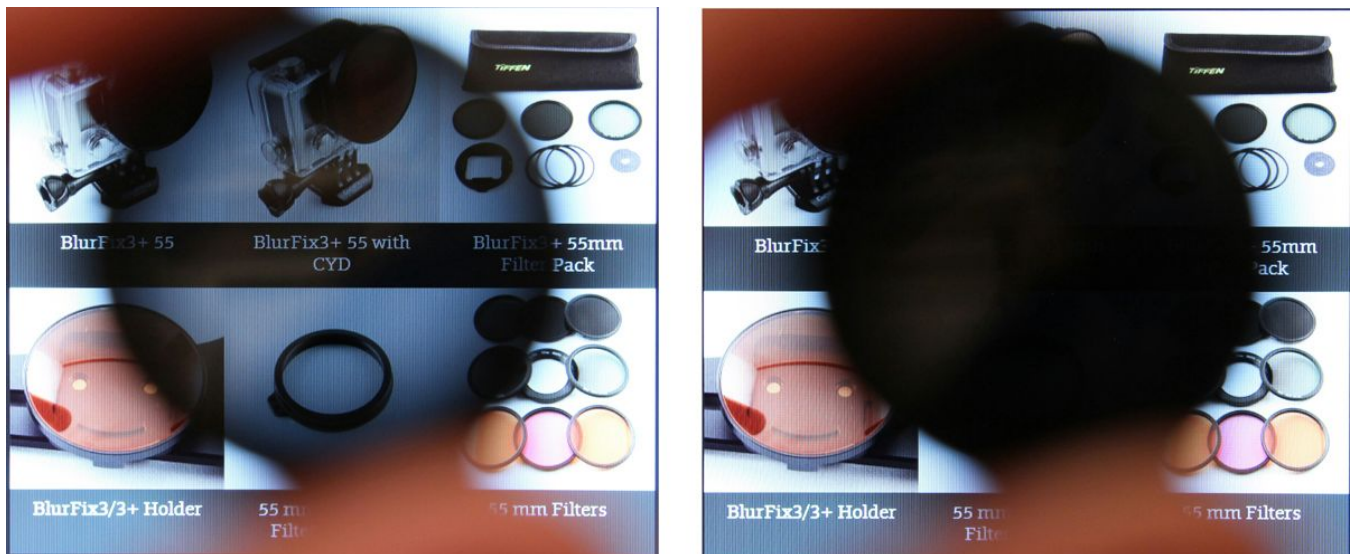
Disassemble the BlurFix Air (see Disassembly of the BlurFix Air). Use the microfiber patch included in the tin filter holder and SRP's lens cleaner (sold separately) to clean the filter glass thoroughly. Reassemble the BlurFix Air (see Assembly of BlurFix Air).

Determining Circular Polarizer Orientation

A polarized filter is intended to be looked through in one direction. In other words, if you flip the filter around and look through it in the opposite direction (regardless of rotation) the polarization properties are not effective. If you take your BlurFix Air apart to clean the filter you can check the polarizer orientation as follows:

1. Hold the filter up between you and an LCD screen (i.e. LCD computer, tv, or phone screen).
2. Rotate the filter and note how dark the screen becomes.
3. Flip the filter over and repeat.
4. The filter orientation that creates the darkest screen indicates the proper orientation.

The following photos show looking through a polarized filter in the incorrect (left) and correct (right) directions. The filter was rotated to its darkest level when looking through in each direction and these are the results.



If you don't have an LCD screen handy because you are out filming and don't have your phone on you, then you can repeat the steps while holding the filter between you and the sky or water. Look through the filter one direction and turn the filter 360 degrees. Then flip the filter over and look through it in the other direction and turn it 360 degrees. Whichever direction has the most dramatic changes as you rotate it is the right direction to look through the filter. Install the glass so that the camera is looking through the filter in the same direction.

How to Set Polarization When Filming

Remove the BlurFix Air from the GoPro camera. Hold the BlurFix Air so that you can see through it clearly. Rotate the BlurFix Air until you see the desired level of polarization. Note the orientation of the filter using

the markings on the side of the frame. The markings on the outside of the filter include the SRP logo and the type of filter (CP or ND8/CP). Install the BlurFix Air on the GoPro in this same orientation.

As an example, if flying a quadcopter over a lake on a sunny day the videographer should first determine the direction that the quadcopter will be predominately filming from. He should then orient himself so that he is looking at the surface of the water in as much the same orientation as possible. Holding the filter out in front of him, he should rotate the filter to the point where glare on the surface of the water is reduced the most. Then without rotating the filter with respect to the ground he would note where the SRP logo is, using straight down as the reference. Next he would press the filter onto the camera so that the SRP logo is at the same orientation with respect to straight down.