



PRODUCT MANUAL

# **CROSSFIRE<sup>®</sup> II**

1-4 RIFLESCOPE

## CROSSFIRE® II RIFLESCOPES

Specifically designed for discriminating hunters and shooters, the Crossfire® II series of riflescopes offer the highest levels of performance and reliability. With features such as generous eye relief, rugged construction, and precise, smooth controls, the Crossfire® II riflescopes are ready for any situation.



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For the most current information about this and all our  
products, please visit [VortexOptics.com](http://VortexOptics.com)

## RIFLESCOPE ADJUSTMENTS

### Reticle Focus

Crossfire® II riflescopes use a Fast-Focus Eyepiece designed to quickly and easily adjust the focus on the rifle's reticle.

**Warning:** Looking directly at the sun through a rifle scope, or any optical instrument, can cause severe and permanent damage to your eyesight.

To adjust the reticle focus:

- Turn the magnification ring to 1x. Looking through the optic, turn the Fast-Focus Eyepiece counter clockwise, until the image is blurry and slightly magnified.
- Next, while looking at an object about 25 yards away and while taking short glances through the optic, start to turn the Fast-Focus Eyepiece clockwise, until the image is true 1x. The object should appear the same size through the optic as it does to your naked eye.



Once this adjustment is complete, it will not be necessary to refocus every time you use the rifle scope. However, because your eyesight may change over time, you should recheck this adjustment periodically.

### Windage and Elevation Adjustments

The Crossfire® II riflescope incorporates adjustable elevation and windage dials with audible clicks. Each audible click moves the bullet's point of impact 1/2 of a minute of angle (MOA).

1/2 MOA closely corresponds to 1/2 inch at 100 yards, 1 inch at 200 yards, and 1 1/2 inches at 300 yards, taking two (2) clicks to move the bullet's point of impact approximately one inch at 100 yards.

### How to adjust windage and elevation settings

Begin adjusting the windage and elevation settings by first removing the outer covers. Then, move the turrets in the direction you wish the bullet's point of impact to go. To make the adjustments, rotate the adjustment dial in the appropriate direction (up/down or left/right) as indicated by the arrows.

After sight-in, you can reindex the turret to "0." This will allow for easier adjustments in the future. (See Indexing Adjustment Dials with Zero Rest on page 11). Replace outer covers when done.



### Variable Power Adjustments

To change magnifications, turn the magnification ring to the desired level.



## Reticle Illumination Adjustment

This Crossfire® II riflescope offers an illuminated reticle controlled by an adjustment knob on the eyepiece. Adjust the illumination intensity by rotating the knob either clockwise or counterclockwise.

**Note:** The illumination does not have an auto-off feature. Make sure to turn the dial to "0" when not using.

## Battery Replacement

1. Unscrew the outer cap with a coin.
2. Remove the battery.
3. Replace with a new CR2032 battery.
4. Install battery with positive (+) side up.



## RIFLESCOPE MOUNTING

To get the best performance from your Crossfire® II riflescope, proper mounting is essential. Although not difficult, the correct steps must be followed. If you are unsure of your abilities, use the services of a qualified gunsmith.



Please take note of the instructions on the following pages - for the proper scope mounting procedure, go to [VortexOptics.com/vortex-nation-videos](http://VortexOptics.com/vortex-nation-videos) for a video tutorial.

## Riflescope Mounting Checklist

- Gun vise or a solid platform/rest for your rifle
- Scope rings
- Torque wrench
- Reticle leveling tool, feeler gauges, weight on a rope, or a plumb bob

**Recommendation:** Pick up the Vortex® Torque Wrench Mounting Kit, which comes with a complete set of bits needed to install Vortex® scope and rings!

## Rings and Bases

Replace: Your Vortex® riflescope features a 30mm main tube. Be sure to select a base and matching rings appropriate for your rifle and mount according to manufacturer's instructions.

**Tip:** Selecting the proper ring height to provide complete clearance between the riflescope and any part of the rifle is paramount. The proper height will also allow for a comfortable cheek weld, and aid in establishing a solid and consistent shooting position. The height of a ring will not have an adverse effect on accuracy and overall range.

## Eye Relief and Reticle Alignment

After installing the bottom ring halves on the mounting base, place the riflescope on the bottom ring halves and loosely install the upper ring halves. Before tightening the scope ring screws, adjust for maximum eye relief to avoid injury from recoil.

1. Set the riflescope to its highest magnification.
2. Move the riflescope forward and aft in the rings until you have a full sight picture.
3. Without disturbing the front-back placement, rotate the riflescope until the reticle is level. Using a reticle leveling tool, a plumb bob, flat feeler gauges, or a bubble level will help this procedure.
4. After leveling the reticle, tighten and torque the ring screws down per manufacturer's instructions. Use caution and do not over tighten ring screws.



**Note:** Vortex recommends not exceeding 18 in-lbs with no thread locking compound on the ring screws for all our optics, with few exceptions depending on ring style. For base clamp screws on the rings, reference the ring manufacturer's specifications.

If you have questions about specific setups please call our Technical Department at 1-800-4VORTEX (1-800-486-7839).

## Bore Sighting

Initial bore sighting of the riflescope will save time and money at the range. This can be done in a number of ways. Use a mechanical or laser boresighter according to the manufacturer's instructions. On some rifles, bore sight by removing the bolt and sighting through the barrel.

To visually bore sight a rifle:

- Place the rifle solidly on a rest and remove the bolt.
- Sight through the bore at a target approximately 100 yards away or at your desired zero range.
- Move the rifle and rest until the target is visually centered inside the barrel.
- With the target centered in the bore, make windage and elevation adjustments until the reticle crosshair is also centered over the target.



## Final Range Sight-In

After the riflescope has been bore sighted, final sight-in should be done at the range using the exact ammunition you'll use while shooting. Sight in and zero the riflescope at the preferred distance. 50 or 100 yards are the most common zero distances.

Be sure the reticle is in focus (see Reticle Focus on page 4). If scope is equipped, set the parallax adjustment to match the distance being used for sight-in:

- Following all safe shooting practices, fire a three-shot group as precisely as possible.
- Next, adjust the reticle to match the approximate center of the shot group (see section on Windage and Elevation Adjustment on pages 4-5).

**Note:** If the rifle is very solidly mounted and cannot be moved, simply look through the scope and adjust the reticle until it is centered on the fired group.

- Carefully fire another three-shot group and see if the bullet group is centered on the bulls eye.

Repeat this procedure as many times as necessary to achieve a perfect zero.

## Indexing Adjustment Dials with Zero Reset

Crossfire® II riflescopes feature windage/elevation dials that allow you to reindex the zero indicator after sight-in without disturbing your settings. Though not required, this process will allow you to quickly return to your original zero if temporary corrections are dialed in the field. To reindex the windage and elevation turrets follow the procedure below:

1. Remove the outer cap. While firmly holding the dial, loosen and remove center screw.



2. Lift dial off of scope. Reposition the turret with the zero mark on the indicator line.



3. Install dial, and reinstall while firmly holding the dial.



## MAINTENANCE

### Cleaning

The Crossfire® riflescope requires very little routine maintenance other than periodically cleaning the exterior lenses. The scope's exterior may be cleaned by wiping with a soft, dry cloth. When cleaning the lenses, be sure to use products that are specifically designed for use on coated optical lenses such as the VTX® Lens Pen and Fog Free Cleaning Kits.

- Remove any dust or grit from the lens before wiping. Use a can of pressurized air, soft camel hair brush, or an acrylic optical brush.
- Clear lenses of smudges and fingerprints. Fog the lens with your breath, then use a non-abrasive lens cloth to clean the lens.

**Note:** Never use facial tissue, heavy cotton, or flannel fabric - these materials can scratch the surface of the lens. Use lens cleaning fluid and an optical tissue or cloth to clean lenses.

### Lubrication

All components of the Crossfire® II riflescopes are permanently lubricated, so no additional lubricant should be applied. If possible, avoid exposing your Crossfire® II riflescope to direct sunlight or any very hot location for long periods of time.

**Note:** Other than to remove the turret caps, turrets dials, and battery cap, do not attempt to disassemble any components of the riflescope. Disassembling of riflescope may void warranty.

### Storage

If possible, avoid exposing your riflescope to direct sunlight or any very hot location for long periods of time.

## TROUBLESHOOTING

Please consult the following list prior to returning a riflescope for service. Many times, a problem thought to be with the scope is actually a mount problem. Be sure the correct rings and bases are being used, and that they are properly torqued to the rifle. Be sure that there is no free play in the scope, base, and rings.

### Common Issues

#### Point of Impact is Inconsistent or Changes Drastically After Turret Adjustment.

- Verify that the ring screws are not over torqued. Ring screws should only be torqued to Vortex® recommendations, and no thread locking compound applied. Over torquing the ring screws will cause excess pressure on the tube, which will cause problems when adjusting the reticle.
- Remove the scope from the rings and visually check the scope tube for slide marks and/or indentations from under/over torqued or out-of-spec rings.
- Be sure that the action screws on the rifle are tightened to the rifle manufacturer's specification.
- Be sure that the base is tightened using Loctite® to the top of rifle's receiver to manufacturer's specs.
- If using the scope on an AR style rifle, ensure that the cantilever mount/rings are mounted only to the top of the receiver. The cantilever mount/rings need to be mounted to one, solid surface. Make sure that the forward connection of the cantilever mount, or ring, is not mounted to the fore end of the rifle.

**Point of Impact is Inconsistent or Changes Drastically After Turret Adjustment. (CONTINUED)**

- Be sure rifle barrel and action are clean and free of excessive oil or copper and powder fouling.
- Some rifles and particular ammunition don't work well together - try different ammunition and see if accuracy improves.

**Insufficient Windage & Elevation Adjustment Range.**

- Be sure you have the proper base and rings for your particular rifle. If you need assistance, contact a local gunsmith or Vortex® Customer Service.
- Once you have verified you have the correct base and mounts, and that you have been properly fitted to your gun, make sure you've followed the correct mounting procedure. See riflescope mounting section on pages 6-7 for this procedure.
- Insufficient windage or elevation adjustment range usually indicates problems with the mounting, base mount holes drilled in the rifle's receiver, or barrel/receiver misalignment.

**Reticle is Blurry/Cannot Focus on the Reticle and Target Simultaneously OR Image is large than 1x while on 1x on the magnification dial.**

- Check and reset the ocular focus for the shooter's eye. See Riflescope Adjustments section, Ocular Focus - Fast-Focus Eyepiece Adjustment on page 4.

**Reticle is upside down.**

- Riflescope is likely backwards. Confirm that you are looking through the larger end of the Crossfire® II scope.



**VIP WARRANTY**  
OUR UNCONDITIONAL PROMISE TO YOU.

We promise to repair or replace the product. Absolutely free.

**Unlimited.**

**Unconditional.**

**Lifetime Warranty.**

Learn more at [VortexOptics.com](http://VortexOptics.com)

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*Note: The VIP Warranty does not cover loss, theft, deliberate damage, or cosmetic damage not affecting product performance.*

For the most up to date manual visit  
[VortexOptics.com](http://VortexOptics.com)





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