VORTEX®

VENOM®

RIFLESCOPE

PRODUCT MANUAL

CONFIGURATION	5-25x56
WATERPROOF	IPX7
FOGPROOF	Nitrogen Gas Purged
LENGTH	15.25" (388mm)
MOUNTING LENGTH	5" (127mm)
TUBE DIAMETER	34mm
WEIGHT	35 oz. (992g)
EYE RELIEF	4" - 3.7" (102 - 93mm)
FIELD OF VIEW	5x mag: 21' @ 100yds (4°)
	25x mag: 4.7' @ 100yds (0.9°)

VENOM® MODELS	MOA	MRAD
ADJUSTMENT GRADUATION	1/4 MOA	0.1 MRAD
ELEVATION ADJUSTMENT w/ REVSTOP™ RING	47 MOA	18 MRAD
ELEVATION ADJUSTMENT w/ REVSTOP™ REMOVED	85 MOA	25 MRAD
WINDAGE ADJUSTMENT	85 MOA	25 MRAD
ELEVATION TRAVEL PER ROTATION	25 MOA	10 MRAD
WINDAGE TRAVEL PER ROTATION	25 MOA	10 MRAD

	L1	L2	L3	L4
LENGTH	2.6" (66mm)	2.4" (61mm)	6.9" (176mm)	15.25" (388mm)

	H1	H2
HEIGHT	1.81" (46mm)	2.54" (65mm)

THE VENOM® RIFLESCOPE

Get into the long-distance game faster with a first focal plane optic packed full of shooter-friendly features. A 5x mag range and a 34mm tube give ample power and turret travel, and our exclusive RevStop™ Zero System makes for a fast, easy, rock-solid return to zero. The included throw lever allows for fast transitions between magnifications, topping off an optic that lets you go deep for less.

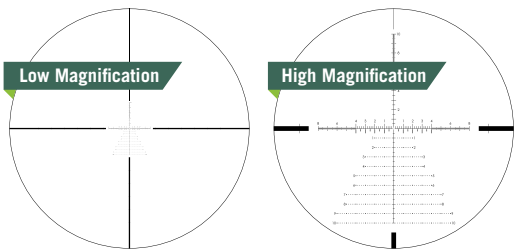
Images are for representation only. Product may vary slightly from what is shown.

RIFLESCOPE ADJUSTMENTS

Reticle Focal Plane

All riflescope reticles can be termed either First Focal Plane (FFP) or Second Focal Plane (SFP), depending upon the reticle's location within the riflescope. This riflescope features a FFP reticle.

FFP reticles are located within the riflescope near the windage and elevation turrets in front of the image-erecting and magnifying lenses. This style of reticle will visually grow and shrink as you change the magnification. The advantage of an FFP reticle is that the reticle subtensions used for ranging, holdovers, and wind drift corrections are consistent at all magnifications. Usually, the reticle will appear heavier at higher magnifications and finer at lower magnifications.



Ocular Focus

The ocular focus is essentially a one-time adjustment used to focus the reticle for maximum sharpness. This adjustment is slightly different for every shooter. A clearly focused reticle is a critical component for accurate shooting.

Ocular Focus—Reticle Focus Adjustment

Your riflescope uses a fast-focus eyepiece designed to quickly and easily adjust the focus on the riflescope's reticle. To adjust the reticle focus:

1. Look through the riflescope at a blank white wall or up at the sky.
2. Turn focus knob fully outward (counterclockwise).
3. Turn the eyepiece focus knob inward until the reticle image is as crisp as possible.

TIP: Make this adjustment quickly as your eye will try to compensate for an out-of-focus reticle.

WARNING: Looking directly at the sun through a riflescope, or any optical instrument, can cause severe and permanent damage to your eyesight.

Magnification

The magnification adjustment is used to change the magnification level, or "power," of the riflescope—adjusting from low to high magnification depending on the shooter's preference.

Magnification Adjustment

Rotate the indicator bar to the desired magnification.

Throw Lever Installation

1. Set the magnification ring to the middle of the magnification range.
2. Slide the throw lever over the eyepiece and magnification ring with the throw lever in the upright position.
3. Thread the screw into the throw lever and tighten until snug using the provided hex wrench. Do not overtighten the screw as it may cause damage to the riflescope or throw lever.
4. Using the throw lever, rotate the magnification ring through its entire range of motion to verify the throw lever's position.
5. If needed, loosen the screw and adjust the throw lever's position.

Arc Measurements

Riflescopes will use one of two arc measurements: Milliradians (MRADs) or Minute of Angle (MOA). The arc measurements apply to both the turret adjustments and the reticle subtensions (or hashmarks).

Milliradian (MRAD) arc measurements are based on the concept of the radian. When a section of the circumference of a circle is equal to its radius, the resulting angle is a radian. By dividing that angle into 1000 equal sections, the result is a milliradian. An MRAD is 1/1000th of any unit of measure.

Minute of Angle (MOA) arc measurements are based on the concept of a degree. Minute refers to 1/60th, and angle refers to 360 degrees of a circle. So, a Minute of Angle is 1/60th of one degree. One MOA will always subtend 1.05" for each 100 yds. of distance, or about 3 cm for each 100 m of distance.

TURRETS

Turrets are used to adjust the bullet's point of impact and are marked in either MOA or MRAD. Vortex® riflescopes incorporate precision, finger-adjustable Elevation and Windage Turrets with audible and tactile clicks.

Turret Adjustments

Each adjustment or "click" moves the bullet's point of impact either 1/4 MOA or .10 MRAD. 1/4 MOA closely corresponds to ¼" at 100 yards, or 3 cm at 100 m; .10 MRAD is equal to .36" at 100 yards, or 1 cm at 100 m.

To make turret adjustments:

- Following the directional arrows, turn the dials in the direction you wish the bullet's point of impact to go.

MOA MODELS
"1 Click = 0.25 MOA"

MRAD MODELS
"1 Click = 0.10 MRAD"

TIP: After sight-in, you can realign the zero marks on the turret dials with the reference dots if you wish (see Setting the RevStop™ Zero System and Indexing Elevation Turret, and Indexing the Windage Turret sections on pages 8-10).

Setting the RevStop™ Zero System and Indexing the Elevation Turret

After the rifle is sighted in, the RevStop™ Zero System allows a shooter to quickly and easily return to an original zero when using the elevation turret to dial in temporary bullet-drop corrections. With the RevStop™ ring installed the riflescope will have 47 MOA or 18 MRAD of elevation adjustment.

Once the RevStop™ ring is installed after sight-in, the elevation turret will travel 1.25 MOA, or 0.5 MRAD past the original zero point when being returned (turning clockwise) from a temporary elevation adjustment. This allows the shooter to also dial the elevation turret down for shots closer than your established zero. The shooter can then turn the elevation knob a partial turn in a counter-clockwise direction until the "0" aligns with the reference line on the scope body, achieving the original zero point.

To set the RevStop™ Zero System and index the Elevation Turret after final sight-in:

1. While firmly holding the turret knob, loosen and remove the turret cap screw and turret dial using the included tool. DO NOT allow the turret to rotate.
2. Push ring down until seated, then rotate the ring clockwise until it stops.
3. Reinstall the dial, lining up the "0" mark with the reference line on the scope body.
4. Reinstall the center turret cap screw.

Note: Although installing the RevStop™ ring is highly recommended, it is not required to operate the scope. The elevation turret can still be indexed to zero after sight-in even if the RevStop™ ring is not installed.

Indexing the Windage Turret

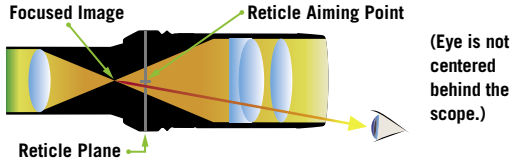
Venom® riflescopes feature a Windage Turret that allows you to re-index the zero indicator after sight-in without disturbing your zero setting. Though not a required process, re-indexing the Windage Turret allows you to quickly return to your original zero if you dial temporary windage corrections in the field.

To index the Windage Turret after final sight-in:

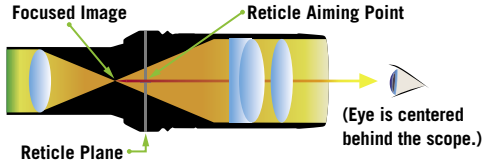
1. While firmly holding the turret knob, loosen and remove the turret cap screw and turret dial using the included tool. DO NOT allow the turret to rotate.
2. Reposition the turret dial with the "0" mark on the cap aligned with the zero-reference line on the scope housing and push the dial straight on. Avoid rotating while pushing down.
3. Be sure the turret dial is fully seated and replace the Windage Turret cap screw.

Image Sharpness—Parallax

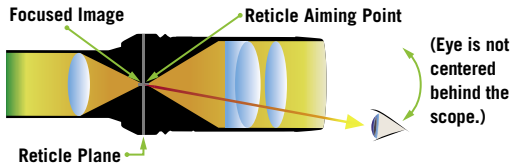
Parallax is a phenomenon that results when the target image does not fall on the same optical plane as the reticle within the scope. This can cause an apparent movement of the reticle in relation to the target if the shooter's eye is off-center.



- When the target image is not focused on the reticle plane and your eye is off-center behind the scope, parallax occurs. This is because the line of sight from the eye to the focused target image does not coincide with the reticle aiming point.



- When the target image is not focused on the reticle plane and your eye is centered directly behind the scope, no parallax occurs. This is because the line of sight from the eye to the focused target image coincides with the reticle aiming point.



- When the target image is focused on the reticle plane, parallax cannot occur, even if your eye is not centered behind the scope. This is because the line of sight from the eye to the focused target image always coincides with the reticle aiming point no matter where the shooter's eye is positioned.

Parallax Adjustment—Image Sharpness

Your scope comes equipped with an adjustable objective lens. This adjustment dial is marked with approximate yardages to aid in initial setting and should be matched to the target's distance. Final focus setting should be checked by moving your head back and forth slightly while looking through the scope and watching for any shift of the reticle on the target (parallax). If you observe shift, the dial should be adjusted slightly until shift is removed. Once this focus is correctly set for your targets distance, shooting errors due to parallax will be eliminated.

RIFLESCOPE MOUNTING

To get the best performance from your Vortex® riflescope, proper mounting is essential. Although not difficult, the correct steps must be followed. Please follow the instructions below for the proper scope mounting procedure or go to VortexOptics.com/Vortex-Nation-Videos for a video tutorial.

If you are unsure of your abilities, it would be best to use the services of a qualified gunsmith.

Riflescope Mounting Checklist

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

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

Rings And Bases

Your Vortex® riflescope features a 34mm main tube. Be sure to select a base and matching rings appropriate for your rifle and mount according to the manufacturer's instructions.

Tip: Select the lowest ring height that will provide complete clearance between the riflescope and rifle to avoid contact with barrel, receiver, bolt handle, or any other part of the rifle. A low mounting height will help assure proper cheek weld, aid in establishing a solid shooting position, and promote fast target acquisition.

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. Slide the riflescope as far forward as possible in the rings.
3. While viewing through the riflescope in a normal shooting position, slowly slide the riflescope back toward your face. Pay attention to the field of view. Stop sliding the riflescope back as soon as you see the full field of view.
4. Without disturbing the front-back placement, rotate the riflescope until the vertical crosshair exactly matches the rifle's vertical axis. Use of a reticle leveling tool, a weight hung on a rope, flat feeler gauges, or a bubble level will help with this procedure.
5. After aligning the reticle, tighten and torque the ring screws down per the manufacturer's instructions. Use caution and do not overtighten.

   Note: After aligning the reticle, tighten and torque the ring screws. Vortex Optics recommends a torque setting of 15-18 in/lbs on the ring screws. DO NOT use a thread locking compound on the threads. Thread locking agents lubricate the threads, which can increase the applied torque.

Bore Sighting

Initial bore sighting will save time and money at the range. Use a mechanical or laser bore sight according to the manufacturer's instructions, or by removing the bolt and sighting through the barrel on some rifles.

To Visually Bore Sight A Rifle:

1. Place the rifle solidly on a rest and remove the bolt.
2. Sight through the bore at a target approximately 100 yards away.
3. Move the rifle and rest until the target is visually centered inside the barrel.
4. 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 boresighted, final sight-in should be done at the range using the exact ammunition you expect to use while hunting or competitive shooting. Sight in and zero the riflescope at the preferred distance. 100 yards is the most common zero distance, although a 200 yard zero may be preferred for long-range applications.

WARNING: The RevStop™ ring should be removed from the scope prior to sighting-in the scope.

Be sure the reticle is in focus (see Ocular Focus—Reticle Focus Adjustment section on page 5) and adjust the side focus knob if present until the target image is sharp and without parallax error (see Parallax Adjustment—Image Sharpness section on page 12).

1. Following all safe shooting practices, fire a three-shot group as precisely as possible.
2. Next, adjust the reticle to match the approximate center of the shot group. Be sure to read the Turret Adjustments section on pages 7 and 8 prior to making adjustments.

   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.
3. Carefully fire another three-shot group and see if the bullet group is centered on the bullseye. This procedure can be repeated as many times as necessary to achieve a perfect zero.

MAINTENANCE

Cleaning

The Vortex® Venom® riflescope requires very little routine maintenance other than periodically cleaning the exterior lenses. Clean the scope's exterior 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.

- Be sure to blow away any dust or grit on the lenses prior to wiping the surfaces.
- Using your breath, or a very small amount of water or pure alcohol, can help remove stubborn things like dried water spots.

Lubrication

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

Note: Other than to remove the turret caps, do not attempt to disassemble any components of the riflescope. Disassembling of riflescope may void warranty.

TROUBLESHOOTING

Please check the following items prior to returning a riflescope for service.

Sighting-In Problems

Many times, problems thought to be with the scope are actually mounting problems. Be sure the mounts are properly torqued to the rifle and the scope is secured so it doesn't twist or move in the rings. An insufficient windage or elevation adjustment range may indicate problems with the base mount, base mount holes drilled in the rifle's receiver, or barrel/receiver alignment.

Check for Correct Base and Ring Alignment

1. Center the scope reticle (see steps in Bore Sighting section on page 15).
2. Attach bore sight or remove bolt and visually bore sight rifle.
3. Look through the scope. If the reticle appears significantly off-center on the bore sight image, or when compared to the visually centered target when looking through rifle's bore, there may be a problem with the bases or rings. Confirm that correct base and rings are being used—and in the proper orientation.

Grouping Problems

There are many issues that can cause poor bullet grouping.

- Be sure that rings are correctly torqued per the manufacturer's instructions.
- Be sure that all screws on rifle's action are properly tightened.
- Be sure rifle barrel and action are clean and free of excessive oil or copper fouling.
- Maintain a good shooting technique and use a solid rest.
- Some rifles and ammunition don't work well together—try different ammunition and see if accuracy improves.

Common Problems

Point of Impact Changes Drastically After Turret Adjustment

- Verify that the ring screws are not over torqued. Ring screws should only be torqued to 18 in/lbs, and no thread locking component applied. Over torqueing the ring screws will cause excess pressure on the tube, which will cause problems when adjusting the reticle.

Point of Impact is Inconsistent

- Ensure the cantilever mount/rings are mounted only to the receiver. The cantilever mount/rings need to be mounted to one, solid surface. Make sure that the cantilever mount's forward connection or ring, is not mounted to the fore-end of the rifle.
- Verify that the ring screws are not over torqued. Ring screws should only be torqued to 18 in/lbs, and no thread locking component applied. Over torqueing the ring screws will cause excess pressure on the tube, which will cause problems when adjusting the reticle.

Insufficient Adjustment Ranges

- Check that you have the proper base and rings for your rifle and for your size. If you need assistance, contact a local gunsmith to be properly fitted to your rifle and scope.
- Once you have verified that you have the correct base and mounts, and that you have been properly fitted to your gun, make sure you followed the correct mounting procedure. See Riflescope Mounting section on pages 12 and 13 for this procedure.

Reticle Appears to Come in and out of Focus

- Check and reset the ocular focus of the reticle for the shooter's eye. See Riflescope Adjustments section, Ocular Focus—Reticle Focus Adjustment on page 5.

NOTICE

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VIP WARRANTY

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You do not have to register, save the box, or a receipt for the Warranty to be honored.

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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