

# Bushnell®

## ELITE

### TACTICAL

PRECISION RIFLESCOPE

## Instruction Manual



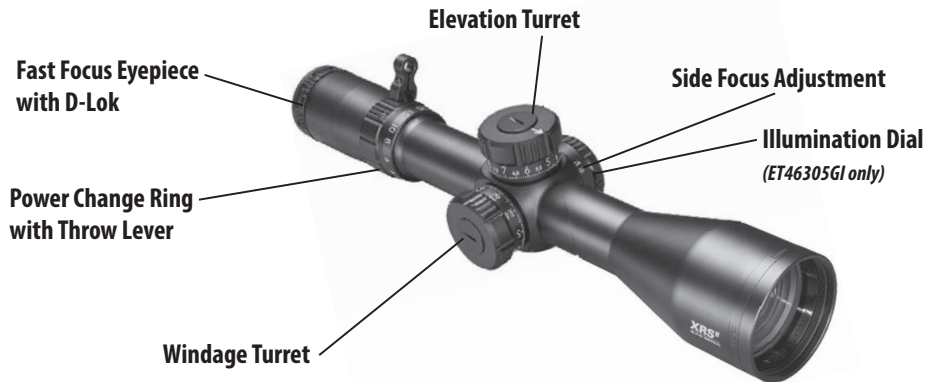
**This manual should only be  
used for Elite 4.5-30x 50 XRS-II  
Tactical Riflescopes  
with these reticle designs:  
Bushnell G3/G3-i Reticle  
Horus Vision H59 Reticle**



## TABLE OF CONTENTS

<b>Contents</b>	<b>Page #</b>
Parts Guide	4
Fast Focus Eyepiece	5
Power Change Ring	5
Side Focus (Parallax)	5
Windage Turret	6
Resetting the Elevation Turret	7
REVLIMITER™ Zero Stop Instructions	8
First Focal Plane Reticle	10
Bore Sighting and Zeroing the Scope	10
Illumination Dial ( <i>Model# ET46305GI only</i> )	11
<b>Bushnell G3/G3-i Reticle</b>	13
<b>Horus Vision H59 Reticle</b>	17
Maintenance and Storage	19

## PARTS GUIDE



**WARNING!** Before mounting your scope, be sure action is open, clip or magazine is removed and a round is not in the chamber. Do not attempt any work until the gun has been cleared and determined to be safe.

## FAST FOCUS EYEPiece

The fast-focus eyepiece dial is found on the ocular end of the Bushnell Elite Tactical Riflescope. Use this adjustment to obtain a reticle image that appears sharp to your eyes. If adjustment is needed, look at a distant object for several seconds without using your scope. Then, shift your vision quickly, looking through the scope at a plain background. Turn the fast-focus eyepiece dial clockwise or counterclockwise until the reticle pattern is sharp and clear. The eyepiece has a large adjustment range and should be used in conjunction with the side focus (parallax) adjustment to obtain maximum resolution when viewing targets at long ranges. Once set, the eyepiece fast focus (diopter) can be locked in place by turning the D-Lok™ ring clockwise until it's tight (**A**). To unlock, turn the D-Lok™ ring counter-clockwise.



**WARNING: NEVER LOOK AT THE SUN THROUGH THE RIFLESCOPE (OR ANY OTHER OPTICAL INSTRUMENT). IT MAY PERMANENTLY DAMAGE YOUR EYE.**

## POWER CHANGE RING

Changing the magnification of the Bushnell Elite Tactical Riflescope can be easily accomplished by grasping the new throw hammer lever (**B**), which is integrated into the power change ring. The throw lever is factory installed, but can be removed by loosening set screws on either side of the hammer's base using the provided allen keys. Use the lever to rotate the power change ring clockwise for higher magnifications, counterclockwise for lower magnifications. The magnification setting can be identified by noting the number that is in front of the stationary dot on the scope tube.



## SIDE FOCUS

The Side Focus adjustment (C) corrects Parallax error. Parallax error is experienced when the intended target and the reticle are not on the same focal plane. The side focus adjustment relocates an optical element within the scope, manipulating the incoming image to appear on the same focal plane as the reticle within the riflescope, thus eliminating parallax error. Parallax error results in inconsistencies regarding point of impact. This can be best experienced by looking at a 100 yard target with the side focus set to 500 yards. While slightly moving your head left and right, or up and down, you will notice movement at the location where the crosshairs intersect. However, if you change your side focus adjustment to 100 yards while looking at the 100 yard target, the intersection of the crosshairs will not move. *Please note the distance markings on the dial are intended as reference points only. Exact side focus adjustments may be needed after making adjustments to the eyepiece in order to achieve a high resolution, parallax free image.*



## WINDAGE TURRET

Your Bushnell Elite Tactical Riflescope features a T-Lok™ (locking) windage turret, which provide audible and visual adjustment references. When the turret is lifted into the upward position it can be rotated in right or left directions to make appropriate adjustments.

Each turn of the turret provides an audible “click” which coincides with a movement of the visible reference point on the turret knob. Additionally, clicks can be felt by your fingers as the turret knob moves. Each “click” represents .1 mil. After adjustments are made, the turret can be pushed back into the downward position to prevent movement, or left elevated and ready for further adjustments if preferred.



After pulling it up to allow adjustment, rotate the windage dial (*D*) counterclockwise to move the reticle plane right, or clockwise to move it left. Bushnell XRS II riflescopes provide 10 mils of adjustment per complete revolution of the turret. After adjustments have been made, you can reset the turret to zero by following the steps below:

1. Ensure the turret is in the lock position.
2. Use a coin or flathead screwdriver to remove the turret screw found on top of the turret knob, being careful not to displace the o-ring found under the turret knob.
3. Remove the turret knob and return it to the turret, with the “zero” mark on the knob lining up with the vertical index line on the turret.
4. Return turret screw to top of knob and tighten down, making sure the turret knob is in the locked position so the turret knob does not turn while tightening the screw.

## RESETTING THE ELEVATION TURRET

Rotate the elevation turret knob counterclockwise to move the reticle plane up, or clockwise to move it down. One full revolution of the elevation dial will move the point of impact 10 mils at any distance.

After zeroing your rifle, you can reset the elevation turret to zero by following these steps:

1. Use a coin, flathead screwdriver or cartridge rim to remove the turret screw found on top of the turret knob, being careful not to displace the o-ring found under the turret knob (*E*).
2. Remove the turret knob and return it to the turret with the “zero” mark on



- the knob lining up with the vertical index line on the turret (F).
3. Return turret screw to top of knob and tighten down making sure the turret knob is in the locked position so the turret knob does not turn while tightening the screw.

## REVLIMITER™ (Zero Stop) INSTRUCTIONS

### Step 1:

Obtain a good zero on your rifle at 100 yds. Remove the turret knob screw using a coin or flathead screwdriver (1)

### Step 2:

Remove the turret knob and set aside (2a).

Loosen the three Allen set screws found on the perimeter of the black inner locking ring  $1\frac{1}{2}$  turns (using 1.5mm Allen wrench-provided) (2b). These screws are "captured" in the RevLimiter ring so that they cannot be completely removed and dropped or lost. Ensure the screws are loosened far enough for the RevLimiter disk to "bottom out" before you turn it in the next step.





**Step 3:**

Turn the RevLimiter disk clockwise until it contacts the fixed pin in the bottom of the turret (**3a**).

Tighten the three set screws in the RevLimiter disk to 2 inch lbs (**3b**). (Do not overtighten). Your zero stop is now set.

**Step 4:**

Re-index the turret cap to zero and return the turret screw to the top of the turret knob and tighten (**4**).



## **FIRST FOCAL PLANE RETICLE**

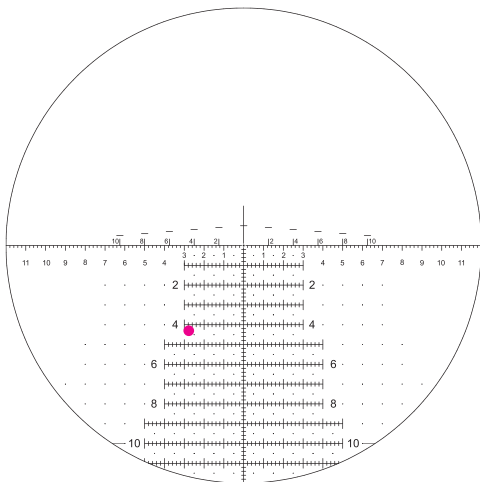
The Bushnell Elite Tactical Riflescopes covered by this manual have their reticles located in the first focal plane. Therefore, the reticle will increase in size when the magnification is increased. This feature allows the continued use of the mil measurement system contained in the reticle, regardless of the power setting. Second focal plane reticles restrict the user to making measurements at a specific power, as the reticle remains the same size and will not account for different magnification levels.

## **BORE SIGHTING AND ZEROING THE SCOPE**

Bore sighting is a preliminary procedure to achieve proper alignment of the scope with the rifle bore. It is best done using a Bushnell Bore Sighter. If a bore sighter is not available, it can be done as follows: Remove the bolt and sight through the gun barrel at a 100 yard target. Then sight through the scope and bring the crosshairs to the same point on the target using the turrets or windage adjustments. Return the bolt and prepare to shoot down range at the 100 yard target.

Your next step will be to zero the scope using live rounds. Fire your first shot and note the location of impact. You can use the turrets to change the point of impact accordingly. For example, if your first shot went 1 mil high and 1 mil left, adjust your elevation dial down 1 mil and your windage dial 1 mil right. Always adjust in the opposite direction from your point of impact.

As you fire your second shot, you should see the point of impact hit closer to your intended target. Multiple rounds may need to be fired before achieving consistent results. You may also use reticle within your scope to help decipher the correct adjustments. The image on the next page shows how this works, using the H59 reticle as an example.



H59 16x

In the example to the left using the H59 reticle, the shooter was attempting to hit a target in the center of the crosshairs. The actual point of impact hit 4 mils down and 3 mils left indicated by the red dot. Adjust the elevation dial 4 mils up/windage dial 3 mils right. Another way to look at this is to determine what adjustment needs to be done with the turrets to move the red dot so it is centered in the middle of the crosshairs (up 4 mils/over to the right 3 mils).



**WARNING: IF THE SCOPE IS NOT MOUNTED FAR ENOUGH FORWARD, ITS REARWARD MOTION MAY INJURE THE SHOOTER WHEN THE RIFLE RECOILS.**



**WARNING: A SCOPE SHOULD NEVER BE USED AS A SUBSTITUTE FOR EITHER A BINOCULAR OR SPOTTING SCOPE. IT MAY RESULT IN YOUR INADVERTENTLY POINTING THE GUN AT ANOTHER PERSON.**

## ILLUMINATION DIAL (Model# ET46305GI only)

To illuminate the reticle on model# ET46305GI, rotate the Illumination Dial located on top of the Side Focus adjustment so that a number is lined up with the side focus index mark on the scope body (*higher numbers=brighter, lower numbers=dimmer*). To turn the illumination off, select any dot between the numbers (*view reticle to confirm power off*). The illuminated reticle model ships with battery pre-installed, ready to use. To replace the CR2032 battery (3 volt lithium coin type), unscrew the cap at the top of the Illumination Dial, ensure the new battery is installed with the positive (+) mark facing out, and screw the cap back in place. Please recycle the expired lithium battery.



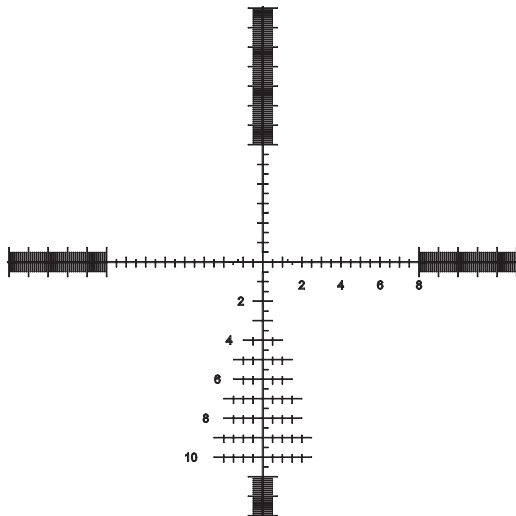
**Battery Compartment**  
(cap removed)

**Model#  
ET46305GI  
w/illuminated reticle**



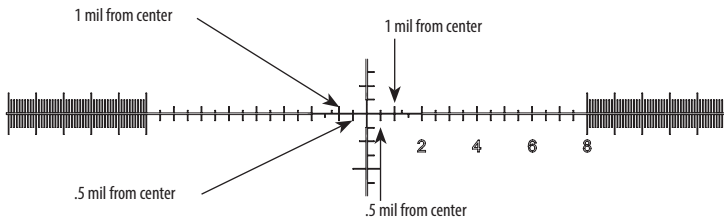
## BUSHNELL G3/G3-i™ RETICLE (ET46305GZ / ET46305GZA / ET46305GI)

The G3 and G3-i reticles, developed in conjunction with *G.A. Precision*, provides a clean reticle space while giving you the ability to range targets with extreme accuracy using .1 mil reference points. The extended horizontal mil markings on the lower portion of the vertical crosshair can be used for both ranging and windage holds. The entire reticle is shown here, but the following pages will provide a detailed look at the markings on the horizontal and vertical crosshairs.

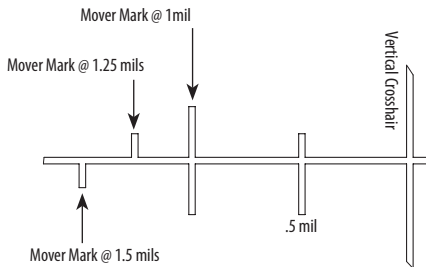


## THE HORIZONTAL CROSSHAIR

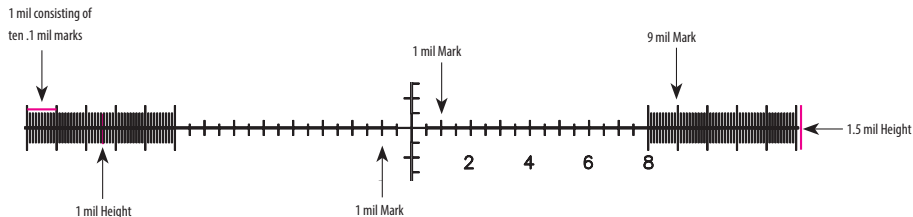
On the horizontal crosshair, numerically designated mil markings extend from the center of the crosshairs outward to the right in 2 mil increments. To keep the reticle plane clean, the numbers were removed on the left side of the reticle but the reference points coincide with the markings from the right side of the crosshair. Moving from the center point to the right in the picture below measurements are as follows: .5 mil, 1 mil, 1.5 mil, 2 mil...etc.



A new feature of the G3 reticles are highlighted hash marks on the horizontal stadia that provide hold off marks for shooting at moving targets. These "mover marks" are located at 1, 1.25 and 1.5 mils to the left and right of the center of the crosshairs. You can use a ballistic software program, or a long distance ranging system such as the **Bushnell Elite Tactical 1 Mile CONX** with Kestrel Sportsman to determine the correct mover hold for your firearm and ammo combination.



Extending past the 8 mil mark, the numerals stop. 1 mil increments are then designated by the longer hash marks, which measure 1.5 mil in height from top to bottom. Ten .1 mil markings are visible between each 1 mil marking, continuing out to 13 mils from center. The height from top to bottom of the .1 mil markings is 1 mil. The .1 mil markings provide you with a very precise horizontal measurement of your target.



## THE VERTICAL CROSSHAIR

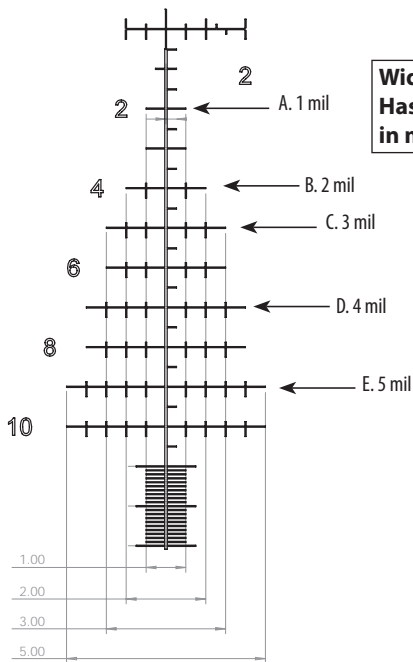
Similar to the horizontal crosshair, the vertical crosshair places the numerically designated mil markings on only one side. Once again, the numerically designated markings are found in 2 mil increments with hash marks every .5 mil. Note the vertical cross hair extends to provide numerically designated markings up to 10 mils from center. From the 11th mil measurement downward the reticle returns to the .1 mil markings, before the next 1 mil marking is seen measuring 1.5 mils across.

The lower portion of the vertical crosshair is different than all other portions of the reticle. Starting with the 2 and 3 mil mark, the horizontal hash mark seen in the picture below measures 1 mil across. See list on next page for horizontal hash mark measurements extending down to 10 mils.

Mil Values of horizontal  
hash marks left to right  
across Vertical Crosshair

- A. 1 mil
- B. 2 mil
- C. 3 mil
- D. 4 mil
- E. 5 mil

At the 11th mil mark the  
reticle returns to .1 mil  
vertical markings.



**Width of  
Hash Marks  
in mils**



## **HORUS VISION H59 RETICLE (ET46305Z)**

The H59 reticle is a “field-tuned” version of the H58 reticle from Horus Vision®. The horizontal grid is widened by one mil for increased wind holdover. Additionally, the center cross has been turned into a “broken cross” so groupings are less obscured and more easily seen. The H59 reticle is free of the clutter of more complex reticles, while still providing more windage and elevation hold capability than any optic in its class.



The clean design includes wind hold dots that extend beyond the grid. In addition to HorusVision's standard gridded, mil-based reticle, the H59 reticle in the ET46305Z incorporates the Accuracy 1st Speed Shooting Formula to provide rapid moving target holds, as well as a system for engaging distant targets quickly without knowing specific ranges.

## **CALCULATING HOLDS FOR ELEVATION**

The H59's moving target lead lines incorporate the Accuracy 1st Speed Shooting Formula to help you rapidly determine an elevation hold your target without using the traditional mil relation formula for range-finding. The steps for determining an expedient hold are as follows:

1. Locate a 12" portion of a target.
2. Find the line above the horizontal stadia that best brackets the 12" target between the moving target lead line and the horizontal stadia.
3. Note the number corresponding to the lead line in step 2; divide that line value in half. For example, if the 12" target fits between the 4 mph lead line and the horizontal stadia line, divide that in half to get a value of 2.
4. Place the 2 mil elevation hold (usually expressed as "2 mils high" or "+2 mils") on target and fire.

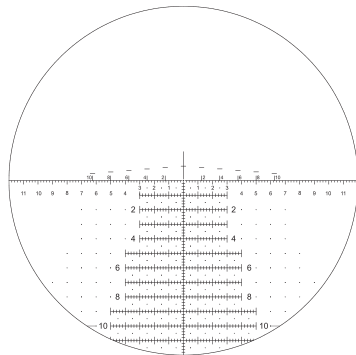
This process works well for many cartridges and weapon systems, but not all will impact exactly the same.

However this system should place you close enough to make a solid hit, all else being equal. If shooting with a different caliber or muzzle velocity, you may need to add to or subtract from the original elevation hold to adapt the formula for your needs.

## CALCULATING HOLDS FOR MOVING TARGETS

The H59 reticle has a series of even numbers above the main horizontal stadia. These numbers represent speeds for moving targets at 2, 4, 6, 8 and 10 mph, with additional holds starting at 20 mils and continuing every 10 mph thereafter to the left and right. These speeds are optimized for .308 caliber, but may be used with many other calibers.

To hold on a target moving at one of these speeds, simply hold the portion of the horizontal stadia that intersects with the short line nearest the number representing the target speed over the moving target, accounting for possible adjustments for distances different from optimal. If using the Horus grid (below center) for elevation, use a hold point in line with the appropriate speed. To hold on a target traveling at a speed between markings (such as 5 mph) you hold between the even numbers on either side of it (4 and 6 mph).



H59 16x

For more detailed information regarding this reticle and its use, please visit [www.horusvision.com](http://www.horusvision.com), or call 650-588-8862

## MAINTENANCE

Your Bushnell Elite Tactical XRS II riflescope, though amazingly tough, is a precision instrument that deserves reasonably cautious care.

1. When cleaning the lenses, first blow away any dry dirt and dust, or use a soft lens brush. Fingerprints and lubricants can be wiped off with lens tissue, or a soft clean cloth, moistened with lens cleaning fluid.

Microfiber cleaning cloths are also recommended.



**WARNING: UNNECESSARY RUBBING OR USE OF A COARSE CLOTH MAY CAUSE PERMANENT DAMAGE TO THE LENS COATINGS.**

2. All moving parts of the scope are permanently lubricated. Do not try to lubricate them.
3. No maintenance is needed on the scope's outer surface, except to occasionally wipe off dirt or fingerprints with a soft cloth.
4. Use lens covers whenever it is convenient.

## STORAGE

- Avoid storing the scope in hot places, such as the passenger compartment of a vehicle on a hot day. The high temperature could adversely affect the lubricants and sealants. A vehicle's trunk, a gun cabinet or a closet is preferable.
- Never leave the scope where direct sunlight can enter either the objective or the eyepiece lens. Damage may result from the concentration (burning glass effect) of the sun's rays.

The H59 reticle design is used under license, and is protected by patents owned by Horus Vision, LLC.

## BUSHNELL IRONCLAD WARRANTY

Products manufactured on or after April 2017 are covered by the Bushnell Ironclad Warranty. The Ironclad Warranty is a full lifetime warranty that covers the lifetime of this Product. Each Product has a defined lifetime; lifetimes can range from 1 to 30 years. This Product's lifetime can be found at the website listed below and/or on the Bushnell webpage specific to this Product.

We warrant that this Product is free from defects in materials and workmanship and will meet all represented performance standards for the lifetime of this Product. If this Product isn't working properly due to a covered defect, we will, at our option, either repair or replace it and ship it back to you at no charge. This warranty is fully transferrable and does not require a receipt, warranty card, or product registration. This warranty does not cover the following: electronic components; batteries; cosmetic damage; damage caused by failing to properly maintain the product; loss; theft; damage as a result of unauthorized repair, modification, or disassembly; intentional damage, misuse, or abuse; and ordinary wear and tear. This Warranty will be void if the date stamp or other serialization codes have been removed from the Product.

To view the full warranty and find details on how to request service under the warranty, go to our website at [www.bushnell.com/warranty](http://www.bushnell.com/warranty). Alternatively, you can request a copy of the warranty by calling us at 1-800-423-3537 or writing to us at one of the following addresses:

IN U.S.A. Send To:

Bushnell Holdings, Inc.  
Attn.: Repairs  
9200 Cody  
Overland Park, Kansas 66214

IN CANADA Send To:

Bushnell Holdings, Inc.  
Attn.: Repairs  
140 Great Gulf Drive, Unit # B  
Vaughan, Ontario L4K 5W5

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