

Bushnell®



RIFLESCOPE INSTRUCTION MANUAL



Congratulations on your choice of a **Bushnell® AR Optics® riflescope**. It is a precision instrument constructed of the finest materials and assembled by highly skilled craftsmen for a lifetime of trouble-free use under the most demanding conditions. This booklet will help you achieve optimum performance by explaining how to use its various features and how to care for it. Read the instructions carefully before mounting and using your scope. The accompanying photographs are guides to the nomenclature and location of the riflescope parts mentioned throughout this text.

Fast Focus Eyepiece

One Piece Tube Construction

Side Parallax Adjustment

Target Turrets



FMC Lenses



EYEPIECE FOCUSING

This adjusts the focus so that the reticle (cross hairs) appears sharp to your eyes. All Bushnell riflescopes are focused at the factory for 20/20 or corrected vision. If the reticle appears sharp, no adjustment is needed. If the reticle appears unsharp, adjust as follows.

FAST FOCUS EYEPIECE DESIGN

The eyepiece is designed to provide a precise fast focus. Simply 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 clockwise or counter clockwise until the reticle pattern is sharp and clear.

WARNING: Never look at the sun through the riflescope (or any other optical instrument)!

It may permanently damage your eye.

MOUNTING

To achieve the best accuracy from your rifle, your Bushnell scope must be mounted properly. (We strongly recommend that those unfamiliar with proper procedures have the scope mounted by a qualified gunsmith).

Should you decide to mount it yourself:

1. Use a high-quality mount with bases designed to fit your particular rifle. The scope should be mounted as low as possible without touching either the barrel or the receiver.
2. Carefully follow the instructions packed with the scope mounts you have selected.
3. Before tightening the mount rings, look through the scope in your normal shooting position. Adjust the scope (either forward or backward) until you find the furthest point forward (to insure maximum eye relief) that allows you to see a full field of view.

WARNING: If the scope is not mounted far enough forward, its rearward motion may injure the shooter when the rifle recoils.

4. Rotate the scope in the rings until the reticle pattern is perpendicular to the bore and the elevation adjustment is on top.
5. Tighten the mounting screws as tight as possible.

BORE SIGHTING

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. Certain mounts have integral windage adjustments and, when bore sighting, these should be used instead of the scope's internal adjustments. If major elevation adjustments are needed, they should be accomplished by shimming the mount base.

ZEROING

Final sighting-in of your rifle should be done with live ammunition, based on your expected shooting distance. If most of your shots will be at short range, zero-in at 100 yards. But, for long-range shooting at big game, most experienced shooters zero-in about three inches high at 100 yards. Three-shot groups are useful for averaging the point of impact.

ELEVATION AND WINDAGE ADJUSTMENT

Your Bushnell® AR Optics scope features finger-adjustable, audible-click elevation and windage adjustments.

Grasp the top of the target turret and turn it in the appropriate direction (elevation turret has marked "Up" direction, windage turret has marked "R" for right direction). Each "click" or increment on the Adjustment Scale Ring will change the bullet impact 1/4", 1/2", or .1 Mil, depending on the model. The adjustment value for your scope is clearly marked on its target turrets.

REALIGNING THE TARGET TURRETS

This step is optional. After sighting in your scope, you may want to realign the zero marks on the removable turret cap with the index dots.

1. Using the included Allen wrench, remove the hex screw on the target turret. Pull the turret straight up and off.
2. Realign the zero marking on the target turret with the index mark on your scope. Seat the target turret cap. Take care not to disturb your zero by “losing” a click or two when loosening the screw.
3. Replace and retighten the hex head screw in the top of the turret cap.

VARIABLE POWER ADJUSTMENTS

To change magnification, simply rotate the Power Selector Ring to align the desired number on the power scale with the Index Dot. Lower powers provide a wider field of view. Higher powers should be reserved for precise long-range shots. The Drop Zone BDC reticle is calibrated for use at the highest power setting on your scope.

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.

USING THE SIDE PARALLAX FOCUS CONTROL (SELECT MODELS ONLY)

You may have noticed that placing your eye at different positions behind the scope's eyepiece causes the reticle crosshairs to appear to move around to different points on your target. This is called “parallax error” (target and reticle are not in the same focal plane), and it becomes more noticeable (and more of a problem) at shorter distances and/or when the scope is set to higher powers. Your rifle scope may provide an adjustment for parallax compensation, which works by moving an optical element until the target (based on its distance) appears in the



same plane of focus as the reticle. Instead of the typical parallax compensation design which adjusts the objective lens at the front of the scope (“adjustable objective” or “AO”), your scope uses an movable lens back near the reticle, so the adjustment can be more easily made with a “side focus” knob placed next to the windage and elevation adjustments. Just line up the estimated distance to your target with the index dot on the body of the scope, and you will eliminate the aiming errors caused by parallax. After setting the side focus, you can double check by moving your head around from side to side behind the eyepiece—the point of aim should not shift if the side focus is correctly set. An alternative method is to look through the scope and turn the Side focus knob until the target, at whatever range, is sharply focused.

USING YOUR AR OPTICS RETICLE

The AR Optics Drop Zone BDC (Bullet Drop Compensation) reticles give shooters a series of aiming points that correspond to different types of ammunition. These aiming points allow shooters to expand their effective range. Bushnell would like to stress that these tools are only as good as the time spent practicing with them. Nothing can replace quality firing range time and becoming comfortable shooting at each of the prescribed yardages, while noting bullet placement. It is imperative for the shooter to spend time at the range, gaining familiarity with the reticle and how it works with their firearm and bullet load. Ballistic performance can vary depending upon a number of factors, including barrel length, powder type, bullet type, and numerous weather/atmosphere related variables.

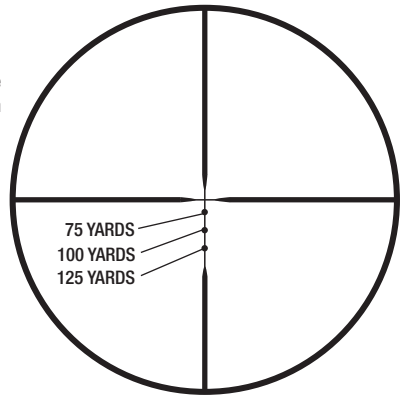
THE DROP ZONE-22 RIMFIRE BALLISTIC RETICLE

Scopes with the **DROP ZONE-22 Rimfire Reticle** are designed to be sighted-in at 50 yds, with aiming points every 25 yds, out to 125 yds. This reticle is calibrated for use with .22 Long Rifle high velocity ammunition. The scope must also be set to the highest magnification for the reticle’s ballistic feature to function properly. In the case of the 2-7x 32mm model, the power change ring must be set at 7x for the ballistic function to work correctly.

How To Use the Reticle:

1. Sight in at 50 yds on any magnification setting.
2. Determine distance to target. For the best accuracy in determining distance, utilize a Bushnell Laser Rangefinder (Scout DX 1000 ARC, G Force 1300 ARC).
3. Set the scope's magnification to 7x (7 power).
4. Place the appropriate aiming point on the desired target. If the target was determined to be at 115 yds, hold directly between the 100 yd aiming point and the 125 yd aiming point.

Based on a 50-yard zero and the ballistics of .22 Long Rifle high velocity ammunition.



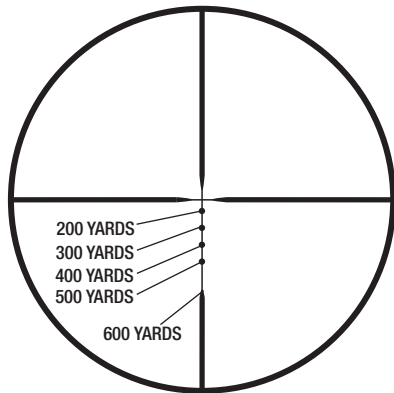
THE DROP ZONE-223 AND DROP ZONE-308 BALLISTIC RETICLES

Scopes equipped with the **DROP ZONE-223** and **DROP ZONE-308** ballistic reticles are designed to be sighted-in at 100 yds, and provide aiming points in the shape of a dot every 100 yds, out to 500 yds. In addition, the top of the reticle's bottom post (located below the 4th dot) represents a holdover point for a shot at 600 yds.

The Drop Zone 223 reticle is calibrated for use with 223 Rem/5.56 ammunition loaded with 55-62 grain bullets. The Drop Zone 308 reticle is calibrated for use with 308 Win/7.62 ammunition loaded with 168-175 grain bullets. All AR Optics scopes must also be turned to the highest magnification setting in order for the reticle's ballistic feature to function properly. In the case of the 3-9x 40mm model, the power change ring must be set at 9 power for the ballistic function to work correctly. The 4.5-18x 40mm models should be set at 18 power for proper ballistic reticle performance.

How To Use the Reticle:

1. Sight in at 100 yds on any magnification setting.
2. Determine distance to target. For the best accuracy in determining distance, utilize a Bushnell Laser Rangefinder (Scout DX 1000 ARC, G Force 1300 ARC).
3. Set the scope's magnification to its highest power.
4. Place the appropriate aiming point on the desired target. If the target was determined to be at 350 yds, hold directly between the 300 yd aiming point and the 400 yd aiming point.



THE BTR TACTICAL RETICLE

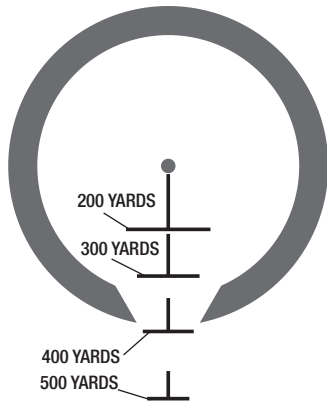
Scopes with the BTR (Bushnell Tactical Reticle) are designed to be sighted-in at 100 yds, with aiming points every 100 yds, out to 500 yds. This reticle is calibrated for use with 223 Rem/5.56 ammunition loaded with 55-62 grain bullets. Because the BTR reticle is located in the first focal plane (FFP) position within the scope, it will be accurate for all targets at any magnification setting.

How To Use the Reticle:

1. Sight in at 100 yds on any magnification setting.
2. Determine distance to target. For the best accuracy in determining distance, utilize a Bushnell Laser Rangefinder (Scout DX 1000 ARC, G Force 1300 ARC).
3. Place the appropriate aiming point on the desired target. If the target was determined to be at 350 yds, hold directly between the 300 yd aiming point and the 400 yd aiming point.

Illuminated Reticle and Throwdown PCL Features

The BTR reticle is illuminated. The “third knob” along with elevation and windage turrets is a brightness adjustment control (not a side focus knob), numbered from 0 to 11 (*see Fig. 1, next page*). To increase the brightness, set the control to a higher number (opposite the white index dot). To turn off the illumination and when storing the scope, set the dial to “0”. To replace the battery, remove the cap on the brightness adjustment control knob using a coin, and insert a CR2032 battery with the “+” mark facing up (*Fig. 2*). The AR Optics scope with the BTR reticle also features Bushnell’s folding Throwdown PCL (Power Change Lever), allowing rapid changes to the scope’s magnification level (*Fig. 3*).





MAINTENANCE

Your Bushnell AR Optics 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. 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.