

Bushnell®



FORGE™

RIFLESCOPE OWNER'S GUIDE

Congratulations on your purchase of a **Bushnell® Forge™** riflescope! You are now the owner of one of the most technologically advanced riflescopes in the industry. Bushnell maintains absolute product integrity and quality control throughout the entire design, production, and delivery cycle of these riflescopes.



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

FORGE RIFLESCOPE FEATURES

Hunters and precision shooters alike can find a Bushnell® Forge™ riflescope to fit their needs. All configurations are built to withstand every environment. The fully-multi coated optics deliver bright, high-contrast images with minimal eyestrain. Whatever the scenario, Forge™ riflescopes have a solution.

All exterior lens surfaces have our new EXO Barrier™ coating. EXO Barrier, quite simply, is the best protective lens coating technology Bushnell has ever developed. Added at the end of the coating process, EXO Barrier molecularly bonds to the lens and fills the microscopic pores in the glass. The result is an ultra-slick coating that repels water, oil, fog, dust and debris - rain, snow, fingerprints and dirt will not stick. EXO Barrier is built to last: the bonded coating will not fade with the passage of time or normal wear and tear.

All Forge riflescope models feature:

- **CLARITY** - The best resolution and contrast in all lighting conditions
- **HIGH LIGHT TRANSMISSION** - Ultra Wide Band Coating enables optimum brightness and true color in every lighting condition
- **SIDE PARALLAX** - Easily correct parallax error without removing eyes from the target
- **PRECISION** - Exposed, locking zero stop turrets and multiple ballistic options offer the ability to make quick adjustments as needed
- **SCOPE COVERS** - Included Butler Creek® Flip-Up Scope Covers protect lenses from dust, debris
- **SUN SHADE** - Included 2.5-inch sunshade aids in target acquisition on bright days

KEY ELEMENTS OF A SCOPE

There are four major elements of a scope:

- 1. Objective Lens:** This lens has three functions. First, it permits light to pass into the scope. Second, it determines resolution. Generally, larger lenses allow more light to enter the scope and resolve details better than smaller ones. Finally, it forms an image for the other lenses to magnify to a usable size. The image formed by this lens is upside down.
- 2. Erector System:** The erector system serves three functions. Its primary function is to erect the image (that is, flips the image right-side up) and align it to the reticle. During this process, primary magnification of the image takes place. These two functions are the result of lens action.

The third function is a mechanical one. The erector lenses are housed in a tube that is fixed at one end, while the other end of the tube is free to move and respond to dial adjustments. By moving the erector system, the point-of-aim of the scope is adjusted to match the point-of-impact of the bullet.

- 3. Reticle:** In simple terms, the aiming device around which the scope is built. This element replaces the iron sight system of non-scoped rifles.
- 4. Ocular or Eye Lens:** This element provides the secondary and final magnification of the image.

MOUNTING YOUR SCOPE

Your new scope, even with its technologically advanced design and features, will not perform at its best if not properly mounted. One of the most important contributing factors to the accuracy of your scope and rifle is the selection of the mount and the care with which mounting is done. Dependable mounts that attach your scope solidly to the rifle will reward you with dependability and consistent accuracy. You should take as much care in selecting a mounting system as you did in selecting your scope.

Remember, not all scopes are compatible with all mounts on all rifles. If there is any doubt in your mind, you should seek the advice of your local retailer or gunsmith.



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

PARTS GUIDE



PRELIMINARY SCOPE ADJUSTMENTS

Before installing the scope, we recommend you set the focus of the eyepiece to fit your individual visual requirement. Refocusing the ocular distance will result in a sharper reticle focus, an improved optical image, and will help to avoid eye fatigue when using the scope over prolonged periods of time. To refocus, hold the scope about 3 to 4 inches from your eye and point at the open sky or other flatly lit area such as a monotone painted wall.

Quickly glance into the scope. If the reticle appears blurred at first glance, it is out of focus. Turn the eyepiece clockwise or counter clockwise several turns. Glance into the scope again to check the sharpness of the reticle. Remember to take quick glances, as the eye will compensate for slightly out of focus conditions with prolonged looks. If the reticle still appears blurred, turn the eyepiece another two or three turns. Repeat this procedure until the reticle is sharp and clearly defined.

Unless your eyes undergo a significant change over the years, you will not have to make this adjustment again.

ATTACHING A MOUNT, RINGS AND SCOPE TO YOUR RIFLE



WARNING: BEFORE BEGINNING THE MOUNTING PROCEDURE, BE SURE THE ACTION IS OPEN, THE CLIP OR MAGAZINE IS REMOVED AND THE CHAMBER IS CLEAR. DO NOT ATTEMPT ANY WORK UNTIL YOUR FIREARM HAS BEEN CLEARED AND DETERMINED TO BE SAFE.



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

In mounting your scope, we recommend that you DO NOT take short cuts as it may lead to damage to either the mounting system or to the scope. Each mounting system will have its own instructions to follow, and it is best to read the instructions first to be sure you understand them and have the necessary tools on hand.

We further recommend that you plan to go through the mounting procedure twice. The first time, to be sure everything fits together and functions properly. On the first run through, please keep the following in mind:

- Before attaching the base, clean the mounting holes in the receiver and the threads of the attaching screws with acetone or any good solvent to free them of oil or grease.
- If the mount manufacturer has recommended the use of a thread adhesive, do not use it on the first mounting trial. Once adhesive has set, it is difficult to demount if anything needs correction.
- Be sure the mounting screws do not protrude into the receiver or the barrel.
- When using dovetail mounts, do not use the scope as a lever when installing the scope. The initial resistance to turning may cause damage to the scope, and is not covered by the warranty. We recommend using a 1" wooden dowel or metal cylinder to seat the rings.

- Be sure the position of the scope does not interfere with the operation of the action.
- Be sure there is at least 1/8" of clearance between the edges of the rings and any protruding surfaces such as the turret housing (saddle), power selecting ring, and the flare of the objective bell. Also be sure there is at least 1/8" of clearance between the objective bell and the barrel.
- You should test position the scope for the proper eye relief. The scope rings should be left loose enough so that the scope will slide easily. Variable power scopes should be set at the highest magnification when performing this procedure. Mount the rifle and look through the scope in your normal shooting position.
- Test position the rifle for the proper cheek weld a number of times to ensure that your scope is positioned properly.
- When you are satisfied that everything is okay, demount and start again. This time, seat all screws firmly.

VARIABLE POWER ADJUSTMENTS

To change magnification, simply rotate the Power Change Ring (use the Throw Lever for fast magnification adjustments) to align the desired number on the power scale with the index dot. When still-hunting or stalking game, a variable scope should be set to the lowest power. You then have the widest field of view for quick shots at close range. Higher powers should be reserved for precise long-range shots.

PARALLAX ADJUSTMENT / SIDE FOCUS

The Parallax Knob or Side Focus adjustment 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.

PRELIMINARY SIGHTING-IN

You can save a significant amount of expense and frustration by pre-sighting the scope to the rifle before you take it to the range for zeroing.

There are two basic methods that can be used for pre-sighting your scope. Method one is to use a Bushnell® Bore Sighter (laser, magnetic or standard). The use of a Bore Sighter saves time and ammunition and is the system most often used by gunsmiths. The second method is traditional bore sighting:

BORE SIGHTING METHOD

1. Place a target at 25 to 50 yards.
2. Remove the bolt from the rifle.
3. Place the rifle on sandbags or a shooting rest.
4. Set the scope to its lowest magnification.
5. Peer through the bore from the receiver and adjust the position of the rifle to center the target bull's eye in the bore (*Fig. A*).
6. Without moving the rifle, look into the scope and note the position of the reticle on the target. Adjust the windage and elevation adjustments to center the reticle on the bull's eye (*Fig. B*).

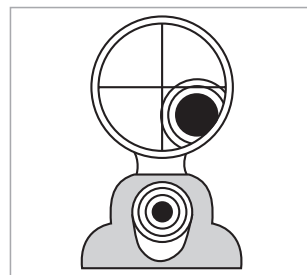


Fig. A
Reticle not in alignment

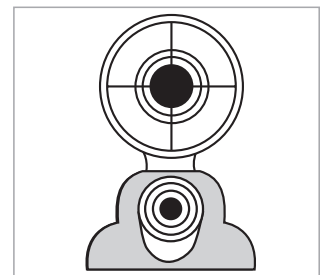


Fig. B
Reticle in alignment

FINAL SIGHTING-IN



WARNING: SINCE THIS PROCEDURE INVOLVES LIVE FIRE, IT SHOULD BE DONE AT AN APPROVED RANGE OR OTHER SAFE AREA. CHECK BORE FOR OBSTRUCTIONS. AN OBSTRUCTED BORE MAY CAUSE INJURY TO YOU AND OTHERS NEARBY. EYE AND EAR PROTECTION IS RECOMMENDED.

1. From a steady rest position, fire two or three rounds at a 100-yard target. Note the impact of the bullet on the target and adjust the windage and elevation dials as needed.
2. To move the bullet impact, turn the windage and/or elevation adjustments in the direction on the dials that corresponds to where the impact point falls on the target (for example, if test shots are hitting low, adjust elevation "down"). If the adjustments on your riflescope model are marked in MOA (minutes of arc), the point of impact at 100 yards will change by 1/4 MOA for each click of the windage or elevation adjustment. One full revolution of the adjustment=20 MOA.
3. When the impact on the 100-yard target is satisfactory, switch to a target set at the desired distance for final zeroing. Set the magnification to the desired power on variable power models.

WINDAGE AND ELEVATION TURRETS: ADJUSTING/LOCKING

Your Bushnell Forge 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 1/4 MOA. 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 counterclockwise to move the reticle plane right, or clockwise to move it left. Rotate the elevation dial counterclockwise to move the reticle plane up, or clockwise to move it down. Bushnell Forge riflescopes provide 20 MOA of adjustment per complete revolution of the turret.

RESETTING THE TURRET INDEX TO ZERO

After adjustments have been made during the sighting-in process, you can reset the turret to zero if desired, by following the steps below:

1. Ensure the turret is in the locked position (*Fig. 1*).
2. Use the provided Allen wrench to loosen all 3 set screws around the top cap of the turret cover, being careful not to remove the set screw completely (*Fig. 2*).
3. Reposition the turret cover, so that the “zero” mark lines up with the vertical index line on the turret (*Fig. 3*).
4. Re-tighten the 3 set screws, making sure the turret knob does not shift its position while tightening the screws. Avoid overtightening. Push the turret back down to the locked position (*Fig. 4*).



USING THE ZERO STOP (REVLIMITER™)

1. After obtaining a good zero on your rifle at 100 yds, use the provided Allen wrench to loosen all 3 set screws around the top cap of the turret cover, being careful not to remove the set screw completely (*Fig. 5*).
2. Remove the turret cover and set it aside (*Fig. 6*).
3. Loosen the three Allen set screws found on the perimeter of the brass inner locking ring 1½ turns (*using the provided 1.5mm Allen wrench*) (*Fig. 7*). 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.



4. Turn the RevLimiter disk clockwise (Fig. 8) until it contacts the fixed pin in the bottom of the turret (Fig. 9).
5. Tighten the three set screws in the RevLimiter disk to 2 inch lbs (Fig. 10) (do not overtighten). Your zero stop is now set.
6. Re-index the turret cap to zero, replace the turret cover, and re-tighten the turret cover set screws.



FIRST AND SECOND FOCAL PLANE RETICLES

Your Forge model RF4275BF7 riflescope has its reticle located in the first focal plane (“FFP”). Therefore, the reticle will increase in size when the magnification is increased (and appear smaller at lower magnifications). This feature allows the continued use of the MOA measurement system contained in the reticle, regardless of the power setting. Second focal plane (“SFP”) reticles maintain a constant reticle size, but require the user to make measurements at a specific power, as the reticle remains the same size and will not account for different magnification levels.

THE BUSHNELL DEPLOY™ MOA RETICLE

The Bushnell® Deploy™ MOA reticle is designed for versatility. It has value for hunters, target shooters, devotees of multiple calibers - anyone who is looking for flexibility in an optic. The 0.20 MOA thick crosshairs are easy to see without obstructing the target picture. There are hashmarks at every 1 MOA for accurate elevation holdover. The hashmarks below zero are 2 MOA wide, to aid in accurate windage holds. With accurate ballistic calculations, the Deploy MOA reticle delivers accurate shots, every time.

SIGHTING IN / AIMING POINTS

Your scope’s Deploy MOA reticle is intended to be sighted in at 100 yards, and is calibrated in MOA (minutes of arc). The reticle has wider markings every 5 MOA. The user can sight-in at 100 yds on any magnification setting.

RANGING WITH YOUR DEPLOY MOA RETICLE

There’s an inverse relationship between how big an object appears and how far away it is. As the distance to an object increases, the size of the object appears to decrease. For example, say you are looking at an object that is 100 yds away. If you moved the object closer so it was half that distance (50 yds) from your location, it would appear to be twice as large (or half the size at 200 yds).

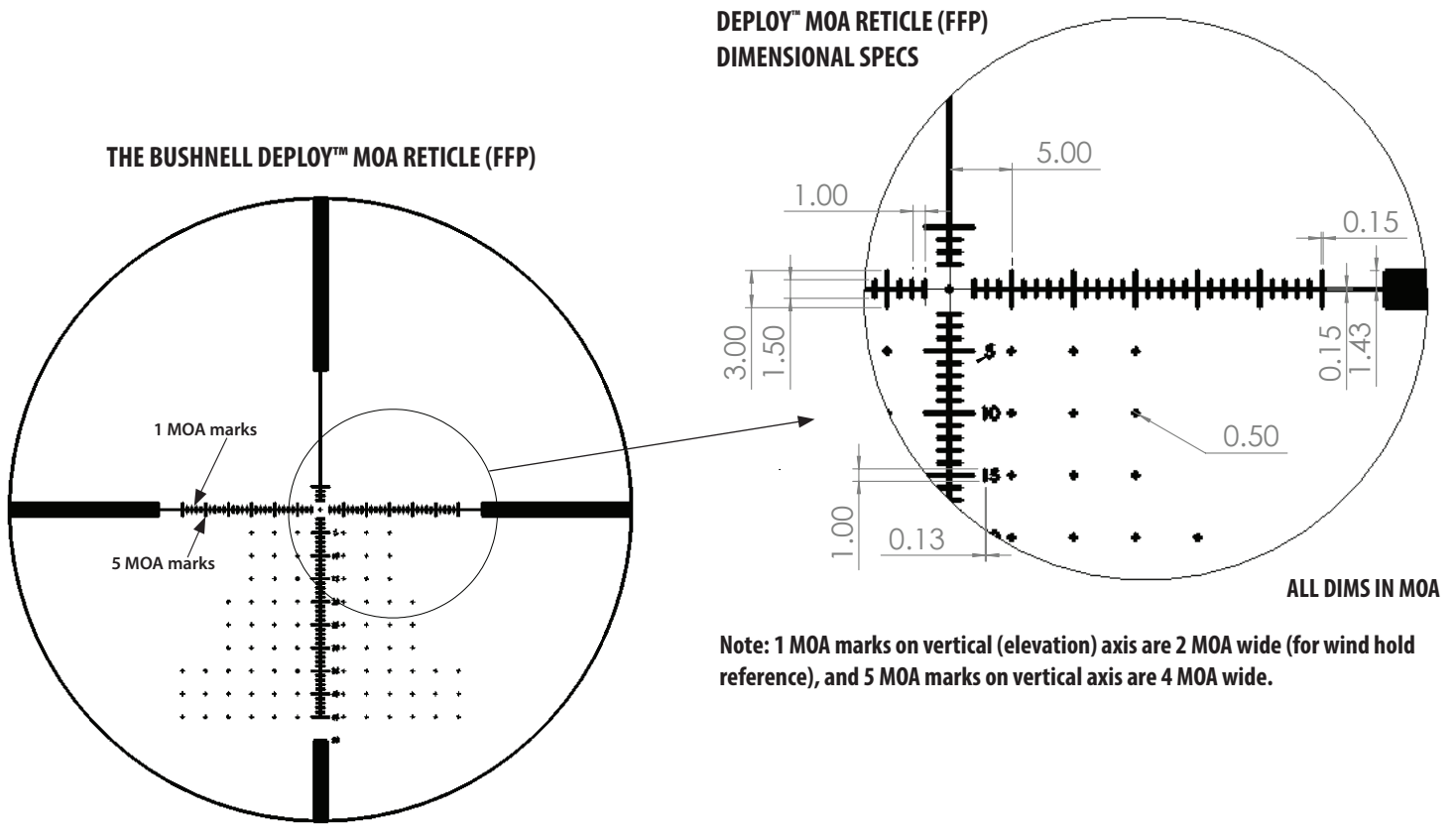
The relationship between your distance to an object and its perceived size allows you to estimate distance based on how big or small the object appears, by using the marks in your reticle to measure its height or width in MOA (Minute of Angle) . Using the apparent measurement of the target, you can determine the distance to the target. In order for this to work, you have to know the size of the target.

To calculate a target’s distance with MOA, multiply the known size of the target in inches by 95.5 and then divide that number by the size of the target measured in MOA through your scope:

$$\frac{\text{The Measured Object's Width or Height in Inches} \times 95.5}{\text{Object's Width or Height in MOA}} = \text{Range in Yards}$$

This formula can also be used to estimate the range in meters, by using 87.3 as the multiplier instead of 95.5, but still entering the object’s height or width in inches.

Looking through your scope, select an object at the distance you want to range -- an object whose width or height you know or can estimate accurately. Man-made objects of uniform size, such as fenceposts, are best, but any object of known dimensions will do. Measure the object’s height or width carefully in MOA, compute it according to the formula and you will find its range. Support your rifle and be precise when measuring objects; any measuring error causes an error in the computed range. Equally, a mistake in estimating the object size results in a proportional range error.



Here's an example: A coyote is sunning himself in a snowfield beside a fencepost; having crossed the fence earlier, you know that the post is about four feet high, or 48 inches. The fencepost measures 7 MOA in your reticle.

$$\frac{48 \text{ inches} \times 95.5}{7 \text{ MOA}} = \frac{4584}{7} = 655 \text{ Yards}$$

This formula should only be used when working with target sizes in inches and distances in yards. If needed, however, there are alternate numbers that can be used in the formula.

COMPENSATING FOR THE EFFECTS OF WIND / AIMING POINTS

The Deploy MOA reticle also incorporates windage hold points on the horizontal axis in the reticle to aid in compensation for the wind's effect on bullet trajectory. Windage hold marks are spaced at 1 MOA intervals, with heavier marks every 5 MOA. The first few 1 MOA marks on the vertical (elevation) axis are also useful for windage purposes, as each mark is 2 MOA in width. To use the windage hold marks, first determine a range to the target using a Bushnell laser rangefinder, or by using the reticle to estimate range as described in the previous section. Once the range to target is available, an estimate of wind velocity must be made. The reticle can then be elevated to the correct yardage mark and then moved horizontally into the wind direction using the MOA wind marks on the Deploy reticle in order to compensate for bullet drop and wind drift. Illustrations of the reticle markings are shown below.

The Deploy reticle is designed to be used with any caliber, bullet weight and velocity. Simply run the ballistics with a known velocity, BC, zero distance and environmental data to get your MOA drop points at various distances. Illustrations of the reticle markings are shown above.

ILLUMINATED RETICLE OPERATION/BATTERY REPLACEMENT

The red dot at the center of the reticle crosshairs is illuminated. The illumination adjustment dial is located at the end of the side focus knob, numbered from 1 to 6. 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 any of the "Off" positions (dots) between each numbered illumination setting.

To replace the battery, remove the cap (see photo, right) on the brightness adjustment control knob using a coin, and insert a CR2032 battery with the "+" mark facing up.



ALTITUDE AND TEMPERATURE

Ballistic charts published by ammunition manufacturers are based upon standard sea level conditions. When sighting in, it is well to keep in mind that altitude and temperature affect trajectory. It is best to sight-in under the same conditions in which you will be hunting.

CARING FOR YOUR RIFLESCOPE

Your scope needs very little maintenance. Exterior metal surfaces should be kept clean. A light dusting with a slightly dampened soft cloth is enough in most cases.

Your new scope features windage and elevation turrets that are completely sealed against water intrusion.

We recommend that lens covers be kept in place when the scope is not being used. Lenses should be inspected regularly and kept clean at all times. Dust, dirt, and fingerprints that collect on the lens surfaces will severely degrade image quality, and if left unclean for long periods, the anti-reflection coating could be damaged. Although lens cleaning is not difficult, it does require care and some patience.

- Start with a lens brush or a small, soft bristle paintbrush. Gently whisk away loose dirt particles.
- Next, use an ear syringe or bulb aspirator (available in most drug stores) to blow remaining dirt or dust from lens surfaces.
- If further cleaning is needed, use a dry, soft lint-free cloth. Very gently wipe the lens, starting at the center using a circular motion, then working outward to the edge.
- If this has not corrected the problem repeat the process using condensation from your breath.

DO YOU NEED TO SEND YOUR SCOPE TO US?

Before returning your scope for service, you should check the following points to make sure the problem is with the scope:

- Check the mounting system and rings for looseness or misalignment.
- Check to be sure the barrel and action are properly bedded and all receiver screws are tight.
- Check to be sure the mounting system allows sufficient clearance between the objective bell and the barrel.
- Check to be sure you are using the same type and weight ammunition that you used for sighting-in.

TECHNICAL SPECS

MODEL #	MAGNIFICATION & OBJ. DIAM.	RETICLE	FOCAL PLANE	ELEV/WIND TRAVEL (MOA)	TRAVEL PER REVO	PARALLAX (YDS)	EYE RELIEF (MAX PWR)	FIELD OF VIEW (FT @ 100 YDS)	WEIGHT (OZ.)	LENGTH
RF4275BF7	4.5-27x50	ILLUMINATED DEPLOY MOA	FFP	60/60	20 MOA	25	100 MM	22-4	30.6	14.2"



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 transferable 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. 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 Outdoor Products
Attn.: Repairs
9200 Cody
Overland Park, Kansas 66214

IN CANADA Send To:

Bushnell Outdoor Products
Attn.: Repairs
140 Great Gulf Drive, Unit B
Vaughan, Ontario L4K 5W1

For products purchased outside the United States or Canada please contact your local dealer for applicable warranty information.

This warranty gives you specific legal rights.
You may have other rights which vary from country to country.

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