

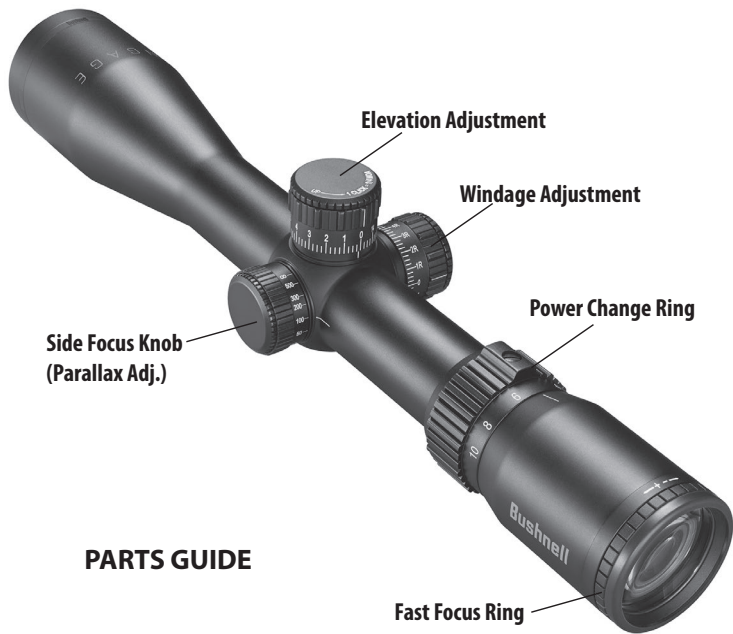
# Bushnell®

ENGAGE™

## RIFLESCOPE INSTRUCTION MANUAL

**For Models with Exposed Turrets**  
**REN21044DG/ REN31242DG/ REN41644DG/ REN62450DG**

05-17



## **PARTS GUIDE**

**Congratulations** on your choice of a Bushnell® Engage™ 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 photo on the right is a guide to the nomenclature and location of the riflescope parts mentioned throughout this text.

### **EXO™ BARRIER LENS 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.

### **HOW IT WORKS**

EXO™ Barrier is a special water repellent lens coating on which condensation forms in much smaller droplets than on standard coatings. These droplets form when the scope is exposed to rain, fog or snow. These smaller droplets scatter much less light than the larger droplets on other coatings. With EXO™ Barrier, light has more space to travel through thanks to small, tall droplets. This results in a much clearer and more useable sight picture. Additionally, water sheets off EXO™ Barrier much more readily than a standard coating. For the first time, the hunter will not miss the shot of a lifetime because moisture was on the lens.



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

## **CARE OF EXO™ BARRIER**

EXO™ Barrier is an extremely durable, scratch-resistant, permanent coating that will give you years of service. To get the best performance, just keep the lenses clean. To clean, first blow away any dirt and dust or use a soft lens brush. Fingerprints and lubricants can be wiped off with lens tissue or a soft, clean cotton cloth moistened with lens cleaning fluid.

## **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.

## **CENTERING THE RETICLE**

The reticle was carefully set at the optical center of your riflescope at our factory. This setting provides you with the ideal adjustment range from the center position. The riflescope's adjustments are used to zero-in the riflescope.

It is wise to check the center of the optical axis before mounting. Do this by placing the scope in a solid V-block (cardboard box with two slots). While looking through the scope in a normal viewing position, carefully rotate the scope. If the target moves in a circle larger than 1" from center (at 25 yards) in relation to intersection of crosshairs, reset windage and elevation adjustments. Remove adjustment caps. Set each adjustment to midpoint and recheck for centering. If reticle still rotates, use adjustments to correct.

## **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 ensure 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.

### 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® Engage scope features Toolless Zero Reset locking turrets with audible-click elevation and windage adjustments.

1. To unlock and enable adjustment, simply pull up on the turret to disengage the lock.
2. Grasp the Adjustment Dial and turn it in the appropriate “UP” (and/or “R”) direction indicated by the arrows. Each “click” or increment on the Adjustment Scale Ring will change the bullet impact by the laser engraved value on the top of your scope model’s turret caps. ¼ MOA corresponds to ¼ inch at 100 yards, ½ inch at 200 yards, ¾ inch at 300 yards and so on.

## RESETTING THE TOOL-LESS ZERO RESET LOCKING TURRETS

After zeroing in your rifle:

1. Push down on the turret (windage or elevation), placing the turret in the locked position.
2. Unscrew the top cap of the turret (rotate it counterclockwise), and pull it off of the turret. Set it aside.
3. Pull up the loose turret (you may remove it from the scope if desired, but it’s not necessary as long as you can freely rotate it). Position it so that zero (“0”) on the turret’s scale is lined up with the index mark on the scope. Press down the turret until it locks in place.
4. Replace the top cap on the turret, rotating it clockwise until finger tight (do not overtighten). Your Engage scope is now zeroed.



## 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. 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.



***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.***

## USING THE SIDE PARALLAX FOCUS CONTROL

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 riflescope 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 a 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 line 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.



## MAINTENANCE

Your Bushnell® Engage 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.



***WARNING: UNNECESSARY RUBBING OR USE OF A COARSE CLOTH MAY CAUSE PERMANENT DAMAGE TO 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 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 0.18 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**

The Deploy 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, but for the Deploy reticle feature (range and windage marks) to function properly, the scope's magnification must be set to the highest power (with the exception of the 6-24x50 model, which should be set to its calibrated magnification of 20x, indicated in orange on the power change ring). The correct settings for the different Engage models that include the Deploy reticle are shown in the chart on the right:

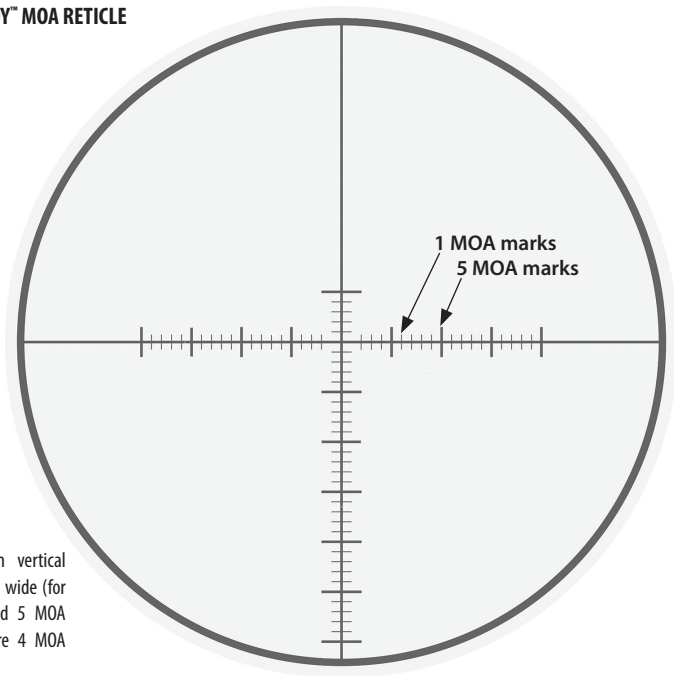
<b>Model</b>	<b>Set to:</b>
2.5-10x 44mm	10x
3-12x 42mm	12x
4-16x 44mm	16x
6-24x 50mm	<b>20x</b>

### **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. 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 on the following pages.

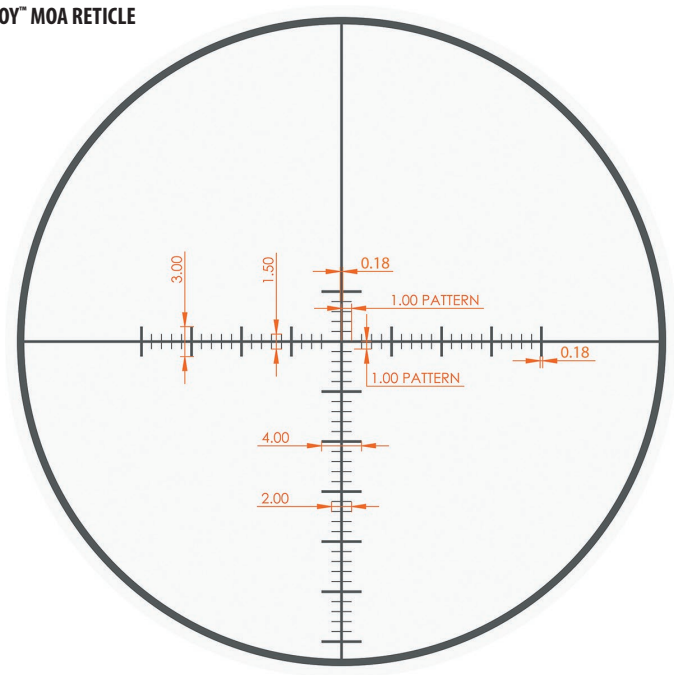
The Deploy reticle is designed to be used with any caliber, bullet weight and velocity. Simply run the ballistics with a known velocity, BC, zero distance and environmental data to get your MOA drop points at various distances.

## THE BUSHNELL DEPLOY™ MOA RETICLE



Note: 1 MOA marks on vertical (elevation) axis are 2 MOA wide (for wind hold reference), and 5 MOA marks on vertical axis are 4 MOA wide. See next page.

# THE BUSHNELL DEPLOY™ MOA RETICLE DIMENSIONAL SPECS



## **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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U.S. Patent Numbers 6,906,862 / 6,816,310 / 6,542,302

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