

# DEAD-HOLD<sup>®</sup> BDC RETICLE



Second Focal Plane Reticle Manual

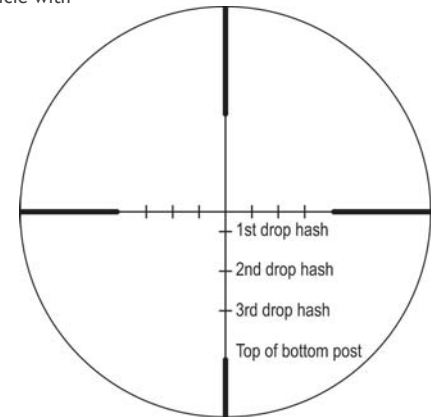


## VORTEX® DEAD-HOLD™ BDC RETICLE

You have purchased a Vortex riflescope equipped with the **Dead-Hold® BDC** reticle. This exclusive reticle has been designed to minimize the need for guessing bullet hold-over at long distances. By selecting the appropriate reticle hashmark, a shooter will have a reliable bullet-drop reference for all reasonable distances.

The Dead-Hold BDC reticle can be used effectively with a variety of firearms, including high powered rifles, rimfire rifles, black powder rifles and slug shotguns. This reticle also provides reference marks which can be used to compensate for bullet drift in windy conditions or to range distances.

Dead-Hold BDC Reticle with  
Drop Hashmarks



This Vortex riflescope model uses the second focal plane design. The listed BDC yardages will be valid at the highest magnification for most models.

**Note:** Listed BDC yardages will only be valid for a 6-24x50 model with the magnification set at 18x (indicated by a red mark on the magnification ring).

## RIFLESCOPE ADJUSTMENTS

### Using the Reticle for Bullet Drop Compensation

#### STANDARD TECHNIQUE

Rifle/ammo combinations are put into ballistic classes where bullet drops will be predictable within 2–4 inches (there will still be a slight variation between individual rifle and load ballistics and the Dead-Hold reticle).

Begin by choosing one of the listed Firearm/Range classes. If your firearm/range doesn't fall exactly into one of these classes, select the class which is most similar. [Use the Vortex on-line Long Range Ballistic Calculator (LRBC) to compare your bullet drop numbers to the ones listed for each class—available at [www.vortexoptics.com](http://www.vortexoptics.com).]

After selecting a class, sight in the main crosshair to the recommended zero range for that class. (Consult the main riflescope owner's manual for information on sighting in the main crosshair.) Once the rifle has been sighted in, the lower hashmarks can then be used as aiming points at the corresponding distances listed. For most popular rifles and loads, the hashmarks will provide accuracy within 0–4 inches of your aiming point (depending on the range). If you require greater accuracy from the Dead-Hold BDC reticle, use the Precision Technique detailed in the next section.

Each of these classes will use a different corresponding range to each crosshair hashmark depending on ballistic performance. **Remember that the listed ranges are accurate with the scope set at the highest magnification (18x for a 6–24x50 model).** The main crosshair and its corresponding zero distance can be used at **any** magnification.

#### Class A

**High Power Big Game Rifle** | Moderate Ranges  
(100–400 yards) Use 100 yard zero on main crosshair.

#### Bullet Drop

1st Hashmark: 200 yards | 3-inch drop  
2nd Hashmark: 300 yards | 13.5-inch drop  
3rd Hashmark: 400 yards | 30-inch drop  
Top of Bottom Post: 500 yards | 55-inch drop

#### Class B

**High Power Big Game and Magnum Rifle** | Extended Ranges  
(100–600 yards) Use 200 yard zero on main crosshair.

#### Bullet Drop

1st Hashmark: 300 yards | 4.5-inch drop  
2nd Hashmark: 400 yards | 18-inch drop  
3rd Hashmark: 500 yards | 37.5-inch drop  
Top of Bottom Post: 600 yards | 66-inch drop

#### Class C

**High Velocity, Small Caliber Varmint Rifle** | Extended Ranges  
(100–600 yards) Use 200 yard zero on main crosshair.

#### Bullet Drop

1st Hashmark: 300 yards | 4.5-inch drop  
2nd Hashmark: 450 yards | 18-inch drop  
3rd Hashmark: 550 yards | 37.5-inch drop  
Top of Bottom Post: 650 yards | 66-inch drop

### Class D

#### **Modern Black Powder Rifle** | *See note below*

(50–200 yards) Use 100 yard zero on main crosshair.

#### Bullet Drop

1st Hashmark: 125 yards | 2-inch drop

2nd Hashmark: 200 yards | 9-inch drop

3rd Hashmark: 225 yards | 17-inch drop

### Class E

#### **.22 LR Rimfire Rifle** | **Extended Ranges**

(25–140 yards) Use 50 yard zero on main crosshair.

#### Bullet Drop

1st Hashmark: 60 yards | 1-inch drop

2nd Hashmark: 90 yards | 4-inch drop

3rd Hashmark: 120 yards | 9-inch drop

Top of Bottom Post: 140 yards | 16-inch drop

### Class F

#### **Slug Shotgun and Traditional Black Powder Rifle** | *See note below*

(25–150 yards) Use 50 yard zero on main crosshair.

#### Bullet Drop

1st Hashmark: 75 yards | 1-inch drop

2nd Hashmark: 100 yards | 4.5-inch drop

3rd Hashmark: 125 yards | 9.4-inch drop

**Note:** Due to the tremendous differences in currently available black powder and shotgun slug loads, these numbers should be viewed as only a representative sample. It is very important to learn the ballistics of the particular loads that you use and match up the correct drop MOAs and yardages.

### **PRECISION TECHNIQUE**

If you wish to get the very best accuracy from the Dead-Hold BDC reticle, you can custom match yardages to the drop hashmarks of the reticle based on the exact ballistics of the load you are shooting. To do this, use the online Vortex Long Range Ballistic Calculator (LRBC) located at [www.vortexoptics.com](http://www.vortexoptics.com).

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Visit [www.vortexoptics.com](http://www.vortexoptics.com) for the Vortex Long Range Ballistic Calculator.

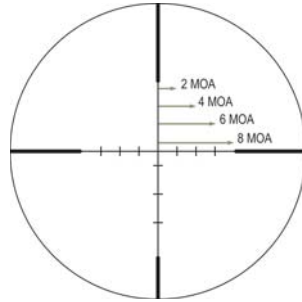
**LRBC** ▶ Input your load and environmental conditions data and then open the “Reticles” tab. Selecting the “Dead Hold” reticle will then allow you to graphically display custom yardage numbers matching your load and conditions. This graphic can also be printed as a field reference, if desired. Small, sticky-backed decals for noting applicable yards (supplied with the riflescope) may also be affixed to the scope or rifle.

Follow this up with a day at the rifle range to confirm the accuracy of the yardage numbers you have obtained through the LRBC. You will then be confident in having the most accurate possible Dead-Hold BDC reticle.

## Using the Reticle for Wind Drift Compensation and Ranging

The Dead-Hold BDC reticle incorporates methods for wind drift correction and range estimation using the hashmarks on the horizontal crosshair. As in using the holdover hashmarks, the magnification must be set at the highest magnification (18x for a 6-24x50 model).

Correcting for wind drift is done with the hashmarks on the horizontal crosshair. These hashmarks are spaced at 2 MOA, with the inside ends of the heavy horizontal crosshairs at 8 MOA from center. Shooters familiar with the wind drift numbers of particular ammunition can use the hashmark spacing to help estimate proper windage hold-off once the correct range and wind are known or estimated. Use the online Vortex Long Range Ballistic Calculator (LRBC) to learn wind drift numbers for your loads.



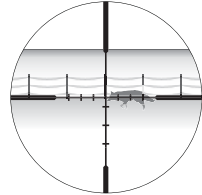
Ranging distances is done using the following simple formula:

$$\frac{\text{TARGET'S KNOWN WIDTH OR HEIGHT IN INCHES} \times 100}{\text{TARGET'S WIDTH OR HEIGHT IN MOAS MEASURED ON RETICLE}} = \text{RANGE IN YARDS}$$

A shooter can compare a target object of known dimension (at shooting distance) to either the vertical or horizontal hashmark spacing and roughly estimate the range. Remember, hashmarks on the vertical crosshair are spaced at 1.5 MOA, 4.5 MOA and 7.5 MOA. The top of the bottom vertical heavy crosshair is 11 MOA from center. Horizontal hashmarks are spaced at 2 MOAs.

### Example: Ranging a Coyote

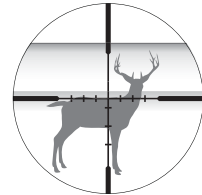
In your home area, you know that a coyote runs about three feet (36 inches) in length. While out hunting, you observe a coyote and range him with your scope set at the highest magnification (18x for a 6-24x50 model). You see that the coyote's body covers about the distance from the center crosshair to the edge of the heavy part of the horizontal crosshair (8 MOA). Using the simple formula, you can estimate the coyotes distance at 450 yards.



$$\frac{36 \text{ INCHES} \times 100}{8 \text{ MOA MEASURED ON RETICLE}} = \frac{3600}{8} = 450 \text{ YARDS}$$

### Example: Ranging a Deer

When spotting a distant buck while deer hunting, you turn your scope to the highest magnification (18x for a 6-24x50 model) and range him. While looking through the scope, you see that the distance from the top of his back to the bottom of his chest (usually about an 18-inch depth on a mature buck) spans from the center crosshair to the 2nd hashmark down (4.5 MOA) on the reticle. Using the formula, you can then estimate the deer's distance at 400 yards.



$$\frac{18 \text{ INCHES} \times 100}{4.5 \text{ MOA MEASURED ON RETICLE}} = \frac{1800}{4.5} = 400 \text{ YARDS}$$

This formula has been simplified slightly to allow faster calculations, and yields distance estimates which are 5 percent greater than actual distance. If you desire more precise estimates, use the following formula:

$$\frac{\text{TARGET'S KNOWN WIDTH OR HEIGHT IN INCHES} \times 95.5}{\text{TARGET'S WIDTH OR HEIGHT IN MOAS MEASURED ON RETICLE}} = \text{RANGE IN YARDS}$$

## THE VIP WARRANTY

We build optics based on our commitment to your absolute satisfaction. That's why Vortex products are unconditionally guaranteed and we make this Very Important Promise to you—a Very Important Person.

Rest assured that in the event your riflescope becomes damaged or defective, Vortex Optics will repair or replace the riflescope at no charge to you. Call Vortex Optics at 800-426-0048 for prompt, professional, and friendly service.



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Visit [www.vortexoptics.com](http://www.vortexoptics.com) for more information. Canadian customers may visit [www.vortexcanada.net](http://www.vortexcanada.net) for customer service information.

**Note:** The VIP warranty does not cover theft, loss, or deliberate damage to the product.

Vortex Optics believes strongly in responsible, ethical hunting and a word should be said about long range shooting at game. Although reticles like the Vortex Dead-Hold BDC can make long distance shots much easier, there are still many other variables, such as wind, affecting every shot. It is important for hunters shooting at long distances to learn their personal effective range, particularly in windy conditions, and to not shoot beyond those distances at game. Please be responsible—the keys are knowing your rifle, ammunition and your own abilities!

**DEAD-HOLD<sup>®</sup> BDC**

**RETICLE**

**[WWW.VORTEXOPTICS.COM](http://WWW.VORTEXOPTICS.COM)**



**#BDC-SFP-13A**

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