



RETICLE MANUAL

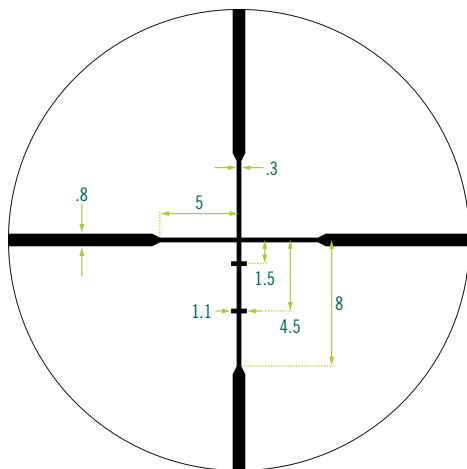
MUZZLELOADER BDC MOA RETICLE

SECOND FOCAL PLANE

MUZZLELOADER BDC MOA RETICLE

The exclusive Vortex® Muzzleloader BDC reticle is specifically calibrated for the slower velocities of modern muzzleloaders. This reticle ensures accurate holds at distance, giving you confidence in longer shot.

Subtension Chart



Note: The Muzzleloader BDC reticle is used in Second Focal Plane (SFP) riflescopes. The MOA values are valid at the highest magnification on most models. Please check the Product Manual to ensure what magnification your optic needs to be on.

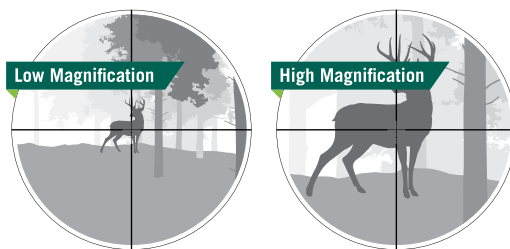
MOA Subtensions

The Muzzleloader BDC reticle is based on Minute of Angle (MOA) subtensions. MOA is an angular unit of measurement used to account for bullet drop, wind corrections, and range estimation. 1 MOA will correspond to 1.047" for each 100 yards.

Note: Although 1 MOA is very commonly corresponded to 1" at 100 yards, this is not correct. 1 MOA at 100 yards equals 1.047". Calling 1 MOA, 1" per hundred yards may be acceptable for short distance, but will result in a five percent error in ranging and holdovers. This could result in missed shots.

Second Focal Plane Reticles

In second focal plane riflescopes, the listed MOA subtensions are calibrated to a specific magnification, typically the highest. The shooter can use the center crosshair on any magnification, but when using the hashmarks for longer range shots or windage corrections, the shooter must be on the calibrated magnification. If the shooter is not on the calibrated magnification, additional calculations must be done to determine the value of the hashmark.



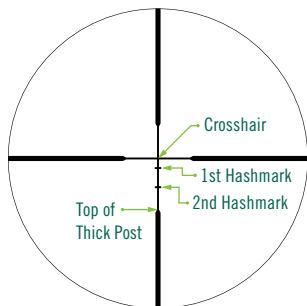
Using the Reticle for Bullet-Drop Compensation

To most effectively utilize your reticle, go to the lrbc.vortexoptics.com and use our Long-Range Ballistics Calculator (LRBC) to determine the bullet drop for your rifle and load combination.

See below examples for bullet drops for common muzzleloader cartridges built using the LRBC.

Note: Use these examples as a starting point; the values can be refined at the range or using a ballistic calculator. If you require greater accuracy, use the Precision Technique detailed in the next section.

Remember the listed ranges will only apply with the riflescope set to its subtended magnification. The center crosshair and its corresponding zero distance can always be used at any magnification.



.50 Cal, 270 gr, 50/50 Pellets -2

BC: .263, MV: 1760 fps, Barrel Twist: 1:28"

(Crosshair zeroed at 50 yds.)

AIMING REFERENCE	DISTANCE	SUBTENSION
Crosshair	50 yds.	—
1st Hashmark	100 yds.	1.5 MOA
2nd Hashmark	150 yds.	4.5 MOA
Top of Thick Post	200 yds.	8 MOA

Load Suggestion:

Powerbelt .50 Cal, ELR, 270 gr

Hodgdon Triple Seven 50/50 Pellets - QTY 2

.50 Cal, 295 gr, 50/50 Pellets -2

BC: .186, MV: 1700 fps, Barrel Twist: 1:28"

(Crosshair zeroed at 50 yds.)

AIMING REFERENCE	DISTANCE	SUBTENSION
Crosshair	50 yds.	—
1st Hashmark	90 yds.	1.5 MOA
2nd Hashmark	140 yds.	4.5 MOA
Top of Thick Post	180 yds.	8 MOA

Load Suggestion:

Powerbelt .50 Cal, Aerotip, 295 gr

Hodgdon Triple Seven 50/50 Pellets - QTY 2

.45 Cal, 285 gr, 45/50 Pellets -2**BC: .333, MV: 1820 fps, Barrel Twist: 1:22"**

(Crosshair zeroed at 50 yds.)

AIMING REFERENCE	DISTANCE	SUBTENSION
Crosshair	50 yds.	—
1st Hashmark	100 yds.	1.5 MOA
2nd Hashmark	160 yds.	4.5 MOA
Top of Thick Post	220 yds.	8 MOA

Load Suggestion:

Powerbelt .45 Cal, ELR, 285 gr
Hodgdon Triple Seven 45/50 Pellets - QTY 2

Note: Due to the tremendous differences in loads, these numbers should be viewed only as a representative sample. It is very important to validate these numbers at the range or a ballistic calculator before hunting.

PRECISION TECHNIQUE

If you wish to get the best accuracy, or have a caliber that is not listed, you can get more detailed ballistic data using the Vortex® Long Range Ballistic Calculator (LRBC®) located at lrbc.vortexoptics.com.



1. Input your max shooting distance and yardage increments you would like displayed. We recommend selecting a shooting distance farther than what you plan on shooting and the smallest increments allowed (10 yds.).
2. Input your ammunition data. You can find this information on the ammo box or on the manufacturer's website. For more accurate information, chronograph your rifle to obtain your true muzzle velocity.
3. Input your zero range and firearm information.
4. Input your environmental data.
5. Select "Calculate."
6. Select "MOA."
7. Cross reference the bullet's drop with the hashmark's values and the corresponding yardage. If the drop does not match up exactly, round to the closest number.

Long-Range Hunting

Vortex® believes strongly in responsible, ethical hunting and a word should be said about long-range shooting at game. Although reticles like the Muzzleloader BDC can make long-distance shots much easier, there are still many variables 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 at game beyond those distances. Please be responsible – the keys are knowing your rifle, ammunition, and your own abilities.



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Note: The VIP® Warranty does not cover loss, theft, deliberate damage, or cosmetic damage not affecting product performance.

For the most up to date manual visit
VortexOptics.com



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