VORTEX

RAZOR® HD LHT™

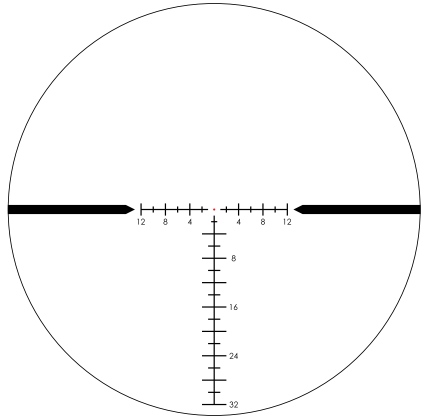
RIFLESCOPE

HSR-5i RETICLE | MOA
SECOND FOCAL PLANE

RETICLE MANUAL

THE VORTEX® HSR-5i RETICLE

The HSR-5i is the ideal reticle for those who want enough information to utilize personalized ballistics, but prefer a clean look. A fine crosshair, coupled with MOA-based hash marks (2 MOA spacing), promotes fast and accurate shots from close to extended ranges. The HSR-5i reticle can be used to effectively determine ranges, holdovers, windage corrections, and moving target leads. Ultra precise laser etching on the glass reticle ensures that Minute of Angle (MOA) specifications can be kept to the tightest tolerances possible. The illuminated center dot on the HSR-5i reticle were carefully chosen to provide the optimum balance between precision aiming and low light visibility.



Images are for representation only. Product may vary slightly from what is shown.

MOA Subtensions

The HSR-5i reticle is based on Minute of Angle (MOA) subtensions. MOA measurements are based on degrees and minutes: 360° in a circle, 60 minutes in a degree for a total of 21,600 minutes. These angular measurements are used to estimate range and correct for bullet-drop in riflescopes. 1 MOA will correspond to 1.05" for each 100 yds. of distance.

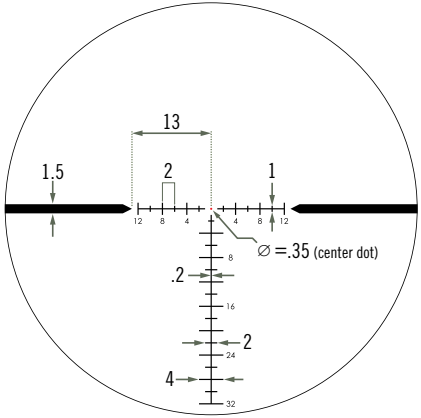
Estimating MOA

Although 1 MOA is very commonly corresponded to 1" at 100 yds., this is not quite correct. 1 MOA at 100 yds. equals 1.05". Calling 1 MOA an inch per 100 yds. may be acceptable at shorter distances, but it will cause a five percent error in ranging and holdover adjustments. This will result in missed shots at longer distances.

Second Focal Plane Reticles

This Vortex® HSR-5i reticle is a Second Focal Plane design. Second Focal Plane (SFP) reticles do not visually change in size when you change the magnification and will always maintain an ideally-sized appearance. When using this SFP reticle it's very important to understand that the displayed reticle subtensions are only correct at the scope's highest magnification. If a shooter attempts to range or compensate for bullet-drop/wind drift using the marked reticle subtensions at a magnification other than the highest setting, error will result. The center crosshair zero is not affected by magnification, and does not change with the setting.

HSR-5i Reticle Subtensions



RANGING

MOA measurements are very effective for ranging using a simple formula. To use this formula, the shooter needs to know the size of the target or nearby object in inches.

MOA Ranging Formula

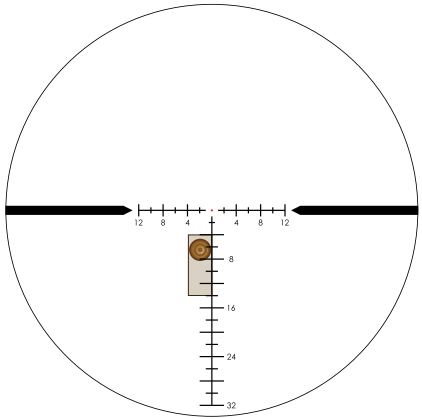
$$\frac{\text{Target Size (in.) x 95.5}}{\text{Measured MOA}} = \text{Range (yds.)}$$

Using either the vertical or horizontal MOA scale, place the reticle on a target of known dimensions and read the number of MOA spanned. You will obtain maximum accuracy in ranging by calculating exact MOA measurements. MOA should be estimated in quarters if possible.

Accurate measuring will depend on a very steady hold. The rifle should be solidly braced using a rest, bipod, or sling when measuring. Once you have an accurate MOA reading, use the formula to calculate the distance.

NOTE: In the MOA ranging formula, a shooter may substitute 100 for 95.5 in the interest of speedier calculations. Be aware that this will produce a five percent over-estimation error of the yardage distance obtained.

Example



Ranging a 6' target (72") at 10 MOA yields 688 yds.

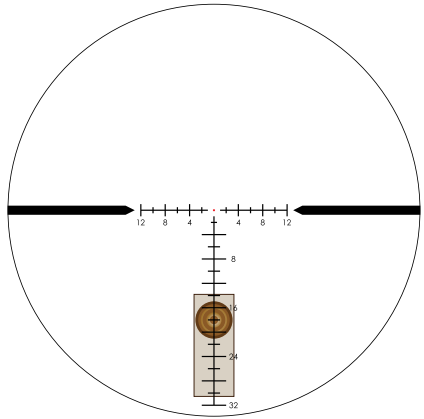
$$\frac{\text{72" x 95.5}}{\text{10 MOA}} = \text{688 yds.}$$

Elevation Holdovers

Once the distance has been calculated using the HSR-5i reticle, or a laser rangefinder, the HSR-5i can be used for rapid holdover correction for bullet-drop of the cartridge being used. To get the most benefit out of the HSR-5i equipped riflescope, Vortex® Optics highly recommends shooters learn their bullet-drop numbers in MOA rather than inches.

Since the HSR-5i reticle is scaled in 2 MOA increments, it is an easy job to quickly select the correct drop reference line once the shooter knows the bullet-drop in MOA. If the shooter prefers to dial for bullet-drop using the Elevation Turret, knowing bullet-drop in MOA rather than inches will allow for much faster adjustments as the MOA can be quickly read on the Elevation Turret.

Example



18 MOA reticle holdover at 625 yds. No wind.

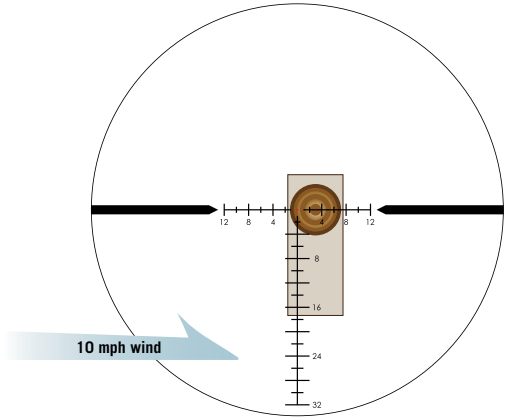
WINDAGE AND MOVING TARGETS

The HSR-5i reticle is highly effective when used for wind and moving target leads. Using the reticle for effective windage and moving target leads will require thorough knowledge of your weapon system's ballistic performance under varying conditions and experience in reading wind strengths and target speeds. As a bullet drops, it is important for the shooter to learn a particular weapon's windage/moving target corrections in MOA rather than inches. Always hold the reticle into the wind.

Basic Windage Correction on Center Crosshair

When dialing elevation, the center horizontal crosshair will be used for windage or moving lead corrections.

Example

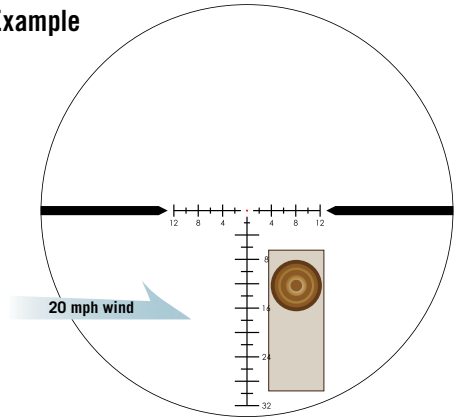


3 MOA reticle windage correction at 400 yds. in 10 mph crosswind using center crosshair. Elevation adjustment already dialed into the riflescope.

Basic Windage Correction Using Drop Line on Reticle

When using the reticle for elevation correction rather than dialing, the MOA marks on the center horizontal crosshair can still be used to help visually reference windage corrections. Remember to hold the reticle into the wind.

Example



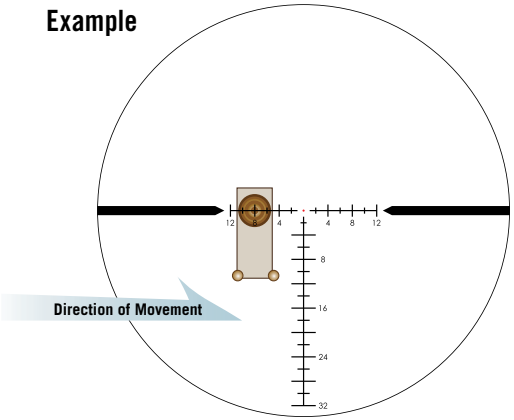
8 MOA reticle windage correction at 500 yds. in 20 mph crosswind using 12 MOA reticle drop line.

Basic Moving Lead Correction

When estimating moving target leads, the MOA marks on the center horizontal crosshair can be used. Estimating moving target leads will require knowing yardage distance, wind speed, moving target speed, and total bullet flight time (including rifle lock time). Bullet flight times can be roughly calculated based on fps velocities or a ballistic calculator.

Note: Correctly estimating moving leads is very difficult and requires considerable practice and knowledge beyond the scope of this manual.

Example



8 MOA reticle correction for a target moving 3 mph at a distance of 800 yds. No wind. Elevation already dialed into turret.

VIP WARRANTY

OUR UNCONDITIONAL PROMISE TO YOU.

We promise to repair or replace
the product. Absolutely free.

- **Unlimited**
- **Unconditional**
- **Lifetime Warranty**

Learn more at VortexOptics.com

service@VortexOptics.com • 800-426-0048

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