

SIGHT  MARK[®]

CORE 2.0 HX



3-9x40
HX series
SM13100DX

3-9x50
HX series
SM13101DX

3-12x56
HX series
SM13103HDR2

4-16x50
HX series
SM13104HDR2

USER MANUAL

ABOUT SIGHTMARK®

Founded to meet the changing needs of the outdoor industry and its customers, Sightmark® was introduced at SHOT Show 2007 in response to the growing popularity of the modern shooting market. The goal was to provide state-of-the-art optics and accessories to make the modern sporting rifle, shotgun and pistol as accurate as possible. In addition, each product is designed for the core market, enabling shooters to purchase more high quality items to accessorize their firearm for hunting, home defense and competition shooting.

In 2011, the new 33,000 square-foot headquarters was completed in Mansfield, Texas, combining the company's corporate offices and a large warehouse to handle the increase in sensitive material and technology being produced. The new facility provides more space for research and development, production, and distribution of defense-related products.

Best-selling products include red dot sights, riflescopes and chamber laser bore sights. More than one million Sightmark bore sights are in use since first released to the market. Sightmark has earned several patents and awards from industry associations and publications including Field & Stream, Optics Planet, Outdoor Life and Predator Xtreme. Numerous optics and accessories have been field tested and approved by prominent outdoor organizations such as the North American Hunting Club and the National Tactical Officers Association.

Currently, Sightmark represents leading markets growing in more than 40 countries and many quality retailers in every state. Products are sold by top retailers and national specialty chains such as: Academy Sports & Outdoors, Bass Pro Shops, Cabela's, Frankonia and many more.



CORE 2.0 HX SERIES RIFLESCOPES

Designed solely for the field, the Sightmark CORE 2.0 HX Riflescope Series has been crafted to offer versatility to the modern hunter. The CORE 2.0 HX Series of optics allows hunters to confidently prepare for the season ahead by providing the right reticle styles and features to match any pursuit.

Each scope in the CORE 2.0 HX lineup is constructed from a single piece of aircraft-grade aluminum for maximum durability. Built to withstand the most punishing conditions, the CORE 2.0 HX Series of hunting riflescopes are waterproof, fogproof, and shockproof. Whether it's from a treestand strapped to a towering oak or peering over a ridgeline on a spot and stalk, hunters can take aim through a reliable optic that works with a variety of rifle calibers.

FEATURES:

SM13100DX/13101DX/13103HDR2/13104HDR2 Models

- Resettable, Capped Turrets
- Fast-Focus Eyepiece
- Red Illuminated Reticle (Excludes 13100DX)
- Single-piece, 30mm Tube (Excludes 13100DX)
- Aircraft Grade Aluminum
- Hard Anodized Finish
- IPX7 - Waterproof, Fogproof, Shockproof
- Fully Multi-coated Optics

INCLUDES

- Scope Rings
- Lens Flip-up Caps
- Lens Cloth
- CR2032 Battery (Excludes 13100DX)

TECHNICAL SPECIFICATIONS	SM13100DX	SM13101DX	SM13103HDR2
Reticle type	Duplex	Duplex	Hunter Dot Reticle 2
Reticle color	N/A	Red	Red
Illuminated reticle (yes/no)	No	Yes	Yes
Reticle brightness settings	N/A	0-6	0-6
Magnification (x)	3-9	3-9	3-12
Objective lens diameter (mm)	40	50	56
Eye relief (in/mm)	3.7 / 94	4 / 101.6	4 / 101.6
Field of view (m @100m)	10.06 - 3.46	10.36 - 3.46	10.91 - 2.71
Field of view (ft @100yd)	33 - 11.35	34 - 11.36	35.8 - 8.9
Diopter adjustment (+/-)	+2/-2	+2/-2	+2/-2
Tube diameter (in/mm)	1 / 25.4	1.18 / 30	1.18 / 30
Parallax setting (yds)	100	100	15 - ∞
Windage adjustment range	90 MOA	60 MOA	80 MOA
Elevation adjustment range	90 MOA	60 MOA	80 MOA
Adjustment value (one click =)	¼ MOA	¼ MOA	¼ MOA
Maximum Recoil (G's)	1000	1000	1000
Battery type	N/A	CR2032	CR2032
Battery life (hours)	N/A	80 (Highest) - 1000 (Lowest)	80 (Highest) - 1000 (Lowest)
Focal plane	Second	Second	Second
IP Standard (water rating)	IPX7 - Water & Dustproof	IPX7 - Water & Dustproof	IPX7 - Water & Dustproof
Lens coatings	Fully Multi-coated	Fully Multi-coated	Fully Multi-coated
Operating temperature	-4° to 149°F / -20° to 65°C	-4° to 149°F / -20° to 65°C	-4° to 149°F / -20° to 65°C
Length (in/mm)	12.25 / 311.2	12.8 / 325.12	13.4 / 340.4
Width (in/mm)	1.85 / 47.2	2.6 / 66	3.1 / 78.8
Height (in/mm)	1.85 / 47.2	2.52 / 64	2.2 / 56
Weight (oz)	16.4	14.8	26.5

TECHNICAL SPECIFICATIONS	SM13104HDR2
Reticle type	Hunter Dot Reticle 2
Reticle color	Red
Illuminated reticle (yes/no)	Yes
Reticle brightness settings	0-6
Magnification (x)	4-16
Objective lens diameter (mm)	50
Eye relief (in/mm)	3.7 / 94
Field of view (m @100m)	7.99 - 2
Field of view (ft @100yd)	26.2 - 6.55
Diopter adjustment (+/-)	+2/-2
Tube diameter (in/mm)	1.18 / 30
Parallax setting (yds)	20 - ∞
Windage adjustment range	80 MOA
Elevation adjustment range	80 MOA
Adjustment value (one click =)	¼ MOA
Maximum Recoil (G's)	1000
Battery type	CR2032
Battery life (hours)	80 (Highest) - 1000 (Lowest)
Focal plane	Second
IP Standard (water rating)	IPX7 - Water & Dustproof
Lens coatings	Fully Multi-coated
Operating temperature	-4° to 149°F / -20° to 65°C
Length (in/mm)	14.3 / 363.2
Width (in/mm)	3.1 / 78.8
Height (in/mm)	2 / 50.7
Weight (oz)	24.1

The new Core 2.0 HX Series of riflescopes from Sightmark is an improvement on the previous Core, offering upgraded glass, finer click adjustments, and improved low light performance. Its finely etched reticles and exact adjustments make taking shots simple and easy.

The Core 2.0 HX promises to be a dependable tool in any hunting environment.

DIAGRAM

1. Objective Lens
2. Eyepiece (Diopter Adjustment)
3. Magnification Adjustment Ring
4. Elevation Adjustment
5. Windage Adjustment
6. Side Focus Dial (Parallax Adjustment)
7. Illumination Dial (Excludes 3-9x40)
8. Battery Cap



INSTALLING THE BATTERY

The Sightmark CORE 2.0 riflescopes are powered by a CR2032 battery. Should the reticle illumination grow dim or not illuminate, the battery needs to be replaced.

TO INSTALL A NEW BATTERY:

1. Unscrew the battery cap (8) on the illumination dial (7) counterclockwise.
2. Insert the new battery with the positive (+) side facing up.
3. Screw the battery cap on clockwise until firmly secure.

Do not over tighten.



ILLUMINATION CONTROL

The Sightmark CORE 2.0 rifle scope uses an etched reticle (excluding the 3-9x40 which uses a wire reticle). The reticle can be used without illumination and will appear black.

TO ACTIVATE THE RETICLE ILLUMINATION:

1. Rotate the illumination dial (7) either clockwise or counterclockwise. The dial is marked with the brightness setting ranging from 0 (off) to 6 with an OFF function between each illumination setting. Setting 6 is best for bright, outdoor environments. Setting 1 is best for low light environments.
2. Set the dial so the setting indicating desired brightness faces the shooter or the white indication mark on the housing.
3. To turn off, rotate the dial to the zero setting between each illumination setting.

DIOPTER ADJUSTMENT

The Sightmark CORE 2.0 riflescope eyepiece (2) is designed to rotate to adjust for diopter. Diopter is the measurement of the eye's curvature. By rotating the eyepiece, the diopter is adjusted to properly match each person's vision. If the reticle does not appear clear, crisp, nor sharp, rotate the eyepiece until the reticle becomes clear and sharp. This adjustment should stay the same unless the riflescope's operator changes.



VARIABLE POWER ADJUSTMENT

To change magnification, turn the magnification ring (3) to the desired level of power.



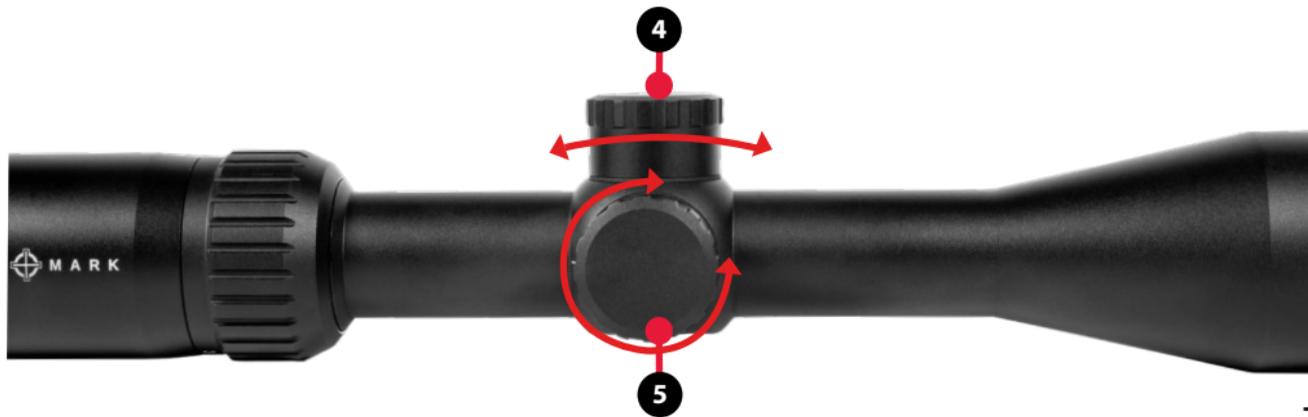
OPERATING THE WINDAGE AND ELEVATION ADJUSTMENTS

The Sightmark CORE 2.0 riflescope has finger-adjustable elevation and windage adjustments (4, 5) with audible clicks. The CORE 2.0 HX series offer capped turrets for protection from impacts and to eliminate accidental adjustments. For these models, the turret covers must be unscrewed to adjust.

TO MAKE WINDAGE AND ELEVATION ADJUSTMENTS:

1. Turn the adjustments in the appropriate direction needed to change the bullet's point-of-impact as indicated by the "UP" and "R" (right) arrows marked on the adjustments.

Each scope is marked with its click value on the scope. For example, a $\frac{1}{4}$ MOA click moves the point of impact $\sim 0.25"$ at 100 yards. 1 MOA of movement ($\sim 1"$ at 100 yards) would require 4 clicks. For a 50 yard zero, the MOA value would be divided by 2. So a $\frac{1}{4}$ MOA click would move the point of impact $\sim 0.125"$ at 50 yards.



PARALLAX CORRECTION

The Sightmark CORE 2.0 riflescope is equipped with a side focus dial that is used to eliminate parallax and finely focus the image (not included with the 3-9x40). Parallax occurs when the image of the target does not focus on the same optical plane as the reticle inside the riflescope. When parallax is present, the reticle appears to move over the target when the shooter's eye is not centered to the eyepiece. Adjusting the side focus dial properly will eliminate parallax.

TO ADJUST THE SIDE FOCUS DIAL:

1. Turn the side focus dial (6) until the image of the target is as sharp as possible. If you know the distance to your target, use the yardage marks on the dial as a starting reference.
2. Check for parallax by moving your head back and forth while looking through the scope. If the reticle appears to shift slightly adjust the focus dial until all shifting has been eliminated. Parallax is eliminated when there is no apparent shifting of the reticle.



MOUNTING

The Sightmark CORE 2.0 riflescope requires 30mm rings for mounting (SM13100DX uses 1" rings). For use on AR platforms, a cantilever style mount is recommended. For use on bolt platforms, a split mount is recommended. Mount the scope rings per the manufacturer's instructions. Do not perform a final tightening of the rings until you have thoroughly checked eye relief and reticle alignment. The riflescope should still be able to move fore and aft and rotate.

TO ACHIEVE MAXIMUM EYE RELIEF:

1. Set the riflescope to its highest magnification.
2. Set the riflescope as far forward in the rings as possible, then slowly move the riflescope closer to your eye. Stop moving the riflescope once a full field of view is visible.
3. Next rotate the riflescope to vertically align the crosshair. Use a reticle leveling tool if available.
4. Once alignment is complete, tighten the mounting ring's screws per the manufacturer's instructions.
Do not over tighten.

BORESIGHTING and SIGHTING IN

Boresighting and test firing should be performed safely on a firing range. Laser boresights are a quick and accurate method for sighting in. The traditional method of boresighting is listed below.

1. When mounting the riflescope on a bolt action rifle, remove the bolt; or when mounting to a semi-automatic rifle, disassemble the rifle until there is a straight line of sight through the bore.
2. Use a target at least twenty yards to fifty yards away when sighting in the riflescope. Look through the bore of the weapon and locate the bull's-eye of the target.
3. Sight in the target through the bore and then make windage and elevation adjustments, (see "Operating Windage and Elevation Adjustments" for instructions) to the riflescope until the reticle is centered on the bull's-eye.

To verify the riflescope is accurately sighted in, always fire a three-shot test group preferably using the same ammo manufacturer, grain, and lot number. 100 yards is the most common zero distance. For long range shooting, a 200 yard zero is generally preferred. Before firing, make sure the image is properly focused and no parallax is present.

4. After firing a group, use the center of this grouping to make adjustments to the elevation and windage, these adjustments will move your firearm's grouping to the center of the target.
5. Fire another three-shot test group to confirm adjustments and use the center of the new grouping to determine any final adjustments.

Once the riflescope is zeroed, the turrets on the Sightmark CORE 2.0 riflescope can be reset (using the provided tool) to the "0" mark on your elevation and windage dial. Make sure the covers are removed if your scope is equipped with turret caps.

To do this:

1. Use the provided tool or coin to loosen and then remove the screw top of the turret.
2. Lift turret cap straight up to remove.
3. Re-install the elevation turret cap, so that the "0" mark is aligned with the line indicator on the riflescope.
Replace the screw top of the turret and tighten.

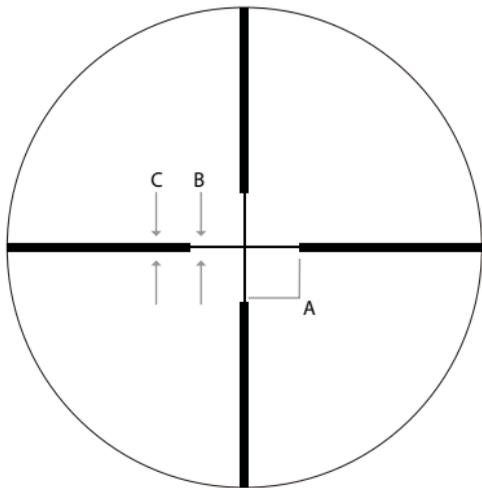
Do not over tighten.

USING THE DX RETICLE

Some of the Sightmark CORE 2.0 HX riflescopes are equipped with the Duplex Reticle. The Duplex was designed for hunters using their rifles for a variety of game – from large to small – at short to long ranges. The reticle's large 0.75 MOA posts draw the shooter's eye immediately to the center of the reticle for quick target acquisition.

The posts at the center are 5 MOA from the center. This is a quick reference point for holdovers at longer ranges and in low winds.

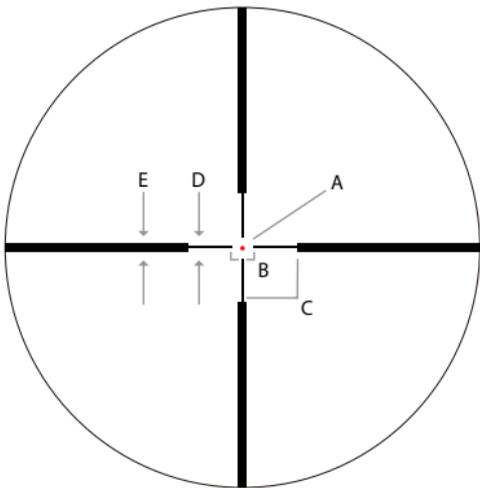
RETICLE DIMENSIONS (@ MAX MAGNIFICATION)	
A	5 MOA
B	.25 MOA
C	.75 MOA



USING THE DX ILLUMINATED RETICLE

Some of the Sightmark CORE 2.0 HX riflescopes are equipped with the Duplex Illuminated Reticle. The Duplex was designed for hunters using their rifles for a variety of game – from large to small – at short to long ranges. The reticle's large 0.75 MOA posts draw the shooter's eye immediately to the center of the reticle for quick target acquisition. The precise 0.5 MOA center dot allows the shooter to see more of the target and place a highly accurate shot on their target. The posts at the center are 5 MOA from the center. This is a quick reference point for holdovers at longer ranges and in low winds.

RETICLE DIMENSIONS (@ MAX MAGNIFICATION)	
A	0.5 MOA
B	2 MOA
C	5 MOA
D	.25 MOA
E	.75 MOA

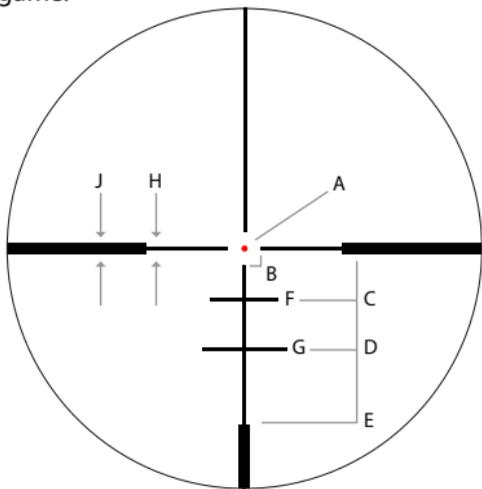


USING THE HDR2 RETICLE

Some of the Sightmark CORE 2.0 HX riflescopes are equipped with the HDR2 Hunter Dot Reticle 2. The HDR2 reticle is a variant of the HDR reticle designed for longer range applications. Overall, the Hunter Dot Reticle 2 is designed to reduce the time it takes to acquire the reticle's aiming point. This reticle can be used for hunting various game, large or small. The heavy duplex posts also aid in leading the eye toward the aiming dot. Below the center aiming dot are 2 sub tensions with windage and elevation holdovers. The elevation holdovers are at 5 MOA and 10 MOA with 3 and 4 MOA windage holdovers respectively.

In the 3-12x56 HDR2 and 4-16x50 HDR2, the design provides a 0.4 MOA central aiming dot at 12x magnification, critical for perfect shot placement on game.

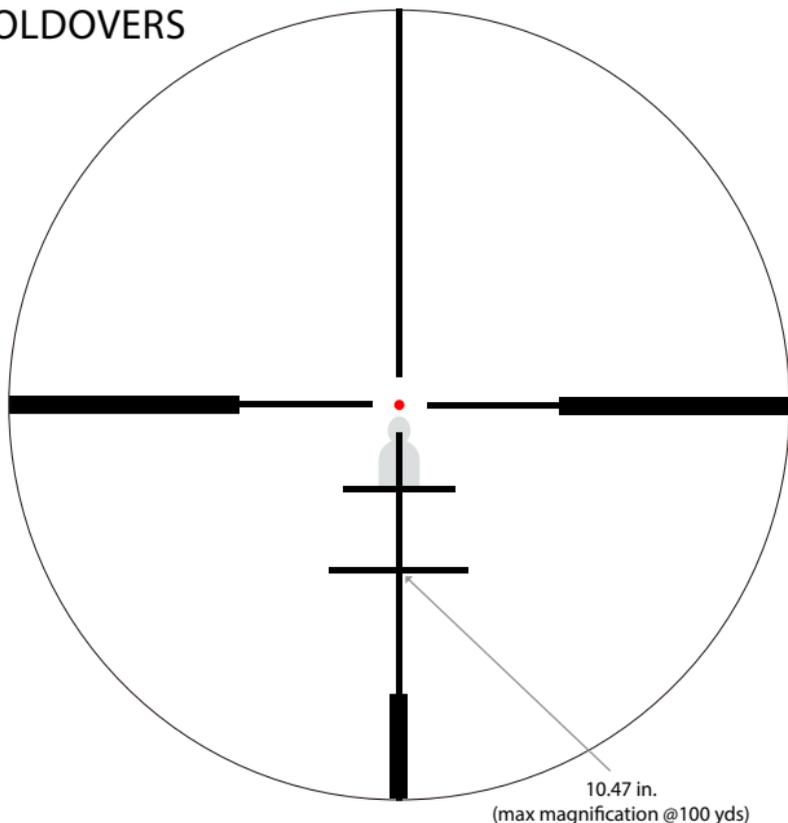
RETICLE DIMENSIONS (@ MAX MAGNIFICATION)	
A	0.4 MOA
B	2 MOA
C	5 MOA
D	10 MOA
E	20 MOA
F	3 MOA
G	4 MOA
H	.25 MOA
J	1 MOA



RANGING AND ELEVATION HOLDOVERS WITH THE HDR2 RETICLE

The HDR2 reticle was designed for hunters using their rifles for a variety of game – from large to small – at short to long ranges. The reticle's large 1 MOA posts draw the shooter's eye immediately to the center of the reticle for quick target acquisition. The ultra-precise 0.4 MOA center dot allows the shooter to see more of the target and place a highly accurate shot on their target. The posts at the center are 2 MOA from the center. This is a quick reference point for holdovers at longer ranges and in low winds. The first sub tension is 5 MOA from the center with a holdover for windage at 2.5 MOA left and right. The second sub tension is 10 MOA from the center with 2 holdovers for windage at 3.5 MOA left and right.

On top of that, they can be used for ranging on target of a known size. Since 10 MOA is roughly 10 inches (10.47 inches exact) at 100 yards, ranges can be estimated based on relative sizing. A known target is 10 inches tall and 10 inches wide, but it only reaches halfway to the lower sub tensions at max magnification. The range can be estimated at roughly 200 yards, since the 10in. x 10in. target only measures 5 MOA. 1 MOA=2.094 inches at 100 yards. If that same target appears to only reach 1/3 of the way to the 10 MOA sub tensions, the range can be estimated at roughly 300 yards since 1/3 of the way would be 3.33 MOA. 1 MOA=3.141 inches at 300 yards.



TROUBLESHOOTING

Proper authorization is required before shipping any product back to Sightmark. Failure to obtain authorization could result in your product being returned to the wrong address, lost, or damaged. Sightmark is not liable for products returned without authorization.

If the riflescope does not hold zero:

1. Verify the sight is mounted securely to the rifle. If the riflescope can be shifted in any direction, retighten the mount according to the mounting instructions but do not over tighten. The sight will need to be re-zeroed afterwards.
2. Check that all screws on the mount are securely tightened.
3. When sighting in, be sure to use factory-loaded ammunition of the same bullet type, weight, and preferably lot number.

The reticle does not illuminate:

1. Check that the battery is in working order and that the polarity of the battery is correct.
2. Check that there is no residue, film, or corrosion on the battery contacts that may be preventing the reticle from illuminating.

The reticle is blurry and not in focus:

1. Rotate the eyepiece to adjust the diopter adjustment until the reticle becomes clear and sharp.

The reticle has a halo or is fuzzy:

1. The halo or fuzzy appearance is caused by greater illumination than is required for the current environment the riflescope is being used in. Decrease the brightness level of the reticle until clear.

The reticle illumination turns off while firing:

1. Tighten the battery cap by hand until the cap is fully seated.

Do not over tighten.

MAINTENANCE

Proper maintenance of the Sightmark CORE 2.0 riflescope is recommended to ensure longevity. It is recommended that when the sight becomes dirty that it is wiped down with a dry or slightly damp cloth. Blow dirt and debris off all optics, and then clean lenses with a lens cleaning cloth. To remove oils or dried water spots, apply a small amount of denature alcohol to a lens cloth or cotton swab. Clean the surface of the lens and let dry. Finally use your breath to clean the lens once more. No further maintenance is required.

Do not attempt to disassemble any components of the scope.

STORAGE

Make sure that your Sightmark CORE 2.0 riflescope is securely attached to your rifle before storing. Ensure reticle illumination is turned off. Cover with the included lens covers. Remove the batteries if the unit will be stored for an extended period of time.

WARNING

Before handling the Sightmark CORE 2.0 riflescope read and understand the contents of your firearm's manual, and the Sightmark manual. Follow all standard safety precautions and procedures during firearm operation, even when the riflescope is not in use.

- Avoid hitting or dropping the unit.
- ALWAYS check that the chamber of your weapon is clear before mounting or dismounting the riflescope.
- The reticle illumination should be tested during periods of non-use to make sure it is still operating properly. Failure to follow standard firearm safety precautions and procedures, as well as the above warnings, is dangerous and may result in serious injury, damage to property, or death.



SIGHTMARK WARRANTY

Please visit www.sightmark.com for warranty details and information.

