





Core SX Riflescope Series

SM13060 SM13063 SM13061 SM13064LR SM13062 SM13065SGR

SM13066LR SM13081CBR

ABOUT SIGHTMARK®

Sightmark offers a wide range of products that include red dot sights, reflex sights, riflescopes, laser sights, night vision and award-winning flashlights and boresights. Sightmark products are inspired by military and law enforcement applications. All products are designed to be the most effective weapon accessories possible.

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ENGLISH

SIGHTMARK CORE SX SERIES

The Core SX Scope Series was designed to meet the needs of hunters shooting crossbows, pistols, shotguns, and rimfire rifles. Product engineers at Sightmark have developed this specialty line of optics based on one leading factor—purpose.

We understand that the needs of shooters differ, not only when and where they are hunting, but also the type of weapon they are shooting. As the demand for specialty hunting weapons increases, so does the demand for quality optics to match each pursuit. Each scope features multi-coated lenses, low-profile capped turrets, and a fully weatherproof body for exceptional dependability, rain or shine.

FEATURES:

- Single-piece tube
- Aircraft grade aluminum
- · Hard anodized finish
- Resettable, capped turrets
- · Shockproof, fogproof, weatherproof

INCLUDES:

- Neoprene scope cover
- Scope rings

TECHNICAL SPECIFICATIONS	4X32 .22LR	3-9X40 .22LR	2-7X32SGR
Reticle	.22LR BDC Reticle	.22LR BDC Reticle	SGR BDC Reticle
Magnification, (x)	4	3-9	2-7
Objective lens diameter (mm)	32	40	32
Eye relief (in/mm)	4 / 101.6	4 - 3.7 / 101.6 - 94	4.7 - 4 / 119.4 - 101.6
Field of view (m@100m)	10.83	11.8 - 4	18.1 - 4.8
Field of view (ft@100yds)	32.5	35.4 - 12.2	54.4 - 14.4
Diopter adjustment (+/-)	±2	±2	±2
Parallax setting (yds)	50	50	100
MOA adjustment (one click)	1/2 MOA	1/4 MOA	1/4 MOA
Windage adjustment range (MOA)	120	70	70
Elevation adjustment range (MOA)	120	70	70
IP Standard (water rating)	IP67	IP67	IP67
Body material	Aluminum	Aluminum	Aluminum
Lens coatings	Multi-coated	Multi-coated	Multi-coated
Operating temperature (°F/°C)	0 to 120 / -17 to 49	0 to 120 / -17 to 49	0 to 120 / -17 to 49
Length (in/mm)	9.1 / 231	12.26 / 311.4	11.26 / 286
Weight (oz)	11.7	14.2	14

TECHNICAL SPECIFICATIONS	1.5-4.5x32 Xbow	3x32 Xbow	4x32 Pistol
Reticle	VXR-M	VXR-L	TDR
Magnification, (x)	1.5-4.5	3	4
Objective lens diameter (mm)	32	32	32
Eye relief (in/mm)	3.5 - 3 / 88.90 - 76.2	3 / 76.2	14 / 355
Field of view (m@100m)	28.1 - 9.4	14.73	4.16
Field of view (ft@100yds)	84.3 - 28.1	44.2	12.5
Diopter adjustment (+/-)	+3 to -3	+3 to -3	+3 to -3
Parallax setting (yds)	30	30	100
MOA adjustment (one click)	1/2 MOA	1/2 MOA	1/2 MOA
Windage adjustment range (MOA)	80	80	60
Elevation adjustment range (MOA)	80	80	60
IP Standard (water rating)	IP67	IP67	IP67
Body material	Aluminum	Aluminum	Aluminum
Lens coatings	Multi-coated	Multi-coated	Multi-coated
Operating temperature (°F/°C)	0 to 120 / -17 to 49	0 to 120 / -17 to 49	0 to 120 / -17 to 49
Length (in/mm)	9.5 / 242	8.9 / 228	9.1 / 231
Weight (oz)	16	14	10

TECHNICAL SPECIFICATIONS	1x24 Shotgun	10-40x56 CBR
Reticle	Duplex	CBR
Magnification, (x)	1.5-4.5	10-40
Objective lens diameter (mm)	32	56
Eye relief (in/mm)	3.80 / 96.5	3.9 - 3.6 / 99 - 91
Field of view (m@100m)	27.3	3.383
Field of view (ft@100yds)	82	9.9 - 2.5
Diopter adjustment (+/-)	+3 to -3	+2 to -2
Parallax setting (yds)	100	15 - ∞
MOA adjustment (one click)	1/2 MOA	1/8 MOA
Windage adjustment range (MOA)	80	40
Elevation adjustment range (MOA)	80	40
IP Standard (water rating)	IP67	IP67
Body material	Aluminum	Aluminum
Lens coatings	Multi-coated	Fully multi-coated
Operating temperature (°F/°C)	0 to 120 / -17 to 49	0 to 120 / -17 to 49
Length (in/mm)	9 / 229	16.8 / 428
Weight (oz)	12	30.8

DIAGRAM

- 1. Eyepiece
- 2. Magnification ring
- 3. Windage/Elevation adjustment
- 4. Objective lens



DIAGRAM 10-40x56 CBR



6. Windage / elevation adjustment

7. Turret locking adjustment

8. Parallax adjustment knob

9. Magnification ring

10. Illumination dial

11. Eyepiece



INSTALLING THE BATTERY

The Sightmark Core SX Crossbow and 10-40x56 CBR 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 on the illumination dial (2) counterclockwise with a coin or flathead screw driver.
- 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 SX Crossbow and 10-40x56 CBR Riflescopes. The 10-40x56 CBR is equipped with both red and green illumination. The crossbow scope are equipped with red illumination only. The reticle can be used without illumination and will appear black. To activate the reticle illumination:

- 1. Rotate the illumination dial (2) either clockwise or counterclockwise. The 10-40x56 CBR riflescope dial is marked with "G" for green or "R" for red followed by the brightness setting ranging from 0 (off) to 5. The crossbow scopes dial is marked with 0 (off) to 11. Setting 5 or 11 is best for bright, outdoor environments. Setting 1 is best for low light environments.
- 2. Set the dial so the setting indicating desired color and brightness faces the shooter or the white indication mark on the housing.
- 3. To turn off, rotate the dial to the zero setting.



DIOPTER ADJUSTMENT

The Sightmark Core SX riflescope's eyepiece (1) is designed to rotate to adjust for diopter. The diopter is the measurement of the eye's curvature. People's eyes are all curved differently. 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.



OPERATING THE WINDAGE & ELEVATION ADJUSTMENTS

The Sightmark Core SX riflescopes come with pre-installed turret caps to protect the windage and elevation adjustments from impacts. The Sightmark Core SX riflescopes have finger adjustable elevation and windage adjustments (3) with audible clicks. Each scope has it's MOA click value marked on the adjustment. For example, a ¼ MOA click means each click moves the point of impact .25" at 100 yards. 1 MOA of movement would require 4 clicks. In order to make windage and elevation adjustments:

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

Note: For a 50 yard zero, the MOA value of the scope would be divided by 2. For example a $\frac{1}{4}$ MOA click would mean at 50 yards the point of impact would move .125" of adjustment

OPERATING THE LOCKING WINDAGE AND ELEVATION ADJUSTMENTS ON THE 10-40x56 CBR RIFLESCOPE

The Sightmark Core SX 10-40x56 CBR riflescope is equipped with exposed, lockable windage and elevation turrets (7). In order to make windage and elevation adjustments:

- 1. Unscrew the turret's locking adjustment (7) counter-clockwise on each turret. This will allow the adjustments to rotate. Note: it only requires 90 degrees of rotation to disengage the locking mechanism, the locking adjustment does not need to be fully unscrewed.
- 2. Turn the adjustment dials (6), in the appropriate direction needed to change the point-of-impact as indicated by the "UP" and "R" (right) arrows marked on the adjustments.
- 3. After adjustments are complete, screw the top locking screw clockwise on each turret. This will lock the adjustments and prevent them from rotating.

VARIABLE POWER ADJUSTMENT

To change magnification turn the magnification ring (2) to the desired level of power. The magnification levels are noted on the magnification ring. For variable power riflescopes, such as the 3-9x40 .22LR, the highest magnification point is noted with a dot. The dot is an indication that the reticle's ballistic holdovers or rangefinding features are true and will operate properly only at this power. Some models, such as the 4x32 .22LR, are a fixed power riflescope and do not have variable power adjustment. The reticle's ballistic holdovers or rangefinding features will operate properly at this fixed power.



For the Core SX 1.5-4.5x32 Crossbow Scope, instead of indicating magnification the ring indicates feet per second to calibrate the reticle to the crossbow's specific speed. To utilize the holdovers of the reticle the magnification ring must be set to the crossbow's bolt speed. It is recommended to measure the crossbow's actual bolt speed using a chronograph in order to achieve accurate results.

PARALLAX CORRECTION

The Sightmark Core SX 10-40x56 CBR is equipped with side parallax adjustment (8) that is used to eliminate parallax and finely focus the image. Parallax occurs when the image of the target does not focus at 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 adjustable objective lens properly will eliminate parallax. To adjust the adjustable objective lens:

- 1. Turn the dial on the side of the riflescope (8) 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 dial until all shifting has been eliminated. Parallax is eliminated when there is no apparent shifting of the reticle.



MOUNTING

The Sightmark Core SX riflescopes require scope rings (included) for mounting. If using aftermarket scope rings, mount the scope per the scope ring manufacturer's instructions. Do not perform a final tightening of the rings prior to checking eye relief and reticle alignment. The riflescope should still be able to move fore and aft and rotate. To achieve maximum eye relief:

- Set the riflescope to its highest magnification. For a fixed magnification riflescope, no magnification adjustment is necessary for this step.
- 2. Set the riflescope as far forward in the rings and slowly move the riflescope closer to your eye. Stop moving the riflescope once a full field of view is visible.
- 3. Next rotate the scope to vertically align the crosshair. Use a reticle leveling tool if available.
- 4. Once alignment is complete, tighten the mounting ring's screws evenly so the gap is even on both sides of the scope. Do not over tighten.

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 semiautomatic 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 bullseye 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 bullseye.

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. 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 adjustment turret can be reset to zero. To do this:

- 1. Hold the turret firmly in place with your fingers in order to prevent rotation. Use a flathead screwdriver to loosen the screw on top of the turret. Carefully remove the screw.
- 2. Once the screw is removed, carefully lift the turret cap straight up and off of the turret.
- 3. Re-install the turret cap, so that the "0" mark is aligned with the line indicator on the riflescope. Re-tighten screw to secure the turret. Do not over tighten. Repeat these steps for the other adjustment.

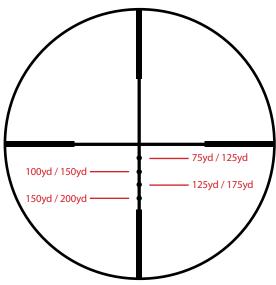
To reset twist lock turrets on the 10-40x56 CBR:

- 1. Hold the elevation turret firmly in place with your fingers in order to prevent rotation. Use a 1.3mm hex key to loosen the 3 hex screw on the turret. Do not remove the screws entirely.
- 2. Once the 3 hex screw are loosened enough, rotate the turret cap so that the "0" mark is aligned with the line indicator on the riflescope. Re-tighten all 3 hex screw. Do not over tighten. The windage adjustment should also be reset to "0" as well.

USING THE SPECIALTY SERIES RETICLES

.22LR BDC Reticle

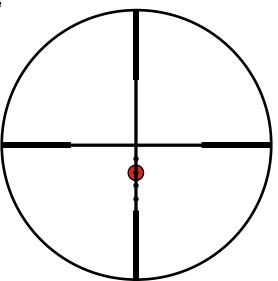
The Sightmark Core SX .22LR Rimfire riflescopes are equipped with a BDC reticle calibrated to .22LR 40 grain standard velocity ammunition and .22LR 29 grain high velocity ammunition. .22LR 40grain SV ammo should be used with a 50 yard zero with holdovers for 75yd, 100yd, 125yd, and 150yds. Next, the .22LR 29grain HV ammo should be used with a 100 yard zero with holdovers for 125yd, 150yd, 175yd, and 200yds. The .22LR BDC reticle is a second focal plane reticle. The advantage of a second focal plane reticle is that the size of the reticle will remain an ideal viewing size at any magnification. Ballistic holdovers, however, must be performed at the highest magnification for variable power riflescope models.



.22LR BDC Reticle Holdover ranges shown for Standard Velocity / High Velocity

Using the holdovers of the .22LR BDC reticle

Before firing with the holdover marks, adjust the magnification ring to the highest magnification or to the marked power on the magnification ring designation by a dot under the number. Note that fixed powered riflescopes do not require this step. This will calibrate the reticle dimensions to match the bullet's drop. Next, match the corresponding holdover dot to the target distance. For example, for a 150 yard shot using 29 grain high velocity ammo, aim with the second holdover dot. For shot placement, aim using the center of the holdover dot.



Example: 150 yard holdover shot placement

USING THE SPECIALTY SERIES RETICLES

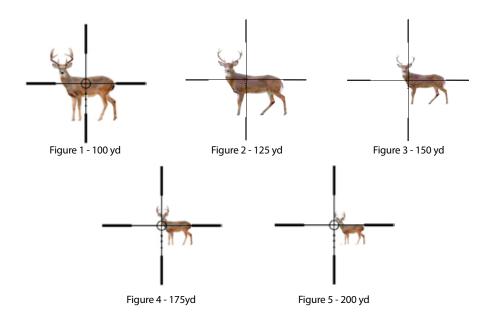
SGR Shotgun Ballistic Reticle

The Sightmark Core SX 2-7x32SGR riflescope is equipped with the SGR shotgun ballistic reticle. This reticle was designed for a variety of shotgun slugs (rifled and sabot) and muzzleloaders for close and long range shooting. The SGR reticle's holdovers, however, are also compatible with larger rifle calibers such as the .458 SOCOM and .50Cal Beowulf.

This shotgun reticle was truly designed for whitetail deer hunting. The design provides a fine .3 moa central aiming crosshair at 7x, critical for precise aiming. At 2x, the 10.5 MOA circle is ideal for close range, quick acquisition shooting. The 10.5 MOA circle at 50 yards will cover approximately 5" of a target, making quick reticle alignment to the 10" kill zone of whitetail deer easy. The duplex design was created to coincide with the average length of whitetail deer, allowing for quick ranging of your target.

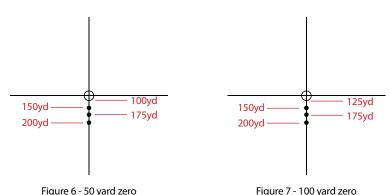
Ranging with the SGR reticle

The SGR reticle is designed to estimate the range of adult white tail deer based on the average overall length of the deer. Ranging is simple by matching the length of the deer (nose to tail) inside the thick brackets of the duplex reticle. The following images show approximately the size ratio for the distance for each holdover mark. For the most accurate range estimation, using a laser range finder is recommended. Note: range estimation must be done at 7x magnification.



Using the Holdovers of the SGR Shotgun Ballistic Reticle

The SGR reticle is a versatile design, and depending on your preferred compatible ammo, the sight can be zeroed at 50 yards and/or 100 yards. Depending on your preferred zero will determine the yardages of the holdover marks. A 50 yard zero will provide holdovers for 100yd, 150yd, 175yd, and 200yd. A 100 yard zero will provide holdovers for 125yd, 150yd, 175yd, and 200yd. Finally, the SGR reticle is a second focal plane reticle. The advantage of a second focal plane reticle is that the size of the reticle will remain an ideal viewing size at any magnification. Ballistic holdovers, however, must be performed at the highest magnification, or 7x.



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Before firing with the holdover marks, adjust the magnification ring to the highest magnification. For the 2-7x32SGR riflescope, this is 7x. This will calibrate the reticle dimensions to match the bullet's drop. Next, match the corresponding holdover dot to the target distance. For example, for a 200 yard shot use the fourth holdover or third dot. For shot placement, aim using the center of the holdover dot.

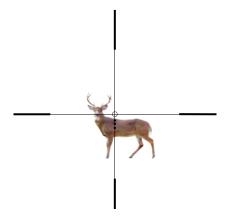


Figure 8 - 200 yard holddover

USING THE VXR RETICLES

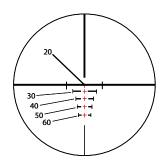
The Sightmark Core SX Crossbow Scope is equipped with the VXR reticles. The VXR-M reticle was designed for ranging medium size game utilizing the size of the vitals area. The VXR-M reticle also is designed for holdovers for various crossbow speeds from 250fps to 400fps up 60 yards. The VXR-L reticle was designed for ranging large size game utilizing the size of the vitals area. The fixed 3x optic provides a wide field of view ideal for close range hunting of large game. The VXR-L holdovers are designed for a 320fps crossbow speed.

The VXR-M and VXR-L reticle is based on a minute of angle (MOA) design. The adjustments in the Sightmark Core SX Crossbow Scopes are 1/2 MOA, meaning that each click will move the reticle .5" at 100 yards or .1" at 20 yards. The VXR-M reticle is a second focal plane reticle. The advantage of a second focal plane reticle is that the size of the reticle will remain an ideal viewing size at any magnification. Ranging, however, must be performed at the highest magnification. Holdovers, on the other hand, will depend on the speed of your crossbow and matching the indexed FPS reading on the magnification ring.

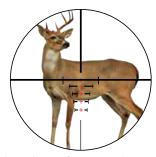
Ranging with the VXR-M reticle

The VXR-M reticle is designed to range medium size white tail deer based on the length of their vital area, generally 10". Ranging is simply by mathcing the horizontal subtensions to the vital area of the deer. For example, by mathcing the vital zone of a white tail deer to the first set of hash marks the deer is approximately 20 yards away. Ti is also possible to range small and large size deer using the same reticle. Generally, a small white tail deer will have a vital zone that sets just inside each bracket, approximately 1/2" to 1" on each side. A large white tail or mule deer will have a vital zone that sets just outside that bracket, approximately 1" on each size.

Note: Ranging should always be done at the highest magnification, 4.5x or the 400fps mark.



Yardage for each aiming point is marked.



Example: Vital zone of target matches 20yd mark.

USING HOLDOVERS OF THE VXR-M

After ranging the deer at the highest magnification, adjust the magnification dial to match your crossbow's exact arrow speed. This will calibrate the reticle dimensions to match the arrow's ballistics. The chart on the next page show the crrespondence between arrow speed and magnification. Next, the same horizontal hash mark used to range the deer also corresponds to the holdover (aiming point) for arrow drop compensation. For shot placement, aim with the crosshair corresponding with the range of the deer. For deer aim for the center of the heart/lung area in the vital zone located about half way up from the brisket and just behind the foreleg.

INDEXED MAGNIFICATION/SPEED CHART

Magnification	Matched Arrow Speed
1.5	250
1.75	270
2	280
2.25	295
2.5	305
2.75	320
3	330
3.25	350
3.5	360
3.75	370
4	380
4.25	390
4.5	400



Example: Vital zone of target matches 20yd mark. Aiming point is marked.

Note: It is recommend to measure your crossbow's arrow speed with a chronograph. Generally crossbows shoot their advertised speeds with light weight arrows, about 350 to 390 grains. For hunting medium size game it is recommended to use a 400 to 425 grain arrow weight. Generally the crossbow speed will be slowed about 20 feet per second. For example a 350fps crossbow using a 425 grain arrow will register speeds at 320fps. For best results, know and use your crossbows true arrow speed.

RANGING WITH THE VXR-L RETICLE

The VXR-L reticle is in a fixed magnification scope so no adjustment of power is required to range. The holdovers in the VXR-L are desinged for a 320fps crossbow arow speed and no optical adjustments are required for using holdovers for shot placement. This crossbow scope is desinged to simply aim to range and shoot.

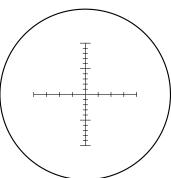
The VXR-L reticle is desinged to range large game such as elk and cribour based on the length of their vital area, generally 15". Ranging is simple by matching the horizontal subensions to the vital area of the target. For example, by mathcing the vital zone of an elk to the second set of hashmarks the elk is approximately 30 yards away. It is also possible to rane moose using the same reticle. Generally, a moose will have a vital zone that sets just outside each bracket, approximately 1.5" to 3" on each side.

USING HOLDOVERS OF THE VXR-L

After ranging the deer at the highest magnification, adjust the magnification dial to match your crossbow's exact arrow speed. This will calibrate the reticle dimeensions to match the arrow's ballistics. The chart below shows the correspondence between arrow speed and magnification. Next, the same horizontal hash mark used to range the deer also corresponds to the holdover (aiming point) for arrow drop compensation. For shot placement, aim with the crosshair corresponding with the range of the deer. For deer aim for the center of the heart/lung area in the vital zone located about half way up from the brisket and just behind the foreleg.

CBR Competition Benchrest Reticle

The Sightmark Core SX 10-40x56 riflescope is equipped with the CBR reticle. The CBR reticle was designed for F-Class and benchrest competition shooting (22LR or long range) At 20x, the reticle has a fine .016 MOA thickness. Making it easy to aim precisely and not cover up the target. At 50 yards the reticle crosshair would cover .032" of the target or about 1mm. At 1,000 yards the reticle would cover .16" or 4mm of the target. The elevation has 2 MOA increments out to 20 MOA. Elevation can be used for holdovers for heavy grain large calibers. Windage has 5 MOA increments out to 20 MOA for windage holdovers.



MAINTENANCE

Proper maintenance of your Sightmark Core SX 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 SX Riflescope is securely attached to your crossbow before storing, and be sure that the reticle illumination is turned off. Cover with the included neoprene cover. Remove the batteries if the unit will be stored for an extended period of time.

WARNING

Before handling the Sightmark Core SX 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 reflex sight 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.

TROUBLESHOOTING

Never ship back a product without getting proper authorization beforehand. Doing so could result in losing the product due to a multitude of reasons, i.e. sending it to the wrong address and other problems associated with unexpected packages.

The reticle does not illuminate:

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

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 with a coin or flathead screw driver so the cap is fully seated.

If the riflescope does not hold zero:

- Verify the riflescope is mounted securely to the rifle. If the scope can be shifted in any direction, retighten
 the mount according to the mounting instructions but do not over tighten. The riflescope will need to be
 re-zeroed afterwards.
- 2. Check that all screws on the mount are securely tightened.

The reticle is blurry and not in focus:

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

SIGHTMARK WARRANTY

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

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