

SIGHT MARK[®]

USER MANUAL



**AR AND M1
RIFLESCOPES SERIES**

SM13050	SM13053	SM13056
SM13051	SM13054	
SM13052	SM13055	

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.

SIGHTMARK® - MAKE YOUR MARK®



ENGLISH

SIGHTMARK RIFLESCOPES

Sightmark AR and M1 Riflescopes target the leading edge of premium, tactical operation optics. Whether your work, competition or passion keeps you going with a modern sporting rifle at the ready, you can depend on the same demanding Sightmark quality you have come to expect in our riflescope lineup. AR and M1 fixed and variable-magnification riflescopes are specifically designed to complement your AR platforms, bolt-action MSR and scout rifles. Built as tough as the professionals who trust Sightmark performance to get them back home to their families after a long, high-stakes day, AR and M1 Riflescopes boast rugged yet lightweight, compact hard-anodized 6061-T6 aluminum tubes; premium, fully multi-coated lenses; digital reticle illumination; generous eye relief; rapid power rotation eyepiece; ultra-reliable shockproof, fogproof and IP67 waterproof performance; and a rock solid lifetime warranty.

FEATURES:

- BDC reticle
- Exposed, pop-up locking turrets
- Rapid Power Rotation eyepiece
- Digital reticle illumination
- Single-piece, tube
- Hard anodized finish
- Shockproof, fogproof, waterproof
- Fully multi-coated optics

INCLUDES:

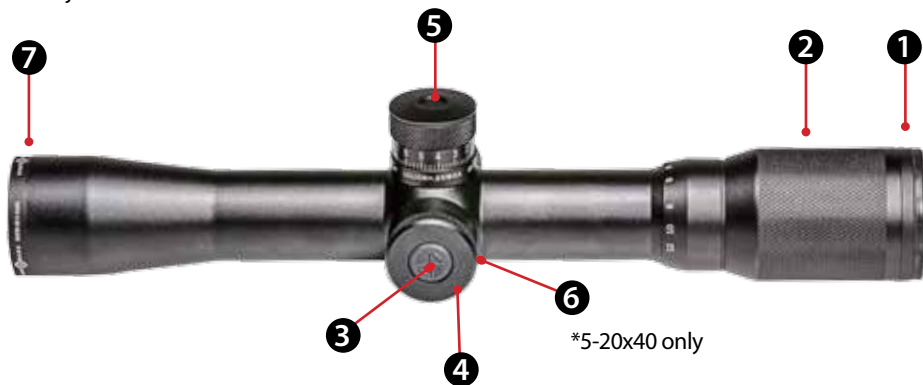
- CR2032 battery
- Lens cloth
- Lens cover

TECHNICAL SPECIFICATIONS

	1-4x20	3-12x32	5-20x40	2.5x20	2-7x32
Magnification (x)	1-4	3-12	5-20	2.5	2-7
Objective lens diameter (mm)	20	32	40	20	32
Eye relief (in/mm)	4.5 / 114.3	4.2 / 107.7	4 / 101.6	8 / 203.2	8 / 203.2
Field of view (ft @100yd)	93 -22.7	32.5 – 8	20.4 – 5.1	20.4	25.8 – 7.3
Diopter adjustment (+/-)	+3 to -3	+3 to -3	+3 to -3	+3 to -3	+3 to -3
Parallax setting (yds)	100	100	25 - ∞	50	50
Windage maximum adjustment range	100	90	70	55	55
Elevation maximum adjustment range	100	90	70	55	55
Adjustment (one click)	½ MOA	¼ MOA	¼ MOA	½ MOA	¼ MOA
IP Standard (water rating)	IP67	IP67	IP67	IP67	IP67
Body material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Lens coatings	Fully multi-coated	Fully multi-coated	Fully multi-coated	Fully multi-coated	Fully multi-coated
Operating temperature (°F/°C)	0 to 122 / -17 to 50	0 to 122 / -17 to 50	0 to 122 / -17 to 50	0 to 122 / -17 to 50	0 to 122 / -17 to 50
Length (in/mm)	8.7 / 221	11.6 / 294	12.8 / 326	7.6 / 194	9.5 / 241
Weight (oz)	19.2	20.8	23.6	11.8	14.2

DIAGRAM

1. Eyepiece (diopter) adjustment
2. Rapid Power Rotation eyepiece
3. Digital illumination switch
4. Battery cap
5. Locking windage/elevation adjustment
6. Focus adjustment knob*
7. Objective lens



INSTALLING THE BATTERY

Sightmark 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 (4) 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

Sightmark Riflescopes use an etched reticle. The reticle can be used without illumination and will appear black. To activate the reticle illumination in red:

1. Press the digital illumination switch (3) to turn on reticle illumination.
2. To cycle through the brightness settings, press the digital switch consecutive times until the desired brightness level is reached. Settings 1 through 8 are best for daytime use. Settings 9 and 10 are best for low light use.
3. To turn off the reticle illumination, press and hold the digital switch for 3 seconds.

DIOPTER ADJUSTMENT

The Sightmark riflescope's eyepiece (1) is designed with a fast focus eyepiece and will 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 or sharp, rotate the eyepiece until the reticle becomes clear and sharp. It may be necessary to hold the eyepiece in place to prevent the magnification from changing. This adjustment should stay the same unless the riflescope's operator changes.



OPERATING THE WINDAGE AND ELEVATION ADJUSTMENTS

The Sightmark AR riflescopes are equipped with exposed, locking windage and elevation turrets (5). Rapid M1 riflescopes feature finger-click adjustments that come with pre-installed turret caps to protect the windage and elevation adjustments from impacts. Each scope has its MOA click value marked on the adjustment. For example, a $\frac{1}{4}$ MOA click means each click moves the point of impact .25" at 100yards. 1 MOA or 1 inch of movement would require 4 clicks.

In order to make windage and elevation adjustments on AR riflescope:

1. Pull up on the turret (5) to unlock the adjustment mechanism. This will allow the turret to be rotated.
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.
3. After adjustments are complete, push down on the turret to lock the adjustment in place. This will lock the adjustments and prevent them from rotating.

In order to make windage and elevation adjustments on M1 riflescope:

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.
3. After adjustments are complete, screw the adjustment covers back on.

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.

VARIABLE POWER ADJUSTMENT

Each variable power riflescope is equipped with the rapid power rotation eyepiece. By rotating the entire eyepiece, the magnification will change. This design allows the user to grab any part of the eyepiece to quickly change magnification. The magnification levels are noted on the front of the eyepiece. To increase magnification, turn the eyepiece clockwise. To decrease magnification, turn the eyepiece counter-clockwise. Please note that this unique optical design does not change the diopter or reticle focus; therefore, the reticle will always be in focus when making power adjustments.



MOUNTING

Sightmark AR riflescopes require 30mm rings for mounting. Sightmark M1 riflescopes require 1" rings for mounting. When using aftermarket scope rings, mount the riflescope 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:

1. 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.

PARALLAX CORRECTION

The Sightmark AR 5-20x40 is equipped with side focus adjustment (6) 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 side focus adjustment properly will eliminate parallax. To adjust the side focus adjustment:

1. Turn the dial on the side of the riflescope (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 side to side while looking through the scope. If the reticle appears to shift slightly over the target, adjust the dial until all shifting has been eliminated. Parallax is eliminated when there is no apparent shifting of the reticle over the target.

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 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 turrets can be reset to the “0” mark on your elevation and windage dial.

To reset zero on AR riflescopes:

1. Make sure the dial is in the pushed down, locked position. Unscrew the protective cap located at the top of the turret. This will expose a flat head screw. Use a flathead screwdriver to remove the screw.
2. Once the screw is removed, take off the turret cap and place it back on the scope so that the “0” mark is aligned with the line indicator on the riflescope. Re-tighten the flathead screw and screw on the protective cap. Do not over tighten. The windage adjustment should also be reset to “0” as well.

To reset zero on M1 riflescopes:

1. Unscrew the adjustment cover and locate the two phillips screws on top of the turret.
2. Hold the turret in place and using a phillips screwdriver, loosen the two phillips screws. The screws do not need to be removed.
3. Rotate the turret so that the “0” mark is aligned with the line indicator on the riflescope. Re-tighten the two screws. Do not over tighten. The windage adjustment should also be reset to “0” as well.

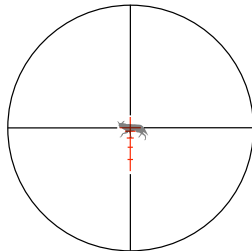
USING THE SHEPHARD AND SCYTHE RETICLES

SHR-223 Shepherd Reticle

The shepherd reticle is calibrated for .223 Remington 55gr and 62gr and was designed for triple duty application: tactical, competition, and hunting. The duplex reticle was designed for coyote hunting and 3-gun competitions with a 100-yard zero. The design provides a fine central aiming crosshair at higher magnifications and holdovers for 200, 300, 400 and 500 yards. Those respective holdovers were designed to coincide with the average length of a coyote or width of IPSC target, allowing for ranging of your target.

Ranging with the SHR-223 reticle

The SHR-223 reticle is designed to estimate the range of adult North American coyotes based on the average length from head to rear (excluding the tail). Ranging is simple by matching the length of the coyote (excluding the tail) inside the horizontal aiming points of the duplex reticle. The following image shows approximately the size ratio for the distance of 100 yards. For the most accurate range estimation, using a laser range finder is recommended. Note: range estimation must be done at the rifle's lowest magnification.



The SHR-223 reticle can also be used for 3-gun competitions to estimate the range of IPSC targets based on the shoulder width of the target. Ranging is simple by matching the width of the IPSC target to half of the horizontal holdover points of the duplex reticle. The following images show the approximate size ratio for distances of 100 and 200 yards. Note: range estimation must be done at the rifle's lowest magnification.

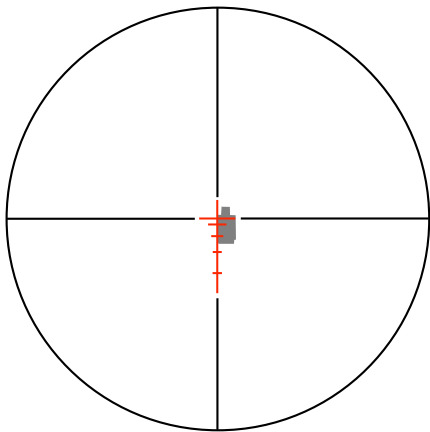


Figure 1 100yd

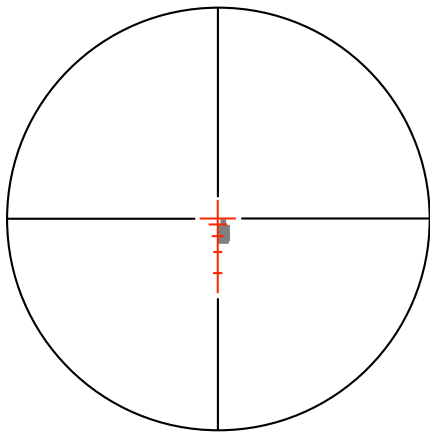
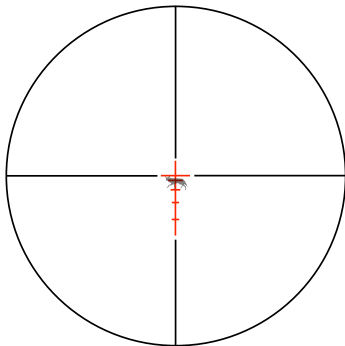


Figure 2 200yd

Elevation Holdovers

By knowing the distance to your target, the ballistic holdovers can then be used. The SHR-223 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 each model. Before firing with the holdover marks, adjust the magnification to the highest power. In the example below, a 200 yard holdover is used by aiming with the second holdover line.

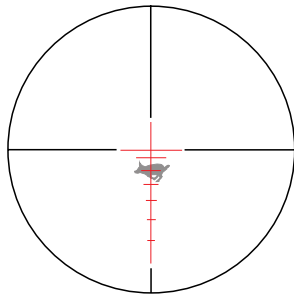


SCR-300 and SCR-308 Scythe Reticle

The Scythe reticles are calibrated for .300 Blackout 110gr. and 120gr. (SCR-300) and .308 Win. 150gr. (SCR-308). The duplex reticles are designed for hog hunting with a 100 yard zero. The design provides a fine central aiming crosshair at higher magnifications and holdovers. Those respective holdovers were designed to coincide with the average length of hog, allowing for ranging of your target.

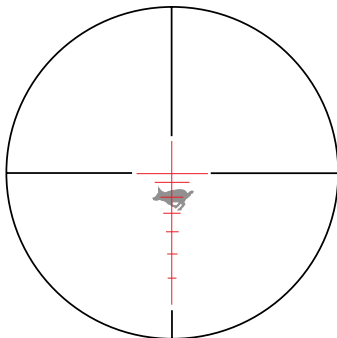
Ranging with the Scythe Reticle

The Scythe reticle is designed to estimate the range of adult hogs based on the average length from head to tail. Ranging is simple by matching the length of the hog inside the horizontal aiming points of the duplex reticle. The SCR-300 allows ranging from 100 to 300 yards. The SCR-308 allows ranging from 100 to 700 yards. The following image shows the approximate size ratio for the distance of 300 yards. For the most accurate range estimation, using a laser rangefinder is recommended. Note: range estimation must be done at the riflescope's lowest magnification.



Elevation Holdovers

By knowing the distance to your target, the ballistic holdovers can then be used. The Scythe 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 each model. Before firing with the holdover marks, adjust the magnification to the highest power. The SCR-300 reticle has holdovers for 200 and 300 yards. The SCR-308 reticle has holdovers for 200, 300, 400, 500, 600, and 700 yards. In the example below, a 300 yard holdover is used by aiming with the second holdover line.



MAINTENANCE

Proper maintenance of your Sightmark Rapid Riflescope is recommended to ensure longevity. It is recommended that when the riflescope 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 denatured 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 Rapid Riflescope is securely attached to your firearm before storing and be sure that the reticle illumination is turned off. Remove the batteries if the unit will be stored for an extended period of time.

WARNING

- Before handling the Sightmark Rapid 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.

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.

If the riflescope does not hold zero:

1. Verify the riflescope 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 riflescope 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 prevent 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 so the cap is fully seated.

SIGHTMARK WARRANTY

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

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This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



www.sightmark.com