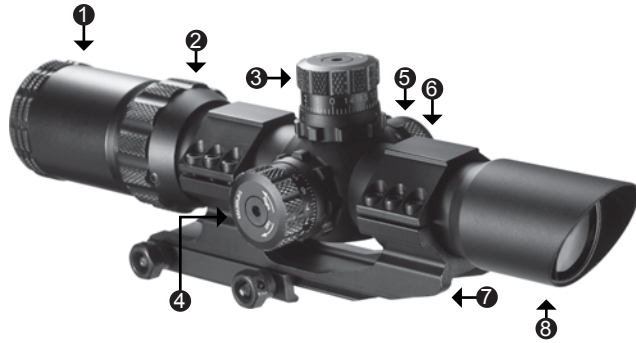


# 1-4x28 IR SWAT-AR Scope Manual



### Parts of the Scope

1. Eyepiece
2. Zoom Ring
3. Elevation with Lockable Bell
4. Windage with Lockable Bell
5. Rheostat
6. Battery Compartment
7. Ring Mount
8. Angled Objective Lens  
- Objective lens is set back in the housing to allow the sun shade to cast a shadow and reduce glare for use in bright sun.



**WARNING**  
BE CERTAIN THAT YOUR FIREARM IS NOT LOADED  
AND POINTED AWAY FROM YOU IN A SAFE DIRECTION

DIRECTLY VIEWING THE SUN OR ANY LIGHT SOURCE WITH THIS OPTICAL DEVICE CAN CAUSE PERMANENT EYE DAMAGE.

Use safe gun handling procedures at all times.

ATTENTION: All shooting should be done in an approved range and in a safe area and that eye and ear protection is used

DANGER: If you used a bore sighting collimator or another bore obstructing device, remove it before proceeding. If the barrel has been drilled for a mount, ensure that the screws do not obstruct the bore. Do not fire live or even blank ammunition with an obstructed barrel as any obstruction can cause serious damage to the gun and the possible injury to yourself and other people around you.

### Focusing

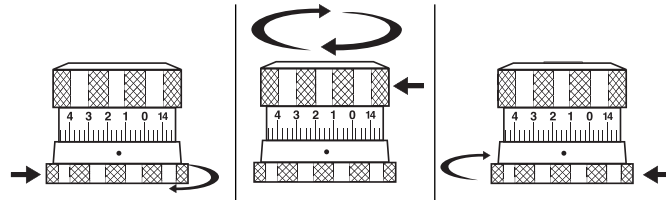
1. Hold the scope about 2 to 3 inches (6 to 10 cm) away from your eye and look through the eyepiece until you see the full field of view.
2. If your reticle isn't sharp, turn the eyepiece focusing ring in either direction until the image seen is sharp and focused.

### Mounting

1. Make sure you have the appropriate rail for your rifle, if not your firearms dealer will assist you.
2. Place and secure the scope onto the mount ring. Once you have fitted the scope to your desired position, tighten the mount ring down onto the rail.

### Pre-Zeroing

1. Pre-zeroing sighting can be done with scope guide or a shot shaver which can be obtained from your firearms dealer.
2. With scope mounted set zoom to mid power and rest the rifle on a steady support.
3. Look through the bore from the breech at a target 50 yards away. Move to butt stock so that the target is in the center of the bore.
4. Without moving the rifle, loosen the lockable bell of the scope at the base of the turret by turning it counter clockwise with fingers (see image below)
5. Turn the windage and elevation adjustment dials in the direction you wish the bullet's point-of-impact to change. (up/down, left/right)
6. Tighten the lockable bell of the scope at the base of the turret by turning it clockwise.



Note: If a large amount of windage and elevation adjustments are needed to bore sight, make half of the scales available adjustments at a time for the windage and elevation.

### Boresighting

Bore sighting your rifle with your rifle will allow you to quickly and more accurately "zero in" or "sight in" your rifle to the correct shooting distance. You will always need to shoot a test group of shots after you bore sight your rifle to your rifle. Bore sighting your rifle will reduce wasting ammunition when targeting in your rifle during test shooting.

Example: You have a newly mounted zoom power rifle scope on a rifle and aim at a target 100 yards away. You aim for the center of the target with the scope and fire for the first time, but you see no impact on the target in the view of the scope. If you were not able to see where the bullet actually landed then you would need to guess how you need to adjust the scopes windage and elevation on the next shot. You would need to continue shooting multiple test shots and adjusting the scope until the actual impact of the bullet comes into view of the scope. This will waste time and ammunition.

Why does this happen? A newly mounted rifle scope's actual zero point on a rifle is unknown due to many variables; type of scope base, height of mounting rings, type of rifle, type of ammunition etc.

### Zeroing

Set scope zoom to the max power, and adjust the windage and elevation knobs as needed to correct the aim.

After zeroing in your scope, you can follow pre-zeroing procedure to scale back to zero.

Each click adjustment of the windage and elevation changes/moves the bullet strikes by the amount in chart below

### 1/2" MOA

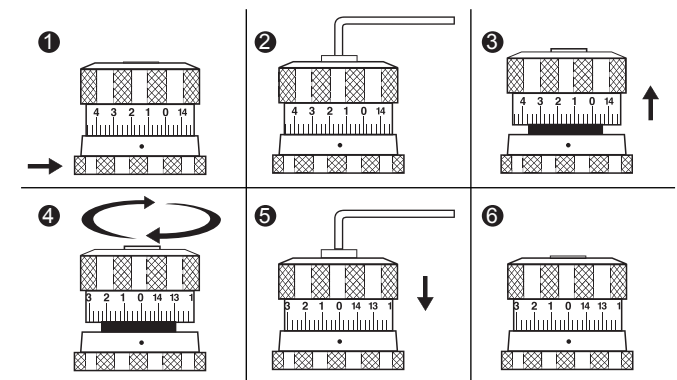
WINDAGE / ELEVATION (inches per click or movement)			
25yds	50yds	100yds	200yds
1/8 inch	1/4 inch	1/2 inch	1 inch

### Re-Zeroing

Re-zeroing scale back to zero is optional and should only be done after zeroing in your scope.

WARNING: Turning the hex screw too tight or too loose can cause damage to the scope

1. Loosen the lockable bell at the base of the turret by turning it counter-clockwise.
2. Loosen hexagon screw by turning counter clockwise until the screw hits the stopper screw inside. About 1-1½ turn of the allen wrench.  
Note: The hexagon screw CANNOT be totally removed.
3. Pull the turret cap gently up to disconnect it from the drum inside.
4. Turn the cap to reset the scale to zero.
5. Hold the cap and turn hexagon screw clockwise to lock the cap 1-1½ turn of the allen wrench.
6. Your scale is now re-zeroed.



### Illuminated Mil-Dot Reticle

The black mil-dot illuminates to red for low light targeting or green for daylight targeting. The adjustable reticle brightness offers variable lighting intensities. When replacing batteries use CR2032 with the "+" side up.

## Mil-Dot Reticle

The space between the centers of the dots equal 1 milliradian. (mil)  
One Mil equals 3.6 inches @ 100 yards or 36 inches @ 1000 yards

To use the MIL-DOT system effectively you must precisely estimate the size of the target. Example: Lets say an average bear is 6 feet tall. The bear is covered by 4 mils in your reticle. Convert the bear's 6 feet to yards. After converting you should be left with 2 yards. Multiply the 2 yards by 1000 yards, (average power of scope) you should be left with 2000 yards. Divide 2000 yards by the number of mils that covers the bear (4 mils) it will equal out to 500 yards. Those 500 yards are the distance between you and the bear. (below is a formula for calculating the range with your Mil-Dot Reticle and below that is a table of mils)

$$\frac{\text{Height of target (yards)} \times 1000}{\text{Height of target}} = \text{Range (yards)}$$

It is important that you estimate the height of the target is correct. The slightest size difference can throw off the range. A good way of knowing the height of objects is by training on your spare time.

Here are some suggestions, to increase your range estimation skills

- Build targets of known dimensions such as 1 yard squares and number them so that the targets can be seen from a distance.
- Now place the targets at various ranges making sure that the targets are visible from the start point.
- Return to the start point. With a notepad, number left side of the pad with the number of targets you have put out.
- Look at the targets you have put out and determine the range with the naked eye. Write down this figure on your note pad next to the corresponding target number. This will help you develop your eye skills and assist you in estimating range by optics.
- After your finished determining the range with the naked eye, establish a stable shooting position with your unloaded rifle or mil dot equipped spotting scope.
- Use the formula listed below to determine range. Using an odometer or a measuring wheel determine the actual range to the targets.
- Compare the actual range between using a measuring wheel, naked eye and using mils.

$$\frac{\text{Height of target (yards)} \times 1000}{\text{Height of target}} = \text{Range (yards)}$$

## Windage & Moving Targets

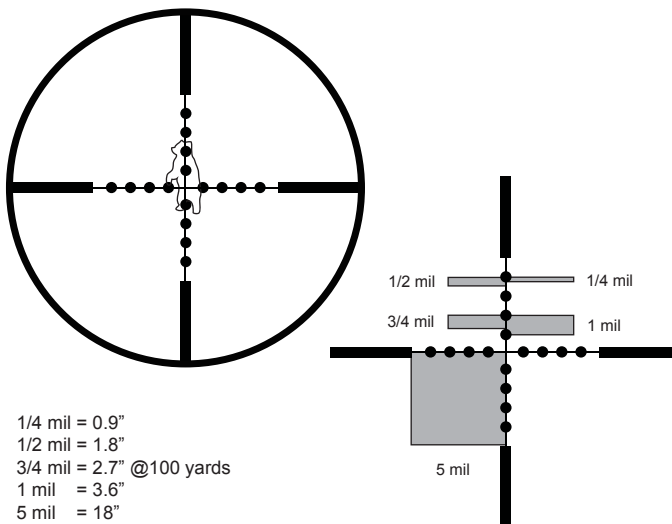
It is possible for you to use your Mil-Dot scope for calling wind, this requires practice and the same goes for moving targets. Moving targets are an extremely difficult task. By practicing and attending competitions, even as an observer, will help you develop the skills for using your Mil-Dot scope. Watching and asking experienced shooters with the wind, and moving objects, will help you become stronger at using the Mil-Dot for windage & moving targets.

This skill is extremely difficult, as well as difficult to train. However, if you have the means of making a moving target in an area where you can train you should do so at every opportunity. Here are some suggestions on moving targets

- Start with slow speeds and then build speed as skill increases. Do not increase target speed until you can hit them 90% or better all of the time.
- Use a target size that at a minimum replicates the kill zone of your intended target. In the beginning, a larger target should be used to show hits to allow you to adjust your leads/actions.

- Begin training at close ranges, (50yards) and increase as your skills increase.

- You should use a partner slightly behind your shoulder with a spotting scope and looking for a bullet trace and provide you with the feedback as to where the bullet is landing



## Maintenance

Your riflescope is shockproof and waterproof but you should not take it apart or clean it internally. If your scope requires repairs or adjustment you should bring it your firearms dealer or an authorised service center. Please refer to the warranty section for further details.

The exposed optical surfaces can be wiped clean occasionally with the included lens cloth or with a special optical cleaning cloth. It is recommended to keep the protective lens cover on the scope when not being used.

The metal body of your scope can be cleaned by using a soft brush or a damp cloth followed by a soft cloth. To maintain the scope, you can use a silicon treated cloth to restore luster and protect the scope against corrosion, however do not touch the lenses with the silicone cloth.

		TABLE OF MILS FOR OBJECTS IN INCHES									
INCHES		9	12	16	18	20	22	24	28	32	
YARDS		0.25	0.333	0.444	0.5	0.558	0.611	0.667	0.778	0.889	
MIL	1	250	333	445	500	5556	611	667	778	889	
MIL	1.5	167	222	296	333	371	407	445	519	593	
MIL	2	125	167	222	250	278	306	334	389	445	
MIL	2.5	100	133	178	200	222	244	267	311	356	
MIL	3	83	111	148	167	185	204	222	259	296	
MIL	3.5	71	95	127	143	159	175	191	222	254	
MIL	4	63	83	111	125	139	153	167	195	222	
MIL	4.5	56	74	99	111	1124	136	148	173	197	
MIL	5	50	67	898	100	111	122	133	156	178	
MIL	5.5	45	61	81	91	101	111	121	141	162	
MIL	6	42	56	74	83	93	102	111	130	148	
MIL	6.5	38	51	68	77	56	94	103	120	137	
MIL	7	36	48	63	71	79	87	95	111	127	



## LIMITED LIFETIME WARRANTY

BARSKA® Optics, as manufacturer, warrants this new precision optical product to be free of original defects in materials and/or workmanship for the length of time specified by this warranty. This warranty does not include damage caused by abuse, improper handling, installation, maintenance, normal wear-and-tear, unauthorized repairs or modifications and tampering in anyway.

This warranty is limited to the original purchaser and is not transferable. This warranty applies only to products purchased in the United States of America and Canada.

In the event of a defect within 30 days, the consumer must return the defective unit to the BARSKA dealer (the place of purchase) at his/her own expense.

Beyond 30 days, BARSKA products should be sent to the following address for warranty repairs. Products must be packed carefully and sturdily to prevent damage in transit, and returned freight prepaid to:

BARSKA® OPTICS  
Repair Department  
855 Towne Center Drive  
Pomona, CA 91767

For additional and updated information  
please visit our website at [www.barska.com](http://www.barska.com)

Please email [info@barska.com](mailto:info@barska.com) or call 1-888-666-6769 for Return Merchandise Number (RMA#) before any returns.

NOTE: All merchandise received without a valid RMA # will be returned to shipper at his/her own expense.

Please include all of the following when returning BARSKA products for service and/or replacement:

1. Please write your complete details (Name, Address, Telephone #, E-mail address, RMA#, etc.)
  2. Purchase receipt or Proof of Purchase. (Original/Copy)
  3. A brief explanation of the defect.
  4. A Check/Money Order of \$25.00 to cover inspection, shipping and handling.
- \*Please allow 6-8 weeks for delivery.

This product will either be replaced or repaired at the discretion of the warrantor. If it's a discontinued item, we will replace the product with an equivalent product. Should the repair not be covered by this warranty, an estimate will be sent for your approval. Non-warranty repairs or refurbishing of your optical products are always provided at a reasonable cost.

BARSKA® Optics shall not be liable for any consequential, incidental and/or contingent damages whatsoever. We will not pay shipping, insurance or transportation charges from you to us, or any import fees, duties and/or taxes. This warranty supersedes all previous BARSKA® Optics warranties.