Trijicon®

Instruction Manual

VCOG® Riflescope

1-6x24 | 1-8x28

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WARNINGS & CAUTIONS

WARNING

Before installing the optic on a firearm, ensure the weapon is UNLOADED.

CAUTION

DO NOT allow harsh organic chemicals such as Acetone, Trichloroethane, or other cleaning solvents to come in contact with the Trijicon VCOG®. They will affect the appearance but they will not affect its performance.

INTRODUCTION

The Trijicon VCOG® (Variable Combat Optical Gunsight) is a rugged variable powered riflescope with an LED illuminated first focal plane reticle. The VCOG is designed for extreme durability and features outstanding glass quality and near constant 4 in. eye relief.

The Trijicon VCOG offers shooters ACOG® riflescope ruggedness in a variable magnification optic. The VCOG is designed to withstand the rigors of modern combat. It features a first focal plane reticle that is LED illuminated with user-selectable illumination settings for rapid aiming in any light. The adjustable magnification range allows for CQB and long distance marksmanship. Designed to withstand shock from soldier-portable weapons platforms, the VCOG is a MIL-spec grade optic, robust enough for any application. Made in the USA.

CHARACTERISTICS

	1-6x24	1-8x28
Magnification	1x – 6x	1x – 8x
Objective Lens	24mm	28mm
Battery Type	(1) AA Lithium (preferred) or Alkaline	(1) AA Lithium (preferred) or Alkaline
Eye Relief	4 in. Constant 102mm	4.0 – 3.9 in. 102 – 99mm
Exit Pupil	0.41 – 0.15 in. 10.3 – 3.9mm	0.46 – 0.14 in. 11.8 – 3.5mm
Field of View	18° – 3°; 95 – 15.9 ft. @ 100 yards 31.7 – 5.3m @ 100m	20° - 2.5°, 109.2 – 13.1 ft @ 100 yards 36.4 – 4.4m @ 100m
Dimensions (L x W x H)	10.05 x 2.51 x 2.73 in. 255 x 64 x 69mm	10.8 x 2.8 x 2.8 in. 274.3 x 71.1 x 71.1 mm
Weight (w/mount and battery)	28 oz. 793.8g	31.5 oz. 893g

CHARACTERISTICS

	1-6x24	1-8x28
Adjustment Increments	MIL reticle: 0.1 MIL per click MOA reticle: 0.25 MOA per click BDC reticle: 0.5 in. per click at 100m	MRAD reticle: 0.1 MRAD per click MOA reticle: 0.25 MOA per click
Battery Life	At setting 4: Red: 700 hours / 29.2 days Green: 1.400 hours / 58.3 days	At setting 6: Red: 633 hours/26.4 days
Waterproof Depth	66 ft. 20m	66 ft. 20m
Illumination Settings	6 (1st & 2nd settings are NV compatible)	11 brightness settings, with an "off" setting between each setting; 2 Night Vision settings, 9 Day settings of which 1 includes a Super-Bright setting
Storage Temperature Range	-46°C to + 85°C -50.8°F to +185°F	-40°C to +85°C -40°F to +185°F
Operative Temperature Range	-25°C to + 60°C -13°F to +140°F	-32°C to +60°C -25.6°F to +140°F

CONTROLS & INDICATORS

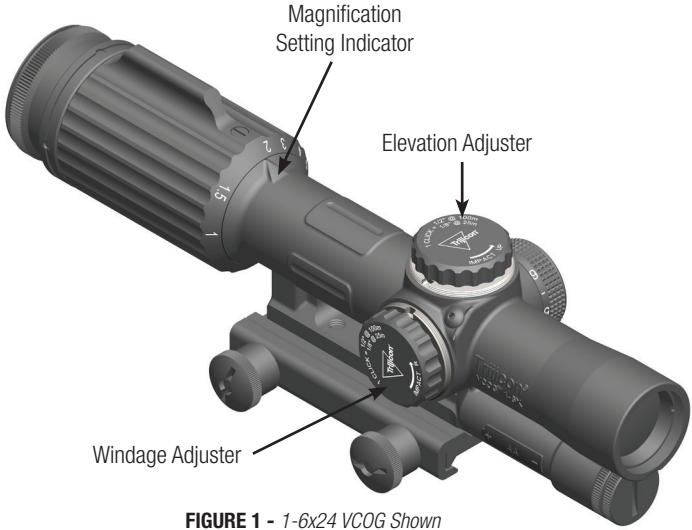


FIGURE 1 - *1-6x24 VCOG Shown*

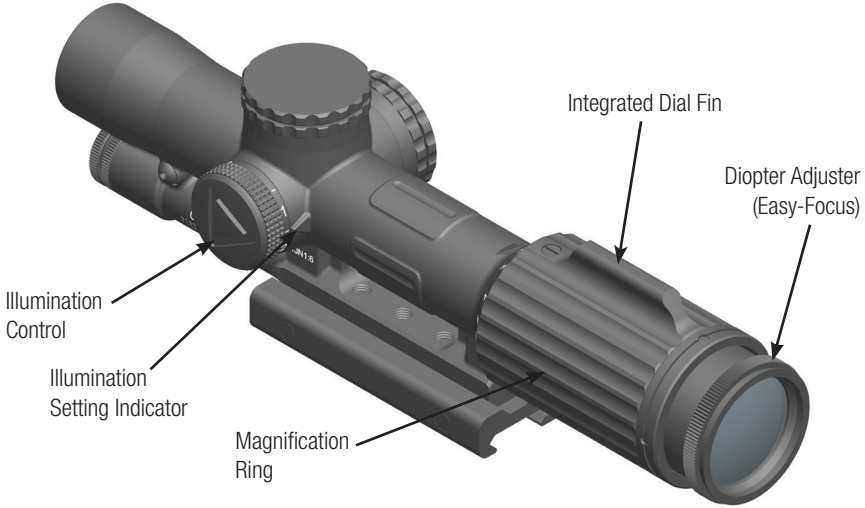


FIGURE 2 - *1-6x24 VCOG Shown*

IDENTIFICATION & MARKINGS

External Markings

The VCOG® external identification markings are laser etched on the housing (**Figure 3**).

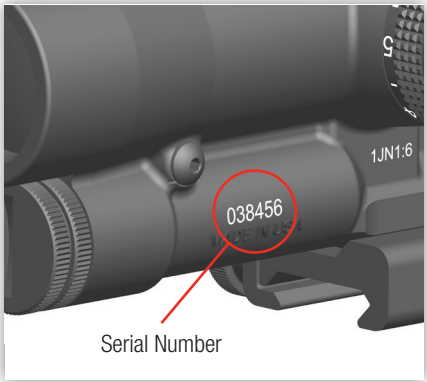


FIGURE 3 - *1-6x24 VCOG Shown*

BDC reticles have a reticle code that is found at the bottom of the field of view when looking into the optic.

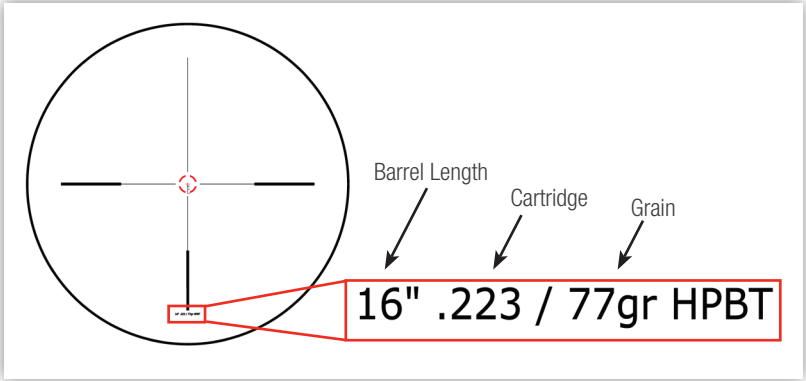


FIGURE 4

PREPARATION FOR USE

Installing the Battery

Unscrew the *Battery Cap* (**Figure 5**) by turning it counterclockwise. Install the AA battery into the sight (as shown on the side of the optic). The system has reverse polarity protection built-in. Inserting the battery improperly will keep the optic from illuminating.

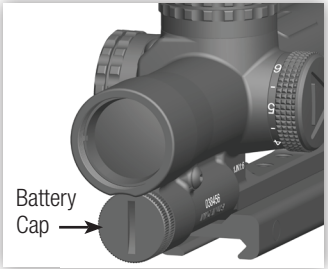


FIGURE 5 (1-6x24 VCOG Shown)

Inspection

The VCOG® central aiming areas are illuminated in any lighting conditions by one AA battery. Turn on the unit by turning the brightness adjustment dial to the preferred setting. Check illumination prior to operation or immediately following any incident (i.e. dropping onto hard surface). Look through the sight and identify if the center of the crosshair or dot is illuminated as shown in (**Figure 6A-F**).

For a full list of reticles visit www.trijicon.com

If the central aiming point does not appear to illuminate, contact Trijicon for additional instruction.

1-6x24

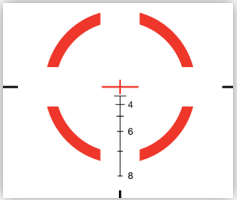


FIGURE 6A - *Crosshair (BDC)*

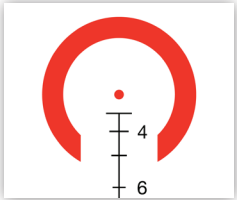


FIGURE 6B - *Horseshoe Dot (BDC)*

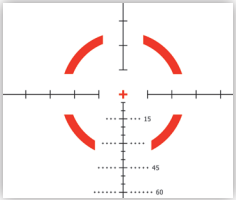


FIGURE 6C - *MOA*

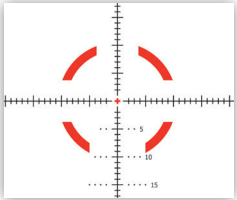


FIGURE 6D - *MIL*

1-8x28

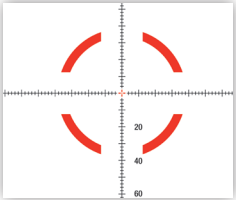


FIGURE 6E - *MOA*

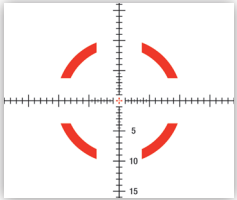


FIGURE 6F - *MRAD*

INSTALLATION PROCEDURES

WARNING:
Before installing the VCOG®, ensure the firearm is UNLOADED.

TA51 Mount Assembly

1. The VCOG is attached to the firearm's M1913 rail using a thumb screw mount (TA51). The TA51 mount attaches to the VCOG from the underside of the optic using the two screws provided. Prior to mounting the optic to a rail, loosen the *Thumb Screws* and pull the *Interface Clamp* back against the thumb screws (see **Figure 7**).

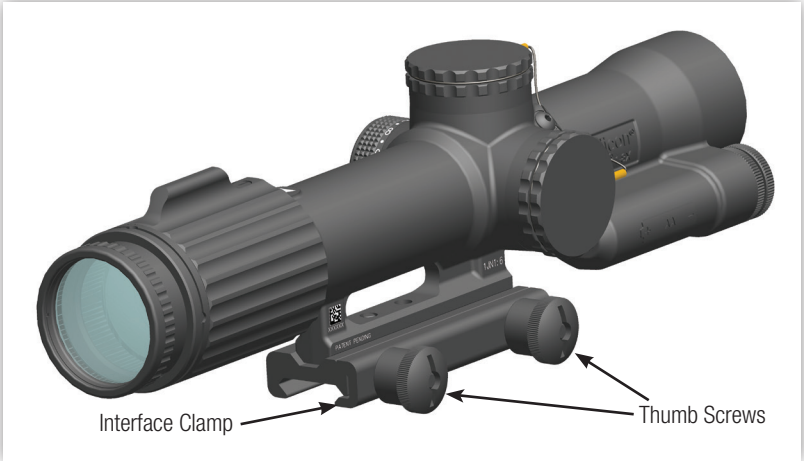


FIGURE 7 - *1-8x28 VCOG Shown*

INSTALLATION PROCEDURES

2. Align the *Interface Studs* located on the bottom of the adapter with the grooves on the M1913 rail of the flattop receiver as illustrated in **Figure 8**. The VCOG® can be placed in any of the slots on top of the receiver to allow for eye relief adjustment. Once the ideal position has been determined, apply forward pressure on the optic and tighten the knobs firmly using finger pressure only. Then, add another ¼ turn using a coin or a flat head screwdriver. This will ensure the mount will not loosen under recoil.

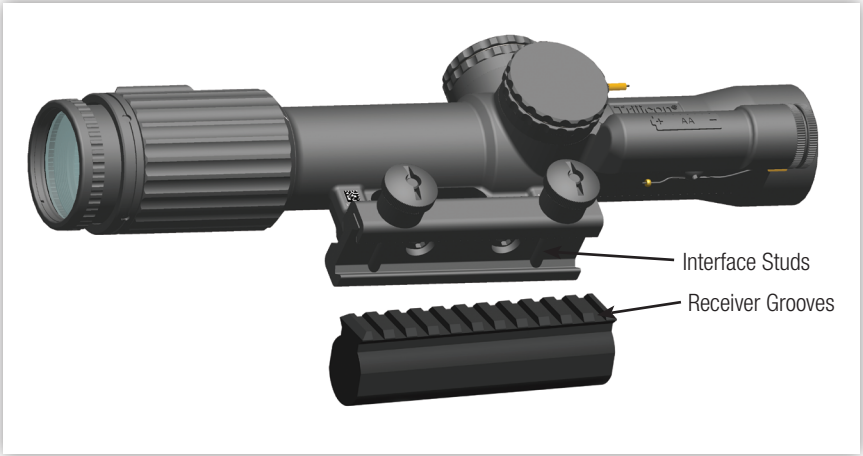


FIGURE 8 - *1-8x28 VCOG Shown*

INSTALLATION PROCEDURES

3. Installing the VCOG® in the same position on the flattop rail and using the same amount of torque on the thumb screws will ensure maximum zero retention. To replicate the same torque setting, tighten using the recommended method and mark the thumb screws and interface bar clamp (**Figure 9**) with indelible marker or other semi-permanent means.

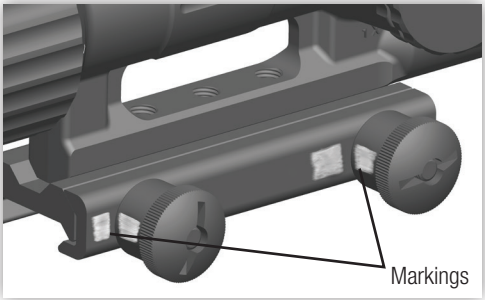


FIGURE 9

TA51 Mount Disassembly

The TA51 mount can be removed from the optic by removing the two screws from the underside of the mount as identified in **Figure 10**. The optic has Spiral-lock™ thread inserts and does not require threadlocker.

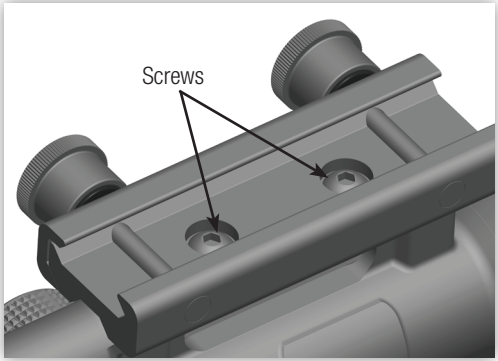


FIGURE 10

ADJUSTMENT PROCEDURES

Internal Adjustment

The VCOG® is internally adjustable. Adjustments are made using the windage and elevation adjusters located under the adjuster caps (**Figure 11**). The VCOG is shipped with a factory zero setting. Normally this means that only small adjustments are necessary. Do not adjust the scope to the extremes. It is possible that over-adjustment will damage the adjusters.

	Reticle Variant	Adjustment Increments
1-6x24	BDC Reticles	0.5 in. per click at 100m
1-6x24	MOA Reticles	0.25 MOA per click
1-6x24	MIL Reticles	0.1 MIL per click
1-8x28	MOA Reticles	0.25 MOA per click
1-8x28	MRAD Reticles	0.1 MRAD per click

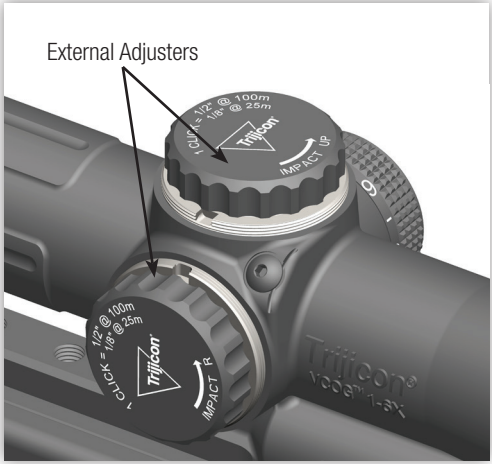

External Adjusters
1 CLICK = 1/2" @ 100m
1/8" @ 25m
Trijicon
IMPACT UP
9
1 CLICK = 1/2" @ 100m
1/8" @ 25m
Trijicon
IMPACT R
Trijicon

FIGURE 11

ADJUSTMENT PROCEDURES

Operation of Adjusters

To make adjustments, remove the adjuster cap and turn the adjuster dials in the direction you want the point of impact to move (**Figure 12A-F**). The amount of clicks can be detected through audible and physical feedback.



FIGURE 12A (BDC Adjusters)



FIGURE 12C (MOA Adjusters)



FIGURE 12E (MRAD Adjusters)



FIGURE 12B (BDC Adjusters)



FIGURE 12D (MOA Adjusters)



FIGURE 12F (MRAD Adjusters)

ADJUSTMENT PROCEDURES

Adjuster Caps

The *Adjuster Caps*, identified in **Figure 13**, are designed for added protection of the adjusters. It is recommended that the adjuster caps be reinstalled after every adjustment. The *Adjuster Caps* should be tightened down so that they make contact with the main housing. This should be accomplished with fingers only. This will prevent possible damage to the cap or the adjuster housing threads. A tool is not required to tighten the caps.

CAUTION: Damage may occur to the cap or the threads of the adjuster housing if the cap does not make contact with the main housing when the cap is exposed to impact.

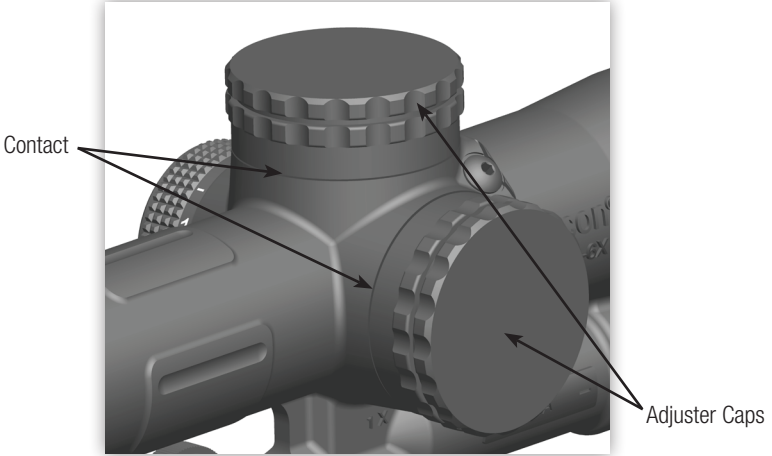


FIGURE 13 - *1-6x24 VCOG Shown*

ZEROING PROCEDURES

100 Meter Zero (Segmented Circle Crosshair & Horseshoe Dot BDC Reticles)

To zero the 1-6x24 VCOG® at 100m, the center crosshair / center of circle is used as the *Point of Aim / Point of Impact* (**Figure 14A, 14B**). This method ensures maximum accuracy using the Bullet Drop Compensator (BDC). Adjustment increments are ½ inch per click at 100m.

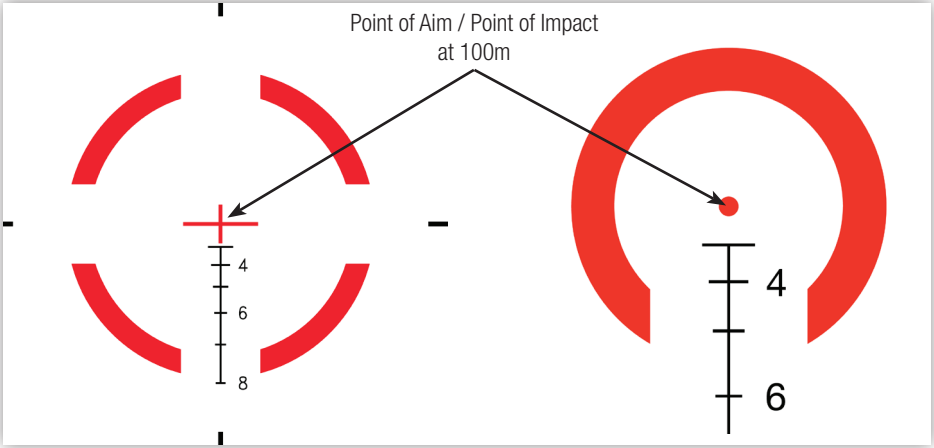


FIGURE 14A - *Segmented Circle / Crosshair (BDC)*

FIGURE 14B - *Horseshoe Dot / Crosshair (BDC)*

ZEROING PROCEDURES

The Bullet Drop Compensator (BDC)

(Segmented Circle Crosshair & Horseshoe Dot Reticles)

The Bullet Drop Compensator (BDC) was designed to give accurate aiming points from 100-1000m (see chart below), (depending on VCOG® model) without the need to make mechanical adjustments to the sight. When zeroed properly, the *Point of Aim / Point of Impact* is represented in **Figure 15A, 15B**.

Bullet Caliber	BDC Range
5.56	100-800m
.308	100-1000m

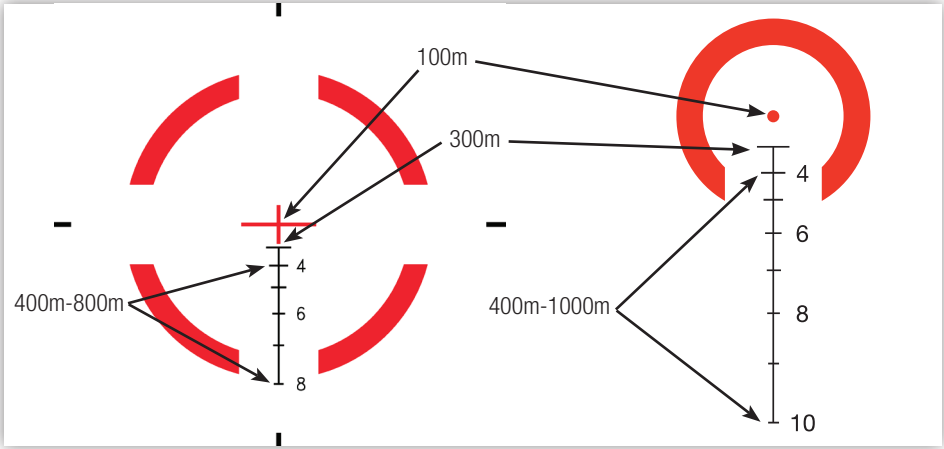


FIGURE 15A - *Segmented Circle / Crosshair (5.56 / 55 Grain Shown)*

FIGURE 15B - *Horseshoe Dot / Crosshair (.308 / 175 Grain Shown)*

ZEROING PROCEDURES

Ranging 100m-800m (19” at Known Distance)

The Segmented Circle/Crosshair and Horsehoe Dot reticles can also be used to estimate range for a known target size. The horizontal stadia lines below the 100 meter crosshair represent 19” at the indicated range (for Military and Law Enforcement reference, 19” is the average width of a silhouette target). For 200m and beyond, determine which stadia line best fits the 19” target and use that ‘crosshair’ as your *Point of Aim*. The figure below illustrates proper sight picture at select distances (**Figure 16**).

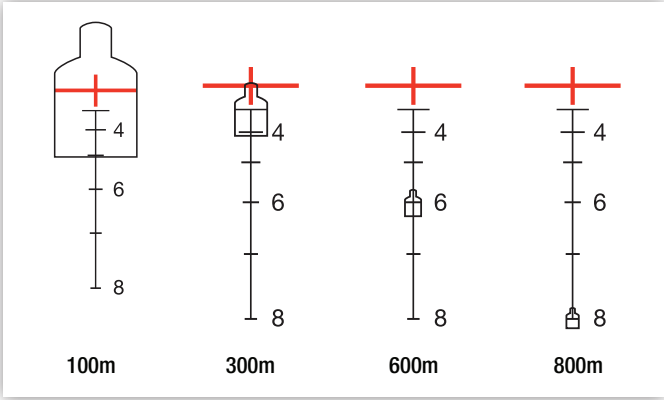


FIGURE 16

ZEROING PROCEDURES

Zeroing (MIL Reticle - 1-6x24)

To zero the VCOG® the center crosshair is used as the *Point of Aim / Point of Impact* (**Figure 17**). This method ensures maximum accuracy using the MIL stadia lines. The wind holds are in 1.0 MIL increments. Adjustment increments are 0.1 MIL per click.

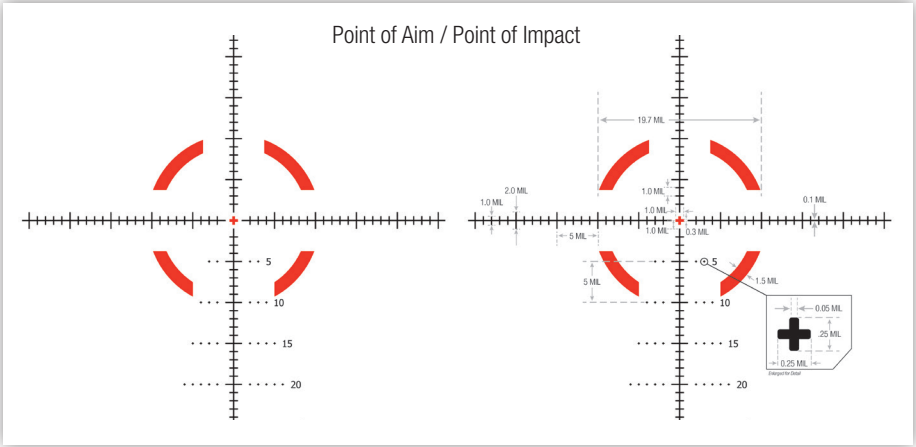


FIGURE 17 - *Segmented Circle / MIL (1-6x24)*

ZEROING PROCEDURES

Zeroing (MOA Reticle - 1-6x24)

To zero the VCOG® the center crosshair is used as the *Point of Aim / Point of Impact* (**Figure 18**). This method ensures maximum accuracy using the MOA stadia lines.

The wind holds are in 1.0 MOA increments. Adjustment increments are 0.25 MOA per click.

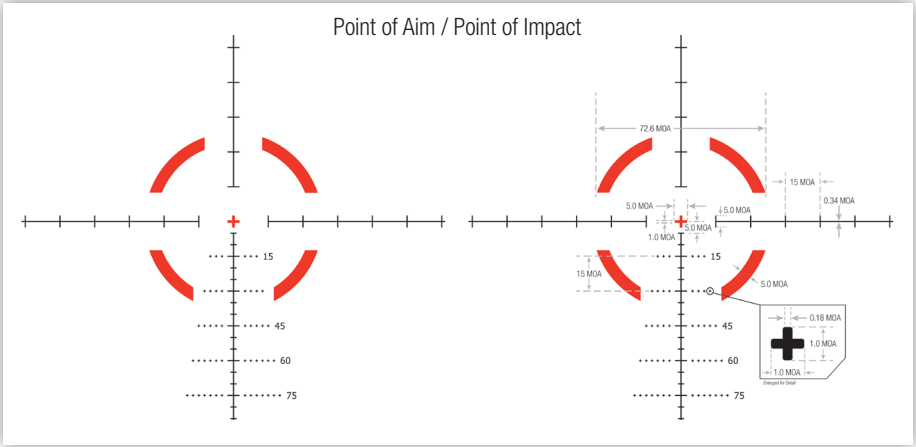


FIGURE 18 - *Segmented Circle / MOA (1-6x24)*

ZEROING PROCEDURES

Zeroing (MRAD Reticle - 1-8x28)

To zero the VCOG® the center dot is used as the *Point of Aim / Point of Impact* (**Figure 19**). This method ensures maximum accuracy usign the MRAD stadia lines. Adjustment increments are 0.1 MRAD per click.

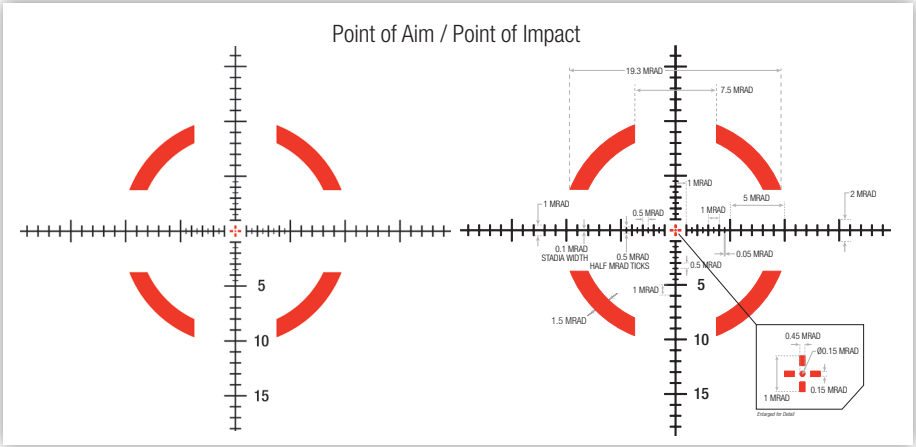


FIGURE 19 - *Segmented Circle / MRAD (1-8x28)*

ZEROING PROCEDURES

Zeroing (MOA Reticle - 1-8x28)

To zero the VCOG® the center dot is used as the *Point of Aim / Point of Impact* (**Figure 20**). This method ensures maximum accuracy using the MOA stadia lines. Adjustment increments are 0.25 MOA per click.

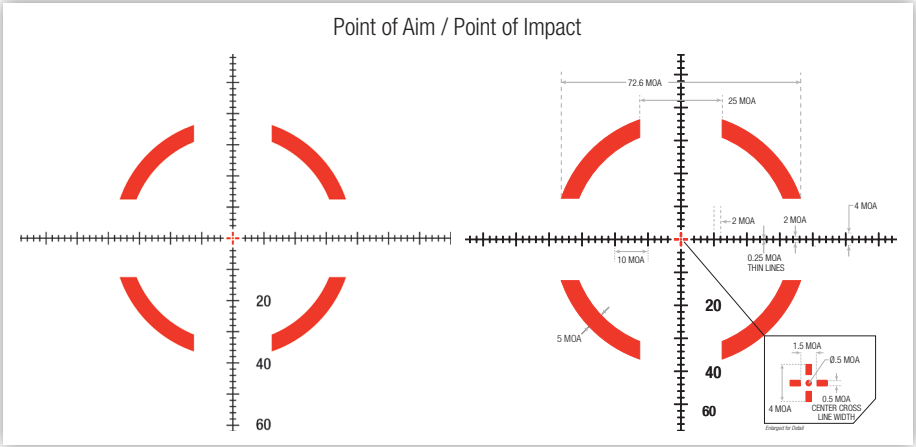


FIGURE 20 - *Segmented Circle / MOA (1-8x28)*

OPERATION

Adjustable Brightness

The brightness adjustment dial is located on the left side of the housing (**Figure 21**) and is equipped with an *Off Setting* in between each of the brightness settings. This enables the user to easily and quickly switch the unit on or off. The brightness adjustment for the 1-6x24 riflescope has 6 settings, (1) being the dimmest and (6) the brightest. The 1-8x28 VCOG riflescope has 9 daylight brightness settings and 2 night vision settings (n) being the dimmest and (9) being the brightest. Turn the adjustment dial to the preferred brightness setting depending on the ambient lighting condition.

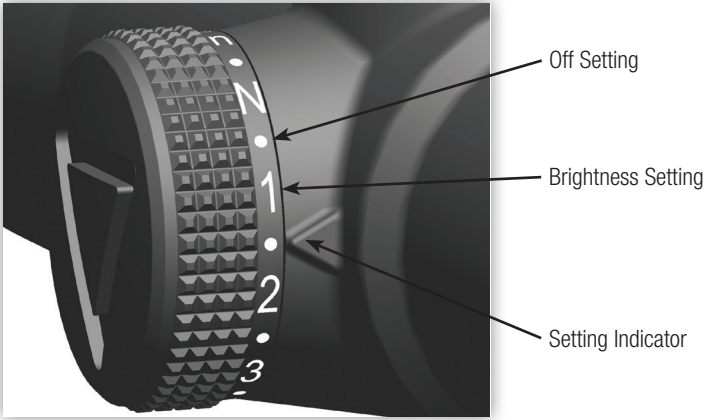


FIGURE 21 - *1-8x28 VCOG Shown*

Diopter Adjuster (Easy-Focus Eyepiece)

The easy-focus eyepiece (**Figure 22**) gives users rapid diopter adjustment. This is especially important for users who wear glasses, or when the rifle is used by more than one shooter.

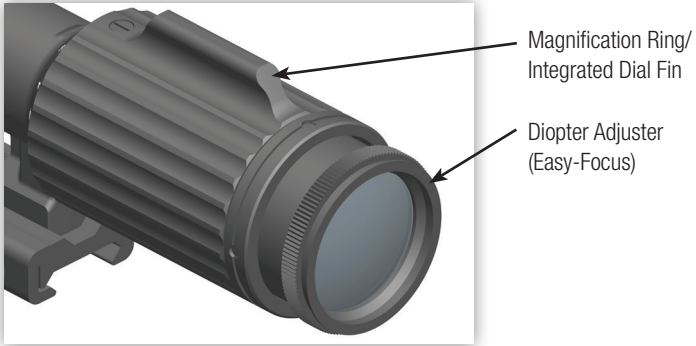


FIGURE 22

Diopter Adjustment

WARNING: Do not look into direct sunlight or bright lights when doing this as permanent eye damage may result.

1. Set magnification ring to highest magnification.
2. Turn eyepiece counterclockwise until the reticle is out of focus or the eyepiece stops (do not force eyepiece past point at which you feel resistance or stops).
3. Quickly look through the scope while viewing a plain white background to determine if reticle is in focus. It is important not to continue to look through the scope as you adjust the diopter. If you do, your eye will not be “relaxed” and you will get a false reticle focus.
4. If reticle is not in focus turn the eyepiece clockwise one half turn (do not look into the eyepiece while doing this as your eyes will adjust).
5. Quickly look again into the scope and check for reticle focus.
6. If out of focus, continue to adjust and quickly look through scope until reticle is in focus.

OPERATION

Magnification Ring

The VCOG® has variable-power magnification ranging from 1x to 6x (1-6x24) or 1x to 8x (1-8x28). Magnification is increased by rotating the *Magnification Ring* (**Figure 23**).

The *Magnification Setting Indicator* on the housing points to the power of magnification as indicated by number on the *Magnification Ring*.

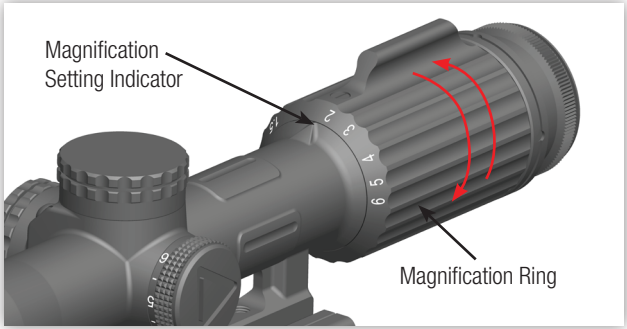


FIGURE 23 - *1-6x24 VCOG Shown*

Determining Your Dominant Eye

To maximize the potential of the VCOG® and use the Bindon Aiming Concept, you must know which eye is dominant. To determine this, conduct the following test:

1. With BOTH eyes OPEN, hold your index finger out in front of your line of sight.
2. Pick up an aiming point and keep your index finger on it.
3. Close your left eye. If your index finger/aiming point does not move, you are right eye dominant.
4. Close your right eye, if your index finger/aiming point does not move, you are left eye dominant.

To use a magnified aiming device to its full potential, you must use your dominant eye to aim. This may mean learning to shoot from your opposite side. If you are cross-eye dominant (shooting with your weak eye), there will be a shift in your point of impact ranging from slight to major dependent upon the disparity between your eyes and the distance.

OPERATION

The Bindon Aiming Concept (BAC)

The BAC technique allows the shooter to track and engage moving targets quickly. Using the Both Eyes Open aiming method, when the firearm is being moved, the image as seen through the VCOG® with your shooting eye blurs much quicker than the view from your non-shooting eye. The brain chooses the non-blurry view from the non-shooting eye automatically (switches focus). As soon as you are close to the proper aim on target, firearm movement slows, the blur ceases, and your brain instantly selects the greater detail of the magnified view. This means when the firearm is moving to the target you will not notice any magnification.

All you will see is the illuminated crosshair in the target area, like a reflexive sight. Once you slow the firearm on the target, the target will "zoom" in at the selected magnification, allowing you to identify and engage more accurately if necessary. This aiming concept happens naturally (without conscious thought) for those with equal or close to equal vision in both eyes.

For more information, visit www.trijicon.com.

Quick Target Acquisition at Close Distances

The VCOG® is designed to be used with BOTH eyes OPEN, providing quick target acquisition and engagement. The illuminated reticle allows the VCOG to be used as a reflexive sight when speed is critical at close distances.

Train yourself to:

- Keep BOTH eyes OPEN
- Focus on the target
- Bring the firearm/optic up into your line of sight—DO NOT switch focus to the reticle
- Assess and engage when warranted

OPERATION

As the distance between the shooter and the target increases, so should the time taken to engage a target more accurately. The *Both Eyes Open* shooting technique can be used very effectively from muzzle to 300 meters when needed (immediate threat).

Proper Sight Alignment

Ensure you have a FULL Field of View (FOV) and proper sight alignment (no scope shadow). Improper FOV or sight alignment (scope shadow) will result in improper shot placement. To acquire the proper sight picture, move your shooting eye vertically and horizontally until you have no scope shadow in your FOV. **Figure 24** illustrates incorrect bullet strikes based on existing scope shadow.

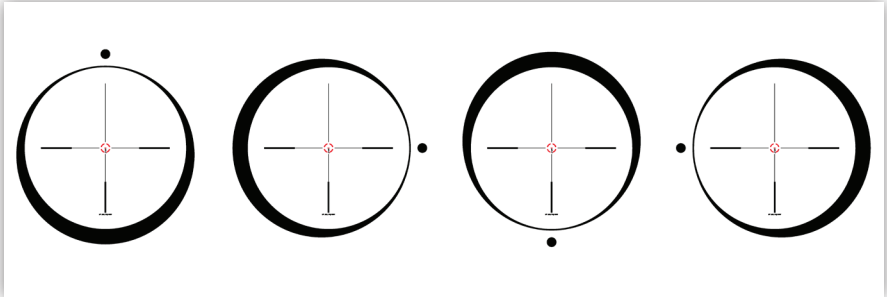


FIGURE 24

CLEANING & GENERAL CARE

General Information

The VCOG® requires very little maintenance. If the lenses become dirty, wash using fresh water and a soft clean cloth. Be sure to remove all foreign matter from the lens surface fully before wiping them with a soft cloth. The lenses can be scratched if any foreign matter is pulled along the lens by the cloth. The outside lenses may fog over in cold weather. Remove fog by using a dry, clean soft cloth. Anti-fog solutions can be applied to the exterior of the lenses to help prevent fogging during temperature changes.

Using the LensPen®

To clean the riflescope using the LensPen®, first depress and push forward the lens brush slider, exposing the lens brush (**Figure 25**). Use this brush to remove all debris from the unit if fresh water is not available. Pay special attention to the lenses.

Next, remove the cap from the opposite end of the LensPen® to expose the lens cleaner. Ensure there is NO foreign material on the lens cleaner surface. Starting in the center of the lens, press the surface of the lens cleaner against the lens and in a spiral motion, work from the center to the outside edge of the lens. Repeat if necessary. When finished, depress the lens brush slider and retract the brush into the LensPen®. Replace the cap over the felt lens cleaner (**Figure 26**).



FIGURE 25



FIGURE 26

TROUBLESHOOTING

This section contains troubleshooting information and tests for locating and correcting most of the troubles which may develop in the operation of the VCOG®. Each trouble symptom for an individual unit is followed by a list of tests or inspections for determining probable causes and suggested actions to remedy the problem.

The VCOG® will not illuminate:

1. Ensure the battery is correctly installed as per Preparation for Use section (page 12).
2. Replace with a fresh battery as per Preparation for Use section (page 12).
3. Inspect the battery contact points in the battery compartment and ensure the battery contact actually contacts the battery. Ensure there is no corrosion or wear to the battery contacts. Clean the contacts if needed.
4. If none of the suggested actions resolve the issue, contact Trijicon for further assistance.

The Crosshair reticle is blurred or fuzzy:

1. Inspect the eyepiece lens to ensure it is free of any foreign materials and/or smudges. Clean the lenses if needed as per Cleaning and General Care section.
2. Inspect the objective lens to ensure it is free of any foreign materials and/or smudges. Clean the lenses if needed as per Cleaning and General Care section.
3. Adjust the diopter.
4. Contact Trijicon for repair or replacement.

The Crosshair optic will not zero:

1. Inspect the mounting on the firearm and to the base of the optic.
2. Mount the optic to another firearm to ensure the problem is the optic and not the firearm.
3. Contact Trijicon for return information.

The Crosshair optic will not adjust:

1. Contact Trijicon for return information.

MODELS & ACCESSORIES

Contact Trijicon Customer Service at 1-800-338-0563 or visit our website at www.trijicon.com to view our latest models and accessories.

PATENTS & TRADEMARKS

U.S. patents may apply to this product. For details, visit www.trijicon.com/patents.

LIMITED LIFETIME WARRANTY

The original owner of the Trijicon® product registered with the warranty card is entitled to repair or replacement (at our option) of the registered item if it should fail due to defects in material or workmanship during normal use. This warranty specially applies to the optical systems and metal structure of the product and does not apply to the illumination system. Electronics are warranted to be free of defects in material and workmanship during normal use for a period of 5 years from the date of manufacture. If repair is necessary, please contact our Customer Service Department for return instructions. This warranty does not apply to defects caused by anything which is deemed abnormal, abusive, or improper including any fault resulting from an accident or improper service. Please note that the manufactures warranty will be void and the product cannot be serviced if it is exported from the United States in violation of U.S. Export Control Laws and Regulations. Special Note: FOR TRIJICON® PRODUCTS THAT CONTAIN TRITIUM, THEY ARE REGULATED BY THE NUCLEAR REGULATORY COMMISSION. THEY MAY NOT BE DISASSEMBLED BY ANYONE OTHER THAN TRIJICON, INC WHICH HOLDS THE NECESSARY LICENSES. Any attempt at disassembly or repair will annul this warranty. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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