



Instruction Manual
MGRS™
(Machine Gun Reflex Sight)

TABLE OF CONTENTS

4	Warnings & Cautions	25	Zeroing Procedures
6	Introduction	26	Range Knob
7	Characteristics	32	Shooting with Both Eyes Open
8	Controls & Indicators	34	Cleaning & General Care
10	Identification & Markings	35	Models & Accessories
12	Preparation for Use	36	Troubleshooting
14	Installation Procedures	37	Patents & Trademarks
20	Operation	38	Limited Lifetime Warranty
22	Adjustment Procedures	39	Contact

WARNINGS & CAUTIONS

WARNING

Before installing the optic on a weapon, ensure the weapon is UNLOADED per the weapon manufacturer's operating instructions. Remove the ammunition, open the action, and ensure the chamber is clear.

WARNING

This Trijicon® product is shipped with a new lithium battery. Lithium batteries or lithium button cells pose the risk of fire. The battery can explode or leak and cause injury if installed backwards, disassembled, charged, crushed or exposed to fire or high temperature. Keep out of reach of children. Check local municipality for proper disposal. California Only: Perchlorate Material – special handling may apply.

WARNINGS & CAUTIONS

CAUTION

When mounting the Trijicon product onto the rail of a weapon, do not tighten the mount screws beyond the recommended method. Damage may occur to the optic and/or zero retention may be negatively affected.

CAUTION

Remove ALL foreign material from the lens before cleaning them with a soft clean cloth. This will prevent damage to the lens. See page 34 for more details.

CAUTION

DO NOT allow harsh organic chemicals such as acetone, trichloroethane, or other cleaning solvents to come in contact with this Trijicon® product. They will affect the appearance, but not the performance.

INTRODUCTION

In order to continue providing the best possible aiming solutions to the US Armed Forces, Trijicon has developed the Machine Gun Reflex Sight (MGRS™) which provides users with an increased ability to acquire, engage, and accurately hit targets from a mounted position (i.e. vehicle, tower, etc.). MGRS™ greatly enhances first round hit probability, significantly reduces training requirements for machine gunners and can be used on various weapons systems. This capability will greatly reduce ammunition expenditure, logistic footprint, re-supply requirements, target acquisition time, overall collateral damage, and the negative strategic impact of high volume fire.

CHARACTERISTICS

LED	
MAGNIFICATION	1x
SIGHT WINDOW	3.0 x 2.0 in. 76.2 x 50.8mm
ADJUSTMENTS	1 click = 1 MOA
ADJUSTMENT RANGE (ELEVATION AND AZIMUTH)	100 MOA Total Travel
DIMENSIONS (L x W x H)	8.78 x 4.17 x 5.22 in. 223.5 x 106.7 x 132.1mm
WEIGHT*	66.9 oz. 1896.6g
ILLUMINATION SOURCE	LED Powered by a CR123A (Lithium Battery)
BATTERY LIFE	Over 1000 hours of continuous use, on brightness setting 6 of 7 at 70°F
BRIGHTNESS SETTINGS	7 Total Settings; 2 Night Vision, 5 Day Settings of which 1 setting is super-bright

**with battery and mount*

CONTROLS & INDICATORS

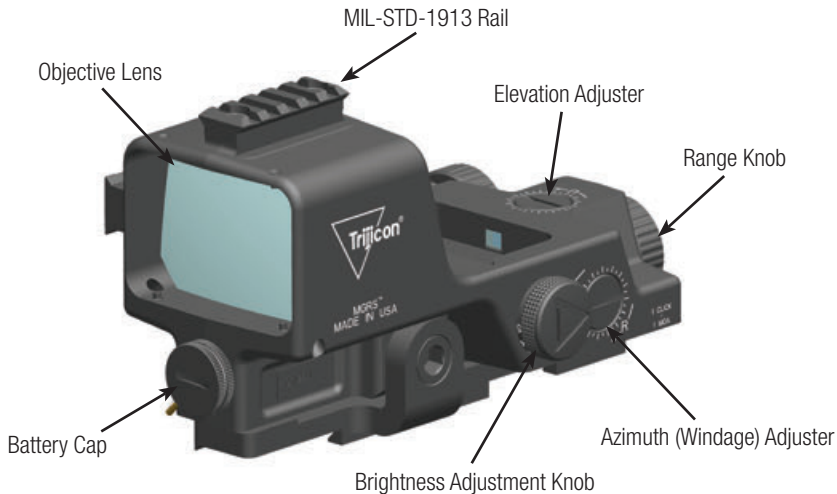


FIGURE 1

CONTROLS & INDICATORS

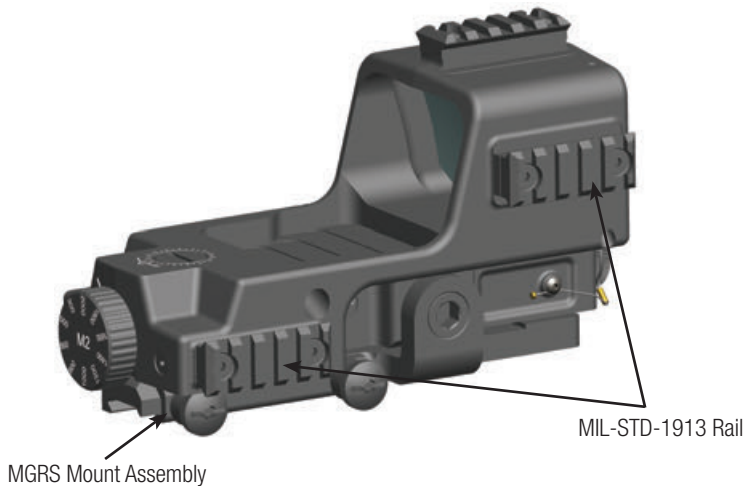


FIGURE 2

IDENTIFICATION & MARKINGS

External Markings

Figure 3 identifies where the serial number can be found. This number is unique for each MGRS sold.

IDENTIFICATION & MARKINGS

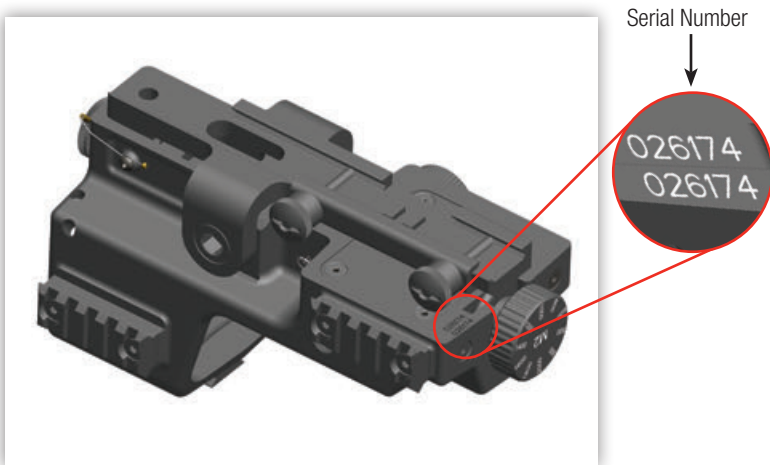


FIGURE 3

PREPARATION FOR USE

Installing Battery

Unscrew the *Battery Cap* by turning it counterclockwise. Install the CR123A (**Figure 4**) battery positive end first 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.

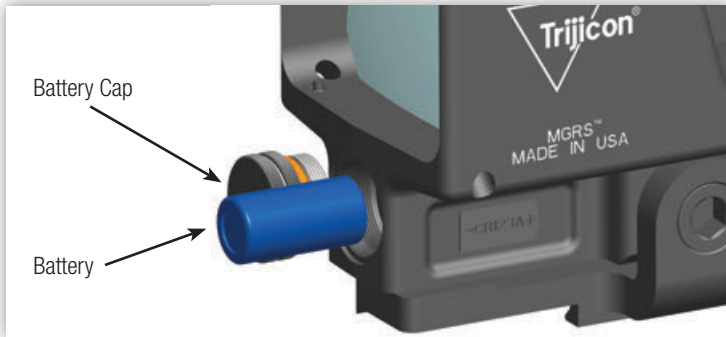


FIGURE 4

PREPARATION FOR USE

Inspection

The MGRS reticle can be adjusted to accommodate any light condition and is illuminated by one CR123A battery. Turn on the unit by turning the *Brightness Adjustment Knob* (**Figure 5**) 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 reticle is illuminated as shown in **Figure 6**. If the reticle does not illuminate, see page 39 for CONTACT information.



FIGURE 5



FIGURE 6

INSTALLATION PROCEDURES

The MGRS can be used on the M240 and M2 machine gun platforms.

The MGRS can be attached directly to the M240 feed tray cover, or the M2 when utilizing a MIL-STD-1913 rail mount. 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

INSTALLATION PROCEDURES

Align the *Interface Lugs* located on the bottom of the adapter with the grooves on the MIL-STD-1913 rail as illustrated in **Figure 8**. Apply forward pressure on the optic and tighten the thumb screws firmly using finger pressure only. Then, add another ¼ turn utilizing a coin or a flat head screwdriver. This will ensure the mount will not loosen under recoil.

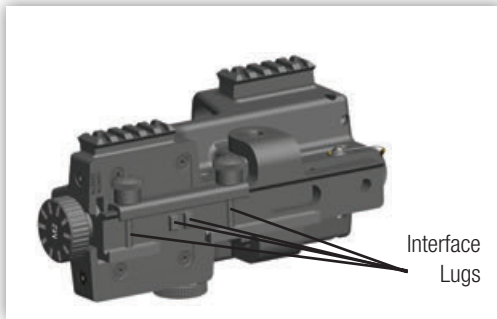


FIGURE 8

INSTALLATION PROCEDURES

Installing the MGRS in the same position on the 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 Clamp* (**Figure 9**) with indelible marker or other semi-permanent means.

INSTALLATION PROCEDURES

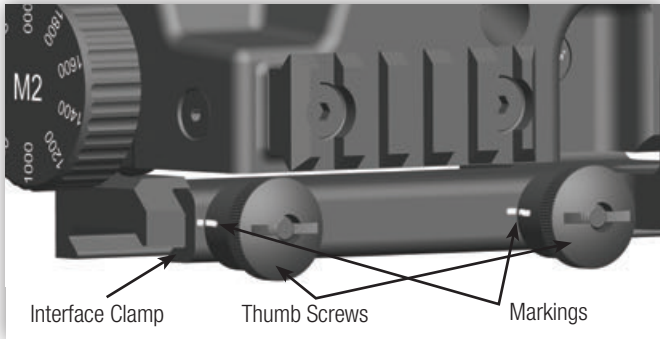


FIGURE 9

INSTALLATION PROCEDURES

MIL-STD-1913 Rail

The *MIL-STD-1913 Rails* on the MGRS may be removed. To remove, use a 1/8 in. hex key to unscrew the two *Flat Head Cap Screws* and set aside (**Figure 10**). Remove the rail and set aside. To reinstall, hold the MIL-STD-1913 Rail to the *Main Housing*. Use a 1/8 in. hex key to tighten the two *Flat Head Cap Screws* (torque to 23 in-lbs).

INSTALLATION PROCEDURES

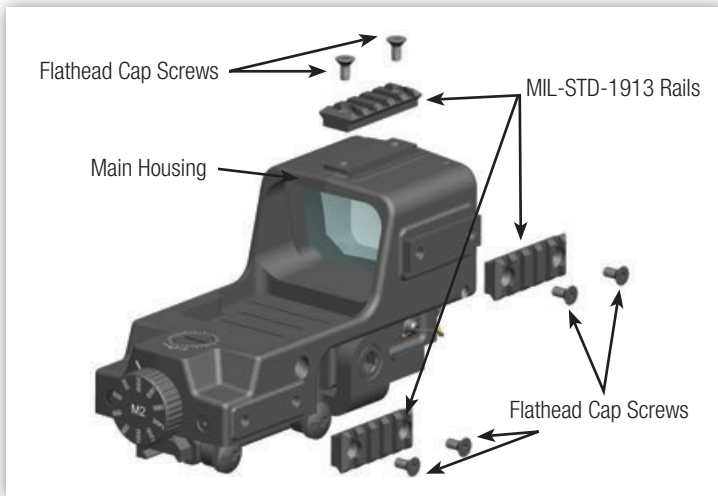


FIGURE 10

OPERATION

The MGRS uses one (1) CR123A battery to power the unit, which has been included in the original packaging. The battery life has been tested to provide over 1000 hours of “continuously on” power when set to the brightness setting labelled “6” on the *Brightness Adjustment Knob* in normal operating conditions. Extreme high and low temperatures will have dramatic effects on battery life.

Trijicon recommends replacing the battery once per year, or more frequently if used on higher power settings.

OPERATION

To turn the MGRS on, simply rotate the *Brightness Adjustment Knob* to the setting which yields the preferred brightness level (**Figure 11**). The positions labelled “n” and “N” are the two settings for use in conjunction with an I² (image intensifier) night vision device. They will not be visible to the unaided eye in any conditions. The numbered positions “1” through “5” are suitable for use without night vision equipment. Settings “1” and “2” are suitable for low-light conditions, and setting “5” is a super-bright setting suitable for use in extremely bright environments. The knob positions indicated by a dot are “off”. There are two such positions - one below the dimmest setting, and one between the settings labelled “N” and “1”.

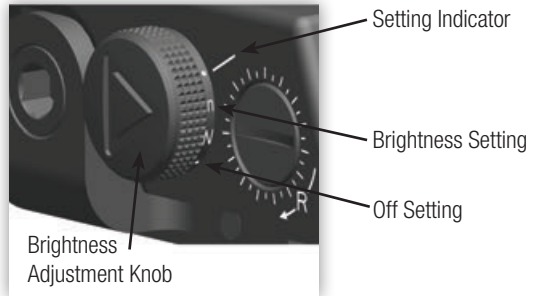


FIGURE 11

ADJUSTMENT PROCEDURES

CAUTION: The azimuth (windage) and elevation adjusters should never be moved all the way to the extremes in adjustment. It is possible that over-adjustment will damage the precise mechanisms inside the MGRS. When rotating the adjusters, the resistance will increase as you reach the limits of the mechanism. If adjusted past this point, the mechanism will break. If you have questions please see our CONTACT information on page 39.

The Trijicon MGRS is internally adjustable. It is shipped with the illuminated reticle in a factory centered position. Normally, this means that only small adjustments are necessary. A coin, such as a dime or penny will fit the slot on the adjuster. You may also use the rim of a cartridge case or a flat-head screwdriver.

ADJUSTMENT PROCEDURES

Elevation Adjustment

Moving the adjuster in the direction of the arrow (counterclockwise) will move the bullet's Point of Impact (POI) UP as indicated on the adjuster (**Figure 12**). Adjustment increments are 1 MOA per click, meaning that 1 click is required to move the bullet's impact 1 inch on a target at 100 yards. The amount of clicks can be detected through audible and tactile feedback.



FIGURE 12

ADJUSTMENT PROCEDURES

Azimuth (Windage) Adjustment

Moving the adjuster in the direction of the arrow (clockwise) will move the bullet's Point of Impact (POI) RIGHT as indicated on the adjuster (**Figure 13**). Adjustment increments are 1 MOA per click, meaning that 1 click is required to move the bullet's impact 1 inch on a target at 100 yards. The amount of clicks can be detected through audible and tactile feedback.



FIGURE 13

ZEROING PROCEDURES

Center the aiming dot of the reticle on a target at the desired zero range, verify correct range knob setting, and fire a precise shot group (minimum 3 rounds). Evaluate the location of shot group compared to your point of aim. Adjust the azimuth (windage) and elevation, and shoot another series of shots until the center of the shot group is on the center of your point of aim. This establishes the Point of Aim (POA) as the POI for the bullet.

This method ensures maximum accuracy utilizing the *Range Knob*. Refer to the *Range Knob* section on page 26 for description and procedures.

NOTE: If the MGRS is moved to a different weapon platform, or if the ammunition used is changed, the MGRS will need to be re-zeroed for the new weapon and / or ammunition.

RANGE KNOB

The MGRS features interchangeable *Range Knobs* (**Figure 14**) for use on the M240 and M2 machine guns. When the MGRS is properly zeroed to the weapon platform, the *Range Knob* allows the user to dial the correct range as a mechanical Bullet Drop Compensation (BDC) for accurate engagements.

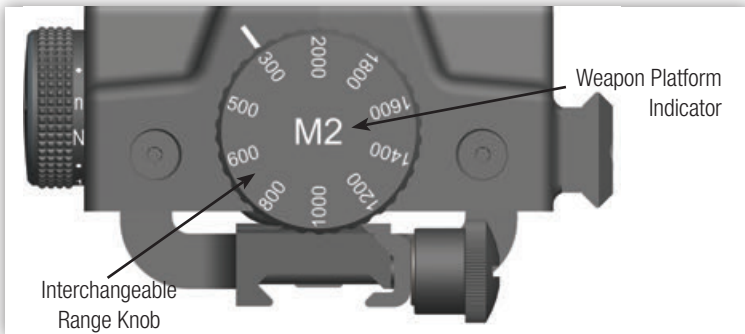


FIGURE 14

RANGE KNOB

WARNING: Ensure the correct *Range Knob* is installed based on the weapon platform.
If the incorrect *Range Knob* is installed, bullet impacts will not correspond to the selected range.

Available M2 Settings	Available M240 Settings
300m	100m
500m	300m
600m	500m
800m	600m
1000m	700m
1200m	800m
1400m	900m
1600m	1000m
1800m	1100m
2000m	1200m

RANGE KNOB

To use the *Range Knob*, rotate the knob to align the *Range Setting* to the *Range Setting Indicator* (**Figure 15**). A detent will engage the *Range Knob* to secure the *Range Knob* at the desired setting. *Do not stop and leave the Range Knob in between Range Settings.*

RANGE KNOB

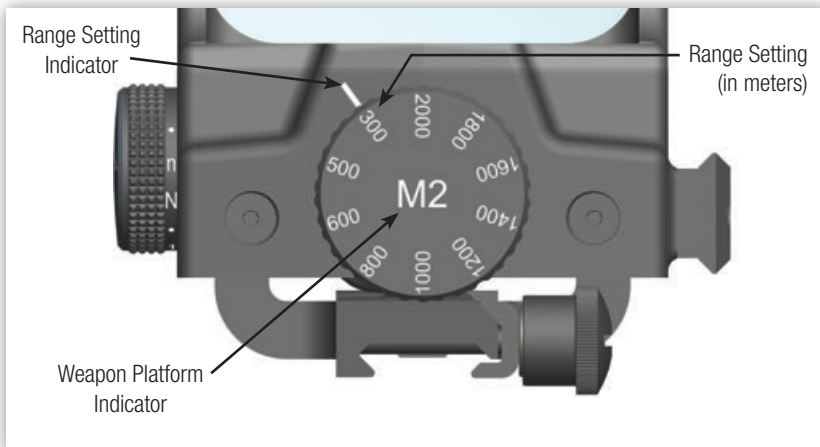


FIGURE 15

RANGE KNOB

To change the *Range Knob*, use a 3/32 in. hex key to remove the two *Flathead Cap Screws* and set aside. Remove the *Range Knob Retaining Plate* and set aside (**Figure 16**). Remove the existing *Range Knob* by pulling away from the main housing and replace with the desired *Range Knob*. Reinstall the *Range Knob Retaining Plate*, and tighten the two *Flathead Cap Screws* (torque to 23 in-lb). Rezero the optic using the Zeroing Procedures.

WARNING: Ensure the correct Range Knob is installed based on the weapon platform. If the incorrect Range Knob is installed, bullet impacts will not correspond to the selected range.

RANGE KNOB

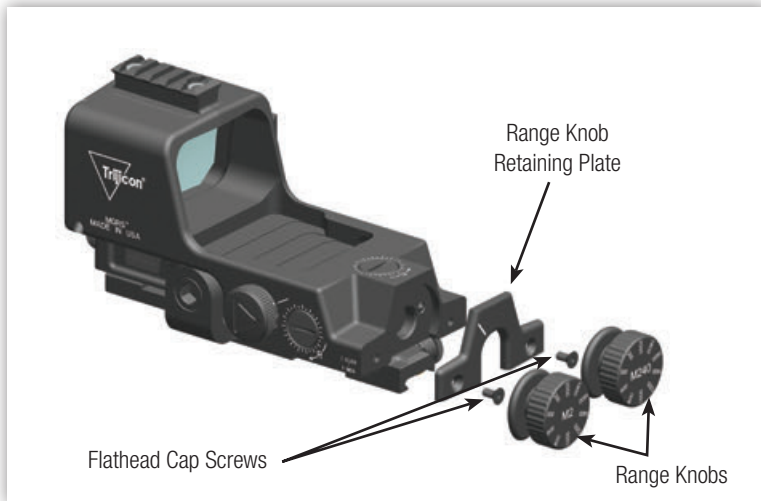


FIGURE 16

SHOOTING WITH BOTH EYES OPEN

Shooting with both eyes open offers several advantages to the user: better situational awareness, a far superior sense of balance, a wider field-of-view, as well as reduction of eye strain. These advantages aide any shooter in quick target acquisition and improved shooting performance.

Determining Your Dominant Eye

In order to maximize the potential of both eyes open aiming, 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 non-shooting eye. If your finger/aiming point does NOT move, that is your dominant eye. If your finger/aiming point moves, your other eye is dominant.

SHOOTING WITH BOTH EYES OPEN

To use any 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.

If you choose to aim with your non-dominant eye, it is recommended that you keep your non-shooting eye closed (or occluded) and use the MGRS like a traditional riflescope. This method is going to be slower at close ranges, but there will be no shift in impact.

CLEANING & GENERAL CARE

General Information

This Trijicon® product 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.

MODELS & ACCESSORIES

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

TROUBLESHOOTING

Please visit our FAQ page at www.trijicon.com for answers to any questions you might have regarding your product. For more detailed information, please contact our Customer Service Department at 1-800-338-0563 or email us at info@trijicon.com.

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 specifically applies to the optical systems and metal structure of the product and does not apply to the illumination system. The tritium lamp is warranted to glow for 5 years in orange night sights, 12 years in green and yellow night sights, 12 years in bow sights, 15 years in fiber optic scopes or 10 years in non-fiber optic scopes from the date of the original manufacture. 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 manufacturer's 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.

CONTACT

Trijicon, Inc.
49385 Shafer Avenue
P.O. Box 930059
Wixom, MI 48393

1-800-338-0563
248-960-7700

WWW.TRIJICON.COM

WWW.TRIJICON.COM