

030-20771

Trijicon, Inc.

ISO 9001 Certified

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Division of Industrial and Medical Nuclear Safety
Office of Nuclear Materials Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Ref: USNRC License # 21-19874-02E

Gentlemen:

We respectfully request amendment to condition 10 of the above-referenced license to permit the distribution on Trijicon Model TX** SERIES gun sight containing 100 millicuries of Tritium gas.

Enclosed are: Application for Material License and the prototype tests and safety analysis as suggested in NUREG-1556 Vol. 8 including the following attachments application:

ATTACHMENT 1 Estimated radiation dose commitments

ATTACHMENT 1A Table of TX** model numbers

ATTACHMENT 2 TX** SERIES NRC Testing and Results

ATTACHMENT 3 TX** SERIES NRC Testing and Results Pictures

ATTACHMENT 4 TRIJICON DWG # XTRX 3000_NRC Sheet 1

ATTACHMENT 5 mb microtech ag DWG # T 4734-1 DWG OF Tritium lamp along
with sealed source registry sheet

ATTACHMENT 6 TRIJICON DWG # XTRX 3000_NRC Sheet 2 DWG OF
MARKINGS ON GUN SIGHT

ATTACHMENT 7 ENTELA TEST REPORT # 02-06052360

ATTACHMENT 8 ENTELA TEST REPORT # 02-05162142

ATTACHMENT 9 ADVANCED RADIATION MONITORING SERVICE REPORT

ATTACHMENT 10 OPERATING INSTRUCTIONS AND ANY LITERATURE
INCLUDED WITH GUN SIGHT.

If further information is required please contact the undersigned.

Due to the urgency of the use of the sighting device for the United States military, any consideration to expedite our request for amendment would be appreciated.

Thank you.

Sincerely,

Darin W. Schick
Engineering Manager

TRIJICON, INC.

Vendor No: NUC001 / Name: U.S. Nuclear Regulatory Commission

45044

Invoice	Ref	Inv Date	Inv Amt	Discount	Adj Amt	Amt Paid
080902-B	21-1987402	08/09/02	2300.00	0.00	0.00	2300.00

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45044

TRIJICON, INC.

P.O. BOX 930059 PH. 248-960-7700
WIXOM, MI 48393-0059

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DETROIT, MICHIGAN 48226
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08/09/02

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\$2,300.00

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IF

U.S. Nuclear Regulatory Commission
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P.O. Box 954514
St. Louis, MO 63195-4514

James R. Hunter

045044 072000326

000871574

Security Features Included. Details on back.

NRC FORM 313

(8-2000)
10 CFR 30, 32, 33,
34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120

EXPIRES: 08/31/2002

APPLICATION FOR MATERIAL LICENSE

Estimated burden per response to comply with this mandatory collection request: 7.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bja1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202, (3150-0000), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO
RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,
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SAM NUNN ATLANTA FEDERAL CENTER
U. S. NUCLEAR REGULATORY COMMISSION, REGION II
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ATLANTA, GEORGIA 30303-8831

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND
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MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
Lisle, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
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OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR
WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-6064

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED
MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- ☐ A. NEW LICENSE
☒ B. AMENDMENT TO LICENSE NUMBER 21-19874-02E
☐ C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (include ZIP code)

Trijicon, Inc.
P.O. Box 930059
Wixom, MI 48393

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Trijicon, Inc.
49385 Shafer Ave.
Wixom, MI 48393

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Darin W. Schick

TELEPHONE NUMBER

(248) 960-7700

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

- a. Element and mass number, b. chemical and/or physical form, and c. maximum amount
which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION PROTECTION AND THEIR
TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 3H AMOUNT \$2,300.00
ENCLOSED

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING
UPON

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN
CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND
CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO
ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

Stephen Bindon - President

SIGNATURE

Stephen G. Bindon

DATE

8/9/02

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
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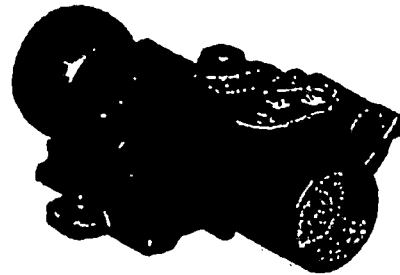
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DRAFT: 080202

TRIUMCON® TRIPOWER® TACTICAL SIGHT
SHOOTERS MANUAL

COPY

DRAFT



2 Aug 2002
Edition

TRIUMCON, INC.
49385 Stafer Ave.
Wicon, MI 48191-0059
USA

ATTN. 10

WARNING

Insure the weapon is unloaded and the selector is in the "Safe" position before attempting to install, remove, or perform maintenance on the sight

WARNING



RADIOACTIVE MATERIALS RADIATION HAZARD

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DESCRIPTION

Introduction

The Trijicon TriPower Tactical Sight is a break through in close combat (0-500meter) fire control for small arms such as pistols, sub-machine-guns, assault rifles, and light machine guns. The TriPower is a compact, sealed, non-magnifying reflex sight. Reflex sights use a reflective lens system and a projected aiming reticle to establish an optical axis that remains aligned to the zero of the weapon at any angle at which the reticle can be seen. Traditional iron sights or telescopic sights require a consistent head/eye position and the aiming point remaining centered to accurately engagement targets. The TriPower will accurately engage targets with the reticle anywhere in the large field of view giving the operator the advantage of extremely fast and accurate target engagement during day and in low light such as dusk and dawn.

Extensive military testing and combat experience with reflex sights has revealed shortcomings in other designs that the TriPower was specifically designed to eliminate. Harsh environmental conditions can introduce dust or moisture into other sights and interfere with the optics or electronic components. Reflex sights require a reliable power source to project the reticle on a reflective lens. Dust, mud, moisture in unsealed sights will disrupt or block the critical optical components. Reflex sights require an illuminated reticle that is bright enough to catch the eye and show distinctly on the target or background but not so bright as to blind and obscure the target. The requirement is that the reticle must be instantly available in combat absolutely every time. Electrical only powered units must be left on requiring a continuous supply of batteries or risk being caught in an immediate reaction situation with no reticle. Batteries, diodes, wiring, and switches are always subject to failure at the worst possible moment. These electronic reticles are a reflection of the filament in the diode and have to be turned down to produce an irregular shaped but small aiming spot for precision aiming. Reflex's such as the Trijicon Reflex II that illuminate the reticle with available light during day and long life radioactive tritium at night are not subject to battery supply or electronic failures and are always on. However, under a certain narrow set of lighting conditions the reticle can washout and be difficult to pick-up quickly.

The TriPower is a compact, lightweight, ruggedized design with a sealed optical and illumination system. The TriPower is a triple-illuminated, fail-safe firearms sighting system that provides a fully illuminated chevron reticle for both rapid and precise aiming that's easy to see under virtually any lighting conditions including partial or total darkness. The TriPower has a red chevron-shaped reticle illuminated by three primary lighting sources.

Integrated Fiber Optic/Tritium System. An ultra-reliable system that automatically adjusts the brightness level of the reticle to the ambient light conditions. Tritium lamp provides a vivid, distinct aiming point even in total darkness and independent of any failure in the battery-powered system for 15 years. Trijicon pioneered this system that has been combat proven in their Reflex Sights and Hindon Aiming Concept (HAC) Advance Optic Camsights (ACOG).

On-Call Battery Back-Up. This innovative battery system provides a supplemental light source. It is ideal for tactical entry/close quarter battle in urban or underground facilities and other special situations in which the need for a bright reticle in low light is critical, immediate and uncompromising. The system includes:

- Reliable digital circuitry design reliable under extreme conditions
- "Low Battery" indicator warns when battery charge starts to drop
- Easy to use tactile push-button brightness adjustments
- Automatic shut-off after two hours to conserve battery.
- Multiple brightness settings (14 day / 6 night vision)
- Memory returns to the previous brightness setting

Chemlite Power. The TriPower provides an additional non-electric source of extra illumination for short periods. A small chemlight can be inserted to provide additional light to the reticle. This is also useful in hazardous environment where electrical devices are not allowed. The chemlight operates for 4-6 hours with the duration and brightness of chemlight is degraded at lower temperature.

The new TriPower has been designed to be readily adaptable to a wide variety of sporting and tactical firearms ensuring ease of use and versatility.

- The 30mm tube allows use of easily available industry standard 30mm rings and scope mounts as well as MilStd K11913 (Picatinny Rail) adapters.
- Completely sealed unit is waterproof to a depth of 100 ft (30 meters).
- Sealed external adjusters that do not require caps, precision adjustments 1centimeter per-click.
- Objective and eyepiece are both threaded to allow mounting various adapters, secondary mounts, KillflashTM units, or covers
- External cover for adjusting light from the fiber optic system to match conditions
- Broad Band Anti-Reflective Coating (BBAR) coated lenses allow use with night vision equipment
- Reduced parallax compared to other red-dot style systems

Chevron Reticle The large clear bright chevron shaped reticle is allows instinctively fast engagement for firing at close target, moving targets, and firing while moving. While the sharp tip enables more precision than crosshairs. The outer edges of the base are the width of a man at 100 meters and the inside edges of the base are the width of a man at 200 meters.

Figure 1 Chevron Reticle

Options Include :

- Q-Plate coated 100% scratch resistant lens
- ARMS mount available separately with low, medium, or full M1913 Rail grabber base for mounting on current military style weapons
- TN 22 KillflashTM Anti-Reflection Device for TriPower
- Night vision/image intensifier adapter compatible version

CHARACTERISTICS AND SPECIFICATIONS:

Length - 133.0 mm (5.24")	Width - 56 mm (2.2")
Height - 53 mm (2.1")	Weight - 132 grams (4.7 oz)

Water-resistant to 30m (100ft) Weight - Mount 106 grams (3.76 oz)
 Batteries - two 1/1N Battery Life 10-110 hours
 Tritium Lamp Life 15 years Tritium source 0.1 curies
 Reticle - Red Chevron 4.27 mils (14.1 Minutes of Angle) tall and 3.92 mils (16.6 Minutes of Angle) wide at the base / width of a man at 100 meters



Figure 2-TriPower Tactical Sight

COMPONENTS

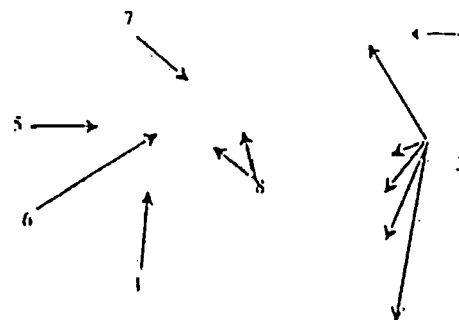


Figure 3-TriPower Tactical Sight

Item	Part #	Nomenclature
1		TriPower Sight
2		Arms # 22 Mount w/ Tail Insert
3		Fiber Optic Cover
4		Battery Cap with O-ring

5		Chemlight Cap with O-ring
6		Cap Retaining Strap
7		Cyalume Chemline 1 1/2in NSN 6260 01 269 4435
8		Battery 1/3 N

Figure 4 TriPower Parts List

Figure 5 Mount for M1913 Rail

Weapon	Mount Nomenclature	Manufacturer	Available from Trijeon
M16/A11	Rail Mount	ARMS	TS10
M16/A11	Handle Mount	ARMS	TS15
M&K MP-5			

Figure 6 Mounts

SAFETY

WARNING

Insure the weapon is unloaded and the selector is in the "Safe" position before attempting to install, remove, or perform maintenance on the sight

WARNING



RADIOACTIVE MATERIALS RADIATION HAZARD

The TriPower Tactical Sight contains radioactive material for nighttime illumination. The radiation source is Hydrogen-3, commonly known as tritium

Tritium is a naturally occurring odorless, tasteless, colorless gas that reacts with the human body in the same manner as natural hydrogen. The body does not easily retain hydrogen or tritium as a gas. However, the oxide, HTO , which is formed by the burning of tritium is 10,000 times more hazardous. For this reason great care should be taken to avoid flame in the presence of the TRIPower Tactical Sight with a tritium lamp which is broken or is suspected of leaking.

If the tritium lamp in a TriPower Tactical Sight is broken or is suspected of being broken, place the unit in a sealed plastic bag and contact Trijicon, Inc. for handling and replacement instructions.

After contact with a unit with a broken lamp, a person should wash their hands carefully with soap and water. Do not handle such a defective sight if you have open skin cuts or abrasions. Work with a defective unit only in a well-ventilated area and avoid inhaling air near the unit.

Do not eat, drink, smoke or apply cosmetics in the presence of such a defective unit.

The manufacturer, Trijicon, Inc. is the only authorized repair facility for defective units. Contact Trijicon, Inc. for handling and replacement instructions.

INSTALLATION

Inspection: Before installing the TriPower Sight on the weapon, inspect the unit for any external damage. Also check the tritium lamp for failure following the procedure listed under Safety.

Mounting the TriPower Sight: The TriPower Sight is easily attached to a variety of weapons using one of many available mounts. A listing of these mounts can be found on page 6. If it should be necessary to remove one

adapter and re-attach the TriPower Sight to another adapter, please refer to the manufacturers Assembly/Disassembly instructions provided with the mount.

Installing Mounts: The TriPower has been designed to easily mount with a wide variety of industry standard 30mm scope rings and bases.

Commercial Ring Mounting: Select a quality heavy-duty 30mm scope ring and base to fit your firearm. The combination of rings and bases should elevate the center of the TriPower to a height that is at eye level when the weapon is shouldered in a natural comfortable shooting position. If the weapon has iron sights, the reticle should sit atop the front sight when in the center of the field of view.

Install the base and lower ring on the weapon according to the manufacturer's directions. Then place the TriPower in the ring and install the top ring evenly tightening the screws until snug. Ensure the weapon is held without canting and rotate the sight within the ring until the chevron reticle is pointed at the 12 o'clock position. Then evenly tighten the screws to firmly hold the TriPower.

Military Mounts: Current U.S. military type small arms come with or have MilStd M1913 rail mounting adapters available. The ARMS TM #22 with the high spacer 30mm Throw Lever Flat Top Rail Adapter listed as Trijicon TX10 is used to mount the TriPower on weapons with Mil Std M1913 (Picatinny) railed receivers. This mount can be used with "Weaver type" rails. However, The M1913 based mounts have cross bars that are wider and project further than those designed for "Weaver rails". The recoil notch in the "Weaver type" rails can be widened and deepened to accommodate the M1913 type rail grabber. Install ARMS TM #22 Rail Adapter on a M1913 rail equipped weapon by swinging the locking lever out 90° to open the jaws. Mounting on flattop railed M16/M4/AR-15 type receivers requires the tall spacer between base and ring to have reticle clear front sight. Hook one side of the rail grabber over the rail and align the cross bar with one of the recoil notches in the rail and rotate the mount down. Ensure the cross bar is fully seated in the notch and the base of the mount is flush and flat against the top of the rail. Push down and forward on the mount while rotating the locking lever to the closed and locked position. Install the TriPower in the mount with the

upper ring and snug the screws down evenly. Hold the weapon up right without a cant and rotate the TriPower in the ring until the chevron reticle is pointed to the 12 o'clock position and evenly tighten the screws.

Do not over tighten the screws. Apply thread-lock to threads of screw if concerned about loosening of the screws.

The ARMS mount will put the sight at the appropriate level on M16, M1 carbine, and AR-15 variants with flat-top M1913 rail receivers. The best mounting for most other weapons will be by using the special ring system and mounts developed for the TriPower series. Many firearms will be supported with either a specific mount, a Weaver rail adapter, or Mil-Std 1913 Picatinny Rail adapter.

M16, M14 Carbine, and AR-15 variants with carrying handles can use handle top or cantilevered adapters for 30mm rings or the Trijicon 1X11 mount. The cantilevered adapters mount the TriPower in front of the carrying handle at a height that maintains the natural shooting position with the M16/M14 style rifles and allows the use of the ironsights through the optic. Mounts that stack on top of the carrying handle tend to mount the optic too high and interfere with a steady, fast, natural shooting position.

The ARMS #22 or heavy 30mm military style rings can be used to mount the TriPower to the M1913 rails mount or current US 5.56/7.62 50 cal/40mm machine guns.

The mount is used to mount the TriPower on the MP-5 9mm submachine guns. Install using manufacturer's directions.

Do not to mount the TriPower too far to the rear. What looks right when standing erect with the weight on the back foot will not provide a fast, comfortable, and steady stock weld when firing in crouched, prone or supported positions. Mounting the scope so the rear lens is over the weapons grip exploits the natural ability of the hand to find the eye. The scope will be aligned with the eyes as the weapon is brought to the shoulder in one smooth, quick, natural motion.

OPERATION

The TriPower is a reflex sight. The chevron aiming reticle is projected on a reflective coating on the backside of the front lens. The lens is parallax corrected and establishes an optical axis aligned with the bore. The coil of fiber optic picks up and concentrates ambient light. The coil's position on top allows it to self adjust the brightness of the reticle to accommodate a much wider variety of lighting conditions in the target area. A rubber cover for the fiber optic collector. During operation rise the retaining band and fold the rubber cover back under the band to hold it out of the way. Tritium equipped models have a radioactive tritium lamp that in the dark lights the reticle allowing the operator to engage muzzle flashes at night or by flare light. The tritium provides a vivid distinct aiming point that is continuously on for 15 years or more. The On Call Battery and Chemlight supplemental light sources are use when aiming at a light target in bright sunlight while the sight is in the shade or entering a dimly lit room or dark room with a flashlight. In 90% of the situations the fiber optic tritium lamp system is perfect.

An On-Call Battery Power System is provided for operations requiring a very bright eye catching aiming point in poor ambient light conditions. This is an advantage in poorly lit conditions where rapid aiming while moving or moving targets is required. This feature is particularly useful in close quarters battle or tactical entry in urban areas, underground facilities, or caves. One set of 1/3 N lithium batteries will last approximately 110 hours of continuous use on the lowest daytime setting (#7) and about 10 hours continuous use on the highest setting (#20). The batteries have a 10 year shelf life.

Figure 8-1 Fiber Optic Rubber Cover Folded Under Retaining Band

Any electrical device with wires, switches, diodes, and batteries is subject to failure. The fiber optic and tritium are the primary light sources and will continue to function even if the battery system fails. The TriPower provides an additional non-electric source of extra illumination to the reticle for short periods. A 1 1/2 inch Cyclone™ NSN 6260 01 209 4435 can be inserted in a special compartment to illuminate the reticle for 4 to 6 hrs.

A small chemlight can be inserted to provide. This is also useful in hazardous environment where electrical devices are not allowed. Duration and brightness of chemlight is degraded at lower temperature.

Installing Batteries: The twist lock battery cap is located on the top rear of the sight. See Figure 3. Twist the cap counter clockwise approximate one quarter turn to unlock and pull to remove. Install two 1/3 N batteries in tandem with the positive (+) side to the rear. Use the plastic wrapper on the batteries to avoid touching the battery with bare fingers since this may cause the batteries to corrode. Load both batteries with the + (smooth side facing out), insert the cap and twist clockwise until fully sealed and locked. When the cap is off the unit is still sealed. However, avoid getting sand or dirt in the battery compartment or on the O-rings.

Installing Chemlight: Remove the small cap on top rear of sight by twisting counter clockwise and pulling. Remove CyalumeTM stick from wrapper, bend until the inner glass tube breaks to activate. Slide the chemlight in and replace cap by pushing in and twisting clockwise. When the cap is off the unit is still sealed. However, avoid getting sand or dirt in the chemlight compartment or on the O-rings.



Figure 7 Battery Back-up Controls

Battery Back-up Controls: An hermetically and environmentally sealed pressure pad on top rear of the sight controls the battery power system. To turn the battery power ON press the increase (+), decrease (-) or on/off sections of the pad. Press on/off portion of the pad to turn off. To adjust brightness press (+) for brighter and (-) for a dimmer. The reticle will blink as it is being adjusted until it reaches the maximum setting at 20 or the minimum at 1 where it stays on steady without blinking. The brightness setting is retained and it will automatically return to the last setting whenever the sight is turned off and on. Removing the batteries will require resetting the brightness. The sight comes on at the lowest daytime brightness at level #6. Settings #1 - #5 are for use with night vision equipment and #6 - #20 for daytime operation.

Automatic Shut-off. The battery power automatically shuts off after two hours of operation to conserve batteries. Touching the pad twice return power to reticle at the last setting.

Low Battery Indicator. When the batteries are low the reticle will flash 10 times. The sight will operate at the maximum brightness for approximately one hour after low battery indication. This does not include turning the battery off and allowing it to recharge for a few more minutes of operation. When the battery is low and the reticle will flash 10 times each time it is turned on. When the batteries are replaced or when at full charge the reticle does not flash.

Zeroing: Zeroing the TriPower to the weapon is accomplished by using the sealed windage and elevation adjusters to move the shot group to the desired point of impact. These adjusters are environmentally sealed and do not require covers to maintain zero or protect the internal workings.

A small screwdriver, coin, or rim of a cartridge case can be used to make adjustments. Turn the elevation adjuster counter-clockwise to move the shot group up. Turn the windage adjuster counter-clockwise to move the shot group to the right. Remember counter clockwise equals right and up. Each click of the adjuster will move the strike of the bullet approximately 1 cm. at 100m, 2 cm at 200 m, 3cm at 300m, or .25 cm at 25 m.

The optimum zero depends on the type weapon, caliber, muzzle velocity, bullet shape and weight and the height of the reticle above the bore. The TriPower can be mounted to enhance the effectiveness of a wide variety of small arms from pistols to heavy machine guns. This manual will provide general zeroing techniques that will be effective on any weapon and specialized zero techniques for common military style weapons.

General Zero : Securely mount the TriPower sight and adjust the reticle to provide a distinct aiming point on the target at the furthest range that you expect to engage targets. Use a steady shooting position and fire a 3 shot group. Measure the distance up/down/right/left of point of aim in centimeters. Divide the range to the target by 100 to determine the number of centimeters the shot will move per click. A 200 m target $200/100 = 2$ cm per click. Divide the centimeters per click into the distance of the group from center of the target

up/down/right/left to determine the number of clicks. If the shot group was 10 cm low and 8 cm. right at 200 meters the correction would be up 5 clicks (counterclockwise) and left 4 clicks (clockwise). Fire another group to confirm or make further adjustments. This zero technique is difficult at longer ranges, where steady hold, wind, etc. makes it difficult and time consuming to zero.

CAUTION

The TriPower Sight's windage and elevation adjusters have stops at the extremes of adjustment. If adjustment screws become difficult to turn, then limits are being approached. Do not continue to adjust or damage may result. Adjustments beyond the center of the range should not be necessary if the scope is properly installed on a serviceable weapon.

Military Zero

Military weapons use standard weapons ammunition and mounts so a short range zero can be calculated that provides a longer-range battlesight zero. Military zeros can be established as an offset and a standard range. The offset zero of 1 cm low at 25 meters give 300 m battle sight zero. Adjusting the shot group to strike 1 cm below the point of aim at 25 m result in a point of aim equaling the point of impact at 28 meters and again at 300m.

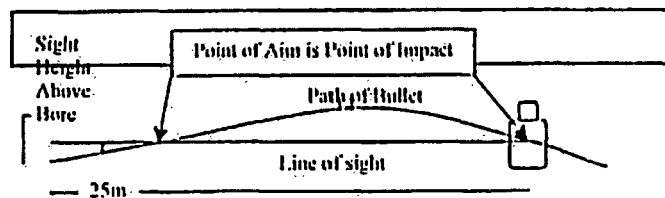




Figure 7 Bullet Path Compared to Line of Sight and Zero

Weapon	Ammu	Mount	25m Zero	POA = POI	Battlesight Zero
M4/M4A1 Carbine	M855 5.56mm	Flattop Receiver	-1cm	28 meter	300 meters
M4/M4A1 Carbine	M855 5.56mm	Cantilever Handle			
M16A2 Rifle	M855 5.56mm	Cantilever Handle			
M16A3 Rifle	M855 5.56mm	Flattop Receiver	-1.5cm	32 meter	300 meters
M249 LMG	M855 5.56mm	Rail	6.4 cm	15meter	600 meters
M240 M80 M80G	M80 7.62mm	Rail	+6.5cm	14 meter	600 meters
M2 TRNG	50 cal	TVS-5	-8cm	41 meter	600 meters

Figure 8 Battlesight Zero from 25 Meter Offset and Point of Aim Equals Point of Impact Zero (POA=POI)

Engagement Techniques: The TriPower can be used much like a traditional scope by closing one eye and acquiring targets and aiming through the sight. This method fails to exploit the TriPower Sight's ability to enhance situational awareness and speed of engagement. Shooting with both eyes open allows the non-shooting eye a wider field of view and the ability to detect targets on the periphery. Looking at the target with the non-shooting eye will allow the shooter to rapidly swing the weapon and bring the reticle to a stop on the target.

This is faster than raising the weapon and searching for the target through the sight tube.

Shooting with both eyes open enhances the use of automatic rifle and machine gun fire. The shooter can maintain a clear image of the target with the non-shooting eye while the shooting eye can see the reticle as the gun cycles. Observing the vibration of the reticle over the target shows the distribution of the burst. Controlling the reticle as the automatic weapon cycles controls the impact of the burst. The gunner can concentrate the fire by holding the reticle on target or distribute fire. The gunner aims at one side of the target and fires a 6 round burst. He can see his initial aim point and when the burst ends where the reticle ended. He knows he distributed 6 rounds between those two points. He can then reengage if more hits are required or distribute fire over another section of the target.

The fluorescent fiber will instantly respond to changes in light in the target area and change the reticle brightness to maintain a sharp aiming contrast. The fluorescent fiber optic responds even to low light at dawn and dusk. Even with no visible light source, the reticle is still visible because of the Tritium illumination enables the shooter to engage enemy muzzle flashes. This results in a well-defined, hard-edged, and clearly visible aiming point in day, night and artificial light conditions.

In close confined spaces such as in jungle, thick brush, buildings, ships, fortifications, etc. the ranges often shorten to 1-15 meters. At these ranges, speed and lethality are the keys to survival. Lethality comes from being able to lock onto vital areas and achieve multiple hits in an instant. The Battery Back-up is used to establish a bright eye catching reticle for rapid and accurate aiming for firing at close targets while moving or firing at moving targets with both speed and lethal accuracy in marginal lighting conditions.

Night Operations. The TX30 can be used with the head-mounted AN/PVS-14 or similar night vision pocketscopes. The pocketscope is mounted in front of the non-shooting eye. This allows the operator to move and operate effectively at night in the presence of ambient light sources like streetlights or flares, in starlight alone. When engaging a target the shooting eye will see the aiming reticle and any ambient light through the sight and the non-shooting eye

target and scene in the image intensifier. The brain will fuse the two images for a rapid accurate shot. However, looking through the TX-30 with nightvision goggles or mounting a pocketscope or other nightvision adapter behind the sight will result in bloom around the reticle from the tritium lamp. The TX30NT (no tritium) sight is compatible with current issue night vision goggles and pocket scopes since without the tritium lamp the night settings on the battery backup can be used to adjust the brightness of the reticle so bloom does not obscure the reticle. The sight is mounted forward on the receiver or top M1913 rail (the sight body will ghost out but the reticle will be clear for aiming). The AN/PVS-14 Pocketscope is mounted to the rail with the Universal Pocketscope Mount or similar mount behind the sight. The TX30AT Adjustable Tritium model will be compatible with nightvision goggles and adapters. A rubber cover is provided to prevent light being emitted from the fiber optic collector when battery power is used at night.

Use of weapon mounted infrared light sources aids performance of nightvision equipment and increases range. However, this does provide a vivid infrared signature to the enemy if he has night vision devices. In such a case, the enemy could identify infrared filter flashlights, infrared diodes, and infrared laser aimers/illuminators. The TriPower provides a low signature passive method of aiming at night with nightvision devices.

NOTE:

If you zero with one eye then engage long range targets with one eye. Close and moving targets are best engaged with both eyes open which is faster and allows for better balance and awareness than single eye aiming. This also applies to shooting while moving

WARNING:

The sight must not be disassembled. The tritium could be released by those not properly trained in the process. Repair of the sight is prohibited by anyone except Trijeon Inc., due to the radioactive material contained in the TriPower Sight.

MAINTENANCE:

Care and Cleaning: The sight requires very little maintenance. If the lens or light-gathering window becomes dirty, rinse it using fresh water. Shake or blow out excess water and dry the lens with a clean cloth. Be careful to rinse all particles from the lens fully before wiping it with the cloth. The remaining dirt could scratch the lens.

Such cleaning should be done whenever the sight becomes dirty or after exposure to salt water. To clean the window, wipe using a soft cloth with clean water, alcohol, or general-purpose window cleaner.

Apply a light coat of C.I.P. or similar cleaner, lubricant, and preservative to metal surfaces.

CAUTION

Avoid getting cleaning solvents and insect repellents on the TriPower Sight which can damage its fiber optic. Never submerge the sight in any liquid but water. If the sight is directly exposed to chemicals, rinse it with plenty of fresh water. The sight should typically be removed for detailed weapon cleaning.

When operation is necessary in a dusty or sandy area, keep the dust cover over the sight unless it is in actual use. Avoid pointing the sight into the wind. This will help to prevent dust and sand from pitting or scratching the objective lens. Clean both sides of the lens frequently with a clean soft cloth and fresh water if available.

Operator Maintenance: Maintenance is limited to inspection and replacements of repair parts listed in Figure 4. All repair parts can be installed at the operator or unit level. Special tools or equipment are not required for maintaining the TriPower Sight. Units requiring further repairs are to be returned to Trijicon.

WARRANTY
Limited Life Time Warranty

The original registered owner of the Trificon product is entitled to repair or replacement (at our option) of the sight if it should fail due to defects in material or workmanship during normal use. This warranty specifically applies to the optical system. The tritium lamps in this product are warranted to glow for fifteen years from the date of original manufacture. If repair is necessary, return the per instructions of our customer service representative at the numbers below, and return it to us, properly packed, including a description of the problem. This warranty does not apply to defects caused by anything that is deemed abnormal, abusive, or improper, including any fault resulting from an accident or improper service. Trificon TriPower Sights contain Tritium and are regulated by the Nuclear Regulatory Commission. They may not be disassembled by anyone other than Trificon 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 rights that vary state to state. Contact TRIFICON INC for warranty service instructions.

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