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TiTAN

OPERATION & INFORMATIONAL MANUAL (O&I)



TiTAN Disruption System Ti Part # ZPTITA106XX

This manual contains information critical to the safety of Bomb Disposal Technicians and should not be released to unauthorized personnel. This document is not for commercial release.

Sensitive Information – Official Use Only

V.082026



757.241.4343



1763 Princess Anne Road, Ste 106
Virginia Beach VA, 23456



www.adaptosllc.com



Service - Disabled Veteran - Owned Small Business

Mr. Perry Sasnett
Founder / CEO / Zero Point, Incorporated
Founder / President, ADAPTOS, LLC
CWO2, USN EOD, (Ret.)

CONTENTS

Proprietary Information	2
Disclaimer	2
Overview	3
Load List	3
Specifics	4
Main Barrel (12") , Breech Plug, Smooth Bore Extensions (6"), Protective Caps and Rifled Bore Extension (6")	5
O- Rings	6
Push Lock Breech Plug Assembly	6
FRAG Sleeve	7
Disrupter Stand 5.5" x 8"	7
Bumper and Stop	7 & 8
Spanner Wrench	8
Seating Tool	8
Knockout Rod	9
Disruptor Maintenance Kit	9
Disruptor Cleaning Kit	10
ADAPTOS Laser	11 & 12

Proprietary Information

This manual contains information obtained through open-source research, testing and evaluation conducted by ADAPTOS, and the experience and knowledge of ADAPTOS personnel. Although some of the information in this manual is readily available to all, the combined information in its present form is the intellectual property of ADAPTOS and all reproduction in whole or in part of the material in or from this manual is not authorized without written approval from ADAPTOS.

Disclaimer

Explosive Ordnance Disposal (EOD) operations are inherently dangerous and should only be conducted by qualified EOD Technicians. The ADAPTOS EOD Render Safe product line consists of commercial off the shelf (COTS) items, modified COTS items and specialized tools manufactured by ADAPTOS. We have selected, modified or manufactured these items based on both their applicability to EOD operations and superior quality. Improper use of any tool included during such operations can result in a catastrophic event and possibly cause serious injury or death. The information provided in this manual is strictly for reference purposes only and is not intended to replace or supersede any official EOD publication, tactic or procedure.

OVERVIEW

The TiTAN is the lightest, most versatile EOD disruptor available. Specifically developed to meet the varying demands of both general and precision IED disruption, it is capable of utilizing all existing Original Equipment Manufacturer (OEM) disruption 12 ga rounds. Whether general or precision disruption is required, robot deployed or man carried, on land or at sea, TiTAN is not only the most versatile and capable disruptor system ever created, but the most tested as well. Weapon System Explosives Safety Review Board (WSESRB) and Military Technical Acceptance Board (MTAB) approved. The information in this manual can be used for reference if developing specific tactics or techniques that require technical specifications of equipment included in the kit.

PARTS LIST

- **Custom Textile Set:**
 - Soft Custom Textile Case with Envelope Pouch
 - Projectile Pouch
 - Combat Carry Sleeve
- **TiTAN Disruptor Assembly:**
 - Disruptor Main Barrel
 - Breech Cap
 - Smooth Barrel Extension 6"
 - Thread Protector Cap
 - Rifled Extension 6"
 - Titanium Breech Assembly
- **Custom Breech Kit:**
 - Push Lock Fitting 1/8"
 - Push Lock Fitting 2.5mm
 - Push Lock Fitting 4 mm
 - Breech Pin
 - Breech Pin Spring
 - Breech Pin Tool
 - Barrel Plug Sets (for water shots)
 - Ratchet
 - Socket
 - Socket Adapter
 - Nonel Cutter
 - Needle Nose Pliers
 - Marine Cloth
- **ADAPTOS Laser**
- **Disruptor Maintenance Kit:**
 - Bore Snake
 - Bore Brush, Black Nylon
 - Bore Brush, Brass
 - Bore Mop, Cotton
 - Cleaning Brush, Double Ended
 - Cleaning Cloth, Large
 - Synthetic Grease, Lube
 - Anti-Seize, Lube
 - CLP
- **Misc Parts:**
 - Seating Tool
 - Barrel Plug Sets (for water shots)
 - Lightweight Disruptor Stand
 - Spanner Wrench
 - Knockout Rod
 - Fragmentation Sleeve
 - Bumper with Stop
 - TiTAN REF Sheet
 - Warning Card
 - Laser Instruction Card
 - Large Hard Carry Case

SPECIFICS

Due to the inherent dangers associated with EOD and explosive operations, improper use of this system could result in injury or death. Unsecured disruption shots present a significant rear ejection hazard from the barrel itself; bunker or secure the TiTAN to minimize this hazard.

Prior to first use, lubricate and inspect O-Rings in the O-Ring grooves of the threaded sections of each TiTAN barrel and smooth bore extensions. Clean and re-lubricate as necessary.

All general disruption water shots should only use smooth bore extensions.

All precision disruption shots using sabot rounds should use the rifled extension.

Reference your individual organizational operating procedures when conducting Improvised Explosive Device Disposal operations.

Unless stated otherwise, all of the bits, cutting edges and metal tools **are not insulated** and **will conduct electricity**. Improper use of these tools can result in catastrophic events that can lead to the **injury or death** of personnel. Insulating and powder coating particular tools greatly reduces the chance of shorting components or wires, but extreme care should still be taken in case the coating wears thin or chips due to excessive use or wear. Re-insulate tools or replace if excessive wear is observed. Some tools require no explanation and are not mentioned.

Note: Pictures are not to scale.



TiTAN Operation & Information Manual

Main Barrel (12") , Breech Cap, Smooth Bore Extensions (6"), Protective Caps and Rifled Bore Extension (6")

All parts are made with 6Al-4V titanium alloy (grade 5).



The TiTAN can be used in the following configurations:

- 12" Main Barrel (12"/1.75 LB), *TiTAN MB*
- 12" Main Barrel, one 6" Smooth Bore Extension (18"/2.5 LB), *TiTAN S*
- 12" Main Barrel, two 6" Smooth Bore Extensions (24"/3.25 LB), *TiTAN S2*
- 12" Main Barrel, one 6" Rifled Bore Extension (18"/2.5 LB), *TiTAN R*
- 12" Main Barrel, one 6" Smooth Bore & one 6" Rifled Bore Extensions (24"/3.25 LB), *TiTAN SR*
- 12" Main Barrel, two 6" Smooth Bore & one 6" Rifled Bore Extensions (30"/4.0 LB), *TiTAN S2R*

All general disruption water shots should only use smooth bore configurations:

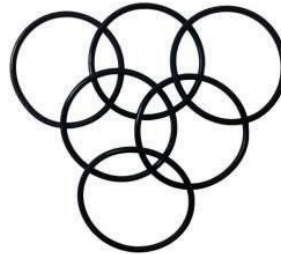
- TiTAN MB (60 mL of water)
- TiTAN S (100 mL of water)
- TiTAN S2 (140 mL of water)

Ensure a protective cap is used on the last threaded section when using a smooth bore configuration. All precision disruption shots using sabot rounds should use the rifled bore configurations.

NOTE: L-Tech round velocities are characterized using a 24" length barrel. Using TiTAN configurations of other than 24" will produce round or water velocities that may vary from L- Tech's advertised technical data.

O-RINGS

The O-Rings are to prevent sections from coming loose during vibration to the target. Prior to first use, lubricate and inspect the O-Rings on the threaded sections of each TiTAN barrel and smooth bore extensions. Clean and re-lubricate as necessary.



PUSH LOCK BREECH PLUG ASSEMBLY

The Breech Plug Assembly consists of the Push Lock Shock Tube Adaptor Housing, Breech Pin Spring, Breech Pin, and Push Lock Fittings that accept shock tube sizes of 1/8", 2.5mm & 4mm.

Assembly: Insert the Breech Spring into the rear of the Push Lock Shock Tube Adaptor Housing. Insert the pointed end of the Breech Pin through the center of the Breech Pin Spring. Select the appropriate Push Lock Fitting and install with the supplied ratchet. Keep the Breech Plug Assembly upright when removing the Push Lock Fitting to prevent loss of the Breech Pin and Breech Pin Spring.

Use: Simply insert shock tube into the lock-ring fitting until it bottoms out. After inserting the shock tube lightly pull back to confirm the teeth of the push lock have engaged the shock tube. If the shock tube can easily be pulled out the push lock needs to be replaced to avoid failure to fire. The fitting will automatically lock the tube in place until manually released. The push lock fitting can be released by depressing the lock ring on the fitting and lightly pulling the expended shock tube. Hundreds of shots can be fired without replacing the push lock fitting.



FRAG SLEEVE

The Fragmentation Reduction Attenuated Gas (FRAG) Sleeve is designed as an insert for the TiTAN Main Barrel to bunker live detonators during render safe operations. Insert the FRAG sleeve into the breech chamber and then insert the detonator into the FRAG sleeve. Ensure both ends of the TiTAN are facing away from personnel as fragmentation will exit either end. Manual procedures are inherently dangerous and should only be performed as a last resort. Consult organizational procedures and doctrine.



DISRUPTER STAND 5.5"X8"

These lightweight aluminum plates are included to provide a fast and reliable method of positioning a disruptor in support of EOD actions. Simply place the disruptor through the two plates and rotate the plates to establish a secure point of aim.



BUMPER STOP WITH RING

The Bumper System allows the operator to align the shot needed without worrying about possible damage to the Breech Plug Assembly.

The material makeup of the bumper protects the TiTAN's Breech Plug Assembly from any damage that may occur during normal operation.

The Bumper Stop is made of aluminum to stop the bumper from compressing into the Breech Plug Assembly causing a cookie cutter scenario* upon impact. The Bumper Stop also has a extra large d-ring connection, allowing the operator to attach any kind of tension or retardation system they may deem necessary for the job. Ensure Bumper Stop is oriented with the arrow towards target as shown on the Bumper Stop.



SPANNER WRENCH

The Spanner Wrench is used to remove the breech cap in the event of over tightening. It is recommended to hit the spanner wrench on the flat surface to un-tighten the breech cap.



SEATING TOOL

The seating tool is used to seat the black plug into the barrel through the breech when preparing a water shot. The red cap is used to seal the other end of the barrel after water has been added. ADAPTOS does not recommend poking a hole in the red cap due to a "pin hole" of water reaching the package before the main water column makes contact.



KNOCKOUT ROD

The Knockout Rod can be used to remove expended rounds. The end of the rod is threaded for use with the cleaning brushes. The Probe found inside the Knockout Rod is used to tighten the Multi-Use Tactical Targeting System (MUTTS) stand.



DISRUPTOR MAINTENANCE KIT

The maintenance kit contains everything to conduct maintenance on the TiTAN Kit.

- Wrench and socket for removing the Push Lock Fitting
- Replacement O-Rings for the laser
- Black & red water load caps (5 pair)
- Re-zeroing Allen keys for ZPL-EOD laser
- Breech Pin checking tool (long Allen key)
- Push Lock Fittings that accept shock tube sizes of 1/8", 2.5mm & 4mm
- Spare Breech Pin and Breech Pin Spring



DISRUPTOR CLEANING KIT

Although the TiTAN is made of non-corrosive titanium alloy, maintenance is still required.

- Brushes, cloths, oil, and a bore snake for cleaning the outside and inside of the TiTAN
- Super lube for assisting the removal of the ZPL-EOD laser from the TiTAN barrels
- Loctite LB8070 anti-seize to aid in removing the expended cartridges



ADAPTOS LASER

The ZPL-EOD is designed specifically for the TiTAN inner diameter of the smooth barrel (blue mandrel) and rifle barrel (red mandrel). The mandrels are designed to easily remove from the barrels with lubrication on the o-rings. Set screws are exposed allowing the operator to rezero if desired. It is recommend to fill in the setscrews with a removable silicone to further enhance the water resistant capabilities of the laser.



Avoid extreme weather conditions:

- Full capability 15-35 degrees C Reduced capability 5-45 degrees C
- When using the laser in colder environments keep it in your pocket to ensure brightness

WARNING: Avoid direct eye contact with laser and always wear laser safe eye wear.

Beam Divergence 2.2 mrad max

ADAPTOS LASER - REMOVING THE BATTERY

To replace the battery on your ADAPTOS Laser, rotate the battery cap counter clockwise until cap is removed.

Replace with 123A Lithium battery.

To power on your ADAPTOS Laser, hold the main body and rotate the battery cap clockwise.

