TACTICAL PARACHUTE DELIVERY SYSTEMS, Inc.

HEAVY LOAD TACTICAL (HLT)

Owner's Manual

2025

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Manual P/N: TPDS-HLT-700

SERIAL NUMBER_____-_____

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STATEMENT OF CONFORMANCE

This letter is to inform that all components of the **Heavy Load Tactical (HLT)** by **TPDS, Inc.** are manufactured under Federal Aviation Administration (FAA) Technical Standard Order (TSO) requirements of the Federal Aviation Regulation 14, Code of Federal Regulations Part 21, Subpart O.

Furthermore: the Heavy Load Tactical Harness/Container meets all Military Standards and Specifications.

Sincerely,

Henri Pohjolainen
President
Tactical Parachute Delivery Systems, Inc.

WARNING!

PARACHUTING IS A HIGH-RISK ACTIVITY WHICH CAN CAUSE OR RESULT IN SERIOUS INJURY OR DEATH.

The following information must be read and understood before any use of this equipment:

USER KNOWS THE RISKS OF PARACHUTING AND ACCEPTS THAT:

Parachuting can cause **death** and/or **serious injuries**. Many of these deaths and injuries can be attributed to equipment problems or malfunctions.

Parachuting equipment can fail, even if all possible precautions are taken by the user, the equipment manufacturers and everyone else involved with the jump.

Failure to activate the main or reserve parachute (or follow emergency procedures) at a safe altitude, and/or equipment failure can result in **severe injury or death**.

IT IS THE USER'S RESPONSIBILITY TO:

Receive proper training before any use of all parachuting equipment. Be extremely careful and cautious.

Read and Understand all owner's and operating manuals for all parachuting equipment.

Thoroughly check all parachuting equipment and replace any defective or worn component prior to use.

Review emergency procedures before each use of this and all parachuting equipment.

Check equipment warnings –

WARNING!

DO NOT EXCEED EQUIPMENT LIMITATIONS!

Never violate the training and experience requirements for the specific equipment use.

DISCLAIMER – STATEMENT OF WARRANTY

Because of the unavoidable dangers involved in the use of this and all parachute equipment – **Tactical Parachute Delivery Systems, Inc**., (including but not limited to all owners, officers, staff, and employees), hereafter referred to as **"TPDS"** makes no warranties of any kind, expressed or implied. The liability of the seller is limited to replacing defective parts found upon examination by the manufacturer to be defective in material or workmanship within 7 days after purchase and found not to have been caused by an accident, improper use, alteration, tampering, abuse or lack of care on the part of the purchaser.

By using this equipment or allowing it to be used by others, owner/buyer waives any liability of **TPDS** for personal injuries or any other damages arising from such use. Any promises or representations inconsistent with or in addition to the **Statement of Warranty** are not authorized by **TPDS** and shall not be binding.

!WARNING!

Parachuting is a hazardous activity that can result in serious injury or death.
Failure to follow all warnings, instructions, and required procedures may result in serious injury or **DEATH!** Parachutes sometimes malfunction even when they are properly designed, built, assembled, packed, maintained and used.

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Chapter 1

Product Information

1.1 Tactical Parachute Delivery Systems, Inc. (TPDS)

TPDS is committed to providing you with the latest, most versatile and dependable skydiving systems available on the market today. **TPDS** can provide you with a system designed to suit or exceed the expectations of your demanding and changing environment with each assembly built to support a range of parachute combinations and options. If your operation requires a custom solution, please feel free to contact us.

This manual should provide you with the necessary information to help select and operate your system to the maximum of its abilities.

1.2 Harness/Container Information

While each system is available in a combination of sizes and options there are several standard features of the **Heavy Load Tactical (HLT)** system which includes:

- Bridle and Riser Cover Protection – Zero exposed riser or main bridle ensures proper function in any manner of orientation or use.
- Single Pin Reserve Closing.
- Partially Exposed Reserve Pilot-Chute.
- Type-13 Mil-SPEC Harness and Reserve Risers.
- Reserve Static Line **(RSL)** – A lanyard connecting the main riser and reserve ripcord which allows minimum altitude loss on the reserve opening during the event of a cutaway.
- Adjustable Harness - The **TPDS HLT** Harness is adjustable on the Main Lift Web and Side Laterals, allowing a range of users to access the same system.
- Foam Padded Yoke, Back Pad and Leg Pads.
- Cut-in Laterals for added comfort and fit.
- Automatic Activation Device Set-up - ready for installation.
- Main Deployment – Drogue Freefall, Over the Shoulder Ripcord, BOC Ripcord, BOC Throw-out, Static Line Assist (T/O or Spring-loaded Pilot Chute) or Direct Bag Static Line.
- Reserve Ripcord Location - Outboard.
- Cutaway Location – Outboard.
- Equipment Rings - Locations: Below the Main Harness Ring, Below the emergency handles- near the adjustable lateral and at the rear of leg.
- ***"Reserve Boost"*** Main Assisted Reserve Deployment **(M.A.R.D.)** System.

- Dual Loop Main Toggle for Assisted Canopy Flight Training.
- Left and Right Hacky style Drogue Release Handles for better grip and familiarity.
- Drogue Release Handles are Retractable and Replaceable.
- Type 8 Drogue Riser w/Mini Rings, Replaceable.
- Ballistic Leg Pads, Replaceable.
- Deployment Bag and Drogue Pilot-Chute are Field Replaceable.
- Magnetic Riser Covers with Replaceable Magnets.
- Replaceable Main Closing Pin and Lanyard.
- Replaceable RSL Clasp.

OPTIONS:

- Pillow or Loop Main Canopy Release Handle. Custom Colors.
- Bent Metal Style Reserve Handle, Loop Style Reserve Handle, or Pillow Style Reserve Handle.
- Custom 1000 Denier Colors.
- Quick Ejector or B-12 Snaps on Chest Strap and Leg Straps.
- Static-Line Drogue.
- Examiner's Emergency Handles.

The **TPDS HLT** Harness/ Container is tested and manufactured under the Technical Standard Order **(TSO) C23d** of the Federal Aviation Administration **(FAA)**.

1.3 Parachute Information

Since the mid-1970's, the company that would become **TPDS** has designed, built, tested and sold multiple types of parachutes to thousands of skydivers, glider, ultra light and fixed wing pilots. These parachutes include **Mains**, popular with many military and student markets as a predictable and safe platform, and **Reserves,** manufactured under the Technical Standard Order **(TSO) C23f** for **Title 14 of the Code of Federal Regulations (14 CFR) part 21, subpart O** of the Federal Aviation Administration **(FAA)**.

TPDS pioneered the idea of wing loading, appropriately matching the size of the parachute to the weight of the jumper, thereby allowing multiple jumpers of different weights and sizes to jump the same parachute.

This makes it easier to translate how to fly a parachute effectively and safely by having not just a parachute that compares in name but in flying characteristics, handling and landing performance.

Main Container/ Harness


Upper Passenger Attachment Ring
Main Canopy Release Handle
Drogue Pilot Chute Handle
Right Hand Drogue Release Hacky


Main Container Harness -Ring System
3
Reserve Ripcord Handle
Lower Attachment Ring
Left Hand Drogue Release Hacky

Passenger Harness


TPDS

Chapter 2

HLT Harness/Container Assembly Specifications

2.1 Main Container Harness Specs:

- Harness is tested under **TSO C23d**.
- Main Lift Webbing, Type 7 Mil-W-4088 Tensile Strength, 6000 lbs.
- Leg Straps and Laterals, Type 7 Mil-W-4088 Tensile Strength, 6000 lbs.
- Chest Strap, Doubled Type 8 Mil-W-4088 Tensile Strength, 4000 lbs.
- Reserve Risers, Type 13 Mil-W-4088 Tensile Strength, 7000 lbs.
- Main Harness Riser Ring, No.10 Proof Load, 5000 lbs.
- Upper Passenger Harness Attachment Ring, Angled “D” Ring, Proof Load, 5000 lbs.
- Adjustable Hip Ring, 555-2 Ring.
- Leg Strap Hardware, PS 22040-1 Proof Load, 2500 lbs.
- Chest Strap Hardware, PS 70101-1
- Lower Passenger Attachment Ring, RW 8
- Large Ring Main Risers, Type 7 Mil-W-4088, Tensile Strength, 6000 lbs.

2.2 Main Container Assembly Specs:

- Reserve Container and all pertaining parts are tested under **TSO C23d.**
- Automatic Activation Device (AAD) with the Control Unit in the Reserve Top Cover Flap.
- 1000 Denier Cordura lined w/ 1/4” Para-pack nylon backed black foam.
- Outboard Reserve and Cutaway Handles.
- 0# Stainless Steel Grommets.
- All Stainless Steel Housings
- .040 Nylon Stiffeners
- .062 Aluminum Reserve Floor Plate
- 1000 Denier Cordura Anti-Line Twist Main Deployment Bag.
- 600 lbs. Dacron Locking Loop for Main and Reserve Control Toggles.
- 1” Tubular Nylon Main Steering Toggles, Tensile Strength, 4000 lbs.
- 1” Type 17 Nylon Reserve Toggles, Mil-W -4088 Tensile Strength, 2500 lbs.
- Stainless Steel Reserve Ripcord Handle.
- Left Riser Reserve Static Line (RSL).

2.3 Passenger Harness Specs:

- Passenger Harness is built under the **TSO C23d**
- Main Lift Webbing, Type 7 Mil-W-4088 Tensile Strength, 6000 lbs.
- Leg Straps, Type 7, Mil-W-4088 Tensile Strength, 6000 lbs.
- Lower Attachment Straps, Type 8 Mil-W-4088, Tensile Strength, 4000 lbs.
- Diagonals, Chest Strap, Belly Band, Back Strap and Butt Strap, Doubled Type 8 Mil-W-4088, Tensile Strength, 4000 lbs.
- Upper Attachment Butterfly Snaps, PS 22042-1, Proof Load, 5000 lbs
- MLW Adjustable Slider, PS 70114-1 Proof Load, 2500 lbs.
- MLW Solid Adapter, No.44A9360, Proof Load, 1000 lbs.
- Large Articulating Hip Junction Ring, C5010.
- Adjustable Leg Strap, Chest Strap and Belly Band Hardware, PS 22040 Proof Load, 2500 lbs.
- Adjustable Diagonal, Back Strap, and Butt Strap Hardware, PS 70114-1 Proof Load, 2500 lbs.
- Lower Attachment - Adjustable Quick Ejector Snaps, PS 22018 Proof Load, 2500 lbs.
- Back Pad and Leg Pads 1000 Denier Cordura w/ 1/4" white foam.
- 3/4" Binding Tape, Mil-T-5038 Tensile Strength, 400 lbs.
- 1" Type 4 Support Tape, Mil-T-5038 Tensile Strength, 1000 lbs.
- 5 cord Nylon Harness Thread, Tensile Strength, 40 lbs.
- "E" Nylon Thread, No.69 Tensile Strength, 8.5 lbs.

2.4 Dual Harness / Container Assembly Specs:

The **TPDS**, Inc. **Heavy Load Tactical Dual Harness / Container System** is built under the **TSO C23d**.

The Maximum Combined Operating Weight (the total gross weight of the personnel and equipment including the parachute assembly) shall be **550 lbs. (249.5 kg.)** at **195 KEAS** (361.1 km/h).

NOTE: The Actual Maximum Combined Weight shall not exceed the Maximum Weight limit of the Reserve Parachute.

The **TPDS (HLT) Dual Harness / Container System** weights 45-60 lbs. fully packed.

2.5 Drogue Pilot Chute Specs:

- Drogue Riser, Type 8 Mil-W-4088 Tensile Strength, 4000 lbs. w/ Mini 3 - Ring Drogue Release System.
- Dual Release Handles; Right or Left Hacky Handles.
- Drogue Kill Line, 2000 lbs. Spectra
- Drogue Bridle, 16’ x 1 1/2” Type 4, Mil-T-5038, Tensile Strength, 1500 lbs.
- Low Porosity Nylon Fabric Drogue Pilot-chute.
- Pud Main Handle.

2.6 Parachute Specs:

Main Canopy Specifications

HLT 9 Cell Elliptical Main Canopy

Area	Aspect Ratio	Max. Recommended Operating Weight
Sq. Ft.	:1	lbs./ kgs.
300	3.01:1	450 lbs./ 204 kg.
330	3.01:1	450 lbs./ 204 kg.
350	3.01:1	450 lbs./ 204 kg.
370	3.01:1	450 lbs./ 204 kg.
390	3.02:1	500 lbs./ 227 kg.
410	3.02:1	500 lbs./227 kg.
430	3.02:1	550 lbs./ 249 kg.
460	3.02:1	550 lbs./ 249 kg.

Reserve Canopy Specifications

HLT- R9 9 Cell Elliptical Reserve Canopy

Area	Aspect Ratio	Max. Recommended Operating Weight
Sq. Ft.	:1	lbs./ kgs.
300	3.01:1	450 lbs./ 204 kg.
330	3.01:1	450 lbs./ 204 kg.
350	3.01:1	450 lbs./ 204 kg.
370	3.01:1	450 lbs./ 204 kg.
390	3.02:1	500 lbs./ 227 kg.
410	3.02:1	500 lbs./227 kg.
430	3.02:1	550 lbs./ 249 kg.
460	3.02:1	550 lbs./ 249 kg.

Reserve Canopy Specifications

HLT-R-SQ 9 Cell Square Reserve Canopy

Area	Aspect Ratio	Max. Recommended Operating Weight
Sq. Ft.	:1	lbs./ kgs.
300	2.72:1	450 lbs./ 204 kg.
320	2.72:1	450 lbs./ 204 kg.
340	2.72:1	450 lbs./ 204 kg.
360	2.73:1	450 lbs./ 204 kg.
380	2.73:1	500 lbs./ 227 kg.
400	2.73:1	500 lbs./227 kg.
420	2.73:1	550 lbs./ 249 kg.
440	2.74:1	550 lbs./ 249 kg.
460	2.74:1	550 lbs./ 249 kg.

2.7 Canopy Fabric Specs:

TEST NAME		COMMERCIAL	TEST METHODS FEDERAL STANDARD 191
MATERIAL	■ 30 Denier, High Tenacity, Bright Nylon, Heat and Light Inhibitors	■ AATCC 20	Method 1530
TWIST	■ Producers Warp and Fill	■ ASTM-D-1423	Method 4050
MELTING POINT	■ 489°F + or - 10°F	■ AATCC-20	Method 1534
WEAVE PATTERN	■ Rip Stop 7.5 Minimum Repeats Per Inch	■ Visual	(Visual)
WEIGHT (max.)	■ 1.17 OSY	■ ASTM-2376 Opt. C	Method 5041
THICKNESS(max.)	■ .0030 Inches	■ ASTM-D-1777	Method 5030
STRENGTH (min.)	■ 47 x 47 Pounds	■ ASTM-D-50351 R	Method 5104
1"strip			
ELONGATON (min.)	■ 25%	■ ASTM-D-50351 R	Method 5104
TEAR STRENGTH (min.)	■ 5 x 5 Pounds	■ ASTM	Method D 2261 or 2262 (1983)
AIR PERMEABILITY	■ .5-3.0 CFM	■ ASTM-D737	Method 5450
CONSTRUCTION (min.)	■ 130 x 132	■ ASTM-D-3775	Method 5050
pH	■ 5.5-9.0	■ AATCC-81	Method 2811
COLOR FASTNESS	■ Good (Regular colors)	■ AATCC-61	Method 5614 - Laundering
		■ AATCC-107	Method 5630 - Cold Water
		■ AATCC-16 A	Method 5660 - Light (20 hrs.)
		■ AATCC-8	Method 5651 - Crocking (3.4 or better)
WIDTH (min.)	■ 48 Inches or 65 Inches	■ FED STD 191A	Method 5020
HEAT/LIGHT RESISTANCE	■ Max. 25% Change	■ MIL C 44378	Para. 4.5.3.1 Light
			Para. 4.5.3.2. Heat
BIAS/BOW (max.)	■ 2 Inches on 48": ■ $2^{1/2}$ Inches on 65"	■ ASTM-D-3882	Method 5060

Specification	Yarn	Construction	Weave	Widths**	Weight	Thickness	Air Perm	Tear W/F	Break W/F	pH
PIA C 44378	*denier*	*count/inch*	*pattern*	*inches*	*oz/sq yd*	*inches*	*Cfm*	*lbs*	*lbs*	
Type 1	30d	114 X 132	Ripstop	48"/65"	1.17	0.003	0-5	5/5	45/45	5.5-9.0
Type 2	30d	126 X 132	Ripstop	36"/48"/72"	1.11	0.003	30-50	5/5	42/42	5.5-9.0
Type 3	30d	114 X 132	Ripstop	48"/65"	1.17	0.003	30-50	5/5	45/45	5.5-9.0
Type 4	30d	126 X 132	Ripstop	36"/48"/65"	1.20	0.003	0.5-3.0	5/5	45/45	5.5-9.0

Chapter 3

Inspection Processes

3.1 Harness / Container System

- Main Lift Web
  - Sizing identification symmetrical (same color).
  - Fold-over is present and sewn.
  - Harness stitching 3 and 4 point stitching is intact, no broken stitches.
  - Selvage edge is intact.
  - Webbing is free of wear and abrasions.
  - Velcro for Main Release Handle and Reserve Ripcord is correct and in place.
  - Main Release and Ripcord Housings are in place and secured.
  - Chest Strap fold-over is present and sewn.
  - TSO Label present and info correct.

- Laterals
  - Symmetrical (if adjustable)
  - Harness stitching present and correct.

- Leg Straps/ Leg Pads
  - Fold-over is present and sewn.
  - Leg pads have reinforcing bar tacks.
  - Harness stitching is present and correct.

- Reserve Container
  - Grommets secure without burrs or sharp edges.
  - Binding tape is secure and sewn correctly.
  - AAD pocket and window sewn in place for AAD set-up.
  - Floor Plate sewn in place.
  - RSL Ring in place.

- Reserve Risers
  - Symmetrical
  - Harness stitching present and correct.
  - Toggles and Velcro in place.
  - Guide rings present, free of wear, no abrasions

- Reserve Free-Bag and Pilot-Chute
  - Grommets secure without burrs or sharp edges.
  - Bridle bar tacked.
  - Spring crimped.
  - Cap and snaps present and secure, TSO Label present.
  - Free bag size matches container.
  - Velcro and pocket secure, TSO Label present.

- Reserve Ripcord
  - Handle is correct shape and smooth.
  - No broken strands of cable.
  - Straight pin.
  - Ball & Shank in place.

- Reserve Static-Line (RSL)
  - Bartacks are present.
  - No Corrosion or wear.
  - Mini ring in shape and lanyard.

- Main Container
  - Binding Tape, present and no stitches missing.
  - Closing Loop Retainer present.
  - Grommets, free of burrs, sharp edges.
  - Housings are secure and no sharp edges.
  - Drogue Pocket, no holes or rips.
  - Drogue Release Handles, clean and free moving.

- Main Risers
  - Ring Shape
  - No Corrosion or wear.
  - Harness Stitching is present and correct.
  - Bartacks are present.
  - Velcro, Hook is present.
  - Grommets are secure w/o burrs or sharp edges.
  - T-IIA Loops are present.
  - Steering Line Locking Loops are present.
  - Snap Shackle RSL present and in good working order.

- Other Hardware
  - No Corrosion or wear.
  - In correct shape.

- Main Deployment Bag and Deployment Option
  - Deployment Bag is correct size. Grommets have no burrs or sharp edges.
  - Drogue Chute is correct size and Drogue Bridle has secured release pins.
  - Main Drogue Releases are clean, free-moving in channel.
  - Main Parachute Release Handle is clean, free-moving in housings.

3.2 Reserve Parachute

- Links should be:
  - Clean of corrosion, debris and without cracks or visible damage.
  - No sharp or raw edges.
  - Free moving barrel, which should be able to tighten 2 ¾ turns from first engagement of the barrel without resistance.

- Rapide Link Covers
  - Covers should be firmly seated on top of links.
  - Covers tacked in place to prevent slippage.

- Lines
  - No excessive fraying or damage to lines.
  - Continuity is correct.
  - Bartacks sewn correctly on each line.
  - Each line is without twists and correctly installed from link to parachute, passing through the correct slider grommet.

- Slider
  - Grommets are seated correctly w/o burrs or damage.
  - Slider is without holes, burns, or other damage.

- Bottom Skin
  - Inspect each cell for any tears, fraying or other damage.
  - Seams and attachment points stitched correctly and evenly.

- Ribs
  - Cross ports without damage.
  - Stitching correct on seams.
  - Reinforcing tape present on loaded ribs.
  - No other damage on entire rib section.

- Top Skin
  - Seams are sewn correctly.
  - Leading edge bar tacks are in place.
  - Control line attachment points are reinforced.

- Stabilizers
  - Slider stops are present and secured.
  - Lines bar tacked to lower edge of stabilizer.
  - Slack is present in stabilizer when line is taut.

3.3 Main Parachute

- Links should be:
  - Clean of corrosion, debris and without cracks or visible damage.
  - No sharp or raw edges.
  - Free moving barrel, which should be able to tighten 2 ¾ turns from first engagement of the barrel without resistance.

- Rapide Link Covers
  - Covers should be firmly seated on top of links.
  - Covers tacked in place to prevent slippage.

- Lines
  - No excessive fraying or damage to lines.
  - Continuity is correct.
  - Bar tacks sewn correctly on each line.
  - Each line is without twists and correctly installed from link to parachute, passing through correct slider grommet.

- Slider
  - Slider is without holes, burns or other damage.
  - Reinforcement Tape in place and secure.
  - Grommets seated correctly without burrs or damage.

- Bottom Skin
  - Inspect each cell for any tears, fraying or other damage.
  - Seams and attachment points stitched correctly and evenly.

- Ribs
  - Cross ports without damage.
  - Stitching correct on seams.
  - Reinforcing tape present on loaded ribs.
  - No other damage on entire rib section.

- Top Skin
  - Seams are sewn correctly.
  - Leading edge bar tacks are in place.
  - Control line attachment points are reinforced.

- Stabilizers
  - Slider stops are present and secured.
  - Lines bar tacked to lower edge of stabilizer.
  - Slack is present in stabilizer when line is taut.

3.4 Passenger Harness

- Main Lift Webbing
  - Harness stitching 3 and 4 point stitching is intact, no broken stitches.
  - Selvage edge is intact.
  - 2 fold-overs are present and sewn.
  - Webbing is free of wear and abrasions.
  - Solid Adjusters are present, free of nicks, dents and burrs.
  - Solid Adapters are present, free of nicks, dents and burrs.
  - Hip Junction ring is sewn with 4 point, intact, no broken stitches.
  - Elastic keepers are present and in good shape.

- Upper Attachment Points
  - Two (2) 3 point stitching is intact, no broken stitches.
  - Two (2) Butterfly snaps present, springs in good working order.

- Floating Chest Strap
  - Chest strap fold-over is present and sewn.
  - Chest strap floats freely for adjustments.
  - Hardware present, free of nicks and burrs.
  - Elastic present and in good shape.

- Belly-band
  - Hardware present and free of nicks and burrs.
  - Fold-over is present and sewn.
  - Elastic present and in good shape.

- Leg Straps
  - Leg strap fold-overs are present and sewn.
  - Hardware present and free of nicks and burrs.
  - Padding present and slides to adjust freely.
  - 3 point stitching present, no broken stitches.
  - Two (2) Webbing retainer loops present on small pads.
  - Elastics present and in good shape.

- Rear Diagonals
  - Two (2) upper 3 point stitching present and intact, no broken stitches.
  - Two (2) solid adjusters present, free of nicks and burrs.
  - 2 Diagonal adjuster fold-overs present and sewn.
  - Elastics present and in good shape.

- Butt Strap
  - Solid adapter present, free of nicks and burrs.
  - Butt strap fold-over is present and sewn.
  - 3 point stitching is present and intact, no broken stitches.
  - Elastic present and in good shape.

- Back Strap
  - Back strap fold-over is present and sewn.
  - Adjuster hardware is present, free of nicks and burrs.
  - Elastic present and in good shape.

- Passenger Lower Attachment Straps
  - Passenger lower attachment straps have fold-overs and are sewn.
  - 3 point stitching present and intact, no broken stitches.
  - Two (2) Adjustable Quick Ejector Snaps present, springs in good working order.
  - Heavy elastics present and in good shape.

- Back Pad and Yoke
  - Back Pad stitching is present, no broken stitches.
  - Bar Tacks present, no broken stitches.
  - Air sickness bag pocket present.
  - Knife pocket present.

- TSO Label
  - Present and Information is correct.

Chapter 4

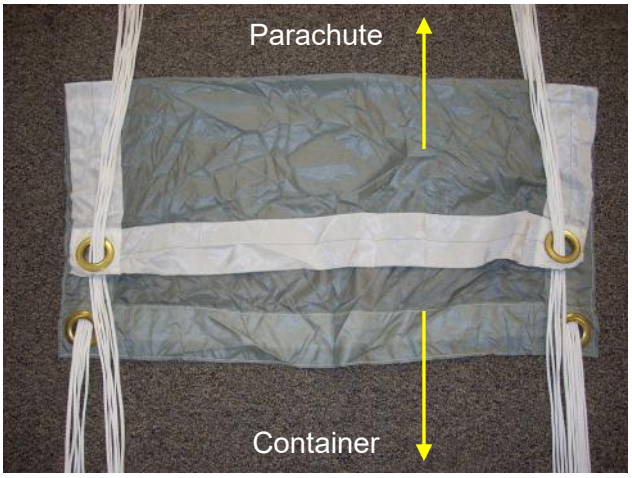
Assembly Instructions

4.1 Assembly of Reserve Canopy.

4.1.1 Reserve Canopy Line Order.

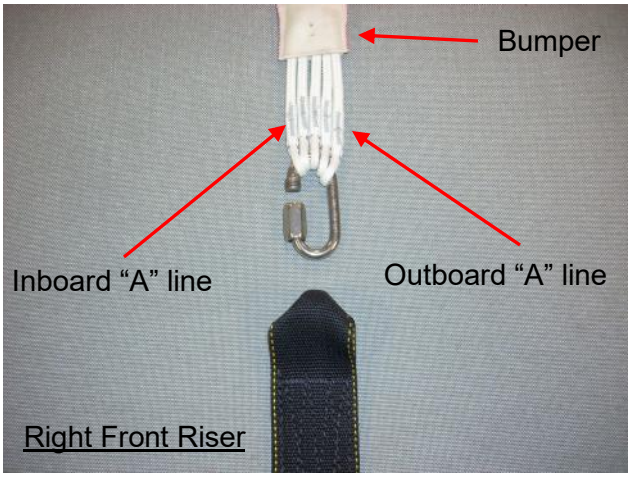
After inspecting the Parachute and the Harness/Container System, hang or lay the parachute out on the ground with the nose section on the ground and the Harness/ Container System oriented face down.

Check to see that the T-12 Bumpers are above the links. See the Instructions on page 3 to install them if needed.

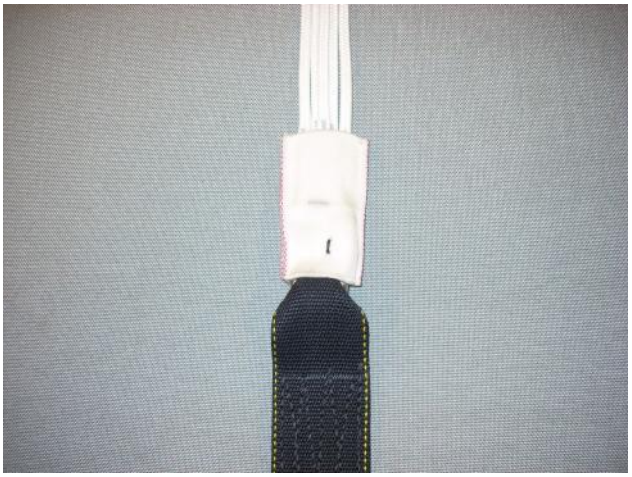


Ensure the slider is correctly oriented; the slider should be longer span-wise than chord-wise, with the reinforcing tape of the slider on the side facing the reserve parachute.

Begin the assembly process by ensuring that all lines are connected to the links correctly with the outboard A-lines on the outside of the link and the center A-line towards the inside of the link, the longer side of the link towards the riser.

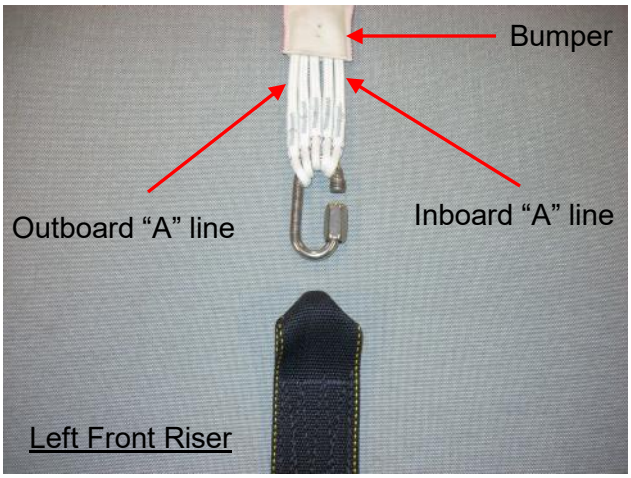


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Right Front line-set*** onto the end of the ***Right Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.

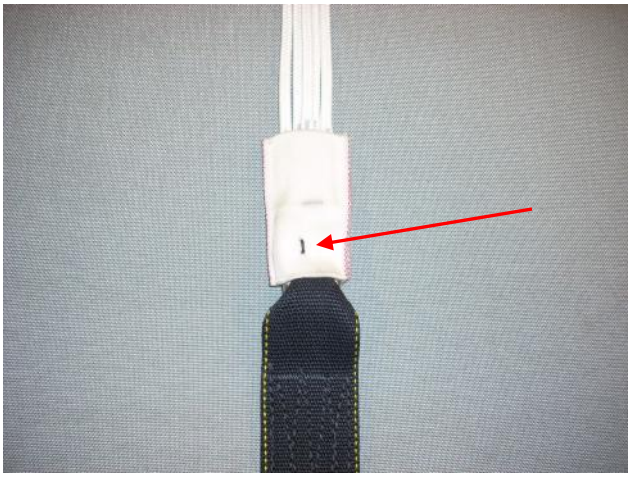


Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the Left Front Riser.



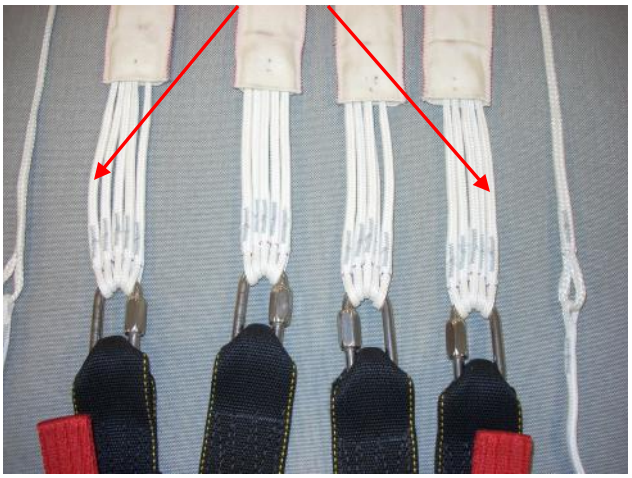
Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Left Front line-set*** onto the end of the ***Left Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.



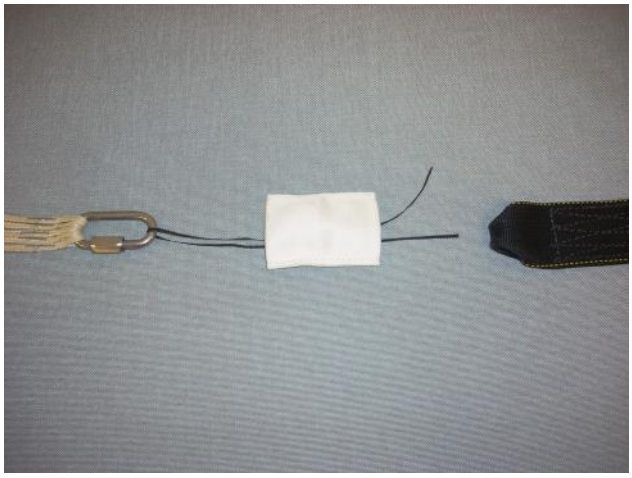
Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the two **Rear Risers**, ensuring that the Outboard “C” lines are on the link first.

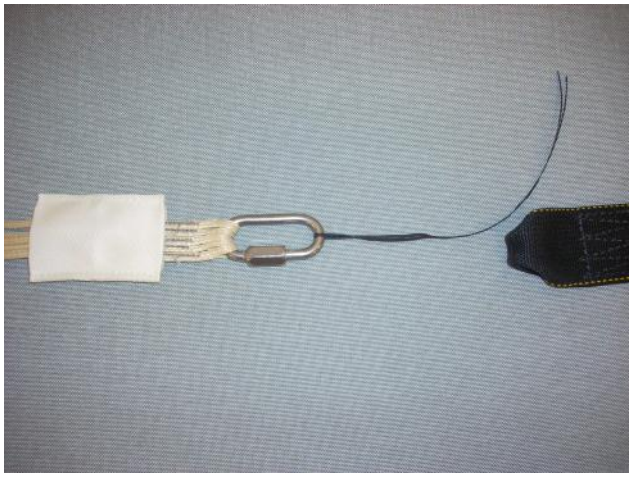
Outboard “C” line



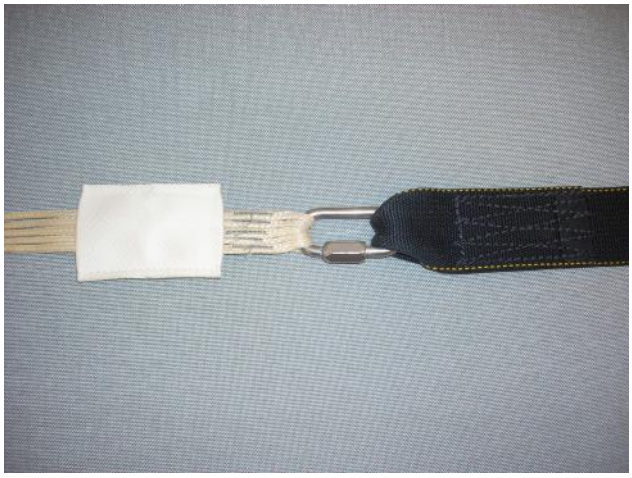
4.2 Installing the Bumpers.



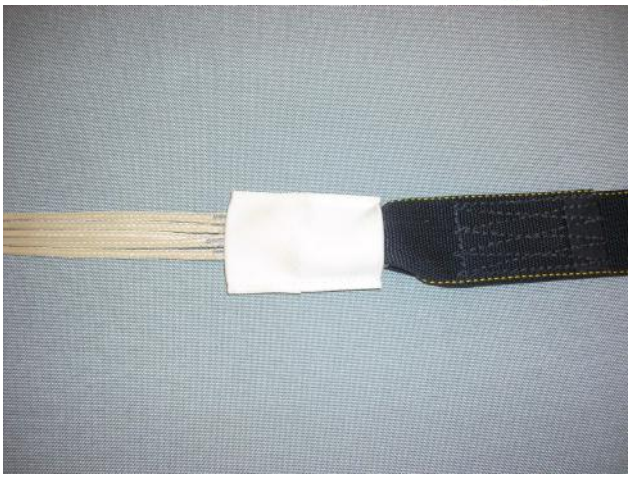
With the line group correctly assembled onto the link, run a short piece of line through the closed link and the center of the bumper.



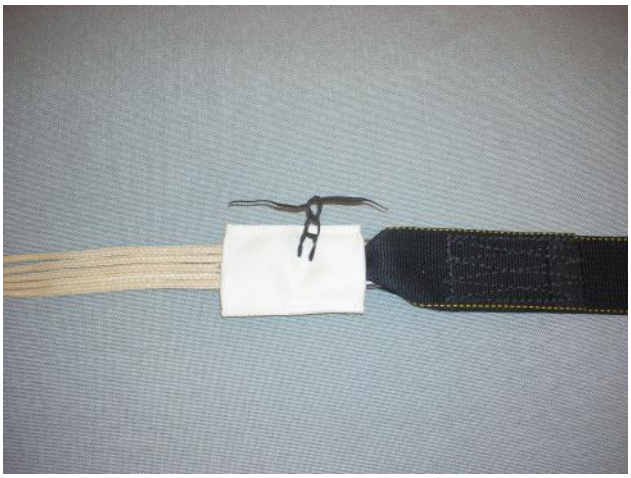
Pull the link through the bumper without twisting or turning the link.



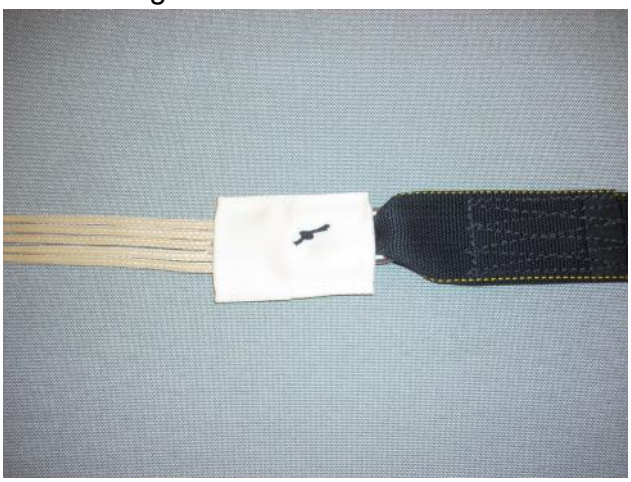
Fold the top of the riser and install the link. Tighten the barrel finger tight then a 1/4 turn with a small wrench.



Pull the bumper down and secure with Super Tack cord.



The tacking should go through both sides of the bumper and include a surgeon's knot and locking knot.



Trim the tails of the tacking cord.

4.3 Assembly of Reserve Canopy using Soft Links.

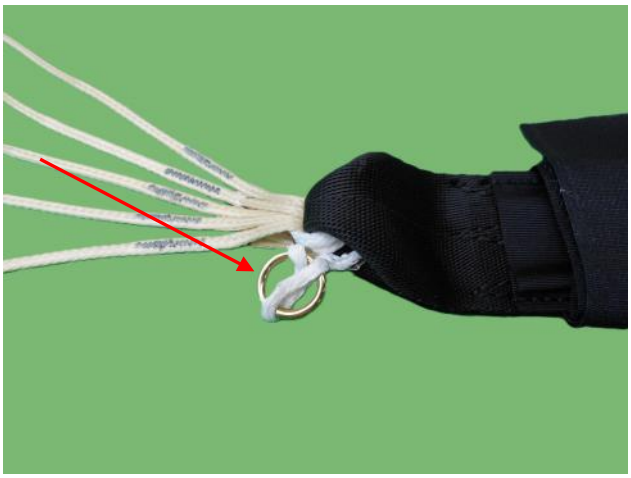
Always Read and Follow the Instructions provided by the Soft Link manufacturer.

While keeping the continuity of the lines in order pass the Soft Link through each line and the Riser.

Pass the Soft Link through the Lines 1x more time. Soft link will be 3x through the lines.

Pass the Soft Link through the Riser end then through the lines again.

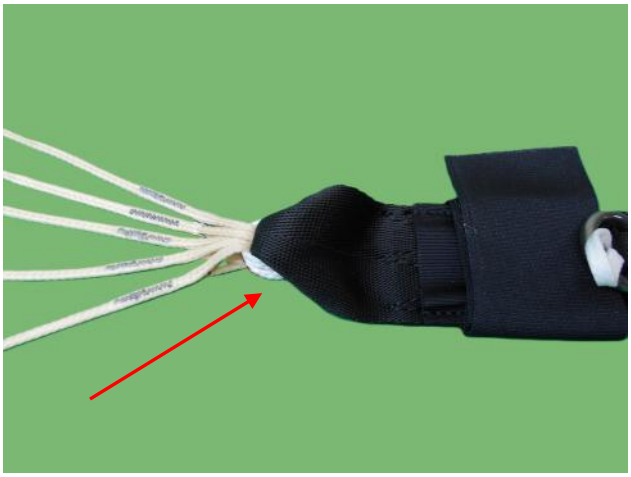
Pass the lead of the Soft Link through the loop under the ring.



After passing the Soft Link through the lines and the Riser the proper number of times pass the Ring through the loop.

Tighten the knot formed.

Should look like this.



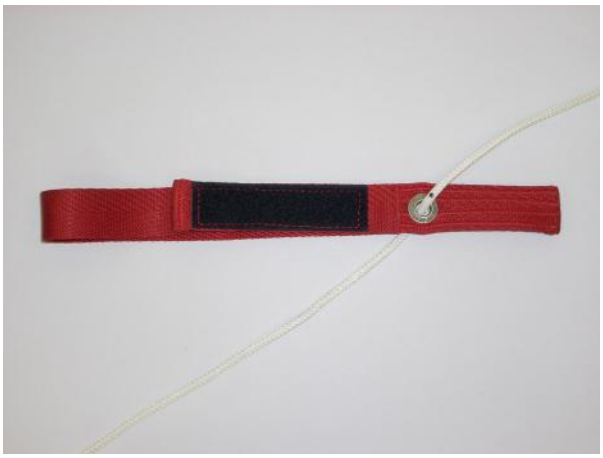
Tuck the Loop and Ring under the Riser.

Hand-tacking may be used to secure it between the Riser webbing.

Repeat other 3 Risers.

4.4 Installing the Toggle onto the Control Lines.

Once the reserve parachute is assembled onto the reserve risers, pass the control line through the appropriate slider grommet and **ONLY** through the guide ring on the reserve riser and **NOT** the Dacron locking loop.



Pass the control line through the rear of the toggle to the “dot”. Pass the line back through the grommet forming a loop around the outside of the toggle.

Pass the line back through the grommet forming another loop around the other side of the toggle. Tighten the loops.

Tie an overhand knot on the tail that is on the other side of the grommet. Snug the knot up as close to the grommet as possible.

Repeat for the other toggle.

The parachute brakes are now ready to be set.

4.5 Installing the Closing Loop in the Reserve Container.

Follow these Instructions for Installing the Closing Loop in the Bottom Plate of the HLT Reserve Container.

Pictured above is the Reserve Container with the new dual grommet bottom plate.

This configuration allows the closing loop to be inserted from the top of the first grommet then up from the bottom through the second grommet.

Begin by lifting the elastic covering of the top grommet.
Pass the closing loop down through the top grommet.

Pass the closing loop up through the bottom grommet as shown.

Tuck the excess closing loop under the elastic cover.

Installation of the Reserve Container Closing Loop is complete.

4.6 Installing the Automatic Activation Device. (AAD)

Read the **AAD Owner's Manual** and become familiar with the different components of the unit and details of its use.

Insert the **Processing Unit** into the spandex pocket located on the bottom wall of the reserve container. (fig. 1)

Route the **Release Unit** under the reserve floor plate and through the slot and elastic housing. Stow the excess cable in the spandex pouch. (fig.2)

Route the **Control Unit** through the channel next to the floor plate. Once threaded through this channel, insert the Control Unit into the Reserve Cover Flap. (fig. 3)

Once secured in the spandex pocket, the display should be clearly visible through the clear plastic window of the back pad.

Stow the excess cable in the channel or spandex pocket.

Close the Velcro pocket on the spandex pouch.

Installation is complete.


Fig. 1

Processing Unit


Fig. 2

Release Unit


Fig. 3

Control Unit

Installation complete.

4.7 Installing the Reserve Static-Line. (RSL)

Mate the Pile Velcro of the RSL with the Hook Velcro under the RSL channel of the Left Side Reserve Riser. Start at the lower end of the channel and proceed to the top.

Close cover when Velcro has been mated and RSL has been installed.

Insert the cable of the Reserve Ripcord Handle into the Reserve Ripcord Housing on the left side Main Lift Webbing.

Install the Reserve Ripcord Handle into the Reserve Ripcord Pocket.

Pass the Ripcord Cable through the ring of the RSL then through the guide ring on the Container.

Installation is complete.

4.8 Installing the Main Canopy Release Handle.

Inspect the ends of the yellow cables of the Release Handle for sharp edges. Ends should be smooth so as to not snag the Type IIA line loop of the risers.

Begin by inserting the shortest yellow cable into the short cutaway housing.

Insert the other yellow cable into the other cutaway housing.

Mate the Hook Velcro of the Main Canopy Release Handle to the Pile Velcro in the pocket on the Right Main Lift Webbing.

4.9 Installing the Floating RSL. (TPDS-HLT-222)

Pictured above is the Floating RSL Lanyard **(TPDS-HLT-222)** and the Left Side Riser.

From the inside of the Left Riser pass the end loop of the **TPDS-HLT-222** through the riser between the two webbings.

From the underside of the Riser pass the end loop through the loop beneath the mini ring.

Pass the Mini Ring through the end loop.

Tighten the knot formed.

The Floating RSL **(TPDS-HLT-222**) installed.

4.10 Installing the Optional T-8 Belly-Band. (HLT-280)

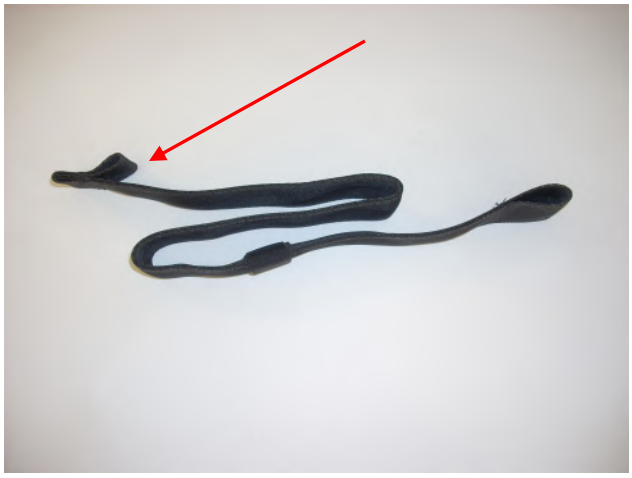
Pictured above is the **HLT-280** Optional T-8 Separable Belly-Band with Stainless Steel 1/4", 650 kg. Rapide Links.

Begin with the shorter strap that has the Friction Adapter sewn to it.

Pass the strap through the slot of the RW-8 Harness Ring of the lower Right Side of the TPDS HLT.

Pass the Stainless Steel Rapide Link through the loop of the T-8 Strap.

Tighten the nut “finger tight”.



Pictured above is the other half of the Belly-Band. When installing it to the Left Side of the TPDS HLT be sure that the “turned back” end is facing the Harness/ Container to prevent it from slipping when fed through the Friction Adapter.

Pass the strap through the slot of the RW-8 Harness Ring of the lower Left Side of the TPDS HLT.
Pass the Stainless Steel Rapide Link through the loop of the T-8 Strap.

Tighten the nut “finger tight”.

The Optional Belly-Band assembled and ready for the mission .

4.11 Assembly of the Throw-out Pilot Chute to the Throw-out Bridle and Deployment Bag.

Shown above is the Throw-out Pilot Chute **(TPDS-HLT-232)** and both ends of the Throw-out Bridle **(TPDS-HLT-245)**.

Notice the “stop tab” on the one end.

Pass the Loop of the Bridle **without** the “stop tab” through the Loops of the Pilot Chute and the Center Line of the Pilot Chute.

Pass the other end of the Bridle through it.

Tighten the knot formed.

The TPDS-HLT with Throw-out Pilot-chute is ready to be attached to the Main Parachute.

Follow these Instructions to attach the Throw-out Pilot-chute to the Main Parachute.

Pass the Bridle with the Pilot-chute from the outside through the grommet of the Deployment Bag. **(TPDS-HLT-270)**

Pass the Loop of the Bridle through the ring of the Main Parachute.

Pass the other end of the Bridle through the loop.

Tighten the knot formed.

Should look like this.

4.12 Assembly of the Throw-out Pilot Chute Static- Line Assist Deployment System.

The **TPDS HLT** Heavy Load Tactical Parachute Assembly has the option to be used with a Throw-out Pilot-chute Static-Line Assist Deployment Method.

Pictured above are the Throw-out Pilot Chute Static-Line Assist Deployment Parts.

Included is the **(TPDS-HLT-241)** Pouch, **(TPDS-HLT-265)** Static Line with Black Cables, **(TPDS-HLT-232)** Main Pilot Chute with Hacky.

Inspect these parts before installing them to the **TPDS HLT** Heavy Load Tactical Parachute Assembly.

Pictured above is the **(TPDS-HLT-241)** Pouch for the Throw-out Pilot Chute.

Pass the Loop of the Static Line **(TPDS-HLT-265)** through the Type 4 Loop on the end of the Pilot Chute Pouch **(TPDS-HLT-241)**.

Pass the rest of the Static Line through the Static Line Loop, creating a Lark's Head Knot.

Tighten the knot formed.

Fold the Pilot Chute in half then into 3rds as shown.

"S"-Fold the bridle in the middle of the P/C.

Finally roll the Pilot Chute into a narrow roll and place into the pouch, **Hacky first.**

Pass the Rubber Band under the T-IV retainer and secure the Pouch closed using the rubber band and the P/C bridle as shown.

See Chp. 8 to close the Main Container.

4.13 Assembly of the Spring-loaded Pilot Chute Deployment System.

The **TPDS HLT** Heavy Load Tactical Parachute Assembly has the option to be used with a Spring-loaded Pilot-chute Deployment System.

Pictured above are the parts for the Spring-loaded Pilot Chute Deployment Assembly.

Included: (A) Main Bridle **(TPDS-HLT-247),**
(B) Main Ripcord **(TPDS-HLT-259)**
(C) Spring-loaded Pilot Chute **(TPDS-HLT-230)**
(D) Main Deployment Bag **(TPDS-HLT-271)**

Inspect these parts before installing them to the **TPDS HLT** Light Load Tactical Parachute Assembly.

Pictured above is the Spring-loaded Bridle **(TPDS-HLT-247)** and the Spring-loaded Pilot Chute **(TPDS-HLT-230)**.

Notice the “stop tab” on the one end.

Pass the Loop of the Bridle **(TPDS-HLT-247)** through both loops of the Spring-loaded Pilot Chute.

Pass the other end of the Bridle through the loop.

Tighten the knot formed.

The **TPDS-HLT** Heavy Load Tactical Parachute Assembly with Spring-Loaded Pilot Chute is ready to be attached to the Main Parachute.

Follow these Instructions to attach the Spring-Loaded Pilot Chute to the Main Parachute.

Pass the Bridle with Spring-loaded Pilot-chute from the outside through the grommet of the Deployment Bag. **(TPDS-HLT-271)**

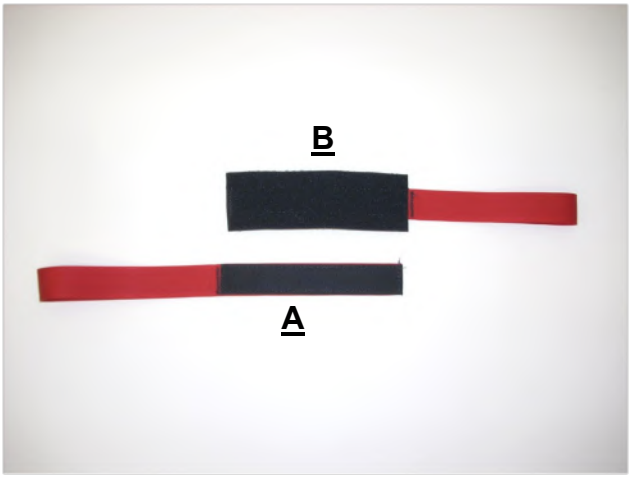
Pass the Loop of the Bridle through the ring of the Main Parachute.

Pass the other end of the Bridle through the loop.

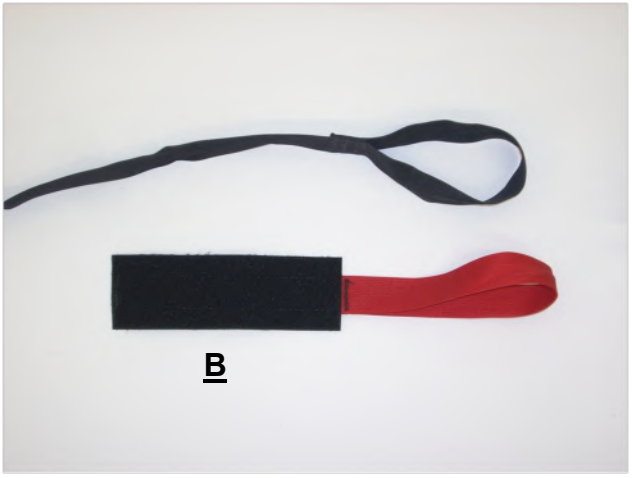
Should look like this.

Tighten the knot formed.

4.14 Assembly of the Spring-loaded Pilot Chute Static Line Assist. (TPDS-HLT-242-A) & (TPDS-HLT-242-B)



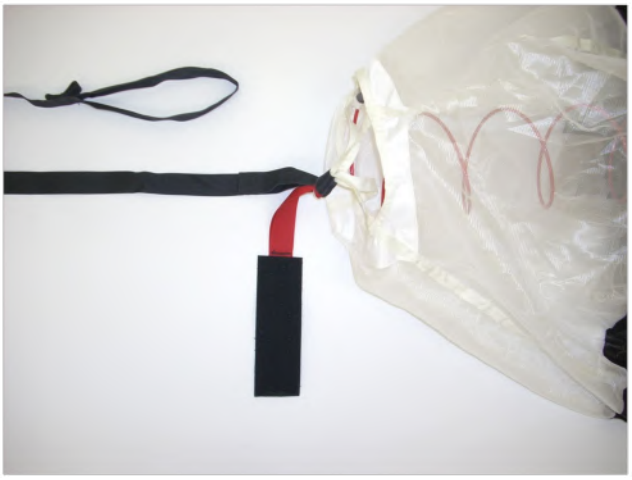
Pictured above are the two (2) parts of the Spring-loaded Pilot Chute Assist Static Line Assembly. **TPDS-HLT-242-A & B**



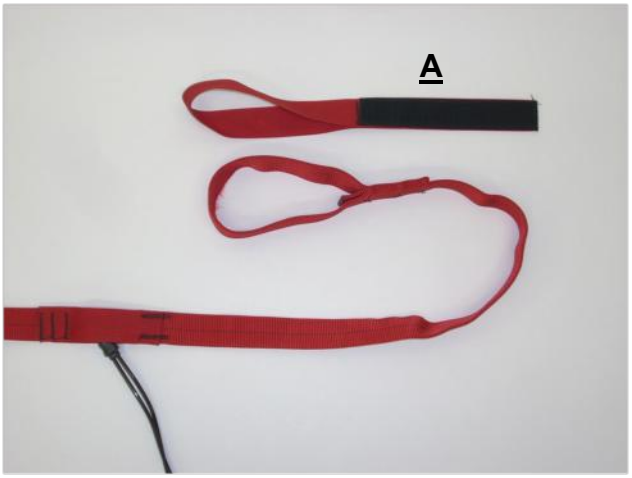
Begin with the Pile Velcro piece (**B**) and the smaller loop end of the Pilot Chute Bridle.

Pass both loops through both loops of the Spring-loaded Pilot Chute.

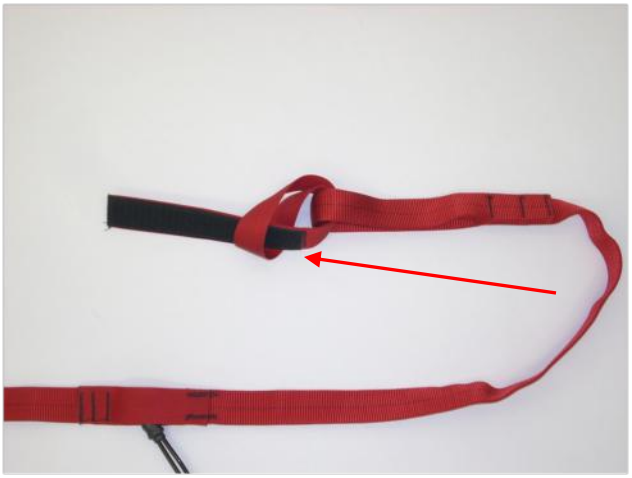
Pass the ends through both of the loops at the same time, forming a double loop. Tighten the formed knot.



Should look like this.



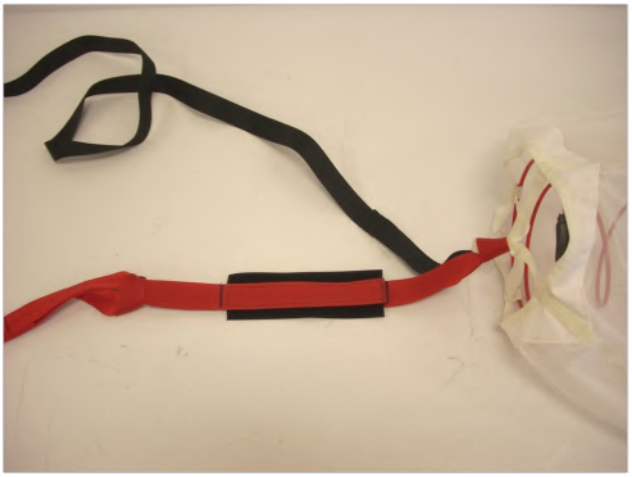
Next take the Hook Velcro part **"A"** and the loop of the Static Line **(TPDS-HLT-265)**.



Pass the Velcro end through the Static Line loop then through the loop of itself.

Tighten the formed Lark's Head knot.

The Spring-loaded Pilot Chute Static Line Assist is ready to be assembled to the Deployment System for closing of the Main Container.



Mate the Hook and Pile Velcro of the **TPDS-HLT-242** and proceed to close the **HLT** Main Container.

See Chapter 8 to close the Main Container.

4.15 Assembly of the Direct Bag Static-Line.

Pull the red Type IV Loop that is attached to the inside of the Main Bag through the grommet.

Pass the loop of the Static Line **(TPDS-HLT-264)** through the red loop of the Main Bag.

Pass the rest of the Static Line through the Static Line Loop, creating a Lark's Head Knot.

Tighten the knot formed.

The Static Line Direct Bag is ready to be packed into the **TPDS HLT**.

4.16 Assembly of the Optional Examiner's Handles.

Pictured above are the Instructor/ Examiner Cutaway Handle and Reserve Handle **(TPDS-HLT-503)**, Handle Pockets **(TPDS-HLT-504)** and Handle Lanyards **(TPDS-HLT-505)**. These handles are interchangeable and may be used for either the Cutaway Handle or the Reserve Ripcord Handle.

Handle colors should match the colors of the corresponding handles on the Main Container, but may be chosen by the user.

The Handles are held in place with Velcro while the Pockets are secured to the Passenger Harness with snaps.

A lanyard of HMA 1750# line connects the Instructor/Examiner Handle to the Emergency Handle and has a Snap Shackle for easy "on" and easy release from the Emergency Handle.

Lay the Handle Pocket **(TPDS-HLT-504)** beside the Passenger Harness as shown above. The Velcro on the Pocket will be facing up.

Lift the webbing away from the Passenger Harness as shown above.

Do Not Place the Handle Pocket around the Main Lift Webbing.

Wrap the Handle Pocket around the webbing and snap the three snaps together.

Mate the Velcro of the Instructor/Examiner Handle to the Velcro of the Handle Pocket.

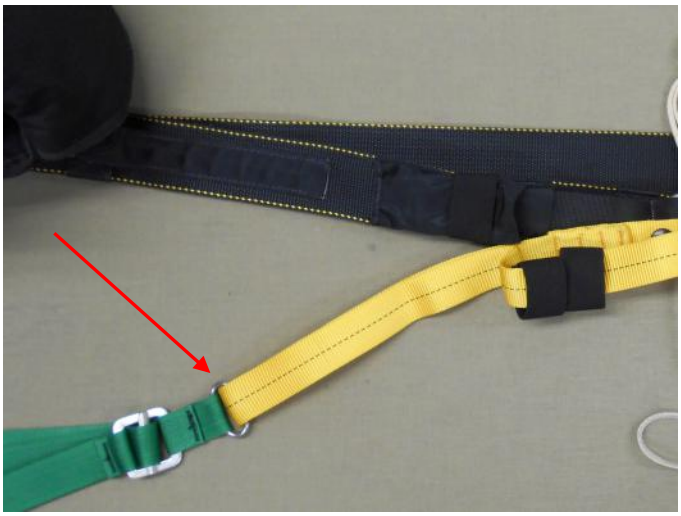
Close the Velcro covering of the Handle Pocket over the Instructor/Examiner Handle.

Repeat these procedures for the other Handle and Pocket.

Close the Velcro covering of the Handle Pocket over the Instructor/Examiner Handle.

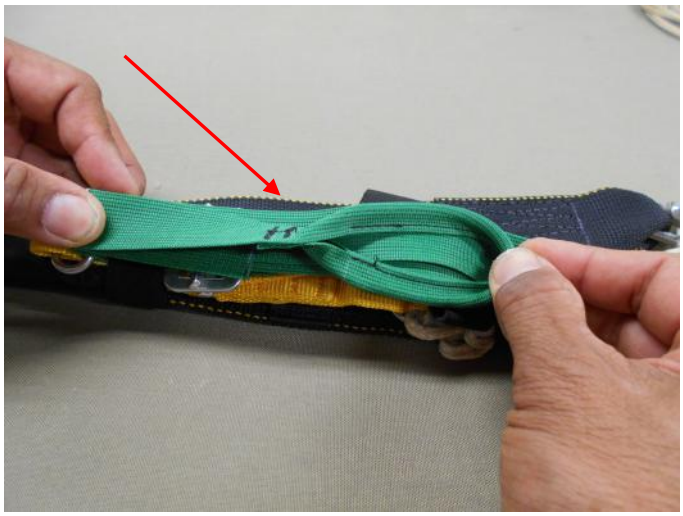
4.17 Assembly of the Optional Toggle Extensions.

Pictured above is the Toggle Extension (green webbing) attached to the Main Riser Primary Toggle.

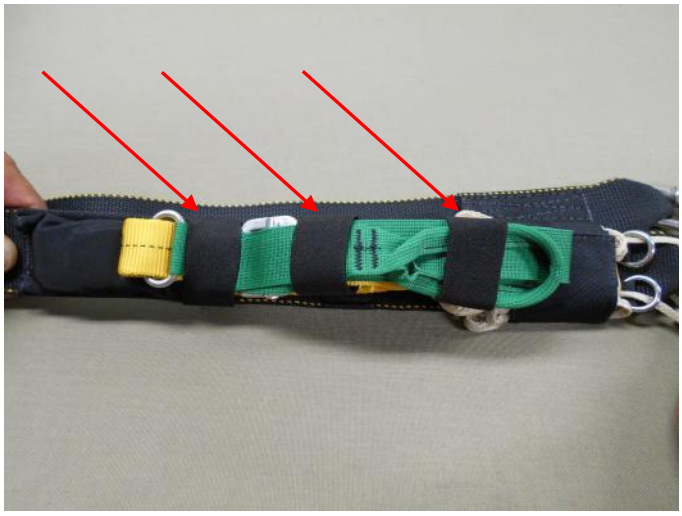


The Toggle Extensions are connected to the Primary Steering Toggle with a Stainless Steel Rapide Link.

With the Main Steering Toggle properly stowed (see Chp. 7.4) the Toggle Extension is ready to be stowed.



"S"-fold the Toggle Extension on top of itself and lay it on top of the Primary Steering Toggle. Stow under the Elastics as shown below.



Chapter 5

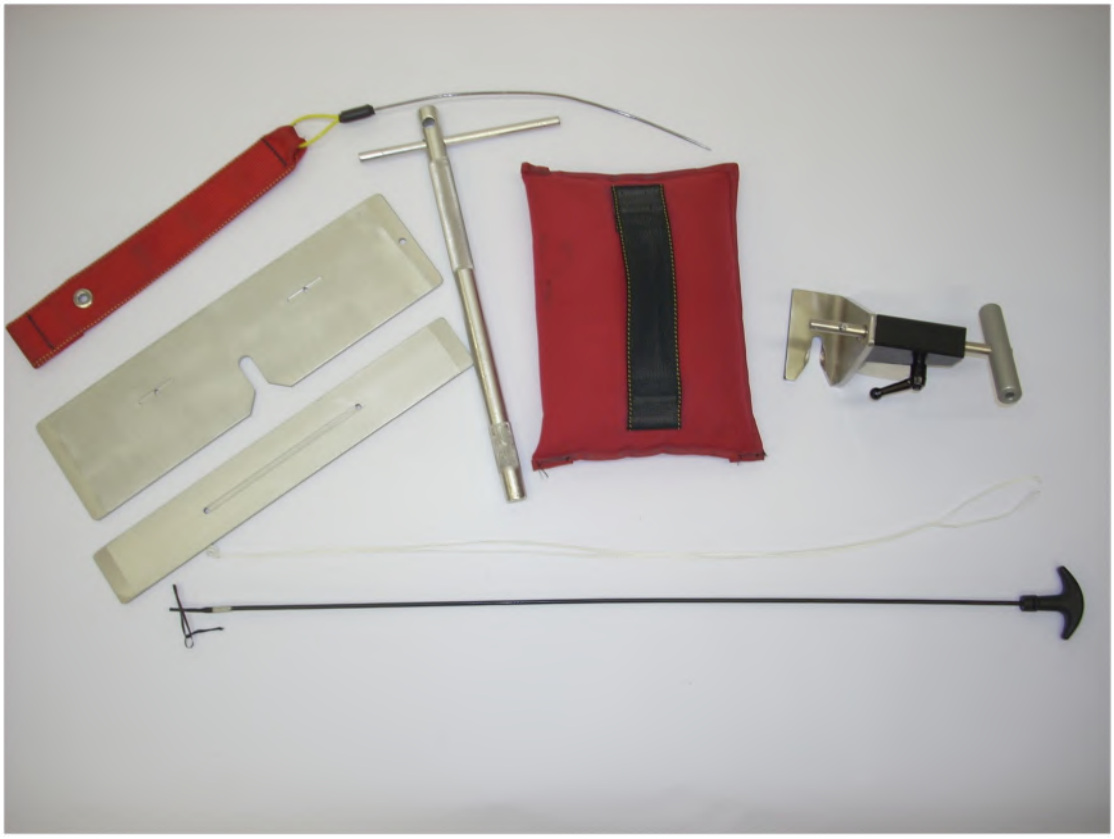
Tools

5.1 Packing Tools Checklist

Use this page to record which tools are used during the packing of your **TPDS, Inc. (HLT)** *Heavy Load Tactical Parachute Assembly*. Mark which tools, and how many were used for packing and document all tools after work is complete.

Packing paddle	____ used	____ used
Shot bag	____ used	____ used
.22 Gun cleaning rod	____ used	____ used
Pull up cord	____ used	____ used
Leverage device	____ used	____ used
Temporary pin	____ used	____ used
Mechanical Tension Device	____ used	____ used
Closing plate	____ used	____ used
Additional tools:		
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used
_____	____ used	____ used

5.2 Recommended Packing Tools.



SHOT BAG

MECHANICAL TENSION DEVICE

PACKING PADDLE

TENSION PLATE

TEMPORARY PIN

.22 GUN CLEANING ROD

SCREW DRIVER

SCISSORS

PULL-UP CORD

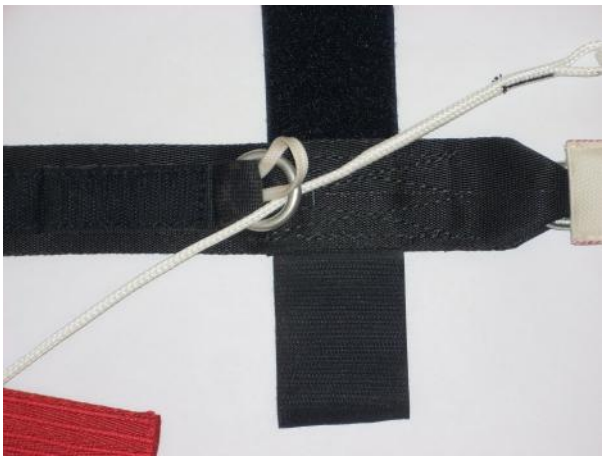
Chapter 6

Reserve Packing

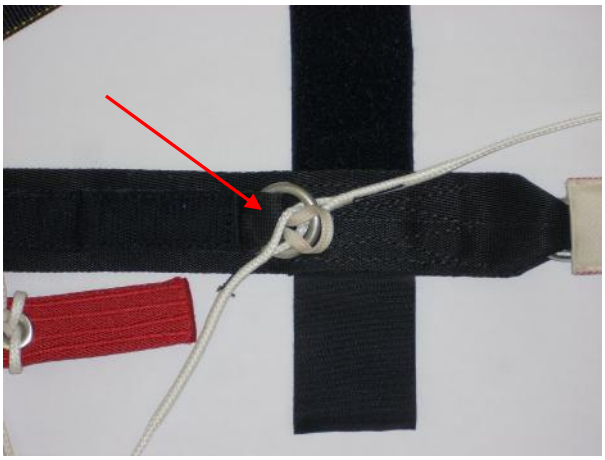
6.1 Setting the Reserve Brakes.

After assembling the toggles correctly, Pull the Control Line so that the *"cat's eye"* of the control line is just below the guide ring located on the riser.

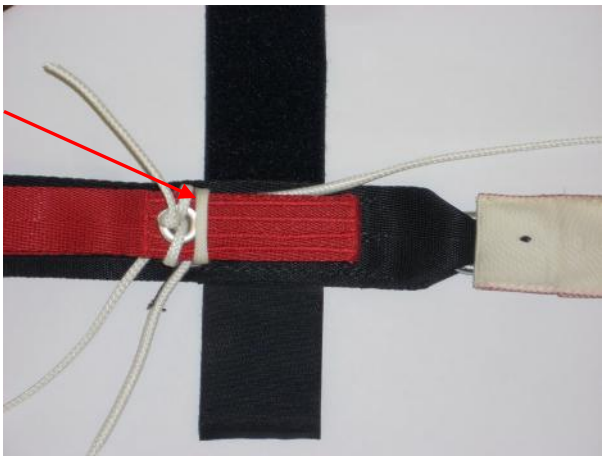
Check to be sure that any twists in the Control Lines have been removed before proceeding to setting the brakes.



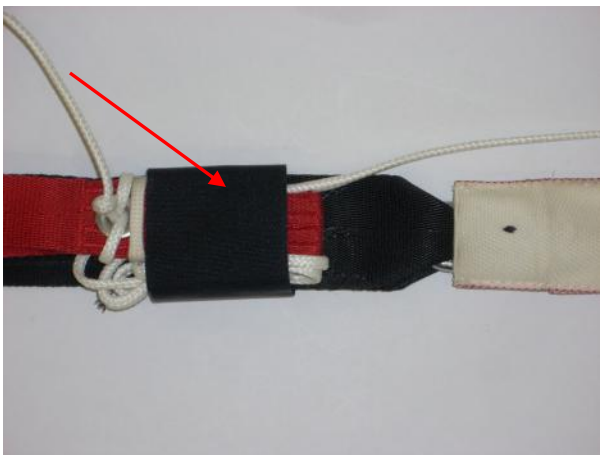
The Control Line should pass only through the guide ring and **NOT** the Dacron loop located on the riser.



Pull the Dacron locking loop through the guide ring and *"cat's eye"* of the control line.



Insert the toggle into the Dacron locking loop, ensuring the guide ring and *"cat's eye"* are underneath the toggle and the brake setting is below the guide ring.



Mate the Velcro of the Riser and the Toggle.

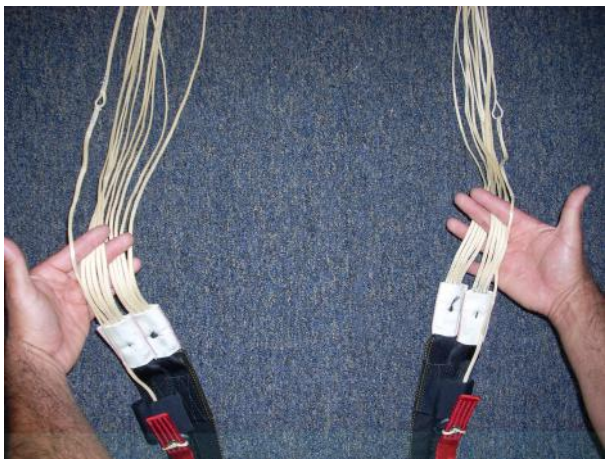
"S"-fold the excess Control Line next to the toggle tip.

Wrap and secure the Velcro around the toggle tip as shown.

Repeat steps for the other brake.

6.2 PRO Pack Method of the Reserve Canopy.

Follow the Instructions for stowing the Reserve Riser Brake Toggles in Chp. 6.1.



With no twists in the risers, place the Left Front Riser line group between the middle and ring finger of the **LEFT** hand.

Place the Left Rear Riser group between the middle and fore finger of the same hand.

Place the Control Line between the fore finger and the thumb.

Repeat for the opposite hand and line groups.

The slider should be between your body and the parachute.

Walk towards the parachute between the line groups, moving the slider up the lines with you and separate the line groups in your hands.

Upon reaching the parachute, check that the control lines are not twisted around any other line groups.

If so, restart this step or perform another continuity check.

Step outside of the lines, group the lines together in one hand and place this group over your shoulder.

For these instructions, the parachute is over the **LEFT** shoulder. Switch orientation if using the right shoulder.

With the parachute in the correct orientation (nose towards the container, tail away from the container) start counting the 9 leading edge cells out.

Start by slightly turning the parachute over your shoulder, resting the right outside cell against your body.

Count each cell and grasp this group.

Push the nose through the center of the parachute and pull it briskly back out.

Place the tip of the leading edge between your knees and hold the material in place.

Starting with the A-line group, count the 5 right cells between the A- and B- line attachment points and flake the material away from the center of the parachute.

Count the 5 right cells between the B- and C- line attachment points and flake the material away from the center of the parachute.

Count and flake the 5 right cells between the C- and D- lines.

Count and flake the 5 right cells between the D- lines and the Control Lines / Tail.

Repeat this process on the other side of the canopy.

Separate the nose, one half on the side, center cell in the middle and second half on the other side.

Raise the canopy so that it is parallel to the floor and gently lay it on the floor.

Pull the slider down and away from the slider stops.

Dress the lines towards the center of the reserve.

On the outside folds, smooth out the material between the A-B, B-C, C-D and D-Control Lines.

Fold the A-B panels in half to narrow the pack job for the free-bag.

Do **Not** Include the **Nose** in these folds.

Repeat for B-C, C-D panels.

Flake the tail of the parachute on top of itself. This step will involve folding half cells between the control lines and whole cells on the remainder of the trailing edge.

Bring the slider up to the slider stops and quarter the slider.

Finish flaking the tail into half folds.

Pull tail down carefully to just above slider and cocoon the parachute by wrapping the tail around the flaked cells.

DO **NOT** include the nose in this cocoon. The cocoon should roughly be the same width as the free bag.

"S"-fold the four (4) nose cells under the corresponding side of the parachute.

Carefully squeeze out any trapped air.

"S"-fold lower portion of canopy up to the trailing edge of the parachute and place under the trailing edge. If Needed.

Find center seam and follow up to the nose.

Separate into two (2) ears and gather center cell material.

Set the Free-bag up as shown. Pull the Bridle through the Safety Stows leaving about 2 1/2" - 3"each.

Place free-bag under the Reserve with the trailing edge of the Reserve Parachute in line with the mouth of the Free-bag.

“S”-fold each ear on top of the canopy.

Put all of the fabric from one ear into the Free-bag, filling out the ear of the Free-bag.
Repeat for the opposite ear; wrap Free-bag around the “S”-folded portion of the parachute.

Close the Free-bag by passing the center Safety Stow through the grommets of the Free-bag. Make the first line bight approximately 1 1/2” and place in the safety stow.

Repeat the other center grommet.

Pass the other longer Safety Stow through the outside end grommet as shown.

Place a line bight into the Safety Stow.

Repeat the other side. The Free-bag is ready to stow the remainder of the lines.

Make the first line bight and place into the corner of the line pouch.

Alternate line stows into the pouch until a little less than 6” of line remains.

Close the line pouch with the Velcro tabs.

Kneel on the center of the Free-bag to form a “nest” for the reserve Free-bag Bridle and Pilot-chute.

Place Free-bag into Reserve Container. Lines to the Bottom of the Reserve Container.

Thread the Closing Loop through the AAD cutter.

Thread the pull-up cord through the Free-bag grommet.

Make sure that the Reserve Risers are tight and that the corners of the container are filled with the Free-bag.

6.3 Closing the Reserve Parachute using the *"Reserve Boost"* RSL.

Bring the Anti-twist flap over towards the bottom of the Container.

Check to be sure that the RSL for the ***Reserve Boost*** is clear of the Reserve Riser and the Cutaway Housing.

"S"-fold the Bridle into 6"-8" folds (depends on the width of the Free-bag) to the **"Reserve Boost"** modification.

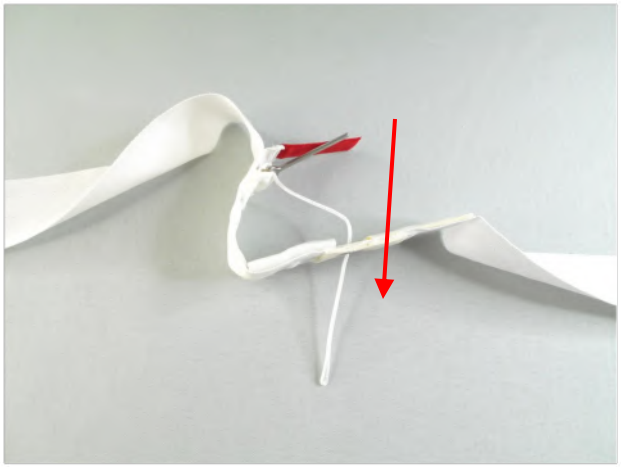
Fold the Bridle back towards the top of the Reserve Container.

Tuck the folded Bridle under the Side Flaps.

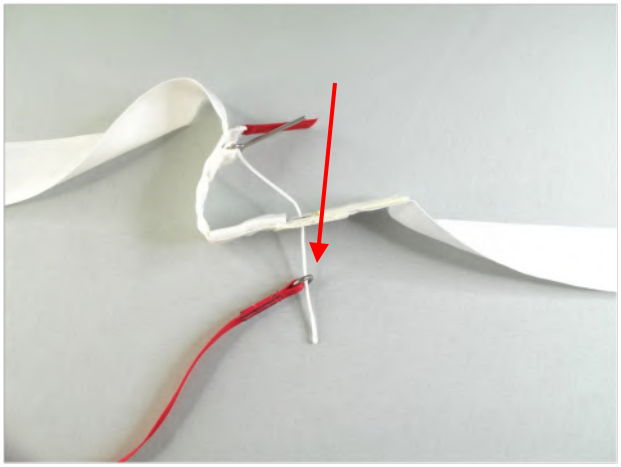
Do **NOT** tuck more than 1" on each side.

Keep the Bridle to the left side of the center of the Free-bag.

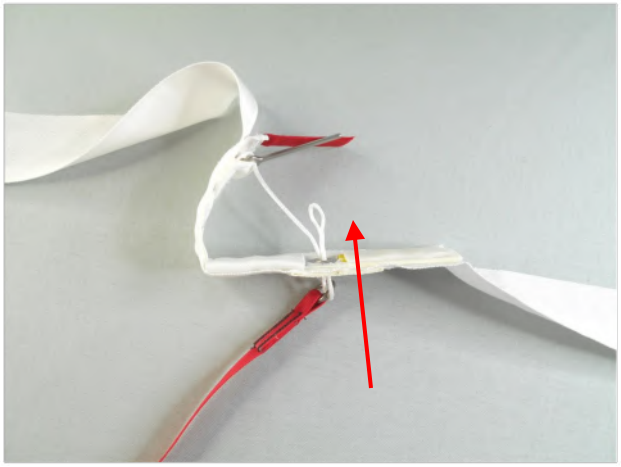
"Arm" the M.A.R.D. ***"Reserve Boost"*** at this time.



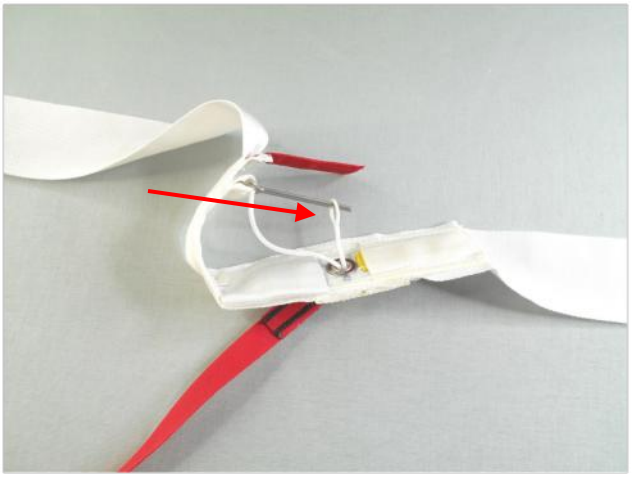
"Arm" the M.A.R.D. ***"Reserve Boost"*** at this time by passing the Spectra Line Loop down through the #0 grommet.



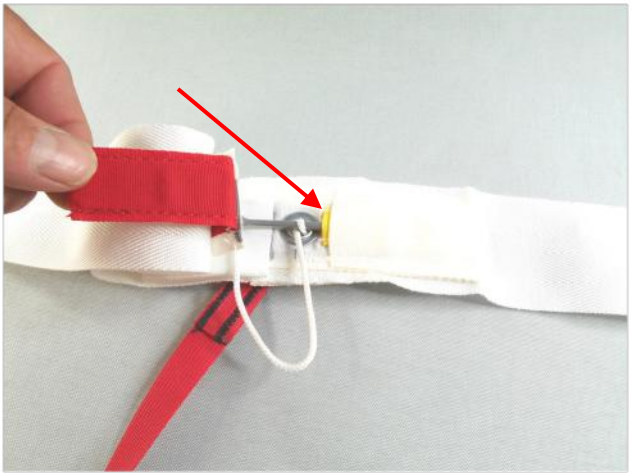
Pass the Spectra Line through the mini ring of the M.A.R.D. ***"Reserve Boost"*** RSL.

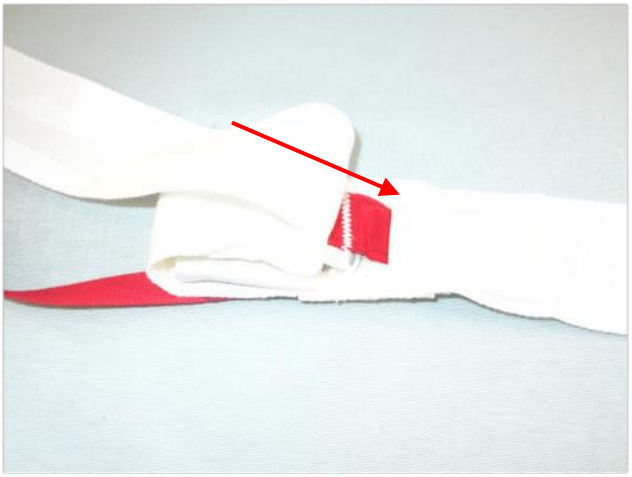


Loop the Spectra Line back up through the #0 grommet of the bridle.

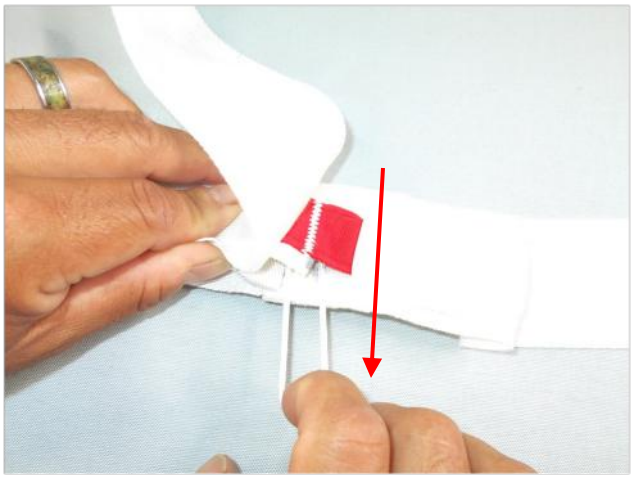


Slide the Long Pin through the loop then stow into the channel under the tuck tab flap. Be certain that it is in it's own channel of T-III tape (yellow).

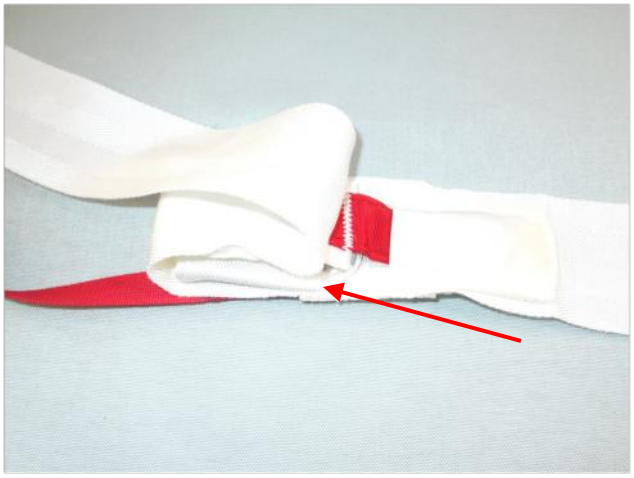




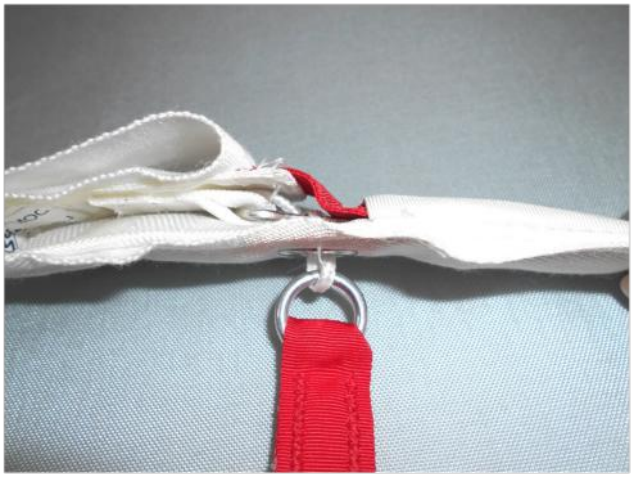
Tuck the stiffened T-III Tab (red) into the tuck flap on top of the Long Pin Channel.



Take up the slack of the Spectra Line Loop.



Stow the Spectra Line Loop into the looped polyester sleeve opposite the long pin channel.



Should look like this.

Tuck any excess RSL into the channel pocket on the top left side of the Free-bag.

The M.A.R.D. *"**Reserve Boost**"* is armed. Continue to close the Reserve Container.

Close the side flaps. Secure with a temporary pin.

"S"-fold the remaining bridle at a right angle to the tucked bridle.

Thread the pull-up cord through the Reserve Pilot-chute and center over the side flap grommets.

While compressing the Pilot-chute be sure to keep all of the pilot-chute material **folded into the spring** and secure with a temporary pin.

Close and secure the Top Closing Flap with a temporary pin.

Close and secure the **Bottom Closing Flap** with the Reserve Ripcord Pin.

Tuck the flaps of the Top Cover under the **Top Closing Flap** as shown.

Tuck the **Top Closing Flap** into the slot of the Bottom Reserve Flap.

Follow all applicable rules for documenting and sealing the Reserve Container.

COUNT THE TOOLS USED DURING PACKING!

Packed, sealed and ready for the Main Parachute.

Chapter 7

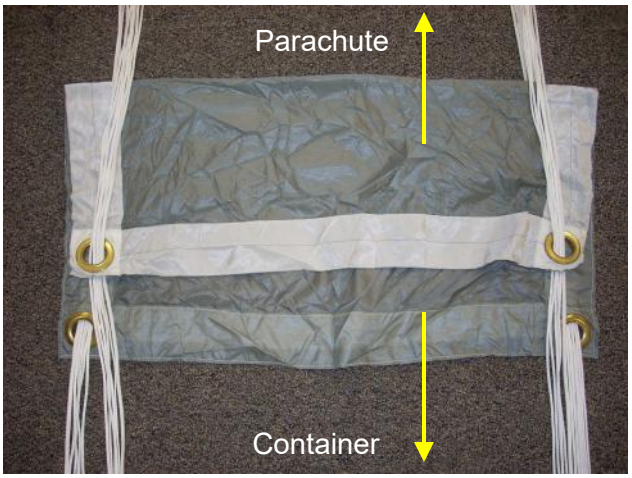
Main Parachute Packing

7.1 Assembly of Main Canopy.

7.1.1 Main Canopy Line Order.

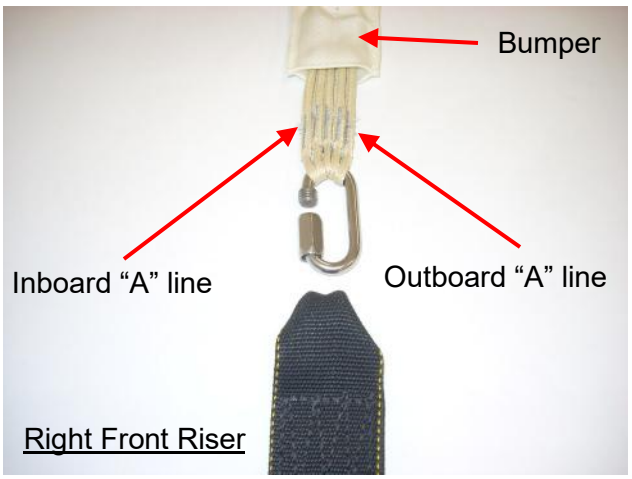
After inspecting the Parachute and the Harness/Container System, hang or lay the parachute out on the ground with the nose section on the ground and the Harness/ Container System oriented face down.

Check to see that the Bumpers are above the links. See the Instructions on page 3 to install them if needed.

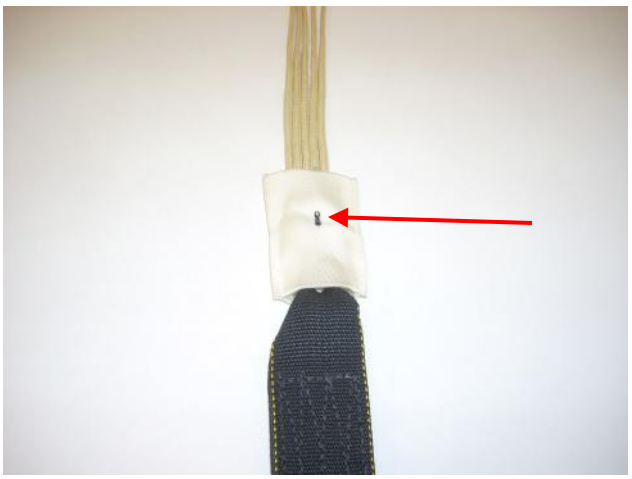


Ensure the slider is correctly oriented; the slider should be longer span-wise than chord-wise, with the reinforcing tape of the slider on the side facing the parachute.

Begin the assembly process by ensuring that all lines are connected to the links correctly with the outboard A-lines on the outside of the link and the center A-line towards the inside of the link, the longer side of the link towards the riser.

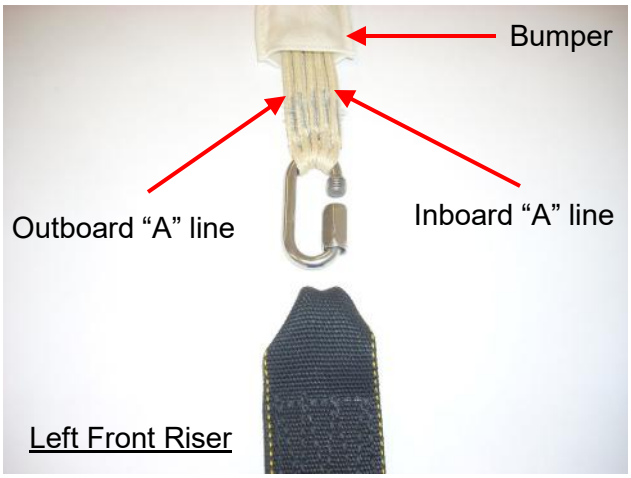


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Right Front line-set*** onto the end of the ***Right Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.

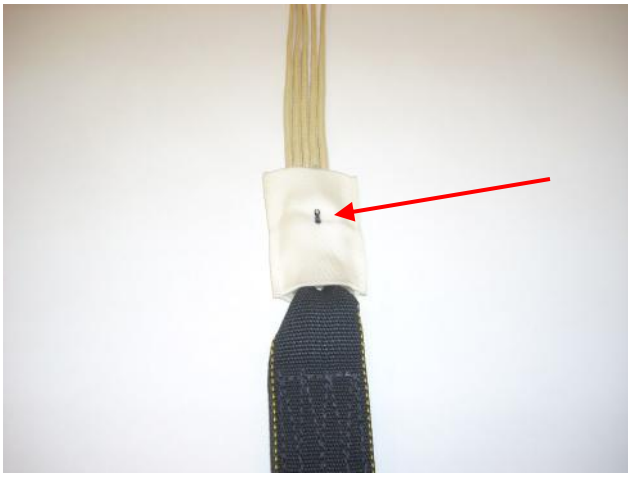


Pull the Bumper down and secure as per the Instructions on page 3 of this Chapter.

Repeat these steps for the Left Front Riser.

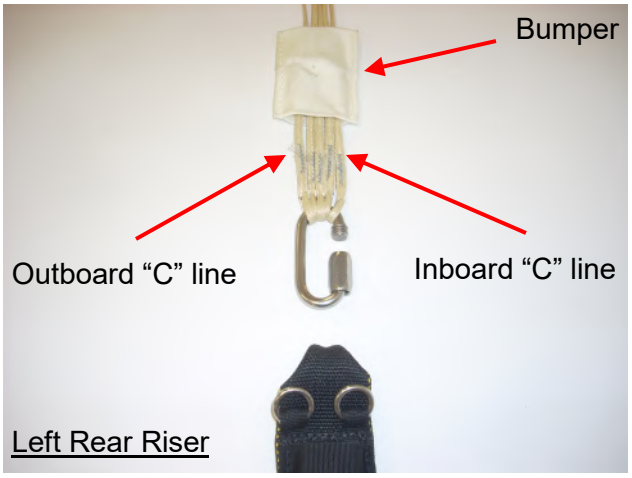


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Left Front line-set*** onto the end of the ***Left Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.

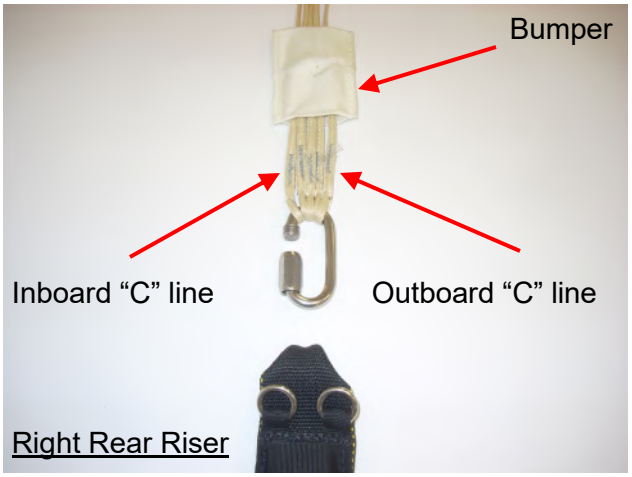


Pull the Bumper down and secure with a length of Super Tack cord.

See Instructions on page 3 of this Chapter.



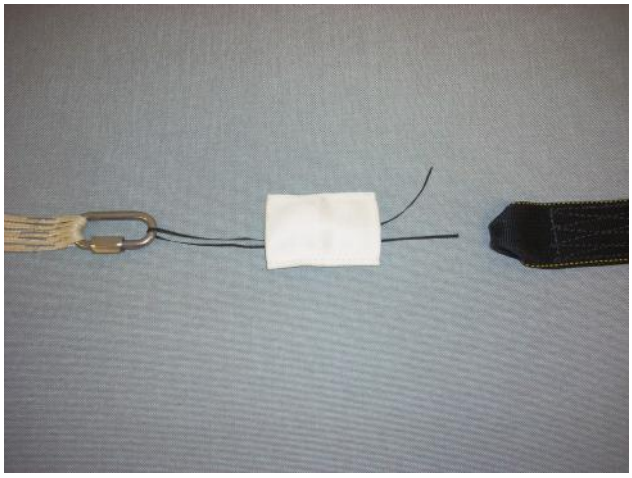
Repeat these steps for the two **Rear Risers**, ensuring that the Outboard "C" lines are on the link first.



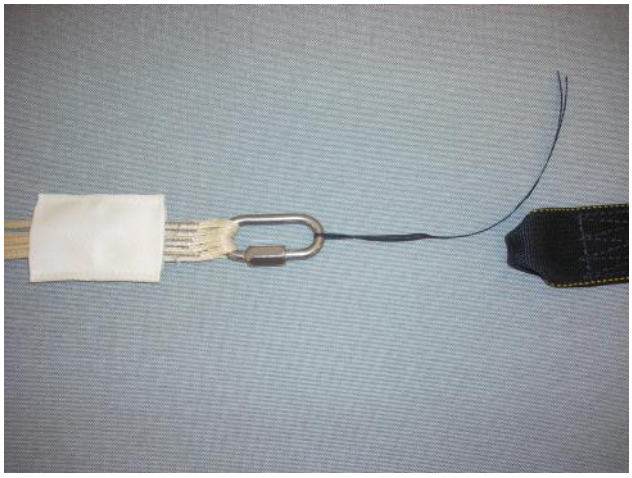
Pull the Bumpers down and secure.

Should look like this.

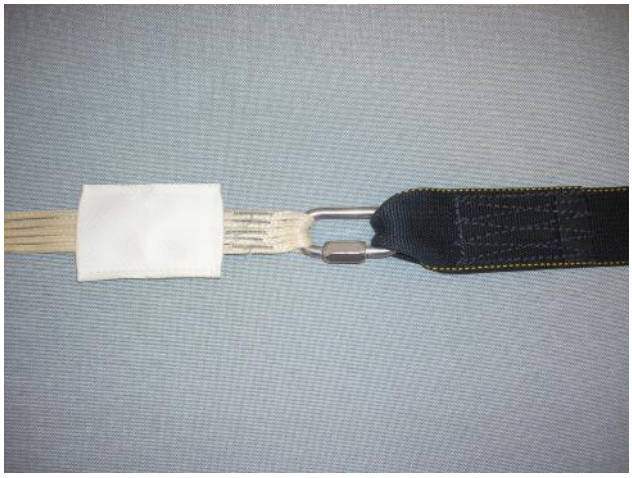
7.2 Installing the Bumpers.



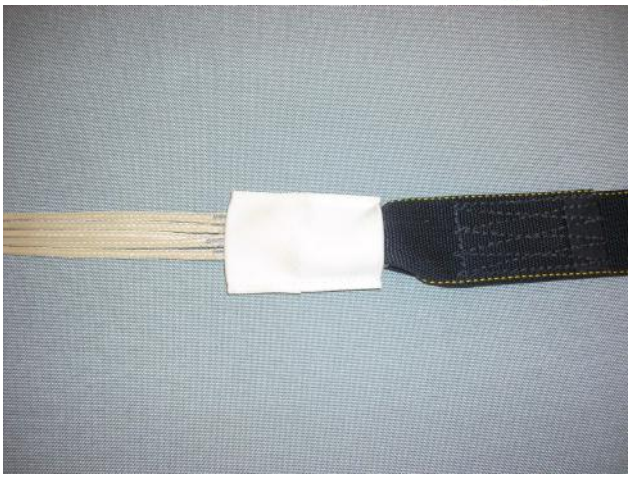
With the line group correctly assembled onto the link, run a short piece of line through the closed link and the center of the bumper.



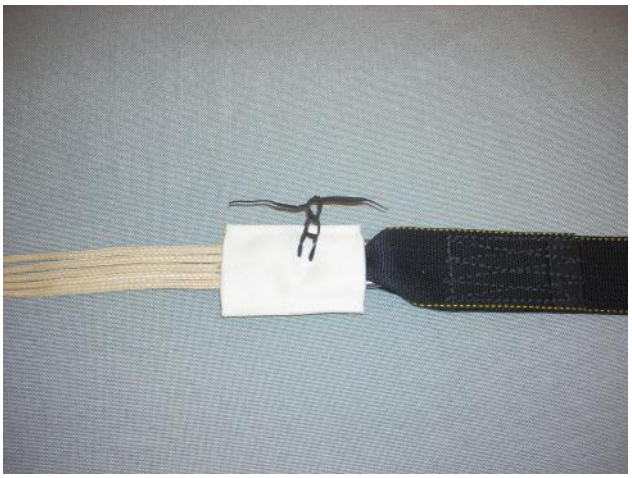
Pull the link through the bumper without twisting or turning the link.



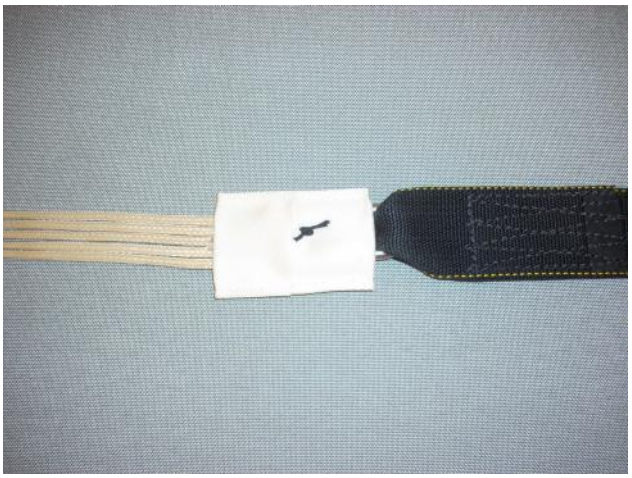
Fold the top of the riser and install the link. Tighten the barrel finger tight then a 1/4 turn with a small wrench.



Pull the bumper down and secure with Super Tack cord.



The tacking should go through both sides of the bumper and include a Surgeon's Knot and locking knot.



Trim the tails of the tacking cord.

7.3 Assembly of Main Canopy using Soft Links.

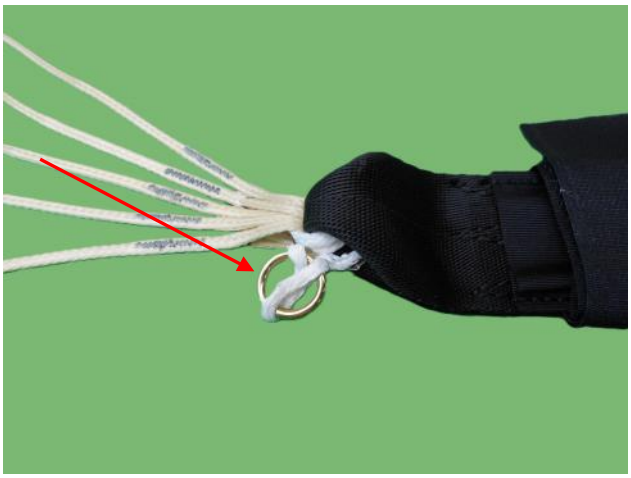
Always Read and Follow the Instructions provided by the Soft Link manufacturer.

While keeping the continuity of the lines in order pass the Soft Link through each line and the Riser.

Pass the Soft Link through the Lines 1x more time. Soft link will be 3x through the lines.

Pass the Soft Link through the Riser end then through the lines again.

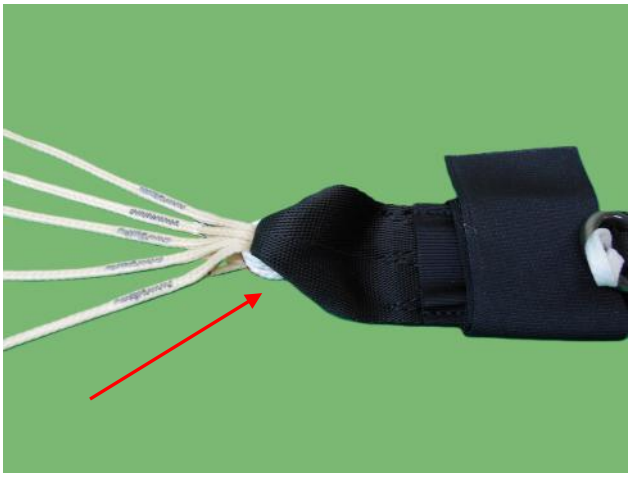
Pass the lead of the Soft Link through the loop under the ring.



After passing the Soft Link through the lines and the Riser the proper number of times pass the Ring through the loop.

Tighten the knot formed.

Should look like this.



Tuck the Loop and Ring under the Riser.

Hand-tacking may be used to secure it between the Riser webbing.

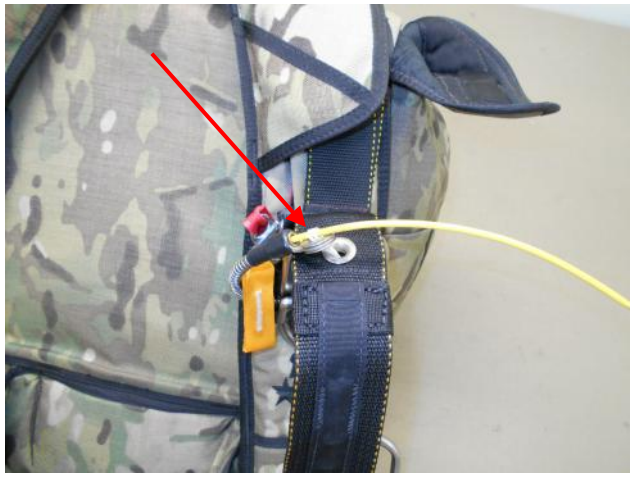
Repeat other 3 Risers.

7.4 Attaching the 3-Ring Risers.

Pass the large ring of the Riser through the large ring of the Harness.

Pass the small ring of the Riser through the large ring of the Riser.

Pass the Type IIA loop through the small Riser ring and into the grommet.



From the back side of the Riser pass the loop through the housing grommet.

Pass the yellow cable through the T-IIA loop.

Pass the yellow cable into the T-III channel.

Attach the Release Shackle to the Reserve Static Line (RSL) ring.

7.5 Installing the Main Canopy Steering Toggles.

Before installing the Main Steering Toggles check the line continuity and be sure that it is correct.

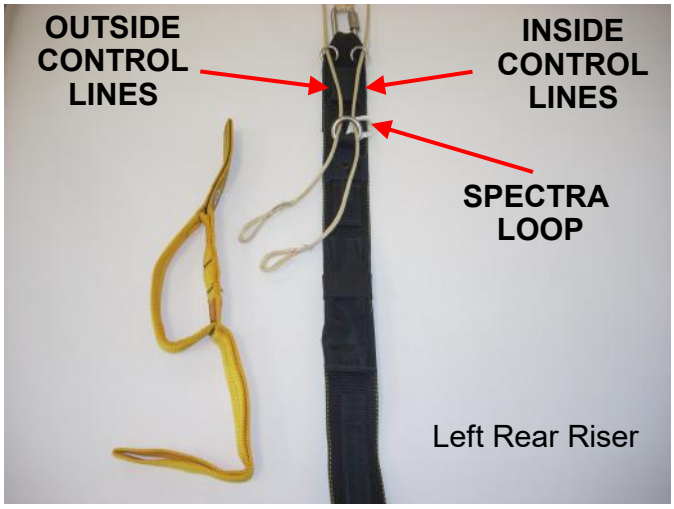
The Main Canopy has two (2) sets of Control Lines.

The outside set controls the outside of the tail.

The inner set controls the inside of the tail.

The **TPDS HLT** Heavy Load Tactical Parachute Assembly may be set up with either a Single Main Steering Toggle or the unique "Dual Toggle" Steering system.

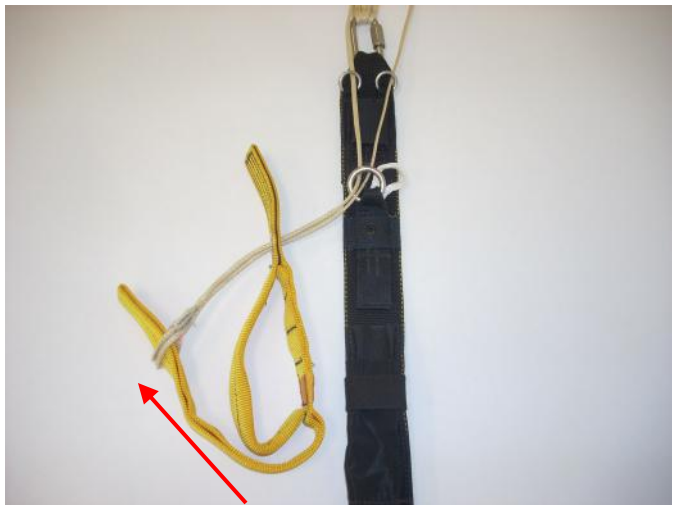
A. Follow these Instructions to set-up the TPDS HLT Main Parachute with a <u>Single</u> Main Steering Toggle.



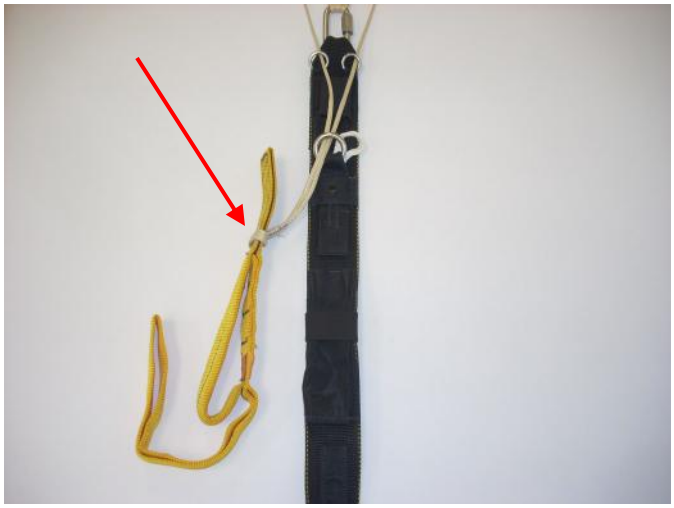
Begin by pulling the steering lines through the two (2) mini rings at the end of the Rear Riser.

Be sure to keep the inner set to the inside ring and the outer set to the outside ring.

Pass both steering lines through the guide ring <u>only</u>, **DO NOT PASS THEM THROUGH THE SPECTRA LOOP!**



Pass the tail end of the Steering Toggle through both loops of the steering lines.

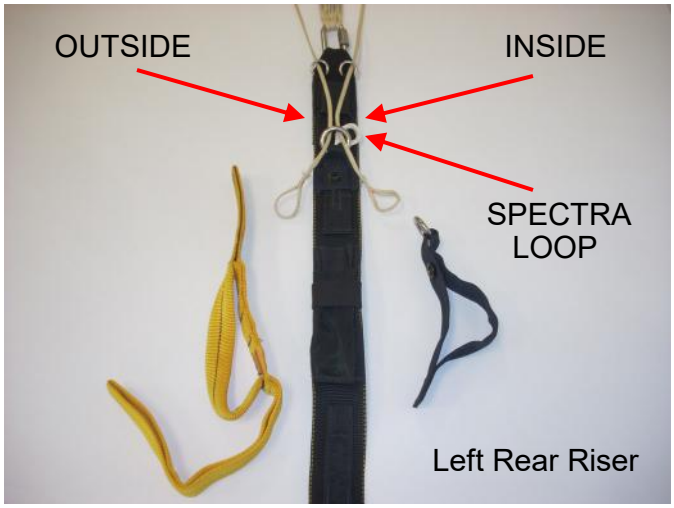


Tighten the knot formed.

Repeat the other riser.

Installation is complete for Single Steering Toggle.

B. Follow these Instructions to set-up the TPDS HLT Main Parachute with the "Dual Toggle" Main Steering Toggles.



Begin by pulling the steering lines through the two (2) mini rings at the end of the Rear Riser.

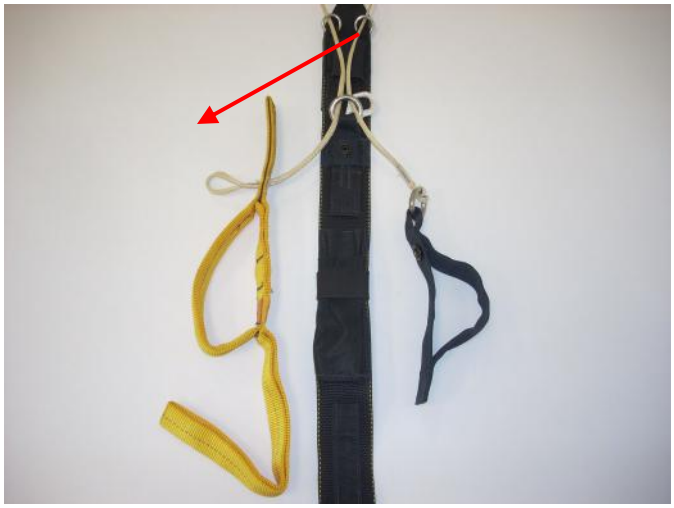
Be sure to keep the inner set to the inside ring and the outer set to the outside ring.

Pass both steering lines through the guide ring only, **DO NOT PASS THEM THROUGH THE SPECTRA LOOP!**

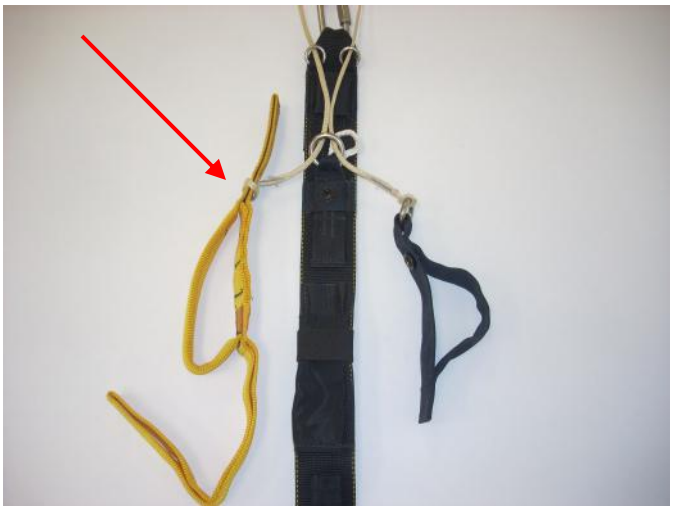
Pass the inner steering line through the ring from the back side of the "flaring toggle".

Pass the tail of the "flaring toggle" through the steering line loop as shown.

Continue to pass the toggle through the loop and tighten the knot formed.



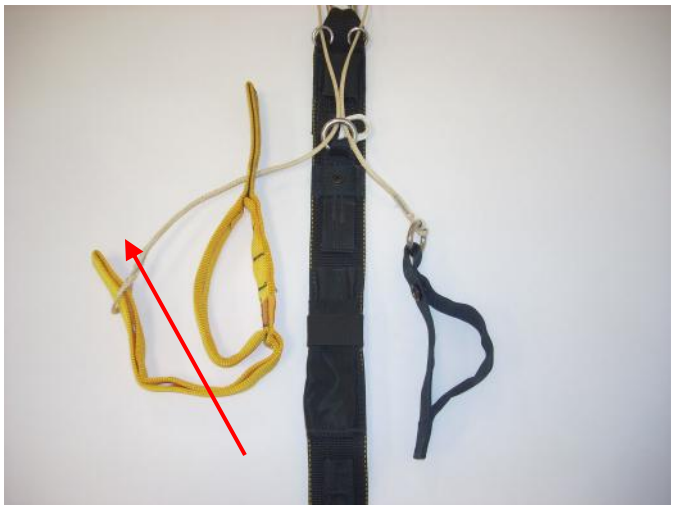
Pass the outer steering line from the back side of the Main Steering Toggle through the #0 grommet.



Tighten the knot formed.

Repeat on the other Riser and Toggles.

Installation of “Dual Toggle” Main Steering Toggles is complete.

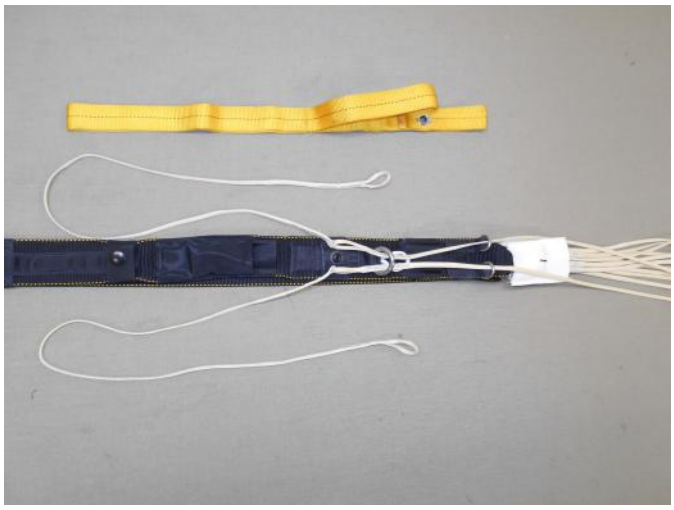


Pass the tail end of the Main Steering Toggle through the loop of the steering line.

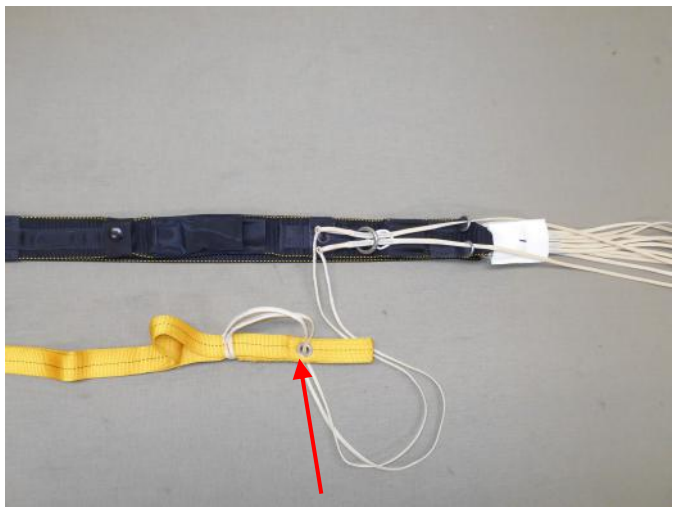
7.6 Stowing the Main Steering Toggle, Single Steering/Flare Toggle.

Follow these Instructions when using only a Single Main Steering Toggle.

The **TPDS HLT** Heavy Load Tactical Parachute Assembly uses a "locking brake" configuration when stowing the Main Steering Toggles.



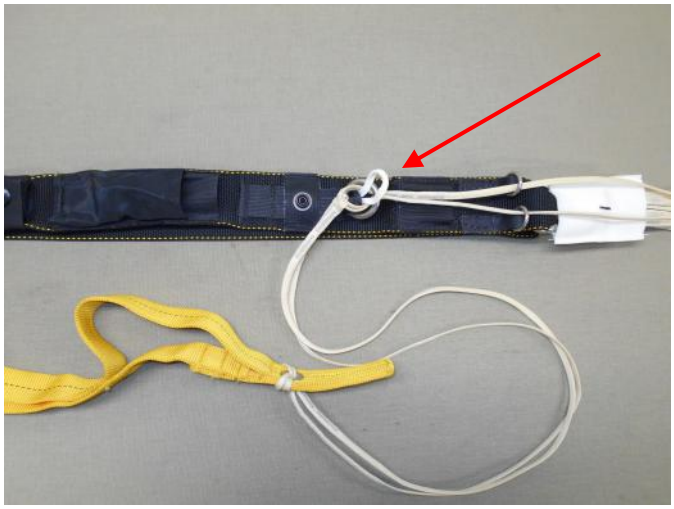
Pictured is the Main Steering Toggle of the TPDS **HLT**. There are *"cat's eyes"* on the main parachute Control Lines to lock with the Steering Toggle.



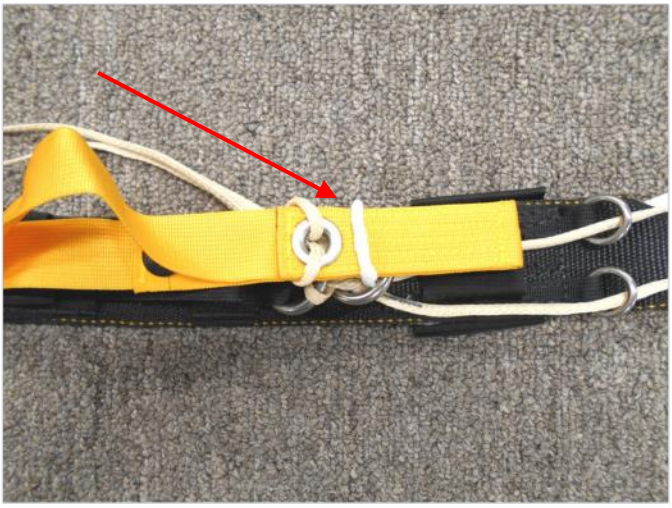
Begin by passing both Control Lines through the grommet of the toggle from the back side.

Pass the tail-end of the toggle through the two loops on the ends of the Control Lines.

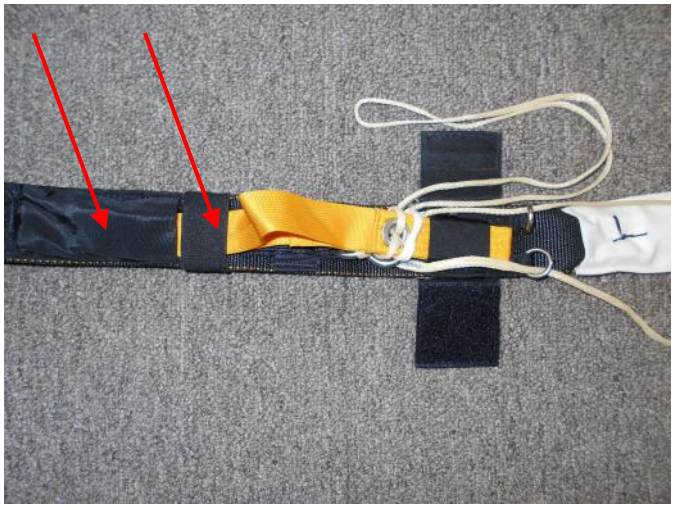
Slide the Control Lines up to the grommet and tighten the knot formed.



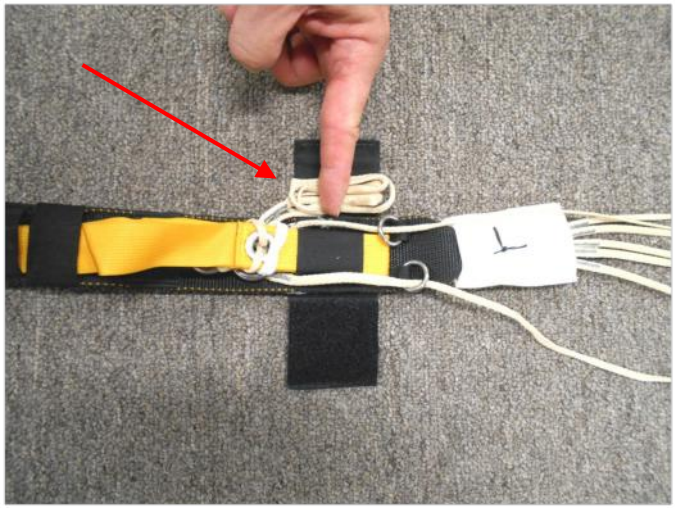
Pass the Spectra Loop on the Riser through the Guide Ring then through both Control Line *"cat's eyes".*



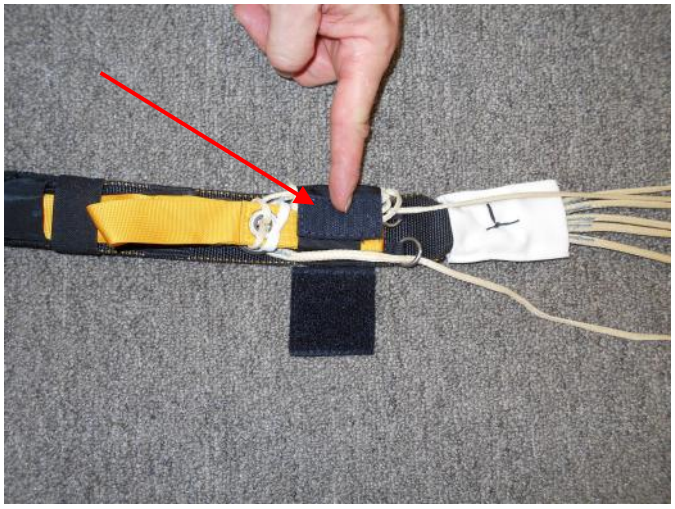
Pass the Toggle tip through the Spectra locking loop.



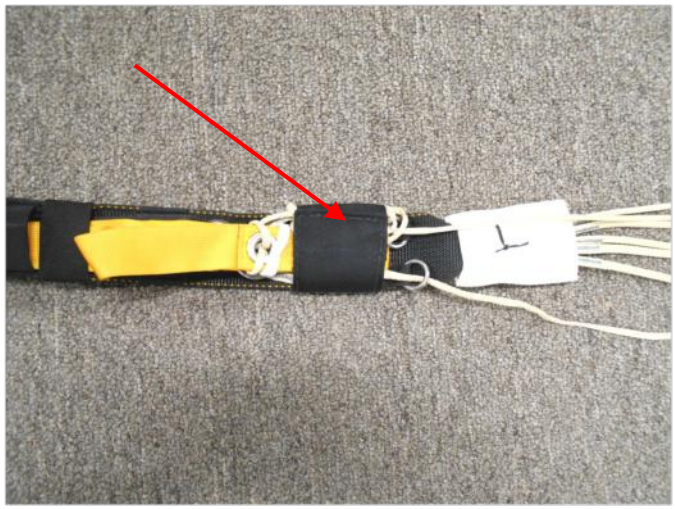
Tuck the Toggle into the sleeve shown and bring up the Elastic Retainer over the Toggle.



"S" Fold the Control Line on top of the Velcro.



Fold over the Hook Velcro.



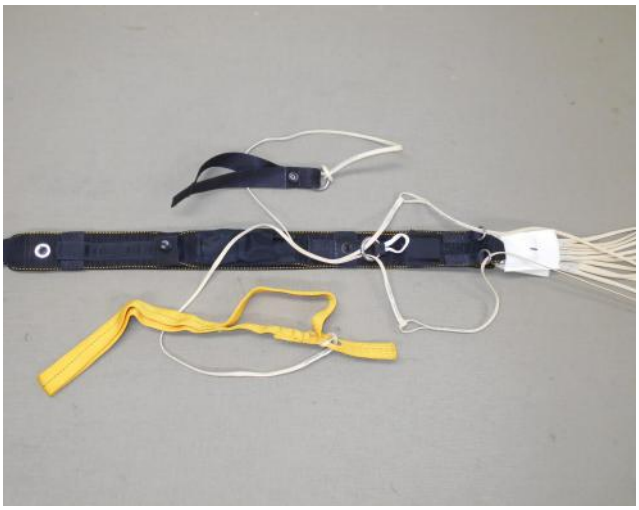
Mate the Pile Velcro to the Hook Velcro.

Repeat the other Riser.

7.7 Stowing the Main Steering Toggle, Dual Steering/Flare Toggle.

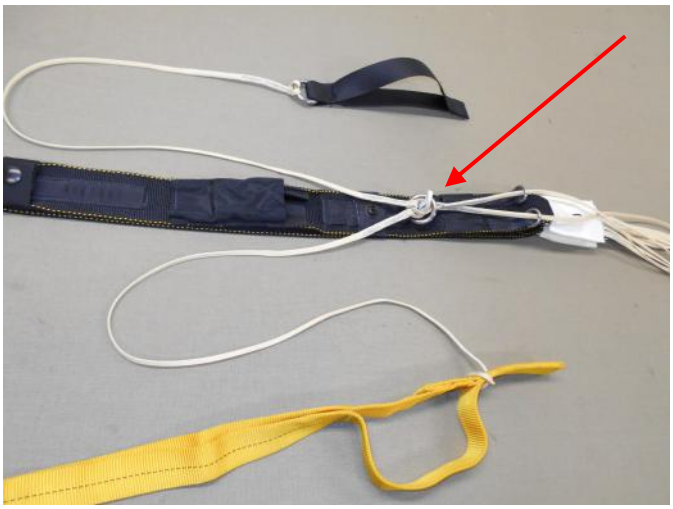
Follow these Instructions when using the Main Steering Toggle with the "Flaring Toggle".

The **TPDS HLT** Heavy Load Tactical Parachute Assembly uses a "locking brake" configuration when stowing the Main Steering Toggles.

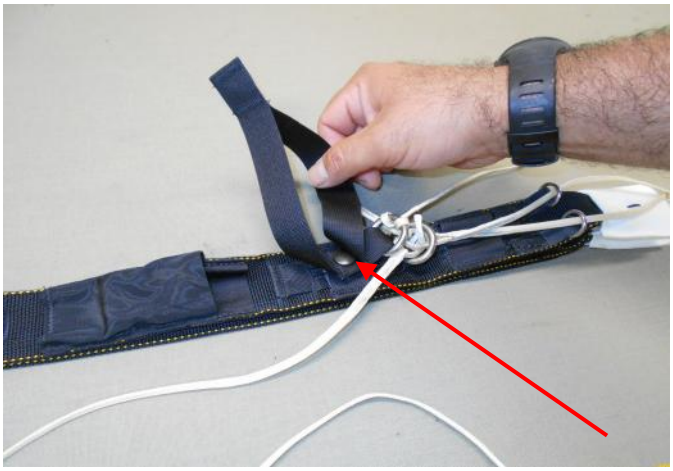


Pictured is the unique "Dual Toggle" Main Steering Toggles of the TPDS **HLT**. There is a "cat's eye" on the main parachute Control Line to lock with the steering toggle.

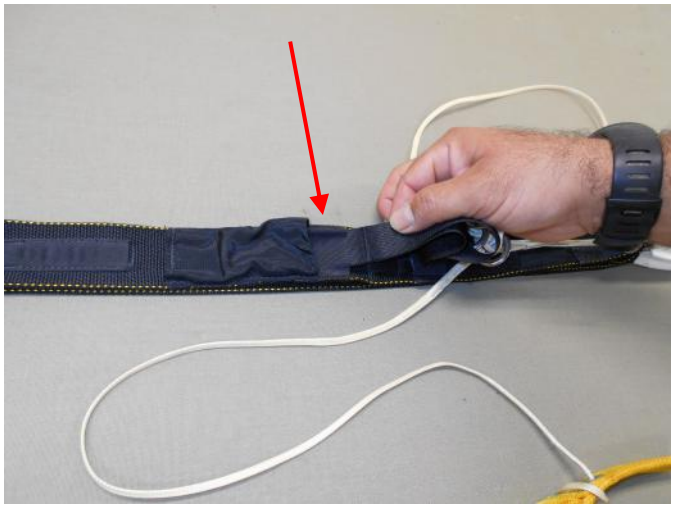
Begin by pulling the two toggles down.



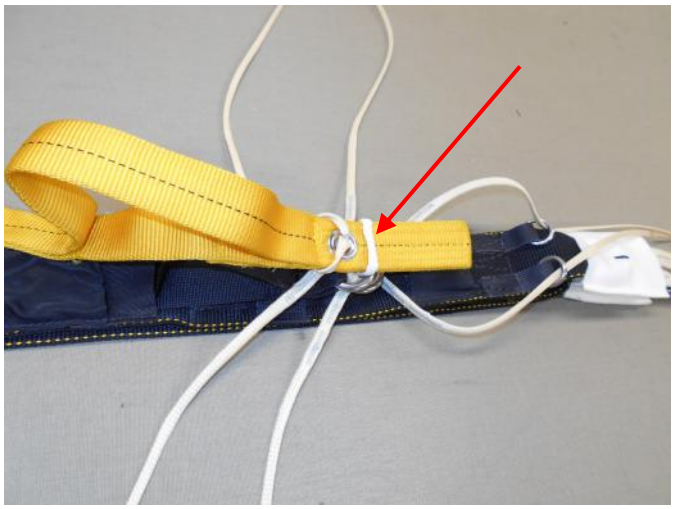
Pass the Spectra Loop up through the Guide Ring and the Finger Trap Loops of the two Control Lines.



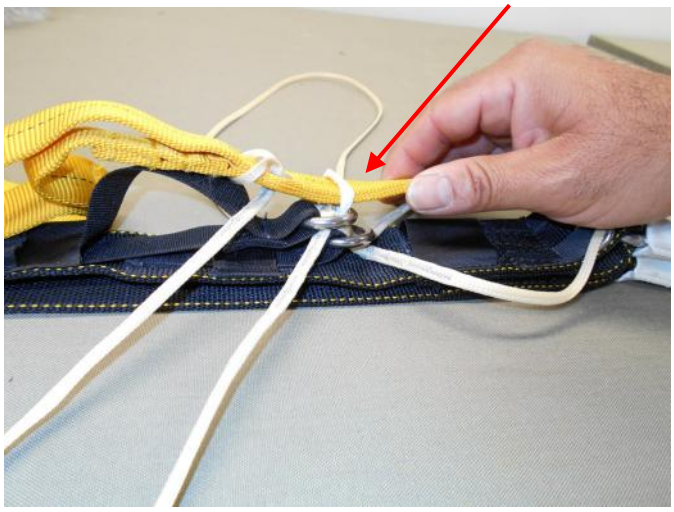
Snap the Flaring Toggle to the Riser.



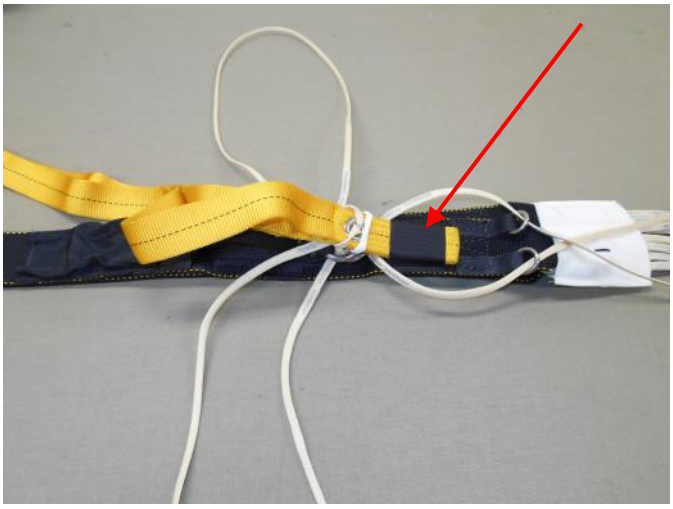
Stow the Flaring Toggle into the 1 1/2” T-III pocket.



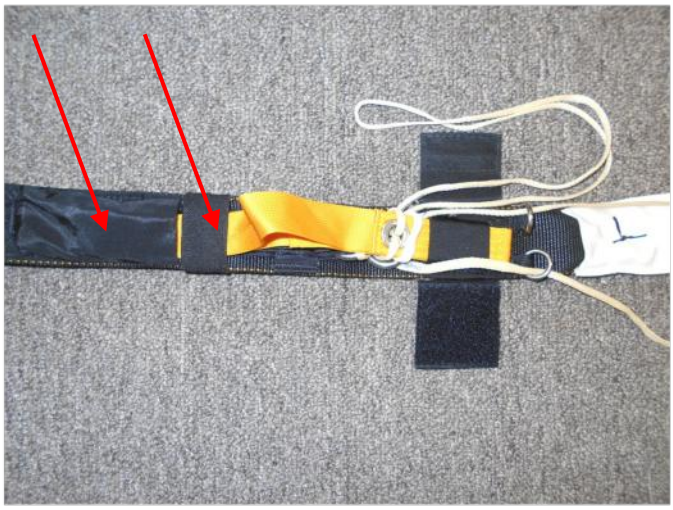
Pass the tip of the Main Toggle through the Spectra Loop as shown.



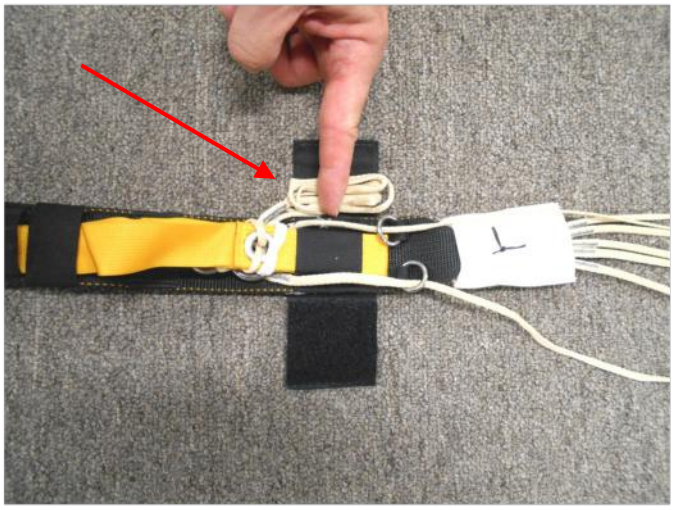
Should look like this.



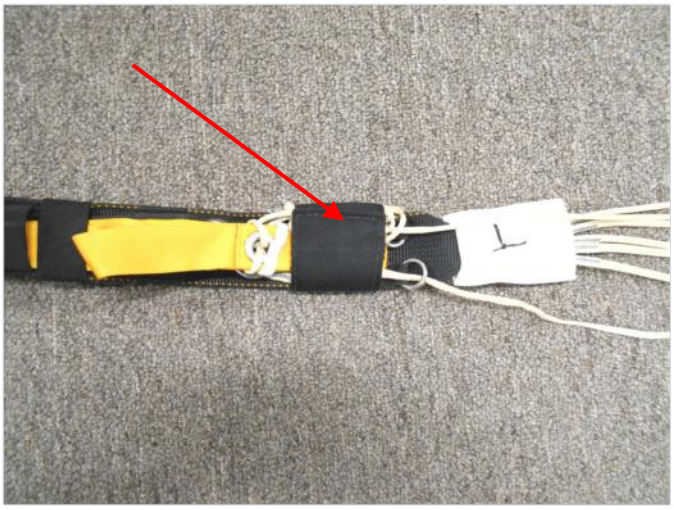
Tuck the Toggle into the 1 1/2” T-III Retainer.



Tuck the Toggle into the sleeve shown and bring up the Elastic Retainer over the Toggle.

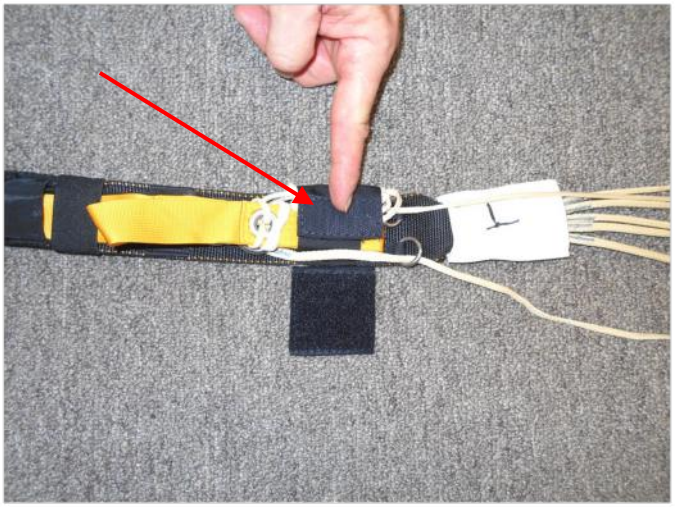


"S" Fold the Control Lines on top of the Velcro.



Mate the Pile Velcro to the Hook Velcro.

Repeat the other Riser.

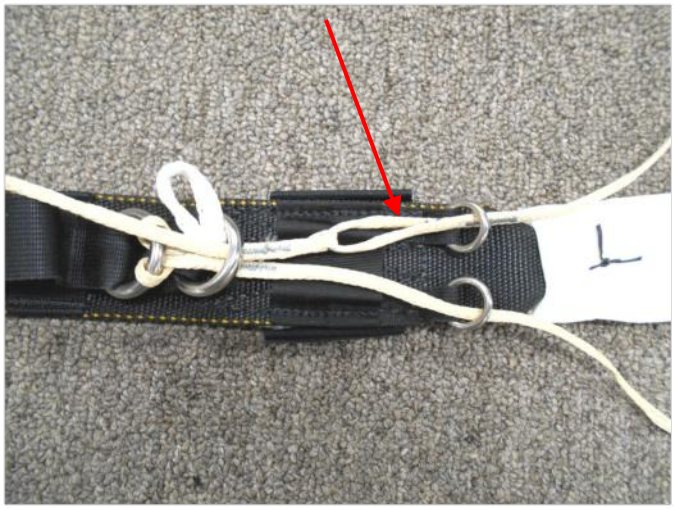


Fold over the Hook Velcro.

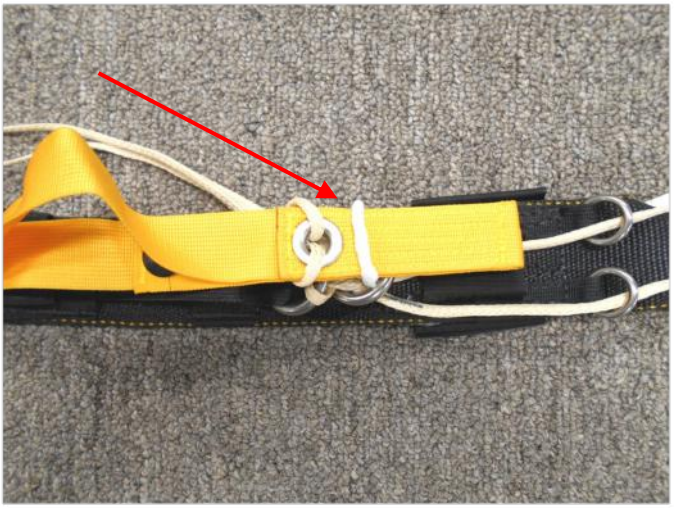
7.8 Stowing the Main Steering Toggle for High Altitude Deployment (HAHO).

Follow these Instructions when Opening the Main Parachute at Altitudes of 10,000'/ 3048 m. or more.

The **TPDS HLT** Heavy Load Tactical Parachute Assembly uses a "locking brake" configuration when stowing the Main Steering Toggles.

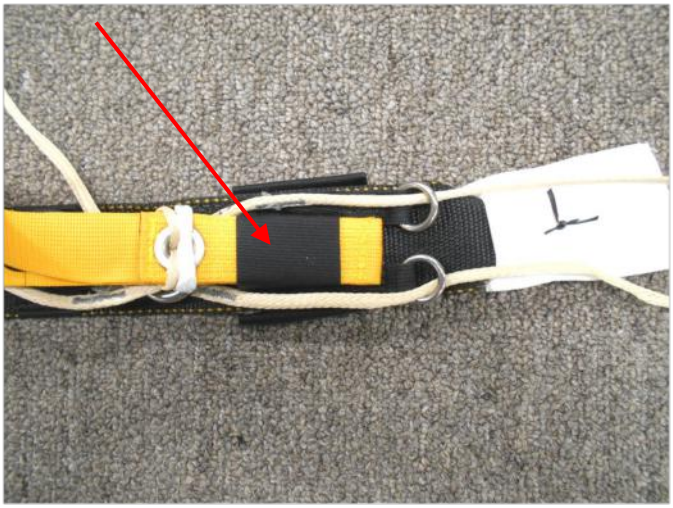


Begin by pulling only the **"outside"** Control Line toward the Spectra locking loop.

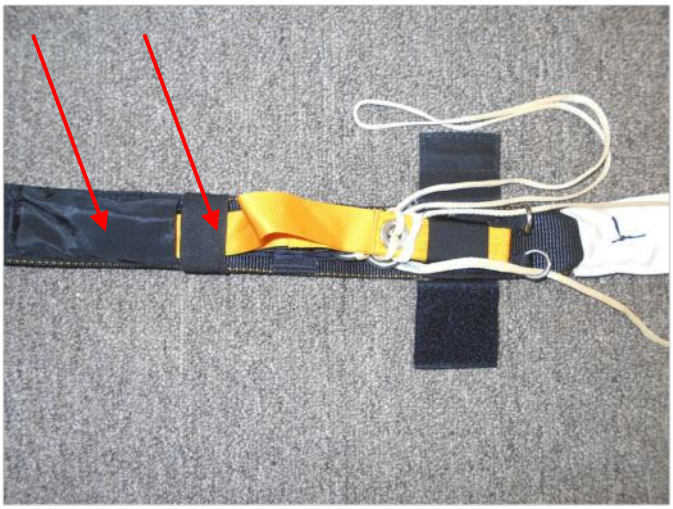


Pass the Toggle tip through the Spectra locking loop.

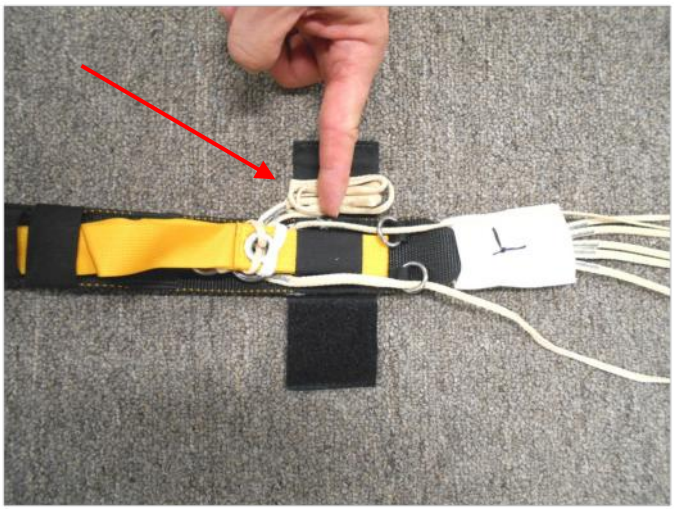
Pass the Spectra locking loop up through the Guide Ring then through the "cat's eye" of the outside Control Line.



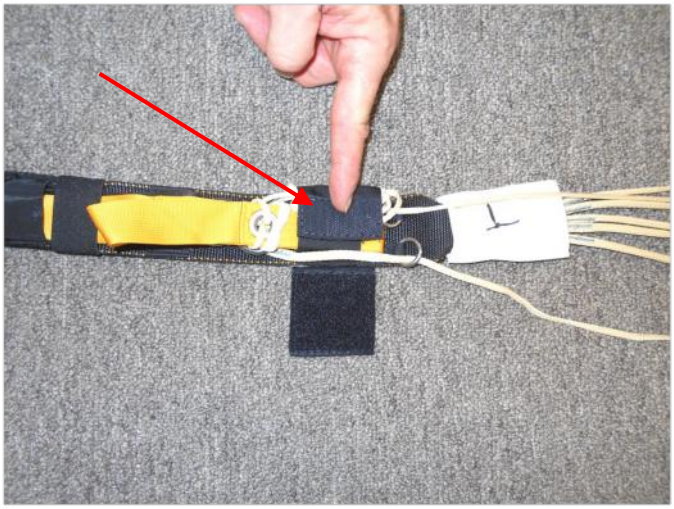
Tuck the Toggle tip into the T-III Retainer.



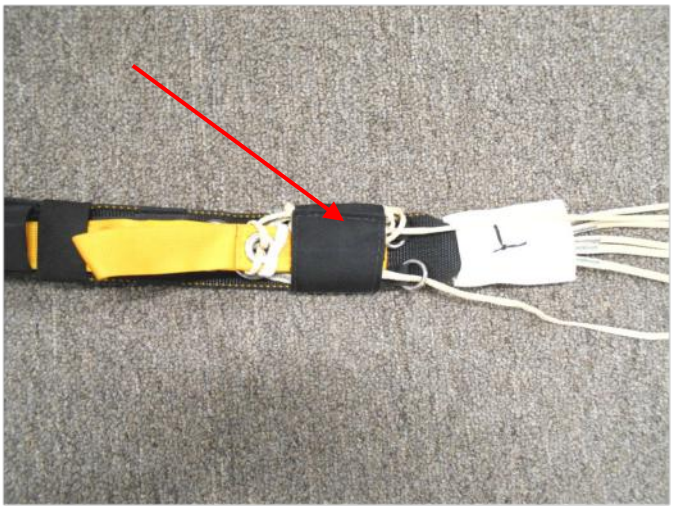
Tuck the Toggle into the sleeve shown and bring up the Elastic Retainer over the Toggle.



"S" Fold the Control Line on top of the Velcro.



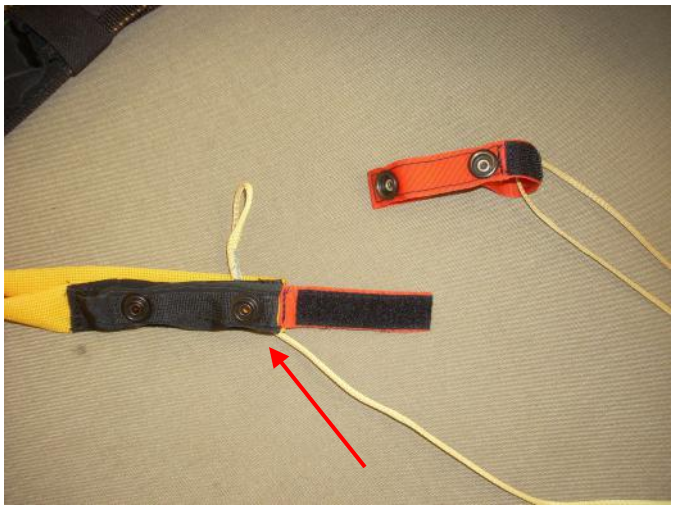
Fold over the Hook Velcro.



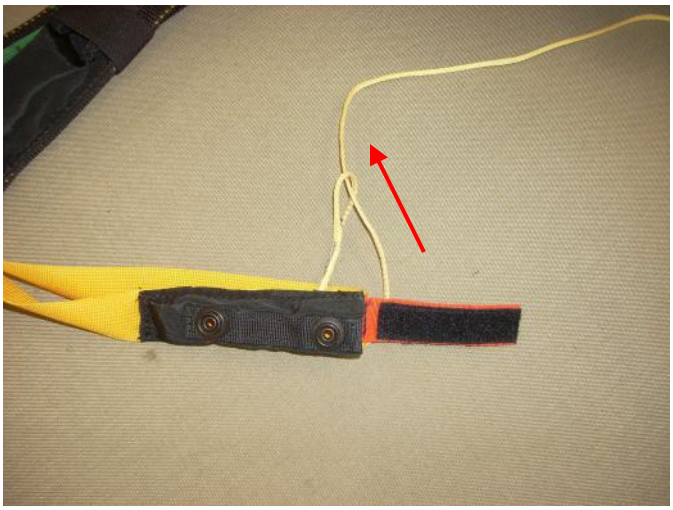
Mate the Pile Velcro to the Hook Velcro.

Repeat the other Riser.

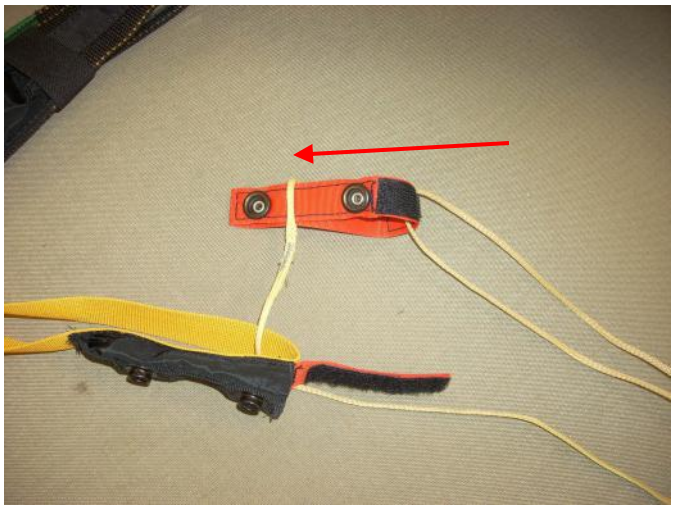
7.9 Installing the Main Canopy Steering Toggles Extensions.



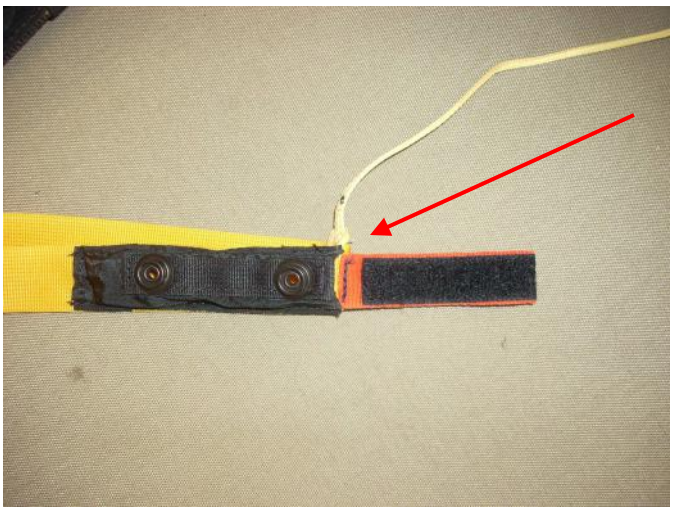
Pass the Kevlar line through the toggle bottom.



Continue to pull the line through the loop.



Pass the small handle through the loop of the Kevlar line.

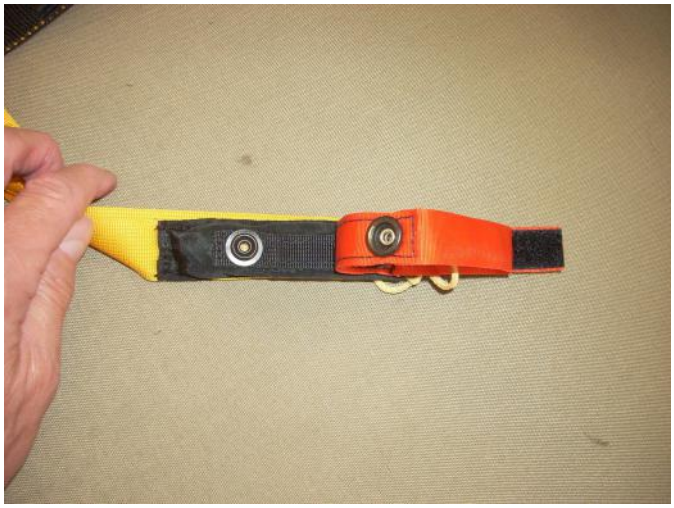


Tighten the knot formed.

7.10 Stowing the Main Canopy Steering Toggle Extensions.

Loop the excess Kevlar line to fit into the small pocket of the Toggle.

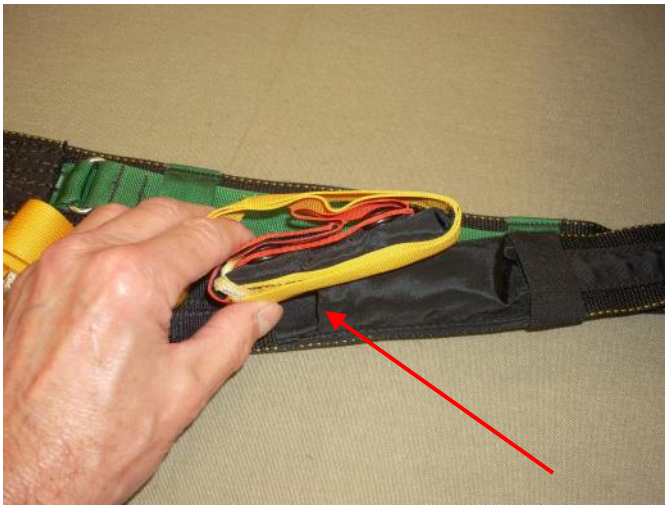
Place into the pocket.



Close the snaps.

Should look like this.

Mate the Velcro tabs.



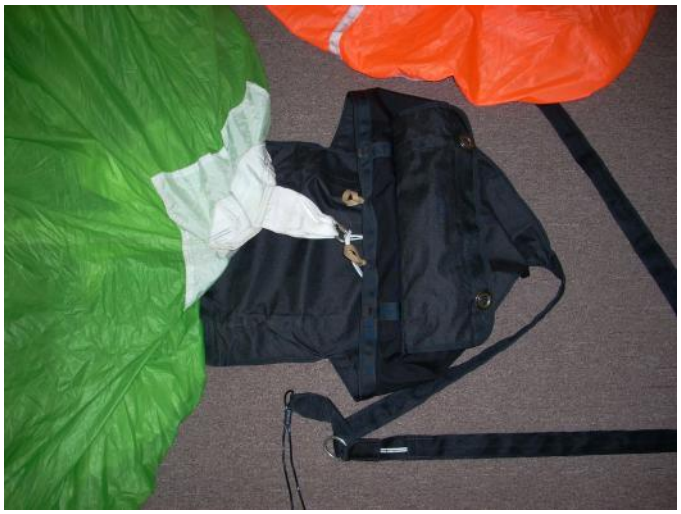
Make a fold under the toggle.

Insert the folded Toggle Extension into the pocket.

The Elastic Keeper over the toggle.

Bring Elastic Keeper up over the toggle bottom.

7.11 Arming the Drogue Pilot Chute.



Remove any twist in the Drogue Bridle or Center Lines and place Main Deployment Bag close to the Drogue Attachment Point of the Main Parachute on the top skin.

Extend the Drogue Bridle until it is at full extension, the center-line is tight, the bridle window shows a **Green line** and there is no excess center-line between the bag and the main parachute.

The Drogue is now armed.

CAUTION: NO GREEN LINE INDICATES THAT THE DROGUE PILOT CHUTE IS **NOT** ARMED!!

7.12 Flat Pack Method of the Main Parachute.

Before packing the Main Parachute be sure that the Deployment Bag is set-up for the specific Deployment Method.

Read and follow the Instructions for stowing the Main Steering Toggles in **Chp. 7.4 / 7.5.**

Grasp the Rear Line and Control Line groups in the **LEFT** hand and the Front Line groups in the **RIGHT** hand.

Walk towards the parachute, leaving the slider at the top of the risers, separating the line groups as you go.

Once at the stabilizer edge, shake the parachute from side to side.

While maintaining control of the line groups, lay out the parachute in front of you and away from the harness/container assembly.

Maintaining line tension will help in later steps.

Walk to the top of the canopy and:
Count and flake out the cells leading edges.
Count and flake out the B-line seams.
Count and flake out the C-line seams.
Count and flake out the D-line seams.
Count and flake out the control lines and the remainder of the trailing edge of the canopy.

With tension on the A-line groups, fold the leading edge under the A-line group.

With tension on the A- and B-line groups, fold the B- line section on top of the A-lines.

With tension on the B- and C-line groups, fold the C- line section on top of the B-lines.

With tension on the C- and D-line groups, fold the D- line section on top of the C-lines.

Place the control line group on top of the line groups.

Separate the tail section, place the right control lines and material on the right side of the pack job, and the left control lines and material on the left side of the pack job.

Bring the Slider up to the Slider Stops and quarter the Slider.

Fold the material between the control lines out and away from the center of the pack job.

While keeping the control lines in the center of the pack job, begin to wrap the tail around the canopy.

Make sure to include the slider.

Compress the air out of the parachute and continue cocooning the canopy until it is slightly wider than the deployment bag.

Start “S”-folding the parachute. The first “S”-fold should be approximately 1/3 of the canopy material. Place on top of the folded canopy.

While maintaining control of the canopy, narrow the material to fit into the Deployment Bag.

Continue to “S”-fold the parachute while maintaining control of the canopy material.

Bring the Deployment Bag up to the parachute.

Carefully place the parachute into the Deployment Bag.

Follow the Instructions in **Chp. 7.10** for closing the Deployment Bag.

7.13 PRO-Pack Method of the Main Parachute.

Before packing the Main Parachute be sure that the Deployment Bag is set-up for the specific Deployment Method.

With no twists in the risers, place the Right Front Riser line group between the little and ring finger of the **Right** hand.

Place the Right Rear Riser group between the middle and fore finger of the same hand.

Place the control line between the fore finger and the thumb.

Repeat for the opposite hand and line groups.

The slider should be between your body and the parachute.

Walk towards the parachute between the line groups, moving the slider up the lines with you and separate the line groups in your hands.

Upon reaching the parachute, check that the control lines are not twisted around any other line groups.

If so, restart this step or perform another continuity check.

Step outside of the lines, group the lines together in one hand and place this group over your shoulder.

For these instructions, the parachute is over the left shoulder. Switch orientation if using the right shoulder.

With the parachute in the correct orientation (nose towards the container, tail away from the container) start counting the 9 leading edge cells out.

Start by slightly turning the parachute over your shoulder, resting the right outside cell against your body.

Count each cell and grasp this group.

Push the nose through the center of the parachute and pull it briskly back out.

Place the tip of the leading edge between your knees and hold the material in place.

Starting with the A-line group, count the 5 right cells between the A- and B- line attachment points and flake the material away from the center of the parachute.

Count the 5 right cells between the C- and D -line attachment points and flake the material away from the center of the parachute.

Count the 5 right cells between the B- and C-line attachment points and flake the material away from the center of the parachute.

Count the 5 right cells between the D-lines and the Control Lines / tail.

Repeat the other side of the parachute.

Quarter the Slider by placing the section between the B-C attachment points away from the center of the parachute and separating the front and rear sections in a similar manner.

Lift the Tail up and slowly wrap the tail around the front of the parachute.

Keep the roll tight and make enough turns until the top skin appears tight and able to hold the cocoon shape.

Gently lay the canopy on the floor. Keep the lines tight and do not disturb the pack job.

Carefully lay on the canopy to remove as much excess air out of it as possible.

Do not allow the canopy to bellow out.

Tighten the cocoon to the width of the Deployment Bag.

Check that the Drogue is still armed.

Start “S”-folding the parachute. The first “S”-fold should be approximately 1/3 of the canopy material. Place on top of the folded canopy.

While maintaining control of the canopy, narrow the material to fit into the Deployment Bag.

Continue to “S”-fold the parachute while maintaining control of the canopy material.

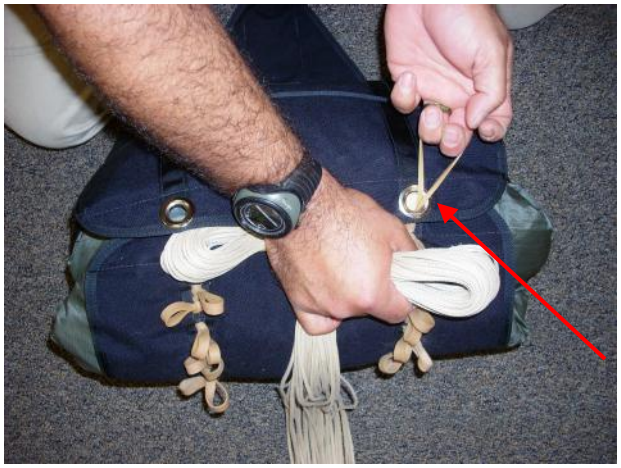
7.14 Closing the Deployment Bag.

Carefully place the parachute into the Deployment Bag.

With the lines up through the center of the canopy and out of the Deployment Bag stow the lines in either of the inner stow bands of the inner closing flap.

The stow should not be more than 1 1/2”-2”.

Stow another bight of the lines in the other inner stow band.



Stow the next line bight in the opposite outer stow band.

Finish closing the Deployment Bag with a bight in the last stow band.

Stow a bight of line into the first rubber band opposite the last stow.

Continue stowing the lines, alternating back and forth, until approximately 12”-15” remain.

Split the lines into two (2) separate rubber bands for the last stow.

Should look like this.

Ready to put into the Main Container.

7.15 Placing the Deployment Bag into the Main Container.

With the Main Parachute secured in the Deployment Bag open the Main Container and remove any debris.

Carefully lift the Deployment Bag up and over the Container. Do **NOT** twist the lines.

Set the Deployment Bag into the Main Container with the lines towards the Bottom End of the Main Container.

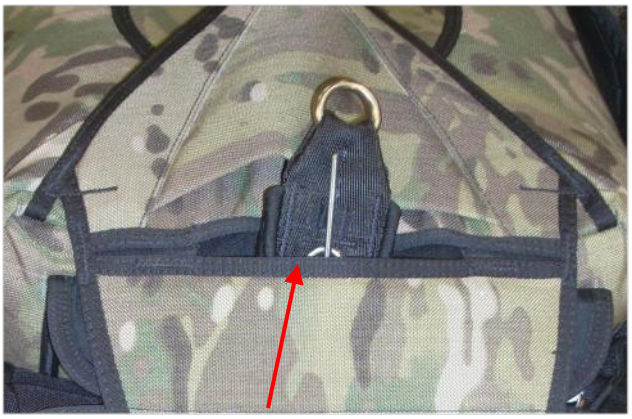
Lay the Main Risers on top of the Reserve Risers and cover them with the Magnetic Cover Flap.

Close the Tuck Flap over and into the Cover Flap as shown.

Chapter 8

Closing the Main Container

8.1 Closing the Main Container for Freefall Drogue Deployment.



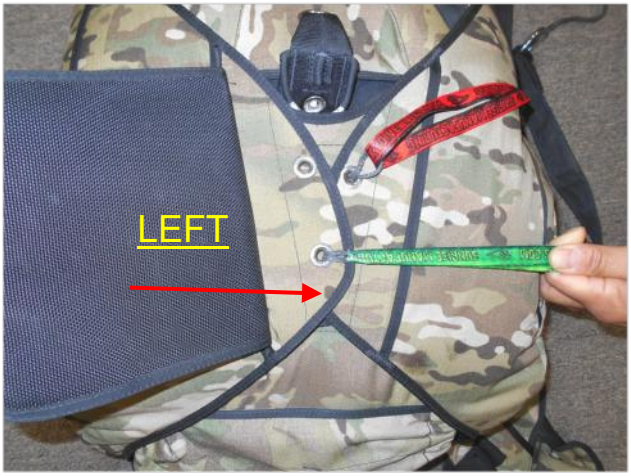
Before starting to close the Main Container pass the 3-Ring Drogue Riser through the slot between the Bottom Reserve Flap and the Top Main Flap.

With the Bridle placed at the top right corner, close the **Bottom Flap** over the Deployment Bag bringing both Closing Loops through the grommets. The Top Closing Loop goes through the top grommet and the Primary Closing Loop goes through the bottom grommet.

Notice the length of the Closing Loops at this point. This length will allow the ideal closing of the Main Container.

Close the **Top Main Flap**. Pass the Primary Closing Loop through the bottom grommet and the Safety Closing Loop through the top grommet.

Pass the Primary Closing Loop through the bottom grommet of the **Right Side Flap**.



Close the **Left Side Flap** using the lower grommet and the Primary Closing Loop.

Use either of the Main Closing Pins to secure the Primary Closing Loop.

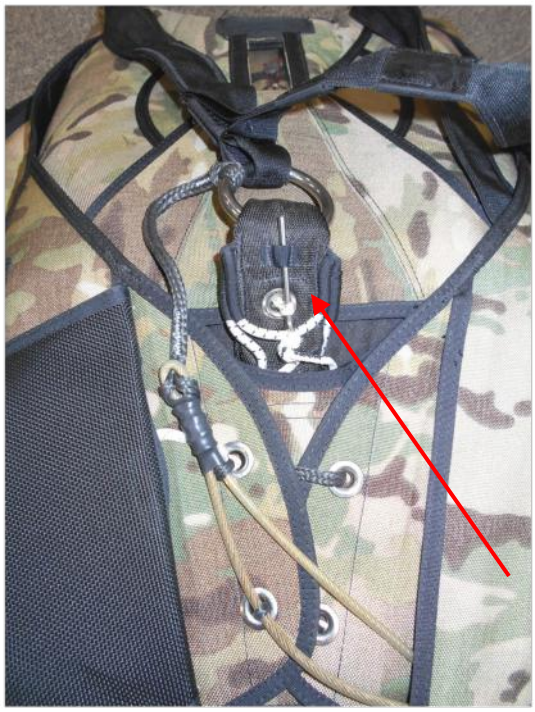
Secure the Safety Closing Loop with the remaining Closing Pin.

Tuck the ends of the Main Closing Pins into the **Right Side Flap.**

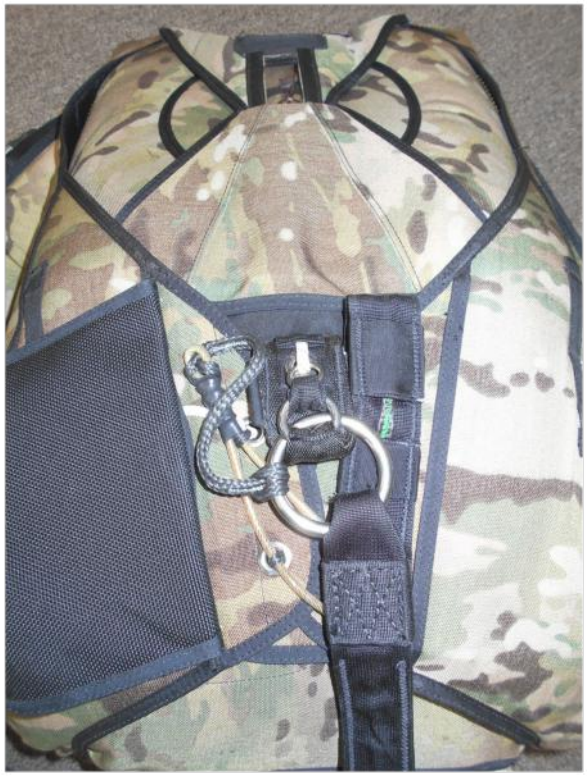
8.2 Assemble the 3-Ring Drogue Release System.

Assemble the 3-Rings.

Pass the T-IIA loop through **only** the smallest ring then through the grommet.



Secure the loop with the straight pin and tuck the pin end under the tape as shown.



Should look like this.

Tuck the Drogue Bridle under the Bottom of the Right Side Flap.

Tuck the Drogue Bridle under the Top Right Side Flap.

Close the Pin Cover Flap.

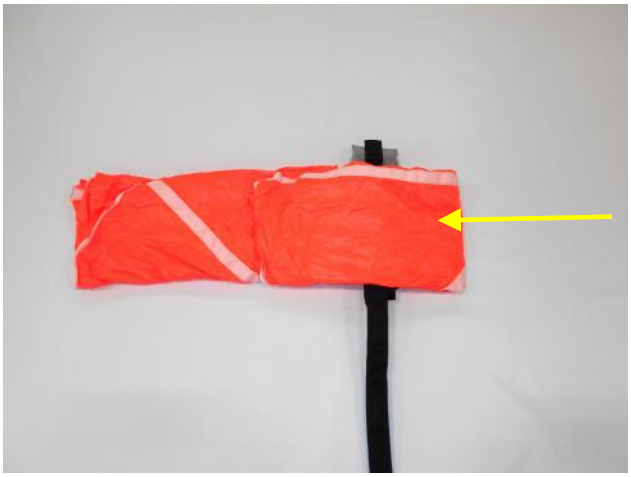
8.3 Stowing the Drogue Pilot-chute into the Pouch.

With no twist in the Drogue Bridle, lay the Drogue Pilot-chute out flat on its top. Mesh side up, handle down.

Fold Drogue Pilot-chute in half with the Drogue Bridle exiting the bottom of the curved side and the magnet facing up.

Fold the Pilot-Chute over into thirds.

"S"-fold the Drogue Bridle over the center.



Fold the Pilot-Chute into thirds to the center.

Fold the other side of the Pilot-Chute to the center.

Fold both ends to the center keeping it to the width of the Drogue Pouch.

Mate the Magnet of the Magnet Sleeve on the Pud with the Magnet inside the pocket of the Pouch.

Should look like this.

8.4 Closing the Main Container for Static Line Drogue Deployment.

Follow these Instructions for Closing the Main Container with a Static-Line Drogue Pilot Chute Deployment.

Follow the Instructions to Assemble the Static Line Drogue Pilot Chute in **Chp. 4.6**.

Pack and place the Main Parachute into the Deployment Bag.

Set the Deployment Bag into the Main Container Tray with the Lines towards the Bottom Closing Flap of the Container.

Fold the Drogue Pilot Chute as instructed in **Chp. 8.3.**

Insert the Drogue Pilot Chute into the Pouch with the Pud Handle in first and the Bridle remaining on the outside of the Pouch.

"S"-fold the Bridle to the width of the Pouch.

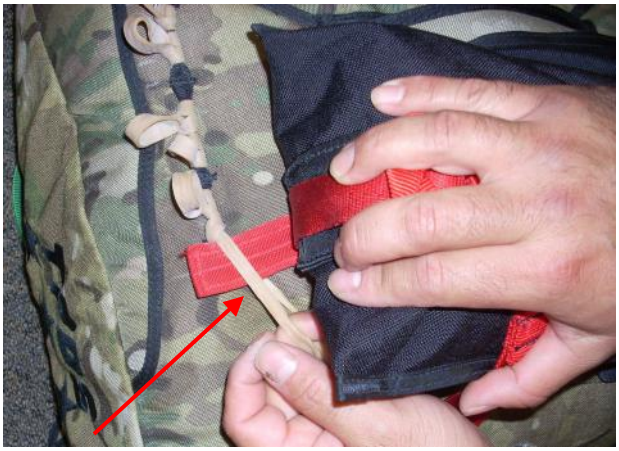
Stuff the folded Drogue Bridle into the Pouch.

Pass the Rubber Band through the T-4 Closing Loop.

Secure the Pouch closed with a bight of the Bridle in the Rubber Band.

Ready to be stowed to the HLT Container.

Set the Drogue Pilot-chute Pouch on top of the Main Container, Tabs down. Secure one side with a rubber band.



Secure the other side with a rubber band.

Stow the first bight of the Static Line and secure with a rubber band. Leave about 1 1/2” - 2” in each bight.

Alternate back and forth leaving about 1 1/2” - 2” in each bight.

Should look like this.

The **TPDS-HLT** Heavy Load Tactical Parachute Assembly with Static-Line Drogue Pilot Chute ready for the mission.

8.5 Closing the Main Container with a Throw-out Pilot-chute.

Follow these Instructions for Closing the Main Container with a Throw-out Pilot-chute and no Drogue Pilot-chute.

Follow the Instructions in **Chp. 12** to remove the Drogue Bridle from the Deployment Bag.

Follow the Instructions in **Chp. 4** to assemble the Deployment Bag for Throw-out Pilot Chute.

Pictured above is the **TPDS HLT** Heavy Load Tactical Parachute Assembly Deployment Bag with Throw-out Pilot-chute.

The Main Parachute is attached to the Bridle and Deployment Bag with a Lark's Head knot on the end of the Main Bridle **(TPDS-HLT-245)**.

The Deployment Bag **(TPDS-HLT-274)** is used for the Throw-out Pilot Chute option.

The Bridle used for the Throw-out Pilot-chute is 1" Type 4 with a curved pin attached. It is different than the one used with a Drogue Pilot-chute.

Follow all Instructions for Assembly and Packing the Main Parachute.

After placing the Deployment Bag into the Main Container and closing the Riser Covers, close the Bottom Flap first using the grommet farthest from the binding tape.

The Deployment Bag placed into the Main Container with the Bridle to the upper right side.

The Bottom Flap closes first. Use the grommet shown above.

Be sure that the Bridle is to the Upper Right Side.

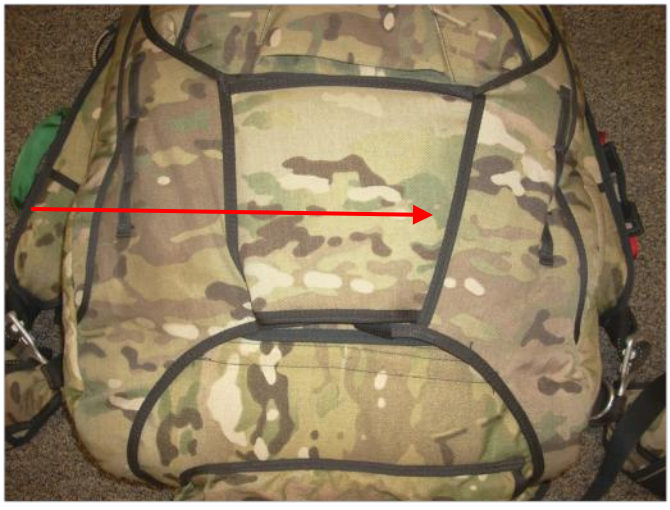
The Top Flap closes next. Use the grommet shown above.

The Right Flap closes next.

Close the Left Flap next.

Insert the Closing Pin into the Closing Loop.

Tuck the Bridle under the Right Flap.



Close the Pin Cover Flap.

Fold the Pilot-chute into 3rds as shown.

Fold the Pilot-chute into 3rd's again.

Roll the Pilot-chute towards the center.

Tuck the Pilot-chute into the Spandex pouch as shown.

Be sure that the Pilot-chute is inside the Spandex pouch.

The **TPDS, Inc. HLT** Heavy Load Tactical Parachute Assembly with **Throw-out Pilot Chute** ready for the mission.

8.6 Closing the Main Container for a Spring-loaded Pilot Chute.

Follow these Instructions for Closing the Main Container with a Spring-loaded Pilot Chute.

Follow the Instructions in **Chp. 4** to remove the Hacky Handles and assemble the TPDS-HLT for the Ripcord option.

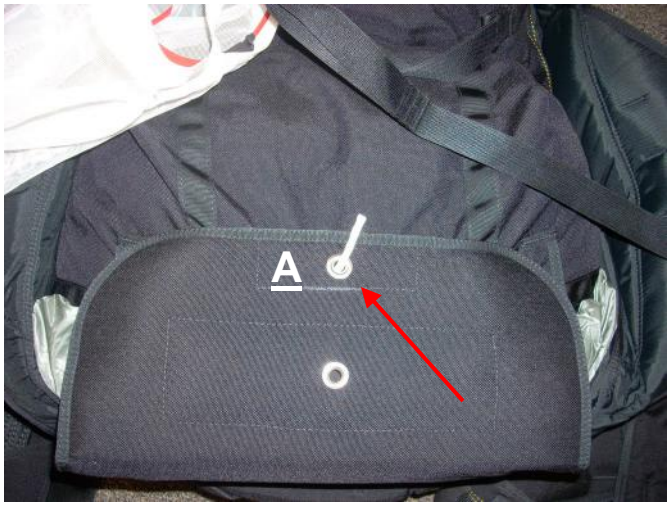
Pictured above is the Ripcord for Spring-loaded deployments. **(TPDS-HLT-259)**

The lower end of the Ripcord Housing opening near the Drogue Pilot-chute Pouch.

The upper end of the Ripcord Housing on the Right Closing Flap.

Ripcord Deployments use only one closing grommet.

A T-IIA Closing Loop. **(TPDS-HLT-275)** is used.



Insert a T-IIA Closing Loop into the grommet A closest to the edge of the Bottom Flap.

Follow the Instructions in Chp. 7 for packing the Main Parachute.

Place the Deployment Bag into the Main Container.

Close the Riser Covers.

Pull-up cord in the T-IIA Closing Loop.

“S”-fold the Bridle on top of the Deployment Bag.

Place the Spring-loaded Pilot-chute on top of the "S"-folded Bridle and compress it keeping the canopy material folded **into** the spring.

Close the Bottom Flap then the Top Flap.

Close the Right Flap.

Close the Left Flap.

Pass the Ripcord through the Closing Loop.

Tuck the Ripcord under the Left Flap.

The TPDS-HLT with Spring-loaded Pilot-chute ready for the mission.

The **TPDS-HLT** with Spring-loaded Pilot-chute ready with BOC Handle.

The **TPDS-HLT** with Spring-loaded Pilot-chute ready with Main Lift Web Handle.

8.7 Closing the Main Container for T/O Pilot Chute Assist Static Line. (TPDS-HLT-241)

Pictured above is the T/O Pilot Chute Assist Static Line Pouch (**TPDS-HLT-241)** and the Static-Line w/Black Pins **(TPDS-HLT-265)**.

Pass the Loop of the Static Line **(TPDS-HLT-265)** through the Type 4 Loop on the end of the Pilot Chute Pouch.

Pass the rest of the Static Line through the Static Line Loop, creating a Lark's Head Knot.

Tighten the knot formed.

Fold the T-O Pilot-Chute in half then into 3rds. with the Hacky toward the opening of the Pouch.

Roll the P/C towards the middle and put into the pouch – Hacky end in first.

“S”-fold the Bridle on top of the P/C.

Close the Pouch using a rubber band and the Bridle to lock the Pouch closed.

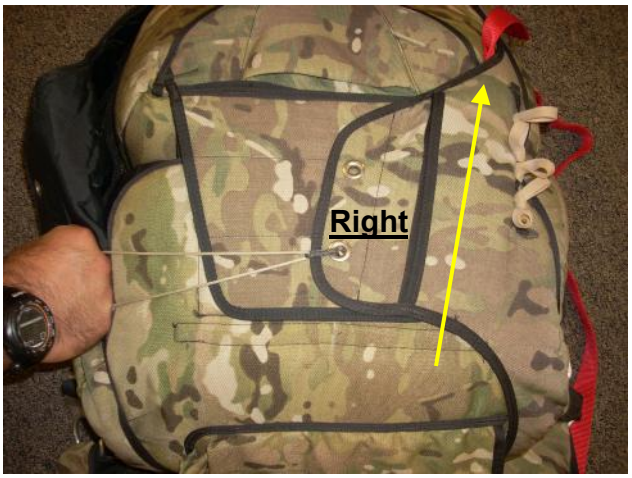
The T-O P/C Assist Pouch is ready to be placed into the Main Container.

Set the Deployment Bag into the Main Container Tray, lines to the bottom.

Lay the Pouch on top of the Deployment Bag. Use a closing loop mounted on the bottom of the Reserve Container.

Close the **Bottom Main Flap** first.

Close the **Top Flap**.



Close the **Right Side Flap**.

Be sure the Static Line is coming out from the top right corner.

Close the **Left Side Flap**.

Secure the Closing Loop with either of the Black Cables.

Tuck the Black Cables under the Left Closing Flap.

Close the Pin Cover.

Stow the first bight of Static-line in the first rubber band on the Right Side.

Stow the second bight of Static-line on the Left Side. Alternate back and forth leaving about 1 1/2" -2" in each bight.

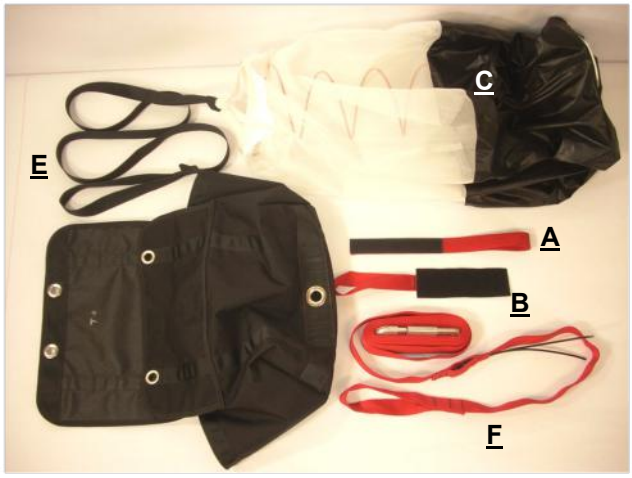
The **TPDS-HLT** Heavy Load Tactical Parachute Assembly with Spring-loaded Pilot Chute Static-Line Assist ready for the mission.

8.8 Closing the Main Container for a Spring-loaded Pilot Chute Assist Static Line.

Follow these Instructions for Closing the Main Container with a Spring-loaded Pilot Chute Assist Static-Line.

Follow the Instructions in **Chp. 4** to remove the Hacky Handle.

Follow the Instructions in **Chp. 4** to assemble the Deployment Bag for Spring-loaded Pilot Chute Static-Line Assist.



Pictured above are the parts for the Spring-loaded Pilot Chute Static Line Assist Deployment Assembly.

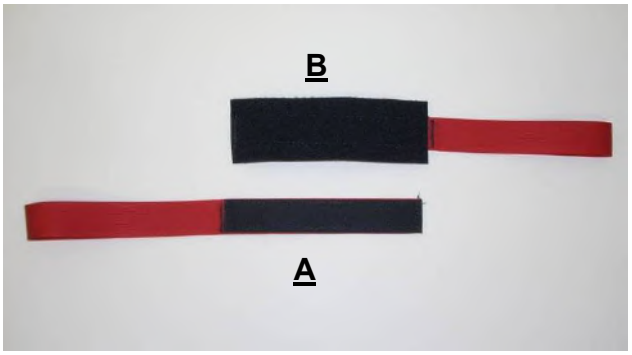
Follow all Instructions for Assembly and Packing the Main Parachute.

A. TPDS-HLT-242-A S/L Assist Hook
B. TPDS-HLT-242-B S/L Assist Pile
C. TPDS-HLT-230 Main Spring-loaded P/C
D. TPDS-HLT-272 S/L Assist D-Bag
E. TPDS-HLT-247 Main Bridle
F. TPDS-HLT-265 Static-line w/Black Cables

Follow all Instructions for Assembly and Packing the Main Parachute.

Place the Deployment Bag into the Main Container.

Place the Deployment Bag into the Main Container with the lines towards the Bottom Flap.



TPDS-HLT-242-A Hook Main Spring P/C
TPDS-HLT-242-B Pile **Static Line Assist**

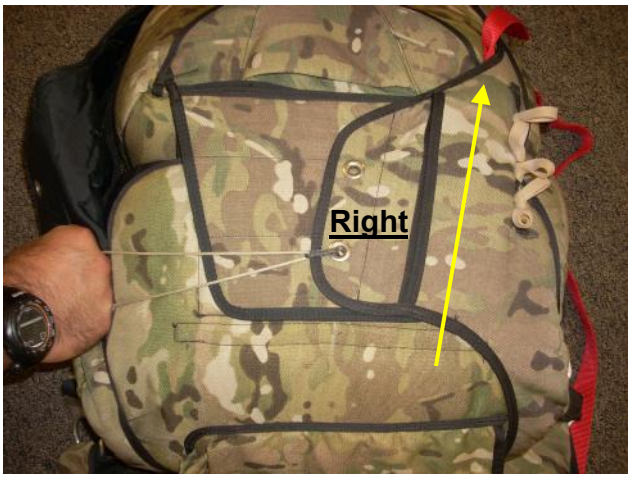
Mate the Hook Velcro of the **TPDS-HLT-242-A** Connector with the Pile Velcro of the **TPDS-HLT-242-B** Connector. "S"-fold the Pilot Chute Bridle on top of the Deployment Bag then place the Static Line Assist Assembly on top of the Pilot Chute Bridle.

Compress the Main Spring on top of the Bridle.

Be sure to keep all of the Pilot Chute material folded into the Spring.

Close the **Bottom Flap** over the Spring.

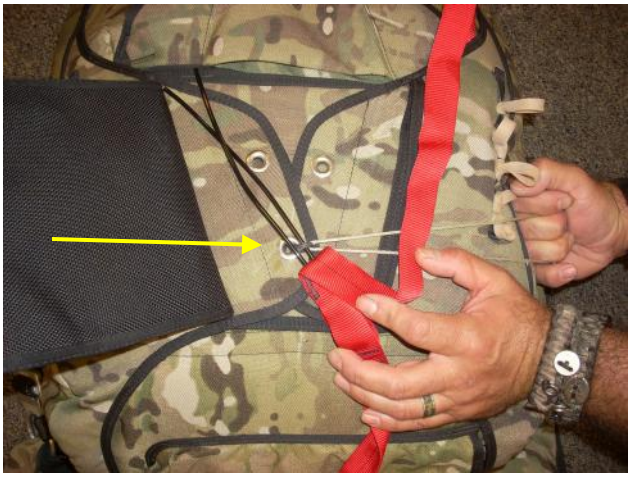
Close the **Top Flap**.



Close the **Right Side Flap**.

Be sure the Static Line is coming out from the top right corner.

Close the **Left Side Flap**.



Secure the Closing Loop with either of the Black Cables.

Tuck the Black Cables under the Left Closing Flap.

Close the Pin Cover.

Stow the first bight of Static-line in the first rubber band on the Right Side.

Stow the second bight of Static-line on the Left Side. Alternate back and forth leaving about 1 1/2" -2" in each bight.

The **TPDS-HLT** Heavy Load Tactical Parachute Assembly with Spring-loaded Pilot Chute Static-Line Assist ready for the mission.

8.9 Closing the Main Container with a Direct Bag Static Line.

Follow these Instructions for Closing the Main Container with a Direct Bag Static-Line.

Follow the Instructions in **Chp. 4** to remove the Drogue Release Hacky Handles.

Follow the Instructions in **Chp. 4** to assemble the Deployment Bag for Direct Bag Static Line.

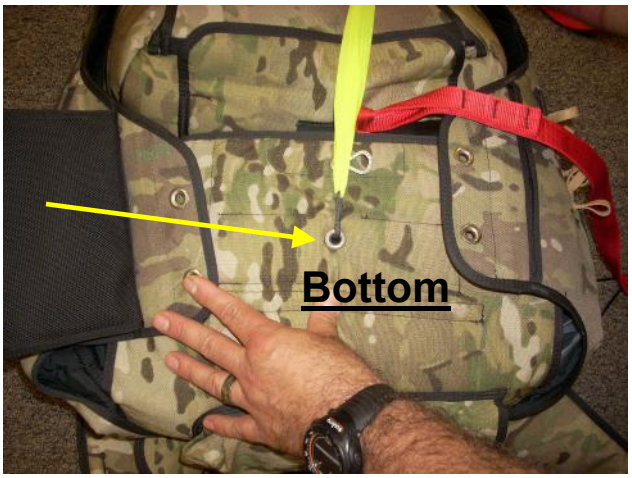
Pictured above are the parts for the Direct Bag Static Line Deployment Assembly.

A. TPDS-HLT-272 Direct Bag D-bag
B. TPDS-HLT-265 Static-line w/Black Cables

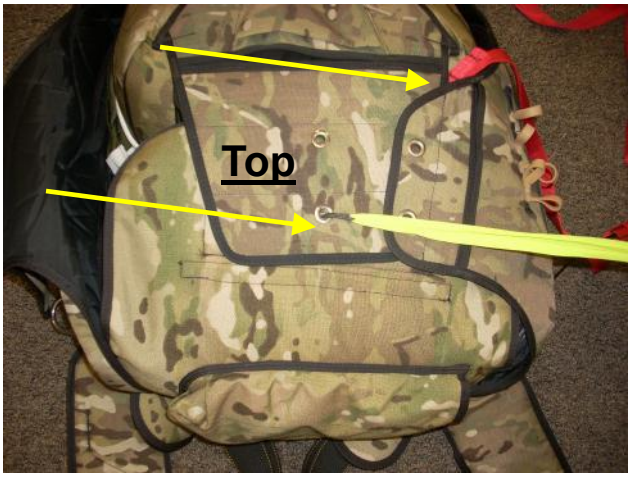
Follow all Instructions for Assembly and Packing the Main Parachute.

Place the Deployment Bag into the Main Container with the lines to the bottom of the Container.

Place the Deployment Bag into the Main Container with the lines towards the Bottom Flap.

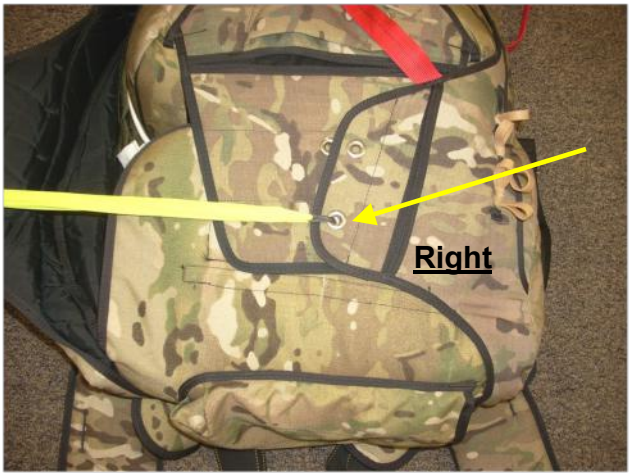


Close the **Bottom Flap** using the HMA Closing Loop through the Bottom Grommet.



Close the **Main Top Flap** using the Grommet shown.

Be sure the Static Line is coming out of the upper right corner.



Close the **Right Side Flap** using the lower grommet.

Close the **Left Side Flap**.

Use either of the Black Cables on the Static Line to secure the Closing Loop.

Tuck both Black Cables under the Side Flap.

Tuck the top and bottom of the Static Line under the **Right Side Flap**.

Close the Pin Cover.

Stow the first bight of Static-line in the first rubber band on the Right Side.

Stow the second bight of Static-line on the Left Side. Alternate back and forth leaving about 1 1/2" -2" in each bight.

The **TPDS-HLT** Heavy Load Tactical Parachute Assembly with Direct Bag Static-Line ready for the mission.

Chapter 9

Donning the Passenger Harness

Loosen all of the adjustable straps.

Help the passenger step into the leg straps and position the harness onto the passenger's shoulders.

Align the Main Lift Webbing straight down from the shoulders to the hips.

Position the Chest Strap so that the attached shoulder pads fit comfortably.

Thread the Belly Band through the adjuster.

Position the Hip Rings over the front of the hip bone, keeping the rings well forward.

Position the Adjustable Leg Pads.

Snug the Leg Straps, making sure that the excess strap is even.

Take the slack out of the Back Strap. Make sure that it sits above the buttocks.

The Back Strap and the Belly Band should work together to fit like a belt.

Place the top attachment snaps forward over the passenger's clavicle while confirming that the Harness Yoke sets just below the back of the neck.

Take out the slack from the Main Lift Webbing and the Back Laterals.

Make sure the "T" strap is loose enough to allow the passenger to lift his/her legs for landing.

Check the fit by lifting the harness at the shoulders. You should be able to lift it no more than one inch.

Harness adjusted and ready for the mission.

Chapter 10

Donning the Main HLT Dual Harness/ Container System

IMPORTANT: Inspect the complete system before donning the **TPDS Inc. HLT Dual Harness/Container System.**

10.1 Donning the TPDS HLT Dual Harness/Container System.

Begin by loosening all of the adjustable straps.

Place Container onto the shoulders.

Step into the Leg Straps or if applicable, snap the B-12/Quick Ejector Snaps. Be sure that the leg straps have no twists in them.

Snug-up the Leg Straps, but do not over tighten or legs may become numb.

Adjust the Main Lift Webbing to fit snug.

If applicable, adjust the Laterals to snug-up the Container. Remember that the Passenger Harness w/passenger will take up any excess slack.

Thread the Chest Strap through the friction adapter or if applicable, snap the B-12/Quick Ejector Snaps, snug up the Chest Strap and stow the excess in the elastic keeper.

Stow all excess straps in the elastic keepers.

Be certain that all Handles are properly seated and accessible.

10.2 Connecting the Passenger to the Parachutist in Command.

Hook the Lower Attachment Snaps of the Passenger Harness to the Lower Attachment Rings of the **HLT** Dual Harness / Container System.

Pull the Adjustable Straps of the Lower Connectors snug.

Stow the excess straps.

Attach the Upper Attachment Butterfly Snaps of the Passenger Harness to the Upper Attachment Rings of the **HLT** Dual Harness / Container System.

Pull-out slack on Passenger Main Lift Web Adjustments.

Stow the excess Straps with the Elastics.

Check Handles, Attachment Points and Passenger Harness before exit.

10.3 Optional Examiner Emergency Handles.

Follow these Instructions when using the Optional Examiner's Emergency Handles.

With the Parachutist in Command and the Passenger connected properly, attach the Snap Shackle of the Examiner's Emergency Cutaway Handle to the yellow cables of the Main Cutaway Handle.

Attach the Snap Shackle of the Examiner's Ripcord Handle to the Stainless Steel Cable of the Reserve Ripcord Handle.

Chapter 11

Operation of the HLT Dual Harness / Container System

11.1 Deploying the Drogue Pilot Chute.

The **Drogue Pilot Chute** is easily deployed by reaching with the right hand back towards the bottom of the Main Container, grabbing the Soft Handle and pulling out with a swift and smooth motion. Release the Drogue Pilot Chute Handle as soon as you reach arm extension.

11.2 Drogue Release.

After the Drogue Pilot Chute has been deployed and **ONLY** after it has been deployed, the Main Parachute may be deployed.

This is accomplished by reaching to the Right Hip, grabbing the **Right** Hacky Handle and pulling it 6”-8”. Since the Right Hacky Handle is Retractable it is not necessary to hold onto the handle after use.

The Main Parachute may also be deployed by pulling the **Left** Hacky Handle. The Left Hacky Handle is also retractable and may be pulled 6”-8” to release the Drogue Pilot-chute. Release the Hacky after pulling it.

11.3 Main Parachute Release.

In the event of the Main Parachute not deploying properly, it may be preferable to Release or “Cutaway” the Main Parachute.

This is accomplished by pulling the **Main Parachute Release Handle** which is located on the Right Main Lift Webbing below the 3-Ring Release Assembly.

The Main Parachute Release Handle comes in two (2) styles, a “pillow” and a loop style. Both use Velcro to secure it to the Main Lift Webbing Pocket.

The Handle should be grasped firmly in the right hand and “peeled” upward to separate the Velcro. In the same swift and smooth motion, the handle should be pulled down and away from the body to arm’s length.

11.4 Reserve Parachute Deployment.

To deploy the Reserve Parachute, locate the **Reserve Parachute Ripcord Handle** on the **Left** Main Lift Webbing. There are four (4) styles of Reserve Ripcord Handles, two (2) metal “D” shaped, a “pillow” and a loop style. All are secured with the use of Velcro.

To pull the handle, the handle should be “peeled” from the Velcro in an upward motion then in a swift and smooth motion, pulled down and away from the body to arm’s length.

11.5 Operating the Examiner Main Cutaway Handle.

The **Instructor/ Examiner Cutaway Handle** is easily used in the event that the Instructor/ Examiner needs to perform the cutaway procedure.

This is accomplished by pulling the I/E Cutaway Handle located on the Passenger's **RIGHT** Main Lift Webbing.

The Handle should be grasped firmly in the right hand and "peeled" upward to separate the Velcro. In the same swift and smooth motion, the handle should be pulled down and away from the body to arm's length.

11.6 Operating the Examiner Reserve Ripcord Handle.

The **Instructor/ Examiner Reserve Ripcord Handle** is easily used in the event that the Instructor/ Examiner needs to perform the Reserve Parachute Deployment Procedure.

This is accomplished by pulling the I/E Reserve Ripcord Handle located on the Passenger's **Left** Main Lift Webbing.

The Handle should be grasped firmly in the left hand and "peeled" upward to separate the Velcro. In the same swift and smooth motion, the handle should be pulled down and away from the body to arm's length.

Chapter 12

Replacement Parts

12.1 Replacing the Ballistic Reinforced Leg Pads.

The **TPDS HLT** Heavy Load Tactical Parachute Assembly has Replaceable Ballistic Reinforced Leg Pads. **(TPDS-HLT-340)**

Unfasten the snap button that secures the Primary Drogue Release Handle to the Leg Pad.

Shown above is the **Right Leg Pad** with Primary Drogue Release Handle.

Remove the Primary Drogue Release Handle.

Unfasten the snap button that secures the Leg Pad to the Leg Strap.

Back the Leg Pad out of the Adjustable Friction Ring. Remove Leg Strap from Friction Adapter.

Strip the Leg Pad from the Leg Strap.

Locate the inner webbing guide at the top of the Replacement Leg Pad, (the end with the button snap).

Pass the Leg Strap Webbing under the guide loop.

Continue to pass the leg strap through the padding and out the other side.

Snug-up the webbing, it should allow the pad to come together with the small leg pad.

Pass the buttoned end back through the Adjustable Friction Adapter Ring.

Slide the Snap Strap of the Leg Pad under the Leg Strap Webbing.

After mating the snaps tuck the Leg Pad into the Leg Pad Sleeve.

Reattach the Primary Drogue Release Handle and Sleeve to the Leg Pad.

Installation Complete.

Repeat the process for the **Left Leg Pad**.

12.2 Replacing the 3-Ring Drogue Riser. (TPDS-HLT-312)

The **TPDS HLT** Heavy Load Tactical Parachute Assembly has a Replaceable 3-Ring Drogue Riser. **(TPDS-HLT-312)**

It is attached to the Large Ring of the Internal Diagonal / Lateral Webbing with a Lark's Head Knot.

To replace the 3-Ring Drogue Riser, open the pocket that is on the bottom of the Reserve Container.

Reach into the pocket and pull the 3-Ring Drogue Riser out.

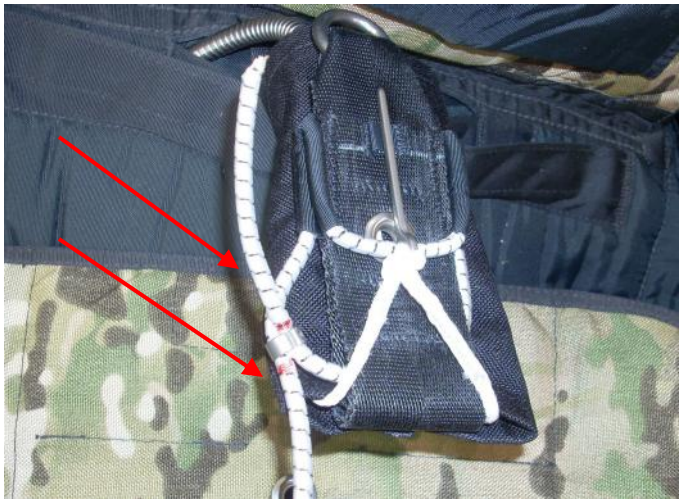
Pictured above is the back side of the 3-Ring Drogue Riser with Cover.

Slide the Riser Cover up to expose the Rapide Link of the 3-Ring Riser.

Open the Rapide link and separate it from the T-IV loop shown.

Open the Velcro Tabs that release the Housings from the 3-Ring Riser.

Bring the Knots of the Elastic out from between the Riser Webbing.



Untie the Elastic Knots.

Completely remove the Elastic from the Channels on the sides of the Riser.

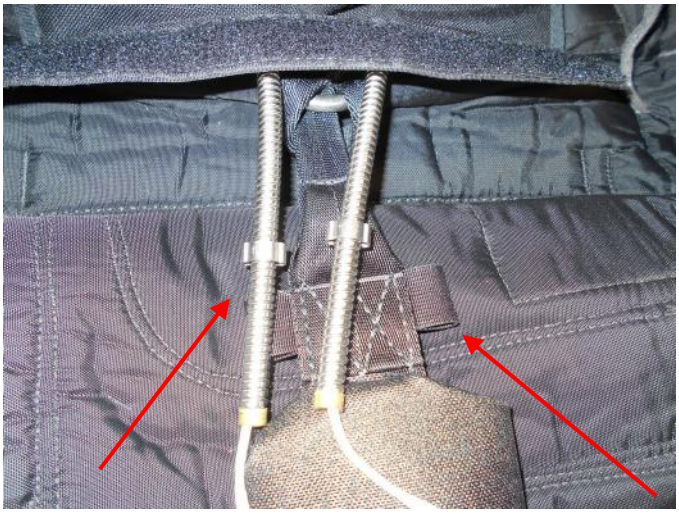
Remove the Elastic from the Straight Pin.

Shown above are the Right and Left Release Lanyards and Housings.

Remove the Straight Pin by loosing the knot and backing it out of the Loops of the Release Lanyards.

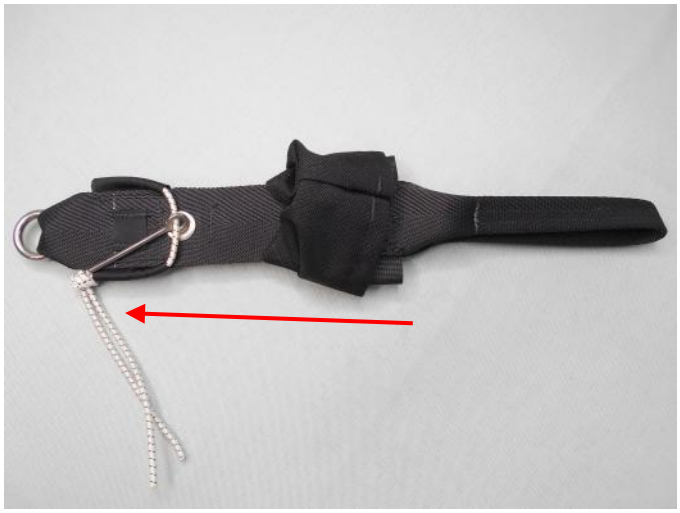
The Drogue Riser separated from the Release Lanyards.

While holding the housing clamp with a pair of pliers push an awl into one of the openings of the clamp. This will loosen the clamp. Push the awl into the other hole to loosen completely.



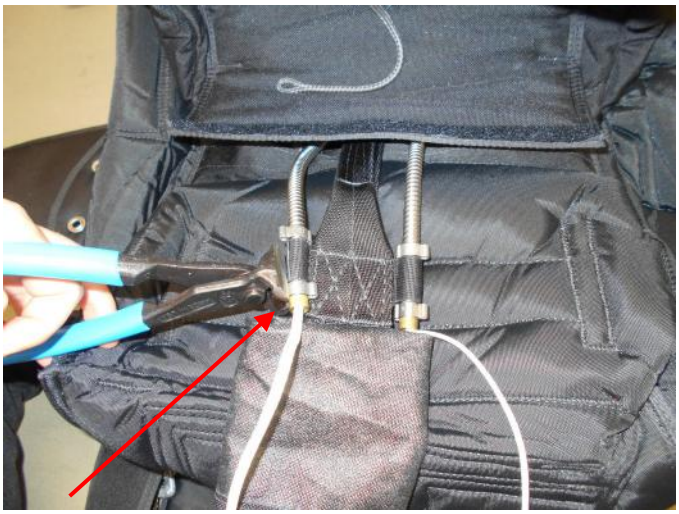
With both front clamps removed pull the housings out of the T-IV housing holders.

Remove the 3-Ring Drogue Riser.



Pictured above is the New Riser. Note the length of the elastic. It should be cut to 1” past the knot when re-assembled.

Replace the 3 Ring Drogue Riser to the Large Ring with a Lark’s Head knot.



Replace the housings into the New Riser and crimp new clamps onto the housings using flat head pliers as shown.

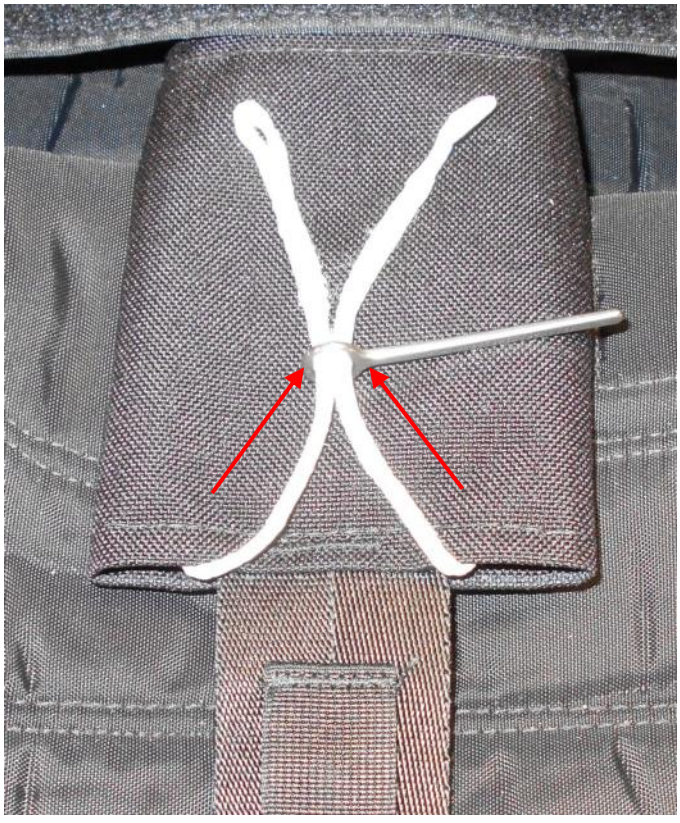
If replacing the Release Lanyards be sure to install the long line into the Primary Release Housing and the shorter line into the Secondary Housing. See Chp.12.3

Follow these Steps to Replace the Drogue Release Pin Elastic. (TPDS-HLT-311)

Pictured above is the Replaceable Drogue Pin Release Elastic **(TPDS-HLT-311).**

Pass the two (2) Release Lanyards through the openings in the Riser Cover.

Turn the Riser Cover back over the Riser.



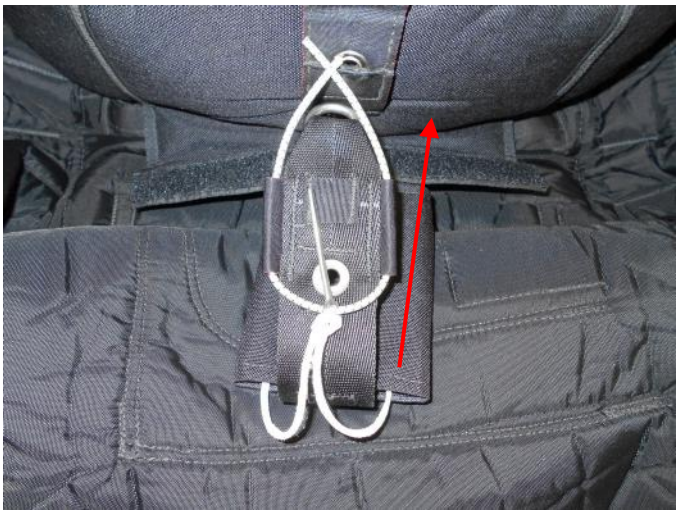
Pass the two (2) Release Lanyards through the eye of the Straight Pin **(TPDS-HLT-310).**

Pass the Straight Pin through the loops of the Release Lanyards to form a knot.

Tighten the knot formed.

Pass the Drogue Release Pin Elastic **(TPDS-HLT-311)** down through the T-12 Channel.

Pass the Elastic through the eye of the Straight Pin.



Pass the Elastic up through the T-12 Channel.

Pass the Elastic between the T-8 Riser.

Tie the two ends with an over-hand knot matching the red dots as shown.

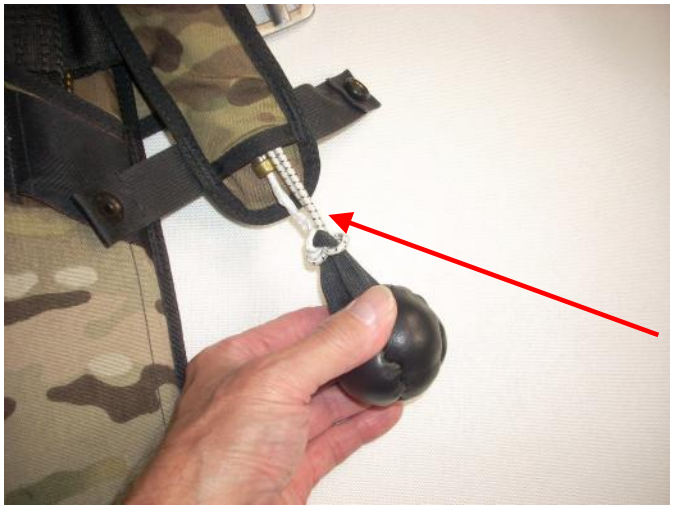
Tuck the knotted Elastic between the T-8 Riser.

Pass the Drogue Riser back up through the pocket.

Should look like this. Be sure there is “slack” in the Release Lanyards.

12.3 Replacing the Retractable Hacky Handle Connector Loop. (TPDS-HLT-309)

Begin to replace the Retractable Connector Loop **(TPDS-HLT-309)** by unsnapping the **Right -Side** Drogue Release Handle from the Right Leg Strap.



Pull the Right-Side Release Hacky to find the Retractable Connector Loop.

The Primary Release Handle separated from the Right Leg Pad.

Loosen the knot of the elastic loop.

Pass the Hacky through the elastic loop.

Pull the Left-Side Hacky Handle out to reveal the Connector Loop and knot.

Retractable Connector Loop freed from the Right Release Hacky.

Loosen the elastic knot.

Remove completely.

Pass the Hacky through the Connector Loop.

Retractable Connector Loop freed from the Left Release Hacky.

Remove completely from Hacky Handle.

Pull the Connector Loop from the Right Side.

Remove the Retractable Connector Loop completely from the right side.

Pictured above is the Replaceable Elastic Hacky Handle Connector Loop. **(TPDS-HLT-309)**

Inspect the Connector Loop carefully before installing it into the TPDS-HLT.

Insert a .22 rifle cleaning rod or similar tool into the opening on the right side of the Handle Sleeve.

From the left side attach the Retractable Connector Loop to the cleaning rod.

Pull the Connector Loop through the Back Pad from the Right Side leaving 3”-4” out.

Pass the Connector Loop through the Hacky Handle.

Pass the Connector Loop elastic over the Hacky Handle.

Tighten the Knot formed.

Left Hacky complete.

Pass the cleaning rod into the opening on the right side of the Handle Sleeve and attach the Connector Loop to it.

Pull the Connector Loop through the sleeve.

Pass the Hacky Handle through the Connector Loop.

Tighten the knot formed.

Replacement of the Connector Loop complete.

Pass the Snap Holder of the Right Drogue Release Handle under the retainer.

Fasten the snap.

Should look like this.

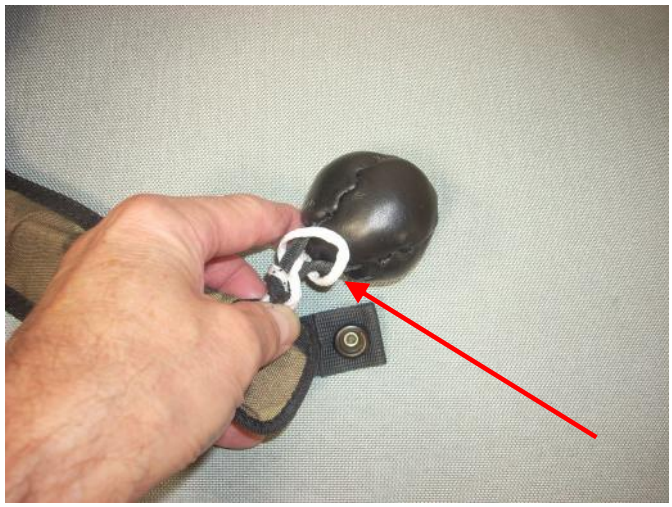
12.4 Replacing the Drogue Release Hacky Handles. (TPDS-HLT-306)

TPDS-HLT-306 Drogue Release Hacky (Left and/or Right Side)

Pictured above is a Drogue Release Hacky Handle. It may be used as the Left or Right Release Handle.

To replace the Drogue Release Hacky Handles follow these Instructions.

Begin by releasing the Primary Drogue Release Handle from the Right Leg Pad. See pg. 1 Chp. 12.



Loosen the knot of the Release Lanyard.

Pass the Lanyard loop over the Hacky.

Place a Rapide Link on the Lanyard to prevent it from retracting into the housing.

Pull the Hacky out away from the Primary Drogue Release Sleeve and loosen the Elastic.

Pass the Elastic over the Hacky.

The Primary Drogue Release Hacky removed and the Elastic and Lanyard on the Rapide Link.

Inspect the Drogue Release Hacky Handle carefully before installing it onto the TPDS-HLT.

Continue to replace the Right Side Drogue Release Hacky Handle by following the previous Instructions in reverse.

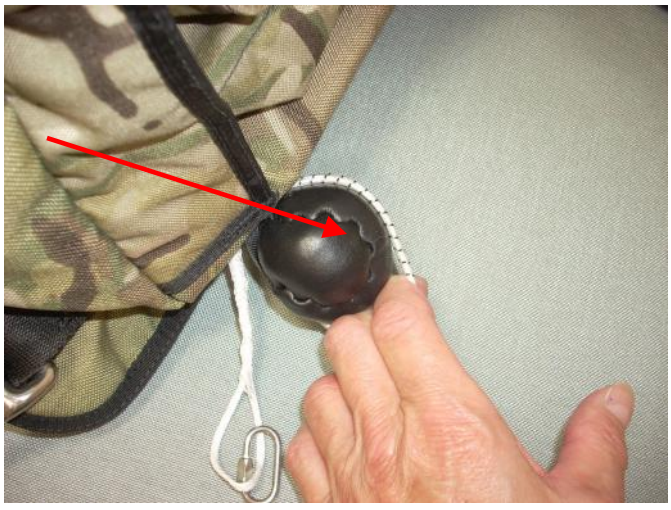
Pictured above is the Left-Side Drogue Release Hacky Handle.

Pull the Hacky out away from the Secondary Drogue Release Housing.

Loosen the knot of the Release Lanyard.

Pass the Release Lanyard loop over the Hacky.

Place the Release Lanyard on a Rapide Link.



Pass the Elastic over the Hacky.

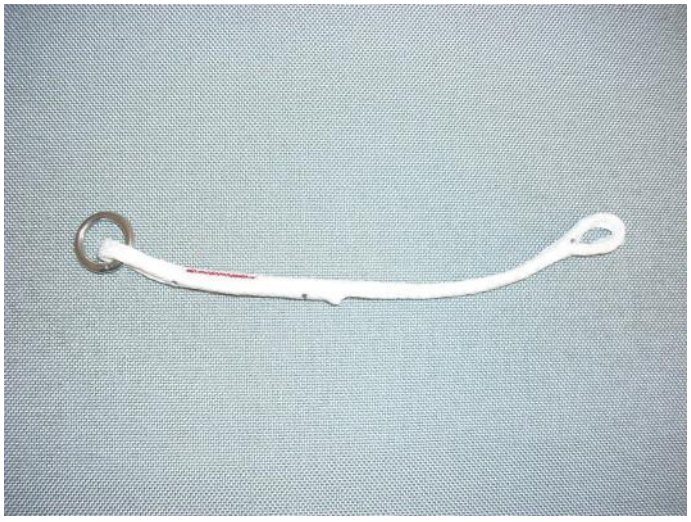
Place the Retracting Elastic onto the Rapide Link with the Release Lanyard.

Inspect the Drogue Release Hacky Handle carefully before installing it onto the TPDS-HLT.

Continue to replace the Left Side Drogue Release Hacky Handle by following the previous Instructions in reverse.

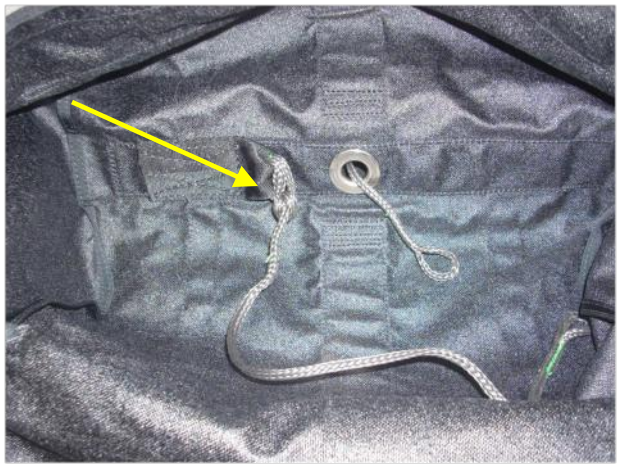
12.5 Replacing the Deployment Bag (TPDS-HLT-270) and Drogue Bridle.

The **TPDS HLT** Heavy Load Tactical Parachute Assembly comes with (2) 2000# Spectra Line Soft Links between the Drogue Bridle and the Deployment Bag to facilitate quick and easy replacement of either part. There is a third Soft Link to attach the Main Parachute.

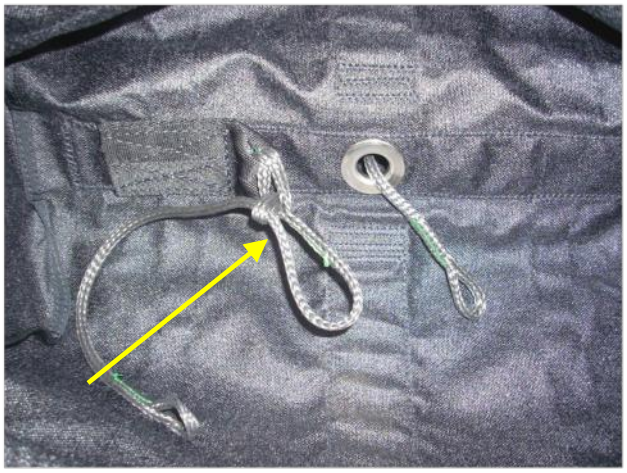


Part No. **TPDS-HLT-320**
Soft Link, 2000# Spectra Line

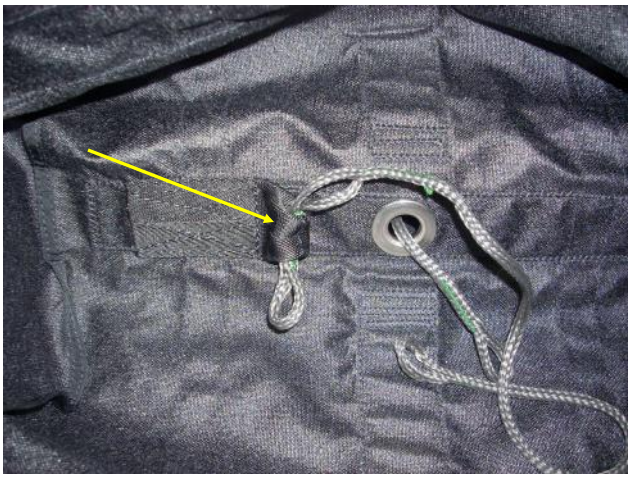
Pictured above is the 2000 lbs. Spectra Line Connector for the Drogue Bridle to Deployment Bag Assembly.



Begin to replace either the Drogue Bridle or the Deployment Bag by removing the Safety Line first. **(TPDS-HLT-303)**

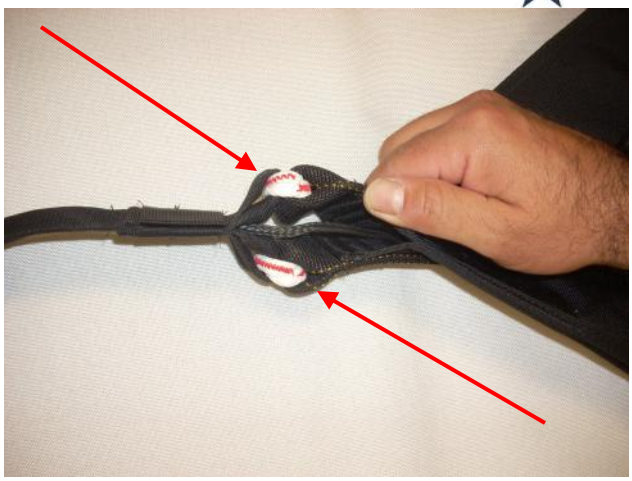


Loosen the knot and back the Safety Line out of the loop.



Remove the Safety Line completely.

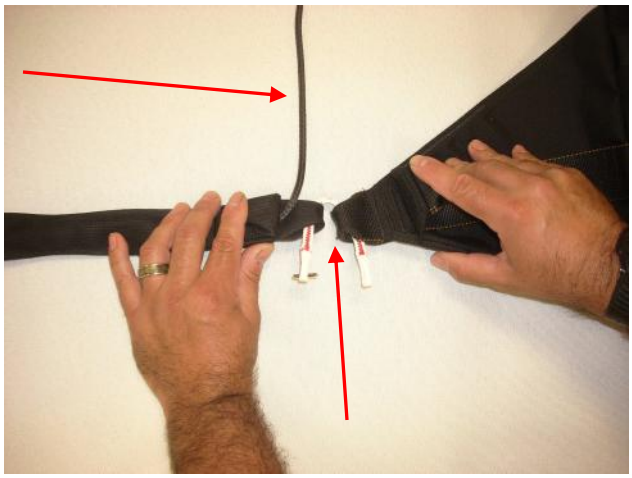
The Safety Line **(TPDS-HLT-303)**.



Shown above are the (2) two Soft Links that secure the Bridle to the Deployment Bag.

Twist the Soft Link out from the loops of the Bridle and Deployment Bag. Begin to open the Soft Link by passing the metal ring through the loop of the Soft Link.

Open the Soft Link completely.



Remove the Soft Link completely.

Remove the other Soft Link the same way.

Remove the Drogue Kill-Line (TPDS-HLT-302) from the Deployment Bag.

Follow these Instructions to Re-assemble the TPDS-HLT Drogue Bridle and Deployment Bag.

Pictured below is the Replacement Drogue Bridle, Deployment Bag, Safety Line and Soft Links.

Before attaching the Bridle to the D-Bag be sure that the Ring of the Bridle is facing down and that the D-Bag is facing up.

Pass a Soft Link through the loops of the Bridle and the Deployment Bag.

Pass the Soft Link through both loops twice.

Pass the end loop through the loop under the ring.

Pass the metal ring through the end loop.

Tighten the Soft Link.

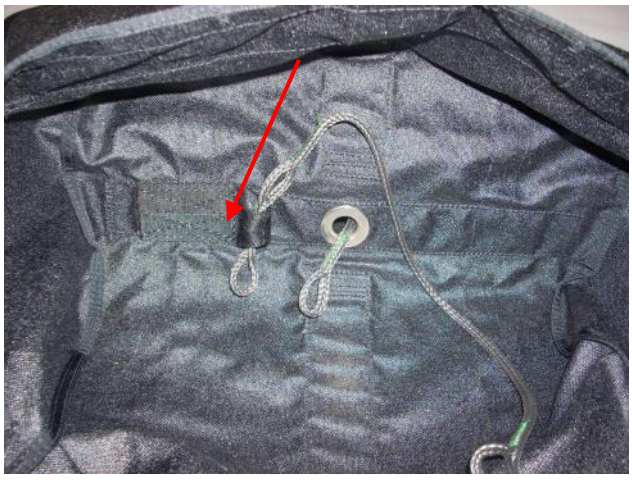
Tuck the metal ring of the Soft Link under the Bridle Loop.

Pictured above is the Kill-Line.

Insert the Kill-Line between the two loops of the Deployment Bag.

Attach the second Soft Link between the Bridle and the Deployment Bag.

Reach between the Anti-Twist Flaps to pass the Kill-Line through the Grommet of the Deployment Bag .



Assemble the Safety Line to the D-Bag.

Begin by passing the double looped end through the T-8 loop on the bottom of the D-Bag.

Pass the end of the loop through the double loop.

Pass the Tail Loop through the end Loop.

Tighten the knot formed.

Bridle and Deployment Bag are now re-assembled.

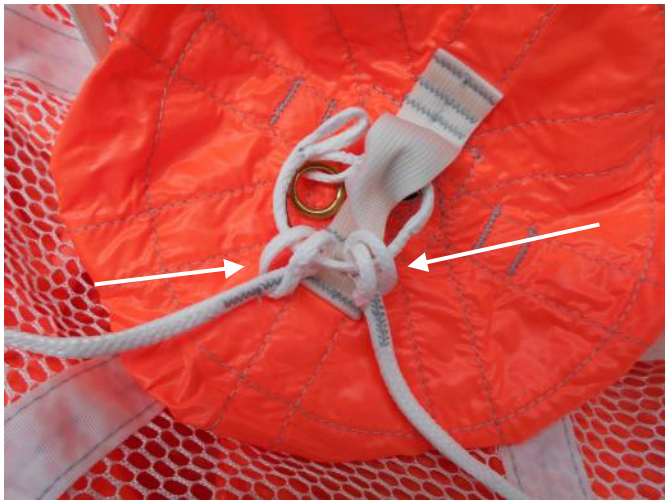
12.6 Replacing the Drogue Pilot-chute and Parts.

The **TPDS HLT** Heavy Load Tactical Parachute has a replaceable Drogue Pilot-chute **(TPDS-HLT-305)**, replaceable Center Line **(TPDS-HLT-304)**, replaceable Drogue Magnet Sleeve **(TPDS-HLT-314)** and a replaceable Kill-Line **(TPDS-HLT-302)**.

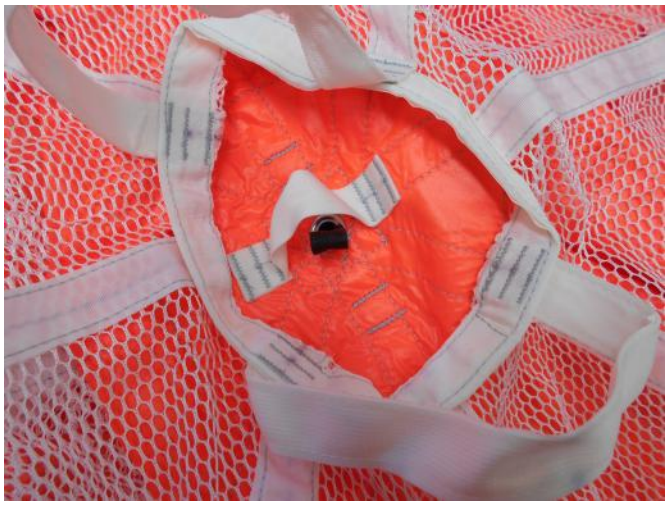
Pictured above is the **(A)** Drogue Pilot-chute, **(B)** Center Line, **(C)** Magnet Sleeve, **(D)** Bridle with Kill-Line and **(E)** Soft Links.

All are attached to the Drogue Pilot-chute with Soft Links **(TPDS-HLT-320)**. **Do Not** use any other type of link as it may cause premature wear on the system.

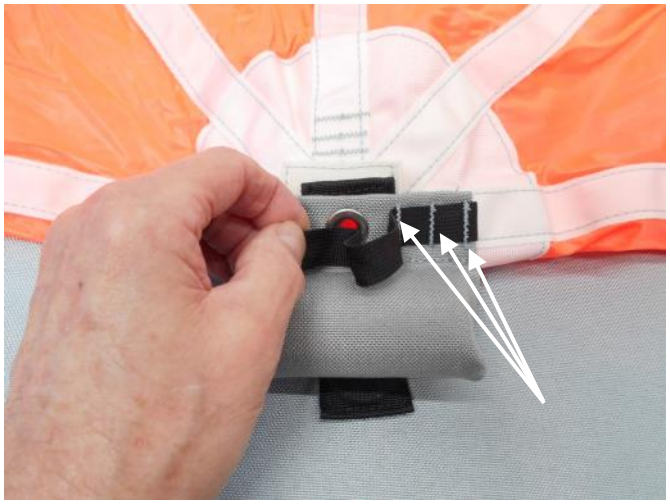
To replace the Drogue Pud and Magnet Sleeve, begin by opening the Soft Link **(TPDS-HLT-320)** on the under-side of the Pilot-Chute.



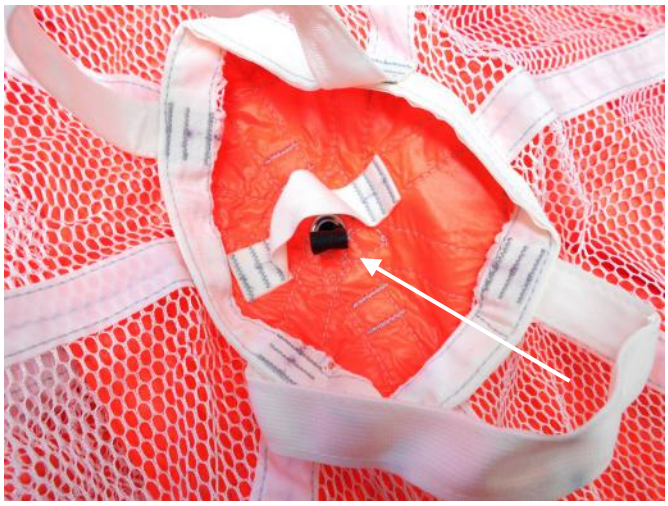
Notice the Lark's Heads.



The Magnetic Sleeve **(TPDS-HLT-314)** can be replaced at this time.



With the Soft Link removed on the inside the 5/8" T IV tape can be pulled up through the #0 grommet and the Magnet Sleeve will slide out from in-between the Pilot Chute and the Pud. The Pud can be replaced by removing the six (6) bartacks (3 on each side).



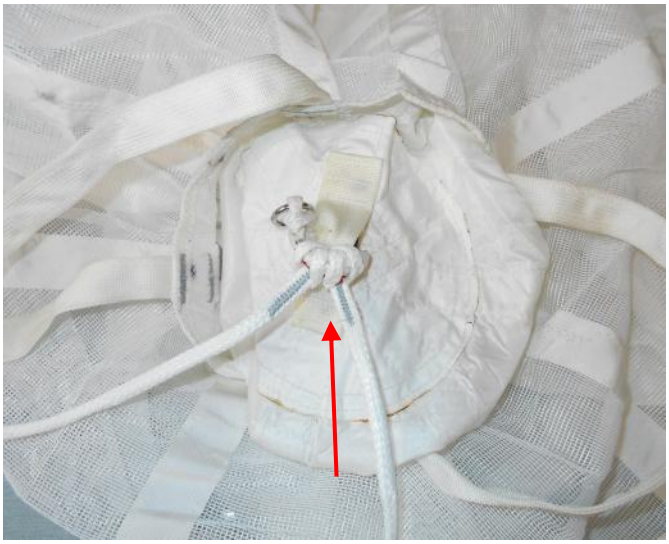
After replacing the Sleeve pass the 5/8" T-IV back down through the #0 grommet.

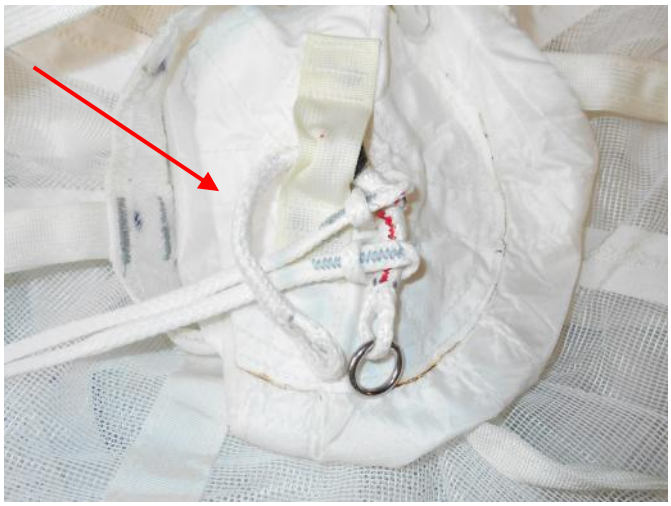
Remove the two (2) Soft Links of the Bridle.

The Center Line can be replaced at this time. Undo the half hitch from the Bridle.

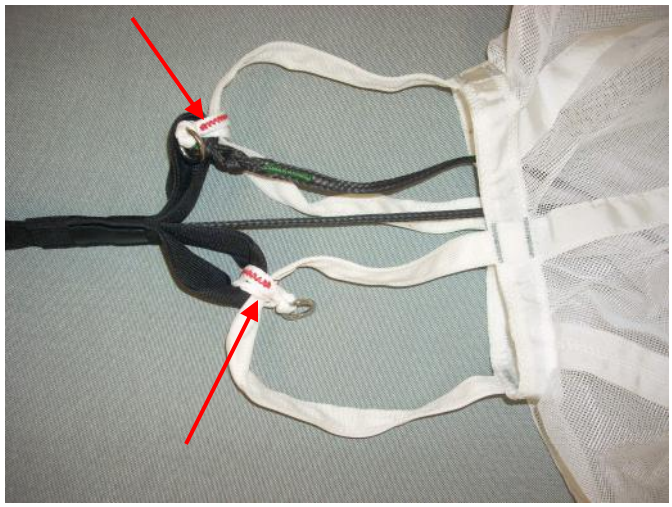
Follow these Instructions for Replacing the Kill-Line, Center Line and Drogue Pilot Chute.

Begin by removing the Center Line and Kill-Line from the underside of the top of the Pilot Chute.

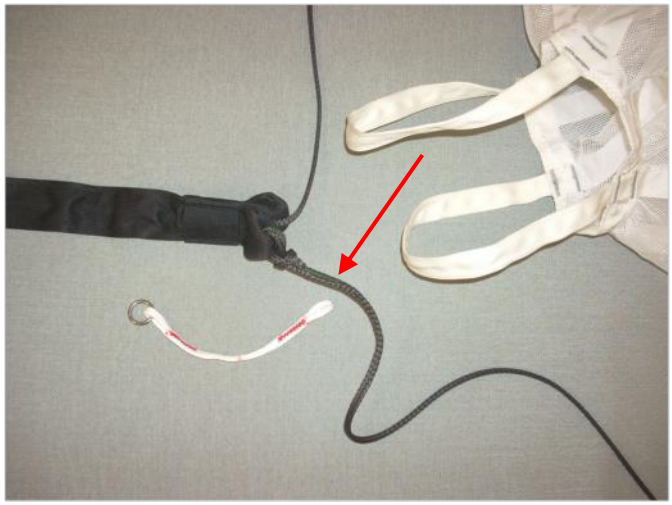




Remove the Soft Link.

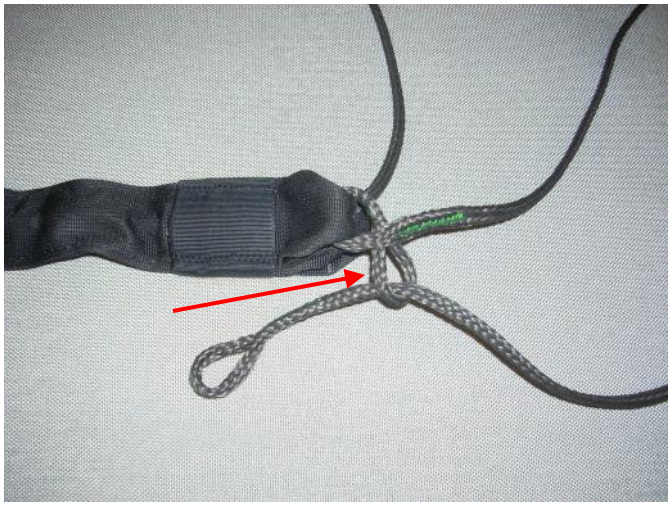


Remove the Soft Links from the Bridle loops.

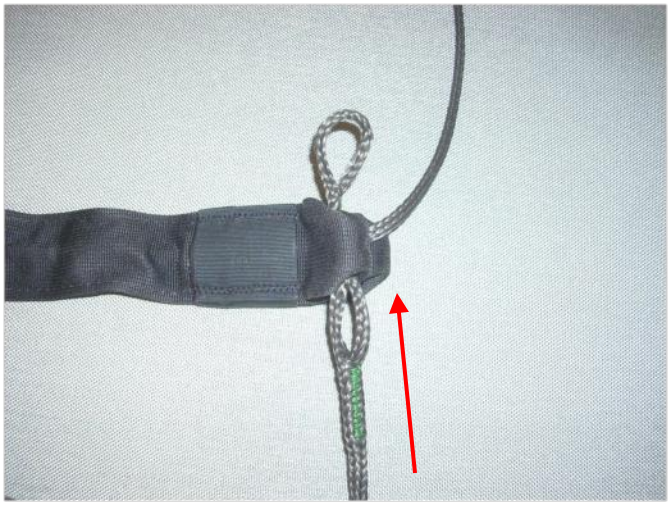


Remove the Center Line.

Loosen the knot.

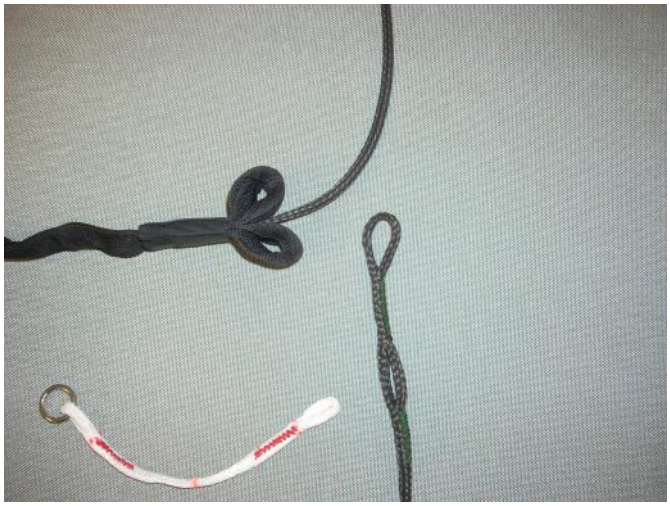


Back the end out through the loop.



Back the end loop out of the center loop.

Remove the Center Line completely.



The Center Line completely removed.

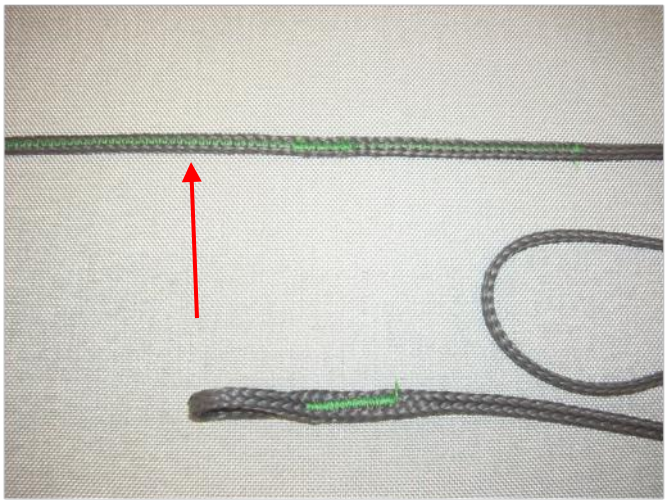
The Kill-Line may be replaced now.

If the Main Parachute is still connected to the Deployment Bag remove the Soft Link that secures it to the Kill-Line and the Safety Line.

To replace the **Drogue Pilot-chute Kill-line**, **(TPDS-HLT-302) -**

There are several methods to replace the Kill-line.

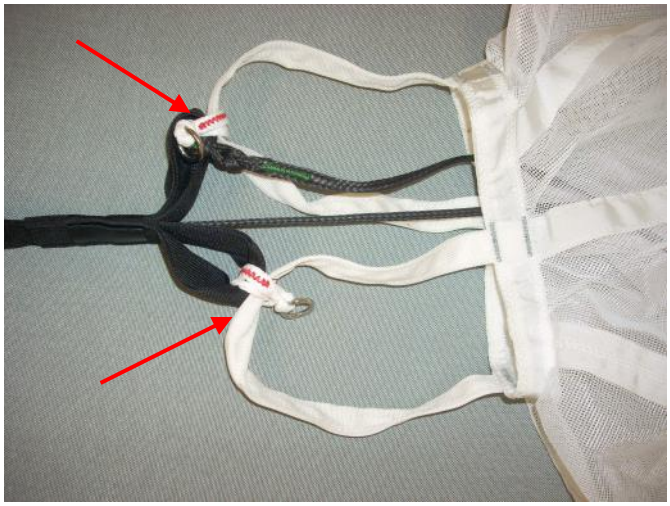
A long rod may be used to pull the new line through the Bridle, the new line may be tied to the old line and pulled through the Bridle or a stiff piece of wire or cable can be tied to the Kill -line and pulled through the Bridle.



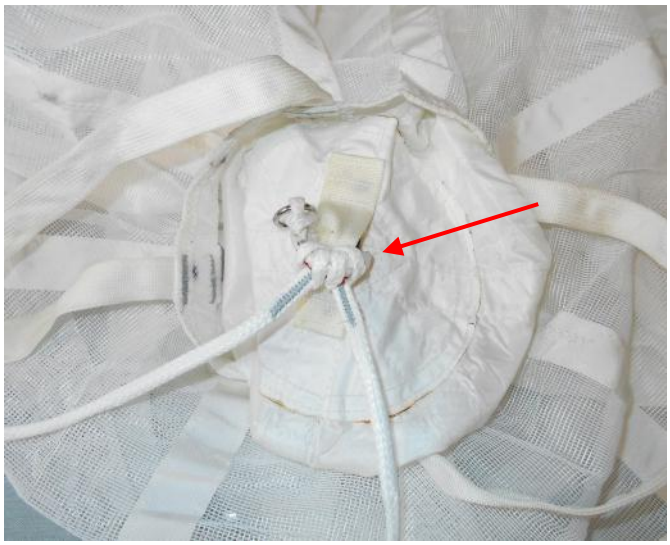
Be sure that the end of the Kill-Line with the center stitching is installed away from the Pilot-chute end.

With the Soft Links removed attach the Pilot Chute end of the Bridle to a stationary object and pull the Kill-Line out of the Bridle from the Deployment Bag.

With the Kill-Line replaced any or all the other parts may be replaced at this time.



To re-assemble begin by attaching the Center Line to either loop of the Bridle. Follow the directions for removing it in the reverse order.



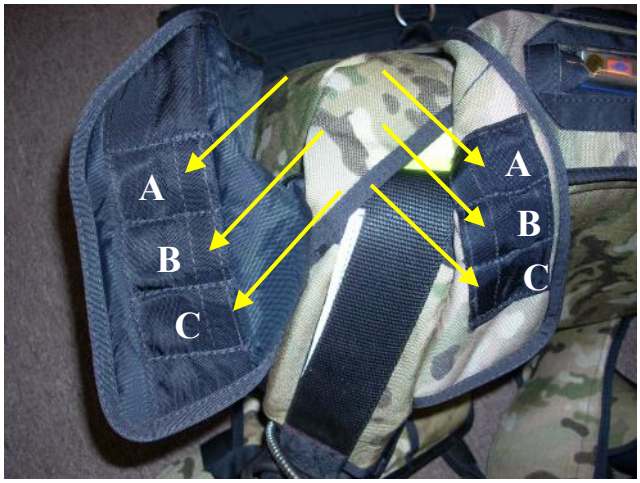
Attach the other end of the Center Line to the under side of the top of the Drogue Pilot Chute with the Kill-Line and the loop of the Hacky Handle with a Soft Link.

Assembly is now complete.

12.7 Replacing the Magnets in the Riser Covers.

The **TPDS HLT** Dual Harness / Dual Parachute comes with Magnetic Riser Covers.

The Magnets **(TPDS-HLT-290)** can easily be replaced when needed.



There are three (3) on each side of the Riser Cover.

Note: When replacing the magnets, be sure that the "A's" are "attracting" to each other, the "B's" are "attracting" to each other and the "C's" are "attracting" to each other and not "repelling" each other. Flip one over to correct the attraction to each other.

Shown above are the three (3) magnet pockets.

The magnets are held in place with Velcro.

Slide them out to replace them.

Shown above is the other side of the Riser Cover.

There are three (3) magnets in this pocket also held in place with Velcro. Slide them out and replace.

12.8 Replacing the Floating RSL with Mini Ring. (TPDS-HLT-222)

Pictured above is the Floating RSL Lanyard **(TPDS-HLT-222)** and the Left Side Riser.

From the inside of the Left Riser pass the end loop of the **TPDS-HLT-222** through the riser between the two webbings.

From the underside of the Riser pass the end loop through the loop beneath the mini ring.

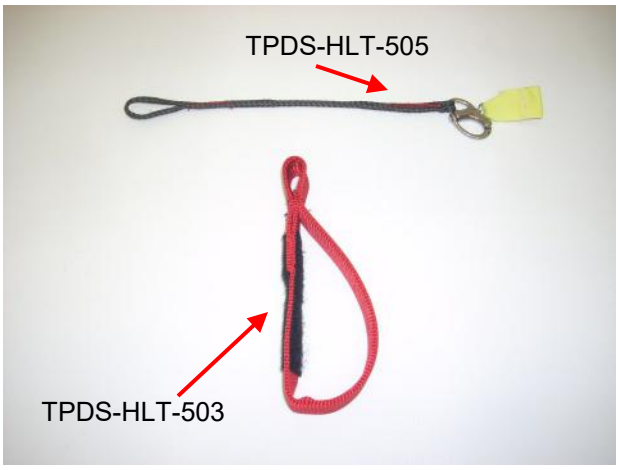
Pass the Mini Ring through the end loop.

Tighten the knot formed.

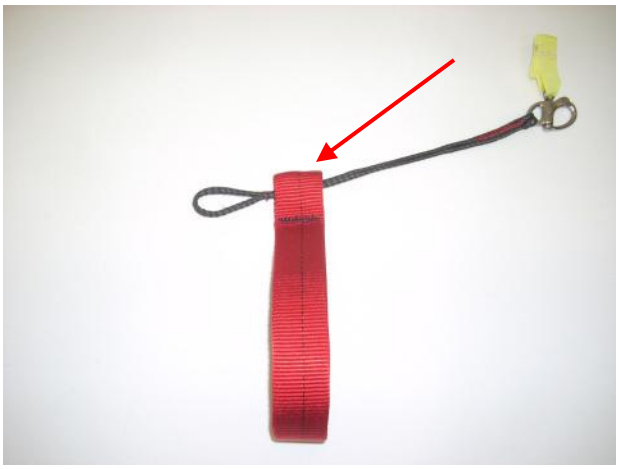
The Floating RSL **(TPDS-HLT-222**) installed.

12.9 Replacing the Lanyards of the Examiner's Handles.

Follow these Instructions for Replacing the Lanyards of the Examiner's Handles. (TPDS-HLT-505)



Pictured above is the Instructor/Examiner Emergency Handle **(TPDS-HLT-503)** and Handle Lanyard **(TPDS-HLT-505).** These handles are interchangeable and may be used for either the Cutaway Handle or the Reserve Ripcord Handle.



Pass the Lanyard through the Loop of the Emergency Handle.

Pass the Snap Shackle through the Loop of the Lanyard.

Tighten the Knot formed.

Repeat for the other Handle.

Chapter 13

Parts List
Heavy Load Tactical (HLT)

PART #	Manufactured Parts
TPDS-HLT-100	Reserve Pilot Chute
TPDS-HLT-101	Reserve Free Bag and Bridle, specify size
TPDS-HLT-102	Reserve Free Bag and Bridle w/**Reserve Boost** Modification
TPDS-HLT-103	Reserve Pilot Chute Cap, specify color & material type
TPDS-HLT-105	Reserve Static Line, **(RSL)** w/Release Clasp and MARD
TPDS-HLT-109	Reserve Ripcord Assembly **(Bent Metal) (out-board)** specify length
TPDS-HLT-111	Reserve Ripcord Assembly (**Pillow type) (out-board)** specify color & length
TPDS-HLT-113	Reserve Ripcord Assembly (**Loop style) (out board)** specify color & length
TPDS-HLT-115	Reserve Ripcord Assembly (Bent metal) (out-board) w/**FXC** cable extension)
TPDS-HLT-116	Reserve Closing Loop
TPDS-HLT-117	Reserve Toggles (military type) (Pair)

TPDS-HLT-119	Safety Stow Loop, Reserve Freebag
TPDS-HLT-201	Main Risers – Type 7, Tandem (specify color and length)
TPDS-HLT-202	Main Risers – Type 7, Military Style (specify color and length)
TPDS-HLT-213	Main Steering Toggles- Tandem (Pair)
TPDS-HLT-214	Main Flaring Toggles – Tandem (Pair) (specify color)
TPDS-HLT-215	Main Toggles – Military Style (Pair) (specify color)
TPDS-HLT-221	HAHO Toggle Extensions (Pair)
TPDS-HLT-222	Floating RSL with Mini Ring
TPDS-HLT-230	Main Spring-loaded Pilot Chute
TPDS-HLT-231	Main Throw-out Pilot Chute w/plastic handle (specify size, color)
TPDS-HLT-232	Main Throw-out Pilot Chute w/Hacky (specify colors, size)
TPDS-HLT-233	Main Throw-out P/C Collapsible w/Hacky Handle (specify size and colors)
TPDS-HLT-241	**Static Line Assist** Pouch – T/O P/C
TPDS-HLT-242-A	Spring-loaded P/C **Static Line Assist** (Hook)
TPDS-HLT-242-B	Spring-loaded P/C **Static Line Assist** (Pile)
TPDS-HLT-245	Main Throw-out Bridle

TPDS-HLT-246	Main Throw-out Collapsible Bridle
TPDS-HLT-247	Main Bridle
TPDS-HLT-251	Main Release Handle – **Pillow** – **Out-board** (specify color)
TPDS-HLT-253	Main Release Handle – **Loop**- **Out-board** (specify color)
TPDS-HLT-255	Main Ripcord, Metal Bent, **Out-board** (specify length and cable type)
TPDS-HLT-256	Main Ripcord, Plastic Handle - BOC
TPDS-HLT-257	Main Ripcord, Bent Metal, **AAD Extented Cable**
TPDS-HLT-258	Main Ripcord, Loop, **Out-board** (specify color and length)
TPDS-HLT-259	Main Ripcord, Plastic Handle -Hip
TPDS-HLT-264	Main Static Line w/Snap (specify length)
TPDS-HLT-265	Main Static Line w/Snap and Black Cables (specify length)
TPDS-HLT-270	Main Deployment Bag (specify size and color) T/O- P/O
TPDS-HLT-271	Main Deployment Bag w/Kicker Plate (specify size and color) Spring-loaded
TPDS-HLT-272	Main Deployment Bag Direct Bag S/L (specify size and color)
TPDS-HLT-274	Tandem Main Deployment Bag- T/O & Ripcord
TPDS-HLT-275	Main Closing Loop, Type II-A
TPDS-HLT-276	Main Closing Loop – HMA

TPDS-HLT-277	Main Closing Loop – Safety Closing Loop- HMA
TPDS-HLT-282	Removable Side Panel **Left** (specify color)
TPDS-HLT-283	Removable Side Panel **Right** (specify color)
TPDS-HLT-284	Removable Side Panel **Right for FF2 AAD**
TPDS-HLT-285	Removable Seat Sling (specify color)
TPDS-HLT-286	Oxygen Bottle Jump Bag-Padded (Standard or Large)
TPDS-HLT-287	Oxygen Bottle Jump Bag-Draw-String
TPDS-HLT-288	Hook Knife w/Pocket (specify pocket color)
TPDS-HLT-289	Jack the Ripper Knife and Pocket (specify pocket color)
TPDS-HLT-290	Magnets (Box)
TPDS-HLT-291	Rapide Links Stainless Steel #3 ½ (Box)
TPDS-HLT-292	Rapide Links Stainless Steel #4 (Box)
TPDS-HLT-293	Rapide Links Stainless Steel #5 (Box)
TPDS-HLT-294	Rubber Bands (Tandem) (Box)
TPDS-HLT-295	Rubber Bands (Large) (Box)
TPDS-HLT-296	Rubber Bands (Small) (Box)
TPDS-HLT-297	Elastic Strap Keepers (Dozen)
TPDS-HLT-298	Elastic Keeper w/Snap

TPDS-HLT-300	Complete Drogue Assembly- D-bag, Bridle & Drogue (specify size)
TPDS-HLT-301	Drogue Bridle
TPDS-HLT-302	Drogue Kill-line only
TPDS-HLT-303	D-Bag Safety Line only
TPDS-HLT-304	Drogue P/C Center Line only
TPDS-HLT-305	Drogue Pilot Chute (specify color and size)
TPDS-HLT-306	Drogue Release Hacky Handle (L or R) (specify color)
TPDS-HLT-307	Right Drogue Release Lanyard (Long)
TPDS-HLT-308	Left Drogue Release Lanyard (Short)
TPDS-HLT-309	Retractable Hacky Connector Loop
TPDS-HLT-310	Drogue Release Straight Pin
TPDS-HLT-311	Replaceable Drogue Release Pin Elastic
TPDS-HLT-312	Drogue 3-Ring Riser, Type 8
TPDS-HLT-313	Drogue 3-Ring Riser- Velcro Housing Holder
TPDS-HLT-314	Drogue Handle Magnet Sleeve
TPDS-HLT-315	Drogue Handle (Specify Type and Color)
TPDS-HLT-320	2000 lbs. Spectra Line Soft Links
TPDS-HLT-330	Main Container Closing Pin only
TPDS-HLT-331	Main Container Closing Pin Lanyard

TPDS-HLT-332	Tandem D-Bag Grommet Insert w/Velcro
TPDS-HLT-340	Replaceable Ballistic Reinforced Leg Pads (Pair)
TPDS-HLT-400	Drogue Static Line Pouch
TPDS-HLT-401	Drogue Static Line
TPDS-HLT-402	Static Line Safety Pin and Lanyard
TPDS-HLT-500	Tactical Passenger Harness
TPDS-HLT-501	Passenger Harness Quick Ejector Release Tabs (Sets of 2)
TPDS-HLT-502	Passenger Harness Hook Knife
TPDS-HLT-503	Examiner's Emergency Handles (Sets of 2)
TPDS-HLT-504	Examiner's Handle Pockets (Sets of 2)
TPDS-HLT-505	Examiner's Handle Lanyards (Sets of 2)
TPDS-HLT-601	Gear Bag HLT- No Frills (Extra Large)
TPDS-HLT-700	**Manual**
TPDS-HLT-800	Main Parachute- Steering Line Set (specify canopy name and size)
TPDS-HLT-801	Main Parachute- Suspension Line Set (specify name and size)
TPDS-HLT-802	Reserve Parachute- Steering Line Set (specify canopy name and size)
TPDS-HLT-803	Reserve Parachute- Suspension Line Set (specify canopy name and size)

TPDS-HLT-810	Main Parachute- Slider (specify canopy name, size and color)
TPDS-HLT-811	Reserve Parachute Slider (specify canopy name, size and color)
TPDS-900	Thermal Double Zippered Jumpsuit (specify size and color)
TPDS -901	Double Zippered Jumpsuit (specify size and color)
TPDS-RRH-800	Rapid Release Harness Bag
TPDS-RRH-112	Rapid Release Harness Drop-Line Assembly
TPDS-860-200	Personal Cargo Drop Harness
TPDS-910	Demo Flag and Flight Bag
TPDS-1000	Advanced Mechanical Closing Device

Chapter 14

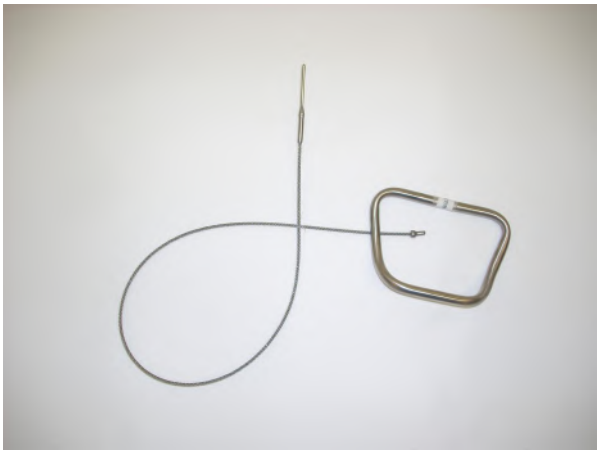
Spare Parts

TPDS-HLT-100 Reserve Pilot Chute

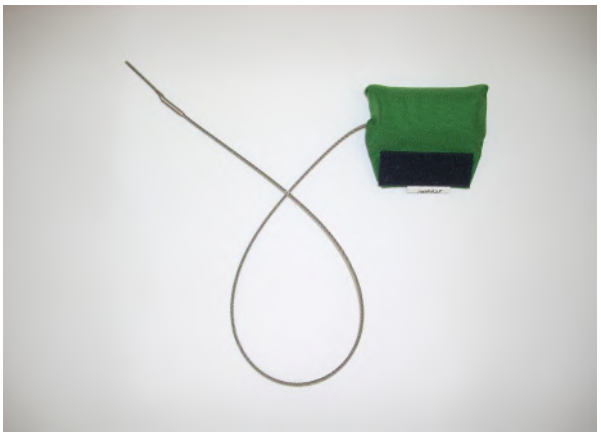
TPDS-HLT-102 Reserve Freebag w/ **M.A.R.D.** ***"Reserve Boost"*** Modification

TPDS-HLT-103 Reserve Pilot Chute Cap

TPDS-HLT-105 Reserve Static Line (RSL) for ***"Reserve Boost"***

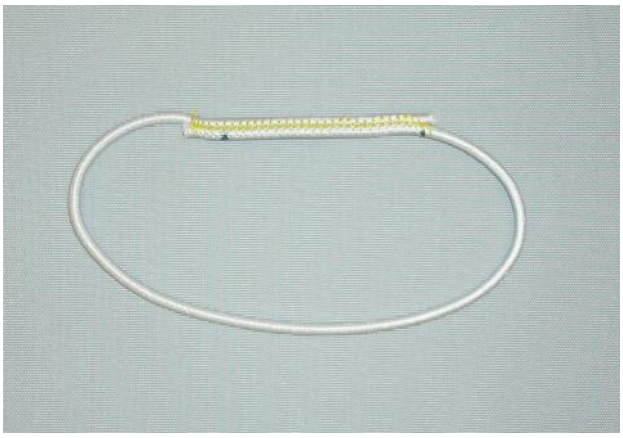


TPDS-HLT-109 Reserve Ripcord Assembly Bent Metal- Out-board



TPDS-HLT-111 Reserve Ripcord Assembly Pillow- Out-board

TPDS-HLT-113 Reserve Ripcord Assembly Loop- Out-board



TPDS-HLT-119 Reserve Safety Stow

TPDS-HLT-116 Reserve Closing Loop

TPDS-HLT-201 Main Risers, Type VII

TPDS-HLT-117 Reserve Toggles (Pair) Military Style

TPDS-HLT-213 Main Steering Toggles,
TPDS-HLT-214 Flaring Toggles
(Sets of 2)

TPDS-HLT-215 Main Toggles- Military Style

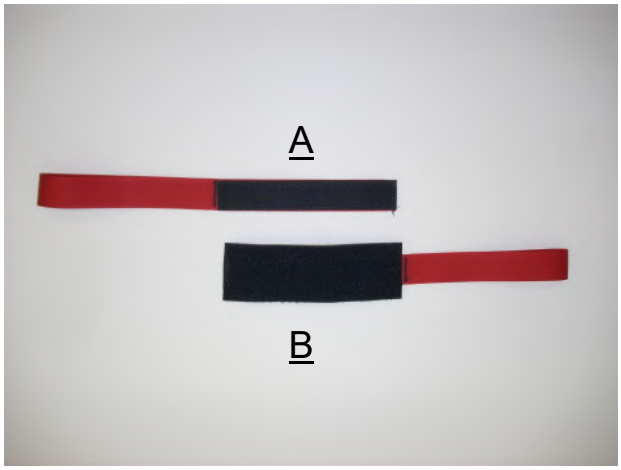
TPDS-HLT-222 Floating RSL w/ Mini Ring

TPDS-HLT-230 Main Spring-loaded Pilot Chute

TPDS-HLT-231 Main Pilot Chute T/O Plastic Handle

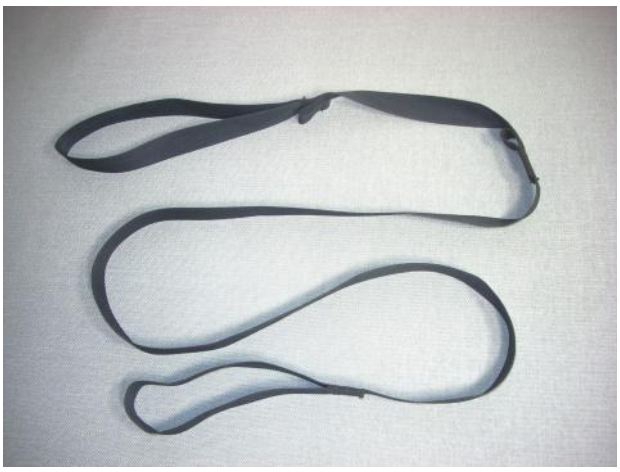
TPDS-HLT-232 Main Pilot Chute T/O Hacky Handle

TPDS-HLT-241 **Static-Line Assist** Pouch
Main T/O Pilot Chute

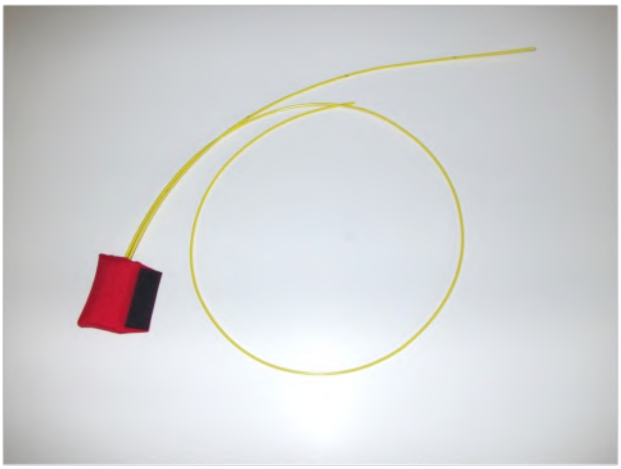


TPDS-HLT-242-A Hook Connector
TPDS-HLT-242-B Pile Connector

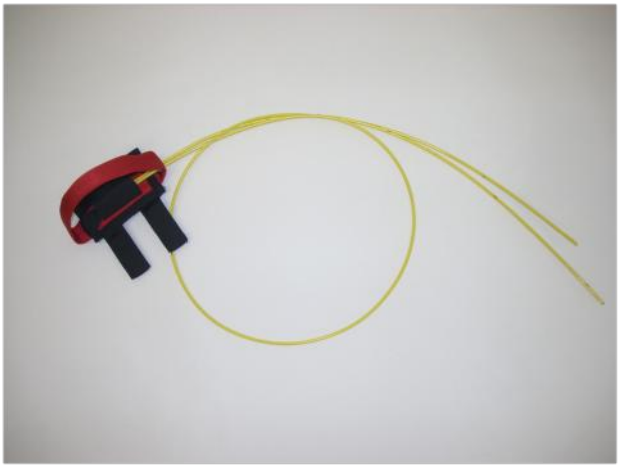
TPDS-HLT-245 Throw-out Bridle



TPDS-HLT-247 Main Bridle- Spring-loaded



TPDS-HLT-251 Main Release Handle
Pillow / Out-board



TPDS-HLT-253 Main Release Handle
Loop / Out-board

TPDS-HLT-259 Main Ripcord Handle- Hip

TPDS-HLT-264 Main Static Line w/Snap Direct Bag

TPDS-HLT-265 Main Static Line w/Black Cables, Spring-loaded and T/O P/C

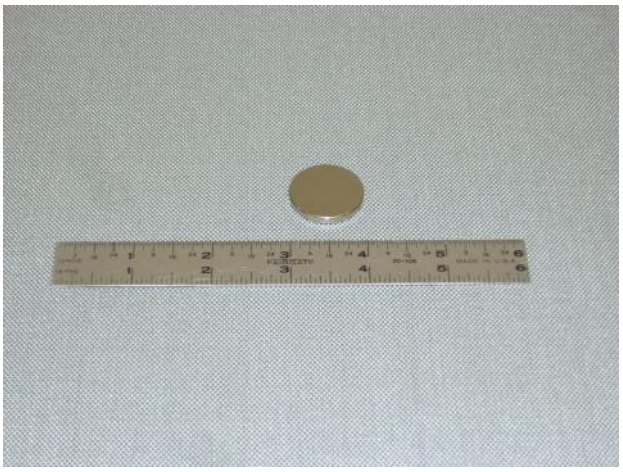
TPDS-HLT-270 Main Deployment Bag- for Drogue Free-fall

TPDS-HLT-272 Main Deployment Bag- for Direct Bag Static Line

TPDS-HLT-274 Main Deployment Bag- T/O and Spring-Loaded

TPDS-HLT-277 Safety Main Closing Loop- HMA

TPDS-HLT-275 Main Closing Loop T-IIA Spring-loaded P/C



TPDS-HLT-290 Magnet

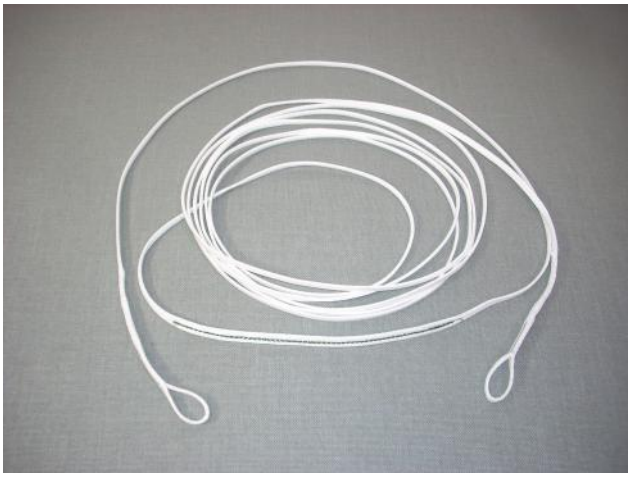
TPDS-HLT-276 Main Closing Loop- HMA

TPDS-HLT-294 Rubber Bands

TPDS-HLT- 297 Elastic Strap Keeper

TPDS-HLT-298 Elastic Strap Keeper w/Snap

TPDS-HLT-301 Drogue Bridle

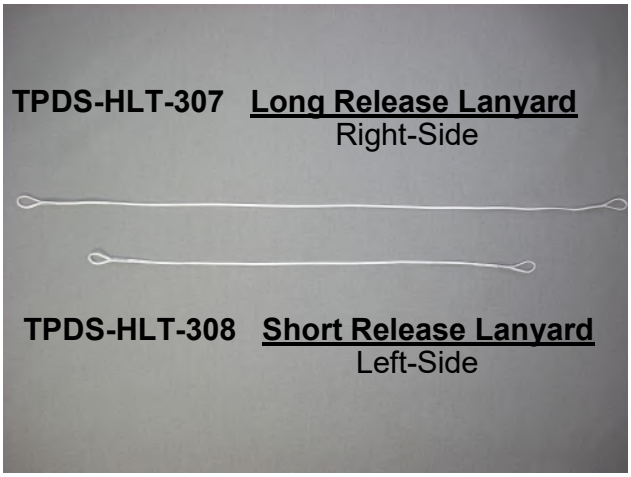


TPDS-HLT-302 Drogue Kill-line

TPDS-HLT-303 Drogue Safety Line

TPDS-HLT-304 Drogue P/C Center Line

TPDS-HLT-306 Drogue Release Hacky
(Left and/or Right Side)



TPDS-HLT-307 & HLT-308
Drogue Release Lanyards

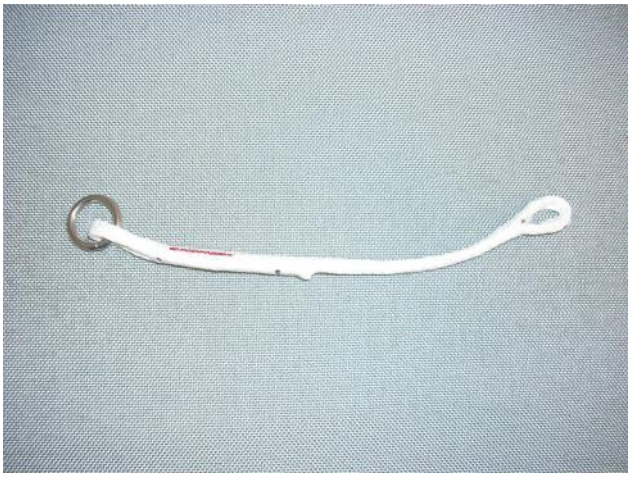
TPDS-HLT-309 Elastic Hacky
Connector Loop

TPDS-HLT-310 Drogue Release Pin

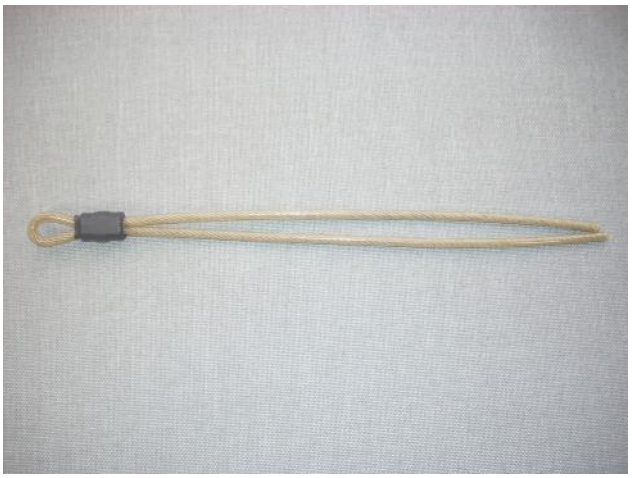
TPDS-HLT-311 Drogue Release Pin Elastic

TPDS-HLT-312 Drogue Riser, Type 8

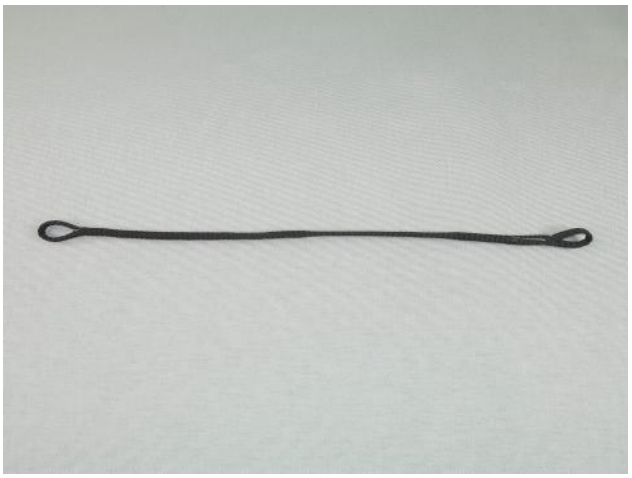
TPDS-HLT-314 Magnetic Sleeve for Drogue Handle



TPDS-HLT-320 Soft Link



TPDS-HLT-330 Main Container Closing Pin



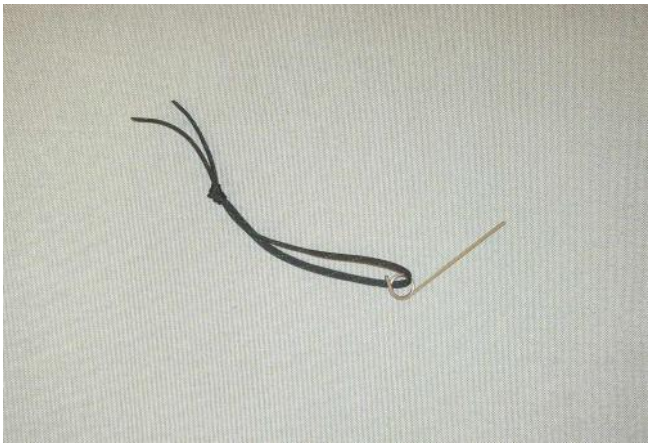
TPDS-HLT-331 Main Closing Pin Lanyard

TPDS-HLT-332 Tandem D-Bag Grommet Insert w/Velcro

TPDS-HLT-340 Replaceable Leg Pads

TPDS-HLT-400 Drogue Static-Line Pouch

TPDS-HLT-401 Drogue Static-line



TPDS-HLT-402 Static-line Safety Pin

TPDS-HLT-500 Tactical Passenger Harness

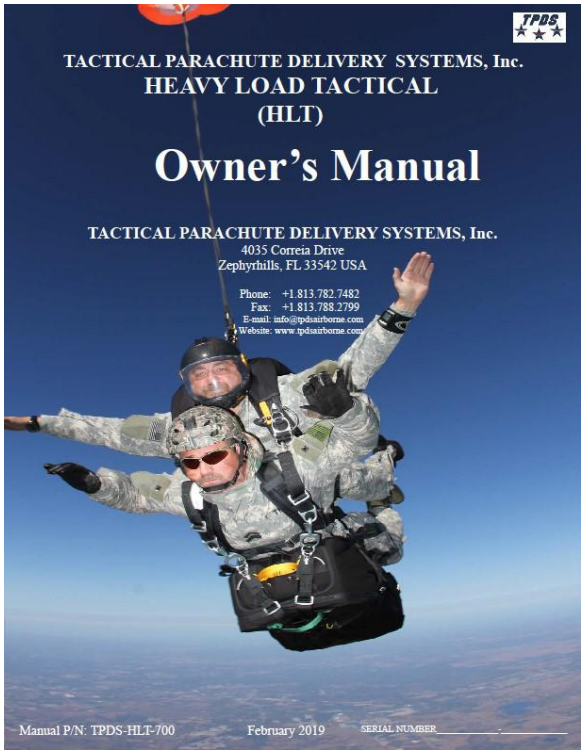
TPDS-HLT-502 Emergency Hook Knife

TPDS-HLT-503 Examiner's Handles (2 ea.)

TPDS-HLT- 504 Examiner's Handle Pockets (2 ea.)

TPDS-HLT-505 Examiner's Handle Lanyards (2 ea.)

TPDS-HLT-601 Tandem Gear Bag



TPDS-HLT-700 Owner's Manual

Chapter 15

Care and Maintenance

15.1 General Storage Requirements for Personal Parachute Systems

The following is an advisory statement and each country/unit may follow its own protocol:

General Storage Requirements:

To ensure that serviceability standards of the stored harness/parachute assembly are maintained, every effort will be exerted to adhere to the following general storage requirements:

1. When available, a climate controlled building should be used to store the harness/ parachute assembly.

2. The harness/parachute assembly shall be stored in a dry, well ventilated location and protected from pilferage, dampness, fire, dirt, insects, rodents and direct sunlight.

3. The harness/parachute assembly will **NOT** be stored in a manner which would prevent ventilation or interfere with light fixtures, heating vents, fire fighting devices, cooling units, exits or fire doors.

4. The harness/parachute assembly will **NOT** be stored in a damaged, dirty or damp condition.

5. All stored harness/parachute items will be marked, segregated and located for accessibility and easy identification.

6. The harness/parachute assembly will **NOT** be stored in direct contact with any building floor or wall. Storage will be accomplished using bins, shelves, pallets, racks or dunnage to provide airspace between the storage area floor and the equipment.

7. All available material handling equipment should be used as much as possible in the handling of the harness/parachute assembly.

8. Periodic rotation of stock, conversion of available space, proper housekeeping policies and strict adherence to all safety regulations will be practiced at all times.

Storage Specifics for Parachutes

In addition to the storage requirements stipulated in the general storage requirements paragraph, above, the following is a list of specifics that must be enforced when storing parachutes:

1. Except for those assemblies required for contingency operations, parachutes will **NOT** be stored in a packed configuration.

2. Stored parachute assemblies will be secured from access by unauthorized personnel.

3. A parachute that is in storage, and is administered a cyclic repack and inspection, will **NOT** be exposed to incandescent light or indirect sunlight for a period of more than 36 hours. In addition, exposure to direct sunlight will be avoided entirely.

In-Storage Inspection

General information:

1. An in-storage inspection is a physical check conducted on a random sample of parachutes that are located in storage.

2. Parachutes in storage will be inspected at least once every 180 calendar days and at more frequent intervals if prescribed by the local parachute maintenance officer.

3. Inspect the parachute to ensure that it is ready for use.

4. Check the parachute for proper identification.

5. Check that no damage or deterioration has incurred.

6. Ensure that all modifications or similar requirements have been completed.

7. Check the adequacy of the storage facilities, efforts taken to control pests and rodents and protection against unfavorable climatic conditions.

15.2 Water Contamination Guidelines

If the parachute or any of its components have been immersed in salt-water for more than 24 hours the equipment will be condemned.

Equipment made of cotton fabric immersed in salt water shall be condemned.

If the parachute or any of its components have been immersed in water, be it fresh water or salt-water, the parachute and any components immersed shall be rinsed immediately or placed in a double plastic bag with the top securely closed to keep the contents in a wet state until they can be rinsed. If they cannot be rinsed within 24 hours, **they shall be condemned**.

Once a parachute or any of its components have been immersed in water, be it fresh or salt-water, then the system shall have 50 jumps or 5 years, whichever comes first, to be used before **it is condemned.**

! CAUTION !

REMOVE ALL INSTRUMENTS! BEFORE RINSING THE PARACHUTE ASSEMBLY

Rinsing the Parachute Assembly after Water Immersion:

1. Place the parachute assembly in a large container filled with enough fresh water to completely cover it.

2. Agitate the contents of the container by hand for 5-minutes.

3. Remove the parachute assembly from the container and suspend or elevate it in a shaded area for a period of 5 – 10 minutes to allow it to drain. Do not wring the fabric nor the suspension lines.

4. Repeat the procedures in steps 1. through 3. above, twice (2x), using fresh, clean water for each rinse.

5. After the 3rd rinse, allow the parachute assembly to drain thoroughly. Upon completion of draining, dry the assembly by elevating or suspending the item in a well ventilated room or a heated drying room with the temperature not to exceed 130° Fahrenheit or 55° Celsius. When heat is used it shall not exceed 160° F or 71° C. The preferred temperature is 140° F. / 60°C. The use of electric circulating fans will reduce the drying time.

6. When dried, perform a technical/rigger-type inspection of the parachute assembly. Corroded metal components or corrosion stain fabrics or suspension lines will be either repaired or replaced.

7. Record the immersion and rinsing and any repairs made to the parachute assembly in the parachute log record.

15.3 20 Year Maximum Life Limitations

20 year Maximum Life Limitations for TPDS *Heavy Load Tactical (HLT).*

Without further limitations, each ***TPDS* Canopy** has a maximum life limitation of **20 years** from the date of manufacture.

Further limitations include:

	Reserve	Main	Harness/Container
Service Life Limitation:	20 years	20 years	20 years
Useful Life Limitation:	20 deployments	500 deployments	500 deployments

WATER JUMPED CANOPIES:

Reserve- Non-Deployed - if the Reserve Parachute is used in a water jump but **NOT** deployed- it shall have 5 years or 20 jumps **(which ever comes first)** remaining for its Useful Life Limitation.

Reserve- Deployed- if the Reserve Parachute is used in a water jump and has been deployed- **It Shall be Condemned.**

Main Parachute- if the Main Parachute is used in a water jump- it shall have 5 years or 50 jumps **(which ever comes first)** remaining for its Useful Life Limitation.

HARNESS/CONTAINER:

If the Harness/Container is jumped into water, it shall have 5 years or 50 jumps **(which ever comes first)** remaining for its Useful Life Limitation.

If at any time the unit is discovered to be B.E.R. (beyond economical repair) it will be removed from service and dispositioned by the equipment activity officer.

Main canopy limitations are similar to reserve canopy limitations with regard to total calendar time; however their initial Useful Life Limitation is **500** deployments, at which time they may be relined and evaluated by an appropriately rated parachute technician for extended service period.

15.4 Factory Authorization of One Year Reserve Repack Cycle

All of the materials, purchased items and parts used in the fabrication process for **Tactical Parachute Delivery Systems (TPDS)** main and reserve parachutes are acquired from suppliers on our Approved Supplier list as part of our FAA approved Quality Control System for parachutes produced under FAA TSO C-23f.

There are no component parts utilized in these parachutes that necessarily require re-certification at a specific repack cycle. Our experience indicates that a repack cycle of one year should not adversely affect the performance of the parachute or compromise safety based on the element of time alone.

Factors that might affect a parachute's airworthiness could come into play during any repack cycle and include:

1. Storage temperature, humidity, and ultraviolet radiation
    a. When not in use, the parachute should be stored in an environment wherein the temperature is controlled between 60°- 85° F. (15°-30° C.) and within the relative humidity limits of 30% and 60%. Ultraviolet radiation (daylight) in the storage facility should be zero.

2. Damage from normal handling and use
    a. The entire system should be inspected prior to each use as well as after each use to determine if any damage has occurred during normal use. If the parachute ever becomes damp, a thorough drying, inspection, and repack are strongly recommended, and the wetting agent should be analyzed for elements that may cause deterioration of nylon and other synthetic components that make up the parachute system.

3. Other components that make up the system
    a. Other components like the container, or the reserve deployment free bag and pilot chute, or any other component that contains material unsuitable for an extended repack cycle could disqualify the system from the extension.

4. Chain of custody
    a. Our approval of extending the repack cycle to one year is authorized only if a logbook is maintained describing a chain of custody and documenting storage and use as outlined in each of the previous items.

When in compliance with these four detailed elements, we approve a repack cycle of both our main and our TSO'd reserve parachute canopies to **1 year** for certain military and civilian applications, in countries that do not impose a more restrictive repack cycle for parachute products.


TPDS


TPDS

Chapter 16

Repairs

16.1 Repair Guidelines

Stitching and restitching on parachute items constructed from cloth, canvas, and webbing should be accomplished with thread, which matches the color of the original stitching, when possible.

All straight stitching should be 7-11 stitches per inch, and locked by overstitching the existing stitching by at least 2-inches. Zigzag stitching should extend at least 1/2-inch into undamaged stitching at each end. Re-stitching should be made directly over the original stitching, following the original stitch pattern as closely as possible.

All thread on the canopy should be VT-295E, Type II, Class A, Size E, VY, and sewn with a light or medium duty machine.

Canopy

Type of Repair	Limitations
Re-stitching:	No limit as to length or number.
Patch, single side:	Size Limit: Maximum 50% of panel area. Limit of 3 per panel, 15 per canopy.
Panel replacement:	Limit 9 per canopy
Radial Seams:	Size Limit: 12", no more than 4 per canopy.
Lateral bands:	Size Limit: 2", no more than 10 per canopy
Upper	Size Limit: 4", Limit 1 per canopy
Lower	Size Limit: 36", Limit 4 per canopy

Static Line

A Damaged Static Line should be replaced.

Container

Standard military single side patches or replacement of the damaged area is authorized.

Ripcords

Damaged ripcords should be replaced.

16.2 Keeping Track of Repairs and Packing

Data Card

Data cards should not be discarded or replaced. When filled, they should be attached to the new card so that a complete log of packing, repairs, and alterations is recorded.

This is the history of the parachute.

Note!

Darning and Ripstop Tape are **NOT** authorized for Certified Canopies as they may weaken the fabric. Single side patches are recommended for even small damaged areas.

NOTES:

HLT-410

MAIN CONTAINER CLOSING LOOP- 1200 lbs. HMA LINE - 11" (28 cm.)
SECONDARY CLOSING LOOP- 1200 lbs. HMA LINE- 5" (13 cm.)

HLT-350-390

MAIN CONTAINER CLOSING LOOP- 1200 lbs. HMA LINE - 9" (23 cm.)
SECONDARY CLOSING LOOP- 1200 lbs. HMA LINE - 5" (13cm.)

SPRING-LOADED MAIN CLOSING LOOP- 1200 lbs. HMA LINE - 4" (10 cm.)

RESERVE CLOSING LOOP- CYPRES LINE - 5 5/8" (14.3 cm.)


TPDS


TPDS