Owner's Manual for Packing, Donning, and Maintenance
of the

TPDS LIGHT LOAD TACTICAL (LLT)

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STATEMENT OF CONFORMANCE

This letter is to inform that all components of the **Light Load Tactical (LLT) Harness/Container System** 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 Light Load Tactical (LLT) 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 promise 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 **Light Load Tactical (LLT)** system which includes:

- Main Pin Cover – Having an upward facing pin cover creates the ultimate in pin protection from unintended knocks or bumps causing premature pin extraction.
- Bridle and Riser Cover Protection – Zero exposed riser or main bridle ensures proper function in any manner of orientation or use.
- 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.
- Single Pin Reserve Closing.
- Partially Exposed Reserve Pilot-Chute.
- Main Risers with Trim Tabs- Type VII Risers come standard with Trim Tabs, allowing the user to set a specific trim while in flight allowing the parachute to descend faster if necessary.
- Adjustable Harness - The **TPDS LLT** Harness is adjustable on the Main Lift Web and Side Laterals, allowing a range of users to access the same system.
- Type VII Mil-SPEC Harness and Reserve Risers.
- Foam Padded Yoke, Back Pad and Leg Pads.
- Automatic Activation Device Set-up - ready for installation.
- Main Deployment – Over the Shoulder Ripcord, BOC Ripcord, BOC Throw-out, Static Line Assist (T/O or Spring-loaded Pilot Chute) or Direct Bag Static Line.
- Cutaway Location – Outboard.

- Reserve Ripcord 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.

The **TPDS LLT** 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) C23d** 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.

Chapter 2

Technical Information

2.1 *TPDS* Light Load Tactical (LLT)

Military *TPDS*-LLT

Outboard Reserve Ripcord Handle
Outboard Main Canopy Release Handle
Outboard Main Ripcord Handle
D-Ring Hook-up x6

The ***TPDS* Light Load Tactical (LLT)** is designed for HALO-HAHO operations and training with a single operator carrying full combat equipment and bundles.

The ***TPDS*-LLT System** accommodates *TPDS* Main and Reserve Canopy sizes from 220-400 sq. ft. according to the end user's tactical and training requirements.

TPDS specializes in the custom applications and requirements of the end user.

TPDS- LLT Specs:

Maximum Suspended Weight:
550 lbs. (250 kg.) depending on the canopy size.

Maximum Deployment Altitude:
35,000 ft. (10,668m) Some restrictions apply depending on canopy size and type.

Minimum Deployment Altitude:
Main Canopy- 3000 ft. (914 m)
Reserve Canopy- 2000 ft. (600 m)

Equipment Configuration:
6 attachment points for bundles Front, Front Lower and Back Lower.

Main Canopies: *TPDS* 220-400 sq. ft.

Reserve Canopies: *TPDS* 220- 400 sq. ft.

Harness/Container Weight: 17 lbs. (7.7 kg.)

Reserve AAD Set-up:
Military Cypres AAD
Astra by FXC
Military Vigil
Military Argus

Installation according to AAD and/or end user's requirements.

Reserve Static Line:
Standard RSL with attachment to the Left Main Riser and Reserve Cable.

TPDS- LLT Specs continued:

Main Deployment Options:

- Throw-out Bottom of Container. (BOC)
- Spring-Loaded Pilot Chute w/BOC or Chest Mounted Ripcord.
- Static Line Deployment with Direct Bag, Spring-Loaded Pilot-Chute Assist or Throw-out Pilot-Chute Options.

Main AAD Options:
AR-2 or equivalent.

Main Risers:
Type 8

Main Toggles/Trim:
HAHO Toggles w/HAHO Extensions and Front Riser Trim Tabs and Front Riser Loops.

Harness:
Adjustable Main Lift Web
Adjustable Laterals.
Adjustable Leg Straps.
Adjustable Chest Strap.
Adjustable Bellyband or
Removable/Adjustable Bellyband.

Leg Hardware:
B-12 Snaps, Thread-Thru or Quick Ejector

Chest Hardware:
B-12 Snaps, Thread-Thru or Quick Ejector

Container Material:
1000 Denier Nylon

Container Colors:
Black, Silver, Dark Grey, Olive Drab Green, Desert Camouflage, Woodland Camouflage, Multi-Camouflage, others upon request.

TPDS- LLT Standard System

Features:

- 6 Cargo Attachment Points
- Fully Adjustable Harness
- Adjustable or Detachable Bellyband
- Weapon Stow Loops.

TPDS- LLT Optional System

Features:

- Removable **HAHO** Seat Sling.
- **Main Assisted Reserve Deployment (MARD) "Reserve Boost" System**

• Max Deployment Speed	150 knots thru airspeed
• Max Deployment Altitude Static Line	18,000 ft. MSL
• Min Deployment Altitude Static Line	1500 ft. AGL
• Min Deployment Altitude Free-fall	2000 ft. AGL
• Max Deployment Speed Static Line	130 knots thru airspeed
• Min Deployment Speed Static Line	60 knots
• Max Exit Weight	202 kg./ 445 lbs. (depends on size of canopy and weight of jumper)
• Min Exit Weight	135 lbs./ 60 kg.
• HALO Altitude	30,000 ft. MSL
• HAHO Altitude	25,000 ft. MSL
• Glide Ratio	3 to 1
• Aspect Ratio	2.94:1
• Average Opening Force	4.2 G's
• Rate of Descent- Speed Full Flight	10-15 ft/sec. (depends on size of canopy and weight of jumper)
• Rate of Descent- 50% Brakes	5 ft/sec. (depends on size of canopy and weight of jumper)
• Forward Speed	40-50 mph. (depends on size of canopy and weight of jumper)
• Pack Volume	500 - 600 cu. in.

• Weight of Canopy	46 lbs./ 21 kg. and less
• Hardware	Mil. Spec Forged Cadmium Plated Steel or equivalent
• Canopy Fabric	PIA C 44378 Type-4 Ripstop 0.5-3.0 and/ or Z-P combination
• Container Fabric	1000 denier Cordura
• Webbing	Mil. Spec. W-4088 or equivalent

TPDS- LLT Light Load Tactical

Reserve Static Line Release Clasp

Upper D-Ring Hook-up (x2)

Outboard Main Ripcord Handle

Outboard Reserve Ripcord Handle

Outboard Main Canopy Release Handle

Lower D-Ring Hook-ups (x4)

TPDS- LLT (rear view)

AAD Clear Inspection Window

Reserve Pin Inspection Window

Static Line Stow Bands

Chest Main Ripcord Housing

Rear Ripcord Housing

Throw-out Pilot Chute Handle

LLT Mains

Main Canopy Specifications

9 Cell Elliptical

Hybrid / Dacron Lines

Area	Span	Chord	Aspect Ratio	Load	Max Weight
Sq. Ft.	Feet	Feet	:1	lbs./ft^2	lbs./ kgs.
200	28.46	9.68	2.94	1.19	240/ 109
220	29.85	10.16	2.94	1.194	265/ 120
240	31.18	10.61	2.94	1.198	290/ 132
260	32.45	11.04	2.94	1.202	316/ 143
280	33.67	11.46	2.94	1.206	342/ 155
300	34.86	11.86	2.94	1.21	368/ 167
330	36.56	12.44	2.94	1.214	406/ 184
360	38.18	12.99	2.94	1.218	445/ 202

Z-P / Dacron Lines

200	28.46	9.68	2.94	1.2	240/ 109
220	29.85	10.16	2.94	1.205	265/ 120
240	31.18	10.61	2.94	1.21	290/ 132
260	32.45	11.04	2.94	1.215	316/ 143
280	33.67	11.46	2.94	1.22	342/ 155
300	34.86	11.86	2.94	1.225	368/ 167
330	36.56	12.44	2.94	1.23	406/ 184
360	38.18	12.99	2.94	1.235	445/ 202

Average Opening Force - 3.2 Gs.

LLT Reserves

Reserve Canopy Specifications

Squares

F-111 / Dacron Lines - 7 Cells

Area	Span	Chord	Aspect Ratio	Load	Max Weight
Sq. Ft.	Feet	Feet	:1	lbs./ft^2	lbs./ kgs.
220	23.18	9.89	2.345	1.19	262/ 119
240	24.21	10.33	2.345	1.18	283/ 129
260	25.2	10.75	2.345	1.17	304/ 138
280	26.15	11.15	2.345	1.16	325/ 148
300	27.07	11.54	2.345	1.15	345/ 156
320	27.96	11.92	2.345	1.14	365/ 166
340	28.82	12.29	2.345	1.13	384/ 174
380	30.47	12.99	2.345	1.11	422/ 191

F-111 / Dacron Lines - 9 Cells

220	25.96	8.56	3	1.42	312/ 142
240	26.83	8.94	3	1.418	340/ 154
260	27.93	9.31	3	1.416	368/ 167
280	28.98	9.66	3	1.414	396/ 180
300	30	10	3	1.412	424/ 192
320	30.98	10.33	3	1.41	451/ 205
340	31.94	10.65	3	1.408	479/ 217
360	32.86	10.95	3	1.406	506/ 230
380	33.76	11.25	3	1.404	534/ 242
400	34.64	11.55	3	1.402	561/ 254
420	35.5	11.83	3	1.4	588/ 267

CANOPY FABRIC SPECIFICATIONS

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 *TPDS* Light Load Tactical (LLT) Harness/Container System

- Main Lift Web
  - Sizing Identification is Symmetrical (same color).
  - Fold-overs are 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 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 is present and correct.

- Leg Straps/ Leg Pads
  - Fold-overs are 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 is present and correct.
  - Toggles and Velcro in place.
  - Guide rings present, free of wear, no abrasions.
  - Steering Line Locking Loop is present.
  - Guide Ring is present and in good shape.

- 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.

- 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.

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

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

- Reserve Static-Line (RSL)
  - Bartacks are present.
  - No Corrosion or wear.
  - Mini Ring present & Lanyard intact.

- Main Deployment Bag and Deployment Option
  - Deployment Bag is correct size. Grommets have no burrs or sharp edges.
  - Deployment Handles are present and in good shape.
  - Pilot Chute is present and correct.
  - Static Line (if used) is present and all stitching is correct and present.

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 correct slider grommet.

- Slider
  - Grommets seated correctly without 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.

Chapter 4

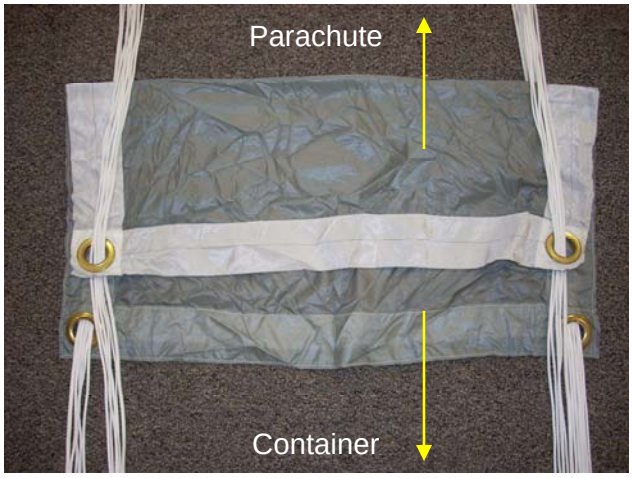
Assembly Instructions

4.1 Assembly of Reserve Canopy.

4.1.1 Reserve Canopy Line Order.

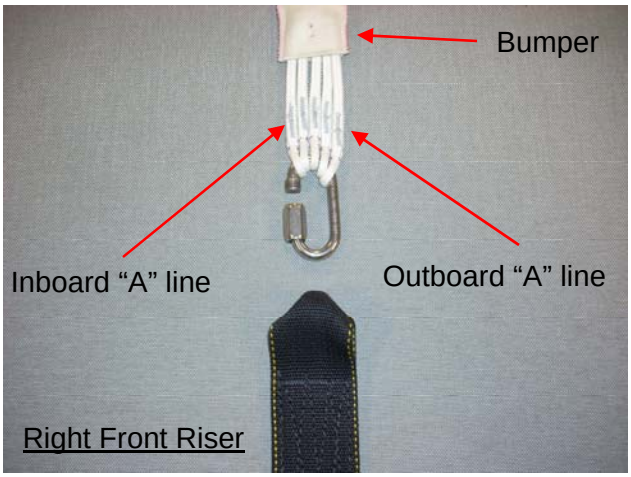
After inspecting the Parachute and the Harness/Container System, hang or lay the parachute out on the ground with the nose section on the ground and the Harness/ Container System oriented face down.

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

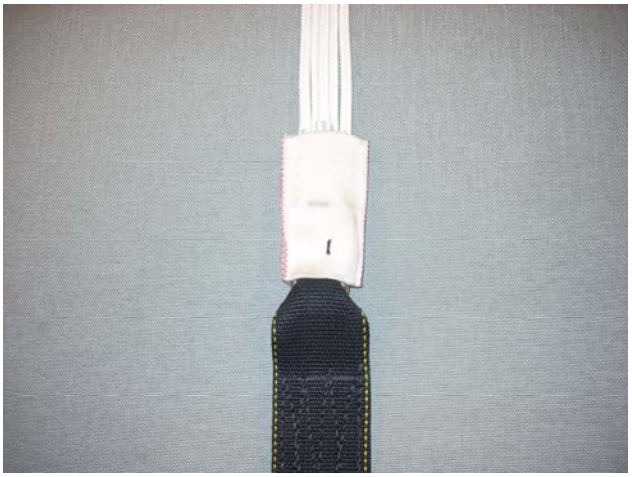


Ensure the slider is correctly oriented; the slider should be longer span-wise than chord-wise, with the reinforcing tape of the slider on the side facing the reserve parachute.

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.

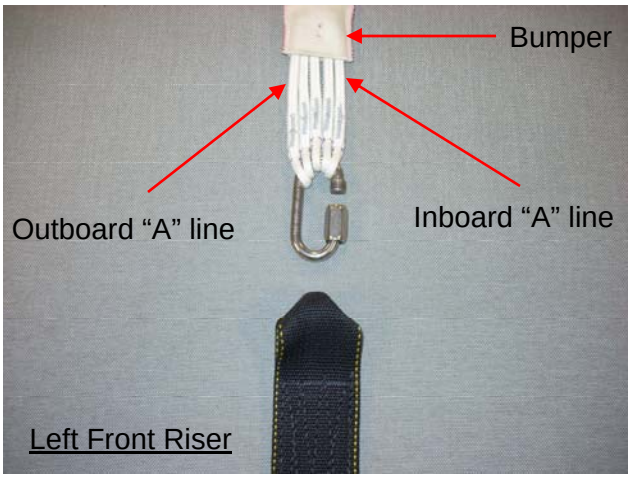


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Right Front line-set*** onto the end of the ***Right Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.

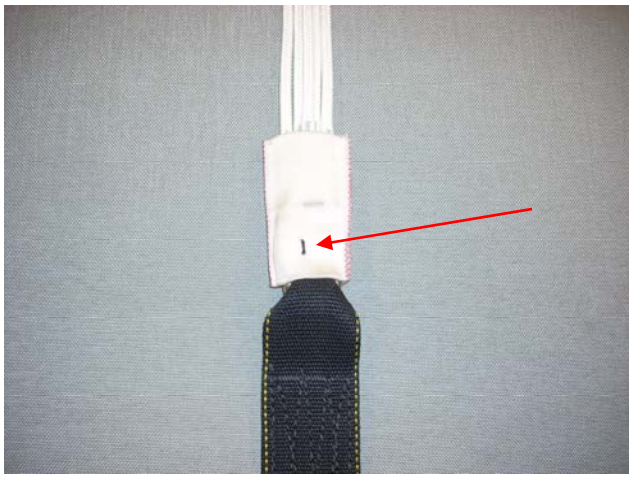


Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the Left Front Riser.



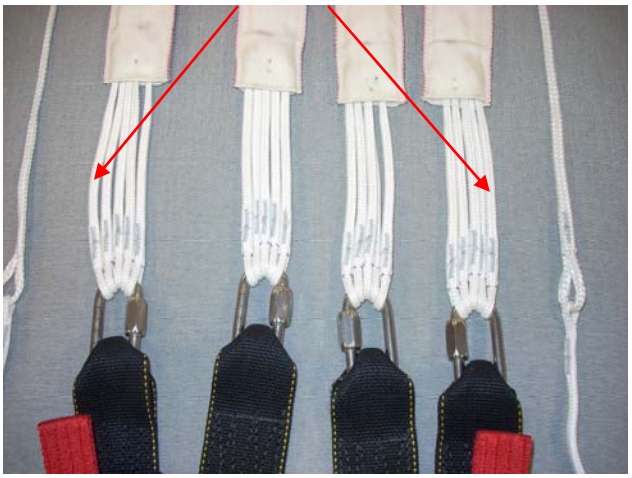
Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Left Front line-set*** onto the end of the ***Left Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.



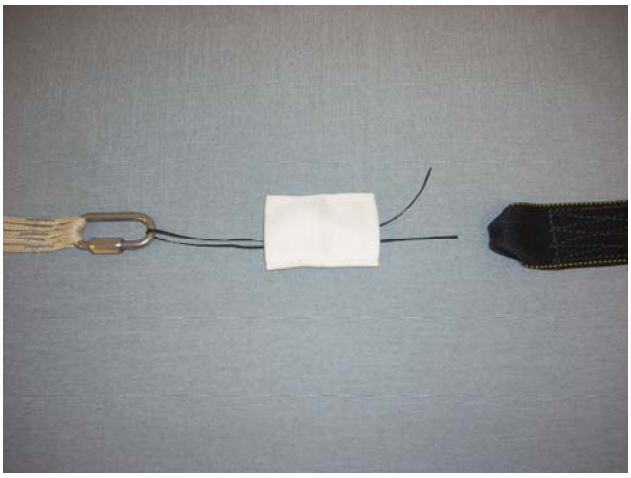
Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

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

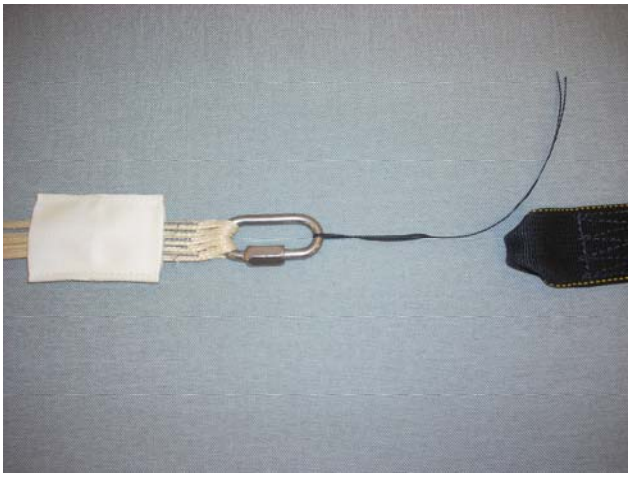
Outboard "C" line



4.1.2 Installing the Bumpers.

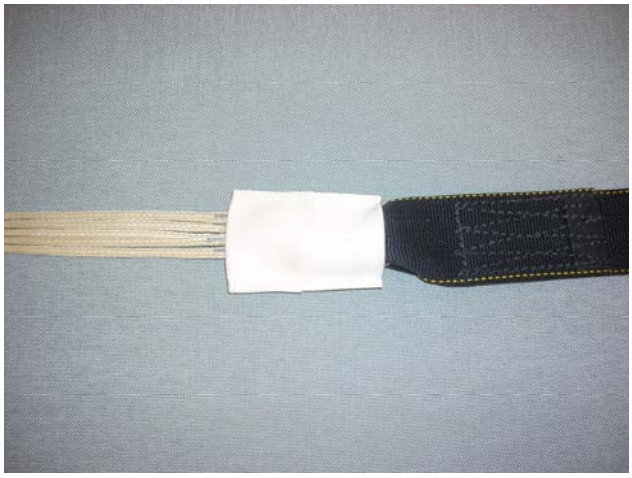


With the line group correctly assembled onto the link, run a short piece of line through the closed link and the center of the bumper.

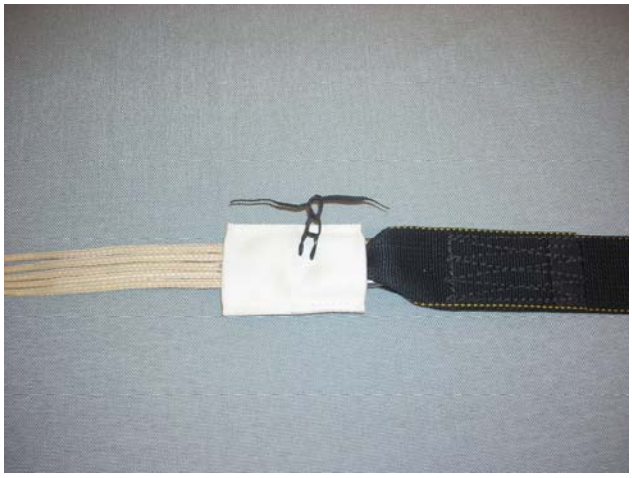


Pull the link through the bumper without twisting or turning the link.

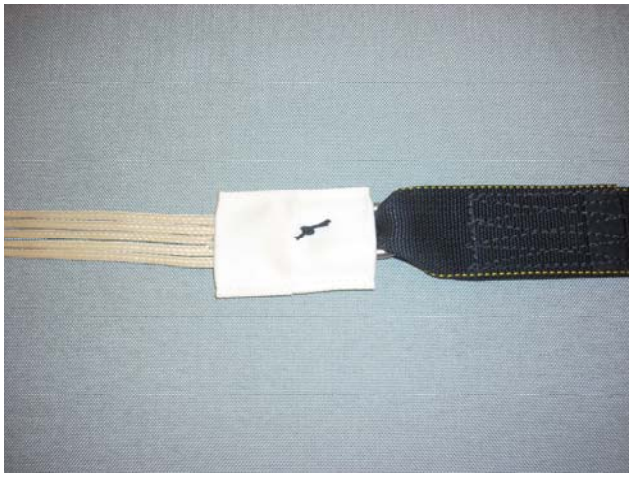
Fold the top of the riser and install the link. Tighten the barrel finger tight then a 1/4 turn with a small wrench.



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.

4.1.3 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.

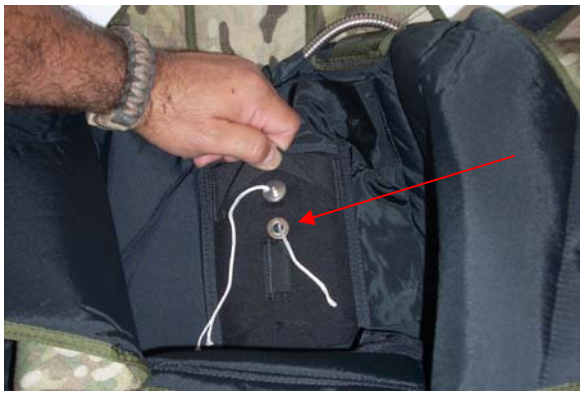
4.2 Installing the Closing Loop in the Reserve Container.

Follow these Instructions for Installing the Closing Loop in the Bottom Plate of the LLT 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.

4.3 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.

4.4 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.

4.5 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.

4.6 Installing the Floating RSL. (TPDS-LLT-222)

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

From the inside of the Left Riser pass the end loop of the **TPDS-LLT-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-LLT-222**) installed.

4.7 Installing the Optional T-8 Belly-Band. (LLT-280)

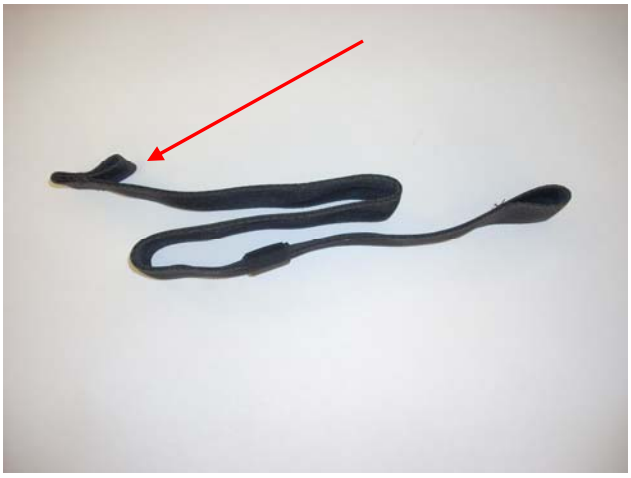
Pictured above is the **LLT-280** Optional T-8 Separable Belly-Band with Stainless Steel 1/4", 650 kg. Rapide Links.

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 LLT.

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 LLT 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 LLT.
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 .

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

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

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

The **TPDS LLT** Light 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-LLT-241)** Pouch, **(TPDS-LLT-265)** Static Line with Black Cables, **(TPDS-LLT-232)** Main Pilot Chute with Hacky.

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

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

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

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

The **TPDS LLT** Light 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-LLT-247),**
(B) Main Ripcord **(TPDS-LLT-259)**
(C) Spring-loaded Pilot Chute **(TPDS-LLT-230)**
(D) Main Deployment Bag **(TPDS-LLT-271)**

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

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

Notice the “stop tab” on the one end.

Pass the Loop of the Bridle **(TPDS-LLT-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-LLT** Light 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-LLT-271)**

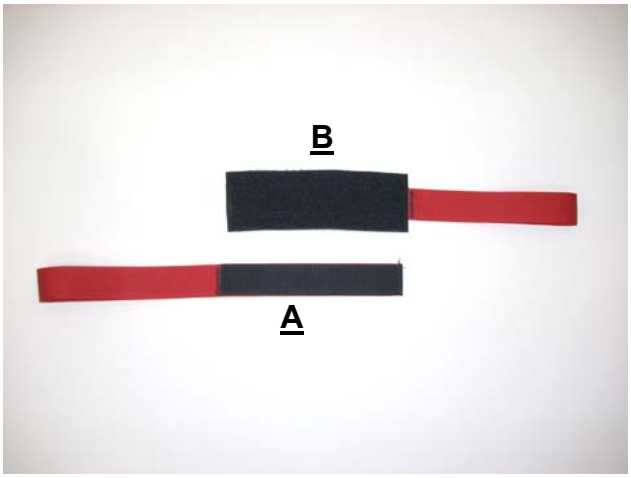
Pass the Loop of the Bridle through the ring of the Main Parachute.

Pass the other end of the Bridle through the loop.

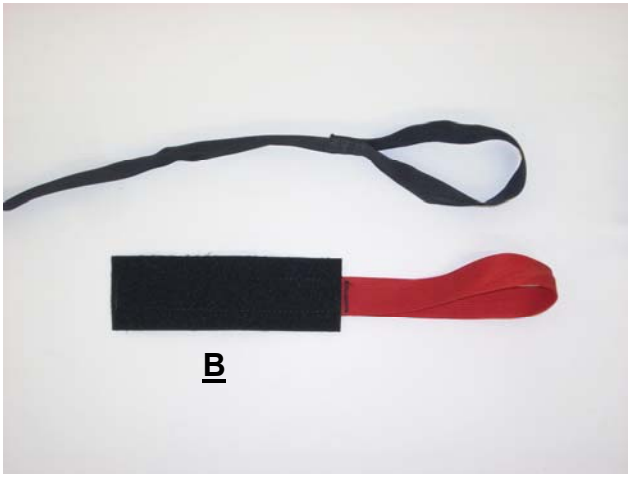
Should look like this.

Tighten the knot formed.

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



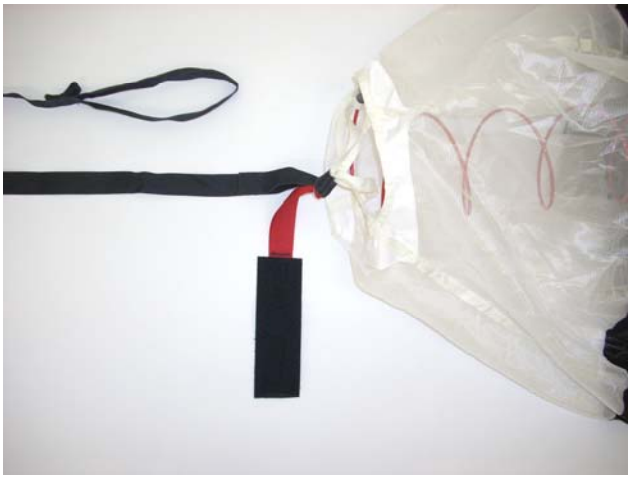
Pictured above are the two (2) parts of the Spring-loaded Pilot Chute Assist Static Line Assembly. **TPDS-LLT-242-A & B**



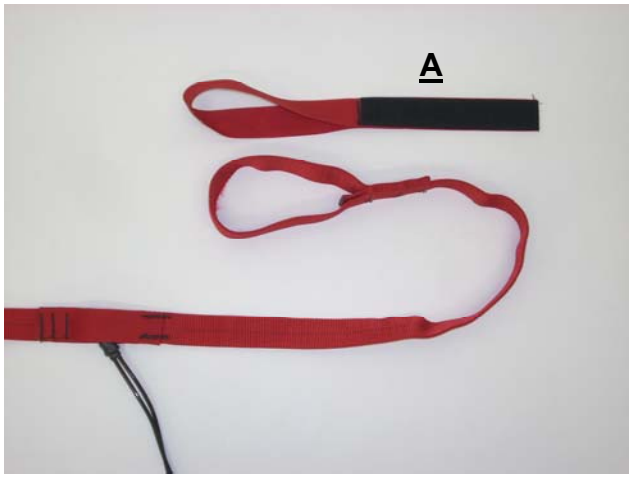
Begin with the Pile Velcro piece (**B**) and the smaller loop end of the Pilot Chute Bridle.

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

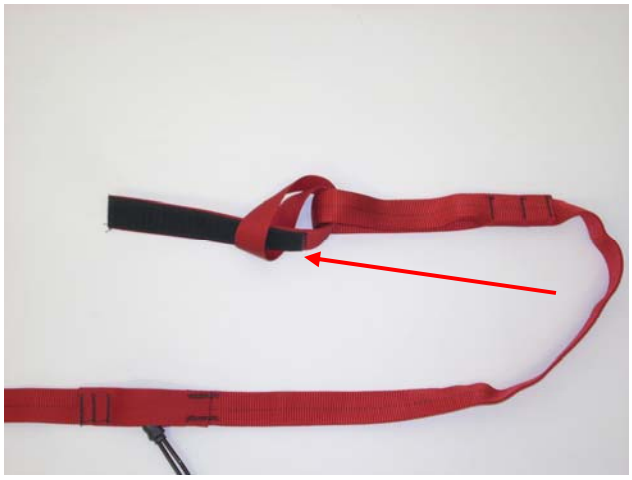
Pass the ends through both of the loops at the same time, forming a double loop. Tighten the formed knot.



Should look like this.



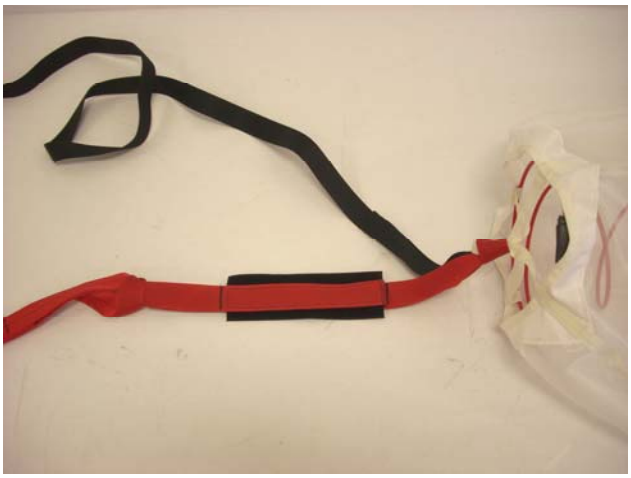
Next take the Hook Velcro part **"A"** and the loop of the Static Line **(TPDS-LLT-265)**.



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-LLT-242** and proceed to close the **LLT** Main Container.

See Chapter 8 to close the Main Container.

4.12 Assembly of the Static-line Direct Bag. (TPDS-LLT-272)

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-LLT-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 LLT**.

Chapter 5

Tools

Use this page to record which tools are used during the packing of your TPDS, Inc. ***Light Load Tactical (LLT)*** Harness/Container System. Mark which tools, and how many were used for packing and document all tools after work is complete.

5.1 Packing Tool Check-List

Tool used:	**Pre-packing**	**Post-packing**
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

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

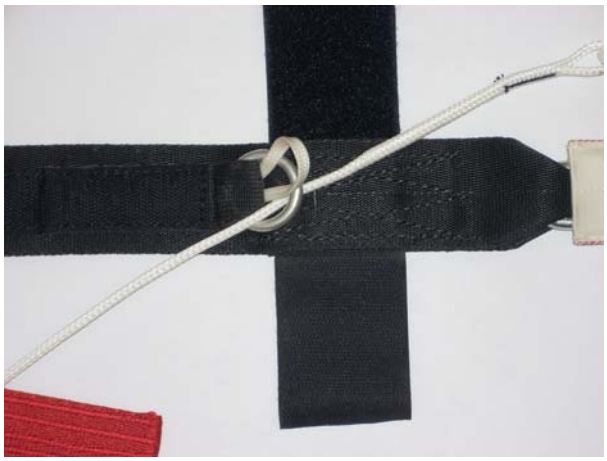
Chapter 6

Reserve Packing

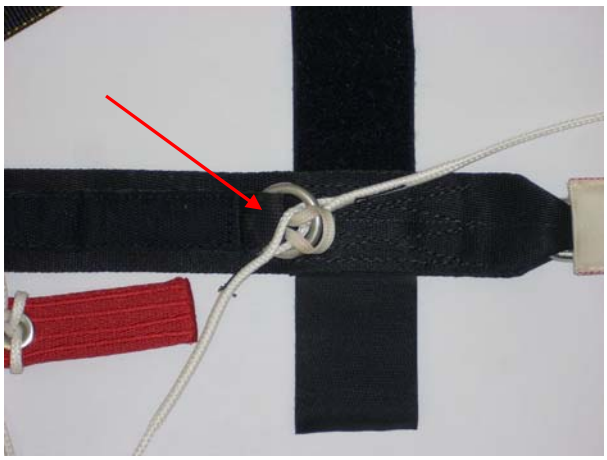
6.1 Setting the Reserve Brakes.

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.

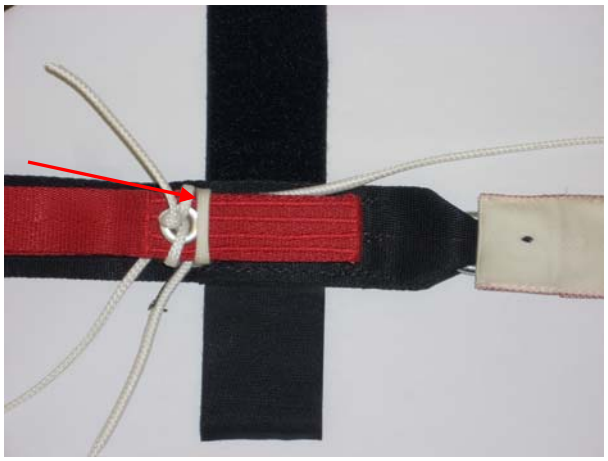
Check to be sure that any twists in the Control Lines have been removed before proceeding to setting the brakes.



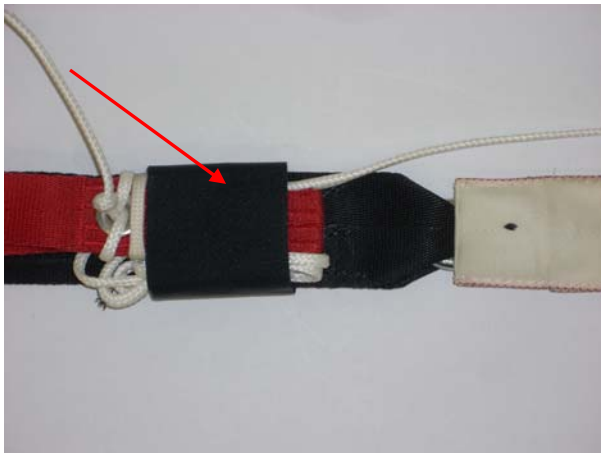
The Control Line should pass only through the guide ring and **NOT** the Dacron loop located on the riser.



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.

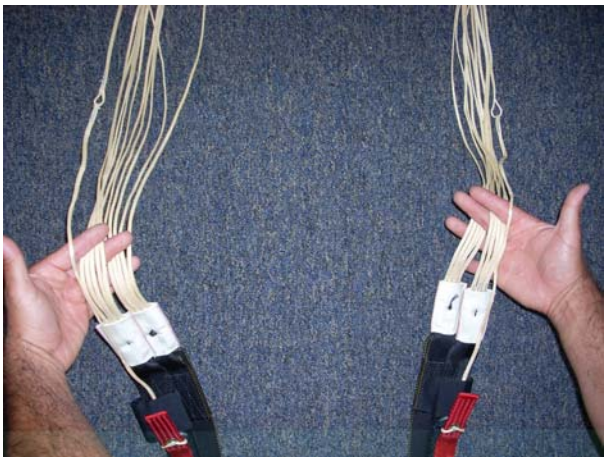
"S"-fold the excess Control Line next to the toggle tip.

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.

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 safety stow through the grommets of the Free-bag and make the first line bight approximately 1 1/2" and place in the safety stow.

Secure the Free-bag closed by making a second line bight and placing it in the safety stow.

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

Take the second line bight and place it into the opposite 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.

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.

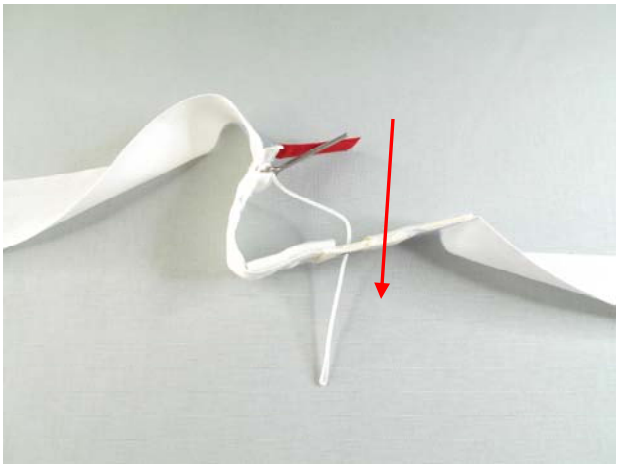
Fold the Bridle back towards the top of the Reserve Container.

Tuck the folded Bridle under the Side Flaps.

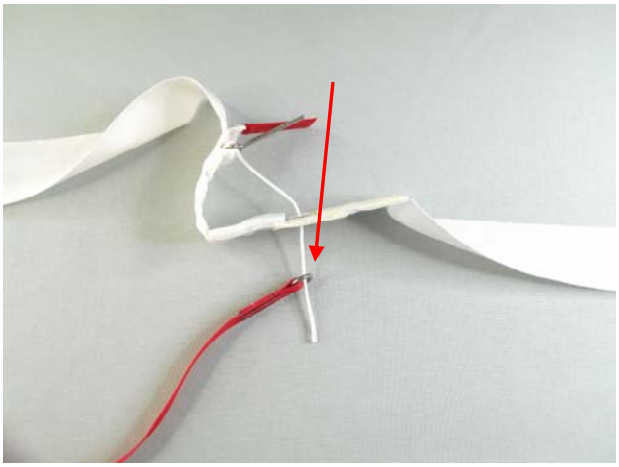
Do **NOT** tuck more than 1" on each side.

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

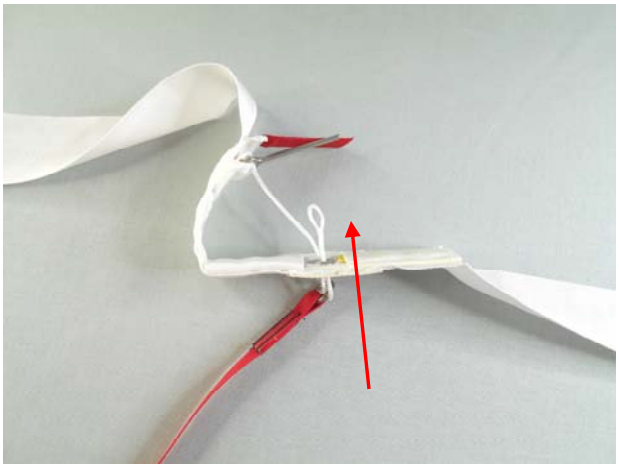
"Arm" the M.A.R.D. ***"Reserve Boost"*** at this time.



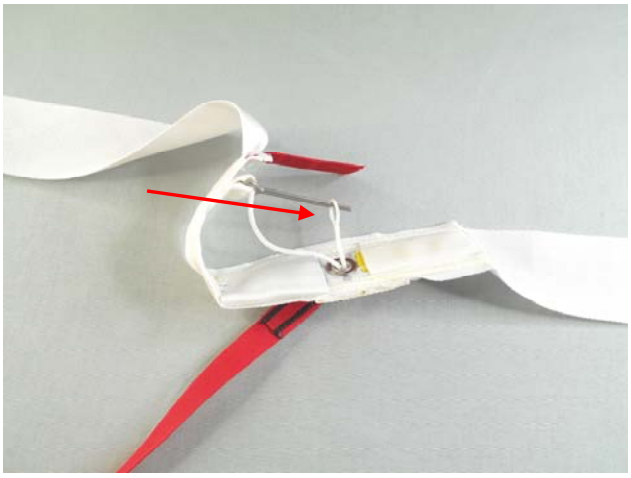
"Arm" the M.A.R.D. ***"Reserve Boost"*** at this time by passing the Spectra Line Loop down through the #0 grommet.



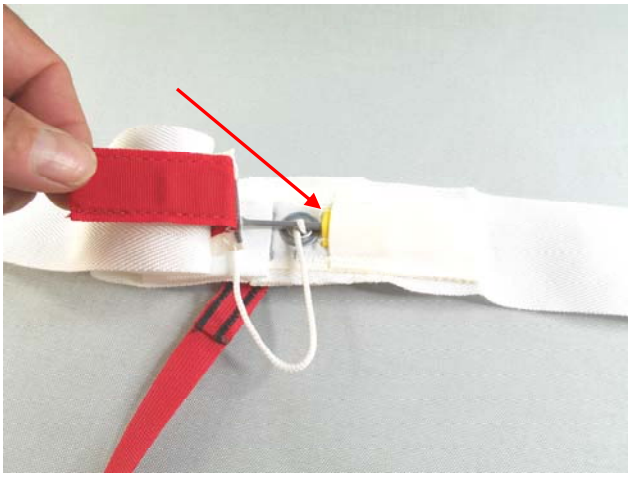
Pass the Spectra Line through the mini ring of the M.A.R.D. ***"Reserve Boost"*** RSL.

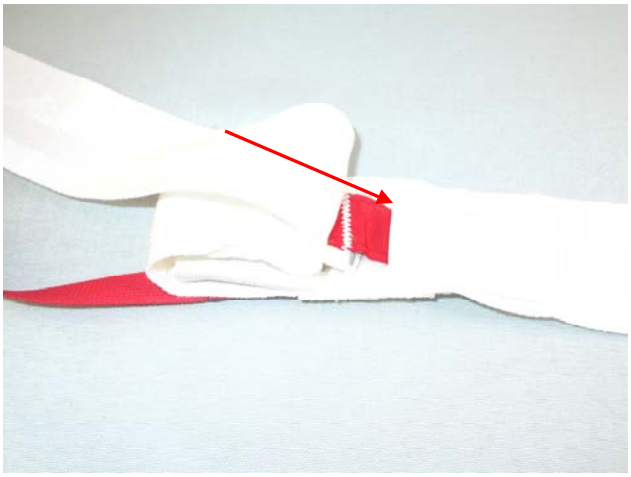


Loop the Spectra Line back up through the #0 grommet of the bridle.

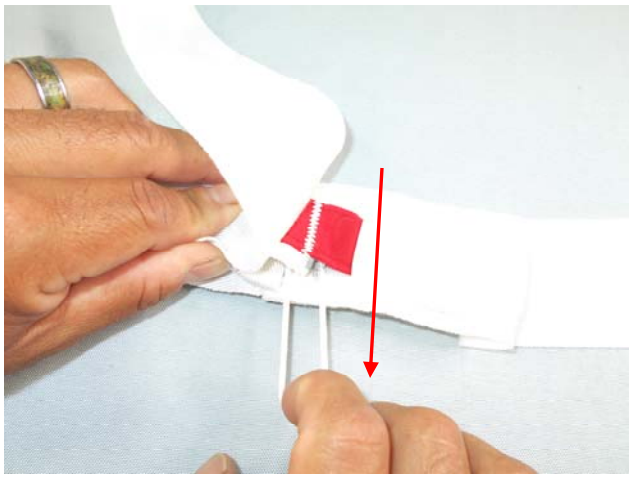


Slide the Long Pin through the loop then stow into the channel under the tuck tab flap. Be certain that it is in it's own channel of T-III tape (yellow).

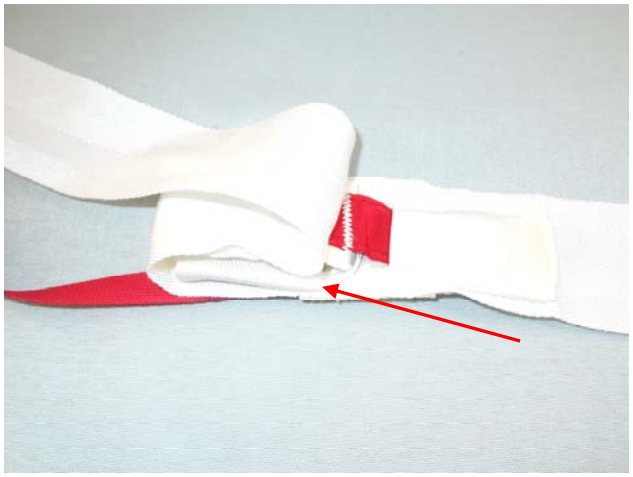




Tuck the stiffened T-III Tab (red) into the tuck flap on top of the Long Pin Channel.



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

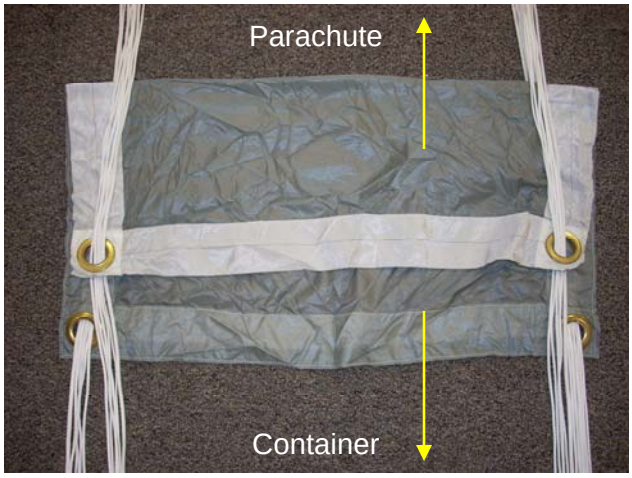
Packing the Main Canopy

7.1 Assembly of Main Canopy.

7.1.1 Main Canopy Line Order.

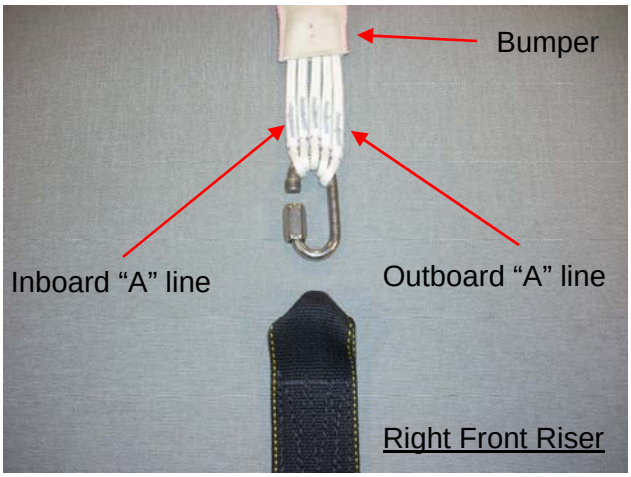
After inspecting the Parachute and the Harness/Container System, hang or lay the parachute out on the ground with the nose section on the ground and the Harness/ Container System oriented face down.

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

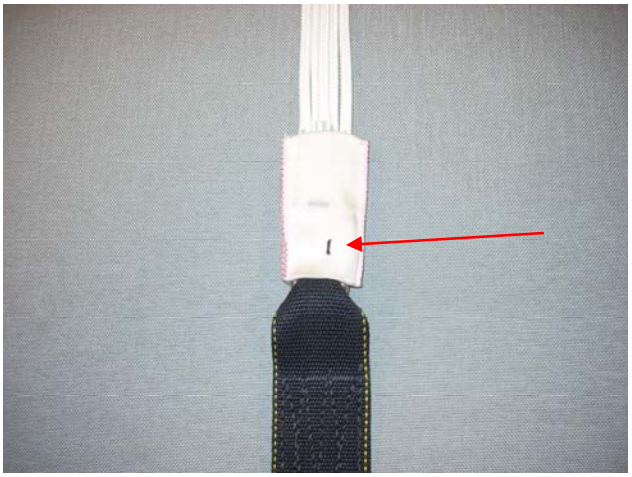


Ensure the slider is correctly oriented; the slider should be longer span-wise than chord-wise, with the reinforcing tape of the slider on the side facing the reserve parachute.

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.

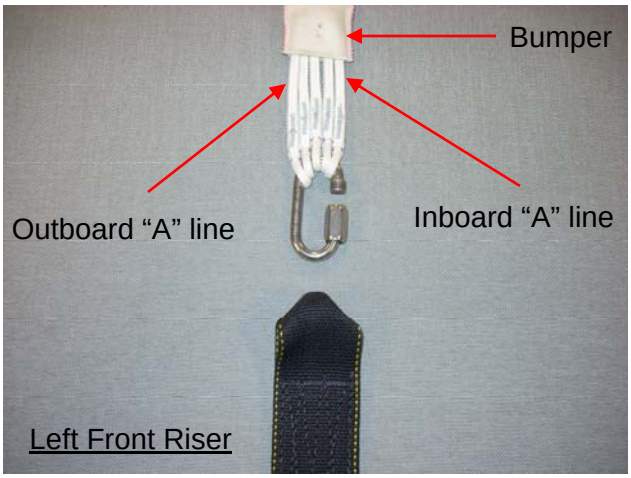


Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Right Front line-set*** onto the end of the ***Right Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.

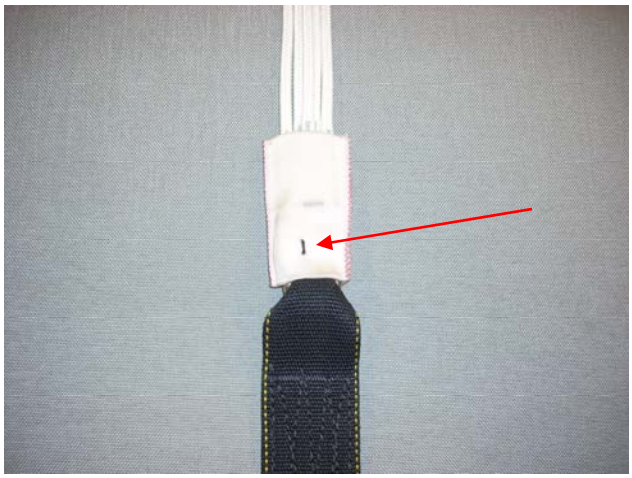


Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

Repeat these steps for the Left Front Riser.



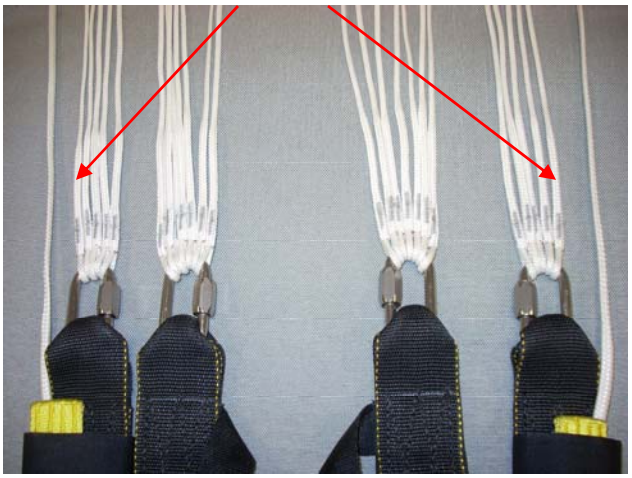
Fold the ends of the risers to narrow the top section. Maintain line continuity and place the link of the ***Left Front line-set*** onto the end of the ***Left Front Riser***. Tighten the barrel finger tight and then an additional ¼ turn with a small wrench until the link is tight.



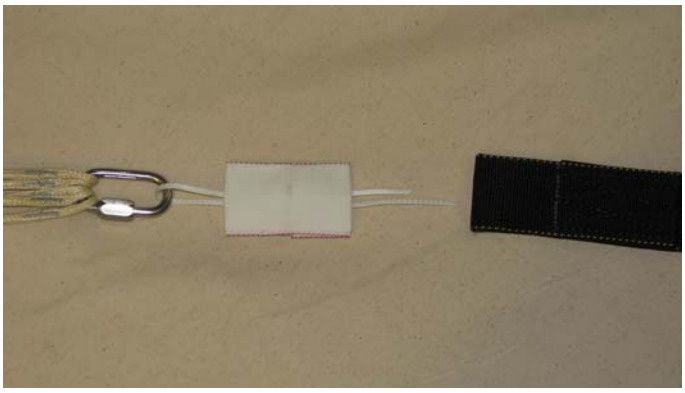
Pull the Bumper down and secure as per the instructions on page 3 of this Chapter.

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

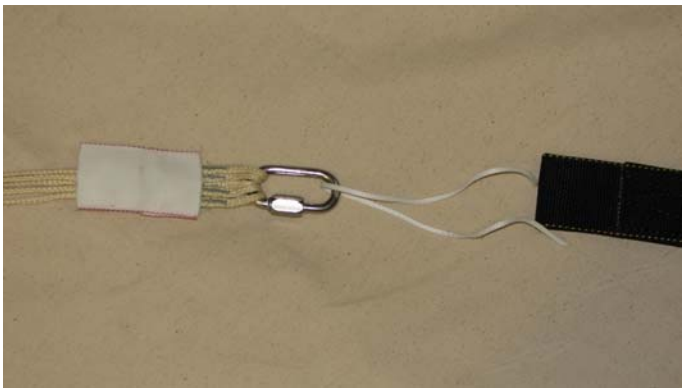
Outboard "C" line



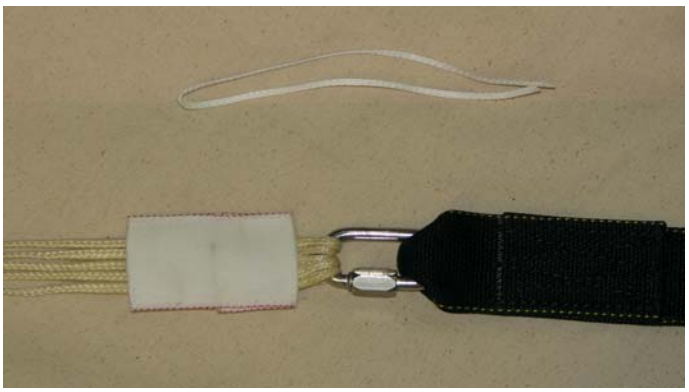
7.1.2 Installing the Bumpers.



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 link.

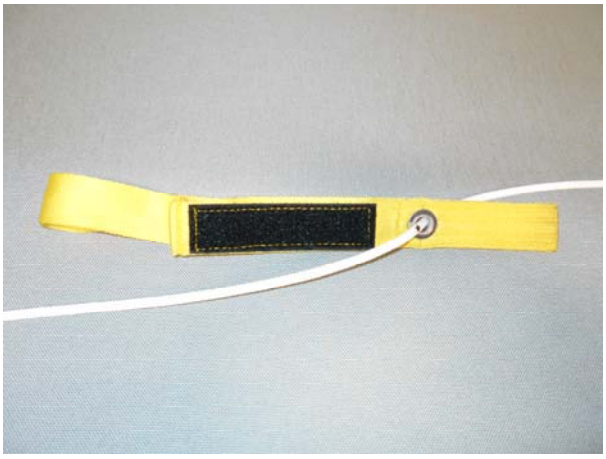


Fold the top of the riser and install the link. Tighten the barrel of the link. Ensure continuity of the line group.

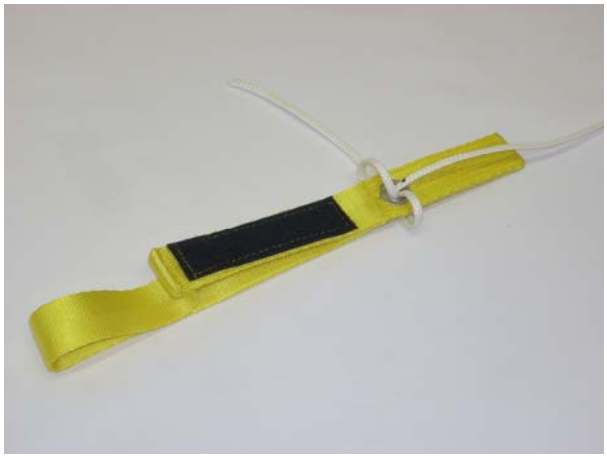
Cinch the bumper over the link and tack into place. The tacking should go through both sides of the bumper and include a Surgeon's knot and locking knot. Once tight, cut the loose ends of the tacking thread.

7.2 Installing the Toggle onto the Control Lines.

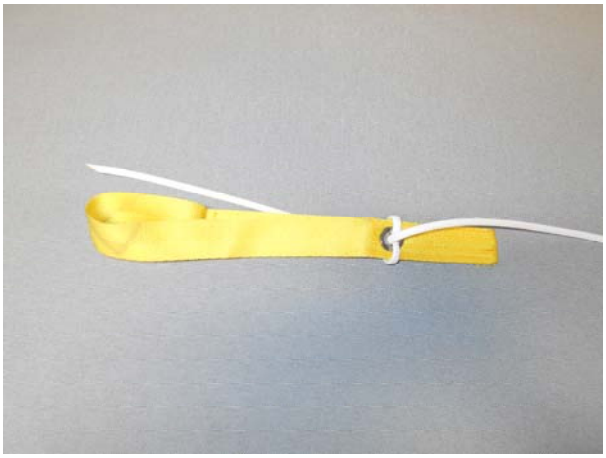
Once the Main Parachute is assembled onto the Main Risers, feed the control line **ONLY** through the appropriate slider grommet and guide ring on the Main Riser and **NOT** the Dacron locking loop.



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.

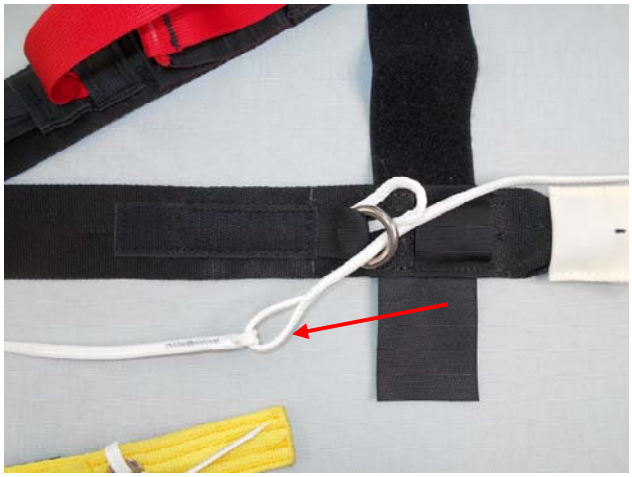
Repeat for the other toggle.

The parachute brakes are now ready to be set.

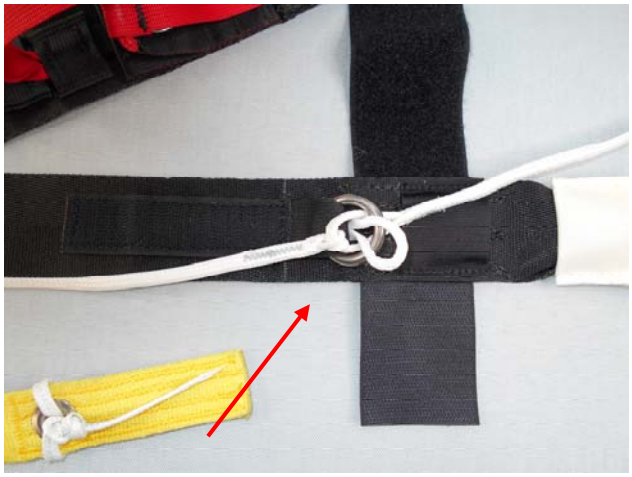
7.3 Setting the Main Canopy Brakes.

After assembling the toggles correctly, (See **Chp.7.2**) Pull the control line so that the "cat's eye" of the control line is just below the guide ring located on the riser.

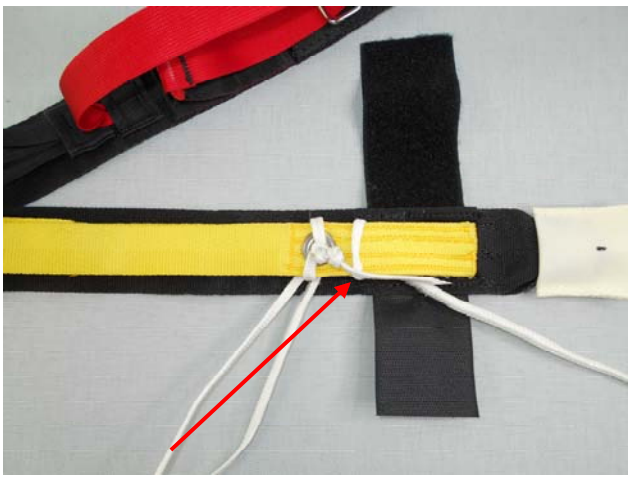
Check to be sure that any twists in the control lines have been removed before proceeding to setting the brakes.



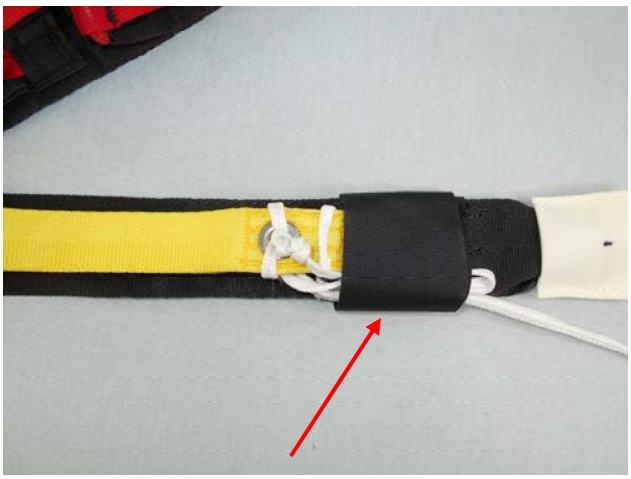
The control line should pass only through the guide ring and **NOT** the Dacron loop located on the riser.



Pull the Dacron locking loop up 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.

Repeat steps for the other brake.

The Main Parachute is ready to be packed.

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.

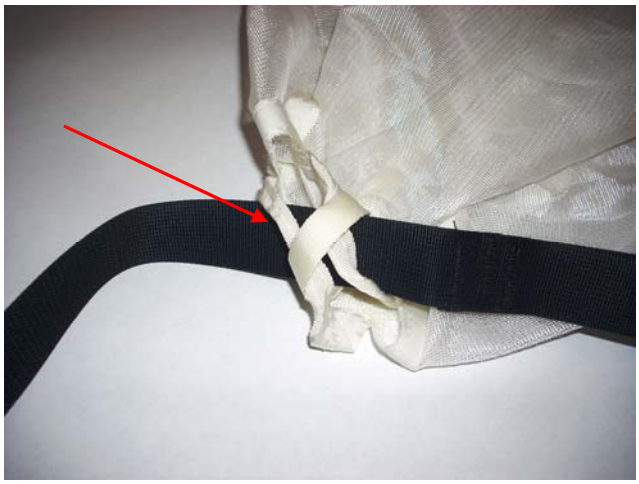
Pass the yellow cable into the T-III channel on the back side of the Main Riser.

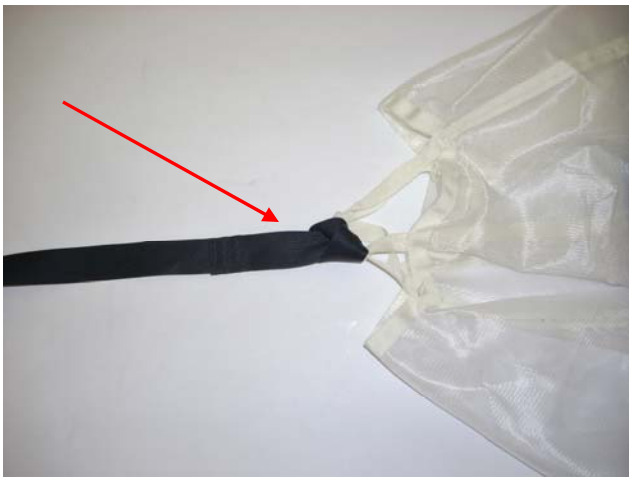
Attach the Release Shackle to the Reserve Static Line (RSL) ring.

7.5 Attaching the Bridle to the Main Pilot Chute.

Pass the smaller loop of the Bridle **(TPDS-LLT-245)** through all of the Pilot Chute **(TPDS-LLT-231)** Loops.

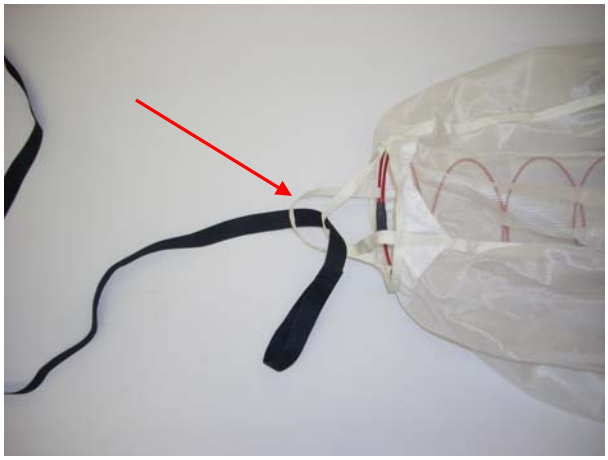
Pass the other end of the Bridle through the small loop.



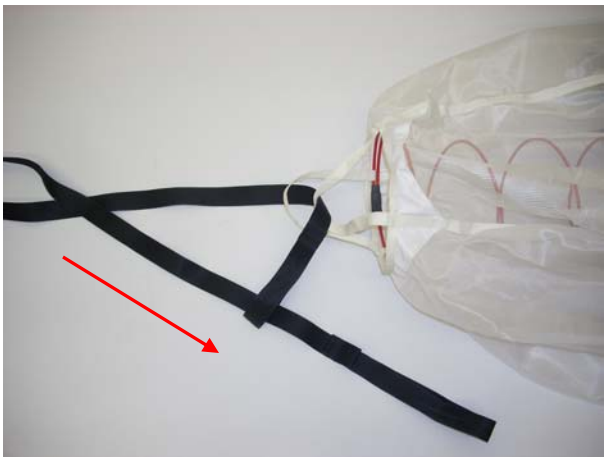


Tighten the Lark's Head Knot formed.

7.6 Attaching the Spring-loaded Pilot-chute to the Bridle.



Pass the smaller loop of the Bridle **(TPDS-LLT-247)** through both loops of the Spring-loaded Pilot Chute **(TPDS-LLT-230)**.



Pass the other end of the Loop of the Bridle through the smaller loop.

Tighten the Lark's Head Knot formed.

7.7 Attaching the Pilot Chute Bridle to the Main Canopy.

When attaching the Bridle to the Main Canopy, the end of the Bridle with the fold-over goes through the grommet of the Deployment Bag from the outside to the inside of the bag.

Pass the Loop of the Bridle through the ring at the center of the Main Canopy.

Pass the entire D-Bag through the Loop.

Continue to pass the pilot-chute through the loop also.

Tighten the Lark's Head Knot formed.

7.8 Flat Pack Method of the Main Parachute.

Before beginning to pack the Main Parachute, have the deployment method set up and ready for the closing of the container. See Chp.8

Read and follow the instructions for stowing the Main Steering Toggles in Chapter 7.3

Place the slider at the connector links.

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. After this and 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.

Fold the leading edge under the A-line group.

Grasp the B-line group under slight tension and fold over the A-line group.

Grasp the C-line group under slight tension and fold over the B-line group.

Grasp the D-line group under slight tension and fold over the C-line group.

Now is a good time to set the brakes.

Bring the slider up from the connector links until it is touching the slider stops and quarter the slider between the slider stops.

Gently squeeze the air out of the canopy.

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

Fold the remaining material on top of the first “S”-fold.

Place one corner of the canopy stack into the Deployment Bag.

Insert the other corner of the canopy into the other corner of the Deployment bag.

With the lines from the center of the folded canopy, Stow the first bight of line in either rubber band through the 2 center grommets.

Allow 1 1/2”-2” of line to extend through each stow.

Continue to stow the lines into the rubber bands either on the top of the Deployment Bag ***or*** on the sides of the Deployment Bag.

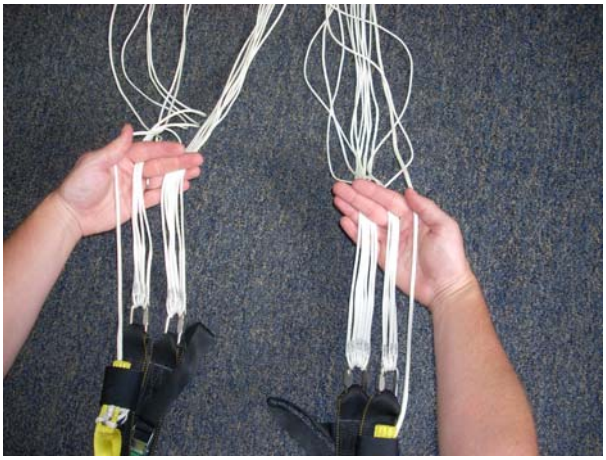
Alternating back and forth until approximately 12” of lines remain.

Follow the instructions in **Chp. 8** for closing the Main Container.

7.9 PRO-Pack Method of the Main Parachute.

Before beginning to pack the Main Parachute, have the Deployment method set up and ready for the closing of the container. See Chp.8

Read and follow the instructions for stowing the Main Steering Toggles in Chapter 7.3.



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.

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 portions in a similar position.

Slowly wrap the tail around the line groups. Begin to roll the tail carefully be sure not to disturb the canopy. 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.

The first “S”-fold should be approximately 1/3 of the canopy material.

Fold the remaining material on top of the first “S”-fold.

Follow instructions next page.

7.10 Inserting Canopy into D-Bag.

With the Kicker Plate facing up place one corner of the canopy stack into the Deployment Bag.

Insert the other corner of the canopy into the other corner of the Deployment Bag.

Bring the lines up through the center of the canopy and out of the Deployment Bag.

Stow the first bight of line into a rubber band brought through one of the center grommets.

Stow the second bight through a rubber band brought through the other center grommet.

Continue stowing the lines, alternating back and forth, until approximately 12”-16” remain.

Chapter 8

Closing the Main Container

8.1. Closing the Riser Covers.

Place the Main Risers on top of the Reserve Riser Covers.

Cover the Main Risers with the inside flap.

Close the outside Riser Cover.

Place the Risers into the tray beside the Reserve Container.

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

8.2 Closing for Direct Bag Static

Begin by attaching the Main D-Bag (TPDS-LLT-271) to the Static-line (TPDS-LLT-264).

Pull the red Type 4 Loop that is attached to the inside of the Main Bag through the grommet.

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

Pass the loop of the Static Line through the red loop of the Main Bag.

Tighten the knot formed.

Pack the Main Canopy using either the Flat Pack method or the PRO Pack method. Follow instructions for placing the canopy into the Deployment Bag. ***Chp. 7.10.***

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

Use a closing loop mounted on the bottom of the Reserve Container.

Pass the pull-up cord through the **Bottom Flap** and pull the closing loop through the grommet.
"S" fold the Static Line on top of the Deployment Bag about 12"-16" or to the plastic covered cables.

Pass the pull-up cord through the **Top Flap** and pull the closing loop through the grommet.

Close the **Right Side Flap**.

Close the **Left Side Flap**.

Insert one of the plastic covered cables through the closing loop then into the channel as shown.

Insert the other plastic covered cable into the channel.

Stow the first bight of the Static Line into the first rubber band of the Right Side.

Stow the second bight of the Static Line into the Left Side rubber band.

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

Stow the remainder of the Static Line into the pocket on the side of the Container.

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

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

Pass the Loop of the Static Line **(TPDS-LLT-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 Main Flap**.

Close the **Right Main Flap.**

Close the **Left Main Flap**.

Insert one of the plastic covered cables through the closing loop then into the channel as shown.

Insert the other plastic covered cable into the channel.

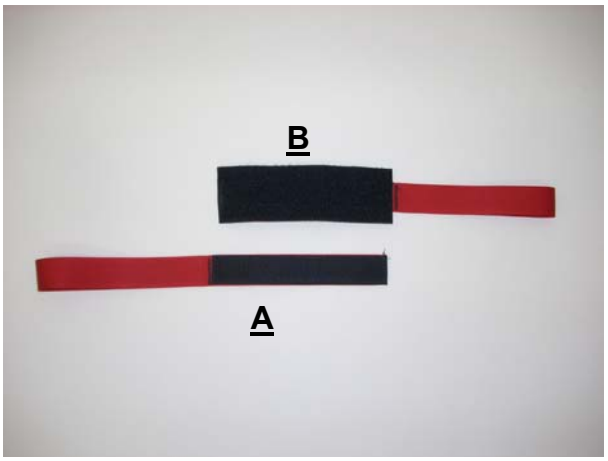
Stow the first bight of the Static-line on the **Right Side**.

Stow the second bight of the Static Line on the **Left Side** of the Container.

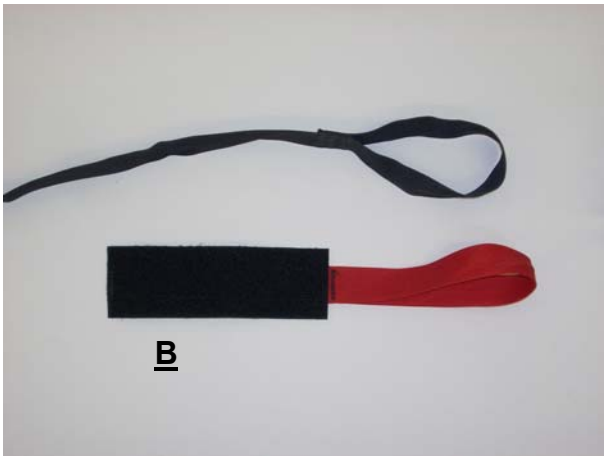
Alternate back and forth leaving about 1 1/2” - 2” in each bight.

Stow the remainder of the Static Line and the Static-line Snap into the pocket on the side of the Container.

8.4 Closing the Main Container for Spring-loaded Pilot Chute Static Line Assist. (TPDS-LLT-242-A) & (TPDS-LLT-242-B)



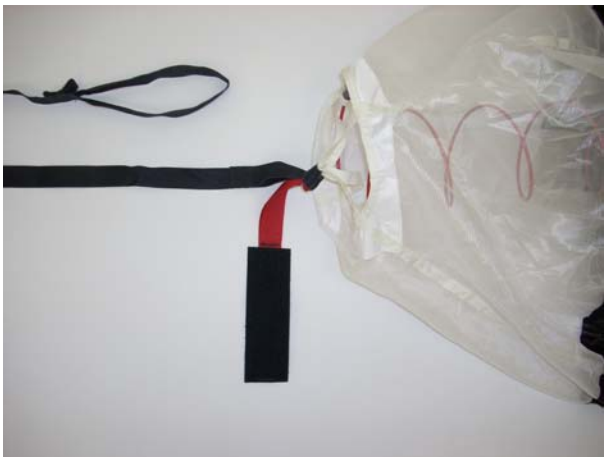
Pictured above are the two (2) parts of the Spring-loaded Pilot Chute Assist Static Line Assembly. **TPDS-LLT-242-A & B**



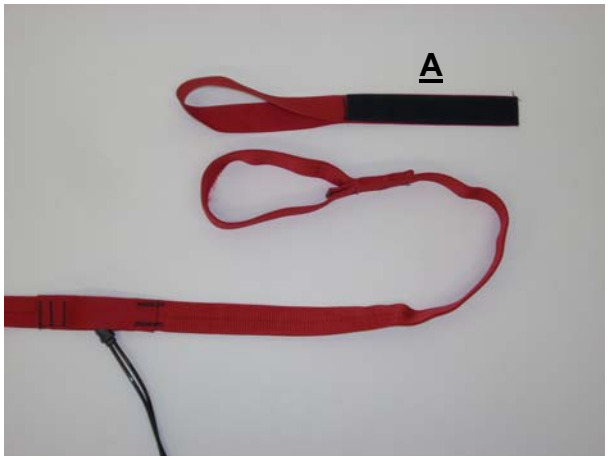
Begin with the Pile Velcro piece and the smaller loop end of the Pilot Chute Bridle.

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.

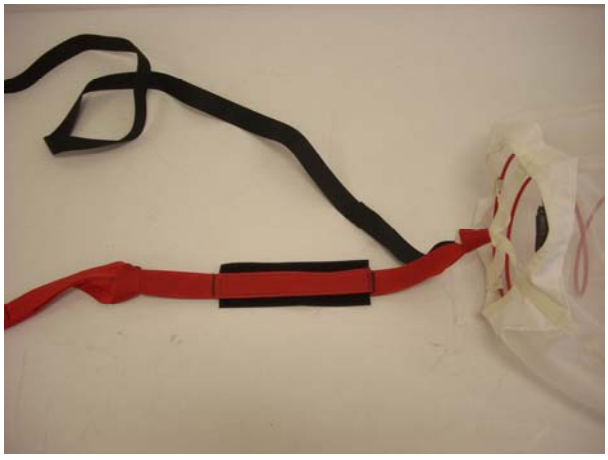


Next take the Hook Velcro part **"A"** and the loop of the Static Line **(TPDS-LLT-265)**.

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-LLT-242** and proceed to close the **LLT** Main Container as follows on the next page.

Pack the Main Canopy using either the Flat Pack method or the PRO Pack method.

Follow the Instructions for placing the canopy into the Deployment Bag. ***Chp. 7.10***

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

Use a short closing loop mounted to the Main Container **Bottom** Flap.

"S"-fold the Pilot Chute Bridle on top of the Deployment Bag. "S"-fold the Static Line Bridle to the black cables on top of the Pilot Chute Bridle. Lay the **TPDS-LLT-242** on top of the Pilot Chute Bridle "S" folds.

While compressing the Main Pilot Chute be sure to keep the mesh out of the spring.

With the short closing loop mounted to the bottom flap, cover the Pilot-chute with the Bottom Flap.

Close the **Top Flap**.

Close the **Right Side Flap**.

Close the **Left Side Flap**.

Insert one of the plastic covered cables through the closing loop then into the channel as shown.

Insert the other plastic covered cable into the channel.

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

Stow the second bight of the Static Line on the Left Side of the Container.

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

Stow the Static-line Snap into the pocket on the side of the container.

TPDS **LLT** ready for the Mission.

8.5 Closing the Main Container for Throw-out Pilot Chute.

Tuck the Risers along the Reserve tray.

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

Using a closing loop on the bottom of the Reserve Container, pass the closing loop through the **Bottom Main Flap**.

Close the **Top Main Flap.**

Close the **Right Side Flap.**

Close the **Left Main Flap.**

Insert the curved closing pin into the closing loop. Be sure that the bridle is coming from the top right, over the Right Side Flap and then is tucked under the lower part of the Right Side Flap.

Follow the Instructions in **Chp. 8.6** for folding and stowing the Throw-out Pilot Chute.

8.6 Folding the Throw-out Pilot Chute.

Begin laying out the Pilot Chute flat.

“S” fold the bridle on top of the canopy.

Fold the Pilot Chute in half.

Fold the canopy into a 3rd.

Fold in half again.

Fold the canopy into a 3rd again.

Roll the Pilot Chute into a tube.

Place the Pilot Chute into the Pouch on the Bottom of the Container.

CAUTION: IF USING A COLLAPSIBLE PILOT CHUTE, BE SURE TO "COCK" IT BEFORE FOLDING.

TPDS **LLT** ready for the Mission.

8.7 Closing the Main Container with a Ripcord Assembly.

Before starting:

Insert the Black Cable of the Main Ripcord into the Main Ripcord Housing located on the right side of the Bottom of the Main Container <u>OR</u> on the Right Main Lift Webbing.

RIGHT BOTTOM OF CONTAINER

RIGHT MAIN LIFT WEBBING

"S"-fold the Pilot-chute Bridle on top of the launching pad of the Deployment Bag.

Compress the Pilot-chute Spring on top of the "S"-folded bridle.

Keep the mesh out of the spring but the F -111 may be folded in with the spring.

Using a short closing loop placed in the Bottom Closing Flap, close the **Bottom Flap**.

Close the **Top Flap.**

Close the **Right Side Flap**.

Close the **Left Side Flap.**

Insert the Plastic Covered Cable of the Ripcord through the closing loop then into the channel as shown.

TPDS LLT Ready for the Mission.

8.8 Closing the Main Container for AFF Left Side Jumpmaster Handle (TPDS-LLT-267) with T/O Pilot-Chute.

Follow the Instructions to Assemble the AFF Left Side Main Deployment Handle for T/O Pilot Chute in Chp. 4.

Pictured above is the TPDS LLT Container with the optional AFF Left Side Main Deployment Handle **(TPDS-LLT-267)** for Throw-out Pilot Chute.

Follow the Instructions for placing the Deployment Bag into the Main Container and closing the Main Container in Chp. 8.

Placing the Throw-out Pilot Chute into the AFF Left Side Jumpmaster Pouch is the same as a Standard Bottom of Container Pouch. See Chp. 8.

Once Assembled, the AFF Left Side Jumpmaster Handle and Pocket function as a regular BOC.

8.9 Closing the Main Container with a Ripcord Assembly and the Optional AFF Jumpmaster's Handle. (TPDS-LLT-266)

Before starting:

Assemble the AFF Jumpmaster's Handle according to the Instructions. Pg. 5.

Insert the Black Cable of the Main Ripcord into the Main Ripcord Housing located on the right side of the Bottom of the Main Container <u>OR</u> on the Right Main Lift Webbing.

Close the Flaps per the Instructions on pg. 8.

Pass the Ripcord Cable through the Loop of the AFF Jumpmaster's Handle **(TPDS-LLT-266)**.

Pass the Ripcord Cable through the Closing Loop.

Continue to pass the Ripcord Cable into the channel on the Left Side Flap.

Close the Main Cover Flap.


TPDS

Chapter 9

Donning the LLT

IMPORTANT:

Inspect the complete system before donning the *TPDS* Light Load Tactical (LLT).

The series of ***TPDS*** containers are designed to fit snugly, yet comfortably, when properly adjusted. A harness that is either too small or too large for the jumper's body can affect safety and comfort during a parachute jump.

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.

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.

CAUTION: AN IMPROPERLY THREADED CHEST STRAP WILL NOT HOLD THE JUMPER IN THE HARNESS.

Optional Belly-band

Optional Belly-band -

Thread the Belly-band Strap through the friction adapter. Snug up the Belly-band 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.

Chapter 10

Operation of the LLT Harness / Container System

10.1 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.

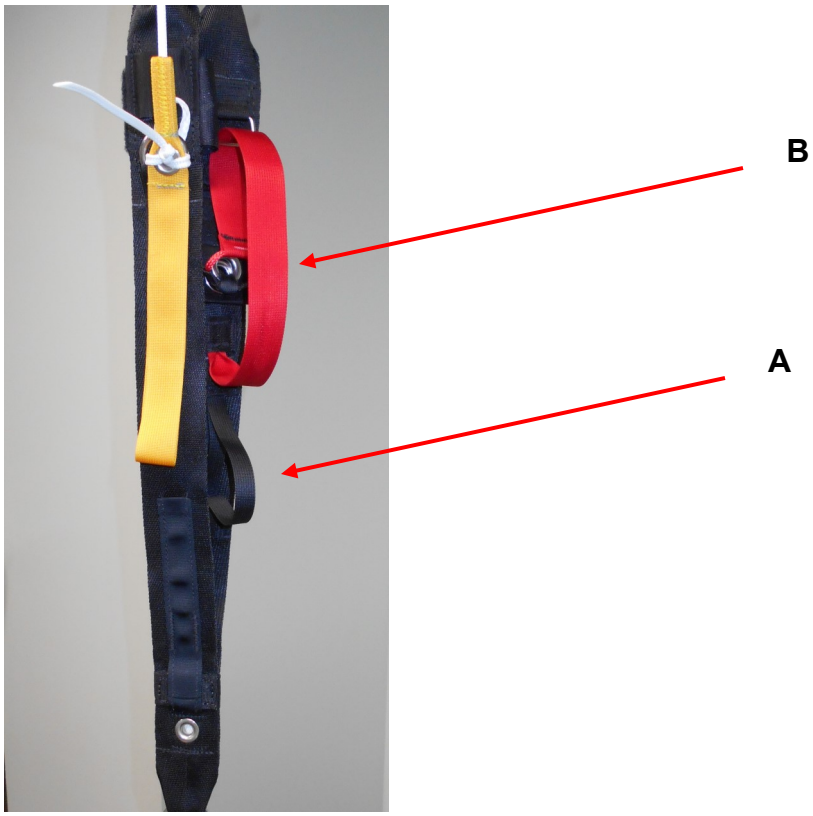
10.2 Reserve Parachute Deployment.

There are three (3) styles of Reserve Ripcord Handles, one (1) metal "D" shaped, a "pillow" and a loop style. All are secured with the use of Velcro.

To deploy the Reserve Parachute, locate the **Reserve Parachute Ripcord Handle** on the **Left** Main Lift Webbing.

To pull the handle, the handle should be grasped firmly in hand and "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.

10.3 Front Riser Trim Tabs.



In order to fly the Main Parachute in a steeper angle the use of the **Front Riser Trim Tabs** may be used.

This is accomplished by pulling the black loops (**A**) located on the Front Risers down.

To release the Front Riser Trim Tabs pull down on the red loops (**B**).

10.4 Optional Oxygen Bottle Holder.

The **Light Load Tactical (LLT)** Harness and Container can be used with an optional Oxygen Bottle. Pictured below is the 1 or 2 liter O2 Bottle **(TPDS-LLT-287)** Holder. It can be configured for either a 1 liter O2 bottle or a 2 liter O2 bottle.

Simply unfold the neck of the holder for the larger 2 liter bottle.

The TPDS-LLT-287 Oxygen Bottle with the two (2) attachment straps included.

To assemble the O2 bottle holder place the oxygen bottle into the sleeve and pull the draw-string tight to close the neck of the holder.

After pulling the drawstring tight, twist it to tighten the holder around the neck of the Oxygen bottle.

Snap the push snap closed.

Assemble is complete.

Place the drawstring over the snap holder.

10.5 Securing the Oxygen Bottle Holder to the LLT Harness/ Container.

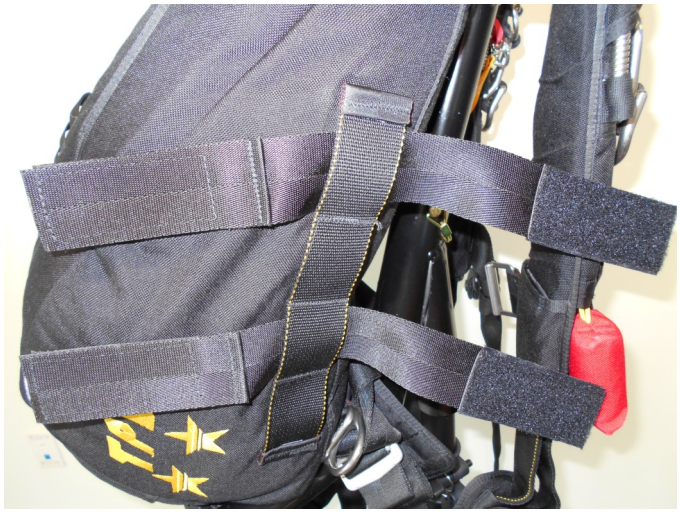
Depending on the size of the Oxygen Bottle and the size of the jumper and LLT Container/ Harness, placement of the Oxygen Bottle Holder can be attached to the any of several different positions.

Position will be determined by these factors.

For these Instructions the top slot of the Container/Harness and the top slot of the Oxygen Bottle Holder are used.

Pass the Pile end of the Bottle Holder through the top slot on the LLT Harness/ Container.

Skip a slot and pass the other Attachment Strap, Pile end first through the slot.



Should look like this.

Pass the Pile end of the Attachment Strap through the top slot on the Oxygen Holder.

Spread the Hook Velcro then Mate the Hook and Pile Velcro.

Spread the Hook Velcro then Mate the Hook and Pile Velcro.

Skip a slot on the Oxygen Holder and pass the Pile end of the other Attachment Strap through it.

Should look like this.

Chapter 11

Replacement Parts

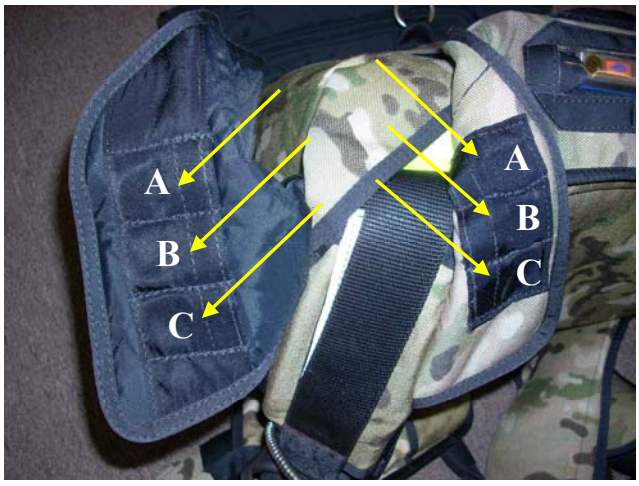
11.1 Replacing the Magnets in the Riser Covers.

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.

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

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

Shown above are the three (3) magnet pockets.
The magnets are held in place with Velcro. Slide them out to replace them.



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

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.

11.12 Replacing the Floating RSL with Mini Ring. (TPDS-LLT-222)

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

From the inside of the Left Riser pass the end loop of the **TPDS-LLT-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-LLT-222**) installed.

Chapter 12

Parts List
Light Load Tactical (LLT)

PART #	Manufactured Parts
TPDS-LLT-100	Reserve Pilot Chute
TPDS-LLT-101	Reserve Free Bag and Bridle, specify size
TPDS-LLT-102	Reserve Free Bag and Bridle w/**Reserve Boost** Modification
TPDS-LLT-103	Reserve Pilot Chute Cap, specify color & material type
TPDS-LLT-105	Reserve Static Line, **(RSL)** w/Release Clasp and MARD
TPDS-LLT-106	Reserve Static Line Extension for **Reserve Boost** Modification
TPDS-LLT-108	Reserve Ripcord Assembly **(Bent Metal) (in-board)** specify cable length
TPDS-LLT-109	Reserve Ripcord Assembly **(Bent Metal) (out-board)** specify cable length
TPDS-LLT-110	Reserve Ripcord Assembly **(Pillow type) (in-board)** specify color & length
TPDS-LLT-111	Reserve Ripcord Assembly (**Pillow type) (out-board)** specify color & cable length
TPDS-LLT-112	Reserve Ripcord Assembly **(Loop style) (in-board)** specify color, & cable length
TPDS-LLT-113	Reserve Ripcord Assembly (**Loop style) (out board)** specify color & cable length
TPDS-LLT-114	Reserve Ripcord Assembly (Bent metal) (in-board) w/**FXC** cable extension)

TPDS-LLT-115	Reserve Ripcord Assembly (Bent metal) (out-board) w/**FXC** cable extension)
TPDS-LLT-116	Reserve Closing Loop
TPDS-LLT-117	Reserve Toggles (military type) (Pair)
TPDS-LLT-119	Safety Stow Loop, Reserve Freebag
TPDS-LLT-202	Main Risers – Type 7, (specify color and length)
TPDS-LLT-204	Main Risers – Type 8, (specify color, length, ring type and size)
TPDS-LLT-206	Main Risers – Type 8 **CReW**, (specify color, length, ring type and size)
TPDS-LLT-207	Main Risers- Type 8 **Accuracy** (specify color, length, ring type and size)
TPDS-LLT-215	Main Toggles – Military Style (Pair) (specify color)
TPDS-LLT-221	HAHO Toggle Extensions (Pair)
TPDS-LLT-222	Floating RSL with Mini Ring
TPDS-LLT-230	Main Spring-loaded Pilot Chute
TPDS-LLT-231	Main Throw-out Pilot Chute w/plastic handle (specify size, color)
TPDS-LLT-232	Main Throw-out Pilot Chute w/Hacky (specify colors, size)
TPDS-LLT-233	Main Throw-out P/C Collapsible w/Hacky Handle (specify size and colors)
TPDS-LLT-236	Main Pull-out Handle with Pin Lanyard (specify color)
TPDS-LLT-237	Main Closing Pin- Curved

TPDS-LLT-238	Main Closing Pin- Straight
TPDS-LLT-241	**Static Line Assist** Pouch – T/O P/C
TPDS-LLT-242-A	Spring-loaded P/C **Static Line Assist** (Hook)
TPDS-LLT-242-B	Spring-loaded P/C **Static Line Assist** (Pile)
TPDS-LLT-245	Main Throw-out Bridle
TPDS-LLT-246	Main Throw-out Collapsible Bridle
TPDS-LLT-247	Main Spring-loaded P/C Bridle
TPDS-LLT-248	Main Pull-Out Bridle
TPDS-LLT-249	Main Pull-Out Collapsible Bridle
TPDS-LLT-250	Main Release Handle – **Pillow** – **In-board** (specify color)
TPDS-LLT-251	Main Release Handle – **Pillow** – **Out-board** (specify color)
TPDS-LLT-252	Main Release Handle – **Loop- In-board** (specify color)
TPDS-LLT-253	Main Release Handle – **Loop- Out-board** (specify color)
TPDS-LLT-254	Main Ripcord, Metal Bent, **In-board** (specify length and cable type)
TPDS-LLT-255	Main Ripcord, Metal Bent, **Out-board** (specify length and cable type)
TPDS-LLT-256	Main Ripcord, Plastic Handle - BOC
TPDS-LLT-257	Main Ripcord, Bent Metal, **AAD Extented Cable**
TPDS-LLT-258	Main Ripcord, Loop, **Out-board** (specify color and length)
TPDS-LLT-259	Main Ripcord, Plastic Handle -Hip
TPDS-LLT-264	Main Static Line w/Snap (specify length)

TPDS-LLT-265	Main Static Line w/Snap and Black Cables (specify line length)
TPDS-LLT-266	AFF Left Side JM Handle for **Ripcord**
TPDS-LLT-267	AFF Left Side JM Handle for **T/O Pilot Chute**
TPDS-LLT-270	Main Deployment Bag (specify size and color)
TPDS-LLT-271	Main Deployment Bag w/Kicker Plate (specify size and color)
TPDS-LLT-272	Main Deployment Bag Direct Bag S/L (specify size and color)
TPDS-LLT-275	Main Closing Loop, Type II-A
TPDS-LLT-278	Separable Belly Band (Type 7) (specify color)
TPDS-LLT-279	Separable Belly Band Pads (specify color)
TPDS-LLT-280	Optional Separable Belly Band (Type 8) (specify color)
TPDS-LLT-282	Removable Side Panel **Left** (specify color)
TPDS-LLT-283	Removable Side Panel **Right** (specify color)
TPDS-LLT-284	Removable Side Panel **Right for FF2 AAD**
TPDS-LLT-285	Removable Seat Sling (specify color)
TPDS-LLT-286	Oxygen Bottle Jump Bag- Padded (standard or large)
TPDS-LLT-287	Oxygen Bottle Jump Bag- Draw-String
TPDS-LLT-288	Hook Knife w/Pocket (specify pocket color)
TPDS-LLT-289	Jack the Ripper Knife and Pocket (specify pocket color)
TPDS-LLT-290	Magnets (Box)
TPDS-LLT-291	Rapide Links Stainless Steel #3 ½ (Box)
TPDS-LLT-292	Rapide Links Stainless Steel #4 (Box)

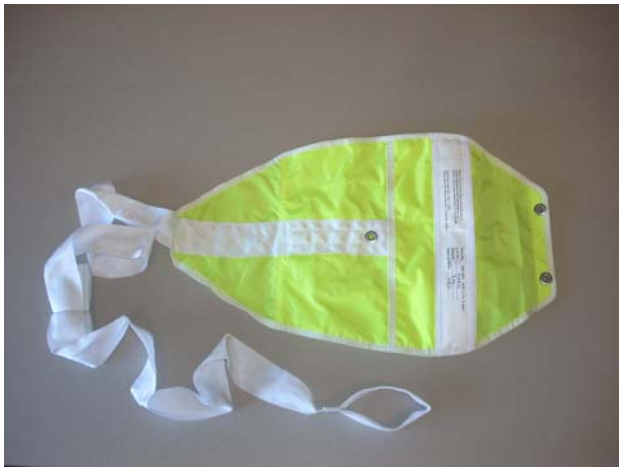
TPDS-LLT-293	Rapide Links Stainless Steel #5 (Box)
TPDS-LLT-294	Rubber Bands (Tandem) (Box)
TPDS-LLT-295	Rubber Bands (Large) (Box)
TPDS-LLT-296	Rubber Bands (Small) (Box)
TPDS-LLT-297	Elastic Strap Keepers (Dozen)
TPDS-LLT-298	Elastic Keeper w/Snap
TPDS-LLT-299	Benny Helmet Liner (specify size and color)
TPDS-LLT-320	2000 lbs. Spectra Line Soft Links
TPDS-LLT-330	Main Container Closing Pin only
TPDS-LLT-340	Replaceable Ballistic Reinforced Leg Pads (Pair)
TPDS-LLT-350	Replaceable Reserve Pin Window
TPDS-LLT-402	Static Line Safety Pin and Lanyard
TPDS-LLT-500	Reserve Parachute Soft Links
TPDS-LLT-600-A, B, or C	Gear Bag Standard, Large, Extra Large
TPDS-LLT-700	**Light Load Tactical (LLT) Manual**
TPDS-LLT-705	Reserve Parachute Registration Card
TPDS-LLT-800	Main Parachute- Steering Line Set (specify canopy name and size)
TPDS-LLT-801	Main Parachute- Suspension Line Set (specify canopy name & size)

TPDS-LLT-802	Reserve Parachute- Steering Line Set (specify canopy name & size)
TPDS-LLT-803	Reserve Parachute- Suspension Line Set (specify canopy name & size)
TPDS-LLT-810	Main Parachute Slider- (specify canopy name and size)
TPDS-LLT-811	Reserve Parachute Slider- (specify canopy name and size)
TPDS-900	Thermal Double Zippered Jumpsuit (specify size and color)
TPDS-901	Double Zippered Jumpsuit (specify size and color)
TPDS-1000	Advanced Mechanical Closing Device
TPDS-1100	LLT Training Harness
TPDS-RRH-800	Rapid Release Harness
TPDS-RRH-112	RRH Drop-Line Assembly
TPDS-860-200	Personal Cargo Drop Harness

Chapter 13

Spare Parts

TPDS-LLT-100 Reserve Pilot Chute

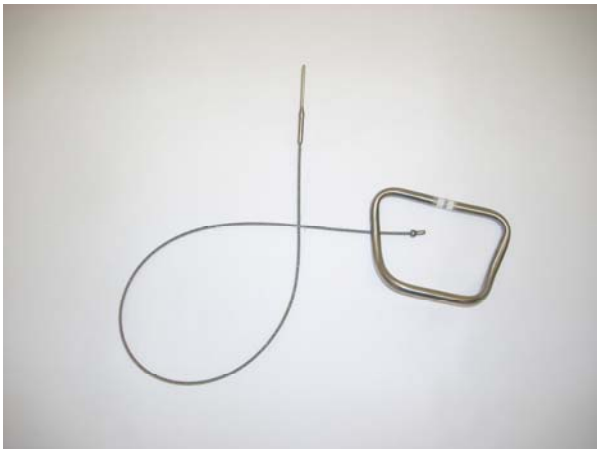


TPDS-LLT-101 Reserve Free-bag w/ Bridle

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

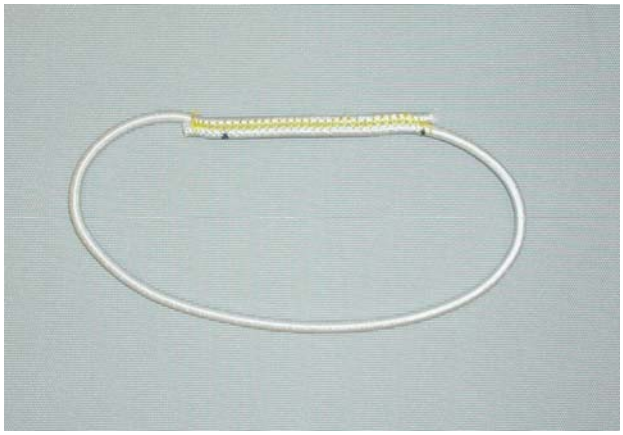
TPDS-LLT-103 Reserve Pilot Chute Cap

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



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

TPDS-LLT-117 Reserve Toggles (Pair)



TPDS-LLT-119 Reserve Safety Stow

TPDS-LLT-204 Main Risers Type VIII- 2”

TPDS-LLT-215 Main Toggles (Pair)
Military Style

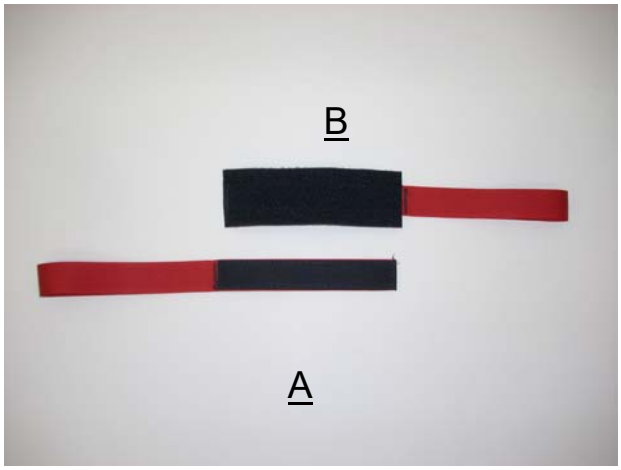
TPDS-LLT-222 Floating RSL w/ Mini Ring

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

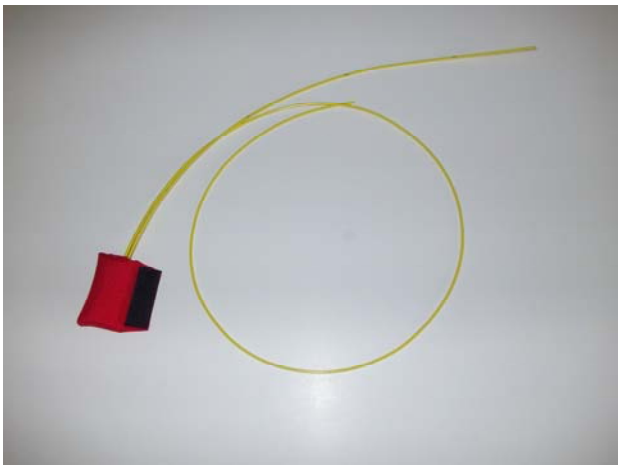
TPDS-LLT-230 Main Spring-loaded Pilot Chute

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

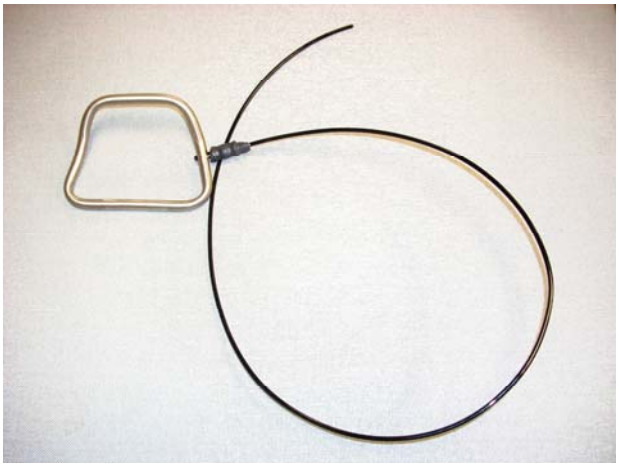
TPDS-LLT-241 Main T/O P/C Static-Line Assist Pouch



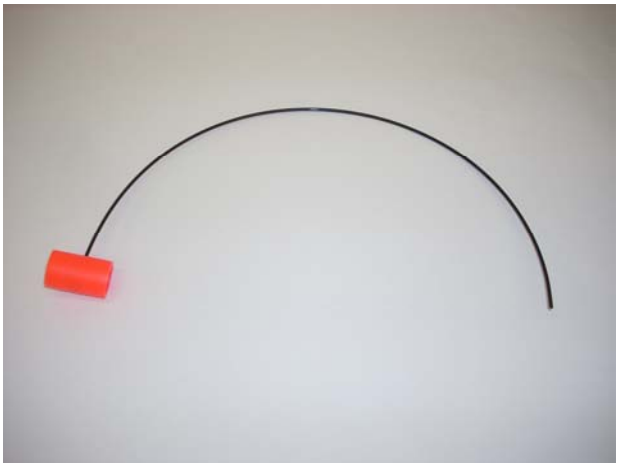
TPDS-LLT-242-A Hook Main Spring P/C
TPDS-LLT-242-B Pile **Static Line Assist**



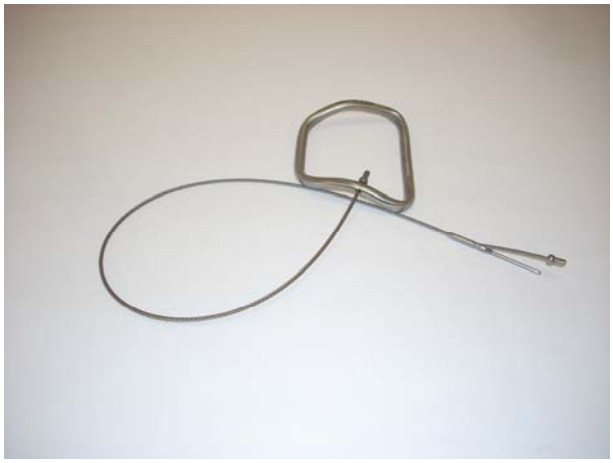
TPDS-LLT-251 Main Release Handle Pillow / Out-board



TPDS-LLT-255 Main Ripcord Handle Bent Metal- Out-board



TPDS-LLT-256 Main Ripcord Handle / BOC



TPDS-LLT-257 Main Ripcord Handle Bent Metal w/ AAD Extended Cable

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

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

TPDS-LLT-266 AFF Left Side JM Handle for Ripcord

TPDS-LLT-267 AFF Left Side JM Handle for Throw-out P/C

TPDS-LLT-270 Main Deployment Bag

TPDS-LLT-280 Optional T-8 Belly-Band

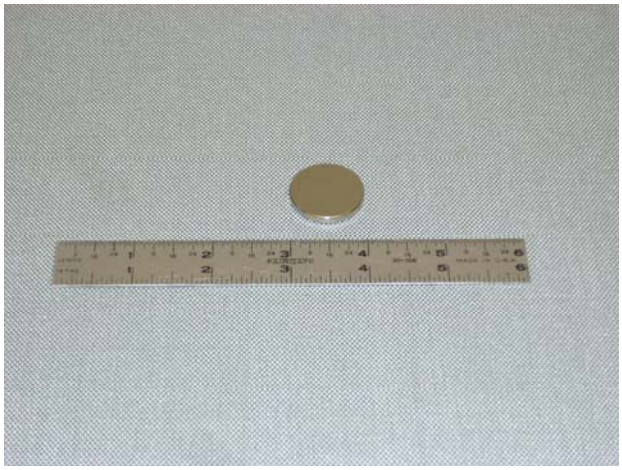
TPDS-LLT-271 Main Deployment Bag w/ Pilot Chute Kicker Plate

TPDS-LLT-286 Oxygen Jump Bottle Bag– Padded

TPDS-LLT-272 Main Deployment Bag, Direct Bag, Static Line

TPDS-LLT- 287 Oxygen Jump Bottle Bag w/ Drawstring

TPDS-LLT-288 Hook Knife w/ Pocket



TPDS-LLT-290 Magnets (Sets of 12)

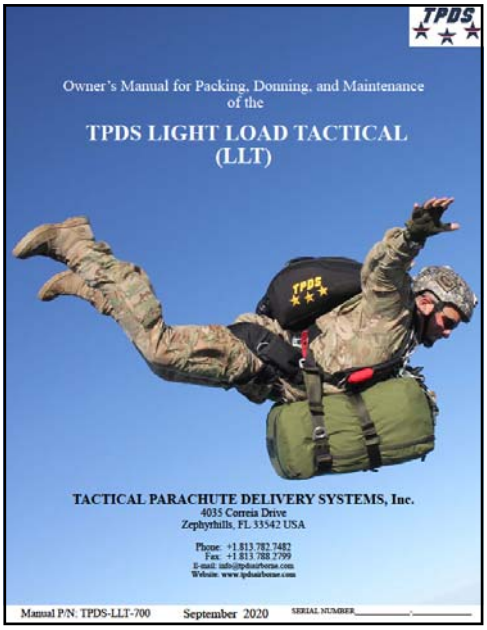
TPDS-RRH-800 Rapid Release Harness (RRH-800)

TPDS-RRH-112
Drop-Line Assembly

TPDS-LLT-600 Military Gear Bag– Standard, Large or Ex-Large

TPDS-900 Thermal Double Zippered Jumpsuit

TPDS-901 Double Zippered Jumpsuit



TPDS-LLT-700 LLT Manual

TPDS-LLT-1100 LLT Training Harness

Chapter 14

Care and Maintenance

14.1 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 should be taken to control pests and rodents and unfavorable climatic conditions.

14.2 Water Contamination Guidelines

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

14.3 15 Year Maximum Life Limitations

15 year Maximum Life Limitations for *TPDS* Light Load Tactical (LLT).

Without further limitations, each ***TPDS*** **Canopy** has a maximum life limitation of **15 years** from the date of manufacture.

Further limitations include:

	Reserve	Main	Harness/Container
Service Life Limitation:	15 years	15 years	15 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 disposed of 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.

14.4 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 Federal Aviation Administration **(FAA)** approved Quality Control System for parachutes produced under **FAA TSO C-23d.**

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.

Chapter 15

Repairs

15.1 Repair Guidelines

Stitching and re-stitching 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.

15.2 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 are 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: