

TACTICAL PARACHUTE DELIVERY SYSTEMS, Inc.

HEAVY LOAD TACTICAL (HLT) BROCHURE



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HEAVY LOAD TACTICAL

Airborne Harness/Container System

The **Heavy Load Tactical** is a complete assembly of military equipment manufactured to the highest standards using the best **Military Specification** materials available in today's market. The **HLT** is manufactured in the United States in a facility that is Federal Aviation Administration (**FAA**) certified for manufacturing parachute equipment.

The **Heavy Load Tactical** is designed for HALO-HAHO operations and training with a single operator carrying full combat equipment and bundles or two individuals with or without the use of a drogue pilot chute.

The **Heavy Load Tactical** consists of a **Main Container** with a choice of Zero Porosity main parachutes and a **Reserve Container** with a choice of F-111 reserve parachutes.

The **Heavy Load Tactical** may be set up for **Static Line** or **Freefall** with or without a drogue pilot chute.

Main Container Capabilities and Features:

Physical Specifications:

Materials:

Container-	1000 Denier Nylon Cordura
Deployment Bag-	1000 Denier Nylon Cordura

Webbing:

Main Lift Webbing-

1 23/32" (4.3 cm.) wide Type 7 Mil-W-4088

Tensile Strength **6000 lbs. / 2721 kg.**

Main Risers-

1 23/32" (4.3 cm.) wide Type 7 Mil-W-4088

Tensile Strength **6000 lbs. / 2721 kg.**

Reserve Risers-

1 23/32" (4.3 cm.) wide Type 13 Mil-W-4088

Tensile Strength **7000 lbs. / 3175 kg.**

Leg Straps-

1 23/32" (4.3 cm.) wide Type 7 Mil-W-4088

Tensile Strength **6000 lbs. / 2721 kg.**

Chest Strap-

1 23/32" (4.3 cm.) wide Type 8 Mil-W-4088

Tensile Strength **4000 lbs. / 1814 kg.**

Laterals-

1 23/32" (4.3 cm.) wide Type 8 Mil-W-4088

Tensile Strength **4000 lbs. / 1814 kg.**

Materials cond.:

Hardware:

Main Canopy Release System-

3-Ring Release System

Tensile Strength 5000 lbs. / 2270 kg.

Main Lift Webbing Adjusters-

Quick Fit Ring w/Friction Lock #555-2

Tensile Strength 2500 lbs. / 1130 kg.

Lateral Adjusters-

Locking Adapter PS 70124-1

Tensile Strength 2500 lbs. / 1130 kg.

Chest Strap Hardware-

B-12 PS 22044-1 / PS 22017 Quick Ejector or
PS22040 with "V" Ring Quick Fit Bar PS 27765

Tensile Strength 2500 lbs. / 1130 kg.

Leg Strap Hardware-

B-12 PS 22044-1 / PS 22017 Quick Ejector or
PS22040 with "V" Ring Quick Fit Bar PS 27765

Tensile Strength 2500 lbs. / 1130 kg.

Top Connector Point-

"D" Ring PS 22046-1

Tensile Strength 2500 lbs. / 1130 kg.

Lower Connector Point-

No. 8 Harness Ring

Tensile Strength 5000 lbs. / 2270 kg.

Static Line Snap Hook

Tensile Strength 2500 lbs. / 1130 kg.

Grommets

Tensile Strength 1750 lbs. / 800 kg.

#0 Stainless Steel

Size:

Container -

24" high x 16" wide x 11" deep

61 cm. x 41 cm. x 28 cm.

Weight:

Container (without canopies) -

20 lbs. (9 kg.)

Fabric Colors:

Black, Smoke, Desert Camouflage, Woodland Camouflage, Multi-Camouflage, Olive Drab Green and others upon request.

Harness Colors:

Black, Smoke, Silver, Olive Drab Green and others upon request.



Product Information

Special Features

- Reserve Container and all pertaining parts are tested under **TSO C23d**.
- Bridle and Riser cover protection - Zero exposed riser or main drogue bridle exposure ensures proper function in any manner of orientation or use.
- Reserve Static Line (**RSL**) - A lanyard connecting the left main riser and reserve ripcord cable which allows minimum altitude loss on the reserve opening during the event of a main canopy cutaway.
- **“Reserve Boost”** - Main Assisted Reserve Deployment (**M.A.R.D.**) System. The fastest system available.
- Adjustable Harness - the **TPDS (HLT)** main container lift webbing and laterals are available with adjusting hardware.
- Cut-in Laterals for added comfort and fit.
- Type-13 Reserve Risers for added safety.
- Comfortable Yoke and Leg Padding for long wear and heavy payloads .
- Dual Loop Main Steering Toggles for assisted canopy flight training.
- Left and Right Hacky Drogue Release Handles for better grip and familiarity.

Field Replaceable Parts for Easy Maintenance

- Anti-Line Twist Main Deployment Bag.
- Drogue Kill Line, 2000 lbs. HMA.
- Type 8 Drogue Riser w/ Mini 3-Ring System.
- Magnets in Riser Covers and Drogue Handle.
- Leg Pads with Reinforced Ballistic Cloth.
- Main Closing Pin.
- RSL Clasp and Lanyard.
- Drogue Release Lanyards.
- Drogue Release Pin and Elastic.
- Drogue Release Hacky Handles.

Product Information

Container Options

- Adjustable Main Lift Webbing.
- Adjustable Laterals.
- Pillow or Loop Style Main Canopy Release Handle.
- Bent Metal Style Reserve Handle, Loop or Pillow Style Handle.
- Custom 1000 Denier colors.

Deployment Options

All-In-One

The **TPDS-HLT** Heavy Load Tactical Airborne Harness/Container is a versatile combat/training Parachute Assembly with the ability to be converted to any one of several Deployment Methods quickly and easily.

- Drogue Freefall with two (2) release handles.
- Static Line Drogue.
- Throw-out Pilot Chute.
- Static Line with Throw-out Pilot Chute Assist.
- Direct Bag Static Line.
- Spring-Loaded Ripcord.
- Spring-loaded Pilot Chute Static Line Assist.

Main Container





Main Container



TPDS Heavy Load Tactical (HLT)
Loop Cutaway and Reserve Handles



TPDS Heavy Load Tactical (HLT)
Pillow Cutaway and Metal Reserve Handles

Passenger Harness





TPDS Heavy Load Tactical (HLT)
Freefall Drogue Deployment



TPDS Heavy Load Tactical (HLT)
Static Line Drogue Deployment



TPDS Heavy Load Tactical (HLT)
Throw-out Pilot Chute Deployment



TPDS Heavy Load Tactical (HLT)
Spring-loaded Pilot Chute Deployment



TPDS Heavy Load Tactical (HLT)
with Replaceable 3-Ring Drogue Riser.



TPDS Heavy Load Tactical (HLT)
Magnetic Riser Covers with Replaceable Magnets.

Heavy Load Tactical Specifications

Main Container Harness Specs:

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

Main Container Assembly Specs:

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

Passenger Harness Specs:

- Passenger Harness is **TSO C23d**
- Main Lift Webbing, Type 7 Mil-W-4088 Tensile Strength, 6000 lbs.
- Leg Straps , Type 7 Mil-W-4088 Tensile Strength, 6000 lbs.
- Lower Attachment Straps, Type 8 Mil-W-4088 Tensile Strength, 4000 lbs.
- Diagonals, Chest Strap, Belly Band, Back Strap and Butt Strap, Doubled Type 8 Mil-W-4088, Tensile Strength, 4000 lbs.
- Upper Attachment Butterfly Snaps, PS 22042-1 Proof Load, 5000 lbs.
- MLW Adjustable Slider, PS 70114-1 Proof Load, 2500 lbs.
- Large Articulating Hip Junction Ring, C5010.
- Adjustable Leg Strap, Chest Strap and Belly Band Hardware, PS 70101-1
- Adjustable Diagonal, Back Strap, and Butt Strap Hardware, PS 70114-1 Proof Load 2500 lbs.
- Lower Attachment - Adjustable Quick Ejector Snaps, PS 22018 Proof Load, 2500 lbs.
- Back Pad and Leg Pads 1000 Denier Cordura w/ 1/4" white foam.
- 3/4" Binding Tape, Mil-T-5038 Tensile Strength 400 lbs.
- 1" Type 4 Support Tape, Mil-T-5038 Tensile Strength 1000 lbs.
- 5 cord Nylon Harness Thread, Tensile Strength 40 lbs.
- "E" Nylon Thread, No.69 Tensile Strength 8.5 lbs.

The **TPDS, Inc. Heavy Load Tactical (HLT)** is built under the **TSO C23d**.

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

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

The **TPDS Heavy Load Tactical (HLT)** weighs 45-60 lbs. fully packed.

CANOPY FABRIC SPECIFICATIONS

TEST METHODS

TEST NAME

MATERIAL

■ 30 Denier, High Tenacity, Bright Nylon,
Heat and Light Inhibitors

COMMERCIAL

■ 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

ELONGATION (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	<i>denier</i>	<i>count/inch</i>	<i>pattern</i>	<i>inches</i>	<i>oz/sq yd</i>	<i>inches</i>	<i>Cfm</i>	<i>lbs</i>	<i>lbs</i>	
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

Heavy Load Tactical - Main Parachute 9 CELL ELLIPTICAL (TPDS-HLT-M)



Main Canopy Specifications

Canopy Class

HLT

Lines

Vectran

Fabric

Z-P

<u>Model</u>	<u>LBS.</u>	<u>KGS.</u>
M-300Z	443	201
M-330Z	491	223
M-350Z	541	245
M-370Z	593	269
M-390Z	646	293
M-410Z	697	316

Also available in a Hybrid- (Z-P Top / F-111 Bottom)



**TPDS-HLT-MAIN CANOPIES
9 CELL ELLIPTICAL**

		TACTICAL PARACHUTE DELIVERY SYSTEMS, INC.		MAIN CANOPY SPECIFICATIONS				
LINE	FABRIC			PART NUMBER	MODEL	SPAN feet	CHORD feet	ASPECT :1
VECTRAN	HYBRID	TPDS-HLT-M-300	M-300H	30.5	10.82	2.82	1.475	443/201
		TPDS-HLT-M-330	M-330H	31.93	11.33	2.82	1.51	491/223
		TPDS-HLT-M-350	M-350H	33.17	11.70	2.82	1.545	541/245
		TPDS-HLT-M-370	M-370H	33.81	11.99	2.82	1.58	593/269
		TPDS-HLT-M-390	M-390H	34.62	12.31	2.82	1.615	646/293
		TPDS-HLT-M-410	M-410H	35.5	12.59	2.82	1.62	697/316
	ZP	TPDS-HLT-M-300	M-300Z	30.5	10.82	2.82	1.475	443/201
		TPDS-HLT-M-330	M-330Z	31.93	11.33	2.82	1.51	491/223
		TPDS-HLT-M-350	M-350Z	33.17	11.70	2.82	1.545	541/245
		TPDS-HLT-M-370	M-370Z	33.81	11.99	2.82	1.58	593/269
		TPDS-HLT-M-390	M-390Z	34.62	12.31	2.82	1.615	646/293
		TPDS-HLT-M-410	M-410Z	35.5	12.59	2.82	1.62	697/316



Heavy Load Tactical - Reserve Parachute **9 CELL RECTANGLE (TPDS-HLT-R9)**



Reserve Canopy Specifications

Maximum Weight:

<u>Canopy Class</u>	<u>Model</u>	<u>LBS.</u>	<u>KGS.</u>
<u>HLT</u>	R9-300	424	192
<u>Fabric</u>	R9-320	451	205
F-111 /	R9-340	479	217
PIA-C 44378	R9-360	506	230
Type IV	R9-380	534	242
<u>Lines</u>	R9-400	561	254
Spectra	R9-420	588	267

**TPDS-HLT-RESERVE CANOPIES
9 CELLS RECTANGLE**

		TACTICAL PARACHUTE DELIVERY SYSTEMS, INC.		RESERVE CANOPY SPECIFICATIONS				
LINE	FABRIC			SPAN	CHORD	ASPECT	LOAD	WMAX
LINE	FABRIC	PART NUMBER	MODEL	feet	feet	:1	Lbs./ft ²	Lbs./kgs
Spectra	F-111	TPDS-HLT-R9-300	R9-300	30	10	3	1.412	424/192
		TPDS-HLT-R9-320	R9-320	30.98	10.33	3	1.41	451/295
		TPDS-HLT-R9-340	R9-340	31.94	10.65	3	1.408	479/217
		TPDS-HLT-R9-360	R9-360	32.86	10.95	3	1.406	506/230
		TPDS-HLT-R9-380	R9-380	33.76	11.25	3	1.404	534/242
		TPDS-HLT-R9-400	R9-400	34.64	11.55	3	1.402	561/254
		TPDS-HLT-R9-420	R9-420	35.5	11.83	3	1.4	588/267



TPDS HLT Canopy Specifications

• 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	316 kg./ 697 lbs. (Depends on size of canopy and weight of jumper)
• Min Exit Weight	135 lbs./ 60 kg.
• HALO Altitude	35,000 ft. MSL
• HAHO Altitude	35,000 ft. MSL (Drogue assist Main Deployment)
• Glide Ratio	6 to 1
• Aspect Ratio	2.82 : 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



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