SIGMA MICRO SIGMA

SIGMA II

TANDEM SYSTEM OWNER'S MANUAL

MAN. 013 Rev. 4.0 6/1/2026

INTRODUCTION

VALUES STATEMENT

Uninsured United Parachute Technologies, LLC (UPT) is committed to maintaining a professional training environment where safety, accountability, and respect guide every aspect of tandem skydiving operations.

The UPT Tandem Program promotes a culture built on sound judgment, continuous improvement, and shared responsibility. Tandem instructors and examiners are entrusted with upholding the highest standards of training, evaluation, and decision-making, recognizing their role in shaping both individual performance and the overall safety culture of the sport.

All participants are expected to conduct themselves with professionalism and integrity. Students, instructors, staff, and members of the public must be treated with respect, fairness, and dignity at all times. UPT values diverse backgrounds and perspectives and is committed to an environment free from discrimination, harassment, or misconduct.

Safety remains the highest priority. UPT supports a culture where individuals are encouraged to speak up, identify concerns, and take appropriate action when standards are not met. Every instructor and examiner shares responsibility for maintaining a safe and professional operating environment.

Through leadership, mentorship, and adherence to established standards, the UPT Tandem Program strives to advance the quality, consistency, and integrity of tandem skydiving worldwide.

These principles apply to all instructors and examiners conducting training, evaluation, and operational activities under the auspices of UPT.

WARNING

Use of this equipment in the United States and its territories should be in accordance with all USPA Basic Safety Requirements (BSR) included within USPA's Skydivers Information manual (SIM), Chapter 2: Basic Safety Requirements and Waivers.

Use of this equipment outside of the United States should be in accordance with the controlling body for parachuting and skydiving in the country in which the equipment will be used & operated.

Read this information carefully and understand it completely. The Sigma Tandem System is designed exclusively for the transportation of two persons. When operated in an instructor-and-student configuration, the jump shall be classified as a tandem jump. The Sigma Tandem System is not designed, approved, or authorized for use in any type of BASE activity. Any jump conducted in violation of the prohibited use list or configurations specified by UPT shall be considered a violation of approved Sigma operating practices. For guidelines on the use of a UPT Sigma for demonstration jumps, refer to Section 6 of the *Operations Manual*. These restrictions do not apply to military tandem applications.

DISCLAIMER - NO WARRANTY

Because of the unavoidable danger associated with skydiving and the use of this parachute system, the manufacturer makes no warranty, either expressed or implied. The system is sold with all its faults and without any warranty of fitness for any purpose. The manufacturer also disclaims any liability in tort for damages, direct or consequential. These include personal injuries that may be the result of a malfunction, a defect in design & material, workmanship or the manufacturing process whether caused by negligence or otherwise. By using this parachute system or allowing it to be used by others, the buyer waives any liability for personal injuries or other damages arising from such use. If the buyer declines to waiver liability on the part of the manufacturer, buyer may obtain a full refund of the purchase price by returning the parachute system, unused, to manufacturer within 30 days from the date of original purchase with a letter stating why it was returned. Please contact the manufacturer for details.

Neon and fluorescent-colored fabrics and tapes fade rapidly. Color brilliance may be lost within a year of manufacture. Uninsured United Parachute Technologies, LLC assumes no responsibility for this condition

CONTACT INFORMATION

If you have any questions, comments or suggestions after reading this manual, please feel free to contact us.

Uninsured United Parachute Technologies, LLC is open Monday thru Thursday, from 8am to 5pm EST, Friday 8am to 12pm EST.

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A WORD FROM THE OWNER

Dear Skydiver,

Congratulations on your purchase of the Sigma Tandem harness and container system - without question the safest and most reliable tandem system on the market today.

Here at Uninsured United Parachute Technologies, LLC, we are totally committed to you, our customer, through the quality and performance in the harness and container systems we design, build and deliver. We have stood behind our products 100% from the day they leave our factory and reach your doorstep and have done so for over 50 years. You will find our service after the sale to be as comprehensive as our customers have come to expect from Uninsured United Parachute Technologies, LLC. When you buy a Sigma, you're buying more than a tandem system; you're buying innovation, quality, reliability and most of all a product that has survived the test of time. Uninsured United Parachute Technologies, LLC has built more sport, student and tandem harness/container systems than anyone else in the world.

Thank you again for your purchase of the Sigma. With proper care and maintenance, it should provide you with many years of safe and enjoyable skydiving. Should you have any questions or concerns about your equipment, please do not hesitate to contact us.

Blue skies!

Bill Booth
President, Uninsured United Parachute Technologies, LLC

PROHIBITED USE

There are currently a number of tandem skydives that are prohibited without expressed written permission by uninsured United Parachute Technologies, LLC on either the Vector or Sigma tandem system. These prohibited tandem jumps include:

- Night Tandem Jumps
- Stadium Tandem Jumps
- Tandem Jumps using Go Pole or similar pole type HandCam devices
- Tandem Jumps made with the Tandem Instructor or Tandem Examiner placed in the student passenger position outside of the scope of tandem instructor certification or currency training.
- Jumping with a tandem student passenger less than 18 years of age (US only)
- Intentional Water Landing Tandem Jump
- Tandem jumps where either the tandem instructor or tandem student (or both) are wearing any form of wingsuit
- Performing any intentional cutaway procedures using a third canopy attached to the tandem pair or via a secondary harness
- Attaching two tandem passengers to a single tandem instructor system, otherwise referred to as a "triple tandem"
- Making a tandem jump with any form of pyro aerial flame device to include smoke
- Wearing any helmet mounted cameras
- Performing "no-drogue out" angle flying, commonly referred to as Tandem Autmonauti
- Performing "drogue out" angle flying, commonly referred to as Tandem Autmonauti
- Performing Tandem Canopy Relative Work (CRW)
- Multiple Backflips out of a side door aircraft or backing out of a side door aircraft
- Extraordinary tandem skydives including stunt / video production tandems, BASE and demonstration jumps that do not fit into Section 6
- The use of the Sigma Tandem System outside of official sunrise and official sunset, and outside the altitude range from surface up to 18,000 feet MSL.
- Any "experimental" operations – including but not limited to high altitude jumps, wingsuit use, test and evaluation activities, night jumps or intentional water landings – require prior written authorization from United Parachute Technologies (UPT).

STANDARD OPERATING PROCEDURES

- Minimum Exit Altitude: 7,500 ft / 2,300 m AGL
- Minimum Open (fully operational) Main Parachute Altitude: 4,000 ft / 1,200 m
- Drogue deployment will occur within 5 – 8 seconds, if stable
- Exits will be stable into the relative wind
- Handles Checks will be performed on each jump, to include a visual drogue inspection
- 25 jump inspection procedures will be followed
- UPT video waiver and written waiver will be viewed and completed by every passenger
- Turns to final on landing will be less than or equal to 90°
- Minimum Decision Altitude is 3,000 ft / 1,000 m AGL
- Tandem canopies will maintain 100 ft / 30 m minimum horizontal separation
- Tandem Instructors will physically escort each passenger to the aircraft
- Tandem Passenger Harness will be secured in jumpable configuration before boarding aircraft
- Tandem RW must cease by 6,500 ft / 2,000 m AGL
- Post canopy deployment adjustment of side connectors will be reattached to the instructor harness D-ring

NOTE: Use of this equipment outside of the United States should be in accordance with the controlling body for parachuting and skydiving in the country in which the equipment will be used and operated.

17 ESSENTIAL TANDEM PRACTICES (ETPs)

1. No jumpers under the age of legal majority.
2. **Waivers are a MUST:** Video first, then written. Every. Single. Time.
3. Tandem student passenger harness should be in a jumpable configuration and Y-Strap snug before boarding the aircraft
4. Minimum exit altitude: 7,500 ft / 2,300 m AGL. **Altitude saves lives**
5. Drogue must be deployed within 5 – 8 seconds
6. 17 Point Check → 4 in the Door → Handle Checks in Drogue fall. ON EVERY TANDEM JUMP
7. RW must cease by 6,500 ft / 2,000 m
8. Pull drogue release with sufficient altitude to ensure an open flying canopy by 4,000 ft / 1,200 m AGL
9. Maintain at least 100 ft / 30 m separation under canopy.
10. **NO HOOK TURNS.** No turns greater than 90° below 500 ft / 150 m
11. Stabilized onto final by 100 ft / 30 m
12. Report any cutaway, injury, or irregular occurrence using the UPT Irregular Occurrence Report form.
13. **Videographer minimum experience:** Must be compliant with Section 6: Relative Work of this manual.
14. **HandCam requirements:**
    a. Review minimum HandCam recommendations and Complete Annual Sigma Tandem HandCam Safety Checklist.
    b. 100 tandem jumps + Complete approved HandCam course, or 200 Tandems as PIC without HC course
15. Adhere to manufacturer maintenance and packing instructions. **Mixing components increases liability & changes system EPs**
16. Minimum passenger briefing given per FAR 105.45 or governing body requirements.
17. **6 Month SOP Review:** Review all tandem emergency procedures, demonstrate proper malfunction responses with training harness, and verify correct student / instructor harnessing, gear checks, hook-up procedures and pre-exit checks per manufacturer SOPs.

For Operational and Training instructions please reference the Sigma Tandem Operations Manual

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SECTION 1: THE SIGMA II TANDEM SYSTEM

SIGMA TANDEM II INTRODUCTION

For over two and a half decades, the Sigma Tandem System consistently set the standard in terms of safety, comfort, and convenience. Unlike other tandem systems, the Sigma Tandem was meticulously designed "from the ground up" as a drogue deployed tandem system. The combination of the advanced Drogue release system and numerous other distinctive features made the Sigma Tandem the undisputed market leader.

In the realm of engineering "Sigma" signifies a culmination or solution to challenges. We proudly dubbed our latest tandem system Sigma II, embodying all we've learned about the tandem equipment and its users. After extensive development and rigorous testing, the Sigma II Tandem system has emerged as our most robust and secure offering to date.

THE ADVANTAGES OF SIGMA II TANDEM

- It takes fewer steps, with fewer potential errors to close the main container.
- Accidentally snagging the drogue bridle will not open the container.
- Out-of-sequence deployments are virtually eliminated.
- Patented TB Pulley ripcord creates reduction in pull force for a clean, easy pull regardless of load.
- Modular Comfort System provides reduced fatigue and maximum comfort with removeable padding and lumbar support.
- Its center-of-main-container drogue connection gives a more "natural" and comfortable drogue- fall position.
- The drogue release ripcords are automatically retracted after use or accidental snagging, so that they are always where they should be, cannot be lost, and don't have to be stowed after pulling.
- It has two redundant drogue release ripcords, one on the right and one on the left.
- The drogue release/container opening pin is "locked" until you throw the drogue, minimizing the possibility of accidental high openings.
- No more time-consuming untwisting of drogue kill line during packing. Kill lines can be easily replaced in the field.
- ALD Main deployment bag design reduces canopy damage.
- Redesigned harness for increased comfort and adjustability.
- Lower Harness geometry updated for a cleaner, more direct drogue release routing and comfort.
- A student harness that is safer and more comfortable for students.
- The Skyhook RSL system.
- The "Collin's Lanyard," and all its advantages.
- Tuck tab style reserve pin cover.
- Sport Style magnetic riser covers.
- Clear plastic windows make reserve pin checks and AAD operation easier.

SIGMA II TANDEM EQUIPMENT LIMITATIONS

This article meets the minimum performance and quality systems standards required by a Technical Standard Order (TSO). Installation of this article requires separate approval.

The UUPT Sigma Dual Harness/ Container System is built under the TSO C23F. The All Up Weight (AUW) or maximum combined weight of passengers and equipment shall not exceed 500 lbs. (226.8 kg) with a VR360 tandem reserve installed and shall not exceed 550 lbs. (249.5 kg) with either a SR 340 or SR 370 tandem reserve installed. And not to be operated at an airspeed exceeding 175 KEAS (207.1 mph) (333 km/h) in any of these configurations.

The Sigma harness and container system meets the minimum performance and quality system standards required by a Technical Standard Order (TSO). Installation of this article requires separate approval.

SIGMA II TANDEM FEATURES IN DETAIL

The Sigma II is the safest and best-selling Tandem system in the world because of its unique design features, many of which are patented. The following information breaks down, in detail, those features.

Disc Release System (Patent: 6,626,400)

At the heart of this system is a specially designed 5-inch diameter disc with a 1 ½" flanged "chimney" at its center, through which the drogue bridle passes. This disc is connected to the bridle, about 3 feet from the deployment bag with a locking pin, which passes through the chimney and a loop on the bridle. To close the main container, and anchor the drogue, you simply place the main bag in the container, and the disc on top of the bag. You then pass the closing loop, which starts on the bottom flap, through custom D-rings on the other three flaps, and then through a grommet back on the bottom flap, in a circular fashion, drawing the flaps snugly around the disc chimney, thus capturing the disc under the four container flaps. The flanged chimney keeps the disc centered in place and allows the drogue bridle to exit the container. The closing loop is secured with an eyeleted metal pin through which two lengths of 1000 lb. Spectra line are looped and then secured a few inches below the final grommet to form a pulley. The other end of each Spectra ripcord passes through its own metal housing, one to the right, and the other to the left. Each drogue release ripcord is attached to a spherical ripcord handle by a lark's head connection, making ripcord replacement in the field quick and easy, without any tools. The system is durable and fail-safe, in that total failure of one ripcord would not affect the function of the other.

The Safety Pin (Patent: 6,626,400)

The system also incorporates a special "safety pin" on the drogue bridle, which locks the main container pin in place until the drogue is deployed. On all other systems, if you snag a drogue release ripcord moving around the aircraft, or on exit, or if you accidentally pull the wrong handle after exit, you end up with a main canopy as soon as you throw your drogue. The unique safety pin minimizes the possibility of this scenario.

The Recoil Ripcord (Patents: 6,626,400, US11820521B2, WO2021194570A2)

A single piece of bungee cord passes through both housings and elastically connects the handles to each other. This holds them firmly against the ends of the housings and causes each handle to recoil back into place after being pulled or accidentally snagged. This means the handles will always be where you expect them to be. There is no more stowing of loose handles after opening, and no more looking for handles at packing time. For further security, each ripcord handle is countersunk, so that it snugly slides 3/8 of an inch over the end of its housing. Each ripcord has 3 inches of slack built in, so that it takes a 5- inch pull, on either handle, to release the drogue. With the addition of the pulley ring, pull force is reduced using 2:1 mechanical advantage

created by the movement of the pin on its anchor line in conjunction with the placement of the ripcord through the pulley ring.

The Drogue System (Patent: 6,626,400)

The 1¾" Kevlar outer bridle extends past the disc all the way to the main deployment bag. The kill line is 1200 lb. Spectra and terminates at the bag. Because the lower ends of both the bridle and the kill line end at the same place, it is impossible to twist one independently of the other. This means no time-consuming untwisting of the kill line. This means less wear, and that the kill line can be easily replaced in the field. And because both the bridle and the kill line share the bag lift-off forces if either the bridle or the kill line breaks, deployment still happens more or less normally, and you don't lose your expensive drogue.

Main Deployment Bag

The Sigma II Tandem main deployment bag is designed with a continuous loop of tubular nylon at the top of the bag. This prevents canopy damage caused by trapping canopy fabric between a bag's grommet and the canopy attachment point.

Reserve Ripcord with Spectra (Patent: 7,837,152)

The spectra reserve ripcord is manufactured out of a double layer of 1000 lb. Spectra, exceeding the strength of a standard ripcord steel cable. The spectra construction offers reduced drag than that created between a housing and metal ripcord cable thus reducing the overall pull forces required to activate the reserve.

The Skyhook RSL system (Patent: 7,118,073)

While a normal RSL automatically pulls the reserve ripcord pin following a breakaway, the Uninsured United Parachute Technologies, LLC Skyhook RSL goes two steps further. It automatically releases the non-RSL riser in case the RSL riser was released prematurely (ensuring your reserve will not deploy with half your main still attached). The Skyhook RSL then uses your departing malfunctioned main canopy as a super pilot chute to deploy your reserve canopy, taking about ½ second from breakaway to line stretch (reserve canopy out of the bag). This is 3 to 4 times faster than a pilot chute can do alone. The Skyhook also causes the reserve bag to leave your back with such speed that it becomes far less likely you will entangle with your main canopy in the case of a spinning malfunction.

The Collins Lanyard (Patent: 6,056,242)

The Sigma II Tandem integrates our proven "Collin's Lanyard" System into the yoke. This system automatically releases the other main riser if the RSL-side main riser breaks, or releases prematurely for any reason. This minimizes the possibility of a potentially fatal main/reserve entanglement.

Magnetic Riser Covers

Sigma II Magnetic riser covers utilize the most successful design on the market, providing improved security during freefall and contributing to on heading openings as the force to open each riser cover is equal. Years of extensive research and development along with thousands of jumps resulted in this superior design. It is the ultimate in main riser protection.

The Student Harness

The Sigma II student harness is designed for comfort while at the same time offering more control on exit and positioning the student's legs forward and upward under canopy. This means fewer students will get sick or pass out under canopy. It also means fewer landing injuries, a greater return and progression rate. The

harness includes the "Y Strap" system to ensure students are unable to fall out of the harness when improperly adjusted.

Reserve Flap with Pin Check Window

Depending on the selected Sigma model, there are two versions of the Reserve pin cover. Both allow for pin checks without opening the flap. Sigma II uses a removable Lexan window that allows for easy replacement if damaged or worn out.

AAD Check Window

The AAD window is visible so a pin check and AAD condition check can be accomplished instantly, even while you are wearing the rig.

SECTION 2: EQUIPMENT

CONTAINER OVERVIEW

A. **AAD Inspection Window** – Turn AAD on or off through clear window. AAD condition can be checked instantly.

B. **Reserve Pin Inspection** – Lexan window allows pin check instantly, without opening reserve pin cover flap.

C. **Magnetic Riser Covers** – Designed for improved security and on heading openings.

D. **Drogue Chute** – Stowed in the Spandura pouch, it uses a plastic ball attached to top for deployment.

E. **Primary Drogue Release** – Blue golf ball located at the left, bottom of the main container. A pull of approximately 6" will release drogue.

F. **Secondary Drogue Release** – Orange golf ball located at top of right leg pad. A pull of approximately 6" will release drogue. Ideal location for training students.

G. **Cutaway Handle** – Right hand pull. Soft pillow handle attached firmly in an outboard position on right main lift web. Handle color is green.

H. **Reserve Ripcord Handle** – Left hand pull. Loop or soft pillow handle attached firmly to the left main lift web in an outboard position. Handle color is red.

I. **Main Lift Web Adjustment** – The pulley style harness is adjusted using the 2-piece adapter.

J. **Upper Student Attachment Points** – Two D-rings mounted under the large harness ring on both sides of the upper main lift web.

K. **3-Ring Release** – Main Canopy Cutaway system.

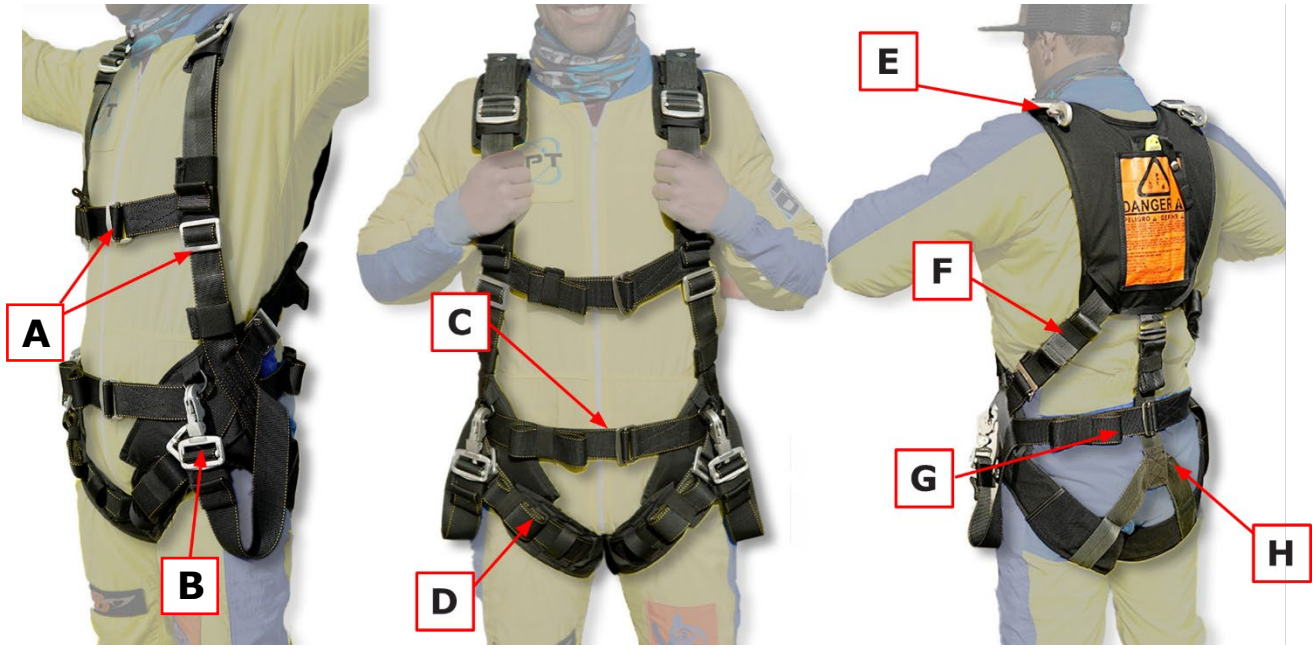
L. **Lower Student Attachment Points** – Two D-Rings mounted on both sides of the lateral.

THE STUDENT HARNESS

The Sigma Student Harness facilitates both safety and comfort by securely containing the human body without restricting normal blood flow. Restricted circulation can cause discomfort, nausea, or even loss of consciousness.

Its hip-hugging horizontal back and belt strap combination positions the main lift webs toward the front of the upper body. This design prevents excessive pressure on the upper body and inner thighs, which could otherwise impede blood flow. Additionally, upon opening, the harness automatically lifts the legs up and forward, placing them in an optimal position for landing.

With 14 points of adjustment, the harness accommodates a wide range of body sizes and shapes, providing a comfortable fit for every tandem student. However, it must still be securely adjusted to the student's body to prevent the risk of falling out in extreme situations or unusual body positions.



A. Fully Adjustable Chest Strap

B. Side Attachment Points – Quick Ejectors

C. Waist Strap

D. Adjustable Leg Straps

E. Top Attachment Points – Snap Hooks

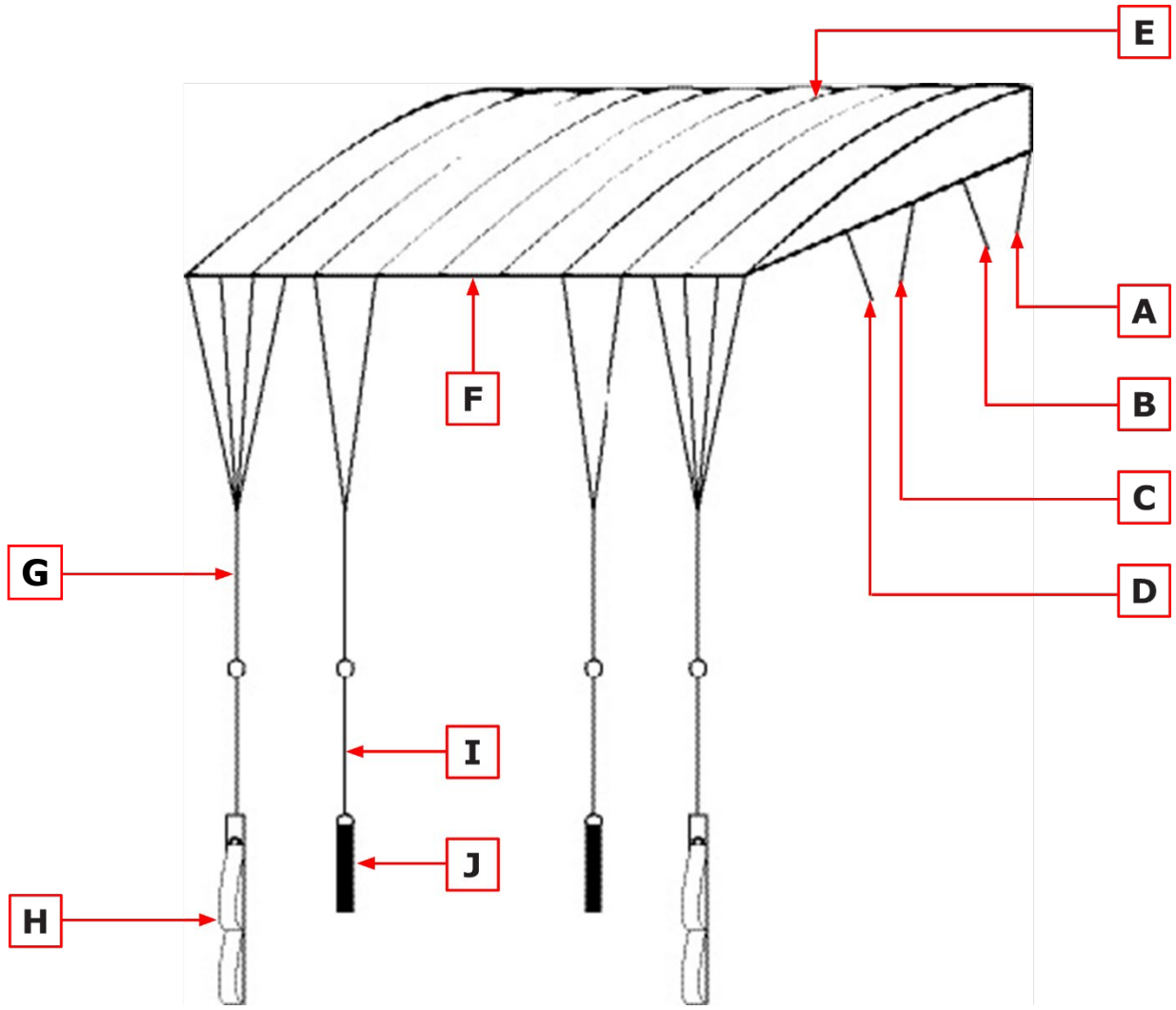
F. Diagonal Back Strap

G. Horizontal Back Strap

H. Y-Strap

The student harness must be in jumpable configuration before boarding the aircraft!

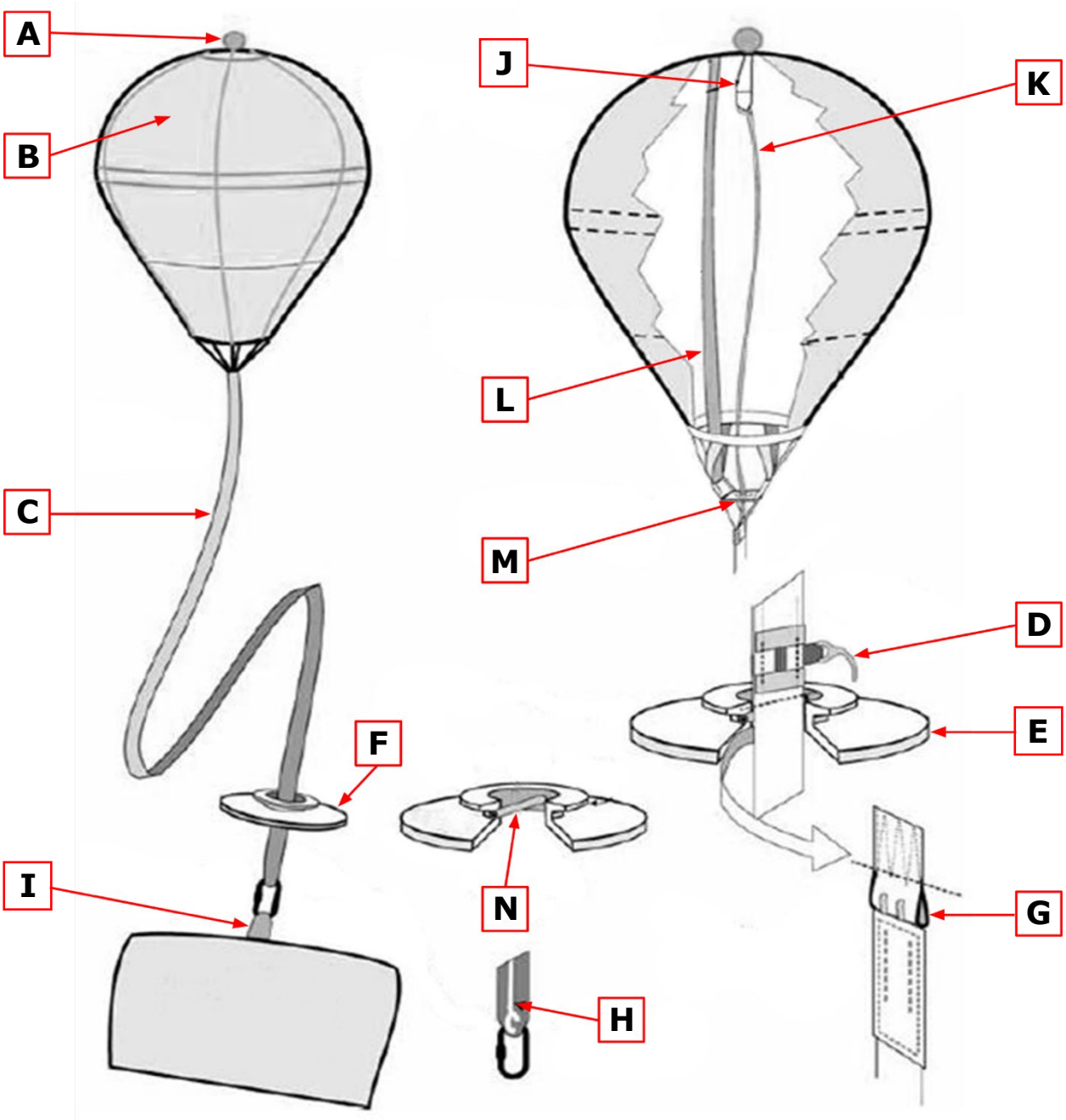
THE SIGMA 2 MAIN CANOPY



A. A Line
B. B Line
C. C Line
D. D Line
E. Canopy Nose
F. Canopy Tail
G. Standard Control Lines
H. Main Toggles
I. Secondary Control Line
J. Secondary Toggle

THE DROGUE SYSTEM

The drogue bridle and kill line end at the same place with either a Rapide link or soft link connected to the top of the deployment bag. When the drogue is set (or cocked) during the packing sequence, the drogue bridle below the disc is "scrunched up", effectively making the bridle shorter than the kill line. When the drogue is deployed, it can inflate because the kill line is longer than the bridle. When a ripcord is pulled to end drogue fall, the container opens and the disc is released, allowing the "scrunched up" section of the bridle below the disc to extend to its full length, thus making the bridle longer than the kill line. This inverts the drogue apex, collapsing the drogue.



A. **Handle** – The 1-5/8in ball, connected to the apex of the drogue envelope, used to deploy the drogue.

B. **Envelope** – The fabric and mesh portion of the drogue. Its top is called the apex, it's bottom the base.

C. **Bridle** – The doubled, 1¾", 2500 lb. Type 12 Nylon or 1500 lb. Type 6 Kevlar section that leads from the envelope to the deployment bag connection loop.

D. **Safety Pin** – A compound-curved pin connected to the bridle, designed to prevent accidental main container openings.

E. **Disc** – A 5" aluminum disc, with a 1 ½" flanged chimney.

F. **Disc Cover** – Designed to protect disc.

G. **Disc Attachment Loop** – A loop on the drogue bridle to which the disc is attached with a stainless-steel pin, held in place with two hex head screws. Two 3/32" hex drive is required to tighten or loosen screws.

H. **Drogue Bridle Loop** – The loop at the end of the Nylon or Kevlar drogue bridle which the deployment bag is attached to.

I. **Bag Attachment Loop** – A loop of tubular Nylon at the top of the main deployment bag where both the bridle and kill line are attached by means of a #5 stainless Rapide or soft link.

J. **Drogue Centerline Attachment Bridle** – 1" Nylon tape that serves as an attachment point for the kill line and limits the degree of collapse if a kill line is accidentally made too short.

K. **Drogue Centerline** – A length of 1,250 lb. Spectra line, with a 1" loop at each end, which runs inside the drogue bridle from the kill line attachment bridle to the Rapide link at the bag attachment loop.

L. **Drogue Set Limiter Tapes** –Two pieces of 1" Nylon tape that run from the drogue apex to the drogue skirt. This saves wear on the drogue bridle and the kill line by limiting the distance they slide on each other during drogue collapse.

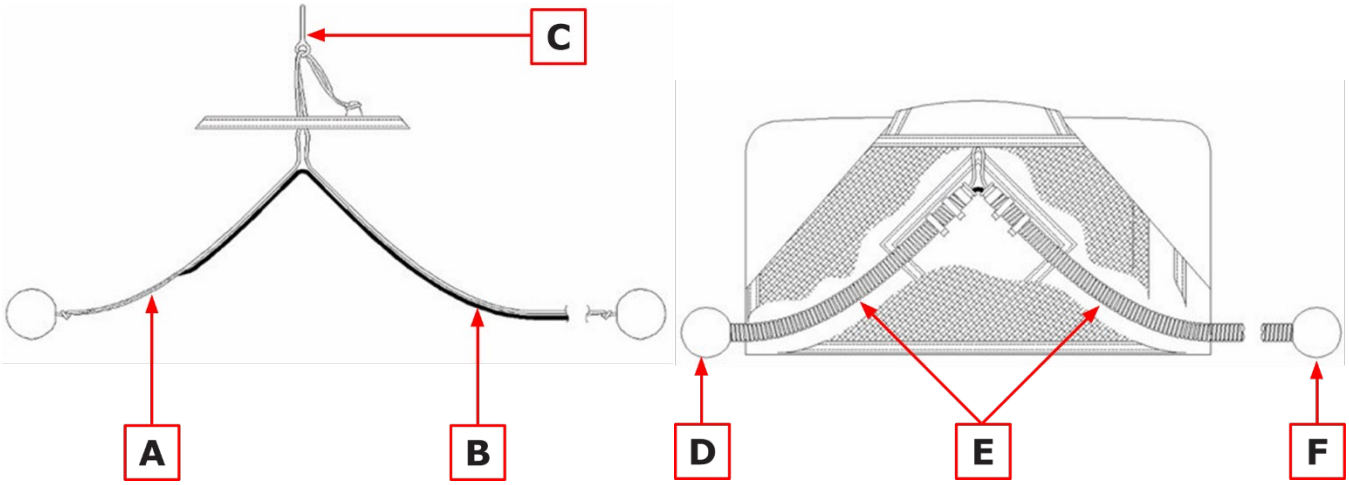
M. **Drogue Centerline Guide Grommet** – A "0" stainless steel grommet at the base of the drogue envelope which directs the kill line into the drogue bridle preventing wear. It also serves as an emergency stop for the kill line attachment bridle if the kill line is accidentally made too short.

N. **Disc Attachment Pin** – A threaded stainless-steel rod, used to attach the disc to the bridle, using 2, 3/32" hex drive screws.

THE MAIN RIPCORD AND RECOIL SYSTEM

The ripcord handles are positioned to allow the tandem instructor to release the drogue with either hand. In addition, the right handle is positioned on the Tandem instructor's harness to simulate a Bottom of Container (BOC) position for the student. Once the drogue is released you can simply let go of the handle and it will automatically return to its position at the end of the ripcord housing. The spherical shape of the ripcord handles, and their method of attachment makes snagging highly unlikely. If dislodged, they automatically return to position plus the unique "Safety Pin," connected to the drogue bridle, makes it virtually impossible for a snagged ripcord handle to cause an accidental container opening.

SIGMA AND MICRO SIGMA ONLY



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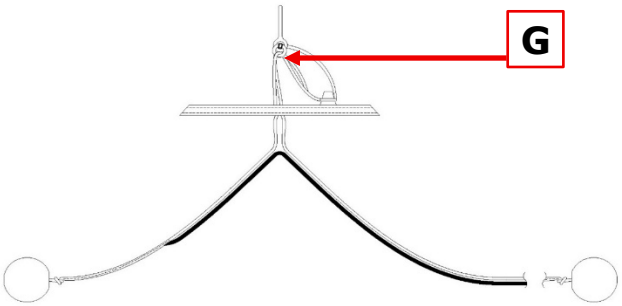


A. **1000LB Spectra** – A Single Spectra line with finger locked loops at each end, and near the center.

B. **Bungee Cord** – 1/8" bungee cord, finger locked between the loops at each end of the Spectra line.

C. **Main Pin** – One stainless steel, eyeleted, ripcord pin.

D. **Blue Ripcord Handle** – Specially prepared, solid core ball handle.

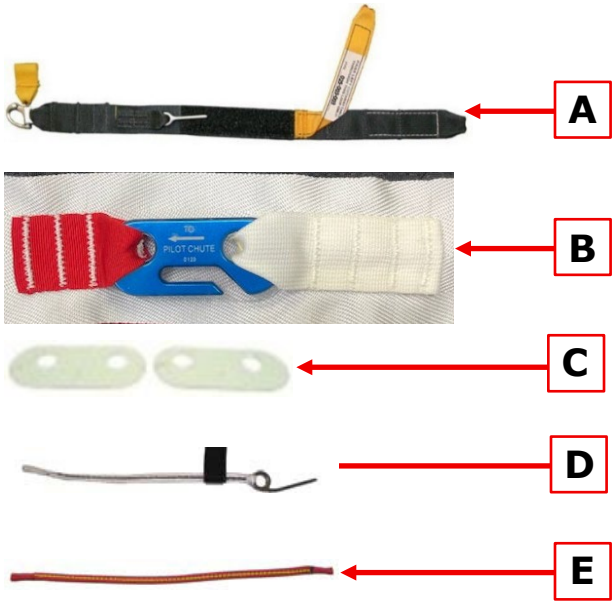
E. **Ripcord Housings** – Two stainless steel ripcord housings.

F. **Orange Ripcord handle** – Specially prepared, solid core ball handle.

G. **TB Pulley Ring (SIGMA II ONLY)** – Stainless steel ring increases mechanical advantage at deployment.

THE SKYHOOK RSL AND INTEGRATED COLLINS LANYARD

A standard RSL does one thing. It pulls the reserve ripcord pin automatically after a breakaway. The Skyhook RSL with integrated Collins lanyard does this and then goes two steps further. It automatically releases the Left (non-RSL) riser if the right riser releases prematurely for any reason and then uses your departing main canopy as a super pilot chute to get your reserve to line stretch faster than ever before. Breakaway to canopy-out-of-bag times are between ½ and ¾ of a second, depending on the size of your reserve canopy. This is up to three times faster than a pilot chute can do it alone. If you have a main total malfunction or your AAD fires, the Skyhook Lanyard automatically releases and therefore does nothing to hinder normal reserve deployment.



A. **The RSL Lanyard** – Made from 1" black webbing with a snap shackle that connects to your right main riser at one end and splits towards the Collins Lanyard and Skyhook at the other.

B. **The Skyhook** – It is sewn to the reserve pilot chute bridle with red attachment tape indicating direction toward the pilot chute.

C. **Lexan Covers** – One per side. These have small holes drilled in them for safety tie thread.

D. **The Universal Lanyard** – One end is attached to the RSL.

E. **The Red Skyhook Lanyard** – One end attached to the RSL with the other end attached to the Skyhook.

SECTION 3: RESERVE CONTAINER ASSEMBLY

INSTALLATION OF AAD

Approved Automatic Activation Devices:

- Vigil, Vigil 2, Vigil 2+, Vigil Cuatro
- Cypres 2 (Original Cypres units have "timed out" and are no longer acceptable for use.)
- M2

Ensure AAD is either a dedicated TANDEM unit or in TANDEM mode if using a multimode unit, before installing into container.

Insert the AAD unit into the pocket. Ensure the cable connections lay flat towards the side wall or the convex curve is towards the sidewall.

Route AAD cutter cable through channel and loop any excess cable into the AAD pocket.

Place AAD cutter into elastic keeper.

Route control unit cable through white sleeve and/or AAD pocket.

Pass the control unit through slit inside the top of the sleeve.

SIGMA AND SIGMA II ONLY:

Pass control unit through slit in the yoke.

SIGMA AND SIGMA II ONLY:

Place control unit into AAD window pocket.

Avoid tension or excessive slack in cable.

MICRO SIGMA ONLY:

Route control unit across back pad, underneath # 6 flap.

MICRO SIGMA ONLY:

Route Control unit behind reserve housing and insert into AAD window pocket with display visible upwards.

Avoid tension or excessive slack on cable.

SIGMA 2 RESERVE CANOPY INSPECTION

The Sigma 2 reserve canopy is a 9-cell F111 canopy, with cascaded Vectran lines. The Sigma 2 reserve must be inspected thoroughly before it is packed the first time and at each repack. This inspection should be performed with even more care and attention when first assembled and after a deployment. A certificated rigger must inspect your new Sigma 2 reserve and determine its compatibility with your rig. This inspection should be done in a clean, well-lit area with enough room to spread out the reserve canopy.

The Uninsured United Parachute Technologies' recommended procedure for inspecting your reserve canopy includes close inspections of the following components:

- The reserve ripcord
- Pilot chute and bridle
- Deployment bag
- Lines
- Links
- Risers
- Harness & Container
- Closing loops

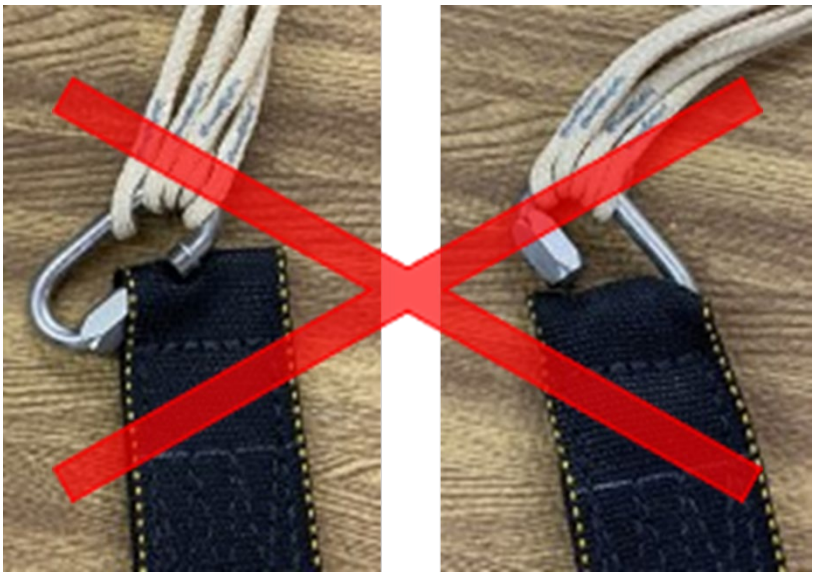
RECOMMENDED TOOLS

The following is a list of recommended tools you may need for assembly and packing:

- Adjustable crescent wrench or 7/16" wrench for # 6 Rapide stainless steel links
- Scissors & snips
- Pull-up cord
- Velcro pile strips with flags (2 short or 1 long)

- Locking soft bodkin
- Metal bodkin/T-bar
- Temporary pin with flag.
- Seal, seal press & seal thread
- Link Separator
- 2 packing Paddles
- Weight bags
- 4 clamps (ensure smooth tips and no sharp edges)
- Cranking/positive leverage devises and knee plate

SIGMA 2 RESERVE USING #6 RAPIDE LINKS

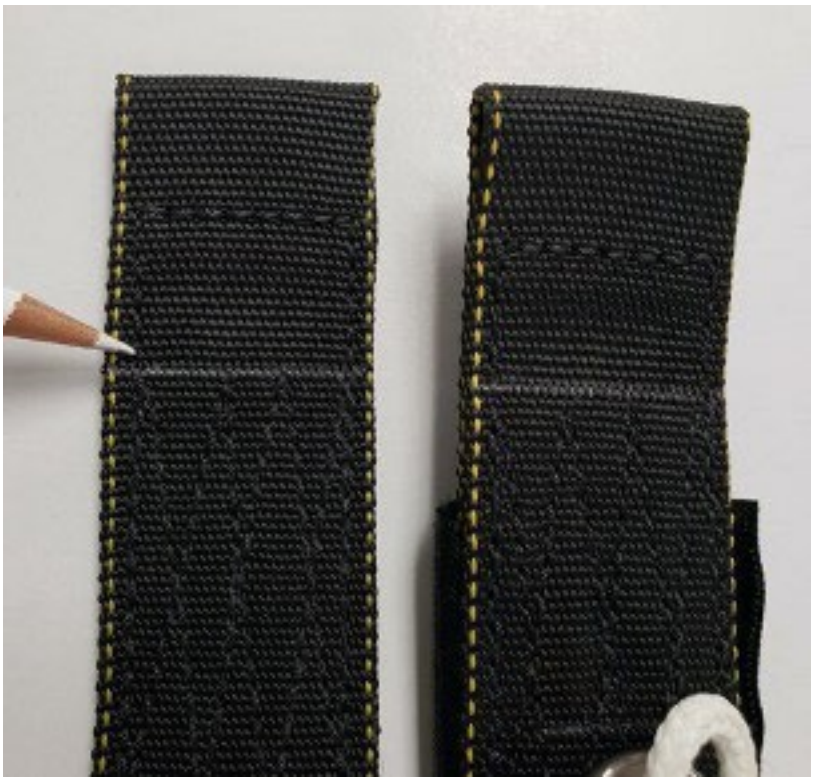


Note: DO NOT assemble this parachute on to the riser that have the smaller L-Bar style attachment loops.

Previous tandem reserve models used continuous suspension lines that required L-Bar connectors. This reserve parachute is certified for use with #6 stainless steel Rapide links only. Assure that the reserve risers of the harness/container system can properly accommodate the supplied #6 Stainless Steel Rapide links.

SIGMA 2 TANDEM RESERVE RISER COMPATIBILITY MODIFICATION

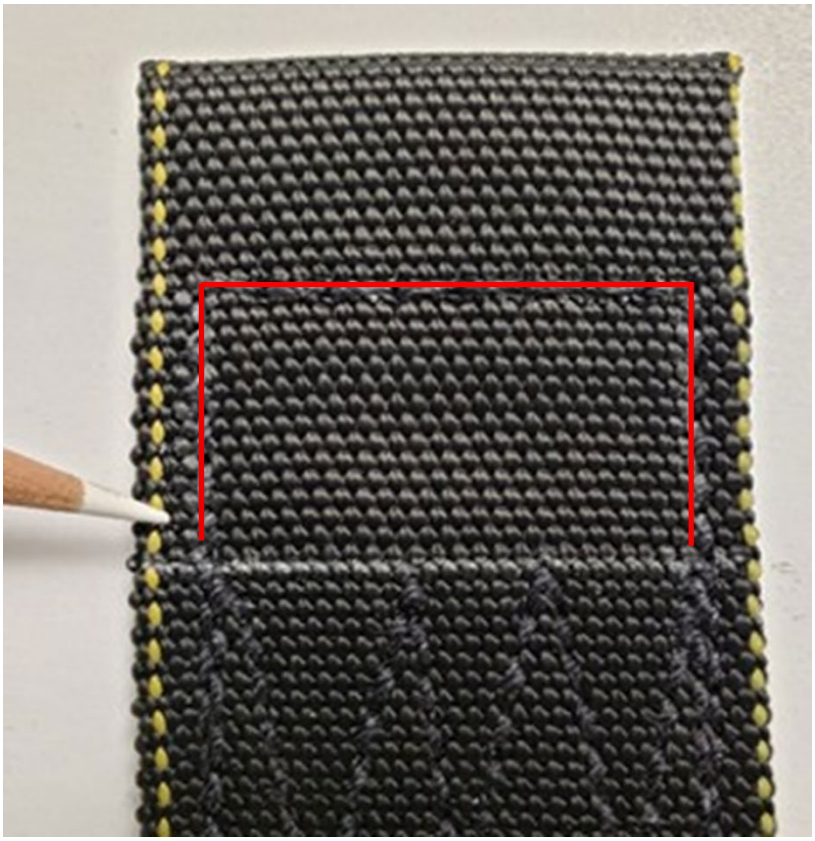
This procedure requires a Master Rigger to perform the task.



***SIGMA 2 RESERVE INSTALLATION (Using #6 Rapide links) REQUIRES THE REMOVAL OF THE 5 CORD BOXING AND THE TYPE 12 BUFFER ON THE RESERVE RISERS.**

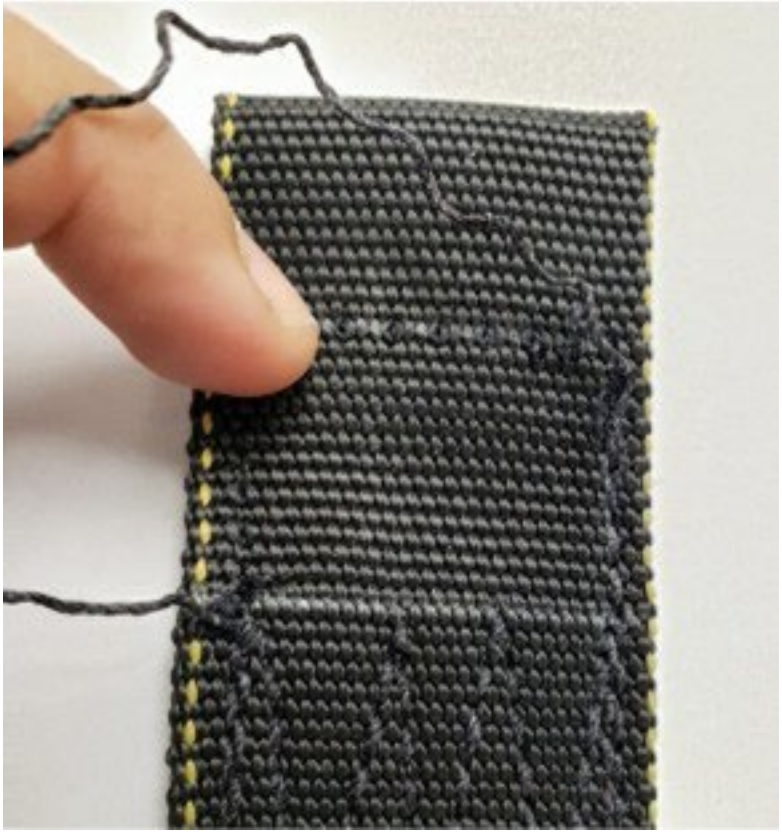
Draw a line at the top of the reserve riser four point.

Only remove stitching to this point.



Remove only the stitching indicated in red, making sure not to damage the webbing.

* It should be noted that the 4-point stitch pattern must stay intact and be verified after the completion of the modification.

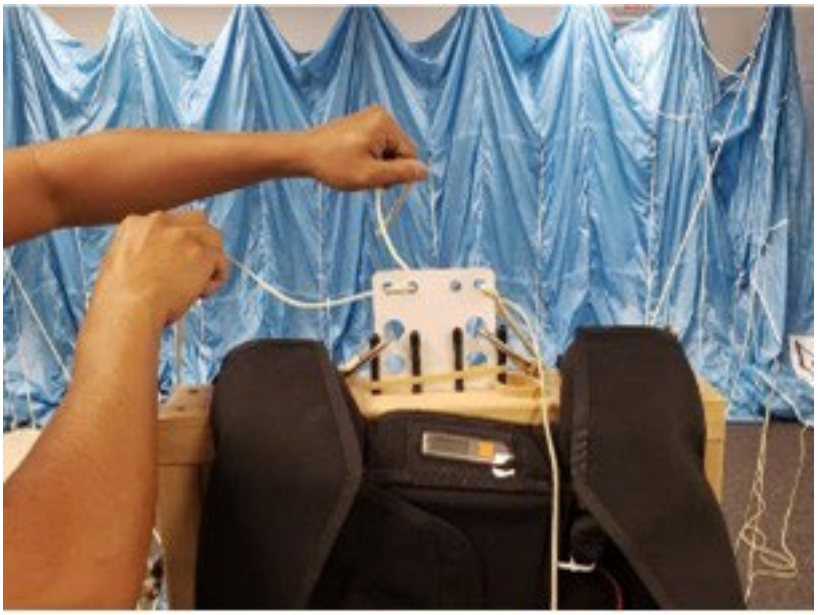


Detail of 5 cord stitching removal.

With stitching removed, remove the Type 12 buffer and hot glue.

Inspect webbing and 4-Point pattern for damage.

LINE BUMPER AND CANOPY INSTALLATION

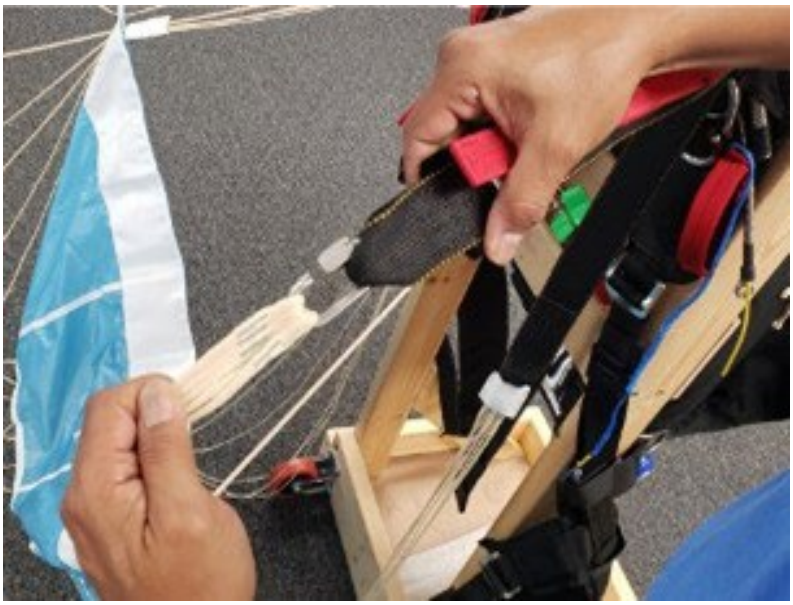


Place Sigma 2 reserve canopy and container in correct orientation in relation to each other

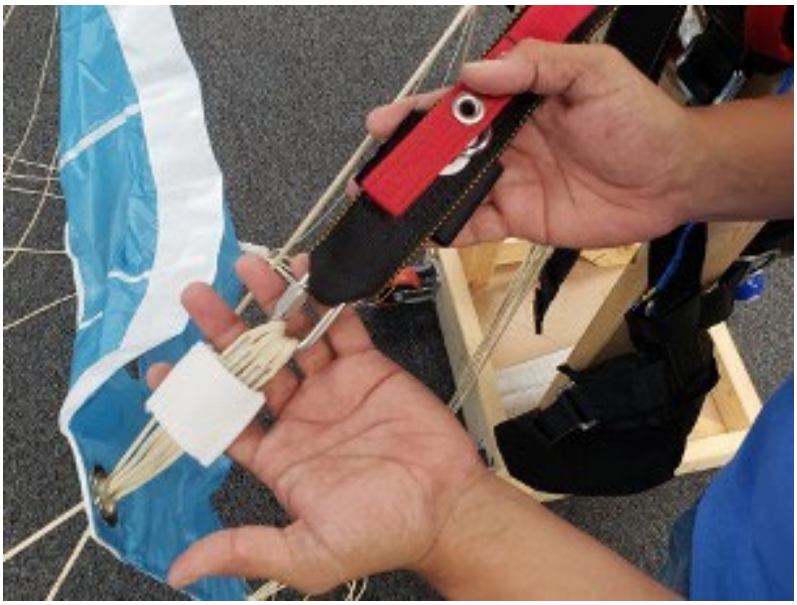
Continue to slide link protector up and over Rapide link.

Place the pull-up cord around the Rapide link and slide through the link protector.

Place and pair reserve riser with correct line group, provided link protectors, and # 6 Rapide link.



Attach # 6 Rapide link with barrel facing inboard, ensuring correct continuity of lines.

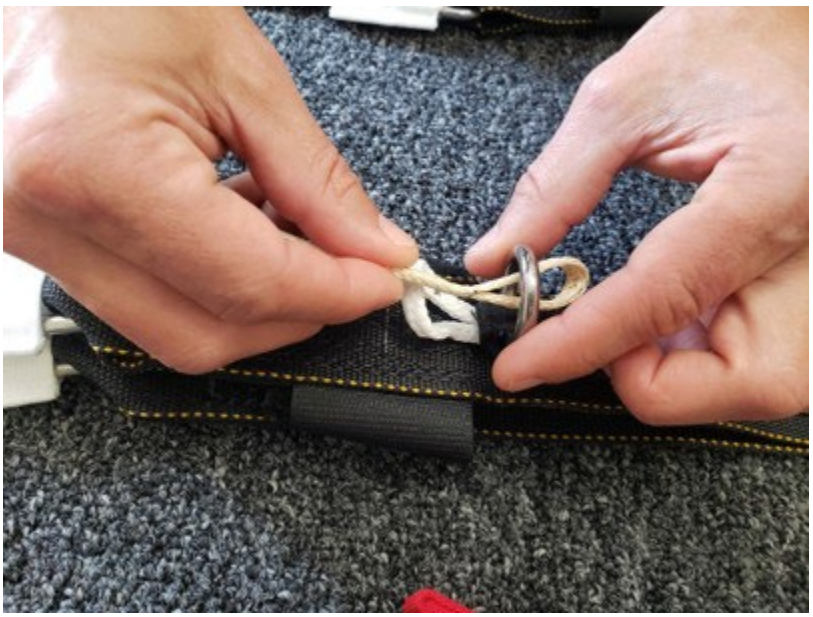


Finger tighten the # 6 Rapide link barrel.

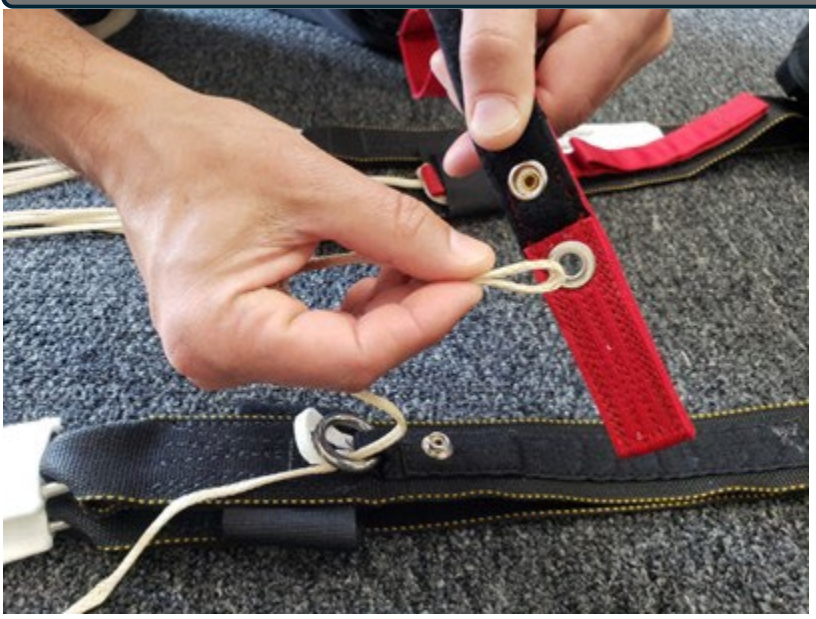
Set and tighten the #6 Rapide link with appropriate wrench. Tighten each connector link with an additional ¼ turn with a 7/16" wrench or crescent wrench.

Slide link protector over link and hand tack in place.

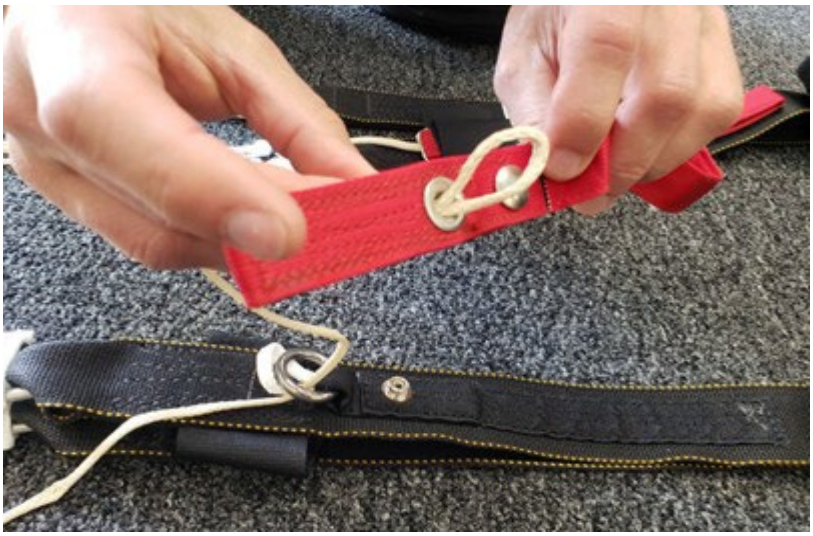
Repeat for remining risers/ line groups.



Thread the end of the steering line through the guide ring.



Thread the end of the steering line through the toggle grommet.



Continue to thread the end of the steering line through the toggle grommet.

Loop the end of the steering line over the end of the toggle.

VR360 VTC-II (L-BAR INSTALLATION)

Place the VR360 and container in correct orientation to each other.

Place and pair reserve riser with correct line group and L-Bar

Remove screws and open L-Bar using separator tool.

Attach L-Bar to reserve riser, ensuring correct continuity of lines.

Hand set the L-Bar. Outboard screw placement must be at the top.

Set L-Bar completely with a rubber mallet on a protective surface.

Insert and tighten the screws completely without excessive force. Ensure that the L-Bar is completely set by alternating screws when tightening.

Repeat for remaining risers/ L-Bars.

SETTING RESERVE BRAKES: SIGMA 2 RESERVE

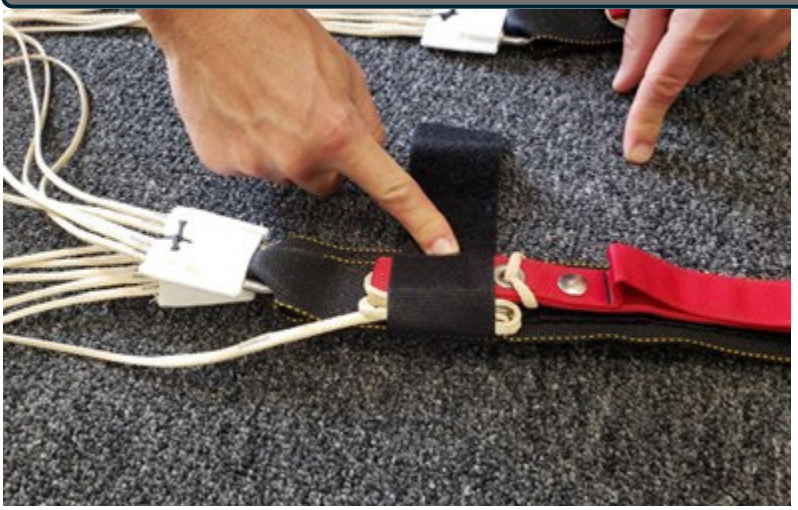
Route Dacron loop on riser through the lower brake line cat's eye.

Route Dacron Loop through the guide ring.

Insert toggle end through Dacron loop with the excess brake line towards the inside of the container.

Place toggle onto Velcro and snap in place.

Route excess control line back and forth next to guide ring.



Place hook side of Velcro over S-folded brake line and toggle tip.

Cover control line with Velcro and mate to secure in place.

Do not trim excess Velcro.

SETTING RESERVE BRAKES VR360/VTC II

Route Dacron loop on riser through lower brake line cat's eye.

Route Dacron loop through guide ring.

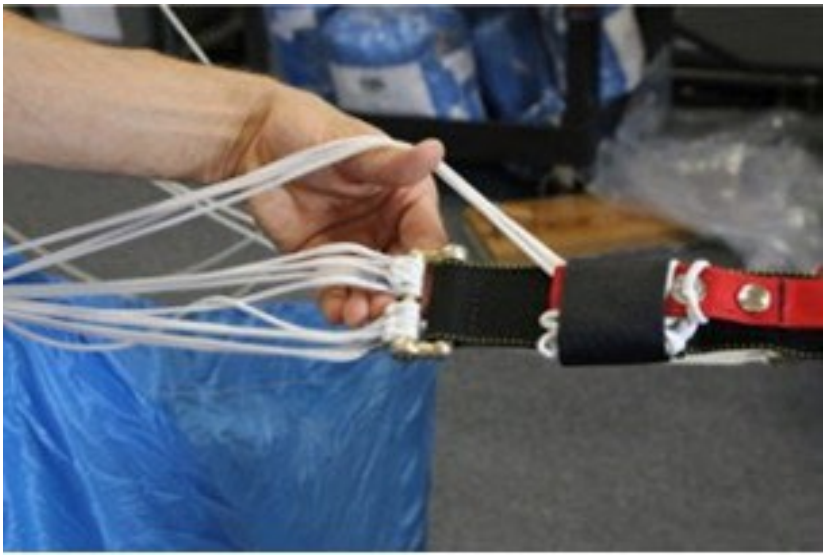
Insert toggle end though Dacron loop with excess brake line placed away from container.

Place toggle on Velcro and snap into place.

Route excess control line back and forth next to guide ring.

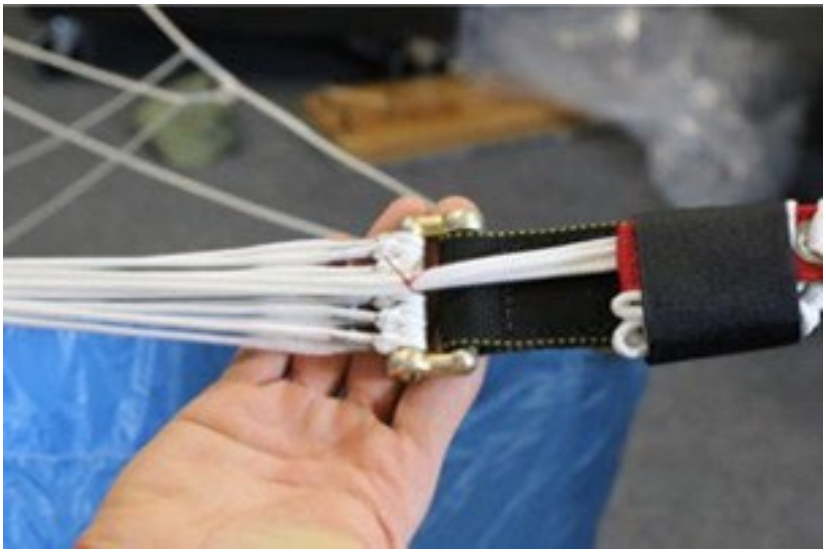
Cover control line with Velcro and mate to secure in place.

Do not trim excess Velcro.



Spread the lines on the rear riser evenly to reveal the L-Bar.

Tie control lines onto L-Bar using a double layer of seal thread.



Finish with a surgeon's knot and a locking knot.

Repeat for opposite side.

INSTALLING FREEBAG BRIDLE ON TO RESERVE PILOT CHUTE

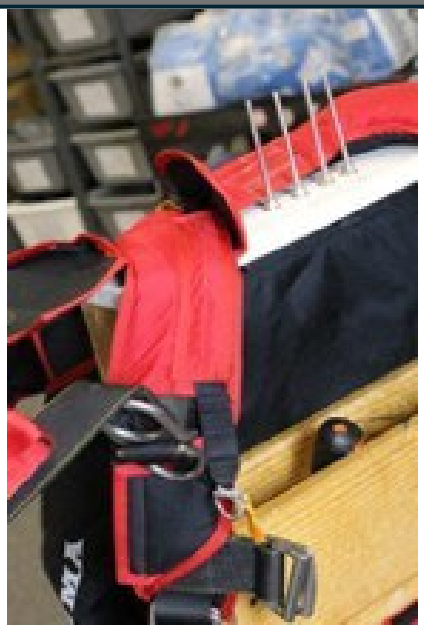
Route bridle through 3 Dacron loops on reserve pilot chute.

Route bridle and bag through end of loop.

Tighten lark's head knot evenly.

INSTALLING RSL ON TO CONTAINER

Place RSL onto Velcro, with pin in pocket.



Close the Velcro cover.

Note: The RSL shackle is routed from the back of the RSL ring to the front.

INSTALLING THE BREAKAWAY HANDLE

Route breakaway cables through the 2 first housings and secure handle in Velcro.

Route breakaway cable through the Collins Lanyard then through the second housing.

Exit cable from housing.

Position and secure the with Universal Lanyard using the Velcro tab.

INSTALLING THE RESERVE HANDLE

Route reserve cable through housing and secure handle in Velcro pocket.

Ensure that breakaway housing is separate from the reserve cable and housing.

SECTION 4: PACKING THE RESERVE CANOPY

PACKING RESERVE CANOPY- VR360/VTCII

Prior to packing, inspect canopy for any damage, and ensure correct line continuity. Ensure control lines are tied to the L-Bars.

Grab individual line groups and follow lines up to the slider. The line groups must be clear up to the canopy and through the slider grommets.

Place canopy over shoulder and flake the nose counting each cell. When you have the entire nose flaked, tuck it in between your knees and hold it there. Clear the stabilizers. Flake each side outwards with lines and attachment points placed in the center. Quarter the slider. Clear the tail, flake the material between each steering line outwards with lines and attachment points placed in the center.

Spread the nose of the canopy with four cells to the left and right, leaving the center cell fully exposed in the middle.

Hold the lines in one hand with tension forward and use your free arm to support the canopy fabric while gently placing the canopy on the packing surface.

Place a packing weight at the base of the canopy and maintain line tension. Dress up the canopy folds from flaking, keeping the lines centered.

Starting at one side of the canopy, carefully lift the folds of the material back towards the center of the pack job until the nose is exposed. Using packing weights, hold the opposite side in place. Flake the four nose cells to the outside and lay them flat. Use a packing weight to hold them in place.

Flake the material between the A and B lines away from the line channel in the center of the pack job. Be sure to have A and B line attachment points and their reinforcement tapes in the center of the pack job stacked together. Even up the bottom seams of the stabilizer

Smooth out the fold between the A and B lines and create a reduction fold in half towards the center of the pack job. Go to, but not beyond the line attachment points. Use weights to control the fabric and folds.

Repeat the previous steps to flake the material from between the B and C lines. Repeat again to flake the material between the C and D lines.

Flake the material between the upper control lines toward the outside of the pack job leaving the control lines stacked neatly on top of the A, B, C, and D lines from before.

Move to the opposite side and repeat the steps for nose, A/B/C/D, and tail. Dress up and quarter the slider into the folds of between B and C lines, without exposing too much in the front or back of the canopy. Make sure the line channel in the center of the pack job is clear and all attachment points are in the center of the pack.

Fold the flaked tail section of the canopy under to achieve the same width as the canopy folds. Prepare the center cell material to cocoon the canopy, without disturbing the folds.

Use the center cell material to cocoon around the tail section.

Place this between the A/B folds and the B/C folds effectively cocooning the fabric from the C lines to the tail.

Ensure that the folds are all the same width and use packing weights to hold them in place. The center cell seam should be centered on the pack.

Count the 4 cells of the nose and grab them while maintaining tension forward.

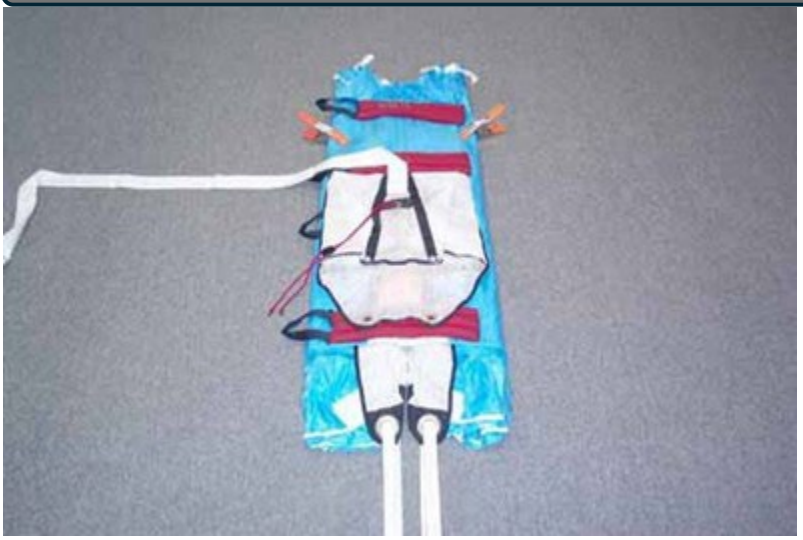
Roll the 4 cells together downward and in toward the center until equal with and placed under the edge of the folds. The roll should not be aggressively tight, but similar to very narrow folds.

Repeat for opposite side.

Prepare the reserve bag to receive the canopy.

The VR360/ VTCII tandem reserve parachute is compatible with both the original VR360 Reserve deployment bag as well as both sizes of the TB Reserve Deployment bag.

Insert the locking soft bodkin into the center grommets and allow approximately 1" between the grommets.



The dressed width of the canopy should be 1" wider that the width of the reserve pack tray to allow it to fill the reserve bag completely.

Perform the first S-fold while controlling the slider grommets and line tension. Using packing paddles will help achieve this.

Once the S-fold is complete, the slider grommets should be place approximately 1" behind the fold line.

Press down and hold tension on the lines and slider grommets in place. Using clamp can help hold this fold in place.

Fold the top portion of the canopy down over the first S-fold and prepare the reserve bag to receive the canopy.

Ensure that the nose folds are still rolled and placed close to the center line of the canopy. Dress center cell to the width of the pack job covering the nose rolls on each side.

Place the reserve bag above the second fold and the closing flap slightly under the canopy.

Use a packing paddle to establish the fold line for the second S-fold.

Using a packing paddle, complete the second S-Fold.

Place knees to control pack and S-folds and remove packing paddles.

Follow the center seam to split the remaining part of the canopy into two ears. Spread the fabric and do not roll fabric in front of the leading edge.

Pull back the ear to make the first half dense and scrunch up the second half for a softer feel.

Insert ear into reserve bag, repeating the steps for the opposite side of the canopy. Switching from side to side, gradually move the entire canopy into the reserve bag.

Use a needle fold of bridle material to secure one end of the safety stow allowing you to make the first locking stow.

Each locking stow bight should be about 3" long.

Dress the pack job to the finished shape desired. The bagged canopy should reflect the shape of the reserve tray for the best results. It should be square at the bottom, wedge shaped in profile, and thin at the top. When pressing down on the pack job, it should be firm at the mouth of the bag and get progressively softer as you move toward the top. 1-2" of canopy material protruding from the mouth of the bag will help you fill the lower reserve tray corners.

Place loop Velcro protectors on the hook Velcro of the reserve bag pouch.

Stow the remainder of the suspension lines into the pouch on the underside of the reserve bag, using S-folds that extend completely from one side of the pouch to the other. Remove the Velcro protectors from the bag and mate the Velcro. Be sure none of the lines are trapped between the hook and loop fastener at the mouth of the pouch.

Create a slight indentation in the center of the pack job to accommodate space for the AAD unit.

PACKING THE SIGMA 2 RESERVE CANOPY

Prior to packing, inspect the reserve canopy for any damage and to ensure correct line continuity.

Pick up individual line groups and follow lines up through the slider. The line groups must be clear up to the canopy and pass through the slider grommets.

Place canopy over your shoulder and flake the nose counting each cell. When you have the nose flaked, tuck it between your knees and hold it there. Clear the stabilizers. Flake each side outwards, with lines and line attachment points placed in the center. Quarter the slider. Clear the tail, flake the material between each steering line outwards, with lines and line attachment points placed in the center.

Spread the nose with four cells to the left and right, leaving the center cell fully exposed in the middle.

Hold lines in one hand with tension and use your arm to support the canopy fabric while gently placing the canopy on the packing surface.

Place a packing weight at the base of the canopy and maintain line tension. Dress up the canopy folds from flaking keeping the lines centered.

Starting at one side of the canopy, carefully lift the folds of material back towards the center of the pack job until the nose is exposed. Use packing weights to hold the opposite side in place. Flake the 4 nose cells to the outside and lay them flat. Use a packing weight to hold them in place.

Flake the material between the A and B lines away from the line channel in the center of the pack job. Be sure to have A and B line attachment points and their reinforcement tapes in the center of the pack stacked together. Even up the bottom seams at the stabilizer.

Flake the material between the upper control lines toward the outside of the pack job leaving the control lines stacked neatly on the top of the A, B, C, and D lines from before.

Smooth out the fold between A and B lines and create a reduction fold in half towards the center of the pack job. Go to , but do not go beyond the line attachments points. Use weights to control the fabric and folds.

Repeat the previous steps to flake the material between the B and C lines. Repeat the previous steps to flake the material between the C and D lines.

Flake the material between the upper control lines toward the outside of the pack job leaving the control lines stacked neatly on top of the A, B, C, and D lines from before.

Move to the opposite side and repeat the steps for nose A/B/C/D and tail. Dress up and quarter the slider into the fold between B and C lines without exposing too much towards the front or back of the canopy. Make sure the line channel in the center of the pack job is clear, and all lines and attachment points are in the center of the pack.

Fold the flaked tail section of the canopy under to achieve the same width as the rest of the canopy folds. Prepare the center cell material to cocoon the canopy without disturbing the folds.

Use the center cell material to cocoon around the tail section.

Place this between the A/B fold and the C/D fold effectively cocooning the fabric from the C lines to the tail.

Ensure that all folds are the same width and use packing weights to hold in place. The center cell seam should be centered on the pack.

Count the four cells of the nose and grab them while maintaining tension forward.

Roll the four cells together downward and in until equal with and placed under the edge folds. The roll should not be aggressive, but similar to very narrow folds.

When the nose folds are complete, the leading edge of the canopy should be even with the edge of the cocooned canopy.

Repeat for opposite side.

The SR340 & SR370 tandem reserve parachutes are ONLY COMPATIBLE with the appropriately sized TB Reserve Deployment Bag.

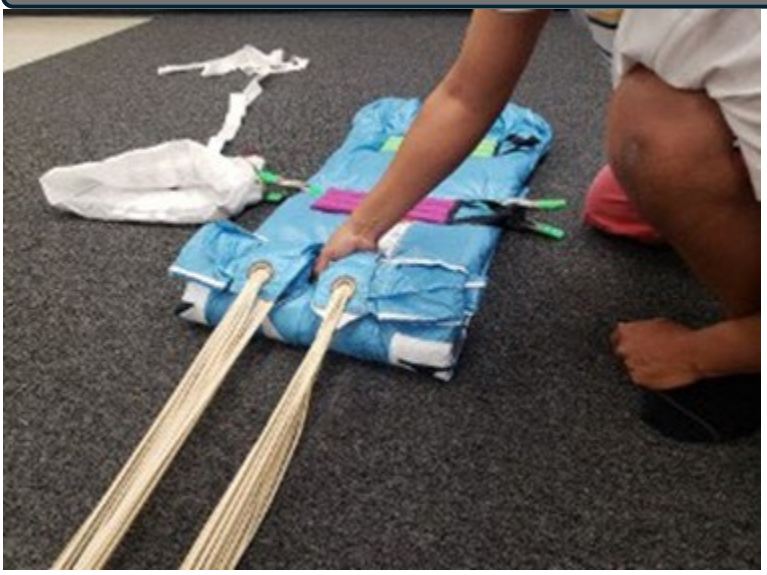
Container	VR-360	SR 340	SR 370
Micro Sigma (S 12)	Micro Sigma Reserve Bag S12 TB Reserve Bag	S12 TB Reserve Bag	S 12 TB Reserve Bag
Sigma (S 13)	Sigma Reserve Bag S13 TB Reserve Bag	NOT RECOMMENDED	S 13 TB Reserve Bag

Prepare the reserve bag to receive the canopy.

Insert the locking soft bodkin into the center grommets and allow for approximately 1" distance between the grommets.

Roll the mouth of the reserve bag back to the free stow channel to allow ease of canopy placement.

Perform the first S-Fold while controlling the slider placement and line tension. Using packing paddles will help this.



Once the first S-fold is complete, the slider grommets should be placed approximately 1" behind the fold line.

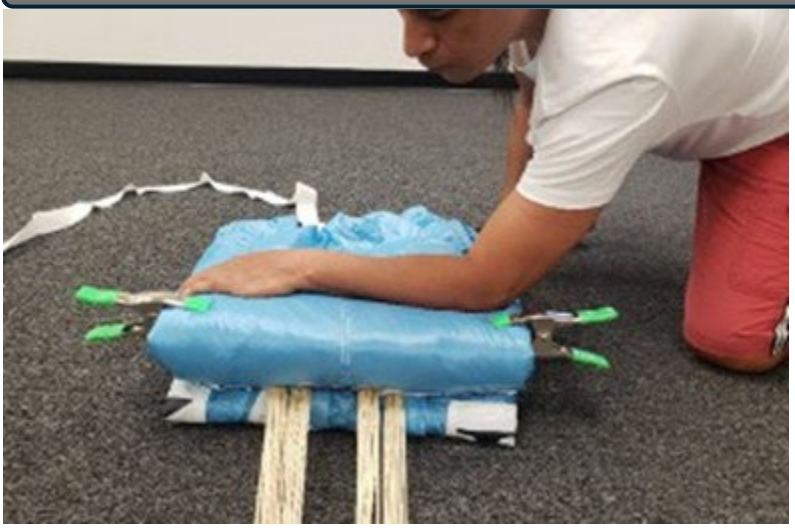
Press down and hold tension on the lines and slider grommets in place. Using clamps can help maintain this fold.

Reach under the cocooned canopy to fold over the second S-fold.

Ensure that the nose folds are still rolled up and placed close to center. Dress center cell to the width of the pack job, covering the nose rolls on each side.

Place the reserve bag above and slightly underneath the canopy.

Use a packing paddle to establish the fold line for the remaining S-fold.



Use a packing paddle to establish the fold line for the remaining S-fold.

Place knees to control the pack and S-folds and remove the packing paddles.

Follow the center seam to split the remaining part of the canopy into two ears. Spread the fabric evenly and do not roll the fabric in front of the leading edge.

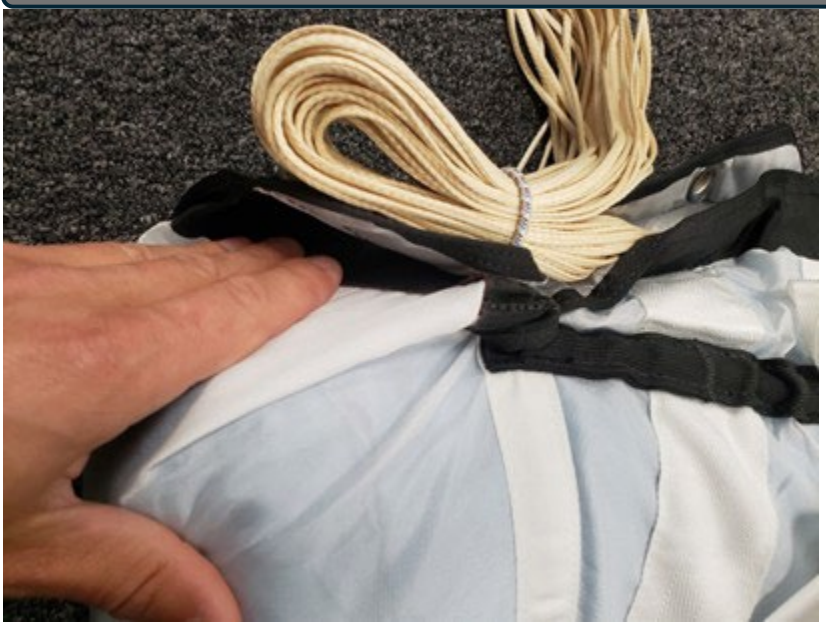
Pull back the ear to make the first half dense and scrunch up the second half for a softer feel.

Insert ear into the reserve bag, repeating the steps for the opposite side of the canopy. Switching from side to side, gradually move the entire canopy into the reserve bag.

Use a needle fold of bridle material to secure one end of the safety stow allowing you to make the first locking stow.

Route locking stows through the grommet on the side of the bag passing through the inside of the grommet.

Tuck side flap of the reserve bag inwards, neatly enclosing the corner of the canopy. Bring locking stow through remaining grommet on the last flap.



Dress the corners of the reserve bag by smoothing the edges of the bag with your hand.

Complete the locking stow and shape the reserve bag side flap to make a clean corner.

Repeat steps on the remaining side of the reserve bag. Locking stows should be approximately 3" long and equal in length. Corners of the reserve bag should be tucked inwards forming a clean corner.

Open line stow pouch by separating Velcro tabs on both sides.

Stow the remainder of the suspension lines into the pouch on the underside of the reserve bag, using S-folds that extend completely from one side of the pouch to the other. Close the two Velcro tabs, mating the Velcro. Be sure none of the lines are trapped between the hook and loop fastener at the mouth of the pouch.

Place the risers to the sides of the reserve tray with the ends fanned out to reduce bulk. Clamping the reserve risers in place can help. Insert a pull-up cord through the reserve closing loop.

Route the pull-up cord through the reserve bag from the bottom and out of the top using the soft bodkin.

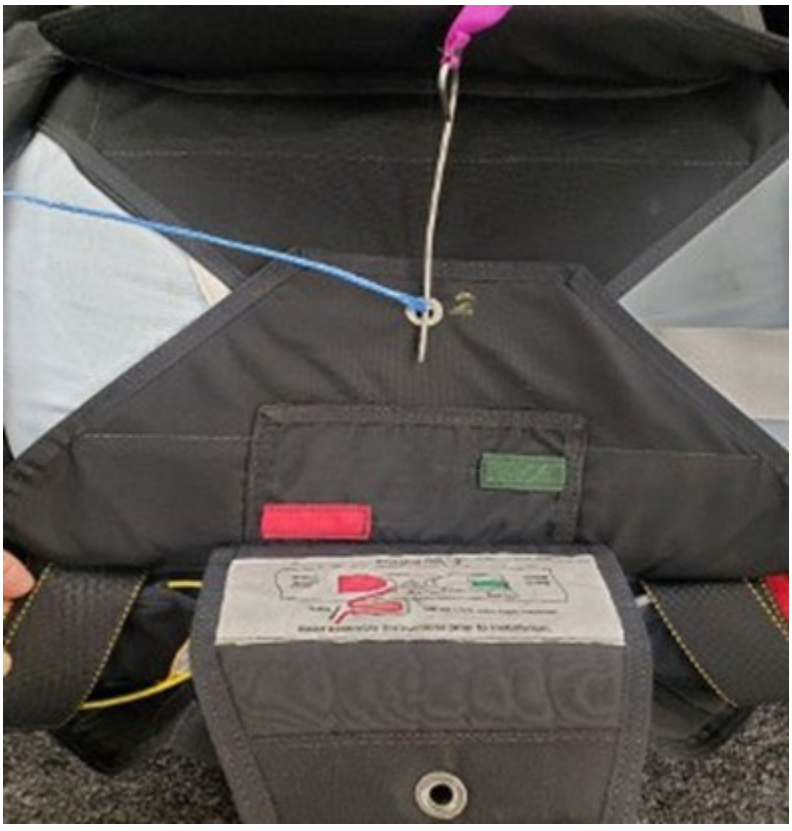
Pull the reserve closing loop through the reserve bag and secure with a temp pin. Ensure no canopy fabric has pulled through the grommet.

Place the mouth of the reserve bag and place the lower corners of the reserve pack job into the bottom corners of the reserve tray.

Thread the pull-up cord through the AAD cutter before passing through flap #1 bottom kicker flap.

Evaluate the length of your closing loop by following method: Press the #1 flap firmly down while pulling with adequate force on the pull-up cord. The top of the closing loop should extend beyond the bound flap #1 by ¼". This will help ensure the proper length closing loop is being used.

Secure flap #1 with temp pin. Fold the bride vertically along both sides of the center grommet, until 6" before the Skyhook and place these folds under flap #1.



Close flap #2 and secure with temp pin. Make sure the remaining bridle exits the close #2 flap on the side with the green pocket. Note the green "flex tab" on the bridle.

Place green flex tab in green pocket and place Skyhook flat across the #2 flap. Place the red lanyard in the red pocket by folding the lanyard in half and insert the folded section completely.

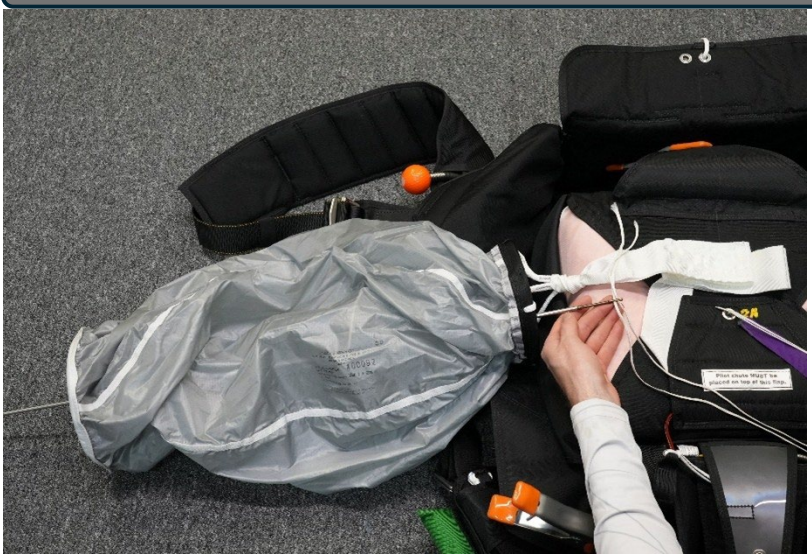
Attach the red lanyard onto the Skyhook and ensure there is no tension or excessive slack.

Insert and tie a single thread of 4.75 lbs. safety/seal thread using a surgeon's knot to keep the red lanyard in place.

Close #2A flap and temp pin in place.

Fold the bridle parallel to the side of the #2A flap and place underneath the flap.

Stow the remaining bridle on top of the #1 flap either left/right or up/down depending on preferred bulk distribution.



Using a gun cleaning rod, route the pull-up cord straight through the reserve pilot chute without catching any material.

Place the reserve pilot chute on top of the bridle, with the center grommet placed directly above the #2A flap grommet.

Compress the reserve pilot chute without getting any material caught between the coils.

Secure reserve pilot chute with temp pin.

Spread material completely and ensure no material is caught inside or underneath the reserve pilot chute.

Accordion fold the reserve pilot chute material fabric closest to the #3 flap until approximately 1" wide.

Close the #3 flap while keeping material in place, secure with temp pin.

Accordion fold the remainder of the pilot chute material, top then sides, until all material is folded back approximately 1" around the cap of the pilot chute.

Close #4 flap while keeping material in place and secure with temp pin.

Close #5 flap while keeping material in place and secure with temp pin.

Close #6 flap while keeping material in place. Place reserve pin through marine eye or Spectra ripcord first, then insert into the reserve closing loop.

Seal container and complete all necessary paperwork.

OPTIONAL STAGING LOOP INSTALLATION: SIGMA AND MICRO SIGMA ONLY

Tie a double overhand knot in staging loop.

Insert into the 2nd grommet at the bottom of the reserve tray. Ensure that the staging loop is 1" shorter than the reserve closing loop.

Pull the reserve closing loop through the reserve bag grommet and secure with a temp pin. Pull staging loop through reserve bag grommet. Ensure no canopy material has been pulled through the grommet.

Place the AAD into the indention in the reserve and place the lower corners of the reserve pack job into the reserve container. Fill bottom corners of the reserve tray completely with the bagged canopy gradually, moving from side to side.

Thread the pull-up cord through the AAD cutter before passing through flap #1 bottom kicker flap.

Secure flap #1 with temp pin.

Pull staging loop through the off-set grommet on flap #1 and secure with temp pin.

Insert reserve bridle straight from the reserve bag to the hinge point of the #3 flap and fold back.

Fold bridle in half widthwise and into a quarter fold.

Insert the bridle approximately 1" into the staging loop.

Fold the bridle diagonally along both sides of the center grommet until 6" before the Skyhook and place these folds under flap #1.

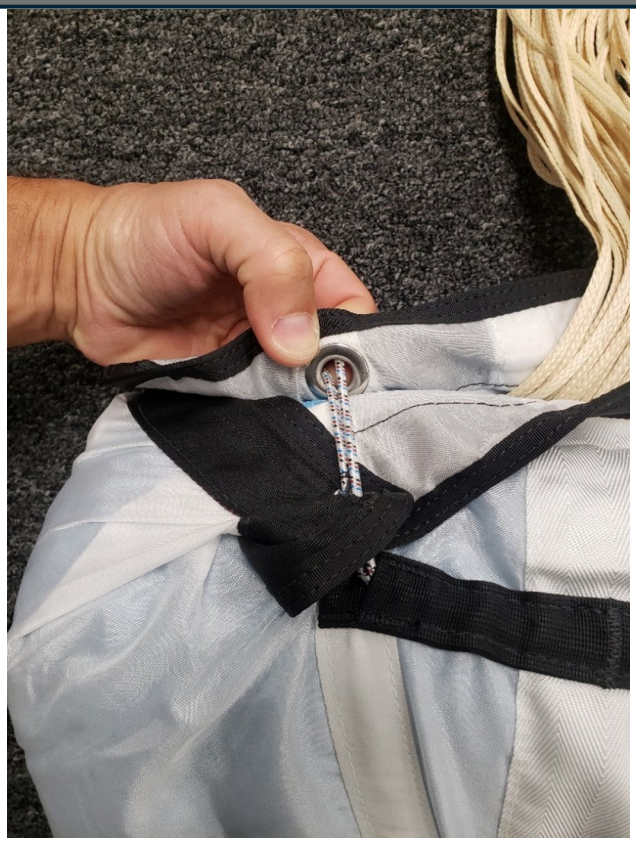
TB RESERVE DEPLOYMENT BAG – CLOSING PROCEDURE

The packed reserve canopy should be completely inserted into the reserve bag, with the bottom edge of the folds closely in line with the safety stow channel. Begin by extending the mouth of the reserve bag fully around canopy. Temporarily secure one end of the safety stow as required to allow making the first locking stow.

Locate the grommet at the top corner of the reserve bag.

Turn the grommet inward such that the safety stow will pass through the smooth face of the grommet.

Pass the safety stow through the grommet.



Tuck side flap of bag inwards neatly enclosing the corner of the canopy and pass the safety stow through the smooth face of the bottom grommet.

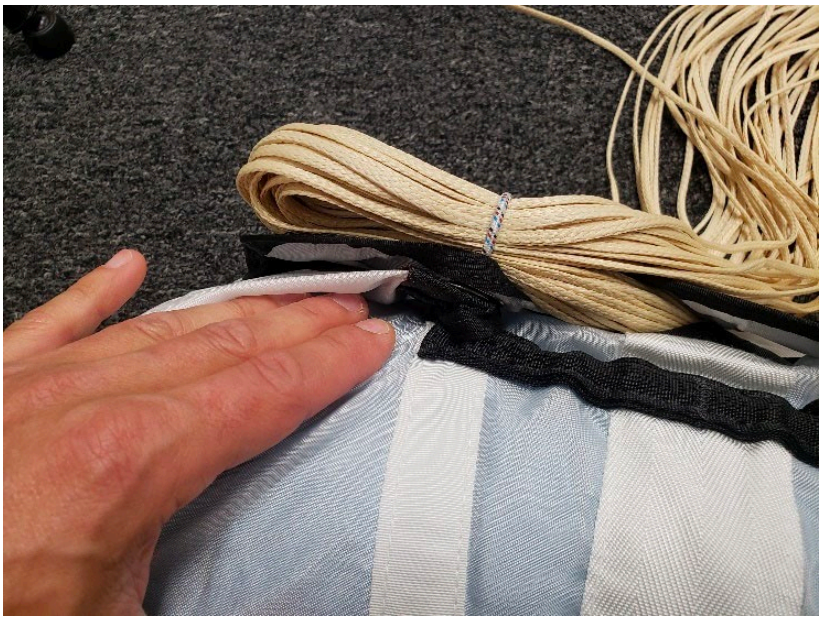
Verify the following:

- The smooth face of the grommets will both face the same direction when correctly closed.
- Safety stow passing through both grommets correctly.
- The material between both grommets will fold inward forming a clean pocket like corner shape.

Make the first locking stow.

Then shape reserve bag side flap to make a clean corner.

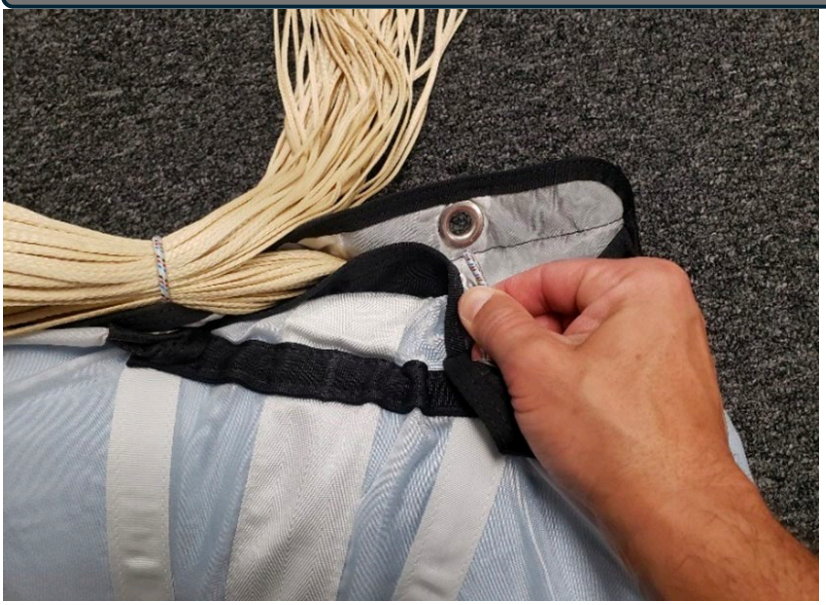
Locking stows should be no shorter than 2" and no longer than 3" long.



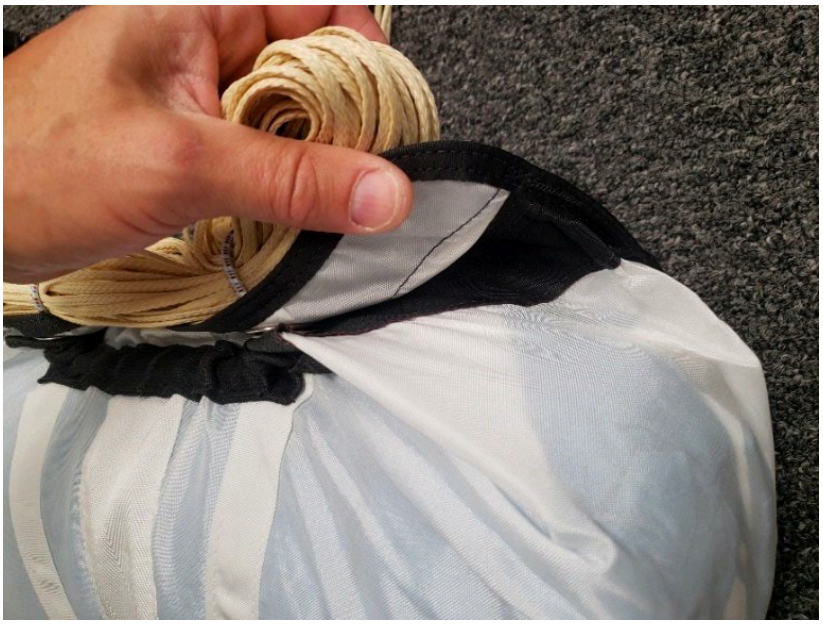
With the locking stow in place, tuck the mouth of the reserve bag inward to organize the slack material found between the grommets. This forms the pocket like corner and provides a neat and clean appearance.

View of reserve bag corner after organizing and dressing.

Pass the safety stow through the grommet.

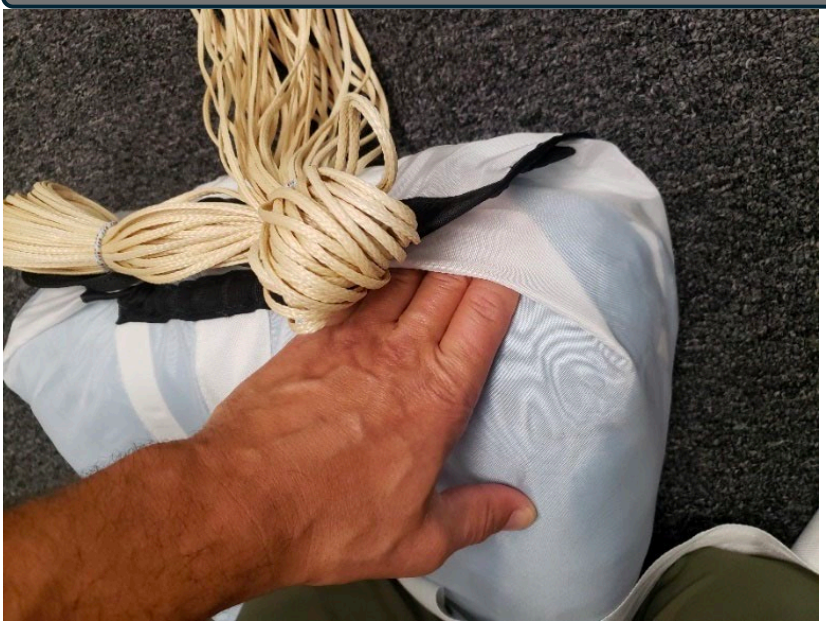


Tuck side flap of bag inwards neatly enclosing the corner of the canopy and pass the safety stow through the smooth face of the bottom grommet.

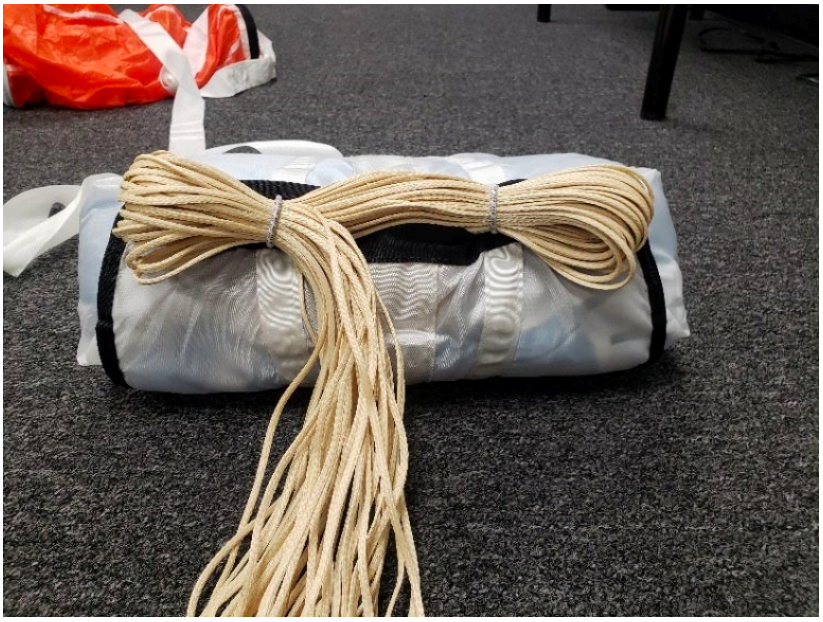


Detail of pocket like corner after locking stows are in place.

*Locking stows should be no shorter than 2" and no longer than 3" long.

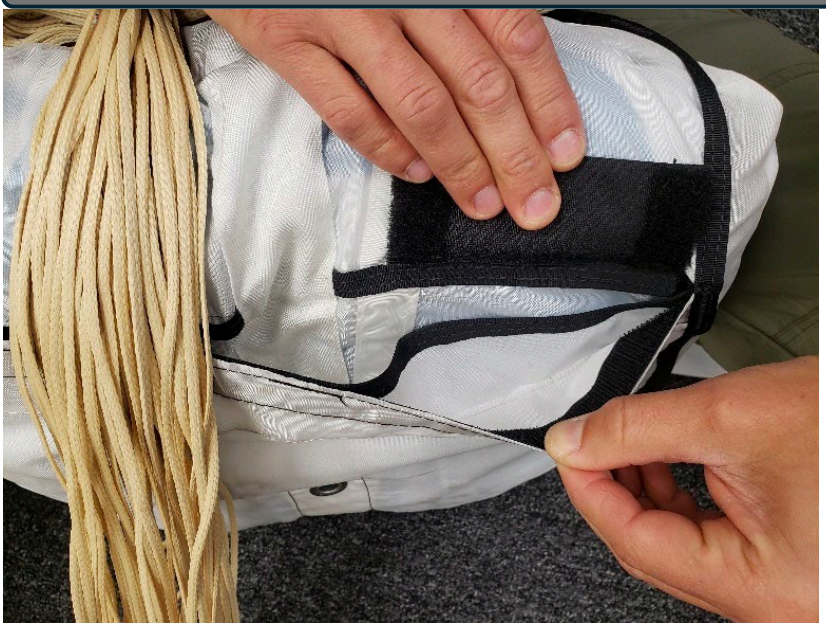


With both locking stows in place, tuck the mouth of the reserve bag inward to organize the slack material found between the grommets. This forms the pocket like corners and provides a neat and clean appearance.



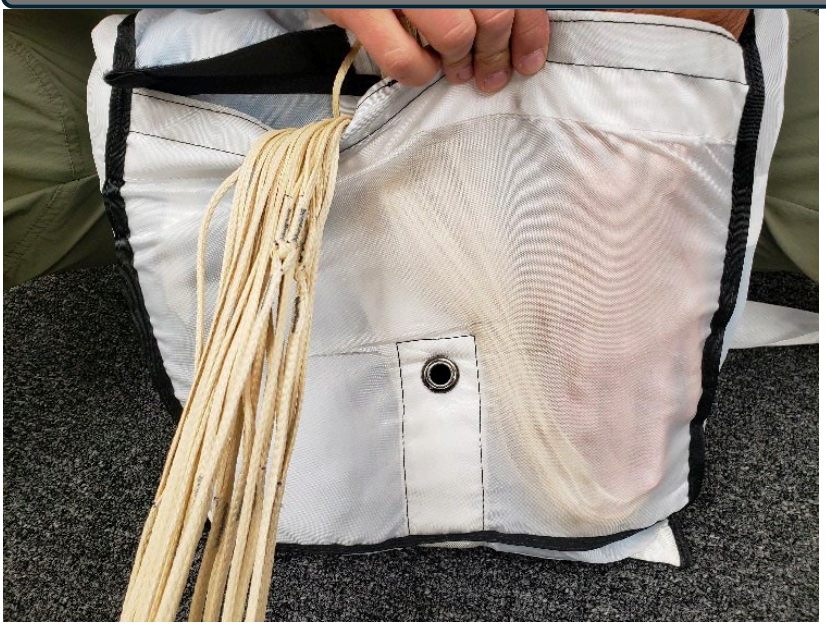
The TB reserve bag is now closed.

The closed reserve bag should look squared off and symmetrical.



Open the line stow pouch by separating Velcro tabs on both sides.

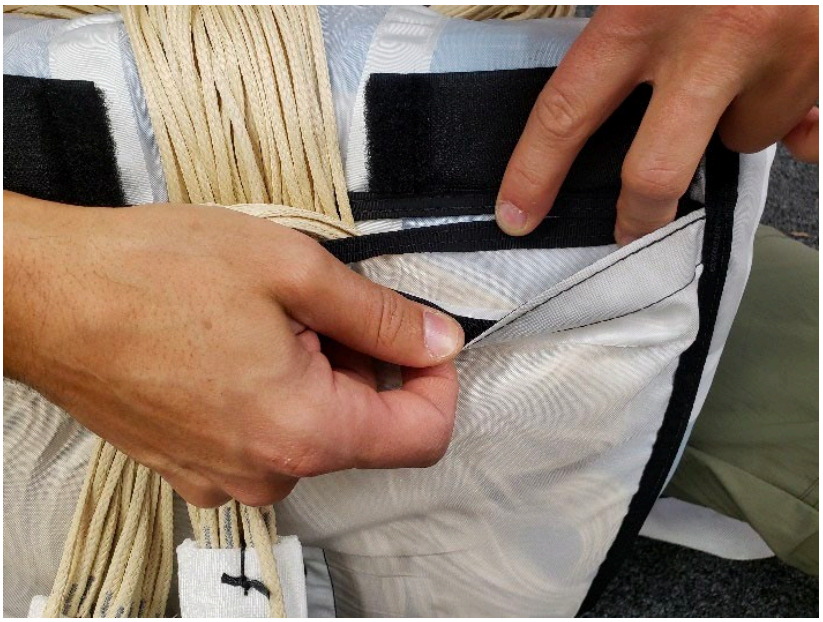
Begin stowing suspension lines by making S-folds that extend to the bottom of the line stow pouch.



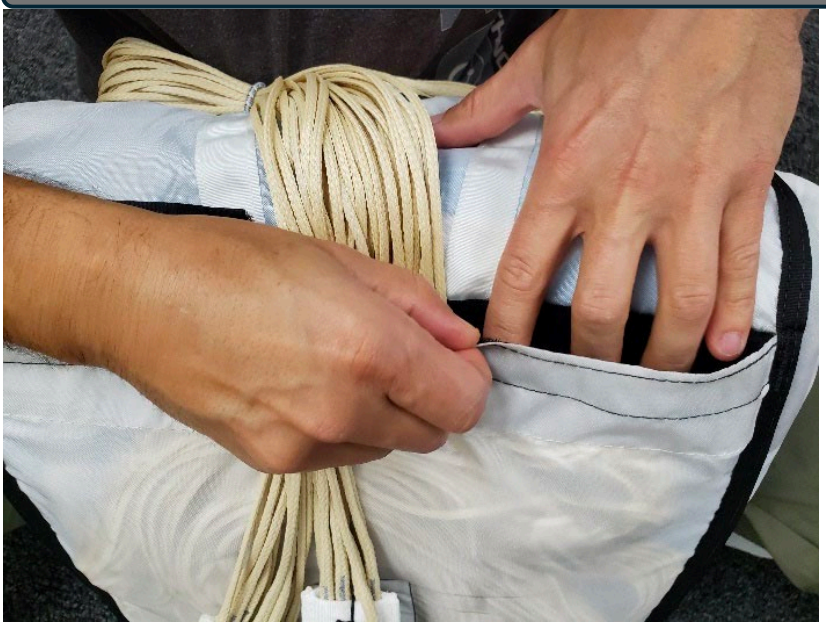
Neatly tuck line stows all the way into the pouch.

Working back and forth stowing the remaining suspension lines by making S-folds and tucking neatly into pouch.

Finish line stowing at the center of the reserve bag in-between Velcro tabs.



Open Velcro pocket.



Tuck pile tab neatly into the pocket cleanly mating Velcro.

Finish closing Velcro tab ensuring that the Velcro is mated evenly.

Repeat Velcro pocket closing on the remaining side.

The suspension lines are now stowed.

SECTION 5: MAIN ASSEMBLY AND PACKING

SELECTING THE CORRECT STOW BANDS

- Rubber bands meeting MIL-R-1832 are recommended. The following sizes are used based on canopy selection.
- 2"x ¾" rubber bands are used with Dacron lined main canopies.
- 2" x 3/8" rubber bands are used with Vectran and HMA lined main canopies

*Substandard rubber bands should be replaced immediately.

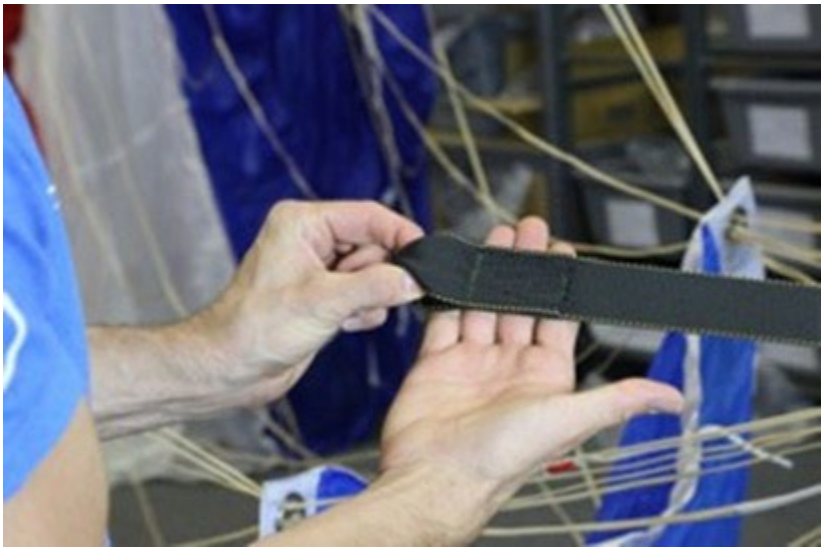
INSPECTING MAIN CANOPY & COMPONENTS

It is highly recommended to inspect the main canopy after 25 jumps in areas including but not limited to:

- Drogue envelope
- Drogue bridle and centerline (Check calibration and general wear)
- Check Drogue Disk, attachment pin and screws.
- Main Deployment bag and grommets
- Bridle attachment point on top of and inside of canopy.
- Canopy fabric, tapes, seams, suspension lines and attachment points.
- Control lines, brake lock loops and toggle attachment.
- Slider & grommet condition
- Connector links & slider bumpers
- Inspect the Sigma disk release system.
- Main closing loop
- Main container D-rings
- Recoil ripcord system.

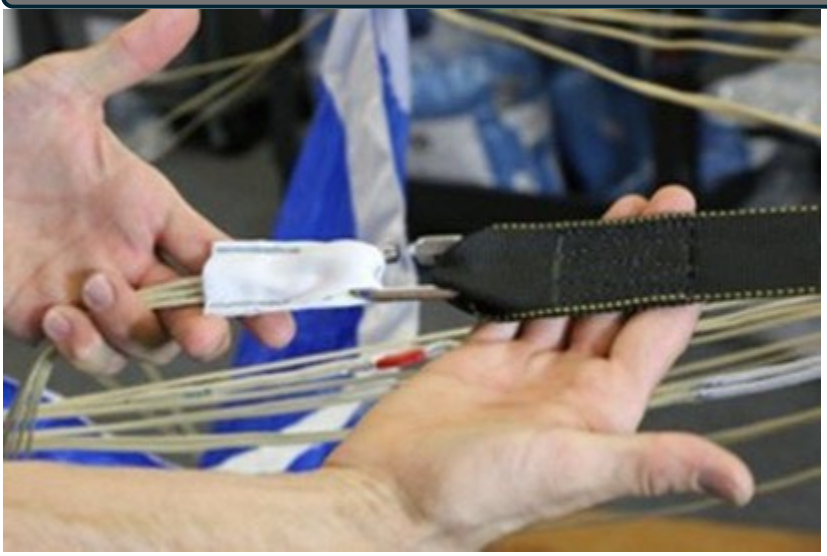
ASSEMBLING THE MAIN CANOPY TO THE MAIN RISERS

Place and pair main riser with the correct line group and link.

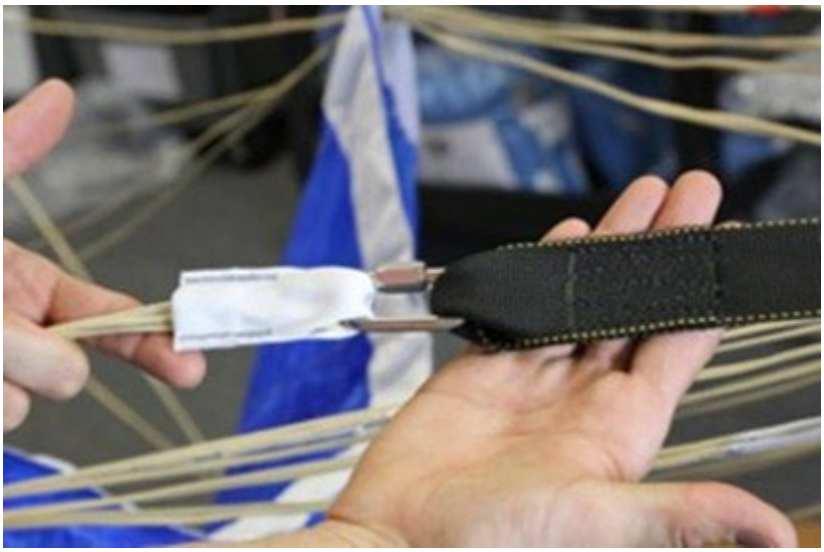


Fold end of riser inside towards the middle.

Open hard link completely, ensure no sharp edges.



Attach the hard link, with the barrel closest to the riser, ensuring correct continuity of lines.



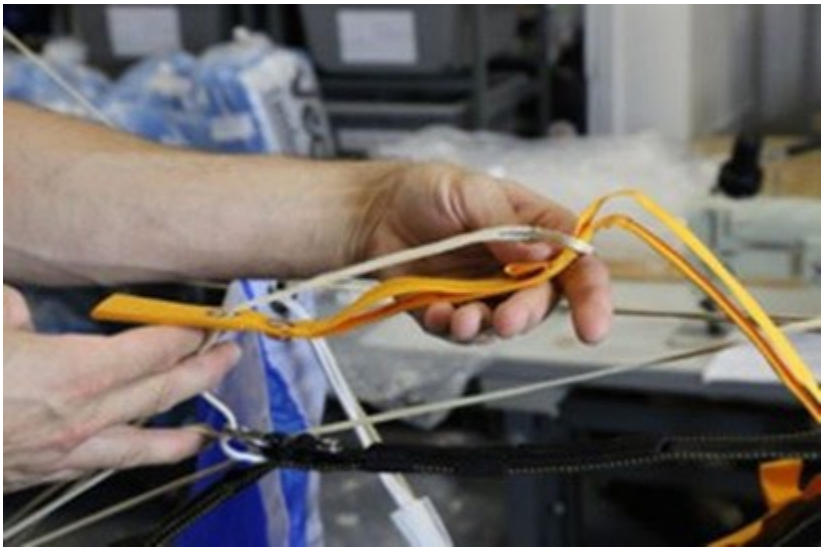
Finger tighten hard link.

Use a wrench to tighten hard link, approximately ¼ turn or until appropriately tight and barrel is seated. Do not overtighten, which may cause damage to the link.

Repeat for remaining hard links.

ATTACHING THE PRIMARY & SECONDARY TOGGLES

Insert primary control line through large guide ring on riser and then through primary toggle grommet (gold toggle.)

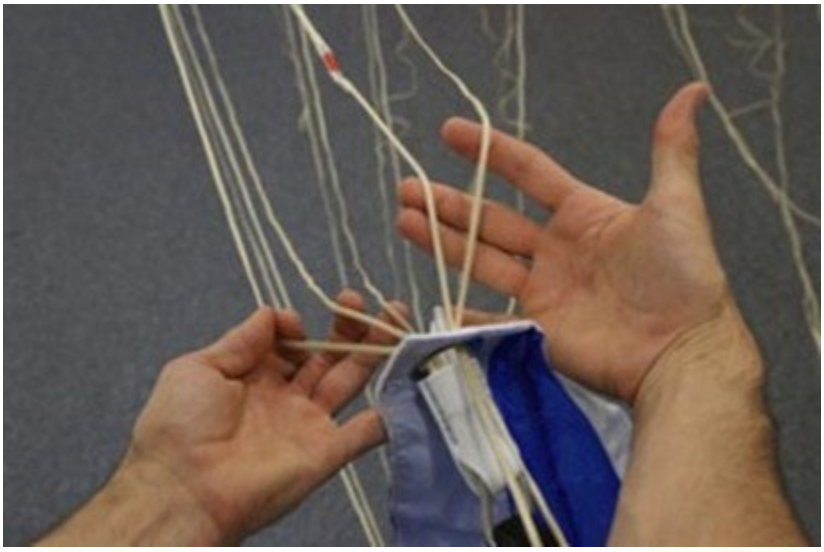


Loop control line end over bottom of toggle. Tighten larks head and place toggle onto riser.

Insert secondary control line through small guide ring on riser, then through secondary toggle ring (black toggle.)

Loop control line end over bottom of toggle.

Tighten lark's head and place toggle onto riser.



Always ensure correct line continuity after attachment.

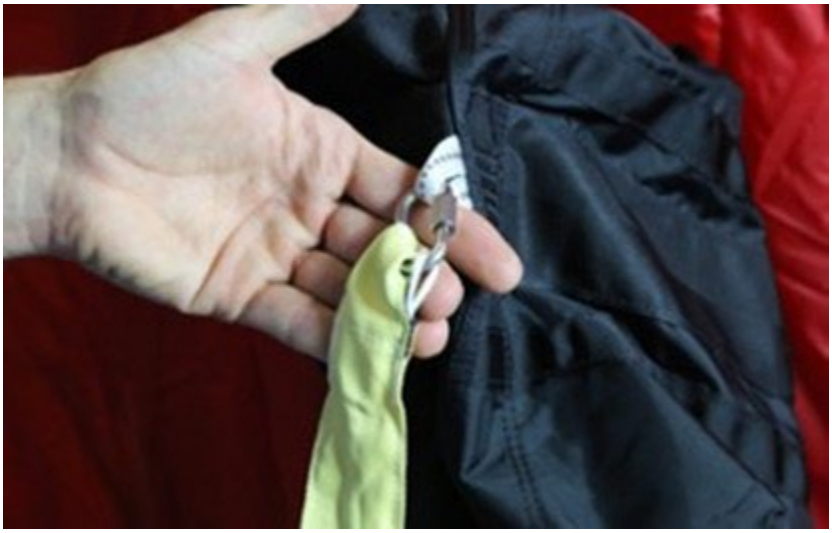
ATTACHING MAIN BAG AND DROGUE

Route inside loop of main bag through eye on bridle attachment point.

Route bag through loop.

Tighten lark's head knot.

Attach drogue end to outer loop, using hard link.



Ensure the center line is attached to the hard link and finger tighten.

(If the center line is not attached or breaks, the drogue will not collapse on deployment. This will result in harder openings of the main canopy.)

Use a wrench to tighten hard link approximately ¼ turn or until appropriately tight and the barrel is seated. Do not overtighten, which may cause damage to the link!

The Sigma, Micro Sigma, and SIGMA II main deployment bags have undergone design improvements to help reduce wear of the WHITE tubular nylon drogue attachment point. All the main deployment bags now come with an additional RED Type IV loop bridle attachment point in addition to the 1" WHITE tubular nylon loop.

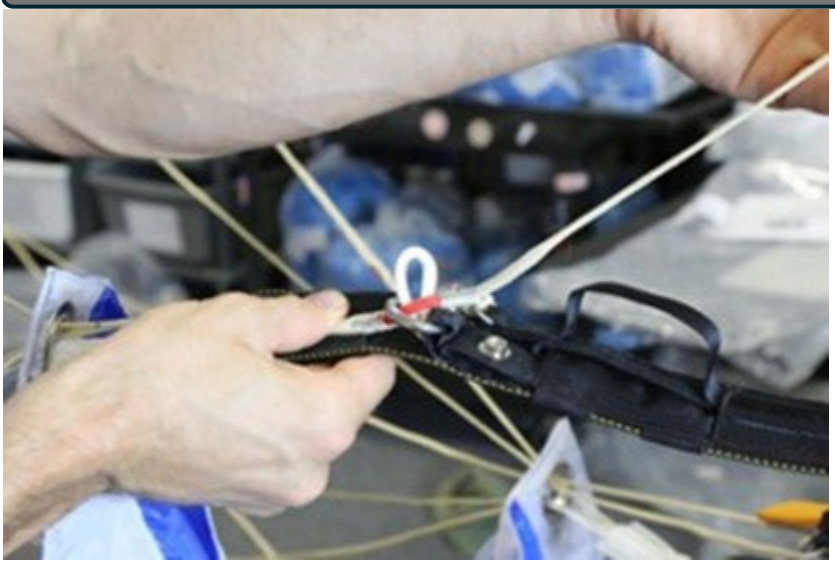
The correct method for attachment for this new design assembly is to:

- Pass open #5 steel link through RED Type IV tape loop.
- Pass open #5 steel link through WHITE 1" tubular nylon loop.
- Pass open #5 steel link through bridle (either Kevlar or Type XII,) ensuring that the #5 steel link also passes through the drogue centerline.

Use a wrench to tighten link approximately ¼ turn past hand tight until barrel is seated. Do not overtighten steel link as damage may occur to the link!

SETTING MAIN CANOPY BRAKES

Route Dacron loop through primary control line cat's eye.



Route Dacron loop through guide ring.

Insert top end of the primary toggle (gold toggle) through the Dacron loop, then insert the top end of the toggle into the toggle keeper.

Place bottom end of toggle into pocket and snap into place.

Insert secondary toggle (black toggle) into pocket.

Place excess brake line into keeper on backside of riser.

Repeat for opposite side.

PACKING THE MAIN CANOPY

Follow lines up to the slider. The line groups must be clear up to the canopy and pass through the slider grommets.

Place canopy over shoulder and flake the canopy counting each cell. When you have the entire nose flakes, tuck it between your knees and hold it there.

Clear the stabilizers. Flake each side outwards, with lines and line attachment points in the center. Quarter the slider. Clear the tail, flake the material between each steering line outwards, with lines and line attachment points in the center.

Reach and grab the tail, to prepare for wrapping and cocooning the entire canopy. Take care not to pull any lines away from the center.

Push the nose of the canopy back so that it hangs straight down without any exposure. Folding the nose slightly inwards is optional. Do not push the nose into the pack.

Cocoon the canopy with the tail. Do not pull excessively on the tail and take care not to pull any lines away from the center.

Hold the lines in one hand with tension and use your free arm to support the canopy fabric while gently placing the canopy onto the packing surface.

Dress the canopy with tension forward, after placing it on the ground it should appear taller than wide.

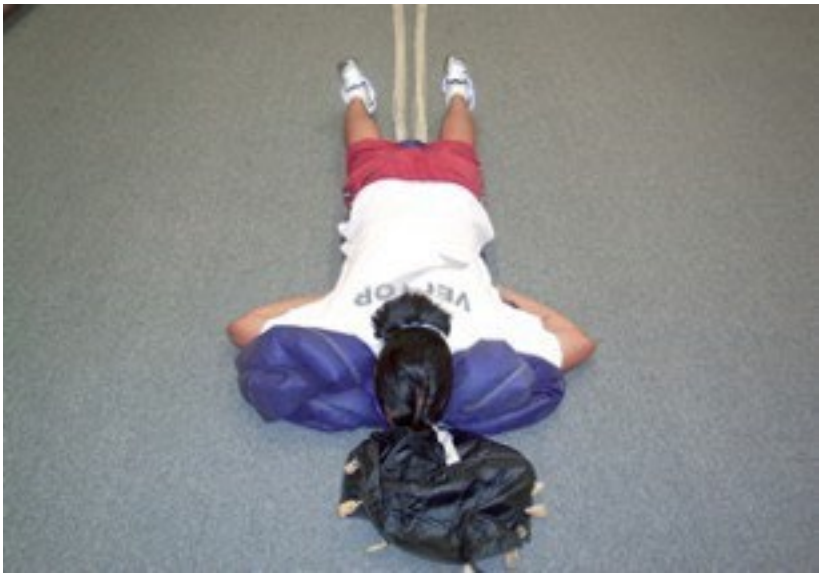
Squeeze the air out of the canopy, paying attention to not moving the lines away from the center. Always push forward to maintain tension on lines.

Folding the canopy towards the center will help control the lines.

Repeat for the opposite side to remove all the air.

Cocoon the canopy using the center cell. Ensure the canopy is wrapped entirely.

Front view.



Remove the remainder of the air.

Prepare the main deployment bag.

Make the first s-fold according to the depth of bag.

The first S-fold will hold the slider in place so ensure firm folds of the canopy and slider material.

Finish S-fold.

Hold down first S-fold with knee.

Reach underneath canopy in preparation for the second S-fold.

Make the second S-fold.

Complete the second S-fold.

After the second S-fold, tuck the ears underneath and above 1st S-fold to the depth of the bag.

Secure S-fold with bag. Insert half of canopy into bag.

Repeat for the other side.

Finish placing the main canopy into bag.

Secure bag with the first two stows, ensuring proper tension. Line bights must be approximately 3". Using the placement of the next grommets helps

Stow the remainder of the lines. Leave about two feet between the last stow and the risers.

ALD MAIN BAG CLOSING INSTRUCTIONS

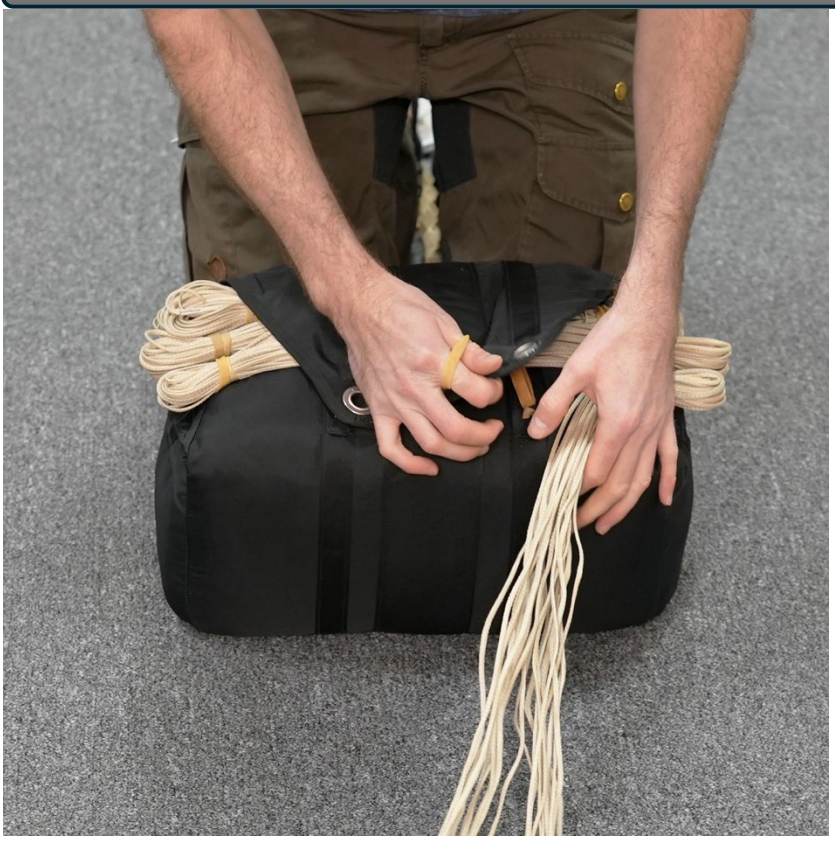
Place canopy in bag with 5 grommet flap facing the container

Close the center stow on the 5 grommet flap

Continuing to the next stow to either the left or right of the center stow, stow your second locking stow. Stows should be about 3" long.

Stow back and forth until all 5 grommets are used. With locking stows completed, continue stowing lines across the middle of the bag.

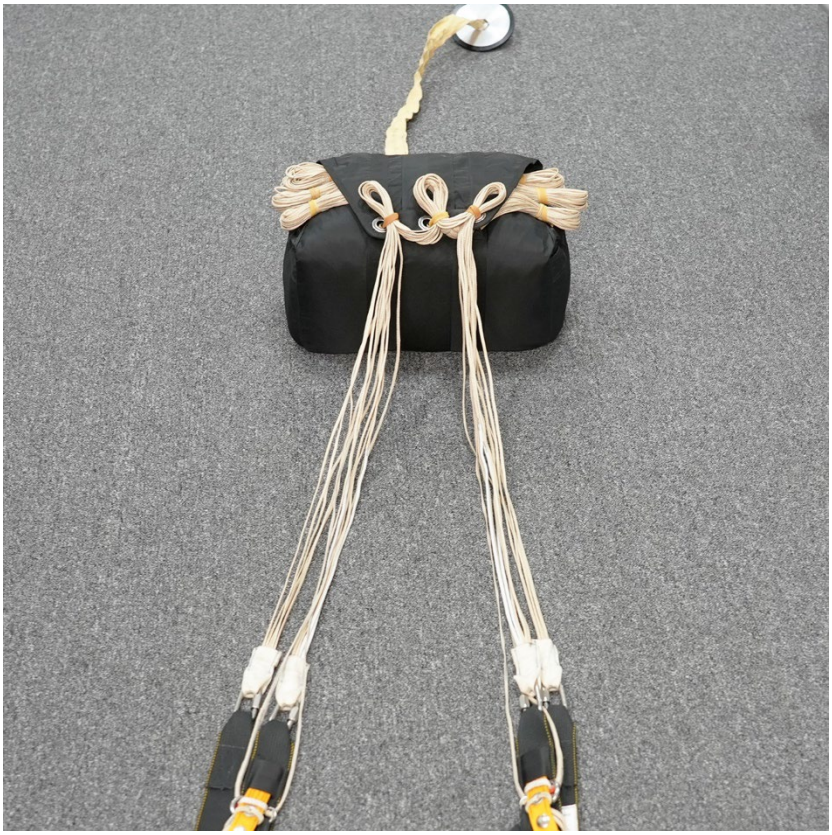
Repeat until reaching the 3 stows on the opposite side of the bag.



Direct the lines to the center stow, under the top flap, aligning the grommet with the corresponding rubber band.

Stow center stow.

Separate the line groups to the left and right riser groups. Stow left group to left side rubber band, repeat for the right-side rubber band.



Confirm that excess line to the risers is symmetrical. There should be about 2' of excess line to the risers.

PACKING THE MAIN CANOPY INTO THE MAIN TRAY

Stow main risers alongside the reserve container.

Stow main risers under the yoke flap and close the magnetic riser cover.

Neatly S-fold remainder of lines in the main pack tray and not over main flap #2.

Place bag in container with line stows at the bottom of the container.

Arrow on disc should be pointing up towards the reserve container.

If the screw in the drogue disc is loose it may snag on the main closing loop. If the screw is missing, the drogue will not inflate upon drogue set.

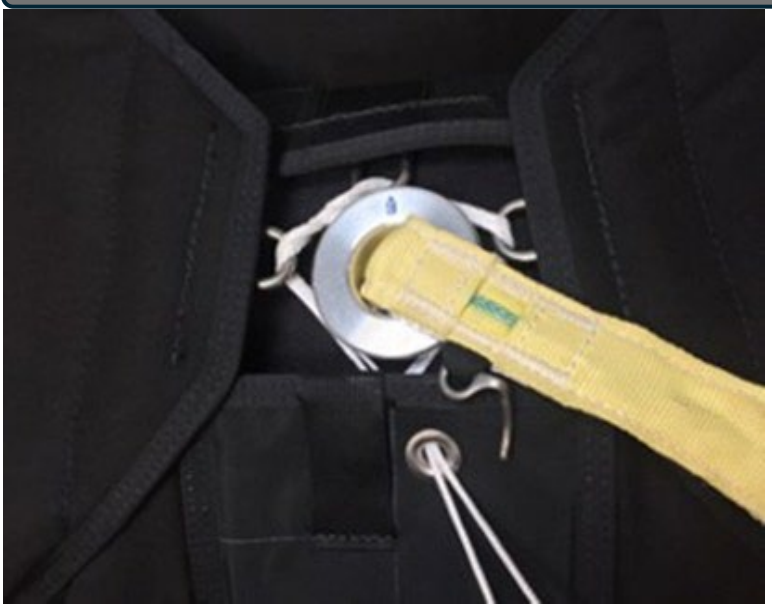
Set the drogue before closing the container making sure the limiter tapes are completely taut.

If the drogue has not been set during the packing process the tandem pair's terminal velocity will increase. The drogue should inflate within 6-8 seconds in this configuration if there are no other drogue entanglements upon deployment. Drogue centerline should be inspected and calibrated if needed every 25 jumps.

Notice the Kevlar bridle on the left side of the container is scrunched up after you set the drogue. Position and keep the scrunched Kevlar bridle on the left side and on top of the bag and reserve container. The two identifiers of a correctly cocked drogue are color in the inspection window and a check of the scrunch in the top left of the main container.

Using a length of 725lb or 1000lb Spectra pull up cord, thread through D-Rings and around the disc to close the container.

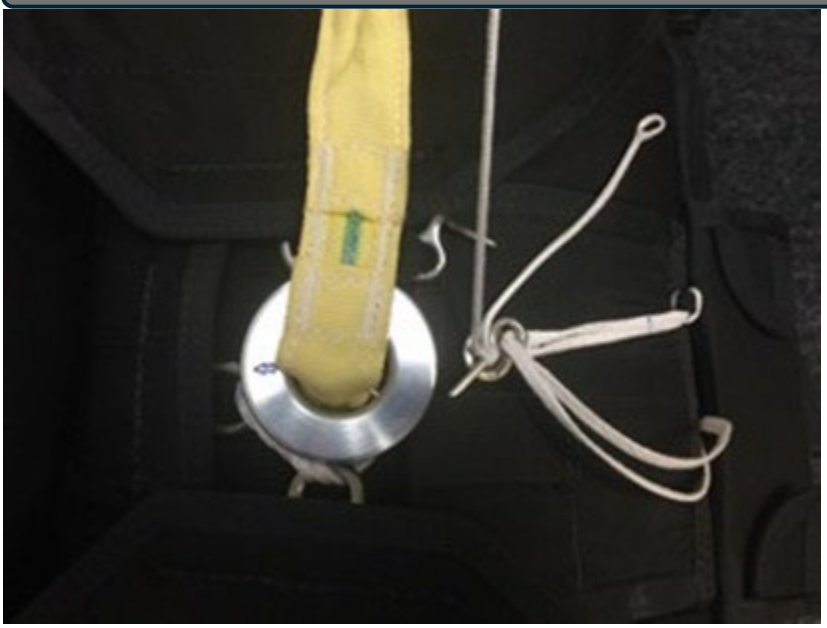
A diagram of the closing sequence is provided on the main pin cover flap.



Pass the pull-up cord through the grommet in the bottom flap.

As the four flaps are drawn together, check that the disc has remained centered with the arrow pointing towards the reserve container with D-Rings evenly spaced.

Secure the main pin making sure the D-Rings, bottom stiffener, and main closing loop are all below the flange on the disc.

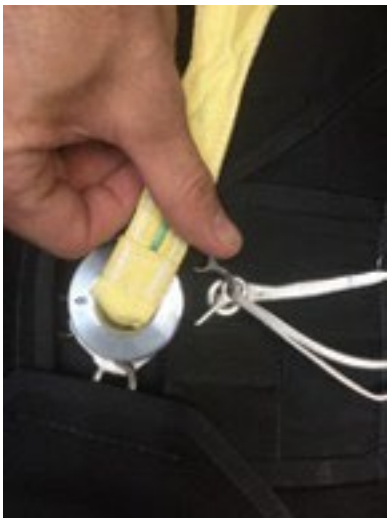


Place the main pin at the 11 O'clock position and ensure that the recoil ripcord is clear and not twisted, as illustrated on main pin cover.

Should the pin be inserted from or point in the wrong direction it could cause a Total Malfunction.

Twists in the recoil ripcord can cause hard pulls.

Once secured carefully remove the pull up cord.



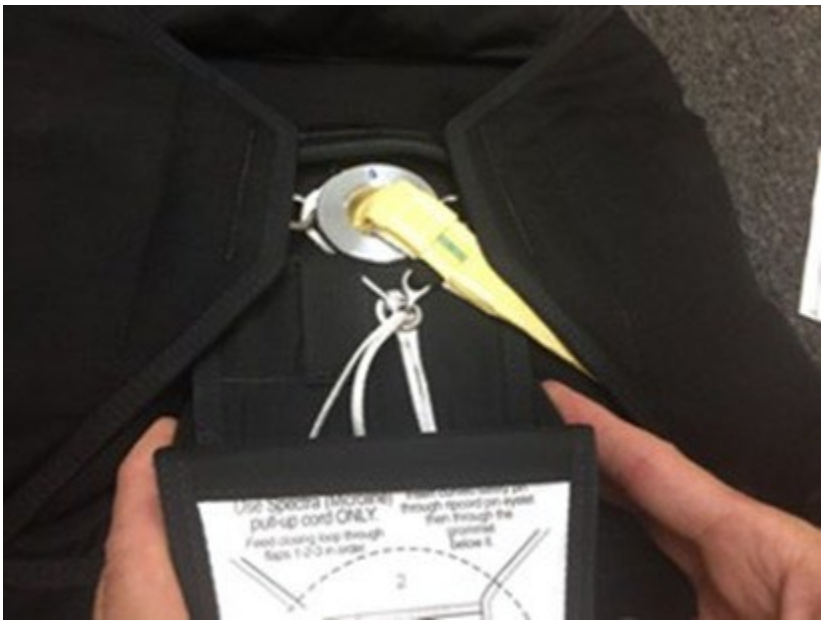
Insert safety pin (attached to drogue bridle) through the main pin eyelet into the grommet.

Main pin should be inserted from the bottom of the container upwards. If it is inserted incorrectly, it can cause a hard pull or drogue in tow.

The curved part of the safety pin must be fully inserted to function correctly, which is to prevent the main container from prematurely opening.

FOR SIGMA II ONLY

Insert the safety pin thought the straight pin eyelet only. Pinning though the TB Disc Pulley Washer may result in a hard pull or drogue in tow.



Place the drogue bridle underneath right-side main flap without excessive tension on safety pin.

Secure two small tuck tabs on pin flap under bottom main stiffener.

Note: The slack of the recoil ripcord should be pulled to the right of the pin.

Close cover and secure it in the center flap.

FOLDING AND STOWING THE DROGUE

Lay out drogue flat on the packing surface.

Fold drogue in half down towards the bridle.

Fold drogue in half towards the handle.

S-fold remainder of the bridle on top of each other leaving approximately 15" of bridle extending from the drogue to the container.

Fold canopy over bridle in thirds.

Fold in thirds once more, making the folded drogue approximately 15" x 6".

Insert drogue into drogue pouch.

Ensure that the opening fold of the drogue is facing the back of the container when inserting it into the pocket.

This completes the packing sequence for the Sigma II Tandem System.

SECTION 6: CARE & MAINTENANCE

CARING FOR YOUR SIGMA II

To extend the life of the harness and container system, regularly scheduled inspections and maintenance must be performed at once per month. Abnormal or harsh conditions and frequent use will shorten the life expectancy of the equipment. It is the responsibility of the owner and operator to ensure that equipment remains in optimal working order. Any concerns should be addressed with the manufacturer or an appropriately rated rigger.

RECOMMENDED COMPONENT LIFESPANS

The following recommendations have been established based on the estimated lifespan of Sigma II Tandem components. Ensure that an appropriately rated rigger determines if the components are in an airworthy condition.

- Replace main canopy suspension lines every 350-500 jumps as needed.
- Replace main canopy every 1400 – 1600 jumps.
- Replace main risers every 600 jumps.
- Replace drogue centerline every 300 jumps.
- Replace the lower Drogue Bridle every 300 jumps.
- Replace drogue every 600 jumps.

RESERVE COMPONENT LIFESPANS

Uninsured United Parachute Technologies, LLC (UPT) requires any Vector Tandem reserve canopy VR-360 (All VTC models, including VTC-xxx or VTC-xxxR) to be inspected, tested, and re-certified after 20 years if the canopy does not have the placard with inspection boxes.

- The VR360/VTC II and the Sigma 2 Reserve canopies are limited to 25 uses, 40 pack jobs or when all boxes are marked, whichever comes first.
- Reserve Pilot Chute limited to 25 uses.
- R.S.L and Skyhook limited to 25 uses.

Once a component limit has been reached, it is no longer certified for use. If further use is intended, it must be returned to the manufacturer for possible recertification.

INSPECTING YOUR SIGMA II

Gear inspections should cover ALL parts of your harness and container system, while paying particularly close attention to these areas:

- **Cutaway System:** Refer to the 3-Ring section in this chapter for detailed information on inspecting the canopy releases.
- **Reserve System:** This includes the reserve ripcord, closing loop, pins, handle, housing, container and associated sewing. You should NOT attempt any repairs or modifications to ANY of these items unless

you are an appropriately rated rigger. You can, however, identify smaller problems before they become more severe. Some items to look for would include damage to the reserve ripcord, frayed or worn closing loop, frayed stitching on the container, etc.

- **Harness:** The harness should be inspected periodically for broken stitching or frayed webbing.
- **Main Container**: Inspect the plastic stiffeners in the container flaps and have replaced any that are broken. Replace any grommets that are deformed, nicked, damaged, or that are pulling out of their setting.
- **Drogue Chute:** Inspect for holes in the drogue envelope, centerline wear, and damage to the bridle. Verify drogue calibration.
- **Closing Loop:** The main container closing loop is made of spectra suspension line. This loop is subject to wear and should be replaced with the first sign of damage.
- **Hook and Loop Fastener:** Hook and loop fastener has many applications within skydiving. Even though it can eventually wear out, there exist few materials that can compete against it regarding its flexibility, adaptability, and wide variety of applications. The "hook" portion of hook and loop fastener often attracts dirt, bits of grass, hair and other debris. You can clean the hook portion using a fine-toothed comb. The "loop" section generally remains clean but the nylon fibers sometimes tend to get pulled out of place. When you find that your hook and loop fastener is losing its adhesive qualities, replace it.

3 RING RELEASE SYSTEM

- Semiannually or as needed, operate the 3-Ring release system on the ground. Extract the cable completely from the housings and disconnect the risers.
- While the system is disassembled, closely inspect it for wear. Check the white locking loops (the ones that pass over the smallest ring and through the grommet) to be sure they are not frayed.
- Check the hook and loop fastener on the cutaway handle and handle pocket to be sure it is clean and adequately holds the handle.
- Check the cable ends for a smooth finish. The ends are finished at the factory to have a smooth, tapered surface. This prevents the cable from hanging up in the loop. Check the cable ends and consult a rigger or the manufacturer if a burr or "hook" is present.
- Check the stitching, including that which holds the large rings to the harness.
- Check that all 3-Ring release housings are firmly clamped (behind right ring cover and under yoke).
- Take each riser and vigorously twist and flex the webbing near where it passes through each ring. The idea is to remove any set or deformation in the webbing. Do the same thing to the white loop.
- Check the housing for dents or other obstructions. Use the cable to do this.
- Clean and lubricate the release cable with silicone spray. Spray on a paper towel and firmly wipe the cable a few times. A thin, invisible film should remain; too much will attract grit and dirt.
- Inspect the end fittings at the end of each housing for damage.
- If any wear is found, consult United Parachute Technologies or qualified rigger before using the system.

- Reassemble the system.

SOURCES OF EQUIPMENT DEGRADATION

Your Sigma II is manufactured primarily from nylon. Nylon is very durable, yet it is still susceptible to damage from several sources.

- **Sunlight:** The ultraviolet rays in sunlight quickly and permanently weaken nylon. Keep equipment out of direct sunlight whenever possible. Structural weakening of nylon is not immediately noticeable.
- **Acids:** Hangar floors, dirty car trunks and similar areas are where acids can be found. If contamination does occur, immediately and thoroughly wash the affected with plenty of warm soapy water. Baking soda may quickly neutralize most acids as an interim step prior to washing. If acid damage occurs or is suspected, an appropriately rated rigger must thoroughly inspect the equipment.
- **Oils and Grease:** Most petroleum compounds do not weaken nylon; they simply stain it. Warm, soapy water or isopropyl alcohol may remove such stains.
- **Water:** Water will not structurally damage your equipment however, prolonged agitation in fresh water weakens webbing or may cause some fabric and tape colors to bleed. Salt water may damage nylon and cause hardware to corrode if not immediately and thoroughly washed off with plenty of fresh water.
- **Soil:** Brush off the soil after it has dried and gently wash with warm soapy water. Make sure that the soil is not on or in components.
- **Sand:** Sand will weaken and cut webbing and fabrics of all types. Prolonged exposure to sand will shorten the life of the entire parachute assembly.
- **Abrasion:** Nylon will be damaged if dragged over concrete or other rough surfaces. Do not drag any part of the container system while transporting or packing.
- **Perspiration:** Minimize exposure to sweat while using or handling the container system.

REPLACEMENT PARTS

Uninsured United Parachute Technologies, LLC supplies replacement parts for your Sigma Tandem System. Certain parts are compatible with the Sigma II container only. To ease purchasing, when ordering parts, include the serial number and date of manufacture of your equipment, found on the container data label, so the proper items can be quickly supplied. Refer to the included illustrated parts catalog on our website https://www.uptvector.com/

MicroSIGMA / SIGMA TANDEM SPECIFIC PARTS

54" DROGUE (WHITE)P/N: 032-001-001 (With Disc)
60" DROGUE (WHITE)P/N: 032-001-003 (With Disc)

54" DROGUE (WHITE)P/N: 032-006-001 (Without Disc)
60" DROGUE (WHITE)P/N: 032-006-003 (Without Disc)

54" DETACHABLE LOWER BRIDLE KIT P/N: 050-005-001
60" DETACHABLE LOWER BRIDLE KIT P/N: 050-005-002

RECOIL RIPCORD- COMPLETE ASSEMBLY
P/N: 032-017-006

54" DROGUE CENTERLINE P/N: 032-015-005
60" DROGUE CENTERLINE P/N: 032-015-002

RECOIL RIPCORD PIN
P/N: MIS-H-PINMTV111

RECOIL RIPCORD
P/N: 032-017-005

ORANGE DROGUE RELEASE HANDLE P/N: 032-017-008
BLUE DROGUE RELEASE HANDLE P/N: 032-017-009

SIGMA DISC ASSEMBLY
P/N: 032-017-018

SIGMA DISC COVER 3D
P/N: 032.-017-001-1

MAIN DEPLOYMENT BAG – SIGMA 13 P/N: 026-002-001
MAIN DEPLOYMENT BAG – MICRO SIGMA 12 P/N: 026-002-002

22" MAIN RISERS – VELCROLESS P/N: 028-007-004 (Standard)
25" MAIN RISERS – VELCROLESS P/N: 028-007-003

MAIN TOGGLE-VELCROLESS P/N: 030-002-002
SECONDARY MAIN TOGGLE-VELCROLESS P/N: 030-003-004

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MicroSIGMA / SIGMA TANDEM SPECIFIC PARTS continued

RESERVE TOGGLE-RED
P/N: 029-001-002

SPECTRA RESERVE RIPCORD 23.5" P/N: 024-021-003

RESERVE RIPCORD 24.5"
P/N: 024-011-001

CUTAWAY HANDLE
P/N: 023-002-001

M.SIGMA/SIGMA SPLIT R.S.L.
P/N: 025-003-003

SKYHOOK LANYARD
P/N: 025-009-002

UNIVERSAL LANYARD
P/N: 025-009-001

SKYHOOK COVERS
P/N: PLAST-RETRO

RESERVE PILOT CHUTE
P/N: 022-001-000

RESERVE DEPLOYMENT BAG-SIGMA 13 P/N: 027-010-005
RESERVE DEPLOYMENT BAG-MICRO SIGMA 12 P/N: 027-010-004

SAFETY STOW LOOP-MED
P/N: 027-005-002

RESERVE PIN FLAP LEXAN WINDOW SIGMA & M. SIGMA
P/N: 008-006-017

JACK THE RIPPER HOOK KNIFE P/N: 045-004-002

SIGMA MAIN CLOSING LOOP
P/N: 031-003-001

RESERVE CLOSING LOOP
P/N: 031-002-001

DROGUE POUCH
P/N: 020-001-001

SIGMA/M.SIGMA MAIN DISC COVER
P/N: 017-003-001 M.SIGMA
017-003-002 SIGMA

STUDENT HARNESS P/N: 043-001-001
STUDENT HARNESS P/N: 043-007-001 XS

STUDENT HARNESS Y STRAP P/N: 043-001-005

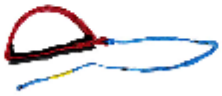
FROM CATALOG-001 Rev. 7.1

06/03/2025

SIGMA II TANDEM SPECIFIC PARTS

SIGMA 2 DROGUE POUCH
P/N: 020-005-002

SIGMA 2 MAIN DISC COVER
P/N: 017-014-001 S12
017-014-002 S13



RESERVE RIPCORD ASSEMBLY-TANDEM-LOOP-SPECTRA- 24.5"-RED
P/N: 024-021-001

RESERVE RIPCORD ASSEMBLY-TANDEM-LOOP-SPECTRA- 24.5"-RED
P/N: 024-011-010

MAIN DEPLOYMENT BAG-ALD-SIGMA 2-S12 P/N: 026-026-009
MAIN DEPLOYMENT BAG-ALD-SIGMA 2-S13 P/N: 026-026-010

SIGMA 2 TB PULLEY RECOIL RIPCORD
P/N: 032-017-024

SIGMA II - MCS PARTS

BACKPAD REMOVABLE SHOULDER PADS-SIGMA 2-S12 P/N: 012-015-008
BACKPAD REMOVABLE SHOULDER PADS-SIGMA 2-S13 P/N: 012-015-010

RSL-SIGMA 2
P/N: 025-003-004

BACKPAD REMOVABLE SHOULDER PAD
SOFT LINK-SOV4 (Qty 2)
P/N: 012-015-005

BACKPAD REMOVABLE CUMMERBUND-SIGMA 2-S12 P/N: 012-015-009
BACKPAD REMOVABLE CUMMERBUND-SIGMA 2-S13 P/N: 012-015-011

MCS LOCKING CABLE-UPPER P/N: 045-017-006
MCS LOCKING CABLE-LOWER P/N: 045-017-007

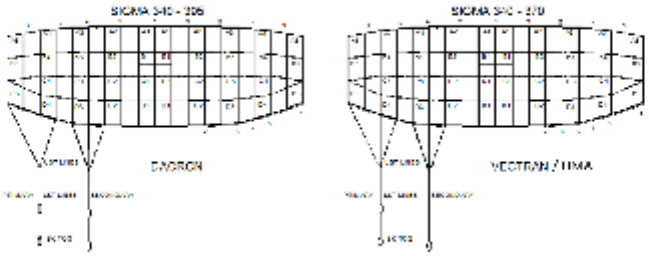
FROM CATALOG-001 Rev. 7.1

06/03/2025

SECTION 7: TECHNICAL SPECIFICATIONS

SIGMA 2-340, 370, AND 395 TRIM CHART

LINE TRIM CHART
FOR



	Measurement in Inches							Measurement in Centimeters						
	SG - 340 Vectran	SG - 340 HMA	SG-340 Dacron	SG - 370 Vectran	SG - 370 HMA	SG-370 Dacron	SG-395 Dacron	SG - 340 Vectran	SG - 340 HMA	SG-340 Dacron	SG - 370 Vectran	SG - 370 HMA	SG-370 Dacron	SG-395 Dacron
A1	193 7/8	193 7/8	193 7/8	202 1/4	202 1/4	202 1/4	209	492.5	492.5	492.4	513.7	513.7	513.7	530.8
A1-B1	3 5/8	3 5/8	3 5/8	3 7/8	3 7/8	3 7/8	4	9.3	9.3	9.2	9.7	9.7	9.7	10.0
A1-C1	13 1/8	13 1/8	13 1/8	13 3/4	13 3/4	13 3/4	14 1/4	33.4	33.4	33.3	34.9	34.9	34.9	36.1
A1-D1	24 3/4	24 3/4	24 3/4	25 7/8	25 7/8	25 7/8	26 3/4	62.8	62.8	62.9	65.7	65.7	65.7	67.9
A2	193 7/8	193 7/8	193 7/8	202 1/4	202 1/4	202 1/4	209	492.4	492.4	492.4	513.7	513.7	513.7	530.7
A2-B2	3 5/8	3 5/8	3 5/8	3 7/8	3 7/8	3 7/8	4	9.3	9.3	9.2	9.8	9.8	9.8	10.1
A2-C2	13 1/8	13 1/8	13 1/8	13 3/4	13 3/4	13 3/4	14 1/8	33.2	33.2	33.3	34.8	34.8	34.8	35.9
A2-D2	24 5/8	24 5/8	24 5/8	25 3/4	25 3/4	25 3/4	26 5/8	62.5	62.5	62.5	65.4	65.4	65.4	67.6
A3	194	194	194	202 3/8	202 3/8	202 3/8	209 1/8	492.8	492.8	492.8	514.0	514.0	514.0	531.1
A3-B3	3 5/8	3 5/8	3 5/8	3 3/4	3 3/4	3 3/4	4	9.2	9.2	9.2	9.7	9.7	9.7	10.0
A3-C3	12 7/8	12 7/8	12 7/8	13 1/2	13 1/2	13 1/2	13 7/8	32.6	32.6	32.7	34.2	34.2	34.2	35.3
A3-D3	23 1/8	23 1/8	23 1/8	24 1/8	24 1/8	24 1/8	25	58.6	58.6	58.6	61.3	61.3	61.3	63.4
A4	194	194	194	202 3/8	202 3/8	202 3/8	209 1/8	492.8	492.8	492.8	514.0	514.0	514.0	531.1
A4-B4	3 7/8	3 7/8	3 7/8	4	4	4	4 1/8	9.8	9.8	9.8	10.2	10.2	10.2	10.5
A4-C4	11 5/8	11 5/8	11 5/8	12 1/8	12 1/8	12 1/8	12 1/2	29.5	29.5	29.5	30.9	30.9	30.9	31.9
A4-D4	20 1/8	20 1/8	20 1/8	21 1/8	21 1/8	21 1/8	21 7/8	51.2	51.2	51.1	53.6	53.6	53.6	55.4
A5	194 1/4	194 1/4	194 1/4	202 5/8	202 5/8	202 5/8	209 3/8	493.5	493.5	493.4	514.8	514.8	514.8	531.9
A5-B5	4 3/8	4 3/8	4 3/8	4 5/8	4 5/8	4 5/8	4 3/4	11.2	11.2	11.1	11.7	11.7	11.7	12.1
A5-C5	12 1/8	12 1/8	12 1/8	12 3/4	12 3/4	12 3/4	13 1/8	30.8	30.8	30.8	32.2	32.2	32.2	33.3
LST-P	131 1/2	131 1/2	131 1/2	137	137	137	141 1/2	334.0	334.0	334.0	348.0	348.0	348.0	359.5
A5-UST1	8 5/8	8 1/2	8 3/8	8 7/8	8 3/4	8 5/8	8 7/8	22.0	21.7	21.4	22.4	22.2	21.9	22.6
A5-UST3	9 1/8	9	8 7/8	9 3/8	9 1/4	9 1/8	9 3/8	23.2	23.0	22.7	23.7	23.5	23.1	23.9
A5-UST4	14	13 7/8	13 3/4	14 3/8	14 3/8	14 1/4	14 5/8	35.6	35.4	35.1	36.6	36.4	36.1	37.3
LST-S	157 1/8	157 1/8	136 3/4	163 1/2	163 1/2	142 1/2	147 1/4	399.0	399.0	347.3	415.2	415.2	361.8	373.9
A5-UST5	33 1/4	33 1/4	13 1/4	34 1/4	34 1/4	13 3/4	14 1/8	84.4	84.4	33.8	87.0	87.0	34.8	35.9
A5-UST6	34 5/8	34 5/8	14 5/8	35 5/8	35 5/8	15 1/8	15 5/8	87.9	87.9	37.2	90.8	90.8	38.3	39.6
A5-UST7	39 1/2	39 1/2	19 5/8	40 3/4	40 3/4	20 1/4	20 7/8	100.4	100.4	49.7	103.6	103.6	51.4	53.1
B STAB SLK	1	1	1	1	1	1	1	2.5	2.5	2.5	2.5	2.5	2.5	2.5
C STAB SLK	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	3.8	3.8	3.8	3.8	3.8	3.8	3.8
BK-TOG-P*	22 5/8	22 1/2	22 3/4	23 3/8	23	23 3/8	24 1/8	57.4	57.2	57.7	59.4	58.6	59.4	61.4
BK-TOG-S*	N/A	N/A	18 5/8	N/A	N/A	19 1/4	19 7/8	N/A	N/A	47.4	N/A	N/A	48.8	50.4
Current Dome Slider w/ 4 Grommets	18 3/8" Chord	18 3/8" Chord	18 3/8" Chord	18 3/8" Chord	18 3/8" Chord	18 3/8" Chord	19 1/2" Chord	46.7 Chord	46.7 Chord	46.7 Chord	46.7 Chord	46.7 Chord	46.7 Chord	49.5 Chord
	44 3/8" Span	44 3/8" Span	44 3/8" Span	44 3/8" Span	44 3/8" Span	44 3/8" Span	54" Span	112.7 Span	112.7 Span	112.7 Span	112.7 Span	112.7 Span	112.7 Span	137.2 Span
	3 channels	3 channels	3 channels	3 channels	3 channels	3 channels		3 channels	3 channels	3 channels	3 channels	3 channels	3 channels	
Original Dome Slider w/ 4 Grommets	16 1/2" Chord	16 1/2" Chord	16 1/2" Chord	16 1/2" Chord	16 1/2" Chord	16 1/2" Chord	19 1/2" Chord	41.9 Chord	41.9 Chord	41.9 Chord	41.9 Chord	41.9 Chord	41.9 Chord	49.5 Chord
	40 3/8" Span	40 3/8" Span	40 3/8" Span	40 3/8" Span	40 3/8" Span	40 3/8" Span	54" Span	102.6 Span	102.6 Span	102.6 Span	102.6 Span	102.6 Span	102.6 Span	137.2 Span
	2 channels	2 channels	2 channels	2 channels	2 channels	2 channels		2 Channels	2 channels	2 channels	2 channels	2 Channels	2 channels	

*Due to development methodology, the finished BK-TOG dimensions may not scale
• Refer to Document MAN-0001 for measuring lines

Title: SG340-395-Line-Trim-Chart.xls
7/17/2024

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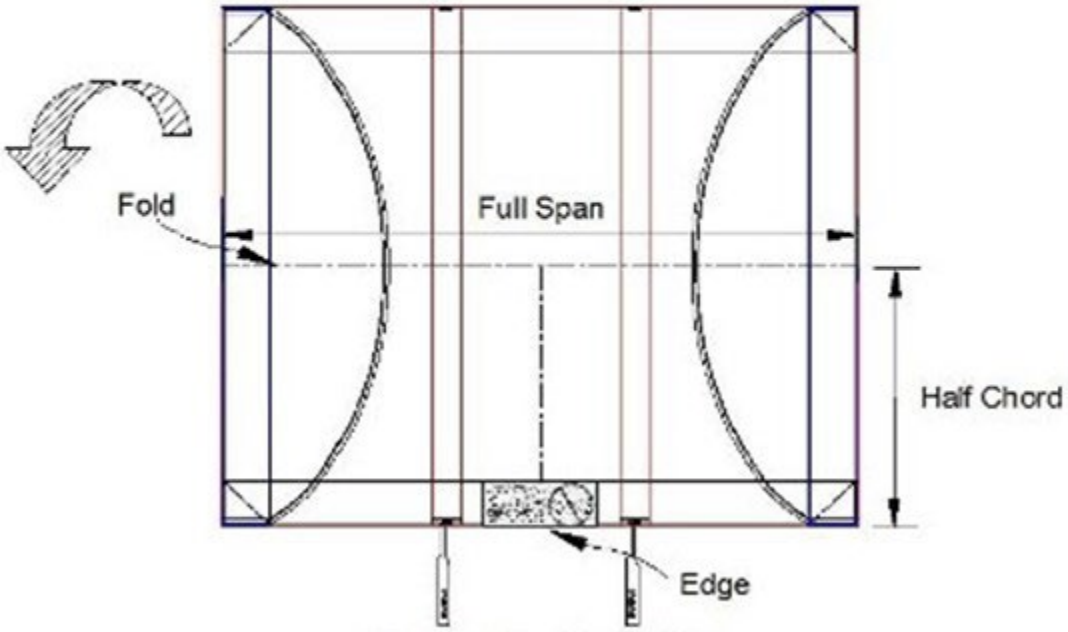
Doc#: LTC-0026 Rev. L

MEASURING THE SIGMA 2 DOME SLIDER

Fold the slider in half front to rear forming a fold from side to side.
For the spanwise dimension: Pull taut from side to side and measure the slider from one side to the other side across the fold.
For the 1/2 Chordwise dimension. Pull taut from the fold to the edge across the center and measure the slider from the fold to the edge.



Bottom Folded View

SIGMA 2 RESERVE CANOPY TECHNICAL INFORMATION

MODEL	SR-340	SR-370
Size (sq ft)	340	370
Chord (ft)	11.63	12.13
Span (ft)	29.28	30.55
Aspect Ratio	2.5: 1	2.5: 1
Weight (lb)*	12.5	13.1
Pack Volume (cu in)*	1,036	1,104
Min FAA suspended weight limit (LB)	200	200
Max FAA suspended weight limit (lb)	550	550
TSO Approval	C23f	C23f
Max Deployment Speed (keas)	175	175

*** Variations of 10% or more are common due to temperature, humidity, material tolerances, and packing technique.**

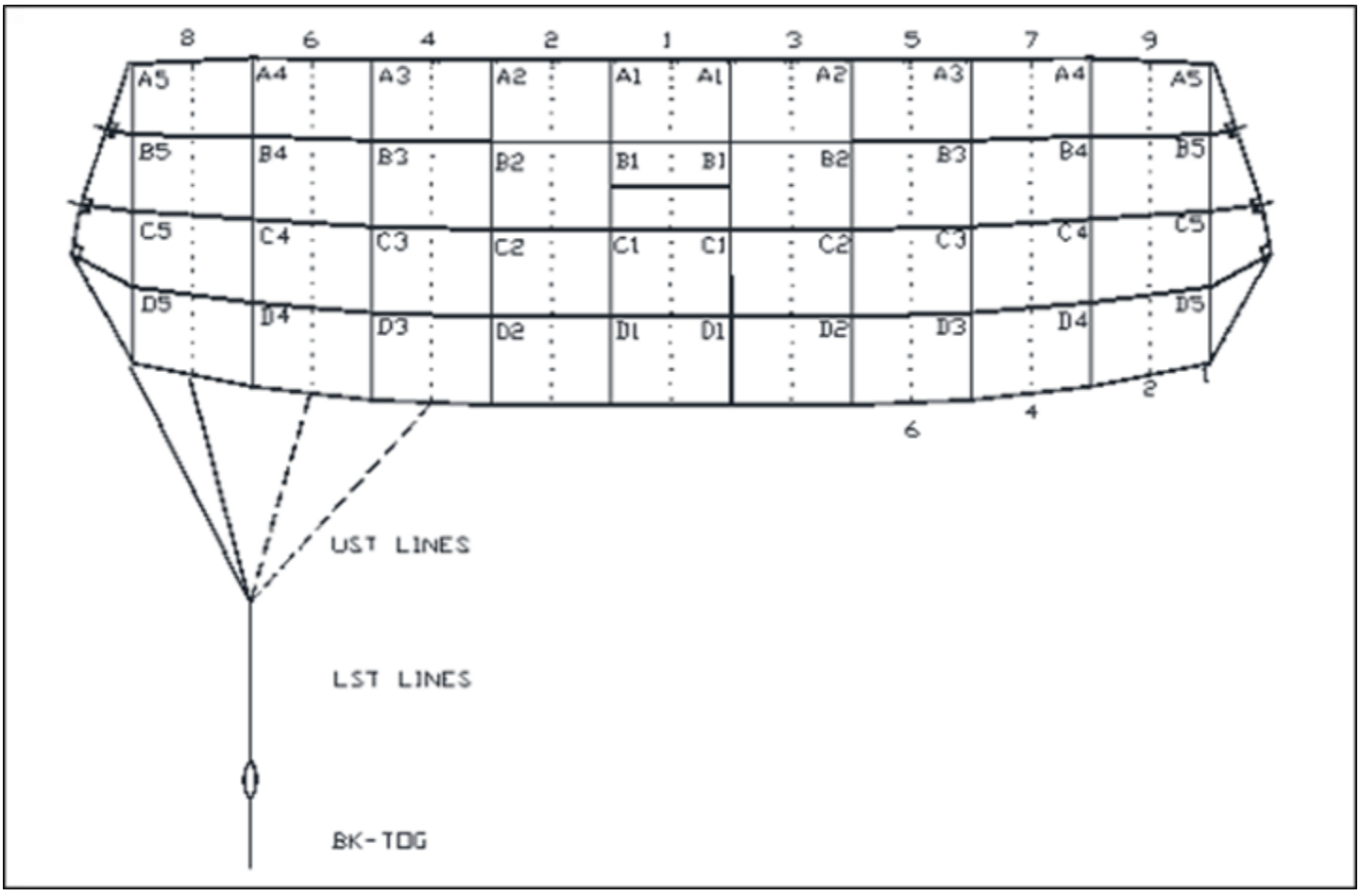
SR-340	Averaged Opening Distance Results Per PIA TS-135 Paragraph 4.3.8.1.(f)			
	TEST SPEED			
TEST WEIGHT	60 KEAS	85 KEAS	MPOS x 80% 140 KEAS	MPOS 175 KEAS
MinOW - 200lb	383	390	322	362
AvOW - 375lb	499	429	408	390
MaxOW - 550lb	526	341	397	440
	All results given in distance (feet)			

SR-370	Averaged Opening Distance Results Per PIA TS-135 Paragraph 4.3.8.1.(f)			
	TEST SPEED			
TEST WEIGHT	60 KEAS	85 KEAS	MPOS x 80% 140 KEAS	MPOS 175 KEAS
MinOW - 200lb	347	319	367	299
AvOW - 375lb	561	563	428	336
MaxOW - 550lb	460	514	448	354
	All results given in distance (feet)			

SR-340 TRIM DIFFERENTIALS BETWEEN LINE GROUPS (inches)					
	1	2	3	4	5
A-B	3.13	3.13	2.86	2.44	2.25
A-C	11.8	11.86	11.38	10.33	9.13
A-D	24.64	24.61	23.80	21.87	19.14
A5-UST	UST-1 9.71	UST-2 5.82	UST-4 6.42	UST-6 15.14	BK-TOG 27.12

SR-370 TRIM DIFFERENTIALS BETWEEN LINE GROUPS (inches)					
	1	2	3	4	5
A-B	3.26	3.26	2.98	2.54	2.35
A-C	12.41	12.38	11.89	10.79	9.53
A-D	25.75	25.71	24.87	22.85	19.99
A5-UST	UST-1 10.00	UST-2 5.34	UST-4 5.57	UST-6 15.35	BK-TOG 30.01

LINE TRIM CHART SR-340, 370



	Inches	Inches		Centimeters	Centimeters
	SR-340	**SR-370**		**SR-340**	**SR-370**
A1	184 3/8	192		468.4	487.6
A1-B1	3 1/8	3 1/4		8.0	8.3
A1-C1	11 7/8	12 3/8		30.2	31.5
A1-D1	24 5/8	25 3/4		62.6	65.4
A2	184 1/2	192 1/8		468.7	487.9
A2-B2	3 1/4	3 1/4		8.0	8.3
A2-C2	11 7/8	12 3/8		30.1	31.4
A2-D2	24 5/8	25 3/4		62.5	65.3
A3	184 3/4	192 3/8		469.3	488.6
A3-B3	2 7/8	3		7.3	7.6
A3-C3	11 3/8	11 7/8		28.9	30.2
A3-D3	23 3/4	24 7/8		60.5	63.2
A4	185	192 3/4		470.0	489.4
A4-B4	2 1/2	2 1/2		6.2	6.5
A4-C4	10 3/8	10 3/4		26.2	27.4
A4-D4	21 7/8	22 7/8		55.5	58.0
A5	185 3/8	193		470.7	490.3
A5-B5	2 1/4	2 3/8		5.7	6.0
A5-C5	9 1/8	9 1/2		23.2	24.2
A5-D5	19 1/8	20		48.6	50.8
LST	125 1/2	130 3/8		318.6	331.0
A5-UST1	9 3/4	10		24.7	25.6
A5-UST2	5 7/8	6		14.8	15.2
A5-UST4	6 3/8	6 5/8		16.3	16.8
A5-UST6	15 1/8	15 5/8		38.5	39.8
B STAB SLK	1	1		2.5	2.5
C STAB SLK	1 1/2	1 1/2		3.8	3.8
D STAB SLK	2	2		5.1	5.1
BK-TOG	21 1/8	28 3/8		53.5	72.1
Flat Slider (Hole in Center)	32	33		76.2 Chord	76.2 Chord
	39	40		91.44 Span	91.44 Span

*Due to development methodology, the finished BK-TOG dimensions may not scale

UNINSURED UNITED PARACHUTE TECHNOLOGIES, LLC.

SIGMA II | SKYHOOK | SIGMA MICRO SIGMA

SIGMA 13 | MICRO SIGMA 12 | SIGMA 11

(Weight is approximate, slight variations in weight may result in weight differences based on main canopy selection and line type.)

Complete System Weight:
50 lbs (22.5 kg)

Main Canopy Fitting:
SG-395 Firm
SG-370 Ideal
SG-340 Soft

Reserve Canopy Fitting:
VR-360 Ideal
SR-370 Ideal

Complete System Weight:
48 lbs (22 kg)

Main Canopy Fitting:
SG-340 Ideal

Reserve Canopy Fitting:
VR-360 Ideal
SR-370 Firm
SR-340 Soft

Complete System Weight:
45 lbs (20.4 kg)

Main Canopy Fitting
JYRO T270 Soft
T300 Ideal
ICARUS TX2 270 Soft
TX2 290 Ideal
TX2 310 Firm

Reserve Canopy Fitting:
SR-340 ONLY

Approved AADs for Sigma, Micro Sigma and Sigma II

	Arming	*Activation*	*De-Arming*
Vigil	150 ft	2050 ft	150 ft
Vigil 2	"	"	"
Vigil 2+	1000 ft	"	"
Vigil Cuatro	"	"	"
Cypres 2	3000 ft	1900 ft	130 ft
Mars M2	2950 ft	2000 ft	330 ft

Verify with the specific AAD manufacturer for accurate altitudes. This chart should be used as a reference only.

Max Operating Weight (VR):
500 lbs (226.5 kg)
With SR Reserve:
550 lbs (249.5 kg)
Min Operating Weight:
200 lbs (90.7 kg)
Maximum Student Weight Calculation:
Max System Weight:
500 lbs (226.5 kg) or 550 lbs (249.5 kg)
Sigma System Weight: 50 lbs (22.5 kg)
Student Harness Weight: 8 lbs (3.5 kg)
Tandem Instructor Weight: (_____)
Maximum Student Weight: _____

Max Operating Weight (VR):
500 lbs (226.5 kg)
With SR Reserve:
550 lbs (249.5 kg)
Min Operating Weight:
200 lbs (90.7 kg)
Maximum Student Weight Calculation:
Max System Weight:
500 lbs (226.5 kg) or 550 lbs (249.5 kg)
Sigma System Weight: 48 lbs (22 kg)
Student Harness Weight: 8 lbs (3.5 kg)
Tandem Instructor Weight: (_____)
Maximum Student Weight: _____

Max Operating Weight (JYRO):
500 lbs (226.5 kg)
With ICARUS:
500 lbs (226.5 kg)
Min Operating Weight:
200 lbs (90.7 kg)
Maximum Student Weight Calculation:
Max System Weight:
500 lbs (226.5 kg) or 550 lbs (249.5 kg)
Sigma System Weight: 45 lbs (22 kg)
Student Harness Weight: 8 lbs (3.5 kg)
Tandem Instructor Weight: (_____)
Maximum Student Weight: _____

(Maximum Student Weight is calculated by subtracting Sigma System Weight, Student Harness Weight and Tandem Instructor Weight from 500 lbs (226.5 kg) or 550 lbs. (249.5 kg) depending on the reserve that is being used in the system. The remaining amount is the Maximum Student Weight.)

SECTION 8: INSTRUCTIONS FOR DROGUE KILL LINE CALIBRATION

How to check if your Drogue Kill Line is the correct length:

For this system to work correctly, a precise relationship between the length of the drogue bridle and the length of the kill line must be maintained. Drogue calibration is critical, as a drogue kill line outside of the specifications could lead to undesirable openings, to include a drogue kill line that is too short could yield slower than normal openings and a drogue kill line that is too long that could contribute to hard opening scenarios.

To check this relationship:

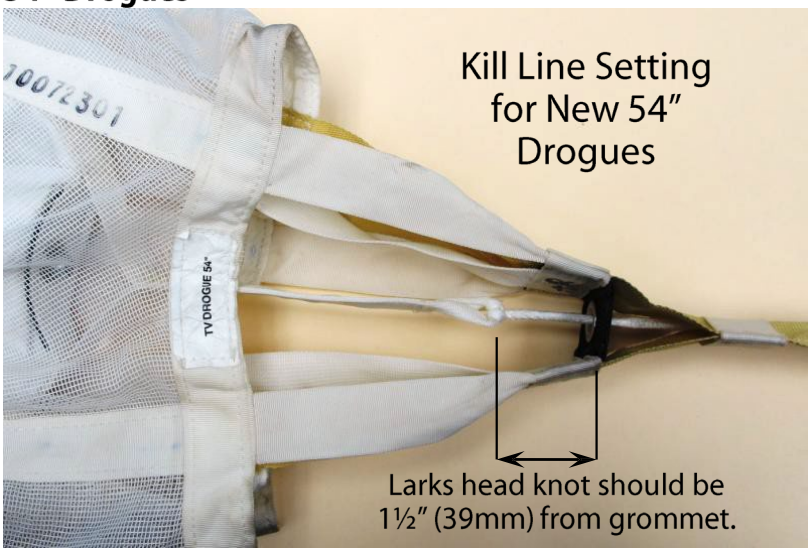
Anchor the Rapide link at the end of the bridle.

Both bridle and kill line should be connected to this link.

Extend the drogue bridle fully.

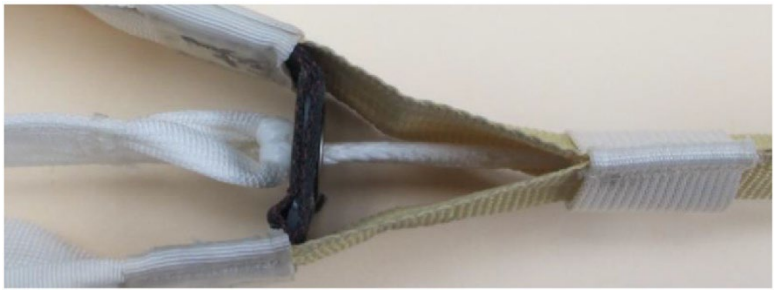
NOTE: This applies to both Kevlar and Type 12 bridles.

54" Drogues



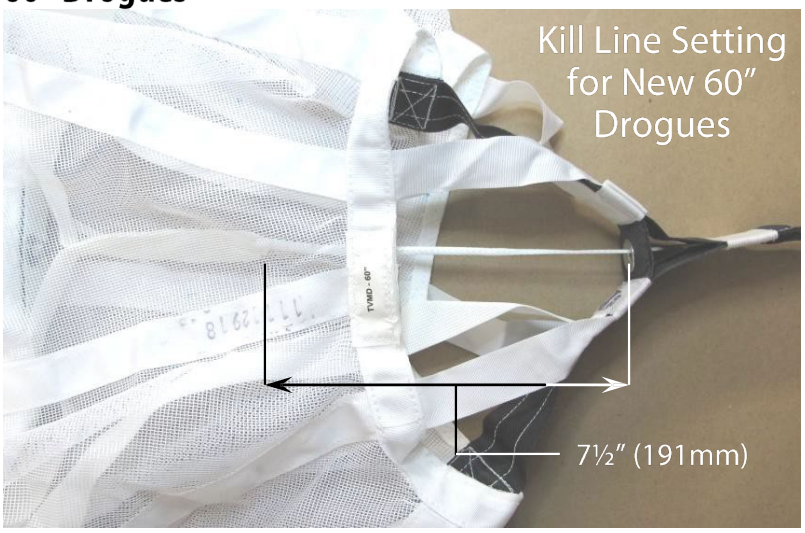
Apply about 10 lbs. of tension against the bridle and with the other hand apply the same tension on the kill line by pulling on the kill line attachment bridle or the drogue handle. The lark's head knot the bottom of the kill line attachment bridle should be 1 ½" (39mm) above the kill line guide grommet on new drogues.

As drogues gain more use, this setting may require lengthening to shorten the trap door effect.



If this distance is shorter than 1", the lark's head know will impact the guide grommet at high speed, quickly causing damage to both. However, in this instance, deployment, while slightly slower, will still happen more or less normally.

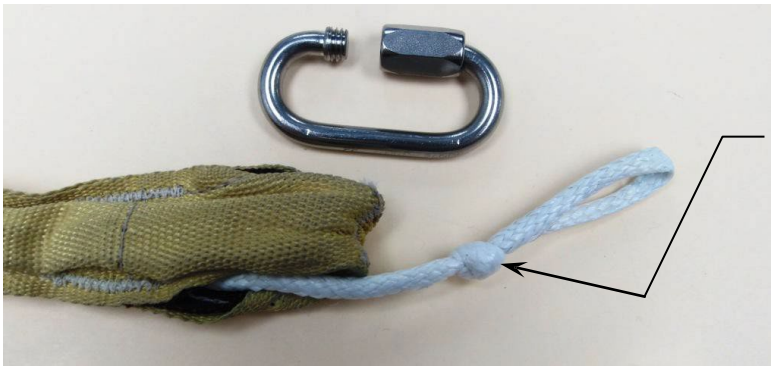
60" Drogues



Using the same technique as above applying about 10 lbs. of tension, the larks head knot at the bottom of the kill line attachment bridle should be 7½" (191mm) above the kill line guide grommet on New Drogues (factory setting).

As drogues become more used, this setting may require lengthening to shorten the trap door affect.

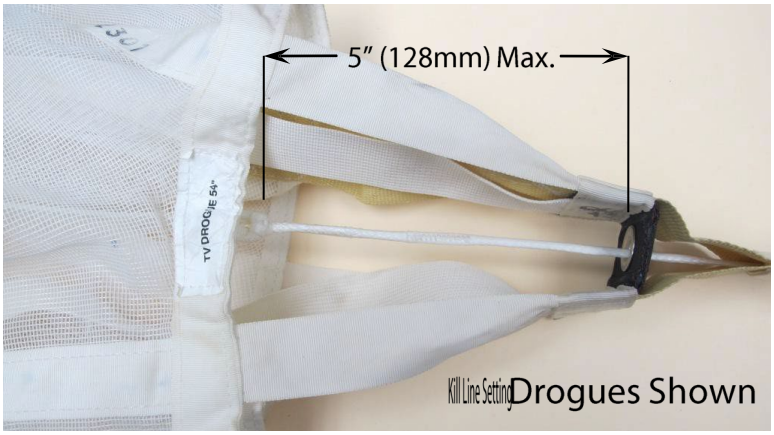
LENGTHENING THE DROGUE KILL LINE



Drogue collapse is calibrated for average weight and fall rates, if you feel the drogue is collapsing too far with longer than normal "trap door" you may lengthen it a little bit by untying the knot and letting out required length of finger trap. Ideal trap door time is ¾ sec. with a minimum of ½ sec.

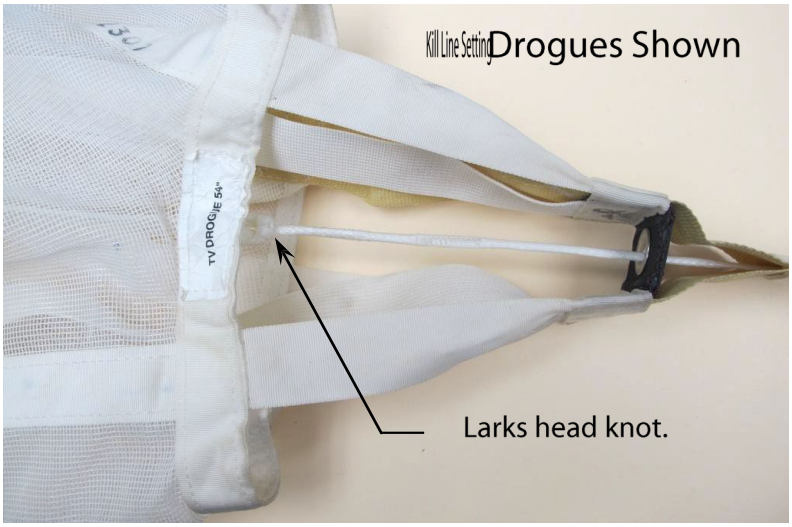
You may also attach a Slink using a larks head knot as shown to the left to lengthen and reduce the amount of collapse.

The link is then attached to the Slink, bridle and bag.



5" (128mm) is the maximum length the kill line may be let out to.

SHORTENING THE DROGUE KILL LINE



If the distance is more than 2" (51mm) greater, the drogue may not fully collapse, yielding a higher snatch force, increased chance of malfunction due to line dump, and increased chance of canopy damage.

If you notice a kill line that is too long, a simple overhand knot, tied within the finger-locked section of the kill line, *at the deployment bag end*, will effectively shorten it almost 2" (51mm), and bring your drogue collapse system back to trim.

REV #	CHANGES	DATE
0.1	Malfunction procedure diagram corrected. Sec.4 Ch.1	7/20/2016
0.2	Edits to standardize verbiage. Sec.2 Ch.2	9/6/2016
0.2	Malfunction procedure diagram updated. Sec.4 Ch.1	9/6/2016
0.3	Student Harness Attachment verbiage clarified. Sec.2 Ch.2	3/7/16
0.3	Addition of M2 to list of Approved AADs. Sec.2 Ch.2	3/7/16
0.4	Added AAD Installation Update. Sec.2 Ch.3	5/17/17
0.4	Added Main Deployment Bag Attachment Update. Sec.2 Ch.3	5/17/17
0.4	Added Main Brake Stowing Update. Sec.2 Ch.3	5/17/17
0.4	Added Main Closing Sequence Update. Sec.2. Ch.3	5/17/17
0.4	Updated Emergency Procedure Flow Charts Sec.4 Ch.1	5/17/17
0.4	Updated Emergency Procedure Descriptions. Sec.4 Ch.1	5/17/17
0.4	Added Drogue Calibration Documentation. Sec.4 Ch.1	5/17/17
0.5	Reorganized Currency Requirements. Sec.1 Ch.2	9/5/19
0.5	Added Vigil 2+ & Cuatro to Approve AAD list. Sec.1 Ch.3	9/5/19
0.5	Added explanation of centerline attachment. Sec.2 Ch.4	9/5/19
0.5	Added Instructions for New Main Bag Sec.2 Ch.4	9/5/19
0.5	Added explanation of drogue screw. Sec.2 Ch.4	9/5/19
0.5	Added drogue setting outcome. Sec.2 Ch.4	9/5/19
0.5	Added drogue calibration criteria. Sec.2 Ch.4	9/5/19
0.5	Added main pin criteria. Sec.2 Ch.4	9/5/19
0.5	Added drogue fold criteria. Sec.2 Ch.4	9/5/19
0.5	Added Student Briefing Criteria. Sec.2 Ch.4	9/5/19
0.5	Added Landing criteria. Sec.3 Ch.1	9/5/19
0.5	Added student hand position criteria. Sec.3 Ch.1	9/5/19
0.5	Added exit criteria. Sec.5 Ch.1	9/5/19
0.5	Added altimeter check. Sec.5 Ch.1	9/5/19
0.5	Added deployment criteria. Sec.5 Ch.1	9/5/19
0.5	Added 90 degree turn criteria. Sec.3 Ch.1	9/5/19
0.5	Added Emergency Procedure Criteria. Sec.4 Ch.1	9/5/19

0.5	Added Left side procedure for camera EP. Sec.3 Ch.2	9/5/19
1.0	Added equipment limitations per TSO C23F Sec.1 Ch.1	4/2/2021
1.0	Added Sigma Tandem Donning Instructions Sec.2 Ch.2	4/2/2021
1.0	Added Sigma II Reserve Assembly Instructions Pg. 25-31	4/2/2021
1.0	Added Setting the Sigma II Reserve Brakes Pg. 36-38	4/2/2021
1.0	Added Packing the Sigma II Sec.2 Ch.3	4/2/2021
1.0	Added VR 360 Reserve Deployment Bag compatibility Sec.2 Ch.3	4/2/2021
1.0	Added SR/340 & SR370 Reserve Deployment Bag Compatibility Sec.2 Ch.3	4/2/2021
1.1	Fixed Various Typos	5/21/2021
2	Altitude discrepancy changes, updates and clarifications of doctrine for training purposes	2/1/2024
2.1	Revised FAR reference on Pg. 5	9/11/2024
3.0	Added Sigma II references and instructions	12/11/2025
4.0	Added TB Reserve Deployment Bag – Closing Procedure, Updated Prohibited Use list, Updated Sigma Tech Spec Sheet	6/1/2026