

*Parachute Systems Specialists*



**FREE  
FLIGHT  
ENTERPRISES  
INC.**

## PACKING & USER INSTRUCTIONS

PRESERVE V MODEL FFE-H2090(-)



P.O. BOX 1419, LAKE ELSINORE, CA 92531 951-245-1734  
<http://www.freeflightent.com>

## **!! DISCLAIMER - NO WARRANTY !!**

BECAUSE OF THE UNAVOIDABLE DANGER ASSOCIATED WITH THE USE OF THIS CANOPY, THE MANUFACTURER MAKES **NO WARRANTY**, EITHER EXPRESSED OR IMPLIED. THE CANOPY IS SOLD WITH ALL FAULTS AND WITHOUT ANY WARRANTY OF FITNESS FOR ANY PURPOSE. THE MANUFACTURER ALSO DISCLAIMS ANY LIABILITY IN TORT OF DAMAGES, DIRECT OR CONSEQUENTIAL, INCLUDING PERSONAL INJURIES RESULTING FROM A DEFECT IN DESIGN, MATERIAL OR WORKMANSHIP OR MANUFACTURING WHETHER CAUSED BY NEGLIGENCE ON THE PART OF THE MANUFACTURER OR OTHERWISE. BY USING THIS CANOPY, OR ALLOWING IT TO BE USED BY OTHERS, THE BUYER **WAIVES** ANY LIABILITY OF THE MANUFACTURER FOR PERSONAL INJURIES OR OTHER DAMAGES ARISING FROM SUCH USE.

IF THE BUYER DECLINES TO WAIVE LIABILITY ON THE PART OF THE MANUFACTURER, BUYER MAY OBTAIN A FULL REFUND OF THE PURCHASE PRICE BY RETURNING THE CANOPY, BEFORE IT IS USED, TO THE MANUFACTURER WITHIN 15 DAYS FROM THE DATE OF THE ORIGINAL PURCHASE WITH A LETTER STATING WHY IT WAS RETURNED.

## **!! WARNING !!**

**DANGER**

EACH TIME YOU USE THIS CANOPY YOU  
RISK SERIOUS BODILY INJURY OR DEATH.

**DANGER**

YOU CAN SUBSTANTIALLY REDUCE THIS RISK BY ASSURING THAT THE CANOPY HAS BEEN ASSEMBLED AND PACKED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS, BY AN APPROPRIATELY RATED AND EXPERIENCED F.A.A. PARACHUTE RIGGER. YOU MUST ALSO OPERATE THE SYSTEM, AND THE CANOPY, IN STRICT COMPLIANCE WITH ALL OWNER'S MANUALS AND OPERATING PROCEDURES.

HOWEVER, PARACHUTE SYSTEMS SOMETIMES FAIL TO OPERATE PROPERLY EVEN WHEN PROPERLY ASSEMBLED, PACKED AND OPERATED, SO THAT YOU RISK SERIOUS INJURY OR DEATH EACH TIME YOU USE THE CANOPY.

# !!WARNING!!

1. TRAINING AND/OR EXPERIENCE ARE REQUIRED TO LOWER THE RISK OF SERIOUS INJURY OR DEATH.

**NEVER USE THE EQUIPMENT UNLESS YOU HAVE:**

- A. READ THIS WARNING LABEL AND COMPLETED A "CONTROLLED PROGRAM OF INSTRUCTION" IN THE USE OF THIS PARACHUTE ASSEMBLY.
2. EVEN IF YOU USE THIS PARACHUTE PROPERLY, AND IT FUNCTIONS PROPERLY, YOU MAY STILL EXPERIENCE DEATH OR SERIOUS INJURY.
  3. LOWER THE RISK OF DEATH, SERIOUS INJURY, CANOPY DAMAGE AND HARD OPENINGS BY NEVER EXCEEDING THE LIMITS SHOWN BELOW:
  4. APPROVED FOR USE WITH EMERGENCY PARACHUTE ASSEMBLIES AND SINGLE HARNESS RESERVE PARACHUTE ASSEMBLIES WITHOUT MAIN PARACHUTE RELEASE ONLY.

**MAXIMUM DEPLOYMENT SPEED 150 KNOTS**

**MAXIMUM GROSS WEIGHT (PILOT + CLOTHING + EQUIPMENT) 275 LBS.  
AVERAGE PEAK FORCES MEASURED DURING 4.3.4 TESTS  
4,169.3 LBS.**

**MODEL H-2090(- ) P/N 941000**

**SER #**

**DATE OF MFG.**

**CANOPY WT. 9.0**



**FREE  
FLIGHT  
ENTERPRISES INC.  
571-A CRANE ST.  
LAKE ELSINORE, CA 92530 USA**

**PRESERVE  
V**

**MANUFACTURED IN THE USA**

# INTRODUCTION

THANK YOU FOR CHOOSING A FREE FLIGHT ENTERPRISES, INC. CANOPY. WE FEEL THIS IS THE MOST ADVANCED RESERVE ON THE MARKET TODAY. THE PRESERVE V PROVIDES THE ULTIMATE IN DESIGN, WITH THE HIGHEST QUALITY MATERIALS AND WORKMANSHIP. THE COMBINATION OF CANOPY SHAPE AND DEPLOYMENT COMPONENTS RESULT IN A SUPERIOR EMERGENCY PARACHUTE SYSTEM FOR THE DISCRIMINATING PILOT.

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<b>MANDATORY PACKING CHECK LIST</b>	<b>ADDENDUM</b>

THE PRESERVE V IS EQUIPPED WITH A UNIQUE DEPLOYMENT DEVICE WHICH ALLOWS A VERY ORDERLY STAGED DEPLOYMENT.

THIS INCLUDES: A CENTER CONTROL LINE, AN INCREMENTAL BRIDLE, WITH A LAZY LEG SECTION OF THE BRIDLE, AND A SERIES OF BREAK TIE WRAPS. SEE PAGE 4.

ONE END OF THE CENTER CONTROL LINE IS FINISHED WITH A 7.5" LOOP. THIS END IS ROUTED THROUGH THE INSIDE OF THE CANOPY. THE OTHER END IS ATTACHED TO THE ATTACHMENT TAB ON THE INCREMENTAL BRIDLE. A BREAK TIE THROUGH THE #5 RAPIDE LINK AT THE VENT LINES AND THE ATTACHMENT TAB FOR THE CENTER CONTROL LINE CREATES THE LAZY LEG.

THERE ARE TWO BREAK TIES AT THE SKIRT OF THE CANOPY. ONE AROUND THE SUSPENSION LINES BELOW THE V-TABS AND THE OTHER 7.5" ABOVE THE SKIRT AROUND THE CANOPY. BOTH ROUTE THROUGH THE 7.5" CENTER CONTROL LINE LOOP.

DURING CANOPY EXTENSION ON DEPLOYMENT THESE BREAK TIES PREVENTS AIR FROM ENTERING THE WIND CHANNEL UNTIL THE CANOPY, LINES AND BRIDLE HAVE REACHED THEIR MAXIMUM EXTENSION. AT THIS POINT THE TIE AT THE VENT SECTION WILL BREAK ALLOWING THE LAZY LEG TO EXTEND AND BREAK THE SKIRT TIES.

THE BARTACKS ON THE INCREMENTAL BRIDLE RELIEVE SOME OF THE LOAD ON THE PILOT CHUTE DURING HIGHER SPEED DEPLOYMENTS. NOTE: IF ALL THE BARTACKS FAIL THE PILOT CHUTE AND BAG WILL SEPARATE FROM THE CANOPY.

## 1. COMPONENTS.

THE FOLLOWING COMPONENT PARTS ARE **MANDATORY** FOR THE USE AND PACKING OF THE PRESERVE V.

- |    |   |            |
|----|---|------------|
| A. | FFE-2090(-) PRESERVE V CANOPY                 | P/N 941000 |
| B. | FFE 200(-) HIGH SPEED PILOT CHUTE             | P/N 910400 |
| C. | FFE 800(-) HIGH SPEED DEPLOYMENT DEVICE       | P/N 910500 |
| D. | LINK, MALLION, RAPIDE, CRES #5                | P/N 720005 |
| E. | BREAK TIES (3), MIL-T-5608, C/B, T/I          | P/N 131708 |
| F. | BREAK TIE (1), VT-276, T/4, 8/4               | P/N 250030 |
| G. | <b>MANDATORY, PACKING INSTRUCTIONS, PRE-V</b> | P/N 941009 |
| H. | <b>MANDATORY, PACKING CHECK LIST, PRE-V</b>   | P/N 941010 |

IF ANY OF THE ABOVE COMPONENT PARTS ARE MISSING THE TSO IS VOID. NO ALTERNATE MATERIALS SHALL BE USED. ANY COMPONENTS REQUIRED BY ANY CERTIFICATED PARACHUTE RIGGER CAN BE OBTAINED BY CONTACTING US AT <http://www.freeflightent.com/>

## 2. REPAIRS.

- A. NO MAJOR REPAIRS OR ANY ALTERATIONS ARE AUTHORIZED. ANY REPAIRS ACCOMPLISHED IN THE FIELD, MUST BE OF A NATURE THAT NO DIS-ASSEMBLY OF ANY PORTION OF THE CANOPY IS REQUIRED. ANY SUCH MAINTENANCE MUST BE RETURNED TO THE FACTORY.
- B. REPAIRS SUCH AS A SMALL PATCH (LESS THAN 9" DIMENSION OF THE LARGEST DAMAGED AREA) MAY BE ACCOMPLISHED BY ANY APPROPRIATELY CERTIFICATED SENIOR OR MASTER PARACHUTE RIGGER WITH THE FACILITIES TO DO SO. THE REPAIRS MUST BE ACCOMPLISHED IN ACCORDANCE WITH THE PROCEDURES IN THE POYNTERS PARACHUTE MANUAL.
- C. ANY DAMAGE WITH A MAXIMUM DIMENSION OF 1/2" OR LESS MAY BE REPAIRED USING A SINGLE INSIDE PATCH WITH MIL-C-44378 OR EQUIVALENT. THE PATCH TO BE A MINIMUM OF 2", FOLD UNDER 1/2" EACH SIDE. SEW WITH A SINGLE NEEDLE SEWING MACHINE 1/16" FROM EDGE. USE A SINGLE ROW OF 301 STITCH, 7-11 S.P.I., WITH V-T-295 T/2, C/A, SIZE E, OVERSTITCHED MINIMUM 1/2". DO NOT REMOVE DAMAGED MATERIAL.
- D. BOTH REPAIRS ABOVE, LIMITED TO 1 PER GORE, 3 PER CANOPY.

## 3. USING THE CANOPY.

THE USE OF THE REAR RISERS GIVES THE BEST TURN RATE FOR STEERING THE PARACHUTE TO A SAFE LANDING. IF THE USER IS UNABLE TO USE THE REAR RISER STEERING, THE TOGGLES AND STEERING LINES WILL GIVE THE USER THE ABILITY TO MANEUVER THE CANOPY TO A SAFE LANDING. THE ONLY DIFFERENCE IS THE NEED TO TURN THE CANOPY INTO THE WIND FOR A SAFE LANDING AT A HIGHER ALTITUDE THAN IF USING THE REAR RISERS.

## 4. PARACHUTE RIGGER QUALIFICATION REQUIREMENTS

THE PARACHUTE RIGGER PACKING THIS CANOPY MUST HAVE A MINIMUM OF AN F.A.A. SENIOR PARACHUTE RIGGER CERTIFICATE WITH THE REQUIRED RATING COMMENSURATE WITH THE HARNESS AND CONTAINER ASSEMBLY TO BE USED.

## 5. PARACHUTE RIGGER EQUIPMENT & MATERIALS REQUIREMENTS

THE PARACHUTE RIGGER PACKING THIS CANOPY MUST HAVE THE PACKING INSTRUCTIONS FOR BOTH THE CANOPY AND THE HARNESS AND CONTAINER, AND THE MANDATORY PACKING CHECK LIST PHYSICALLY IN HIS OR HER POSSESSION, AND USE ALL OF THEM WHILE PACKING!! THE PARACHUTE RIGGER PACKING THIS CANOPY MUST HAVE ALL TOOLS REQUIRED BY THE PACKING INSTRUCTIONS OF THE MANUFACTURER OF THE HARNESS AND CONTAINER IT WILL BE PACKED INTO, IN HIS OR HER POSSESSION.

## 6. ASSEMBLY INSTRUCTIONS

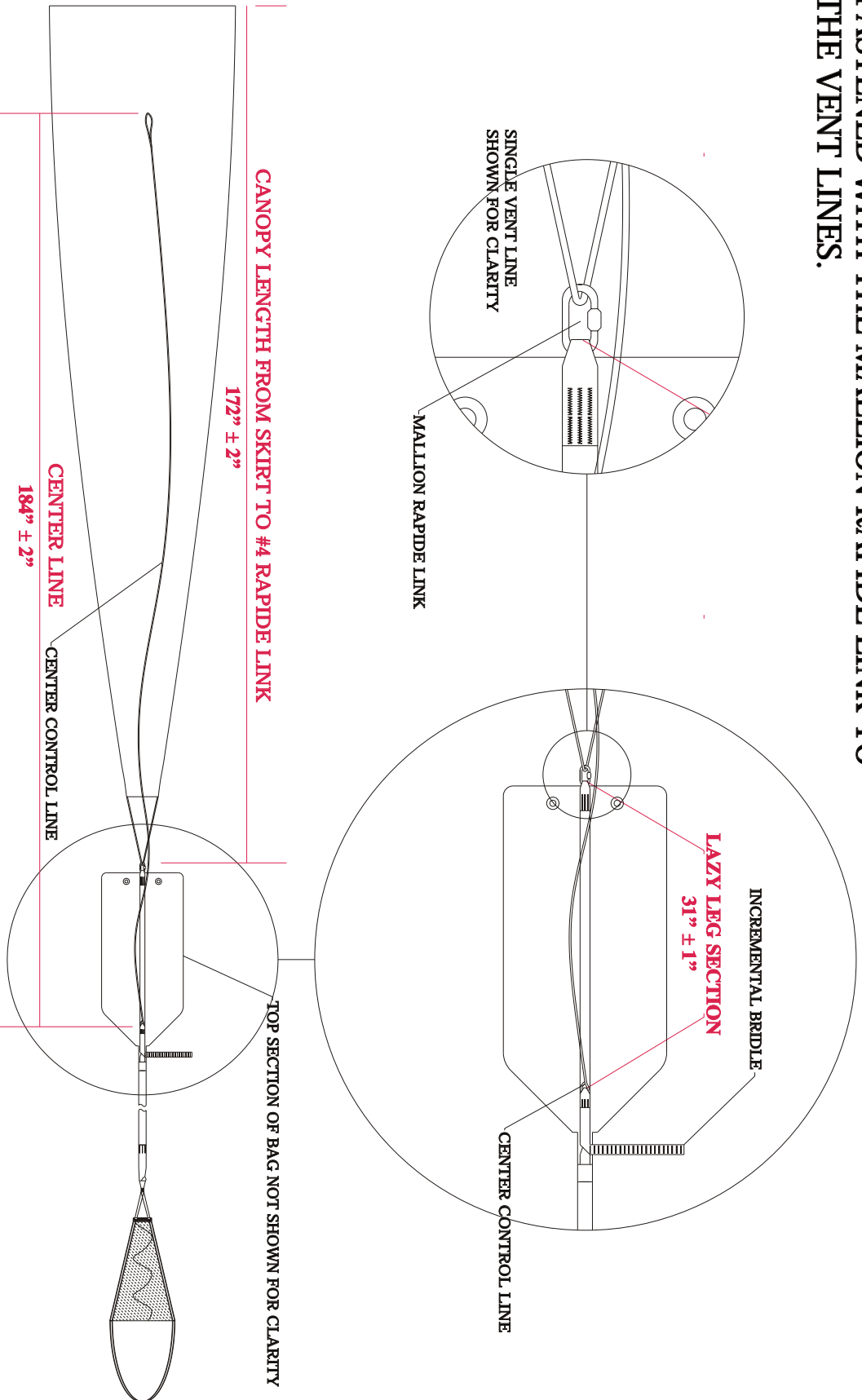
THIS CANOPY MUST BE ASSEMBLED IN ACCORDANCE WITH BOTH THE CANOPY AND THE HARNESS AND CONTAINER MANUFACTURER'S INSTRUCTIONS. THE MINIMUM STANDARD IN THESE INSTRUCTIONS MUST BE TO TIGHTEN THE RAPIDE LINKS FINGER TIGHT, THEN 1/4 TURN WITH A WRENCH. ASSEMBLY MUST BE DONE WITH GORE 20 TO THE REAR OF THE USER WHEN UNDER THE OPEN CANOPY.

## 7. REPACK CYCLE

REPACKS MUST BE ACCOMPLISHED IN A TIMELY MANNER, CONSISTANT WITH THE F.A.R. 'S.

# V-WRAP COMPONENTS

PILOT CHUTE IS LARKS HEADED TO THE BRIDLE AT THE TOP OF THE BAG. THE LAZY LEG IS FASTENED WITH THE MALLION RAPIDE LINK TO THE VENT LINES.



## V-WRAP ASSEMBLY

ALL DIMENSIONS MEASURED UNDER  
15 LBS. TENSION!

### PRESERVE V "V WRAP" TOLERANCES

- CANOPY TO LINK  $172'' \pm 2''$
- LAZY LEG  $31'' \pm 1''$
- CENTER LINE  $184'' \pm 2''$
- C/L FROM SKIRT  $19'' \pm 4 \frac{1}{2}''$



VIEW 1



VIEW 2



1. LAYOUT AND INSPECT CANOPY, BAG, BRIDLE AND PILOT CHUTE. NOTE: CENTER CONTROL LINE MUST BE SHORTER WHEN CANOPY LINES AND BRIDLE ARE EXTENDED. VIEW 1&2 INITIAL CHECK LIST.

VIEW 3



VIEW 4



2. INSERT CENTER CONTROL LINE THROUGH VENT AND DOWN TO SKIRT. SAFETY PIN TO LINE #10. NOTE INCREMENTAL BRIDLE WITH LAZY LEG. VIEW 3&4 INITIAL CHECK LIST!

3. FLAKE CANOPY, SPLIT AND FOLD SKIRT 45°. INITIAL CHECK LIST!

VIEW 5



VIEW 6



## VIEW 7



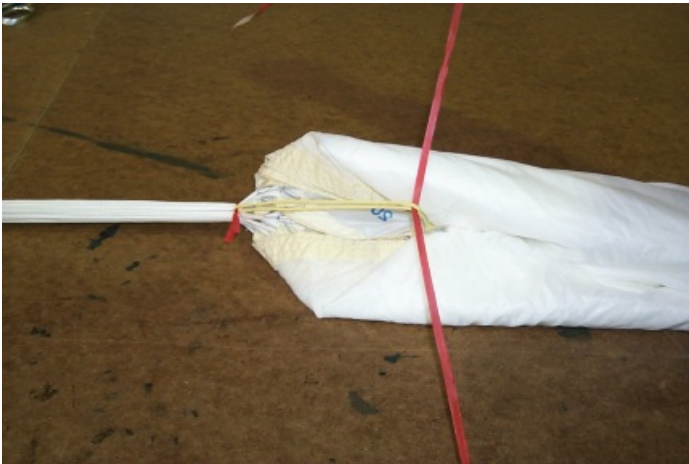
4. CUT ONE PIECE BREAK TIE (P/N 131708) 12" LONG, ROUTE THROUGH CENTER CONTROL LINE LOOP, THEN ONCE AROUND SUSPENSION LINES AT SKIRT. TIE SECURELY WITH SURGEON'S AND LOCKING OVER-HAND KNOT. CUT OFF EXCESS TO 1". REMOVE SAFETY PIN! VIEWS 5-7 **INITIAL CHECK LIST!**

5. PULL THE INCREMENTAL BRIDLE AT VENT TOWARD PILOT CHUTE TO ASSURE THAT BREAK TIE WRAP IS ROUTED THROUGH THE CENTER CONTROL LINE LOOP. CONTROL LINE

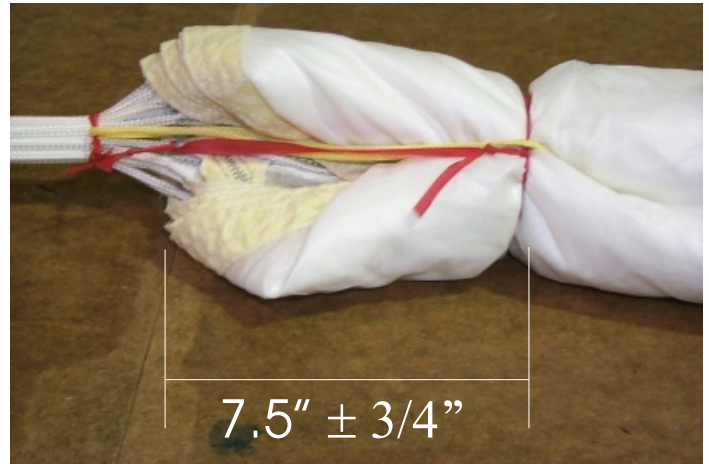
MUST NOT BE ABLE TO BE EXTRACTED UNLESS THERE IS A LOAD TO BREAK THE TIE. THIS ASSURES THE BREAK TIE IS ROUTED THROUGH THE CENTER LINE. **INITIAL CHECK LIST!**

6. FOLD CANOPY IN 5TH'S. **INITIAL CHECK LIST!**

## VIEW 8



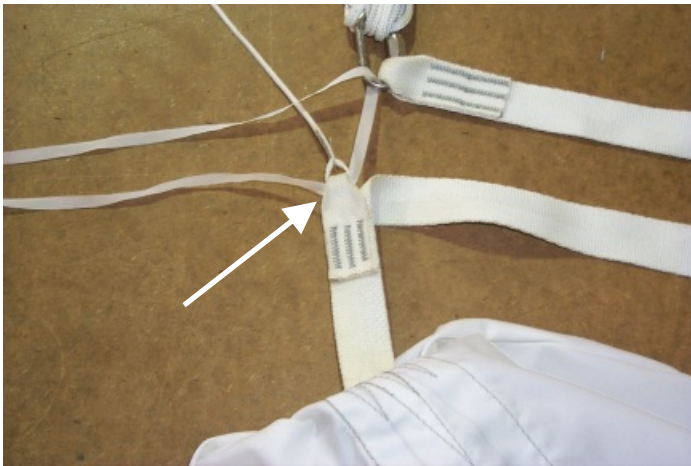
## VIEW 9



7. CUT A SECOND PIECE OF BREAK TIE (P/N131708) 18" AND ROUTE THROUGH CENTER CONTROL LINE LOOP ABOVE SUSPENSION LINES, THEN ONCE AROUND CANOPY APPROXIMATELY 7 1/2" ABOVE SKIRT. TIE SECURELY WITH SURGEON'S AND LOCKING OVERHAND KNOT. CUT OFF EXCESS LEAVING ONE END APPROX. 1" LONG, THE OTHER 10" LONG. TIE THE LONG END TO ANY V-TAB AT SUSPENSION LINE WITH 3 HALF HITCH KNOTS AND A LOCKING OVERHAND KNOT TO PREVENT ANY MOVEMENT DURING DEPLOYMENT. CUT OFF EXCESS TO APPROX. 1" LONG. VIEW 8&9 **INITIAL CHECK LIST!**

8. PULL CENTER CONTROL LINE AT SKIRT TOWARDS CONTAINER TO ASSURE THE BREAK TIE WRAP IS ROUTED THROUGH CENTER CONTROL LINE LOOP. THE CONTROL LINE MUST NOT BE ABLE TO BE EXTRACTED WITHOUT A LOAD TO BREAK THE TIE. **INITIAL CHECK LIST!**

VIEW 10



VIEW 11



9. CUT APPROXIMATELY 12" OF BREAK TIE (P/N 131708) THEN ROUTE THROUGH CENTER CONTROL LINE ATTACHMENT LOOP (SEE ARROW) THEN THROUGH #5 RAPIDE LINK AT VENT LINES. TIE WITH SURGEON'S AND LOCKING OVERHAND KNOT. CUT OFF EXCESS TO APPROX. 1". VIEWS 10&11 INITIAL CHECK LIST!

VIEW 12

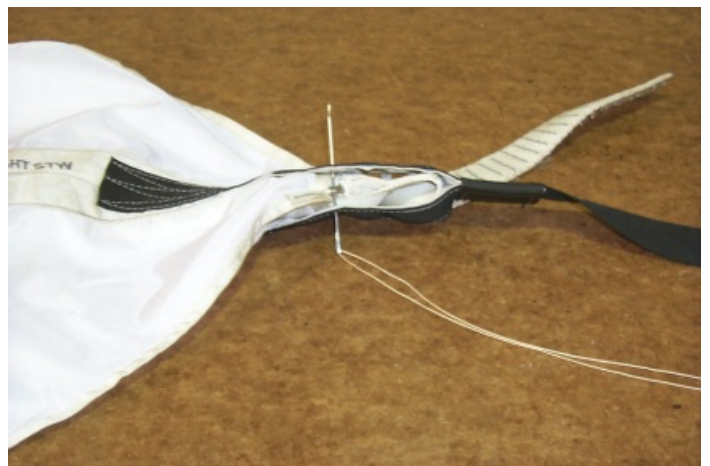


10. FOLD THE EXCESS LAZY LEG SECTION OF THE BRIDLE IN HALF AND STOW EXCESS WITH A RUBBER BAND INCLUDING THE VENT LINES AND CENTER CONTROL LINE. (DOUBLE STOW) VIEW 12 INITIAL CHECK LIST!

VIEW 13



VIEW 14



11. MAKE TWO S FOLDS WITH CANOPY AND PLACE AT THE TOP OF THE BAG. AT THIS POINT PULL THE INCREMENTAL BRIDLE OUT OF THE BAG THROUGH THE ACCESS SLOT AT THE TOP OF THE BAG. CONTINUE UNTIL THE RAPIDE LINK IS EXPOSED. TACK THE RAPIDE LINK TO THE EXTERNAL BRIDLE WITH SURGEON'S AND LOCKING OVERHAND KNOT. CUT OFF EXCESS TO APPROX. 1". USE VT-276, T/4, 8/4, (COTTON 3 CORD) (P/N 250030) ONE TURN DOUBLED. ONLY SEWN SECTION OF INCREMENTAL BRIDLE IS LEFT EXPOSED VIEW 13-15 INITIAL CHECK LIST!

**VIEW 15**



**VIEW 16**



**VIEW 17**



**VIEW 18**



**VIEW 19**



12. MAKE ONE MORE S FOLD THEN ROUTE PULLCORD THROUGH TOP GROMMETS FRONT AND BACK. CONTINUE WITH TWO S FOLDS AND AGAIN ROUTE PULLCORD THROUGH BOTTOM GROMMETS FRONT AND BACK. THERE SHOULD BE ENOUGH CANOPY FOR THREE MORE FOLDS. S FOLDS CAN BE ARRANGED IN MANNER THAT WILL FILL UPPER OR LOWER HALF OF CONTAINER FOR PILOT COMFORT AND CLOSING CONTAINER. S FOLDS MUST BE HORIZONTAL TO BAG. VIEW 16 **INITIAL CHECK LIST!**

13. CLOSE FLAP AND ROUTE LOCKING LOOPS THROUGH THE GROMMETS AND STOW LOCKING STOWS 1.5" MINIMUM, 2" MAXIMUM. VIEW 17 **INITIAL CHECK LIST!**

14. ROTATE BAG AND CONTAINER TO ACCESS STOW FLUTES. ROTATE CONTAINER & HARNESS IN THE SAME DIRECTION TO PREVENT A TWIST IN THE SUSPENSION LINES. STOW SUSPENSION LINES INTO STOW FLUTES STARTING AT THE TOP OPPOSITE THE LAST LOCKING STOW. STOWS STOP AT END OF FLUTES. **STOW MUST NOT EXTEND MORE THAN 1/8"**. VIEW 18&19 **INITIAL CHECK LIST!**

15. INSTALL IN CONTAINER PER MANUFACTURERS INSTRUCTIONS. **INITIAL CHECK LIST!**

**ASSURE PULL CORDS ARE REMOVED FROM BAG! ASSURE SAFETY PIN AND FLAG ARE REMOVED FROM BAG! RETAIN MANDATORY CHECK LIST!**