

*Butler Personnel Parachute Systems*  
**Deployment Bag**  
**Assembly and Packing Instructions**



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## 1. Introduction

The following symbols are used throughout this manual:



**WARNINGS** indicate a procedure or situation that may result in serious injury or death if instructions are not followed correctly.



**CAUTIONS** indicate any situation or technique that will result in potential damage to the product, or render the product unsafe if instructions are not followed correctly.



**NOTES** are used to emphasize important points, tips, and reminders.



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These instructions do not constitute complete instructions for assembling and packing a Butler Emergency Parachute. This manual outlines only the procedures for packing a Butler Personnel Emergency Parachute canopy into a deployment bag. You must also have the following manuals: *Butler Personnel Canopies Assembly and Packing Instructions*, the appropriate manual for the container you are servicing, and *General Information for Parachute Riggers for Servicing BPS Personnel Parachute Systems*. You may need additional manuals to pack the parachute if it has options that require maintenance and service not covered in the manuals listed above. Contact Butler Parachute Systems if you are not sure you have the manuals you need. The pictures for this manual were shot during two different photo sessions and show the packing of a deployment bag for a container with three closing pins and a container with two closing pins. The procedures are the same for both configurations.

The HX and Lopo series canopies require an incremental bridle for the deployment bag option. The incremental bridle connects the canopy to the deployment bag. The pilot chute bridle connects the deployment bag to the pilot chute.

The Butler Emergency Parachute is an important piece of survival equipment. Proper installation of the components and maintenance of the system are necessary for the parachute to deliver the safety performance it is designed to provide. It is important that you become familiar with these instructions to properly install and pack the components. Improper installation and packing of the components may result in failure of the parachute system during use.



**IMPROPER USE OR NEGLIGENT CARE OF THIS EQUIPMENT CAN CAUSE SERIOUS INJURY OR DEATH.**

## 2. Rigger Responsibilities and Rating Limitations

We spare no effort in making our equipment the finest emergency parachutes available. However, parachute riggers in the field must also do their part to educate the user so he or she may fully benefit from the level of safety protection our systems offer. Parachute riggers should help the user understand his or her parachute and how to use it. We recommend that you become familiar with the User's Guide and answer any questions the user may have. We also recommend that you allow the user to don the parachute and pull the ripcord before each repack.

All routine maintenance and minor repairs that do not affect airworthiness may be performed by an FAA licensed Senior Parachute Rigger (or foreign equivalent) with the proper facilities and equipment.



MAJOR REPAIRS OR ALTERATIONS THAT MAY AFFECT AIRWORTHINESS MUST BE RETURNED TO BUTLER PARACHUTES OR A DESIGNATED REPRESENTATIVE.

## 3. Methods

- Unless stated otherwise, secure all hand tacks and ties called for in this manual with a surgeons knot and locking knot.
- All bartacks called for in this manual are 48-stitch type.
- All directional references are as the equipment is worn by the user.

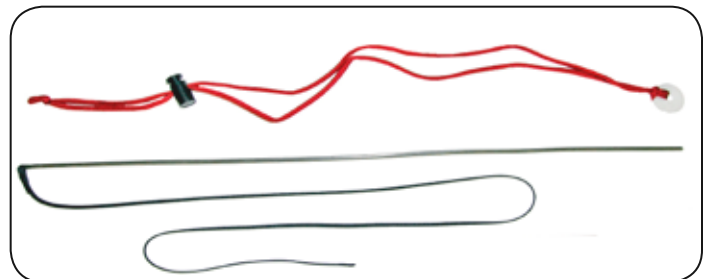
## 4. Tools and Materials

You will need the tools and materials listed on page 7 of the manual titled *Butler Personnel Canopies Assembly and Packing Instructions* to pack the entire parachute system.

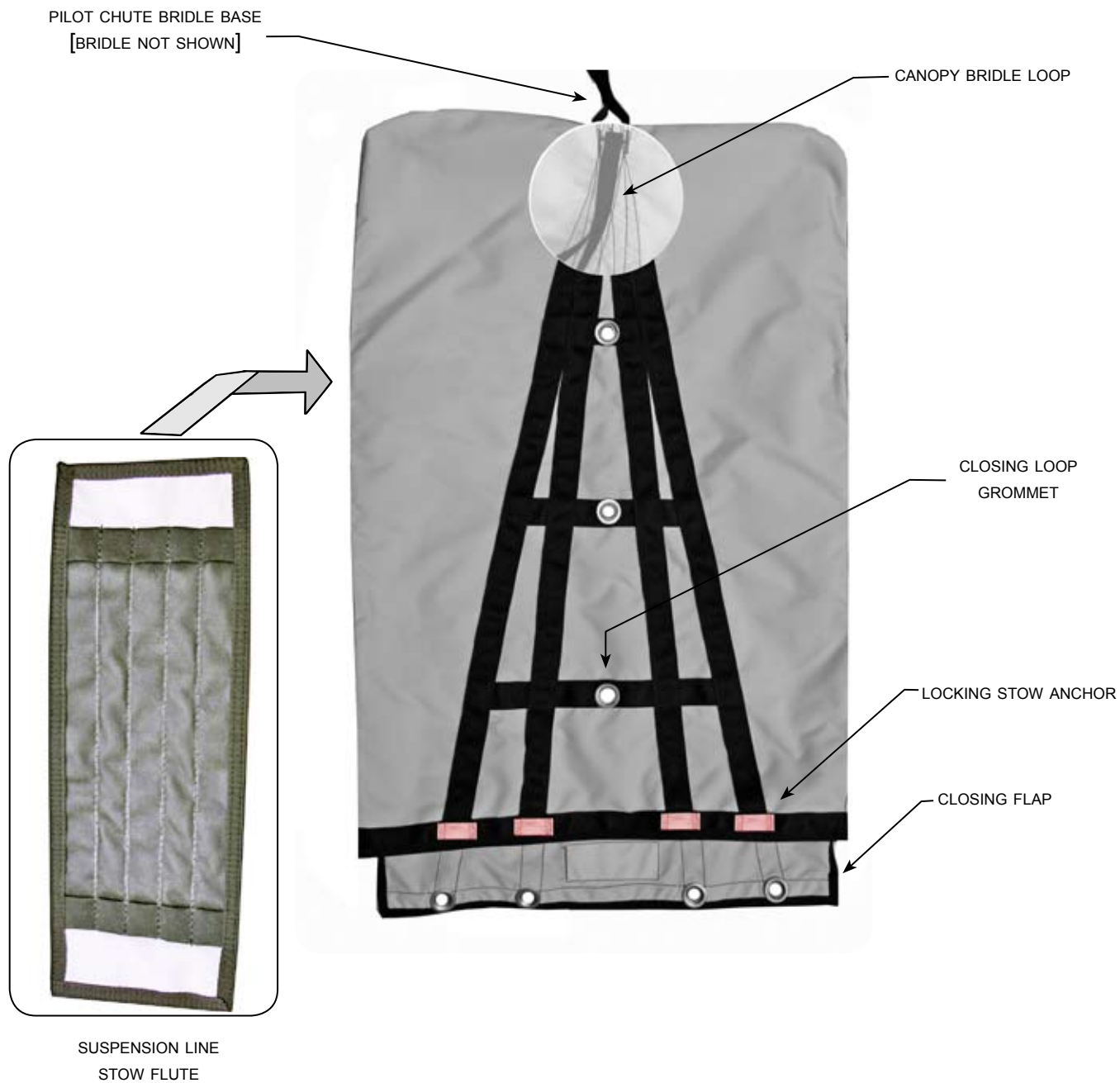
Additional tools required for packing a parachute with a deployment bag:

- 18" bodkin with 40" pull-up cord attached
- Locking pull-up cord with washer\*

\* 2 for two pin container - 3 for three pin container.



## 5. Reference



## 6. Deployment Bag Assembly



**WARNING**

The spandex suspension line stow flutes on Butler deployment bags are sized specifically for the size and type of canopy installed in the parachute system. You must use the appropriate deployment bag for the container and canopy it was made for. The label of the deployment bag is marked for the type of canopy it is made for.

### 6.1

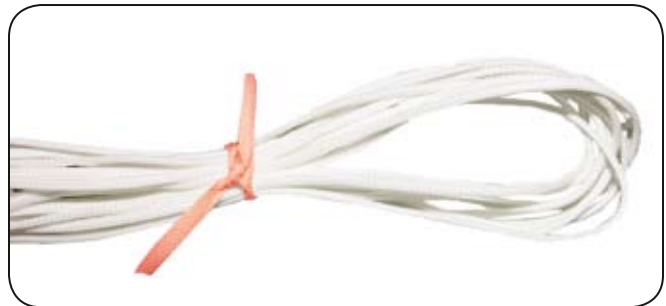
Straighten the canopy apex.

Tie the vent lines with a piece of break tape\* four-to-six inches from the top.



MAKE THIS TIE AS TIGHT AS POSSIBLE.

\* 80 POUND BREAK TAPE (MIL-T-5661, TYPE 1, 1/4")



6.1 Tying the vent lines.

### 6.2

Thread the open end of the pilot chute bridle around the bottom grommet strap of the pilot chute.

Form a loop and sew three 48-stitch bartacks at the bottom of the loop.



6.2 Attaching the pilot chute.

### 6.3

Install a locking stow bands\* on each locking stow anchor.

\* MICRO LINE TUBE STOWS



6.3 Installing the locking stow bands.

## 6.4

The incremental bridle splits at one end. One leg is looped and bartacked. The other leg is open.

Form a loop around the apex lines with the open leg and sew the loop closed with two bartacks.



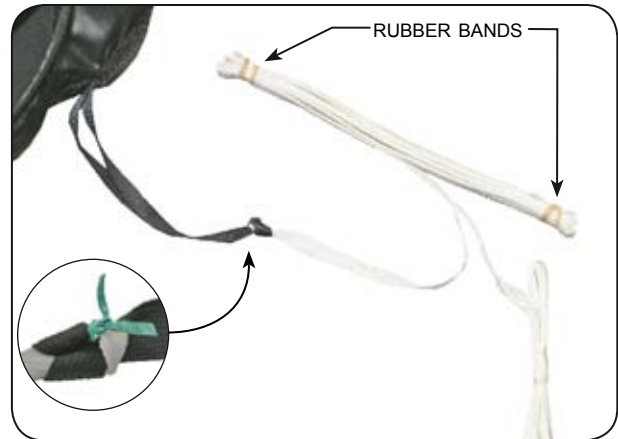
6.4 Sewing the incremental bridle to the apex.

## 6.5

Attach the incremental bridle to the canopy bridle loop with a lark's head knot.

Tack\* the knot.

Accordian fold the incremental bridle so it is the width of the deployment bag and secure the ends with a rubber band.



6.5 Attaching the deployment bag.

\*ONE TURN OF SUPER TACK (80 LB.) OR LITE SUPER TACK (50 LB.) TACK CORD.

## 7. Stowing the Canopy in the Deployment Bag

### 7.1

Flake the canopy and stow the slider as outlined in Section 9 of *Butler Personnel Canopies, Assembly and Packing Instructions*.

Fold the skirt of the canopy on top of itself to the wind channel.

Fold the rest of the canopy into fifths. Leave approximately 15" of the canopy at the skirt unfolded.



7.1 Folding the canopy.

7.2

Open the deployment bag with the closing flap on the bottom.

Slide the bag under the canopy so the apex is in a top corner of the bag.

Stow the incremental bridle and the apex lines across the top of the bag.



7.2 Stowing the incremental bridle.



It is important to distribute the bulk of the canopy evenly in the deployment bag. As you are S-folding the canopy into the deployment bag, fill the areas between the grommets with enough canopy to fill out the corners of the bag and provide enough volume in each section for a smooth and even pack.

7.3

S-fold the canopy to the first closing loop grommet.



7.3 S-folding the canopy.

7.4

Thread a locking pull-up cord through the top and bottom grommet.

Pull the side zippers closed as you fill the bag.



**CAUTION**

WHEN CLOSING THE BAG, PLACE YOUR INDEX FINGER BETWEEN THE ZIPPER HEAD AND THE CANOPY TO PREVENT PINCHING THE CANOPY.



7.4 Installing the locking pull-up cord.



### 7.5

Repeat step 7.4 to S-fold the canopy between the grommets. Close the zippers as you go as outlined in step 7.4.



BE SURE THAT THIS PART OF THE CANOPY IS THE WIDTH OF THE DEPLOYMENT BAG.



IF NECESSARY, YOU MAY FOLD MORE OF THE CANOPY INTO FIFTHS TO COMPLETE THE SIDE-TO-SIDE S-FOLDS. OR YOU CAN OPEN UP MORE OF THE CANOPY INTO THIRDS TO COMPLETE THE NEXT STEP.



7.5 S-folding the canopy.

### 7.6

Slide the skirt of the canopy straight into bag; S-fold the material behind the skirt as you push it into the bag.



7.6 Inserting the skirt of the canopy.

7.7

Fill in the corners and front of the bag with the canopy and slider skirt.



7.7 Filling the front of the bag.

7.8

Close the zippers all the way and tack\* the zipper heads to the bag.

\*ONE TURN OF SUPER TACK (80 LB.) OR LITE SUPER TACK (50 LB.) TACK CORD.



BE CAREFUL NOT TO CATCH THE CANOPY IN THE TACK.



7.8 Tacking the zippers.

## 8. Stowing Suspension Lines

8.1

The suspension lines come out of the bag between the inside locking stows.

Pull the inside locking stow bands through the grommets and form two locking stows.



MAKE THE SUSPENSION LINE STOW LOOPS BETWEEN 1" AND 1 1/2" LONG.



8.1 Closing the inside locking stows.

8.2

Close the outside locking stows in the same manner as 8.1.



8.2 Closing the outside locking stows.

8.3

Turn the bag over\*.

Use an 18" bodkin to stow the suspension lines in the flutes.

Stow an equal amount of lines on both sides of the deployment bag.

Do not expose more than 1/2" of suspension line past the stow flutes.

Leave approximately 14" to 18" of suspension line unstowed.

\* YOU WILL HAVE TO TURN THE BAG OVER AGAIN BEFORE PLACING IT IN THE CONTAINER. THIS WILL REMOVE THE HALF TWIST IN THE SUSPENSION LINES CREATED BY THIS TURN.



8.3 Stowing the suspension lines.



**WARNING** DO NOT EXPOSE MORE THAN 1/2" OF SUSPENSION LINE PAST THE STOW FLUTES.

## 9. Placing the Deployment Bag in the Container

9.1

Turn the bag over so the suspension lines are on the bottom.

Thread pull-up cords through the closing loops on the container.



9.1 Turning the bag.



**CAUTION** TURN THE BAG OVER IN THE DIRECTION THAT WILL REMOVE THE HALF TWIST PLACED IN THE SUSPENSION LINES DURING STEP 8.3.

9.2

Set the risers and tie a stow to the base of the container as outlined in the manual titled *Packing Instructions for Butler Back Type Emergency Parachute System*.



9.2 Preparing the container.

9.3

Place the deployment bag in the pack tray with the suspension lines underneath and the locking stows at the bottom of the pack tray.



9.3 Placing the deployment bag in the pack tray.

9.4

Remove the washers from the locking pull-up cords. Thread the pull-up cords through the locking pull-up cords.



9.4 Threading the pull-up cords.

9.5

Use the locking pull-up cords to pull the pull-up cords through the deployment bag.

Secure the closing loops with temporary pins.



9.5 Pulling the cords through the deployment bag.

Close the container as outlined in the manual titled *Packing Instructions for Butler Back Type Emergency Parachute Systems*.

## Appendix A. Canopy Operating Limitations

P/N	Model	Diameter	Weight	Maximum Permitted Gross Weight* @ 150 KEAS*	Maximum Recommended Gross Weight* @ 150 KEAS*	Demonstrated Overload KIAS <sup>†</sup>
2101-1	Lopo 350	23'	6.0	220 lb	175 lb	264 lb @ 180 KIAS
2101-2	Lopo 450	26'	7.0	285 lb	235 lb	345 lb @ 180 KIAS
2101-3	Lopo 550	29'	8.0	330 lb.	300 lb	420 lb @ 180 KIAS
3101	HX-300	20'	5.8	250 lb	160 lb	300 lb @ 180 KIAS
3102	HX-400	23'	6.4	340 lb	225 lb	400 lb @ 180 KIAS
3103	HX-500	26'	7.9	416 lb	280 lb	500 lb @ 180 KIAS
3106	HX-500/24	26'	8.5	416lb	280 lb	500 lb @ 180 KIAS
3104	HX-600	28'	9.1	500 lb	340 lb	600 lb @ 180 KIAS

\* KNOTS EQUIVALENT AIRSPEED: THE CALIBRATED AIRSPEED CORRECTED FOR ADIABATIC COMPRESSIBLE FLOW FOR THE PARTICULAR ALTITUDE.  
 † KNOTS INDICATED AIRSPEED: THE SPEED SHOWN ON AN AIRCRAFT'S PITOT-STATIC AIRSPEED INDICATOR.



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