Butler Parachute Systems, Inc.

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General Packing Instructions for Butler Chest Type Emergency Parachute Systems for Canopies Equipped with P/N 103- Deployment Diapers

For use with Butler Parachute Systems manuals titled:

General Canopy Folding
and
Packing Instructions
for
Personnel Parachute Canopies
Manufactured by
Butler Parachute Systems, Inc.

OR

General Canopy Folding
And
Packing Instructions
For
H-X Series
Personnel Parachute Canopies

INTRODUCTION

This manual contains information required to pack the canopy into the BPS Chest Style emergency parachute system and is intended to be used in conjunction with one of a series of BPS manuals generally titled "General Canopy Folding and Packing Instructions for ***xxxxx*** Personnel Parachute Canopies. Once the canopy portion of the instructions have been complied with, then you must transition to this manual (or its equivalent for other products). If you do not have access to the appropriate manuals, **DO NOT ATTEMPT TO PACK THE PARACHUTE!** Contact the owner or BPS for a replacement copy.

PART NUMBERING SYSTEM

BPS currently produces over 200 different parachute configurations and uses the following part numbering system, consisting of two or more sections as follows:

PPP–WW/wwLLTT/tt(XXXX)-CCCC

PPP – is the basic part number: 101 for back/chair style (the BPS chairpack is actually an extended version of the backpack and therefor uses the same basic part number), and 102 for seatpack.

WW/ww – is the design width of the pack in inches. The lower case segment is only used if the width of the pack is different from top to bottom; the top width is given first. For seatpacks, the width of the pack at the front edge (as worn) is shown at the first position.

LL – is the design length of the pack in inches. For seatpacks, this number is the front-to-rear dimension as seen when worn.

TT/tt – is the design thickness of the pack in inches. The lower case segment is only used if the pack thickness differs from top to bottom; the top thickness is given first. For seatpacks, the front thickness is given first.

XXXX – an open format designator reserved for various types of optional equipment; multiple optional items will appear separated by slashes within the parentheses. This section is not used unless there has been a structural or functional modification to the parachute.

CCCC – a canopy designator for complete systems to indicate which canopy is installed in the system.

Examples:

P/N 101-122002-HX300 is a Back Style parachute that is 12 inches wide, 20 inches long, 2 inches thick, and contains an HX-300 canopy.

P/N 101-14190.5/02-HX400 is a Back Style parachute that is 14 inches wide, 19 inches long, .5" thick at the top tapering to 2" at the bottom, and
contains an HX400 canopy.

P/N 102-151303(WB/SL)-HX500 is a Seat Style parachute that is 15 inches wide, 13 inches long, and 3 inches thick. It is a Warbird model equipped with the optional Static Line and contains an HX500 canopy.

Note: Placement of the diaper and distribution of the bulk when packing is dictated by the design dimensions of the particular container. For example, a container that is thicker at the top would have the diaper placed in the thicker portion at the top and the remainder of the bulk distributed to fill the container in proportion to the thickness at each point. Please keep this in mind if the particular parachute you are packing does not match the illustrations in this manual. Also remember that you as the rigger have broad discretion in how minute details of a particular pack job are accomplished.

CLOSING LOOP LENGTH

All BPS packs use adjustable soft closing loops. In general, the closing loops should be short enough to fully compress the pilot chute and keep it firmly in place. This not only ensures that the spring will get a good solid launch, but it will also keep the spring from shifting off center. For an initial assembly of a parachute, the force to pull the loops up and insert the pins can be quite high and still result in a pull force within limits (15 for chest packs and 22 lb. for all others) after several days. This is because the pack tray area where the loops are attached changes shape under the tension from the loops, allowing the loop tension (and thus the pull force) to drop off. This effect only occurs after the initial assembly and packing or an extreme increase in the loop tension.

The original (and strongly preferred) material for the closing loops is a 225 lb. braided polyester cord; however, you may also use the outer sheath or MIL-C-5040, T3 ("550 line") . No other types of closing loop material are authorized! Please contact Butler Parachute Systems for replacement cord.

Note: It is the rigger's responsibility to ensure that ripcord pull force meets the requirements

TOOLS REQUIRED

Three pull-up cords
Three temporary pins with safety flags
Packing paddle
Tacking needle with waxed 6-cord or equivalent
Seal thread/lead seals

GENERAL PACKING PROCEDURES

1. COUNT YOUR TOOLS!
2 Pull test – If possible, have the customer pull the ripcord themselves.
3. Airing and drying – as required.
4. Check layout and line rotation; straighten canopy from the top down.
5. INSPECTION – Record Serial number and other data from all components.
    a. Pilot chute – snags, bent spring, solid ferrule, proper type.
    b. Bridle – tackings and knots, proper routing of incremental bridle, T3 break tape.
    c. Apex – vent and cap, lateral band, straighten vent hem.
    d. Canopy – radial seams and gore seams, general condition, fabric pull test.
    e. Lower lateral band – skirt hem, line attachments.
    f. Suspension lines – snags, kinks, sheathing.
    g. Connector links – plating, approved type (no speed links).
    h. Risers – Stitching, condition of webbing.
    I. Harness – canopy releases, webbing, hardware, ripcord and cables, housings, and pocket
6. Repair and re-inspect as necessary.
7. Pleat, fold, stow, stack, close, dress pack...Neatness Counts!
8. Seal, sign, record data.
9. Count your tools!

CHEST TYPE PACKING INSTRUCTIONS

Unlike other chest style parachute containers, the BPS Chest Style container utilizes inner staging flaps to control the pilot chute / canopy deployment sequence. These staging flaps hold the canopy in the container until a positive pilot chute deployment has been achieved. During packing, the pilot chute is placed ON TOP OF the staging flaps. NEVER PLACE THE PILOT CHUTE UNDER THE STAGING FLAPS! DOING SO COULD RESULT IN LOSS OF LIFE!

Prior to packing the canopy into the container, take a moment to familiarize yourself with the components that are unique to BPS Chest Style containers.

Figure 1. After flaking and folding the canopy place the risers into the container as shown, centering the risers between the edges of the top flap and the side flaps. Ensure that the oriented correctly; the opening of the butterfly snaps will be facing down.

Figure 2. Using one turn single of Supertack (or equivalent), tack the risers in place as shown. Tie with a Surgeon's and Locking Knot.

Figure 3. Position the edges of the top flap over the risers as shown and mate the velcro.

Figure 4. Insert the two closing loops. Next, insert a 12” piece of 80lb cotton tape under the Type IV as shown. This tape will be used later to secure the first bight of suspension lines to stage the deployment of the canopy.

Figure 5. Neatly fold the risers and the cross-connectors across the bottom of the container.

Figure 6. Form a bight in the suspension lines and using the 80lb tape, secure it to the pack tray with a surgeon's and locking knot. Trim the ends to 1 inch. **Note:** This suspension line tie helps ensure proper staging of the deployment sequence and must be installed.

Figure 7. Place the diaper across the bottom of the container on top of the risers and cross-connectors as shown.

Figure 8. Rotate the container as needed to begin “S” folding the canopy into it. Depending on the container size, the amount of canopy “S” folded between the closing loops and the inner staging flaps will vary and is up to riggers discretion.

Figure 9. For this size of container, the rigger determined that the diaper plus one fold of the canopy is the correct amount to place between the closing loops and the bottom of the container.

Figure 10. Place the bottom inner staging flap over the diaper and canopy. Pass your pull-up cords through the grommets and pin in place.

Figure 11. Continue “S” folding the remaining canopy into the container. Folding the apex back towards the center will place the pilot chute bridle in the correct position and leave a cleaner edge when closing the container.

FIG 11.

Figure 12. With the remainder of the canopy folded into the container, bring the top inner staging flap up over the canopy and pin in place as shown. Note: The pilot chute bridle is routed between the grommets on the staging flaps.

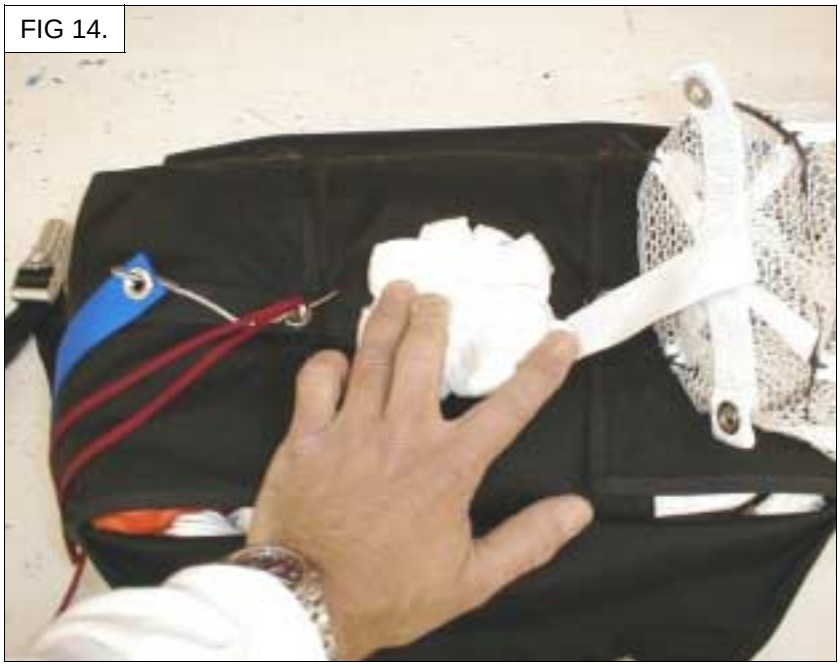
FIG 12.

Figure 13. Close the ride side flap and pin in place as shown. After pinning the side flap in place, mate the side flap velcro to the velcro on the staging flaps. Repeat with the left side flap. If the velcro will not stay mated, you have made the “S” folds too wide; re-position the canopy as needed.

FIG 13.

Figure 14. If the canopy you are packing is equipped with an incremental bridle (such as a BPS HX series canopy) the pilot chute bridle needs to be “S” folded in a star-shaped pattern, rather than back and forth on top of itself. Folding the bridle in the star shape will reduce the amount of bulk of the bridle. If no incremental bridle is used, folding the bridle back and forth on top of itself is fine.

FIG 14.



Figures 15 & 16. Position the pilot chute base on top of the folded pilot chute bridle, aligning the grommets located on the base with the inner staging flap grommets. Pass your pull-up cord through the bottom pilot chute grommet and pin the pilot chute in place. Repeat with the grommet located on the other side of the pilot chute base.

FIG 15.

FIG 16.

Figure 17. Compress the pilot chute and pull all of the material clear of the spring.

Figure 18. Hold the compressed pilot chute in place (your knee works well). Carefully fold the pilot chute material that is covering the side of the container and place it against the compressed pilot chute spring. DO NOT TRAP ANY MATERIAL INSIDE THE PILOT CHUTE SPRING! Pass your pull-up cord through the grommet on the pilot chute crown and pin in place.

WARNING! BPS pilot chutes utilize a heavy-duty spring; use care when compressing it and holding it compressed!

Figure 19. Still holding the pilot chute compressed, fold the material on the other side of the container and pin the crown in place.

Figure 20. Overhead view of pilot chute compressed and pinned in place.

Figure 21. Rotate the container so that the bottom flap is facing away from you. Carefully fold the pilot chute and place it up against and barely under the edge of the pilot chute crown. Arrange the bulk of the pilot chute so that it will help stabilize the pilot chute spring and keep it from rocking. This

FIG 21.

Figure 22. Bring the bottom flap up over the pilot chute an pin in place.

FIG 22.

Figure 23. Rotate the container so that the top flap is away from you. Fold the remaining pilot chute material in the same manner as you did previously.

FIG 23.

Figure 24. Close the top flap and pin in place.

FIG 24.

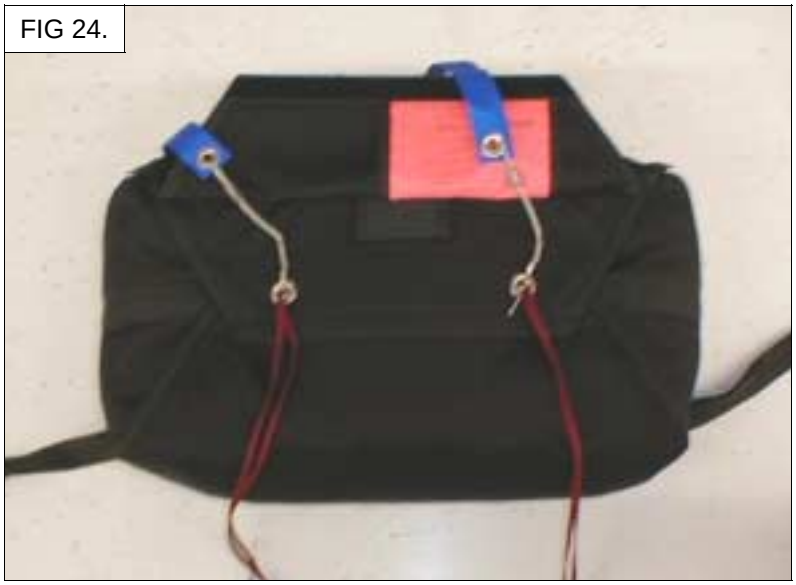


Figure 25. Insert the ripcord handle into the elastic keeper and replace your temporary pins with the ripcord pins. Remove the pull-up cords being careful not to burn the closing loops. It is recommended that you place the pin between the closing loop and the pull-up cord before removing the pull-up cord.

FIG 25.

Figure 26. Dress the container, paying attention to the corners. Seal the pins, Sign the Packing Data Card, and log the pack job

FIG 26.

COUNT YOUR TOOLS!

RIGGER'S NOTES

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