Sidewinder

OWNERS MANUAL

CAUTION

Read this manual before using this equipment

WARNING: SKYDIVING CAN KILL YOU!

Parachuting equipment does not always work the way it is intended to, and this piece of equipment could be no exception. Each time you use this parachute system, no matter how careful you may be, you risk serious injury or death. You can substantially **REDUCE** (but not eliminate) this risk in three ways:

First, assure that each component of your parachute system is assembled, packed and maintained in strict compliance with the equipment manufacturer's instructions.

Second, assure you have been instructed in the use of this system.

Third, use the complete system as intended by the manufacturers, and as explained in the owner's manuals.

****
* **DISCLAIMER---NO WARRANTY** *
****

Because of the unavoidable danger associated with the use of this harness/container assembly, the manufacturer and/or seller provide **NO WARRANTY**, either express or implied. The harness/ container assembly and all components are sold with all faults and without any warranty of fitness for any purpose, express or implied. Purchaser and all users expressly waive any and all implied warranties which might otherwise arise by operation of law, statute or otherwise. The manufacturer and/or seller also disclaim any liability in tort for damages, direct or consequential, including (but not limited to) personal injuries resulting from a defect in design, material or workmanship or manufacturing or any other nature, whether caused by negligence on the part of the manufacturer or otherwise. By using this harness/container assembly, or allowing it to be used by others, all users waive any liability by the manufacturer and/or seller for personal injuries or any other damages arising from such use.

If the buyer declines to waive liability on the part of the manufacturer, the buyer may obtain a full refund of the purchase price by returning the unused parachute harness/container to the manufacturer within 30 days from the date of original purchase with a letter stating why it was returned. (Box 2320 Claresholm AB T0L 0T0) The manufacturer will bear the cost of the return postage.

 p/n 4810-00-000

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This manual covers the SIDEWINDER starting at s/n 065

INTRODUCTION

Congratulations! You have chosen one of the finest harness/container systems available on the market today, the SIDEWINDER, a product of Flying High Manufacturing Inc.

The SIDEWINDER is a dual parachute tandem container integrated with a single harness. It is most noted for the single pin reserve ripcord and internal pilot chute, but also has covered main risers, and double layer construction (which increases strength and eliminates unsightly stitching). The harness is constructed of a single Type-13R main lift webb, rated at 7000 lbs. per side.

Your SIDEWINDER is outstanding, not only in its design and performance, but also in custom crafted, quality workmanship. We have taken great care in building this rig for you; we hope you are as proud of it as we are. We have been manufacturing harness/ container systems like the Bullet, the Excaliber and the Sidewinder for jumpers all across Canada since we incorporated in 1979. Besides doing very custom work (such as race car harnesses, rescue and stunt harnesses, and even the rig used in the James Bond movies), we also do top quality repairs, modifications and repacks. We sell most popular brands of canopies and skydiving accessories as well.

PLEASE: Take the time to READ THROUGH THIS MANUAL and make yourself familiar with this product before you jump with it.

It is your life, and therefore your responsibility to insure that your new rig is assembled, packed and used correctly. A rigger, instructor or drop zone safety officer can help you become familiar with your new gear before you make your first jump on it. Before lending your rig to anyone else, make sure they are familiar with it's operation and use. Should you require any custom alterations or repairs, please contact us. Keep you and your rig safe, and keep it all "Flying High". We have replacement parts available at reasonable prices.

If you have any questions or suggestions about your container system or this manual please contact us at:

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Box 2320 Claresholm, AB T0L 0T0 Canada
TEL/FAX (403) 687-2225 (MST).
email flyhigh@agt.net

We sincerely hope you make your very best skydives with your new equipment.

.....from the Flying High loft...

1.0 MAIN PACKING INSTRUCTIONS

1.1 Assembly

We heartily recommend the use of a packing mat for your rig and a tarp or protective sheet for your canopy while packing. Do not drag your rig across the bare ground when packing. Lay out the main parachute with the lines stretched out straight. (On a clean surface free from any sharp objects which could snag canopy cloth or lines). To attach the pilot chute and deployment bag, feed the end of the main pilot chute bridle through the large center grommet in the deployment bag. Be sure the bag is correct side out (webbing to the outside) and the open end is facing the canopy. Run the bridle through the ring (or loop) attachment point on the center of the top skin of the canopy, and then back through the same center grommet in the deployment bag. (Fig 1) Work the main pilot chute through the loop in the end of the bridle, and then pull the bridle taut, moving the knot down through the deployment bag grommet and tightening it up against the ring or loop on the top center of the main canopy.

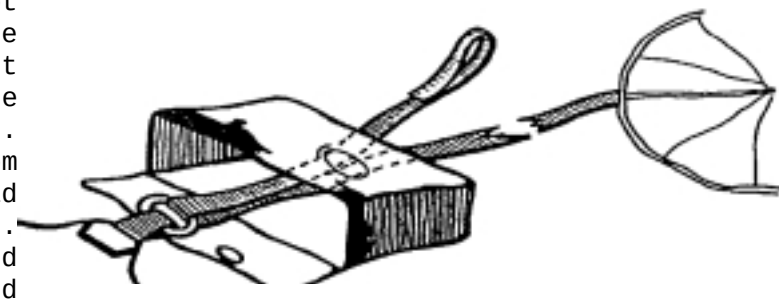


Fig.1

Attach the two main risers to the harness rings according to the **ASSEMBLY instructions** in the **3-RING RELEASE SECTION (2.0)**. Brake lines are stowed to the outside. Lay the rig down so that the main risers are in position to be attached to the main connector links. Do a thorough inspection of the main canopy, looking for any defects. (In the case of a used main, check for excessive wear or damage).

It is VERY important to attach the main links to the risers with proper continuity. ** **Have a rigger or an experienced jumper DOUBLE CHECK this step if you are not 100% sure**! ** There are two ways of doing this; both work well.

1) Suspend the canopy from the tail--possibly ceiling hard points, the top of a curtain rod, a clothes line, or the overhang on a low

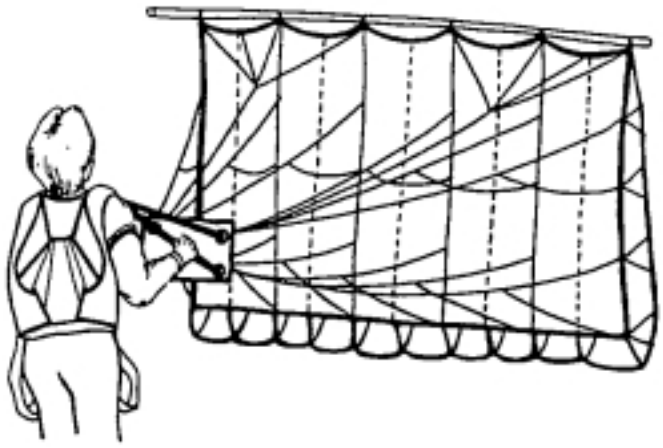


Fig.2

building. (Fig.2) Looking to see that each line group is straight, clear of other line groups, and through it's respective slider grommet, attach each rapide link to the correct riser. If the canopy does not come with slider bumpers already on the links, you may wish to install them first. Slide the bumpers onto the lines above the rapide link, fold the loop at the end of the riser under to the center, to form a "buffer", and insert the folded end into the opening of the rapide link. Tighten the barrel of the link as tight as possible with your fingers and, with a wrench, tighten a further 1/4 turn. (Fig.3) Slide the bumper back down over the rapide link. Line grouping should be very obvious; ie. two separate groups for the left side and two for the right side; the lines from the nose go to the front risers and the lines from the back half of the canopy go to the rear risers (the rear risers have the steering loops and the brake lock rings). Starting at the tail of the canopy, clear each steering line down to the steering line junction point, then to the brake locking loop, through the rear slider grommet on its respective side, through the steering guide/brake lock ring and tie the steering loop onto the steering line at the factory mark. The best way to tie on the steering loop is with a bowline and overhand knot (especially if you ever have to take off the toggles or move them after a few openings), however you may follow the canopy manufacturer's instructions here.

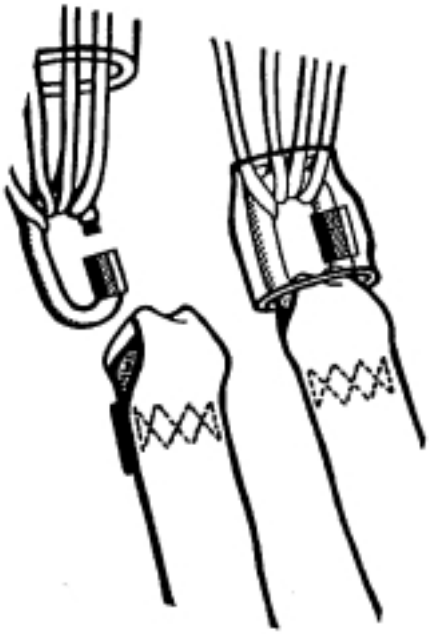


Fig.3

Slide the rig on over your shoulders as if you were putting it on, and step back just far enough to take most of the slack out of the lines. It is now very easy to see that all the lines are straight and clear.(Fig.2) Tack the slider bumpers to the links to prevent them from sliding up the lines during deployment. (Fig.5)
Make sure that the steering lines move without binding when the slider is all the way down and resting against the slider bumpers. Make sure you can easily reach the steering loops.

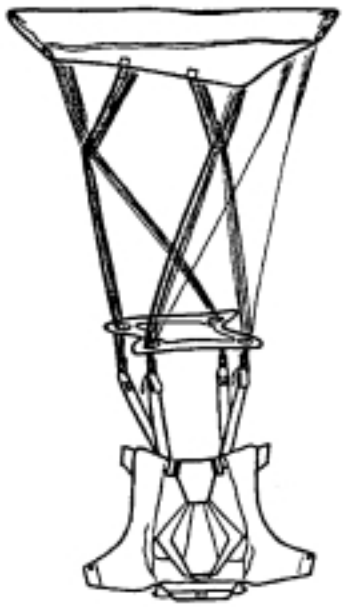


Fig.4

2) If you don't have the luxury of suspending your canopy by the tail, you can do the assembly with the canopy on its side.(Fig.4) First flake the canopy, straighten the lines, and then lay

the canopy down on its right side. Pick up the two center lines (B+C) on the top side (starting at the slider stops on the stabilizers), run the lines down to the two connector links, and attach the links to the front and back of the left riser. Turn the whole canopy over and do the same thing with the other side. Slider bumpers, steering lines, steering loop installation and link tightening are all the same as the preceding instructions. Finally, check each line for continuity.

Continuity can also be easily checked by carefully inflating the canopy when there are light ground winds. Use a helper.

If you are unclear on how to assemble the main parachute to the risers and the harness, have it done by a qualified rigger.

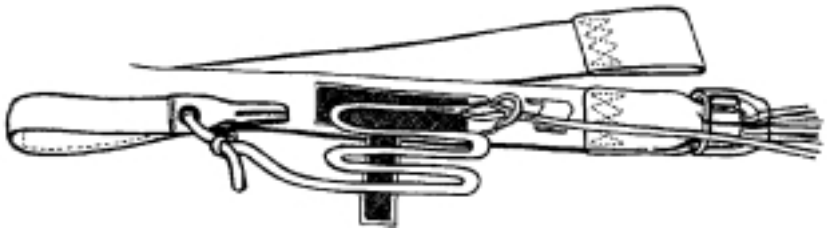
Install the rubber bands on the deployment bag, flake and stack the canopy according to the manufacturers packing instructions. Keep the lines taut during the entire packing and line stowing process---THIS IS VERY IMPORTANT. Slack in the lines increases the chance of a malfunction.

DOUBLE CHECK ALL YOUR WORK!

1.2 Setting the Deployment Brakes

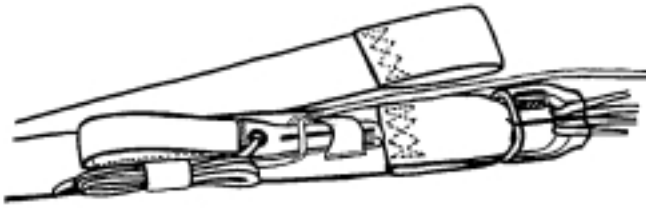
The deployment brakes can be set either before you start packing or after you have done the flaking and stacking; many jumpers have their own preference, or follow the canopy manufacturers packing instructions.

Fig.5



To set the brakes, pull the steering loop down until the brake locking loop in the steering line is exposed **BELOW** the guide ring. (Fig.5) Push the stiffened end of the steering loop through the brake locking loop 3/4" and into its protective channel. Mate the steering loop to the velcro on the riser. Steering line left over when the brakes are set can be "S" folded and stowed in a rubber band attached to the connector link or stowed in the velcro tab beside, and locked under, the steering loop. (Fig.6)

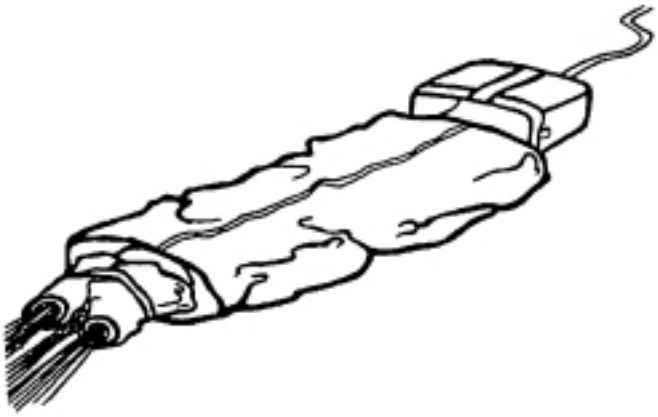
Fig.6



1.3 Packing

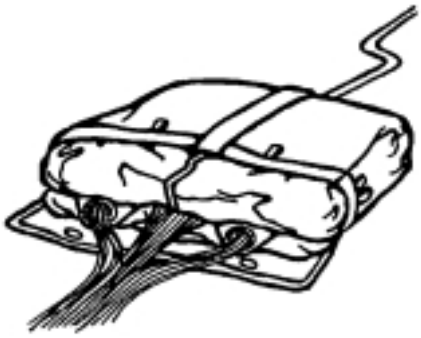
Main packing instructions supplied by the parachute manufacturer should be followed, with this section serving as a supplement.

Fig.7



Fold the canopy to about 4" wider than the deployment bag. (Fig.7) This gives extra bulk at the edges to compensate for the high tape and line bulk in the center of the bag.

Fig.8

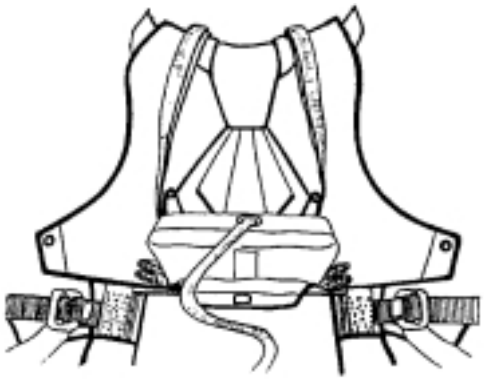


When stack folding the canopy, keep the length of the folds the same as the distance from the top to the bottom of the bag. Making neat, square cornered stack folds helps fill the bottom corners of the bag. Place the folded canopy in the deployment bag and pull all of the bridle cord out through the grommet in the top of the bag. (Fig.8)

Fig.9

Bring the line groups to the center, pull the locking flap up over the packed canopy, and make 1" to 1½" bight locking stows at the center two locking flap grommets. (Fig.9) Keeping the lines taut as you go, stow the remainder of the lines across the mouth of the bag. Any damaged rubber bands must be replaced.

Fig 10



The bights should be 1-2" and extend about 1" beyond the ends of the bag. While holding the last line stow, pick up the bag and set it into the main container on its line stows. (Fig. 10) Ensure that there is no canopy material caught between the bridle attachment point ring (or loop) and the deployment bag top center grommet, as damage to your canopy could occur.

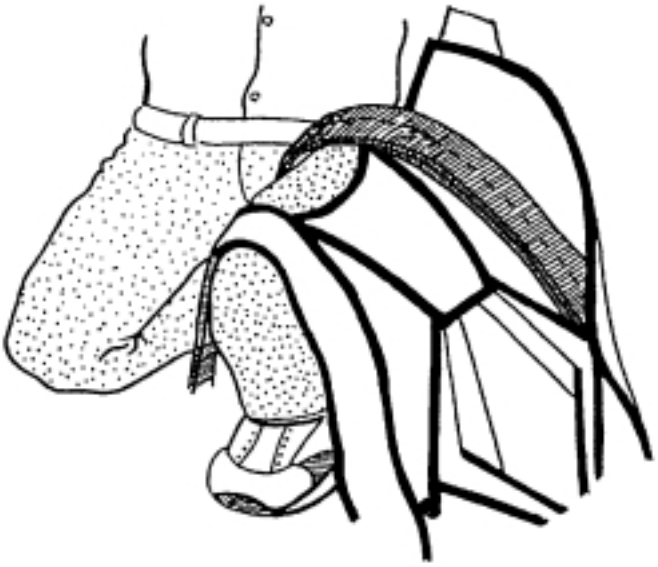
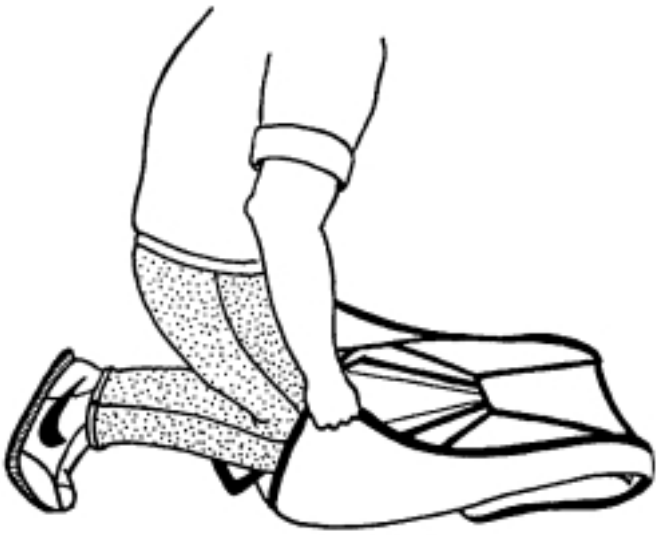


Fig.11

Lay the risers into position, starting at the 3-rings and working over the top of the container, over the reserve top flap "ears", and then down the side of the reserve container. This is most easily accomplished by raising the top of the rig almost vertically and holding it in that position over one knee so that the yoke and front part of the harness hangs down. (Fig.11) It simulates the position of the harness to the container when it is worn, so that the risers do not stick out or pull too tightly when the rig is packed. Tuck the riser cover "tabs" into their respective pockets, pull the yoke and harness down firmly against the container and set the rig back down. Tuck the risers into position along the side of the reserve. The ends of the main risers are placed between the main deployment bag and the sides of the main container. **Take care not to dislodge the brake lock setting when stowing the bag in the container.**

Fig.12



Tip the bag forward so that the line stows completely fill the bottom "corner pockets" on the bottom flap. The **line stows must be to the bottom or a pilot chute in tow condition may result**. Roll the top of the deployment bag into the top part of the main container and, using your knees, place your full weight onto the center of the bag. This will flatten excess bulk in the center and help to push it out into the corners for a more pleasing result. (Fig.12)

Refer to the throw-out or pull-out section particular to your pilot chute deployment system.

1.4 Closing the container with a THROW-OUT

Fig.13

Using a pull up cord through the main closing loop, close the container: bottom, top, left side and then right side, with the bridle exiting the container between top and bottom flaps, to the **RIGHT** of the closing loop. Mate the two small velcro tabs so the bridle folds above the pin, with the velcro at the top of the loop. Insert the pin in the closing loop and remove the pull up cord by first sliding it under the pin, and then pulling it out. (Fig.13) **Remove your pull up cord, or your rig will not open!** (it's best to use a pull up cord which does not match the colors of your rig). Close the outside center main top flap by tucking in the locking tongue.

For a leg-mount, roll the rig onto its left side and, starting at the edge of the right main lift webb, mate the bridle velcro onto the side plate velcro. Work back towards the pin, tucking the excess under the right main side flap. For a bottom of main container pocket (BOC), mate the 2" bridle velcro to the bottom flap, just above the BOC pocket.

Remove twists from the bridle, spread out the pilot chute and fold it in half with the mesh to the inside. Tuck the exposed mesh neatly inside the cloth while keeping tension between the bridle and the deployment handle. (Fig.14) Fold the pilot chute across in thirds and "S" fold the excess bridle

Fig.14

Fig.15

Fig.16

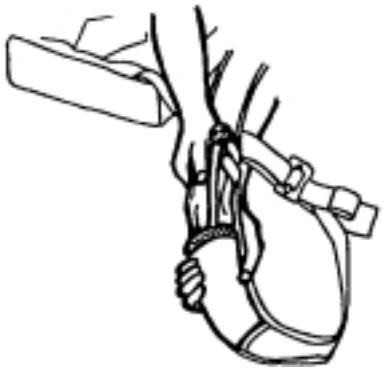


Fig.17

from the base of the pilot chute to only half way towards the handle. (Fig. 15) Fold the pilot chute in half so that the "S" folded bridle is now covered and the handle extends just past the base of the pilot chute.(Fig.16) Roll as tightly as you can, and after first checking that there are no remaining twists in the bridle, slide the pilot chute into its pouch so that only the handle is exposed.(Fig.17) **Check that you can easily extract the pilot chute from its pouch before jumping the rig**. With this packing system, the pilot chute will come out of the pouch easily, even if the bridle is directly pulled or accidently snagged.

1.5 Closing the container with a PULL-OUT

Fig.18

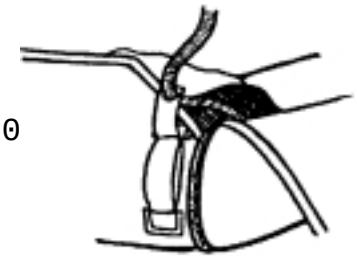
S-fold the pilot chute bridle across the top of the deployment bag with the pilot chute and deployment handle exiting the bottom right corner of the main container. (Fig.18)

Push the folded bridle down between the bag and top of the main container. Friction here will stage the deployment of the bridle. Push the base of the pilot chute into the bottom right hand corner of the main container between the deployment bag and the container side wall. (Fig.19) Friction here helps keep the handle from getting too far from reach, if it is accidently knocked from its pocket.

Fig.19

Distribute the bulk of the pilot chute evenly along the bottom of the main container, on top of the D-bag line stows. Route the handle out the bottom main container, to the **RIGHT** of the closing loop (Fig.20).

Fig 20



Snap the deployment handle into the top locking tab, then the bottom one. Ensure there is enough slack in the bridle, so the pin will **clearly be pulled** before tension is exerted on the pilot chute. (Fig.20) **CAUTION**--If slack is not left between the base of the pilot chute and the deployment handle, a hard pull or total malfunction could result.

Fig 21

Using a pull up cord through the main closing loop, close the container in the following order: bottom, top, left side and then right side, with the bridle exiting the container between top and right side flaps to the **RIGHT** of the closing loop. (Fig.21) Pull out just enough bridle to insert the pin in the closing loop, and remove the pull up cord by first sliding it under the pin, and then pulling it out. **Remove your pull up cord, or your rig will not open!** (it's best to use a pull up cord which does not match the colors of your rig). Tuck excess bridle under the right side flap, close the center flap and tuck in the locking tongue. Again using your knees, place your full weight onto the center of the main container (each side of the main closing pin) to flatten out the pack job perfectly.

2.0 THE 3-RING RELEASE

2.1 General

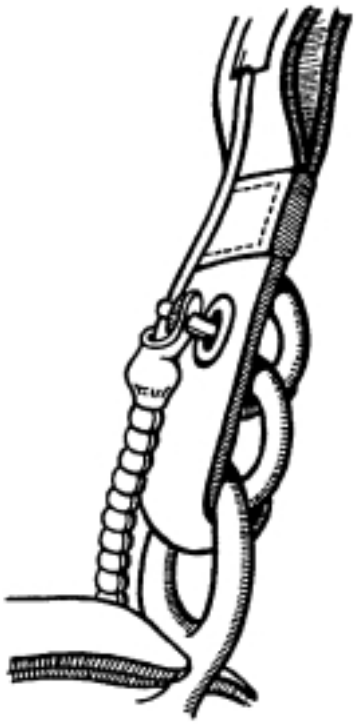
The 3-ring release was invented by Bill Booth in 1976. It was the first and undoubtably the best single point release system ever invented. We are pleased to use the 3-ring system, either in the standard and mini 3-ring sizes on all Flying High rigs. Although the 3-ring system is incredibly simple, it must be correctly assembled and maintained to function properly.

2.2 Assembly

Slide the yellow cables from the cutaway handle into their appropriate length housings until the ends of the cables are just even with the ends of the housings, but not poking out.

Hook up the right riser (it has the excess steering line stowed to the **right** of the steering loop, and also the RSL ring and snap tab, if so equipped) to the right side of the harness. Then hook up the left riser to the left side of the harness.

Fig.22



Pass the large riser ring through the harness ring, from the inside towards the outside. Fold the large riser ring up and back over and onto the small riser ring. Pass the small riser ring through the large riser ring (but not the harness ring) and fold it up and back over the grommet in the riser.

Fold the white cloth loop over the top of the small riser ring and push it through the grommet, to the back of the riser. Pull it tight from the backside of the riser. (Fig.23)

Position the flat side of the housing terminal end against the back of the riser grommet, and push the white loop through the grommet in the housing terminal end.

Move each cutaway handle cable further into the housing, and as you do this, guide the yellow cutaway cable end through the protruding white cloth loop. Make sure that the loop is not twisted. (Fig.22)

If a canopy is already installed on the risers, do a line continuity check on the canopy so that none of the lines are twisted or tangled, and the line groups from each side of the canopy run cleanly down to their respective risers. Steering lines should follow straight from the tail to the steering line junction point, through their respective rear slider grommets, steering guide/brake lock rings, and be tied securely to the steering loop.

After hooking up both risers, push the cutaway cables into the housings all the way and mate the velcro of the cutaway handle to the velcro on the back side of the right main lift webb. Insert each cable end into the protective channel on the back of its riser. (Fig.22)

Double check that the line continuity is correct and that the 3-ring is assembled exactly as shown in the drawings. (Fig.22, Fig.23)

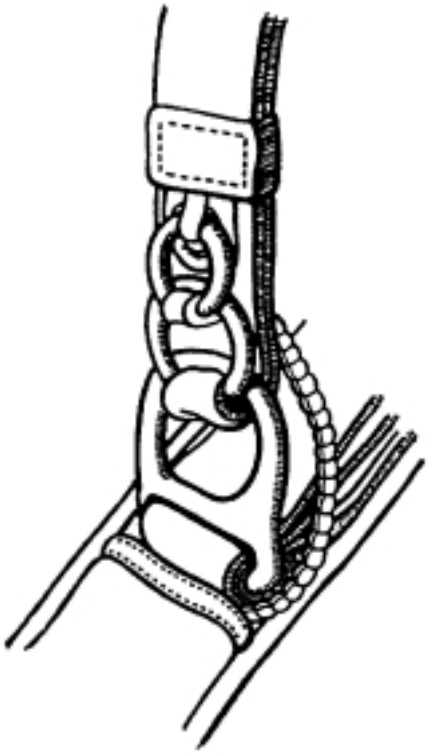


Fig.23

2.3 Pre-Jump Inspection

1. Each ring should pass through only one other ring.

2. The white cloth loop should pass over only the smallest riser ring, then through the riser grommet, and finally through the grommet in the housing terminal end. There should be no twists in the white cloth loop.

3. The only thing passing through the white cloth loop should be the yellow cutaway cable.

4. The cutaway handle should be securely mated to the harness velcro with minimal yellow cable showing between the top of the handle and the bottom end of the cutaway housings.

2.4 Periodic Maintenance

1. Make sure that the cutaway cables slide easily in the housings. They tend to collect sticky dirt over a period of time, which can make a cutaway much more difficult. Wipe the cables clean, lubricate with a silicon spray and then wipe dry. The silicon will lubricate without attracting dirt. Although the cutaway cable **must** be cleaned and sprayed at each reserve repack, it is recommended that it be done more often.

2. Make sure that the nylon webbing attachments for the rings and the white cloth locking loops remain flexible. They tend to collect dirt after a period of time, and because they are in contact with metal, the surface of the metal rings tend to transfer a bit into the nylon. As well, any dirt around the ring area tends to get ground into to the softer nylon. This contamination makes the nylon stiff, and could eventually prevent the release from operating. You can do two things to combat this problem:

a) Separate the 3-ring assembly so that the riser webbing near the rings (and the cloth loop) can be softened by repeated flexing. Do this once a month or every 25 jumps, which ever occurs first.
b) Using a nylon fingernail brush and some liquid dish soap, wash and rinse the riser webbing near the rings and also the white cloth locking loop. You can do this at every reserve repack, or when you notice the webbing and loop getting dirty or stiff. Make sure the nylon webbing is thoroughly **DRY** before jumping the rig (this can take up to two days in a humid environment).

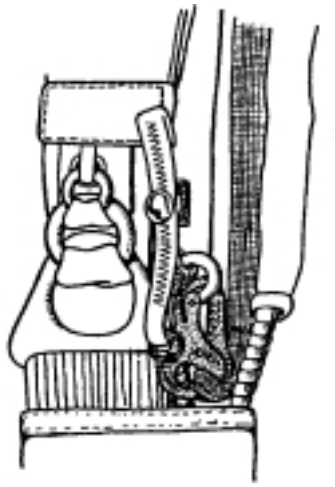
3. Protect the nylon webbing and the cloth loops from abrasion. They are particularly susceptible where they pass over a metal ring. DO NOT DRAG YOUR CONTAINER DIRECTLY OVER THE GROUND. Rather, use a packing mat and move your canopy/bag towards the container as you pack and stow the lines.

4. Check that the length of cutaway cable protruding from each housing end, is equal. Should you have to operate the 3-ring release system, it will assure that a breakaway will occur on both sides simultaneously. If a Reserve Static Line system is installed on your rig, cable lengths differ. See the RSL section.

5. Be careful that the nylon loop does not become wet when packing or jumping. A **wet loop** can **freeze** at the higher altitudes and airspeeds on your next jump--a frozen loop can easily prevent the 3-ring release system from operating.

2.5 RSL

Fig.24



On a rig equipped with an RSL, cutaway action on the right riser pulls the reserve cable and pin via a short lanyard. Although this action is very fast and positive, always carry through with the reserve deployment sequence after a cutaway (ie. Pull the reserve handle!) The cutaway cable on the wearer's left side is 1" shorter than the right side to ensure separation on both sides before the RSL pulls on the reserve ripcord cable.

The RSL snap shackle routes from the bottom of the yoke velcro, behind the two cutaway housings and locks onto the right riser "side ring". The pull tab snaps onto the "side tab". (Fig.24). The other end of the RSL lanyard is covered under the reserve packing instructions, "Closing the container" (3.5).
Pull down sharply on the pull tab to unsnap and disconnect the RSL shackle. Stow the shackle and excess lanyard under the 3-ring stitch cover to keep from tangling with the 3-ring system. To use the rig without an RSL, remove the lanyard and completely cover all three pieces of hook velcro with loop velcro to prevent damage.

3.0 RESERVE PACKING INSTRUCTIONS

3.1 General

Carefully read the contents of this manual prior to packing the reserve parachute. These packing instructions must be adhered to, but where discrepancies arise between this manual and the canopy manufacturers' packing instructions, the canopy manufacturers' instructions shall prevail. Please consult Flying High for clarification if you have a problem--DO NOT GUESS! When you pack, seal and sign the reserve pack job in this container, you are certifying it to be airworthy. Anything that is wrong with a new container, or has gone wrong since the last reserve pack job is now your responsibility. This should not be taken lightly.

Reserve assembly and packing must be done by a certified parachute rigger, complying with FAA standard rigging practices. If a "ram-air" reserve is to be packed, the rigger must also have a Ram-Air reserve endorsement. The reserve container is designed for a specific size of reserve parachute--do NOT try and put a large reserve into a small container.

The reserve container uses an internally mounted pilot chute. The single closing loop, which routes up through the middle of the reserve container and reserve pilot chute, is locked with a single pin ripcord. This allows for a flat, compressed reserve pack job that easily falls within the 22# pull force limit.

3.2 Parts List (supplied with container)

1- Sidewinder harness/container system
1- Reserve ripcord
1- Cutaway handle
1- Reserve pilot chute
1- Reserve closing loop and washer
1- Reserve deployment bag and bridle
2- Reserve steering loops
1- Main container closing loop
2- Main risers
2- Main steering loops
1- Main deployment bag
1- Main pilot chute/bridle/pin
1- Owner's manual

Round reserve option: round reserve bridle included and brake locking system is installed, but these parts will not be included:

1- Reserve deployment bag and bridle
2- Reserve steering loops

RSL option: the following extra part will be included:

1- RSL lanyard

3.3 The Round Reserve

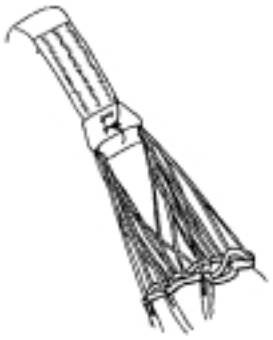
Tools Required:
1.) 6 to 8 shot bags
2.) one packing paddle
3.) one line separator
4.) one flagged temporary pin
5.) one gutted 550# pull-up cord about 36" long
6.) one flagged velcro protector for RSL, if equipped

NOTE: A T-Bar or similar lever closing device is NOT recommended.

--COUNT ALL TOOLS ON COMPLETION OF PACKING SEQUENCE--

1. Stretch out the canopy on the packing table. Attach the connector links to the four reserve risers (check the canopy manufacturer's instructions for what type/size of connector links to use). Double check line continuity and tighten the links. When using Rapide links, the standard procedure is to tighten finger tight, then 1/4 turn. Follow manufacturer's instructions for any steering system set up. Loop the bridle around the apex lines using the small loop, and then loop the pilot chute onto the larger end of the bridle. The bridle loop must be tacked near the apex lines with at least two stitches (doubled) or four stitches (single) of Supertack or waxed 5 or 6 cord, so that it slides freely on the apex lines. (Fig.25)

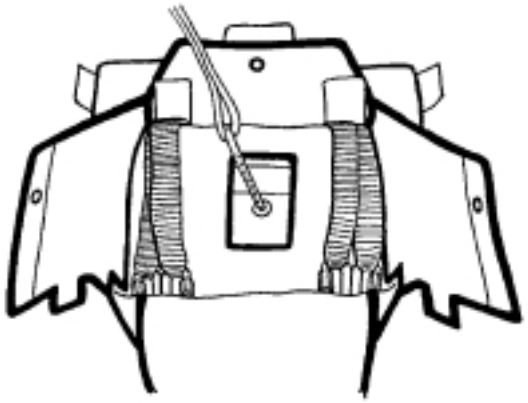
Fig.25



2. Inspect the harness and container assembly completely, then work up the lines, to the canopy, bridle, and finally finish the inspection with the pilot chute.

3. Flake the reserve canopy as per the canopy manufacturer's instructions, stowing the lines on the diaper as required.

Fig.26



4. Install a velcro protector onto the RSL velcro hook on the right "ear" of the reserve flap cover. Lay the risers inside the pack tray along the outer edges. Links from each riser group should be resting side by side to reduce bulk. (Fig.26) Check that the reserve loop figure-8 knot is secure after the washer, under the 1½" elastic, on the center plate. (Fig.45)

Thread a pull-up cord through the reserve loop and lay to the top center of the container.

Fig.27

5a. For canopies with **Type 3 Diapers** (baby bottom), lay the diaper into the bottom right corner of the reserve container, filling the corner as fully as possible. (The diaper may be curved up along the bottom). Run the reserve across the bottom of the container on edge, and fold it back on itself at the bottom left corner. Make one extra short fold from the bottom left corner to the edge of the diaper and then back to the left side again. This fold is to equalize the bulk of the diaper and stowed lines. (Fig.27)

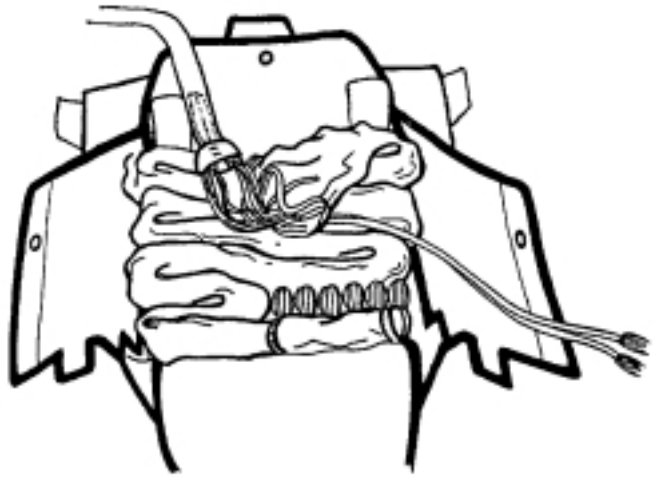
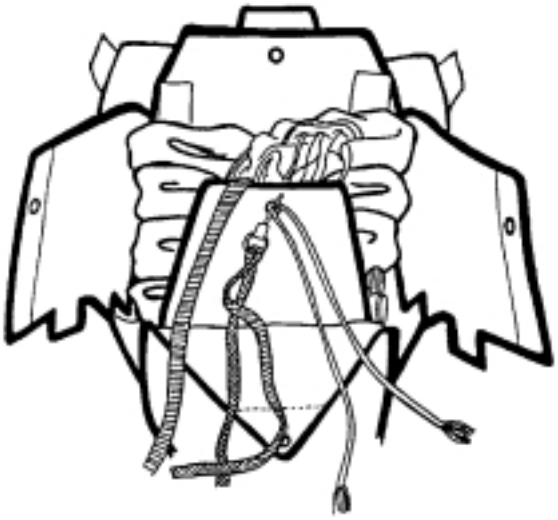


Fig.28

5b. From the left side, fold the reserve (on edge) back and forth across the reserve container, from the bottom towards the top. For better bulk distribution, make the top folds a little bit wider than the width of the container with no more than two folds above the closing loop. The apex should be folded in towards the center, so as not to leave a wrinkle or hard spot. (Fig.28)

Skip to step #7.



6. For canopies with **Type 4 Diapers** (choker), lay the diaper on edge across the bottom of the container, from the right corner to the left corner. Continue packing as per the Type 3 (5b) directions.

7. Thread the pull-up cord up through the folded canopy, and then through the bottom internal flap. Pull tight and pin closed with the temporary pin. (Fig.29)

Fig.29

8. The bridle exits between the top and bottom internal flaps, on either side of the closing loop. Thread the pullup cord through the top internal flap, close and temporarily pin in the same manner.

Fig.30

Tuck in the T-12 tabs at the outer top corners. Make sure that the bulk is evenly distributed from side to side and top to bottom. The closing loop may have to be moved up or down one stow of canopy to get the bulk balanced properly. "S" fold the bridle in 6" horizontal stows on top of the bottom internal flap, just below the closing loop. (Fig.30)

Skip to:

3.6 Closing the Container

3.4 The Square Reserve

Tools Required:
1.) one packing paddle
2.) one flagged temporary pin
3.) one molar strap
4.) one gutted 550# pull-up cord about 36" long
5.) two 6" flagged velcro line protectors

NOTE: A T-Bar or similar lever closing device is NOT recommended.

--COUNT ALL TOOLS ON COMPLETION OF PACKING SEQUENCE--

Fig.31

1. Assemble, inspect and check line continuity according to the canopy manufacturer's instructions. Make sure that the connector links are tightened (finger tight plus 1/4 turn for Rapide's) and the steering lines are routed through the rear slider grommets, then through the guide rings on the rear risers. Tie on the reserve steering loops at the steering line mark with a bowline and overhand lock knot, unless the canopy manufacturer advises otherwise. Check the canopy trim, including brake lock and full flight settings against the canopy manufacture's specs.

2. Although TSO testing was accomplished using only the "PRO" packing method, flake and fold the canopy according to the manufacturer's instruc-tions, to the point where the brakes are set, the slider is pulled up to the stops, and the canopy is dressed 2"-4" wider than the reserve D-bag. (Fig.31)

To set the brakes, pull the control line down until the brake lock loop is exposed below the guide ring. Insert the stiffened short end of the steering loop into the lock loop and stow the excess line in the velcro keeper by wrapping the 2" velcro loop around the line and mating it to about 1/3 of the 1" velcro hook. Mate the steering loop/riser hook velcro and tack the top of the stiffened end of the steering loop to the riser with one turn of doubled seal thread. (Fig.32) Ensure that the lock loop stays seated on the stiffened portion of the steering loop when tugging sharply on the steering line.

Fig.32

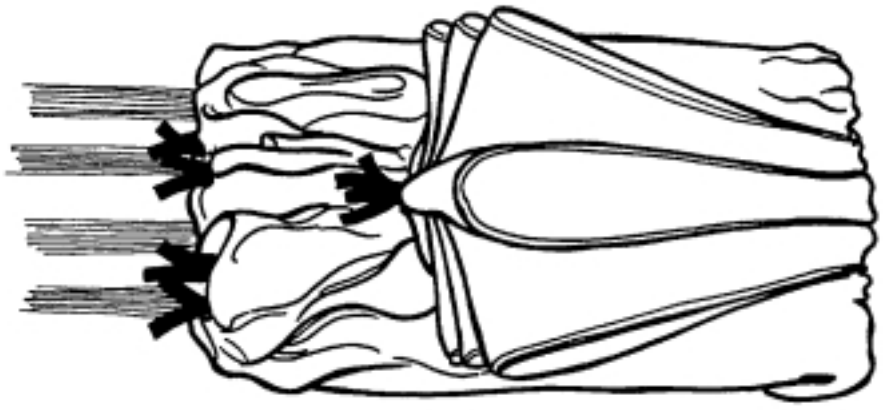
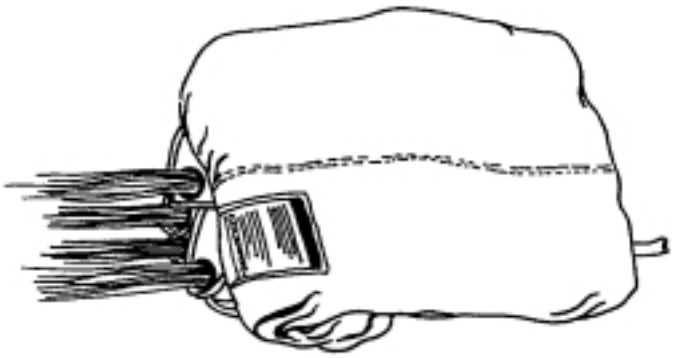


Fig.33

3. Fold the top part of the canopy back on itself, making a fold length equal to the distance between the bottom of the reserve D-bag and the center grommet. Make sure that the nose is exposed.
(Fig.33)

Fig.34



4. Fold back on itself again, so that the top part of the canopy now points away from the container.

Recheck the length of your fold.
(Fig.34)

5. Split the top portion of the canopy (above the fold) into two separate halves, by following the center tail seam up to the nose. Clean and split the nose, and fold back over towards the container so the high points of the nose are even with the slider. Neatly shape the two halves into "ears" for an overall "U" shape. The folded canopy is best held in position with a "molar strap", until the canopy is set in the D-bag. (Fig.35)

Fig.35

Set the bottom folded portion of the canopy onto the locking flap of the D-bag, and work the "ears" into each side of the top half of the D-bag. Move the bottom half of the canopy (folded portion) up into the bottom half of the D-bag. **REMOVE THE MOLAR STRAP**! (Fig.36)

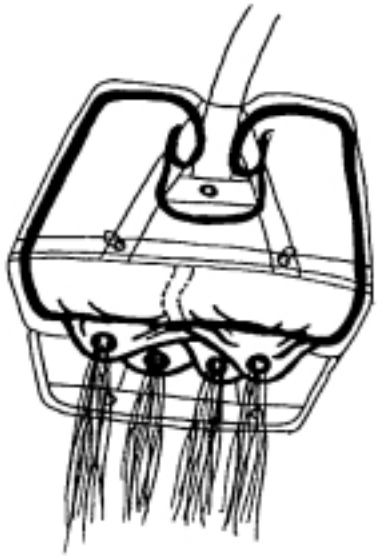


Fig.36

7. Close the locking flap with two locking stows, taking no more than 1½" bites. (Fig. 37) After temporarily adding two flagged 6" loop velcro line protectors onto the hook velcro of the line stow pocket, neatly "S" fold the rest of the lines in the deployment bag line stowage pocket on the bottom. Leave the last 10" to 12" unstowed (Fig.38) Make sure that the bulk of the canopy tapers smoothly from the folded section at the bottom to the "ears" at the top, with no wrinkles or soft spots, and with no differences in bulk from one side of the D-bag to the other side. The excess canopy protruding from the bottom corners of the bag will help fill the bottom corners of the reserve container.

********** REMOVE VELCRO LINE PROTECTORS! **********

Fig 37

Fig.38

8. Pick up the D-bag with one hand and the risers with the other hand. Lay the risers on the pack tray, fanned out so that the links from each riser group rest side by side to reduce bulk. The rear risers lie closest to the outside edge.

Set the bag on top of the risers, locking stows down. (Fig.39)

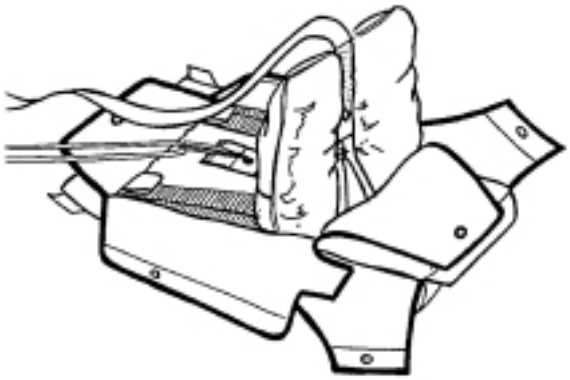


Fig.39

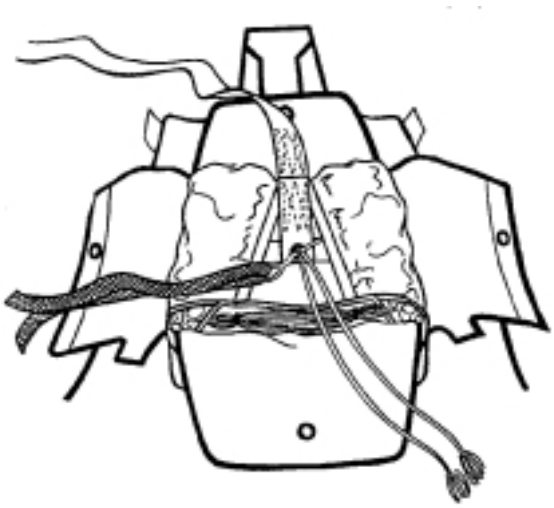


Fig.40

9. Check that the reserve loop figure-8 knot is secure, the washer is in position, and the loop is inserted properly. (Fig.45) Thread a pull-up cord through the reserve closing loop and feed through the center grommet on the D-bag, from the bottom through to the top. Tip the top of the D-bag down into the pack tray, hold it there with your knee, and ensure that the bottom of the D-bag fills the bottom corners of the reserve container.

Pull the pull-up cord tight and lock the D-bag in place with a flagged temporary pin. (Fig 40) The D-bag line stow pocket now faces down and the bridle exits the top of the reserve container. Check under the corners of the D-bag to ensure that the risers have not changed position.

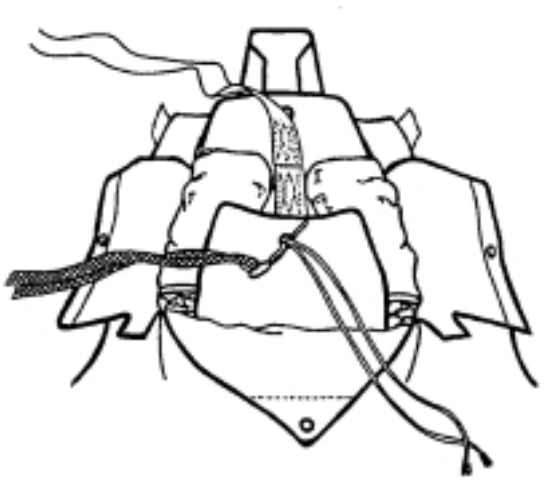
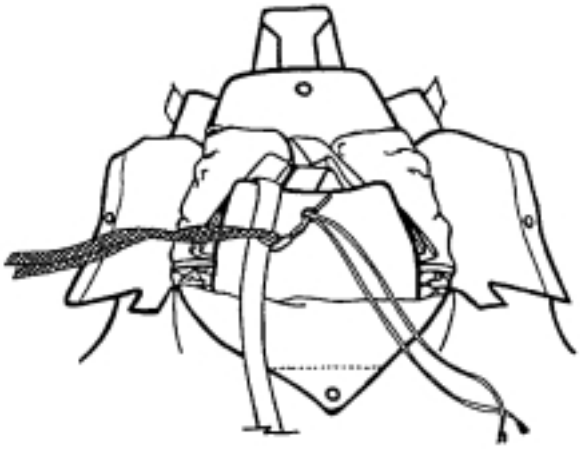


Fig.41

10. Push the two locking stows towards the bottom of the reserve container and thread the pull-up cord through the bottom internal reserve flap. Pull tight and lock with the temporary pin. (Fig.41)

Fig 42



11. Make two folds of the bridle on each side of the closing loop, running from top center of the D-bag to the bottom outsides of the reserve container, in an inverted "V" shape. Make sure there is at least 5 ft. of bridle left from the last fold to the pilot chute. Tuck the bottom half of the folds under the bottom internal reserve flap. (Fig.42)

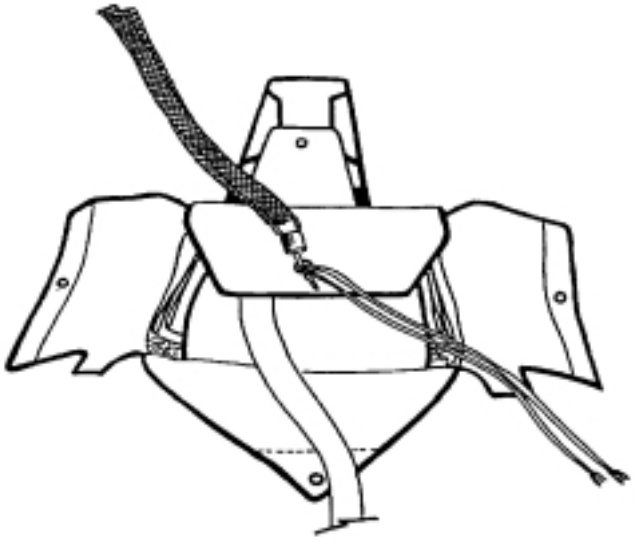


Fig.43

12. Thread the pull-up cord through the top internal reserve flap. As you work the flap down tight, keep the bag straight and the bulk even at the top. Keep the top of the bag from curling and keep the bulk at the bottom of the bag, tight into the corners. Remove the temporary pin and repin with the top flap in place. Double check that the bottom corners are filled tightly; the top corners should be softer for arcing over the shoulders. Tuck the T-12 tabs under the D-bag at the outer top corners. (Fig.43)

Fig.44

13. "S" fold the last 5 ft. of bridle in 6" to 8" stows and set horizontally on top of the bottom internal flap, just below the closing loop. (Fig.44)

Go to:

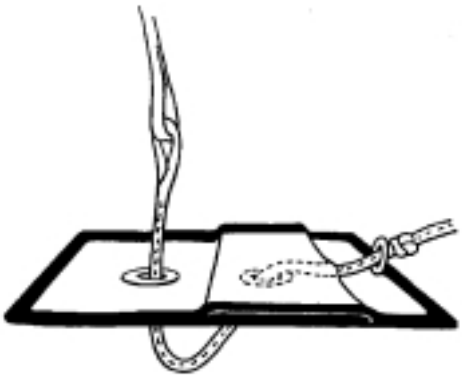
3.5 Closing the Container

3.5 Closing the Container

The good technique for closing a flap without container damage is:

Thread the pull-up cord through the closing loop and then through the appropriate flap grommet. While maintaining tension on the pull-up cord, work the flap into position by hitting the outside of the flap with the fist or palm of your hand. Do not "reef" on the pull-up cord to get the flaps into position--this will only result in damaged flap stiffeners. Once the flap is in position (one flap grommet directly over another), maintain tension on the pull-up cord and **compress the flap** to expose the closing loop for pinning. The flap should be compressed as close as possible to the grommet and over as large an area as possible. This can be accomplished with a pilot chute compressing plate or else by pressing on the flap, beside the grommet, with your foot or knee.

1. Feed the pull-up cord through the bottom of the pilot chute, up and out through the top. Pull all the fabric out, away from the spring and compress the pilot chute on top of the two internal flaps, centered on the closing loop. Ease up on the compressed pilot chute, and double check that all the fabric is pulled away from the spring. Remove the temporary pin,recompress the pilot chute, and lock with the temporary pin.Stop and adjust the loop length at this point if you can pull more than ½" of the closing loop through the top of the grommet in the compressed pilot chute.



(Do this by popping the pilot chute, pulling the running end of the closing loop out from beneath the heavy elastic, and loosening the "Figure 8" knot. Move the knot the required amount, retighten and pull the knot and running end back tight, under the elastic. (Fig.45) Now go back to section 3.4, step 9.

Fig.45

2. Recheck that all the fabric is pulled out and away from the spring, including material at the top plate and bottom spring. Center the bottom of the pilot chute spring under the top plate.

3. Both at the top and the bottom, fold the pilot chute fabric under to the edge of the top plate. Do a second fold under to the edge of the top plate, and on the third fold, the fabric is folded just under the edge of the top plate. This will leave about 12" of pilot chute fabric sticking out each side of the pilot chute. (Fig.46)

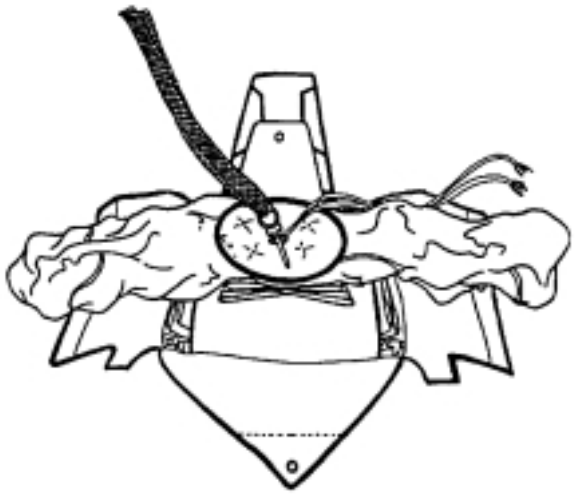


Fig.46

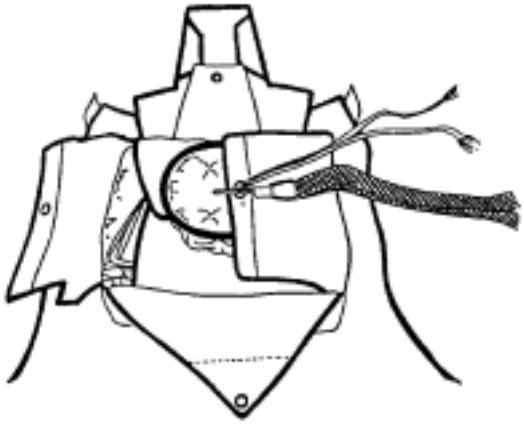


Fig.47

4. On the right side, fold the pilot chute fabric under, just to the edge of the top plate. Fold under again to the edge of the top plate. On that same side, thread the pull-up cord through the side flap, close the side flap over the pilot chute, compress and repin. (Fig.47)

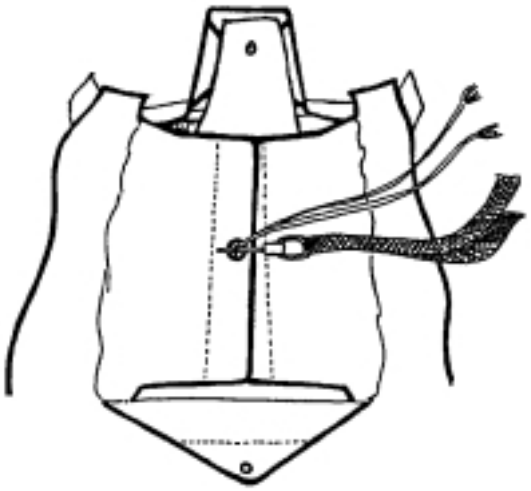


Fig.48

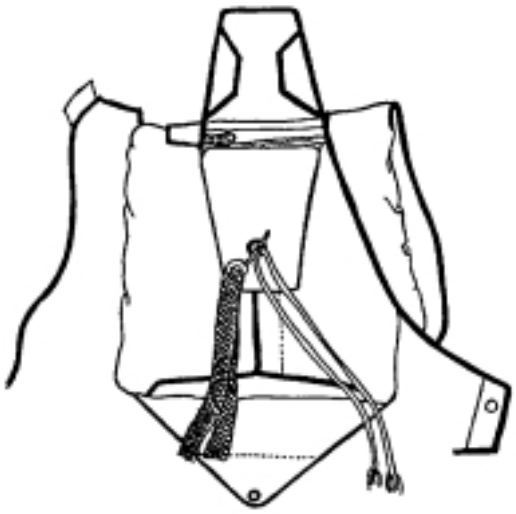


Fig.49

5. Fold the pilot chute fabric under and close the left side flap; a mirror image of step #4. Tuck in the bottom tab on each side flap so that the velcro mates completely. There should be enough canopy bulk to completely fill in the bottom corners. (Fig.48)

6. Thread the pull-up through the top closing flap, compress and pin. The top of each side flap should go over the shoulder with no buckles or wrinkles. Soften the top corners by hitting with your fist, if necessary. (Fig.49)

7. Thread the pull-up through the bottom outer closing flap, compress and pin.

Fig.50

Fig.51

8. For containers without an RSL system, compress the bottom outer closing flap, remove the temporary pin and insert the ripcord pin through the closing loop and under the bottom outer closing flap protective cover. (Fig.50) Skip to step #10.

9. For containers with an RSL system, mate the lanyard onto the yoke velcro, starting at the 3-ring end. (Ensure the lanyard completely covers the hook closest to the back diagonal). Follow over the reserve pin cover flap "ear" velcro and fold 90 degrees to turn towards the end of the ripcord housing. Mate the end of the lanyard to the velcro tab on the top reserve flap. Thread the ripcord pin through the mini-ring at the end of the RSL lanyard, and then through the guide ring on the top reserve flap. (**Over the top part of the guide ring and under the bottom part**). Compress the bottom outer closing flap, remove the temporary pin and insert the ripcord pin through the closing loop and under the bottom outer closing flap protective cover. (Fig.51) **See the section on RSL's.** You can now insert the riser cover "tuck tabs" into their pockets.

10. Remove the pull-up cord (slide one end under the pin, and then slowly withdraw it), then check that the pull force required on the handle to move the pin, does not exceed the maximum allowable amount of 22 lbs. Stow the handle back in its pocket.

11. Seal the reserve, fill in and sign the packing card. Close the reserve pin cover flap over the pin by guiding the locking tabs under the edges of the top reserve flap. Insert the packing card into its pocket on the inside top of the backpad.

COUNT YOUR TOOLS!

3.6 TIPS

1. Within the 22 lb. pull force limit, a higher pull force tends to pull the pilot chute and flaps in further for a more pleasing appearance. Best results are with the pilot chute pulled in slightly more than the height of the canopy bulk on each side.
A pilot chute which sticks out or "tips" to one side will quickly wear the fabric of the container sideflaps.

For a pilot chute which sticks out or "tips" to one side when brought in for repack, compress firmly by hand to determine the amount the loop should be shortened before popping the reserve.

2. Make sure that the canopy bulk is split evenly between the left/right sides and proportionally between the top/bottom BEFORE seating the pilot chute. Once the pilot chute is seated, the material generally tends to stay put. The bottom corners should be snug, but the top corners should be softer.

3. Because the reserve container tapers, don't put too much of the bulk at the very top.

4. The 120 day repack cycle is an excellent time to do a thorough check on the condition of the main parachute and related items. Although the harness and container is thoroughly checked at the time of the repack, it is a good idea to inspect:

* main bridle attach point on the canopy, external and internal,
* main bridle velcro (for throw out pilot chutes),
* deployment bag velcro,
* condition of the main risers, 3-rings and steering loops,
* lower control lines
* slider grommets
* brake lock loop fingertrapping.

4.0 CARE AND MAINTENANCE

4.1 General

Periodically inspect the harness and container system, as well as the pilot chute, cutaway handle, reserve ripcord and pocket, and any velcro, for signs of wear.

Ensure that the ripcord housing are securely tacked in place at both ends. The cutaway housings must be tacked at the chest strap end.

Check the reserve loop for wear at every reserve repack; replacing it if wear is noticed.

Occasionally, the locking loop on the main container must be replaced. Wear can be dramatically accelerated by improper removal of the pull-up cord when closing the container.

Common sense goes a long way towards caring for your rig. Keep your rig and your canopy out of the sun. Ultra-violet rays do accumulative damage to the fabric, often without showing any signs.

Excessive heat can also damage your equipment. A hot sunny day can turn the trunk of a black car into a 200 degree Fahrenheit oven--again, without showing any tell-tale signs.

The fumes from a car battery in close proximity can damage nylon **VERY QUICKLY**. Acid contamination keeps on working until it has eaten up everything in contact, or until it is neutralized.

It is normal for your container to get dirty over a period of time. Except for major mud puddle landings, it is usually most convenient to consider getting your rig washed at the reserve repack cycle. One of the easiest ways of washing is to: a) disconnect the main and reserve, b) remove the handles and the reserve packing card, c) cover any velcro hook, and toss the rig into the bathtub with cool water and some mild all-temperature detergent. Work at any dirt spots with a nylon fingernail brush. Rinse thoroughly several times and hang to dry out of direct heat or ultra-violet light. A fan directed at the harness/container will shorten the drying time to about 24-36 hours (depending on the local relative humidity).

Although washing your rig will shrink it slightly, it will stretch back to its original size and shape after a pack job.

In cold weather, **DO NOT LET THE 3-RING WHITE CLOTH LOOP GET WET** when packing, if you are going to use the rig right away. A wet loop can freeze at higher altitudes, rendering the cutaway system inoperable.

A packing mat is recommended when packing your Sidewinder, to avoid abrasion, dirt, and extra wear on the rig.

5.0 USING YOUR SIDEWINDER

Before your harness/container is used for the first time, the assembled equipment should be donned to ensure proper fit, and then all the handles (ie: main pilot chute and main pin extraction, cutaway handle, and reserve ripcord handle) should be deployed to ensure proper operation.

5.1 Pre-jump Check

Before putting on your rig for each jump, check that:

The 3-rings are properly assembled and free from foreign matter, and the cutaway handle is securely mated to the velcro on the back of the right main lift webb with a minimum of yellow cable exposed between the top of the handle and the bottom end of the housings.

The ripcord handle is secure in it's pocket and the ripcord pin is properly seated with a seal on the pin. The packing card shows it has been repacked by a certified rigger within the last 120 days.

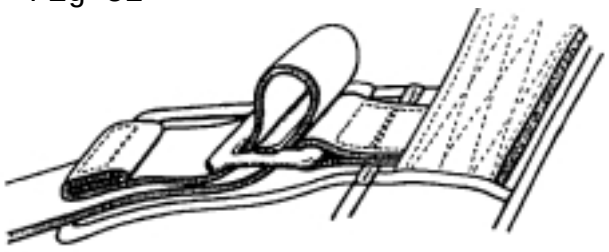
The main closing pin is properly seated and the main bridle is neatly tucked under the side flap with no excess exposed. On a pull-out, the handle is securely in it's pocket. On a throw-out, the pilot chute is neatly stowed in it's pouch with only the handle exposed, and (for a legmount) the main bridle is routed along the container velcro and leads directly to the pouch without any twists or deviations (this is critical). For a BOC, the velcro on the bridle is mated with the velcro just above the mouth of the pocket.

Where an AAD is installed, it must be calibrated and turned on.
Calibrate the altimeter and any "beepers". Where an RSL is installed, check for proper lanyard routing (velcro fully mated) and assure the snap shackle is locked into position on the riser "side ring" and the pull tab is snapped onto the riser "side tab". The shackle rests on edge between the cutaway housings.

5.2 Donning and Adjusting

Pick up your packed rig by the main lift webb/shoulder padding at a point just above the 3-ring release. Slide it onto your shoulder, then slip your other arm through the other side, just as you would put on a jacket.

Fig 52



Check to see that there are no twists in the webbing, then thread the running ends of the legstraps through their appropriate metal friction adjusters. Threading is accomplished by routing the running end up through the adjuster from behind, over top the sliding bar, and then back down through the space left between the sliding bar and the outer end of the metal frame (Fig 52). Do up the chest strap in the same manner. Snug up the leg

straps first, then the chest strap; stow the running ends in their elastics. When you are standing up, the rig should be snug but not overly tight.

5.3 Deploying Your Throw-out Main Pilot Chute

Before jumping a throw-out pilot chute for the first time, the jumper should practice the procedure on the ground under the supervision of an instructor, or competent jumper who is experienced with this type of system.

Identify your deployment handle and while maintaining stability with your left arm, firmly grasp the handle with your right hand. Pull the pilot chute out from its pouch and throw it out and away from your body, into the clean air. **DO NOT ALLOW THE PILOT CHUTE TO DEPLOY IN FRONT OF YOUR ARM**. Remain stable during the opening, ie. shoulders parallel to the ground.

****DO NOT HANG ONTO THE PILOT CHUTE ONCE IT HAS BEEN DEPLOYED!****

5.4 Deploying Your Pull-out Main Pilot Chute

Before jumping a pull-out pilot chute for the first time, the jumper should practice the procedure on the ground under the supervision of an instructor, or competent jumper experienced with this type of system.

While maintaining stability with your left arm, reach back to the bottom right hand corner of the rig and identify your deployment handle with your right hand. Firmly grasp the handle by sliding your two center fingers under the handle and snapping the handle into your hand.

In one easy motion, pull the handle straight down to full arms extension to extract the pin, and while keeping your arm straight, swing your arm out level with your shoulder and release the pilot chute. Remain stable during the opening, ie. shoulders parallel to the ground.

****DO NOT HANG ON TO THE PILOT CHUTE ONCE IT HAS BEEN DEPLOYED!****

N.B. Many jumpers prefer to watch the pilot chute inflate and start to pull the bag from the container, before rolling back stable and sitting up to watch the canopy open. This works well as long as the pilot chute is thrown well out from the body and does not blow back into the burble above the jumpers back. Watching both the pilot chute do its job and the canopy opening, has the advantage of providing several extra seconds to deal with any problem during deployment.

5.5 Cutaway and Deploying Your Reserve

Familiarize yourself with the system by practicing cutaways from a suspended harness before actually jumping the Sidewinder. Be sure that both risers release simultaneously when activated by the release handle (N.B. Container systems equipped with an **RSL** release the left riser **before** the right riser).

For maximum ease of operation, the soft cutaway handle (which is velcro'd in place) should be peeled away from the main lift webbing, then pulled downward about 8" to effect release. If the handle is just pulled straight down, considerably more force will be required to release the handle from the main lift webbing velcro.

In order to cutaway or jettison the main parachute from the harness at the 3-ring point and deploy the reserve parachute:

1) Look to identify the cutaway handle on the inside of the right main lift webb, just below the chest strap. Tightly grasp the handle with the right hand.

2) Look to identify the reserve ripcord handle on the inside of the left main lift webbing, just below the chest strap. Tightly grasp the handle with your left hand by making a fist around it (with your thumb around the inside of the handle and your fingers around the outside).

3) Arch your back, tuck up your feet and legs behind you, peel the cutaway handle off the harness velcro and pull the entire handle and cables from the housings. Discard immediately to avoid possible entanglement with the reserve canopy.

4) Be sure that both risers have cleared the 3-ring releases, remove the ripcord handle from its pocket, then pull the reserve handle to full arm extension with your left hand, assisting with the right hand. Resume an arch. (Fig. 53).

Fig.53

5.6 Emergency Procedures

Emergency situations are best thought out before hand. Talk to your instructor or DZ Safety Advisor about the best ways of dealing with a variety of malfunctions or emergency situations. Practice dealing with these situations on the ground, under supervision, before jumping your new gear. Then, if an emergency situation does arise:

1) Assess the situation.
2) Decide which preplanned action you will use.
3) CARRY IT OUT! Don't waste time or altitude.

REMEMBER--Most malfunctions are caused by:

*Poor or improper packing techniques.
*Inadequate equipment maintenance.
*Inadequate pre-jump equipment inspection.

These are all easily prevented.

Thanks to those who helped on this manual.
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U.S Department of Transportation
Federal Aviation Administration

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DEC 2 1 1992

Flying High Manufacturing, Inc.
P.O. Box 626
Abbotsford, British Columbia
V2S 6R7

Dear Flying High Manufacturing, Inc.

TSO Design Approval

This refers to the Canadian Department of Transport letter to this office dated December 4, 1992 in which the Department of Transport (DOT) certified that the Flying High Manufacturing, Inc. Sidewinder 4000 Reserve Type Parachute Assembly Department of Transport type Approval Data Sheet AP-17, Issue 1 meet the requirements of TSO-C23c.

Under the provisions of FAR 21.617, this letter of design approval, together with the issuance of a Certificate of Airworthiness for Export as specified in FAR 21.502(a), constitutes your authority to identify the Sidewinder 4000 Reserve Type Parachute Assembly applicable marking as delineated in FAR 21.607(d). Each Parachute Assembly must be accompanied by the Certificate of Airworthiness for Export issued by the Canadian Department of Transport.

This authorization is not transferable and will be withdrawn or terminated for any reason that would have precluded its issuance. It is valid only at Flying High Manufacturing, Inc. P.O. Box 626 Abbotsford, British Columbia facility. This office must be notified in advance of any proposed relocation.

The following data, pertaining to this design approval, is maintained in the New York Aircraft Certification Office files.

1. Transport Canada letter of December 4, 1992 requesting TSO Design Approval for Flying High Manufacturing, Inc.

2. Sidewinder Compliance Program dated October 1992.

3. Flying High letter to Transport Canada dated November 3, 1992.

4. Flying High Test Reports.

5. Flying High Master Drawing List for Sidewinder 4000 Reserve Type Parachute Assembly Model 4000 dated June 1992.

6. Flying High Construction Manual.

7. DOT Appliance Type Approval, AP-17.

Sincerely,

Irwin N. Brumer
Manager, New York Aircraft
Certification Office