



# **PARA- CUSHION**

## **EMERGENCY PARACHUTES**

US Patent 3,908,937

**Owner's Manual**  
**For packing and maintenance of**

**Model 303 Back**  
**(2016 & later)**

with

**26ft. Mid-Lite Canopy (with H/C sized for 26')**  
**30ft. Lo-Po Canopy (with H/C sized for 30')**

**&**

**Acropro**  
with

**26ft. Mid-Lite Canopy (with H/C sized for 26')**



# **Strong Enterprises**

*"The parachute company with imagination"*

Division of S.E. Inc.

6448 Pinecastle Blvd Suite 104, Orlando, FL 32809

Tel. (407) 859-9317 Fax: (407) 850-6978

[www.strongparachutes.com](http://www.strongparachutes.com) [sales@strongparachutes.com](mailto:sales@strongparachutes.com)

# **! WARNING !**

*Parachuting is a hazardous activity that can result in serious injury or death. Failure to follow all warnings, instructions and required procedures may result in serious injury or death. Parachutes sometimes malfunction, even when they are properly designed, built, assembled, packed, maintained and used. The results of such malfunctions are sometimes serious injury or death. There are so many factors, both human and natural, beyond our control that we want you to clearly understand that by using or intending to use our parachutes, you are assuming a considerable risk of personal injury or death. If you are not willing to assume that risk, please return the parachute to the dealer where it was purchased for a full refund.*

## **DISCLAIMER**

*There are NO WARRANTIES which extend beyond the description of the parachutes in this manual and neither the seller nor any agent of the seller has made any affirmation of fact or promise with respect to the parachutes except those that appear therein.*

*The liability of the seller is limited to the duty to replace defective parts found upon examination by the manufacturer to be defective in material or workmanship within 7 days after purchase and found not to have been caused by any accident, improper use, alteration, tampering, abuse or lack of care on the part of the purchaser.*

# Table of Contents

## Warning/Disclaimer

<b>Table of Contents</b>	<b>3</b>
<b>1. Introduction</b>	<b>4</b>
1.1 Scope .....	4
1.2 FAA Approval .....	4
1.3 Operational Limitations .....	4
1.4 Repack Interval .....	4
1.5 Model Description .....	4
1.6 System Function.....	5
1.7 Care of your Para-Chusion Parachute System.....	5
1.8 Service Life .....	6
1.9 Preflight Inspection.....	6
1.10 Fitting the Parachute Harness.....	6
1.11 Plan Ahead .....	7
1.12 How to get out of the Aircraft.....	7
1.13 How to open your Parachute .....	7
1.14 How to Steer .....	8
1.15 Landing and Recovery .....	8
1.16 Reporting of Equipment Improvement Recommendations.....	8
<b>2. AcroPro &amp; 303 Model Description</b>	<b>9</b>
2.1 Parts List .....	10
<b>3. Required Packing Tools</b>	<b>11</b>
<b>4. Prepare Parachute for Packing</b>	<b>12</b>
<b>5. Pre-Packing Inspection</b>	<b>12</b>
<b>6. Packing the AcroPro and 303</b>	<b>13</b>
6.1 Folding the Parachute .....	13
6.2 Securing the Diaper .....	15
6.3 Risers and Line Stows.....	17
6.4 Placing Canopy into Container .....	19
6.5 Closing the Container .....	21
<b>7. Repair Guidelines</b>	<b>26</b>
<b>8. Changing the Pilot Chute Loop and Cap</b>	<b>27</b>
<b>9. Installing the Toggles</b>	<b>29</b>
<b>FAA Approval Letter (Inside Back Cover)</b>	

# 1. Introduction

Thank you for purchasing a new Para-Cushion Emergency Parachute System from Strong Enterprises. It is the finest available anywhere and with a little care, should last you a very long time. Rest assured that your new Para-Cushion has been constructed to retain the durability, reliability, and comfort that Strong Enterprises has been building into its products for over 50 years. We welcome your comments so that we may continue to improve our products and help make flying safer and more comfortable.

## 1.1 Scope

This owner's manual constitutes the manufacturer's instructions for the operation, packing, and maintenance of the Para-Cushion Emergency Parachute System.

## 1.2 FAA Approval

Originally certified in 1973 under TSO C-23b, standard category, the Para-Cushion parachute assemblies were upgraded in 1992 and are now FAA approved under TSO C-23f, (in accordance with AS 8015A, category B and FAR 21, Subpart O). A copy of the FAA Approval Letter is on the inside of the back cover of this manual.

## 1.3 Operational Limitations

When using the 26ft Mid-Lite Canopy (Strong Enterprises Part Number 420550), this Para-Cushion is limited to use by persons up to 254 lbs (115kg) fully equipped (person, clothes, and equipment including parachute) at up to 150 knots IAS.

## 1.4 Parachute Repack Interval

Your Para-Cushion is designed for a 365-day repack cycle. Your countries laws may dictate a stricter schedule, check your local regulations. The Para-Cushion must be packed by an FAA certificated parachute rigger, or foreign equivalent, with an appropriate rating or returned to Strong Enterprises for inspection and repack. If your Para-Cushion is exposed to moisture, excessive dirt or is damaged it should be inspected sooner than the maximum allowed.

***Note!***

***USA current repack regulations can be found in FAA FAR 91.307***

## 1.5 Model Description

The unique Para-Cushion system design (U.S. Patent #3,908,937), with externally mounted pilot chute, allows for a soft, flexible container with protected ripcord pins. The Para-Cushion, is an FAA approved, manually operated emergency parachute system.

Para-Cushion AcroPro has a standard back mounted container measures 21" (53 cm) tall by 13" (33 cm) wide by 3.5" (9 cm) thick and weighs approximately 14 lb. (6.4 kg).

Para-Cushion Back 303 has a standard back mounted container measures 24" (60 cm) tall by 16" (40 cm) wide by 3" (7 cm) thick and weighs approximately 15 lb. (6.5 kg).

It has a contoured container and backpack with extra padding at the shoulders to keep it comfortable while performing. Available with an aerobatic or standard harness, this system is designed to be unrestrictive while ensuring the safety of the pilot. In addition we have extended the riser covers to protect the harness webbing from UV exposure and wear.

The 26' (7.92m) Mid-Lite parachute is block constructed using low porosity (Lo-Po) fabric. This fabric allows less air flow than conventional parachute fabric and therefore provides a slower, more stable rate of descent.

## 1.6 System Function

The Para-Cushion is activated by pulling the ripcord handle. This withdraws the ripcord pins and releases the locking loops allowing the pilot chute to eject, catch air and extract the parachute canopy from the container. A "diaper" is sewn to the skirt at the bottom of the canopy. On deployment, the canopy and suspension lines are extracted from the container. The diaper is released as the last stows deploy, allowing the canopy to inflate.

Typically, it takes about 2 to 3 seconds from ripcord pull to fully inflated canopy, traveling a vertical distance of 150 to 300 feet. This does NOT mean that you should plan on jumping or pulling at 300 feet. Deployment time and distance depend on, among other factors, your airspeed.

## 1.7 Care of Your Emergency Parachute System

Observe these precautions to maximize the service life of your Para-Cushion Emergency Parachute System. Parachutes are simultaneously very rugged and quite delicate. They are life saving devices and should be treated with great care. Parachutes are made of nylon, a very strong and durable, but not invincible, material. Nylon is deteriorated by small amounts of acid and weakened by ultraviolet sunlight. These surface effects do not seriously influence thicker materials, such as webbing or pack material, but canopy cloth is very vulnerable. If your Para-Cushion is opened or used, it should be taken to a certificated parachute rigger, or returned to the manufacturer for airing, drying, inspection and repack. FAA FAR 65.129 requires that no parachute be packed, maintained, or altered in any manner that deviates from procedures approved by the manufacturer.

The parachute should be left unopened inside its protective container until ready for use. When you take your Para-Cushion to your rigger for servicing, they will be glad to allow you to pull the ripcord yourself, give you a functional demonstration, and answer all your questions. We urge you NOT to open your parachute in the field for demonstration purposes. Foreign objects can cause costly damage the canopy.

When your Para-Cushion is in the aircraft, care must be exercised to ensure that it is not damaged. Be sure that it does not come in contact with any sharp or loose metal surfaces, or any objects within the plane, which might cut or snag it. All metal edges, exposed nuts and bolts, etc. should be taped or covered to prevent wear on the parachute container. Be sure that your parachute does not come in contact with water, oils, acids, grease, dirt, agricultural or fire retardant chemicals.

For long term storage the best possible way to store your canopy is unopened inside the carry bag. It doesn't matter how long the canopy is kept that way. If you open your para-cushion there are more opportunities to damage the canopy or lines. If you decide that you must open it and remove the rubber bands we suggest putting both canopy and lines directly into the cloth bag (laundry bag, pillow case). The reason we don't recommend a plastic bag is that nylon "breaths". Or more specifically it will absorb and release moisture and stabilize to the ambient humidity levels. If it is trapped in a plastic bag there is more opportunity for mold/mildew to grow, while a cloth bag allows the breathing process to continue.

***! WARNING !***

***Leaving your packed parachute system exposed to the sun will greatly decrease its service life.***

## 1.8 Service Life

FAA FAR 65.129 requires that “No certificated parachute rigger may pack a parachute that is not safe for emergency use”. The continued airworthiness of an assembly is at the discretion of the FAA licensed parachute rigger’s inspection during re-pack. While proper care can no doubt extend its usefulness, an older parachute should be examined more closely for signs of deterioration. Your parachute is a sensitive piece of life saving equipment and should be treated as such. However, it should not be expected to last forever, even with proper care.

## 1.9 Preflight Inspection

The parachute must be inspected by the wearer prior to each use. Check it visually for any unsafe condition. Be sure the harness is not twisted or misrouted. Be sure the fittings are not rusted. Be sure the ripcord handle is securely in its pocket (under the fabric pocket covering). Unsnap the back pad and check ripcord pins. Be sure they are properly seated in their loops. All pins should extend at least 1/2-inch beyond the fabric locking loop. Be sure the rigger’s seal and thread are still intact around the furthest pin. That is your assurance it has not been opened since it left the rigger’s packing table. Check the packing data card in the nearby pocket to be sure that the parachute is current and has been repacked in accordance with regulations.

## 1.10 Fitting the Parachute Harness

The Strong Enterprises Para-Cushion comes with one of 2 basic harness designs: the fully adjustable harness, and the aerobatic harness. Below, please find proper fitting for each of these models.

**Fully Adjustable Harness** - The fully adjustable harness allows you to custom fit your harness. To properly adjust this harness, first loosen all adjustment points all the way out. Then put on the parachute as explained above being sure to fit the leg straps snugly. Then stand at attention and take up the slack in the main lift web (vertical straps) by pulling on the harness ends located just above the leg pads. This should pull the straps down snug over your shoulders. Next adjust the horizontal back strap (located behind you at the leg junction) to come in contact with your back. This strap need not be tight for a comfortable fit. Finally, snap and adjust the chest strap, fold and stow the webbing ends in the elastic keepers. Be sure the ripcord handle is securely stowed, yet accessible.

**Aerobatic Harness** - The Aerobatic, or two-point harness moves the snaps normally located on the leg, to the middle of the chest, thereby preventing interference with your seat belt. To properly don this harness, loosen the two adjusters all the way out. Slip your arms through the main lift webs (the vertical straps in front), much like putting on a jacket. Then reach between your legs, pick up the right leg strap, untwist if necessary and thread the right strap through the loop located on the right main lift web at the leg junction. Take care not to twist the strap. Next, snap it in place at the chest on the opposite (Left) main lift web. Repeat the process for the left strap. The straps should be adjusted tight, but not so tight that it restricts your ability to stand upright. Resist the urge to over tighten the straps once you are seated. Fold and stow the webbing ends in the elastic keepers. Be sure the ripcord handle is securely stowed, yet accessible.

## 1.11 Plan Ahead

Be prepared in the event of an emergency situation. Know and rehearse your emergency procedures before they are needed. With the parachute on, sit in your cockpit and fasten your lap and shoulder belts. Be certain these are over your parachute harness. Wear gloves, helmet and goggles, even headphones if you normally use them. Mentally organize your bailout procedure. Inspect your cockpit for projections or sharp edges that may damage the parachute, or injure you. Consider canopy ejection, oxygen disconnect, or other requirements that you may be faced with. All these things take time, and an emergency leaves you little time for errors. Generally, you are better off staying with the aircraft if it is controllable. However, your margin of safety is reduced as time passes evaluating your situation. With time many situations can get worse. Make your decision quickly because all these actions consume altitude.

## 1.12 How to Get Out of the Aircraft

There are only two steps to remember when you must leave your aircraft. 1) Get clear of the aircraft, 2) then pull your ripcord, in that order. If the parachute begins to open while you're still aboard, the wind may inflate it, dragging you out or into the tail. Also, it may entangle with the aircraft. There are no other rules - the aircraft may be tumbling, spinning, or inverted. Simply get yourself out any way you can. Clear the aircraft and pull your ripcord immediately. There is enough oxygen to breath and you'll be descending into denser air.

## 1.13 How to Open Your Parachute

The ripcord handle is located near the chest strap on the wearer's left front of the harness. The key is to:

**LOOK** at the ripcord handle, rather than fumble or tug on a harness fitting. Beneath the fabric cover, the ripcord handle is held in place by a pocket. Look at it first because it may have been dislodged by your exit.

**REACH** over and grab it with both hands (typically with your right hand and left thumb), and **PULL!** This is no time to be gentle!

If the ripcord doesn't come free on the first pull, check to make sure it is the handle in your hand, not some other piece of hardware. Back the handle up to the housing to create slack in the cable, then punch it out again. The entire cable assembly should come completely out of the housing.

To reduce the pull force, push the handle in the direction that the protective ripcord housing points - rather than straight out from your chest. The ripcord housing on the Para-Cushion comes over your shoulder, so push the handle down toward your feet. By having both hands together on the handle, you also reduce the chance of the canopy or lines entangling with an extended limb. Keep your feet together for the same reason. Body position is secondary to pulling.

***Remember to LOOK-REACH-PULL.***

## 1.14 How to Steer

Having a steerable parachute reduces your rate of descent, increases your stability, and helps you avoid obstacles such as buildings, trees, water, and power lines. The parachute drifts with the wind and has a forward speed of about 6 MPH, which can be directed with or against the wind using the built-in steering vents in the rear.

The canopy may be turned by pulling down on the webbing toggles, located on the rear of the risers, just above your head. An 8-12 inch pull will produce a slow rotation. Excessive pulling will not improve the performance.

## 1.15 Landing and Recovery

Ideally, you want to reduce your landing speed by facing into the wind (or quartering slightly). Avoid all but very slight turns below 200 feet.

Push your feet and knees tightly together and point your toes slightly so you don't land on your heels. The tension caused by keeping your ankles and knees pressed tightly together increases their individual support, reducing your chance of injury. Keep your elbows in and try to look at the horizon, not down at the ground. This will give you a better idea of your altitude (much like looking out the side, rather than over the nose during a landing flare).

If the wind keeps your canopy inflated after touchdown, you may be dragged. Pull in the lines closest to the ground to spill some air, and then run around the canopy to collapse it.

In most cases you can maneuver the canopy as necessary to avoid as many obstacles as possible. In the event of a tree or power line landing, keep your feet together so you don't straddle a limb or wire. Be prepared to slide through and hit the ground afterwards. You should be able to avoid power lines, but if not, throw away the ripcord -- it is an electrical conductor. If suspended from a power line, do not attempt to climb down and do not accept assistance from anyone until the power has been shut off.

To prepare for a water landing, the chest strap may be unfastened (except with the Aerobatic harness) as long as you cross your arms in front of the harness to prevent falling out. Depth perception over water is difficult, so do not attempt to leave your harness above the water. Take a deep breath just before you splash down. Once under water, unfasten your harness straps and swim as far as possible upstream, allowing the canopy to blow away from you. Entanglements with wet nylon cloth and lines can weigh you down.

## 1.16 Reporting of Recommendations

In our effort to continuously improve our products, processes, and services, we invite you to send us your comments and suggestions. As a user of this equipment, you are uniquely suited to provide us with valuable feedback regarding design and/or performance. Feel free to tell us what you like and what you don't like. Send us an email or mail a letter to:

Strong Enterprises  
6448 Pinecastle Blvd. Ste. 104  
Orlando, FL 32809  
sales@strongparachutes.com



## 2. AcroPro & 303 Model Description

The AcroPro measures 21" (53 cm) tall by 13" (33 cm) wide by 3.5" (9 cm) thick and weighs approximately 14 lb. (6.4 kg).

The 303 measures 24" (60 cm) tall by 16" (40 cm) wide by 3" (7 cm) thick (w/ 26' mid-Lite) 4.5" (11 cm) thick (w/ 30' Lo-Po), weighs approximately 15 lbs (6.5 kg) w/ mid-Lite & approximately 19.5 lbs (8.9 kg) w/ 30' Lo-Po..

In many cases, by removing the back cushion of the seat pan, the pilot may place the AcroPro or 303 in it's place.



## 2.1 Parts List



26-foot Mid-Lite (w/ H/C sized for 26")  
30-foot Lo-po (w/ H/C sized for 30')



Ripcord Assembly  
611366



Carrying Bag  
816031



Cap for Pilot Chute  
799030



Pilot Chute, Lil Grabber  
790121



Locking Loop

**AcroPro**  
861044 Gold

**303**

861043 White -Velcro back-pad w/ Mid-Lite)  
861058 Royal Blue- snap back-pad w/ Mid-Lite  
861044 Gold w/ 30' Lo-Po

### 3. Required Packing Tools

**A - Shot Bags at least 4**

**B - Line Separator 1 ea**

**C - Pilot Chute Locking Rod 1 ea**

**D - Pilot Chute Locking Strap 1 ea**

**E - T-handles 3 ea**

**F - Pull-Up Cords 3 ea**

**G - Tension Plate 1 ea**

**H - Tension Hook 1 ea**

**I - Fid 1 ea**



## 4. Prepare Parachute for Packing

1. Gather the appropriate tools.
2. Always count your tools to ensure you don't leave any in the packed parachute.
3. Lay the harness, container and canopy down on the table with the harness facing down.
4. Attach canopy apex to tension hook and attach container to tension plate. By tightening both ends, canopy will be stretched out allowing easier inspection and packing.

## 5. Pre-Packing Inspection

Always perform the following inspection prior to packing:

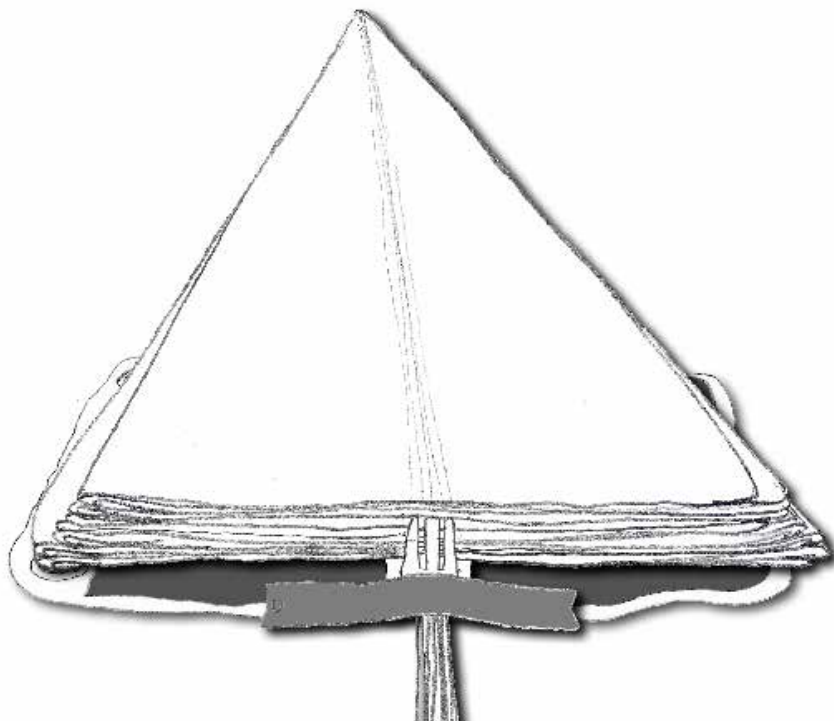
- Inspect the entire assembly for any damage.
- Inspect pilot chute and bridle.
- Check that the Larks-head knot on the pilot chute is secure.
- Inspect Apex area.
- Check over entire canopy for damage.
- Inspect lines for damage.
- Check line sequence and control lines.
- Perform a complete suspension line continuity check.
- Check the barrels on #6 rapide link for cracks.
- Check that links are tight.
- Inspect Harness and Container assembly.
- Check that the elastic stow bands are in good condition.
- Check tackings for tightness and condition.
- Inspect Hardware for functionality and condition.
- Inspect Harness for nicks, abrasions, and sun damage.
- Check that ripcord is snug in pocket.
- Check closing loop length AcroPro and 303 w/ 30' Lo-Po: 861044 Gold - should be 10" with a tolerance of (-) 1/4
- Check closing loop length 303 w/ Mid-Lite w/ Velcro Back-pad: 861043 White - should be 9" with a tolerance of (-) 1/4
- Check closing loop length 303 w/ Mid-Lite w/snap Back-pad: 861058 Royal Blue - should be 9 3/8" with a tolerance of (-) 1/4

## 6. Packing the AcroPro & 303 Parachute

### 6.1 Folding the Parachute

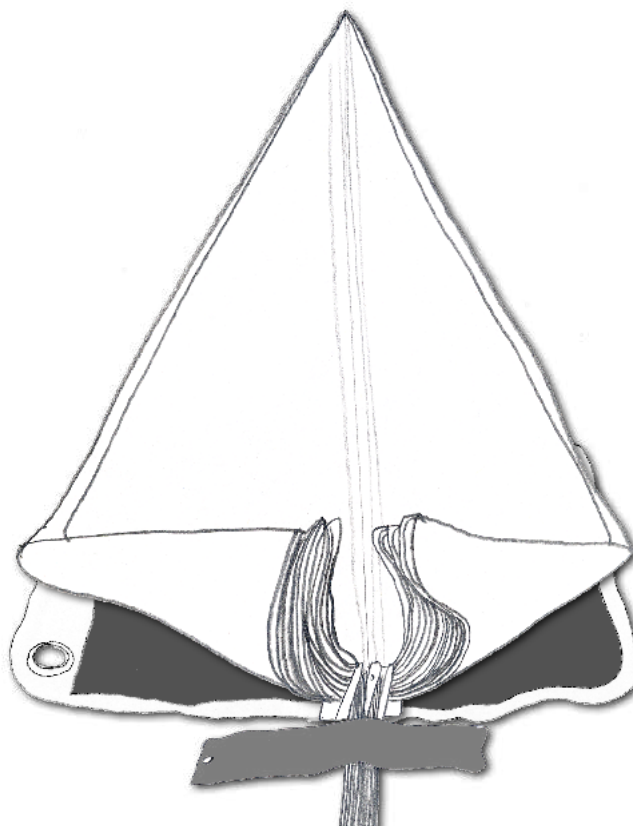
#### 6.1.1

Lay harness, container and canopy down on the table with the wearer side facing down. Inspect entire assembly for completeness and any damage. Flake canopy and pleat in the normal manner with an equal number of gores to each side. Diaper should be between table and canopy.



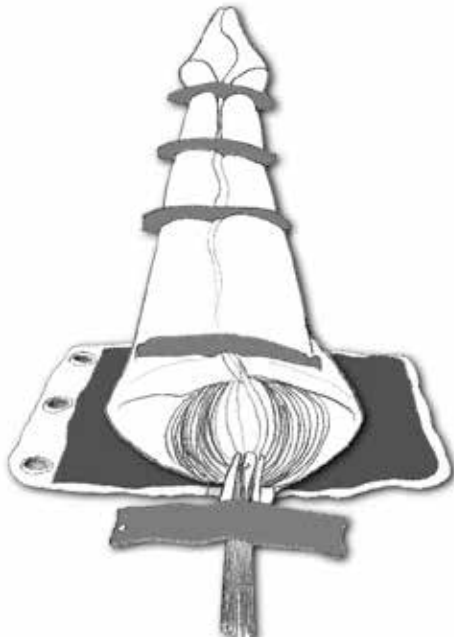
#### 6.1.2

Fold skirt up 90° on each side parallel to the radial seams.



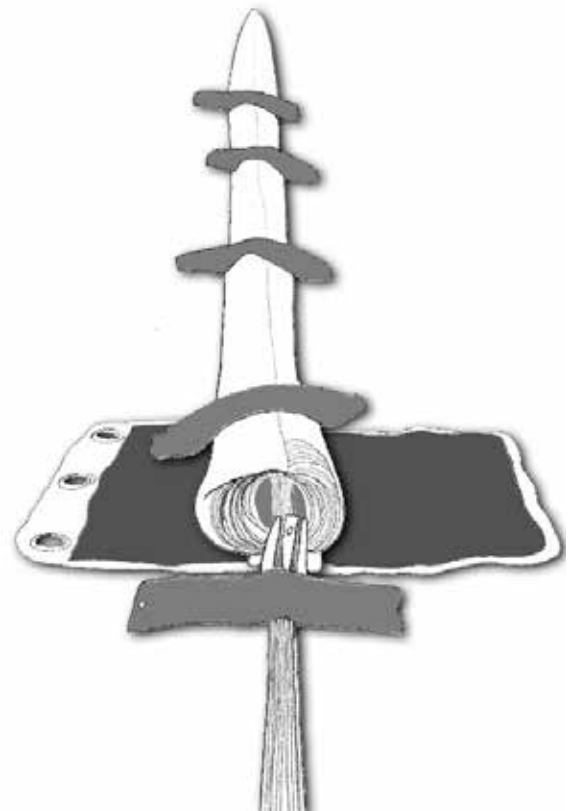
### 6.1.3

Fold the canopy into thirds by bringing the sides up to the middle. First right side and then left.



### 6.1.4

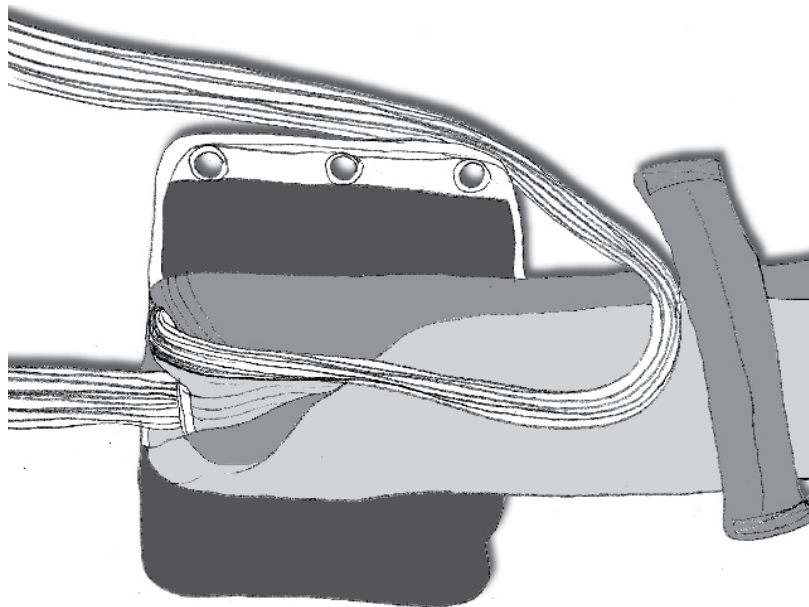
Long fold the canopy into fifths, long and tight, bringing the right side just past center then folding the left side over center.



## 6.2 Securing the Diaper

### 6.2.1

Spread diaper out flat. Bring lines on the LEFT-HAND GROUP ONLY loosely up over skirt.

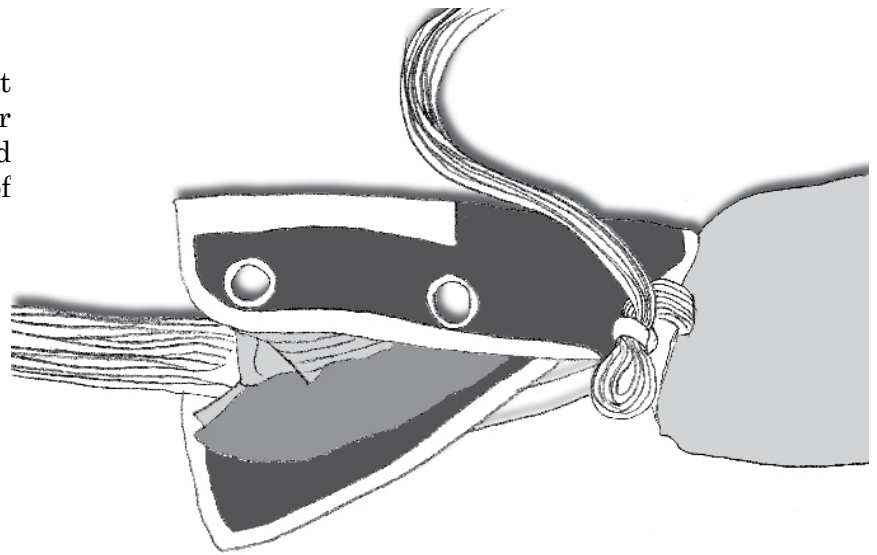


### ***! WARNING !***

***DO NOT tuck the lines inside the folded canopy.  
Tucking the lines in the canopy can cause serious  
burns to the canopy and lines.***

**6.2.2**

Wrap the diaper around the skirt and left line group. Bring rubber band through upper grommet and lock in place with 1 1/2 inch bight of line from left line group.

**! WARNING !**

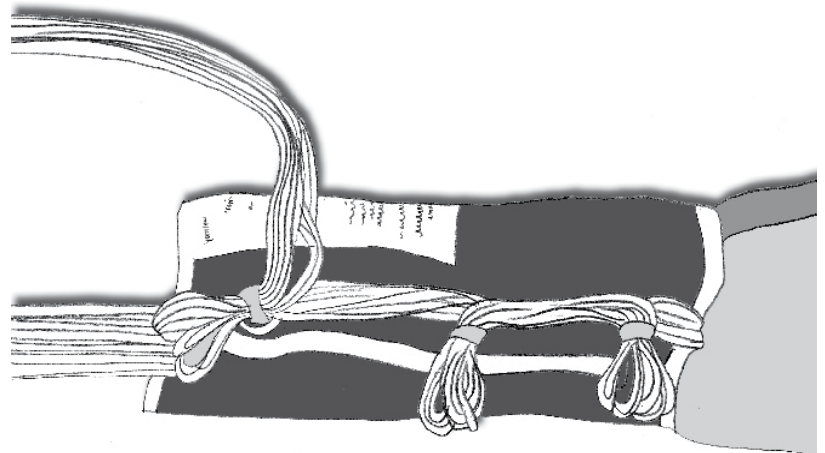
***Put only the left line group of lines inside the diaper. Otherwise the purpose of the diaper will be defeated, allowing it to release before all lines are unstowed.***

**6.2.3**

Continue to secure the diaper by bringing remaining rubber bands through their respective grommets and locking in place with 1 1/2 inch bights of line from left line group.

**Note:**

***If using shorter (1 1/4 inch) rubber bands, a single wrap is sufficient. If using large rubber bands, double wrap each stow.***





## 6.3 Riser and Line Stows

### 6.3.1

Insert the T-bars up through the three grommets located in the bottom of the container.



### 6.3.2

Open the riser covers on the bottom of the container and lay risers in the channel. Close riser cover over risers by securing the hook and loop fastener.



First Stow (all lines)

### 6.3.3

Right line group will be 14-16" longer than the left line group. Bring excess line to container end, keeping lines even from canopy to container. Stow the first bight of lines in the outermost rubber band on the wearer's lower left corner of the container.

**Note:**

*This bight should contain all the lines. There will be excess in the right line group between the riser links and this first line stow.*



Excess Right Line group

**6.3.4**

Stow the excess from the right line group on the right side of the container, in the upper right inboard rubber band. To do this, route the lines diagonally from the first stow to the top of the container, and stow using the rubber band closest to the center of the pack tray. This stow can be doubled back on itself.

**6.3.5**

Make the next stow of all parachute lines in the outermost top left side rubber band.

**6.3.6**

Continue to stow lines on the left side until you have two top and three bottom stows.



### 6.3.7

Route the line group around the bottom grommet to the innermost bottom rubber band on the right side of the container.

#### *Note!*

*Ensure that lines run between middle and bottom grommet.*

*Routing lines below the bottom grommet could cause a malfunction.*



### 6.3.8

Continue stowing lines on the right side of the container working from the inside to the outside. The last stow should be in the outermost upper rubber band and 6-10 inches from the skirt of the canopy.



## 6.4 Placing Canopy Into Container

### 6.4.1

Lay the diaper across the top of the container. Although the diaper may be twisted slightly to reduce lumps, stow the canopy "flat," not turned on edge.



**6.4.2**

Fold canopy 90 degrees “down” and “up” the left side of the container. This fold is positioned between the side flap of the container and the central divider flap.

**6.4.3**

Next fold the canopy diagonally across the container. The canopy fold should start below the diaper and cross to the right side between the middle and bottom grommets.

**6.4.4**

Next take an approximately 10” bight of canopy and fold it across the bottom of the container. This fold should be between the bottom flap and the bottom grommet, and should fill in the bottom of the container.



**6.4.5**

Bring the protector flaps up around the canopy and close the bottom flap by placing the grommet over the T-bar.

**6.4.6**

S-fold the remaining canopy on the right side keeping the folds between the diaper and the bottom corner. Bring the canopy protector flaps up to clear the grommet area.

***Rigger Note!***

*Folding the Apex under the last canopy fold prevents visible lumps once container is closed.*

**6.5 Closing the Container****6.5.1**

Bring the grommet from the top flap over the top T-bar.



**6.5.2**

Next close the right side by placing the grommets over the T-bars. Make sure that the pilot chute bridle is between the top and middle grommet.

**6.5.3**

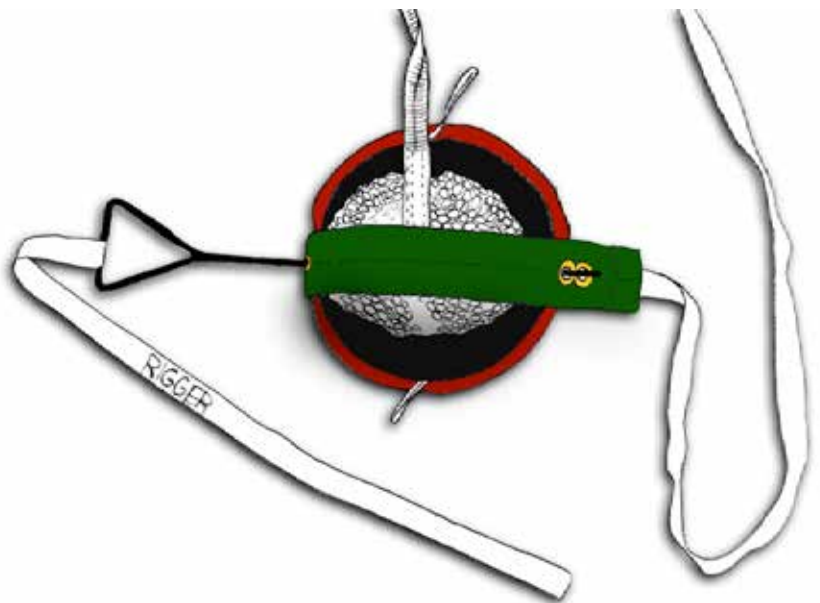
Close the left side by placing the grommets over the T-bars. Make sure that the pilot chute bridle is between the top and middle grommet.

**6.5.4**

Stand the pilot chute upright on the locking rod. While compressing pilot chute, neatly and symmetrically tuck the pilot chute's canopy cloth in between the coils of the spring. Continue until the pilot chute is fully compressed and lock with locking strap. Do NOT tuck material into base of spring.

***Note!***

***Locking rod and strap should be at 90° angle to closing loops.***



**6.5.4**

S-fold pilot chute bridle and place under left side flap. Next center the compressed pilot chute between the upper two grommets.

**6.5.5**

Pass the pull-up cords (3) through the closing loops in the pilot chute cap and the closing loop that is attached to the left side flap. Pass the ends of the pull-up cords through the slots in the T-handles.

**6.5.6**

Holding the pilot chute in position with one hand and with the other hand under the pack, turn the pack over.



**6.5.7**

Draw the pull-up cords through the grommets by removing the T-handles from the pack.

**6.5.8**

Working from the top, pull the locking loop through the container and insert ripcord pin.

**6.5.9**

Once all three pins are in place, remove pull-up cords slowly to avoid damaging the closing loops.





**6.5.10**

Seal the bottom most pin (pin furthest from the housing). Complete the data card and your rigger's logbook.

**6.5.11**

Snap all the snaps to secure the backpad in place.

**6.5.12**

Turn rig over and remove pilot chute locking rod and strap.

Use a fid to tuck the excess pilot chute fabric under the rim of the cap. Dress the pack neatly. Be sure the ripcord handle is secure in its pocket.

When the pack job is finished, the pilot chute should be centered on the back, and sunk down below the sides of the pack.

***! WARNING !***

***Count your tools to assure you have not left any in the packed parachute.***

## 7. Repair Guidelines

The following repair specification is set forth to aid riggers in the maintenance of Strong Enterprises' parachutes. Repairs must be made only by appropriately rated FAA certificated parachute riggers or foreign equivalent.

### CANOPY

#### TYPE OF REPAIR

#### LIMITATIONS

Re-stitching:	No limit as to length or number
Patch, single side:	Size limit: 50% of panel area Limit of 3 per panel, 15 per canopy
Panel replacement:	Limit 9 per canopy
Radial Seams:	Size limit: 12", no more than 4 per canopy
Lateral bands:	Damage: size limit 2"
Upper	Limit: 1 per canopy
Lower	Limit: 4 per canopy
"V" tabs:	No limit
Suspension Lines:	No limit

### PILOT CHUTE

Use re-stitching or single side patch. Anything more, replace.

### PILOT CHUTE CAP

Replace when Spandura® fabric becomes worn.

### LOCKING -Replace as needed

- AcroPro and 303 w/ 30' Lo-Po: 861044 Gold - should be 10" with a tolerance of (-) 1/4
- 303 w/ Mid-Lite w/ Velcro Back-pad: 861043 White - should be 9" with a tolerance of (-) 1/4
- 303 w/ Mid-Lite w/snap Back-pad: 861058 Royal Blue - should be 9 3/8" with a tolerance of (-) 1/4

### BRIDLE

Damaged bridles should be replaced.

### CONTAINER

Standard military single side patches or replacement of the damaged area is authorized.

### HARNES

Any portion of the harness which is structurally damaged should be replaced in a manner to duplicate original equipment.

### RIPCORDS

Damaged ripcords should be replaced.

### DATA CARD

Data cards should not be discarded or replaced. When filled, they should be attached to a new card so a complete log of packing, repairs, and alterations is recorded. This is the history of the parachute.

#### *Note!*

*Darning and ripstop tape are not authorized for certified canopies as they may weaken the fabric. Single side patches are recommended for even small damaged areas.*

## 8. Changing the Pilot Chute Loop and Cap

### 8.1

The Para-Chusion has a pilot chute cap with a Spandura® Rim. This Spandura® Rim is hand-tacked to the top of the pilot chute at 90° angles to the loop openings. By snipping this hand tacking, you can easily remove the cap and lift it off.

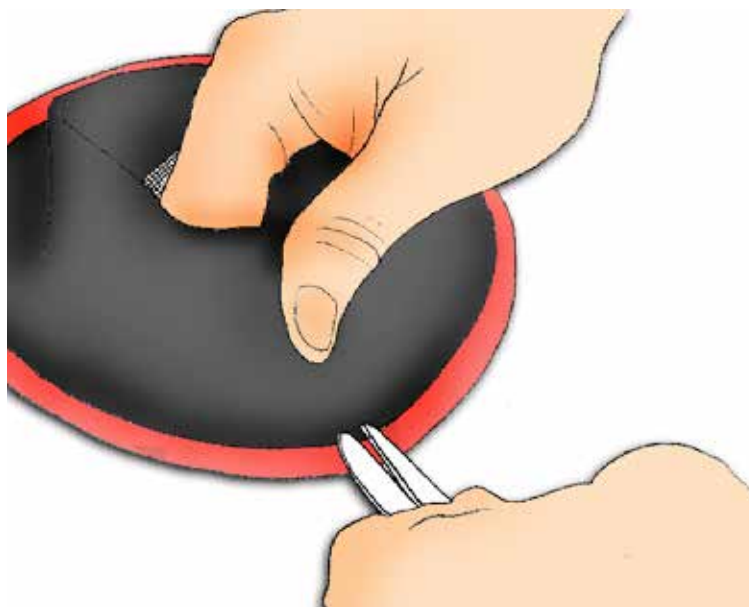


### 8.2

Once the cap is removed, remove the loop by snipping the hand tacking. Install a new locking loop by hand tacking the Type 4 tape to the pilot chute top, (do not hand tack the canopy of the pilot chute) followed by a good surgeon's knot. Position new loop so that loop is between type 4 and pilot chute.

#### *Note!*

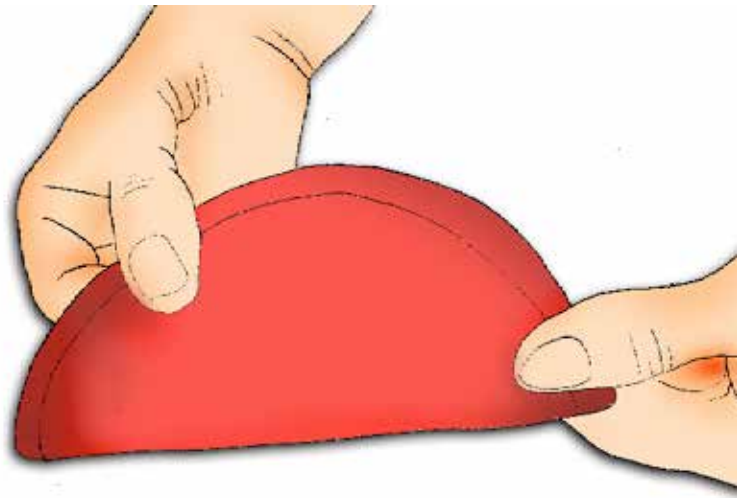
*Pilot chute loop must be placed as close to dead center as possible. Being off even a couple of degrees may cause the pilot chute to sit improperly on the packed container.*



### 8.3

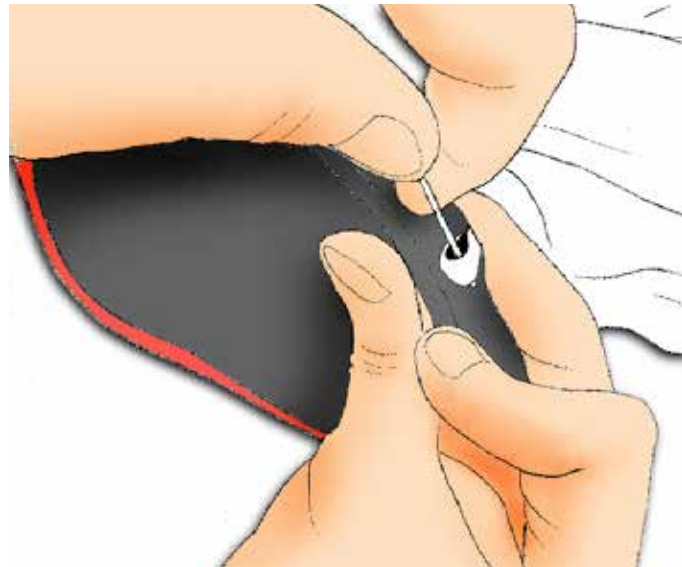
If you are replacing the cap, you must make two small holes where the loops will come through the Spandura®. Do this near the seam in the binding tape.

**Rigger Tip:** Once you have cut the first hole in the Spandura® for your loop to come through, fold the cap perfectly in half at that hole, making a crease. Unfold the cap, and you can see just where 180° is and where your other hole should go.



### 8.4

Once the holes are cut, install the new cap over the loop by aligning the loop ends with the holes in the Spandura® cap and pulling the loop through the holes with your hand tack needle.



Hand tack the new cap in place at 90° angle to the loop.

### *Note!*

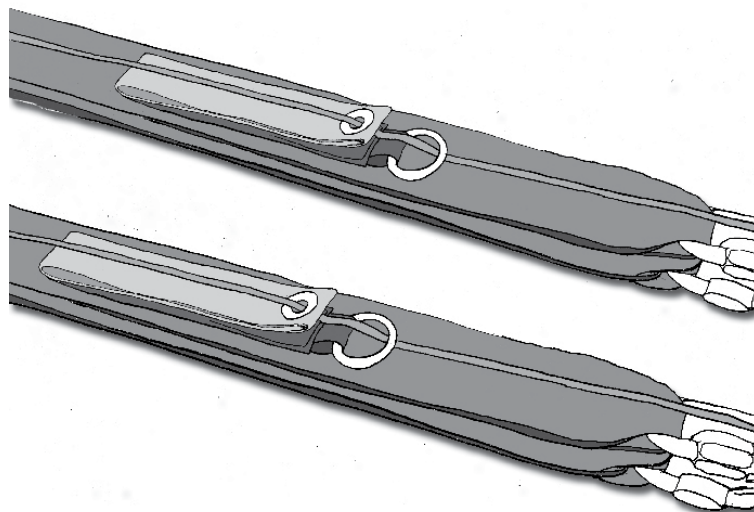
*Be careful not to catch the pilot chute canopy cloth below the stitch line at the top of the pilot chute. Doing so may result in stress being put on the cloth resulting in a hole in the canopy.*

## 9. Installing the Toggles

### 9.1

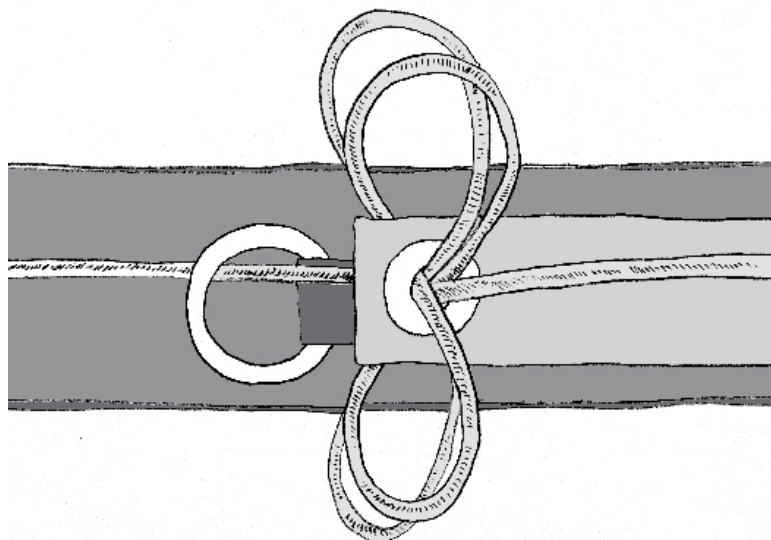
Thread steering line through guide ring then through the grommet in the toggle, starting from the underside of the toggle (the side with Velcro®).

Lay the toggle on the riser where it will be when set, and measure where the steering line should be tied. There should be one or two inches of slack in the steering line after the rest of the lines are pulled tight.



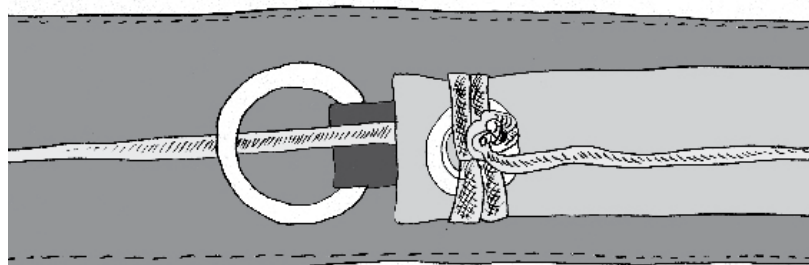
### 9.2

Make two "Figure-8" with the line through the grommet and secure with an overhand knot.



### 9.3

Mate the Velcro® to secure the toggle to the riser.





Mr. Edward Strong  
 President, Strong Enterprises  
 A Division of S.E. Inc.  
 11236 Satellite Boulevard  
 Orlando, FL 32837



U.S. Department  
 of Transportation  
**Federal Aviation  
 Administration**

Dear Mr. Strong:

This is in response to your March 9, 1992, and subsequent submittals requesting Federal Aviation Administration authorization to identify Para-Cushion Series, Part No. 1045-( ) emergency parachutes assemblies, in accordance with the requirements of Federal Aviation Regulation (FAR) Part 21, Subpart O, Technical Standard Order (TSO) C23c, and SAE Aeronautical Standard AS-8015A, Category B.

We find your March 9, 1992, Statement of Conformance submitted with your request and your Quality Control Manual dated December 6, 1988, acceptable.

The following data as submitted by your letter will be retained on file for this authorization:

- a. Strong Enterprises Test Summary dated March 9, 1992.
- b. Strong Enterprises Drawings for the Para-Cushion Series P/N 1045-( ) submitted with your March 9, 1992, request.
- c. Strong Enterprises Owner's Manual which includes limitations and instructions and was submitted on May 7, 1992.

Effective this date, you are authorized to identify the Para-Cushion Series, Part No. 1045-( ) parachute assemblies with the appropriate TSO markings required by the applicable TSO and FAR 21.607(d).

This authorization is not transferable to another person or location and is effective until surrendered, withdrawn, or otherwise terminated by the Administrator.

Your responsibilities as a holder of a TSO authorization are outlined in FAR 21.3 and FAR 21, Subpart O.

The Airframe Engineer for this authorization is Cindy Lorenzen, telephone number (404) 991-2910. The Technical Support Specialist is Lorraine Bush, telephone, (404) 991-6137.

Sincerely,

John Tigue  
 Manager, Atlanta Aircraft  
 Certification Office

## AVAILABLE OPTIONS TO CUSTOMIZE YOUR Para-Cushion AcroPro or 303



### **Custom Monogram** PN: 099105

We can monogram your name, N number, Company Name, Nose Art or anything you can imagine. Space provided 6" X 2.5"



### **Aerobatic Harness** PN: 260050

Moves the adjustment points from your thigh to your chest. Use for high G maneuvers.



### **Sheepskin Back Pad** PN: 812146

Sheepskin pads keep you cool in the summer and warm in the winter.



### **Quick Ejector Snaps** PN: 099113 (3 each) or PN: 099112 (2 each)

Military Style hardware replaces B-12 snaps. Allows you to lift the gate and eject the hardware instead of reaching under and lifting.



### **Aero Pad**

A zip-on seat pad held in place by the pilot's weight to restrain the Para-Cushion and prevent shifting during high G maneuvers.

*Call or email for more information and pricing.*