

# ZEROX OWNERS MANUAL

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## INTRODUCTION

# ZEROX OWNERS MANUAL

First of all we would like to thank you for choosing a Thomas Sports Equipment Zerox, you have shown impeccable taste.

Please read this manual thoroughly before assembling or using your Zerox. If after reading this manual you still have questions concerning the Zerox please contact us, we will be more than willing to help. If you have any suggestions or see a need for some changes in the Zerox please let us know by calling or writing to:

**Thomas Sports Equipment**

**Pinfold Lane**

**Bridlington**

**East Yorkshire**

**YO16 5XS**

**Tel: + 44 (0) 1262 678299 Fax: + 44 (0) 1262 602063**

**E-mail enquires@thomas-sports.com**

## **FACTS: about Thomas Sports Equipment**

Thomas Sports has been manufacturing parachute equipment since 1968 and has provided services from students to British team members. Twenty six years in our sport has provided TSE with a wealth of experience in developing and manufacturing parachute equipment with an enthusiasm and commitment in the complete sense. A service second to none. This in turn means you can be confident in the knowledge that with TSE you are using the very best available, from the initial PLF through to the highest levels of competing. Staff qualifications are more than impressive: 2 FAA master riggers, 2 BPA advanced, rigger examiners, with a collective total of over 10,000 jumps, oversee all aspects of the production, maintenance and repairs operations at the loft. Every care is taken to ensure that each rig from TSE meets the highest possible standards.

The Zerox is a piggy-back harness and container system designed for free fall sport parachuting. It is available in a wide variety of container sizes to fit practically any main or reserve canopies on the market today. This harness/container system is the most innovated on the market today. TSE have developed the single pin pop top reserve container, giving both safety and ease of packing. The ZEROX version also lends itself to the CYPRES A.A.D.

## **THE MAIN CONTAINER FUNCTION:**

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The main canopy may be deployed by either throw away or pull-out pilot chute.

### **THE THROW AWAY MAIN PILOT CHUTE:**

The throw away is an external pilot chute located in a spandex pocket on the rear of the leg strap or on the bottom of the container. The pilot chute is attached to a bridle line. Sewn to the bridle line is a curved locking pin. This locking pin keeps the main container closed until the pilot chute inflates thus removing the locking pin, opening the main container and extracting the main parachute.

### **THE PULL-OUT MAIN PILOT CHUTE:**

The pull-out base mounted pilot chute is a soft handle located on the bottom right hand corner of the main container, (the pilot chute is stowed inside the main container), this connects to a straight pin at the base of the pilot chute. Hence 'base-mounted'. As the handle is pushed straight down the straight pin releases the nylon loop allowing the main container to open. The pull action extracts the pilot chute from inside the main container. The pilot chute must be thrown manually into the clean air-flow, the wearer must throw to their side and release the pilot chute. The pilot chute then pulls out of the main container. For the apex pull-out pilot chute the system of deployment activation is as is for the base mounted pilot chute, however the pad is located on top of the pilot chute.

### **THE RESERVE CONTAINER:**

The reserve parachute container is held closed by a single pin. The reserve ripcord is protected by a cover on the outside back of the jumper, so that once checked on the ground it does not need to be checked again in the aircraft. The reserve ripcord handle is made of metal and fit into a pocket on the left hand main lift web. The reserve pilot chute is a High drag type. You may have a Stevenson Lanyard attached to the reserve ripcord handle end, so that when you cutaway the main parachute the lanyard acts like a static line and pulls the reserve ripcord.

### **THE HARNESS:**

The harness is constructed from either type 7 or type 8 Mil-spec webbing and incorporates the famous 3-ring circus. It also features the unique TSE shaped harness design.

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## PARTS LIST

**THE TEAR DROP 1 PIN SF IS SHIPPED TO THE CUSTOMER WITH THE FOLLOWING COMPONENTS:-**

**\*HARNES/CONTAINER.**

**MAIN RISERS WITH CONTROL TOGGLES.**

**MAIN DEPLOYMENT BAG.**

**CUTAWAY HANDLE.**

**MAIN PILOT CHUTE AND BRIDLE.**

**^RESERVE PILOT CHUTE WITH SPECIAL CLOSING LOOP.**

**#RESERVE RAM-AIR FREE BAG FOR SQUARE RESERVES.**

**RESERVE RIPCORDER.**

**RESERVE CONTROL TOGGLES.**

**MAIN LOCKING LOOP.**

**TEAR DROP 1 PIN SF OWNER'S MANUAL.**

**\*All ZEROX harness/containers are manufactured to accept the Cypress A.A.D.**

**^Only the ZEROX reserve pilot chute may be used with the ZEROX harness/container system. Do not substitute with any other pilot chute.**

**#Only the ZEROX reserve free bag may be used when packing a ram-air reserve into the ZEROX harness/container system.**

**All components listed above are also available individually from: Your ZEROX dealer  
OR**

**Thomas Sports Equipment Limited  
Pinfold Lane  
Bridlington  
East Yorkshire  
YO16 5XS  
England  
Tel: + 44 (0) 1262 678299  
Fax: + 44 (0) 1262 602063  
E-mail: enquires@thomas-sports.com**

# **ZEROX OWNERS MANUAL**

## **TRAINING REQUIRED BEFORE JUMPING THE ZEROX**

The T.S.E. Zerox may be jumped only by persons who have received thorough instruction on its use from a qualified instructor. It is the responsibility of the owner and those whom he allows to use the system to ensure it is properly assembled, maintained, packed, worn and used, also that the user has the training and skill to use it properly. The manual is NOT a course of instruction on how to make a parachute jump. Nor does it contain the various regulations that govern sport parachuting and related activities. This information is best obtained from government bodies. The person who inspects and packs both the main and reserve parachutes must be qualified to do so. Finally, nothing in this manual is meant to discourage the reader from using the T.S.E. Zerox in a reasonable and prudent way. The information and specifications in this manual were in effect at the time of printing. Thomas Sports Equipment Limited, however, reserve the right to change specifications or design at any time without prior notice and without incurring any obligation.

## **ABOUT MODIFICATIONS**

It is common for jumpers to "improve" their rigs by altering them. A high percentage of these alterations cause malfunctions or make it difficult to use the rig correctly. Typical alterations include conversion to "pull out" pilot chute, changing the configuration of the harness and changing the length of the bridles. Check with Thomas Sports Equipment before you make any changes to your Zerox. It was designed and built the way it is as a result of years of testing and development. There are reasons for having things the way they are, reasons that might not be apparent at first. Check with the Manufacturer before you make any changes; even "insignificant" alterations may have very negative or unforeseen effects.

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## THE MAIN

### PACKING THE MAIN

First refer to the manufacturers instructions for laying out the main parachute, setting the brakes and otherwise preparing the main parachute to put into the deployment bag. If you are unable to obtain suitable instructions for the main the conventional pack job will generally suffice. If you require further instruction seek the advice of a suitable instructor.

1. Fold the parachute slightly wider than the deployment bag.
2. Place the parachute on top of the deployment bag, then push the parachute out into the corners of the deployment bag. Then close the bag, making sure that you have filled out the corners of the bag.
3. Thread the locking bungies through the grommets of the bag and stow all the lines on the deployment bag.
4. Pull the pilot chute bridle out of the top of the deployment bag until the load bearing ring on top of the parachute seats against the grommet on the top of the main deployment bag.
5. Set the deployment bag in the tray of the main container with the lines facing the bottom the container and the pilot chute bridle coming out of the top of the container. ( SEE FIGURE #1 )

FIGURE #1

# WARNING

## YOUR LINES MUST BE STOWED AT THE BOTTOM OF YOUR CONTAINER

6. When using a throw away pilot chute the bridle line comes out of the top right hand side of the main container.
  - A. Close the bottom flap #1, then the top flap #2, right side flap #3, then the left side flap #4. Insert the curved pin through the closing loop from right to left. Next, dress the container making sure that the risers are correctly positioned. Remove the pull up cord. Note that the container will not open if the pull-up cord is left in.
  - B. There is a small pocket down the right side of the bottom flap this is for running the bridle line down to the pocket on the B.O.C. If the throw away is on the right of leg then mate the velcro on the pilot chute bridle, starting from the top of the pouch on the leg strap and follow along the side of the container putting the extra bridle length under the right hand side flap of the container.

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## FOLDING THE PILOT CHUTE

- A. Lay the pilot chute out over the leg strap, net side up so the edge of the circle is at the mouth of the spandex pocket. S-Fold the bridle line on the half of the pilot chute over the pocket.
- B. Fold the pilot chute in half over the bridle line. (see FIGURE #2) then bring the corners up to form a wide triangle. (see FIGURE #3).
- C. Fold the triangle in half, forming a skinny triangle. (see FIGURE #4).
- D. Fold the triangle into thirds, forming a skinny triangle, then fold it once more. (see again FIGURE #4).
- E. Fold the pilot chute in half so that the handle is even with the skirt. (see FIGURE #5)
- F. Then stow the pilot chute into the spandex pocket with the toggle showing at the top.

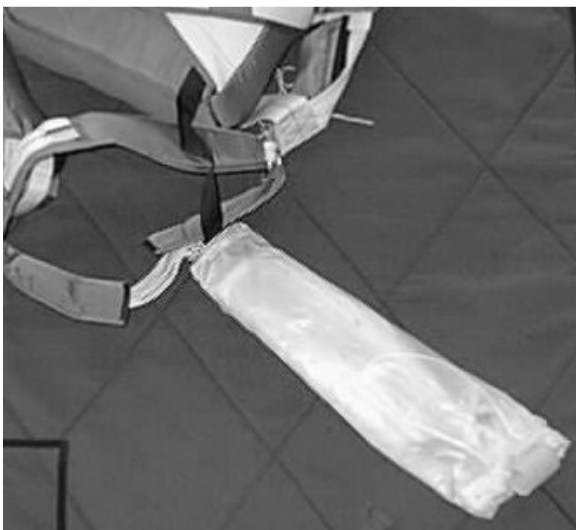
**FIGURE #2**

**FIGURE #3**



**FIGURE #4**

**FIGURE #5**



# ZEROX OWNERS MANUAL

## INSTRUCTIONS FOR THE PULL-OUT

- A. S-fold the pilot chute bridle across the top of the container and lay the folded pilot chute on the center of the deployment bag with the base coming out of the right hand bottom corner.
- B. Place the pull-out pad onto the velcro on the bottom of the container.
- C. Close the container with the closing loop, following the #'s on the main container flaps.
- D. Ensure that where the pad and pin is attached to the pilot chute, it is free from snagging on the right side.
- E. Remove the pull-up cord and tuck the excess bridle and base of the pilot chute up under the bottom right hand flap.

## COMPATIBILITY

Make sure that the main parachute you are packing is the right size for the Zerox it is connected to.

## CLOSING LOOP LENGTH

A too short closing loop results in a dangerously hard pull. One that is too long looks messy and can snag on protrusions on aircraft or on lines, whilst performing C.R.W. Clear a channel for the loop, visually inspect the complete pack job from both the front and back (back pad) of the Zerox. Ensure that no lines, parachute or pilot chute material can hinder the closing loop passage through the main container.

There are many types of main parachutes on the market today and the Zerox can be manufactured to accept most of them. Because of the size range available on the main parachutes this manual does not contain instructions on inspection and assembling each one, for these steps it is the responsibility of a qualified packer to use the appropriate method for any main he / she packs and to pack according to the harness/container manufacture's instructions. Deviating from these instructions results in a void pack job and no responsibility will be held by THOMAS SPORTS EQUIPMENT LIMITED.



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## PACKING A SQUARE RESERVE

Because of the size range of square reserve canopies available today, this manual does not contain instructions on inspection, assembling and flaking. For these steps the rigger must follow the instructions provided by the canopy manufacturer.

### TYPICAL PRO PACKING EXAMPLE

#### TOOLS REQUIRED

- 1 X T Bar
- 1 X Pull up cord (cypres type)
- 1 X Packing paddle
- 1 X Temporary Pin
- 1 X Packing plate

1. Thoroughly inspect the pilot chute bridle, deployment bag, canopy, lines, links, locking loop, risers, container and harness.
2. Follow canopy manufactures instructions for
  - A. Attaching the canopy to risers.
  - B. Attaching toggles to steering lines.
  - C. Flaking canopy.
  - D. Folding the nose of the canopy.
  - E. Setting deployment brakes.
  - F. Splitting the tail.
  - G. Stowing the slider.
  - H. Dressing the canopy.
3. Prepare the free bag so that it is ready to be packed. To do this, insert one end of the pull up cord through the grommet in the top and bottom of the bag, and tie it to the other end so that it won't slip out during the packing procedure. NOTE: Some riggers prefer to use a T bar instead of a pull up cord. Insert the T bar through the bag from the bottom. The T bar or pull up cord will be used later to pull the locking loop through the bagged canopy.



# ZEROX OWNERS MANUAL

## PACKING A SQUARE RESERVE

FIGURE #1

4. **FIGURE #1**

Dress the canopy to the width of the reserve bag.

5. **FIGURES #2, #3, #4**

Kneel on the trailing edge and keeping the center seam in the middle of the bundle, push the middle of the top of the canopy down to your knees until the bundle resembles two ears, as shown in FIG #2.

Spread the center of the trailing edge out to the approximate width of the reserve bag and kneel on it again. Using a pushing and rolling motion, shape the ears so that the bundle resembles the 'V' shape in FIG #3. Then place the reserve bag as shown in FIG #4. The grommet of the reserve bag and the T bar should be right at the crutch of the 'V' formed by the bag.

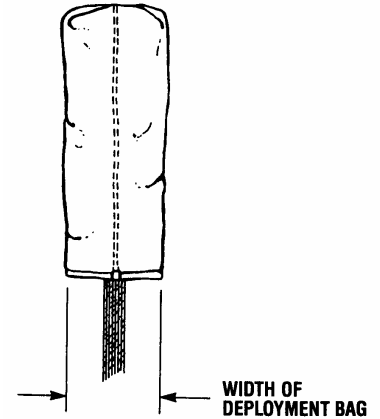


FIGURE #2

6. **FIGURE #5**

Kneel on the canopy so that your knee holds the locking flap of the reserve bag in place, then stuff each arm of the 'V' into its respective side of the reserve bag. The 'T' bar will be effectively surrounded by canopy and should be well filled as shown in FIG #5.



FIGURE #3

7. **FIGURE #6**

'S' Fold the rest of the canopy into the reserve bag as shown in FIG #6.

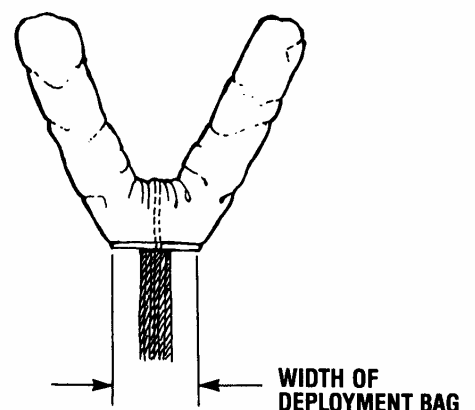
8. **FIGURE #7**

Lock the reserve bag closed with the suspension lines and safety stow ( only safety stow elastics must be used).

9. **FIGURE #8**

Stow the remainder of the suspension lines into the pouch on the under side of the bag. 'S' Fold half of the lines into the left side of the pouch and then the other half into the right side of the pouch. Be sure none of the lines are trapped between the Velcro at the mouth of the pouch.

10. You are now ready to put the reserve bag into the container.



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## PACKING A SQUARE RESERVE

FIGURE #4

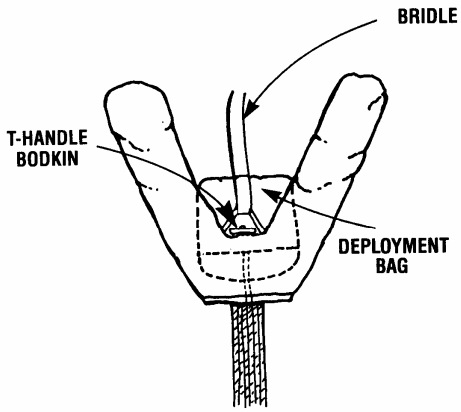


FIGURE #5

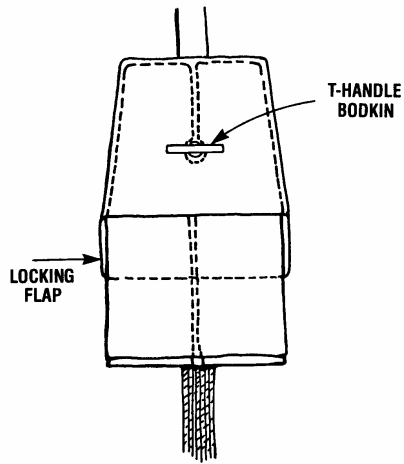


FIGURE #6

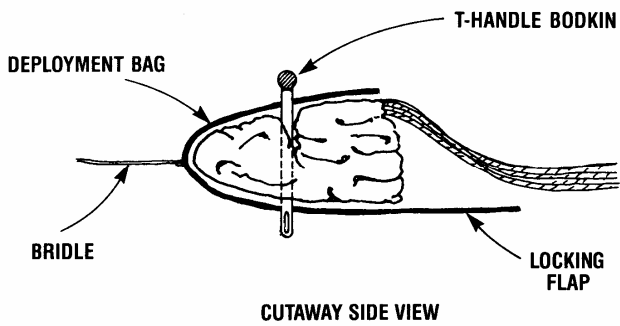


FIGURE #7

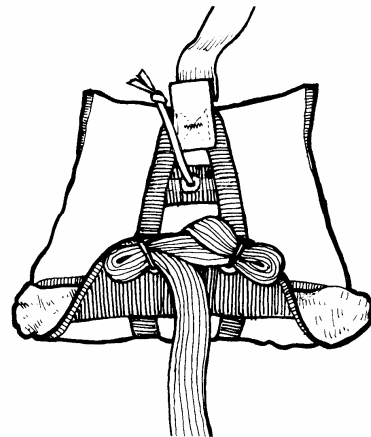
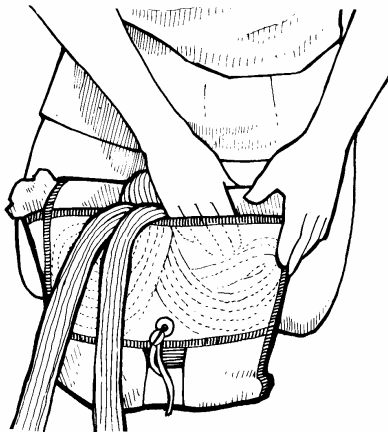


FIGURE #8



# ZEROX OWNERS MANUAL

## PACKING A SQUARE RESERVE

### CLOSING THE RESERVE CONTAINER.

Regardless of what procedure was used to place the canopy in the bag, the same procedure is used to close the container. **AT ALL TIMES.**

**STEP 1.** Close the inside bottom flap #1 and secure it with a temporary pin. Make long S- folds with the bridle from top of the bag to the bottom right hand corner of the reserve container as shown. Carefully tuck the bottom of the S-folded section under the inside bottom flap #1. As shown in fig #1.

**FIGURE #1**



**STEP 2.** Repeat this process on the left side make long S-folds in the bridle line from the top of the bag to the left hand corner of the container and tuck under the inside bottom flap as shown in fig #2.

**FIGURE #2**



# ZEROX OWNERS MANUAL

## CLOSING THE RESERVE CONTAINER.

**Step 3.** Close the inside top flap (fig #2) and secure with temporary pin. The bridle should come out between these two flaps. take a moment to check the amount of free bridle at this point. There must be at least five feet left from the junction of the closed flaps to the base of the pilot chute. If the excess bridle is too short, release the inside top flap and re do the S-folds.

**FIGURE #3**

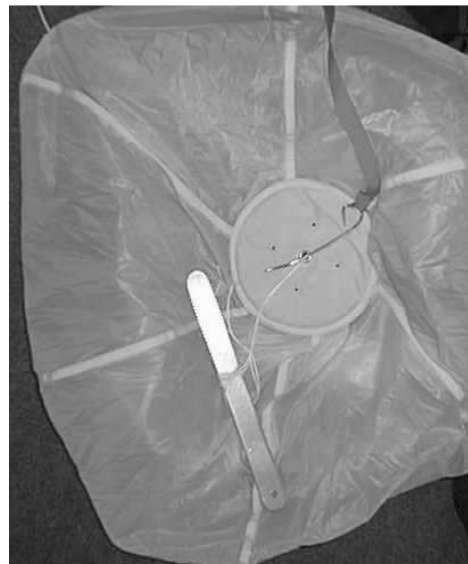


**STEP 4.** Fold the bridle to the left and make a series of short S-folds right up to the base of the pilot chute.

**FIGURE #4**



**FIGURE #5**



**STEP 5.** Thread the pull up cord through the bottom of the pilot chute and out the top. Centre the base of the pilot chute over the two flaps. (fig #4)

**STEP 6.** Make sure the base of the pilot chute is centred over the loop, then collapse the pilot chute and lock it with a temporary pin. (fig #5)

# ZEROX OWNERS MANUAL

## CLOSING THE RESERVE CONTAINER.

**STEP 7.** Pull all the canopy fabric out from between the spring. Folding the fabric rather than stuffing it between the coils reduces the bulk of the packed container. After pulling the fabric from between the springs, check to be sure the pilot chute base is centred under the crown. Now fully compress the spring to see how much loop can be pulled through the top of the pilot chute. If you can pull more than 1/2" to 3/4" of an inch through, the loop is too long. Now would be the best time to open the container and shorten the loop.

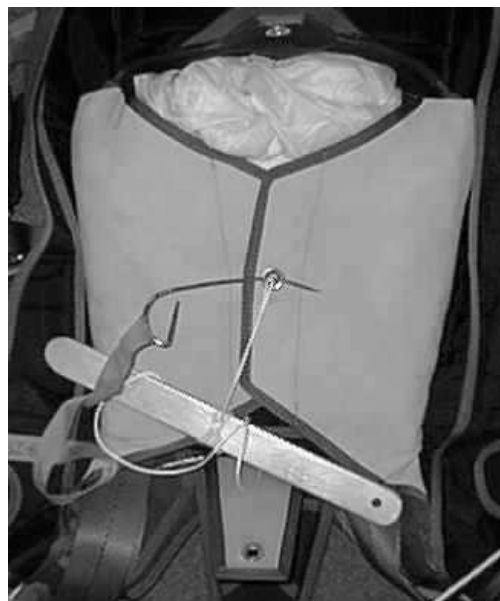
**FIGURE #6**



**STEP 8.** Lay the fabric flat all around the pilot chute and fold it under in wide folds to the centre. Fold the top and bottom first, then the sides. Keep the fabric folds of the pilot chute out from under the open flaps. (fig #6)

**STEP 9.** Thread the pull up cord through the side flaps (flap #3 and #4) and close, secure with a temporary pin. Make sure that the folds in the pilot chute stay flat and neat. (fig #7)

**FIGURE #7**



# ZEROX OWNERS MANUAL

## CLOSING THE RESERVE CONTAINER.

**STEP 10.** Thread the pull up cord through the outside bottom flap (flap #5) and insert the temporary pin.

**STEP 11.** Thread the pull up cord through the outside top flap (flap 6) and insert a temporary pin. If the force necessary to close the last two flaps seems excessive this will cause a hard pull. Lengthen the closer loop. A maximum pull force of 25lbs or less is required on the ripcord pin.

**FIGURE # 8**



**FIGURE #9**



**FIGURE #10**



**STEP 12.** Replace the temporary pin with the reserve ripcord pin. Insert the ripcord handle into its pouch on the main lift wed.

**STEP 13.** Place the rig on a clean surface with the back facing up and walk on it with stocking feet or clean shoes to help expel the air from the container and make it flatter.

**STEP 14.** Attach the main parachute risers.

**STEP 15.** Dress the container, seal, sign and log the reserve pack job.

**STEP 16.** COUNT YOUR TOOL ???????.

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## MAINTENANCE & CARE OF ZEROX

### INTRODUCTION

Your Zerox will last longer, look better and function correctly if it is maintained. A Zerox actually requires very little maintenance unless it is subjected to unusual conditions such as a jump into salt water or a muddy landing.

### INSPECTION

The best approach in maintaining you rig is to periodically spend a few minutes examining every detail on it. This inspection should be done at least once a month. If any wear or damage is found, it should be rectified immediately, putting off repairs may result in a malfunction. In addition to inspecting the rig yourself, ask your rigger to inspect the entire assembly when the reserve is repacked. Particular attention should be given to these areas;

1. **Breakaway system.** Refer to the 3-ring section in this chapter for detailed information on inspecting the canopy releases.
2. **Reserve system.** This includes the reserve ripcord, locking loop, pins, handle, housings, container and associated sewing. You should not attempt any repairs or modifications to any of these items unless you are an appropriately rated rigger. you can, however, spot little problems before they become major.
3. **Harness.** The harness should be inspected periodically for broken stitching of frayed webbing.
4. **Main container.** Inspect the plastic stiffeners in the container flaps, any broken stiffeners should be replaced. Check grommets, replace any grommets that are badly deformed or pulling out of their setting. A rigger must replace grommets or plastic stiffeners.
5. **Main pilot chute.** Check the centerline (a length of nylon tape inside the pilot chute that extends from the handle to the base) of the main pilot chute. It must be firmly sewn at each end: there must be no broken stitches or torn fabric. Inspect the seam that joins the pilot chute mesh to the pilot chute fabric. If the mesh is torn or badly frayed, replace the pilot chute.
6. **Locking loop.** The main container is held shut with a locking loop made of nylon suspension line sheathing. This loop is subject to wear. If it wears out and breaks the main canopy may release prematurely and a malfunction may occur. Replace the loop with a duplicate if wear is noticed.
7. **Velcro.** Velcro tape has many applications in parachuting. However, it wears out and loses its adhesive ability after a while. It also gets 'clogged' with dirt and bits of grass and should be cleaned occasionally.



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## MAINTENANCE & CARE OF ZEROX

**Your Zerox is manufactured mostly from nylon. Nylon is very durable, but is susceptible to damage from several sources.**

**1. Sunlight.** The ultraviolet rays in the sunlight quickly and permanently weaken nylon. Keep your Zerox out of direct sunlight as much as possible.

**2. Acid.** Nylon is also damaged by acid. Keep your Zerox away from hangar floors, dirty car trunks and similar areas where acids may be found. If such contamination does occur, immediately and thoroughly wash the rig with plenty of warm soapy water. Until a rig can be washed, baking soda will neutralize most acids. If acid damage occurs or is suspected, a rigger should thoroughly inspect your Zerox.

**3. Oils and Grease.** Most petroleum compounds do not weaken nylon: they simply stain it. Such stains should be promptly removed by a rigger using the proper petroleum solvent.

**4. Water.** Water will not damage your rig, but may cause some fabric colours to run. Salt water will rust the hardware if not promptly and thoroughly washed off with plenty of fresh water. Your rig will maintain its new appearance longer if it is kept dry.

**5. Soil.** Soil will not damage your rig. Brush off the soil after it has dried and gently wash with warm soapy water. Be sure that the soil is not in the housings, leg snap, 3-ring release, reserve ripcord pin or loops. Consult a rigger if your rig is heavily soiled or extremely dirty.

**6. Abrasion.** Nylon quickly frays if dragged over concrete or other rough surfaces. Do not drag your rig on the concrete while packing, use a packing mat.

**7. Certification.** After 10 years your Zerox harness/container should be returned to Thomas Sports Equipment Ltd for overhaul and re certification.

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## THE 3-RING RELEASE SYSTEM

### INTRODUCTION

The 3-Ring release system was invented by the Relative Workshop in 1976. It was the first practical release system that allowed a parachutist to jettison their main parachute in one motion by simply pulling a single handle.

Not only is the 3-Ring easier to operate than previous parachute release systems, it is also more reliable.

Once the main parachute is jettisoned, the only remaining items on the harness are two smooth rings that cannot snag a deploying reserve. Some other popular release systems can, and have interfered with the deploying reserve.

### MODIFYING THE 3-RING RELEASE

The great reliability of the 3-ring system results from the correct functioning of every one of its individual components. Therefore, the owner should not modify the system in any way. These modifications, among others, will cause the system not to operate properly:

- \* Substituting risers that don't have type 2 sheathing for the locking loop. Do not use risers that have loops made of kevlar or solid cord.
- \* Not using a break away handle with cable manufactured with the special yellow coating (Teflon). This Teflon impregnated coating is important. Other plastic coatings may cause the cable to bind in the housings or loops, making it difficult or even impossible to jettison the risers.
- \* Using a break away handle with cables of the wrong length. The length of these cables are critical to ensure each riser releases in the proper sequence.

Each ring forms a lever with a ten to one mechanical advantage as it passes through the other. A force of 1,000 LB (pounds) on the large harness ring exerts a force of only 10 LB (pounds) on the white loop (opening shock usually totals about 1,000 LB or 500 LB on each riser). Because of the mechanical advantage provided by the 3-ring design, only a force of approximately 1 LB (pound) on the top ring keeps the release together. This is the important reason for keeping foreign matter, for example bits of grass, small sticks, ect, out of the 3-ring assembly.

When nylon stays in the same position for a long period of time, it begins to conform to that position or takes a "set". If the 3-ring release system stays assembled for too long, the nylon can become so stiff that the low drag from a malfunction (such as a streamer) won't pull the riser off the ring.

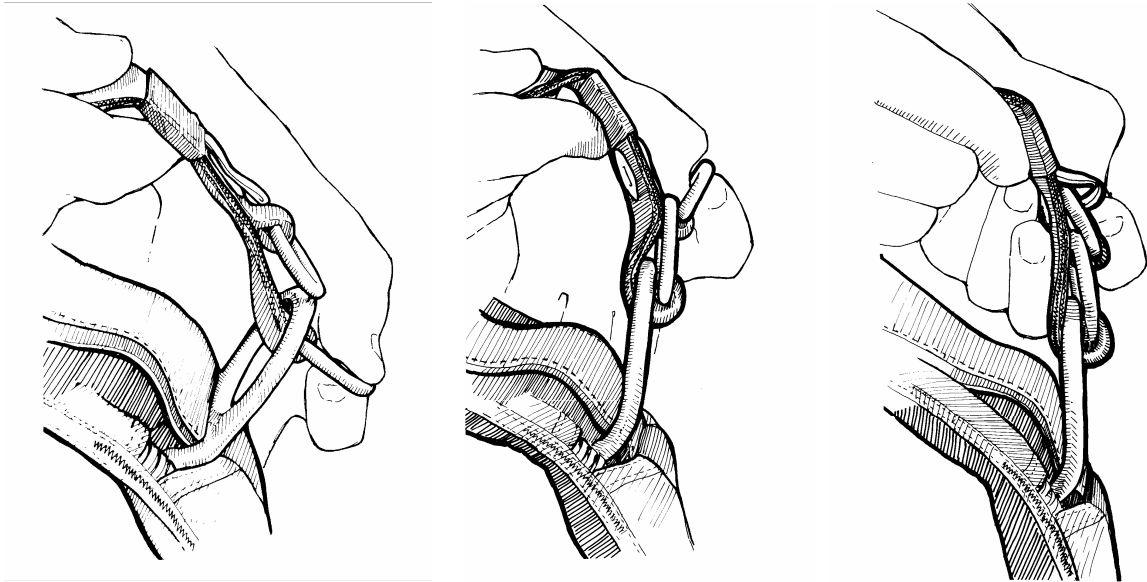
The 3-ring release system must be disassembled, flexed and inspected every month or 50 jumps.

## ZEROX OWNERS MANUAL

### ASSEMBLY OF THE 3-RING RELEASE

Before assembling the 3-ring release system, ensure the risers are not twisted Lay the container, Zerox, face down, as you would pack it.

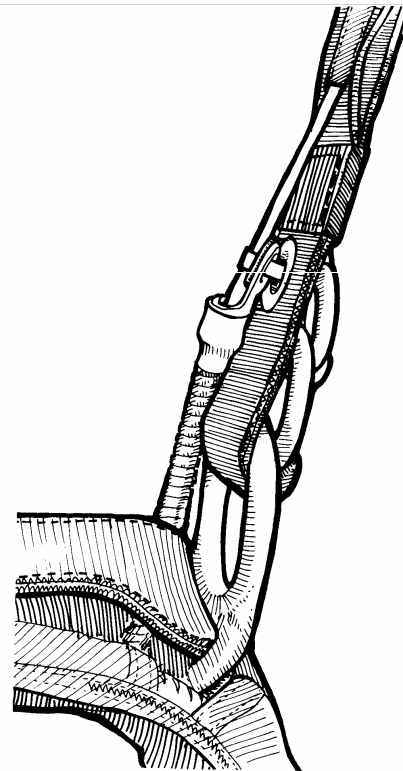
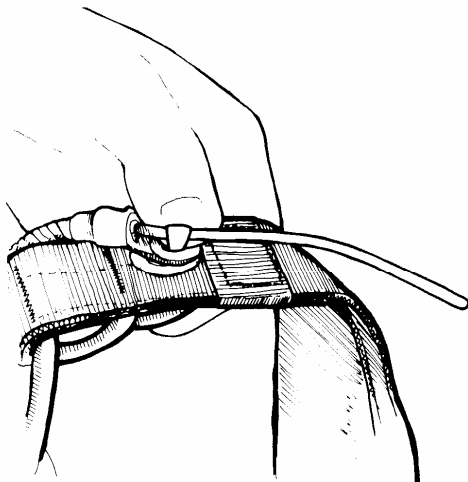
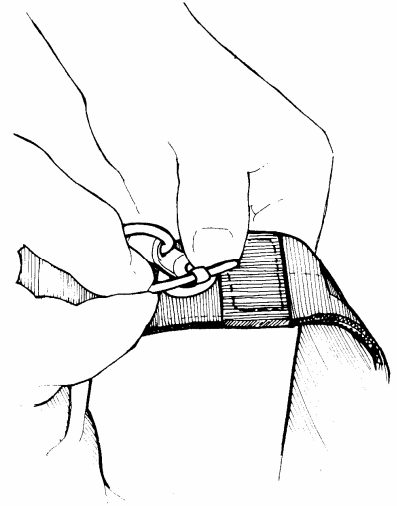
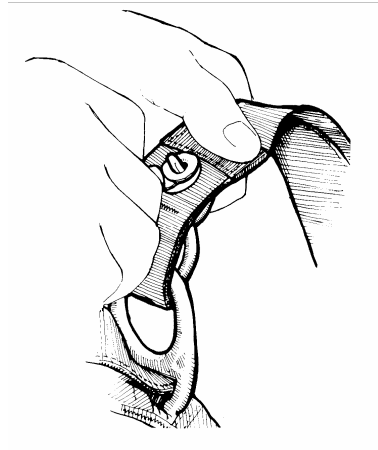
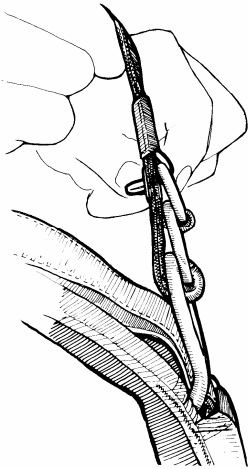
1. Thread each cable into its housing and stick the handle to the harness. The handle should be positioned as close to the ends of the housings as possible so that no cable is exposed.
2. With the rings of the risers facing towards the floor, pass the ring on the end of the riser through the large ring from above. Fold it back towards the parachute and risers.
3. Thread the smallest ring through the middle ring in the same way, but make sure it does not pass through the large ring.
4. Bring the white loop over the small ring only, then through the riser grommet so it pokes out the back of the riser.



## ZEROX OWNERS MANUAL

### ASSEMBLY OF THE 3-RING RELEASE

5. Continue treading the white loop through the grommet on the end of the cable housing. The flat side of the fabric housing grommet should be against the riser.
6. Thread the yellow cable through the white loop, ensuring that the loop isn't twisted. take care with the cable so that you don't bend it too sharply or kink it. Insert the free end of the cable in the channel on the back of the riser.
7. Repeat the above steps with the other riser.

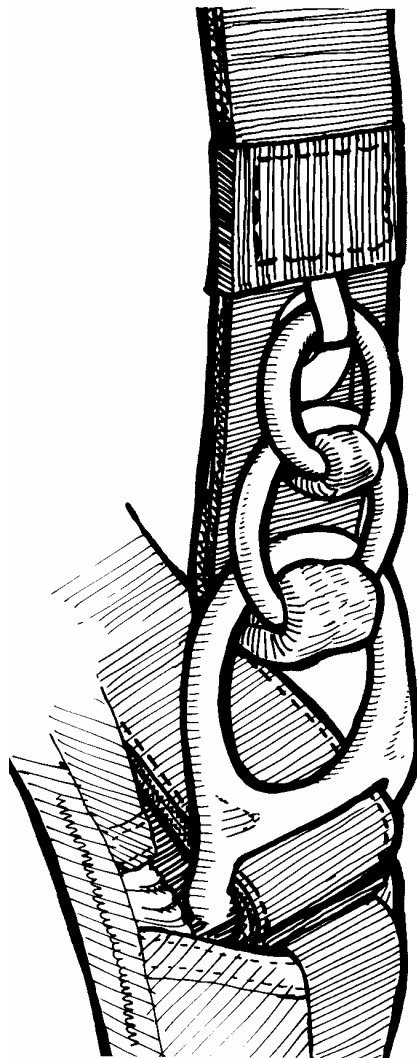


# ZEROX OWNERS MANUAL

## PRE JUMP INSPECTION

Before jumping the Zerox check the 3-ring release system for the following:

1. Each ring passes through only one other ring.
2. The white loop passes through only the small ring.
3. The white loop passes through the grommet on the end of the cable housing without twists.
4. Nothing passes through the white loop except the yellow (Teflon) cable.
5. The 3-ring release handle is securely fixed to the harness and that no cable is visible.

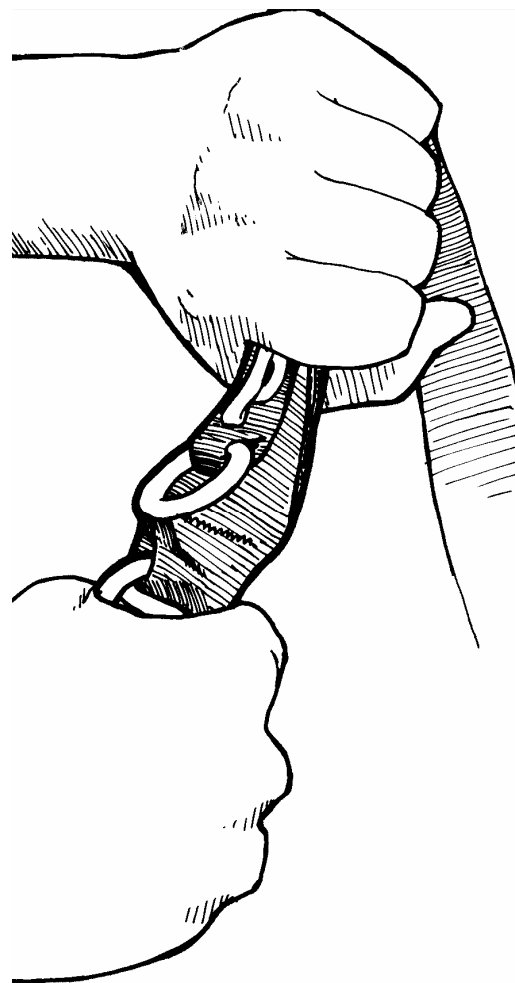


## ZEROX OWNERS MANUAL

### REQUIRED PERIODIC MAINTENANCE FOR THE 3- RINGS

The Booth 3-ring release system has been in use for many years with excellent results. Although the system is as durable as the rest of the harness and container assembly, it requires periodic maintenance and inspection to ensure proper operation. Generally, it is NOT recommended that the risers be attached to the harness when new awaiting rigging ready to jump. Like all skydiving gear, the 3-ring release should be carefully inspected and operated on a regular basis. The procedures below should be done at least every month. This is especially important if the rig has not been used for a month or more, such as during the winter. Immediate inspection is required if it has been subjected to some abuse, as a drag across the runway, a water landing or exposure to a lot of dust or sand.

1. Every month operate the 3-ring release system on the ground. Extract the cable completely from the housings and disconnect the risers.
2. While the system is disassembled, closely inspect it for wear. Check the white locking loops (the ones that pass over the smallest ring and through the grommet) to be sure they are not frayed.
3. Check the velcro on the break away handle and main lift web to be sure it is clean and adequately holds the handle.
4. Check the cable ends for a smooth finish. The ends are finished at the factory to have a smooth, tapered surface. This prevents the cable from hanging up in the loop. Check the cable ends and consult a rigger or the manufacturer if a 'burr' or 'hook' is present.
5. Check the stitching, including that which holds the large 3-ring to the harness and the hand tacking that prevent the housings from sliding through their keeper. (This keeper is a loop of webbing located in the chest strap a few inches above the release handle.)
6. Take each riser and vigorously twist and flex the webbing near where it passes through each ring. The idea is to remove any set of deformation in the webbing. Do the same thing to the white loop.
7. Check the housings for dents or other obstructions. Use the cable to do this.
8. Clean and lubricate the release cable with a light silicon spray. Put a few drops on a paper towel and firmly wipe the cable a few times. A thin, invisible film should remain.



# ZEROX OWNERS MANUAL

## **REQUIRED PERIODIC MAINTENANCE FOR THE 3-RINGS**

9. Inspect the security of the fittings at the end of each housing. If one of these fittings were to come off the housing, a riser might release prematurely.
10. If any wear is found, consult the manufacturer or a rigger before using the Zerox.
11. Reassemble the system. Double check it. Make sure the risers aren't twisted.

Thomas Sports Equipment appreciates any comments from users that relate to the safety, operation or maintenance of the 3-ring release.

It is important to maintain the system even more frequently in humid, muddy or freezing conditions. If the Zerox becomes immersed in mud or muddy water, clean the 3- ring release system with a mild solution of soap and water. Any rusted components must be replaced.

## **REPLACEMENT PARTS.**

Thomas Sports Equipment supplies replacement parts for its rig at reasonable cost. When ordering parts for your rig, include the serial number, type and date of manufacture of your Zerox so the proper items can be quickly supplied. This information is written on the manufacturing label on the front of the left hand rear reserve riser.

# ZEROX OWNERS MANUAL

## INSTALLATION OF COLLAPSIBLE PILOT CHUTE

1. **Remove old pilot chute and bridle line, if fitting to old system.**
2. **Check bag for proper size grommet, number 4 or 5 only.**
3. **Thread the red retention line and kill line from the outside of the bag to the inside of the bag**
4. **Thread the two loops at the bottom of the bridle line into the grommet, number 4 or 5 only.**
5. **Insert rapid link into loops forming a circle with the white kill line in the center.**
7. **Attach red retention line using the rapid link to attachment point on canopy.**





# ZEROX OWNERS MANUAL

## INSTALLATION OF COLLAPSIBLE PILOT CHUTE



### ATTACHMENT:

**REMEMBER: YOU MUST COCK THE SYSTEM BEFORE YOU CLOSE YOUR CONTAINER. TO COCK THE PILOT CHUTE PULL THE APEX (HANDLE) OF THE PILOT CHUTE UNTIL THE CENTRE LINE OF THE PILOT CHUTE IS TAUT \*DO THIS BEFORE PACKING THE CANOPY INTO THE BAG\***



# **ZEROX OWNERS MANUAL**

## **BEFORE USING THE ZEROX**

- 1) **READ AND UNDERSTAND THIS MANUAL, AND BE QUALIFIED BY PROPER INSTRUCTION FOR SPORT PARACHUTING ACTIVITIES.**
- 2) **CHECK BOTH 3-RING RELEASES TO SEE THAT THEY ARE CORRECTLY ASSEMBLED, AND THE RELEASE HANDLE IS SECURELY VELCROED TO THE MAIN LIFT WEB.**
- 3) **CHECK THE MAIN CONTAINER CLOSURE FOR THE CORRECT PIN POSITION AND THE CORRECT ROUTING OF THE BRIDLE LINE.**
- 4) **CHECK THE RESERVE CONTAINER FOR CORRECT PIN CLOSURE AND ROUTING OF THE RIPCORD. BE SURE THE RESERVE RIPCORD HANDLE IS WELL SEATED IN ITS VELCRO POCKET.**
- 5) **THE MAIN PILOT CHUTE MUST BE PROTECTED BY ITS POUCH, BUT THE HANDLE MUST BE EASILY VISIBLE AND ACCESSIBLE.**

## **PUTTING ON YOUR ZEROX**

**When lifting the ZEROX, hold the main lift web between the large harness ring and the chest strap. Put the rig on as you would a jacket, setting the yoke across the shoulders. Step through the leg straps, being sure they are not twisted, then thread the chest strap through its friction adapter and tighten it to where it is most comfortable and snug. Be sure it has NOT been threaded through the reserve ripcord handle.**

**Tighten the leg straps until they are comfortably snug, and then put the free ends of the straps down the leg pads or in the elastic keepers. It is important to secure these free ends; a loose end can easily be mistaken for a deployment handle.**