

# Next Century Tandem

## Owner's Manual



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## **A word from the President**

Dear valued customer !

First of all, we like to congratulate you to your new Next Century Tandem System.  
By choosing it you have shown impeccable taste.

Paratec is reknown for it's superiour Tandem Technology since 1993, when we presented our first Tandem System, the Ultra Tandem.

Unlike most other brands, Paratec is one of the few manufacturers which designs and manufactures all components in house.

Our new production facility on the Saarlouis-Düren municipal airport is one of the most modern parachute manufacturing sites in Europe if not worldwide.

Over 30 skilled and longtime employees craft our products with the utmost care and quality as you'd expect it from a product which proudly bears the „Made in Germany“ label.

We are sure your new Paratec Century Tandem System will be dependably at your service on every tandem skydive you make.

Sincerely

Eva Schuman  
Managing Director  
Paratec GmbH

# I. General Information

## 1.1.1 Name

Next Century Tandem System

## 1.1.2 Purpose

The Next Century Tandem resembles a dual harness parachute system, capable to fly and land 2 persons after a predetermined parachute jump of up to 240 kg of maximum suspended weight.

## 1.1.3 Parachute system Assembly

The parachute system consists of:

- Main parachute
- Reserve parachute
- Harness / container system
- Main riser with toggles (main steering toggles & flare toggles)
- Free bag with reserve pilot chute and bridle
- Main deployment bag
- Drogue with bridle
- Reserve Ripcord assembly
- Cutaway handle with secondary drogue release assembly
- Main drogue release handle

## 1.2 Design and Performance Specifications, Operation limitations

### 1.2.1 Design Specifications

<b>Size</b>	<b>340</b>	<b>372</b>	<b>402</b>
Planform	eliptical		
Surface area	31 qm	34 qm	38 qm
Projected surface area	28 qm	31 qm	34 qm
Aspect Ratio	1 : 2.85		
Span	9,47 m	9,98 m	10,47 m
Avg. Chord	3,38 m	3,50 m	3,68 m
Pack Volume	732 cui	820 cui	840 cui
System Weight	16 kg	20 kg	23 kg

### 1.2.2 Performance Specification (values based on MSW and projected surface area)

<b>Size</b>	<b>340</b>	<b>372</b>	<b>402</b>
Absolute Speed in m/s	14	14	14
Horizontal Speed in m/s	13,5	14	13,5
Vertical Speed in m/s	3,5	3,5	3,5
Glide Ratio	3,9 : 1	3,9 : 1	3,9 : 1

### 1.2.3 Operating limitations

Size	340	372	402
Min pack opening altitude Main	1500 m	1500 m	1500 m
Min pack opening altitude Reserve*	600 m	600 m	600 m
Minimum pack opening speed	60 KTS		
Maximum pack opening speed	180 KTS		
Minimum suspended weight	100 kg	110 kg	120 kg
Ideal suspended weight	180 kg	195 kg	210 kg
Maximum suspended weight	205 kg	215 kg	225 kg
Operating temperatures	-55°C - 70°C		

*Notice:*

*Maximum pack opening speed is defined as the speed of the parachute system at canopy activation and/or container opening.*

*Maximum suspended weight is defined as the weight of the jumper (s) including parachute system and all auxiliary equipment attached when exiting the aircraft.*

*Pack opening altitude is defined as the altitude at canopy activation and/or container opening*

*Operating temperature range is defined as the ambient temperature at parachute deployment and/or container opening.*

*\*Notice:*

*When using minimum actuation altitudes, refer to the manual of the AAD in use.*

## II. Rigger's Section

### 1. General

This manual can not substitute for the knowledge and training you get in a proper riggers course. The scope of this manual is also not to enable you to pack this reserve parachute without any basic skills.

**It is in the responsibility of every trained and licensed rigger, to assemble inspect and pack to the manufacturers instructions, recommendations and his best knowledge and ability before he seales and signs any pack job.**

**It is also in the responsibility of every user to stay within the limitations set by the manufacturer regarding maintenance cycles, wing loading and pack opening speeds to not endanger himself nor his fellow skydiver friends!!**

This manual is rather a guideline and a source of compact information, both for the owner, the user and the rigger.

### 2. About Packing

Paratec recommends the Pro Packing Method for the Twinspeed Reserve. Should you wish to Flat Pack, this is also acceptable. The Twinspeed reserves look, handle and pack no different than any other 9 cell reserve on the market. The Pro packing Method is probably the most logical and efficient method of packing a reserve today. Nevertheless, the packer should pay extra attention to the following steps:

- Always keep your lines under tension, tying them together at the connector links
- clear stabilizers, perform neat S-folds, clearing all line groups
- while folding the tail, make sure your steering lines stay in the centre of the pack
- split the nose part in a left and right half, keeping the center nose exposed
- seat the base of the reserve with the slider properly, so it won't shift
- match your packing (fabric distribution) to the dimensions of the individual free bag
- after the canopy is in the bag, follow the manual of the rig manufacturer.

**And most important of all: Inspect before your pack!**

### **3. Read before assembling**

Since parachutes are manufactured and inspected by people, there is always the possibility of human error in terms of defects. Therefore, inspect the entire parachute system, Reserve, Harness/Container, Main Parachute and all other functional components, before you begin to assemble, pack or use this parachute system.

### **4. Inspections**

To be carried out at assembly, before every repack and after emergency use According to the manufacturer's regulation, every NEXT Century Tandem System and/or it's components must be inspected by qualified personel, before it is used for the first time, before every reserve repack, no matter if it was used or not and after it was handled in an improper way such as after water jumps etc. The periodic inspection and repack cycle for this Harness Container Sytem is 12 months. Other countries may have different regulations, so please check with your responsible governing body. Read the instructions in this manual completely before you begin.



## 5. Inspection Table

<b>Points of Inspection</b>	
<b>Harness / Container</b>	<b>Inspect for</b>
Main Lift web	damaged edges, velcro damage, broken stitches, ravelled stitches
Reserve rip cord, ripcord pocket, cable housing	tight fit in pocket, bent pin, enough excess cable, worn out velcro, broken stitches, loose tacking on MLW and / or reserve flap
Chest and leg straps	damaged edges, velcro damage, broken stitches, ravelled stitches, worn out elastic keepers
Cutaway pad, drogue release cables, cutaway housings,	damaged edges, velcro damage, broken stitches, ravelled stitches, worn out elastic keepers
Container flaps	broken plastic stiffeners
Grommets	sharp edges, bad or improper setting
AAD set up	according to manufacturer's installation, damaged cables
Main riser	velcro damage, bent rings, damaged closing loop, hardened webbing on 3-ring, good toggle fit
Free bag and pilot chute	velcro damage, bent rings, damaged closing loop, hardened webbing on 3-ring, good toggle fit,
Main deployment bag and drogue	damaged grommets, old rubber bands, retract system of drouge in good condition, closing pin ( flex pin )
Closing loops	proper length, not frayed, general contition, proper type for AAD used
Entire hardware	rust, sharp edges, cracks, correct installation
<b>Canopy</b>	
Links	Assure the barrel nuts are tight, not stripped or cracked.
Slider	Check for correct assembly, the fabric for weave imperfections, the grommets for proper setting, knicks and dents.
Lines	Check for continuity, trim, burns and excessive fraying. Check for complete existence of all bartacks.
Stabilizer Attatchments Line Attatchments	Check for proper slack to the connecting lines, the slider stops and for imperfections in the fabric.
Seam starts	Check for back stitches and the existence of bartacks.
Seam work	Check for loose stitches, continuity and snags.
Fabric	Check each cell (ribs, Top Skins, Bottom Skins) for imperfections.

## 6. Packing the Reserve



Sort and flake the canopy



Flake the nose 4 left - 4 right



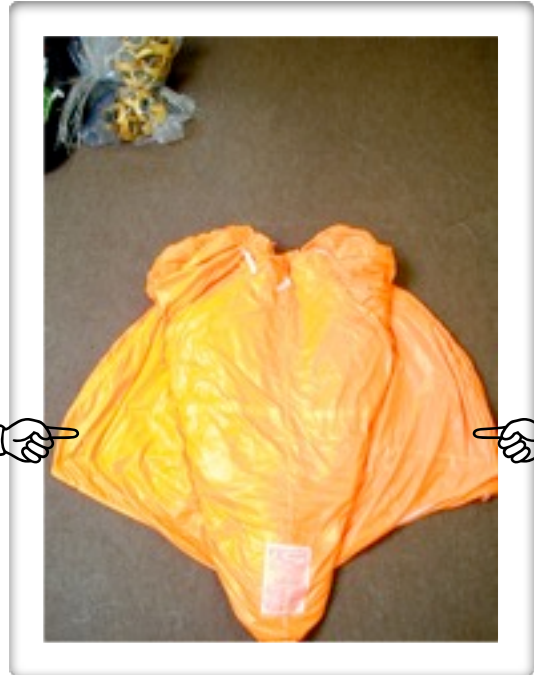
Bring up the tail  
Position the trailing edge of the centre cell on the lines and bring the corresponding sides of the trailing edge around the canopy, placing them **BEHIND** the outermost cells



Extend the flakes of your nose left and right to fully cover the trailing edge



Close up shot of a properly dressed nose, with the slider in the centre and the trailing edge behind the flaked nose



Place the canopy on the floor and dress it to the shape as in picture above.

Please take extra care that all 4 corners left and right are fully exposed and the centre cell remains facing down



Perform 1<sup>st</sup> S Fold on top of the



Spread the dressed canopy alongside the center seam and expose the centre cell



Roll the centre cell down to the



Position the free bag in front of you



Lift up the base gently and pull the free bag underneath it. By using a T Bodkin you can make sure the base sits right at the spot where the loop will pass through later on.



Bring the first „ear“ forward to sit at a 90° angle from the base



Perform a S fold with about one third of the ear extending over it



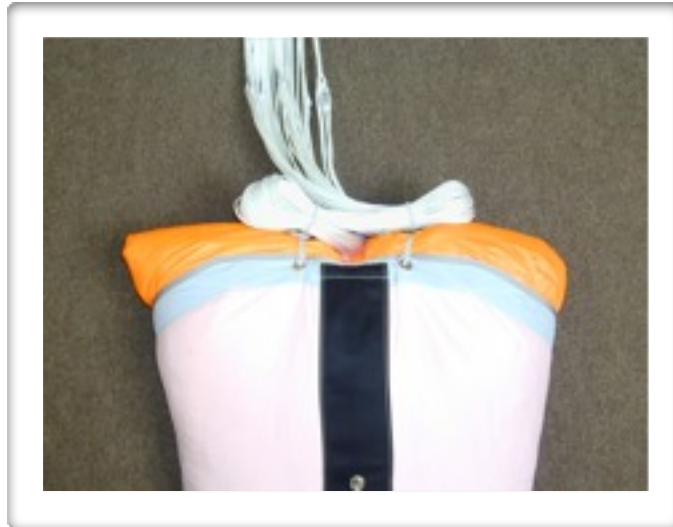
Push the top end into the corresponding side of the bag by sliding it on top of the lower part of your S fold towards the tip of the bag.



Execute the same step with the opposite side. Do not push your S folds completely into the bag as you will need some fabric to fill the rear corners of the reserve container



Roll the extending S folds downward and under to create the required thickness at the lower end to fill the corners of your reserve container

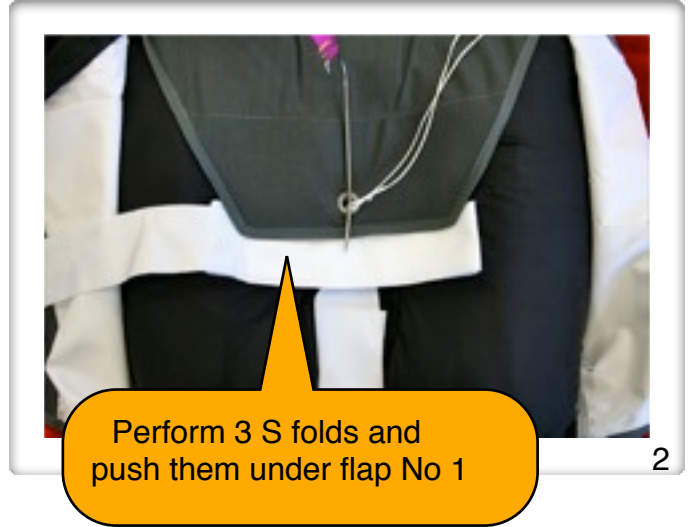
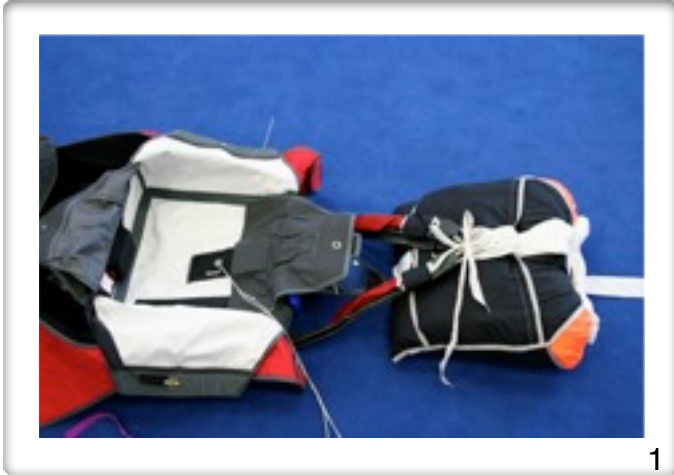


Close the mouth of the bag, using the safety stow and continue with the stowing of the lines into the lines pocket

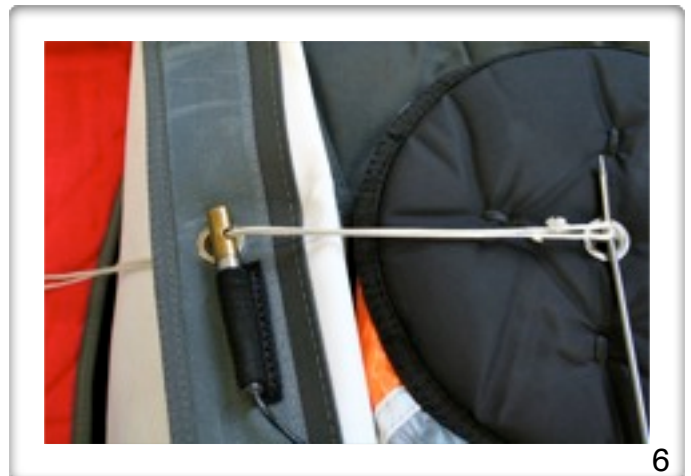
Should you use your Twinspeed Reserve in a different Container System than the Next Century Tandem Container, please follow the manual of the relevant manufacturer from this point onward.

Riggers to pack a complete Next Century Tandem System, please continue with the next page

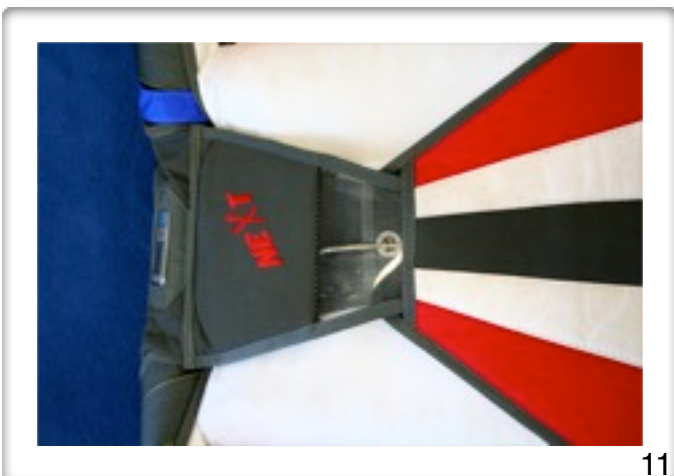
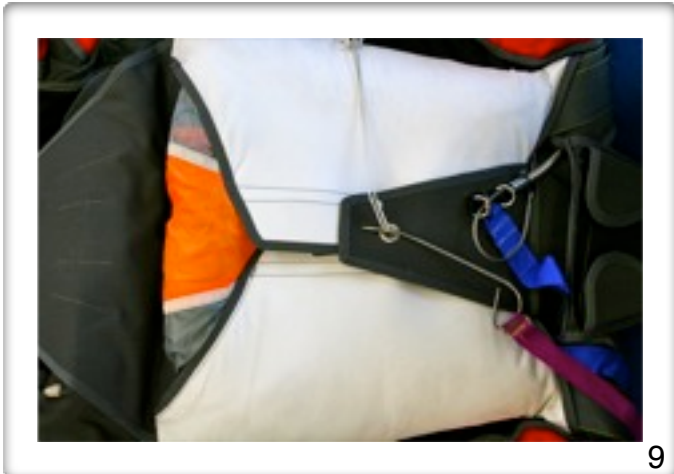
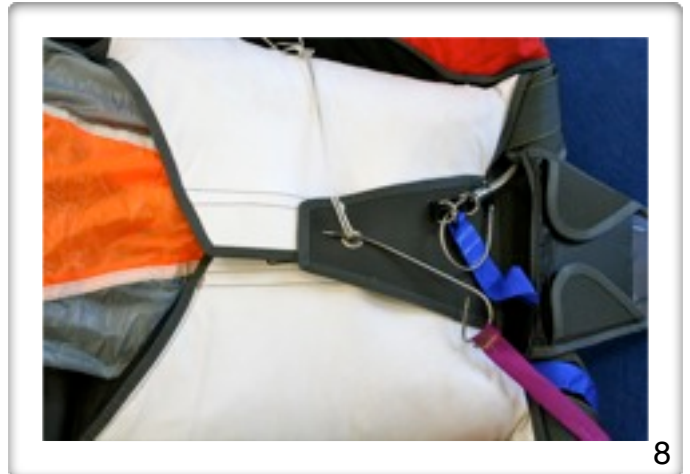
To close the container, follow the pictures left to right and top to bottom



Clear all fabric from spring prior to compressing it and dress it as seen in this picture. It resembles a long rectangle pointing towards the main container



Continued form page 15





## III. Operator's Section

### 1. General

This manual can not substitute for the knowledge and training you receive in a proper Tandem Master course. The scope of this manual is also not to enable you to operate this parachute system without any basic skills.

**It is in the responsibility of every trained and licensed operator and/or owner to pack and operate to the manufacturers instructions and to his best knowledge and ability in the use of this equipment.**

**It is also in the responsibility of every operator and/or owner to stay within the limitations set by the manufacturer regarding pack opening speeds and maximum suspended weight to not endanger himself nor his passenger**

This manual is a guideline and a source of compact information, both for the owner and the operator.

### 2. About Packing

Paratec recommends the Pro Packing Method for the Century Twin Main Canopies. Should you wish to Flat Pack, this is also acceptable. Our canopies look, handle and pack no different than any other 9 cell tandem main on the market. Pro Packing is a standard in parachuting today, you therefor will not see any pictures of another folding variation in this manual. The Pro packing Method is probably the most logical and efficient method of packing a reserve today. Nevertheless, the packer should pay extra attention to the following steps:

- Always keep your lines under tension
- Clear stabilizers, perform neat S-folds, clearing all line groups
- While folding the tail, make sure your steering lines stay in the centre of the pack
- Position the slider on top of the slider stops and in the centre of your pack job.
- Match your packing (fabric distribution) to the dimensions of the individual main deployment bags
- After the canopy is in the bag, follow the manual of the rig manufacturer to close the container.

### 3. Packing the Twin and the Century Twin main canopy

General:

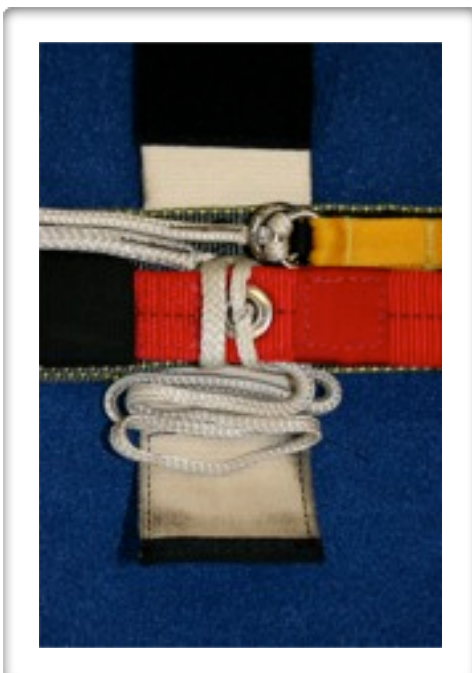
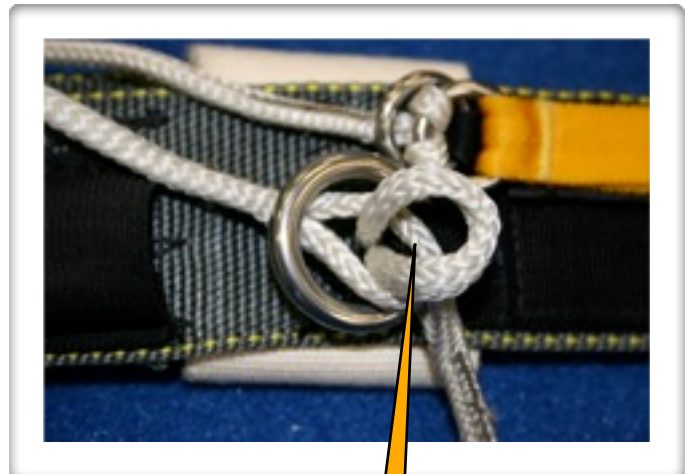
The following pictures show you how to prepare and close the container and pack the drogue in conjunction with a Paratec Main Canopy.

For all other main canopies used in a Next or Century Next Tandem System please refer to the manual of the OEM (Original Equipment Manufacturer)

The pictures appear in chronological order.

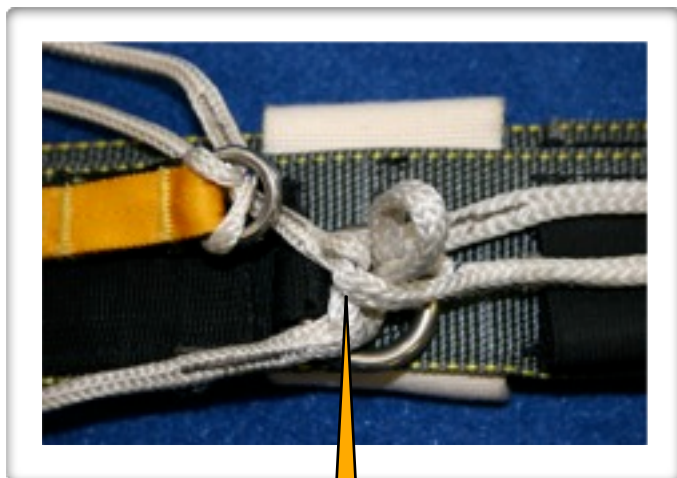
As they are self explaining, there are no comentaries to the pictures but rather notes where explanation is needed. Should any step in this procedured be not clear to you, please feel free to contact us.

#### 3.1 Brake setting on the Twin 340, 372 and 402



**Note!**  
These models only feature a break setting on the main steering lines !

### 3.2 Brake setting on the Century Twin 340, 372 and 402



**Note!**  
These models feature a break setting on the main steering lines AND the additional flare lines

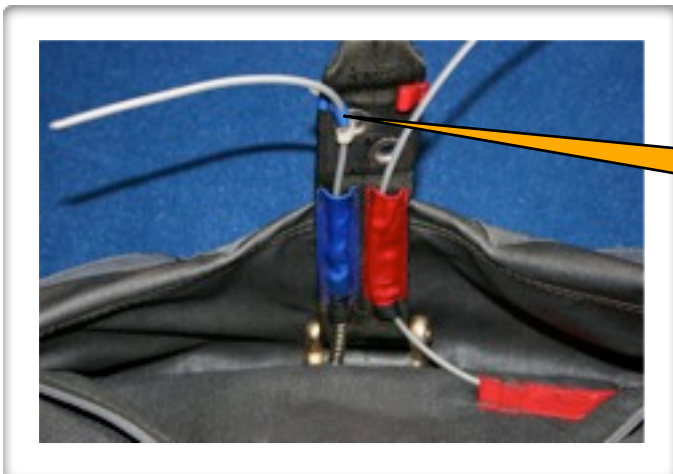


### 3.3 Inserting the main drogue release



**Note!**  
Should your main elastic keeper which is on the rear side be worn out you can use the secondary front one to stow the „cat's tongue“ of the release

### 3.4 Preparing the drogue riser



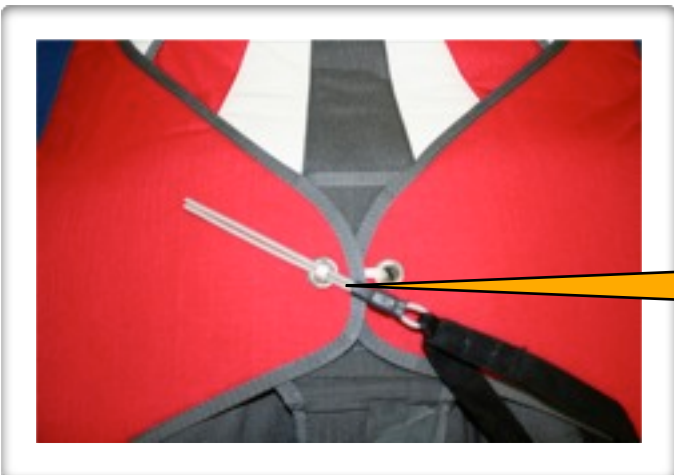
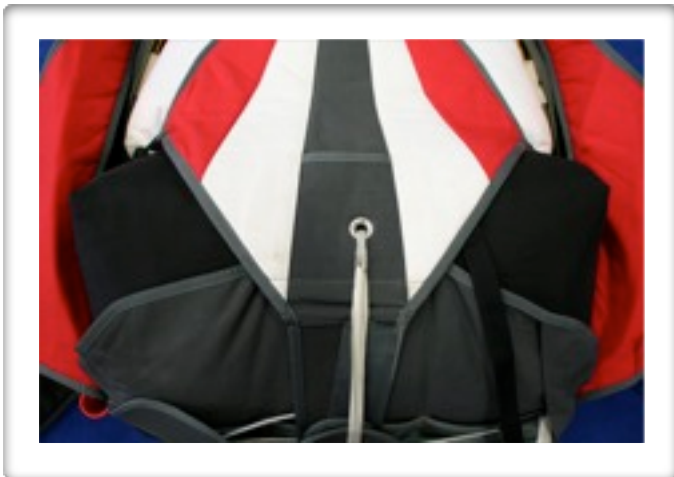
**Note!**  
The routings of the main and secondary drogue releases are colour coded.  
Always make sure the 2<sup>nd</sup>ary cable runs through the blue keeper to avoid losing the loop

### 3.5 Stowing the lines



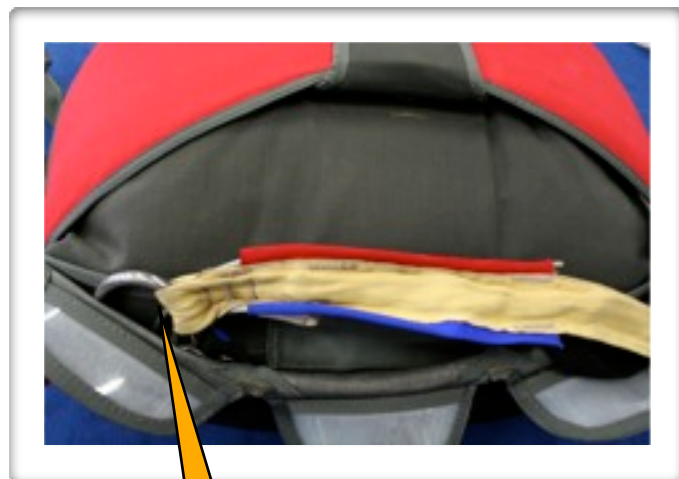
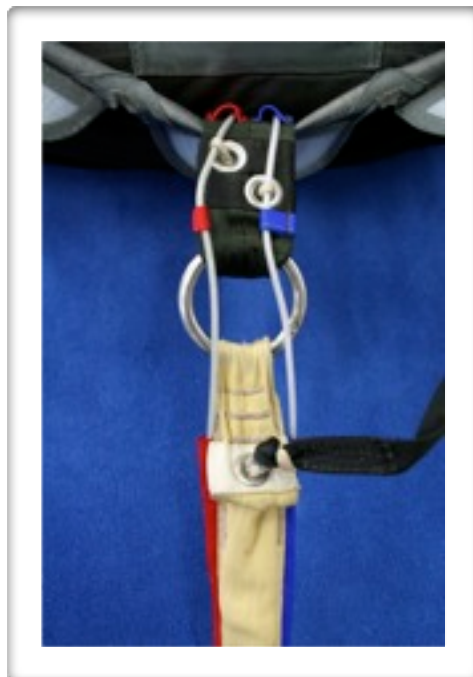
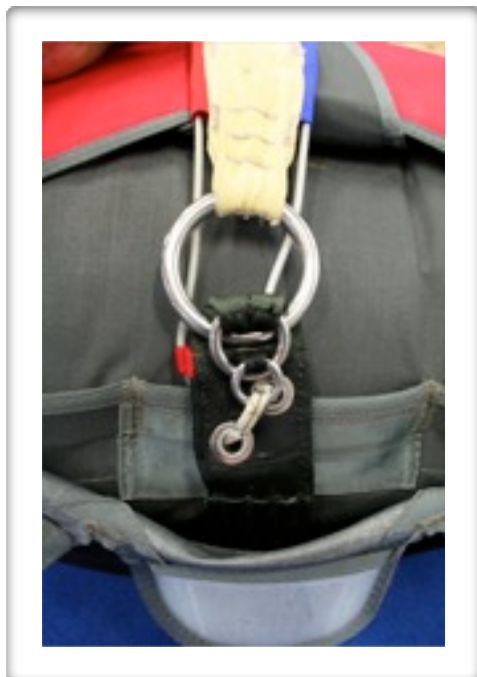
**Note!**  
Our Tandem main deployment bags utilize side grommets to stabilise the bag during line deployment. Please do not bypass them !!  
Always make sure you use stows which are new and keep the line bites tight to avoid line dump !

### 3.6 Closing the main container

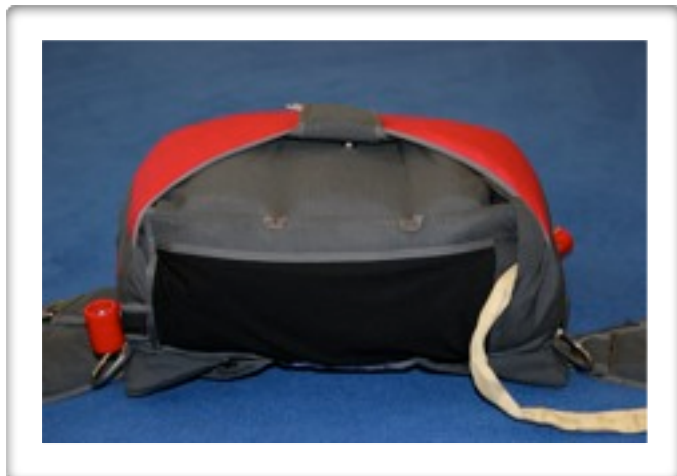


**Note!**  
Always leave minimum a finger's width of cable between the loop and the shrink tube to optimise the extraction of the flexpin due to better mechanical advantage

### 3.7 Connecting and folding the drogue

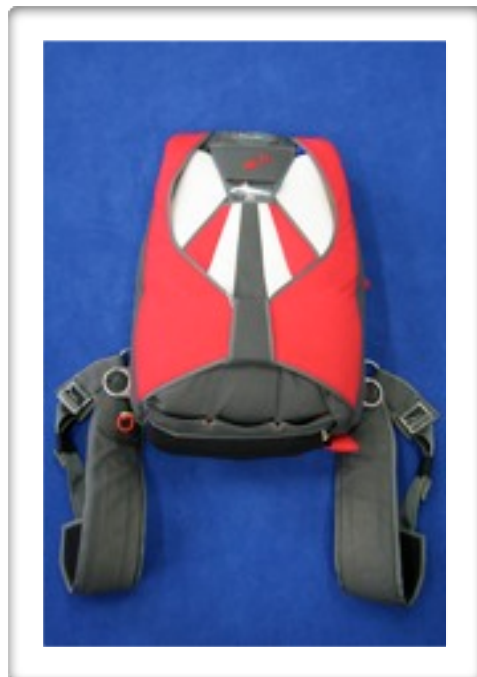


**Note!**  
Do not bend or try to fold the drogue riser. Just move it to the left and push it down into it's pocket.



**Note!**  
This way of folding let's you define the proper dimensions of the drogue to perfectly fit into it's pouch.





## IV. Maintenance Section

### 4.1 Cleaning your Container

We assume, that in the service life of this Parachute System it is most unlikely that except for the container part that it needs to be cleaned. Should you however have to do so, avoid washing the parachute if possible.

Cleaning will generally increase the porosity which will result in a loss in performance.

Usually mild soap and water applied to the dirty spots will get most contaminants out.

Avoid any acids, bleach and other aggressive substances.

Do not use cleaners and do not agitate the fabric by scrubbing it. A soft cloth or brush will do the work. In case of question contact your rigger.

### 4.2 Storage

Store your parachute in a clean (not over 20°C), dry and dark place. Also make sure that the storage place will stay in this manner during the time of storage. This will prevent the "hard to detect" ultra-violet damage caused by sunlight and other sources such as chemicals, acids and other aggressive substances. Wherever you can, pack in a shaded place to avoid extra UV exposure extending over the one you can't avoid during the use of it.

### 4.3 Maintenance

There are 3 different types of maintenance for a Speed 2000 Reserve!  
Mandatory ones, such as the

#### **INSPECTION with REPACK PROCEDURE and MINOR AND MAJOR REPAIRS**

All maintenance carried out on this parachute system has to be performed by a properly trained and certified parachute rigger or a qualified person with equivalent ratings (ratings may differ from country to country, so please check with your governing body before you choose your service person).

See the chart below for who may do what type of maintenance to your Paratec Tandem System or one of it's components

As an example here a list that shows "may and may not" according to the German regulations.

Type of Maintenance	Manu- facturer	Senior Rigger	Master Rigger	Maintenance Cycles
Assembling and compatibility check	yes	<b>yes</b>	yes	before release to service
Inspection and Repack	<b>yes</b>	<b>yes</b>	<b>yes</b>	- before release to service - within 12 months - periodically
Minor Repair	yes	no	yes	- after emergency use
Major Repair	yes	no	yes	- after water jumps - after improper handling

## 5. Definitions

### **Minor Repair**

"A repair any other than a major repair". Pointer Manual, Volume I, Glossary/Index. Such as:

#### **Replacing**

canopies, harness/containers, cable housings, automatic actuation devices and harness hardware, where major stitching is not required.

#### **Making repairs to**

containers, repair of stitching (re-stitch), patching holes in canopies.

### **Major Repair**

1. That, if improperly done, might affect weight, balance, structure strength, performance, flight characteristics or other qualities affecting airworthiness.
2. That is not according to accepted practices or cannot be done by elementary operations.
3. Which includes replacement of panels, ribs, lines, lateral bands, back straps, main lift webs.

Pointer Manual, Volume I, Chapter 7.01 and 07.02

## 6. Compatibility

Traditionally, your Paratec Tandem System comes with all components made by Paratec. Should you have the intention of operating it with other brands of main canopies, please check with your dealer, service person or Paratec GmbH for details.

WE DO WANT TO STRESS, THAT THE USE OF ANY FUNCTIONAL SUB COMPONENTS OF THE HARNESS/CONTAINER SYSTEM IS NOT CLEARED BY PARATEC AND WILL VOID ANY CERTIFICATION OR WARRANTIES.

**7. Parts lists**

<b>Description</b>	<b>Part Number</b>
Reserve bag TW340 R	40040107
Reserve bag TW372 R	40040140
Reserve bag TW402 R	40040141
Reserve pilot chute RSH II	51050240
Reserve ripcord	40040103
Cutaway handle	40040104
Secondary release	40040105
Reserve toggles	40040122
Main Release	40040102
Main deployment bag TW340	40040108
Main deployment bag TW372	40040142
Main deployment bag TW402	40040143
Main toggles	40040110
Flare toggles	40040115
Riser	40040109
RSL	40040106
Drogue, complete assembly	40040101
Drouge bridle	40040131
Drogue canopy only	40040132
Kill line complete	40040130
Kill line upper part	40040129
Drogue pocket	40040111
Main loop	40040116
Continuous loop Freebag	40040117

# Tandem Emergencies - Problems and Solutions

## Next Containers *with secondary drogue release routed through cutaway pad*

**Suggested system check order:** *Drogue, Primary, Secondary, Cutaway, Reserve, RSL*

- **Exit Phase (Before drogue-fall)**

<b><i>Problem/Malfunction</i></b>	<b><i>Solution</i></b>
Bag out immediately on exit	Deploy drogue, pull primary drogue release
Bag out on exit, can not deploy drogue *	Disconnect RSL, pull cutaway, clear riser covers, pull reserve handle
Unstable on exit	Attempt to regain stability. In an emergency, use the drogue to regain stability
Sidespin after exit *	Drogue side up: deploy drogue. Drogue side down: attempt to deploy drogue or pull reserve handle
Drogue release handle pulled prior to drogue deployment	Immediately deploy drogue
Unable to locate drogue	Pull cutaway then reserve
Unable to deploy drogue	Pull cutaway then reserve

- **During Drogue-Fall**

<b><i>Problem/Malfunction</i></b>	<b><i>Solution</i></b>
Drogue does not inflate	Pull primary drogue release after 6 seconds. Pull secondary drogue release after 8 seconds
Drogue rips off	Pull primary, secondary, cutaway and then reserve
Cannot locate (or pull) primary drogue release handle	Pull secondary drogue release handle
Cannot locate (or pull) secondary drogue release handle	Pull cutaway pad then reserve handle
Drogue bridle becomes entangled	Attempt to clear drogue. If drogue does not clear, pull reserve handle
Main container opens during drogue-fall	Immediately pull primary drogue release
Left arm incapacitated by injury or student	Pull secondary drogue release with right arm
Unable to locate or pull secondary drogue release handle (while left arm incapacitated)	Pull cutaway pad then deploy reserve using RSL
Right arm incapacitated by injury or student	Pull primary drogue release with left arm
Unable to locate or pull primary drogue release handle (while right arm incapacitated)	Attempt to pull cutaway pad with left hand then deploy reserve using reserve handle

- **Drogue Release Handle Pulled**

<b><i>Problem/Malfunction</i></b>	<b><i>Solution</i></b>
Main canopy malfunctions	Pull cutaway then reserve handle
Inflated drogue does not release	Pull secondary drogue release, if still does not release pull cutaway then reserve handle
Inflated drogue in tow	If still in tow by 3000ft, pull cutaway then reserve
Drogue deflates but does not release	Pull secondary drogue release, if still does not release pull cutaway then reserve handle
Deflated drogue in tow	If still deflated by 3000ft, pull cutaway then reserve
Drogue entangles with main canopy	Decide if main canopy safe to fly/land – if not, pull cutaway pad then reserve handle

\* *BPA recommendation as manufacturer gives no clear guidance*