



Personal Emergency Parachute

- Manual -



PARATEC

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1. Preface

This manual is intended to serve as both a source of information for users, regardless of parachute jump experience, as well as a reference for technical personnel.

The following product descriptions, explanations and examples may contain specific terminology and names not commonly used or understood.

In case of any open questions, please feel free to contact us.

2. Description

The NeXt WINGMAN System was specifically designed for the pilot and their unique environment. Remarkably thin, ergonomic and extremely comfortable, it has been optimized for the use in all types types of aircraft.

The NeXt Wingman consist of two main components, the harness/container (available in "Standard" or "Long" version) and a SPEED 2000 7-cell square ram-air reserve parachute. The parachute (aka "canopy") is available in three sizes based on operator exit weight (sizes: 190, 220 or 250sqft). The system is equipped with both an automatic and manual parachute deployment option and includes a protective storage abd carry bag made of 1000 Denier Cordura®.

The system is approved under U.S. Federal Aviation Administration (FAA) Technical Standards Office (TSO) C23d standard.



Pic 2.1
Wingman Container right side view



Pic 2.2
Wingman Container front (inside) view

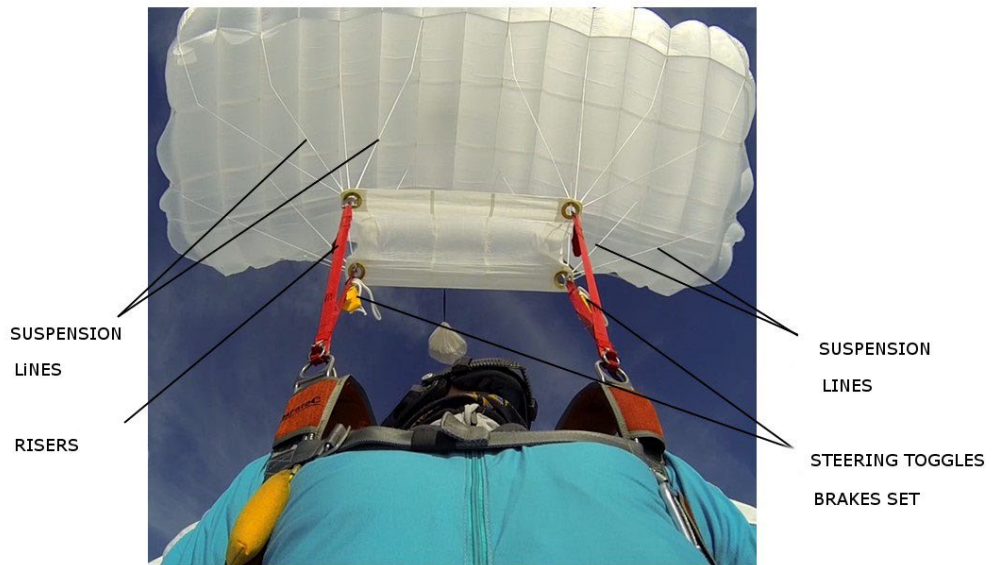


Pic 2.3
Wingman Container left side view



Pic 2.4
Wingman Container rear view

3. Description of Parts



Pic 3.1
Canopy Lines and Attachment Points



Pic 3.2
Canopy Terminology

4. Parachute Activation

4.1. Manual Activation: Ripcord

The ripcord handle is located on the left side of the operator's harness.

It is secured to the inside of the handle pouch with a layer of Velcro. For activation: pull the handle sideways out of the pocket towards the center of your body, then pull handle down forcefully as illustrated below.



Pic 4.1.1
View of the ripcord handle



Pic 4.1.2
First pull the handle towards the center of the body , then downwards.

4.2. Automatic Activation: Static Line

The NeXt Wingman is equipped with an activation static line which is located under the left Riser cover (see picture 4.2 below). The static line must be attached to the aircraft prior to

exit. **! Attention !**

In order to ensure an automatic opening of the parachute.

If, after leaving the aircraft, the pilot and the damaged aircraft move independently of one another at a constant speed and distance in the same direction, an automatic opening may not occur.

In this case, the parachute must be activated manually!



Pic 4.2.1
Visible part of static-line



Pic 4.2.2
Static-line; view under the cover

5. Opening Characteristics: Ram-Air Parachute

After the activation of the parachute deployment sequence by either ripcord or static line, the parachute canopy will deploy within seconds and begin performing as designed.

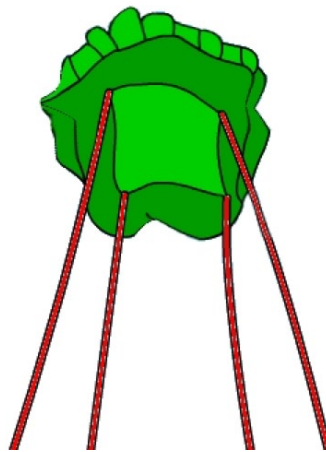
The parachute opening takes place in 3 phases:

Phase 1: The container opens. The spring of the auxiliary pilot parachute, which is under tension, is released and immediately transports the pilot parachute into the air flow. It then pulls the inner pack tray (aka freebag), which houses the packed parachute, out of the container.

Phase 2: The canopy is extracted from the freebag and cells start to inflate.

Phase 3: The canopy is now open, inflated and fully functional.

Note: The auxiliary pilot parachute and freebag are separated from the system during phase 2 and drift to the ground independently.



Pic 5.1
Canopy inflating (scheme)

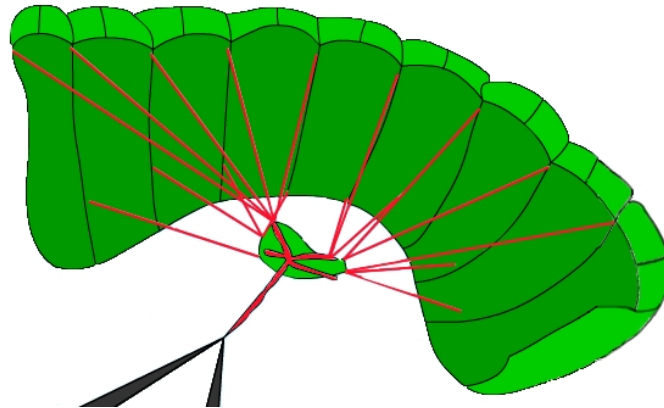


Pic 5.2
Canopy fully inflated

6. Line Twist

Although the Speed 2000 reserve parachute is designed to mitigate line twist after canopy inflation, they principally could occur in any parachute canopy.

Therefore, should a line twist occur, the operator must grip the risers and actively counter the twist with swinging the body and legs in the opposite direction.



Pic 6.1
Scheme: line twist

! Attention !

While the lines are twisted:

- **Do Not Release the Brakes**
- **Do Not Steer with the Risers**

Line Twists usually correct themselves after a while.

The untwisting procedure is reinforced with counter body swing.

7. Operation: Ram-Air Parachute

7.1. Canopy Flight: Brakes Set at 50% (see picture 14.3.1.2)

SPEED 2000 reserve parachute brake lines are pre-set and stowed at 50% when the canopy is packed. Following opening and inflation of the canopy, this setting translates to a more equivalent horizontal and vertical speed with the trailing edge of the canopy pulled slightly down.

The SPEED 2000 reserve parachute can be safely flown and landed in this pre-set (50%) braked configuration. Pulling down on either the left or right rear riser will cause the canopy to change direction respectively. This method allows the operator to avoid obstacles as well as steer the canopy into the wind in order to slow the forward speed over ground to facilitate a safe landing at slower speeds.



Pic 7.1.1
Flight configuration „Brakes Set”. trailing edge of the canopy pulled slightly down.

7.2. Canopy Flight: Brakes Released

7.2.1. Releasing the Brakes

Releasing the brakes after canopy inflation increases the forward speed of the canopy (aka Full Glide).

To release the brakes take both steering toggles (secured on the rear risers with velcro fasteners) in your hands, loosen them from the Velcro fasteners and pull them down about 5 cm with a small tug. The brakes should now be released and changes in direction can now be initiated via the toggles and control lines.



Pic 7.2.1.1
Flight position „arms up – neutral“ for full glide



Pic 7.2.1.2
Flare exercise with toggles

Helpful Hint: It is not necessary to release the brakes to change direction. It can be done by the rear risers with brakes set.

7.2.2. Manuvering: Steering Toggles (Brakes Released)

In order to initiate a change in direction, pull the toggle downwards, parallel to the longitudinal axis of the body; left toggle initiates a left turn and right toggle initiates a right turn. To stop the turn (rotation) and resume straight ahead flight simply return the toggle position to neutral (see pic 7.2.1.1.)



Pic 7.2.2.1
Right turn



Pic 7.2.2.2
Left turn

7.2.3. Landing: Steering Toggles (Brakes Released)

In order to perform a landing with the brakes released, actively pull both steering toggles parallel to the longitudinal axis of the body down to shoulder height (aka “the flare”). This toggle position corresponds to about 50% brake input and represents a safe landing configuration. In certain situations, the toggles can be pulled further to reduce more speed, however lower forward speed will result in less lift and the potential for a stall if the approach is too high.

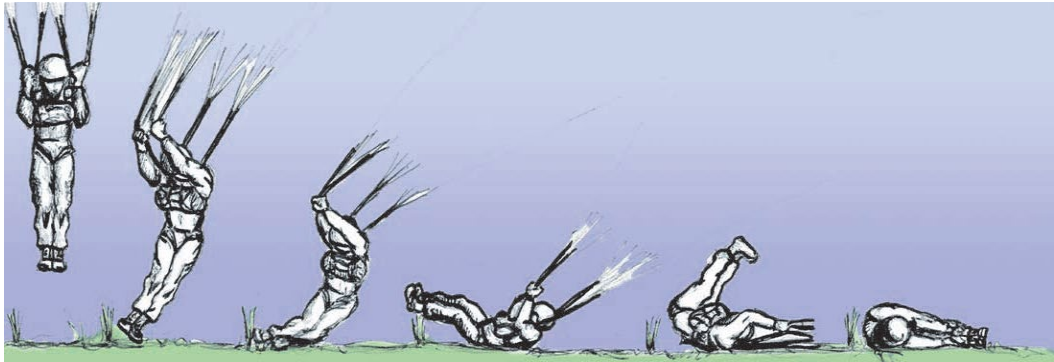
Note: The parachute canopies do not have a stall warning!



Pic 7.2.3.1
Landing by active flare with steering lines

7.3. Parachute Landing Fall

In order to better absorb the vertical energy when landing, execute a Parachute Landing Fall (PLF). A PLF is appropriate at any time and provides the best protection against injury when landing in or on obstacles such as roof tops, trees, roads, shallow water, power lines, etc.



Pic 7.3.1
Scheme of a Parachute landing fall

! Attention !

It is strongly recommended to perform a Parachute Landing Fall (PLF) in all cases!

7.3.1. Prepare for the PLF

Always prepare for the PLF in advance of touching the ground

- Press your knees and feet together
- Bend your knees slightly to the side
- Bring the elbow in front of the body
Keep hands at head height (do not let go of the toggles or rear risers)
- Place your chin on your chest
- Push the hip to the intended direction of the PLF
- Reduce body tension as much as possible

7.3.2. Sequence of PLF

- Feet touch the ground first
- The side of the leg and hip touch the ground one after the other in a rolling motion
- Roll your upper body diagonally over your back
- Fold the legs that are still closed to the other side

8. Maintenance of the Parachute System

8.1. Maintenance Guidelines (as per German § (15) LuftGerPV)

"The airworthiness of the air sports device must be checked by the owner or checked on his behalf in accordance with the instructions given by the manufacturer.

The owner is responsible for the timely and complete performance of the inspection. He must immediately report any defects in the parachute or the test instructions to the manufacturer".

Types of maintenance (measures to maintain airworthiness)

The airworthiness of the system is determined during each annual inspection and is based on system "condition". (There is no pre-determined limit or lifespan of the system).

All maintenance must be carried out and documented by trained and certified technical personnel with a valid license or a qualified person with equivalent authorization in accordance with the manual.

The following table provides an overview of the minimum requirements (based on German Aviation Equipment Ordinance) for the maintenance of the parachute equipment and components manufactured by Paratec GmbH. (The repair permissions, maintenance intervals, and scope of repair may vary from country to country. Please consult your local/national Skydiving Organization and/or your National Aviation Authority for further information).

Type of Maintenance	Manufacturer Recognized Service Company	Certified Personnel	Maintenance Interval
Assembly and Compatibility Check (Initial)	Yes	Yes	Initial Release to Service (In accordance with Manufacturer's Instructions)
Airworthiness Inspection and Reserve Repack	Yes	Yes	Periodic (Every 12 Months)
Minor Alteration Minor Repair	Yes	No	As Required (Water Contact)
Major Alteration Major Repair	Yes	No	Immediate As Required

8.2. Avoiding Damage

In order to prevent damage from UV radiation such as weakened harness materials and bleached colors, avoid prolonged exposure to direct sunlight.

Acid, of any kind, is damaging to nylon. It weakens the straps and especially the seams of the canopy.

8.3. Cleaning

! Attention !

Do not use acidic agents!
Avoid salt water contact!

- Remove dirt and grass stains with soap, a brush and warm water.
- The cover of the removable back pad cushion is made of cotton, it is machine washable at 30 ° C but is not suitable for drying in a tumble dryer..



Pic 8.2.1
Removable back pad cushion (if applicable)

Helpful Hint: If you notice any damage or changes, please contact us, the dealer or a service person.

9. Storage

Store parachutes in a dark, dry location away from UV radiation and free from vermin.

If the system is to be stored for a longer period of time, it is advisable to remove the Parachute canopy from the container, shake them up and put all into the transport bag or in a pillowcase.

When traveling to tropical regions, make absolutely sure, that the parachute is not stored in excessive heat (e.g. in the trunk of a car during the midday heat). If this has happens, open the complete system before the next jump and have it checked for airworthiness by a service person.

If the harness/container is stored or permanently kept in the aircraft when not in use, it must be covered to protect it from damaging UV radiation.

10. Disposal

The NeXt Wingman parachute system consists mainly of woven fabrics, as well as metal and plastic parts. For disposal, the individual parts should be separated according to applicable waste separation criteria and, if necessary, sent to recycling.

Based on the custom composition of individual Wingman systems, cadmium-plated fittings may have been used. Due to their coating, these cadmium-plated hardware components must be disposed of separately and may not be recycled with other metals.

Label and Serial Number



Pic 12.1
Position of label



Pic 12.2
Label with serialnumber

11. Spare Parts and Part Numbers (P/N)

All lost or damaged components have to be replaced by original spare parts.

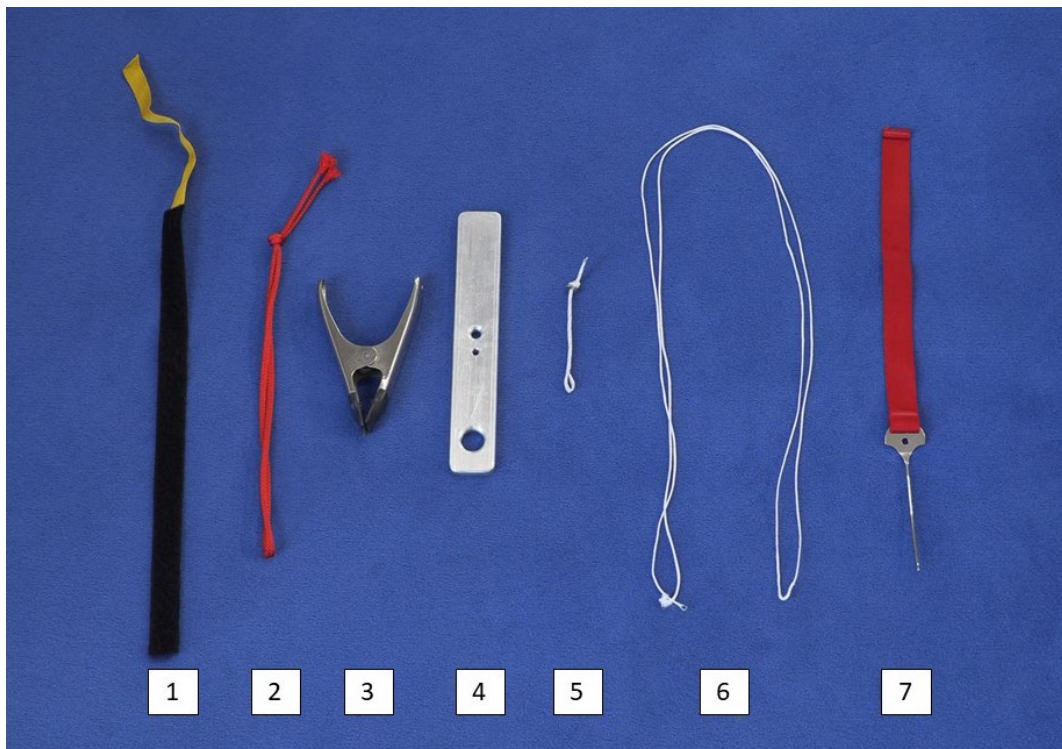
Component Description	P/N
Steering Toggles	50107
POD, Inner Pack Tray (Freebag)	50116
Spring-loaded Pilot Parachute	50118
Reserve Handle	50114
Static-line	50128
Back Pad Cushion (Removable)	35040153

12. Packing Instructions

The following instructions, to include pictures and tables, are provided as a guide for licensed rigging specialists to safely and effectively pack the NeXt Wingman. (The reserve should only be packed by qualified personnel).

12.1. Tools (Recommended)

(Not included in scope of delivery)



Pic 14.1.1
Tools and packing aids

1. Velcro
2. Packing Cord
3. Fixing Clamp
4. Packing Aid
5. Loop and Washer
6. Pull Up Cord
7. Temporary Pin

Helpful hint: The packing instructions contain terms and procedures which are not specifically defined as these are familiar to trained and licensed parachute rigging personnel. (If there are questions or a need for clarification, please contact Paratec GmbH).

12.2. Preparing the Free Bag



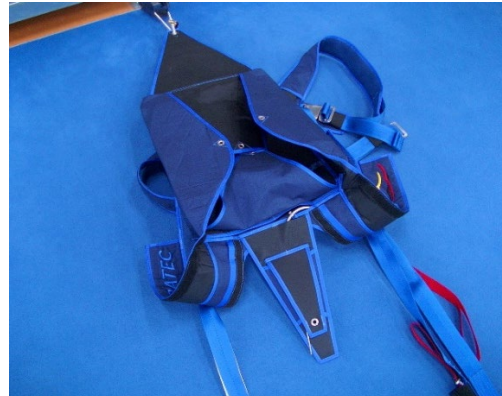
Pic 14.2.1
Cover the hook part of the Velcro using packing aid (1)



Pic 14.2.2
Feed packing cord (2) through free bag



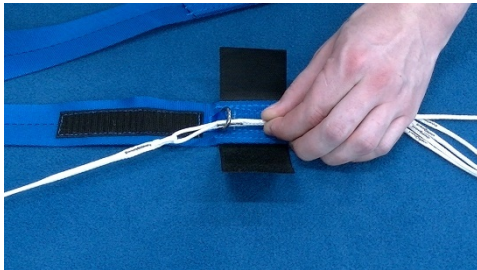
Pic 14.2.3
After inspecting H/C and canopy; place canopy as shown



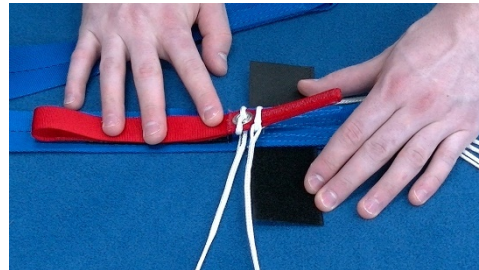
Pic 14.2.4
Attach H/C (as required)

12.3. Packing / Flaking the Canopy

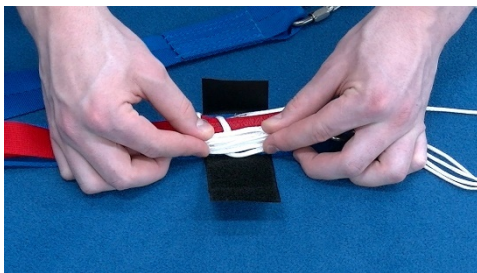
12.3.1. Prepare Toggles and Brake Lines Setting



Pic 14.3.1.1
Pull down untwisted steering line until the „eye“ is below the break ring



Pic 14.3.1.2
Slide the hard toggle tip through the eye and match the toggle and riser Velcro

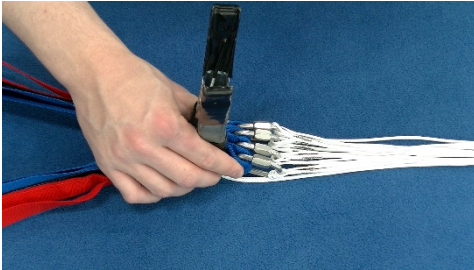


Pic 14.3.1.3
„S“ fold the steering line extension

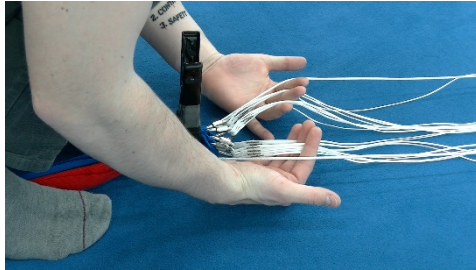


Bild 14.3.1.4
Close the Velcro; make sure to cover up all hook Velcro

12.3.2. Prepare the Canopy



Pic 14.3.2.1
Temporarily connect the 4 riser below the connector links (e.g. with a clamp)



Pic 14.3.2.2
Separate the lines (front/rear/steering) and check all the way up to the canopy



Pic 14.3.2.3
Lift up the canopy, check lines, and hold them under tension



Pic 14.3.2.4
Check steering lines for free unentangled routing



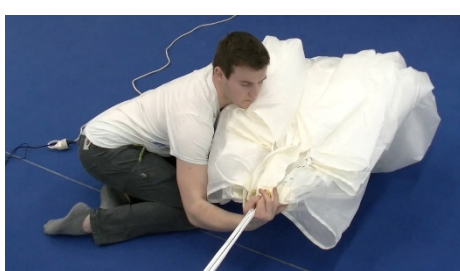
Pic 14.3.2.5
Route lines over the shoulder and start to flake the canopy



Pic 14.3.2.6
Organize and split cells (3 each side)



Pic 14.3.2.7
Ensure a symmetrically organized canopy



Pic 14.3.2.8
Lay organized canopy gently on packing surface

12.3.3. Prepare and Pack Canopy Into Free Bag



Pic 14.3.3.1
Reorganize lines and canopy fabric



Pic 14.3.3.2
Organized canopy; 3ea. cells left and right; center cell facing down



Pic 14.3.3.3
Prepare free bag and pull down center cell



Pic 14.3.3.4
Prepare separation of canopy left and right



Pic 14.3.3.5
Separate canopy simultaneously, keeping lines under tension using your knees



Pic 14.3.3.6
Compress center cell



Pic 14.3.3.7
Dress left side of canopy and gently push air out



Pic 14.3.3.8
lift up left side of the canopy; cell openings should face down



Pic 14.3.3.9
Fold tip under



Pic 14.3.3.10
And compress before pushing into the free bag



Pic 14.3.3.11
Completely push left side of canopy into left side of free bag



Pic 14.3.3.12
Now compress right side



Pic 14.3.3.13
Continue as on right side



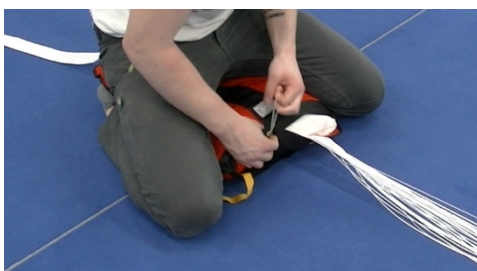
Pic 14.3.3.14
And compress before pushing into the free bag



Pic 14.3.3.15
Completely push right side of canopy into right side of free bag



Pic 14.3.3.16
Push all canopy fabric, that is still sticking out of the free bag back in



Pic 14.3.3.17
Route right end of the elastic loop through the right grommet



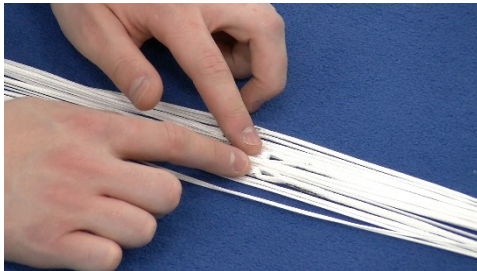
Pic 14.3.3.18
Pull the lines through the elastic; approx. 2 inches



Pic 14.3.3.19
Route left end of the elastic loop through the left grommet



Pic 14.3.3.20
Pull the lines through the elastic; approx. 2 inches



Pic 14.3.3.21
Check both sides of the line bundle for symmetry



Pic 14.3.3.22
Release the H/C (Pic 14.2.4) Flip the free bag over



Pic 14.3.3.23
Stow the lines from right to left into the line pouch



Pic 14.3.3.24
Pay attention to avoid knots



Pic 14.3.3.25
When finished remove Velcro packing aid and match free bag Velcro hook and pile. Do not trap lines doing this



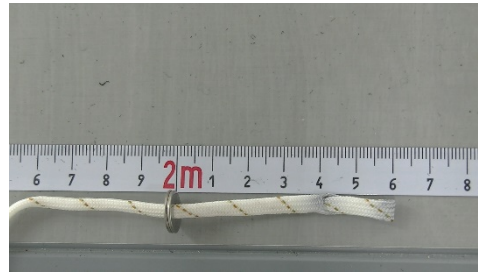
Pic 14.3.3.26
Lines completely stowed and line pouch closed

12.4. Pack and Close the Container

12.4.1. Installation of Closing Loop and Stowing of Risers



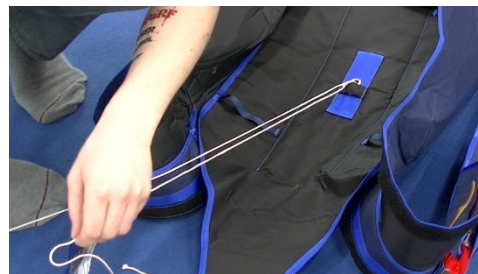
Pic 14.4.1.1
Free bag and container prepared



Pic 14.4.1.2
Length of closing loop from tip to washer: 6cm



Pic 14.4.1.3
Insert closing loop, stow washer, knot and end of loop under the elastic tape



Pic 14.4.1.4
Insert pull up cord into closing loop



Pic 14.4.1.5
Lift up free bag



Pic 14.4.1.6
Place free bag gently onto container



Pic 14.4.1.7
Stow left pair of risers to the side as shown



Pic 14.4.1.8
Stow right pair of risers to the side



Pic 14.4.1.9
Place risers under the tape to protect them against Velcro wear



Pic 14.4.1.10
Check correct routing of static line



Pic 14.4.1.11
Feed pull up cord (white) through packing cord (red) and pull white cord by red cord through free bag as shown



Pic 14.4.1.12
White pull up cord through free bag

12.4.2. Pack Free Bag Into Container



Pic 14.4.2.1
Align corners of free bag to corners of container; Hold down free bag with knee



Pic 14.4.2.2
Push corners of free bag into corners of container



Pic 14.4.2.3
Feed pull up cord through grommet; pull loop up on top of grommet and secure with temporary pin



Pic 14.4.2.4
Push first part of the bridle under the free bag using you packing tool



Pic 14.4.2.5
Fold bridle in "S" folds on top of the free bag as shown



Pic 14.4.2.6
Push the ends of the bridle gently under flap #1 using your tool



Bild 14.4.2.7
Route the bridle on top of flap #1

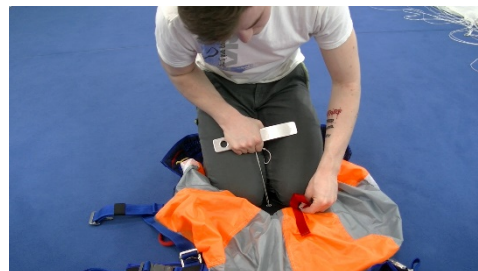


Bild 14.4.2.8
Close flap # 2 (Obere Klappe) and secure with temporary pin

12.4.3. Compress the pilot chute



Pic 14.4.3.1
„S“ fold the rest of the bridle in „V“ shape left and right of closing loop, then rout pull up cord through pilot chute from bottom to top



Pic 14.4.3.2
Place pilot chute in the center on top of the closing loop, compress it and pull out fabric to the sides of the spring, pull up closing loop and secure with temporary pin



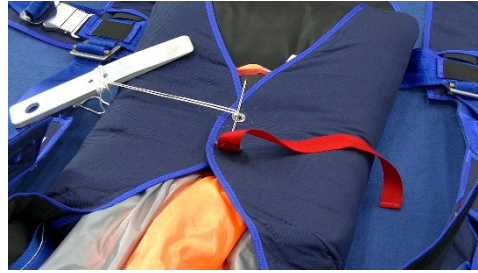
Pic 14.4.3.3
Pull fabric out of the spring (only pull on seams, where fabric is doubled)



Pic 14.4.3.4
Shape the pilot chute fabric as shown



Pic 14.4.3.5
Close flap #3 and secure with temporary pin



Pic 14.4.3.6
Close flap #4 and secure with temporary pin



Pic 14.4.3.7
Close flap #5 and compress pilot chute fabric, secure with temporary pin



Pic 14.4.3.8
Close flap #6 and use pin of ripcord cable to secure; remove pull up cord and seal pack job



Pic 14.4.3.9
Close left shoulder flap and stow static line



Pic 14.4.3.10
Close right shoulder flap



Pic 14.4.3.11
Close top flap and slide in tuck flaps; complete paperwork and put data card behind warning lable on back pad



Bild 14.4.3.12
Wingman ready to go

A large, bold version of the PARATEC logo, featuring the stylized 'P' symbol and the word 'PARATEC' in a very large, sans-serif font.

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