

BEAMER³

STAY IN CONTROL

OWNER'S MANUAL

BEAMER 3 / BEAMER 3 LIGHT
Reserve parachute

VERSION 2.0
VALID FROM 2013 MANUFACTURE
IN EFFECT: AUGUST 2014



This manual must be read before you install the reserve!

This manual tells you how to use your reserve correctly. If you have any questions about using the reserve you should contact High Adventure direct for an answer.

If you need a professional to pack or repair your reserve please contact your dealer or High Adventure.

INHALT

Safety information..... 3

Technical Data 3

intended purpose 4

operating limits..... 4

documents you should have..... 4

How to use the reserve 4

care and maintenance 4

storing..... 5

Packing and checking intervals..... 5

if damage is found 5

Repairs 5

packing and installing instructions 6

Installing in a harness reserve compartment 23

compatibility test..... 24

preflight check 24

SAFETY INFORMATION

This paraglider reserve must not be used for parachuting, free-falling or base jumping!

The user of this reserve system does so at his own risk. The manufacturer cannot be held responsible for any damage to persons or property that may arise from the use of this reserve system. Flying behaviour can be negatively affected when the parachute is wet (after a landing in water).

Deployment system warning: this parachute system has been tested and found compliant using the original manufacturer's inner container. Use of any other inner container may produce different results, including failures.

It is essential that this reserve parachute is correctly installed in the harness and a compatibility test then carried out by a suitably qualified person. Safe operation can only be guaranteed if the reserve has been installed correctly.

TECHNICAL DATA

	Beamer 3	Beamer 3 light	Beamer 3 S	Beamer 3 light S
Area:	41.75 m ²	41.75 m ²	35.47 m ²	35.47 m ²
Weight:	1785 g	1370 g	1590 g	1180 g
Weight including inner container:	1835 g	1420 g	1640 g	1230 g
Volume:	4959 ccm	3837 ccm	4432 ccm	3324 ccm
No. of panels:	18	18	16	16
Max. Load:	130 kg	130 kg	90 (100)* kg	90 (100)* kg
Inspection ID:	EP/RG 073.2013	EP/RG 101.2013	EP/RG 102.2013	EP/RG 104.2013

(*) Extended Weight Range

Although the EN/LTF flight tests showed a 3,7 m/sec descent rate at 100 Kg, our own experience also tells us that highly loaded Rogallos, like conventional reserve parachutes, can lead to mirror flying or down-planing when combined with the paraglider. This mainly happens with very stable and collapse resistant school gliders, or in very steady throwing conditions such as training openings over water. The EN/LTF practical tests are always carried out in separated configuration - without the troublesome paraglider. When developing our Rogallo reserve parachutes we focus a lot of attention on the overall functioning spectrum, above all in connected condition (when the paraglider is not cut away).

Despite the positive flight tests at more than 100kg we recommend that the extended weight range is only for use by experienced "Rogallo pilots", or in conjunction with a reliable cut-away system.

Manufacturer
High Adventure AG
Wiesenbergstrasse 10
CH-6383 Dallenwil
Switzerland

INTENDED PURPOSE

Manually deployed emergency parachute for solo paraglider pilots.

OPERATING LIMITS

Maximum deployment speed: 115 km/h (32 m/s)

Packing interval: every 6 months; and each repacking should be recorded in the reserve packing record.

Inspection: We recommend that a full inspection is carried out every 24 months. This inspection should be recorded in the repacking record.

Certified operating life: 12 years, extended to 14 years by inspections every 12 months.

Caution: the certified life depends very much on the style of use and quality of care of your Beamer 3 (acro, test openings etc. can significantly reduce the reserve's life). The **Beamer 3 light** is not suitable for use in the acro discipline.

DOCUMENTS YOU SHOULD HAVE

- Owner's manual
- Repacking and check record

HOW TO USE THE RESERVE

In an emergency give the reserve handle a determined pull. This will open the outer container and release the inner container. Throw the inner container (the reserve is inside) far away with an energetic swinging action, letting go of the reserve handle at the same time (it is fixed to the inner container – its job is over)!

The inner container is designed so that the lines stretch out first, followed by the reserve canopy. This makes sure the canopy does not open too soon, and this minimises the risk of the reserve becoming tangled up with the paraglider, the pilot, or anything else nearby (e.g. another flying machine if there has been a collision etc). For a fast reserve opening the inner container needs enough speed after the pilot has thrown it. In general one can say: the faster the throwing speed the faster will the reserve pay out and open.

The reserve inner container opens after it has been thrown. The strong throw, and/or the available airflow, stretches out the lines, then the canopy, and the reserve will open.

When the reserve is fully open height above ground should first be assessed. If there is plenty of height available the possibility of disabling the paraglider should be considered so as to minimise the problem of paraglider and reserve scissoring (racing each other to the ground). If there's not enough height for this the pilot should concentrate on the ground coming up and prepare for touchdown.

CARE AND MAINTENANCE

The Beamer 3 has been designed for high loads and extreme demands. Especially long-lived materials have been chosen accordingly. To a great extent, however, the lifespan depends on the care and attention of the user and we recommend that the reserve is regularly inspected for signs of wear - and that if any damage is found the Beamer 3 should be immediately returned for repair to High Adventure, or a workshop authorised by High Adventure.

Pay special attention to the following advice:

- Do not leave the reserve out in the sun (UV radiation) unnecessarily.
- A wet or damp reserve should be completely unpacked and allowed to dry inside at room temperature, or outside in the shade.
- Do not expose a packed reserve to large temperature changes, and do make sure it gets enough air circulation in cars and building so that condensation does not form.
- Deal with the reserve carefully on the ground after an opening, or during SIV training.
- After contact with seawater the reserve must be thoroughly rinsed with fresh water.
- Only clean the reserve with fresh water, and a little neutral soap if required. Never use solvents.

Caution: Chemicals, cleaning agents, insects, stains etc. can affect the strength of the parts as much as physical abuse.

STORING

Do not store the reserve anywhere near oils, fats, acids and dyes. It should be stored in a well ventilated, dry space. Reserves that are not to be used for a long time should be stored unpacked.

PACKING AND CHECKING INTERVALS

The reserve must be aired every 6 months and repacked in accordance with the packing instructions. This will ensure a reliable and fast opening every time. If the reserve gets wet, damp, or has been exposed to extreme heat it must be aired straight away and repacked.

If the reserve is thrown in an emergency or during SIV training it should be inspected by the manufacturer or an authorised service centre. The reserve should also be thoroughly checked by a qualified person if it gets overloaded (e.g. tree landing).

IF DAMAGE IS FOUND

If damage is discovered during a check the reserve should be sent to High Adventure for repair. This applies to any damage where you cannot be certain that the reserve is still airworthy. Repairs must only be done by the manufacturer!

REPAIRS

Basically you are not allowed to repair a reserve yourself. The various seams and the lines are made with great precision. Only the manufacturer or an authorised service organisation may do repairs, using original materials.

PACKING AND INSTALLING INSTRUCTIONS

Before packing the reserve must be visually checked by the packer. Then the reserve should be aired in a humidity of 60 – 65 % for 24 hours. Packing should be done on a packing table if possible, or at least on a clean static-free surface.

Equipment needed for packing

- Line separator. Only the centre slot will be used.
- Several shot bags. The reserve is not tensioned from both ends: these are very useful – have enough.
- Elastic bands (must be new for every packing - original elastic bands are available from High Adventure)
- Packing tools for putting the reserve in the harness

We strongly recommend that a trained and qualified person does the packing.

Fixing to the harness

The Beamer 3 can be stowed in a front container or a harness reserve compartment.

The reserve risers marked “L” & “R” will be fixed on the relevant left and right (in the direction of flight) hand sides of the harness on the main carabiners (front container) or shoulder harness loops.



Pic. 1 Attachment on main carabiners



Pic. 2 Shoulder harness attachment

Note: The “L” & “R” markings on the reserve risers face rearwards relative to the direction of flight (similar to the paraglider riser attachment). The riser colours may be different, but the L and R indications apply.

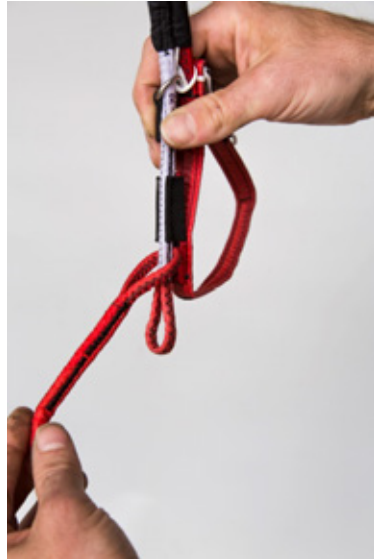
Brake handle position

Reserve riser extensions are needed for front container mounting to get the brake handles in the right position (See Pics 1 & 2). The riser extensions (optional accessory - Pic. 3) are looped through the ends of the risers and secured with O-rings (Pics. 4-11). This arrangement has been dynamically load tested.

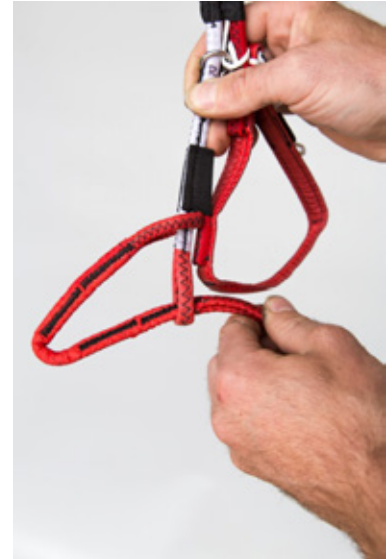


Pic. 3

Art. Nr. 000345 extensions for
Beamer 3 Dyneema risers &
Art. Nr. 000140 O-Ring 22mm



Pic. 4



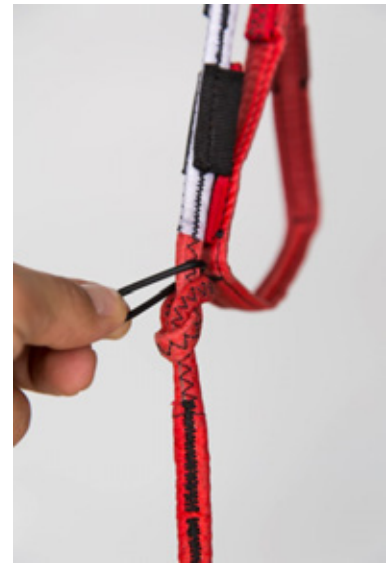
Pic. 5



Pic. 6



Pic. 7



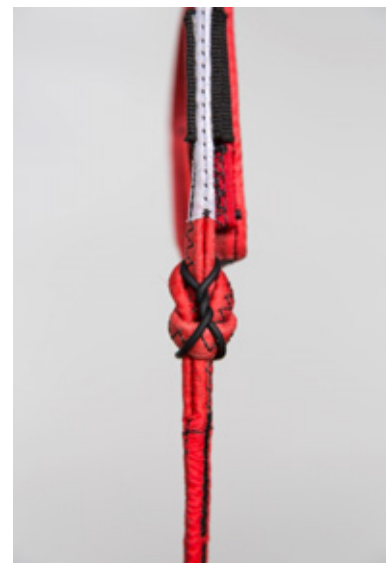
Pic. 8



Pic. 9 O-Ring 2 turns



Pic. 10



Pic. 11

Reserve/Harness connections

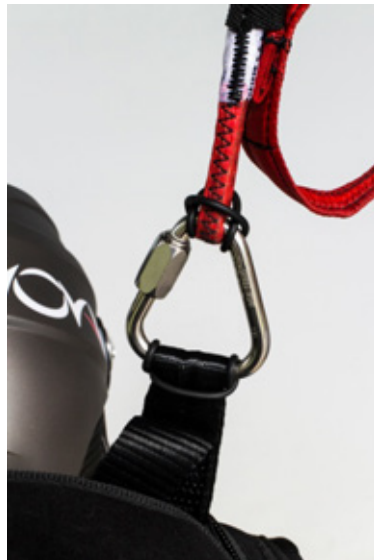
Pic. 12

Art. Nr. 000136 Maillon Rapide
Ref. MRDI06.0 – Stainless (INOX)
Art. Nr. 000140 O-Ring 22mm &
Art. Nr. 000141 O-Ring 32mm

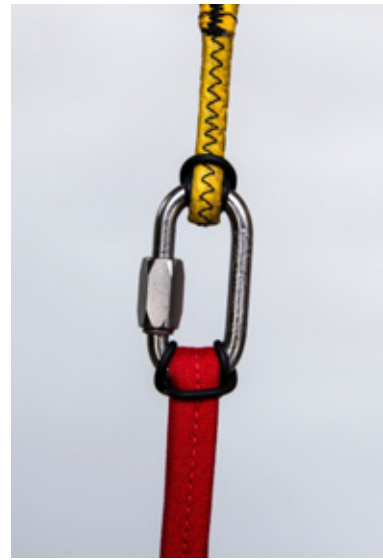
Pic. 13

Art. Nr. 000137 Maillon Rapide
Ref. MRNI06.0 – Stainless (INOX)
Art. Nr. 000140 O-Ring 22mm

Caution: Minimum safe load
2,250kg per quicklink!



Pic. 12



Pic. 13



Preparing the braked opening configuration

Our pre-braking concept gives the Beamer 3 two flight phases. The canopy opens in its braked condition. This means that the Beamer 3 flies with very little forward speed at first. When the pilot takes the brake handles this braked position is released and the Beamer takes up its proper gliding flight.

The braked opening setting must be set **before packing**. When the brake handles are fixed in their correct positions the brake lines are shortened on the Beamer 3 / Beamer 3 light by approx. 42 cm and around 25 cm on the Beamer 3 in small size. There is a loop in the brake line at this distance. The brake handle stick goes through this loop (Pic. 14).



Pic. 14



Pic. 15



Pic. 16 Stow the brake stick **outside** the metal ring!

Stow the extra length of brake line in the elastic loop on the brake handle (Pic. 16).

Laying out, untangling, checking the lines

Connect the reserve risers to the end of your packing surface or directly to the harness (Pic. 17) and stretch it out to its full length. The Beamer 3 should be lying similar to a paraglider pre-takeoff layout - (wing lying on its top surface). Separate the lines into their three groups (left wing lines, middle lines, right wing lines) (Pics. 20-21). Put all the middle lines in the centre slot of the line separator (Pic. 22), and secure with weight. To check the lines take the top line at each riser and run them up to the nose of the wing (High Adventure label), checking that they go all the way without crossing each other or tangling with other lines! (Pic. 24-28)!

Basic differences from packing a round centreline reserve

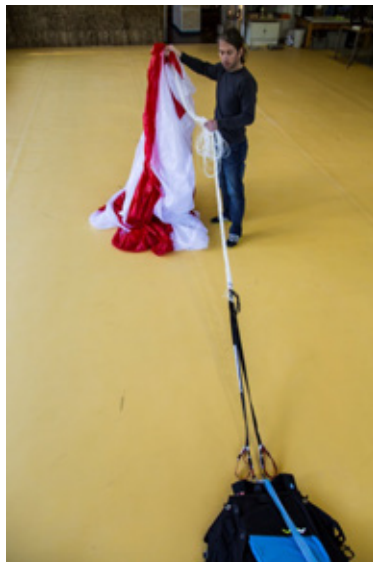
- The laid out canopy is not tensioned from both ends. Weights are a great help in keeping the job neat.
- There are no loops at the tops of the folded panels. Seams and lines must be pulled straight by hand.
- The folded panels do not naturally lie completely flat; careful wafting while tensioning seam at the top by hand will produce the best result, with extra material spread out inside the panels.
- The panels get smaller as the nose (top) is approached. Apart from the middle line (shortest) from the centre of the canopy base (trailing edge) all lines and seams will run inside the centre of the folded canopy.
- The final halving of each folded side is symmetrical – both sides are folded under. Then one side folds on top the other.

Separate the wing halves and flatten the panels between the middle lines

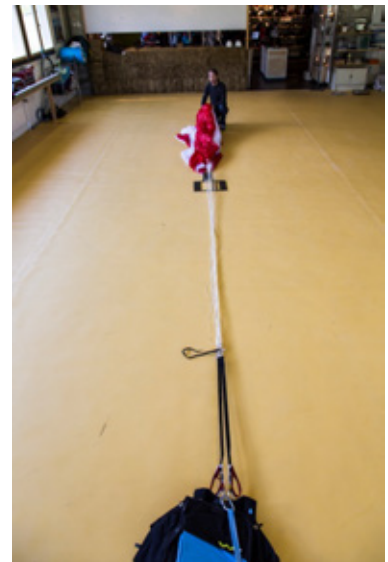
Lay the wing halves to the outside and stretch the material between the middle lines upwards into pockets (Pics. 32-49) and spread them out to the sides, and to about 50 cm either sides of the centreline).



Pic. 17



Pic. 18



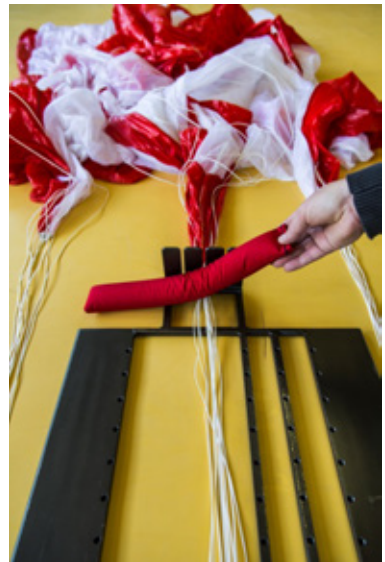
Pic. 19



Pic. 20



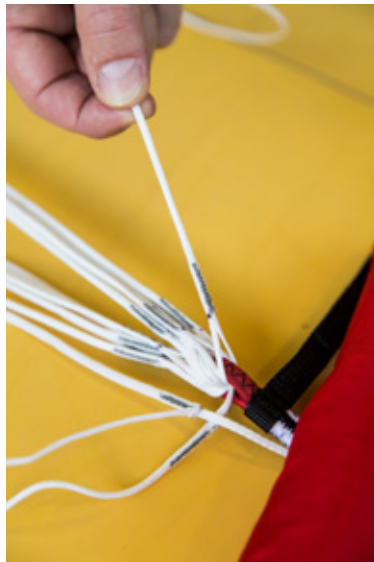
Pic. 21



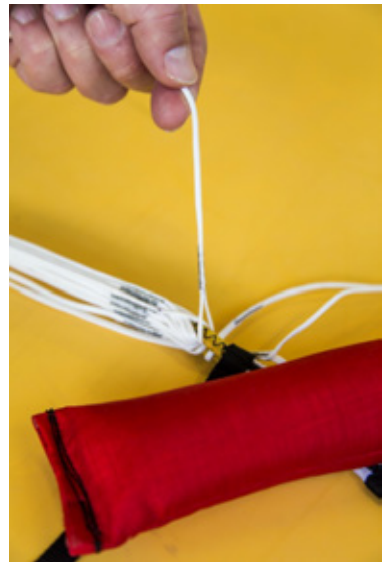
Pic. 22



Pic. 23



Pic. 24



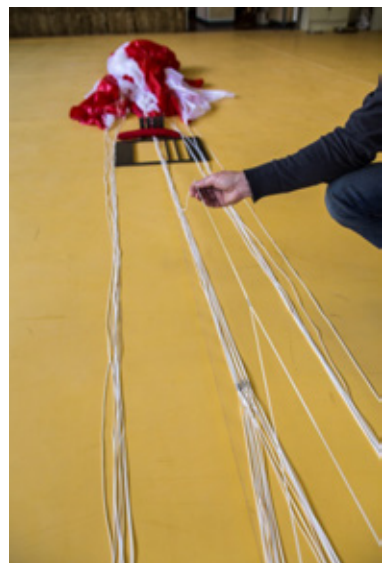
Pic. 25



Pic. 26



Pic. 27



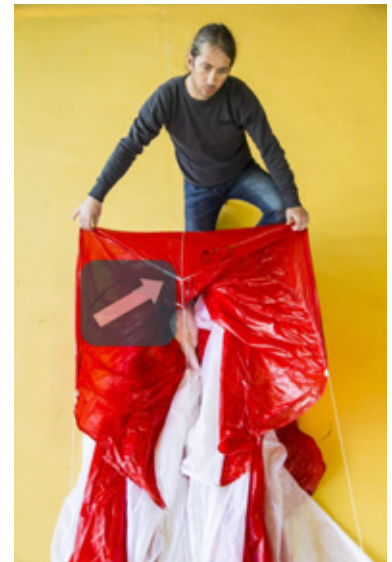
Pic. 28



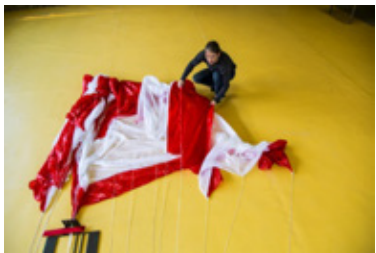
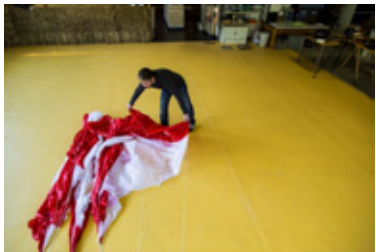
Pic. 29



Pic. 30



Pic. 31



Pic. 32-33



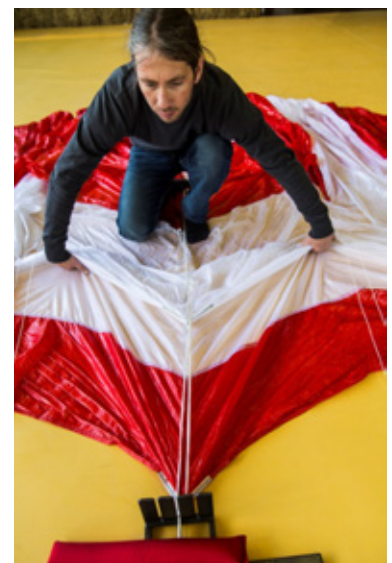
Pic. 34



Pic. 35



Pic. 36



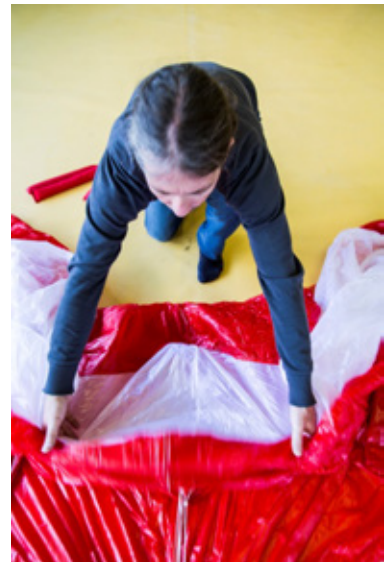
Pic. 37



Pic. 38



Pic. 39



Pic. 40



Pic. 41



Pic. 42



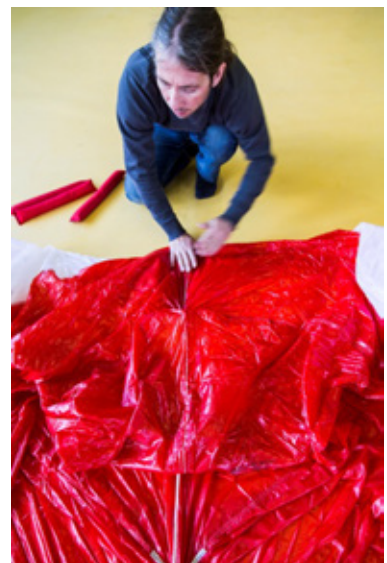
Pic. 43



Pic. 44



Pic. 45



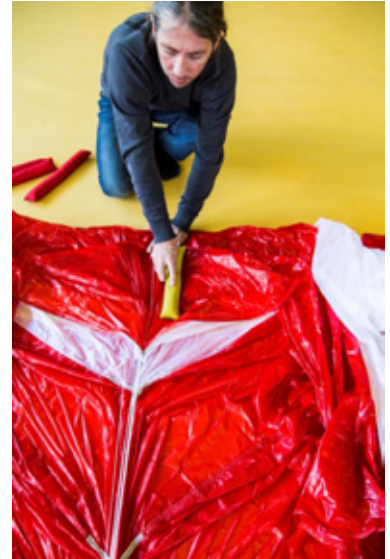
Pic. 46



Pic. 47



Pic. 48



Pic. 49

Folding the wing halves

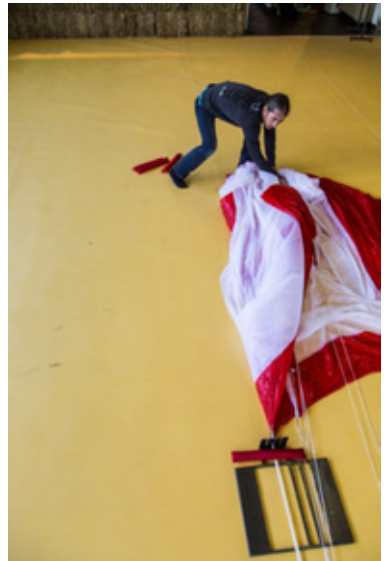
Lay a wing half on top of its opposite side and put its lines on the other side of the line separator, making sure that the middle lines are not disturbed (hold with weight).



Pic. 50



Pic. 51



Pic. 52



Pic. 53



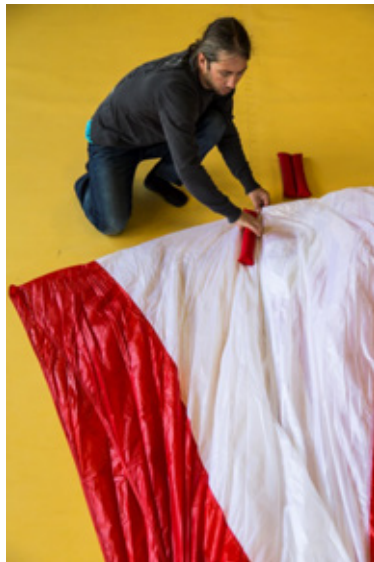
Pic. 54 Go along the bottom edge from the middle line to the first line



Pic. 55 Put this line in the line separator (weight)



Pic. 56 Stretch out panel #1



Pic. 57 Seam on the centreline



Pic. 58 reduce the width of panel #1 with...



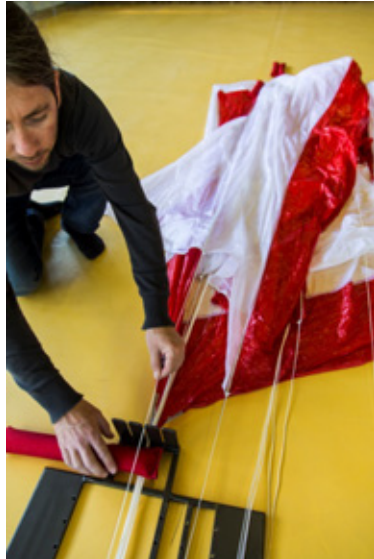
Pic. 59/60 ...with an S - 2 folds (for Beamer 3 small only halved)



Pic. 61 Line #1 on the centreline!



Pic. 62 Follow the bottom edge of the second panel



Pic. 63 Put the panel #2 line in the line separator



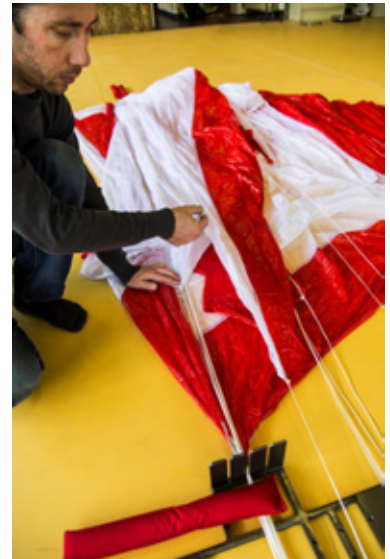
Pic. 64 Put the line attachment point on the middle lines and hold it there



Pic. 65



Pic. 66 Fold panel #2 in an S



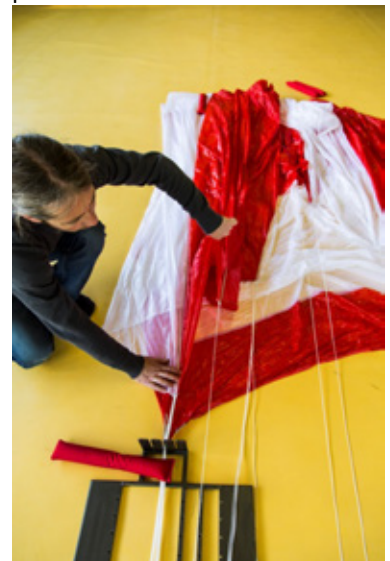
Pic. 67 Bottom edge of the third panel



Pic. 68 Line for panel #3 in the line separator



Pic. 69 Stretch panel #3 to the side; halve it with one fold.



Pic. 70 Bottom edge of panel #4



Pic. 71 Line #4 in the line separator



Pic. 72 Lay panel #4 to the outside and halve it (one fold)



Pic. 73 Bottom edge of panel #5



Pic. 74 Line in the separator



Pic. 75-77 Fold the remaining panels up to the nose...

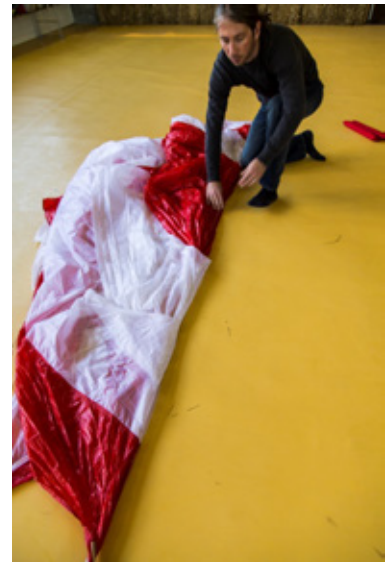
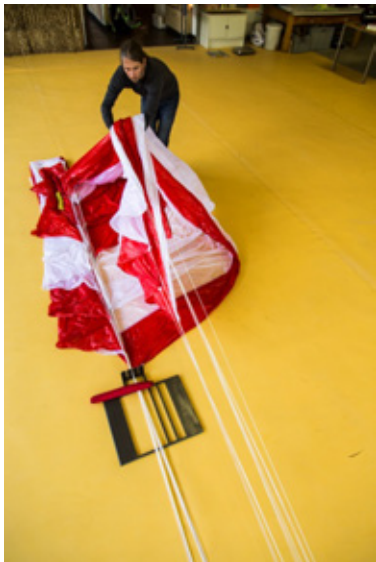


... as described for panels 3, 4 & 5



Pic. 78-79 Slide excess material back into the folded panels





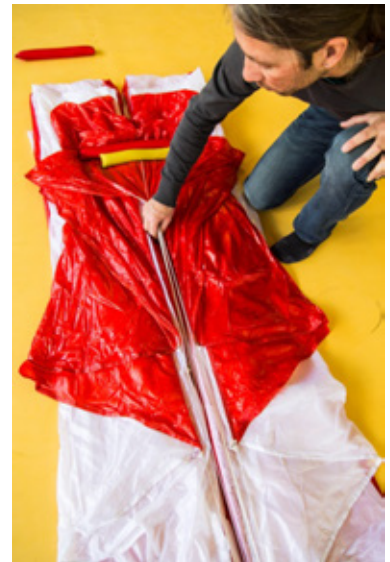
Pic. 80-82 Lay the opposite wing half (taking its lines over the separator) on the other side (on top of the first wing)



Pic. 83 Fold this wing exactly as the first side ...



Pic. 84 ...as far as the Beamer nose



Pic. 85 Check that the lines have a free run ...



Pic. 86 ...to the base



Pic. 87 All the lines must lie along the centre of the wing



and straight



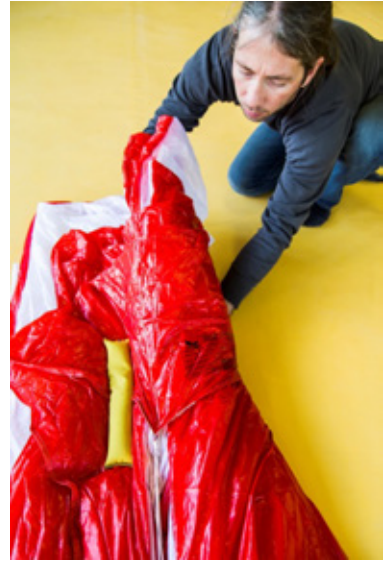
Pic. 88-89 Locating the lines



Pic. 90-91 Holding the lines (weight)



Pic. 92 Weighting down one wing half



Pic. 93 Halving the other wing half



Pic. 94



Pic. 95



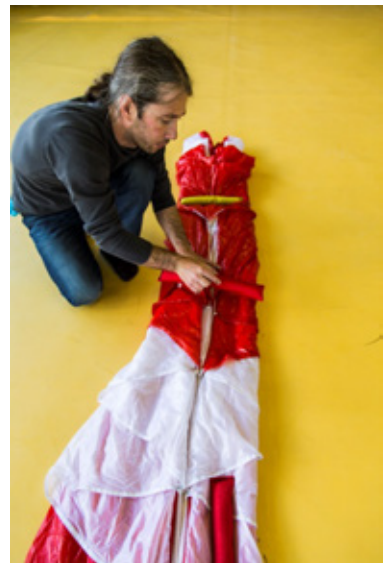
Pic. 96



Pic. 97 The same for the other side



Pic. 98



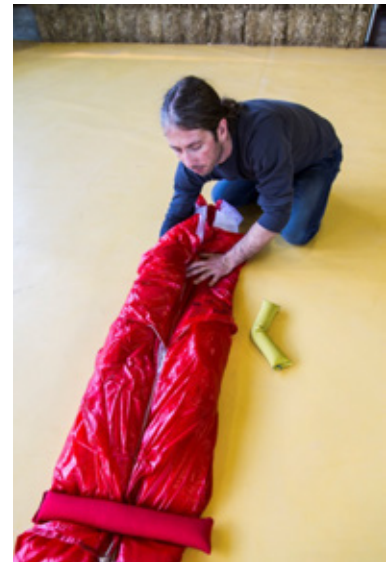
Pic. 99



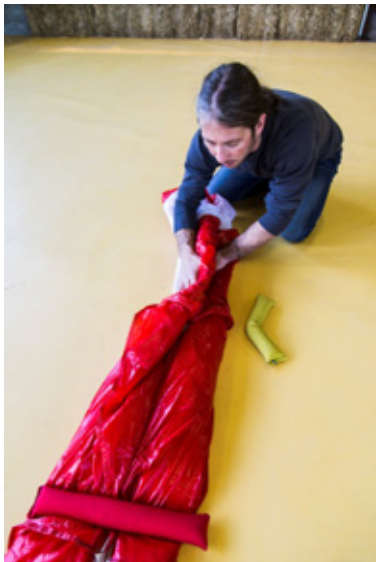
Pic. 100



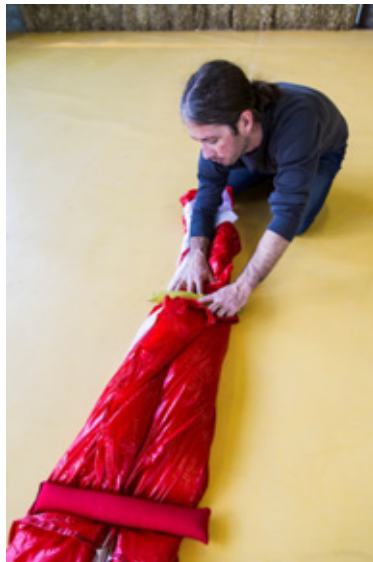
Pic. 101



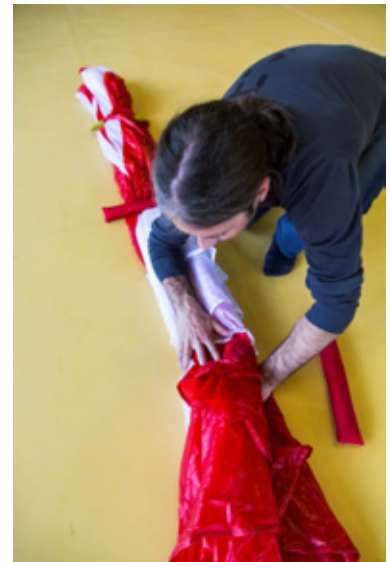
Pic. 102 Lay one half on the other



Pic. 103



Pic. 104



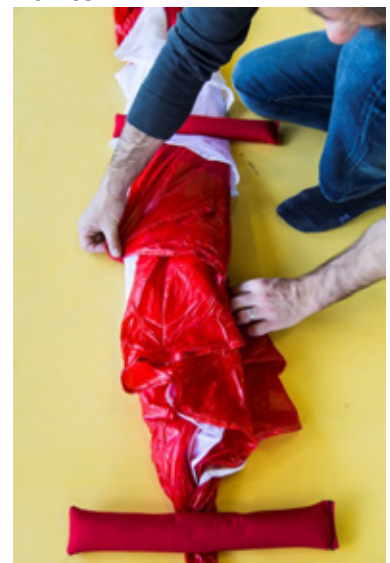
Pic. 105



Pic. 106



Pic. 107 Neat corners



Pic. 108



Pic. 109



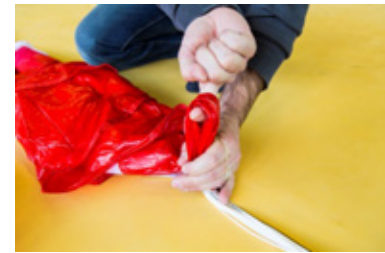
Pic. 110



Pic. 111

Avoiding line overlooping

The following pictures show effective ways of avoiding overloops (overthrows).



Pic. 112-115
Secure the whole bundle in the bottom panel with an elastic band

Putting the canopy and the lines in the inner container



Pic. 116 Fold to length of container



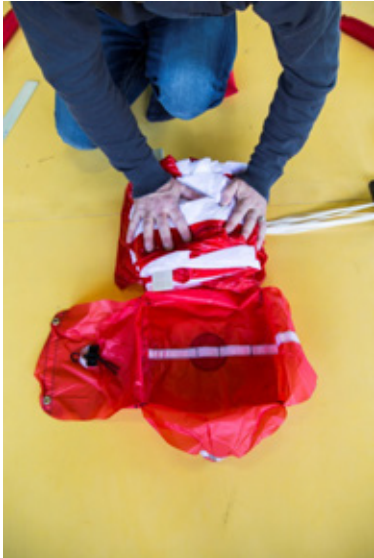
Pic. 117



Pic. 118



Pic. 119



Pic. 120



Pic. 121



Pic. 122



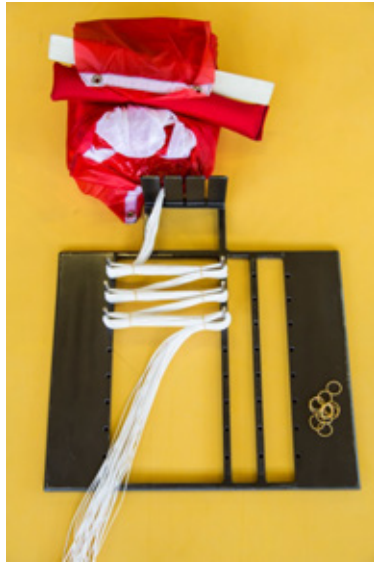
Pic. 123 Take the harness off



Pic. 124



Pic. 125



Pic. 126



Pic. 127



Pic. 128



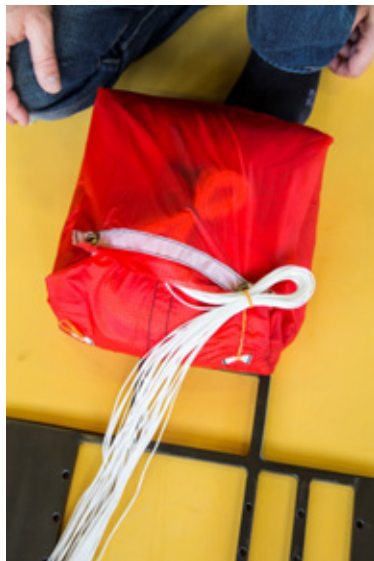
Pic. 129



Pic. 130



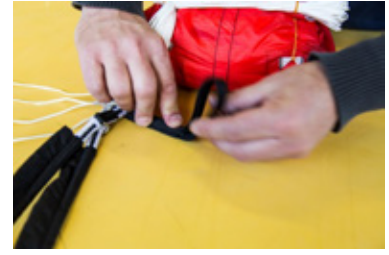
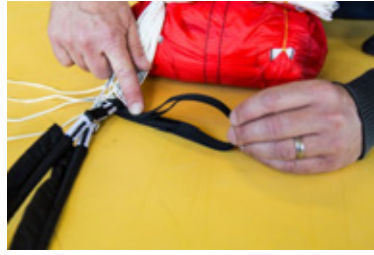
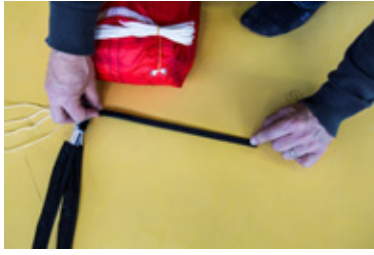
Pic. 131



Pic. 132



Pic. 133



Pic. 134-137
Fold the interconnector in half twice and secure with an elastic band

Caution: The inner container is held closed by a loop in the lines, the tension exerted by the inner container bungee loop should not be too strong. This can be tested by picking the reserve up by its risers. The lines must free themselves from the bungee loop under the weight of the reserve alone.

INSTALLING IN A HARNESS RESERVE COMPARTMENT

Follow the instructions in your harness owner's manual.



Pic. 138-140

Caution: Velcro damages lines! **Wrap** the relevant lines in a piece of rubbish bag or glider fabric. This protection must not prevent or delay opening (DON'T fix it!)

COMPATIBILITY TEST

Every new combination of reserve and harness must, after its first packing, be tested by the harness manufacturer or someone trained and qualified by him.

This test of the reserve system must show that it is possible to release the reserve in the flying position without problem, and in accordance with the provisions laid down by the manufacturer. It must thereby be confirmed that the force required to release the reserve does not exceed 7 kg.

Confirmation that this test has been carried out must be entered by the tester in the repacking and check record.

PREFLIGHT CHECK

In addition to the normal preflight check (see paraglider/harness instruction manual) correct closure of the reserve compartment/front container as well as proper stowage of the reserve handle should be checked before every takeoff. If the reserve system connection/s, bridle or steerable risers could hang out after any flight (e.g. front container), the preflight check must include correct stowage of these connecting lines!