



independence **paragliding**

Owner´s manual
Rescue system

Fassung 1.0 vom 07.01.2022

NG 100, 120, 140
NG 100 light, 120 light, 140 light

Fly market GmbH & Co. KG
Am Schönebach 3
D-87637 Eisenberg

Tel.: +49-8364-9833-0
Fax: +49-8364-9833-33
Mail: info@independence.aero

Table of contents:

1. Technical Data
2. Purpose of use
3. Operating limits
4. Necessary documentation
5. Mode of operation
6. Control and inspection of the parachute
7. Behaviour in case of damage
8. Storage
9. Maintenance
10. Cleaning
11. Repairs
12. Nature- and environment-friendly behaviour
13. Environmentally compatible waste disposal
14. Spare parts / changeable parts
15. Structure of the parachute
16. Packing instructions
17. Mounting in an optional frontcontainer
18. Mounting / integration to a harness
19. Specialities for paraglider's winch-towing
20. Pre-flight check

Warning

It's not allowed to use this rescue-parachute for skydiving!

According to EN 12491: Not suitable for use at speeds exceeding 32 m/s (115 km/h).

Use of this parachute with any alternative inner container: the speed of opening and opening shock test has been completed using the inner container supplied.

Use of any other inner container may produce different results (including failure)

The rescue systems of the NG / NG light series comply with the German type approval LTF 2-565-20 and EN12491:2015.

The manufacturer cannot be held liable for any personal injury or material damage, which may result from this rescue system in any way.

1. TECHNICAL DATA

Type of rescue parachute: NG 100, NG 120, NG 140,
NG 100 light, NG 120 light, NG 140 light

Manufacturer: Fly market Flugsport-Zubehör GmbH & Co. KG
Am Schönebach 3
D-87637 Eisenberg
Tel. +49-8364-9833-0

Rescue system:	NG 100	NG 120	NG 140	NG 100 light	NG 120 light	NG 140 light
Weight (kg):	1,45	1,6	1,85	1,18	1,3	1,49
Surface (m²):	25	29	33	25	29	33
Number of lines / panels:	20	20	20	20	20	20
Total length packed: (Bridle to packing loops)	6,49	6,94	7,51	6,53	6,98	7,52
Mn. load (kg):	60	80	100	60	80	100
Max. load (kg):	100	120	140	100	120	140
Sinkrate at max. load:	5,28 m/s	5,14 m/s	5,37 m/s	5,1 m/s	5,16 m/s	5,45 m/s
Volume in Milliliter (without bridle)	3600	3800	6300	3300	3500	6000

2. Purpose of use

Manually activated rescue system for single-seat paraglider pilots in emergency situations, as well as the HG version for hangglider pilots.

3. Operating limits

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

Packing interval: 12 months, after which repacking is required. This must be noted in the Repack and inspection Log book. The packing interval may be shortened by the effects of moisture, sand, salt or other environmental influences.

Re-inspection interval: 24 months, after which a complete inspection of the rescue system is required. This includes a thorough and complete visual inspection of all components. The re-inspection must be noted in the repack and inspection Log book.

Maximum operating time: 10 years, thereafter up to 12 years with annual re-inspection by the manufacturer.

4. Necessary documentation:

- a) Owner's manual
- b) Repack and inspection log book (with recorded repack and inspection jobs)

5. Mode of operation:

In case of emergency, the deployment handle is pulled open with a firm jerk. This opens the outer container and releases the rescue system. Then the parachute package (still packed in the deployment bag) is thrown into the free airspace with a sweeping movement. The deployment handle is thereby thrown away together with the rescue system!!!!

The deployment bag together with the bridle is designed in such a way that the lines and parachute canopy are released only after the throw has been completed.

This prevents an unwanted, early opening. This minimises the risk of snagging on the paraglider / pilot or the reason responsible for the air emergency (e.g. collision with another pilot, etc).

The maximum speed of the deployment bag, which is necessary for a quick opening, is only reached after the pilot's hand has left the deployment bag..

In general: The faster the rescue parachute package is thrown away, the quicker the parachute will open.

After the throw, the deployment bag opens and releases the lines and canopy.

The powerful throw and/or the airflow stretches the lines, the canopy and the rescue system opens.

When the rescue system is fully open, the remaining height above ground must be checked first.

If there is still enough height, the paraglider should, if possible, be rendered flightless according to the doctrines in order to avoid a V-position of rescue system and paraglider.

If there is not enough height left, you should only keep an eye on the ground and prepare for a landing fall.

6. Control and Inspection of the parachute

Before repacking the rescue system it must be checked by the packer and must be sufficiently ventilated. If the parachute has been opened by a rescue deployment, it must be subjected to a full inspection either by the manufacturer or by a company authorised by the manufacturer.

After repacking, as well as before each flight, it must be ensured that the release force of the locking system of the outer container is between 2 daN and 7 daN.

If the rescue system is combined with an outer container or a harness with an integrated rescue system container for the first time, the functionality must be checked by a competent person and confirmed in the repack and inspection log book.

The inspection includes a complete visual check of all components (cloth, seams, lines, straps) for damage and wear. Suitable aids (light table, packing tools) must be available for a re-inspection, and the work carried out must be documented in a suitable manner.

7. Behaviour in case of damage

If damage is found during the inspection of the rescue system, the parachute must be sent to the manufacturer for assessment/repair. This also applies to damage whose effects on the airworthiness of the system cannot be clearly determined.

Caution: Chemicals, cleaning agents, insects, mould stains and the like can have just as negative an effect on the strength of the components as mechanical damage.

8. Storage

Oils, greases, acids and paints must not be stored in the immediate vicinity of the parachute. The room should be dry. Parachutes which are not used for a longer period of time must be opened, the canopy rolled up loosely and stored in an air-permeable carrier bag.

High temperatures above 60° C, such as can occur in a car parked in the sun, must be avoided!

9. Maintenance

The service life and condition is highly dependent on the care of the user. We therefore recommend that the rescue system is regularly inspected for signs of wear and damage, at the latest when it is repacked.

In normal use, pay attention to the following:

If the rescue equipment has become damp or wet, it must be opened as quickly as possible and dried in a well-ventilated place - but not in the sun - and then repacked to avoid mildew and mould.

If the rescue system has been used beyond its normal service life, it must be sent to the manufacturer for inspection. (e.g. if the rescue system has been subjected to mechanical pressure or a sharp object may have caused damage.)

Avoid contact with salt water, acids or other aggressive substances!

Exposure to sunlight should be avoided as ultraviolet radiation weakens the molecular structure of the material.

10. Cleaning

Dirty canopies and containers can be cleaned carefully with clean tap water and a soft sponge.

Attention: Under no circumstances may chemicals, brushes, hard sponges or similar be used for cleaning! Cleaning in the washing machine is also not permitted.

If the rescue system has been in contact with salt water, rinse it with plenty of fresh water. Rinsing and cleaning accelerates the ageing process of the material.

11. Repairs

Repairs must be carried out only by the manufacturer or by a company authorised by the manufacturer.

12. Nature and environment friendly behaviour

Please practise our sport as much as possible in a way that preserves nature and the landscape! Do not go off the marked trails, do not leave any rubbish behind, do not make unnecessary noise and respect the sensitive biological balances in the mountains. Especially at the launch site, consideration for nature is required!

13. Environmentally compatible waste disposal

At the end of the life of the rescue parachute, it must be disposed of in an environmentally friendly manner. We are happy to take care of this when the rescue parachute is returned.

14. Spare parts / changeable parts

Besides the rubber bands, no spare part is necessary for the NG / NG light series. Only tested rubber bands of the size 25x3x1 mm may be used! They can be purchased from us at a reasonable price..

The deployment bag is an integral part of the rescue parachute, except when using an inner container described under No 18.4. and must not be exchanged for a third party brand. Otherwise the operating licence will expire!

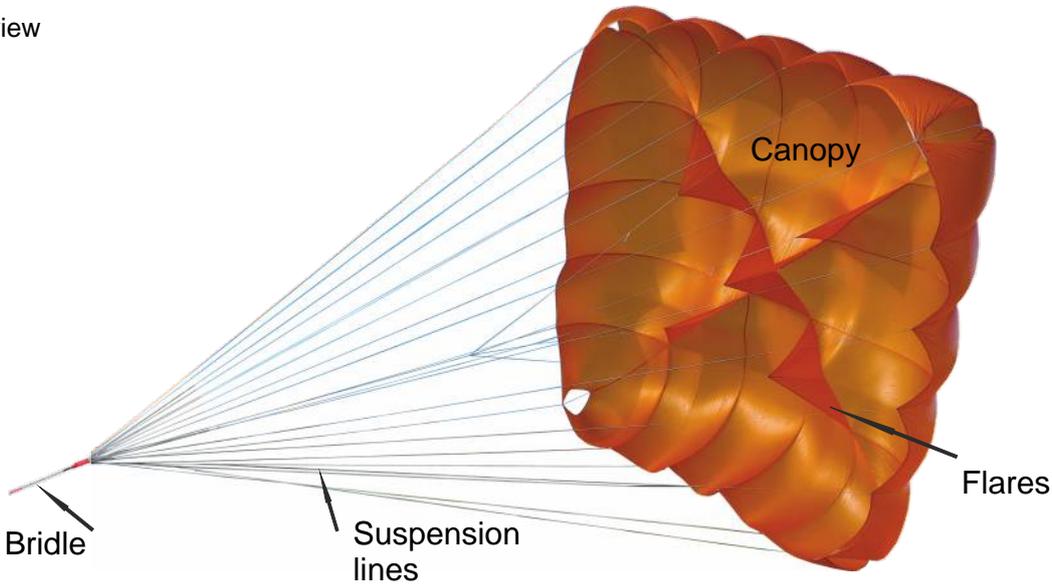
15. Structure of the parachute

The parachute has a square construction and consists of 20 panels. Packing loops are attached to the top of the canopy.

The canopy is made of high strength nylon fabric. The seams of the canopy are cap seams. Hem and canopy are reinforced with sewn-in tapes. The lines are sewn to the canopy and the line connections on the canopy are reinforced with V-tapes. The centre of the canopy is drawn in over flares and centre lines. All lines and centre lines are connected to the bridle.

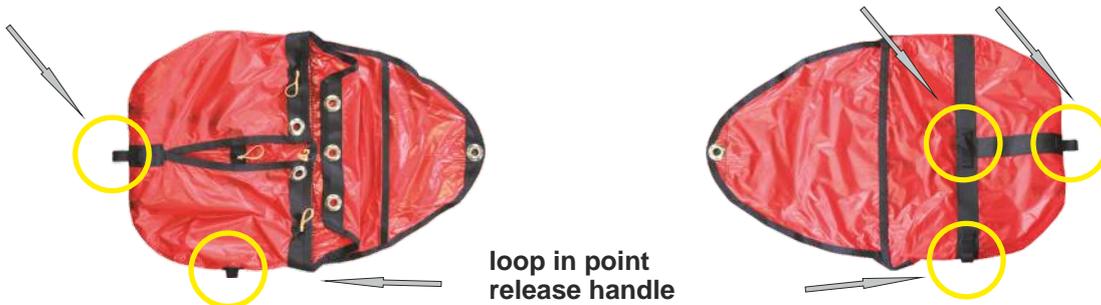
The connecting line has a strength of > 2400 daN.

Overview



The deployment bag is made of nylon fabric and has a 4-point closure.

On the deployment bag there are 3 loop possibilities for the deployment handle of the outer container or for the deployment handle of the harness.



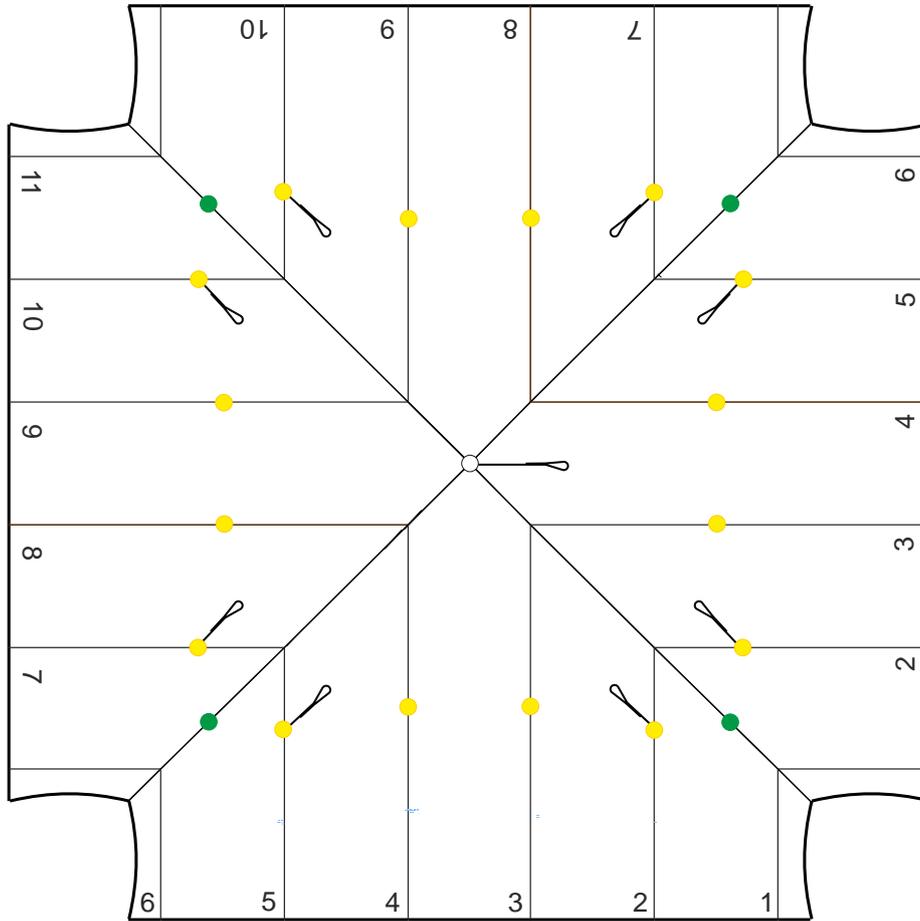
The frontcontainer (optional) is made of robust, water repellent Nylon fabric. It consists of 2 lateral flaps, the upper and lower flap, the release handle with 2 pins, which closes the container.



15. Structure of the parachute - description of packing loops

On the NG series, packing loops of different lengths are attached to the top to enable easy packing. They are green at the corners, yellow at the sides, and the packing loop of the centre line is white.

The overview drawings below show where the packing loops are located (required for 16. packing instructions, step 1).



16. Packing instructions



1. Put on all packing loops with a cord and hang them up. The number and position of the packing loops can be seen in 15.

2. Attach the packing loop cord, tighten the lines, bundle the lines and lay all the panels on the left side so that panel 11 lies as shown in the illustration.



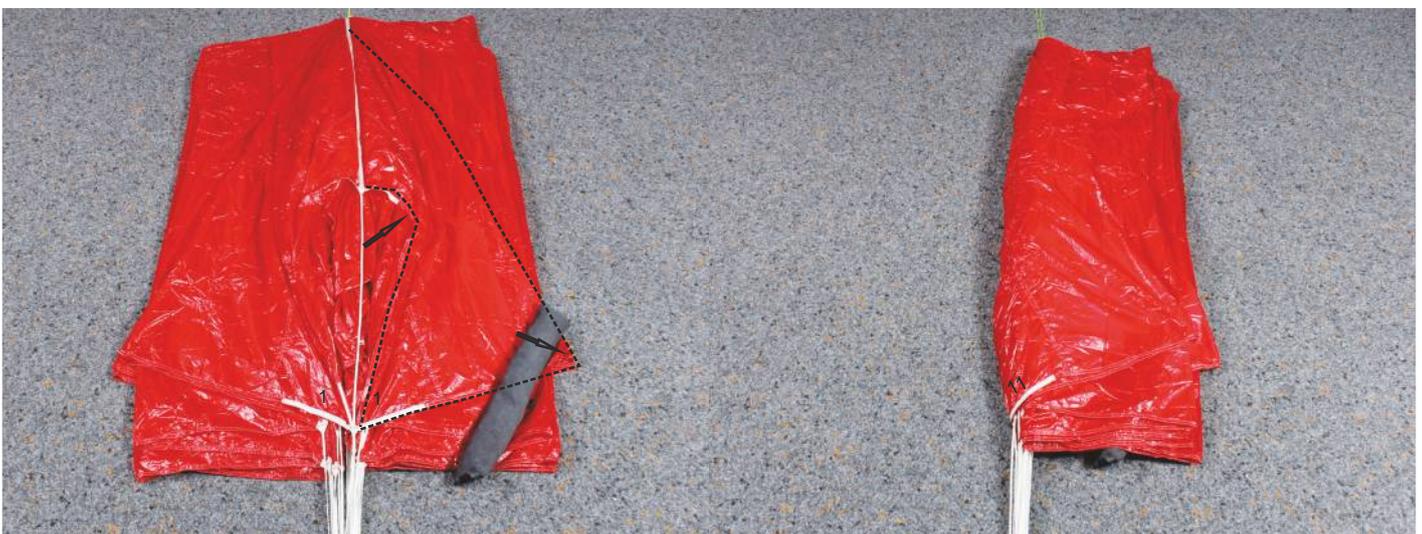
3. Place panel 11 centred on the floor, pull panel 10 out to the side, as well as the upper part (blue arrow).

4. Arrange panel 9 to 7. Pull the upper and lower part of the panel out to the side so that the panel forms a rectangle.



5. Arrange panel 6 (corner panel). Pull out the upper part of the canopy (blue arrow).

6. Arrange panel 5 (corner panel). Pull out the upper cap part (blue arrow). Then arrange panels 4 to 2 as described under number 4.



7. Arrange panel 1 (corner panel) and weigh down the hem with a weight.

8. Put the left side on top of the right side.



9. Place panel 11 centred on the floor, pull panel 10 out to the side, as well as the upper part (blue arrow).

10. Arrange panel 9 to 7. Pull the upper and lower part of the panel out to the side so that the panel forms a rectangle.



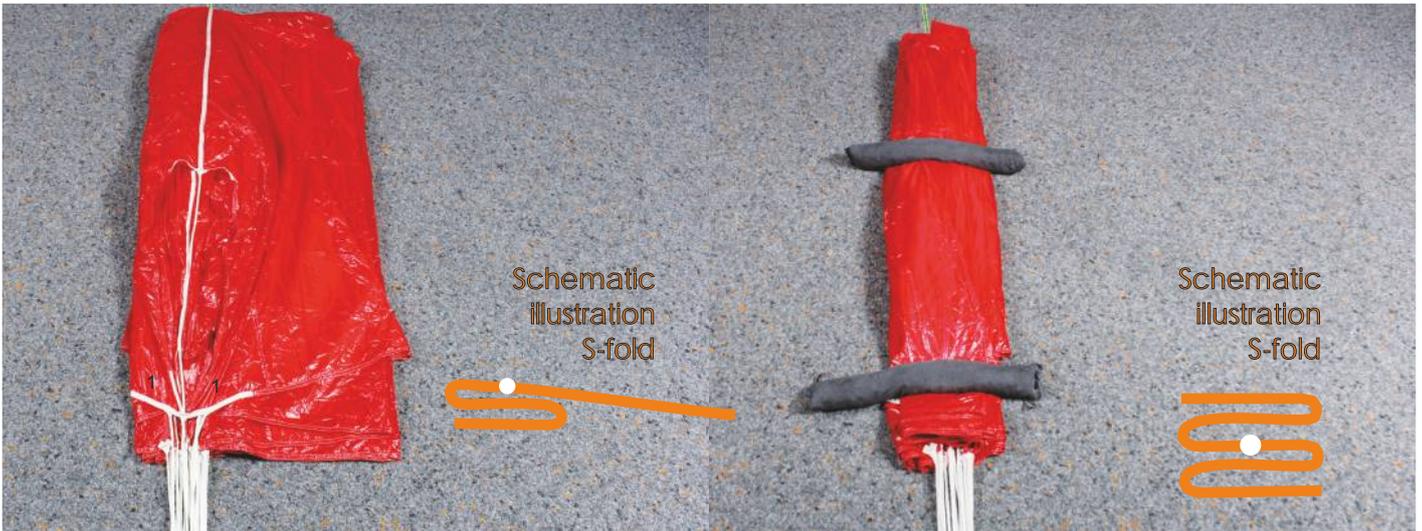
11. Arrange panel 6 (corner panel). Pull out the upper part of the canopy (blue arrow).

12. Arrange panel 5 (corner panel). Pull out the upper cap part (blue arrow). Then arrange panels 4 to 2 as described under number 10.



13. Arrange panel 1 (corner panel) and weigh down the hem with a weight.

14. Check the lines of panel 1 (arrows) and the centre lines to make sure they do not cross and running free.



15. Fold the left side in an S-shape (step 1).

16. Fold the right side in an S-shape (step 2).



17. Remove packing cord.

18. Stow top of the canopy in the deployment bag. Fold the rest of the canopy in small S-folds and place it in the deployment bag.



19. Close the container. First the middle, then the outside. Bundle the lines in 3 x 3 "8-shaped" hanks. Do not bundle the last 60 cm of lines.

20. Place the hanks in the lines of the deployment bag.

21. Close the deployment bag with the last 60 cm of lines. Check that the packing tools are complete!

Attention:
New rubber bands must always be used for both the suspension lines and the deployment bag each time they are packed!

17. Mounting in a front container (optional)



1. Connect the release handle at the loop in the middle of the deployment bag (flat side) by looping.

2. Fix the Y-bridle in the required position on the front container by using the velcro strips. Connect the parachute bridle with the Y-bridle of the front container (for details see No. 3)



3a. Version with shackle:
Connect the parachute bridle and Y-bridle with a shackle. Note: the strength of the shackle must be higher than 2400 daN. The connection must be centered in the field of the protection fabric (yellow arrow) and secured against slipping (eg by a neoprene sleeve).

3b. Version "bridle to bridle":
Connect the parachute bridle and Y-bridle by looping with each other. The connection must be centered in the field of the protection fabric (yellow arrow) and secured against slipping (eg by a neoprene sleeve).



4. Put a packing cord left and right in the loops.

5. Put the packing cords through the eyelets of the bottom flap of the container.



6. Close the bottom flap and secure provisionally with the pins of the release handle.

7. Put the packing cords through the eyelets of the top flap.



8. Close the top flap and secure with the pins of the release handle. Stick the release handle under the handle cover and remove packing cords. Take care that the handle - deployment bag connection (arrow) is long enough that the pins will unlock the flaps.

9. By shortening the straps the parachute can be compressed (green arrows).

The ends of the Y-bridle are to be hooked into the main carabiners of the harness.

Record the repack, if needed the compatibility check in the rescue system log book.

By using the adjusters of the black belts (yellow arrows) the front container can be positioned (height) on the harness (depending on the width of the chest belt).

With the belt (blue arrows) the front container can be additionally fixed left and right on the harness main suspension.

18. Mounting / integration to a harness

The adaptation of the NG / NG light series to the harness depends on the harness which is used. Always refer to the manual of the used harness.

This is usually done at suitable attachment points in the shoulder area or in the main suspension of the harness.

The NG / NG light series has one attachment point via the bridle. The connection to the harness must be made with a suitable connection device with a minimum strength of 2400 daN.

18.1. harnesses without integrated rescue system container:

If the harness does not have an integrated rescue system container use the frontcontainer which is shown at point 15.

The frontcontainer will be mounted by the Y-bridle in the main suspension of the harness. For a correct mounting on the harness please refer to the harness manual.

18.2. Usage of an outercontainer / frontcontainer of an other manufacturer:

The usage of a frontcontainer or outercontainer from other manufacturers depend on the size and if the container is certified. If the container is too small/big or not certified the rescue system isn't airworthy anymore.

If a container of an other manufacturer is used you have to read the manual of the container.

For mounting the system to the harness please refer to the harness manual.

18.3. harnesses with integrated rescue container:

Almost all modern harnesses have an intergrated rescue container in which a rescue system can be placed. For the correct mounting of the rescue system in such a container please refer to the harness manual.

18.4. Harnesses with combined deployment bag/release handle

These parachute systems have been tested and found compliant using the original manufacturer's inner container. Use of any other inner container may produce different results, including failures.

Several harnesses are equipped with a complete release handle/deployment bag system, which is adapted optimally to the specific harness.

When using such a system ensure that the deployment bag is compatible to the rescue system used. Please consider:

1. The permitted volume range of the handle/deployment bag system must cover the volume of the rescue system. The volume of the rescue system is to be found under 1. Technical datas.
2. In addition make sure that the deployment bag releases the rescue system without any problem.

A deployment bag, if is used within its specs, with 4 or more flaps (so called cloverleaf deployment bag) is, if LTF tested, according LTF standart in general compatible. See LTF standart 4.3.2.

The use of a pocket container with an opening on only one side must be, according LTF standart 4.3.6, explicitly approved by a LTF test centre for the specific rescue system used.

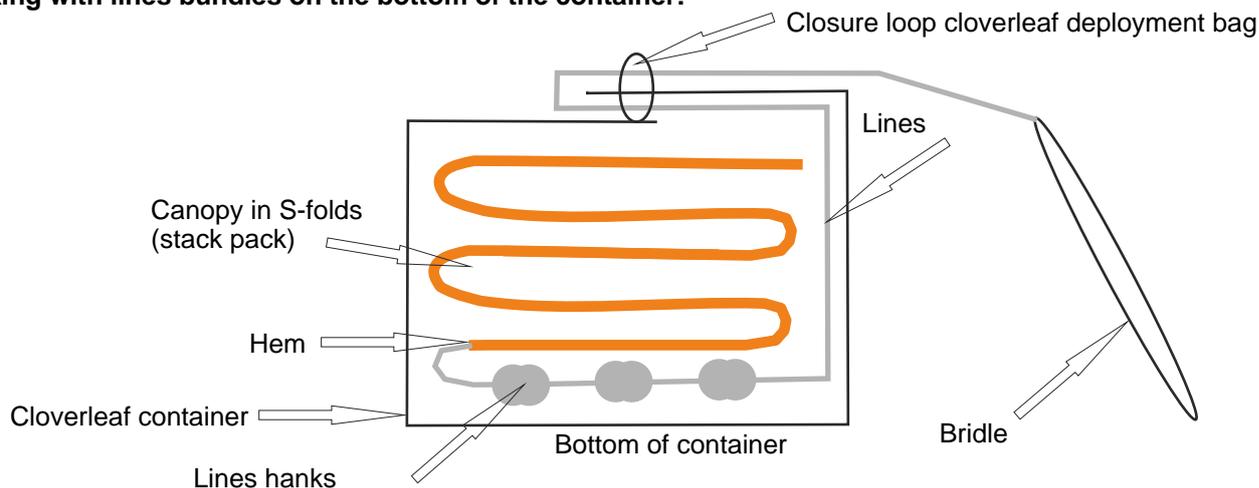
Mounting:

If the above conditions are met, the rescue system is to be packed by following No. 16 (Packing the parachute) step 1 to 19.

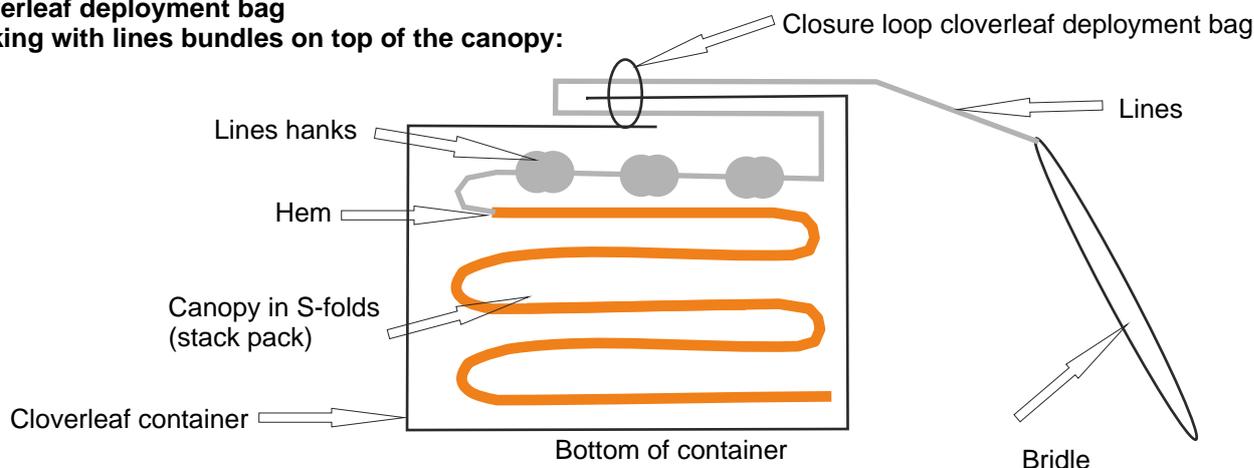
The remaining steps of stowing the rescue system in the harness specific deployment bag is shown in the manual of the harness.

If the harness manual shows a so called stack-pack packing method, this is also possible! The afterward drawings are showing the stack pack method only exemplary!

**Cloverleaf deployment bag
packing with lines bundles on the bottom of the container:**



**Cloverleaf deployment bag
packing with lines bundles on top of the canopy:**



Attention:

If the parachute is mounted to a harness or a front/outer container you have to check the compatibility. This check is only allowed to be done by therefore authorized persons. The compatibility check have to be noticed in the "Repack and inspection log book".

Beside some other points you have to take care particularly that the connection length of the release handle to the deployment bag is minimized. Therefore different loops are at the deployment bag where the release handle can be attached. You should always try to use the shortest possible connection to ensure that the rescue parachute can be thrown as good as possible. But you also have to take care that the release of the container is not blocked in any way. (take care that the release pin does not block!!!). Read the manual of the harness in any way.

19. Specialities for paraglider´s winch towing

For winch towing you have to consider the instructions of the harness-, paraglider- and towing release manufacturer!
If you use a frontcontainer you have to ensure that the rescue parachute can be released in every situation.

20. Pre-flight check

In addition to a normal preflight check (see manual of the glider/harness or maybe towing device), you have to check before every take off that the rescue container is closed correctly and the release handle is placed correctly.
If the rescue parachute connection bridle is removed after every flight (for example: when you use a frontcontainer) you also have to check the correct attachment of the bridle!

