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**Owner's manual
Rescue system**

**Ultra CROSS
75, 100, 125, 150, 210**

manufactured by



independence

● **paragliding**

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Warning

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

The paragliding rescue systems of the Ultra Cross serie 100 - 210 are certified according to EN 12491 (European standard) and LTF 91/09 (German type approval). The Ultra Cross 75 is certified according to EN 12491.

The manufacturer can not be made liable for any possible damages to persons or material damages, which may result from this rescue parachutes in any way.

1. TECHNICAL DATA

Type of rescue parachute: Paragliding rescue system Ultra Cross 75, Ultra Cross 100, Ultra Cross 125, Ultra Cross 150, Ultra Cross 210

Manufacturer: Fly market GmbH & Co. KG
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Paragliding/Hanggliding (HG) rescue-parachute:	Ultra Cross 75	Ultra Cross 100	Ultra Cross 125	Ultra Cross 150	Ultra Cross 210
Weight of the parachute (kg):	0,790	0,975	1,230	1,630	2,270
Surface (m²):	21,53	25,06	32,92	40,33	54,8
Number of lines / panels:	12	16	16	20	24
Total length packed: (Bridle to packing loops)	6,14	7,10	8,22	8,62	10,42
Max. load (kg) :	75	100	125	150	212
Sinkrate at max load:	5,5 m/s	4,61 m/s	5,1 m/s	5,1 m/s	5,45 m/s
Volume in milliliter: (without bridle)	2350	2980	5000	5400	7800

2. Purpose

The emergency parachutes are manually released parachutes for paraglider / hang glider (HG version) pilots in an emergency situation while flying.

3. Conditions of use

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

Interval for repacking: 12 month, then the rescue parachute have to be repacked and this repacking have to be recorded in the "Repack and inspection log book".

Due to the effect of water, sand, salt or other environmental influences may reduce the repack interval.

Interval of inspection: 24 month, then a complete inspection of the rescue parachute is necessary. The inspection have to be recorded in the "Repack and inspection log book".

Operational lifespan of parachute: 10 years. The lifespan can be extended for 2 more years if the rescue parachute is inspected yearly during this last two years at the manufacturer. So the total max. possible lifespan is 12 years.

4. Necessary documentation:

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

5. Mode of operation:

During an emergency situation while flying the pilot pulls at the release handle with a firm tug. Thereby the outer container opens and the deployment bag is released. After that the rescue parachute package (which is still packed in it's deployment bag) have to be thrown with a dynamic move into the free airspace. That means the release handle have to be thrown away together with the deployment bag!!!

The deployment bag and the bridle are designed in a way which releases the lines and canopy of the parachute not before the parachute package is thrown away.

This prevents an unintentional or too early opening of the rescue parachute. This is minimizing the danger of tangling up with the paraglider / hang glider / pilot or the reason which maybe causal for the emergency case (e.g. collision with another paraglider).

Moreover the maximum throwing speed of the deployment bag should be reached when the deployment bag leaves the pilot hand.

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 lines and canopy. The powerful throw and/or the airstream stretches the lines and canopy now the rescue parachutes opens.

After the rescue parachute is opened completely, you first have to check the altitude above ground.

If you have still enough height you should try to make the paraglider unable to fly according to the doctrine to avoid an V-position of the paraglider and the rescue parachute. In the use with a hang glider you should try to get in an upright position and climb into the trapeze.

If you do not have enough height anymore, just focus on the ground and prepare yourself for a landing fall.

6. Control and Inspection of the parachute

A parachute must be controlled by a registered packer before it is repacked. After being opened during an emergency rescue, the parachute must be inspected by the manufacturer or a workshop which is authorized by the manufacturer.

A repacked parachute should undergo a release test after mounted in the outer container or harness. This ensures that the opening force to release is between 2 kp and 7 kp.

By the first assembling of the rescue system with an outer container or harness with an integrated rescue system container the functionality must be checked by an expert and must be confirmed in the inspection log book.

The inspection required after 24 months includes a complete visual examination of all components (cloth, seams, lines, bridles etc) for damage and wear. For an inspection suitable tools must be available (light table, repack tools etc).

7. Behaviour if damages are noticed

If you notice any damage at the rescue parachute, which may affect the airworthy condition of the rescue parachute, you have to send the rescue parachute for inspection/repair to the manufacturer. Also, if you are not sure about the airworthy condition in any way, you have to send the parachute to the manufacturer.

Attention: Chemicals, detergents, insects, mould stains or the like can have the same negative effects to the strength of the parts as mechanical influences.

8. Storage

Oil, grease, acid and paint should not be stored near the parachute. The storage space should be dry. Parachutes which will not be used for a long period should be opened and the canopy loosely rolled and stored in a permeable bag.

Avoid unnecessary high temperature above 60° C (e.g. in a parking car)!

9. Maintenance

The lifespan and condition depends largely upon how carefully you handle and maintain your parachute. Out of this reason we recommend to control the parachute regular, at the latest if it is repacked, if there are any wears or damages.

During normal use you have to take care of the following points:

If the parachute got wet, you have to open it and dry it at a well ventilated place as soon as possible (but avoid direct sunlight!) The fast drying is important to avoid mould stains. After the parachute is complete dry it can be repacked.

If the parachute is strained more than normal (for example: a car drove over the harness in which the parachute is placed, or it maybe is damaged by a sharp object, or any other possible damage), you have to send the parachute to the manufacturer to check it.

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

Also avoid unnecessary exposure to sunlight, cause the UV rays may damage the molecular structure of the material.

10. Cleaning

A dirty canopy and container can be carefully cleaned with clear water and a soft sponge.

Attention: Never use detergents, chemicals, brushes or hard sponges to clean the parachute! Also a cleaning in the washing machine is not allowed.

If the rescue parachute gets in contact with salt water, you have to wash it with fresh water. A too often cleaning accelerates the ageing of the system.

11. Repairs

Repair jobs have to be done only by the manufacturer or a workshop which is certified by the manufacturer.

12. Nature and environment friendly behaviour

Please do our nature-near sport in a way which do not stress nature and environment!

Please do not walk beside the marked ways, don't leave your litter, don't make unnecessary loud noises and respect the sensitive balance in the mountains. Especially at the take-off we have to take care for the nature!

13. Environmentally compatible waste disposal

The materials of which a rescue parachute is made require a special waste disposal. So please send disused parachutes back to us. We will care about a professional waste disposal.

14. Spare parts / changeable parts

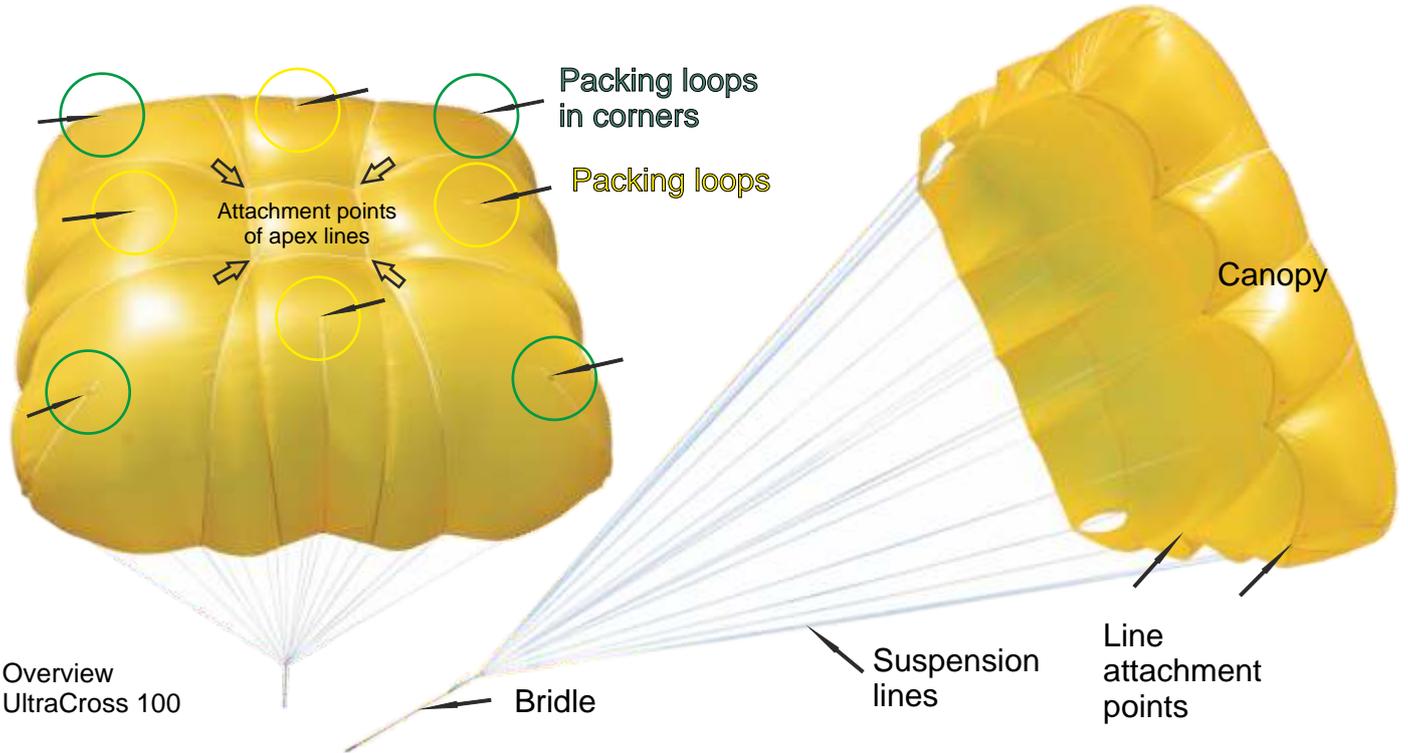
Beside the rubber rings the Ultra Cross series do not need any other spare parts. Only certified rubber rings with the size 25x3x1mm are allowed! This special rubber rings you can get from us very well priced.

The deployment bag is part of the rescue parachute. It's not allowed to use an other rescue parachute deployment bag of other manufacturers, except a deployment bag described in 18.4. is used. A change to any other deployment bag will void the airworthiness of the rescue parachute!

15. Structure of the parachute

The parachute structure is square and has 12/16/20/24 panels (see "technical datas")

The canopy is made of tear resistant, high strength nylon fabric. The main seams are flat fell seams and are reinforced by a band. The lines are sewn to the canopy and reinforced with V-tapes at the canopy. The crown is pulled down by the center lines. All lines and center lines are connected to the bridle. The bridle has a strength of more than 2400 daN.

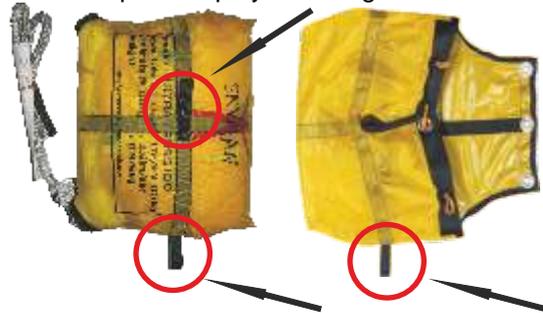


Overview
UltraCross 100

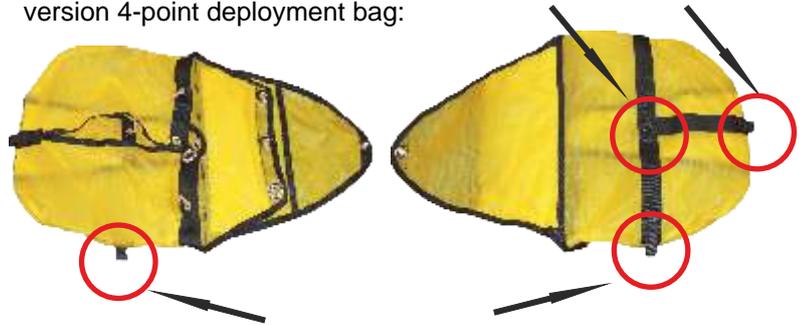
The deployment bag is made of nylon fabric and gets closed at three points.

On the deployment bag are depending on the version two or three loops. At one of these loops the release handle of the outercontainer or the harness is attached.

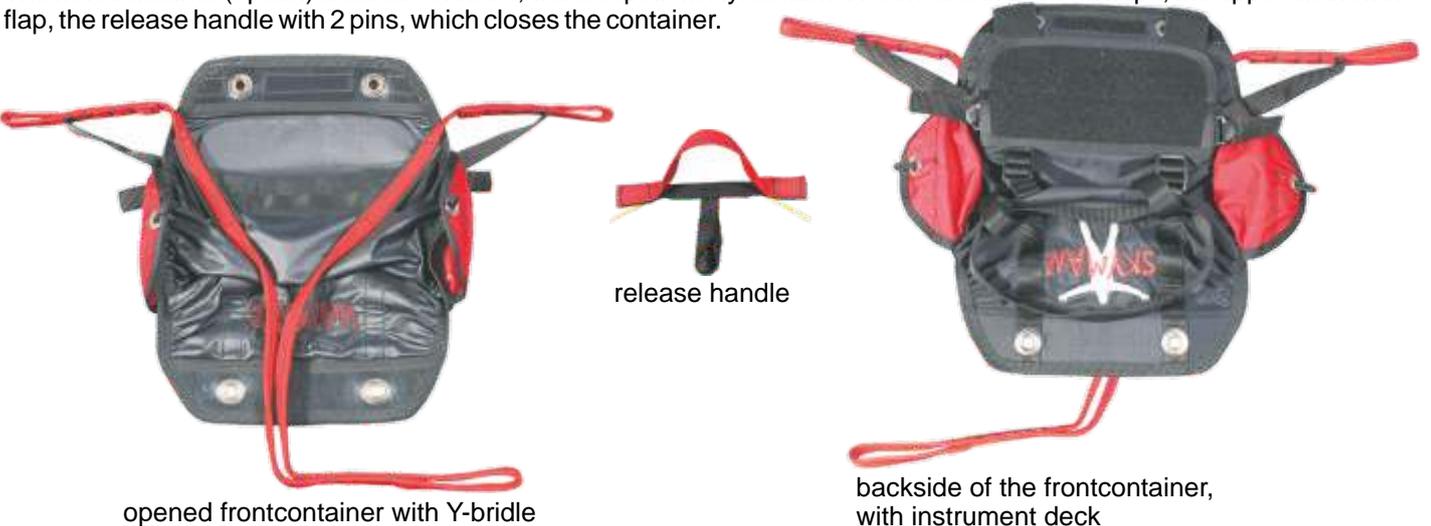
version 3-point deployment bag:



version 4-point deployment bag:



The frontcontainer (option) 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.



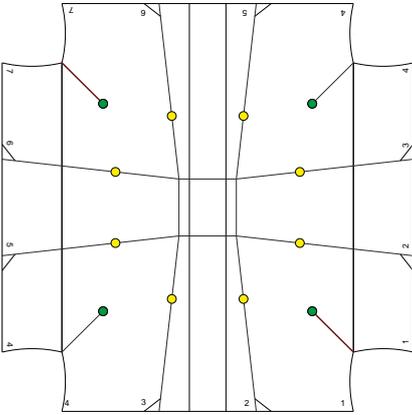
opened frontcontainer with Y-bridle

backside of the frontcontainer,
with instrument deck

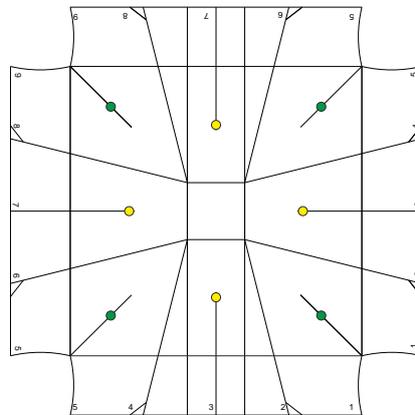
15.1. Structure of the parachute - description of packing loops

Depending on the model the Ultra Cross series have different numbers of packing loops attached to the canopy to enable an easy repack. On the corners the packing loops are green, on the sides yellow and on the center lines black

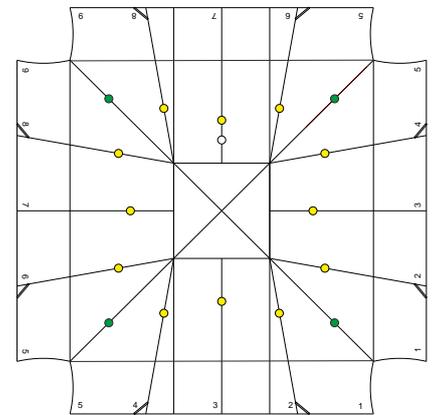
The below overview drawings show how many packing loops each model has (needed for 16. Packing the parachute, step 1.).



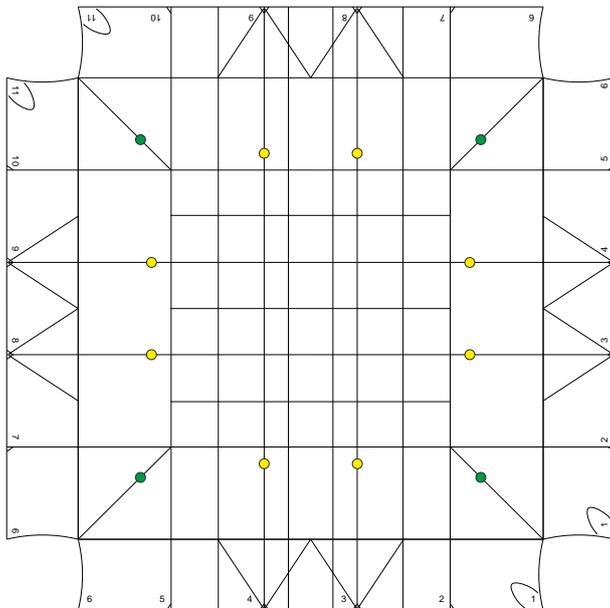
Ultra Cross 75: the packing loops are colored to find them more easy. The Ultra Cross 75 has 4 green packing loops in the corners, and 8 packing loops on the sides.



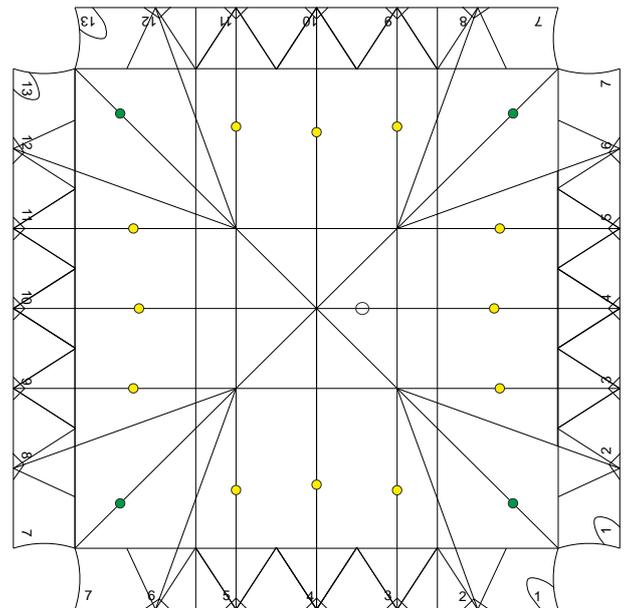
Ultra Cross 100: the packing loops are colored to find them more easy. The Ultra Cross 100 has 4 green packing loops in the corners, and 4 packing loops on the sides.



Ultra Cross 125: the packing loops are colored to find them more easy. The Ultra Cross 125 has 4 green packing loops in the corners, and 12 yellow and 1 white packing loops on the sides.



Ultra Cross 150: the packing loops are colored to find them more easy. The Ultra Cross 150 has 4 green packing loops in the corners, and 8 yellow packing loops on the sides.



Ultra Cross 210: the packing loops are colored to find them more easy. The Ultra Cross 210 has 4 green packing loops in the corners, 12 yellow packing loops on the sides and 1 white packing loop in the center.

16. Packing the parachute



1. Slide on the packing loops on a packing cord. The number and placement of the packing loops can be seen by 15.1.

2. Hook in packing cord. Bundle the lines and stretch them by fixing the bridle on the other end and put the canopy to the left side that panel no. 9 (Ultra Cross 100/125) is positioned like in the picture above.
Ultra Cross 75: panel 7, Ultra Cross 150: panel 11, Ultra Cross 210: panel 13



3. Place panel 9 (Ultra Cross 100/125) centered to the floor and arrange panel 8 to the side.
Ultra Cross 75: panel 7/6, Ultra Cross 150: panel 11/10, Ultra Cross 210: panel 13/12

4. Arrange panel 7 (Ultra Cross 100/125) and pull the upper part so far that it forms in about a rectangle.
Ultra Cross 75: panel 5, Ultra Cross 150: panels 9,8; Ultra Cross 210: panels 11,10,9



5. Arrange panel 6 (Ultra Cross 100/125).
Ultra Cross 75: not applicable, Ultra Cross 150: panel 7, Ultra Cross 210: panel 8

6. Arrange panel 5 (Ultra Cross 100/125) (corner panel).
Ultra Cross 75: panel 4, Ultra Cross 150: panel 6, Ultra Cross 210: panel 7



7. Arrange panel 4 (Ultra Cross 100/125).
 Ultra Cross 75: panel 3, Ultra Cross 150: panel 5,
 Ultra Cross 210: panel 6



8. Arrange panel 3 (Ultra Cross 100/125).
 Ultra Cross 75: not applicable
 Ultra Cross 150: panels 4,3, Ultra Cross 210: panels 5,4,3



9. Arrange panel 2.



10. Arrange panel 1 (corner panel) and place a packing weight on the hem.



11. Fold the left side on the right side.



12. Place panel 9 (Ultra Cross 100/125) centered to the the floor and arrange panel 8 to the side.
 Ultra Cross 75: panel 7/6, Ultra Cross 150: panel 11/10,
 Ultra Cross 210: panel 13/12



13. Arrange panel 7 (Ultra Cross 100/125).
 Ultra Cross 75: panel 5, Ultra Cross 150: panel 9,
 Ultra Cross 210: panel 11



14. Arrange panel 6 (Ultra Cross 100/125).
 Ultra Cross 75: not applicable
 Ultra Cross 150: panels 8,7, Ultra Cross 210: panels 10,9,8



15. Arrange panel 5 (Ultra Cross 100/125) (corner panel).
 Ultra Cross 75: panel 4, Ultra Cross 150: panel 6,
 Ultra Cross 210: panel 7



16. Arrange panel 4 (Ultra Cross 100/125).
 Ultra Cross 75: panel 3, Ultra Cross 150: panel 5,
 Ultra Cross 210: panel 6



17. Arrange panel 3 (Ultra Cross 100/125).
 Ultra Cross 75: not applicable
 Ultra Cross 150: panels 4+3, Ultra Cross 210: panels 5+4+3



18. Arrange panel 2.



19. Arrange panel 1 (corner panel).



20. Check line 1 and 2 (arrows) and the center lines are not crossed and running free.



21. Fold right side S-shaped. (Step 1).



22. Fold left side S-shaped (Step 2).



23. Remove packing cord.

16.1. Version a) placing in a 3-point deployment bag



24. Stow top of the canopy in the deployment bag.

25. Fold the rest of the canopy in small S-folds and place it in front of the deployment bag.



26. Put the S-folded canopy in the deployment bag.

27. Bundle the lines in 3x3 "8-shaped" hanks. Do not bundle the last 50 cm of lines.

Attention: You have to use new rubber rings for hanks and deployment bag everytime the parachute is packed.



28. Close the deployment bag with the lines. First in the middle then the sides.

16.2. Version b) placing in a 4-point deployment bag



24. 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.



25. Close the canopy deployment bag with the lines. First in the middle then the sides. Bundle the lines in 3x3 "8-shaped" hanks. Do not bundle the last 60 cm of lines.

Attention: You have to use new rubber rings for hanks and deployment bag everytime the parachute is packed.



26. Place the hanks in the lines deployment bag.



27. Close the lines deployment bag with the last 60 cm of lines.

17. Mounting in an outercontainer (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 (details on 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. Record the repack, if needed the compatibility check in the rescue system log book.

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.

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 arrow) the front container can be additionally fixed on the harness by looping the Get-Up system.

18. Mounting / integration to a harness

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

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 with 4 or more flaps (so called cloverleaf deployment bag) is in general compatible.

The use of a deployment bag in the shape of a pocket (so called pocket container - exemplary design see under no 15) is possible, but must be tested and certified by a LTF test laboratory separately for every rescue system model. The deployment bag which comes as standard with the Ultra Cross Serie is of course compatible.

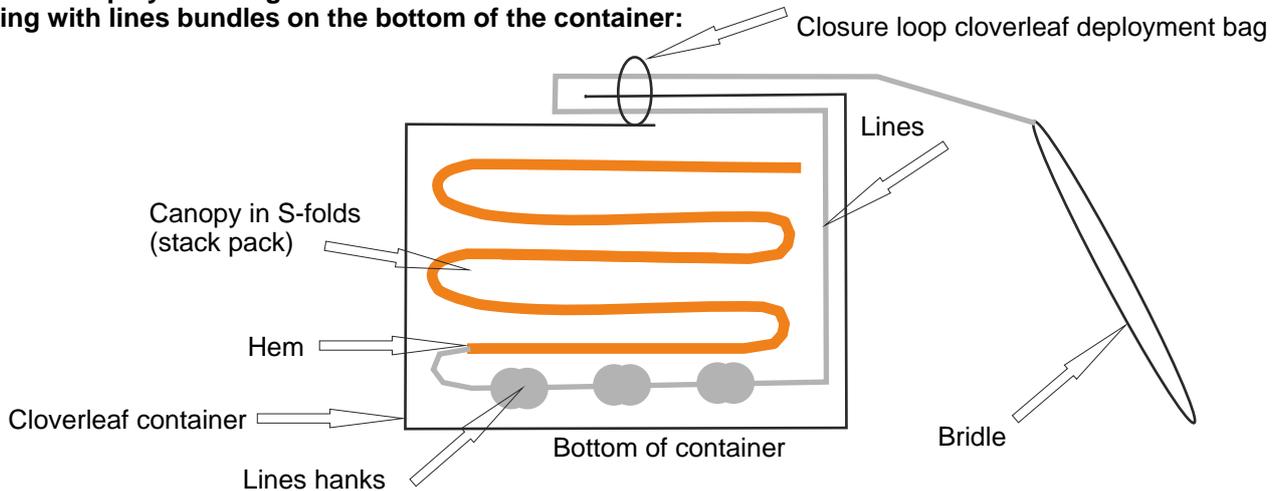
Mounting:

If the above conditions are met, the rescue system is to be packed by following No. 16 (Packing the parachute) step 1 to 23.

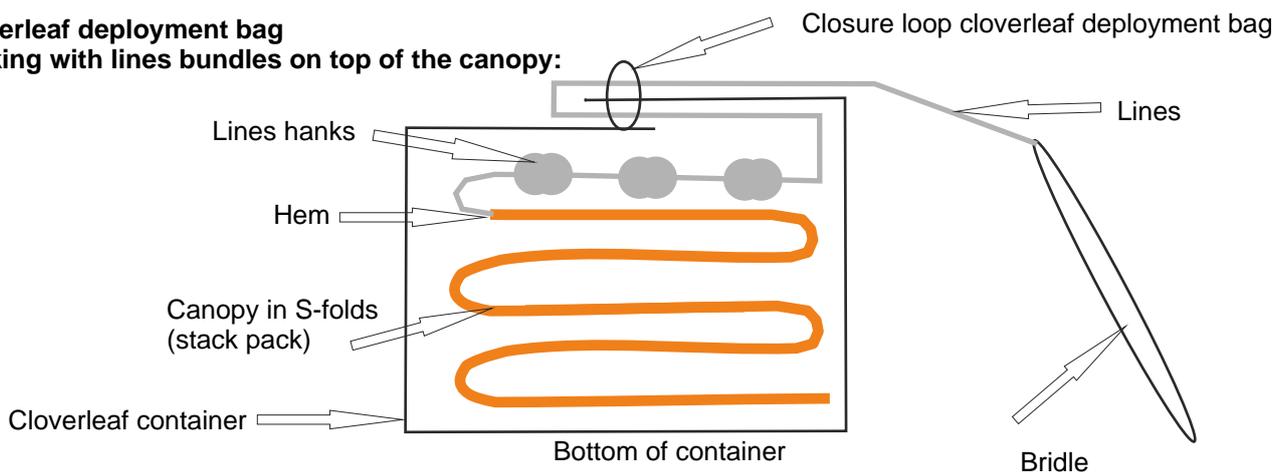
The remaining steps of stowing the rescue system in the harness specific deployment bag is shown in the manual of the harness.

If the harness manual shows a so called stack-pack 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!

