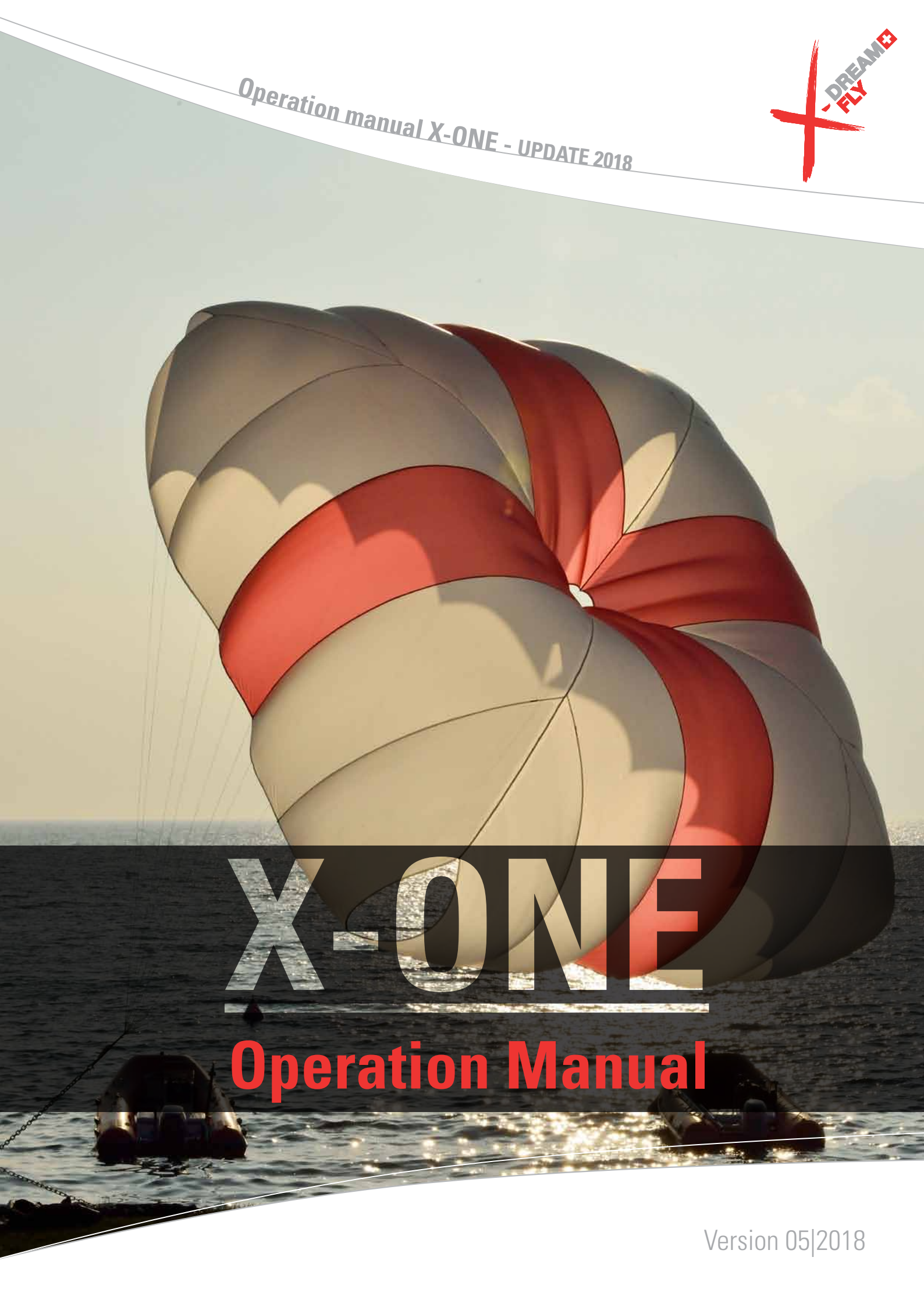


X-ONE

Operation Manual

Version 05|2018

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Content

1. Forword 4
2. Introduction 5
Safety Instruction 5
Intended Use 5
3. Rescue Canopy X-ONE 5
The construction 6
Necessary documentation 7
Components of the delivery 7
Quality assurance 8
Materials used 8
The components 8
Certification 8
Operational limits 8
4. Throwing the X-ONE 9
Deployment oft the rescue canopy 9
After the opening 9
The scissors position 9
Landing with the rescue 9
5. Maintenance and inspection of the X-ONE 11
Behaviour if damaged 11
Storage 11
Cleaning and drying 11
Repairs 11
Correct disposal of the rescue equipment 11
6. Attachment to the harness 11
7. Packing interval for the X-ONE 12
8. Packing Manual for the X-ONE 12
9. Appendix Inspection records 29
Release 31

1. Forword

Dear Customer,

Thank you very much, that you have decided for a **X-ONE**. You have not only acquired one of the most modern and innovative rescue equipment, you also opted for a brand that is committed to the sustainable use of the earth's resources. The ecological balance of our products is our priority.

As a responsible designer I brought the cross canopy first in the paragliding scene, probably before that we have to deal with the development and design of rescue equipment in general and in particular with the cross canopy. Dozen of prototypes, hundreds of test airdrops and measuring flights have enriched our experience and sharpened insights. The product of this unique history is a unrivalled lightweight cross canopies rescue equipment such as the **X-ONE!**

The use of a rescue system is complex and it requires some practice to complete a successful rescue deployment. For this reason, I recommend intense workout for the use of the **X-ONE**. A perfect way for those who can learn only by themselves by repeating the exercises in the event of an emergency in the prevailing difficult condition and react correctly.

I naturally hope that the **X-ONE** must be used as little as possible. If nevertheless, the situation requires it, it should not be hesitated and the rescue device should be activate immediately. For this rare moments we have invested all our knowledge and our intelligence, so you can count completely on the reliability of the **X-ONE.**
I wish you much success and joy dealing with the **X-ONE!**

Dani Loritz & Geri Roschmann

Team X-dream Fly ...
... live your dream

2. Introduction

Safety Instruction

The cross canopy X-ONE is a parachute to be release by hand for paraglider pilots who are in an emergency sit-uation. Due to their design characteristics it is not suitable for the free-fall! The parachute, the suspension lines and their connection are not designed for an abrupt opening, because the necessary shock absorbers are missing. An unauthorized use is prohibited. It is essential to ensure the proper installation of the X-ONE in the harness. In the direct connection, a compatibility test must be carried out by an entitled person, to exclude possible non-compatibility between the harness and rescue device. Only a correctly mounted rescue equipment can function properly in case of an emergency and thus contribute to safety. In case of a release of the rescue device above water, for example, as part of safety training, should pay attention to the fact that a harness foam protector generates positive bouncy and can bring the pilots in the „head-down" position in water. There is also the risk that the foam protection soak water during a longer stay in the water and then pulls the pilot down.

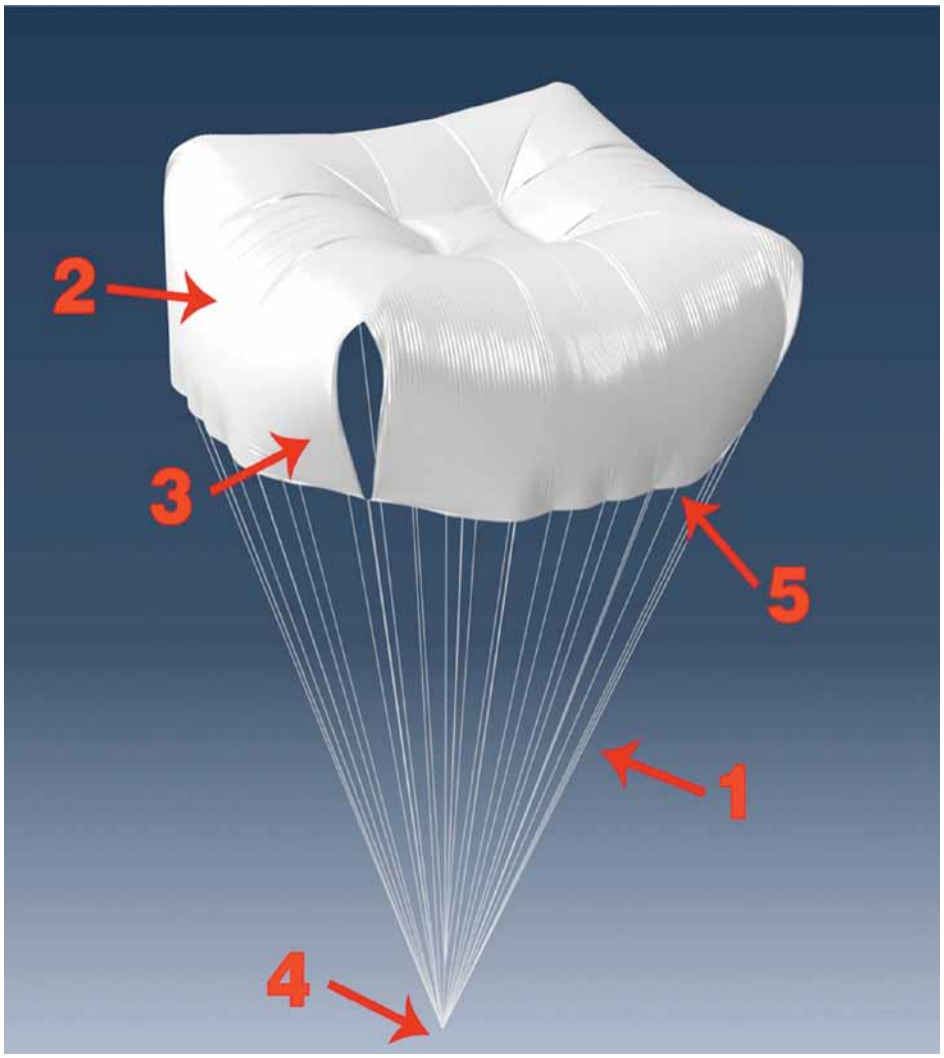
Intended Use

This rescue device has been developed and constructed exclusively for the paragliding sport. The deployment of the rescue device is carried out manually and is used for the paraglider pilot and provide if need it an emergency descent.

3. Rescue Canopy X-ONE

Through to intensive development work, we have succeeded to develop a cross canopy for the sport of paragliding.
The X-ONE is easy to pack, with a small size and weight and has very high pendulum stability. Despite a high maximum towing capacity, we were able to achieve very good sink rate.

The construction



Legend:

1. Suspension lines
2. Canopy
3. Corner openings
4. Main Riser
5. Base

We use only the highest quality materials such as Cousin-Trestec lines or Liros and nylon Fabric from UTT in order to achieve a unique product. All materials used are manufactured in Europe. Sophisticated and modern production methods after ISO 9001 guarantee the best quality and long life. Due to the low pack size the compatibility is guaranteed with most harnesses.

Specifications:

	X-ONE 120	X-ONE 160	X-ONE 120 Update 2018	X-ONE 160 Update 2018
max. load [kg]	LTF 120 | EN 105	LTF 160 | EN 140	LTF 120 | EN 105	LTF 160 | EN 140
number of panels	20	24	20	24
weight parachute incl. riser [kg]	1,45	1,95	1,24	1,64
area [m²]	34,5	44	34,5	44
number of lines	20	24	20	24
number of centerlines	1	2	1	2
sink rate max. load [m|s]	LTF 5,98 | EN 5,49	LTF 6,02 | EN 5,39	LTF 5,98 | EN 5,49	LTF 6,02 | EN 5,39
certification	LTF | EN (Air Turquoise)	LTF | EN (Air Turquoise)	LTF | EN (Air Turquoise)	LTF | EN (Air Turquoise)
certification number	LTF RG 065.2012	LTF RG 068.2013	LTF RG 065.2012	LTF RG 068.2013
certification number	EN EP 128.2015	EN EP 129.2015	EN EP 128.2015	EN EP 129.2015
container size [cm]	L27 | B25 | H9,5	L28 | B26 | H11,5	L27 | B25 | H9,5	L28 | B26 | H11,5
container volume [cm³]	4.980 *(incl. lines)*	5.600 *(incl. lines)*	4.600 *(incl. lines)*	5.200 *(incl. lines)*
system lentgh [m]	6,5	7,3	6,5	7,3
max.area load [kg|m²]	3,48	3,64	3,48	3,64

Necessary documentation

- Operation manual
- Inspection record

Components of the delivery

- X-dream Fly X-ONE rescue
- X-dream Fly X-ONE inner container *(tube container or 4-leaf container)*
- X-dream Fly X-ONE pack instructions *(in the operations manual for free download)*
- X-dream Fly X-ONE inspection record
- X-dream Fly X-ONE operation manual
- the operation manual is available for download at **www.x-dreamfly.ch**

Quality assurance
The X-dream Fly rescue devices go through a step by step control during the whole production. After every step, the product is accurately checked and only after a successful pass of the test the following step will be started. The fabric, the straps, lines and also the sewing machines are verified before use. Continuous quality controls of the production process ensure an error-free production. Each rescue unit is subjected to a strict final inspection before it leaves our factory.

Materials used
The materials used were selected very carefully and under the strictest quality standards. So we choose a 26g uncoated rip-stop nylon fabric from UTT|Delcotex. This meets the required strengths, convinced by good workmanship and promises a longer life.The main seams are including a webbing , which enhance the strength of the canopy. The lines are made out of high-strength Dyneema for an enormous weight reduction. Only the middle lines are made out of polyester. The connection of the lines to the canopy are also made out of polyester and corresponds to the international parachute workmanship.

The components
The X-ONE consists of 4 components.
- The canopy *(cross-canopy)*
- The suspension lines *(side and middle line)*
- Main riser
- Innercontainer

Certification
The rescue device X-ONE 120 and X-ONE 160 by X-dream Fly are approved by the German airworthiness requirement LTF. The X-ONE 90 is approved only by Shock-Loadtest. The approval is valid only in use with the original X-dream Fly tube or 4-leaf Innercontainer. When using a X-ONE in the context of a non-original inner-container please note the corresponding release note in the appendix of this manual.

Operational limits
X-ONE 120 and X-ONE 160 *(LTF)*: Max. Service speed= 150km/h=41,6m/s. X-ONE 90: According to EN 12491 are not suitable rescue equipment for use at speeds greater than 32m/s odder 115km/h.

Every 12 months the X-ONE rescue equipment need to aired and repackaged. It makes sense when you throw the rescue package for training on this occasion in a clean, dry space. Currently, there is no verification requirement for rescue equipment. However, we recommend every 24 months a review of the rescue system. After each case of a real emergency opening the X-ONE rescue device should be checked by the manufacturer.

Permissible operating time: 12 years in compliance with the pack intervals and storage regulations. An extension up to 15 years is possible after an inspection of the manufacturer.

4. Throwing the X-ONE

The reserve is very often literally the lifesaver the "Second Chance" for the paraglider pilots. In the close flown airspace of many flying areas a collision should not be underestimated as a danger on good flying days. Collisions with other aircraft are one of the principal reasons to pull the parachute. Disturbance in the glider as cravats, which leave the glider in spirals, fast twisted rotation movements or line breaks that make the steering of the glider impossible are other good reason for throwing the reserve.

Deployment oft the rescue canopy

You grab the handle of the rescue and throw the canopy with a strong lively movement slightly backwards. The more hard the movement precipitates, the faster the lines stretches themselves and pulls the canopy out of the container.

After the opening

When the reserve opens *(usually behind the pilot)* the glider is momentarily unable to fly, any prior rotation stops immediately. The rescue rises above the pilot, the glider dives forward or sideways. Now you must immediately attempt to deform the glider strongly *(B- or C-Stall, or pull one line in)* that the glider disturbs the rescue in his movements as little as possible. If one does nothing at all, the glider rises above the pilot, the rescue shifts backwards and cannot carry properly. This can occur to the dreaded scissoring position *(Down Plane)* when the glider and the rescue are at an angle of 45° to each other. The rescue canopy carries now only one part of the load, the rate of descent is dangerously high. Try to deflate the glider and don´t let it fly anymore *(B- or C-Stall, pull one line in)*. If the paraglider flutters only like a flag upwards, the rescue canopy can carry widely undisturbed and freely of pendulum.

The scissors position

The X-ONE is extremely pendulum stable as a cross canopy can be. Nevertheless, the danger of a scissor position *(Down Plane)* should be reduced by stabilising or retraction the main glider. A scissor position increases the rate of descent and produce an oblique pilot position when landing and increases the risk of injury!

Landing with the rescue device

Especially when triggered at low altitude the upright position in the harness is important. If you have a shoulder mount to the harness, it usually brings you in an upright position. It is essential to ensure that the canopy is not deform the rescue device just before the ground.

It is important to note the following when landing on the rescue:

- Upright pilot position
- Legs together and knees slightly bent
- be ready to roll over yourself

Potential errors and hazards

Error in the Deployment	Rescue response/hazard:	Pilot reaction:
Release handle can not be achieved	Rescue can not be triggered	Compatility-Check after each complete new installation
Closure on the outer container can not be opened	Rescue can not be triggered	C-Check after each complete new installation
Inner container is not thrown away aggressively	Rescue does not open or very delayed	strongly pull on the lines or riser of the rescue, pull second rescue

Error in the Deployment	Rescue response/hazard:	Pilot reaction:
No deformation of the paraglider	Scissor position, strong commuting, uncontrolled impact	Deform the gilder, get rid of the glider (Quick-Out)

Error in the Deployment	Rescue response/hazard:	Pilot reaction:
Too much concentration on the glider, pilot forget the upright position	pendulum, uncontrolled landing	Occupy upright pilot position, prepare for landing
During the landing legs not together, wrong pilot position	Uncontrolled landing	Ouch!!!

5. Maintenance and inspection of the X-ONE

Before each packing the parachute must be inspected by a packer. Was the emergency parachute opened for an emergency case then the rescue must be subjected from the manufacturer.

Behaviour if damaged
If a check at the rescue system found some damage which affect the airworthiness of the device, the rescue equipment has to be send to the manufacturer for repair. This also applies to damages whose impact on the airworthiness of the system and cannot be uniquely determined.

Storage
A rescue device exists to save the life of the owner. It needs careful maintenance and care. UV radiation, moisture and chemicals are the worst enemies of your X-ONE rescue device. Avoid unnecessary burdens and let your X-ONE never unnecessarily lying in the sun. The rescue equipment should be dried in clean, dry and dark rooms. Rescue packages that are no longer used should be stored loosely rolled in a bag.

Cleaning and drying
Dirty canopies and containers can be washed with clean clear water. Acids and mildew can affect the strength of the components. Such polluted parachutes have to be sent to the manufacturer for investigation and repaired if necessary.

Repairs
The manufacturer or authorized X-dream Fly Partners must perform all repairs.

Correct disposal of the rescue equipment
As an environmentally conscious manufacturer of rescue equipment we pay great attention to produce our products Eco social tolerated. The material we use in our products is evaluated according to environmental criteria and subject to constant control. For the proper disposal the steel fittings should be separated at the metal disposal point. The canopy, the lines and straps can be disposed with household waste.

6. Attachment to the harness

Each new combination of harness and rescue has to be checked *(Compatibility Check)* after the first packing by the manufacturer of the harness or by a trained and appointed person. Deploying the rescue system has to be possible out from each flying position according with the requirements of the building regulation. It should be noted that the release force of 7daN is not exceeded. The X-ONE must be connected with a carabiner or by looping through the V-line to the harness. When using a connection carabiner the breaking load of the carabiner must have a min. of 2400 daN.

7. Packing interval for the X-ONE

Before the rescue is repacked it must be subjected to a visual inspection by the packer. The reserve parachute must therefore be aired at a humidity of 60 - 65% for 24 hours. The packing shall be done as possible on a packing table, but at least on a clean, antistatic surface. The following photos are from a X-ONE. We remind you that you fly at your own risk. This also applies to the use of this life-saving device.

8. Packing manual X-ONE

Before you start to pack, the X-ONE should be checked for any damage to the canopy, the lines and the main riser. The lines should be checked for proper performance and to unravel if necessary. The X-ONE is a cross-canopy and has four corners. One of these corners is at the bottom when folding, one corner on the left and right and the last above.



picture 1

Before each packing slide on the packing loops on a line *(packing cord)*. Now you pull the whole rescue under tension, all the fabric and lines are under tension except the 4 corner lines.



picture 2

The reserve should now be well ordered. 10 panels *(blue arrows)* lay to the left and 10 panels (green arrows) on the right. The corner line with the two opposite (green and blue) arrows should be located down on the bottom.

NOTE: There are 8 panels at the X-ONE 90 and 12 panels at the X-ONE 160.

picture 3

Now we have to arrange panel by panel to the right *(green arrows)*. The panels should be as wrinkle-free as possible. Note that the lines remain pooled on the basis below. The first panel has come to be tapered at the top.





picture 4

After follows four rectangular panels which will be placed from the left to the right side *(X-ONE 120)*.

NOTE:
At the X-ONE 90 there are three panels and on the X-ONE 160 there are five panels.



picture 5

The following panel and as the same time the middle panel on the green side is the corner panel and should be placed as a triangle. Here the slot *(corner of the rescue)*, is visible on the right side. This panel is wider than the underlying panels. The out looking area is inserted later on the S-turns.



picture 6

Keep on folding the panels on the green side till the panels with the two arrows pointing to each other is visible. Now we can fix the right side panels with some sand bags, this recommended especially for less experience packers.



picture 7

Then we must move the left *(blue arrow)* panels over to the right ones *(green arrow)*. All panels are now right.



picture 8

Same like we did with the right side panels now the left ones with the blue arrow must be placed according to the same procedure as the right side, clean and wrinkle-free. Beginning with the first at the bottom.



picture 9

Same as on the right side with the green arrows the panels are defined with the blue arrows. There are two rectangular panels before the lateral corner panel. It should be noted that the lines must be located in the centre of the base bellow. Here you a can help yourself with sand bags.

NOTE: The X-ONE 90 has one panel and the X-ONE 160 has three panels.



picture 10

The fourth panel is a blue corner panel as already on the right side and is accordingly also laid down as flat as possible.

NOTE: In the X-ONE 90 it is the third panel and on the X-ONE 160 it is the fifth panel.



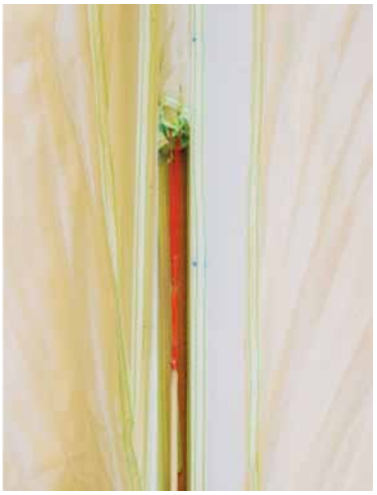
picture 11

The other panels are placed clean down till the top corner panel is achieved. This panel is recognizable by the two arrows pointing to each other. The X-ONE is now symmetrical and nicely folded in front of you.



picture 12

The base can be seen below with the centrally located lines, all panels with the blue arrows are left and all panels with green arrows are the right of the lines. In the middle are the arrows which are pointing to each other.



picture 13

In the center of the canopy the middle line and the top should be recognizable through the slot.



picture 14

Similar to round canopies the rescue is now folded with the help of S-turns to the width of the inner container.



picture 15

The corner panel is simply folded back to the left side.



picture 16

The entire parachute is now rotated around it axis 180° to the left. This act is the most difficult and it is easier if two people working in sync for the rotation. At the base edge the two arrows pointing away from each other are now visible.



picture 17

The left side panels with the green arrows are defined as S-curve to the right on the inner container width. The lines should now be centrally located in the middle of the rescue again.



picture 18

The triangle panel get´s folded to the left on top to reach the inner container width. The X-ONE is now longitudinal S-folded symmetrically in front of you. The lines are in the middle of the base edge.



picture 19

The packing line for holding the packing loops together can be removed now. It is important that this line is removed completely. Otherwise it will prevent the opening of the X-ONE!

ATTENTION:

Our rescue series X-ONE and X-CURVE will be provided from mid 2015 on with the new 4-leaf container.
The packing method of the rescue is identical till image 19.
For further procedure of packing with the 4-leaf container, please go to image 26th.



picture 20

The X-ONE should now be placed with narrow S-curves to a tower. The width of the S-turns should be about 8 - 10 cm wide.



picture 21

The inner container is placing on top of the existing S-turns. The slot of the inner container should look towards the lines.



picture 22

The inner container should be closed now with the lines. Note that the central rubber closes first. First the slot and after the line container flap, after you close both sides of the line container flap. Laterally projecting loops of the lines should be kept as small as possible.



picture 23

The lines are collected in S-folds so that it gives about 2 - 3 line bundles. Again, care should be taken that the excess of the line loops behind the rubber are kept as small as possible. From the last line groups to the main riser should be left 15 cm of lines for closing the cover part.



picture 24

The line bundles are stowed away in the pocket of the line bag from the inner container.



picture 25

The cover sheet of the inner container should be closed with the rubber at the end of the slot and a final short line loop. The X-ONE is now ready for installation into the harness. The connection of the X-ONE to the harness shall be made due following the recommendations of the harness manufacturer *(harness manual)*.

The riser of the X-ONE should be connected to the suspension point of the harness. For the connection of the handle there are three loops on the outside face of the inner container.



picture 26

The X-ONE should now be placed in S-curves. The length of the S-curves is depending on the size of the container. The length of the inner container from the X-ONE 90, X-ONE 120 and X-ONE 160 are different.

picture 27

It is important that the base edge of the X-ONE is placed at the top of the 4-leaf container facing towards cover leaf No. 5.

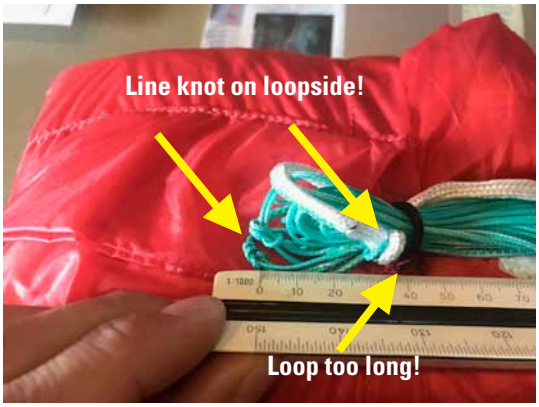




picture 28

The leafs 1 - 4 of the inner container will be closed with the black rubber band in the correct order. The black rubber band is fixed trough the grommet with a line loop.

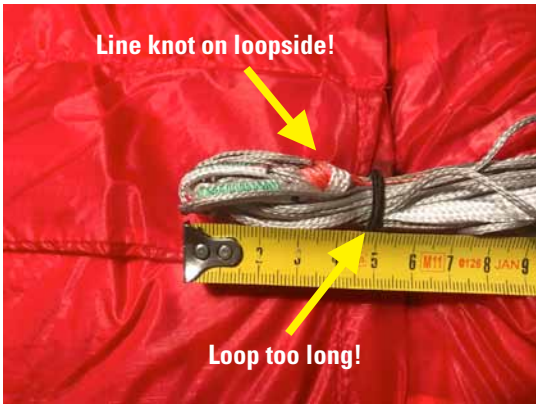
IMPORTANT: This line loop on the black rubber band is made first, thereby the canopy is fixed in the container. This packing method ensures maximum throwing power. The lines released first, get stretched and opens the last line loop with the black rubber band, afterwards the canopy will be released from the container.



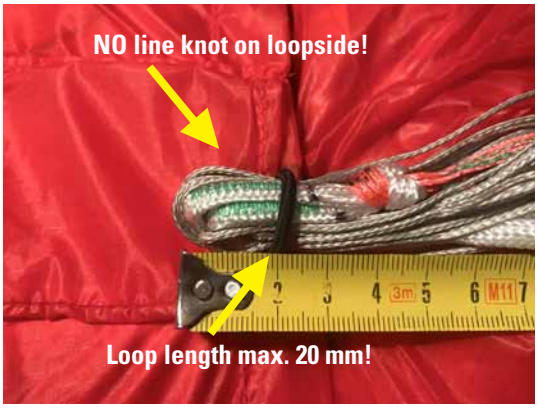
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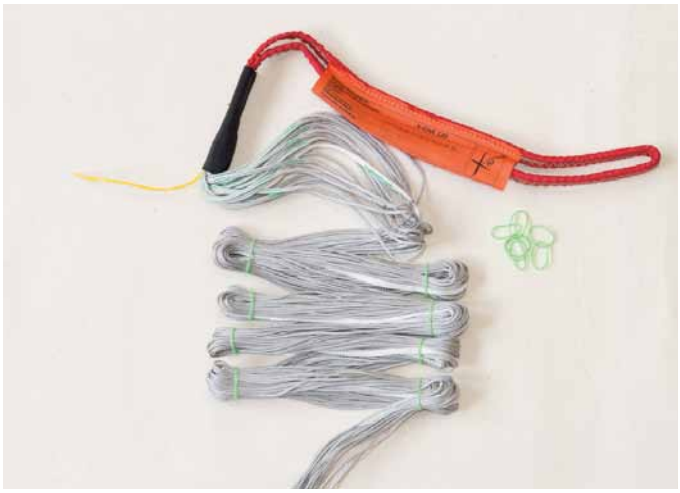
CORRECT



NOT CORRECT



CORRECT



picture 29

The lines are collected in S-folds so that it gives about 3 - 4 line bundles. Again, care should be taken that the excess of the line loops behind the rubber are kept as small as possible.



picture 30

The line bundles are stowed away in the pocket of the cover sheet No. 5 from the inner container. The first line bundle which fixed the black rubber band should be tucked now into the provided pocket in leaf 4.



picture 31

The cover sheet No. 5 of the inner container is closed with the plastic stick. The plastic stick is first pushed from the inside out trough the smal hole.



picture 32

Fold the cover sheet No. 5 to the right, push the black rubber through the eye of cover sheet No. 5and push the plastik stick trough the black rubber band.



picture 33

Then insert the plastic stick back through the small hole in leaf No. 5 and fix the bracket of the cover sheet No. 5 in the intended pocket in sheet No. 4.



picture 34

The X-ONE is now ready for installation into the harness or the external container. The connection of the X-ONE to the harness shall be made due following the recommendations of the harness manufacturer *(Harness manual)*.

The riser of the X-ONE should be connected to the suspension point of the harness. For the connection of the handle thereare three loops on the outside face of the inner container.

9. Appendix

Inspection records

Wartung/Packnachweis
Serien Nr.

Packing Advice/Inspection Book
Serial No.

Nr.: No.:	Datum: Date:	Tätigkeit: Activity:	Notöffnung: Emergency use:	Spezielles: Specials:	Packwart: Name:	Unterschrift: Signature:

Nachprüfung Datum: Inspection Date:	Beanstandung: Result:	Spezielles: Specials:	Prüfer: Inspector:	Unterschrift: Signature:

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Version 05|2018

We wish you continued great flights and many happy landings with the X-dream Fly product X-TWO.

Team X-dream Fly ...
... live your dream

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Release

Release of X-dream Fly rescue equipment for external containers
(harnesses with integrated reserve container)
Current status 10|09|2016

1. Content

This release is valid for all X-dream Fly rescue equipment including X-ONE-series, X-CURVE-series, X-TRIANGLE-series and X-TWO-series in conjunction with non-original inner containers.

2. Risk

The compatibility of a harness with integrated | solid inner container to an external emergency equipment must be guaranteed by the manufacturer of the harness and is tested by internal tests with different bulky containers. The opening processes of the rescue device are dependent on the type and size of the inner container. There is the possibility that the rescue equipment have a slowed-down opening or not even open in use of a smaller inner container or inner container of other design. The original container of X-dream Fly have a separate line compartment for the S-loop line packages for a defined opening sequence. In a container without a separated line compartment the throwing power slows down by the early release of the entire rescue system. The X-dream Fly containers provide a maximum of throwing power and quality of defined opening. This ensures a faster opening. In addition, Dyneema lines are installed in most modern rescue equipment. These lines are coated with a polyurethane resin. In our rescue manu-facturing (at X-dream Fly) we take care that different materials are handled separately. It is possible that mini-mal parts of this coating are solved and get transferred on the fabric if the lines and the fabric are packed together. This can lead to bonding and thus a delayed opening. Similarly, a defined packing method is recommended which is not useful or possible in each inner container from other brands. Changes that differ from the original packing method or the packaging size can increase the opening time and reduce the opening quality.

3. Implementation and installation

The implementation and installation of a X-dream Fly rescue unit in the inner container of a third-party may be made only by trained personal by X-dream Fly. During the conversion and installation of the rescue the manual of the rescue as also of the harness - or inside container manufacturer - has to exist and the corresponding installation and pack instructions need to be followed. The conversion in the non original inner container is to note in the packing ID and signed by the pack manager.

4. Changes | Pack Interval | Opening Quality

We would like to point out that we pay much attention to a uniform development of our rescue systems. This refers to all system details and also includes the inner container. Who changes the inner container on our rescue equipment or remodels, change the quality of opening under certain circumstances. We definitely recommend a proper release during a compatibility-check. Take special care if the lines packed together with the canopy in the container and recheck the eventual problem explained in point 2. On the usual precautions (dry storage, no compact packing, no moisture in the system etc.) in the handling of harness, inner container and rescue device should be placed specialemphasis.

The operating manual as well as additional information can be found as download under www.x-dreamfly.ch

Bach, 10|05|2018

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