



**OWNERS MANUAL
B-SAFE 140**

reserve system for the Paraglider

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www.pro-design.at

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1. GENERAL GUIDELINES

The reserve parachute B-SAFE 140 was developed for the use with Paragliders or Hanggliders. Our first principle when developing this chute was to make a rescue device with quick deployment time, low sink rate and high loading capacity of the canopy. Because of the high shock loads during deployment only materials with high elasticity and stability are used.

The special packing method, which was tested in different trials, guarantees a fast deployment. Immediately after the opening of the inner container the opening of the chute starts, which means the basis starts to fill with air. The special packing ensures a fast and symmetrical opening. DHV certification test: The B-SAFE 140 was dropped from an altitude of 60 meters at zero acceleration with a load of 70 kg. After two thirds of the dropping distance the rescue chute was fully deployed already. In normal use the deployment will be even faster, because pilots in most cases throw the chute away and accelerate the deployment this way.

The comparatively big area of the canopy reduces the sink rate. Because of the long lines the B-SAFE 140 is much more stable than normal rescue systems. This also reduces the pendulum effect and the touch down speed of the pilot on ground is lower.

The construction of the inner container supports the fast deployment. A pilot chute is attached to the container. This small chute ensures that the rescue chute moves away from the pilot immediately even if the container has not been thrown away powerfully and helps to pull away the inner container from the folded canopy. The container's four-leaf-system guarantees a fast deployment and makes packing easy.

B-SAFE 140

Flat round canopy (annular) with 2 center lines and big skirt opening. Because of that the projected area is bigger at the same normal area, which means lower sink rate and faster opening. Also the canopy is made of two different materials: The upper material has more porosity than the lower material. That means a more reduced pendulum effect.

2. USE WITH HANGGLIDERS

Not described in this manual.

3. USE WITH PARAGLIDERS

The B-SAFE 140 is equipped with a dampening part sewn in S-loops, where seams brake during a hard deployment and dampens the shock load. It is important that the pilot after the opening of the rescue chute pulls down the Paraglider with one of the rear risers. This avoids a V-position of the two canopies and the pilot to move into a horizontal position. It is also important that the rescue chute is correctly attached with a V- attachment bridle at two points, either at both carabines or at the shoulder straps.

4. LIMITATIONS

The B-SAFE 140 may only be used as a rescue system with Paragliders or Hanggliders. It is not permitted to use this rescue device as a skydiving chute or as a normal flying chute.

5. DURATION OF USE

The permissible duration of use is 10 years with an inspection by the manufacturer every two years. If it is packed you are allowed to use it for 4 months then it is recommended to re-pack (DHV recommendation).

6. TECHNICAL DATA

model:	B-SAFE 140
number of panels:	22
layout area m ² :	41
load with 6,8m/s in kg:	143
type:	round annular canopy
recomm. load in kg:	140
max. load in kg:	140
load with 5,5m/s in kg:	115
weight in grams:	2600

7. DEPLOYMENT INSTRUCTIONS

Explanation:

If you decide to use the rescue system, follow the below described sequence:

1. Look for the handle.
2. Grab the handle.
3. Wait for an appropriate moment and throw the container into the free airspace powerfully.
4. The releasing power which the container needs for opening has a range between 5 and 7 kg due to the break link (knotted thread), and depending on the harness/handle design

Explanation:

Not much power is necessary to release the rescue package and to throw it away.

Even if you have to react very quickly in a dangerous situation, you should grab the handle and then make sure that the opening of the rescue chute is not obstructed by your glider. Wait for an appropriate moment and throw the container into the free airspace powerfully.

Simulate the worst case on the ground by grabbing the handle until you are sure you can find it even with your eyes closed. If you are trained well your action in a dangerous situation will be safer and more efficient.

WARNING

Manufacturer and seller of the rescue system B-SAFE 140 do not take any liability for risks in Para- and Hanggliding. Also accidents, loss, improper handling, improper maintenance, direct and indirect damages, which occur through the use of the rescue system are in the responsibility of the pilot. It has to be clear to every pilot that this is a rescue system, which was built to be used as the last chance if you are in an emergency situation during flight. The rescue chute reduces the sink rate of pilot and glider (Para- or Hangglider) and makes an emergency landing possible. The use of the rescue chute has to be seen as a rescue opportunity but does not guarantee a safe rescue. If the rescue chute is opened for no reason, serious injury for pilot and damage for the glider can occur, especially at low altitudes.

8. PACKING INSTRUCTIONS

1. The rescue chute B-SAFE 140 is easy to pack but deviates a little bit from normal rescue systems. Accuracy is the most important thing packing the chute. The right sequence of the opening is the most important requirement for a fast and faultless deployment of the rescue system. This fact was one of the important guidelines during construction. Our experience is that a simple construction is more functional and faultless.

Only the right way of packing ensures a fast and save opening. Keep on hold to the instructions very accurate. Pilots, who are less experienced in packing rescue systems are recommended to have the rescue chute packed by a professional.

2. To pack the chute in the right way, you need two persons. Moreover you need an approx 50cm cord, two carabines and tension belts. The rest you are working on should be clean, dry and should be an even place. The surface should not bring static charge onto the chute because this could prevent the chute from opening.

3. First make sure that all top skirt lines have the same length and the top forms one base (Photo 1). The middle lines have to be in the center that the top is pulled symmetrically during the opening. Make sure that the middle lines are connected with the top lines correctly (Photo 2). Photo 3 shows the wrong connection, which can lead to a damage of the lines.

4. Now make sure that the bottom lines are also connected to the chute correctly. The loops of the bottom lines have to be over the loops of the chute (Photo 4). The B-SAFE 140 has lines, wich are sewn to the canopy. For the next step you need a spare line, which has another color than the chute. This line has to be removed later on. The spare-line has to be put through the packing loops (Photo 5). All together the spare line should catch as many packing loops as the chute has panels. (B-SAFE 140, 22 panels). Count the packing loops that you do not forget one of them. Only then the two ends of the spare line are tied together (Photo 6).

5. With the colored middle line the top has now to be towed through the canopy.

6. Attach a carbine to the spare line which runs through the packing loops as a connection. With the tension belt fix the chute to the area you are working on. Make sure that the middle lines are as long as the bottom lines. Use this as control for the top to be towed far enough through the canopy. Make sure that two following bottom lines are clear over the whole length, from the main bridle to the canopy. If so then all other lines are also clear (Photo 7). As the next step make sure that the inner bottom lines lie on the right and left side of the middle-line (Photo 8). Lay down the canopy so that the panel NR. 1 is on the top of the right side and the last panel (B-SAFE 140:

No 22) is on the top of the left side. Now connect the main bridle in the same way you did with the other end at the top and tension it (Photo 9).

7. Make sure the bottom of the canopy forms one base (Photo 10). Now lay the panels very neat and check them. With one hand you hold the bottom-lines together to keep the bottom of the canopy in one base. With the other hand you take always one panel, sleek it and count it to the other side. The helping person stands at the other side at the top and takes the same panel, sleeks it and same time takes care for a correct position (Photo 11). First count all panels to one side and then back to the other side (Photo 12). Only then you make two halves that there are half of the panels on each side (Photo 10).

8. Now you fold about one third of each side in an angle of 45 degrees (Photo 13). Then divide the canopy into three thirds. First lay the left part to the inside by one third (Photo 14). After that you fold the right over it (Photo 15). The bottom-lines should be in the middle of the base (bottom-edge of the canopy). Now the base should be as wide as the inner container, in which the chute is packed later on.

9. Release the tension by releasing the tension belt at the packing-loops. Pull the spare-line out of the packing-loops (Photo 16).

Do not forget to remove the spare-line; otherwise the chute will not open!

10. Now the bottom-lines are put in S-loops. The S-loops have to be as wide as the base. With special packing-rubbers (15 x 1 x 1 mm) fix the five ends of the loops (Photo 17). It is important that the bottom-lines keep the same length and lie flat. The free part of the lines remains for the closure of the container.

11. Then put the inner container into a position to the chute that the double-leaf faces the base (Photo 18). Now you can start to pack the inner container (Photos 19/20).

12. Fold the chute in S-loops; the first S-loop should include the base and the bundled lines and should have the same width like the other S-loops (Photo 19/20).

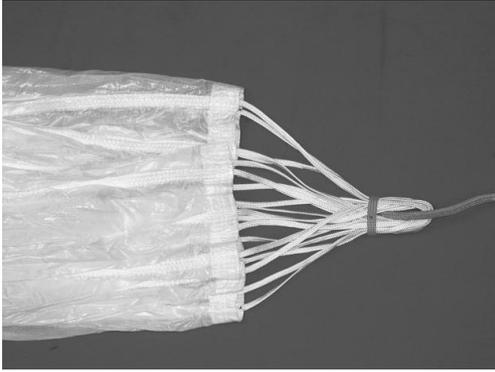
13. Turn around the chute by 180° (turn it that it lies on the top) and put it into the inner container that the lines are on top (Photo 21).

14. Now start to close the container. First you close the leaf with the smaller eye. The rubber band is pulled through the eye from the inside. Make sure that the rubber knot has enough size that it cannot move through the eye even if you pull it. Maybe you have to strengthen the knot with a washer. Now close the opposite leaf and pull the rubber band through the eye by using a spare-line (Photo 22).

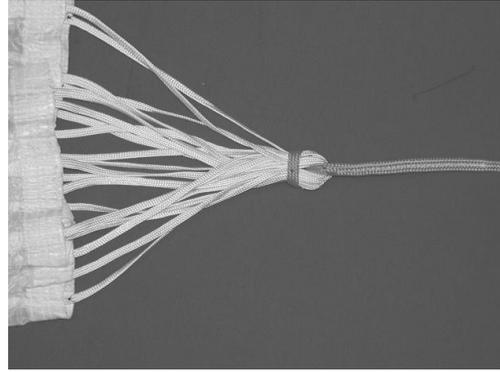
15. Then the leaf has to be closed on which the lines run out of the container (Photo 23). It is important that you hold on to this sequence because nothing should work against the pulling direction during the opening.

16. After you have closed the container with the fourth leaf, bolt it by blocking the rubber band by the lines (Photo 24). Test the tension of the rubber band. If it is too loose it is too easy to open the bolt; if it is too strong it will be too hard to open.

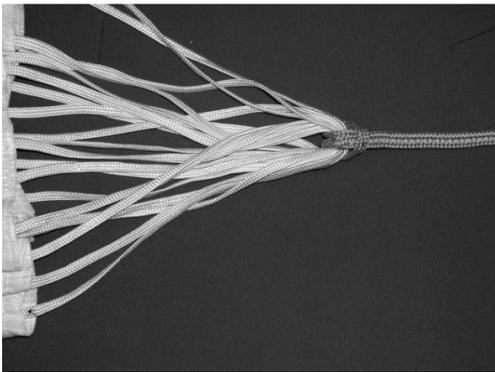
17. Now close the second part of the double leaf. First pull the packing rubber in the middle through the middle eye. (Photo 25). The packing rubbers on the right and left side are now pulled through the eyes in the cover and each has to be fixed with a S-loop of the bottom-lines (about 3cm) (Photo 26/27).



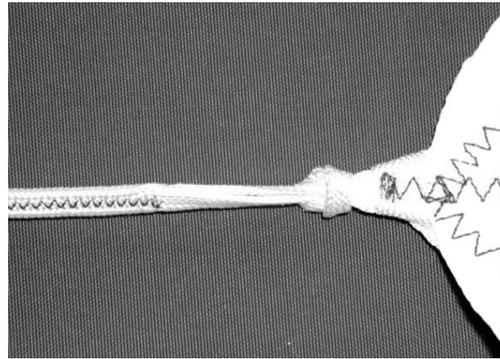
1. same length?



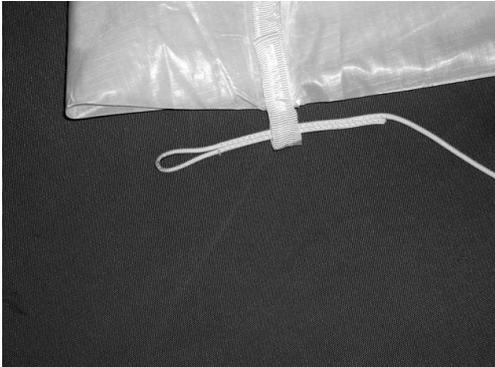
2. correctly connected



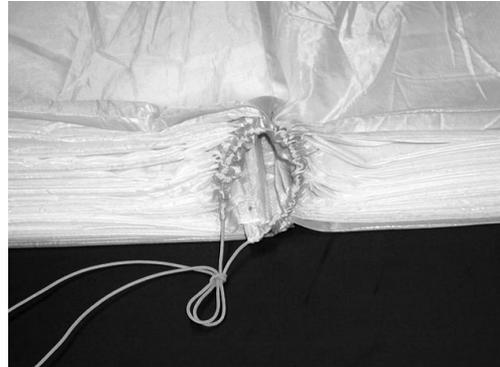
3. wrong connection..take care of damage..



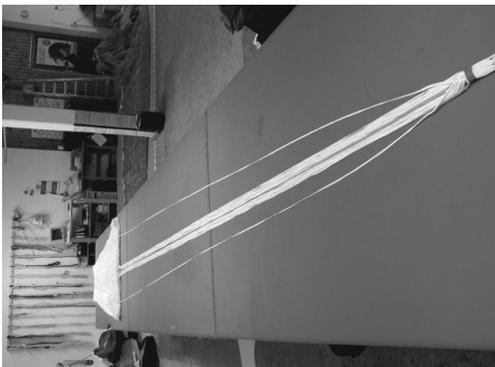
4. control the bottom lines...



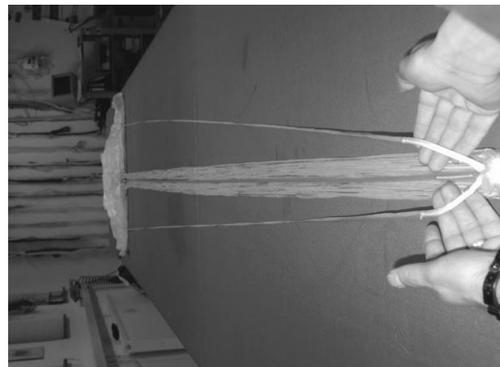
5. spare line...Attention! Dont forget to remove afterwards!



6. dont forget one of them. and fix it.



7. inner bottom lines left and right...



8. ...are free.



9. ...and tighten it.



10. all in one base?



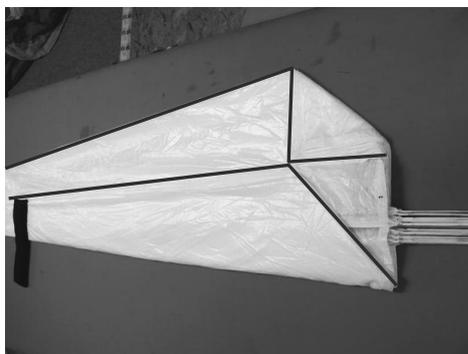
11. Count every panel



12. until one half is on the right
one on the left.



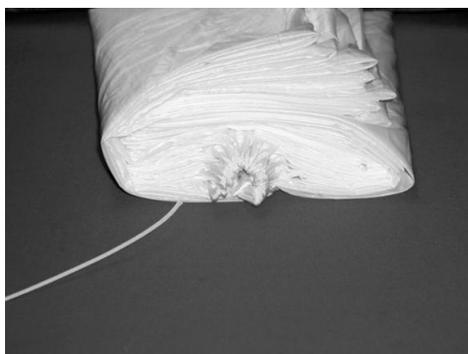
13. fold about one third in 45°



14. fold left side inside (one
third)...



15...after the right side. Fix it



16.! Remove the spare line!



17. S-loops. 5 packs.



18. Fold canopy the same width like the container...



19



20



21. turn 180° and put it in the container.



22. pull the rubber through the middle eye...



23. ...leaf by leaf...



24. ...and fix it.



25. close the container...



26. in the right order



27. ready!

18. There is also the opportunity to put a swivel-joint in between, which avoids twisting of the rescue chute if you get into a rotation (Hanggliders).

19. Put the main connecting cord into the outer container so that everything can open one after the other. Put the rescue container into the outer container like it is mentioned in the owners manual of your harness!

DO NOT FORGET TO REMOVE THE SPARE-LINES.

20. Check the function by a test opening!

9. MAINTENANCE

To keep the rescue system in good condition, keep hold on to the following advices:

- Store the rescue system in a dry room with normal temperature. If the humidity is too high the canopy will stick together what could prevent an opening.
- Every four months you should open the chute check and pack it. The periodical packing makes sure that the rescue system is always ready to use and you get more confident with packing.
- Every two years you should bring your rescue system to PRO-DESIGN or to a professional packer to have it checked.
- After each rescue opening the rescue chute has to be checked by the manufacturer.
- Under no circumstances you should try to repair the chute yourself. Even small damages have to be repaired by the manufacturer.
- Oils, fats and paints may not get close to the rescue system because this stuff could damage the material.
- Protect the rescue system against direct sunshine because Nylon can get damaged by UV-radiation.
- If the canopy or the lines are soiled clean them only with water and give them enough time to dry before you pack again. Do not use detergents. Hang up the chute in a dry room in which the air can circulate (Not in the garage or in the basement!) Do wait until the chute is dry before you pack it.
- If the chute gets in contact with salt water it has to be swept with normal water.
- Make sure that there are no grass, insects or other items between the widths before you pack the chute.
- The surface you are packing on should not damage the rescue system and should not charge it statically.
- On the last page of the included packing proof you find the checking proof in which all repairs and checks have to be recorded.

DISCLAIMER AND SAFETY NOTICE

By the purchase of our equipment, you are responsible for being a certified paraglider pilot and you accept all risks inherent with paragliding activities including injury and death. Improper use or misuse of equipment greatly increases these risks. Neither PRO-DESIGN nor the seller of equipment shall be held liable for personal or third party injuries or damages under any circumstances. The pilot is in charge for the start-up of the product. The operating licence and warranty expires, if any inappropriate repairs or technical changes are being done.

The airworthiness is to be controlled before each flight. Launching is only allowed with a flightworthy equipment. Moreover the pilot must catch up on the present weather conditions before each start and constantly observe weather development. Launch should only be proceeded, if the further weather development allows for a safe flight operation.

This product was developed for Paragliding and is not suitable for Free-fall and therefore not suitable for sky diving.

Moreover we disclaim liability, if one or several of the following points apply:

- Launching beyond permitted weight range
- wind velocities more than 15 km/h and/or turbulent weather conditions
- Launching into lee sides
- Launching in rain, fog or snow fall
- Flying in clouds
- Aerobatics
- Extreme flying manoeuvre with angles over 30°
- Less experience or training of the pilot
- Incomplete, not certified or damaged equipment (helmet, emergency chute, etc..)
- Winch towing with non-certified winch or non-certified Pilot and/or winch operator
- Non-certified changes on harness

Please note:

If any aspect of the use of our equipment remains unclear, please contact your local paragliding instructor, reseller or the importer in your country.

WARRANTY

Extent of the Guarantee

1. PRO-DESIGN guarantees for every product which has been delivered after 01.01.2008 for the period of 1 year. This guarantee covers failures caused by material or production problems for which PRO-DESIGN should be responsible.
2. This Guarantee is valid for all DHV-certified products from PRO-DESIGN, that are used for leisure flights. The guarantee does not include products which are used for educational or professional purposes.

The following points are also excluded from the guarantee:

- a) Color fading from the fabric
- b) Damage by solvents, fuel, chemicals, sand or sea water.
- c) Accidental damage before, during and after the flight caused by accidents and emergency situations
- d) Damage caused by negligence
- e) Damage caused by force majeure

Terms of Guarantee

1. The product is to be used and maintained in accordance with the instructions that are part of the manual and other documents. This includes in particular careful drying, cleaning and storage of the product.
2. All prescribed checks and repairs are to be carried out exclusively by PRO-DESIGN or by technical aviation companies that have been explicitly charged with such repairing or checking by PRO-DESIGN. Every modification or repair has to be documented completely and correctly according the guidelines issued by PRO-DESIGN.

Warranty

Any claim under the warranty which is accepted will be handled as follows:

1. If a warranty claim is accepted for a product which is not more than 6 months old, it will be repaired at no charge.
2. If a warranty claim is accepted for a chute which is more than 6 months old or which has had more use, it will be replaced by a used product which is either at least equal in value to, or better than, the original product.

3. The customer also has the option of acquiring a new product if an appropriate amount is paid to make up the difference in value.

Good faith

PRO-DESIGN is under no obligation beyond those described above. It is possible, however, that it will make a good faith settlement.

PRO-DESIGN

Hofbauer GmbH., PRO-DESIGN & SUNFLIGHTCRAFT

Zimmererweg 4

A-6020 Innsbruck

Tel: +43 (0)512 546444

Fax: +43 (0)512 546445

www.pro-design.at

office@pro-design.at

PACKING- AND CHECKING BOOKLET
RESERVE SYSTEM B-SAFE 140



Type: B-SAFE 140
Manufacturer: PRO-DESIGN
Zimmerweg 4
A-6020 Innsbruck, Austria

