CHARLY
BEST OF AIR

OPERATING & PACKING INSTRUCTIONS
Reserve parachute TARGETcross



Version 2025 with new steering lines

Models
TARGETcross 100 / 125 / 160 / 220 Basic
TARGETcross 100 / 125 / 160 ST
TARGETcross 160 / 220 ST Tandem
TARGETcross 125 / 160 / 220 HG

Certification standards EN 12491 and LTF NFL II 91/09
Version 02/2025

Thank you for your confidence!

Thank you for choosing a CHARLY product!
These operating and packing instructions provide important information on the use of your rescue system. It has been written to inform you comprehensively about the correct use and must be read before installation!
If you have any questions related to the use of this rescue system, please contact CHARLY directly. If you need professional packing or repair service, please contact your certified dealer or CHARLY.

For more information about this and other CHARLY products, please visit our website. We wish you great flights and always safe landings!



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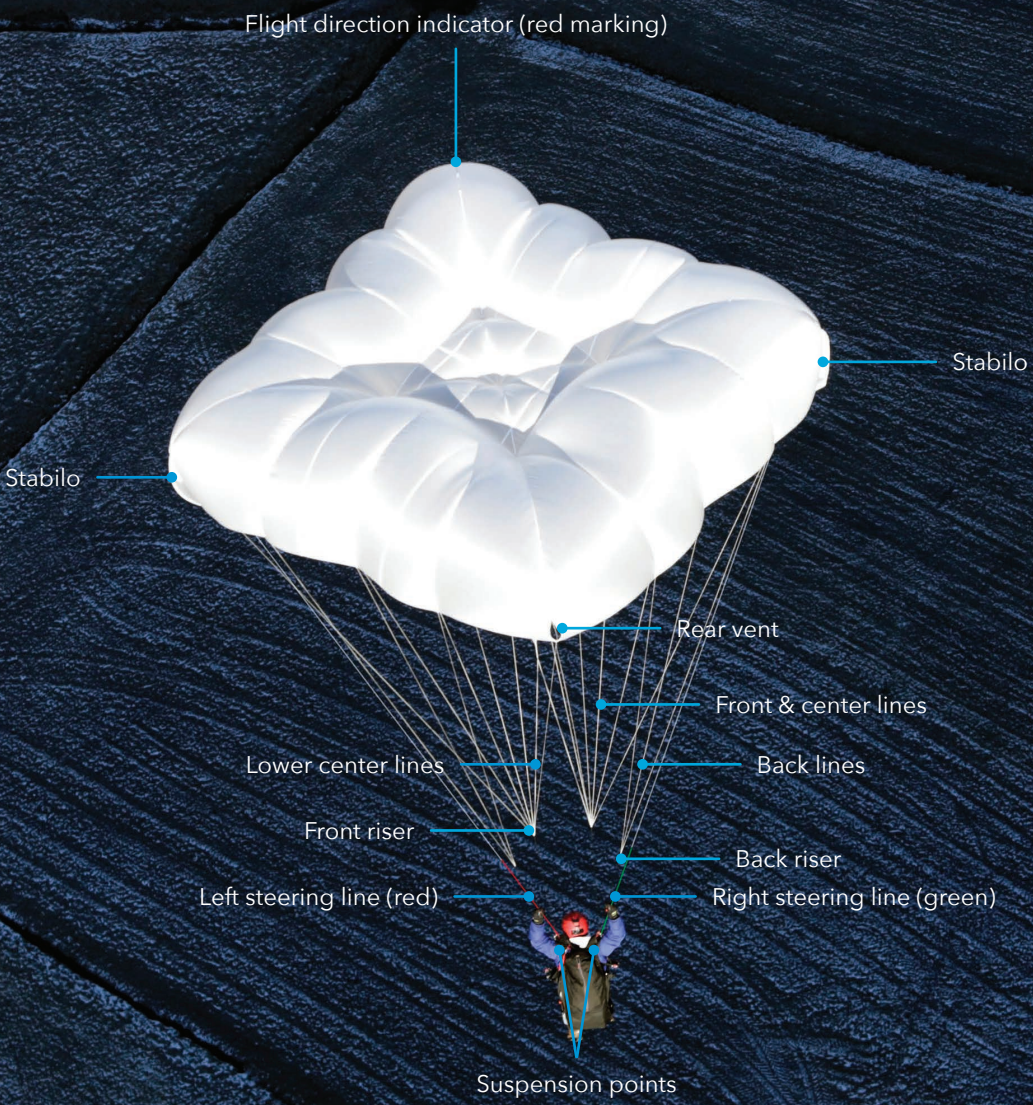
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STRUCTURAL SETUP



The figure shows the structural setup of the steerable TARGETcross ST. The steerable Basic and HG versions are not equipped with steering lines.

As an additional safety feature for the TARGETcross HG versions, we strongly recommend the use of a swivel (Rotor), as hang gliders in emergency situations often get into rotating twisting motions, which can entangle the rescue parachute.
The Rotor (CHARLY art.no. HFa160) has been tested and approved for a breaking load of up to 50 kN. The TARGETcross HG can be purchased directly ex works with the Rotor looped in, but it is also possible to loop it in at a later date between the reserve lines and the main riser as shown in the picture below.
Please note that for the connection between the suspension lines and the Rotor, the special swivel line loop is required (CHARLY art.no. HFa161s).



TECHNICAL DATA

		TC100	TC125
Surface / Volume		25,2 m² / 3.900 ccm	30,7 m² / 4.700 ccm
Line length incl. risers	**ST / Basic** **HG**	6,10 - 6,42 m --	6,86 - 7,22 m 9,96 - 10,32 m
Center line length incl. risers	**ST / Basic** **HG**	6,63 - 6,71 m --	7,27 - 7,37 m 10,37 - 10,47 m
Number of lines / panels		18 / 6	18 / 6
Number of center lines		5 / 2	5 / 2
Load max. / min.		100 / 50 kg	125 / 60 kg
Sink rate		4,6 m/s @ 100 kg 3,6 m/s @ 70 kg	4,5 m/s @ 125 kg 3,5 m/s @ 85 kg
Max. use speed		115 kmh / 32 m/s	115 kmh / 32 m/s
Certification		EN / LTF	EN / LTF
Approval number	**ST** **Basic** **ST Tandem** **HG**	EP 157.2016 EP 178.2017 -- --	EP 158.2016 EP 179.2017 -- EP 184.2016

		TC100	TC125
Weight	**ST**	1,17 kg	1,39 kg
	Basic	1,14 kg	1,35 kg
	HG	--	1,43 kg
	HG with Rotor	--	1,60 kg

ST = steerable, Basic = not steerable, HG = hang glider (not steerable)

		TC160	TC220
Surface / Volume		41,0 m² / 5.300 ccm	59,2 m² / 7.300 ccm
Line length incl. risers	**ST / Basic**	6,86 - 7,25 m	--
	ST Tandem	7,46 - 7,85 m	7,87 - 8,35 m
	HG	9,96 - 10,35 m	10,60 - 10,90 m
Center line length incl. risers	**ST / Basic**	7,37 - 7,47 m	--
	ST Tandem	7,97 - 8,07 m	8,48 - 8,55 m
	HG	10,47 - 10,57 m	10,85 - 11,02 m
Number of lines / panels		22 / 20	26 / 24
Number of center lines		8 / 2	9 / 2
Load max. / min.		160 / 80 kg	220 / 100 kg
Sink rate		4,8 m/s @ 160 kg 3,5 m/s @ 110 kg	4,6 m/s @ 220 kg 3,6 m/s @ 160 kg
Max. use speed		115 kmh / 32 m/s	115 kmh / 32 m/s
Certification		EN / LTF	EN / LTF
Approval number	**ST**	EP 173.2017	--
	Basic	EP 180.2017	EP 182.2017
	ST Tandem	EP 225.2018	EP 181.2017
	HG	EP 185.2017	EP 186.2017
Weight **ST**		1,78 kg	--
	Basic	1,75 kg	2,46 kg
	ST Tandem	1,85 kg	2,57 kg
	HG	1,83 kg	2,57 kg
	HG with Rotor	1,97 kg	2,71 kg

ST = steerable, Basic = not steerable, HG = hang glider (not steerable)

INTENDED USE & GENERAL SAFETY INSTRUCTIONS

This rescue system is certified according to the standards EN 12491 and LTF NFL II 91/09, and has been specially developed as a manually deployable rescue parachute for paragliding, powered paragliding and hang gliding. Its use in connection with other flying activities, such as parachuting, skydiving or base jumping, is not permitted!

The use of this rescue system requires appropriate flight training.Before each take-off, the pilot must check all parts of the flight equipment for airworthiness.



CAUTION: When practicing air sports, the pilot bears sole responsibility for all risks, up to and including injury and death.Neither the manufacturer nor the seller of a rescue system can be held responsible, nor can they guarantee the safety of the pilot.

PERMISSIBLE OPERATING TIME

The permissible operating time of the rescue system is ten years, starting with the first commissioning. This also applies if the rescue system has never been deployed.

The date of the first commissioning must be noted on the approval label on the reserve riser at the time of purchase. This date is decisive for the ten-year operating period as well as the regular packing intervals, which are documented in the packing and inspection record booklet.

After ten years, the operating time can be extended by the manufacturer for an additional two years. For this, it is required that the rescue system undergoes a factory inspection, and is extensively tested and re-measured. If the condition proves satisfactory, the two-year operating time extension will be guaranteed and documented.

INNER CONTAINER & INSTALLATION OF THE RESERVE IN THE HARNESS

Constructional features of CHARLY inner containers

Depending on the intended use, two different inner containers are available for the TARGETcross:

- Flat inner container for harnesses with integrated container compartment
- Inner container for external containers and front containers

Both containers have separate compartments for the lines and the canopy, so that the canopy is released only after the lines have been stretched. This ensures a controlled opening of the canopy and reduces the risk of the reserve becoming entangled in the glider, especially when deploying in SAT-like rotations.

Inside the CHARLY inner containers, the canopy is protected from dirt in the best possible way, and unintentional release of the line bundles is reliably excluded.

In addition, CHARLY inner containers are equipped with fabric-protected rubbers diameter 3 mm, which can be easily replaced as they age. Closure rubbers without protection have often led to accidental deployments in the past.

The **CHARLY flat inner container** has been developed on the G-Force trainer and is the result of years of experience with reserve deployments under centrifugal force.



S = red
For DC100

M = blue
For DC125

L = black
For DC160

XL = orange
For DC220

The deployment tests have shown that pulling out the first third of the container requires the most energy, as the inner container often gets caught in the container compartment during this first phase of the deployment. The very flat and in the front area conical shape with a small cross-section of the CHARLY flat inner container counters this danger in the best possible way. The tests prove that the flat container can be pulled out of the reserve compartment in the harness much better and with less effort than a cube-shaped container - even if the latter has a significantly smaller volume.
Thanks to its centered, triangular pull tab, the CHARLY flat inner container will slide out of the harness even if the deployment handle is intuitively pulled upward instead of outward.
The containers of the HG versions are equipped with four loops for variable attachment of the reserve handle, depending on the type of harness.

The alternative **CHARLY front inner container** has the conventional round shape, which is ideal for front outer containers.



S = red
For DC100

M = blue
For DC125

L = black
For DC160

A detailed description for repacking from the flat inner container to the front inner container is available on CHARLY's website.

Connecting the reserve to the harness

Harnesses with attachment points on the shoulder straps
Harnesses with an integrated container have the reserve compartment either under the seat or on the side of the back. Such harnesses usually have attachment points for the rescue system on the shoulder straps. From there, a V-line is led through a dedicated channel at the harness to the reserve compartment, where the main riser of non-steerable rescuers (e.g. the TARGETcross Basic) is looped in.

The steerable TARGETcross ST has two separate risers that are attached directly to the shoulder attachment points. The V-line is not needed and its weight can be saved. If a V-line is attached to the harness ex factory, it can be removed.

The risers of the TARGETcross ST, marked with the colors green (right) and red (left), are connected to the shoulder straps of the harness by means of connecting links with a suitable breaking load (e.g. CHARLY art.no. Be31) or with "soft links" (usually made of Dyneema material) at the attachment points provided for this purpose. From there, they are led to the reserve container via the dedicated channel which is otherwise used for the V-line.

Attachment to the carabiners
For paraglider harnesses with outer container or front container, where the attachment points on the shoulder straps are missing, the riser of the TARGETcross Basic is connected to the carabiners of the harness using a V-line.

With the steerable TARGETcross ST, the V-line is obsolete, but please note that the right and left risers have to be extended by means of special front container extension loops (CHARLY art.no. HFa165) before they are each hooked to the corresponding paragliding carabiner. Otherwise problems may arise with the red connection line between the risers (see information below).

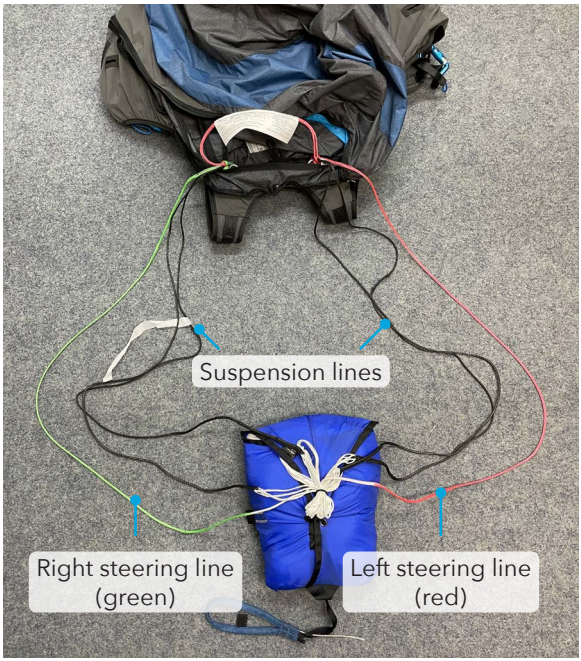
Removal of the connection line is not recommended, but may be considered if necessary, e.g. if a harness does not allow the installation of the TARGETcross ST in another way. The connection is not required by construction regulations, therefore removing it does not invalidate the approval.



Note: The red connection line between the two risers of the TARGETcross ST has the purpose that the reserve parachute remains functional, at least to a limited extent, should one of the two suspension points on the harness fail (e.g. due to carabiner breakage). In addition, it helps to untangle possible line twists more easily. CHARLY explicitly points out that if the connection line is removed, an additional safety and backup feature is lost! The Tandem version does not have the connection line due to characteristics of the system.

For the TARGETcross HG, the riser is connected directly to the main suspension of the harness using a suitable connecting link (breaking load min. 2.5 t).

Please note the following when installing the steerable TARGETcross ST versions in the harness





Twists are often unavoidable when deploying the reserve. However, the following installation method will help minimise this as much as possible.

Position the harness and container as shown on the left.
Then turn the container over so that the closure points to the ground.
When installing the container on the right side of the harness as seen in direction of flight, the rotation must be made to the left (from the perspective of the photo), when installing the container on the left side of the harness as seen in direction of flight, the rotation must be made to the right.

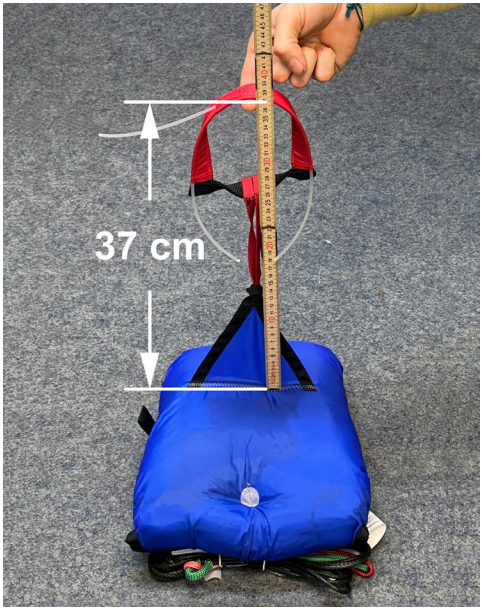
Then move the container to the harness as shown, attach the release handle as described in the next section and finally install the inner container according to the harness manufacturer's instructions.

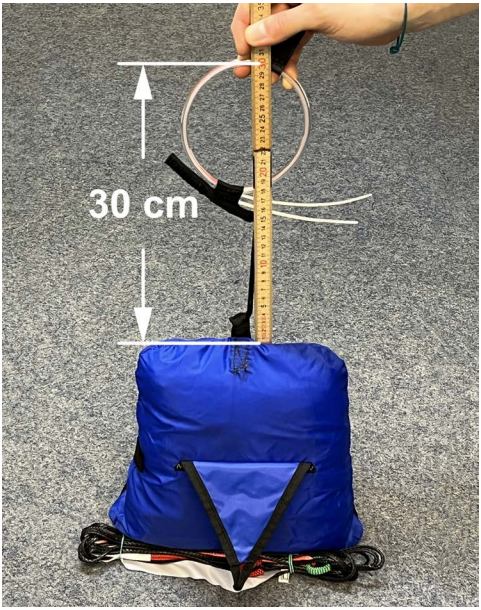
Connecting the inner container to the release handle

Outer containers and front containers as well as harnesses with integrated container compartment are equipped with a release handle, which must be connected to the inner container of the reserve. The use of original release handles is mandatory.

Release handles with possibility of looping in the original inner container
If there is a possibility of looping in the deployment handle, it is recommended to attach the CHARLY inner container to it. It is then very important to check the length between the handle and the inner container.
The shorter the connection from the release handle to the inner container is, the easier it is to pull out and throw the reserve. However, the connection must be at least long enough to ensure that the locking pins are released when the handle is pulled. To prevent an entanglement of the release handle in the suspension lines while they are stretching, the maximum length of the connection from the release handle to the inner container must not exceed 37 cm.
There are three loop-in options on the CHARLY flat inner container:

- The attachment to the triangular pull tab is preferable, as it is the best prevention against the container getting stuck during the extraction from the harness.
- The attachment point on the side is intended for harnesses with a rear container compartment.
- The bottom attachment point is used when the 37 cm would be exceeded when using the triangular pull tab. How to measure the length of the connection is shown in the pictures.





Please contact the harness manufacturer if the release handle connection is too long. If it is necessary to shorten the connection between the handle and the inner container, this must be done by the handle manufacturer or another qualified specialist. It is required to use a high-strength sewing thread (Art.No. HNae40) for this purpose.

Release handles and third-party inner containers
In modern harnesses with integrated container compartment, the release handle and inner container usually are a single unit, which has been specially tested during the approval of the harness or front container. The CHARLY pocket container can no longer be used for these harnesses. Rather, it is necessary that the reserve is repacked into the harness manufacturer's inner container. CHARLY permits this, provided that it is a standard cloverleaf inner container and its volume is not less than that of the CHARLY rescue system (see technical data). If the design of the third-party inner container differs significantly from the usual cloverleaf containers, the handle-inner container combination must be sent to CHARLY for approval.

Repacking into third-party inner containers

The following steps describe the repacking of a TARGETcross ST from the CHARLY flat inner container into the GIN Genie Lite 3 cloverleaf inner container (CHARLY Art.No. HFa1952).
It is not a problem that third-party containers usually have only one closure for the two line bundles. The bundles can simply be put together in the closure rubber.

Please note: The following steps for repacking the reserve into a third-party cloverleaf inner container are to be understood as an example only. Detailed instructions must be obtained from the respective manufacturer of the third-party container.

Unpacking from the CHARLY flat inner container



Reserve packed inside the CHARLY standard flat container



Tie both line bundles together with packing cords



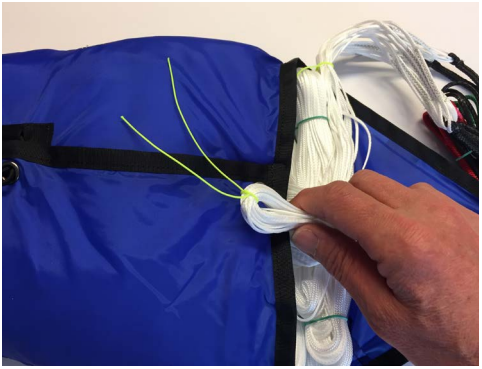
Gently pull the line bundles from the closure loops



Open the line compartment



Tie the central line bundle together with a packing cord



Gently pull the central line bundle from its closure loop



Open the inner container flaps



Carefully remove the cap from the inner container

Packing into the cloverleaf inner container



Carefully insert the cap into the cloverleaf container and remove the 3 packing cords



Guide the closure loop through the central eyelet, and secure it with the line bundle



Insert the looped line bundles



Close the container and make sure that all packing cords have been removed



Reserve packed inside the cloverleaf inner container from GIN



When lifting the reserve up by its lines, the closure must open under its own weight

Compatibility test of reserve, harness & pilot

There have been several issues reported associated with the recombination of reserves with harnesses with an integrated container compartment. Also special characteristics of the pilot, e.g. his strength or arm length, or a changed packing volume after the first repacking of the reserve can cause problems related to the deployment of the rescue system. A compatibility check by a qualified specialist is therefore mandatory. Qualified specialists are active flight instructors and authorized employees of flight schools who have received comprehensive instruction in the task of compatibility testing. The reserve-harness-pilot combination must be tested in a realistic arrangement. That is, the pilot is in normal flight position while the harness is hooked to its main carabiners.
It has to be checked:

- That the release handle is easy to reach and grasp.
- That the inner container can be pulled out of the outer container easily and effortlessly. The pulling power on the release handle should be between 4 and 8 daN. During the release test, the inner container must be fully extracted.
- That the configuration of the release handle, the inner container and their connection allows for the powerful throwing away of the inner container in one pull with the extraction.
- Which pilot position results with the selected harness settings when the harness is hooked to the attachment points of the reserve.

After the compatibility check has been completed and passed, the rescue parachute inside its inner container is reinstalled in the harness container compartment or external outer container in accordance with the operating instructions. Particular attention must be paid to the following:

- That the packing volume indicated on the CHARLY reserve's approval label is consistent with the allowed volume indicated in the operating instructions of the harness/container.
- That the volume of the packed reserve can vary significantly depending on the quality of packing, and often differs greatly from the volume of a factory-packed reserve compressed by the harness.
- That the rescue system has not been installed in the wrong direction/arrangement inside the reserve compartment. The instructions for the harness/container must be strictly followed in this regard.

It must be ensured that the compatibility test is documented in the packing and inspection record booklet!

PRE-FLIGHT CHECK

In addition to the usual pre-flight check (see operating instructions of the paraglider, the harness, possibly the tow release etc.), make sure that the reserve container is properly closed and the release handle is correctly positioned before every take-off.
If the reserve connection line is unhooked after each flight (for example with a front

container system), the pre-flight check must additionally include the correct attachment of the riser!

INFORMATION FOR WINCH TOWING

For winch towing, the instructions of the harness, paraglider/hang glider and winch manufacturer must be followed! When using a front container, it must be ensured that the deployment of the rescue parachute is possible at all times.

FEATURES OF THE TARGETCROSS CANOPY & FLIGHT CHARACTERISTICS

Its S-shaped canopy trim provides a high righting moment, so that the TARGETcross is in a stall for a short time imediately after opening. This reliably prevents a downplane position of the reserve. The paraglider is quickly unloaded and dives down. This prevents the danger of a scissor position between the rescue system and the paraglider, facilitates the recovery of the main glider and even allows the unhooking of one riser with CHARLY Pinlock or even conventional carabiners.
The sinking of the TARGETcross during stall corresponds to that of a conventional cross canopy. The then beginning forward movement in the direction of the red marked corner further reduces the sink rate significantly. Since the S-shaped canopy trim additionally ensures high pendulum stability, also the hang glider versions of the TARGETcross benefit from its advantages.
Steerability is an optional feature of the paraglider ST versions of the TARGETcross. If it is not used after deployment, e.g. due to low altitude, the landing will be the same as with a conventional cross canopy.
If required, the paraglider Basic versions of the TARGETcross can be converted to be steerable by the manufacturer at a later date.

Forward motion
Significant forward speed only occurs after the paraglider has been pulled in or separated. The trim of the TARGETcross canopy results in a flying speed of up to 15 km/h or a glide ratio of about 1:1,5. This gives the pilot the possibility, e.g. at 500 meters above ground, to target a landing area of about 1,7 km² for landing. At lower deployment altitudes, it is at least still possible to avoid obstacles; at higher altitudes, it is even possible to steer from the ridge down into the valley or towards a safe landing area.
The horizontal drift of the TARGETcross also helps to reduce the risk of injury, because the deceleration path to reduce the impact speed is shortest in the case of a vertical impact on a flat surface, while lower forces act on the body in the case of an angular impact. In addition, the human body is not equally resilient in all axes. The most sensitive axis is the one in the direction of the spine, which has to cushion an impact on the buttocks.

Twists with steerable reserves
Since after deployment, the inner container package is thrown more or less uncontrolled into the open airspace, and rotations of the container before the canopy unfolds cannot be completely avoided, a steerable reserve sometimes opens twisted. Steerable rescue systems have the characteristic that the main glider will always be turned away from the flight direction due to the air resistance. Even if the main glider still has open surface, a

twist (at least 180°) is usually unavoidable. The pilot flies backwards. The TARGETcross then behaves like a conventional cross canopy, but with increased forward movement, higher pendulum stability and a reduced sink rate.
Twists have basically no negative influence on the TARGETcross' sink rate or pendulum stability, and can be considered uncritical in contrast to twists of the paraglider. However, the benefits of a steerable reserve can only be fully realized if the main glider is completely disconnected. An uncontrollable, partially open surface of the main glider always has a disadvantageous effect on the flight characteristics of the reserve parachute. This also applies to all non-steerable systems, which is why it is generally advisable to use separation carabiners (e.g. CHARLY Paralock) instead of conventional carabiners.

Resolving twists
If the paraglider is disconnected, even multiple twists can be resolved quickly and easily with the right technique. By making leg kicks in an upright position (slow in one direction, fast in the other), the pilot turns about 90° per stroke in the desired direction. This technique is standard in skydiver training, and should be practiced on a suspension using the reserve attachment points at the harness.
While resolving twists, the pilot should look upwards to the reserve and check whether the leg kicks are made in the right direction for the respective direction of rotation. If necessary, it can help to change the direction of the leg kicks and thus the direction of rotation.

Turning
The TARGETcross can be steered using the steering lines (red for left, green for right). This is most effective when one side is pulled through quickly and to full deflection to fly a turn. After about five seconds, the steering line can be released briefly to resume full speed. Then it can be pulled fully again for directional correction. With this method, the canopy turns into the curve most quickly and in a defined manner.
The control forces of the TARGETcross are relatively high and the system reacts much slower to direction changes than a paraglider. There is no danger of a stall - not even with impulsive and deep control inputs at the steering lines. The rescue cannot perform a proper sprial dive.

Flyback
The reserve system will not fly backwards, even if the steering lines are pulled all the way down and the hands are extended under the seat plate.

Landing approach
The TARGETcross' minimized sink rate resulting from its canopy trim gives the pilot more time to prepare for landing and provides optimal conditions for an injury-free landing. The flight tests have shown that the TARGETcross is best landed when the approach and landing are done completely unbraked.

GENERAL ADVICE FOR THE USE OF A STEERABLE RESERVE

1. In an emergency, the moment you first think, "I should deploy my reserve," is usually the best time to do so. When in doubt, it is always better to act sooner rather than later.

- To deploy the rescue parachute, first release the right-hand brake line, or transfer it to your other hand, so that your right hand is free (the glider is flying forward or backwards).

- Grasp the deployment handle with your free hand and pull it sideways (away from your body), extend your arm fully and only release the handle when your arm is fully extended. The further the reserve is thrown away from the body, the faster and more reliably it will deploy.

- As the suspension lines stretch, the inner container opens and the canopy is inflated by the air current. The reserve unfolds and the inner container is lost. Perform the throwing action as quickly and as powerfully as possible, and practice it on the ground before each repack of the reserve. It is important to also mentally practice the procedure several times.

2. Check: Is the canopy inflated? What is the height above ground?

3. Check: Orientation - what is the direction of flight (indicated by the red corner)?

4. Adjusting the direction of flight: If a collision with an obstacle is imminent, take immediate action to change the flight direction by pulling one of the steering lines - it does not matter which side. Even if the reserve parachute is twisted, make every effort to perform this maneuver as quickly as possible to avoid impact.

5. Pull in or separate the paraglider (optional). Separation can be done by:

   - Separation carabiners

   - Unhooking the risers from conventional carabiners (a separation system for the speed system is strongly recommended)

   - Using a crosscut knife and cutting the paraglider risers or the main lines in case of emergency. Material damage is preferable to physical damage, so every pilot should always carry a crosscut knife in flight!

6. Direction check: Correct the direction of flight again, if necessary.

7. Resolve twists

8. Heading for the landing area: In the remaining time, head for the nearest possible area where a safe, injury-free landing appears possible. Do not attempt to fly over power lines or other obstacles in low altitude if your position is in front of the obstacle!

9. If possible, turn the canopy against the wind: If you are above an obstacle and sinking towards it due to increased headwind speed, try to turn off and reach a more suitable landing site with tailwind.

10. Landing: At least 20 m above the ground, release the brakes completely and land unbraked, without flaring (even in the case of a tailwind landing). An exception is the attempt to initiate a side slip to avoid an obstacle. In this case, one brake can also be held fully pulled until landing.

11. Notify emergency services: It is highly recommended to contact the police or rescue services immediately after landing via an emergency call. This applies even if there is no personal injury, as search operations are often initiated by observers after a rescue parachutes deployment.



Packing & inspection record booklet

A packing and inspection record booklet must be kept as proof of care and for reasons of insurance coverage and warranty maintenance.
The following shall be noted therein:

- On the part of the manufacturer: The routine test
- On the part of the seller: the date of purchase and the compatibility test
- On the part of the service companies: packings, repairs and inspections

Packing & inspection intervals

The reserve must be opened, ventilated and then repacked six months after commissioning and every 12 months thereafter.
The required packing interval may be shortened in the event of extreme environmental influences such as humidity, sand, water and other factors. The packing procedure is described from page 25.

In the event of a water landing, the rescue system may only be repacked after it has dried completely in the air. For this purpose, it is best to hang it upside down in a symmetrical position.
After contact with salt water, the reserve should be immediately rinsed several times with fresh water and then dried.
If the reserve has been incompletely dried (canopy or lines), it may shrink asymmetrically!
No other heat sources or machines may be used to accelerate the drying process.

CAUTION: If the reserve is not thoroughly rinsed with fresh water within 36 hours after it has come into contact with salt water, it must be taken out of service.
It is then no longer airworthy!

We recommend having a complete check of the rescue system (recheck) performed every 24 months.
Irrespective of this, a retest is required in the following cases:

- After every emergency deployment or deployment during a safety training
- After any event of increased stress (e.g. a tree landing)
- After a repair or modification
- After longer use at the seaside or in salty air
- If the cap shows signs of rot or mold

CAUTION: All rechecks and repairs may only be performed by a certified company.
The packing and inspection record booklet can be used to trace the packing intervals, inspections and repairs.

Care & cleaning

The following points should be given special attention:

- Do not expose the packed reserve to high temperature fluctuations and ensure sufficient air circulation to prevent condensation
- Do not expose the reserve unnecessarily to the sun (UV radiation)
- Allow the wet or damp reserve to completely dry unpacked at room temperature or outdoors in a shaded area
- After contact with salt water, rinse the reserve thoroughly with fresh water as soon as possible
- Clean all components only with fresh water and at most with neutral soap, never use chemicals containing solvents!

Storage & transport

Oils, greases, acids and paints must not be stored in the immediate vicinity of the parachute. Storage should take place in a well-ventilated, dry room. Rescue parachutes which are not used for a longer period of time should be stored unpacked.
Prolonged exposure to pressure as well as extreme heat (such as in the trunk of the car in summer) should be avoided.

Repairs

If damage is found during the inspection of the reserve parachute, it must be sent to CHARLY or an authorized service center for repair. This also applies to damage whose effects on the airworthiness cannot be clearly determined. The manufacturer must be

involved in the repair in any case!

As a matter of principle, repairs to reserve parachutes may never be carried out by the pilot himself. Repair seams can have a significant influence on the strength of the system. Damages must be assessed individually in each case. Therefore, only the manufacturer or an authorized service center - always in consultation with the manufacturer - may carry out repairs using original materials.

A repair instruction approved by the manufacturer must be noted in the packing and inspection record booklet after the repair. In the case of resale, the booklet must be given to the new owner as part of the rescue system. The preparation of repair instructions by the manufacturer is subject to a charge. In case of non-compliance with the repair instructions, the airworthiness certified according to EN or LTF expires automatically.

Acid and mildew stains as well as rips and scuff marks may affect the strength of the components. Such damage must be checked and, if necessary, repaired by the manufacturer or an authorized service center.

We recommend to always inspect the rescue system for signs of wear and, if necessary, have any damage repaired by CHARLY or an authorized service center before the next use.

Disposal

CHARLY rescue systems are mainly made of fibers such as polyamide, polyurethane and polyethylene, which do not require special disposal. At the end of the product life, they can be disposed in the plastic waste.



Optional riser cover

For connecting the risers from the tandem spread-bar to the pilot harness, we recommend the use of a riser protection cover (CHARLY Art.No. HFa195RST).

To install the riser cover, guide it all the way from the reserve riser loop to under the cover of the pilot's harness shoulder attachment points. The zipper must be opened a few centimeters at the end on the side the shoulder attachment points. Attach the white loop at this end to the harness using a small cable tie. When the reserve is deployed, the zipper of the riser cover opens automatically.





For paramotor or front containers with reserve attachment points on the shoulders, a separate version of the riser cover is available (CHARLY Art.Nr. HFa195RSM).


RÜSCHERENERGIE

PACKING INSTRUCTIONS

CAUTION: In an emergency situation, the pilot's life may depend on the operational reliability of the rescue system. Incorrect packing can therefore have fatal consequences! In case of doubt, the reserve should therefore be packed by a specialist.

Packing preparation

The reserve must be visually inspected before packing and checked for damage to the canopy, lines, suspension points, main riser and connecting link. The canopy shall then be hung freely above the ground for at least six hours in a well-ventilated place without direct exposure to UV light.

Packing should be done on a packing table if possible, but at least on a clean, antistatic surface. A carabiner and a rubber cord attached to the loop at the canopy apex can be used to apply tension to the canopy between the harness or suspension point and the pack loop. Packing cords help to bundle the lines. Several bags of lead shot or sand can be used as weights to facilitate packing and reduce the packing volume.

All packing rubbers must be replaced with new ones for each packing operation. Original packing rubbers can be obtained from CHARLY (CHARLY Art.Nr. HFa1991). We strongly recommend to let the reserve be packed by a trained professional.

Required material

- Packing instructions
- Packing cords
- Connecting links (2x)
- Packing rubbers (6x)
- Packing table, clamps, weights (optional)
- Packing & inspection record booklet

CAUTION: It is essential to ensure that the latest version of the packing instructions is used.
The most up-to-date instructions are available for download in several languages and as a video on the CHARLY website.

Packing video

YouTube

www.youtube.com/finsterwaldercharly

Packing procedure

Preparation

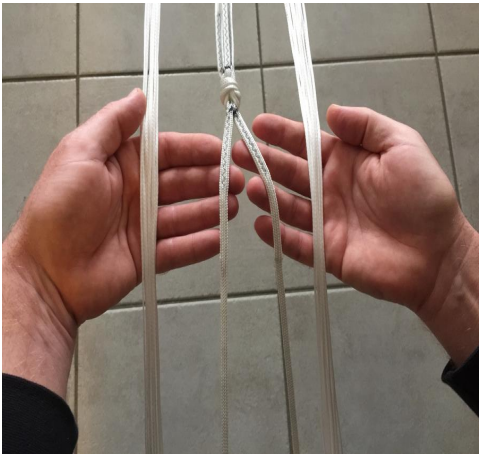


Connect the rescue parachute to the harness as described on page 9 and place the harness on the ground with the back part facing upwards.

Sorting the lines



Separate the lines of the risers (ST versions) or the riser (Basic & HG versions). Start on the harness side and continue in the direction of the canopy.

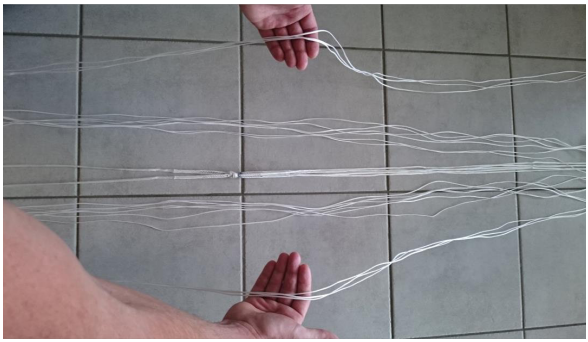


When you reach the center line fork, drop the knot and continue separating the two bundles until you reach the cap.



Check that all center lines go between the two fork lines (5 lines on TARGETcross 100 & 125, 8 lines on TARGETcross 160, 9 on TARGETcross 220).

CAUTION: If the center lines are outside, the canopy is twisted in on itself (inside out, line overthrow!).



Only ST versions: Follow the brake lines (riser with 3 lines) from the harness to the canopy. Resolve any twists so that the lines lead freely to the canopy.

Folding the canopy





Face the red direction indicator of the canopy towards the ground. Slightly tension the canopy along the entire circumference so that all main and center lines are brought to tension and stretched.



Presorted canopy after line and twist control.



Place the right half of the canopy over the left half as shown in the picture, so that the red marking is visible and facing the packer. For packing, bundle the lines with packing cord.



Due to its asymmetrical lines, the TARGETcross has only one packing loop. However, this is sufficient and saves time when packing. The packing loop is attached at the same strap as the front red marking.



Stabilo triangles are attached to the lateral corners.
A special folding technique for these parts is not required. Continue folding the canopy to the rear gap (path 8 for TARGETcross 100 & 125, path 10 for TARGETcross 160, path 12 for TARGETcross 220).



Start with panel 01. Fix the already sorted panels at the apex with the right hand and pull up the next panel with the left hand, starting at the base.



Position the sewn-on reinforcement tapes along the center line and always keep them slightly on tension. Make sure that the reinforcement tapes are not confused with the lap seams!



Open the gap at the rear corner to position the center lines and place a marker between the other panels. In the picture, an inner container is used as a marker.



Position all center lines in the middle and tension them with a light pull (5 lines for TARGETcross 100 & 125, 8 lines for TARGETcross 160, 9 lines for TARGETcross 220). Smooth the canopy material upwards above the center lines and also position it in the center.



Continue sorting until all panels are on one side and the red direction indicator mark is visible again.



Put back half of the panels, and remove the marker.





Lift the edge of the center panel up about 30 cm, and fold it to the left side.



Fold the sorted panels inwards twice at about one third of the depth (no S-folds!). Do not fold too narrowly, as this will increase the height of the container. If necessary, use packing clips or weights.



Fold the edge of the center panel to the right side as seen in the direction of flight (the lower side in the picture), and roll the panels of the other side inward as well.



Position the now resulting opening over the folded panels, and open the gap as wide as the panels. This packing method guarantees a controlled opening with low shock loads. This further reduces the opening time, especially in rotations with high sink rates, while the opening time is often significantly longer when the canopy is folded with conventional S-folds!



Unhook the packing loop and push the panels together at the apex to approximately the width of the container.

Packing into the inner container



Tightly roll up the cap approx. 10 to max. 15 cm at the apex and push it all the way to the bottom of the container.



Form several vertical S-folds and push them into the container.

CAUTION: A flat and compact packing method without excess air between the panels is important.
A too high packing pressure can impair the reserve canopy's ability to slide out of the inner container.



Multiple small S-folds keep the container flat (If necessary, provisionally close the lower part of the container).



Pass the rubber loop of the container through the two eyelets (inner flap first) and close it using a loop of the line bundle.



Now remove the packing cord!!!



Bundle the lines as shown (3, max. 4 loops per side) and secure the bundles with packing rubbers.

CAUTION: If the packing cord is not removed, the reserve will not open when released.
An improper functioning of the rescue parachute can lead to serious or fatal injuries.



Arrange line bundles from the inside to the outside.



Close the container by passing the line loop through the rubber loop.

CHARLY
BEST OF AIR

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