

CHARLY
BEST OF AIR

A NORMAL CROSS CANOPY...
...JUST BETTER!











TARGETcross

CHARLY - Rescue systems from the pioneer and market leader since 1984

The CHARLY TARGETcross is an ultra-light reserve with a plus of possibilities in all situations.

In an emergency situation near the ground, the rapid inflation of the canopy will help you get out of trouble; at higher altitudes, the steerability will. If you do not make use of the steerability, you will sink almost pendulum-free, as with any other cross canopy. **This makes the TARGETcross the perfect rescue system even for beginners.**

The TARGETcross is a further development of the patented DIAMONDcross, equipped with an inner container with improved opening performance at low airflow rates.

1 The top cover opens and releases the lines.
2 The canopy compartment remains closed at first to prevent the canopy from getting caught in the glider.
3 When the canopy compartment is open, the inflation of the canopy is greatly accelerated, as the edges of the canopy do not lie on top of each other, but are fanned out due to the different line lengths of the TARGETcross.

If the deployment handle of the harness is fitted with a specially approved reserve container, the TARGETcross can usually be repacked without difficulty due to its small volume. Details on repacking can be found in the TARGETcross operating instructions.



TARGETcross ST Light

A normal cross canopy..just better!

The TARGETcross is very easy to handle, making it the ideal choice also for beginners.

More rescue options, both near the ground and at higher altitudes

If you can avoid power lines, rivers, rocks or roads and choose your landing spot, that is an undeniable advantage. Nevertheless, in the past, steerable rescue systems have only been recommended for professionals. Especially in the case of openings close to the ground, steerable reserves used to have more disadvantages than advantages. This was due to the fact that the early steerable Rogallo reserves had too little surface area or were not yet mature in terms of their design and, due to their tendency to downplanes and twists in certain situations, required the appropriate pilot skills.

These disadvantages have been largely eliminated with modern steerable Rogallo reserves. With the TARGETcross ST, a steerable cross canopy is now available, which is also advantageous in emergency situations close to the ground where steerability is not an issue.

The TARGETcross solution

The TARGETcross has only moderate forward speed and enough surface area to avoid a dangerous sink rate even when stalled. The different line lengths fan out the canopy base, which greatly accelerates air intake and canopy opening. If you do not want to make use of the steering option or if the altitude is too low, you will sink as with a conventional cross canopy with a slight sideways drift.

Similar to a regular cross canopy, the TARGETcross initially goes into a stall with vertical sinking after opening. A downplane position of the reserve is thus reliably prevented. The S-shaped canopy trim, as it is common for hang gliders, gives the TARGETcross canopy a high righting moment. The paraglider is thus quickly unloaded and dives down. This minimises the risk of a shear constellation between the reserve and the paraglider.

Sometimes twists of the lines can occur when throwing the reserve. This is inevitable but usually unproblematic. The low friction, soft riser and line material of the TARGETcross makes it still possible to reliably steer the rescue parachute in the desired direction - even with multiple twists! Twisted lines can be untwisted by kicking with the legs.



Disconnecting or not disconnecting the main glider?

When you decide to use your rescue parachute in an emergency, it is usually because your paraglider went out of control. The best way to resolve this situation is to give control to the rescue parachute and disconnect from the paraglider as quickly as possible. If you do not disconnect, it can cause you problems in several ways.

5 reasons why the paraglider should be disconnected after an emergency parachute deployment

1. According to the LTF, the maximum allowed sink rate for paraglider rescue systems is 6.8 m/s, corresponding to 24.5 km/h. However, many pilots are not aware that in the reserve parachute certification process, the sink rate is determined without the paraglider. Interactions between paraglider and rescue system can increase the sink rate substantially – for example, by increased pendulum movements or due to a resulting shear position. The risk of injury increases accordingly.

2. Although modern reserve parachutes usually reach maximum sink rates of “only” 5.5 m/s, corresponding to approx. 20 km/h, these values are often only achieved by a lateral drift that generates lift. A paraglider that is not separated or only separated on one side impedes this drift and thus substantially increases the sink rate.

3. The possibility to choose the landing spot with a steerable rescue system is a significant safety plus. If the main glider is not separated, this safety advantage is foregone.

4. It has shown that a separated paraglider usually collapses very quickly and that its salvage is easier. In the case of a tree landing, there is also a much lower risk of damage to the glider when it does not carry the full pilot weight.

5. A dangerous downplane situation of the paraglider after an emergency parachute deployment, as shown in the video linked on the right, can be resolved quickly and effectively by disconnecting the paraglider.

The TARGETcross solution

Even if the main glider is not disconnected, the S-shaped canopy trim of the TARGETcross allows it to easily pull it in or to unhook it at least on one side with Pinlock or even conventional carabiners,.

The rapid dive down of the main glider directly after the opening of the TARGETcross immediately ensures low sink rates of the reserve.
Due to the very effective pendulum damping, also resulting from its canopy trim, the TARGETcross is also the best choice for deployments extremely low above the ground in absolute emergency situations.

Rapid separation with the Paralock and safe landing

Example of a downplane with dangerous sink rate



Benefits of rescue systems with horizontal drift

Perfectly symmetrical parachutes sink vertically, which is not advantageous for several reasons.

In the case of a vertical impact on a flat surface, the deceleration distance to reduce the impact velocity is the shortest, whereas in the case of an inclined impact, the forces acting on the body are lower. 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.

When a canopy is symmetrical, the air escapes over its edges sometimes more on one side, sometimes more on the other side when sinking. This causes a pendulum motion that can considerably increase the sink rate. If, on the other hand, a rescue parachute drifts, dynamic lift similar to that of an airfoil is created, with the effect that the sink rate is significantly reduced.
A patented feature of the TARGETcross reserve is the defined lateral drift in diagonal direction. Compared to one side of a square, the diagonal has a greater aspect ratio and thus correspondingly more lift. Conventional cross canopies have an alternating lateral drift, depending on the corner from which the air escapes under the canopy.

Rescue systems without horizontal drift also carry the risk that the uncontrollable main glider may move very close to the reserve and wrap around it due to the vertical airflow.

The TARGETcross solution

The diagonal configuration and S-shaped canopy trim of the TARGETcross with longer lines at the rear edge create a high righting moment which prevents a downplane of the canopy and ensures that the main glider is immediately unloaded. Pre-braking of the rescue parachute is therefore not necessary with the TARGETcross. The result is an immediate forward movement which keeps the paraglider at a distance from the reserve.

The Basic and HG versions of the TARGETcross also feature this trim, as the advantages of this configuration clearly outweigh the disadvantages.



Reliability of opening and entanglements between the reserve and the main glider

Situations in which the pilot and the paraglider are in SAT-like rotations carry a particularly high risk of entanglements between the reserve and the main glider during deployment. Avoiding this potential threat was one of the highest priorities in the development of the TARGETcross and is especially relevant for pilots flying with only one rescue system.

The TARGETcross solution

Long line concept The lines of the TARGETcross were made longer, so that the opening of the parachute happens approximately in the radius of the main glider and not in the area of its lines. In the rotational movement, the longer lines have almost no influence on the opening time, because the package separates immediately from the pilot at high speed.

Inner container design The inner container has a separate closure for the canopy, so that it is only released after the lines have been fully stretched and there is an adequate safety distance to the main glider. This results in a significantly reduced risk of an entanglement with the paraglider. Fabric-coated rubbers and the separate canopy closure also ensure that accidental deployment due to a too early opening of the container inside the harness, is effectively excluded.

Packing method Thanks to a special but simple way of packing, the TARGETcross already opens at the base without delay, even before the apex has left the inner container. The higher the speed of rotation, the faster the opening in the TARGETcross packing method. This is achieved by the separate folding of both pre-sorted sides (instead of the usual long S-fold) and a tube inner container, in which the parachute is packed with small standing S-folds.

Differing line lengths The differing line lengths of the TARGETcross ensure that the canopy edges do not lie on top of each other. The fanned out canopy base allows the canopy to inflate much faster.



Technical Data

TARGETcross

		TC100	*TC125*	*TC160*	*TC220*
Surface		25.2 m²	30.7 m²	41.0 m²	59.2 m²
Load max. / min.		100 / 50 kg	125 / 60 kg	160 / 80 kg	220 / 100 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	4.8 m/s @ 160 kg 3.5 m/s @ 110 kg	4.6 m/s @ 220 kg 3.6 m/s @ 160 kg
Volume		3 900 ccm	4 700 ccm	5 300 ccm	7 300 ccm
Certification		EN / LTF	EN / LTF	EN / LTF	EN / LTF
Certification no.	**ST**	EP 157.2016	EP 158.2016	EP 173.2017	---
	Basic	EP 178.2017	EP 179.2017	EP 180.2017	EP 182.2017
	ST Tandem	---	---	EP 225.2018	EP 181.2017
	HG	---	EP 184.2016	EP 185.2017	EP 186.2017
Weight	**ST**	1.17 kg	1.39 kg	1.78 kg	---
	Basic	1.14 kg	1.35 kg	1.75 kg	2.46 kg
	ST Tandem	---	---	1.85 kg	2.57 kg
	HG - ohne Rotor	---	1.43 kg	1.83 kg	2.57 kg
	HG - inkl. Rotor (optional)	---	1.60 kg	1.97 kg	2.71 kg

ST = steerable, Basic = non-steerable, HG = hang glider (non-steerable)

Carabiners

Paralock 3 universal paragliding carabiner

The next generation paragliding carabiner with extra safety in dangerous situations: Its quick-release function makes it possible to prevent dangerous interactions between the reserve and the paraglider, and is useful for emergency water landings and high wind conditions on the ground.
Simple and safe operation, additional blocking option, suitable for Hike & Fly (75 g) and built to last.





Quick-Out separation carabiner

In use for many years, proven 1 000+ times. Four security steps and rapid disconnection.

Pinlock

Fatigue-resistant paragliding carabiner, also suitable for tandem use. When the paraglider is unloaded after a reserve deployment, disconnection is possible by pulling the pin.



More info on our air sports carabiners

Accessories & spare parts

Inner containers

- **Flat version:** Optimized for best deployment from integrated harness compartments on the G-Force Trainer. New with slotted canopy compartment that releases the canopy completely as soon as the lines are stretched, even with low airflow and varying pack pressures. Sizes S, M, L, XL

- **Version for front attachment:** For best deployment from external front containers. Sizes S, M, L

Riser cover

- Versions for **tandem**, **front container** or **paramotor**

Connecting links

- Lightweight connecting link made of **stainless steel** or **Dyneema**

Separation links for speed systems

- Versions **Easy Release**, **Brummel hooks** or **patent shackle**

More info on our separation links for speed systems



Flat inner containers



Inner containers for front attachment



Riser cover

Connecting links: *Screw-lock links* *Dyneema soft links*



All info about the TARGETcross at charly-produkte.de

CHARLY
BEST OF AIR

Finsterwalder GmbH
Charly Produkte

Pagodenburgstr. 8
81247 Munich
GERMANY

Phone +49 89 8116528
E-mail office@finsterwalder-charly.de
Website www.finsterwalder-charly.de
Webshop shop.finsterwalder-charly.de

facebook.com/finsterwaldercharly

instagram.com/finsterwalder.charly

YouTube

You can find all videos of the TARGETcross on our YouTube channel
youtube.com/finsterwaldercharly