

RESCUE PARACHUTES



We made this particular parachute with features targeted for **Powerd Para Glider** use.

this article serves to explain the technical reasons that led us to propose this unconventional solution..

First of all, we must realize what is **a real situation of use** in a paramotor.

Most of the flying time passes at very low altitudes,

In the unfortunate event that use is necessary, the time for decision, launch and opening is very short

.

In these times, the components related to the **size, weight, length of the lines and bridle are fundamental**

.

- As these components are smaller than the easier and faster it will be the launch of the rescue parachute,

- to ensure the best performance when opening the rescue parachute canopy must remain **below** the main glider,

no rescue parachutes with long bridles (due to the dimensions or frequently used extensions) can meet this requirement.

We need to know that rescue parachutes are normally designed for free flight use, where the pilot on landing only has to bear his weight.

The maximum descent speed in order not to suffer physical consequences is verified by the Certification Bodies according to the maximum weight, the max. speed normally is between 5,5 to 6 m/s, corresponding to a jump from around 2 meter, a normal pilot must apply a good technique to avoid physical damage.

If we think to an emergency landing of an equipped paramotor pilot we understand that landing on his legs the pilot must hold the weight of the paramotor also, to make sure he do not get hurt, the fall rate must be much lower than that conventionally accepted in free flight, to do this, the emergency should be much larger (to support a greater weight and fall to a lower speed).

We can reasonably consider it necessary to use a rescue made for a weight greater than **150 up to 200% of real flying weight**

.

This rescue parachute consequently would be so heavy as to be used unwillingly, it risk to be **left on the ground** most of the time.

Considering that

the experience with our MINIPLANE guarantees that the pilot who falls on his back is very well protected by our frame that is designed to absorb energy with a progressive deformation and without dangerous protruding parts.

Numerous times this fact has been verified in real cases by our customers.

The MINIPLANE frame absorb the impact energy much more than the legs can do, so that we can even accept an higher sink rate

To absorb the energy it is important to understand that the landing position can not be standing with the center of gravity perfectly vertical to the point of contact, as it would be with the shoulder straps hooked over the shoulders as in free flight,

but must be bent back so that after the contact of the feet, that unload a part of the energy, the pilot falls on the back leaving the frame to deform, doing its job: protection.

Therefore the **hang point of the MINIPLANE rescue parachute must be the same as the main glider**

We focused

on **small size** rescue parachutes, and carefully studied the form that still allows for the slowest falling rate.

a key point in the design was to minimize the possibility of oscillations, this required to do a number of prototypes and extensive testing in flight.

During the design and in the tests, particular attention was paid to the reduction of the mirror effect during the descent, a phenomenon that increasing the falling rate reduces the effectiveness of the rescue parachute.

The problems to be overcome were important, the weaknesses of small rescue parachutes are usually related to the shock of opening and stability, problems solved so egregious as guaranteed by the homologation.

A rescue parachute of only 1.6 Kg to 110 Kg approved and the brother of 1.85 Kg to 130 Kg approved are excellent results.

Why propose a parachute with a front container on our MINIPLANE ?

We believe that it is the best option currently for a few simple reasons.

- Can be launched with both hands and in both directions (the launch can be more effective if outwards of the spiral)
- The bridle is shorter
- The handle is always visible
- The handle can be reached more easily if the pilot is centrifuged in spiral (which is the most common consequence of a paraglider loss of control)

- the weight is more balanced compensating the weight of the motor
- The pre-flight checks of the parachute are facilitated
- the front container is also useful as support tool for instruments

Nevertheless, there are some unfavorable characteristics that the user needs to know:

- must be attached to the hook support after closing the buckle of the chest
- the bridle must be double, one of these should be attached to the hook of the harness after closing the chest buckle
- in case of ditching there are at least two more point to free (bridle and lateral support of the container), of which 1 (bridle) may not be capable of opening in flight to rid first of the water landing (opening the chest and leg belts is a common safety procedure before water landing) , which makes it even more necessary to use a self-inflating life jacket

We believe that the **big benefits compensate** these small annoyances

when used in PPG the MINIPLANE rescue:

must only stay in his original front container, the folding divides the right and left bridle, and the bridles must be hooked to the harness main hang point, the same of the glider.

DON'T HANG THE BRIDLES TO THE HOOK OVER THE SHOULDERS

DO NOT USE ANY EXTENSION BRIDLE.

If, despite the above explanation, you choose to put a rescue in a side pocket, or use an

extension belt, you have to use another parachute model.

In our online shop: [Miniplane](#)