



User's manual

Combo 2023

v30.01.2024

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Congratulations!

Thank you for choosing the Combo 2023 harness. We have done our best to present you with a highest quality product, fulfilling all safety requirements. Please read this manual carefully before using the harness for

the first time. This will help you utilize all features of the Combo 2023, maximizing comfort and fun you get out of each flight. We wish you a lot of safe and enjoyable airtime!

Description

Combo 2023 was designed for novice pilots. It's perfect for training and recreational flights.

The compact design with a comfortable seat and backrest and an integrated rescue parachute container guarantees high comfort and convenience of use.

The range of adjustment and availability in four sizes allows for a precise fit of the harness.

Combo 2023 uses a certified airfoam protector with a thickness of 15 cm. The pilot's back is protected by an additional airfoam cushion. The lower part of the harness is protected by an easy-to-replace abrasion-resistant plastic plate to protect this part of the harness from damage.

The rescue parachute is placed in an integrated container at the back of the harness with the release handle on the right side.

Combo 2023 has four pockets: the back, two side pockets and an additional one under the seat in the front part.

The harness uses lightweight Allen pulleys

with ball bearings to improve the speed system's operation.

The harness is produced in four sizes S, M, L.

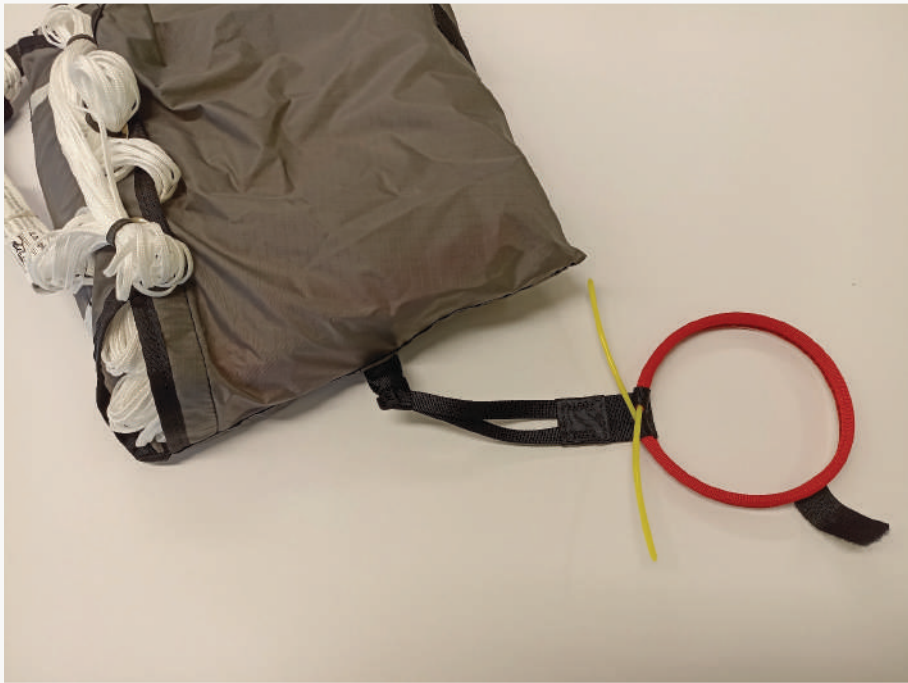
Safety

Paragliding is a potentially hazardous sport. When flying a paraglider you have to accept the risks of injury and even death. Improper and/or incompetent use of the harness may increase those risks. Thus the proper training, familiarity with your gear and a valid insurance are mandatory. The pilot has to be able to independently assess the weather conditions, too. All flights are to be absolved with your helmet on and the rescue chute installed. Before each flight a gear check is required as for possible damages and overall airworthiness. In case of any doubts please ask your dealer or manufacturer.

Caution: POWAIR do not bear any responsibility for damages or injuries resulting from paragliding activities.

Rescue chute installation

Connect the release handle to the point on the side of the bag.



Connect both ends of the V-riser to the connecting strap of the reserve parachute using a C6 quicklink.

The V-riser should be fixed in place by the attached O-ring and the square nut tightened with a wrench.



Secure the connection additionally with the neoprene cover supplied with the harness.



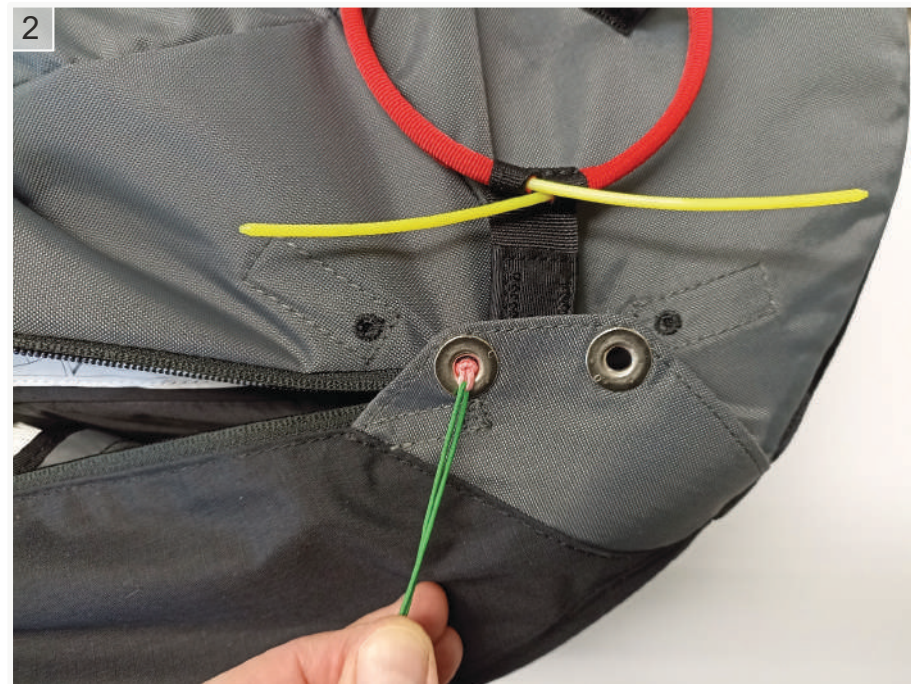
Lay the harness on its side and arrange the lines and v-riser in the container. Slide the rescue parachute into the

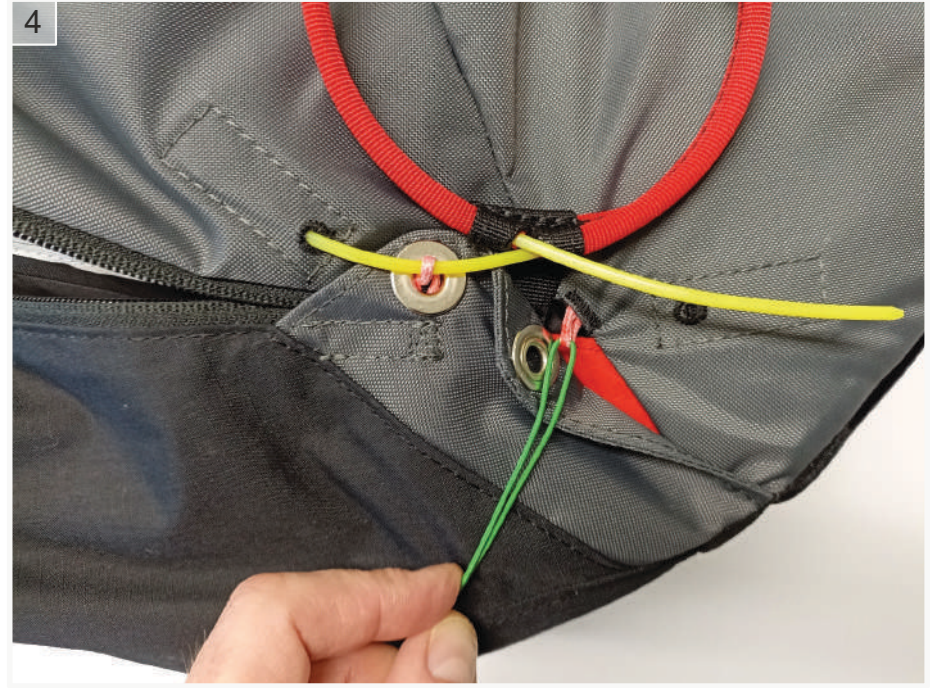
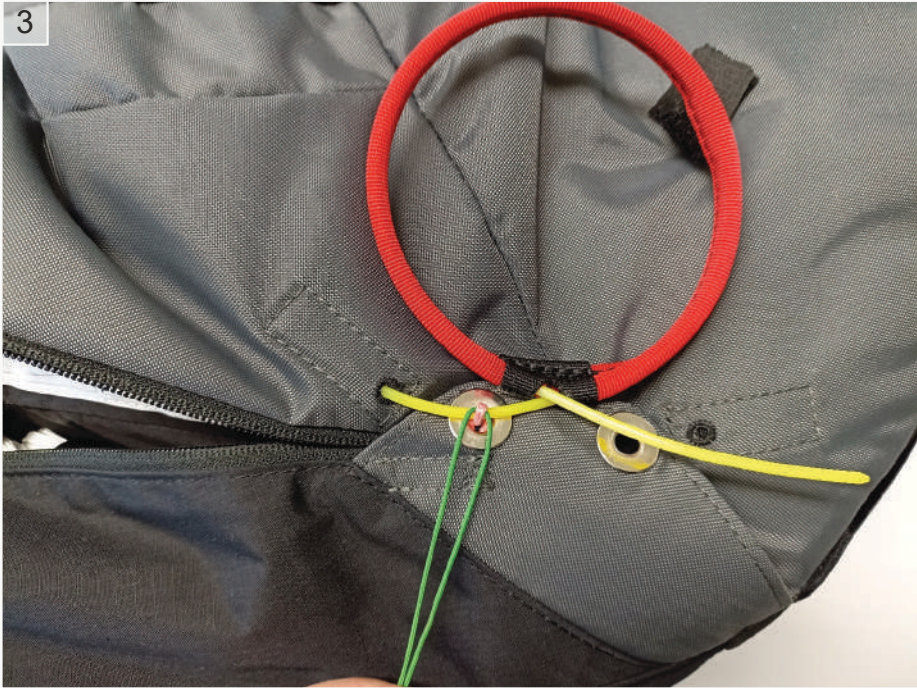
container and attach the release handle with Velcro.

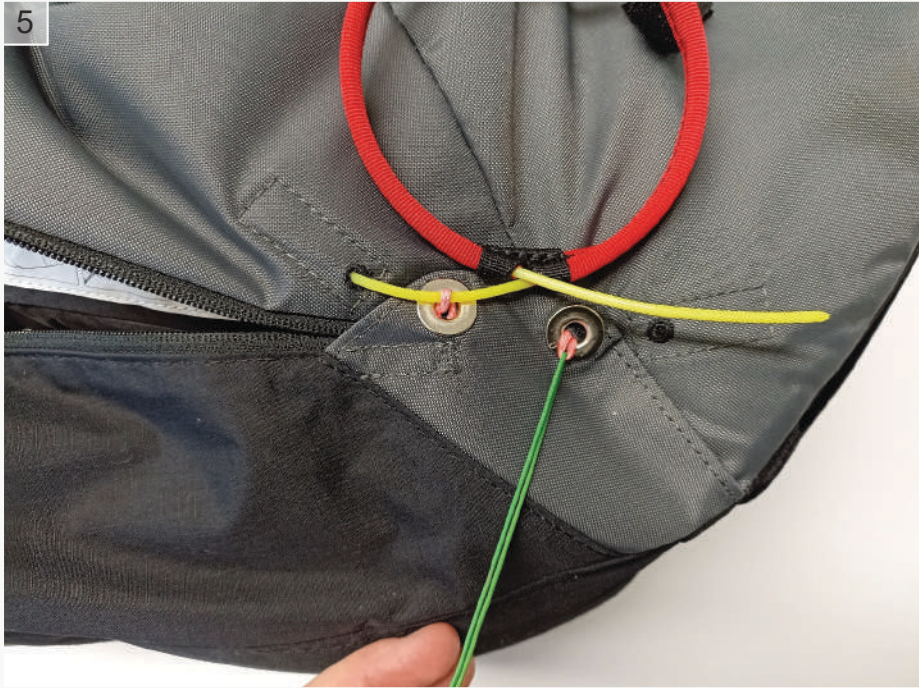




Using the auxiliary line, close the container following the sequence shown in the pictures.







Gently move the slider of the zip closing the tunnel towards the container until resistance is felt. Then close the tunnel.



Caution: To avoid accidental opening of the rescue system, pins closing the container must be checked before each flight!

The rescue chute must be periodically aired and repacked according to its manual. The Combo 2023 harness will best accommodate light rescue chutes: Globe Light 90, Globe Light 110 manufactured by Dudek

Paragliders. However, use of rescue parachutes by other manufacturers is possible too, as long as their dimensions when packed do not exceed those of the container.

Container's volume:

Max - 4800 cm³

Min - 3900 cm³

After each installation of rescue chute in a container, a compatibility test is necessary. In order to do that, hang the harness, equipped ready for flight. Seat down in the harness and assume your usual position in flight. Grab the container release handle and pull it to the side in a resolute effort, so that the parachute is completely out of the container. Still, do not throw it away, so that the bag remains closed. If the trial was successful, put the rescue back into the container.

If, however, the parachute could not be released properly, possible reasons may include:

- Too big rescue chute compared to the container's dimensions (after airing and repacking the parachute is usually slightly bigger than a new one).

- Pulling the release handle not strong enough or in wrong direction (to the front, back or up instead of to the side).
- The length of pilot's arm can be a factor in this case. Especially small pilots can find it difficult to throw the chute away properly.
- Be aware that a cumulation of unfavorable circumstances, aggravated with.
- G-forces in possible spiral may render opening the rescue chute difficult or outrightly impossible.

Caution:The rescue parachute inner container is not supplied with the harness. Check that after connecting the handle to the inner container, there is no risk of it becoming entangled in the rescue parachute lines.

Speed system

The speedbar should be already installed in your harness. If for some reason it has been removed, fix it as described below.

Put the speedbar lines through the metal rings on the sides of the front edge of the seat, the tunnels on the sides of the seat and the pulleys on the backrest. Put stoppers and speed system hooks on the ends of the lines. The hooks allow easy adjustment of the line length.

Now it is necessary to adjust the length of the speed system lines. In order to do this, hang yourself in the harness

using the risers of the paraglider. Adjust the lines so that the pulleys on the paraglider risers touch each other when the beam is pressed to the maximum. If necessary, adjust the length of the line after testing the speed system in flight.

Caution: Do not adjust the length of the speed system in flight. The speed system is properly adjusted when you can reach maximum speed on the second step of the speedbar. Speed lines that are too short can cause the paraglider to stay accelerated at all times.



1 – speed system line

2 – two-step speedbar

Harness straps adjustment

Caution: Before adjusting the straps please install your rescue chute and fill the back pocket as for normal flight. Watch out for symmetry – left and right side should be adjusted the same. The first, test flight should be done in easy weather conditions, with necessary corrections to be applied afterwards. When in the air, you can only adjust the chest and shoulder straps due to their accessibility.



1 – Shoulder straps

2 – Side straps

3 – Leg straps

4 – Chest strap

Straps

Shoulder straps

By adjusting the shoulder straps (1) the harness will fit the height of the pilot. Adjust their length so that they adhere to the shoulders and provide clear support for the upper back. Too short straps will make it difficult to get into the harness and may restrict your movements in flight. The shoulder straps clip prevents them from slipping off the shoulders during take-off.

Side straps

They are used to change the seat / backrest inclination. Complete with the Combo 2023 harness, we have provided you with three sets of side straps of different lengths. Medium length side straps are already installed in the harness. Most probably, you will find this backrest angle comfortable. If not, replace the side straps with longer ones for a more reclined position. If you prefer to fly more seated, install the

shortest side straps. Remember that the more the backrest reclines, the greater the risk of twisting in the risers in dangerous flight conditions.

Leg straps

The leg straps are the most important safeguard against falling out of the harness. Their adjustment must allow both easy launch and proper seating in the air. Too short straps can make you uncomfortable and restrain your starting run. Too long straps can make seating into harness impossible without using your hands. In the harness both leg straps

are connected to the chest strap, thus significantly reducing risk of launching without leg straps locked.

Chest strap

The chest strap regulates the spacing of the carabiners. In the Combo 2023 harness, its length is fixed and the spacing of the carabiners is 44 cm for size M. It has no length adjustment and is connected to the leg loops.

Caution: Check the fastening of the chest strap before each flight so that you do not fall out of the harness after take-off.

Pockets

Combo 2023 has a large back pocket (approx. 17 l capacity in size M) and two smaller side pockets. The back pocket successfully fits a backpack, Camelbak

and more. Careful packing of the back pocket significantly affects the comfort of the flight. Hard objects can be felt through the backrest of the harness and

this may ruin your day. In the upper part of the back pocket there are grommets for the Camelbak hose and, for example, the radio antenna. Side pockets are

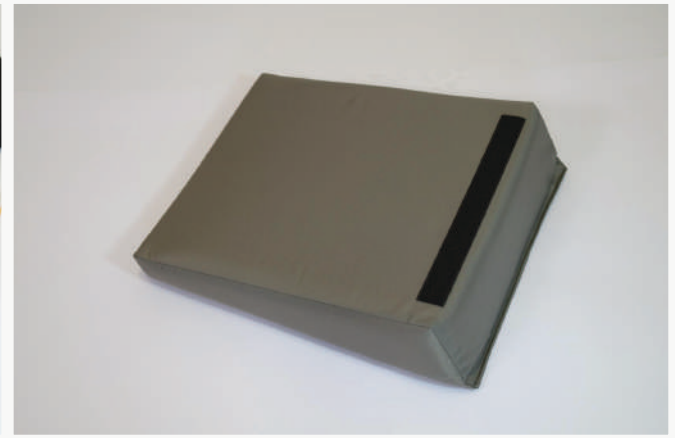
easily accessible during flight. Under the seat in the front part there is an additional small pocket.



Protector

The Combo 2023 is equipped with a certified, 15 cm thick airfoam protector. Fixing the protector in place is shown

below. The pilot's back is protected by an additional airfoam cushion.



Caution: The protector does not require special attention, as long as no hard or water landing occurred. If any of these happens, please follow paragraphs 15 “Cleaning and storage” & 16 “Operation and repairs”

No protector can guarantee total

safety for the pilot neither exclude injuries (e.g. to the spine) in case of an accident.

A protector offers some guard against hits only for those body parts it was designed to protect. Any modifications to the protector can drastically reduce its effectivity.

In case of replaceable protector – it will obviously protect you only when present in the harness.

Protector is certified by:

ALIENOR CERTIFICATION n ° 2754
21 rue Albert Eintsien 86100

CHATELLERAULT France,
in accordance with the EU regulation 2016/425 and the CRITT SPORT LOISIRS SP002 protocol.

The CE declaration is available on our website www.dudek.eu

Connection

Harness/paraglider connection

The Combo 2023 harness is equipped with 23 kN Edelrid Ease aluminium carabiners. Use them to connect the harness to the risers. Another thing to connect before launch is the speedsystem of the harness and the speedsystem of the risers. It is recommended to replace the main carabiners with new ones after 500 hrs airtime.

Caution: Check before launch if the carabiners are closed and locked against accidental opening.

Harness/tow connection

The only safe way of attaching the tow line is with a dedicated tow release. The Combo 2023 does not feature any additional points to fix the tow release, therefore it is to be mounted directly on the harness' carabiners or the canopy risers.

Caution: If the tow release is fixed to the carabiners, it must be observed that they are mounted with their locks facing back, so that the tow release is placed on the smooth part of a carabiner.

Preparing harness for flight

Before each flight a thorough check of the harness is required. For your own safety make sure that:

- the harness is not damaged in any way,
- the rescue chute container is correctly closed and locked with pins,
- rescue chute release handle is correctly set up and has the right shape (quite often it happens to be malformed in transport, so it's important to check if it's not flattened and easy to grab),
- shoulder and leg straps remain correctly adjusted,
- all pockets are closed and their zips covered,

- the main carabiners are closed, locked and free of any damage,
- the speedbar is hooked to the paraglider.

Fastening the harness:

- fasten the chest strap.,
- fasten the strap fixing the shoulder straps.

Caution: Always close the chest strap first, and the pod second. Before each start check that the chest strap is firmly closed, especially when it's a subsequent launch. Not properly locked chest strap may lead to falling out of the harness with POSSIBLY FATAL CONSEQUENCES !!!

Harness use in practice

Paraglider compatibility

Combo 2023 can be used with any paraglider.

Training

Combo 2023 is intended for initial and training flights.

Tandem flying

Combo 2023 is not suitable for tandem flight neither as a pilot, nor as a passenger.

Acro

Combo 2023 has been designed for training and recreational flights. It is not suitable for advanced aerobatic

manoeuvres.

Speed system operation

Combo 2023 is equipped with Allen 20 ball-bearing pulleys to improve the work of the speed system and a two-stage speedbar.

Both steps of the bar are stiffened with tape. Make sure that speed system stays hooked to the paraglider, even if you are not going to use it. Speedbar installation and its adjustment is described on page 13.

Flying with ballast

Combo 2023 does not have a ballast pocket.

Landing

While on the final approach, assume upright position and slip out of the harness Touchdown when still sitting is unacceptable, as there is high risk of spine injury. Land always on your feet, with a few steps to bleed the speed off if necessary. The protector is NOT a landing aid and was not designed as such.

Waterlanding

Waterlanding can be very dangerous as there is a risk of drowning. If unavoidable, undo the buckles of the chest straps and the strap securing the shoulder straps while at a low altitude. Get out of the harness just before it

hits the water so you don't get entangled in lines or other paraglider components. The harness does not sink, so you can swim up to it and use it as a lifebuoy if you see that there is no risk of entanglement in the paraglider lines.

Caution: Waterlanding while still seated in the harness is extremely dangerous. The protector does not sink and will always float, forcing your head under water and rendering breathing very hard or impossible. Additionally, there is very high risk of getting tangled in lines and drowning. Nevertheless, avoid such situation at all costs.

Using a rescue chute

Rescue chute should be used as final means when it's the only way to get the paraglider out of dangerous situation. Using the rescue chute when the paraglider is rotating is dangerous. As long as the altitude margin lasts you have to partially or completely stop the rotation. In order to use the rescue grab the release handle and with quick move detach it from the harness,

throwing it with the rescue chute as a far possible away from the rotation (if present). After opening of the chute fold down the paraglider, pulling rear rows of the suspension lines. For landing adapt position as for parachuting landing fall, that is keep your legs together and slightly bent in knees.

Cleaning and storage

All materials for the harness have been carefully selected, with their quality and durability in mind. Your care and maintenance of the harness will keep in good condition for a long time. The harness is best cleaned with a wet sponge, possibly a bit of soap. Do not use neither detergents nor solvents. If there is a lot of mud, use the brush first before wet cleaning.

In case of completely soaked harness (e.g. after waterlanding) dry it in a well aired place, away from direct sun operation. Soaked back protector must be taken out of the harness and dried with its zip opened. If this will be not enough, remove the airfoam and dry it separately. Soaked rescue chute always has to be completely removed

from the harness, dried and packed again by a licensed person.

The harness can be kept in the backpack, or best loose in a well ventilated room, away from the sun. In case of a long-time storage we recommend taking it out of the backpack. Unfortunately some discoloration of the harness' parts is unavoidable over time and this is yet another reason for not exposing it to the sun more than necessary.

Caution: Do not store a wet harness in the backpack for a long time. Dry it thoroughly before packing. Some parts of the harness are glued and this may affect the condition of these joints.

Operation and repairs

Periodic control of the harness condition will keep it in safe operation for a long time. After each hard landing check the back protector too, as the seams or zip quite often get ripped when absorbing impact and damaged protector will be ineffective. If you notice damage to its cover, send it back to the producer for a repair or buy a new one.

Correspondingly, after each use of rescue chute thoroughly check entire harness for damages, paying particular attention to the straps and seams.

Aluminium carabiners should be replaced each 5 years or 500 hours

airtime. Scratched or damaged carabiners are not serviceable anymore and have to be replaced at once.

Using damaged harness is out of the question. In case of any doubts please contact your dealer or manufacturer and/or send it to an authorized workshop for closer inspection.

Caution: The Combo 2023 harness is per standard airworthy for 10 years since the date of production.

The CDAF-15/2022 protector used in the Combo 2023 harness is airworthy for 10 years from the date of production.



Environmental care

How to take care of the environment

Paragliding is an outdoor sport. We believe that our clients share our environmental awareness. Exercising paragliding you can easily contribute to environment preservation by following some simple rules. Make sure you are not harming nature wherever you fly. Keep to marked paths, do not make excessive noise, do not leave any garbage and respect fragile balance of the environment.

Recycling of used gear

The harness is made out of synthetic materials, which need to be properly disposed of when worn out. If you are not able to dispose of your gear properly, POWAIR will do that for you. Just send your harness to the address given at the end of the manual, accompanied by a short note.



Technical data

Combo 2023	S	M	L
Pilot height [cm]	160-169	167-182	180-192
Seat width [cm]	32	33	35
Suspension height [cm]	45	46	47
Spacing of carabiners [cm]	43	44	45
Weight of the harness * [kg]	-	3,13	-
Load test [100 kg]	EN 1651/LTF91/09	EN 1651/LTF91/09	EN 1651/LTF91/09
Certificate	EN/LTF	EN/LTF	EN/LTF

* Weight (kg) including protector, carabiners, speedbar.

Materials

Main strap	Poliester 15mm 1300 daN
Leg straps	Poliester 15mm 1300 daN
V-strap	Dyneema 12mm 1500 daN
Side and chest straps	Poliester 15mm 1300 daN
Shoulder straps	Poliester 15mm 1300 daN
Buckles	Edelrid, Finsterwalder
Fabrics	Zagros ripstop 70 D 85 g/m2
	Delinova 100 200 g/m2
	Cordura ripstop 5012 120 g/m2

Since POWAIR products are subject to constant improvements, minor differences are possible between the manual and actual product. POWAIR with holds rights to introduce such changes without individual notice.

Set cointains

- 1 Harness with integrated container
- 1 Plywood seat board
- 1 Protector CDAF 15/2022
- 2 Edelrid Ease 18 kN carabiners
- 1 Release handle for the container
- 1 Two-piece V-strap
- 1 Two step speedbar with hooks



Join our community

By purchasing our gear you've become an important part of Dudek Paragliders family!

Share your experiences with the entire community and stay current with new offers by joining our fanpages.

If you have interesting photos and films

of your flying by all means send them to us, and we will share them with our entire community

media@dudek.eu

Do not forget to label everything you publish in social media with [#dudekparagliders!](#)



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