



USER'S MANUAL ZEROGRAVITY

EDITION NR 1_03/2018



Congratulations!

Thank you for choosing the ZeroGravity harness. We have done our best to present you with a highest quality product, fulfilling all safety requirements and offering maximum functionality. Please read this manual carefully before using the harness for the first time. This will help you utilize all features of the ZeroGravity, maximizing comfort and fun you get out of each flight. We wish you a lot of safe and enjoyable airtime!

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1. Safety

Paragliding is a potentially hazardous sport. When flying a paraglider you have to accept risks of injury and/or even death. Incompetent or improper use of the harness may increase those risks. In case of any doubts please ask your dealer or manufacturer.



Dudek Paragliders do not bear any responsibility for damages or injuries resulting from paragliding activities.

2. Description

ZeroGravity harness was designed for paragliding acro and freestyle pilots. Large adjustment range makes sure that every single pilot will be able to find his/her optimum. Safe-T straps scheme considerably diminishes possibility of launching without leg straps closed. The ZeroGravity is equipped with a certified, 15 cm thick airfoam protector.

There are two integrated rescue chute containers placed under the seatplate. One of them is capable of holding a steered rescue chute. The release handles are fixed in easily accessible areas on both sides of the harness. ZeroGravity has a footrest, featuring system of automatic release triggered by the rescue chute use. The harness has a large back pocket plus two side pockets accessible in flight. It is equipped with easily replaceable, ball-bearing Duroll pulleys improving the speedsystem operation.

3. Footrest

A footrest enhances comfort in long flights, helps sitting into the harness after launch and positively influences steering. It is attached to the harness in two points, and its length is adjustable (1). Lower part of the footrest retracts when it is not in use. Designed in this way the footrest does not disturb you during launch and is easier to find in flight. Both attachment points of the footrest are equipped with automatic release system (2), triggered by the rescue chute use. Only one side of the footrest is disconnected, depending on which rescue chute was operated. This system prevents possible tangling of the rescue chute and footrest.



4. Speedbar

Please lead the speedbar lines through metal grommets in the front part of the seat, then push them through the side grommets into the harness, finally lead them through the pulleys and put a stopper on the line. Fix the speedsystem hooks on the ends of the line. Dock the speedbar in a magnetic fastener (3) below the front edge of the seat. In order to adjust the whole system you have to sit in the harness while it is hung by the paraglider's risers. At full speedbar the pulleys on the risers should touch. When necessary, adjust the lines later according to your experience in flight.



Do not adjust the speedsystem lines in flight.



The speedbar is not included in the harness on purchase.

- 1 – speedsystem line
- 2 – two-step speedbar



5. Rescue chute #1 installation

Rescue chute container (1) is located under the front part of the seat.

Container #1 capacity:

Max	5200 cm ³
Min	4400 cm ³



Release handle of the #1 container is placed on the left side of the harness (2) and marked as „Left handle“.



If only one rescue parachute will be used/installed in the #1 container, put a filler insert in the #2 container. In such case close the #2 container according to par.6 of the Manual, “Rescue chute #2 installation”.



The filler insert for the #2 container is not included in the harness on purchase. It can be bought separately.

Connect the „Left handle” release to suspension point
in the middle of the the bag.



Connect the v-strap to the rescue chute riser
with a lockable C6 quicklink.
Fix the V-riser with an o-ring
(see picture on the right) and tighten the nut



Place the V-riser in the tunnel and close the Velcro as shown below.



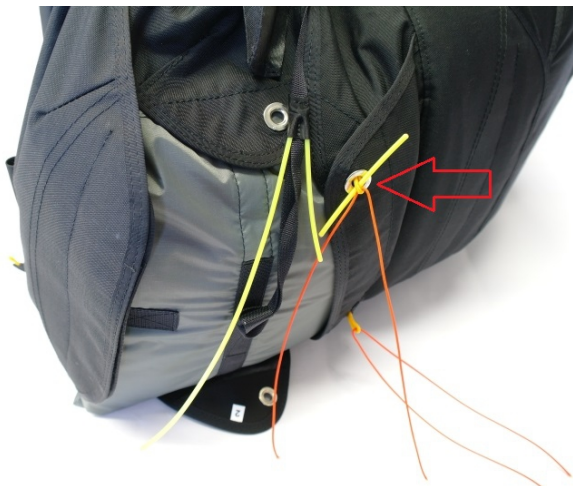
Put the rescue chute in the #1 container.



Insert the footrest release pin in a slit on the side of the harness.



Fix the release handle with a Velcro and place the ends in dedicated pouches.



Lead the assist lines through the loops of the #3 and #3a flaps. Connect the # 3 and #3a flaps and lock them with temporary pin as shown on the left.

Lead the assist lines through metal grommets in the # 2 flaps and lock them with temporary pins.

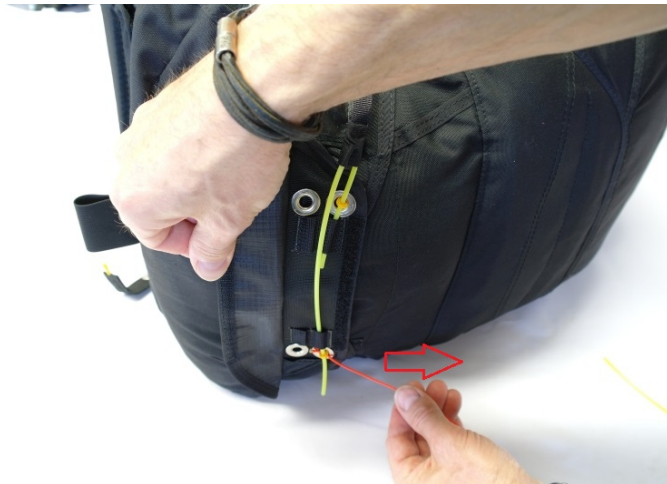
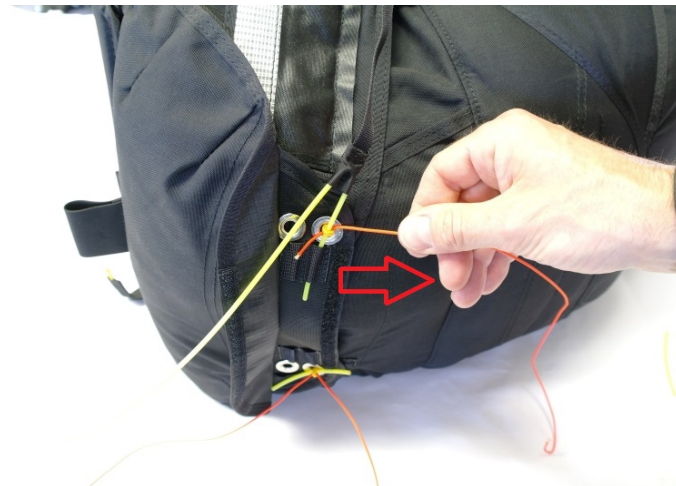


Lead the assist lines through metal grommets of the # 1 flap and lock them with temporary pins.



There are two rows of grommets in the #1 flap. You can use either of them, depending on size of the rescue chute.

Replace the temporary pins with those of the release handle and gently remove assist lines.



Shove the tip of the longer pin into the pouch.



Close the pins cover with a velcro strap and place the strap of the release handle in a tunnel on the #2 flap.



Lock the left side of the footrest as shown on the pictures.





6. Rescue chute #2 installation

Rescue chute (2) container is located under the seat, behind the #1 container.

Container #2 capacity:

Max	7200 cm ³
Min	5900 cm ³



Release handle of the #2 container is placed on the right side of the harness (3) and marked as „Right handle”.

Connect the release handle to the point in the middle of the bag.



Fix the additional V-riser to the attachment points on the shoulder straps with two C6 lockable quicklinks as shown on the pictures.



Tighten the nuts of the quicklinks with a wrench.



Put the V-riser in the tunnel on the right side of the harness and close the lid with a velcro.



Connect the V-strap to the rescue chute riser with a lockable C6 quicklink. Fix the V-riser with an o-ring (picture on the right) and tighten the nut with a wrench.



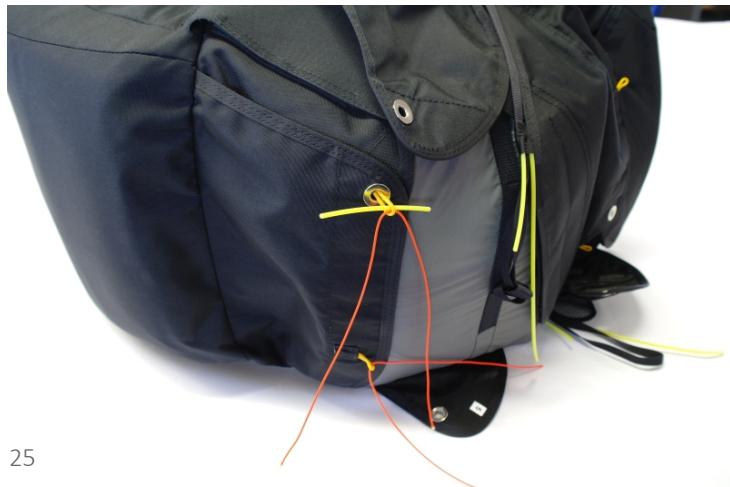
Put the rescue chute in the #2 container and close the V-strap channel with a velcro.



Insert the footrest release pin in a slit on the side of the harness.

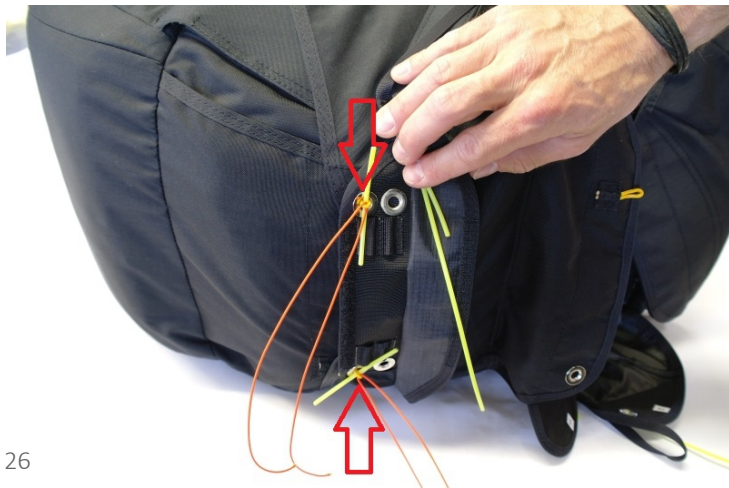
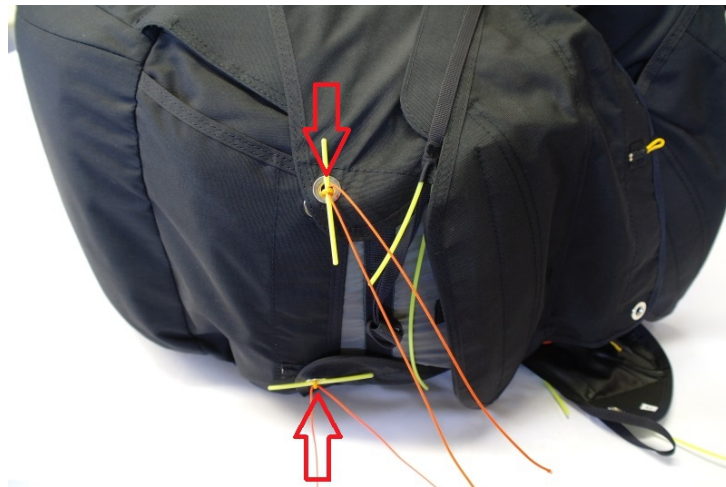


Fix the release handle with a Velcro and place its ends in dedicated pouches.



Lead the assist lines through the loops of the #6 and #6a flaps. Connect the # 6 and #6a flaps and lock them with temporary pin as shown on the left.

Lead the assist lines through metal grommets in the # 5 flaps and lock them with temporary pins.



Lead the assist lines through metal grommets of the # 4 flap and lock them with temporary pins.



There are two rows of grommets in the #4 flap. You can use either of them, depending on size of the rescue chute.

Replace the temporary pins with those of the release handle and gently remove the assist lines.



Put the tip of the longer pin into the pouch.



Close the pins' cover with a velcro strap and place the strap of the release handle in a tunnel on the #4 flap.





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. Zerogravity harness will best accommodate light rescue chutes: Globe Light 90, Globe Light 110 or Globe Light 135 manufactured by Dudek Paragliders. It is possible to use rescue parachutes by other manufacturers too, as long as their dimensions when packed do not exceed those of the container.



ZeroGravity harness is designed as ready to accept a steerable rescue chute. Such a parachute can be installed in the #2 container only. The risers of this parachute should be attached directly to the hangpoints on the shoulder straps, without additional V-strap (page 20-22). **When a steerable chute is installed, it is recommended to use the Quick Out carabiners with an automatic speedsystem release Hkar141 (page 38-41).**



After each installation of a rescue chute in a container a compatibility test is necessary. In order to do that, hang the harness, equipped and packed as for flight. Seat down in the harness and assume the 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 are:

- too big a parachute in relation to container's dimensions (after a repacking the parachute is usually bigger than it originally was)
- you pull the handle not resolutely enough or in wrong direction (i.e. to the front, to the back or upwards).

7. Harness straps adjustment



Before adjusting the straps please install both rescue chutes and fill the back pocket as for normal flight. Watch out for symmetry – left and right side must be adjusted identically. All settings are to be verified during first flight in easy weather conditions and can be further modified at any time. Do not adjust the harness while in flight.

- 1 – shoulder straps
- 2 – side straps
- 3 – leg straps
- 4 – chest strap
- 5 – seat inclination strap
- 6 – ABS strap



7.1 Shoulder straps

Thanks to adjustable shoulder straps (1) the harness can accommodate pilots of almost any height. The straps should stay on your shoulders rather tight, with just a little play. Too short straps will make difficult comfortable seating after launch and can limit your movements in flight. A clip on the shoulder traps will make sure they stay in place during launch and flight. Additionally, there is an alarm whistle fixed to the clip. You can use it whenever help is needed.

7.2 Side straps

They determine the seat/backrest angle. Initial adjustment should be done before first flight, with the harness hanged from a ceiling. All settings are to be verified during first flight and can be further modified at any time. Bear in mind that when the backrest is reclined too much, there is increased risk of getting a twist in case of big deflation.

7.3 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. The Safe-T scheme of the straps significantly reduces risk of launching without leg straps closed.



In order to prevent falling out of the harness after launch it is imperative to check before each flight if the leg straps are closed. **Not closing the leg/chest straps is extremely dangerous and is a known reason of fatal accidents!**



7.4 Chest strap

Chest strap controls distance between the carabiners. Increasing that distance makes the harness less stable, improving effectiveness of the weightshifting and relaying more information from the canopy. Reducing it will stabilize everything and make the paraglider less receptive to weight steering. Too narrow carabiner base can make recovery from extreme situations very hard or even impossible (in case of a spiral). If the manufacturer of the paraglider does not give any special instructions, the recommended width is 42-48 cm. In turbulent air you can pull in the strap to feel more comfortable, but always remember that it is more probable to get a twist in emergency then.



In order to avoid falling out of the harness it is imperative to check before each launch if the chest and legs straps are closed.

7.5 Seat inclination straps

By adjusting the length of those straps the inclination of the seat plate is changed. It can be adjusted to match personal preferences, as long as symmetry is observed.

7.6 ABS straps

They are stabilizing the harness laterally and influence weightshifting. The shorter straps, the less effective weightshifting.



The ABS straps are to be adjusted only after the seat inclination straps are properly set.



While adjusting any of the shoulder, side, leg, seat plate and ABS straps you need to observe the symmetry. Left and right sides must be adjusted identically.



The side, middle and seat inclination straps are clipped directly into the carabiner as shown on the left picture, independent of the carabiner type used.



8. Pockets

ZeroGravity has a spacious back pocket (ca. 23 l. volume) and two smaller ones on the sides of the pod. The back pocket can easily hold paraglider's backpack, camelback and much more. Side pockets can be easily reached in flight.



9. Protector

ZeroGravity harness features a certified, 15 cm thick airfoam protector. Fixing the protector in place is shown below.



The protector does not require special attention as long as there was no hard or water landing. Servicing in such cases is described under #18 „Cleaning and storage” and #19 „Operation and repairs”



10. Accessories fastener

On the right side of the harness there is a fastener for additional equipment (smoke flare etc.), designed for easy drop of the flare before landing or in any other case.



It is enough to pull the handle to get a release (right photo).

11. Harness/paraglider connection

ZeroGravity harness is equipped with steel carabiners AustriAlpin of 27 kN. 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 each 300 hrs airtime.

You can also use the Quick Out carabiners, with an option of instant releasing the paraglider. The QuickOut carabiners are to be installed according to suggestions of the producer:

http://finsterwalder-charly.de/images/stories/startseite/downloads/quick-out_manual_print.pdf





In order to install the Quick Out carabiner in ZeroGravity harness – apart of following the QuickOut producer's manual – additionally remove a plastic stopper as shown below.



Clip the harness' straps in the carabiner as visible and assemble the carabiner as per its manual.





After clipping riser of the paraglider to the Quick Out carabiner, move the locks of the buttons in order to avoid unintentional release.





When using the Quick Out carabiners it is absolutely necessary to use the automatic speedsystem release too (e.g. HKar141).



The Hkar141 system is to be installed according to the producer (p. 3)

http://finsterwalder-charly.de/images/stories/startseite/downloads/quick-out_manual_print.pdf



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

12. Harness/tow connection

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



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 (concerns the steel AustriAlpin 27 kN carabiners).

By far the better method of attaching the tow release is to clip it directly into the riser of the paraglider with a pair of C5 quicklinks.

13. Before 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
- rescue chute containers are correctly closed and locked with pins
- rescue chutes' release handles are correctly set up and have the right shapes (quite often they happen to be malformed in transport, so it's important to check if they are not flattened and easy to grab)
- all leg and chest straps are closed
- shoulder and side straps remain correctly adjusted
- all pockets are closed and their zips covered
- main carabiners are closed, locked and free of any damage
- the speedbar is clipped to the paraglider.

14. Using the rescue chute

The rescue chute should be used in case of emergency, when you can't recover the paraglider from dangerous flight state in any other way. Throwing the chute while in a fast spin is risky. If there is still some altitude to spare, you should first try to slow down the spin or stop it altogether.

To use the chute grab the release handle, with fast and resolute move rip it away from its velcro and throw it together with the canopy bag as far as possible, to the outside of the spiral (if present). After opening deflate your paraglider by pulling down its rear risers. Prepare for a parachute style landing, keeping your legs together with your knees slightly bent.

15. Landing

While on the final approach, assume upright position and get your legs ready for landing. Touchdown when still sitting is unacceptable and very dangerous, as even despite the protector 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.

16. Waterlanding

Water landing is potentially very dangerous, with imminent risk of drowning. If you can't avoid the waterlanding, release both the legs and chest straps when ca. 10m over the surface. In the last moment get out of the harness to avoid getting tangled in suspension lines or other gear. The harness does not sink, so it is advisable to grab it later and use as a lifebuoy.



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.

17. Tandem flying

ZeroGravity harness was not designed - and remains unsuitable - for tandem operations.

18. Cleaning and storage

All materials for the harness have been carefully selected, keeping 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.

Harness can be stored in a backpack, but if you want to give it best service – keep it de-rigged in a well-ventilated place, away of sunlight. If the harness is not going to be used for a longer time, it is advised to get 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.

Before packing the harness remove the stiffener from the upper area of the back pocket. Open the cockpit and put the instrument panel inside for protection.

19. 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.

Steel AustriAlpin 27 kN carabiners should be replaced each 5 years or 300 hours airtime. Quick Out carabiners are to be replaced according to their producer, that is every 8 years, regardless the 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.



ZeroGravity harness has an airworthiness certificate for 10 years since the date of production.

The ZGAF-15/2018 protector is allowed to remain in operation within 10 years from the date of production.

Environmental care

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, DUDEK Paragliders will do that for you. Just send your harness to the address given at the end of the manual, accompanied by a short note.

20. Technical data

Size	Suspension height (cm)	Seat width* (cm)	Seat depth (cm)	Back support height (cm)	Max. pilot weight (kg)	Harness weight ** (kg)
S	43	33 / 34	45	65	100	-
M	44	33 / 34,5	47	68	100	5,35
L	45	33 / 35,5	49	71	100	5,60
XL	46	35 / 36,5	52	75	100	-

* Seat plate width front/back, ** Weight including protector, carabiners and footrest

Complete set includes:

- 1 Harness
- 1 ZGAF-15/2018 Protector
- 1 Left container release handle
- 1 Right container release handle
- 2 Steel AustriaAlpin 27 kN carabiners
- 1 Footrest

Optional equipment:

- 2 Quick Out carabiners
- 2 speedsystem quick release hooks HKar141
- 1 speedbar
- 1 V-riser for the #2 container
- 2 C6 lockable quicklinks for the V-riser or steered rescue chute assembly
- 1 Filler insert for the #2 container



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



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