



# MANUAL

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Version 1.0/2016

### Verification of Checks and repairs

<p style="font-size: 1.2em; font-weight: bold; margin: 0;">AIX</p> <p>Serial number: .....</p> <p>First check by ICARO / date: .....</p>	<p>.....</p> <p>Name/ Stamp</p>
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Check (C) Repair (R)	Which repair/ Check? Check valid until?	Performed by/ date

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Congratulations on buying your  
**AIX**  
harness and welcome the family  
of ICARO - pilots!

Before you get to know your system please read the manual, there is important information inside.

This manual gives you information on the entire specific and general characteristics of the harness.

All technical data and instructions in this manual were drawn up with great care. ICARO Paragliders cannot be made responsible for any possible errors in this manual.

Should you decide to sell this harness at a later date, please pass on this manual to the new owner.

No guarantee of any kind can be made against accidents, injury, equipment failure, and/or death. It is assumed that the pilot is in possession of the necessary qualifications and provisions of any relevant laws are observed.

The use of this harness is entirely at your own risk.

Every pilot bears the responsibility of his/her own safety. The manufacturer or distributor assumes no responsibility for accidents occurring while using it.

Do not fly unless you are personally willing to assume all risks inherent in the sport of paragliding and all responsibility for any property damage, injury, or death, which may result from use of this sport.

Your harness is made with great care and state of the art and tested according European Standards.

The harness is suitable for training and tandem flying.

***It is strictly prohibited to fly the harness***

- ***with damaged carabines, belts, buckles or protector***
- ***outside the specified weight range***
- ***in aerobatics and with motor.***

All technical data and instructions in this manual were drawn up with great care. ICARO Paragliders cannot be made responsible for any possible errors in this manual.

Important information in this manual is written in ***fat cursive writing.***

Any important changes to this manual will be published in our homepage ([www.icaro-paragliders.de](http://www.icaro-paragliders.de)).

Should you decide to sell this harness at a later date, please pass on this manual to the new owner.

The manufacturer or distributor assumes no responsibility for accidents occurring while using it.

Every pilot must ensure that the harness is properly checked at regular intervals.

***Each alteration is dangerous and reactions are not predictable. Your harness will lose its pattern test result and guarantee.***

### **Environmental aspects:**

The materials of which a harness is made require a special waste disposal. So please send disused ICARO - harnesses back to us. We will care about a professional waste disposal without costing for you.

Please do our nature-near sport in a way which does not stress nature and environment!

Please do not walk beside the marked ways, do not leave your litter, do not make unnecessary loud noises and respect the sensitive balance in the mountains.

**Especially at the launch site consideration is needed!**

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## To get to know your AIX

Allowed for training	yes
Allowed /certified for flying with passengers	yes/ no
Allowed /certified for aerobatics	no/ no
Allowed /certified for flying with motor drive	no / no

<b>Technical data</b>			
Designated use	Harness for paragliders, pattern tested GH		
Size	S, M, L		
Suspension highs (cm)	43 (S), 44 (M), 47 (L)		
Maximum loading (kg)	120		
Distance of karabiners (cm)	35 - 44		
Total weight (without rescue system) kg with protector and karabiners	3,4 (S), 3,7 (M), 4,2 (L)		
Type of protection	foamed rubber protector 17 cm		
Reserve parachute	Integrated container attached under the seat with handle at the right side		
Check interval	24 month		
Extent of the seat (cm)	<b>size</b>	<b>readth</b>	<b>length</b>
	S	32,5	35,5
	M	34,5	37,5
	L	38,5	40,5

		Gewicht in kg													
		45	50	55	60	65	70	75	80	85	90	95	100		
Größe in cm	155													5'1"	Height inches
	160	<b>S</b>												5'3"	
	165													5'5"	
	170				<b>S or M</b>									5'7"	
	175						<b>M</b>							5'9"	
	180													5'11"	
	185								<b>M or L</b>					6'1"	
	190											<b>L</b>		6'3"	
195													6'5"		
		99	110	121	132	143	154	165	176	187	198	209	220		
		Weight Lbs													

This harness is designed especially for pilots who want a functional, safety and compact Harness. Maximum freedom of movement during ground handling, start and landing is ensured, due to a special concept of leg strap guidance and a fold-away seat. The suspension point was chosen so the pilot has a maximum feeling for the glider.

Active flying is especially supported by the body-control-system. Disturbance of the canopy can be detected earlier and avoided. The protector is attached by zipper in the back pocket.

***The protector must be attached before installing the rescue system.***

The harness is provided with a big rear bag and two side pockets. All flight equipment not needed during flight can be placed in the rear bag. One pocket has an open net and can be reached while flying. The other pocket is closed with a zip so that nothing can fall out during flight.

### **Speed system**

All necessary deflection pulleys to install the speed system are mounted. The rope guide was chosen to provide easy and comfortable use of the speed system also for longer periods of time.

Put the ropes which are attached at the foot bar through the rings at the front right and left of the harness from the outside and then through the eyelets on the side.

Afterwards put the ropes which are now running inside the harness through the pulley which can be found at the left and right of the sitting board.

The ropes which have been put through the eyelets and the pulley need to be bypassed on the outside along the harness bands and fastened with the brummel hook.

Adjust the length of the rope in this way that both legs are straightened completely when flying maximum speed (both pulley of the risers are laying on top of each other).

***Please pay attention that the glider will not be pre-accelerated, while the accelerator is loosened, when the acceleration ropes are set too short.***

At the start we advice to fix the accelerator with the Velcro which is attached at the front of the sitting board, in order to avoid tripping while pulling up the glider or when starting up.

***The description refers to the rope characteristics of an ICARO harness. When using a different harness the application can be different.***

Before starting the brummel hook (foot accelerator-glider-riser) are stuck together. When flying normal all risers have the same length.

When using the accelerator system the risers A, B are shortened by a constructive exactly defined length and therefore the angle of attack of the canopy is smaller. The length of the hindmost riser however is not changed.

This causes a reduction of the angle of attack of the whole glider and results to an increase of speed.

## **Adjustment of AIX**

The harness can be adjusted in many ways to the individual needs and likings of each pilot. We advise each pilot to take time to get acquainted to the harness. This will reward the pilot with an excellent sitting comfort. To carry out the adjustments we advise to hang the harness in a simulator.

***Conduct the adjustments with the rescue system installed.***

### **Adjustment of shoulder straps**

Adjust the shoulder belts while standing. They are to be tightened so you can just stand straight. Fine

### **Adjustment of back straps**

When you prefer sitting in the harness you must pull the sideward straps (they are on breast height), if you like more lying during flight open the straps.

### **Adjustment of leg straps**

Pull the leg belts tight before starting, but make sure they do not cut in or squeeze. Due to a special design the leg belts will not hinder your running at the start.

Because they are tied tight, the front of the seat is lifted up and helps you getting into the harness. By slipping back in the gear, the leg belts loosen a bit after start.

### **Adjustment of chest straps**

The adjustment of the harness chest strap controls the distance between karabiners and affects the handling and stability of the glider.

Excessive tightening the chest strap increases stability but also the risk of twists following glider collapse, and it also increases the frequency of getting collapses due to poor feedback from the glider.

The risk of twisting is also strongly affected by the seating position of pilot. Flying in a laid back (reclined) position makes it much more difficult to react in time to prevent riser twisting.

With the chest strap in a more closed position the glider also has more tendency to maintain a stable spiral, lengthening of the chest strap gives more feedback from the glider but decreases stability.

***Each setting the harness must be done with mounted protector, rescue system and be symmetrical on both sides.***

## **Fitting the rescue system**

---

To install the rescue system a container is mounted under the seat. The opening is installed as standard on the right hand side. If desired, it can be positioned on the left hand side. The container of the AIX contains a rescue handle. The handle has to be fixed with its loop to the inner container of your rescue system.

***If in your inner container there is no loop, get in contact with the producer of your rescue system.***

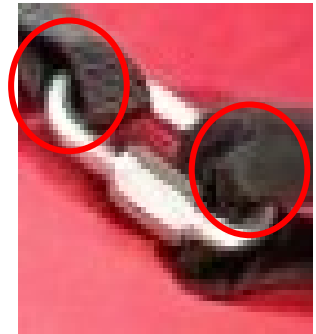


Most harnesses have a handle for the harness containers. This handle must be connected to the inner container. The inner container of ICARO rescue systems has two loops, in which the handle of the harness can be attached (center, side). Handles for front and back containers are generally suspended in the central loop, container on side or under the seat, the side strap used.

***If there is no handle of the harness or it does not fit with your inner container, please ask the dealer of your harness or your paragliding school.***

### **Attachment of the connection belt with the harness**

For connecting the two belts use a fixable 24 KN- snap hook with a diameter of 8 mm. It is very important that the snap hook cannot twist to prevent traverse stress of the snap hook.



Therefore use cable fixer, adhesive tape or strong rubber bands and pull it **above and below the snap hook** around the belts.

Another fixing method is to put the belt of the rescue system through the connection belt of the harness and then the rescue system through the harness belt as shown in the photo.

It is just as very important that the knot is very tight fastened. Therefore use cable fixer, adhesive tape or strong rubber bands and pull it **above and below the knot** around the belts.



***Please pay attention to the symmetry of both lines. Neither side of the loop must be longer than the other.***

### **Closing the container**

Now put the rescue system in the container under the seat.

First insert the delivered rubber bands with knots in the eyelets of flap (flap with smaller eyelets, Nr.1). Then fold the flap inwards.

The rescue connection handle must be threaded through the loops so that the connection line can be tightened without difficulty.

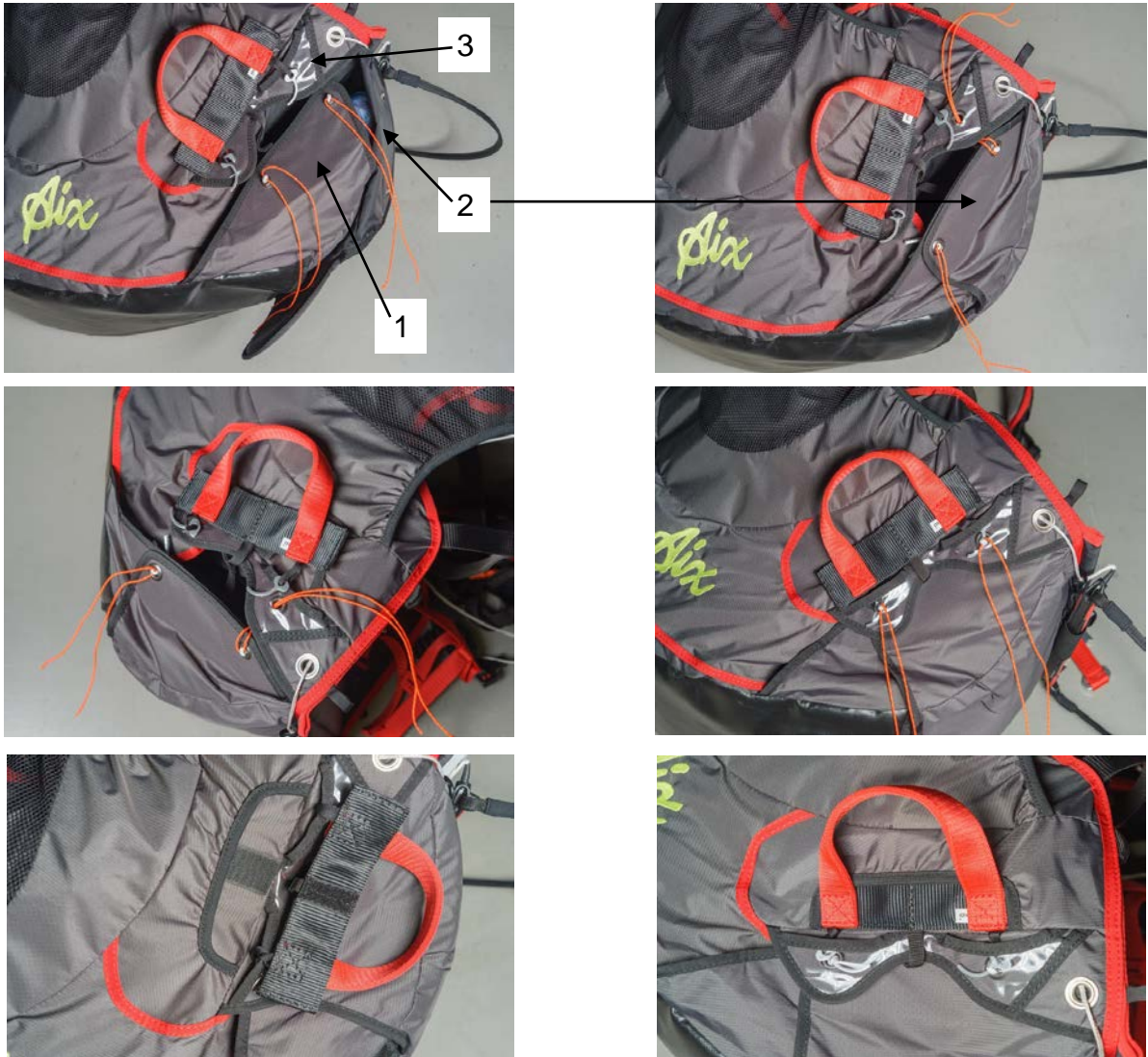
The packing cords are threaded through the eyelets of the flap Nr.2

Then pull the lines through the last remaining flap 3 (with transparent window) and fix the splint with the now visible rubber bands.



Fix the handle with the Velcro and slide the ends of the handle into the flaps.

**Remove the cords used to help pack the rescue system!**



Now fold the flap seen in picture in the designated bag under the plastic protection.

In order to avoid unwanted release of the rescue system, the closing splint must be held with a special thread (50 N) which is made with certified material.

***A higher breaking force could otherwise endanger the release of the rescue system!***

***After installing the first rescue system it is essential to conduct test activation (in flight position, sitting in the harness).***

### **Compatibility check**

A control of every new combination of rescue system and harness/outer container has to be carried out by either the producer of the harness or the rescue system or an authorized person (dealer or flight instructor). The activation of the rescue system in flight position has to be correct and in conformity to the construction



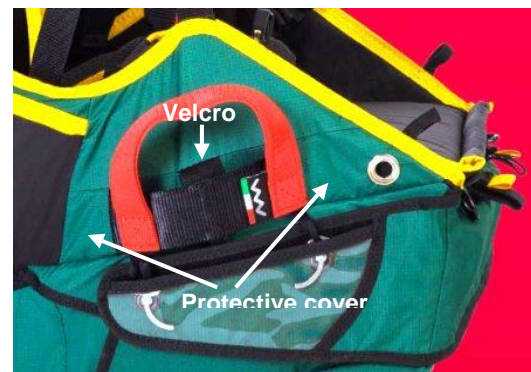
guidelines. The check has to be recorded in the documentation of the rescue system. The throwing movement should be practiced every time the rescue system is repacked.

## IMPORTANT POINTS TO LOOK OUT FOR:

- **Check (steady)**
  - connection of the rescue system to your harness
  - connection of the harness and deployment handle
  - the closing splint must be held with a special thread
  - aluminum karabiners; aluminum might get micro cracks from impacts during use
- **line from the fixing loops is removed (after each packing)**
- **Check compatibility of rescue system and harness**
- **Before each start with your glider you have to check the container is closed!!!**

## Correct handling of the rescue system

In nearly all commercial harnesses with integrated rescue system the handle of the rescue system is mounted on the right hand side (optionally it can be mounted on the left). To prevent unintentional operating of the rescue system most harness models with a handle mounted on the side (Tube- , side- , back containers) offer additional safeguards. Depending on the model ICARO harnesses one or two cover plates attached to the rescue handle are used to be stuck into two flaps and are secured with an additional Velcro. This ensures that lines cannot interlock with the handle pad and the rescue system opens unintentionally (e.g. during ground handling). This fallback system for rescue handles is very effective and therefore used in many other harnesses.



AIX

ENERGY CROSS, ENERGY SP

The used material for handle pads and the Velcro provides a guarantee for functionality and safety against unintentional loosening. The new material is stiff and therefore

***ICARO paragliders recommends to bend the handle pad a couple of times and open and close the Velcro before each installation. Thus the web of the handle becomes softer and the adhesion of the Velcro decreases.***

The release of the rescue system represents an essential factor to reduce the required release force. When the handle is pulled upwards, the resistance caused by the protective cover is much higher when releasing it horizontally or diagonally upwards.



Therefore we recommend to train (before repacking the rescue system, during g-force trainer) these methods.

Another problem can arise when the handle is released with the other hand. After evaluation of different air accidents, however, it was found that such a situation only happens with multiple adverse conditions (for example wrong recovery of a Full stall, partly fallen into the cap, the throwing hand covered in lines and additionally spiral dive) .



Also in this case it is essential not to try to pull the parachute handle vertically but as far as possible horizontally or diagonally upwards.

### **Connecting the wing to the harness**

Without twisting the risers, connect them to the harness attachment loops using the selflocking carabines.

Check for the risers to be properly positioned and untwisted. The «A» risers must be located at the front and facing the flight direction (see diagram).

Lastly, check for the main self-locking carabines to be fully closed and locked in place

## Flying with the AIX

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It is important to perform a pre flight check before taking off. Please give the following points your special attention.

Check your harness and make sure that all connections to pilot are correctly closed. Check that all karabiners are closed and can not be opened accidentally in flight and that the risers are not twisted.

Always be certain to have enough altitude to make a landing approach corresponding to the weather conditions of the moment and terrain. During the landing approach, never make hasty maneuvers.

Always land upwind in a standing posture and be ready to run upon touchdown if necessary. During your final approach, use as much airspeed as possible based on the weather conditions of the moment, then gradually reduce the glider air speed by pushing the toggles all the way down until contact with the ground is made. Beware not to brake too soon and too rapidly and too deep which could lead to a stall and a dangerous landing.

During high wind speed landings, turnaround and face the wing as soon as ground contact is made and move toward the wing while braking symmetrically to deflate it. Do not land in a seated position as it is dangerous.

The harness is very well suited for tandem flights. It can be used both for the pilot and the passenger. Due to its special construction, it allows a maximum freedom of leg movement, which makes the start easier for the pilot and the passenger.

***The passenger should not have a rescue system in his harness to avoid unwanted activation of the rescue system.***

The harness is also very suitable for towing. For this you either need a towing attachment or two screw-in trapeze shackles.

The towing attachment is available from specialized dealers and is mounted to the main karabiner with the straps. The trapeze shackles are available from flight schools and should be placed at the chest belt between the shoulder belt and main suspension. The towing link is attached to this.

## Care and repair Instructions

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### Care Instructions

To maintain your harness in good condition, please ensure that the harness does not get dragged along the ground, the karabiner does not get hit against rocks and avoid over exposure to sunlight, heat or humidity.

If you wish to clean your harness it is best to use warm water and a soft sponge.

Store your harness in a dry and dark place, ideally between 5° and 30° Celsius. Do not store it near chemicals or petrol.

If you will not fly for longer period, take it out of its pack.

Avoid storing your harness for days at a time in a hot car.

If the harness has become wet, lay it out so that air can get to all areas of the fabric, also your second chance.

***It may take several days for your harness and your rescue system to dry out completely especially the lines of the rescue system, which take longer than the fabric. Do not fold and store your rescue system prematurely if it not completely dry. Mildew may damage your harness and your rescue system.***

### **Repairs**

***The seal of approval can only be preserved if original parts are used. If you discover any damaged parts to the harness which might impede deployment, please send it back to the manufacturer to be repaired.***

***Repairs can only be carried out by the manufacturer or from the manufacturer authorized persons.***

The aluminum karabiners should be changed every two years at the latest as the aluminum might get micro cracks from impacts during use.

### **Inspection**

**After 24 months**, it is important to have your harness inspected by a trained ICARO technician.

***Without regular certified inspections, your harness will lose its certification and guarantee.***

Only an authorized technician who has been trained by ICARO paragliders is authorized to sign and date the harness certification label and sign the manual.

## **Terms of guarantee**

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ICARO paragliders guarantees 24 month for the proper processing, an operation within the allowable limits of proper operation and the fulfillment of the eligibility criteria of harness equipment at the time of first delivery by ICARO paragliders.

# ***Guarantee is only valid for ICARO products with LTF/ EN certification.***

### **What is covered by the guarantee?**

Provided that ICARO paragliders accept the fault the guarantee contains all necessary spare parts related to the replacement or repair of defective parts and working time.

ICARO paragliders accept no freight costs (outbound and return transportation).

### **What are the conditions of the guarantee?**

Provided that ICARO paragliders accept the fault the guarantee contains all necessary spare parts related to the replacement or repair of defective parts and working time.

- ICARO paragliders needs to be informed immediately after the discovery of a defect and the defective product must be sent to us for testing.
- The harness was used in normal circumstances and maintained according to the instructions. This includes in particular the careful drying, cleaning and storage.

- The harnesses were used only within the applicable guidelines and all rules have been complied with all times.
- All flights must be accounted for within the flight book.
- There were only original spare parts used and checks, exchange and / or repairs were conducted by an authorized dealer or by ICARO paragliders company / person and properly documented.
- A fully and correctly completed guarantee card must be sent at least 6 weeks after buying the glider to ICARO paragliders commercial. Alternatively can this be sent via the appropriate online form on [www.icaro-paragliders.com](http://www.icaro-paragliders.com).

**What is excluded from guarantee?**

- Harnesses
  - that are used for training purposes, Acro or other official competitions,
  - which were involved in an accident,
  - which have been changed by yourself,
  - that were not purchased from an authorized dealer / flight school,
  - where the required inspection intervals were not met and the verification of the harness was not conducted by a ICARO paragliders authorized operation / person
- Damage
  - which has occurred due to improper treatment (i.e. storage in humidity, heat or direct sunlight)
  - caused by solvents, salt water, insects, sun, sand, humidity or “debug-jumps”.
  - caused by force majeure.
  - caused by the paramotor (Oil, fuel, damage in cause of the prop)
- Parts that need to be replaced due to normal wear and tear,
- Discoloration of the cloth material used,

In case of a concluded claim the period of guarantee carries on. The period of guarantee and the connected claim are not prolonged and are only valid until the original date of expiry. The freight costs (transport to and from) are not paid by ICARO paragliders.

## Annex

Please fill in the guarantee card which you find on our homepage [www.icaro-paragliders.com](http://www.icaro-paragliders.com) and send it to us.

<b>Check sheet for harnesses</b>					
Client (Name, Address):					
Type / size / year of construction :			Serial number:		
Certification number:			Date of last inspection:		
			Memos	yes	no
Seat strap system	Visible damages?				
	Areas of abrasion?				
Seat board	Visible damages?				
	Positioning of the straps ok?				
Straps	Visible damages?				
	Course of the straps?				
	Seams ok?				
Buckles and carabines	Visible damages?				
	Condition (closing properties, operation) ok?				
	main carabines (condition, age)				
	Operativeness ok?				
Protectors	Visible damages?				
	Seams ok?				
Airbag -/ Foamed material	Valve ok?				
	Tightness airbag/ foam protector sheeting?				
	Conditions of any reinforcements ok?				
Speed bar	Visible damages?				
	Fixing rubber ok??				
	Return pulleys ok?				
	Lines ok?				
Rescue system	Visible damages?				
	Identification plate ok?				
	V-lines				
	Handle fitted and connected?				
Backpack (reversible harnesses)	Visible damages?				
	Zip ok?				
	Buckles ok?				
	Seams ok?				
Compatibility check effected?			Additional repairs carried out? Which?		
Type label affixed?					
Inspection stamp affixed?					
<b>Overall result</b>			<b>Next inspection:</b>		
As new					
Very good			<b>Next inspection when using the harness commercial:</b>		
Used					
Much used			Date, name and signature of the checker		
certification only for one year					
not airworthy					





Accelerator return elastics

Return pulley

Pocket with Zipper



Pocket on the back

Adjustment for the back angle

Pocket with net

Handle for the rescue system



### Dispatch protocol / Delivery content

Handle

Seat Board

Snap hook

Elastic

.....

Date

.....

Signature