



## Tandem- Pilot Harness



MANUAL

Version 3 / 2022

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Congratulations on buying your  
**LOXIA 2**  
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 later, 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, tested according to European Standards EN 1651:1999, and Notification of the Federal Aviation Administration of Germany and its pattern tested as harness with foamed rubber protector 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***
- ***This product has been designed exclusively for paragliding. Any other activity such as skydiving or base jumping is absolutely forbidden.***

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.

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

***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.***

## **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!**

### **ICARO paragliders**

Hochriesstraße 1, D-83126 Flintsbach

**Téléphone** : +49 (0)8034 909700

Telefax: +49 (0)8034 909701

Email: [office@icaro-paragliders.com](mailto:office@icaro-paragliders.com)



## To get to know your LOXIA 2

|  |           |
|--|-----------|
| Allowed for biplace training                   | Yes       |
| Allowed /certified for flying with passengers  | Yes / yes |
| Allowed /certified for aerobatics              | No / no   |
| Allowed /certified for towing                  | Yes / no  |
| Allowed /certified for flying with motor drive | No / no   |

|                              |           |
|------------------------------|-----------|
| <b>Technical data</b>        |           |
| Classification               | GH        |
| Size                         | one size  |
| Weight (kg)                  | 3,5       |
| Maximum take-off weight (kg) | 120       |
| Pilot size (cm)              | 160 - 195 |
| Suspension height (cm)       | 37        |
| Seat depth (cm)              | 22        |
| Seat width (cm)              | 40        |
| Protector                    | foam      |
| Check interval               | 2 years   |

The LOXIA 2 is our further developed lightweight harness for pilots and was designed exclusively for tandem-specific requirements.

The combination of leg loops and seat board (Picture. 1) distributes the pilot's weight evenly, thereby maximizing seating comfort. The entire geometry with the upright sitting position enables a good view and an easy transition from running to sitting.

Many details, such as the standard photo pole holder (Picture 2) or the spacious radio pocket (Picture 3) make it easier to use in practice. Both can be attached to either the right or left side of the harness.

The handle for the rescue system (Picture 4) is intended for both left-hand and right-hand assembly. The six-leaf outer container (Picture 5) is numbered, which makes it easier to close.

The protection on the bottom of the harness (Picture. 6) can be replaced if necessary / if it is defective.

## LOXIA 2 Features



Picture 1



Picture 2



Picture 3



Picture 4



Picture 5



Picture 6

## **Operation of the protector**

The LOXIA 2 has a type tested protector made out of a special foam, which is sewn in a nylon fabric cover (mousse bag).

Before every take off you have to check that the protector is completely filled up with air. Especially on low temperatures and after long disuse of the protector (if compressed during storage) it may take a little longer to be inflated completely.

During a hard landing the air inside of both protector systems will be compressed and the air will be deflated through the seams of the nylon fabric cover. The resulting deceleration distributes the impact energy over a longer period and protects the spine from extreme peak loads. However, even the best back protection does not guarantee the prevention of back injuries.

***For this reason, the protector should not be used for unnecessary seat board landings.***

***With every use the protector will be less efficient and the effect of protection less - even if no damage is visible. If a damage is visible the protector is not to be used anymore as well as after a hard landing.***

## **Adjustment of the LOXIA 2**

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***We recommend in any case that all adjustments and settings are done in start position of the passenger before the flight to guarantee an optimal comfort.***

### **Adjust the chest belt**

The chest belt is closed with Click-Lock-buckles. If the chest belt is closed, also the falling out safety device (Safe-T-System) is closed. The Click-Lock buckles must be closed audibly. The length of the chest belt can be adjusted and should not be tightened too much.

### **Adjusting the shoulder belts**

Please note that with correct adjusting the shoulder belts are felt with light pressure on the shoulders. With the shoulder belts you adjust the harness on the pilot's height, but also you adjust the seating position between upright and lying.

### **Adjusting the lateral chest belts**

Adjusting the lateral chest belts take place as the third step and offers on one side again the variation of the seating position. On the other hand, you adjust with the lateral chest belts the most comfortable seating position.

During the adjustment pay attention to the fact that the body load is distributed equal on shoulder belt and lateral chest belt.

### **Adjusting of the leg belts**

When you put the harness on, please take care that the Click-Lock-buckles are closed correct and audible. The leg belts should be fastened tight but should leave your legs still enough space to move during take-off and landing phase.

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

## Rescue system

The handle must be connected to the inner container.

***ICARO Paragliders recommends attaching the loop of the handle to the middle loop of the inner container. The handle must be firmly connected to the loop that is attached to the inner container.***



***This handle can be fitted in either a right or left hand.***

1. The harness connecting line as shown on. As described in Fig. 1, insert it into the channel provided on the right and left.
2. Loop the connection line of the reserve parachute with the connection line of the harness or connect it with a screw shackle (strength > 2400 daN). Secure connection (e.g. with neoprene tube) against slipping. The handle is tied to the inner container. If possible, select an attachment point in the middle of the inner container.
3. Insert the inner container so that the container / handle loop points towards the pilot. Let the handle connection between the container flaps 3 and 4 run out. It must be ensured that the connection between the handle and the inner container is long enough so that the locking pin can safely unlock when the container is closed. Close the container flaps 1, 2, 3, 4 with the help of a packing cord.

The further steps for closing the container are described in Figures 4 to 8.

***Steerable systems may only be installed with the combined inner container / handle in the LOXIA 2 after approval by the rescue parachute manufacturer and the harness manufacturer.***

### Installation of the inner container in the harness

1. Insert the connecting cord of the harness on the right and left into the channel provided and let them peek out at the required length.



2. Loop the connection line of the reserve parachute with the connection line of the harness or connect it with a screw shackle (strength > 2400 daN). Secure connection (e.g., with neoprene tube) against slipping.



3. Insert the inner container so that the suspension lines point outwards / upwards. Let the handle run out between the container flaps 3 and 4.

Use a packing cord to close the container flaps 1, 2, 3, 4. After closing the container flaps 1 to 4, secure with the split pin of the release handle and close the container flaps 5 and 6.



4. Close the container and remove the packing cord.



5. Insert the handle cover under the container flap 4. Place the handle cover over the container flap 3 and under the container flap 5.



6. Insert the handle into the mount and, if necessary (according to country-specific regulations), secure with a breaking thread through both white loops (on the handle and on the harness).

***Only material approved for this purpose may be used, since an excessively high breaking load jeopardizes operational safety!***



***After each pack, a test activation must be carried out and checked to ensure that the opening force is not more than 7 daN.***

***Compatibility must be confirmed in the pack and test certificate for the rescue system.***

## Flying with LOXIA 2

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### ***Conduct a thorough pre-flight check before each takeoff.***

- Fasten and securely lock the leg and chest-strap buckles.
- Double check that all buckles are fully locked and secured by pulling firmly on them. Check that no line, tab or cloth is stuck / jammed in the buckles
- Be absolutely certain for the reserve parachute handle to work freely without anything impeding its proper functioning.
- Check the harness and carabiners completeness.
- Be certain for the reserve parachute pocket to be properly closed with its handle securely in place.
- Check that your harness adjustments have not changed.
- Check the connection risers/ harness/ rescue system as well as the self-locking carabiners locked and secured).
- Takeoff is a simple and straight forward. The transition from running to seating is easy.
- Do not push yourself inside the seat with the breaks still connected to your hands. There would be a risk of increasing the angle of attack, slowing the wing down with a possible stall taking place as a result.
- Stretch your legs and adopt an upright position in order to run and dissipate horizontal speed.
- With a split-leg harness, adopting a standing/upright posture may feel more difficult to achieve than with a seat-plate outfitted harness. Straightening/ stretching the legs fully will

***Do not land whilst in the seated position, this is dangerous.***

### **Towing**

The LOXIA 2 is suitable for towing if the main carabiners are used as attachment points for the towing release. There are no separate attachment points to mount a towing release.

***Please check the towing release manual for a correct adaption on the harness.***

### **Behavior in particular cases**

During water and strong wind landings the pilot should disconnect himself as soon as possible from the paraglider / harness after landing. For that please loosen the leg belts and then open the leg and chest buckles.

For tree landings, etc. the pilot should first secure himself against a possible crash and should wait for professional help.

***Contrary to above recommendations, it is possible that a different behavior as described is required. The variety of possible situations not allows a universal or general advice for the right behavior.***

***The right behavior is a case-to-case decision in full responsibility of the pilot***

## Care and repair Instructions

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### Care Instructions

- Packing the harness is similar to all the other harnesses.
- 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.

***Any change to the harness except those approved by the manufacturer will invalidate the type test of the harness.***

### 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 warranty

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ICARO paragliders guarantees 24 months 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.

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

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

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 warranty?**

- 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 harness is 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 warranty?**

- 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

| <b>Check sheet for ICARO 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<br><br>Airbag -/<br>Foamed material | Visible damages?                              |  |   |     |    |
|  | Seams ok?                                     |  |   |     |    |
|  | 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                                  |   |  |   |     |    |