

EN



Pica

# MANUAL

This manual is copyrighted.  
Partial reproduction is allowed only after prior approval by  
ICARO paragliders, all other rights are reserved.

VERSION 2.0/2015 ©

### Verification of Checks and repairs

<p><b>PICA</b></p> <p>Serial number: .....</p> <p>First check by ICARO / date: .....</p>	<p>.....</p> <p>Name/ Stamp</p>
--	---------------------------------

Check (C) Repair (R)	Which repair/ Check? Check valid until?	Performed by/ date
Porosity value	Strength value of the lines	Estimated condition optical:  technical:

Check (C) Repair (R)	Which repair/ Check? Check valid until?	Performed by/ date
Porosity value	Strength value of the lines	Estimated condition optical:  technical:

Check (C) Repair (R)	Which repair/ Check? Check valid until?	Performed by/ date
Porosity value	Strength value of the lines	Estimated condition optical:  technical:

## TABLE OF CONTENTS

VERIFICATION OF CHECKS AND REPAIRS.....	2
FOREWORD.....	4
TO GET TO KNOW YOUR <b>PICA</b> .....	6
<b>FLYING WITH THE PICA</b> .....	8
HARNESS .....	8
FLIGHT PREPARATION: .....	9
LAUNCH: .....	8
ACTIVE FLYING: .....	9
FLYING WITH ACCELERATOR .....	9
TURNING:.....	9
LANDING: .....	10
<b>DESCENT TECHNIQUES</b> .....	10
BIG & SMALL EARS: .....	10
B-LINE-STALL:.....	11
SPIRAL DIVE:.....	11
WINGOVER:.....	12
<b>WHAT HAPPENS WHEN IT HAPPENS?</b> .....	12
KNOTS AND TANGLES: .....	12
DEEP / PARACHUTE STALL: .....	12
ASYMMETRIC COLLAPSE: .....	12
SYMMETRIC COLLAPSE: .....	12
EMERGENCY STEERING:.....	13
NEGATIVE SPIN: .....	13
FRONT STALL: .....	13
FULL STALL: .....	13
<b>CARE INSTRUCTIONS, REPAIRS, INSPECTION</b> .....	14
CARE INSTRUCTIONS: .....	14
REPAIRS: .....	15
<b>TERMS OF THE GUARANTEE</b> .....	15
<b>ANNEX</b> .....	18
GUARANTEE CARD.....	18
INSPECTION INSTRUCTIONS .....	18
PARTLIST .....	21
LINE LENGTHS ALL OVER.....	22
DESCRIPTION OF THE RISERS AND CANOPY .....	23

**ICARO** paragliders  
 Hochriesstraße 1, D-83126 Flintsbach  
 Telefon: +49 (0)8034 909700  
 Telefax: +49 (0)8034 909701  
 Email: [office@icaro-paragliders.com](mailto:office@icaro-paragliders.com)



Congratulations on buying your  
**PICA**  
and welcome to the family  
of ICARO - pilots!

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

**Your PICA is pattern tested in A<sup>1</sup> .**

Therefore the glider is a “paraglider with good passive safety and forgiving flight characteristics. It is relatively resistant to abnormal flight conditions. It is appropriate for all pilots including pilots of all training levels.”

***The flight maneuvers during the certification process should not be overrated. Certification results provide only little information when you flying in thermically active and turbulent air because the glider classifications serve to inform solely with regard to the performance of a paraglider during extreme flight manoeuvres in stable air conditions.***

The use of this paraglider is entirely at your own risk. It may be only used for those purposes described in this manual.

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

- ***under the influence of drugs or alcohol,***
- ***in insufficient experience or training of pilots,***
- ***without guilty license,***
- ***beyond the minimum and maximum recommended Take Off- Weight,***
- ***with damaged glider, lines, risers or harness***
- ***in the rain, in snow, in the clouds and fog and in turbulent weather conditions,***
- ***with motor drive,***
- ***tandem- flying and***
- ***Aerobatics.***

If you cannot keep your glider under control use the rescue system in good time. Always pay attention to ground distance.

Our products are made with great care and state of the art. Each glider before it is delivered to the dealer or flight school is checked by ICARO paragliders (incoming test). This date is entered in the identification plate and as well guarantee as the first 2-year-check period starts. The incoming test must also be documented in the manual. Test flights are made only on a random basis.

---

<sup>1</sup> Used harness in accordance with EN 1651:1999, and EN 12491:2001

On that score an approved ICARO dealer or teacher of the flight school must inflate a new ICARO paraglider in the wind or should carry out the first flight before the wing is handed over to you.

This date is entered in the identification plate and as well guarantee as the first 2-year-check period starts. If this seal is missing, it must be assumed that this glider is not identical in construction with the model tested at the specification center.

The use of this paraglider is entirely at your own risk. Every pilot bears the responsibility of his/her own safety.

In order to get to know your glider, we recommend that you practice with your glider on the ground. Pulling up in flat gradients is great practice for fine tuning your launch techniques. Here you can get to learn the reactions of your glider without any stress and hectic. Ground practice pays off in the air.

All technical data and instructions 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 glider at a later date, please pass on this manual to the new owner.

Each alteration of the glider (lines, canopy, and riser) is dangerous and reactions of the glider are not predictable. Your glider will lose its pattern test result and guarantee.

You can only fly your glider with a valid flying license and in accordance with local rules and regulations.

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

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

Many countries have specific regulations or laws regarding paragliding activity. It's your responsibility to know and observe the regulations of the region where you fly.

### **Environmental aspects:**

The materials of which a paraglider is made require a special waste disposal. So please send disused gliders 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!**

## To get to know your *PICA*

Allowed for training	yes
Certified / allowed for aerobatics	no/ no
Certified / allowed for flying with passengers	no/ no
Certified / allowed for towing	no/ not tested
Certified / allowed for flying with motor drive	no / not tested

<b>Technical data</b>		<b>22</b>	<b>24</b>	<b>26</b>	<b>28,5</b>
Certification LTF/ EN		i.P.	A	A	A
Number of cells		36	36	36	36
Number of risers		3+1	3+1	3+1	3+1
Weight of the glider	kg	4,6	4,9	5,4	5,7
Wing Area flat	m <sup>2</sup>	22	24	26	28,5
Wing Span flat	m	10,6	11	11,5	12
Aspect Ratio		5,1	5,1	5,1	5,1
Wing Area projected	m <sup>2</sup>	18,3	19,9	21,5	23,6
Wing Span projected	m	8,1	8,5	9,0	9,2
Aspect Ratio projected		3,6	3,6	3,6	3,6
Take Off Weight minimum	kg	60	70	85	95
Maximum symmetrical steering way by minimum take off weight	mm		> 550	> 600	> 600
Take Off Weight maximum	kg	85	95	105	125
Maximum symmetrical steering way by maximum take off weight	mm		> 600	> 650	> 650
Trimmer	mm	none	none	none	none
Maximum way of the accellerator	mm		115	125	140
Recommended storage temperature	Celsius	+ 5 <sup>0</sup> to + 30 <sup>0</sup>			
Recommended storage humidity	% rel. H.	55% to 75%			
Check interval	24 months or 150 operating hours, depending on what occurs sooner.				

### Canopy

The canopy is made of synthetic fabric with different strengths where a reinforced thread-net is woven in, which stops the fabric from further tearing and is increasing the firmness at the seams and has sticks for an optimized geometry of the canopy. The coating makes the fabric water-repellent, UV-stabile and air-impermeable. Between the single groups of main lines are taut ribbons sewn in, which are regulating the tension of the sail. On the entry- and trailing-edge of the canopy a special ribbon with low elongation is sewn in, which offers cunning, by our design-software calculated tension-distribution along the canopy.

## Lines

Depending on the line level, we use different line diameters. The complete geometry of the lines is shown on the single line plan, which you find in the annex of the manual.

The end control of all line lengths is documented for all paragliders produced by ICARO paragliders. The complete geometry of the lines is shown on the single line plan, which you find in the annex of the manual.

The length of the steering lines is set correctly at the factory and should not be changed. The improper adjustment of the steering lines can cause severe changes to in flight behavior.

## Risers

The Glider has 3 fold risers with separated A-risers an acceleration system which will be activated with a foot bar. The risers are signified. The main break line comes through a return pulley; the handle of the main break line is mounted on the C- riser. The acceleration system is mounted on the A- riser.

To fix it with the foot bar you must connect the brummel hooks of the foot bar with the brummel hook of the acceleration system.



## How to vary the trim of the glider

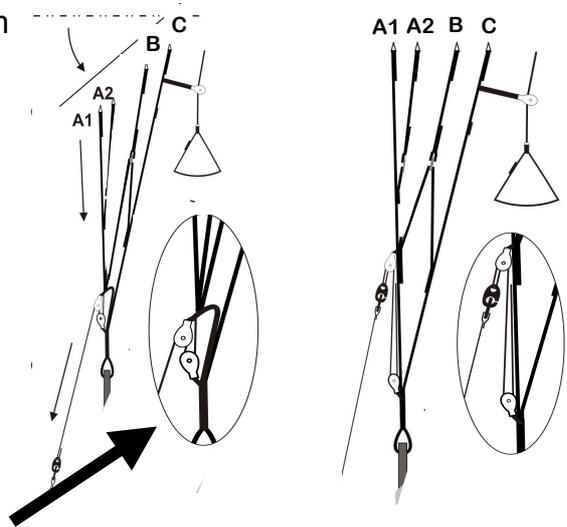
The glider has an acceleration system which will be activated with a foot bar.

### Acceleration system

When flying normal all risers have the same length. When using the accelerator system the risers are shortened by a constructive exactly defined length.

Therefore the angle of attack of the canopy is smaller and speed increases.

***The length of the accelerator is adjusted to the left and right of the foot pedal so that when your leg is fully extended, then the acceleration is at maximum – both rollers are touching.***



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

***Assembling the accelerator is reliant upon the harness, e.g. numbers of return pulleys, rope guide ...***

***The more turbulent the weather conditions and when near the ground, the less acceleration should be used.***

***Do not use the acceleration system and brakes at the same time! It is very dangerous to use both simultaneously as it can result in serious collapses.***

## Flying with the **PICA**

---

### Harness

The **PICA** is certified for use with harnesses GH type. Practically all modern harnesses are GH type harnesses. Older harnesses with fixed cross belts (GX type) are not certified and should not be used.

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.

ICARO paragliders recommends following settings:

Take off weight	< 80kg	80 kg -100 kg	> 100kg
Horizontal distance of the main karabiners	38 cm – 42 cm	42 cm – 46 cm	46 cm – 50 cm

### Flight preparation

- Whilst unfolding your paraglider check the canopy and cell walls for damage. Always take into consideration that the paraglider may have become damaged during transportation.
- Make sure that no sand, stones or snow get inside the canopy as the extra weight collected in the trailing edge may slow down or even stall the glider. Sharp edges damage the canopy.
- Check the lines for knots, twisting and damage, the brake lines for knots, kinks and their symmetric. Loose or incorrect brake knots can cause serious accidents through loss of the steering of the glider! The correct length of the main brake line must not be altered.
- Separate the line groups carefully and bring the risers in order. All lines must run freely from harness to canopy. It is equally important that the lines are unhindered and cannot get caught up during the launch.
- There should not be any lines underneath the canopy. If the lines wrap around the canopy, this can result in injury or death!
- 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 the risers are not twisted. Check canopy (all cells are open), wind direction and airspace.

## **Launch**

The most important thing during the take-off is, like at all other gliders too, not the force but the constancy of the pull. 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.

Hold the inner A-risers and the handles of the brakes and use progressive pressure on the A-risers and the energy of your own body weight until the wing is fully inflated overhead. The canopy is inflated quickly.

When there is no pull from the lines use slight pressure on the brake. After a few accelerating steps and at the same time let go of the brakes gently, you will take off. Then use slight pressure again on the brakes to fly at a speed with minimal sink rate.

When there is strong wind the reverse launch technique is recommended. Holding the brakes, turn around to face the wing passing one set of risers over your head as you turn. We suggest building a "wall" by partially inflating your glider on the ground, thus sorting out the lines thoroughly.

Check the airspace is clear and gently pull the glider up with inner riser. When the glider is overhead, check it gently with the brakes, turn and launch. In stronger winds, be prepared to take a couple of steps towards the glider as it inflates and rises.

## **Active flying**

Active flying in normal flight means that the wing is always kept at a safe angle of attack and, if at all possible, vertically above the pilot. The moving air affecting the wing often changes the angle of attack in an unwanted way. When flying into an upwind the paraglider often bucks, the wing drops back, the angle of attack increases, getting closer to a stall. In upwind the canopy pitches forward, the angle of attack is reduced and there is the risk of a collapse. Both can occur symmetrically, on both sides or asymmetrically, on one side only.

It is impossible to control the angle of attack by looking to the canopy. Look in the direction you are flying, changes in the horizon inform the pilot about the canopy's movements.

Breaking is also an absolute must! If the canopy pitches forward, the angle of attack decreases. In the case of strong forward pitching there is a risk of the canopy collapsing due to its insufficient angle of attack. The pilot must therefore prevent the canopy from pitching forward by pulling the controls down on both sides. Inversely, the angle of attack increases if the wing drops back behind the pilot, e.g. when entering into a thermal. The canopy is closer to stalling.

In these flight situations a significant breaking movement by the pilot can lead to a spin or a stall. When the wing drops back, the pilot therefore must not break and/or if the pilot is already holding the controls low, he must release them accordingly.

Any change in the angle of attack immediately transfers in to a change in the control pressure of the brakes. The control pressure presents the pilot with immediate information on the angle of attack and on what the canopy is doing or about to do.

## **Flying with accelerator**

When you use the accelerator, be careful. The accelerator should be employed, in order to compensate for high angles of attack and the associated potential risk of a stall.

Do not step too quickly because your glider will dive down from the strong change in angle of attack.

Put equal pressure on the speed bar with your feet until the pulley touches the A-riser and the glider will quickly gain speed and the sink speed remains very moderate from beginning up to full speed.

***The more turbulent the weather conditions and when near the ground, the less acceleration should be used. Using the accelerator decreases the angle of attack and can make the glider more prone to collapse.***

***Do not use the acceleration system and brakes at the same time! It is very dangerous to use both simultaneously as it can result in serious collapses.***

## **Turning**

A combined steering technique is suitable for every situation. The **PICA** is agile and reacts to steering impulses quickly and directly. Strong, one sided pulling of the brakes brings the glider into an obvious side angle and the glider flies fast steep curves until spiral dive begins.

***If the brake lines are pulled too fast or too far the glider will be stalled!***

A one-sided stall is signaled clearly by: The curves's inner side of the wing is getting soft, and nearly stops. In this case you have to release the brakeline!

## **Landing**

Always stand up in the harness in the landing position very early in order to be able to react as fast as possible to sudden events. Give yourself plenty of options and a safe margin of error. Set up your final landing leg to face into the wind to minimize groundspeed. If you leave the inflated leading edge bang on the ground, this can cause the cell walls to burst!

***Do not brake it too much, to avoid a stall of the glider in this very low altitude! Do not reduce height by "pumping" with the brakes.***

## **Descent Techniques**

---

***Training of descent techniques and simulation of flight incidents (SFI) should only take place at professional safety training seminars with professional trainer and only while flying over water.***

***Before inducing any exercise control the airspace beneath.***

***During the exercises stay in contact with the canopy.***

***If the glider is out of control, use your reserve parachute.***

***Fullstall, negative spin and wingover more than 90° are aerobatics and during normal air traffic forbidden.***

## **Big & Small Ears**

Only take the outer lines of the A-risers in your hand, without releasing the brakes and pull down leaving it run through your hands (use gloves!). Sink rate increases but not the forward speed. If you use the acceleration system then higher sink speeds can be achieved. Reopen the wing by pushing up with your hands and if necessary then pump the brakes with short symmetric movements.

For directional control while using the big ears, you should use weight shift. As the controls cannot be used to fly actively with big ears, the pitching movement has to be compensated for with the help of the accelerator.

***Never attempt tight turns or spirals with Big Ears, as the A-lines will be over stressed.***

## **B-Line-Stall**

The **PICA** is a very agile glider. Therefore spiral dive is the most effective method to reduce flight level. B-Line-Stall is not so effective, furthermore stresses the material of the glider and reduces operating life of the canopy.

To enter and hold a B-line-stall requires considerable strength. It is very dangerous performing a B-line-stall incorrectly and following errors must be avoided:

- pulling too far on the B-line-stall aid, so that the A-lines are pulled too, and using brakes during or directly after exiting,
- exit is too slow,
- releasing the B-line-stall aid without simultaneously pushing up with your hands
- Brakes must not be shortened by twisting around your hand during the exercise.

## **Spiral Dive**

In a controlled spiral dive, the pilot applies an active flying technique in the same way as when circling in thermals. The strong centrifugal forces in a spiral dive, however, change the control pressure. It increases by a multiple of the force. Even in moderate spirals, the pilot reaches double acceleration of gravity (2G). Subsequently, the control pressure also doubles.

To initiate a spiral dive, look in the direction you want to go, roll your body weight in that direction and at the same time smoothly pull down on the inside brake. The **PICA** will start to turn, and then drop into a spiral.

In the spiral dive an uncontrolled acceleration of the canopy must be prevented. As the canopy always accelerates via the outside of the wing, the spiral speed is controlled via the outside brake by applying the active flying technique. If the speed increases in an unwanted manner, the pilot pulls the brakes further to slow down. If the wing becomes too slow, it can be speeded up by releasing the outside control.

***If you pull abruptly and too far on the brakes, the canopy may enter a negative spin. When entering a spiral dive keep the brake on the outer curve released.***

The **PICA** does not have a tendency for stable spiral dive. If under certain conditions, it should go into a stable spiral dive then actively exit the maneuver by bringing your weight into a neutral position, release the brakes of the inner curve side and brake gently on the outer curve side until you notice that the wing starts

to level out. Then gently brake on the inside curve for several turns until normal flights returns.

***Rate of descent could be very high also the dynamic and g- load. In reliance of your physical condition it is possible to have a blackout.***

### **Wingover**

The **PICA** is an agile glider, and it is quite easy to get to an excessively high angle of bank in just a few turns. Practice wingovers gently at first, as there is a chance of quite large collapses at high bank angles.

## **What happens when it happens?**

---

### **Knots and tangles**

The best way to avoid knots and tangles is to inspect the lines before you inflate the wing for take-off. If you notice a knot before take off, immediately stop running and do not take-off. If you have taken-off with a knot you will have to correct the drift by leaning on the opposite side of the knot and gently apply the brake line on that side too. You can gently try to pull on the brake line to see if the knot becomes unfastened or try to identify the line with the knot in it. Try to pull the identified line to see if the knot releases. If the knot is too tight and you cannot remove it, carefully and safely fly to the nearest landing place.

***Be very careful when trying to remove a knot. When there are knots in the lines or when they are tangled, do not pull too hard on the brake lines, there is an increased risk of the wing to stalling or negative turn being initiated.***

### **Deep / Parachute Stall**

Your **PICA** has been carefully designed to resist entering deep stall. Before exiting a deep stall please ensure that the brakes are fully released. Actively exit the deep stall by reaching up and push forward with both palms on the A-risers or pull on the risers. Avoid flying in very humid air or in rain. A wet canopy may have very unpredictable flying characteristics, one of which is a radically increased risk of deep stall.

***Never pull the brake-lines during a parachute stall, because the glider would go into a full stall immediately.***

***If you find yourself flying in unavoidable rain we strongly recommend that you avoid any sudden movements or radical brakeline input, that you do not pull Big Ears or B-Line-Stall, and that you steer clear of turbulence and avoid a deep flare on landing.***

### **Asymmetric Collapse**

While flying in turbulent conditions it may occur that a portion of your glider deflates. However, just like in flying in turbulences, please pull gently on both brakes. Re-inflation is speeded up by counteracting the turning movement of the canopy until normal forward flight return. Then pump the brake line on the collapsed side.

If the canopy is in front of the pilot after an asymmetrical collapse, the pilot must immediately and decisively brake down the open side to prevent an uncontrolled

rotation. The same rule applies here: If the wing is ahead, braking is a must. Sometimes, however, the angle of attack on the open, not-collapsed side is relatively high and the wing is behind the pilot. Then a significant control movement would definitely cause a stall and its potentially extreme reactions.

In the case of asymmetrical collapses, the behavior of the canopy must always determine the pilot's actions. Strong tendency to turn (wing in front) = decisive steering in the opposite direction. No or only slight tendency to turn (wing behind) = no or little steering in the opposite direction.

***If the collapsed part of the canopy is very big, you have to break the open side very dosed (not too much!) to avoid a stall.***

### **Symmetric Collapse**

Your **PICA** normally re-inflates promptly in a symmetric collapse without pilot input. Applying the brakes symmetrically will speed things up.

### **Emergency Steering**

Should it no longer be possible to steer your **PICA**, for example due to a broken line, the glider may be steered by gently pulling on either rear riser. We recommend for emergency control in the air to use the stable line. With a bit of weight shift and by pulling down the stable line allows controlling your glider precisely and easily.

***By steering this way airspeed is reduced hardly. Therefore, for landing you must change to the rear risers to control your glider. Handling will be more direct so being careful not to pull too hard.***

### **Negative Spin**

If the pilot abruptly applies full brake to one side of the glider while the other side is at zero brake, the faster side may fly around the braked and stalled side resulting in a spin. Alternatively, if flying very slowly with almost full brakes on both sides, if one hand releases one brake suddenly, while the other continues with full brake, the glider may enter a negative spin. To exit a spin just do "hands up" to release the brakes and the glider will return to normal flight.

### **Front stall**

After a front stall of the canopy, the wing moves backwards while the pilot with his higher mass moves further ahead. Wing behind, pilot ahead, significantly high angle of attack – there is only one thing to do:

***Do not break or you run the risk of a dangerous stall.***

***The pilot must not pull the control lines before the canopy is at least above him again. If the canopy then shoots forward dynamically, it is absolutely vital to stop the motion in a consistent and decisive manner via the brakes.***

### **Full Stall**

***Spin and full stall are both dangerous and somewhat unpredictable exercises. Do not stall or spin your paraglider on purpose.***

To initiate a full stable stall, apply both brakes to maximum arm extension. The pilot will swing back under the canopy and finally the canopy will stabilize to a full stall. Once in a stable stall, the exercise can be completed. Release the brakes just a little and let the glider fill until it regains shape. Then release the brakes fully and your **PICA** will return to normal flight.

***It is imperative that the pilot fully completes this exercise and holds on, as a premature release while the glider is still falling back may cause the glider to rapidly dive ahead past the pilot. There is a possibility of the pilot landing in or entangling in the glider.***

## Care instructions, repairs, inspection

---

### Care Instructions

- Even with good care and maintenance, just like any item exposed to the elements, your glider can wear out after a certain amount of use. This can change flight behavior and safety. We recommend a regular safety inspection of the canopy and all lines.
- If you clean your glider it is best to use warm water and a soft sponge.
- Store your glider in a dry and dark place, ideally between 5° and 30° Celsius and humidity between 55 and 65%. Do not store it near chemicals or petrol.
- If you will not fly for longer period, store the glider releasing all compression straps and take it out of its backpack so that the fabric is not compressed, creased or stretched.
- Avoid storing your glider for days at a time in a hot car.
- Unpack your paraglider shortly before launch and pack away immediately after landing to avoid any unnecessary UV exposure.
- When unfolding the paraglider insure that neither the canopy nor the lines become too dirty. Dirt particles can damage the material and lines.
- Never use chemical cleaning agents, brushes or hard sponges on the material, as these destroy the coating and affect the strength of the cloth. The canopy will become porous and will loose structural strength.
- Never attempt to clean your paraglider in a washing machine. Even without using detergents the simple mechanical abrasion will quickly finish the canopy and render it useless.
- If you are flying near the sea most the wing may age faster because the air is humid and salty. In this case we suggest you have it checked more often than prescribed in this manual.
- Also avoid dipping it in a swimming pool; the chlorine will damage the cloth.
- If you must rinse or clean your glider do so with fresh water. Frequent cleaning will accelerate the ageing process.
- If the glider has become wet, lay it out so that air can get to all areas of the fabric.
- After landings in trees or on water you should check the length of the lines.
- Always make sure that your intended logo will not in any way influence the glider behavior. If in doubt we suggest avoiding the attachment of advertising logos on the wing. ICARO paragliders cannot be held responsible for any mishaps caused by intentional after sales changes done to the wing.
- Flying all the descent or acrobatic exercises will not normally pose a structural problem but aerobatic training does accelerate the ageing process dramatically.

- There is no special method packing your glider. ICARO paragliders commends the “Cell to Cell-method bag because the reinforcements of the leading edge stay flex-free on top of each other and do not fold.

***When you did not fly for a longer period ICARO commends to check the glider (e.g. mildew stains, splice of the lines, corrosion of the shackles and carabines). If you are not convinced of the gliders airworthiness please send your glider to an authorized ICARO dealer to check your glider. The same is commended for harnesses.***

***Attaching heavy adhesive logos made out of unsuited material to the wing may result in the revocation of the glider’s guarantee. Do not fold and store your glider prematurely if it not completely dry. The performance of a wet glider can change significantly.***

## **Repairs**

***Only use original ICARO parts for repairing your glider. If you don’t you lose the guarantees for your glider.***

Small holes in the canopy (max. 20x20 mm) can be repaired by the pilot by using self adhesive sailcloth on both sides of the perforation.

Damage to the lines or any other repairs should only be carried out at an authorized ICARO centre. If the glider needs to be repaired, please contact your local ICARO paragliders dealer.

## **Inspection**

It is important to have your **PICA** inspected by a trained ICARO technician but it is also allowed to check your glider for yourself. In the annex you find the regulations for checks of certified gliders and items in order to perform a paraglider inspection you need.

## **Inspection interval**

**24** months or **150** operating hours, depending on what occurs sooner.

***Without regular certified inspections, your glider will loose its pattern test result and guarantee.***

ICARO recommends having wings that are often used for training of descent maneuvers, acrobatics or flying in salty ore sandy conditions subjected to checkups all 100 operating hours or 12 month.

It is also important, that ground handling also will be considered. All gliders, especially gliders manufactured with light and thin material are mechanically more stressed than other gliders. Therefore ICARO recommends multiplying ground handling time with the factor 1,5.

Not only gliders have a recurrent inspection interval. Airworthiness of harnesses, snap hooks and rescue systems must also be verified. Generally it is recommended to change aluminum snap hooks after 24 months or 150 operating hours.

***All inspections and repairs must be documented (manual page 2).***

## Terms of the guarantee

---

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

Paragliders: **24** month or **150** operating hours, depending on what is first

Harnesses: **24** month

Rescue systems: **24** month

## ***Guarantee is only guilty for ICARO products with LTF/ EN certification <sup>1</sup>.***

### **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 glider / the harness was used in normal circumstances and maintained according to the instructions. This includes in particular the careful drying, cleaning and storage.
- The glider / the harness 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.
- The online form on [www.icaro-paragliders.com](http://www.icaro-paragliders.com) must be sent at least 6 weeks after buying to ICARO paragliders.

### **What is excluded from guarantee?**

- Gliders and Harnesses that are used for training purposes, Acro or other official competitions,

---

<sup>1</sup> - EN 926-1 und EN 926-2 for gliders, EN 1651 for rescue systems , EN 12491 for harnesses, all at the time guilty version

- LTF/ NfL II 91/09 und NfL 2-60-14

- Gliders / Harnesses who were involved in an accident,
- Rescue equipment, which has been thrown for a emergency,
- Gliders / harnesses and rescue equipment, which have been changed by yourself,
- Gliders / harnesses and rescue equipment that were not purchased from an authorized dealer / flight school,
- Gliders / harnesses and rescue equipment where the required inspection intervals were not met and the verification of the glider 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)
- Parts that need to be replaced due to normal wear and tear,
- Discoloration of the cloth material used,
- Damage caused by solvents, salt water, insects, sun, sand, humidity or “debag-jumps”.
- Damage caused by force majeure.
- Damage caused by the paramotor (Oil, fuel, damage in cause of the prop)

***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**

---

### **Guarantee Card**

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

### **Users needs for Inspections**

You will need the following items in order to perform a paraglider inspection:

- Standardized inspection report
- Porosity meter
- Spring scale
- Equipment for measuring line lengths
- Equipment for line strength testing
- Sewing machine
- Big, clean and bright room

Technical specifications about your glider (type, serial number, size and year of production). Please call ICARO Paragliders for information.

A three week course at ICARO Paragliders, specified to a glider type together with a legal flight license is the necessary prerequisites for permission to inspect ICARO Paragliders.

### **Inspection Instructions**

#### **Record Information**

Spread out your paraglider in a big bright room and make a note of information such as model, type and serial number.

#### **Porosity Test**

Use your porosity meter to perform porosity checks at 4 different places of the canopy. The results are recorded in the inspection protocol and are to be evaluated according to the internal guidelines of the workshop.

#### **Visual Control of the Canopy**

Hang up the canopy so that you can do a visual check of your canopy. Check for perforations in the upper and lower sailcloth, damaged stitching between the cells, and damage to the leading/trailing edge reinforcements.

Each cell must be checked.

#### **Visual Control of the Risers and Lines**

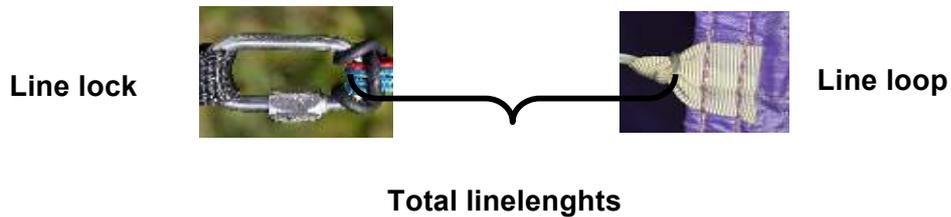
Check the risers, the trimmers, the stitching at each line loop, the brake lines, all seams and line contact points. Each line must be measured and inspected for kinks.

#### **Strength test of the lines**

One complete A-and B- line must be removed, measured and submitted to a strength test. The measured value of each individual line must be noted in the inspection protocol. The minimum of the lines strength are 125% of the normative guidelines.

### **Measurement of the lines**

Measure every single line while stressing it with defined tractive force (5daN). Compare with the line plan. The lines must be measured between fixing point on the linelock and fixing point on the line loop.



The results are recorded in the inspection protocol and are to be evaluated according to the internal guidelines of the workshop.

### **Assessment**

The measurements of all procedures are noted in the inspection protocol. When all facts have been recorded, the technician must make a general assessment.

Check the backpack for damage to the zips, seams and straps and repair if necessary with a sewing machine.

### **General Remarks**

Any other repairs, corrections etc. to the general condition of the paraglider must be evaluated. A copy of the results of each inspection must be sent on to ICARO Paragliders.

The technician must report any unusual faults to ICARO Paragliders within 3 days.

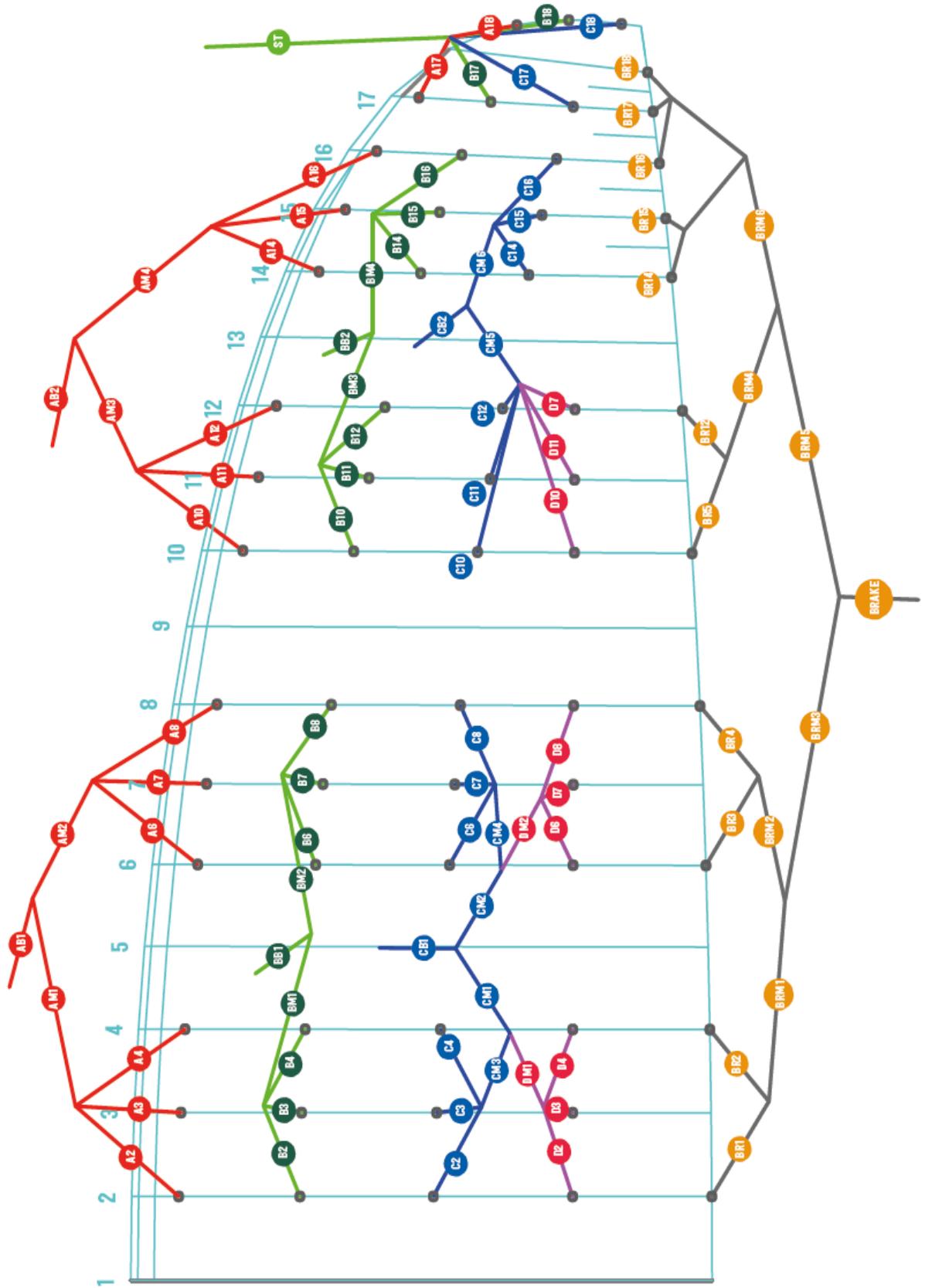
### **Inspection Reference**

Only an authorized technician who has been trained by ICARO Paragliders is authorized to sign and date the glider type label and sign the manual.

**Part list 24, 26, 28 (S, M, L)**

<b>Name</b>	<b>Order numbers</b>	<b>material</b>	<b>surface</b>	<b>dimension</b>	<b>producer</b>
Linelocks	Triangle	Edelstahl	Edelstahl	Ø 3,5 mm	Maillon
Lineclip	TSL 380	Aramid	Ummantelt	Ø 2,2 mm	Liros
Meanlines	TSL 190	Aramid	Ummantelt	Ø 1,55 mm	Liros
Lines (1. partition)	DSL 70	Dynema	Ummantelt	Ø 0,95 mm	Liros
Lines (2. partition)	DOKDO 30 DMF	Nylon	Beschichtet		Dominico
Mean brake line	DDOKDO 30 DMF	Nylon	Beschichtet		Dominico
Break line middle	DDOKDO 30 DFM	Nylon	Beschichtet		Dominico
Break line gallery	TEX 45				A&E
Upper sail	TEX138				A&E
Lower sail	Schiffchenware	Nylon		12,5 mm	Schmahl
Profile	Nylon Webbing	Nylon		Ø 2.7 mm	
Thread sail	NCV 20mm Mylar Tape	Mylar	90g	20 mm	Porcher Marine
Thread strap	DSL 350	Dyneema	Ummantelt	Ø 2,0 mm	Liros
loops	TSL 140	Aramid	Ummantelt	Ø 1,3 mm	Liros
Reinforcement profile	DSL 70	Dynema	Ummantelt	Ø 0,95 mm	Liros
Edging band	Leinenschloss Clip	Kunststoff			

# ALL SIZES



**Line length all over including riser****Size S**

	A	B	C	D	E	Br
1	7200	7145	7195	7295		7235
2	7115	7060	7110	7220		7025
3	7120	7070	7115	7225		6925
4	7090	7050	7100	7195		6960
5	7065	7025	7075	7175		6810
6	7120	7085	7135	7230		6700
7	7010	6990	7060	7135		6600
8	6930	6905	6975	7050		6555
9	6915	6895	6950	7025		6525
10	6770	6745	6800			6500
11	6670	6650	6705			6530
12	6635	6605	6640			
13	6410	6375	6440			
14	6160	6175	6265			

**Size M**

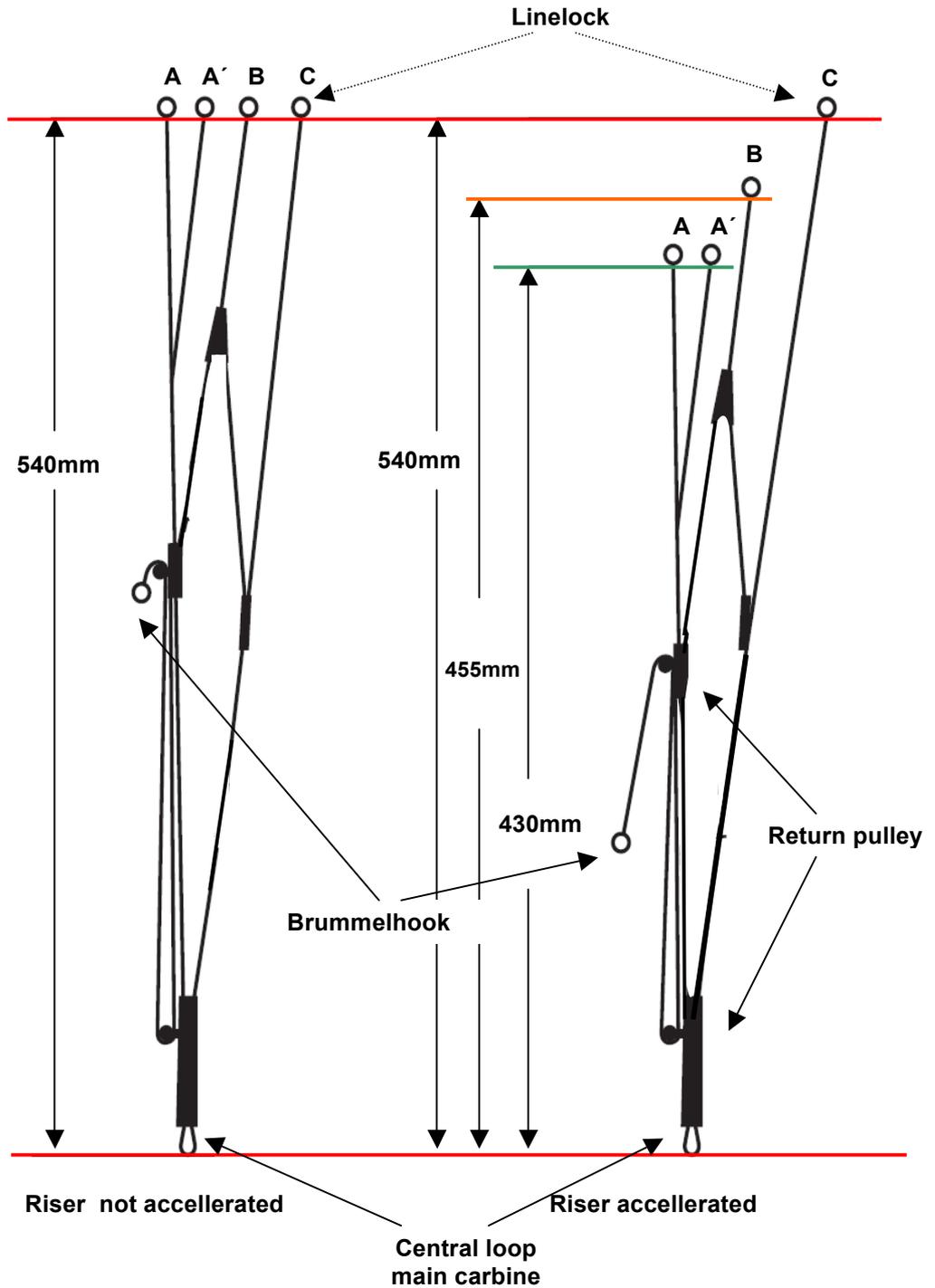
	A	B	C	D	E	Br
1	7480	7440	7485	7610		7595
2	7390	7350	7405	7535		7335
3	7405	7360	7410	7540		7105
4	7370	7335	7390	7510		7225
5	7345	7310	7370	7485		7100
6	7405	7375	7435	7540		7005
7	7335	7275	7320	7390		6890
8	7250	7195	7240	7310		6820
9	7235	7185	7225	7290		6735
10	7090	7040	7060			6680
11	6985	6940	6970			6680
12	6945	6895	6910			
13	6715	6640	6685			
14	6410	6340	6370			

**Size L**

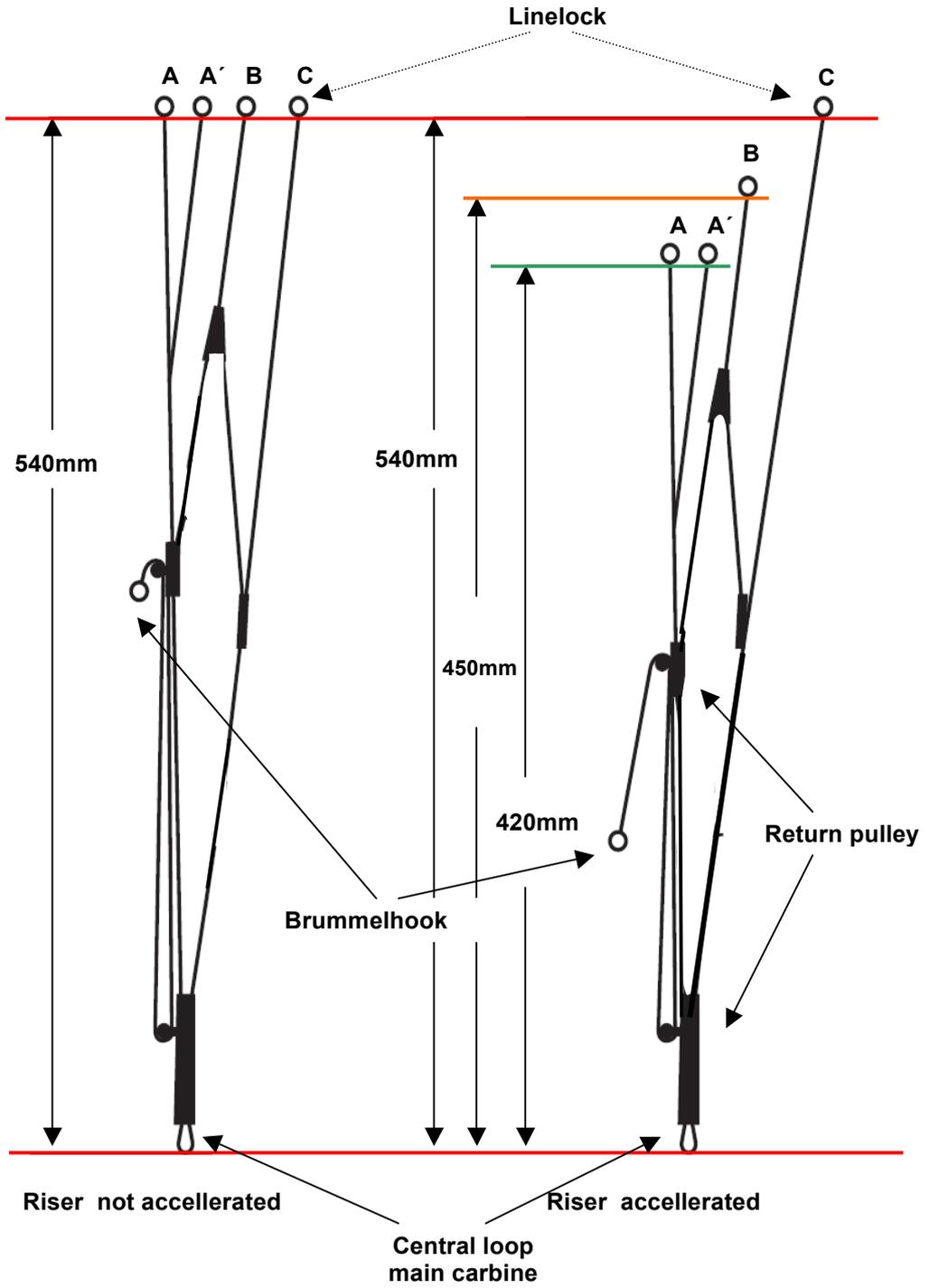
	A	B	C	D	E	Br
1	7866	7818	7849	7951		7960
2	7779	7727	7762	7869		7733
3	7789	7740	7773	7875		7630
4	7760	7713	7754	7851		7668
5	7732	7686	7731	7831		7507
6	7796	7755	7798	7890		7384
7	7698	7656	7716	7795		7261
8	7609	7566	7623	7704		7195
9	7590	7551	7598	7673		7151
10	7416	7397	7436			7094
11	7287	7290	7325			7115
12	7225	7239	7260			
13	6975	6944	7033			
14	6708	6732	6835			

The length of the risers is measured from the central loop to the linelocks.

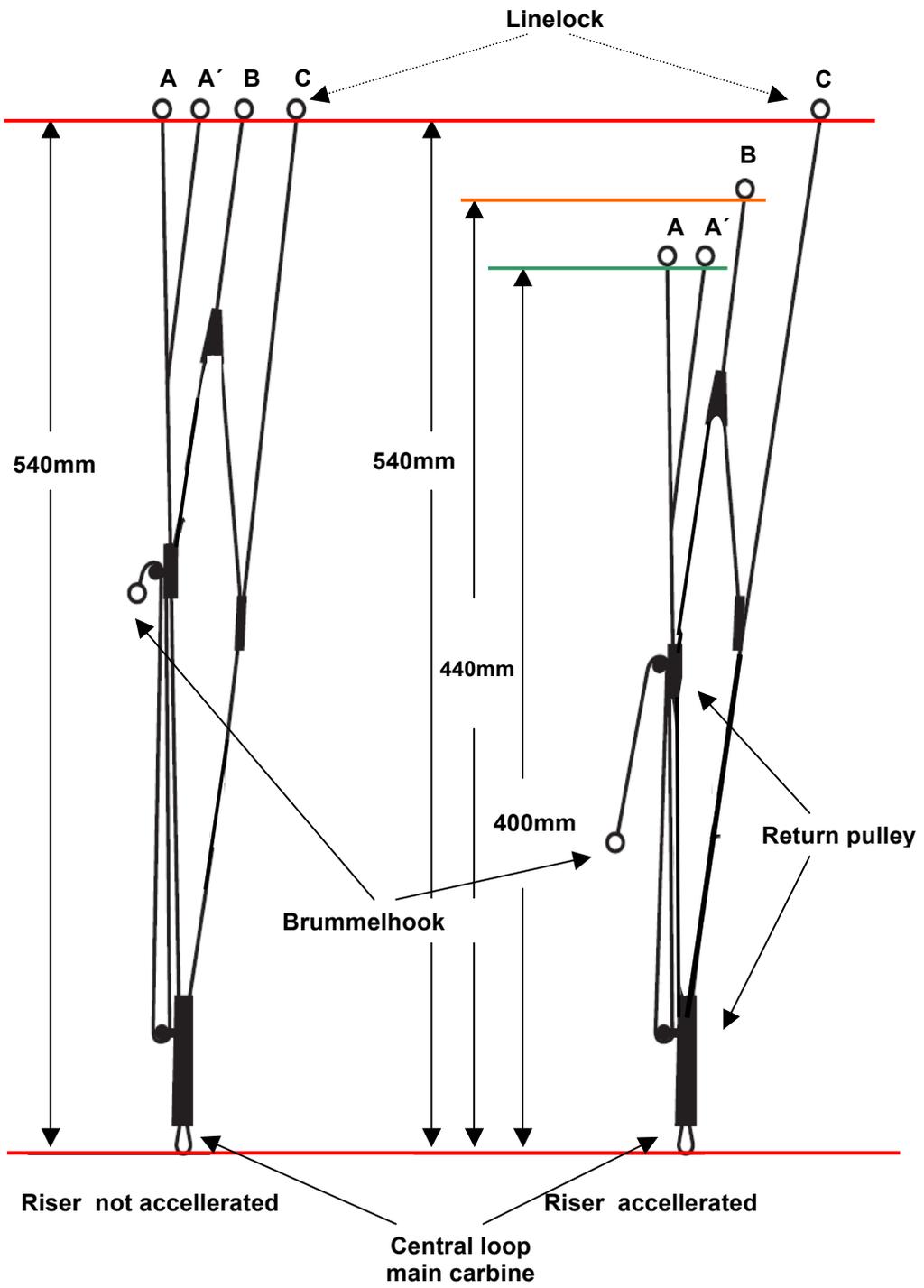
# PICA S



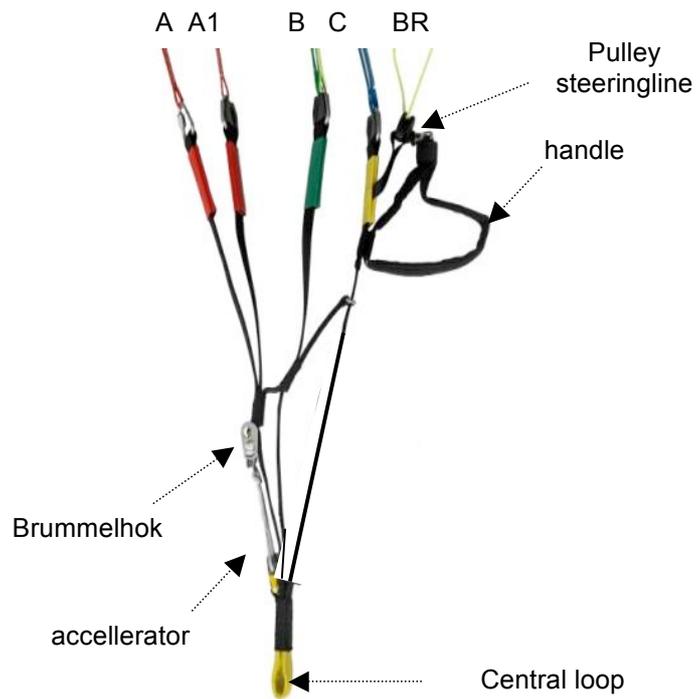
# PICA M



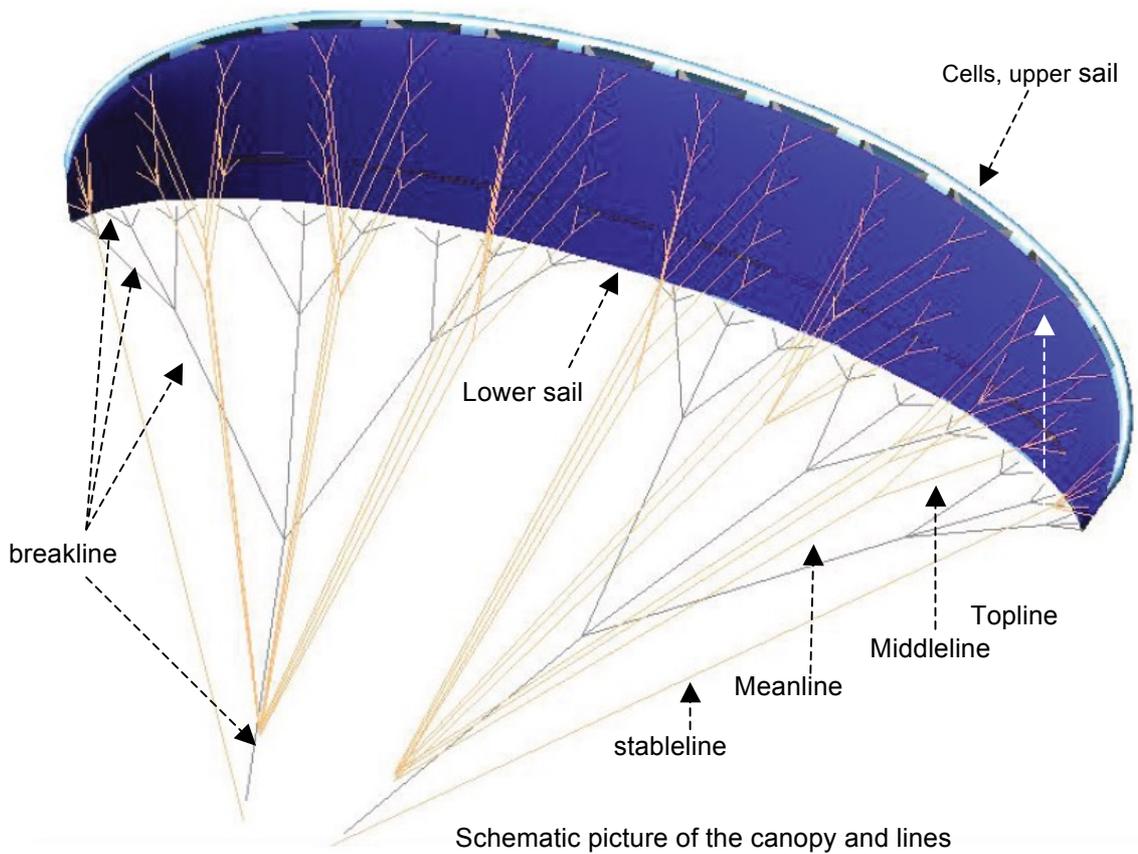
# PICA L



## Description of the risers



## Description of the canopy



### Dispatch protocol/ Delivery content

Inner bag

Compression band

Outer rucksack

Manual

Gift

Sticker

.....

Date

.....

Signature