

# TWICE TE MANUAL

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**Verification of Checks and repairs**

<p><b>TWICE TE</b></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
Porosity value	Strength value of the lines	Estimated condition optical: technical:

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Congratulations on buying your  
**TWICE TE**  
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 **TWICE TE** is pattern tested in B<sup>1</sup> and therefore a “paraglider with good passive safety and forgiving flight characteristics. Relatively resistant to abnormal flight conditions. Appropriate for all pilots including pilots of all training levels.” Additionally **TWICE TE** size S is homologated for single flying.
- It is valid using any harness which has been categorized by “GH” and may be only used for those purposes described in this manual.
- ***It is strictly prohibited to fly the TWICE TE***
  - ***under the influence of drugs or alcohol,***
  - ***without guilty license,***
  - ***beyond the minimum and maximum recommended Take Off-Weight,***
  - ***The glider is not checked at regular intervals or checked by not authorized personal***
  - ***with damaged glider, lines, risers or harness***
  - ***in the rain, in snow, in the clouds and fog and in turbulent weather conditions.***
- Our products are made with great care and state of the art. Each paraglider before it is delivered to the dealer or flight school is checked by ICARO paragliders but test flights are made only on a random basis.
- 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.
- 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.

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

- 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.
- The manufacturer or distributor assumes no responsibility for accidents occurring while using it.
- Every pilot must ensure that the paraglider is properly checked at regular intervals.

**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 **TWICE TE**

Allowed for training		yes	
Allowed for towing		not tested	
Certified / allowed for aerobatics		no/ no	
Certified / allowed for biplace		yes	
Certified / allowed for flying with motor drive		no / not tested	
<b>Technical data</b>		<b>S</b>	<b>M</b>
Wing Area Flat	m <sup>2</sup>	37,99	43.00
Wing Area projected	m <sup>2</sup>	29,79	34.41
Wing Span Flat	m	14,10	15.00
Wing Span projected	m	11,06	11.76
Aspect Ratio	A/R	5,23	5,23
Aspect Ratio projected	A/R	4,10	4,02
Number of cells with mini ribs		39	39
Take Off Weight	kg	120/190	145/225
Weight of the glider	kg	8,0	8.7
Number of risers		4+1	4+1
Homologation	EN / LTF	B	B
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.		
Additionally <b>TWICE TE</b> size S is homologated for single flying.			

### Canopy

The canopy of the **TWICE TE** 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 made of NITINOL 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

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

***The length of the break 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**

**TWICE TE** has 4-fold risers which are equipped with a trimmer system. Small and big ears are simplified by the separation of the A-harness. Important aspects in the development of this harness were easy start behavior, B-line-stall, exact optimized geometry of accelerated flight (open trimmer) as well as high weight specific stability.



### **How to vary the trim of the glider**

Start off weight can be optimally adjusted by the position of the trimmer, and flight speed can be varied.

Will be flown on the weight lower limit or low temperatures, the trimmer should always be opened slightly.

***If the trimmers are opened completely, you are in the high speed range. TWICE TE probably has the greatest speed increase of all licensed tandem gliders. Therefore the following rules apply:***

- ***In very turbulent air can cause ambitious cap deformations with wide open trimmers despite the EN-B classification.***
- ***The trimmer which is completely opened should never be flown with less than 100 meters distance from the ground.***
- ***The completely opened trimmer must not be used in extreme, not flyable strong wind to force a start.***
- ***Landing completely opened trimmers is dangerous with a lot of risk and should be omitted.***
- ***When towing, make sure that the trimmers are closed or opened slightly during the towing process.***

### **Fixing the trimmer belt:**

The belt of the trimmer can be fixed either on the magnetic C belt or be fixed to the enclosed, freely positioned magnetic tapes. An approved method is to fix these tapes to the spreader bars.

## **Flying with the TWICE TE**

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### **Harness**

The **TWICE TE** 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.

### **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.
- 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!
- 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.
- Check the rescue system (handle's pins fixed in the loops and the closed cover of your harness).
- Please ensure that both you and your passenger are wearing gear which offers both optimal comfort and protection (helmet with chin protection, boots, gloves and an overall).
- At last connect the karabiners of the harnesses and the risers to the spreader. The choice of the optimal hook up point is dependent on the type of harness used and also the weight and body size of both the pilot and passenger. In order to find the optimal hook up points, we recommend that you try out different situations in a simulator.
- Check that all karabiners are closed and cannot be opened accidentally in flight that the risers are not twisted and the position of the trimmer on both risers.

### **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.

Hold only the middle A risers and the handles of the brakes, after you have finished the obligatory preflight check. When you pull on the A-risers, the lines in the middle of the wing should be under tension before the lines on the wing ends. This ensures an even easier start. Use progressive pressure on the A risers and the energy of our own bodies weight until the wing is fully inflated overhead. The canopy is inflated quickly due to the super short lines. When there is no pull from the lines and the wing is overhead, use slight pressure on the brake. Look up and make sure that the canopy is fully inflated. After a few accelerating steps and at the same time let go of the brakes gently, you will take off with your passenger. Then use slight pressure again on the brakes to fly at a speed with minimal sink.

***The completely opened trimmer must not be used in extreme, not flyable strong wind to force a start.***

### **Active flying**

The **TWICE TE** has an extremely high stability. We advise you to apply the brakes at all times whilst flying in turbulences. You hereby increase the opening angle and the wing is more stable. At the same time the pilot has a better feeling for the canopy via the brakes. When flying into strong thermals please pay attention that the canopy does not remain behind the pilot. This is avoided by releasing the

brakes when entering an up-wind to increase speed. Vice versa the glider must be slowed down with the brakes if the canopy falls before the pilot when entering a down-wind or exiting a thermal.

This type of flight technique is called “active flying”. The pilot may roll his body with weight shift to move with the glider when the glider rolls to the right or left. These subtle adjustments keep the glider flying smoothly.

***In very turbulent air can cause ambitious cap deformations with wide open trimmers despite the EN-B classification.***

### **Turning**

A combined steering technique is suitable for every situation. The **TWICE TE** 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!!***

### **Landing**

The **TWICE TE** is very easy to land. 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!

***Landing completely opened trimmers is dangerous with a lot of risk and should be omitted.***

***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**

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- ***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.***

### **Big & Small Ears**

The aim of this exercise is to descend in strong thermals. Take the outer A-risers of the **TWICE TE** 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. Before landing, release the pulled down A-risers to achieve normal sink speed for a gentle landing.

Keep the brakes in your hand. In this way, it is possible to fold in up to two thirds of the leading edge. If you use the trimmer sink speed 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.

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

## **B-Line-Stall**

It is common knowledge that to enter and hold a B-line-stall requires considerable strength. Entering a B-line-stall in strong upward air movements may not be possible for weaker pilots, even with gliders equipped with easy enter B-line-stall aids.

***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,***
- ***exit is too slow,***
- ***releasing the B-line-stall aid without simultaneously pushing up with your hands,***
- ***using brakes during or directly after exiting,***
- ***Brakes must not be shortened by twisting around your hand during the exercise.***

## **Spiral Dive**

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 **TWICE TE** will start to turn, speed up and then drop into a spiral. To keep the wing under control you must pull and release the inside brake Exit slowly. Bring your body weight back to a neutral position and as soon as the wing levels out, apply the brakes gently. This procedure should be done slowly and will take a couple of turns to complete.

***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 **TWICE TE** 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.

***With heavy passengers and extreme sink rates it may be necessary to have outside counter steering with both hands. (This is not specific for the TWICE TE, it is applying to all tandem gliders!)***

## **Wingover**

The **TWICE TE** 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. Also notice that a wingover flown with more than 90 degrees bank angle is classified as illegal aerobatics in some countries!

## What happens when happens?

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### **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 **TWICE TE** 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 both 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 brake line 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 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 **TWICE TE** 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 **TWICE TE**, 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 stabilo line. With a bit of weight shift and by pulling down the stabilo (20 cm) allows to control your **TWICE TE** 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 with your **TWICE TE** just do “hands up” to release the brakes and the glider will return to normal flight.

***If you do not have control over your glider and you are running out of altitude, immediately deploy your reserve parachute.***

### **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 clearly 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. If possible grasp the seat of your harness to assist keeping your arms locked. 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 **TWICE TE** will return to normal flight.

***It is imperative that the pilot fully completes this maneuver 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 landing in or entangling in the glider.***

## **Care instructions, repairs, inspection**

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### **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.
- 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 lose 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.
- 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.
- The **TWICE TE** is a very strong paraglider. Flying all the descent exercise 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 don't fold.

***When you haven't been flying for a longer period ICARO commends to check the glider (e.g. mildew stains, splice of the lines, corrosion of the shackles and carbines). 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.***

## **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 center. Please contact ICARO paragliders for information about single line lengths. If your **TWICE TE** needs to be repaired, please contact your local ICARO Paragliders dealer.

## **Inspection**

It is important to have your **TWICE TE** 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 lose its pattern test result and guarantee.***

ICARO recommends having wings that are often used for training of descent exercises, acrobatics or flying in salty or sandy conditions subjected to checkups all 100 operating hours or 12 months. 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 200 operating hours.

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

## **Terms of the guarantee**

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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.

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<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

- 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,
- 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**

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### **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**

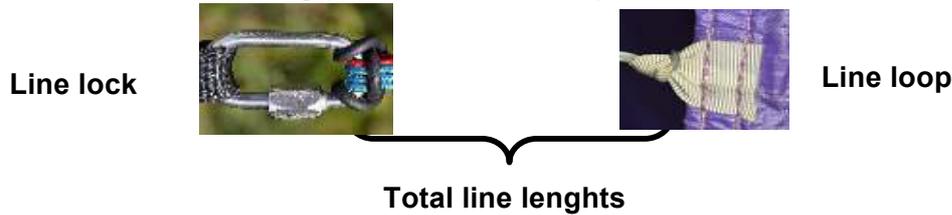
Check the risers, the trimmers, the stitching at each line loop, the brake lines, all seams and line contact points. Each line must be measured and inspected for kinks.

#### **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

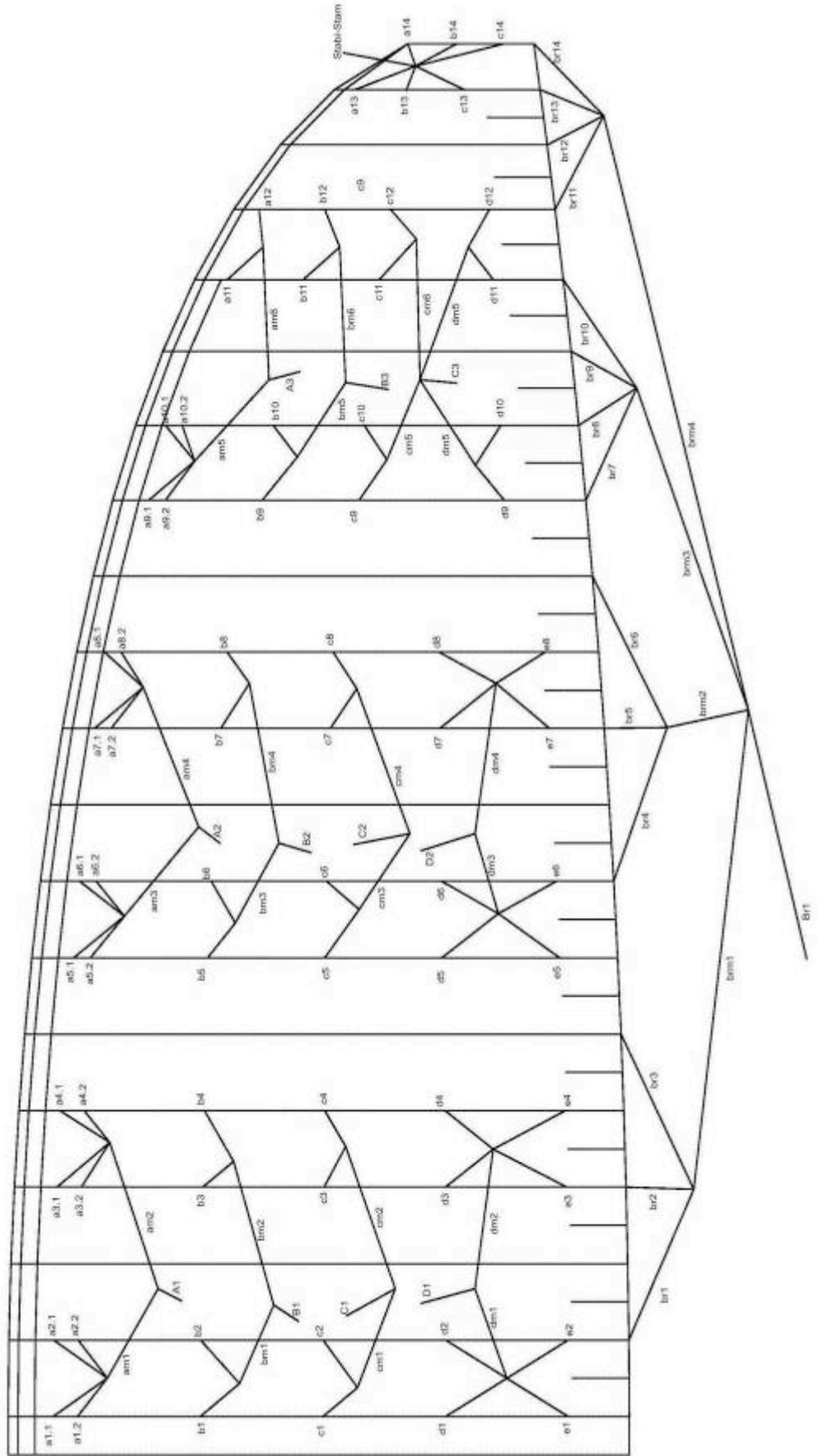
Only an authorized technician who has been trained by ICARO paragliders is authorized to sign and date the glider type label and sign the manual.

Linlengths Size M (mm)						
	A	B	C	D	E	BR
1	8685	8575	8640	8751	8895	9879
2	8624	8539	8555	8687	8831	9472
3	8589	8466	8527	8659	8814	9374
4	8621	8502	8559	8699	8847	9213
5	8597	8484	8551	8683	8828	9022
6	8540	8428	8486	8630	8775	9115
7	8504	8410	8477	8611	8741	9007
8	8539	8443	8501	8632	8750	8932
9	8475	8387	8434	8591		8909
10	8365	8293	8342	8477		8962
11	8174	8143	8187	8310		8862
12	8124	8095	8114	8233		8732
13	7858	7825	7841	7954		8627
14	7725	7763	7827			8591
15	8661					
16	8601					
17	8566					
18	8598					
19	8572					
20	8517					
21	8483					
22	8513					
23	8450					
24	8341					

Linlengths Size S (mm)						
	A	B	C	D	E	BR
1	8199	8089	8126	8258	8393	9327
2	8144	8021	8063	8198	8338	8947
3	8122	7995	8041	8171	8312	8837
4	8133	8032	8074	8207	8347	8706
5	8114	8016	8053	8186	8315	8537
6	8062	7954	8003	8138	8268	8632
7	8034	7938	7985	8120	8243	8508
8	8060	7971	8017	8136	8256	8439
9	7995	7919	7967	8115	8119	8427
10	7897	7834	7876	8019	8026	8461
11	7735	7704	7735	7855	7852	8373
12	7686	7660	7680	7786	7785	8246
13	7406	7375	7390	7497		8145
14	7288					8106
15	7316					
16	7372					
17	A2					
18	8162					
19	8103					
20	8084					
21	8109					
22	8082					
23	8028					
24	8006					
25	8027					
26	7985					
27	7888					

Lengths of the risers, both sizes (mm)	A	A2	B	C	D
not accelerated	405	405	405	405	405
accelerated	405	405	405	460	520

# TWICE TE (Biplace EN / B) - LINEPLAN



### Dispatch protocol/ Delivery content

Inner bag	<input type="checkbox"/>
Compression band	<input type="checkbox"/>
Risers bag	<input type="checkbox"/>
Manual	<input type="checkbox"/>
Repair set	<input type="checkbox"/>
Outer rucksack	<input type="checkbox"/>
Gift	<input type="checkbox"/>
Sticker	<input type="checkbox"/>

.....

Date

.....

Signature