

User's Manual PARAGLIDERS

KUAT²

KUJAT²



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WELCOME TO SOL TEAM!

You have just acquired a high quality product, manufactured under one of the most demanding industry standards worldwide, we believe this project will allow that you learn a lot in paraglider flight.

We trust your paraglider KUAT 2 will bring you many great life memories you will cherish forever and you could understand our work's Philosophy, safety, performance, ease of operation and innovation.

We would like you to read this manual carefully and thoroughly. In it, you will find important information about using your new equipment.

In the event you should have any questions about its usage or should you wish to be updated on the latest news at SOL, we remain at your disposal:

Thank you for selecting a SOL PARAGLIDERS.

SOL Team!

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USER'S MANUAL

This manual offers information about your paraglider. It is not a training manual. It is a assumption that the pilot respects the law and order of aviation and that his skills are up to the challenge of this particular equipment. It is a basic assumption that the pilot is certified to fly this paraglider.

This paraglider meets at the time of delivery the requirements of the LTF certification or of the EN, so any equipment alteration will result in the cancellation of this respective certification, we must remember that every pilot is responsible for the maintenance and assessment of equipment usability and the manufacturer and its representatives are not liable and therefore not responsible for any misuse nor mishandling of this equipment.

Don't forget that flying with this equipment shall be performed at the individual's own risk. It's very import read this manual carefully.

Along with your product, you are getting an accessory kit:

- Tandem Spread Bars;
- Big deluxe backpack;
- Internal protection bag;
- Risers' protection sack;
- User's Manual;
- Compression strap;
- Easy Check;
- Basic Repair Kit;
- Sack Pack;
- Cap;
- Windsock.



KUAT 2 - THE PROJECT

The KUAT 2 is a paraglider developed for tandem flights. This new project has much less weight and the start, flight and landing is easier. This all comes with a significant gain of performance.

The KUAT 2 is a very versatile paraglider which inspires confidence and allows pilot and passenger to enjoy the flight and feel the pure pleasure of flying.

This paraglider is dedicated as much to professional tandem pilots as to pilots who occasionally like to fly with friends or family.

The KUAT 2 is a tandem paraglider within the classification LTF/EN B and requires experience from the pilots who are licensed to fly a tandem paraglider.

The project has received innovations in many details: the profile and the new air intake, from the typ shark nose, (PBP - Pressure Booster Profile) offer more performance and enhanced climbing in thermals, although more intern pressure stability. At the front part of the profiles are added the X Battens, aiming for a much more structured and firm profile, more rigid and avoiding deformations. This results in more speed and glide performance. The trailing edge of the KUAT 2 got Mini Ribs. This helps to reduce the turbulence caused by the canopy profile and increases the performance.

We all know that 50% of the time flight is being spend to climb in thermals, for that reason we searched for a new concept that offers a clear advantage in comparison to the other projects of the same category on the market.

All improvements were made with the most modern materials and with the best new technologies known in this class of paragliders, though we can offer the best performance for the pilots.

SOL Paragliders products are known for long-life and performance – our tests and research, which use paragliders for competition and acrobatics in the first place, are getting us knowledge to choose the right materials. We achieved less weight, volume and resistance for the KUAT 2 with new construction technology. We are using competition lines made of vectran and thin risers.

Warning

This glider is not designed for flight school!

TECHNICAL DESCRIPTION

The KUAT 2 combines our performance technology with security



PBP - Pressure Booster Profile: Novo design de perfil que intensifica e mantém de forma mais estável a pressão interna. Mais desempenho em toda a faixa de velocidade.



X Battens: Talas cruzadas X reforçando o nariz do perfil.



3D Shaping: Nosso duplo 3D Shaping é uma tecnologia de modelagem em 3 dimensões que diminui as rugas e imperfeições da construção no bordo de ataque melhorando a performance aerodinâmica do projeto.



Mini Ribs: Perfis entre células no bordo de fuga que melhoram a performance e a pilotagem.



3RS - 3 Risers System: 3 Tirantes – sistema híbrido de tirantes e linhas garantindo estabilidade, redução de 25% do consumo de linhas, melhor distribuição da carga e principalmente baixa deformação durante os anos de uso.



BOW Tech: Maior sustentação na mesma área vélica e melhor distribuição da pressão em toda envergadura de parapente.



Full Hybrid Tecnology: Utilização de diferentes tipos de tecidos, combinando durabilidade e resistência com baixa deformação e menor peso.



HPAR - High Project Aspect Ratio: Nova relação entre alongamento real e projetado maximizando a sustentação e estabilidade e minimizando o arrasto.

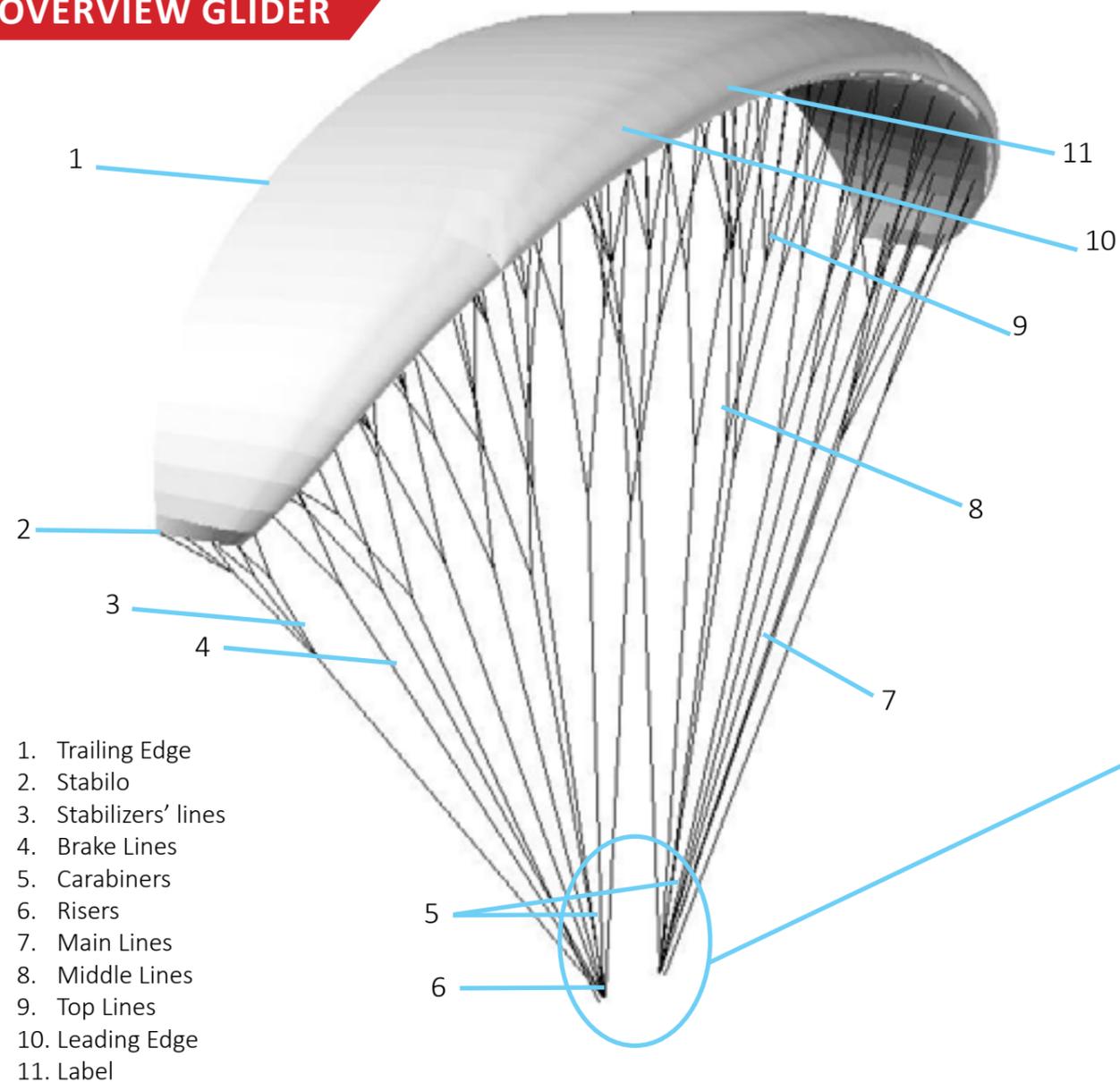


HTM - High Tech Materiais: Materiais de alta tecnologia que garantem durabilidade e leveza ao conjunto.



LCT - Laser Cut Technology: Todas as partes de tecidos e reforços cortados com maior precisão em equipamentos de corte a laser.

OVERVIEW GLIDER



1. Trailing Edge
2. Stabilo
3. Stabilizers' lines
4. Brake Lines
5. Carabiners
6. Risers
7. Main Lines
8. Middle Lines
9. Top Lines
10. Leading Edge
11. Label

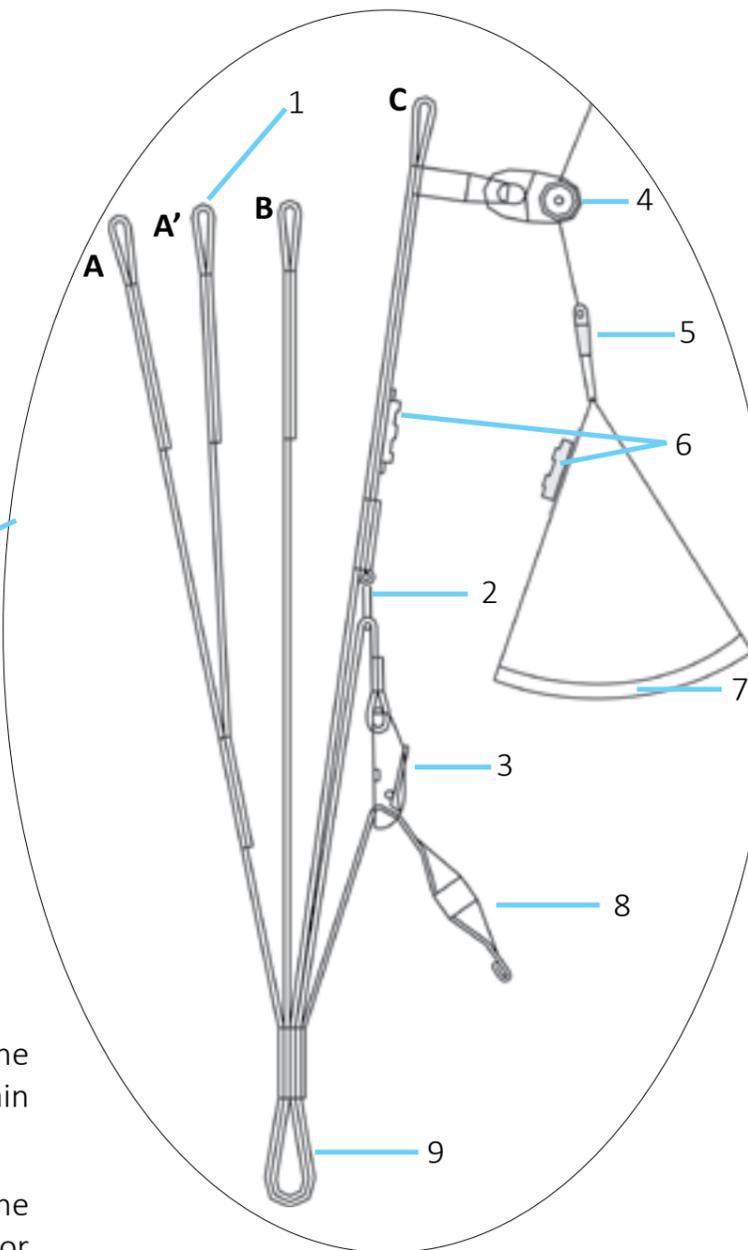
The upper lines distinguish themselves (9), next to the inside layer, the middle lines (8) and the main lines (7), which are connected to the Quick Links (5). These, in turn connect to the main lines on the risers (6). The stabilizers' lines (3) are connected to the same Quick Links (5).

The brake lines (4) come out of the trailing edge, through the master line and are linked to the toggles, passing through a pulley attached to the 'C' riser. The brake lines are of different color in order to facilitate takeoff preparation.

On the brakes' master lines, there is a mark at the ideal setting point, at which height the toggles are affixed. This setting should not be altered as it ensures adequate and sufficient path and room for the toggles in case of emergency situations during flight and landing. Furthermore, in this position the paraglider is not constantly on a stall.

RISERS

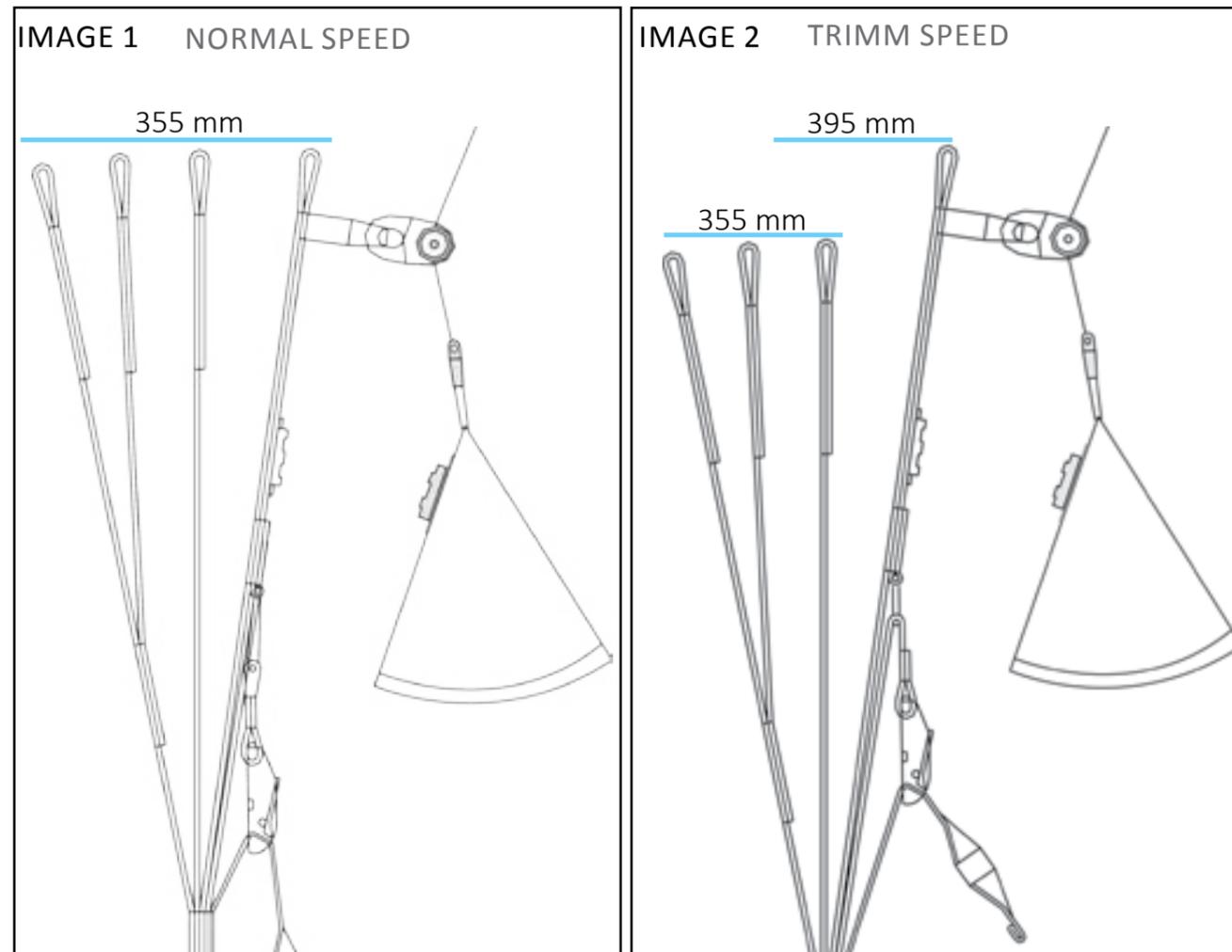
The KUAT 2 has 3 riser's on each site. All A lines are attached to the A riser. The A1 riser is for the ears. The B lines and stabilo lines are attached to the B riser. The C riser leads to all the C lines. The brake lines are going to the pulley which is attached to the C riser. The Glider has a trimmer but no accelerator.



- 1- Ears
- 2- System of increase speed
- 3- Trimmer and Speed
- 4- Brake pulley
- 5- Swivel
- 6- Magnetic button
- 7- Toggle
- 8- Trimmer handle
- 9- Carabiner's harness connection

TRIMMER

The riser of the KUAT 2 is equipped with a trimmer. If the risers A, A1, B and C are aligned the trimmer is closed (Figure 1). If the trimmer is open the risers are not aligned and the result is a gain of speed. (Figure 2).



	A	A1	B	C
Trimmer closed	355mm	355mm	355mm	355mm
Trimmer open	355mm	355mm	355mm	395mm

Warning

- The use of the trimmer enables more speed.
- The use of the trimmer makes your glider more vulnerable for closings.

TANDEM SPREADS

The pilot is connected behind the passenger on the shorter end of the tandem connection thus reaching easier the control handles and risers.

In case of a big weight difference between pilot and passenger, the tandem connection offers various points to fix the passenger always maintaining the ideal position of balance.



Risers

- A1- Ears
- D- Toggle
- E- Trimmer

Tandem Spreads

1. Main carabiner
2. Rescue system connection
3. Pilot
4. Passenger heavier than pilot: position 4
5. Passenger with similar weight: position 5
6. Passenger lighter than pilot: position 6

HARNESSES

The **KUAT 2** was tested with a harness LTF Type GH. Any harness of type ABS are recommended for the **KUAT 2**, tested with large clips set at 42 cm and 48 cm heights from the board, depending on the harness size. Care must be taken because the large clips height affects the brake position when set at 'normal'. SOL give free together all gliders and harnesses, a Measuring Tape "Easy Check" to help pilots to check the distance between carabiners.

The regulated distance between the large clips (adjustable at the chest) is 44cm. Variations of more than 5 cm above these ones will alter the fundamental characteristics of the canopy and are potentially dangerous.



FLIGHT

TAKEOFF WEIGHT

The KUAT 2 was tested within a tolerance of maximum and minimum weight. It is recommended to fly within these limits.

Warning

- As a tandem paraglider the weight will change with every passenger. We developed a comfortable paraglider for all these situations.

FIRST FLIGHT

A careful First Flight is necessary with every paraglider, the KUAT 2 is no exception. This flight must take place on a practice hill. After unpacking the paraglider and laying out it in a horseshoe shape position, the following steps must be taken:

- The paraglider must be laid out in such a way that, when tension is applied to risers 'A', the canopy center should be extended before the extremities. This allows for an easy takeoff with good directional stability.
- Special attention must be taken to the wind's direction upon the lifting of the canopy, so that the two halves are inflated symmetrically.
- All lines must be organized and completely free of any entanglements. Special attention must also be given to the lines 'A', which must be free right from the risers 'A' (with the red mark) to the canopy.
- Same priority and care must be given to the brake lines, which must also be completely free and without any possibility of entanglement on any obstacle during takeoff.
- All lines should be checked and all the risers in appropriate order. When the risers are aligned and not twisted, the brake lines will be free from the pulleys (on the rear risers) to the canopy's rear edge.
- It is extremely important that no entanglements nor bunched lines are present. Any line going under the canopy or tie may result in disastrous consequences.

- Before and after each flight the lines, risers and canopy must be checked for any possible damage.
- In case there is any damage present, as insignificant as it may be, the canopy should not be flown!

Warning

- It is not advisable to fly the KUAT 2 in rainy days or with a wet paraglider, since the in-flight maneuvers become more sensitive and a reserve deployment may occur upon exiting a B-Stoll or in the event of excessive usage of breaks.
- Never take off if your glider is not fully inflated or the toggles are not under your control.

TAKEOFF PRE-FLIGHT CHECKLIST - DO NOT FORGET

- Make sure reserve is OK! Opening device and pins activated?
- Untangled brakes in hand?
- Are you in the center of the canopy?
- Helmet?
- Takeoff path is clear?
- Carbines closed?
- Paraglider and pilot aligned with the wind?
- Harness – Connected all Locks closed?
- Airspace ahead of takeoff area is clear?
- 'A' risers in hands?
- Distance between carbines is correct?

TAKEOFF

FORWARD TAKEOFF

It's very easy to fly the KUAT 2. When ready to takeoff, the pilot must take risers 'A', 'A1' together with the toggles. In order to differentiate between the lines, line 'A' and risers 'A' inclusive are marked with a different color.

Before takeoff, a last check is required to ensure all the equipment is laid out properly. The arms must be extended to the side, as if they are extensions of risers 'A'. A decisive run allows for a quick and stable inflation.

Canopy overtakes are not common. After the initial inflation momentum, the pilot must keep the tension forward on risers 'A' (pushing them ahead, and not pulling them downwards), until the canopy is above your head. At this point, the brakes must be carefully activated, ensuring room for the possibility of directional changes. A move to underneath the center of the paraglider is the best method for corrections, provided there is room for it. The pilot glances at last upwards to ensure the canopy is properly located above, completely unobstructed and inflated. At this point, the pilot decides whether or not to takeoff.

REVERSE TAKEOFF

Reverse takeoffs in strong wind conditions are also very easy to execute. Due to risk of takeoff with entangled lines (twist), it is highly recommended to take some time and practice reverse takeoffs on a small, leveled hill initially.

INSTALLATION OF TOW RELEASE AND AUXILIARY ADAPTATION

The KUAT 2 can be used for towed flight as long as is connected to the towed flight system (Tow release). It must be connected to the same carabines that join the harness with the paraglider. It is activated through an activator that is strategically located and when is pulled it releases the equipment to fly.

During the taking off it's necessary to avoid a small angle of the cable with the ground. A taking off with tow release help needs instructions and appropriate procedures. Make sure that you have the necessary knowledge and that the operation is made in a safe and correct way.

NORMAL FLIGHT

The KUAT 2 has its best glide rate in normal flight when the brakes are not applied. The way of the brake handles till stall is approximately 83 cm.

THERMALING AND SOARING

In turbulent conditions, the paraglider must be flown with the brakes softly applied. An increase in angle of attack is achieved by this measure, resulting in greater canopy stability.

The pendulum effect back and forth must be avoided! The canopy must remain on top of the pilot. For this purpose, the speed must be increased by releasing the brakes upon entering a thermal (depending on its intensity) or braking on exit. This is part of the basic technique on active flying.

During flights over the lift, it is highly recommended a minimum height of 50m be kept, for safety reasons.

It is extremely important to know and respect flying regulations, especially so when the airspace within close proximities of canyons is shared among several pilots, where last minute anti-collision maneuvers are not executable.

TURNS

The KUAT 2 is very sensitive, responding instantly to turn commands. Leveled turns can be achieved with the shifting of weight on the risers with minimum altitude loss.

A combination of weight shifting and breaking technique is the most efficient way of executing turns in any situation. The given brake utilized determines the radius of turns.

By activating the brakes on the outside edge of the turns, as well as applying maximum weight shifting on the risers, the efficiency and resistance to collapse in turbulences (at the edge of

thermals) is increased. In case it becomes necessary to perform turns in a constrained space with the KUAT 2, we recommend you to release the outside brake in the given turn and pull a little more the brake on the inside of the turn.

Warning

- By pulling either brake too strongly or suddenly, there is a danger of creating a negative spiral!

ACCELERATED FLIGHT

It is recommended to use the accelerator when flying against the wind or in descending current zones. Due to a decreased angle of attack, the canopy may collapse easier than when set at the normal position. The pilot must remember that the higher the speed, the more dynamic the collapse response or symmetric closing will be.

FLIGHT IN TURBULENT CONDITIONS

In turbulent conditions it is not recommended to fly the glider with full speed, cause the KUAT 2 is more sensitive to deformation and closing. You must remember that the higher the speed, the more dynamic the collapse response or symmetric closing will be.

Warning

- The KUAT 2 requires active flying in turbulences! This can avoid canopy closings and deformations.

ACTIVE FLIGHT

For best performance during your flight, it is important to be always sensitive to what your canopy is trying to communicate. The key elements of active flying are the advancements and tension control. When the canopy moves ahead of you, carefully apply the brakes, so that the canopy returns to be above you, and if the canopy moves behind you, you must release the brakes. Flying with the brakes lightly applied (+- 20 cm) allows the canopy to fly slightly behind. In turbulent circumstances the internal paraglider tension may change, which you will feel on the brakes. The idea is to maintain a constant tension, and in case you feel loss of tension, apply the brake.

Avoid flying excessively with the brakes on because you might brake to the point of stopping the canopy from flying. Always consider your aerodynamic speed. Your movements can be symmetric or asymmetric and both or one brake can be applied. We suggest that you do ground practice runs and advancing simulations.

Tension loss can be simulated well on the ground.

Warning

- Neither pilot nor any paraglider are immune to collapses; therefore active flying will decrease the chances of happening.

- Always maintain altitude awareness and do not get into excessive commanding mode. We advise you to maintain brake tension and avoid flying in extreme turbulent conditions.

LANDING

It's very easy to land with the KUAT 2. The final approach stage must be done in straight line upwind.

During this final glide, the paraglider must be decelerated slowly and at about 1 m from the ground the pilot must stall the canopy, according to the conditions.

With a strong nose wind, the pilot should break only slightly or eventually don't even brake at all, and utilizing just the risers 'C' to de-inflate and overcome the canopy after the landing. By breaking during a landing in strong wind conditions, you may expose the canopy to the wind, which could lead to the pilot being dragged backwards.

The final approach must be done always in a straight line. Sharp and alternating turns may produce a dangerous pendulum movement close to the ground.

MOTORIZED FLIGHT, ACROBATIC FLIGHT AND TANDEM FLIGHT

The KUAT 2 has not been designed for motorized flight, tandem flight or acrobatics. This project is designed for only one pilot without passenger.

We recommend that seminars who simulate flight incidents or other manoeuvres are done with the supervision of experienced instructors and above water with all the safety precautions necessary.

FAST DESCENT MANEUVERS

All fast descent maneuvers must be executed in light conditions and at sufficient altitude, so that they can be performed as necessary under extreme flying conditions.

'Full Stalls' and negative spirals must be avoided, regardless of the paraglider being flown. Incorrect recoveries and exits can result in disastrous consequences.

The best flight technique is to fly safely and correctly. This way you will never need to descend rapidly!

EARS

By pulling simultaneously the external riser 'A1' at about 18 cm, the canopy tips will close. The canopy remains completely maneuverable through the activating of unilateral brakes or the shifting of weight towards the risers, flying at a fast descending rate (up to approximately 3m/s). In order to recover, the pilot must release the external riser 'A1' lines. Usually the canopy re-opens by itself, but the pilot can assist with a long and quick pumping.

Warning

- SOL does not recommend combining of ears and spirals, as this may exceed the allowable load.
- Don't push the ears simultaneously, push one each time.
- Never fly with ears simultaneously using the speed bar, this might cause a great collapse.

POSITIVE SPIRAL

Spirals carry a high rate of descent. Therefore high accelerations (G) make it impossible to hold them for an extended period of time. The spiral force may cause the pilot to faint and to lose flying controls, and crash. Furthermore, they will exert a lot of force and affect the pilot and equipment alike.

The pilot should never exercise this maneuver in turbulences or with wide lateral angles. In windy conditions, the pilot must be aware of oscillations during the maneuver.

When the pilot activates just one brake, slowly and progressively, the paraglider inclines sideways in a sharp angle and enters a steep and quick turn, which may become a positive spiral.

During a spiral the rotation radius can be controlled by the greatest or smallest force applied to the inside brake.

In order to come out of it, the pilot must release the brake slowly and shift his/her weight lightly to the outside of the turn. A sudden exit may result in an exaggerated momentum forward of the canopy, and collapsing it. For this reason, on exiting the last turn, the inside brake of a given turn must be softly applied again.

In case the canopy collapses during this process, the spiral must be counter-acted, as the active canopy area will be reduced.

Warning

- Never combine ears with spirals. The canopy active area reduction plus the 'G' force, by the centrifugal effect, may result in line and/or canopy damage.
- Exiting of any spiral at great speeds must be piloted.
- This maneuver requires high altitudes (at least 600 meter over ground) and is dangerous due high descent ratio pilot can lose the altitude reference. Never do this maneuver without sufficient experience.

B-STALL

To induce a 'B-Stall', the pilot must pull the risers 'B' simultaneously, between 15 and 20 cm. There will be a shift of air flow on the outer layer and the canopy will initiate a parachutal phase.

By releasing the risers 'B' quickly the airflow recoils on the outer layer and the canopy returns to its normal flight position. In case the canopy does not recover to normal flight, refer to the section on Wraps. The momentum of return creates a forward motion by the canopy. We recommend avoiding braking the paraglider eliminating the possibility of a parachutal stall.

The load applied on the 'B' lines during this maneuver is not beneficial to your paraglider. Use this maneuver only in emergencies. In the event risers 'B' are pulled too quickly or too deeply, a horseshoe may occur towards the front. In order to regain normal flight, the pilot must apply the brakes lightly.

BEHAVIOR IN EXTREME MANEUVERS AND COLLAPSES

Extreme maneuvers must be executed under the supervision of a qualified instructor, on safe courses and with the entire infrastructure available for above ground and water flying!

LATERAL ASYMMETRIC CLOSING

Like any other canopy, a negative angle of attack will result in a closing. In order to maintain directional control upon a lateral asymmetric closing, the brakes must be applied on the open side. In case of a major closing, the amount of braking must be well graduated, in such way to avoid the airflow displacement (stall) on the open section of the canopy.

To facilitate the canopy re-inflation during a collapse, the steps above must be followed in conjunction with a long and slow brake pumping action (2 seconds) with the toggle on the closed side. The shifting of weight on the opposite side riser of the closing will also assist with the re-inflation and increase safety, requiring less brake action and keeping away from the stall point.

In case the pilot does not compensate with the brakes, the ATMUS 2 in most situations will inflate by itself even in major asymmetric collapses. The ATMUS 2 can make a complete turn and in the event it does not open on its own.

Without action, the paraglider will begin a positive spiral. The pilot must lightly apply the brake on the external side to stop a spiral and at the same time shift his/her weight on the same side until the canopy is stabilized. Exactly at this stage of pendulum effect under the canopy, it is important that the pilot controls carefully the amount of force applied on the brakes, and often it is needed to decrease the force. Once a straight flight is achieved, the closed side can be re-inflated by the pumping action.

Warning

- If the pilot does not actively terminate the spiral, it will continue all the way to the ground!

LINE-OVER

In the eventuality of lines going over the canopy during flight, the pilot must take the following steps:

- Try to maintain a straight flight: Shift the weight to the open side of the paraglider and assist with a light brake tension on the open side.

- To re-open: Pull the stabilizer line on the closed side (first line of riser 'B' of a different color) until the line entanglement is cleared.
- If the line-over is serious, if it's not possible to maintain a stable flight (spiral) and if there is sufficient altitude (>400 m), there is a chance of resolving this mal-function by executing a 'Full Stall'. In case the above maneuver does not solve the problem, or if the altitude is not sufficient, the pilot can activate the emergency parachute (reserve).

Warning

- Line-overs are generally the result of poor preparation before takeoff, collapses during acrobatics or lateral asymmetric closings.

FRONTAL SYMMETRIC CLOSING

Risers 'A' and 'A1' are tightly pulled until a complete closing of the Leading edge is achieved, then quickly release the risers until it is closed. The pilot should not hold the risers after the closing. Special attention must be given to ensure enough altitude is available.

The KUAT 2, on most instances, recovers on its own from a frontal asymmetric closing. In turbulent conditions, a head butt may occur, which must be overcome by accurate brake control.

PARACHUTAL

The KUAT 2 does not have parachutal stall tendencies and recovers on its own from an intentional parachutal stall induced by braking commands. In the event of a parachutal stall upon coming out of a B-Stall, it is enough just to pull the risers 'A' downwards or the accelerator, thus reducing the angle of attack, therefore reorganizing the air flow contact to the canopy.

FULL STALL

To create a 'Full Stall', the pilot must pull both brakes to the end, and hold them tightly in this position. In this situation, the KUAT 2 flies in most times on reverse, in a forward horseshoe shaped tie.

The canopy must be stabilized before the procedure for normal flight re-entry is initiated. Any attempt of recover during the beginning stages of a stall, when the paraglider reverses suddenly can result in a sudden push forward of the canopy. When recovering from a 'Full Stall', both brakes must be released slowly simultaneously and symmetrically (> = 1 second). The KUAT 2 will move forward gradually and begin normal flying.

An asymmetric recovery (releasing one brake before the other) of a 'Full Stall' is utilized only by test pilots to simulate a paraglider being expelled out of a thermal and must not be attempted by pilots!

NEGATIVE TURNS

To induce a fast Negative Turn out of normal velocity (LTF) or starting from the minimum speed (EN), the pilot must pull tightly and quickly one toggle right to the end of it.

During the negative spiral, the canopy rotates relatively fast around its center, with its inner side flying backwards.

When entering an unintentional Negative Turn, the pilot must recover as soon as it is noticed by releasing the brake slightly so that the canopy will accelerate and returns to a stable flight, without losing too much altitude.

When a negative turn is intentionally prolonged, the KUAT 2 accelerates forward asymmetrically. A frontal asymmetric closing should not be under-estimated.

To recover from an intentional negative spiral, the pilot must release the pulled brake and pay close attention to a strong canopy surge ahead.

Warning

- A sequence of wrong commands could cause a sequence of collapse of the canopy and might lead to an accident.

WINGOVER

In order to perform a 'Wingover' the pilot must generate a strong pendulum effect by alternating turns on both sides. A complete closing of the canopy is possible.

Warning

- A turn with an incline beyond 60° is considered acrobatic.

EMERGENCY FLYING

In case braking controls are impossible, the canopy can be driven by utilizing risers 'C' and eventually land. Pay close attention to the length of the command, which should be shorter than braking commands.

UP-KEEP AND CARE

A good maintenance extends the life of your KUAT 2 for many years to come.

STORAGE

The KUAT 2 fabric is made mainly out of Nylon, which like any other synthetic material is sensitive to UV light radiation, causing it to decompose, losing its mechanical resistance, and thus increasing its porosity.

For this reason, the unnecessary exposure to sun light, which carries a high UV radiation level in high altitudes must be avoided. It is highly recommended to leave the paraglider stored away and well protected when it's not being used in a dry place, protected from UV light and away from chemical products. Avoid keeping the paraglider in places with high temperature (trunk of the car).

Warning

- After an accident or long time without using the paraglider must be checked.

FOLDING YOUR PARAGLIDER

There are various facts that could help to increase the life of your paraglider. One of them is the way how to fold your equipment. To take care of the battens folding the paraglider is essential to maintain the starting and flight characteristics of your paraglider. We recommend to fold the canopy using the origami folding technic and our origami folding bag. With your paraglider comes a traditional bag to store and protect your equipment. Storing it in there is a good beginning to protect the canopy.

Steps to fold the canopy:



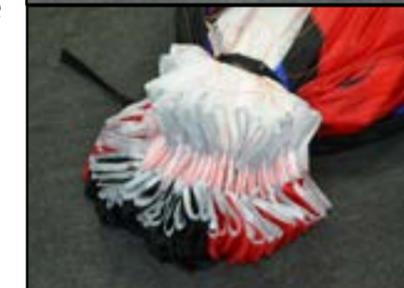
Step 1. Open the canopy completely on the ground and fold him in form of a accordion, though you avoid dragging him over the ground.



Step 2. Initiate the folding at the center, placing profile over profile always taking care of the battens (forming the curve of the profile (A). To liberate space for the battens, manage the bottom surface.



Step 3. After folding the battens turn both sides to the center (C), handle the profile of the center to shape the form of the others.





Step 4. Organize the canopy in form of o accordion of both sides and then put one side up the other. Now all battens should be positioned lateral.



Step 5. Open your origami folding bag and localize the cushioned area, there you have to put the battens. After closing the bag fold the part with the battens to the middle, this way they are double protected.



Step 5a. If you use the traditional bag, follow the steps 1 to 4. After this fold the canopy with the battens inside. This way you protect them. Normally the paraglider occupies the whole bag without great compression.



CLEANING

Cleaning must be performed only when it is absolutely necessary. We recommend the use of water only with a smooth sponge or cloth. Do not use any chemical product, since it will damage the material permanently.

PULLEYS

It is important you keep pulleys lubricated because in case they do not work may consume the speedy handle or axle, apply paraffin or lubricant spray, read carefully about the lubricant to avoid spots and fabric consume. Do not apply on the sewing lines.

Warning

- When buying the lubricant make sure that this product do not attack the material properties. This may affect the fabric and lines resistance.

BACKPACK

Your backpack was designed with comfort and practicality in mind. It's format allows for good content distribution. Shoulder straps and back support are padded so that comfort is not compromised during walks.

RECOMMENDATIONS FOR A LONG LIFE

- The KUAT 2 lines are made of Vectran. Individual line overloads beyond the normal range in flight must be avoided, because an excessive deformation of the line is irreversible, and becoming permanent.
- The same way, folding and creasing the lines must be avoided, specially the main lines. Never step over the lines or canopy, above all on hard surface. The canopy must be opened only on a clean surface area, since dirty can penetrate in the canopy's fiber, shorten the lines or spoiling the fabric. The lines must be kept from any entanglements on takeoff to prevent excessive deformation. Avoid storing the paraglider for long periods in areas with high humidity or heat, this causes premature aging of the materials.
- Keep away sand, stones or snow from entering the canopy cells because any weight on the trailing edge slows the canopy down, possibly creating a stall, furthermore, sharp corners may cut the fabric.
- During takeoffs and landings in windy conditions, a run-away canopy may hit the ground strongly and the shock may rupture the material. Em caso de emaranhamento as linhas de freio podem esfolar ou uma linha principal pode vir a ser cortada por uma linha de freio, rompendo devido a fricção.
- In case of line entanglement the brake lines may peel-off or a main line may get cut by a brake line, due to friction.
- The manipulation of the paraglider during ground takeoff, or a lot of wind speed up the aging process of your equipment.

- After a tree or water landing, the lines must be checked and tested.
- On landing, avoid letting the Leading Edge fall forward and downward towards the ground because this may damage the materials that form the front of the paraglider and/or rip the sewn areas.
- In case of salt-water contact, the paraglider must be soaked and washed with fresh water. Salt water might decrease the lines' resistance even if soaked with fresh water. The lines must be changed after contact with salt water.
- Never dry the paraglider directly under the sun. This must be done in a shaded area.
- After an accident send the paraglider for inspection to the manufacturer or distributor.

Warning

- Your KUAT 2 was designed, tested and certified to perform the best. Any alteration of your paraglider will nullify your certification and jeopardize your safety. For these reasons we strongly recommend you to avoid altering anything on your paraglider.

INSPECTION

The revision plan for the KUAT 2 must be followed. The first revision must be applied after 24 months, 150 flights or 150 flight hours depending which limit is reached first.

After the first revision, the canopy must be revised each 12 months or 100 flights or 100 flight hours, depending which limit is reached first. It is possible que during the revision a shorter period is established (for example 50 flights or 6 months). Without these revisions, the paraglider loses his certification and warranty. After an accident or a long period without flight, always take the paraglider for a revision.

Little repairs (see section repairs) could be made by yourself, but greater ones must be done only by the factory or an authorized distributor.

REPAIRS

TEARS

Along with your kit you get small adhesives for repair. Small tears up to 10 cm away from the line points may be fixed by you. Beyond that we advise you the maintenance be made by the manufacturer or by the registered workshop.

- Clean the spot where the adhesive will be applied with a humid cloth;
- It must be at least 2,5 cm more of the adhesive than the tear;
- Make the edges rounded to avoid to unglue after is glue;
- Apply on both sides of the tear.

LINE BREAKAGE

Along with your kit you get a 1.1 thickness line to make a little repair. When you repair we advise you to sew the unsowed point after you check the measure. Do not knot because it may diminish up to 80 % of the line resistance.

SEALING

Along with your kit you get sealing for the carabines. Do not leave your risers without them because they avoid the movement of the screw nut making it impossible their opening.

ZIPPER

The backpack zipper must open and close softly. If there is any difficulty to move it you must apply paraffin or a spray lubricant to diminish the attrition among the components. You will notice the difference when you move it.

It is possible most of the times you fix by yourself the zipper. In case it does not close any more just pull it until the beginning of the position and with a pliers press both sides of the zipper.

Warning

- We advise you the maintenance and repairs be made by the manufacturer or by a registered workshop.

WARRANTY

Every paraglider manufactured has a Warranty of 3 Years or 300 Hours of Flight, whichever comes first. Our research technology in combination with the use of highly quality material and the adoption of new production methods allow us to offer to you, our client, this great advantage. This guaranty includes the cost free repair or substitution of material with new ones that are in perfect conditions. The criteria depend on the manufacture.

WARRANTY TERMS

1. This warranty is valid for all SOL Paraglliders with LTF, EN or AFNOR certification, rated for leisure use only. The warranty includes defective materials and production errors.
2. This warranty does not include paragliders rated for professional use (school, competitions, aerobatics, etc). All paragliders used for competition or acro have a 1 year warrant for production errors.
3. This warranty is defined as repair or substitution of the defective paraglider parts determined by the producer.

WARRANTY PRE-REQUISITES

1. A three-copied filled-out form: One copy to be sent to SOL Paragliders within 30 days after purchase; one copy to the sales person and one copy to the purchaser.
2. All flights must be logged providing information on date, place and length of flight.

3. The equipment must be kept in accordance with the instructions provided in this manual. All the storage, folding, cleaning and care instructions must be carefully taken.
4. Maintenance and inspections can only be performed by the manufacturer or authorized shop and must be properly documented.
5. The first inspection check is mandatory completing 24 months or 100 flights, whichever comes first.
6. After the first inspection any wing has to be checked yearly or at each 100 flights, whichever comes first. In any of these inspections may occur that a shorter period of time for the next inspection will be defined (f. ex. 6 months or 50 flights). It is of utmost importance to follow these guidelines. Without performing the mandatory inspections, the paraglider loses its certification and the respective SOL warranty becomes null and void.
7. All shipping and handling expenses are paid by the owner. 7. The final decision on exchanging or repairing the equipment will be decided by SOL Paragliders. The corresponding equipment has to be sent to SOL Paragliders in the following way:
 - a) Accompanied by a copy of all inspections and a log of all flights.
 - b) Accompanied by a copy of the SOL Paragliders warranty form.

THIS WARRANTY DOES NOT COVER

1. Any alterations on original fabric colors, lines and risers.
2. Any damage caused by chemical products, sand, friction, cleaning products or salt water.
3. Any damage caused as a result of errors during operation of the Paraglider, incidents or emergency situations.
4. Any damage caused by inadequate operation of the Paraglider.
5. Paragliders that may have been subjected of any alteration from the original design and without proper permission from SOL Paragliders.
6. Damages caused by inappropriate transport, storage or settings of the paraglider.
7. Damages caused by the use of not compatible components with the paraglider.
8. Damages caused by the use of inappropriate packaging for the transport.
9. Paragliders without original identification label and serial number.
10. Handling inadequately to the instructions given in the owner's manual.

NATURE AND ENVIRONMENT

Apart from self-evident things, like not leaving your rubbish behind, we would like to appeal for a thoughtful behavior towards animals, like birds of prey or game animals. If you notice, that your fly by affects those animals (like causing a shortening reaction) please increase your distance.

OUT OF USE

Disused paragliders need a proper disposal. If you are not sure about the correct removal, please send your glider to SOL or your flying school.

FINAL WORDS

Safety is the major theme of our sport. In order to fly safely, pilots must train, study, practice and be alert to the dangers around us.

In order to achieve excellent safety levels, we must fly regularly as much as possible, don't go beyond our limitations and avoid exposing ourselves to unnecessary dangers.

Learning to fly is a slow process and takes years, so don't pressure yourself. If conditions are not favorable, keep your equipment stored away.

Don't overestimate your skills and be honest with yourself. Every year we see many accidents which in most cases could be prevented with a minor adjustment.

We are a part of the community in which we live: friends, family and even people we don't necessarily know worry about us. Our obligation towards this community is to keep ourselves healthy and that at each landing we will be one landing happier than before. We fly so that we can feel more alive.

We wish you good and safe flights with your KUAT 2 .

SOL Paragliding Team !!

TECHNICAL FEATURES

TECHNICAL FEATURES

PORTUGUÊS	ENGLISH	FRANÇAIS	DEUTSCH	41	Unid.
Zoom	Zoom	Zoom	Zoom	1,22	
Células	Cells	Cellules	Anzahl Zellen	54	
Envergadura Projetada	Projected Span	Envergure projetée	Spannweite projiziert	11,63	m
Área Projetada	Projected Surface	Surface projetée	Projizierte Fläche	33,78	m ²
Alongamento Proj.	Projected A/R	Allongement projetée	Streckung projiziert	4,00	
Envergadura Real	Real wingspan	Envergure Réelle	Spannweite ausgelegt	14,41	m
Área Real	Real Surface	Surface Réelle	Fläche ausgelegt	39,00	m ²
Alongamento Real	REAL A/R	Allongement Réelle	Streckung ausgelegt	5,32	
Diâmetro das Linhas	Line Diameter	Diamètre suspente	Leinendurchmesser	0,6 – 1,0 – 1,2 – 2,1 – 2,4	mm
Altura	Height	Suspentage	Leinenlänge	926	cm
Perfil Máximo	Maximum Profile	Profil Max.	Maximale Profiltiefe	333	cm
Perfil Mínimo	Minimum Profile	Profil min.	Minimale Profiltiefe	85	cm
Peso da Vela	Weight	Poids	Gewicht	8,5	kg
Peso de Decolagem*	Take off Weight	Poids total volant	Startgewicht	140-220 308-484	kg lbl
Afundamento mínimo	Sink Rate Minimum	Taux de chute mini.	Minimale Sinkrate	1.0	m/s
Velocidade min.**	Minimum Speed**	Vitesse mini.**	Minimale Geschw.**	25+/-2	km/h
Velocidade**	Trim Speed**	Vitesse **	Geschwindigkeit**	40-44	km/h
Velocidade max.**	Maximum Speed**	Avec Accélérateud**	Mit Beschleuniger**	46-52	km/h
Planeio	Glide	Finesse	Gleitzahl	9,7	
Assentos	Places	Seat	Plätze	2	
Certificação	Certification	Certification	Zertifikation	B- TANDEM	

* Take Off Weight: Pilot , Glider, Harness and equipment(20kg -44 lb) ** Performance depends on pilot position and aerodynamic form of the harness.

The identification and information tag is found at the center of the wingtip.



PARTS LIST AND MATERIAL

All components are high standar and were chosen for a long life of your equipment.

PORTUGUÊS	ENGLISH	DEUTSCH	
Extradorso	Top	Obersegel	Wtx40 PU+Silicon Coating 40 gr/sm
Intradorso	Bottom	Untersegel	Wtx40 / Wtx36 Pu+Silicon Coating 40/36 gr/sm
Perfis/Reforços diagonais	Profiles/Diagonal Bands	Profile/Diagonalbänder	Pro-Nyl High Tenacity Nylon rip-stop Hard finish 42/36 gr/sm
Reforços	Reinforcements	Verstärkungen	Nylon Battens (Profile front)
Linhas	Lines	Leinen	Cousin 988 / Liros PPSLS
Tirantes	Risers	Gurte	Fitanew 19 x 2,0 mm flat multi Bl. 1.600 kg
Mosquetinhos	Carabiners	Karabiner	Ansung Precision 19 mm Bl 800 kg
Roldanas	Pulleys	Rollen	Sol PL14

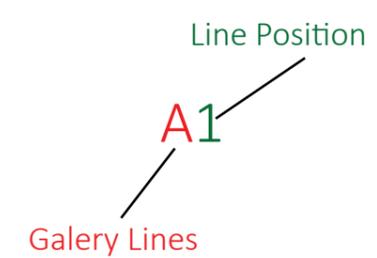
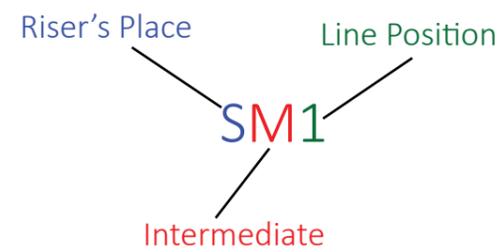
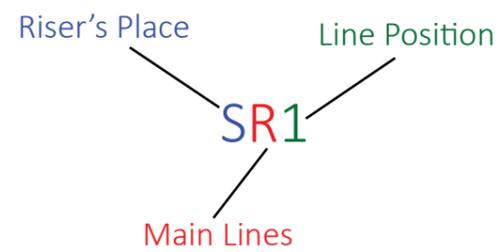
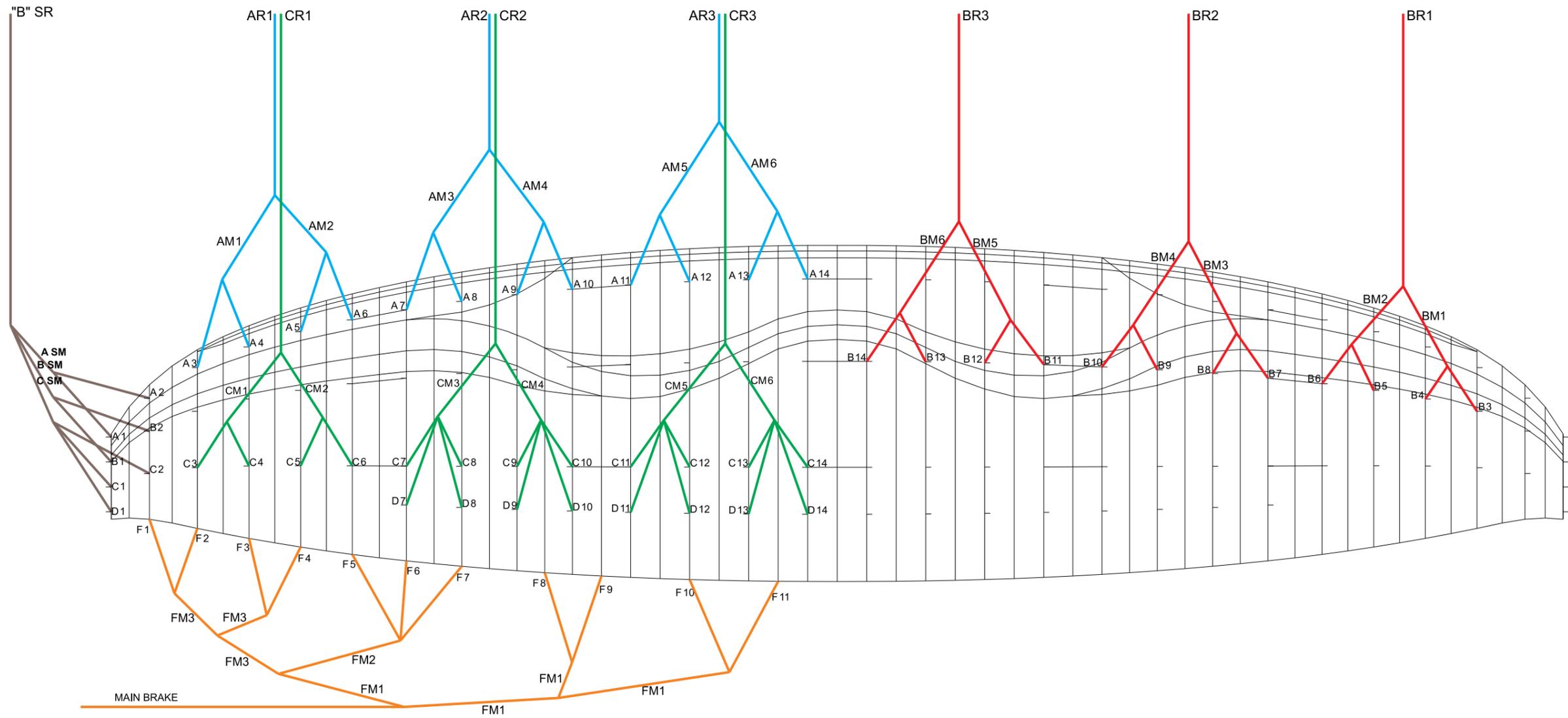
LINES

The nucleus of the principle lines of the KUAT 2 are made of beige-colored Technora with high tear strength and low deformation. They are coated with colored polyester. The lines are individual and have sewed loops at the extremities.

PORTUGUÊS	ENGLISH	DEUTSCH						
Tipo de Linha	Type of Line	Leinentyp	988-2,5	988-2,1	PPSLS 60	PPSLS 125	PPSLS 180	PPSLS 260
Fabricante de linhas	Line manufacturer	Leinenhersteller	Cousin FR	Cousin FR	Liros	Liros	Liros	Liros
Resistência da Linha	Line resistence	Leinenresistenz	401,4 daN	262,6 daN	50,0 daN	124,9 daN	150,0 daN	178,1 daN
Diâmetro	Diameter	Durchmesser	2,5 mm	2,1mm	0,6mm	1,0mm	1,2mm	1,6mm
Material do Núcleo	Material Core	Material des Kerns	Technora	Technora	Dynema	Dynema	Dynema	Dynema
Material revestimento	Material Cover	Material des Mantels	Polyester	Polyester	Polyester	Polyester	Polyester	Polyester
Resistência pós teste de fadiga	Line Strength bended	Bruchlast nach Knicktest	182,4 daN	181,2 daN	40,0 daN	121,4 daN	142,9daN	182,3daN



LINE LAYOUT



INSPECTION FORM

PARAGLIDER INSPECTION FORM	
Owner:	Date:
Address:	Neighborhood:
City:	State:
Email:	Phone:
Model:	Serial Number:
Top Colors:	Bottom Colors:

SERVICE EXECUTED / CHECKED	
Porosity Time Minutes / Seconds:	Tested by:
Report in conformity with the norm of the textile producer:	

Risers Check:	A	A1	B	C
Riser adjustment:				
Riser replacement:				
Others:				
Quick links in good condition:				
Quick links with problems to replace:				
Pulleys:	Replacement cause:			
Brake toggles:	Replacement cause:			
Other replacements:				

Lines Check:			
Problems noticed:			
Line replacements:	Yes:	No:	
Size:	Thickness:	Size:	Thickness:
Size:	Thickness:	Size:	Thickness:
Size:	Thickness:	Size:	Thickness:
Size:	Thickness:	Size:	Thickness:
Size:	Thickness:	Size:	Thickness:
Size:	Thickness:	Size:	Thickness:
Size:	Thickness:	Size:	Thickness:
Size:	Thickness:	Size:	Thickness:
Lines with load and symmetry check:			

Profile Check: verification of seams and profile condition:
Problems noticed:
Check bottom: All seams and panels checked
Problems noticed:
Check top: All seams and panels checked:
Problems noticed:

Report:	In great condition (New)
	Very good condition – Revision after 2 years
	Used, good condition – Revision after 100 flight hours or each year
	Used, tolerable condition – Revision after each 50 flights or each 6 months
	Very used, still flyable – Revision must be made in short periods
	Not recommended for flight
<i>In conformity of the international norm of paraglider certification, an annual revision of the equipment it is necessary. If the revisions are not made the paraglider loses his certification.</i>	



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