



# QUBIK

*User's manual*

## QUBIK

### EXPERIENCE EVERY JOURNEY

#### WELCOME

We wish to welcome you to our team and thank you for your confidence in our glider product line.

We would like to share the enthusiasm with which we created this wing and the importance and care we took in the design and manufacture of this new model in order to offer maximum pleasure on every flight with a Niviuk glider.

It's time to go further in the world of paramotoring. The Qubik offers excellent performance with a wide speed-range. A stable and safe progression wing ideal for those flights you've always dreamt of, but not yet dared to attempt. Start your engine and prepare to experience new thrills.

We are confident you will enjoy flying the QUBIK and will soon discover the meaning of our motto:

“The importance of small details”.

This is the user manual and we recommend you read it carefully.

**The Niviuk Team.**

## USER MANUAL

This manual provides you with the necessary information on the main characteristics of your new paraglider.

Whilst it provides information on the wing, it cannot be viewed as an instructional handbook and does not offer the training required to fly this type of paraglider. Training can only be undertaken at a certified paragliding school and each country has its own system of licensing. Only the aeronautical authorities of respective countries can determine pilot competence.

The information in this manual is provided in order to warn you against adverse flying situations and potential dangers.

Equally, we would like to remind you that it is important to carefully read all the contents of your new QUBIK manual.

Misuse of this equipment could lead to severe injuries or death. The manufacturers and dealers cannot be held responsible for misuse of the paraglider. It is the responsibility of the pilot to ensure the equipment is used correctly.

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## 1. CHARACTERISTICS

### 1.1 WHO IS IT DESIGNED FOR?

The QUBIK was designed for paramotor flights. Aimed at experienced and independent pilots who enjoy powered flight, whether they are undertaking long cross-country or short local flights. With the QUBIK they have a fast and high performing wing without sacrificing strength, solidity and safety typical of Niviuk wings. Pilots will also benefit from the latest advances and technologies of our sport.

### 1.2 CERTIFICATION

Air Turquoise thoroughly tested the structural strength of QUBIK and certifies its compliance with all DGAC stipulations. The test procedure was defined in accordance with the methodology of the EN 926-1:2015 and LTF NFL II-91/09 chapter 3 standards.

The shock test proved that the wing can resist 1200 daN of force. The load test passed the requirement to withstand the 5.25 G of its maximum take off load for 3 seconds. 228 kg.

Only the aeronautical authorities of respective countries can determine pilot competence

For further information on the flight test and the corresponding certification number, please see the final pages of this manual or see [niviuk.com](http://niviuk.com).

### 1.3 IN-FLIGHT BEHAVIOUR

The NIVIUK Team has carried out extensive and meticulous design work on the QUBIK. After several prototypes and many hours of test flying, numerous adjustments were made. These prototypes were then tested in all types of flight conditions. This intense development work supported by the combined experience of the whole team has resulted in a wing with unbeatable flight behaviour.

This intense development work was underpinned by the combined experience of the whole team and has resulted in a wing with incredible flight behaviour.

Thanks to the leading edge reinforcements and the SLE (Structured Leading Edge), the wing distinguishes itself with light handling, precise response, manoeuvrability, safety and high stability. With these characteristics, it is perfect for powered flight.

Its inflation behaviour is the first step to appreciating its obedient character. Its lightness, both in terms of weight and handling, has a positive impact on all its flying attributes, allowing you to fly with complete freedom.

The addition of SLE technology with its light weight and structured cells ensures that every inflation and take off remains simple and uneventful. Thanks to the QUBIK's controlled and progressive inflation rate the pilot remains in complete control of the wing throughout all stages of the take off. This allows extra time to position the wing in the perfect pre-launch position directly above the head.

The running phase is perhaps one of the most critical when taking off with a powered wing, so any technological assistance is an advantage to take off easily and safely. During take off in order to create sufficient lift traditional profiles demand high forward speed, in other words, a long and fast run. The new technological features on the QUBIK facilitate early lift off and therefore reducing the amount of time and physical effort

required when running.

Once airborne, the QUBIK wing impresses with precision in response, handling, safety, a sporty look and good performance. These are achieved thanks to the same SLE technology that brought us so many successes in high-level competitions and which we have now perfectly adapted to this paramotor wing.

It will very quickly become apparent to the pilot that the handling and manoeuvrability of the QUBIK remains light and efficient during all aspects of flight and even in the most adverse conditions every pilot input is met with an immediate and precise response.

When the trimmers are opened the wing's profile changes and accelerates, penetrating without any problems. The brakes are usable in all the trimmer positions, even accelerated.

The performance of this new wing is substantially above average for this type of glider.. The power required of the engine is in the low to medium range. Its consumption is much less than most wings due to the effectiveness of a glider perfectly designed to ensure the top stability and performance in all aspects of flight.

The QUBIK has the same advantages when landing as it does on take-off. With a low speed approach, a short final glide and with the pilot always in total control the QUBIK can land in the smallest of areas with precision and ease.

It is worthwhile remembering that the best paraglider in the hands of a bad pilot does not guarantee a happy ending. The QUBIK's passive safety measures should also be complemented by the passive safety offered by the pilot's other flying equipment, i.e. the harness, helmet, the emergency parachute etc. The extraordinary smooth behaviour of the QUBIK and common sense piloting will give you many hours of peaceful flying.

## 1.4 CONSTRUCTION, MATERIALS

The QUBIK has all the technological innovations used on other Niviuk gliders and is built with the most careful selection of current materials. It has all the current technology and accessories available to improve pilot comfort whilst increasing safety and performance.

In the design of all Niviuk products the team aims to ensure development and continuous improvement. The technologies developed in recent years have allowed us to develop greater, better wings. It is in this context that we would like to introduce the technologies included in this new model.

**RAM Air Intake** - this system is characterised by the arrangement of the air inlets, to ensure optimal maintenance of internal pressure. Thanks to this design, we were able to reduce their size, while maintaining the same air flow at all angles to improve laminar flow. More consistency across the whole speed range and better performance without compromising on safety.

**Titanium Technology (TNT)** - a revolutionary technique using titanium. Using Nitinol in the internal construction provides a more uniform profile and reduces the weight to gain efficiency in flight. Nitinol provides the highest level of protection against deformation, heat or breaks. The leading edge is more rigid and the wing surface remains perfectly taut, without creases or parasitic drag. This optimises glide in all phases of the flight. Because the flexible rods always return to their original shape, the integrity of the profile is never affected. Nitinol provides the highest level of protection against deformation, heat or breaks.

**Structured Leading Edge (SLE)** - the use of the SLE considerably reduces the amount of Mylar which was used in previous Niviuk wings and this also reduces the weight of the leading edge. Therefore it is easier to inflate this wing than a paraglider without this system.

**3D Pattern Cut Optimisation (3DP)** – the latest generation of wings require a new fabric panel pattern and cutting system. Creating separate panels for each of the sections at the front of the wing means the sail fabric is more taut and crease-free. During the cutting, the optimal orientation of the fabric section is selected, depending on its final location. If the fabric pattern is properly aligned with the axes of load, it suffers less deformation after repeated use, to the long-term benefit of the leading edge.

**3D Leading Edge (3DL)** - adding an extra seam to the longitudinal axis of the glider helps, on the one hand, give more consistency and volume to the profile (a more efficient 3D contour) and on the other, joins and shapes the leading edge panels. The fabric is guided by the panel position to ensure fewer creases and better load distribution. The result is a cleaner profile, which benefits the wing in terms of performance and durability.

**3DL** - adding an extra reinforced seam to the leading edge helps to ensure more consistency and volume in the profile. This provides a more efficient 3D contour.

**Reflex System Profile (RSP)** - with the RSP the engine does not need much power to achieve greater thrust, resulting in less consumption, more autonomy, less need for power, better durability, mechanical efficiency and increased performance.

The use of these technologies is a big technological leap forward in building wings and a big improvement in flight comfort.

For the construction process of the QUBIK we use the same criteria, quality controls and manufacturing processes as in the rest of our range. From Olivier Nef's computer to fabric cutting, the operation does not allow for even a millimetre of error. The cutting of each wing component is performed by a rigorous, extremely meticulous, automated computer laser-cutting robotic arm.

This program also paints the guideline markers and numbers on each individual fabric piece, thus avoiding errors during this delicate process. The jigsaw puzzle assembly is made easier using this method and optimises the operation while making the quality control more efficient. All Niviuk gliders go through an extremely thorough and detailed final inspection. The canopy is cut and assembled under strict quality control conditions facilitated by the automation of this process. Every wing is individually checked with a final visual inspection. The fabric used to manufacture the glider is light, resistant and durable. The fabric will not experience fading and is covered by our warranty. All lines are made from Technora with a polyester sheath.

The line diameter has been calculated depending on the workload and aims to achieve the required best performance with the least drag. The sheath protects the line cores from UV rays and abrasions. The lines are semi-automatically cut to length and all the sewing is completed under the supervision of our specialists.

Every line is checked and measured once the final assembly is concluded.

Each glider is packed following specific maintenance instructions as recommended by the fabric manufacturer.

Niviuk gliders are made of premium materials that meet the requirements of performance, durability and certification that the current market demands.

Information about the various materials used to manufacture the wing can be viewed in the final pages of this manual.

## 1.5 ELEMENTS/COMPONENTS

The QUBIK is delivered with a series of accessories that will greatly assist you in the maintenance of your paraglider:

- A Koli bag This bag is large enough to hold all equipment comfortably

and with plenty of space.

- An inner bag to protect the wing during storage and transport.
- An adjustable compression strap to compress the inner bag and reduce its volume.
- A repair kit with self-adhesive Ripstop tape in the same colour as the wing and spare parts to protect the maillons.

## 2 UNPACKING AND ASSEMBLY

### 2.1 CHOOSING THE RIGHT LOCATION

We recommend unpacking and assembling the wing on a training hill or a flat clear area without too much wind and free of obstacles. It will help you to carry out all the recommended steps required to check and inflate the QUBIK.

We recommend the whole installation procedure is supervised by a qualified professional instructor or official dealer. Only they can address any doubts in a safe and professional way.

### 2.2 PROCEDURE

Take the QUBIK out of the rucksack, open and unfold it on the ground with the lines positioned on the undersurface, oriented in the direction of inflation. Check the cloth and lines are undamaged and all maillons connecting the lines and risers are locked. Identify, and if necessary untangle, the A, B, C and the brake lines and corresponding risers. Make sure that there are no knots.

### 2.3 ASSEMBLY WITH THE ENGINE

After carefully laying out the wing connect the risers to the harness/engine according to the paramotor manufacturer instructions and set the trimmers to the neutral position.

Check the engine manufacturer's specification on attachment points.

The QUBIK risers are colour-coded.

- Right: green
- Left: red

This colour-coding makes it easier to connect the wing to the correct side and helps prevent pre-flight errors.

Correctly connect the risers to attachment points so that the risers and lines are correctly ordered and free of twists.

Check that the carabiners are properly fastened and securely locked.

### 2.4 HARNESS TYPE

Check the engine manufacturer's specification on attachment points. Before any flight commences it is strongly recommended that the pilot checks the connection of the wing to the harness/engine and whilst seated in the harness checks the length of the brake lines, that they can easily reach the handles and also easily reach and operate the trimmers on both sides. The QUBIK is fitted with two brake height options so the pilot can choose their optimal the brake position.

### 2.5 SPEED-BAR

The speed-bar is a means of temporary acceleration by changing the flow over the profile. The speed system comes pre-installed on the risers and is not modifiable as it conforms to the measurements and limits stipulated in its certification.

The QUBIK includes a speed system with with a differential between the A-D risers of 16 cm.

The speed system is engaged when the pilot pushes the speed-bar - not included as standard with this glider model - with their feet (see 2.5.1 Speed system assembly)

The speed system uses an action/reaction system. Released, the speed-bar is set to neutral. When the bar is pushed using the feet, the wing accelerates. The speed can be regulated by varying the pressure on the bar. Once the pressure on the bar is released, the speed system returns to the neutral setting.

The speed system is efficient, sensitive and precise. The pilot can use the system whenever they want during the flight. In the neutral position the glider will fly at the standard speed and glide. Using full speed-bar, the wing will fly at maximum speed, but the glide will be adversely affected.

- Released speed-bar: the A, B, C and D-risers are aligned.
- Full speed-bar: the difference between the A – D risers becomes: 16 cm in all sizes

#### **Please note!**

The use of the speed system results in changes to the speed and reactions of the wing. For more information, please see the certification report.

#### 2.5.1. Speed system assembly

The speed-bar consists of the bar that the pilot pushes with their feet, as well as the two cords that connect it to the speed system components on the risers. Once you have chosen the type of speed-bar you prefer, you must install it. Some considerations:

- You should use the type of speed-bar you consider appropriate, depending on the type of harness, personal preferences, etc.
- The speed-bar is detachable to facilitate its connection and/or disconnection to the risers as well as subsequent adjustment.
- To connect it to the harness, please follow the instructions of the harness manufacturer. The majority of harnesses have a speed system pre-installed.
- The standard connection of the speed-bar to the speed system is via

Brummel hooks, where two slots in the hooks are interlocked, making their connection / disconnection easy. However, any connection system that is safe may be used.

#### 2.5.2. Changing the riser cords

In spite of the speed system having pulleys with bearings to reduce friction to a minimum, the frequency with which the speed-bar is used causes the cord to wear and you may need to replace them.

In all Niviuk gliders the speed system cords on the risers are completely removable and easily replaceable. You can use the Brummel hooks, not use them, remove them, use another type of connector, etc. It is even possible to fix the speed-bar cords directly to the speed system on the risers. This last option makes the connection / disconnection more laborious, but means the cord has maximum travel without obstructions or restrictions which is very useful for some models of harnesses.

### 2.6 TRIMMERS

Using the trimmers:

The trimmers are an adjustable profile modification system. They are activated by releasing trimmers. To open the trimmers, press the trim tab inwards until the tape is released. Release the tape until it is in the desired position. When the trim tab is no longer pressed, the tape is locked in that position. Colloquially this is known as “releasing” or “opening” the trimmers.

Once it is locked in that position, it will not release automatically and return to its initial position. The pilot is solely responsible for opening and closing the trimmers.

To close the trimmers, pull the tape down using the handle - without touching the trimmer tabs. Release the handle when you reach the required position. Colloquially this is called “closing” the trimmers. The trimmers must be applied symmetrically.

- Trimmers closed or in the neutral position: The A, B, C, D risers are aligned.
- Trimmers fully open: the difference between the A - C-risers becomes: 24.5 cm in all sizes

### Take off

Thanks to the profile of the QUBIK, all aspects of take off can be controlled using the trimmers.

The SLE system optimally positions the cells openings of the leading edge and thus assuring the rapid formation of the wing profile. This contribution is in itself already a huge advantage when attempting to take off in nil wind conditions, but the correct use of the trimmers at this time will further facilitate an easy take-off. In nil wind and without the application of trimmers the QUBIK inflates easily and effortlessly. However, by adjusting the trimmers we can control both the inflation and the speed at which the wing rises. We should not confuse the speed of the inflation with the speed of the forward run required. It is important to remember that the minimum take-off speed is achieved with the trimmers closed and as the trimmers are opened more speed will be required. Therefore every pilot should be aware of the trimmer settings and make any necessary adjustments appropriate to the conditions, the terrain and pilot skill.

### In flight

The trimmers on the QUBIK are highly and precisely adjustable, allowing the pilot to either increase speed by opening the trimmers or conversely decrease speed by closing them. Each trimmer is equipped with a clearly numbered scale to allow the pilot to easily check and confirm the exact setting of each. Each trimmer may be set to compensate for the torque effect of the engine, allowing fine tuning to ensure the wing remains in symmetrical flight. The pilot will very quickly become familiar with the scale and after just a few flights be able to optimise every flight by adjusting the trimmers to their most efficient setting.

With the trimmers closed and using just the full range of brake travel the QUBIK is a precise, light to handle and a fun machine to fly.

### Landing

The QUBIK offers the comfort of ending the flight with the perfect landing; large areas and long runs are no longer required.

Please note that in wind nil conditions the forward ground speed encountered may be significantly higher and during landing that speed must be decreased as safely as possible. This can be achieved by fully closing the trimmers and proportionately applying the brakes. If necessary, as the pilot reaches the ground a longer run off should also be carried out. When landing in moderate wind conditions, the ground speed is reduced so a simple and progressive application of the brakes will be enough for a perfect landing.

Landing with open or half open trimmers is possible, but it will be necessary to balance the application of the brakes to the position of the trimmers and the forward ground speed being experienced. Of course, open trimmers and an increase in forward ground speed when landing may require a larger landing area as opposed to when the trimmers are closed. The QUBIK very efficiently transforms forward speed into lift and inherently allows a wide margin for error either with or without wind.

### 2.7 INSPECTION AND WING INFLATION ON THE GROUND

After your gear has been thoroughly checked and the weather conditions deemed favourable for flying, inflate your QUBIK as many times as necessary to familiarise yourself with its behaviour. Inflating the QUBIK is easy and should not require a great deal of physical effort. Inflate the wing with a little pressure from the body using the harness. This may be assisted by using the A-lines. Do not pull on them; just accompany the natural rising movement of the wing. Once the wing is inflated to the overhead position, appropriate control with the brakes will be sufficient to hold it there.

## 2.8 ADJUSTING THE BRAKES

The length of the main brake lines are adjusted at the factory and conform to the length stipulated during certification. However, they can be changed to suit your flying style. It is advisable to fly with the original setting for a period of time to get used to the actual behaviour of the QUBIK. In case it is necessary to modify the brake length, loosen the knot, slide the line through the brake handle to the desired point and re-tighten the knot firmly.

Only qualified personnel should carry out this adjustment. You must ensure that the modification does not affect the trailing edge and slow the glider down without pilot input. Both brake lines should be symmetrical and the same length. We recommend using a clove hitch or bowline knot.

When changing the brake length, it is necessary to check that they do not engage when the speed-bar is used. When we accelerate, the glider rotates over the D-riser and the trailing edge elevates.

It is important to check that the brake is adjusted to take into consideration this extra distance during acceleration. With this profile deformation there is a risk of generating turbulence and causing a frontal or asymmetric collapse.

## 2.9 ADJUSTING THE BRAKE PULLEY

Depending on the position of the pilot during the flight or the height of the trike hang points, the QUBIK has the possibility of moving the brake pulleys to a variety of positions to ensure pilot comfort.

The pulley is fastened to the riser loop that can be adjusted easily. The riser has 2 possible fixing points (distributed along the entire riser) to accommodate the pulley.

## 3. THE FIRST FLIGHT

### 3.1 CHOOSING THE RIGHT LOCATION

For the first flight we recommend going to your usual flying area and that a qualified instructor is present and supervising the entire procedure.

### 3.2 PREPARATION

Repeat the procedures detailed in section 2 UNPACKING AND ASSEMBLY to prepare your equipment.

### 3.3 FLIGHT PLAN

Planning a flight before taking off to avoid possible problems later is always a good idea.

### 3.4 PRE-FLIGHT CHECK

Once ready, but before taking off, conduct another equipment inspection. Conduct a thorough visual check of your gear with the wing fully open, the lines untangled and properly laid out on the ground to ensure that all is in working order. Be certain the weather conditions are suited to your flying skill level.

### 3.5 WING INFLATION, CONTROL AND TAKEOFF

Whether taking off on foot or using a trike, the QUBIK does not require a different technique. The control of the QUBIK is intuitive and the wing inflates easily and progressively in a controlled manner. Any unwanted oscillation or required course correction can easily be controlled with gentle pilot input.

When the decision has been made to take off, only a short run is required and the QUBIK will quickly transform the forward speed and thrust of the engine into lift. Even with a trike, only a very short rolling distance

is required to achieve the desired forward speed of 25 km/h and take off. The QUBIK has been designed to easily and efficiently inflate whilst providing exceptional directional stability without pitching or hanging back behind the pilot. Excessive amounts of energy are not required when taking off with the QUBIK, simply set the trimmers to the correct positions (see 2.6)

### 3.6 LANDING

The QUBIK offers the comfort of ending the flight with the perfect landing; large areas and long runs are no longer required. Please note that in wind nil conditions the forward ground speed encountered may be significantly higher and during landing that speed must be decreased as safely as possible. This can be achieved by fully closing the trimmers and proportionately applying the brakes. If necessary, as the pilot reaches the ground a longer run off should also be carried out. When landing in moderate wind conditions, the ground speed is reduced so a simple and progressive application of the brakes will be enough for a perfect landing.

Landing with open or half open trimmers is possible, but it will be necessary to balance the application of the brakes to the position of the trimmers and the forward ground speed being experienced. Of course, open trimmers and an increase in forward ground speed when landing may require a larger landing area as opposed to when the trimmers are closed. The QUBIK very efficiently transforms forward speed into lift and inherently allows a wide margin for error either with or without wind.

### 3.7 PACKING

The QUBIK has a complex leading edge, manufactured using a variety of different materials and it must be packed carefully. A correct folding method is very important to extend the useful life of your paraglider.

It should be concertina-packed, with the leading edge reinforcements flat

and the flexible rods stacked one on top of the other. This method will keep the profile in its original shape and protect the integrity of the wing over time. Make sure the reinforcements are not bent or folded. It should not be folded too tightly to avoid damage to the cloth and/or lines.

At Niviuk we have designed the NKare Bag, a bag designed to assist you with rapid packing which helps maintain the integrity of the leading edge and its internal structures in perfect condition.

The NKare Bag guides you through the folding process, allowing you to concertina pack the wing with each rod on top of the other and then fold the wing as required. This folding system ensures that both the fabric and the reinforcements of the internal structure are kept in perfect condition.

## 4. IN FLIGHT

It is important to point out that the appropriate response to each adverse manoeuvre can vary from size to size; even within the same size at maximum or minimum load the behaviour and reactions of the wing may vary.

The performance and speed of the QUBIK depend directly on the engine power and wing-loading.

With the RSP (Reflex System Profile) the engine does not need much power to achieve greater thrust, resulting in less consumption, more autonomy, less need for power, better durability, mechanical efficiency and increased performance.

However, in order to get the maximum power out of this wing, we will need an engine that is able to push a highly loaded wing. Without the right wing-loading and without the required power, the wing will not operate to its full potential.

## 4.1 FLYING IN TURBULENCE

### Double Steering System

The QUBIK has two brake lines: the main brake (conventional brake) and the High Speed Tip (fixed to a separate handle on the B-riser). The High Speed Tip gives the pilot the ability to turn without pulling the brakes, thus avoiding deforming the profile and therefore preventing a decrease in performance and speed.



### High Speed Tip

The High Speed Tip on the QUBIK consists of a line attached to the wingtip. It enables the pilot to correct the direction easily and accurately without using the main brake controls and therefore, the performance of the wing is not affected.



### Torque Compensator

The High Speed Tip is a very efficient tool to compensate for the natural equal and opposite effect caused by engine inertia or torque. This line can be adjusted or set according to the needs of the pilot.

To become familiar with the manoeuvres described below, we recommend practising within the auspices of a licensed training outfit.

## 4.2 FLYING IN TURBULENCE

The QUBIK has an excellent profile to deal with incidents; it is very stable in all conditions and has a high degree of passive safety, even in turbulent conditions. All paragliders must be piloted for the prevailing conditions and the pilot is the ultimate safety factor.

We recommend active flying in turbulent conditions, always taking measures to maintain control of the wing, preventing it from collapsing and restoring the speed required by the wing after each correction.

Do not correct the glider (braking) for too long in case this provokes a stall. If you have to take corrective action, make the input then re-establish the correct flying speed.

## 4.3 POSSIBLE CONFIGURATIONS

To become familiar with the manoeuvres described below, we recommend practising within the environment of a licensed training outfit. You must adapt your use of the brakes depending on the wing-loading and avoid over-steering.

It is important to note that the type of reaction to a manoeuvre can vary from one size of wing to another, and even within the same size the behaviour and reactions may be different depending on the wing-loading.

In the test report, you will find all the necessary information on how to

handle your new wing during each of the tested manoeuvres. Having this information is crucial to know how to react during these manoeuvres in real flight, so you can deal with these situations as safely as possible.

### **Asymmetric collapse**

In spite of the QUBIK's profile stability, strong turbulent air may cause the wing to collapse asymmetrically in very strong turbulence, especially if you do not fly actively and prevent the collapse. In this case the glider conveys a loss of pressure through the brake lines and the harness. To prevent the collapse from happening, pull the brake handle on the affected side of the wing. It will increase the incidence of the wing (angle of attack). If the collapse does happen, the QUBIK will not react violently, the turning tendency is gradual and easily controlled. Weight-shift toward the open, flying side (the opposite side of the collapse) to keep the wing flying straight, while applying light brake pressure to that side if necessary. Normally, the collapsed side of the wing should then recover and reopen by itself. If it does not, then pull the brake handle on the collapsed side decisively and quickly all the way (100%) down. You may have to repeat this pumping action to provoke the re-opening of the deflated glider side. Do not over-brake or slow down the flying side of the wing (control the turn). Once the collapsed side is open make sure you return to normal flying speed.

### **Frontal collapse**

Due to the QUBIK's design, in normal flying conditions frontal collapses are unlikely to take place. The wing's profile has great buffering abilities when dealing with extreme incidence changes. A frontal collapse may occur in strong turbulent conditions, entering or exiting powerful thermals. Frontal collapses usually re-inflate without the glider turning, but a symmetrically applied quick braking action with a quick deep pump of both brakes will accelerate the re-inflation if necessary. Release the brake lines immediately to return to default glider air speed.

### **Negative spin**

A negative spin does not conform to the QUBIK's normal flight behaviour.

Certain circumstances however, may provoke a negative spin (such as trying to turn when flying at very low air speed whilst applying a lot of brake). It is not easy to give any specific recommendation about this situation other than quickly restoring the wing's default air speed and angle of attack by progressively reducing the tension on the brake lines. The normal wing reaction will be to have a lateral surge on the re-accelerated side with a rotation not greater than 360° before returning to default air speed and a straight flight path trajectory.

### **Parachutal stall**

The possibility of entering or remaining in a parachutal stall have been eliminated from the QUBIK. A parachutal stall is virtually impossible with this wing. If it did enter into a parachutal stall, the wing loses forward motion, becomes unstable and there is a lack of pressure on the brake lines, although the canopy appears to be fully inflated. To regain normal air speed, release brake line tension symmetrically and manually push on the A-lines or weight-shift your body to any side WITHOUT PULLING ON THE BRAKE LINES.

### **Deep Stall**

The possibility of the QUBIK stalling during normal flight is very unlikely. It could only happen if you are flying at a very low air speed, whilst over-steering or performing dangerous manoeuvres in turbulent air.

To provoke a deep stall, the wing has to be slowed down to its minimum air speed by symmetrically pulling the brake lines all the way (100%) down until the stall point is reached and held there. The glider will first pitch rearward and then reposition itself overhead, rocking slightly, depending on how the manoeuvre is done.

When entering a stall, remain clear-headed and ease off the brake lines until reaching the half-way point of the total brake travel. The wing will then surge violently forward and could reach a point below you. It is most important to maintain brake pressure until the glider has returned to its default overhead flying position.

To resume normal flight conditions, progressively and symmetrically release the brake line tension to regain air speed. When the wing reaches the overhead position, the brakes must be fully released. The wing will then surge forward to regain full air speed. Do not brake excessively at this moment as the wing needs to accelerate to pull away from the stall configuration. If you have to control a possible frontal collapse, briefly pull both brake handles down to bring the wing back up and release them immediately while the glider is still in transition to reposition itself overhead.

### **Cravat**

A cravat may happen after an asymmetric collapse, when the end of the wing is trapped between the lines. Depending on the nature of the tangle, this situation could rapidly cause the wing to spin. The corrective manoeuvres to use are the same as those applied in case of an asymmetric collapse: control the turn/spin by applying tension on the opposite brake and weight shift opposite to the turn. Then locate the 3STI stablo line (attached to the wing tip) trapped between the other lines. This line has a different colour and is located on the outside position of the B-riser.

Pull this line until it is taut. This action will help to release the cravat. If ineffective, fly down to the nearest possible landing spot, controlling the direction with both weight-shift and the use of the brake opposite to the tangled side. Be cautious when attempting to undo a tangle while flying near terrain or other paragliders; it may not be possible to continue on the intended flight path.

### **Over-controlling**

Most flying problems are caused by wrong pilot input, which then escalates into a cascade of unwanted and unpredicted incidents. We should note that the wrong inputs can lead to loss of control of the glider.

The QUBIK was designed to recover by itself in most cases. Do not try to over-correct it!

Generally speaking, the reactions of the wing, which are caused by too much input, are due to the length of time the pilot continues to over-control the wing. You have to allow the glider to re-establish normal flying speed and attitude after any type of incident.

## **4.4 FLYING WITHOUT BRAKE LINES**

If, for any reason at all, the QUBIK's brake lines become disabled in flight, it will become necessary to pilot the wing with the C-risers and weight shifting until landing. The C-lines steer easily because they are not under much tension, however you will need to be careful and not handle them too heavily in case this causes a stall or negative spin. The wing must be flown at full speed during the landing approach, and the C-risers will have to be pulled symmetrically all the way down shortly before contact with the ground. This braking method is not as effective as using the brake lines, and hence the wing will land with a higher ground speed.

## **4.5 LINE KNOT(S) IN FLIGHT**

The best way to avoid knots and tangles is to thoroughly inspect the lines as part of a systematic pre-flight check. If a knot is spotted during the take off phase, immediately abort the launch sequence and stop.

If inadvertently taking off with a knotted line, the glider drift will need to be compensated by weight-shifting to the opposite side and applying a slight brake pull to that side. Gently pull the brake line to see if the knot can be undone or try to locate the problem line. Try pulling it to see if the knot can be undone. Beware of trying to clear a knotted line or untangle a line in flight when close to the terrain. If the knot is too tight and cannot be undone, carefully and safely fly to the nearest landing zone. Be careful: do not pull too hard on the brake handles because there will be an increased risk of stalling the wing or entering a negative spin. Before attempting to clear a knot, make sure there are no other pilots flying in the vicinity.

## 5. LOSING ALTITUDE

Knowledge of different descent techniques could become vital in certain situations. The most suitable descent method will depend on the particular situation.

To become familiar with the manoeuvres described below, we recommend practising within the environment of a licensed training outfit.

### 5.1 BIG EARS

Big ears is a moderate descent technique, able to increase the sink rate to  $-3$  or  $-4$  m/s and reduces the ground speed by 3 to 5 km/h. The angle of attack and effective wing-loading will also increase due to the smaller surface area of the wing.

#### Standard technique

To perform the 'Big ears' manoeuvre, take the outermost line on each A-riser and simultaneously, smoothly pull them outward and downward. The wingtips will fold in.

To re-establish forward speed and the correct angle of attack, accelerate once the ears are pulled.

Keep the ears pulled in until you have lost the desired altitude. Let go of the lines to re-inflate the tips automatically. If they do not, try progressively pulling one brake then the other. We recommend inflating the wing tips asymmetrically, without major change to the angle of attack, especially when flying near the ground or flying in turbulence.

#### Beware of the risk of stalling!

The action of reaching for the outermost A-lines to make ears, can inadvertently mean pulling the brakes. The same can happen when we are holding the tips down with the outermost A-lines, it is possible to

accidentally affect the brakes. This can obviously lead to a significant speed decrease.

In paragliders with a very pronounced arc, pulling big ears means an increase in drag. On a very arched wing, the ears do not fold, they just hang. The increase of drag is more pronounced than on wings with a less pronounced arc.

The QUBIK is designed with little chord, which is good in normal flight conditions. However, this same damping is what can cause us to have problems to regain normal flying speed after a high increase of the angle of attack and the added drag of the ears. These particularities, together with turbulent thermic conditions, could cause an unintentional stall.

**The solution:** big ears may still be applied but you must be fully aware of the above-mentioned points and act accordingly. To avoid the stall, simply use half speed-bar (this is sufficient) to increase the speed and decrease the angle of incidence. This should allow you to maintain sufficient speed to prevent the stall. Take care not to pull the brakes while making the ears as this will make a stall more likely!

### 5.2 B3 TECHNIQUE

On the new generation paragliders the application of big ears can create a high degree of trailing edge turbulence. In addition, with the length of the chord and the arc of the wing, the ears have a tendency to "flap", increasing the turbulence and causing the QUBIK to lose too much airspeed, making it necessary for the pilot to recover it, either using the speed-bar or by releasing the ears.

This new rapid descent technique was first discovered by our Niviuk team pilots in 2009 while flying a competition prototype wing, which, because of its line plan and high aspect ratio would not allow big ears to be applied. In fact, big ears on 2-liner wings can often prove difficult. With the current 2 or 3-liner wings, the inability to pull big ears, or the risk involved in doing so, concerns many pilots who want to have a controlled

rapid descent technique. For the above reasons we recommend using the '3B3' line.

This technique easily increases the descent rate without causing problems and without the risk of causing a collapse while maintaining high speed.

How? Locate the 3B3 line on your risers and, as you would when applying big ears, simply pull down firmly and smoothly until you see both wingtips drop back slightly. The forward speed of the glider speed will then reduce slightly, quickly stabilise and then increase. You will then experience a descent rate of around 5-6 m/s.

We recommend the application of the speed-bar whilst using this technique. Controlled turning of the wing can easily be maintained by weight shifting, exactly the same as you would with big ears. During this manoeuvre, the first sensation is a decrease in relative wind and a slight backwards inclination of the wing, as if going backwards.

To exit the manoeuvre release the lines as you would with big ears, control the pitch and the wing will quickly adopt normal flight. This new technique allows a comfortable and controllable rapid descent without the risk of experiencing a cravat. It is very comfortable and makes turning simple. We advise you to first try this technique in smooth conditions with sufficient altitude above appropriate terrain.

This is a new controlled descent technique that only needs a little practise to be executed with total comfort and effectiveness.

### 5.3 B-LINE STALL

When carrying out this manoeuvre, the wing stops flying, loses all horizontal speed and the pilot is no longer in control of the paraglider.

The airflow over the profile is interrupted and the wing enters a situation similar to parachuting.

To enter this manoeuvre, the B-risers are gripped below the maillons and symmetrically pulled down together (approx. 20-30 cm) and maintained in that position.

Initiating the maneuver is physically demanding because it can take some strength to pull the risers down until the wing is deformed. After this, the physical effort is less. Continue to hold the risers in position. Once the wing is deformed, its horizontal speed will drop to 0 km/h; vertical descending speed increases to -6 to -8 m/s, depending on the conditions and how the manoeuvre is performed.

To exit the manoeuvre, simultaneously release both risers. The wing will then slightly surge forward and automatically return to normal flight. It is better to let go of the lines quickly rather than slowly.

This is an easy descent technique to perform, but remember that the wing will stop flying, will lose all forward horizontal speed, and its reactions will change markedly when compared to a normal flight configuration.

### 5.4 SPIRAL DIVE

This is a more effective way to rapidly lose altitude. Beware that the wing will experience and be subjected to a tremendous amount of descending and rotating speed (g-force), which can cause a loss of orientation and consciousness (blackout). This manoeuvre must therefore be done gradually to increase one's capacity to resist the g-force exerted on the body. With practise, you will fully appreciate and understand it. Only practise this manoeuvre at high altitude and with enough ground clearance.

To start the manoeuvre, first weight shift and pull the brake handle located on the inner side of the turn. The intensity of the turn can be controlled by braking slightly using the outer brake handle.

A paraglider flying at its maximum rotating speed can reach -20 m/s, or the equivalent of a 70 km/h vertical descent, and will stabilise in a spiral dive from 15m/s onwards.

Good enough reasons to familiarise yourself with the manoeuvre and understand how to exit it.

To exit this manoeuvre, the inner brake handle (down side of the turn) must progressively be relaxed while momentarily applying tension to the outer brake handle opposite to the turn. The pilot must also weight shift and lean towards the opposite side of the turn at the same time.

The exit should be performed gradually and smoothly so that the changes in pressure and speed can be noted.

When exiting the spiral, the glider will briefly experience an asymmetrical acceleration and dive, depending on how the manoeuvre was carried out.

Practise these manoeuvres at sufficient altitude and with moderation.

## 6. SPECIAL METHODS

### 6.1 TOWING

The QUBIK does not experience any problem whilst being towed. Only qualified winch personnel should handle the certified equipment to carry out this operation. The wing must be inflated similarly as during a normal take off.

It is important to use the brakes to correct the flight path alignment, especially if the glider begins to turn. Since the wing is subject to a slow airspeed and with a high positive angle of attack, we must make any corrections with a high degree of feel and delicacy, in order to avoid a stall.

### 6.2 ACROBATIC FLIGHT

Although the QUBIK was tested by expert acrobatic pilots in extreme situations, it was not designed for it. We do not recommend using this

glider for acrobatic flying!!!

We consider acrobatic flights to be any form of piloting different than standard flights. Learning acrobatic manoeuvres should be conducted under the supervision of qualified instructors within a school environment and over water with all safety/rescue elements in place. Centrifugal forces as high as 4 to 5 g can be exerted on the body and wing during extreme manoeuvres.

## 7. CARE AND MAINTENANCE

### 7.1 MAINTENANCE

Niviuk we are firmly committed to make technology accessible to all pilots. Therefore our wings are equipped with the latest technological advances gained from the experience of our R&D team.

Careful maintenance of your equipment will ensure continued top performance. Apart from the general checks, we recommend actively maintaining your equipment.

A pre-flight check is obligatory before each flight. If there is any damage to the equipment or you suspect any areas of the wing are susceptible to wear, you should inspect these and act accordingly.

All incidents involving the leading edge should be reviewed. A hard impact of the leading edge against a hard surface can damage the sail cloth.

Unsheathed lines provide increased performance, but this means more care should be taken when using and maintaining the wing.

Thanks to TNT, the wing has more safety and performance, but this means being more careful with the material. If any Nitinol rod is

damaged, they are easily replaceable.

The fabric and the lines do not need to be washed. If they become dirty, clean them with a soft damp cloth, using only water. Do not use detergents or other chemicals.

If your wing is wet from contact with water, place it in a dry area, air it and keep it away from direct sunlight.

Direct sunlight may damage the wing's materials and cause premature aging. After landing, do not leave the wing exposed to the sun. Pack it properly and stow it away in its backpack.

If your wing is wet from contact with salt water, immerse it in fresh water and dry it away from direct sunlight.

## 7.2 STORAGE

It is important for the wing to be correctly folded when stored. Keep it in the in a cool, dry place away from solvents, fuels, oils.

Do not leave your gear inside a car boot, as cars left in the sun can become very hot. A rucksack can reach temperatures up to 60°C.

Weight should not be laid on top of the equipment.

It is very important to pack the wing correctly before storage.

It is essential that the wing is properly folded and packed. In case of long-term storage it is advisable, if possible, that the wing is not compressed and it should be stored loosely without direct contact with the ground. Humidity and heating can have an adverse effect on the equipment.

## 7.3 PACKING INSTRUCTIONS

It is very important to pack the wing correctly before storage.

In case of long-term storage it is advisable, if possible, that the wing is not compressed and it should be stored loosely without direct contact with the ground. Humidity and heating can have an adverse effect on the equipment.

The QUBIK has a complex leading edge, manufactured using a variety of different materials and it must be packed carefully. A correct folding method is very important to extend the useful life of your paraglider. It should be concertina-packed, with the leading edge reinforcements flat and the flexible rods stacked one on top of the other. This method will keep the profile in its original shape and protect the integrity of the wing over time. Make sure the reinforcements are not bent or folded. It should not be folded too tightly to avoid damage to the cloth and/or lines.

The QUBIK comes with the KOLI BAG as standard. This bag allows rapid packing and transportation without problems.

At Niviuk we have designed the NKare Bag, a bag designed to assist you with rapid packing which helps maintain the integrity of the leading edge and its internal structures in perfect condition.

The NKare Bag guides you through the folding process, allowing you to concertina pack the wing with each rod on top of the other and thus protecting the SLE and then fold the wing in the correct position, depending on the lengths of the SLE. This folding system ensures that both the fabric and the reinforcements of the internal structure are kept in perfect condition.

## 7.4 CHECKS AND INSPECTIONS

### Inspections

The QUBIK must be periodically serviced. An inspection must be scheduled every 100 flying hours or every two years whichever comes

first (EN/LTF norm).

We strongly recommend that any repairs should be done in a specialist repair shop by qualified personnel. This will guarantee the airworthiness and continued certification of your QUBIK.

A thorough pre-flight check must be performed before every flight.

## 7.5 REPAIRS

In the case of small tears, you can temporarily repair these by using the Ripstop tape included in the repair kit, as long as no stitching is required to mend the fabric.

Any other tears or repairs should be done in a specialist repair shop by qualified personnel.

Damaged lines must be repaired or exchanged immediately.

Please refer to the line plan at the end of this manual.

Any repair should be done in a specialist repair shop by qualified personnel.

Niviuk can not be held responsible for any damage caused by incorrect repairs.

## 8. SAFETY AND RESPONSIBILITY

It is well known that free-flying with a paramotor or trike is considered a high-risk sport, where safety depends on the person who is practicing it.

Incorrect use of this equipment may cause severe, life-changing injuries to the pilot, or even death.

Manufacturers and dealers cannot be held responsible for your decisions, actions or accidents that may result from participating in this sport.

You must not use this equipment if you have not been properly trained to use it. Do not take advice or accept any informal training from anyone who is not properly qualified as a flight instructor

## 9. GARANTEE

The equipment and components are covered by a 2-year warranty against any manufacturing defect.

The warranty does not cover misuse of the equipment.

**DISCLAIMER:** Paragliding is an activity that requires concentration, specific knowledge and common sense. Take care! You should learn to paraglide under the auspices of a certified flying school. Take out personal insurance and make sure you have all the correct licences. Be modest when you evaluate your skill level in terms of meteorology.

Niviuk's liability for damages covers only its own products.

Niviuk can take no responsibility for your actions. When flying, accept the risk involved.

## 10. TECHNICAL DATA

### 10.1 TECHNICAL DATA

QUBIK			19	21	23	25	27
CELLS	NUMBER		59	59	59	59	59
ASPECT RATIO	FLAT		5,5	5,5	5,5	5,5	5,5
AREA	FLAT	m <sup>2</sup>	19	21	23	25,5	27,5
	PROJECTED	m <sup>2</sup>	16,47	18,2	19,94	22,1	23,84
CORD	MAXIMUM	m	2,29	2,41	2,52	2,66	2,76
LINES	TOTAL	m	262	277	291	307	320
	MAIN				2+1/4/3/2		
RISERS	NUMBER				A+A'/B/C/D		
	TRIMS	mm	140	140	140	140	140
	ACCELERATOR	mm	80	80	80	80	80
SPEED RANGE		km/h			TRIM = 40-56	MAX. 65	
TOTAL WEIGHT IN FLY	MIN-MAX	kg	60-100	70-120	80-140	100-160	110-180
GLIDER WEIGHT		kg	4,7	5,1	5,4	5,9	6,3
CERTIFICATION					DGAC		

## 10.2 MATERIALS DESCRIPTION

CANOPY	FABRIC CODE	SUPPLIER
UPPER SURFACE	N20 DMF	DOMINICO TEX CO (KOREA)
BOTTOM SURFACE	N20 DMF	DOMINICO TEX CO (KOREA)
PROFILES	9017 E29	PORCHER IND (FRANCE)
DIAGONALS	9017 E29	PORCHER IND (FRANCE)
LOOPS	LKI - 10	KOLON IND. (KOREA)
REINFORCEMENT LOOPS	W-420	D-P (GERMANY)
TRAILING EDGE REINFORCEMENT	MYLAR	D-P (GERMANY)
RIBS REINFORCEMENT	LTN-0.8 STICK	SPORTWARE CO.CHINA
THREAD	SERAFIL 60	AMAN (GERMANY)

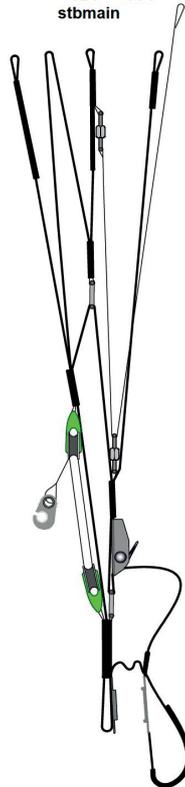
SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	TNL - 80	TEIJIM LIMITED (JAPAN)
UPPER CASCADES	TNL - 140	TEIJIM LIMITED (JAPAN)
MIDDLE CASCADES	TNL - 80	TEIJIM LIMITED (JAPAN)
MIDDLE CASCADES	TNL - 140	TEIJIM LIMITED (JAPAN)
MIDDLE CASCADES	TNL - 220	TEIJIM LIMITED (JAPAN)
MAIN	TNL - 140	TEIJIM LIMITED (JAPAN)
MAIN	TNL - 220	TEIJIM LIMITED (JAPAN)
MAIN	TNL - 280	TEIJIM LIMITED (JAPAN)
MAIN	TNL - 400	TEIJIM LIMITED (JAPAN)
MAIN BREAK	TNL - 280	TEIJIM LIMITED (JAPAN)
THREAD	SERAFIL 60	AMAN (GERMANY)

RISERS	FABRIC CODE	SUPPLIER
MATERIAL	WD103	COUSIN (FRANCE)
COLOR INDICATOR	PAD	TECNI SANGLES (FRANCE)
THREAD	V138	COATS (ENGLAND)
MAILLONS	MRI4	ANSUNG PRECISION (KOREA)
PULLEYS	ID018041	RONSTAN (AUSTRALIA)

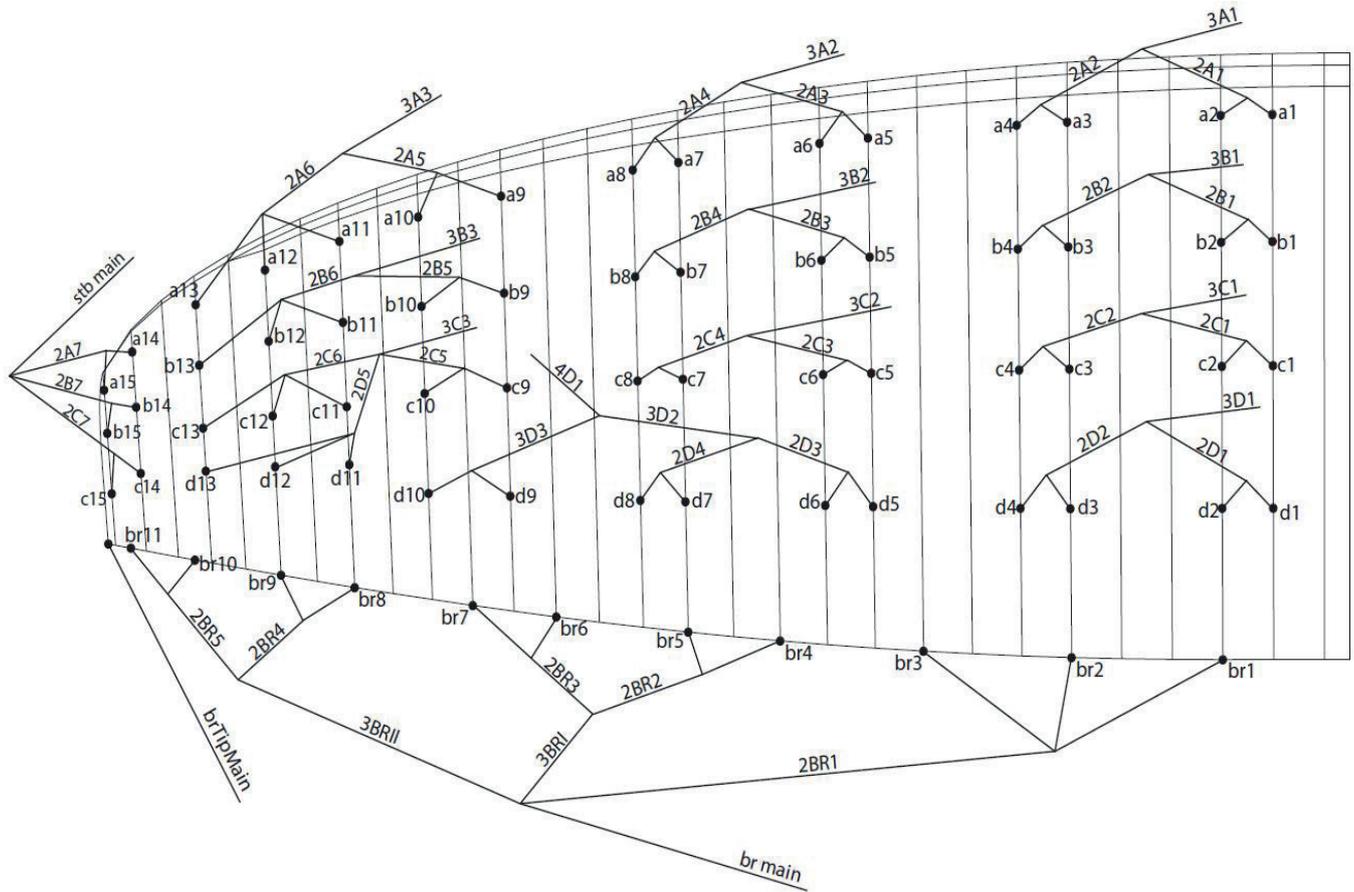
### 10.3 RISERS PLAN

<b>A</b>	<b>A'</b>	<b>B</b>	<b>C</b>	<b>D</b>
3A1	3A3	3B1	3C1	3D1
3A2		3B2	3C2	4D1
		3B3	3C3	

stbmain



# 10.4 SUSPENSION PLAN



## 10.5 DIMENSIONS QUBIK 19

LINES HEIGHT MM					
	A	B	C	D	br
1	5660	5576	5612	5714	6760
2	5617	5534	5561	5656	6367
3	5580	5500	5526	5624	6188
4	5603	5523	5559	5666	6030
5	5563	5490	5519	5677	5929
6	5532	5461	5482	5618	5882
7	5518	5460	5483	5558	5921
8	5546	5491	5521	5584	5793
9	5497	5451	5517	5582	5691
10	5431	5391	5422	5644	5503
11	5385	5354	5365	5405	5375
12	5331	5310	5309	5346	5194
13	5342	5329	5337	5369	
14	5130	5101	5149		
15	5086	5079	5143		

RISERS LENGHT mm				
A	B	C	D	
485	485	485	520	STANDARD
485	555	625	730	TRIMMER OPENED
406	515	625	770	ACCELERATED

## 10.6 DIMENSIONS QUBIK 21

LINES HEIGHT MM					
	A	B	C	D	br
1	5970	5881	5919	6027	7075
2	5926	5838	5865	5966	6669
3	5888	5804	5831	5935	6491
4	5913	5829	5866	5979	6335
5	5874	5796	5828	5993	6229
6	5842	5767	5789	5931	6180
7	5829	5768	5791	5869	6221
8	5859	5800	5832	5897	6074
9	5807	5759	5829	5896	5959
10	5738	5696	5730	5963	5749
11	5691	5657	5671	5711	5603
12	5634	5611	5612	5650	5485
13	5646	5632	5642	5675	
14	5425	5393	5444		
15	5378	5370	5437		

RISERS LENGHT mm				
A	B	C	D	
485	485	485	520	STANDARD
485	555	625	730	TRIMMER OPENED
406	515	625	770	ACCELERATED

## 10.7 DIMENSIONS QUBIK 23

LINES HEIGHT MM					
	A	B	C	D	br
1	6265	6173	6212	6326	7354
2	6219	6128	6156	6262	6936
3	6182	6094	6122	6231	6757
4	6208	6122	6160	6278	6603
5	6169	6090	6121	6295	6492
6	6136	6059	6081	6231	6441
7	6124	6061	6085	6167	6484
8	6156	6096	6128	6196	6321
9	6104	6053	6127	6196	6195
10	6032	5987	6024	6266	5966
11	5984	5947	5962	6004	5804
12	5925	5899	5901	5940	5824
13	5938	5921	5932	5967	
14	5703	5671	5724		
15	5654	5647	5717		

RISERS LENGHT mm				
A	B	C	D	
485	485	485	520	STANDARD
485	555	625	730	TRIMMER OPENED
406	515	625	770	ACCELERATED

## 10.8 DIMENSIONS QUBIK 25

LINES HEIGHT MM					
	A	B	C	D	br
1	6617	6519	6561	6681	7720
2	6569	6472	6503	6615	7287
3	6533	6440	6470	6585	7107
4	6561	6470	6510	6635	6956
5	6521	6437	6472	6655	6839
6	6487	6405	6430	6588	6784
7	6477	6410	6436	6520	6829
8	6511	6446	6482	6551	6647
9	6457	6403	6481	6554	6508
10	6381	6334	6373	6628	6257
11	6331	6292	6309	6353	6077
12	6269	6242	6244	6286	6073
13	6283	6265	6278	6314	
14	6038	6003	6058		
15	5986	5978	6051		

RISERS LENGHT mm				
A	B	C	D	
485	485	485	520	STANDARD
485	555	625	730	TRIMMER OPENED
406	515	625	770	ACCELERATED

## 10.9 DIMENSIONS QUBIK 27

LINES HEIGHT MM

	A	B	C	D	br
1	6886	6785	6827	6953	8056
2	6837	6737	6768	6885	7611
3	6801	6704	6735	6855	7430
4	6831	6735	6777	6908	7281
5	6792	6704	6739	6930	7159
6	6757	6672	6696	6860	7102
7	6747	6677	6704	6792	7149
8	6782	6715	6752	6824	6953
9	6728	6671	6753	6828	6804
10	6650	6600	6641	6906	6539
11	6598	6556	6573	6620	6345
12	6534	6505	6507	6550	6370
13	6548	6529	6542	6580	
14	6293	6257	6314		
15	6239	6231	6306		

RISERS LENGHT mm

	A	B	C	D	
	485	485	485	520	STANDARD
	485	555	625	730	TRIMMER OPENED
	406	515	625	770	ACCELERATED



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE



FICHE D'IDENTIFICATION ULM DE CLASSE 1

D S A C

(à joindre à la carte d'identification)

a	b	c	d	e	f	Révis <sup>n</sup>
B	1	0	1	S	F	0 3 3 7 8 E
						-

- a) Construction en série : B - autres cas : A
- b) Monoplace : 1 - Biplace : 2
- c) Paramoteur : 01 - Pendulaire : 02 - Multiaxe : 03 - Autogire : 04 - Aérostat : 05 - ULM à motorisation auxiliaire : 1A - 2A - 3A - Hélicoptère : 06
- d) Code de l'autorité aéronautique
- e) Numéro d'ordre
- f) Utilisation : Loisir : L - Activité particulière : T - Loisir et activité particulière : E

Appellation ou type d'ULM	QUBIK - 19
Constructeur	NIVIUK GLIDERS / AIR GAMES S.L.
Adresse	Carrer del Ter, 6 nave D 17165 LA CELLERA DE TER - GIRONA - ESPAGNE

DESCRIPTION DE L'ULM

Activités particulières prévues	n/a			
Options prévues	n/a			
Masse minimale	Masse maximale	Voilure		
		Fabricant	Modèle/Référence	
60 kg	100 kg	NIVIUK	QUBIK - 19	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
MANUEL QUBIK	MANUEL QUBIK	19 m <sup>2</sup>	1200 daN	
Limitations du constructeur de la voie vs-à-vis des GMP	Puissance maximum : 36 CV			



Pour le Ministre chargé de l'Aviation Civile  
Document établi le 19 Décembre 2018

Visa de l'autorité  
Chef du pôle navigabilité

A remplir par le constructeur d'ULM en série ou par son représentant pour toute copie conforme remise à l'acheteur.  
Je soussigné ..... certifie que TULM, numéro de série ..... est conforme au dossier technique ayant fait l'objet de la présente fiche d'identification.

à ..... le .....  
signature et cachet de l'entreprise



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE



FICHE D'IDENTIFICATION ULM DE CLASSE 1

D S A C

(à joindre à la carte d'identification)

a	b	c	d	e	f	Révis <sup>n</sup>
B	1	0	1	S	F	0 3 3 7 9 E
						-

- a) Construction en série : B - autres cas : A
- b) Monoplace : 1 - Biplace : 2
- c) Paramoteur : 01 - Pendulaire : 02 - Multiaxe : 03 - Autogire : 04 - Aérostat : 05 - ULM à motorisation auxiliaire : 1A - 2A - 3A - Hélicoptère : 06
- d) Code de l'autorité aéronautique
- e) Numéro d'ordre
- f) Utilisation : Loisir : L - Activité particulière : T - Loisir et activité particulière : E

Appellation ou type d'ULM	QUBIK - 21
Constructeur	NIVIUK GLIDERS / AIR GAMES S.L.
Adresse	Carrer del Ter, 6 nave D 17165 LA CELLERA DE TER - GIRONA - ESPAGNE

DESCRIPTION DE L'ULM

Activités particulières prévues	n/a			
Options prévues	n/a			
Masse minimale	Masse maximale	Voilure		
		Fabricant	Modèle/Référence	
70 kg	120 kg	NIVIUK	QUBIK - 21	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
MANUEL QUBIK	MANUEL QUBIK	21 m <sup>2</sup>	1200 daN	
Limitations du constructeur de la voie vs-à-vis des GMP	Puissance maximum : 36 CV			



Pour le Ministre chargé de l'Aviation Civile  
Document établi le 19 Décembre 2018

Visa de l'autorité  
Chef du pôle navigabilité

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à ..... le .....  
signature et cachet de l'entreprise



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE



FICHE D'IDENTIFICATION ULM DE CLASSE 1

D S A C

(à joindre à la carte d'identification)

a	b	c	d	e	f	Révis <sup>n°</sup>
B	1	0	1	S	F	0 3 3 8 0 E

- a) Construction en série : B - autres cas : A
- b) Mono-place : 1 - Biplace : 2
- c) Paramoteur : 01 - Propulsé(e) : 02 - Multiaxe : 03 - Autogire : 04 - Aérostat : 05 - ULM à motorisation auxiliaire : 1A - 2A - 3A - Hélicoptère : 06
- d) Code de l'autorité aéronautique
- e) Numéro d'ordre
- f) Utilisation : Loisir : L - Activité particulière : T - Loisir et activité particulière : E

Appellation ou type d'ULM	QUBIK - 23
Constructeur	NIVIUK GLIDERS / AIR GAMES S.L.
Adresse	Carrer del Ter, 6 nave D 17165 LA CELLERA DE TER - GIRONA - ESPAGNE

DESCRIPTION DE L'ULM

Activités particulières prévues	n/a			
Options prévues	n/a			
Masse minimale	Masse maximale	Voiture		
		Fabricant	Modèle/Référence	
80 kg	140 kg	NIVIUK	QUBIK - 23	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
MANUEL QUBIK	MANUEL QUBIK	23 m²	1200 daN	
Limitations du constructeur de la voile vis-à-vis des QMP	Puissance maximum : 36 CV			



Benoit  
Pour le Ministre chargé de l'Aviation Civile  
Document établi le : 13 Décembre 2018

Chef du pôle  
Visa de l'autorité

A remplir par le constructeur d'ULM en série ou par son représentant pour toute copie conforme remise à l'acheteur.

Je soussigné, ..... certifie que l'ULM, numéro de série ..... est conforme au dossier technique ayant fait l'objet de la présente fiche d'identification.

à ..... le : .....  
signature et cachet de l'entreprise



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE



FICHE D'IDENTIFICATION ULM DE CLASSE 1

D S A C

(à joindre à la carte d'identification)

a	b	c	d	e	f	Révis <sup>n°</sup>
B	1	0	1	S	F	0 3 3 8 1 E

- a) Construction en série : B - autres cas : A
- b) Mono-place : 1 - Biplace : 2
- c) Paramoteur : 01 - Propulsé(e) : 02 - Multiaxe : 03 - Autogire : 04 - Aérostat : 05 - ULM à motorisation auxiliaire : 1A - 2A - 3A - Hélicoptère : 06
- d) Code de l'autorité aéronautique
- e) Numéro d'ordre
- f) Utilisation : Loisir : L - Activité particulière : T - Loisir et activité particulière : E

Appellation ou type d'ULM	QUBIK - 25
Constructeur	NIVIUK GLIDERS / AIR GAMES S.L.
Adresse	Carrer del Ter, 6 nave D 17165 LA CELLERA DE TER - GIRONA - ESPAGNE

DESCRIPTION DE L'ULM

Activités particulières prévues	n/a			
Options prévues	n/a			
Masse minimale	Masse maximale	Voiture		
		Fabricant	Modèle/Référence	
100 kg	160 kg	NIVIUK	QUBIK - 25	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
MANUEL QUBIK	MANUEL QUBIK	25,60 m²	1200 daN	
Limitations du constructeur de la voile vis-à-vis des QMP	Puissance maximum : 36 CV			



Benoit  
Pour le Ministre chargé de l'Aviation Civile  
Document établi le : 13 Décembre 2018

Chef du pôle  
Visa de l'autorité

A remplir par le constructeur d'ULM en série ou par son représentant pour toute copie conforme remise à l'acheteur.

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à ..... le : .....  
signature et cachet de l'entreprise



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE



D S A C

FICHE D'IDENTIFICATION ULM DE CLASSE 1

(à joindre à la carte d'identification)

a	b	c	d	e	f	Révisi <sup>n</sup>
B	1	0	1	S	F	0 3 3 8 2 E
						-

- a) Construction en série - B - autres cas : A
- b) Monoplace : 1 - Biplace : 2
- c) Paramoteur : 01 - Pédoncule : 02 - Multiaxe : 03 - Autogre : 04 - Aérostat : 05 - ULM à motorisation auxiliaire : 1A - 2A - 3A - Hélicoptère : 06
- d) Code de l'autorité aéronautique
- e) Numéro d'ordre
- f) Utilisation : Locaux : L - Activité particulière : T - Loisir et activité particulière : E

Appellation ou type d'ULM	QUBIK - 27
Constructeur	NVIUK GLIDERS / AIR GAMES S.L.
Adresse	Carrer del Ter, 6 nave D 17165 LA CELLERA DE TER - GIRONA - ESPAGNE

DESCRIPTION DE L'ULM

Activités particulières prévues	n/a			
Options prévues	n/a			
Masse minimale	Masse maximale	Voilure		
		Fabricant	Modèle/Référence	
110 kg	180 kg	NVIUK	QUBIK - 27	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
				MANUEL QUBIK
Limitations du constructeur de la voile vis-à-vis des GMP		Puissance maximum : 36 CV		



Pour le Ministre chargé de l'Aviation Civile  
Document établi le 13 Décembre 2018

Visa de l'autorité

Chef du pôle n. 1

A remplir par le constructeur d'ULM en série ou par son représentant pour toute copie conforme remise à l'acheteur.

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 **niviuk**  
——— AMAZING ADVENTURES ———