

A purple paraglider with green accents is suspended in the air, positioned in front of a rugged, snow-covered cliff face. The sky is a dark, overcast grey. Below the cliff, the ocean is visible with white-capped waves crashing against the base of the rock.

KOUGAR 3

User's manual

KOUGAR 3

LIMITLESS POSSIBILITIES

WELCOME

We wish to welcome you to our team and thank you for your confidence in our KOUGAR 3 product line.

We would like to share the enthusiasm with which we created the KOUGAR 3 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 KOUGAR 3 glider.

The KOUGAR 3 is ready to revolutionise the world of paramotoring. Let yourself be inspired by the confidence this wing gives you and set off in search of new adventures. The KOUGAR 3 is part of the new generation of Niviuk paramotor wings offering a high level of technological innovations combined with very intuitive and accessible handling. The complexity of the design makes it easy to fly and allows long cross-country flights in a much more efficient and relaxed way.

We are confident you will enjoy flying this glider 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.

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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 KOUGAR 3 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?

For experienced and/or competition pilots who want speed and a solid wing.

Its fast but maneuverable character makes it the ideal glider for navigation, competition and cross-country flights.

A high performance but simultaneously very comfortable glider but it must be noted that this is a demanding wing with particular flight characteristics with potentially violent reactions in turbulence if the pilot is not able to fly actively.

1.2 CERTIFICATION

EN / DGAC

Air Turquoise thoroughly tested the structural strength of KOUGAR 3 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 1000 daN of force. The load test passed the requirement to withstand the 5.25 G of its maximum take off load for 3 seconds. 267 kg.

DGAC is a legal document that confirms the commitment that the brand will meet all the requirements for a particular wing to function correctly and grant maximum safety to the pilot. In this way, we demonstrate that from the outset our wing was designed and developed with the sole objective of being flown with a paramotor, complying with the adequate performance and safety requirements across all weight-ranges.

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.

1.3 IN-FLIGHT BEHAVIOUR

The Niviuk Team has carried out extensive and meticulous design work on the KOUGAR 3. 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 KOUGAR 3's controlled and progressive inflation 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 KOUGAR 3 facilitate

early lift off and therefore reducing the amount of time and physical effort required when running.

Once airborne, the KOUGAR 3 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 KOUGAR 3 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. For more information see the sections Trimmers and Speed-bar.

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 KOUGAR 3 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 KOUGAR 3 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 KOUGAR 3's passive safety assets 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 KOUGAR 3 and common sense piloting will give you many hours of peaceful flying.

1.4 CONSTRUCTION, MATERIALS

The KOUGAR 3 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.

Drag Reduction Structure (DRS) - the trailing edge has been reinforced with small ribs in order to distribute the pressure more evenly. This results in excellent manoeuvrability and greater control and precision.

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 KOUGAR 3 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 of unsheathed Technora.

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 KOUGAR 3 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 KOUGAR 3 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 O-rings 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 KOUGAR 3.

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 paraglider 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 condition of the fabric and the lines for defects. Check the maillons/IKS connecting the lines to the risers to make sure they are fully closed and tightened. Identify, and if necessary untangle, the A, B, C and D-lines, 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.

The KOUGAR 3 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 the attachment points so that the risers and lines are correctly ordered and free of twists. Check that the IKS and 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 KOUGAR 3 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 KOUGAR 3 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.

Differential between risers (mm):

A	B	C	D	
500	500	500	500	STANDARD
500	545	590	668	OPEN TRIMM
350	425	500	608	ACCELERATED
350	470	590	743	OPEN TRIM + ACCELERATED

Please note!

The use of the speed system results in changes to the speed and reactions of the wing

It is the pilot's responsibility to decide the amount of speed-bar at any given moment, bearing in mind that the speed-bar is not the only means of acceleration. Care should be taken when the following elements interact with each other:

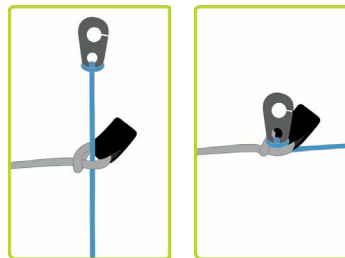
Accelerated	Trimmers	TIP	Brake	IN CALM AIR
100%	0%	100%	100%	
0%	100%	100%	100%	
50%	100%	100%	0%	
100%	100%	100%	0%	

The graph indicates the maximum use of speed-bar and trimmers in calm air. The increase of wind speed and turbulence must be assessed by the pilot who should consider the safety limits of the conditions before making any decision.

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 the 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.

Differential between risers (mm):

A	B	C	D	
500	500	500	500	NORMAL
500	545	590	668	OPEN TRIMMERS
350	425	500	608	SPEED-BAR
350	470	590	743	OPEN TRIMMERS + SPEED-BAR

Take off

Thanks to the profile of the KOUGAR 3, 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 KOUGAR 3 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 KOUGAR 3 are highly and precisely adjustable, allowing the pilot to either increase speed by opening the trimmers or conversely decrease speed by closing them.

The KOUGAR 3 is a precise, fun machine, capable of gliding when the engine is almost idle. All this whilst being able to use the brakes at any

time and with their full operational travel.

Please note!

the use of the trimmers results in changes to the speed and reactions of the wing.

It is the responsibility of the pilot to decide how much trimmer to use at any one time, bearing in mind that the trimmers are not the only means of acceleration. Care should be taken when the following elements interact with each other:

Accelerated	Trimmers	TIP	Brake	IN CALM AIR
100%	0%	100%	100%	
0%	100%	100%	100%	
50%	100%	100%	0%	
100%	100%	100%	0%	

The graph indicates the maximum use of speed-bar and trimmers in calm air. The increase of wind speed and turbulence must be assessed by the pilot who should consider the safety limits of the conditions before making any decision.

Landing

The KOUGAR 3 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 KOUGAR 3 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 KOUGAR 3 as many times as necessary to familiarise yourself with its behaviour. Inflating the KOUGAR 3 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 behavior of the KOUGAR 3. 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 KOUGAR 3 rotates over the C-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 TIP STEERING

The new location of this element makes its use easier and more efficient. This allows the pilot to operate and control the tips without having another element in his hand, thus facilitating its use at all times by not having to move their hand once the turn has started. Cross-country pilots are aware that to optimise performance it is important not to deform the profile. If you need to make small course corrections, the tip steering is available to you. This “stabilo steering” allows you to make small course corrections, without the need to lose performance. The same happens in turns, where it is possible to initiate them with the tip or once inside the turn modify the radius using the tip steering. Its use is simple. It is installed next to the brake, but does not pass through the pulley, allowing the pilot to utilise the line without applying more brake. It can be reached without needing to exert any pressure on it and it will return to its correct position on release.

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 KOUGAR 3 does not require a different technique. The control of the KOUGAR 3 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 KOUGAR 3 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 KOUGAR 3 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 KOUGAR 3, simply set the trimmers to the correct positions (see 2.6).

3.6 LANDING

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3.7 PACKING

The KOUGAR 3 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.

Another option is the Koli Bag, which allows you to pack the wing correctly, but at the same time quickly and easily. Just place the wing inside the Koli Bag and secure it with the compression straps. Perfect for short walks or to transport the wing in the car without the risk of damage.

4. IN FLIGHT

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

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

4.1 FLYING IN TURBULENCE

The KOUGAR 3 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 KOUGAR 3's 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

4.2 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.

Asymmetric collapse

In spite of the KOUGAR 3'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 KOUGAR 3 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, try to weight-shift towards the collapsed side. If this does not resolve the issue, pull the brake handle on the collapsed side decisively and quickly all the way (100%) down and release it back up immediately. You may have to repeat this action to provoke the re-opening of the collapsed 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 KOUGAR 3'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 KOUGAR 3's normal flight behavior. 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 KOUGAR 3.

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 KOUGAR 3 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 maneuvers 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 maneuver 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 maneuvers 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 stabilo 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 KOUGAR 3 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.

4.3 ACCELERATED FLIGHT

The KOUGAR 3's profile was designed for stable flight throughout its entire speed range. The speed-bar can be used in strong winds or significant sink.

When accelerating the wing, the profile becomes more sensitive to turbulence and closer to a possible frontal collapse. If a loss in internal wing pressure is felt, tension on the speed-bar should be reduced to a minimum and a slight pull on the brake lines is recommended to increase the wing's incidence angle. Remember to re-establish the air speed after correcting the angle of attack.

It is NOT recommended to accelerate near obstacles or in turbulent conditions. If necessary, adjust your trimmers and release the speed-bar. This is considered to be 'active piloting'.

Be careful!

Remember the following guidelines:

Accelerated	Trimmers	TIP	Brake	IN CALM AIR
100%	0%	100%	100%	
0%	100%	100%	100%	
50%	100%	100%	0%	
100%	100%	100%	0%	

4.4 FLYING WITHOUT BRAKE LINES

If, for any reason at all, the KOUGAR 3's brake lines become disabled in flight, it will become necessary to pilot the wing with the D-risers and weight shifting until landing. These risers steer easily because are not under significant tension. You will have 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 (not accelerated) during the landing approach, and the D-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 maneuvers described below, we recommend practicing 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' maneuver, 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 3A3-lines to make ears, can inadvertently mean pulling the brakes. The same can happen when we are holding the tips down with the outermost 3A3-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 KOUGAR 3 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 paraglider to lose too much airspeed, making it necessary for the pilot to recover it, either using the speed-bar or 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 stabilize and then increase. You will then experience a descent rate of around 5-6m/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 maneuver, the first sensation is a decrease in relative wind and a slight backwards inclination of the wing, as if going backwards.

To exit the maneuver 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 maneuver, 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 maneuver, 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 maneuver is performed.

To exit the maneuver, 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 maneuver must therefore be done gradually to increase one's capacity to resist the g-force exerted on the body. With practice, you will fully appreciate and understand it. Only practice this maneuver at high altitude and with enough ground clearance.

To start the maneuver, 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 stabilize in a spiral dive from 15m/s onwards.

Good enough reasons to familiarize yourself with the maneuver and understand how to exit it.

To exit this maneuver, 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 maneuver was carried out.

Practice these maneuvers at sufficient altitude and carefully.

6. SPECIAL METHODS

6.1 TOWING

The KOUGAR 3 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 KOUGAR 3 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 maneuvers 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 maneuvers.

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.

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

Inspections

The KOUGAR 3 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 KOUGAR 3.

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

7.4 CHECKS AND INSPECTIONS

In 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.

We recommend any inspection or repair is performed by a Niviuk professional in our official workshop: <http://niviuk.com/content/service>. Any modification of the glider made in an external workshop will invalidate the guarantee of the product. Niviuk cannot be held responsible for any issues or damage resulting from modifications or repairs carried out by unqualified professionals or who are not approved by the manufacturer.

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 and paramotoring are activities that require 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

			16	18	20	23	25	28
CELLS	NUMBER		64	64	64	64	64	64
ASPECT RATIO	FLAT		5,7	5,7	5,7	5,7	5,7	5,7
AREA	FLAT	m ²	16	18	20	22,5	25	28
	PROJECTED	m ²	13,9	15,65	17,38	19,55	21,73	24,34
CORD	MAXIMUM	m	2,05	2,18	2,29	2,43	2,56	2,71
LINES	TOTAL	m	238	254	268	285	300	319
	MAIN		2+1/4/3/2	2+1/4/3/2	2+1/4/3/2	2+1/4/3/2	2+1/4/3/2	2+1/4/3/2
RISERS	NUMBER	3+1	A+A'/B/C'+C/D	A+A'/B/C'+C/D	A+A'/B/C'+C/D	A+A'/B/C'+C/D	A+A'/B/C'+C/D	A+A'/B/C'+C/D
	TRIMS	mm	80	80	80	80	80	80
	ACCELERATOR	mm	160	160	160	160	160	160
SPEED RANGE		km/h	OPEN TRIM = 40 MAX. 60 CLOSE TRIM = 60 MAX. 80					
TOTAL WEIGHT IN FLY	MIN-MAX	kg	60-125	65-140	70-155	80-175	90-195	100-215
GLIDER WEIGHT		kg	4	4,3	4,6	5	5,4	5,8
CERTIFICATION			DGAC	DGAC	DGAC	DGAC	DGAC	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)

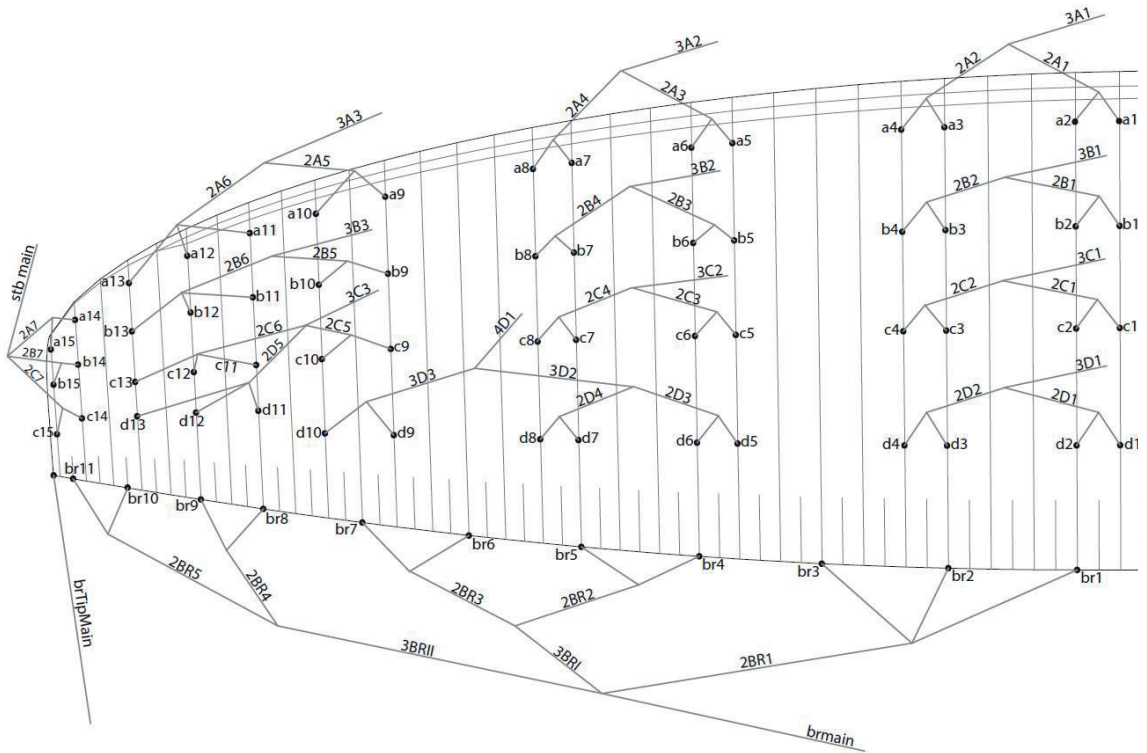
SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	A-8000/U 50	EDELRID (GERMANY)
UPPER CASCADES	A-8000/U 70	EDELRID (GERMANY)
UPPER CASCADES	A-8000/U 90	EDELRID (GERMANY)
MIDDLE CASCADES	A-8000/U 50	EDELRID (GERMANY)
MIDDLE CASCADES	A-8000/U 70	EDELRID (GERMANY)
MIDDLE CASCADES	A-8000/U 90	EDELRID (GERMANY)
MIDDLE CASCADES	A-8000/U 130	EDELRID (GERMANY)
MIDDLE CASCADES	A-8000/U 190	EDELRID (GERMANY)
MAIN	A-8000/U 90	EDELRID (GERMANY)
MAIN	A-8000/U 130	EDELRID (GERMANY)
MAIN	A-8000/U 190	EDELRID (GERMANY)
MAIN	A-8000/U 230	EDELRID (GERMANY)
MAIN	A-8000/U 360	EDELRID (GERMANY)
MAIN BREAK	TNL - 280	TEIJIM LIMITED (JAPAN)
THREAD	SERAFIL 60	AMAN (GERMANY)

RISERS	FABRIC CODE	SUPPLIER
MATERIAL	WD103	COUSIN (FRANCE)
COLOR INDICATOR	210D	TECNI SANGLES (FRANCE)
THREAD	V138	COATS (ENGLAND)
MAILLONS	MRI4	ANSUNG PRECISION (KOREA)
PULLEYS	RF25109	RONSTAN (AUSTRALIA)

10.3 RISERS PLAN



10.4 SUSPENSION PLAN



10.5 DIMENSIONS KOUGAR 3 16

LINES HEIGHT + RISER mm					
	A	B	C	D	br
1	5285	5210	5241	5329	6148
2	5254	5180	5203	5285	5845
3	5220	5149	5171	5256	5720
4	5232	5162	5193	5285	5624
5	5181	5118	5142	5275	5505
6	5157	5096	5113	5229	5459
7	5124	5075	5094	5161	5506
8	5138	5089	5115	5173	5430
9	5059	5021	5075	5151	5399
10	5002	4969	4996	5207	5409
11	4965	4938	4948	4981	5493
12	4925	4907	4906	4937	4706
13	4948	4936	4943	4970	
14	4779	4752	4794		
15	4752	4744	4799		

RISERS LENGHT mm					
	A	B	C	D	
	500	500	500	500	STANDARD
	500	545	590	668	TRIM OPEN
	350	425	500	608	ACCELERATED
	350	470	590	743	TRIM OPEN + ACCELERATED

10.6 DIMENSIONS KOUGAR 3 18

LINES HEIGHT + RISER mm					
	A	B	C	D	br
1	5628	5549	5582	5676	6540
2	5597	5518	5542	5630	6221
3	5563	5488	5511	5602	6091
4	5577	5502	5535	5633	5990
5	5525	5458	5484	5625	5865
6	5500	5436	5454	5576	5819
7	5467	5415	5435	5506	5870
8	5482	5430	5458	5519	5790
9	5401	5359	5417	5497	5756
10	5341	5305	5334	5557	5767
11	5301	5273	5283	5318	5856
12	5260	5240	5239	5272	5035
13	5284	5271	5279	5307	
14	5104	5076	5120		
15	5076	5068	5126		

RISERS LENGHT mm					
	A	B	C	D	
	500	500	500	500	STANDARD
	500	545	590	668	TRIM OPEN
	350	425	500	608	ACCELERATED
	350	470	590	743	TRIM OPEN + ACCELERATED

10.7 DIMENSIONS KOUGAR 3 20

LINES HEIGHT + RISER mm					
	A	B	C	D	br
1	5953	5870	5904	6004	6943
2	5921	5838	5863	5956	6609
3	5887	5808	5833	5928	6474
4	5902	5824	5858	5962	6370
5	5851	5780	5808	5957	6239
6	5825	5757	5776	5905	6192
7	5792	5737	5758	5832	6247
8	5808	5753	5783	5846	6162
9	5723	5680	5741	5825	6126
10	5661	5623	5654	5888	6137
11	5620	5589	5600	5637	6230
12	5576	5555	5554	5589	5373
13	5602	5588	5596	5627	
14	5413	5382	5429		
15	5382	5374	5435		

RISERS LENGHT mm					
	A	B	C	D	
	500	500	500	500	STANDARD
	500	545	590	668	TRIM OPEN
	350	425	500	608	ACCELERATED
	350	470	590	743	TRIM OPEN + ACCELERATED

10.8 DIMENSIONS KOUGAR 3 23

LINES HEIGHT + RISER mm					
	A	B	C	D	br
1	6337	6249	6285	6392	7312
2	6303	6216	6242	6341	6960
3	6271	6187	6213	6315	6819
4	6288	6205	6241	6351	6712
5	6236	6161	6190	6348	6575
6	6209	6137	6157	6294	6526
7	6176	6117	6139	6218	6585
8	6193	6135	6166	6233	6495
9	6105	6059	6124	6212	6458
10	6039	5998	6032	6280	6469
11	5996	5963	5975	6015	6568
12	5950	5927	5927	5964	5668
13	5978	5963	5972	6004	
14	5777	5744	5793		
15	5745	5735	5800		

RISERS LENGHT mm					
	A	B	C	D	
	500	500	500	500	STANDARD
	500	545	590	668	TRIM OPEN
	350	425	500	608	ACCELERATED
	350	470	590	743	TRIM OPEN + ACCELERATED

10.9 DIMENSIONS KOUGAR 3 25

LINES HEIGHT + RISER mm					
	A	B	C	D	br
1	6701	6608	6646	6759	7738
2	6666	6574	6601	6706	7368
3	6634	6545	6572	6680	7222
4	6652	6565	6602	6719	7111
5	6600	6521	6552	6719	6968
6	6572	6496	6517	6662	6918
7	6538	6476	6500	6583	6981
8	6558	6496	6529	6599	6886
9	6466	6417	6486	6579	6847
10	6397	6354	6389	6651	6859
11	6352	6317	6330	6372	6963
12	6304	6280	6279	6318	6006
13	6334	6318	6327	6361	
14	6122	6087	6139		
15	6088	6078	6146		

RISERS LENGHT mm					
	A	B	C	D	
	500	500	500	500	STANDARD
	500	545	590	668	TRIM OPEN
	350	425	500	608	ACCELERATED
	350	470	590	743	TRIM OPEN + ACCELERATED

10.9 DIMENSIONS KOUGAR 3 28

LINES HEIGHT + RISER mm					
	A	B	C	D	br
1	7114	7016	7055	7175	8174
2	7077	6980	7009	7120	7785
3	7046	6952	6981	7095	7632
4	7066	6974	7013	7137	7518
5	7014	6930	6963	7140	7367
6	6985	6904	6927	7080	7316
7	6951	6885	6910	6997	7384
8	6972	6906	6941	7014	7282
9	6876	6824	6898	6995	7240
10	6803	6758	6796	7072	7252
11	6756	6719	6733	6777	7362
12	6706	6680	6680	6721	6393
13	6738	6720	6731	6766	
14	6513	6477	6531		
15	6477	6466	6538		

RISERS LENGHT mm					
	A	B	C	D	
	500	500	500	500	STANDARD
	500	545	590	668	TRIM OPEN
	350	425	500	608	ACCELERATED
	350	470	590	743	TRIM OPEN + ACCELERATED

11. CERTIFICATION

KOUGAR 3 16



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	Révis ^{n°}
B	1	0	1	S	F	0 3 4 9 3 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	KOUGAR 3 - 16
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	
60 kg	125 kg	NIVIUK	KOUGAR	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
Manuel KOUGAR 3	Manuel KOUGAR 3	16 m ²	1000 daN	
Limitations du constructeur de la voile vis-à-vis des GMP	Puissance maximale: 36cv			

Pour le Ministre chargé de l'Aviation Civile
Document établi le : 22 Octobre 2019

Visa de l'aviateur
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 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

KOUGAR 3 18



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	Révis ^{n°}
B	1	0	1	S	F	0 3 4 9 5 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	KOUGAR 3 - 18
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	
65 kg	140 kg	NIVIUK	KOUGAR 3	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
Manuel KOUGAR 3	Manuel KOUGAR 3	18 m ²	1000 daN	
Limitations du constructeur de la voile vis-à-vis des GMP	Puissance maximale: 36cv			

Pour le Ministre chargé de l'Aviation Civile
Document établi le : 22 Octobre 2019

Visa de l'aviateur
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 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 ^{n°}
B	1	0	1	S	F	0 3 4 9 6 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	KOUGAR 3 - 20
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	155 kg	NIVIUK	KOUGAR 3	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
Manuel KOUGAR 3	Manuel KOUGAR 3	20 m ²	1000 daN	
Limitations du constructeur de la voile vs-à-vis des GMP	Puissance maximale: 35cv			

Pour le Ministre chargé de l'Aviation Civile
Document établi le : 22 Octobre 2020

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 ^{n°}
B	1	0	1	S	F	0 3 4 9 7 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	KOUGAR 3 - 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	Voilure		
		Fabricant	Modèle/Référence	
80 kg	175 kg	NIVIUK	KOUGAR 3	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'ancrage	
Manuel KOUGAR 3	Manuel KOUGAR 3	22,50 m ²	1000 daN	
Limitations du constructeur de la voile vs-à-vis des GMP	Puissance maximale: 35cv			

Pour le Ministre chargé de l'Aviation Civile
Document établi le : 22 Octobre 2020

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

DSAC

(à joindre à la carte d'identification)

a	b	c	d	e	f	Révis ^{n°}						
B	1	0	1	S	F	0	3	4	9	8	E	-

- a) Construction en série - B - autres cas : A
- b) Monoplace : 1 - Biplace : 2
- c) Paramoteur : 01 - Pendulaire : 02 - Multiaxe : 03 - Autogre : 04 - Aerostat : 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	KOUGAR 3 - 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	
90 kg	185 kg	NIVIUK	KOUGAR 3	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'encrage	
Manuel KOUGAR 3	Manuel KOUGAR 3	25 m ²	1000 daN	
Limitations du constructeur de la voile vis-à-vis des GMP		Puissance maximale: 36cv		

Pour le Ministre chargé de l'Aviation Civile
Document établi le : 22 Oct 2013

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



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE



FICHE D'IDENTIFICATION ULM DE CLASSE 1

DSAC

(à joindre à la carte d'identification)

a	b	c	d	e	f	Révis ^{n°}						
B	1	0	1	S	F	0	3	4	9	9	E	-

- a) Construction en série - B - autres cas : A
- b) Monoplace : 1 - Biplace : 2
- c) Paramoteur : 01 - Pendulaire : 02 - Multiaxe : 03 - Autogre : 04 - Aerostat : 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	KOUGAR 3 - 28
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	215 kg	NIVIUK	KOUGAR 3	
Référence manuel d'utilisation	Référence manuel d'entretien	Surface à plat	Résistance minimale d'encrage	
Manuel KOUGAR 3	Manuel KOUGAR 3	28 m ²	1000 daN	
Limitations du constructeur de la voile vis-à-vis des GMP		Puissance maximale: 36cv		

Pour le Ministre chargé de l'Aviation Civile
Document établi le : 22 Oct 2013

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



NIVIUK
AMAZING ADVENTURES