

**USER  
MANUAL  
HOOK 4 P**



## HOOK 4 P

Adventurous progress

### WELCOME

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

We would like to share the Niviuk R&D team's commitment, passion and emotions, which resulted in the creation of the new HOOK 4 P. Our company is proud of this new carefully designed glider, bringing maximum pleasure during a pilot's progression.

Versatile and multifunctional, in a lightweight version. Designed for those with an adventurous nature, who want to decide when, how and where they want to progress. You are free to choose your starting point and progression route.

We are confident that you will enjoy flying this wing and will soon understand the meaning of our motto: 'The importance of small details'.

This is the user manual. We recommend you read it before your first flight with the wing.

The **NIVIUK** Team.

## USER MANUAL

### NIVIUK GLIDERS HOOK 4 P

This manual includes all the necessary information pertaining to the HOOK 4 P's characteristics, but it cannot be viewed as an instructional handbook and does not offer the instruction required to pilot this type of wing. Training can only be obtained at a certified paragliding school.

Please review and read the comprehensive content of the HOOK 4 P manual.

Misuse of this equipment could lead to severe injuries or death.

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NIVIUK GLIDERS & AIR GAMES SL C/ DEL TER 6, NAVE D 17165 LA CELLERA DE TER - GIRONA - SPAIN

TEL. +34 972 42 28 78 FAX +34 972 42 00 86

info@niviuk.com www.niviuk.com

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## 1. CHARACTERISTICS

### 1.1 WHO IS IT DESIGNED FOR?

The HOOK 4 P is the lightweight version of our progression wing, the Hook 4. With up to 1.4 kg less weight, this new model is ideal for explorers who after making their debut in the world of paragliding decide to continue progressing with each flight, as well as for more experienced adventurers who prefer an intermediate, very safe wing.

With the new HOOK 4 P you too can discover and enjoy hike & fly or vol-biv adventures. A wing with an extremely reduced weight and volume so that from now on you can choose when, where and how to advance.

### 1.2 CERTIFICATION

The HOOK 4 P's load test, conducted by the Air-Turquoise testing centre in Switzerland, exceeded 8 G of force.

### 1.3 IN-FLIGHT BEHAVIOR

Niviuk developed the HOOK 4 P by adopting very specific guidelines: the objective was to seek utmost performance while minimising gear weight and volume for easy transportation, simple and relaxed flying, and above all, maintain a very high level of wing safety.

With progressive, predictable and efficient handling the HOOK 4 P effectively reads the air mass, seeking out and coring thermals with efficiency and ease. The HOOK 4 P remains agile, light and predictable in all conditions of flight and behaves impeccably during turbulence.

The HOOK 4 P was designed with the latest innovations in materials and technologies, and that aspect provides the glider with a better performance in all phases of flight.

If you already are a Niviuk pilot, the HOOK 4 P will surprise you. If this is the first time you pilot a Niviuk glider, just enjoy it!

### 1.4 ASSEMBLY, MATERIALS

The HOOK 4 P has all the technological innovations used on other Niviuk gliders. Furthermore, it is full of small details like the SLE, RAM, DRS, TNT, IKS and 3 line profile which are destined to enhance the pilot's comfort and to improve the performance of the wing.

SLE.- The use of the SLE (Structured Leading Edge) allows reinforcement of the leading edge, preventing any deformation in turbulence. The airflow is also vastly improved over the entire leading edge of the glider.

RAM.- The RAM Air Intake technology presents an internal positioning of the air intakes to provide optimal and constant internal pressure while improving laminar air flow on the undersurface. As a result, a significant turbulent air buffering takes place at the leading edge for better consistency across the speed range, and hence increasing performance with maximum safety.

DRS.-The trailing edge has been reinforced with small ribs that make this part flatter in order to spread the pressure out evenly. It means better air-flow and less drag on this important part of the glider. The addition of these ribs gives exceptional handling (better and more efficient when turning) and more control and precision.

TNT.- A revolutionary technique using Nitinol, developed to build the internal structure of the glider, brings a more uniform profile, and hence reduces the overall wing weight to gain efficiency in flight. The Nitinol provides the highest level of protection against deformation, heat or breaks. Using this technological advance, the glider is able to maintain its original features for a longer period of time.

3LT.- Its powerful profile, a detailed internal architectural structure, and

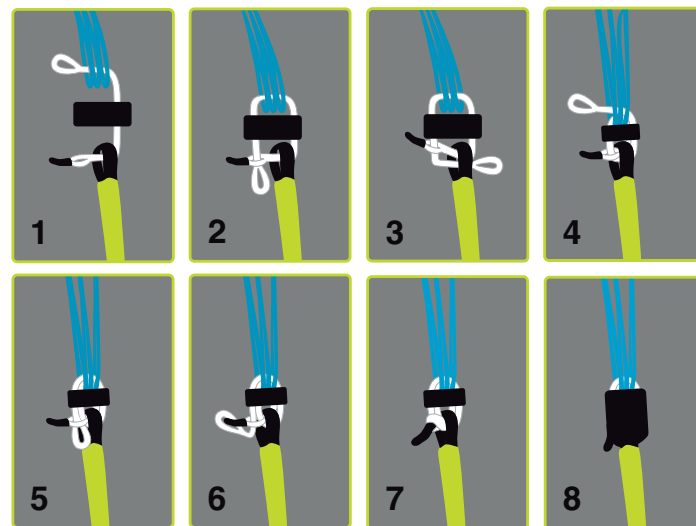
the use of high-tech strength materials make it possible to obtain a significant reduction of the combined line lengths, hence reducing the amount of parasitic drag and the weight of the glider for better efficiency.

IKS.- The Interlock System is an ultralight connection system specially designed for mountain and lightweight equipment. It has less weight than the traditional delta maillon and is much more resistant.

Moreover, it is fitted with a locking system providing greater efficiency at maximum load. It is made from Dyneema braids stitched together with a locking strap. Your glider comes as standard with the IKS 1300 kg, a version made to connect the lines to the risers.

Being 25 times lighter (0.2 g), this IKS model has a load bearing braking point of 1300 kg compared to the 800 kg of the classic maillon.

*Notice: the IKS 1300 kg system was not designed nor certified to connect the risers to the harness and/or a rescue parachute to the harness.*



1. Locate the elastic sleeve's inner small diameter tube.
2. Push the IKS line through it.
3. Push now the IKS line through the lines and the riser. The reinforced end with the black tab should be located on the side of the riser.
4. Push the upper looped end downward through the elastic sleeve (not the small diameter tube) and then through the reinforced loop end where the black tab is located.
5. Continue with the procedure in a counter-clockwise motion by pushing the looped end through the riser.

6. Push the looped end first upward through the elastic sleeve (not the small diameter tube) and through the lines again following the same pattern.
7. Push the looped end downward through the elastic sleeve (not the small diameter tube) first, and then through the loop with the reinforced end (black tab) once more.
8. Push the reinforced end loop (black tab) through the looped end to secure them together.
9. Pull tight to secure the knot and connection.
10. Check the entire assembly

The HOOK 4 P's line set is made from Edelrid Aramid. The Aramid lines are not sheathed, thus directly exposed to potential abrasions. Consequently and in accordance with the EN certification recommended guidelines, lines must be inspected by a professional certified servicing centre every hundred ( 100 ) hours. These high performance materials require particular attention before each flight.

The fabric used to manufacture the glider is light, resistant and durable and will not experience colour loss.

From Olivier Nef's computer to fabric cutting, the operation is a zero 6 tolerance process. An automated computer laser-cutting robotic arm creates each of the many sections needed to complete the wing assembly. This program also paints the guideline markers and numbers on each individual fabric piece.

The lines are semi-automatically cut to length and all the sewing is completed under the supervision of our specialists. 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 efficient final inspection. Every line is checked and measured once the final assembly is concluded. Each wing is then individually inflated for the last visual inspection.

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

Niviuk gliders are made of premium materials. Information about the various materials used to manufacture the wing can be reviewed on the final pages of this manual.

## 1.5 ELEMENTS, COMPONENTS

The HOOK 4 P is delivered with a small fabric repair kit, including self-adhesive ripstop matching the wing's colour scheme, a compression strap to pack the wing into a small volume, a bag with straps, the speed-bar and the new Inner Bag.

## 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. Meeting these conditions will help with the necessary steps required to check and inflate the HOOK 4 P. We recommend that a qualified instructor is present to supervise the entire procedure.

We recommend that an instructor or a Niviuk dealer supervises the entire procedure, as only they can resolve 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 facing the sky. Lay out the wing in a crescent shape with the cells openings pointing into wind, as if you were to inflate it.

Check the condition of the fabric and the lines for abnormalities. Identify, and if necessary disentangle the A, A', B and C lines, the brake lines and the corresponding risers. Make sure that there are no knots.

## 2.3 HARNESS ASSEMBLY

Correctly connect the risers to the harness' carabiners. The risers and 6 lines should not have any twists and be sorted in the right order. Check that the harness buckles are fully locked and secured in place.

## 2.4 TYPE OF HARNESS

The HOOK 4 P has passed the EN B certification using an EN1651:1999 type harness.

Small = 44 cm  
Medium = 45 cm  
Large = 46 cm

Incorrect chest strap adjustments can affect glider/harness behaviour and thus glider handling. Too wide a distance between the carabiners will provide greater feedback from the wing, but less glider stability. Too narrow a distance will not bring as much feedback, in addition to increasing the risk of experiencing a riser twist during a collapse.

We recommend referring to the harness' instruction manual and the certification test report outlining the chest strap length adjustments used during these tests.

## 2.5 SPEED SYSTEM ASSEMBLY

The acceleration mechanism of the HOOK 4 P works when you push with your feet on the accelerator bar, this is supplied with the equipment. On delivery the accelerator bar has not yet been installed and it is recommended that it is fit by yourself before flight.

Most harnesses are equipped with a pre-installed acceleration system. When fitting any accelerator system ensure that all preinstalled items within the harness, such as roller pulleys are used correctly. After fitting, take into account that you will have to adjust the length of the accelerator lines for correct use. This will vary according to the length of the pilot's legs!

We recommend that you try the correct fitting of the acceleration system on equipment designed to do this, most paragliding schools have this sort of equipment.

## 2.6 INSPECTION AND WING INFLATION ON THE GROUND

Once all the gear is checked and deemed safe to use, inflate the HOOK 4 P and ground handle it as much as possible to become familiar with the wing's behaviour. The HOOK 4 P inflates easily and smoothly. An excess of energy is not necessary and the wing will inflate with minimum pressure on the harness when you move forward. 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 in the 12 o'clock position, simply apply the correct pressure on the brake lines and the HOOK 4 P will sit over your head.

## 2.7 ADJUSTING THE BRAKE LINES AND TOGGLES

The lower brake line length is pre-adjusted at the factory and identical to the ones used during the glider certification procedure. However, that length can be modified to the pilot's personal preference. We nevertheless

recommend keeping the default factory settings as is, and adapt yourself to the HOOK 4 P's behaviour instead.

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 C riser and the trailing edge elevates. We must check that the brake is adjusted to take into consideration this extra length during acceleration.

### 3. THE FIRST FLIGHT

#### 3.1 CHOOSE THE RIGHT PLACE

The first flights with the HOOK 4 P should be made in low wind speeds, on a training hill or obstacle free area. We recommend that a qualified instructor is present and supervising the entire procedure.

#### 3.2 PREPARATION

Repeat the procedures detailed in chapter 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 LIST

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 for your flying skill level.

#### 3.5 WING INFLATION, CONTROL AND TAKE-OFF

Smoothly and progressively inflate the wing (see chapter 2.6 INSPECTION AND WING INFLATION ON THE GROUND). The HOOK 4 P comes up easily, without excessive energy and does not overfly the pilot. It is a straight forward exercise leaving enough time for the pilot to decide whether to run and take off or not.

Whenever the wind speed permits, we recommend using a reverse launch technique more, as it is more conducive to carrying out a better visual check of the wing. The HOOK 4 P is especially easy to control during reversed inflations in windier conditions. However, wind speeds up to 25 to 30 km/h are considered strong and extra consideration should be given as whether or not to fly.

Setting up the wing on the ground before take-off is especially important. Choose an appropriate location facing the wind. Position the paraglider in a crescent configuration to facilitate inflation. A clean wing layout will ensure a trouble free take-off.

#### 3.6 LANDING

The HOOK 4 P lands excellently, it transforms the wing speed into lift at the pilot's demand, allowing an enormous margin of error. You will not have to wrap the brake lines around your hand to get greater braking efficiency.

### 4. IN FLIGHT

#### 4.1 FLYING IN TURBULENCE

The HOOK 4 P has an excellent profile design made to withstand various weather conditions, hence enabling the pilot to take advantage of its stability for greater piloting efficiency. It behaves impeccably in passive



flight mode, thus offering a high level of safety in turbulent conditions. Nonetheless, the pilot always has to fly according to the prevailing weather conditions, and the pilot is the ultimate safety factor.

We recommend that the pilot to anticipate every move, understands the air mass and flies actively to make appropriate corrections with the right input amount. Over-steering is dangerous, all actions must be undertaken in a timely manner, amplitude and duration. The ultimate piloting goal is to keep the speed of the glider going. AIR SPEED = SAFETY. Do not hesitate to ask questions and get advice from qualify certified personnel if in doubt.

## 4.2 POSSIBLE CONFIGURATIONS

To become familiar with manoeuvres described below, we recommend practising within the environment of a competent training company

### **Asymmetric collapse**

In spite of the HOOK 4 P's profile stability, strong turbulent air may cause the wing to collapse asymmetrically if the pilot was unable to predict the glider's reactions in specific circumstances. When the wing is about to experience an asymmetric collapse, the brake lines will slacken and transmit a tension loss affecting the harness stability. To prevent the collapse from happening, pull the toggle corresponding to the affected side of the wing. It will increase the incidence of the wing (angle of attack). If the collapse does happen, the HOOK 4 P will not react violently, the turning tendency is gradual and easily controlled. Weight-shift toward the flying and opposite side of the collapse to keep the wing flying straight while applying a light brake pressure to that side if necessary, to slow it down. The collapsed side of the wing should then recover and reopen by itself. If it does not, then pull the brake toggle on the collapsed side decisively and quickly all the way down before bringing it back up immediately. 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 (the causes the risk of a stall for having too high

an angle of attack). Once the collapsed side is open, re-centre your body under the wing to regain the default flying speed.

### **Frontal collapse**

In normal flying conditions and due to the HOOK 4 P design, asymmetrical 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 or when lacking experience using the accelerator/speed-bar with untimely inadequate input. Frontal collapses usually re-inflate without the glider turning, but a symmetrically applied quick braking action with a quick deep pump 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 HOOK 4 P's normal flight behaviour. Certain circumstances however, may provoke this configuration (such as trying to turn when flying at very low air speed whilst applying a lot of brake, and applying even more toggle pressure on one side). 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 flightpath trajectory.

### **Parachutal stall**

A parachutal stall takes place when the wing remains fully inflated but loses forward motion and then descends vertically at an accelerated rate. Instability and a lack of pressure on the brake lines set in, although the canopy would appear to be correctly inflated. To regain normal air speed, release brake line tension symmetrically and push forward on the A-lines or weight-shift your body to any side WITHOUT PULLING ON THE BRAKE LINES.

### **Deep stall**

The possibility of the HOOK 4 P falling into this configuration during normal flight is very unlikely. It could only happen if you are flying at a very low air speed, whilst over-steering or entering 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 down until the stall point is reached and held there for a few seconds. The glider will first pitch rearward and then reposition itself overhead, rocking slightly, depending on how the manoeuvre was done. When entering a stall, remain clear minded and ease off the brake lines upon reaching the half-way point during the downward pulling motion. The wing will then surge violently forward and could reach a point below the horizontal line. It is most important to maintain brake pressure until the glider has returned to its default overhead flying location.

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 as the wing needs to accelerate to pull away from the stall configuration. If you have to control a possible symmetrical front stall (frontal collapse), briefly pull both toggles 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 asymmetrical 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 asymmetrical collapse: control the turn/spin by applying tension on the opposite brake and weight shift opposite to the turn. Then locate the stabilo line trapped between the other lines. This line has a different colour and belongs to the external lines of the C riser.

Pull on this line until it is taught, as it should help undo the cravat. If ineffective, fly down to the nearest possible landing spot, control the trajectory 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 a mountainside or other paragliders; it may not be possible to continue on the intended flight path and a subsequent collision could happen as result.

### **Over-handling**

Most flying problems are caused by wrong pilot input, which then degenerates into a cascade of unwanted and unpredicted series of incidents. The HOOK 4 P was designed to recover by itself in most cases. Do not try to over-correct it!

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

### **4.3 USING THE ACCELERATOR**

The HOOK 4 P profile was designed for stable flight throughout its entire speed range. It is useful to accelerate when flying in strong winds or in extreme 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 accelerator 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 incidence.

It is NOT recommended to accelerate near obstacles or in very turbulent conditions. If necessary, constantly adjust the movements and pressure on the speed-bar whilst doing the same to the brake lines. This balance is considered to be 'active piloting'.

The HOOK 4 P risers have been designed without any adjustable, removable or variable device to prevent and incorrect use of the speed system.

#### 4.4 FLYING WITHOUT BRAKE LINES

If, for any reason at all, the HOOK 4 P's brake lines become disabled in flight, piloting the wing with the 'C' risers and weight shifting will become necessary. The C-lines can be used to steer the glider easily because they are not under much tension, however you will need to be careful and not handle them too heavily to cause a stall or negative turn. 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 running phase, immediately abort the launching 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 of the wing 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. Do not pull too hard on the brake handles for there will be an increased risk of stalling the wing or enter a negative turn.

Before trying to remove a knot, make sure there are no pilots flying nearby, and never try these attempts close to obstacles. If the knot is too tight and cannot be undone, carefully and safely fly to the nearest landing zone.

## 5. LOSING ALTITUDE

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

It is well advised to learn the particularities of these manoeuvres under the supervision of a knowledgeable certified instructor.

### 5.1 EARS

Big ears is a moderate descent technique, able to increase the sink rate to  $-3$  or  $-4$  m/s, and reduce the ground speed down to 3 to 5 km/h. Effective piloting then becomes limited. The angle of attack and load will also increase due to the smaller surface area of the wing. Pushing on the accelerator/speed-bar will partially restore the wing's horizontal speed and angle of attack.

To activate the 'Big ears' manoeuvre take the 2A3 line on each A'-riser and simultaneously, smoothly pull them outward and downward. The wingtips will fold in. Let go of the risers to reinflate them automatically. If they do not, gently pump them open asymmetrically and sequentially using the brakes, without altering the angle of attack, especially when flying near obstacles or flying in turbulent air.

### 5.2 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 carry out this manoeuvre you have to take the B below the maillons and symmetrically pull both of them down (approx. 20-30 cm) and then hold this position. The initial phase is quite physical (a lot of resistance)

which means that you will have to pull strongly until the profile of the wing is deformed, when this happens the required force will be significantly reduced. To maintain this manoeuvre you must continue to hold the B risers in the pulled down position. The wing will then deform, its horizontal speed will drop to 0 km/h; vertical descending speed increases to -6 to -8 m/s, depending on the weather 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 do but remember that the wing will stop flying, will lose all forward horizontal speed, and its reactions will change quite a bit when compared to a normal flight configuration.

### 5.3 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, a pilot 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 toggle located on the inner side of the turn. The intensity of the turn can be controlled by braking slightly on the outer brake toggle. A paraglider flying at its maximum rotating speed can reach -20 m/s, or the equivalency of a 70 km/h vertical descent, and will stabilise in a spiral dive from 15 m/s onwards. Good enough reasons to familiarise yourself with the manoeuvre and understand how to exit it.

To exit this manoeuvre, the inner brake toggle (down side of the turn)

must progressively be relaxed while momentarily applying tension to the outer brake toggle opposite to the turn. The pilot must also weight shift and lean towards the opposite side of the turn at the same time. When exiting the spiral, the glider will briefly experience an asymmetrical acceleration and dive, depending on how the manoeuvre was carried out.

Practise these movements at sufficient altitude and with moderation.

## 6. SPECIAL CONSIDERATIONS

### 6.1 TOWING

The HOOK 4 P is suitable for towing. Only a qualified tow operator should be in charge of operating a certified paragliding winch. On the tow, the wing should be inflated the same way used during a hill/mountain flight take-off.

### 6.2 ACROBATIC FLIGHT

Although the HOOK 4 P was tested by expert acrobatic pilots in extreme situations, it WAS NOT designed for acrobatic flight manoeuvres. DO NOT USE THIS GLIDER for aerobatic manoeuvres. We define aerobatic flight as any form of piloting where the paraglider is placed in attitudes that are not used in normal flight. To safely learn how to master aerobatic manoeuvres, instruction must be undertaken at a certified school, under the guidance of a qualified instructor and in a safe environment.

A complete wing and line inspection should be performed every six months, including repairs if necessary, to guarantee the integrity of the equipment. Extreme manoeuvres means you and your wing can be exposed to centrifugal forces that can reach 4 to 5 G.

## 7. FOLDING INSTRUCTIONS

The HOOK 4 P has a complex leading and trailing edge manufactured using a variety of different materials. 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 Nitinol flexible rods stacked up on top of each other. This method will keep the profile in its original shape and protect the integrity of the wing over time.

The wing should then be folded in three sections while taking care of not to bend or twist the SLE. There is no need for compression during the procedure; doing so may damage the fabric, including the risers and lines.

## 8. CARE AND MAINTENANCE

### 8.1 MAINTENANCE

Careful maintenance of your equipment will ensure continued top performance.

The fabric and the lines should not be washed. If they become dirty, clean them with a soft damp cloth.

If your wing is wet from contact with salt water, immerse it in fresh water and dry 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 flying in a sandy environment, and sand has accumulated inside the wing, remove it before packing it away.

### 8.2 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 and UV rays. Do not leave the gear inside a car boot, as temperatures can reach up to 60°C and damage it. Weight should not be laid on top of the equipment.

If the glider is stored with organic material, such as leaves, grass or insects trapped inside the cells, the chemical reaction can cause irreparable damage.

### 8.3 CHECKS AND INSPECTIONS

The HOOK 4 P must be periodically serviced. An inspection must be scheduled every 100 flying hours or every twenty four months whichever comes first (EN/LTF normative).

Regular maintenance is the only way to guarantee the HOOK 4 P's integrity and keep it functioning as it should, while still conforming to the certification criteria.

### 8.4 REPAIRS

If the wing is damaged, you can temporarily repair it by using the ripstop material found in the repair kit, so long as no stitches are involved in the tear, otherwise the damaged area must be repaired in a specialist repair shop by qualified personnel. Do not attempt a home repair.

## 9. SAFETY AND RESPONSIBILITY

It is well known that paragliding is considered a high-risk sport, where safety depends on the pilot.

Incorrect use of this equipment may cause severe injuries to the pilot, or

even death. Manufacturers and dealers cannot be held responsible for your decisions or any act or accident 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 or qualified coach.

## 10. GUARANTEE

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 requiring concentration, specific knowledge and sound judgment. Beware! Learn your skills under the supervision and guidance of a certified school. Take out personal insurance and become a licensed pilot. Be realistic when evaluating your knowledge in respect to weather assessment before deciding whether or not to fly. Niviuk's liability coverage is for its product line only. Niviuk cannot be held responsible for your actions. Fly at your own risk!

## 11. TECHNICAL DATA

### 11.1 TECHNICAL DATA

<b>HOOK 4 P</b>			<b>21</b>	<b>23</b>	<b>25</b>	<b>27</b>
CELLS	NUMBER		52	52	52	52
	CLOSED		8	8	8	8
	BOX		23	23	23	23
FLAT	AREA	m <sup>2</sup>	21	23	25	27
	SPAN	m	10,65	11,15	11,62	12,08
	ASPECT RATIO		5,4	5,4	5,4	5,4
PROJECTED	AREA	m <sup>2</sup>	17,85	19,55	21,25	22,95
	SPAN	m	8,45	8,84	9,22	9,58
	ASPECT RATIO		4	4	4	4
FLATTENING		%	15	15	15	15
CORD	MAXIMUM	m	2,47	2,58	2,69	2,8
	MINIMUM	m	0,49	0,52	0,54	0,56
	AVERAGE	m	1,97	2,06	2,14	2,23
LINES	TOTAL METERS	m	208	218	227	236
	HEIGHT	m	6,5	6,8	7,09	7,36
	NUMBER		180	180	180	180
	MAIN		2+1/3/2	2+1/3/2	2+1/3/2	2+1/3/2
RISERS	NUMBER	3	A+A'/B/C	A+A'/B/C	A+A'/B/C	A+A'/B/C
	TRIMS		NO	NO	NO	NO
	ACCELERATOR	m/m	135	135	135	135
TOTAL WEIGHT	MINIMUM	kg	55	65	80	95
IN FLIGHT	MAXIMUM	kg	70	85	100	115
GLIDER WEIGHT		kg	3	3,25	3,6	3,85
CERTIFICATION	EN/LTF		B	B	B	B

## 11.2 MATERIALS DESCRIPTION

<b>CANOPY</b>	<b>FABRIC CODE</b>	<b>SUPPLIER</b>
UPPER SURFACE FOR LEADING EDGE	9017 E25	PORCHER IND (FRANCE)
UPPER SURFACE FOR THE REST	70000 E3H	PORCHER IND (FRANCE)
BOTTOM SURFACE	70000 E3H	PORCHER IND (FRANCE)
RIBS	70000 E91	PORCHER IND (FRANCE)
DIAGONALS	70000 E91	PORCHER IND (FRANCE)
LOOPS	LKI - 10	KOLON IND. (KOREA)
REINFORCEMENT LOOPS	SOFT DACRON	D-P (GERMANY)
TRAILING EDGE REINFORCEMENT	DACRON	D-P (GERMANY)
RIB REINFORCEMENT	LTN-0.8 STICK	SPORTWARE CO. (CHINA)
THREAD	SERAFIL 60	AMAN (GERMANY)

<b>SUSPENSION LINES</b>	<b>FABRIC CODE</b>	<b>SUPPLIER</b>
UPPER CASCADES	DC - 040	LIROS GMHB (GERMANY)
UPPER CASCADES	DC - 060	LIROS GMHB (GERMANY)
MIDDLE CASCADES	A-8000/U 090	EDELRID (GERMANY)
MIDDLE CASCADES	A-8000/U 130	EDELRID (GERMANY)
MIDDLE CASCADES	A-8000/U 230	EDELRID (GERMANY)
MAIN	A-8000/U 280	EDELRID (GERMANY)
MAIN BREAK	TNL - 280	TEIJIM LIMITED (JAPAN)
THREAD	SERAFIL 60	AMAN (GERMANY)

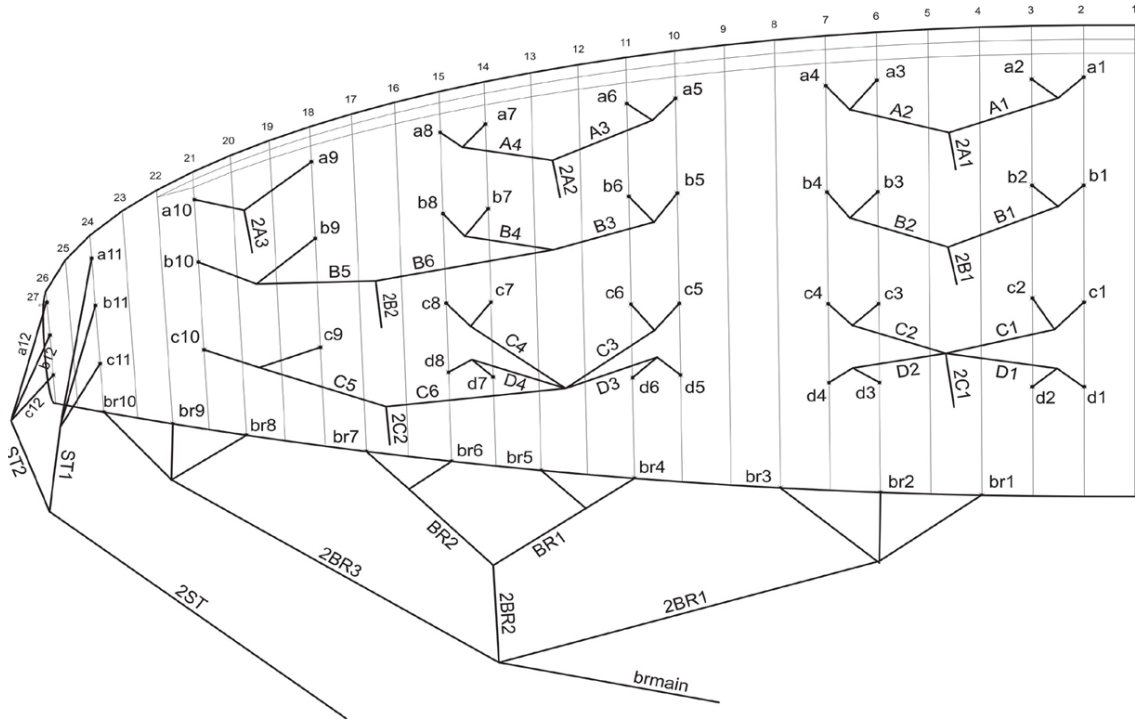
<b>RISERS</b>	<b>FABRIC CODE</b>	<b>SUPPLIER</b>
MATERIAL	10148	LIROS GMHB (GERMANY)
COLOUR INDICATOR	PAD	TECNI SANGLES (FRANCE)
THREAD	V138	COATS (UK)
PULLEYS	RF25109	RONSTAN (AUSTRALIA)



### 10.3 RISERS LAYOUT



# 10.4 LINE PLAN



## 10.5 LENGTHS HOOK 4 P 21

LINES HEIGHT m/m					
	A	B	C	D	br
1	6001	5913	6004	6103	6757
2	5940	5853	5918	6021	6441
3	5900	5815	5873	5972	6280
4	5919	5836	5917	6012	6165
5	5882	5851	5942	6027	6039
6	5843	5799	5867	5948	5999
7	5793	5719	5764	5837	6062
8	5808	5729	5789	5856	5881
9	5633	5640	5704		5810
10	5494	5608	5726		5800
11	5286	5273	5372		
12	5184	5188	5246		

RISERS LENGTH m/m					
	A	B'	B	C	
	470	470	470	470	STANDARD
	340	360	380	470	ACCELERATED

## 10.6 LENGTHS HOOK 4 P 23

LINES HEIGHT m/m					
	A	B	C	D	br
1	6305	6204	6307	6416	7131
2	6241	6142	6218	6330	6801
3	6201	6105	6171	6270	6634
4	6221	6127	6218	6312	6515
5	6186	6156	6255	6344	6383
6	6145	6101	6176	6262	6343
7	6093	6018	6069	6146	6409
8	6110	6029	6096	6165	6242
9	5932	5935	6012		6167
10	5786	5903	6035		6157
11	5571	5558	5662		
12	5463	5468	5528		

RISERS LENGTH m/m					
	A	B'	B	C	
	470	470	470	470	STANDARD
	340	360	380	470	ACCELERATED

## 10.7 LENGTHS HOOK 4 P 25

LINES HEIGHT m/m					
	A	B	C	D	br
1	6593	6494	6604	6714	7419
2	6528	6430	6512	6625	7076
3	6488	6392	6465	6574	6902
4	6510	6416	6514	6619	6779
5	6470	6446	6552	6645	6643
6	6427	6389	6470	6559	6600
7	6375	6302	6359	6439	6670
8	6393	6314	6386	6460	6473
9	6207	6208	6292		6396
10	6055	6175	6316		6386
11	5824	5810	5918		
12	5711	5717	5779		

RISERS LENGTH m/m				
A	B'	B	C	
470	470	470	470	STANDARD
340	360	380	470	ACCELERATED

## 10.8 LENGTHS HOOK 4 P 27

LINES HEIGHT m/m					
	A	B	C	D	br
1	6873	6770	6886	6999	7699
2	6806	6703	6790	6908	7343
3	6766	6666	6742	6849	7163
4	6789	6691	6794	6896	7037
5	6749	6707	6824	6925	6895
6	6705	6647	6739	6836	6852
7	6651	6558	6625	6713	6925
8	6669	6570	6654	6734	6721
9	6477	6462	6564		6642
10	6319	6428	6590		6632
11	6077	6062	6174		
12	5959	5964	6029		

RISERS LENGTH m/m				
A	B'	B	C	
470	470	470	470	STANDARD
340	360	380	470	ACCELERATED

## 10.9 HOMOLOGACIÓN

HOOK 4 P 21

HOOK 4 P 23

HOOK 4 P 25

HOOK 4 P 27

