USER'S MANUAL
KLIMBER P

KLIMBER P

Naturally competitive, designed for your adventure

WELCOME

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

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

The KLIMBER P is the result of our obsession to achieve the perfect balance between a super-light wing and incredible performance.
We are sure that you will enjoy flying this paraglider and soon you will discover the meaning of our slogan: “Give importance to the small details to make big things happen”.

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

The NIiviuk Team.

USER MANUAL

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

Whilst it provides information on the wing, it cannot be viewed as an instructional handbook and does not offer the training required to fly this type of paraglider.
Training can only be obtained 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 KLIMBER P 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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SUMMARY

1. CHARACTERISTICS

1.1 WHO IS IT DESIGNED FOR?

The KLIMBER P is a wing for very experienced and skilled pilots. It was designed for pilots who want maximum performance in combination with very little weight, but who also want the safety of a certified wing.
The KLIMBER P is especially suitable for hike & fly and is ideal for vol-biv. It offers pilots top performance, confidence, comfort and handling with minimal weight (only 3.56 kg in the largest size).).

The KLIMBER P conforms to both EN and LTF norms and has been certified D.
We recommend that only advanced pilots with experience of flying LTF/EN D wings use this paraglider.

Description of the skills, experience and level required of the pilot:
this wing is suitable for pilots trained in recovery techniques, able to fly very actively, with significant flying experience in turbulent conditions and who accept the consequences of flying this level of wing.

Only the aeronautical authorities of respective countries can determine pilot competence.

1.2 CERTIFICATION

The KLIMBER P was certified in accordance with the following norms:
EN 926-2:2013, EN 926-1:2015 & LTF 91/09

All certification tests were conducted by the Air Turquoise testing centre in Switzerland. All sizes passed the certification tests.

Shock test to 1.000 kg.
Load test to 864 kg.
Certification number:
- Size 22 PG_1131.2016
- Size 24 PG_1132.2016

The KLIMBER P was certified as a LTF/EN D in all sizes.
Description of flight characteristics of LTF/EN D paragliders: paragliders with demanding and unique flight characteristics with potentially violent reactions in turbulence and to pilot errors. Normal flight recovery requires precise pilot intervention.

We recommend pilots read the flight test report by the certification testing centre. The report contains all the necessary information on how the paraglider reacts during each of the tested manoeuvres.

It is important to note that different sized wings will react differently during manoeuvres. Even within the same size, at maximum or minimum load, the behaviour and reactions of the wing may vary.

For further information on the flight test and the corresponding certification number, please see the final pages of this manual.

1.3 IN-FLIGHT BEHAVIOUR

Niviuk developed this wing by adopting very specific goals: to achieve maximum performance while minimising weight, excellent handling; to facilitate more control for the pilot. To increase performance while maintaining the highest level of safety, to ensure that the wing transmits the maximum feedback in an understandable and comfortable way so that the pilot can focus on piloting and enjoying the flight and take advantage of all good conditions.

In all aspects of flight, the wing is very solid and stable. The glide is smooth, even when fully accelerated. During glides, the wing maintains altitude and the wing remains stable. The high-speed tip improves the turn precision and is therefore less physical and provides better feedback. Inflating the wing is much easier and gentler without

overshooting.

Flying this wing is very intuitive, with clear and useful feedback about the airmass. It responds to the pilot's inputs effectively and even in turbulent conditions it remains stable and solid.

The KLIMBER P navigates the airmass efficiently. It enters thermals with sufficient speed to centre in the lift and climbs progressively. The handling is progressive and effective for even more flying pleasure under an exciting wing of extraordinary quality.

It is lightweight, even lighter in flight and easy to pilot, with outstanding turbulence buffering and a surprising range of speed for incredible glides.

1.4 ASSEMBLY, MATERIALS

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

RAM - the Ram Air Intake system is characterised by the arrangement of the air inlets, to ensure optimal maintenance of internal pressure. The result? Better tolerance of turbulence, greater consistency across the 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.

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 and therefore the wing inflates more easily than one without this system.

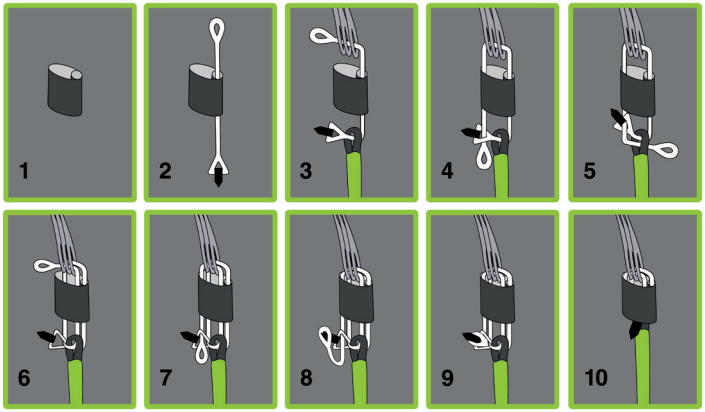
3DP - the optimal distribution of cloth tension has been achieved by cutting individual sections, paying attention to the orientation of the fabric and using 3D modelling.

3DL- there is an additional seam on the leading edge for a cleaner profile, no creases for less drag and a better load distribution.

IKS - is an ultralight connection system specially designed for mountain and lightweight equipment. With less weight than the traditional delta maillon it is nevertheless much stronger.

The IKS1000 is designed and dimensioned as a connection system between the risers and the lines. It has a breaking load of 1055 kg, which greatly exceeds that of the classic 3mm (550 kg) maillon, but with a much less weight. This feature makes it a key element in the entire range of P-Series (lightweight) wings, which are delivered with this technology as standard.

Please note: the IKS1000 kg system was not designed nor certified to connect the risers to the harness and/or a rescue parachute to the harness. For that specific function, Niviuk developed the IKS3000. For more information visit niviuk.com



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 riser side.

4. Push the upper looped end downward through the elastic sleeve (not small diameter tube) and then through the reinforced loop end where the black tab is located.

5. Continue with the procedure in a counterclockwise motion by pushing the looped end through the riser.

6. Push the looped end first upward through the elastic sleeve (not small diameter tube) and through the lines again following the same pattern.

7. Push the looped end downward through the elastic sleeve (not 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.

DRS -the trailing edge has been reinforced with integrated small ribs that make this part flatter in order to spread the pressure out evenly.

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 KILMBER P 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 usedis the lightest possible, whilst guaranteeing strength and durability.

The lines are made from Dyneema & Kevlar. The line diameter has been

calculated depending on the workload and aims to achieve the required best performance with the least drag.

The lines are semi-automatically cut to length and all the sewing is completed under the supervision of our specialists.

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

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

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

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

1.5 ELEMENTS AND COMPONENTS

The KLIMBER P is delivered with a series of accessories that will greatly assist in the maintenance of the paraglider:

- A Kargo bag. This bag is large enough to hold all equipment comfortably and with plenty of space.
- An inner bag to protect the wing during storage and transport.
- An adjustable compression strap to compress the inner bag and reduce its volume.
- A repair kit with self-adhesive Ripstop tape in the same colour as the wing and spare parts to protect the maillons.

2. UNPACKING AND ASSEMBLY

2.1 CHOOSING THE RIGHT LOCATION

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

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. Pay attention to the maillons 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 the brake lines and corresponding risers. Make sure that there are no knots.

2.3 CONNECTING THE HARNESS

Correctly connect the risers to the risers, ensuring that the lines are correctly ordered and free of twists. Check that the carabiners are properly fastened and securely locked.

2.4 HARNESS TYPE

The KLIMBER P can be flown with all current harness types, including pod harnesses. We recommend the setting the chest strap to the distance specified in the certification report - this will vary depending on size.

Care should be taken with the chest strap setting, as the distance of the chest strap setting will affect the handling of the glider. If the chest strap is too wide, allows greater feedback but this carries the risk of affecting the stability of the wing. If the chest strap is set too tightly, the wing feels more solid, but there is a loss of feedback and a risk of twisting in the case of a violent asymmetric collapse.

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 KLIMBER P includes a speed system with a maximum travel 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. The pilot must install and adjust the speed-bar and connect it to the risers (See 2.5.1: “Speed system assembly”).

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

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

- **Released speed-bar:** the A, A’, B, C risers are aligned.
- **Full speed-bar:** the difference between the A - C risers is 16 cm.

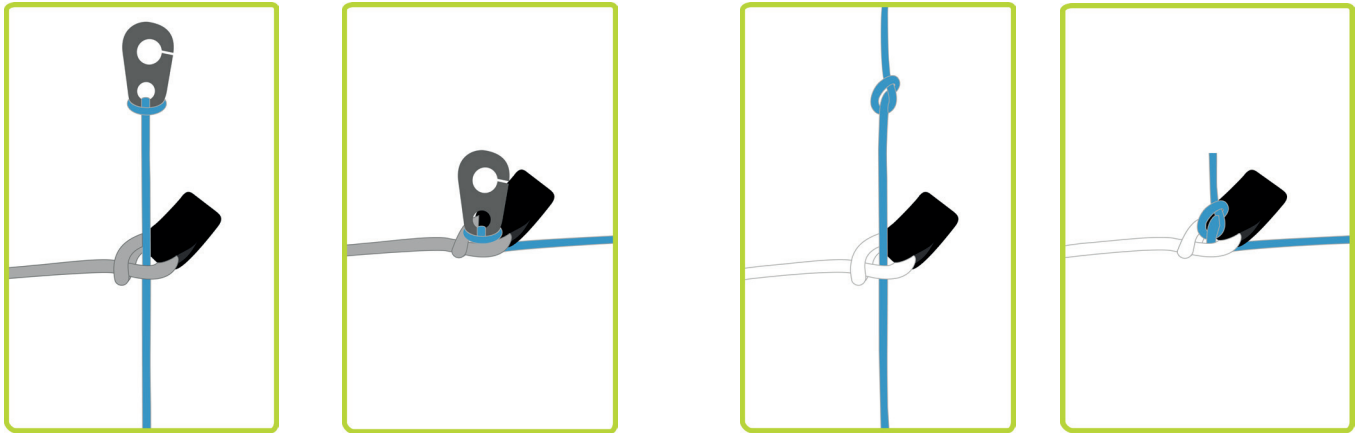
PLEASE NOTE!
The use of the speed system results in changes to the speed but also the reactions of the wing. For more information, see the certification report.

2.5.1 Speed system assembly.

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

- The pilot should use the type of speed-bar that they consider appropriate, depending on the type of harness, preferences, etc.
- This accessory is removable to facilitate its connection and / or disconnection to the risers as well as subsequent adjustment.
- It is important to follow the manufacturer’s instructions during the speed-bar installation. 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 safe connection system can be used.

Graphic 1. Speed-bar connection using Brummel hooks.



Plume (P) models - please note
The P models were designed with the idea of saving weight across the entire equipment. To achieve this, Niviuk decided to deliver the wings without the classic Brummel hooks and opting for a kite-style knotting system. This system offers the same efficiency and safety as the classic Brummel hooks, but with much less weight.

Graphic 2. Speed-bar connection using a kite-style knotting system (without Brummel hooks).

1. We make a knot in the speed-bar cord and we pass this through the cord connections on the risers.
2. Apply tension to both sides until the knots are located tightly in the riser connections.

The system or procedure for connecting the kite knot is exactly the same as the Brummel hooks and can be used in other systems or connection elements.

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 pilots may need to replace them.

In all Niviuk gliders the speed system cords on the risers are completely removable and replaceable. The pilot can use the Brummel hooks, not use them, remove them, use another type of hook, 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 INSPECTION AND WING INFLATION ON THE GROUND

After your gear has been thoroughly checked and the weather conditions deemed favourable for flying, inflate your KLIMBER P as many times as necessary to familiarise yourself with its behaviour. Inflating the KLIMBER P 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.

2.7 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 the pilot's flying style. It is advisable to fly with the original setting for a period of time to get used to the actual behaviour of the KLIMBER P. 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 of the same length. We recommend using a clove hitch or bowline knot.

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

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 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

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

Smoothly and progressively inflate the wing. The KLIMBER P inflates quickly and does not require additional force. The wing rises fast and the pilot must anticipate this in order to have control during this phase. The wing will take the load immediately, making it easier to take off in rough terrain.

If the wind permits, we recommend a reverse launch, as this allows a

better visual inspection of the wing during inflation. In “strong” winds, the KLIMBER P is especially easy to control using this launch technique. Winds of 25 to 30 km/h are considered strong for paragliding.

Correctly 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 KLIMBER P lands excellently, it converts the wing speed into lift at the pilot’s demand, allowing an enormous margin of error. Wrapping the brake lines around your hand to get greater braking efficiency is not necessary.

3.7 PACKING

The KLIMBER P 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.

4. IN FLIGHT

We recommend that you read the certification test report.

The report contains all the necessary information on how the KLIMBER P reacts during each of the tested manoeuvres.

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

Having the knowledge that the testing house provides through the test report is fundamental to learning how to deal with possible situations. To become familiar with the manoeuvres described below, we recommend practising within the environment of a competent training outfit.

4.1 FLYING IN TURBULENCE

The KLIMBER P has an excellent profile to deal with incidents; it is very stable in all conditions and has a high degree of passive safety, even in turbulent conditions.

All paragliders must be piloted for the prevailing conditions and the pilot is the ultimate safety factor.

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

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

4.2 POSSIBLE CONFIGURATIONS

To become familiar with the manoeuvres described below, we recommend practising within the environment of a competent training outfit. The pilot must adapt their use of the brakes depending on the wing-loading and avoiding over-steering.

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

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

Asymmetric collapse
In spite of the KLIMBER P's profile stability, strong turbulent air may cause the wing to collapse asymmetrically in very strong turbulence, especially if the pilot is unable to 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 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 KLIMBER P will not react violently, the turning tendency is gradual and easily controlled. Weight-shift toward the open, flying side (the opposite side of the collapse) to keep the wing flying straight, while applying light brake pressure to that side if necessary. Normally, the collapsed side of the wing should then recover and reopen by itself. If it does not, then pull the brake handle on the collapsed side decisively and quickly all the way (100%) down. You may have to repeat this pumping action to provoke the re-opening of the deflated glider side. Do not over-brake or slow down the flying side of the wing (control the turn). Once the collapsed side is open make sure you return to the default flying speed.

Frontal collapse
Due to the KLIMBER P'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 or when lacking experience using the accelerator/ speed-bar without adapting to the prevailing conditions. 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 KLIMBER P's normal flight behaviour. Certain circumstances however, may provoke a negative spin (such as trying to turn when flying at very low air speed whilst applying a lot of brake). It is not easy to give any specific recommendation about this situation other than quickly restoring the wing's default air speed and angle of attack by progressively reducing the tension on the brake lines. The normal wing reaction will be to have a lateral surge on the re-accelerated side with a rotation not greater than 360° before returning to default air speed and a straight flight path trajectory.

Parachutal stall
The possibility of entering or remaining in a parachutal stall has been eliminated from the KLIMBER P.

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

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

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

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

Cravat
A cravat may happen after an asymmetric collapse, when the end of the wing is trapped between the lines. Depending on the nature of the tangle, this situation could rapidly cause the wing to spin. The corrective manoeuvres to use are the same as those applied in case of an asymmetric collapse: control the turn/spin by applying tension on the opposite brake and weight shift opposite to the turn. Then locate the 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 KLIMBER P was designed to recover by itself in most cases. Do not try to over-correct it! 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 ACELLERATED FLIGHT

The KLIMBER P 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 incidence.
It is NOT recommended to accelerate near obstacles or in very turbulent conditions. Aim to achieve a balance between speed-bar and brake use. This balance is considered to be 'active piloting'.

4.4 FLYING WITHOUT BRAKE LINES

If, for any reason at all, the KLIMBER P's brake lines become disabled in flight, it will become necessary to pilot the wing with the C-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 during the landing approach, and the C-risers will have to be pulled symmetrically all the way down shortly before contact with the ground. This braking method is not as effective as using the brake lines, and hence the wing will land with a higher ground speed.

4.5 LINE KNOT(S) IN FLIGHT

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

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

5. LOSING ALTITUDE

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

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

5.1 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.
To re-establish forward speed and the correct angle of attack, the pilot must accelerate once the ears are pulled.

Big ears can be applied until landing but should be released at the moment of braking.

To activate the 'Big ears' manoeuvre, take the outer '3 A 4' line on each A-riser and simultaneously, smoothly pull them outward and downward. The wingtips will fold in. Let go of the lines risers to re-inflate them 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.

5.2 5B1 TECHNIQUE

With the new generation paragliders like the KLIMBER P, the application of big ears can create a high degree of trailing edge turbulence. When big ears are applied to high aspect ratio wings the ears tend to "flap" which also adds to the amount of unwanted turbulence which in turn creates a significant loss of airspeed, making it necessary for the pilot to recover it either using the accelerator or stopping the manoeuvre.

For the above reasons we recommend using the '5 B 1' 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 5B1 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 stabilise 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 the harness, exactly the same as you would with big ears.
During this manoeuvre, the first sensation is a decrease in relative wind and a slight backwards inclination of the wing, as if going backwards.
To exit the manoeuvre release the lines as you would with big ears, control the pitch and the wing will quickly adopt normal flight.

This new technique allows a comfortable and controllable rapid descent without the risk of experiencing a 'cravat' or 'deep stall'. 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

This manoeuvre was not tested during certification.

5.4 SPIRAL DIVE

This is a more effective way to rapidly lose altitude. Beware that the wing will experience and be subjected to a tremendous amount of descending and rotating speed (g-force), which can cause a loss of orientation and consciousness (blackout). This manoeuvre must therefore be done gradually to increase one's capacity to resist the g-force exerted on the body. With practise, 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 handle located on the inner side of the turn. The intensity of the turn can be controlled by braking slightly using the outer brake handle.
A paraglider flying at its maximum rotating speed can reach –20 m/s, or the equivalent of a 70 km/h vertical descent, and will stabilise in a spiral dive from 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 handle (down side of the turn) must progressively be relaxed while momentarily applying tension to the outer brake handle opposite to the turn. The pilot must also weight shift and lean towards the opposite side of the turn at the same time.

The exit should be performed gradually and smoothly so that the changes in pressure and speed can be noted.
When exiting the spiral, the glider will briefly experience an asymmetrical acceleration and dive, depending on how the manoeuvre was carried out.

Practise these manoeuvres at sufficient altitude and with moderation.

5.5 SLOW DESCENT TECHNIQUE

This technique allows descent without straining the wing or taxing the pilot. Glide normally while searching for descending air and begin to turn as if climbing in a thermal, but with the intention to sink.

Common sense has to be used to avoid dangerous areas of rotor when looking for descending air. Safety is the most important consideration.

6. SPECIAL METHODS

6.1 TOWING

The KLIMBER P 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 takeoff.
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 KLIMBER P 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!

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

7. CARE AND MAINTENANCE

7.1 MAINTENANCE

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

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

A pre-flight check is obligatory before each flight.
If there is any damage to the equipment, you should inspect it and act accordingly.
All incidents involving the leading edge should be reviewed. A hard impact can damage the sail cloth.

Thanks to TNT and the RAM system, 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 ageing. 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. The apertures at the wingtips facilitate easy removal of objects from the trailing edge.

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 the gear inside a car boot, as cars left in the sun can become very hot. A rucksack can reach temperatures up to 60ºC.

Weight should not be laid on top of the equipment.

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

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

7.3 CHECKS AND INSPECTION

A complete inspection must be scheduled every 100 flying hours or every 24 months, whichever comes first (EN/LTF norm).

We strongly recommend that any repairs should be done in a specialist repair shop by qualified personnel. A thorough pre-flight check must be performed before every flight.

7.4 REPAIRS

If the case of small tears, you can temporarily repair these by using the Ripstop tape included in the repair kit, as long as no stitching is required to mend the fabric. Any repair should be done in a specialist repair shop by qualified personnel.
Damaged lines must be repaired or exchanged immediately. Please refer to the line plan at the end of this manual.

Any repair should be done in a specialist repair shop by qualified personnel. Niviuk can not be held responsible for any damage caused by incorrect repairs.

8. SAFETY AND RESPONSIBILITY

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

Wrong 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.

10. TECHNICAL DATA

10.1 TECHNICAL DATA

KLIMBER P			**20**	**22**	**24**
CELLS	NUMBER		66	66	66
	CLOSED		14	14	14
	BOX	m^2	31	31	31
FLAT	AREA	m^2	21	22,5	24,5
	SPAN	m	12,08	12,5	13,05
	ASPECT RATIO		6,95	6,95	6,95
PROJECTED	AREA	m^2	17,95	19,24	20,95
	SPAN	M	9,74	10,08	10,52
	ASPECT RATIO		5,28	5,28	5,28
FLATTENING		%	15	15	15
CORD	MAXIMUM	m	2,18	2,26	2,36
	MINIMUM	m	0,45	0,47	0,49
	AVERAGE	m	1,7	1,8	1,9
LINES	TOTAL METERS	m	227,1	235,4	246,1
	HEIGHT	m	7,3	7,56	7,9
	NUMBER		216	216	216
	MAIN		3+1/2/2/	3+1/2/2/	3+1/2/2/
RISERS	NUMBER	3	A+A'/B/C	A+A'/B/C	A+A'/B/C
	TRIMS		NO	NO	NO
	ACCELERATOR	m/m	150	150	150
TOTAL WEIGHT	MINIMUM	kg	65	70	85
IN FLIGHT	MAXIMUM	kg	85	90	110
GLIDER WEIGHT		kg	3,25	3,36	3,56
CERTIFICATION	EN/LTF		D	D	D

10.2 MATERIALS DESCRIPTION

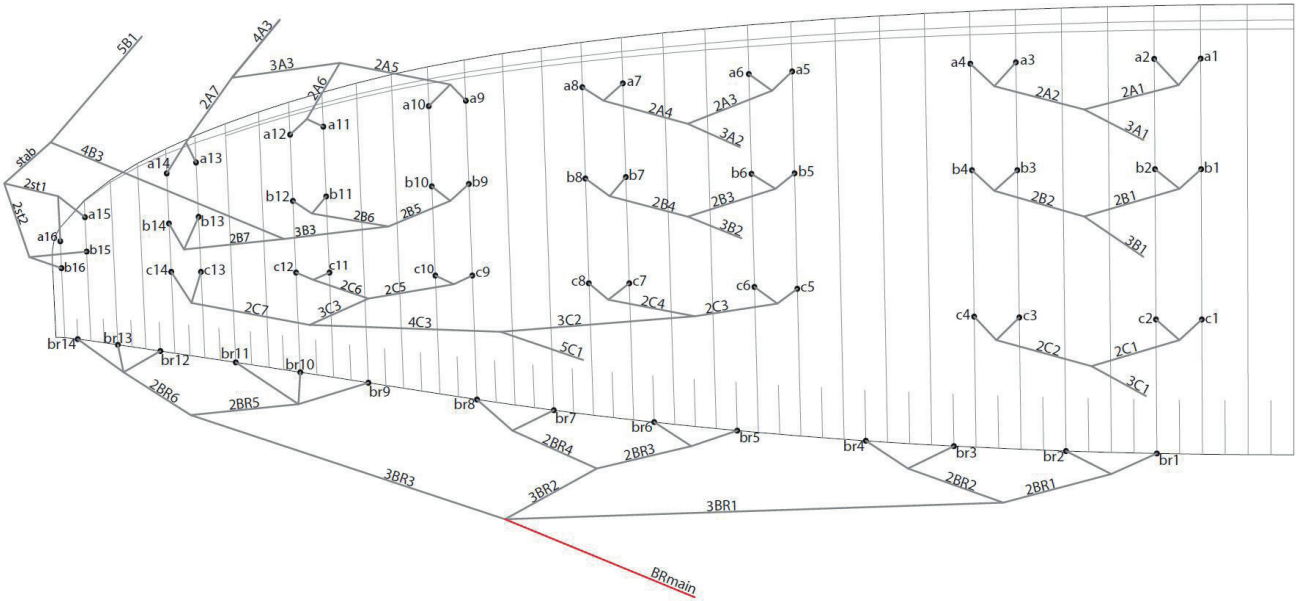
CANOPY	FABRIC CODE	SUPPLIER
UPPER SURFACE FOR LEADING EDGE	70032 E3W	PORCHER IND (FRANCE)
UPPER SURFACE FOR THE REST	70000 E3H	PORCHER IND (FRANCE)
BOTTOM SURFACE	70000 E3H/70000 E71	PORCHER IND (FRANCE)
RIBS	70032 E4D/70000 E91	PORCHER IND (FRANCE)
DIAGONALS	70032 E4D/70000 E91	PORCHER IND (FRANCE)
LOOPS	LKI - 10	KOLON IND. (KOREA)
TRAILING EDGE REINFORCEMENT	MYLAR 20	D-P (GERMANY)
RIB REINFORCEMENT	LTN-0.8 STICK	SPORTWARE CO. (CHINA)
THREAD	SERAFIL 60	AMAN (GERMANY)

SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	DC - 40	LIROS GMHB (GERMANY)
UPPER CASCADES	DC - 60	LIROS GMHB (GERMANY)
MIDDLE CASCADES	DC - 40	LIROS GMHB (GERMANY)
MIDDLE CASCADES	DC - 60	LIROS GMHB (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)
MAIN	A-8000/U 130	EDELRID (GERMANY)
MAIN	A-8000/U 190	EDELRID (GERMANY)
MAIN	A-8000/U 230	EDELRID (GERMANY)
MAIN BREAK	TNL-280	TEIJIM LIMITED (JAPAN)
THREAD	SERAFIL 60	AMAN (GERMANY)

RISERS	FABRIC CODE	SUPPLIER
MAIN MATERIAL	3455	COUSIN (FRANCE)
SECONDARY MATERIAL	10148	LIROS GMHB (GERMANY)
COLOUR INDICATOR	PAD	TECNI SANGLES (FRANCE)
THREAD	V138	COATS (UK)
PULLEYS	RF25109	RONSTAN (AUSTRALIA)

10.3 RISERS PLAN

10.4 SUSPENSION PLAN



10.5 DIMENSIONS KLIMBER P 22

LINES HEIGHT m/m

	A	B	C	br
1	7050	6964	7055	7768
2	7007	6923	6995	7490
3	6961	6885	6956	7315
4	6975	6902	6992	7330
5	6892	6831	7005	7187
6	6849	6793	6926	7074
7	6780	6738	6803	7019
8	6794	6756	6816	7060
9	6706	6670	6718	6940
10	6638	6602	6662	6844
11	6519	6482	6620	6846
12	6513	6475	6653	6851
13	6416	6375	6610	6889
14	6416	6375	6619	6980
15	6213	6206		
16	6195	6196		

RISERS LENGHT m/m

A	A'	B	C	
470	470	470	470	STANDARD
312	370	390	470	ACCELERATED
158	100	80	0	TRAVEL

10.6 DIMENSIONS KLIMBER P 24

LINES HEIGHT m/m

	A	B	C	br
1	7379	7289	7383	8126
2	7334	7247	7321	7836
3	7288	7208	7282	7655
4	7303	7226	7320	7670
5	7217	7154	7335	7522
6	7173	7114	7253	7403
7	7102	7057	7125	7348
8	7117	7077	7139	7392
9	7025	6988	7037	7267
10	6954	6917	6979	7168
11	6830	6792	6934	7169
12	6824	6785	6969	7176
13	6723	6681	6925	7215
14	6723	6681	6934	7311
15	6513	6506		
16	6494	6496		

RISERS LENGHT m/m

A	A'	B	C	
470	470	470	470	STANDARD
312	370	390	470	ACCELERATED
158	100	83	0	TRAVEL

10.7 CERTIFICATION SPECIMEN TEST

KLIMBER P 22

AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Comte 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65
Test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Class: **D**

In accordance with standards
EN 926-2:2013, EN 926-1:2015 & LTF 91/09: PG_1131.2016

Date of issue (DMY): 12. 01. 2017

Manufacturer: Niviuk Gliders / Air Games S.L.

Model: Klimber P 22

Serial number: Klimber 6-22

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight (kg)	**90**	Range of speed system (cm)	**18**
Minimum weight in flight (kg)	**70**	Speed range using brakes (km/h)	**14**
Glider's weight (kg)	**3.4**	Range of trimmers (cm)	**0**
Number of risers	**3**	Total speed range with accessories (km/h)	**30**
Projected area (m2)	**19.24**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 24 months or every 100 flying hours
Harness brand	**Flugsau**	Warning! Before use refer to user's manual
Harness model	**XX-Lite**	Person or company having presented the glider for testing: **None**
Harness to risers distance (cm)	**41**	
Distance between risers (cm)	**44**	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
B	A	B	C	A	A	A	A	B	D	A	A	A	C	A	A	A	A	0	A	A	A	0	□

KLIMBER P 24

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Test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Class: **D**

In accordance with standards
EN 926-2:2013, EN 926-1:2015 & LTF 91/09: PG_1132.2016

Date of issue (DMY): 12. 01. 2017

Manufacturer: Niviuk Gliders / Air Games S.L.

Model: Klimber P 24

Serial number: Klimber 6-24

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight (kg)	**108**	Range of speed system (cm)	**18**
Minimum weight in flight (kg)	**85**	Speed range using brakes (km/h)	**14**
Glider's weight (kg)	**3.6**	Range of trimmers (cm)	**0**
Number of risers	**3**	Total speed range with accessories (km/h)	**30**
Projected area (m2)	**20.95**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 24 months or every 100 flying hours
Harness brand	**Advance**	Warning! Before use refer to user's manual
Harness model	**Success 4**	Person or company having presented the glider for testing: **None**
Harness to risers distance (cm)	**46**	
Distance between risers (cm)	**46**	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
C	A	B	C	A	A	A	A	A	D	A	A	B	C	A	A	A	B	0	A	A	A	A	□

The importance of small details
niviuk.com