USER'S MANUAL
PEAK 4

PEAK 4

Spirit cross country

WELCOME

We wish to welcome you to our team and thank you for the confidence that you have placed in a NIVIUK Glider.

We would like to share with you the commitment, the passion and emotions of the Niviuk design team, which have resulted in the creation of the new PEAK 4. Niviuk are very proud of this new glider, a glider carefully designed to bring you maximum pleasure whilst allowing you learn and progress.

We are really proud of what we have achieved with the PEAK 4. With this glider we have applied all our years of knowledge in research design and technology to create a wing for the new mandatory rules in world class competitions.
With its new profile, the PEAK 4 was born to high competition challenges, but at the same time to cross the world in the greatest XC flights. Once again, our R+D have been able to reduce the aspect ratio keeping the same performance of our open class gliders.
This is the new glider for the new era. It offers maximum efficiency and compromise.
We are confident that you will enjoy flying this wing and that you will soon understand the meaning of our slogan: “The importance of small details”

This is the user’s manual that we recommend you to read in detail.

The **NIVIUK Gliders** Team.

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USER’S MANUAL

NIVIUK Gliders PEAK 4

This manual offers all the necessary information that will familiarize you with the main characteristics of your new paraglider. Although this manual informs you about your glider, it does not offer the instruction requirements necessary for you to be able to pilot this type of wing. Flying instruction can only be taught at a paragliding school recognized by the Flying Federation of your country.

Nevertheless we remind you that it is important that you carefully read all the contents of the manual for your new PEAK 4.

Severe injuries to the pilot can be the consequence of the misuse of this equipment.

Pilots should be able to fly at competition level to control this glider in order to guarantee their security. All instructions in this manual are informative and focused on prevent possible dangerous flight situations. All instructions in this manual are informative and focused on prevent possible dangerous flight situations.

SUMMARY

1. CHARACTERISTICS

1.1 WHO IS IT DESIGNED FOR?

The PEAK 4 is aimed for those experienced pilots with a good level of flying skills. It has been conceived for cross country and competition, therefore its capacity to fly kilometer after kilometer with an intensive pace has been proved. Its strengths are its glide, its excellent rapid ascent in thermals and its speed when flying. Moreover, it provides to the pilot a perfect transmission of the air flow and an incomparable security sensation in its category.

The PEAK 4 is a new glider's concept. Its design and structure have changed completely to improve its performance. The PEAK 4 has a new profile and it has improved the internal pressure of the wing with the new RAM technology. The lines have been redistributed, new improved materials and the inclusion of TNT technologies that improves its performance.

Description of the skills and experience required for this glider:
For those pilots used to recovery techniques, active piloting, to fly on turbulent conditions and capable of flying these kind of demanding gliders.

1.2 CERTIFICATION

The PEAK 4 passed the certification according to European EN / LTF rules. This test was carried out in the Swiss Air-Turquoise laboratories in Switzerland. All the commercially available sizes passed every required test with excellent results load test of gand collision test of 1.000 daN without experiencing any problems.

The certification result achieved on the PEAK 4 for all sizes is:

EN D

LTF D

We recommend paying special attention on the flight test report made by the certification laboratory, and specially attention to the test pilot comments (Point 25 on the flight test report).

On the flight test report there is all necessary information to know how the new glider will react on each maneuver tested.

It is important to take into account that each size can have a different reaction on the same manoeuvre. Furthermore, the same size on maximum load o minimum load can experiment a different behavior.

Description of flight characteristics on D class:
Paragliders with very demanding flying characteristics and potentially violent reactions to turbulence and pilot errors. Recommended for experienced and regularly flying pilots.

The intervention of the pilot is needed to recover a normal flight state. Check the certification results and figures on the last pages of this manual or at www.niviuk.com

1.3 IN-FLIGHT BEHAVIOR

Designing a new high-featured and accessible glider is the result of years of research and extensive testing flights under all conditions and in different places in order to provide an easy piloting wing.

The PEAK 4 cells are impregnated with Niviuk technology: equipped with SLE, STE, TNT, DRS and RAM air intake technology in the leading edge to gain performance, speed and stability. The parasitic drag is reduced to the minimum decreasing the overall length of the suspension lines thanks to its internal architecture. It offer you more features and more safety with less aspect ratio and weight.

With an aspect ratio of only 6.8, it is a 2 liner wing that provides clear and useful information to the pilot; it usually situates itself into the centre of the thermal or it follows the ascendant (good) air flow. Its air entrances have been replaced, so the application of the RAM air intake turns the leading edge in a powerful and key element to its performance. While flying the PEAK 4 the pilot feels that can reach his full potential.

In thermals, you will realize that you are piloting a glider with a big capacity to reach the nucleus. Regarding speed and L/D, PEAK 4 is surprising; the pilot can feel the glider, through the accelerator pulley, and can anticipate its movements. Even at high speed the wing is stable due to the RAM air intake. The accelerator pulley of PEAK 4 works gradually and lets you enjoy real acceleration without losing L/D in the first part of the accelerator. The wing is homogeneous, fast and capable to fly as far as you dreamed possible. The second part of the accelerator is very accessible and pleasure to use. The glider keeps its excellent glide angle throughout a full days flying in all conditions.

If you already are a Niviuk pilot the improvements of this glider will surprise you. If this is the first time you pilot one of our gliders, just enjoy it!

1.4 ASSEMBLY, MATERIALS

The PEAK 4 has all the technological innovations as used on other Niviuk gliders. Furthermore it is full of small details destined to enhance the pilots' comfort and to improve the performance of the SLE, STE, RAM AIR INTAKE, DRS and TNT.

The use of the SLE (Structured Leading Edge) allows reinforcement of the leading edge preventing any deformation during turbulence. The airflow is also vastly improved over the entire front span of the glider.
(See http://www.niviuk.com/technology.asp?i=eng&id=JNKPKPN4&prod=&news=)

The STE (structured Trailing edge) optimizes the profile without any distortion, resulting in less resistance and improved performance.
(See http://www.niviuk.com/technology.asp?id=JNKPNQL0)
With the 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.

The TNT is a technical revolution. It underlines building the internal structure of the glider with Nitinol to make the profile more uniform and the glider lighter for better flight performance. Moreover, the Nitinol is resistant to deformations, hot temperatures and breaks as well as more resistant to the glider folding process.
The RAM AIR INTAKE technology presents and internal situation for the air entrance to allow an optimal maintenance of the internal pressure as well as an improving of the laminar flow on intrados. What's the result? Gaining turbulent air absorption in the leading edge, more consistent at every speed and a better performance while assuring maximum security.
(See http://www.niviuk.com/technology.asp?id=JNKQKNP4)

The new generation profile of the PEAK 4 has been conceived to efficiently distribute the total load across the two rows of lines. The chosen materials and line dimensions have minimum air resistance while respecting the security and maximum load efficiency.

The line plan on the PEAK 4 has a total of 196 unsheathed lines, which are slightly more exposed to the normal rigours and wear of our sport. It is strongly recommended that all lines are thoroughly checked by the pilot prior to every flight and ultimately checked by a service centre or Niviuk dealer after the first 30hours of flight. We should not forget that we are using materials with great performance but that they need a rigorous check before every flight.

The fabrics used in the construction of the PEAK 4 have been carefully selected for their lightweight, UV standards and resilient properties when

used during normal conditions.
Not a single millimeter of error is possible in the manufacturing process from Olivier's computer to the cutting of the fabric. An automatic process controlled by a laser-cutting program cuts each of the sections that compose the different parts of the wing. This program not only cuts the pieces of fabric but it also paints the guideline marks that will aid the assembly; it also numbers the separate pieces of material. All this is carried out before human handling of the pieces begins. So we eliminate possible and understandable errors that may occur during this delicate procedure.

The lines are semi-automatically manufactured and all the sewing is finished under the supervision of our specialists. The jigsaw puzzle of the assembly process is made easier using this method. We minimize the processes while making the quality control more efficient. All the different parts of the canopy are cut and assembled under the strict conditions induced by the automation of the whole process.

All NIVIUK gliders go through an extremely thorough and efficient final inspection.
Every single line of each glider is measured individually once the final assembly has concluded. Each wing is then individually inflated for the last visual revision.

Each glider is packaged following the maintenance and conservation instructions recommended for the advanced materials. NIVIUK gliders are made of first class materials as demanded by the performance, durability, and homologation requirements of the present-day market.

Information about construction materials is given on the last pages of this manual.

1.5 ELEMENTS, COMPONENTS

The PEAK 4 is delivered to its owner together with a series of components that, although not fundamental, do take an important part in the use, transport and storage of the paraglider:

The new large capacity Kargo rucksack 220L, ideal for packing also one competition harness (such as the Drifter). Capacity and comfort all in one.

The N-Kare bag which makes easy the glider folding process. Moreover, it protects the wing when packing and carrying. An adjustable strap for quick and easy compression to fold the wing as small as possible

A small fabric repair including auto adhesive rips top (same colors of the wing) and replacement maillon blockers.

An instruction booklet including the technical data info, the line plan and some tips.
The user's manual with the answers all our questions about our new PEAK 4 is available at www.niviuk.com

2. UNPACKING AND ASSEMBLY

2.1 CHOOSE THE RIGHT PLACE

We recommend that you unpack and assemble your wing on a schooling slope or a flat clear area without too much wind and free of obstacles. These conditions will allow you to carry out all the steps required for you to check and inflate the PEAK 4.

We recommend that an instructor or a retailer supervises the entire procedure as only they are competent to resolve any doubt in a safe and professional way.

2.2 PROCEDURE

Take the paraglider out of the rucksack, open it and spread it open, with

the lines on top of the underside, position the wing as if you were to inflate it. Check the condition of the fabric and the lines, make sure there are no abnormalities. Check the maillons that attach the lines to the risers are properly closed. Identify and order the A, A', B lines, the brake lines and the corresponding risers. Make sure that there are no ties or knots.

2.3 ASSEMBLY OF THE HARNESS

Correctly place the risers on the harness karabiners. The risers and lines should not have any twists and they should be in the right order. Check that the harness buckles are correctly locked.

2.4 TYPE OF HARNESS

The PEAK 4 has been certified on EN D with a harness according to the following rules:

- 2. DV LuftGerPV §1, Nr. 7 c (LTF)
- European Standard EN1651
- European Standard EN12491

This certification allows it to be flown with most of the harnesses on the market, even the ones that use cocoon.

We recommend that you adjust the distance of the chest strap according the homologation from 46 cm between the harness carabineers. This adjustment will offer the top compromise between safety and feelings.

Incorrect adjustment can seriously affect the piloting of the glider. A distance, which is too wide between the karabiners, may provide more feedback but could affect the overall stability of the glider. A distance, which is too narrow between the karabiners, would provide less feedback but also increase any risk of developing a twist in during a large collapse. Any change made to these specifications may affect the wing's performance and reactions. This would therefore effect the glider's configuration and would not conform to the homologation.

2.5 ASSEMBLY OF THE ACCELERATOR

The acceleration mechanism of the PEAK 4 works when you push with your feet on the accelerator bar. The accelerator bar should be installed correctly considering that each harness is different and that it is fit by you 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 you have checked all the equipment and made sure that the wind conditions are favorable, inflate your PEAK 4 as many times as necessary in order to become acquainted with the wing's behavior. The PEAK 4 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 lift to accompany the natural rising movement of the wing.

We recommend becoming familiar with the air intakes of the PEAK 4. Getting a slow pre-inflated before reaching a good air volume inside the glider is the best technique.

2.7 ADJUSTING THE BRAKES

The length of the main brake lines is adjusted at the factory to the length established during homologation. However, the length can be changed to adapt to the pilots' flying style. Nevertheless, we recommend that you fly for a while with these, set at the original length. This will allow you to become accustomed to the PEAK 4's original flying behavior. If you then decide to change the length of the brake lines, untie the knot, slide the line through the brake link to the desired length, and strongly re-tie the knot. Qualified personnel should carry out this adjustment. You must ensure that this adjustment does not slow down the glider without any pilot input. Both brake lines should be symmetrical and measure the same length. The most recommended knots are the clove hitch knot or bowline knot.

When changing the brakes length, it is necessary to check that they do not act when the accelerator is used. When we accelerate the glider rotates over the B riser and the trailing edge elevates. We must check that the brake is adjusted taking in consideration this extra length in acceleration.

3. THE FIRST FLIGHT

3.1 CHOOSE THE RIGHT PLACE

We recommend that the first flight with your PEAK 4 is made on a smooth slope (a school slope) or in your usual flying area.

3.2 PREPARATION

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

3.3 FLIGHT PLAN

Draw out a flight plan before take-off in order to avoid possible flight errors.

3.4 PRE-FLIGHT CHECK LIST

Once you are ready, but before you take-off, carry out another equipment inspection. Ensure correct installation of all equipment and that all lines are free of hindrances or knots. Check that the weather conditions are suited for your flying skills.

3.5 WING INFLATION, CONTROL AND TAKE-OFF

Smoothly and progressively inflate the wing (chapter 2.6 INSPECTION AND WING INFLATION ON THE GROUND). The PEAK 4 inflates easily and does not require excessive energy. It does not tend to over-take you, so the wing inflation phase is carried out without anguish. These take off characteristics provide a perfect control phase and enough time for the pilot to decide whether to accelerate and take off.

Whenever the wind speed allows it, we recommend a reverse launch technique; this type of launch allows you to carry out a better visual check of the wing. The PEAK 4 is especially easy to control in this position in strong winds. However, wind speeds up to 25 to 30 km/h are considered strong and extra consideration should be given to any thought of flight.

Preparation and positioning of the wing on the take off is especially important. Choose a location which is appropriate for the direction of the wind. Position the paraglider as if it were part of a large circle, taking into account the shape of the canopy in flight. All this will assist in a trouble free take-off.

3.6 LANDING

The PEAK 4 lands excellently, it transforms the wing speed into lift on 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 PEAK 4's profile withstands different turbulent conditions thus allowing the best piloting and stability. It reacts admirably in passive flight, thus offering a high level of safety in turbulent conditions. Nonetheless, the pilot always has to pilot according to the prevailing weather conditions. The pilot is the ultimate safety factor.

We recommend active piloting, making the necessary fine adjustments to keep the wing in control. He/she should stop braking to allow it to fly at the required wing speed after a correction is made.

Do not maintain any correction for longer than necessary (braked) this would cause the wing to enter into critical flying situation. Whenever necessary, control a situation, react to it and then re-establish the required speed.

4.2 POSSIBLE CONFIGURATIONS

We recommend paying special attention on the flight test report made by the certification laboratory, and specially attention to the test pilot comments (Point 25 on the flight test report).

On the flight test report there is all necessary information to know how the new glider will react on each manoeuvre tested.

It is important to take into account that each size can have a different reaction on the same maneuver. Furthermore, the same size on maximum load o minimum load can experiment a different behavior.

Knowing how the glider is going to react when maneuvering is the best way to face every possible situation with success.
We recommend that training to master these maneuvers be carried out under the supervision of a competent school.

Asymmetric collapse

In spite of the great stability of the profile of the PEAK 4, heavy turbulent conditions may cause part of the wing to collapse asymmetrically. This usually happens when the pilot has not foreseen this possible reaction of the wing. When the wing is about to experience an asymmetric collapse the brake lines and the harness will transmit a loss of pressure to the pilot. To prevent the collapse from happening, pull the brake line corresponding to the compromised side of the wing, this will increase the angle of incidence. If the collapse does happen the PEAK 4 will not react violently, the turn tendency is very gradual and it is easily controlled. Lean your body towards the side that is still flying in order to counteract the turn and to maintain a straight course, if necessary slightly slow down the same side. The collapse will normally open by itself but if that does not happen, pull completely on the brake line on the side, which has collapsed (100%). Do this with a firm movement. You may have to repeat this operation to provoke the re-opening. Take care not to over-brake on the side that is still flying (turn control) and when the collapse has been solved; remember to let the wing recover its flying speed.

Symmetric collapse

In normal flying conditions the design of the PEAK 4 ensures that a symmetric collapse is quite improbable. The profile of the wing has been designed to widely tolerate extreme changes in the angle of incidence. A symmetric collapse may occur in heavy turbulent conditions, on entry or exit of strong thermals or lack of adapting the use of the accelerator to the prevailing air conditions. Symmetrical collapses usually re-inflate without the glider turning but you can symmetrically apply the brake lines with a quick deep pump to quicken the re-inflation. Release the brake lines immediately to recover optimum flight speed.

Negative spin

This configuration is out of the normal flight behavior of the PEAK 4. Certain circumstances however, may provoke this configuration such as trying to turn when the wing is flying at very low speed (while heavily braking). It is not easy to give any recommendations about this situation since it varies depending on the circumstances. Remember that you should restore the relative air speed over the wing. To achieve this, progressively reduce the pressure on the brake lines and let the wing gain speed. The normal reaction would be a lateral surge with a turn tendency no greater than 360° before restoring to normal flight conditions.

Parachutal stall

The possibility of this happening has been eliminated by the design of the PEAK 4 and it is highly unlikely to happen on this paraglider. If it does happen, the feeling would be that the wing would not be advancing; you would feel a kind of instability and a lack of pressure on the brake lines, although the canopy would appear to be correctly inflated. The correct reaction would be to release the pressure on the brake lines and push the A lines forward or rather lean your body to any side WITHOUT PULLING ON THE BRAKE LINES.

Deep Stall

The possibility of the PEAK 4 falling into this configuration during normal flight is very unlikely. This could happen if you are flying at a very low speed, whilst over steering in a number of maneuvers and in turbulent conditions. To provoke a deep stall you have to take the wing to minimum flight speed by symmetrically pulling the brake lines, when you reach this point, continue pulling until you reach 100% and then hold. The glider will first fall behind you and then situate itself above you, rocking slightly, depending on how the maneuver was carried out. When you start to provoke a stall, be positive and do not doubt an instant.
Do not release the brake lines when half way through the maneuver. This would cause the glider to surge violently forward with great energy and may result in the wing below the pilot. it is very important that the pressure on the brake lines is maintained until the wing is well established vertical above.

Wing tangle

A wing tangle may happen after an asymmetric collapse, the end of the wing is trapped between the lines (Cravat). This situation could rapidly cause the wing to turn, although it depends on the nature of the tangle. The correction maneuvers are the same as those applied in the case of an asymmetrical collapse, control the turn tendency by applying the opposite brake and lean your body against the turn. Then locate the line (3a3) that reaches the stabilizer that is trapped between the other lines. Pull on this line until it is tense, this should help to undo the wing tangle. If you cannot undo the tangle, fly to the nearest possible landing spot, control the flying course with your body movements and a little pressure on the opposite brake. Be careful when attempting to undo a tangle if you are flying near a mountainside or near to other paragliders, you may lose control of the flying course and a collision may occur.

Over handling

Most flying incidents are caused by wrong actions of the pilot, which chained one after another create abnormal flying configurations (a cascade of incidents). You must to remember that over handling the wing will lead to critical levels of functioning. The PEAK 4 is designed always to try to recover normal flight by itself, do not try to over handle it.
Generally speaking, the reactions of the wing, that follow over handling, are neither due to the input made or the intensity, but the length of time the pilot continues to over handle. You have to allow the profile to re-establish normal flight speed after any type of handling.

4.3 USING THE ACCELERATOR

The profile of the PEAK 4 has been designed to fly stable through its entire speed range. It is useful to accelerate when flying in strong winds

or in extreme descending air. When you accelerate the wing, the profile becomes more sensitive to possible turbulence and closer to a possible frontal collapse. If you feel a pressure loss, you should stop pushing on the accelerator and pull slightly on the brake lines to increase the angle of incidence. Remember that you have to re-establish the flight speed after correcting the incidence.

It is NOT recommended to accelerate near to the mountainside or in very turbulent conditions. If necessary you will have to constantly adjust the movements and pressure on the accelerator whilst constantly adjusting the pressure applied to the brake lines. This balance is considered to be “active piloting.”

PEAK 4 has been designed with no other adjustable, removable or variable device that could modify glider’s behavior to prevent an incorrect use of the product.

4.4 FLYING WITHOUT BRAKE LINES

The PEAK 4is a new generation 2 liner D class glider which allows piloting with the back risers. The back risers of the PEAK 4 have handles conceived to do that.

The PEAK 4 allows the classical piloting using only the breaks. However, piloting using the back risers is now a common technique that allows reaching more control and precision over the wing while keeping the glider accelerated without utilizing the breaks.

4.5 KNOTS IN FLIGHT

The best way to avoid these knots and tangles is to inspect the lines before you inflate the wing for take-off. If you notice a knot before take-off, immediately stop running and do not take off.
If you have taken off with a knot you will have to correct the drift by leaning on the opposite side of the knot and apply the brake line on that side too. You can gently pull on the brake line to see if the knot becomes unfastened or try to identify the line with the knot in it. The identified line can then be pulled to see if the knot undoes. Be very careful when trying to remove a knot. When there are knots in the lines or when they are tangled, do not pull too hard on the brake lines because there is a greater risk of the wing to stalling or negative turn being initiated

Before trying to remove a knot, make sure there are no pilots flying nearby and never try these maneuvers near the mountainside. If the knot is too tight and you cannot remove it, carefully and safely fly to the nearest landing place.

5. LOSING HEIGHT

The knowledge of the different descent techniques is an important resource to use in certain situations. The most adequate descent method will depend on the particular situation.
We recommend that you learn to use these maneuvers under the tuition of a competent school.

5.1 EARS

Big ears are a moderate descent method, reaching –3 or –4 m/s, speed reduces slightly between 3 and 5 km/h and piloting becomes limited. The angle of incidence and the surface wing load also increases. Push on the accelerator to restore the wing’s horizontal speed and the angle of incidence.

To activate ears take the line 3a3 and simultaneously, smoothly pull them outward and downward. The wingtips will fold in. Let go of the lines and the ears will re-inflate automatically. If they do not re-inflate, gently pull on one of the brake lines and then on the opposite one. We recommend that you re-inflate asymmetrically, not to alter the angle of incidence, more so if you are flying near the ground or flying in turbulence.
Please, read this carefully: risk of full stall!!!

The PEAK 4 has a relatively short brake travel and it should be noted that by reaching for the 3a3 line to make ears it is possible to apply brake pressure without realizing it. The same happens whilst pulling down the 3a3 line to make the ears. This can obviously lead to a significant speed decrease.

The PEAK 4 has a new high arch concept and applying ears induces more resistance. With this new arch, the ears don't stick but they do tend to "hang". Because of this, there will be more resistance, compared to ears on a standard glider.
The PEAK 4 is designed with little cord, which is good in normal flight conditions. However on the other hand the glider could get into trouble when recovering normal speed if it is allowed ears and achieve an extreme angle of incidence.
These are 3 particularities, which together with turbulent conditions could cause an unintentional stall.

The solution: big ears may still be applied but the pilot must be fully aware of the above-mentioned points and act accordingly. To avoid the stall simply use the accelerator halfway (this is sufficient) to increase the speed, which naturally rises the speed and decreases the angle of incidence. In this way you will maintain a safe margin and avoid this phenomenon. Take care not to pull the brakes while making the ears!!

5.2 B3 TECHNIQUE – 2c3 on the PEAK 4

On the new generation paragliders the application of big ears can create a high degree of trailing turbulence which in turn creates a significant loss of airspeed. When big ears are applied to high aspect ratio wings the ears tend to "flap" which also adds to the amount of unwanted turbulence.

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 wings with a profile of 2 lines can often prove difficult.

For all these reasons, we advise the use of the new B3 line descent technique-2c3 on the PEAK 4. This technique ensures a rapid descent is achieved whilst forward wing speed is maintained and so the risk of a deep stall is eliminated.

HOW?

Locate the 2c3 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 fall rate of around 5-6m/s. Controlled turning of the wing can easily be maintained by weight shifting the harness, exactly the same as you would with big ears. We recommend the application of the speed bar whilst using this technique. 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" or "deep stall".
We advise you to first try this technique in smooth conditions with sufficient altitude above appropriate terrain.

5.3 B-LINE STALL

This maneuver is not possible with this wing.

5.4 SPIRAL DIVE

This is a more effective way for rapidly losing height. You have to know that, the wing can gain a lot of vertical speed and rotation speed (G force). This can cause a loss of orientation and consciousness

(blackouts). These are the reasons why it is best to carry out this maneuver gradually so your capacity to resist the G forces increases and you will learn to fully appreciate and understand the maneuver. Always practice this maneuver when flying at high altitude.

To start the maneuver, first lean your bodyweight and pull the brake line to the side to which you are leaning. You can regulate the intensity of the turn by applying a little outside brake.

A paraglider flying at its maximum turn speed can reach –20 m/s, equivalent 70 km/h vertical speed and stabilize in a spiral dive from 15 m/s onwards.

These are the reasons why you should be familiar with and know how to carry out the exit methods.

To exit this maneuver you must progressively release the inside brake and also momentarily apply outside brake. Whilst doing this you must also lean your bodyweight towards the outside. This exit maneuver has to be carried out gradually and with smooth movements so you can feel the pressure and speed changes at the same time.

The after effect of the exit maneuver is that the glider will rock briefly with lateral surge, depending on how the maneuver has been carried out. Practice these movements at sufficient altitude and with moderation.

5.5 SLOW DESCENT TECHNIQUE

Using this technique (do not hurry to descend) we will fly normally, without forcing neither the material nor the pilot. It means looking for descending air areas and turn as it was a thermal – in order to descend. We have to avoid danger areas when looking for descent zones. Safety is the most important thing.

6. SPECIAL METHODS

6.1 TOWING

The PEAK 4 does not experience any problem when being towed. Only qualified personnel should handle the qualified equipment to carry out this operation. The wing has to be inflated in the same way as in normal flight.

6.2 ACROBATIC FLIGHT

Although the PEAK 4 has been tested by expert acrobatic pilots in extreme situations, it HAS NOT been designed for acrobatic flight and we DO NOT recommend continued use in this type of flight. Acrobatic flight is the youngest discipline in free flight. We consider acrobatic flight to be any form of piloting that is different to normal flight. To learn safely how to master acrobatic maneuvers you should attend lessons which are carried out by a qualified instructor and over water. Extreme maneuvers take you and your wing to centrifugal forces that can reach 4 to 5g. Materials will wear more quickly than in normal flight. If you do practice extreme maneuvers we recommend that you submit your wing to a line revision every six months.

7. FOLDING INSTRUCTIONS

The PEAK 4 has been equipped with the latest technologies SLE and RAM AIR INTAKE in the leading edge, STL in the extrados and DRS in the trailing edge. In order to guarantee the correct preservation of the glider and to keep it in perfect flying condition, we recommend using always an appropriate folding method.

The PEAK 4 is delivered with the N-Kare bag. It is an easy folding bag that assists you during the folding process and also can be used as a base surface which protects the glider against damage.
More info at http://www.niviuk.com/accessories.asp?id=JNKQKNP4)

When the PEAK 4 is folded, the Kargo rucksack is ready to transport it.

8. CARE AND MAINTENANCE

8.1 MAINTENANCE

Careful maintenance of your equipment will ensure continued performance.
The fabric and the lines do not need to be washed, if they become dirty, clean them with a soft damp cloth.
If your wing gets wet with salty water, immerse it in fresh water and dry it away from direct sunlight. The sunlight may damage the materials of your wing and cause premature aging. Once you have landed, do not leave the wing in the sun, store it properly.

If you use your wing in a sandy area, try to avoid the sand from entering through the cell openings of the leading edge. If sand is inside the wing, remove it before folding.

If it gets wet of sea water, you should submerge it into fresh water and let it dry far away from the sun.

8.2 STORAGE

It is important that the wing is correctly folded when stored. Store your flying equipment in a cool, dry place away from solvents, fuels or oils. It is not advisable to store your flying equipment in the trunk of your car. Temperatures inside a car parked in the sunlight, can be very high. Inside a rucksack and in the sunlight temperatures can reach 60ºC. Weight should not be laid on top of the equipment.

If the flying gear is stored with organic material (such as leaves or insects) inside, the chemical reaction can cause irreparable damage.

8.3 CHECKS AND CONTROLS

We strongly recommend that all actions on the glider were advised for professionals.

Always check all the flying equipment before every flight.

In spite of providing much more benefits to the pilots, 2 liner gliders need more care and control of the calibration. The PEAK 4 unsheathed lines resistance is guaranteed under 150 +/- hours. The resistance to the UV is one of the highest. With a 2 liner glider every little variation on the calibration of the lines has a directly effect on the performance of the wing.

We recommend checking the lines calibration after the first 30 hours +/- of flight. This examination must be taken apart from the regular checking every 100 hours of use or every two years (whichever happens first).

Why is it necessary?

Thanks to the experience acquired with the 2 liner gliders on the previous seasons and to the incessant control task of our R&D team over the Abac Team gliders, we are capable now of predicting how to take appropriately care of this kind of lines to assure the best performance of the profile. Following the controls recommended the glider will keep its original features for longer.

The conditions of the flight zone, the climate area, temperature, humidity, wing load,… cause a different impact over the wing. That's why the calibration would be set taking in consideration these factors. Only qualified professionals should realize it. Do not modify the wing considering the calibration required for other pilots before being sure that it is really necessary for us.

8.4 REPAIRS

If the wing is damaged, you can temporarily repair it by using the rip stop that you'll find in the repair kit, so long as no stitches are involved in the tear. Any other type of tear must be repaired in a specialized repair shop or by qualified personnel. Do not accept a home repair.

9. SAFETY AND RESPONSABILITY

It is well known that paragliding is considered a high-risk sport, where safety depends on the person who is practising it.
Wrong use of this equipment can cause severe injuries to the pilot, even death. Manufacturers and dealers are not responsible for any act or accident that may be the result of practicing this sport.
You must not use this equipment if you are not trained. Do not take advice or accept any informal training from anyone who is not properly qualified as a flight instructor.

10. GUARANTEE

The entire equipment and components are covered by a 2 year guarantee for any manufacture fault.

The guarantee does not cover misuse or abnormal use of the materials.

11. TECHNICAL DATA

11.1 TECHNICAL DATA

PEAK 4			**21**	**23**	**25**	**27**
CELLS	NUMBER		75	75	75	75
	CLOSED		8	8	8	8
	BOX		25	25	25	25
FLAT	AREA	m^2	21	23	24,5	26
	SPAN	m	11,95	12,506	12,907	13,297
	ASPECT RATIO		6,8	6,8	6,8	6,8
PROJECTED	AREA	m^2	17,95	19,666	20,94	22,22
	SPAN	m	9,604	10,051	10,374	10,686
	ASPECT RATIO		5,14	5,14	5,14	5,14
FLATTENING		%	15	15	15	15
CORD	MAXIMUM	m	2,15	2,25	2,33	2,4
	MINIMUM	m	0,44	0,46	0,48	0,49
	AVERAGE	m	1,76	1,84	1,9	1,96
LINES	TOTAL METERS	m	182	191	197	203
	HEIGHT	m	7,1	7,43	7,68	7,9
	NUMBER		196	196	196	196
	MAIN		2/1/3	2/1/3	2/1/3	2/1/3
RISERS	NUMBER	3	A / A' / B	A / A' / B	A / A' / B	A / A' / B
	TRIMS		NO	NO	NO	NO
	ACCELERATOR	m/m	135	135	135	135
TOTAL WEIGHT	MINIMUM	kg	70	85	95	105
IN FLIGHT	MAXIMUM	kg	90	105	115	125
GLIDER WEIGHT		kg	5,1	5,3	5,5	5,8
CERTIFICATION		EN/LTF	D	D	D	D

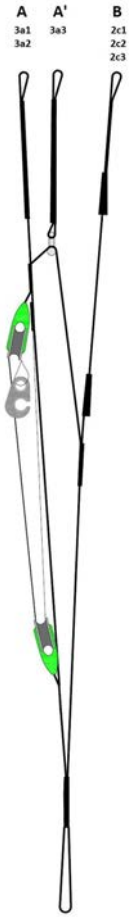
11.2 MATERIALS DESCRIPTION

CANOPY	FABRIC CODE	SUPPLIER
UPPER SURFACE	9017 E25	NCV (FRANCE)
BOTTOM SURFACE	N-20-DMF 36	DOMINICO TEX CO
RIBS	9017 E29	NCV (FRANCE)
DIAGONALS	9017 E29	NCV (FRANCE)
LOOPS	LKI - 10	KOLON IND (KOREA)
REINFORCEMENT LOOPS	SOFT DACRON	D-P (GERMANY)
TRAILING EDGE REIFORCEMENT	MYLAR 20	D-P (GERMANY)
REINFORCEMENT RIBS	LTN-0.8 STICK	SPORTWARE CO. (CHINA)
THREAD	SERAFIL 60	AMAN (GERMANY)

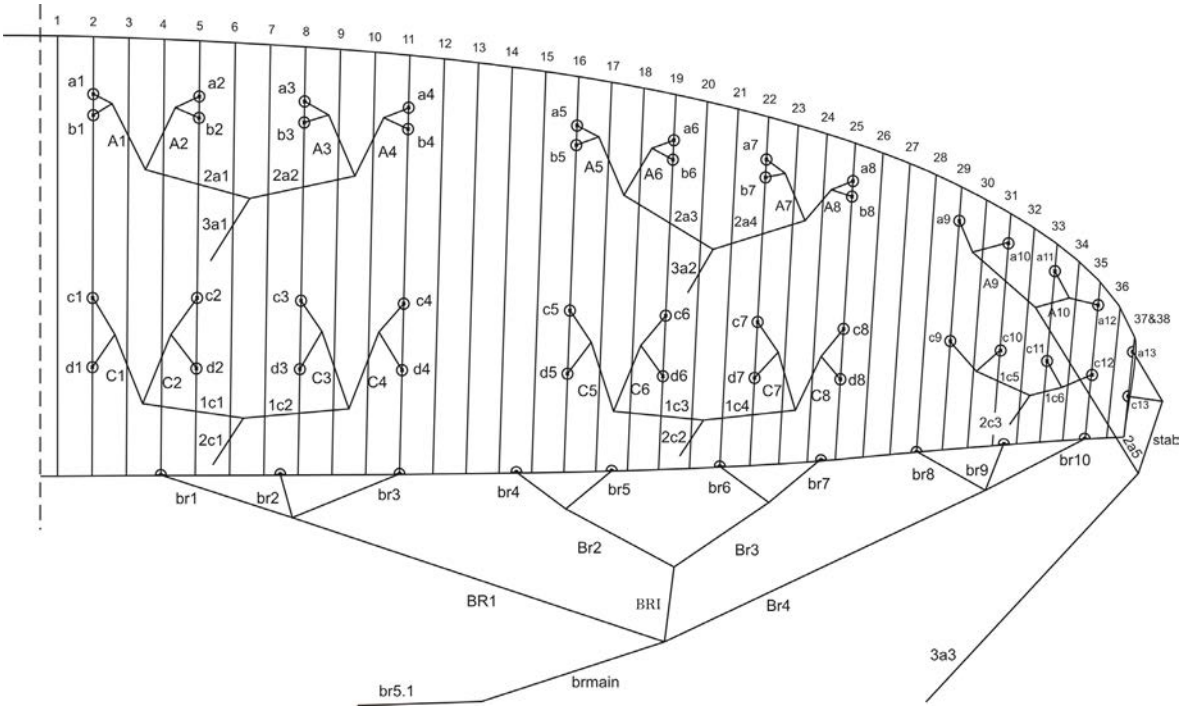
SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	DC-040	LIROS GMHB (GERMANY)
UPPER CASCADES	8000/U-050	EDELRID (GERMANY)
UPPER CASCADES	8000/U-070	EDELRID (GERMANY)
MIDDLE CASCADES	DC-040	LIROS GMHB(GERMANY)
MIDDLE CASCADES	DC-060	LIROS GMHB(GERMANY)
MIDDLE CASCADES	8000/U-050	EDELRID (GERMANY)
MIDDLE CASCADES	8000/U-070	EDELRID (GERMANY)
MIDDLE CASCADES	8000/U-090	EDELRID (GERMANY)
MIDDLE CASCADES	8000/U-130	EDELRID (GERMANY)
MIDDLE CASCADES	16140-070	COUSIN (FRANCE)
MIDDLE CASCADES	12240-115	COUSIN (FRANCE)
MIDDLE CASCADES	16330-145	COUSIN (FRANCE)
MIDDLE CASCADES	12470-200	COUSIN (FRANCE)
MIDDLE CASCADES	16560-240	COUSIN (FRANCE)
MAIN	12240-115	COUSIN (FRANCE)
MAIN	16330-145	COUSIN (FRANCE)
MAIN	16560-240	COUSIN (FRANCE)
MAIN	12950-405	COUSIN (FRANCE)
MAIN BREAK	TNL-280	TEIJIM LIMITED (JAPAN)
THREAD	SERAFIL 60	AMAN (GERMANY)

RISERS	FABRIC CODE	SUPPLIER
MATERIAL	3455	COUSIN (FRANCE)
COLOR INDICATOR	PAD	TECNI SANGLES (FRANCE)
THREAD	N/F-66	YOUNG CHANG T&C LTD
MAILLONS	3.5	ANSUNG PRECISION (KOREA)
PULLEYS	ID018041	RONSTAN (AUSTRALIA)

11.3 RISERS ARRANGEMENT



11.4 LINE PLAN



11.5 LENGTHS PEAK 4 21

LINES HEIGHT m/m

	A	B	C	D	br
1	6.651	6.616	6.628	6.772	7.381
2	6.529	6.492	6.481	6.642	6.988
3	6.499	6.463	6.454	6.612	6.842
4	6.575	6.542	6.570	6.709	6.792
5	6.451	6.417	6.428	6.559	6.645
6	6.331	6.300	6.297	6.434	6.627
7	6.291	6.263	6.271	6.399	6.769
8	6.339	6.318	6.364	6.467	6.596
9	6.141		6.135		6.565
10	6.043		6.046		6.643
11	5.990		6.005		
12	6.005		6.029		
13	5.893		5.938		

RISERS LENGHT m/m

	A	A'	B	
	490	490	490	STANDARD
	360	430	490	ACCELERATED

11.6 LENGTHS PEAK 4 23

LINES HEIGHT m/m

	A	B	C	D	br
1	7.000	6.968	6.976	7.127	7.724
2	6.865	6.832	6.812	6.982	7.349
3	6.823	6.790	6.770	6.931	7.208
4	6.866	6.836	6.843	6.990	7.158
5	6.764	6.734	6.732	6.870	7.005
6	6.657	6.629	6.618	6.760	6.974
7	6.614	6.589	6.589	6.722	7.124
8	6.648	6.631	6.666	6.775	6.944
9	6.434		6.423		6.912
10	6.354		6.353		6.994
11	6.304		6.316		
12	6.326		6.347		
13	6.200		6.244		

RISERS LENGHT m/m

	A	A'	B	
	490	490	490	STANDARD
	360	430	490	ACCELERATED

11.7 LENGTHS PEAK 4 25

LINES HEIGHT m/m

	A	B	C	D	br
1	7.240	7.207	7.223	7.379	8.036
2	7.101	7.067	7.055	7.230	7.613
3	7.059	7.025	7.012	7.178	7.457
4	7.104	7.073	7.088	7.240	7.406
5	7.000	6.969	6.975	7.117	7.249
6	6.889	6.861	6.858	7.004	7.231
7	6.846	6.820	6.828	6.965	7.385
8	6.881	6.864	6.908	7.020	7.201
9	6.663		6.657		7.168
10	6.581		6.585		7.253
11	6.529		6.547		
12	6.551		6.578		
13	6.421		6.471		

RISERS LENGHT m/m

	A	A'	B	
	490	490	490	STANDARD
	360	430	490	ACCELERATED

11.8 LENGTHS PEAK 4 27

LINES HEIGHT m/m

	A	B	C	D	br
1	7.460	7.426	7.429	7.590	8.280
2	7.328	7.292	7.269	7.448	7.844
3	7.298	7.263	7.243	7.418	7.684
4	7.385	7.354	7.375	7.529	7.596
5	7.251	7.219	7.221	7.367	7.435
6	7.119	7.090	7.077	7.229	7.417
7	7.076	7.049	7.048	7.191	7.577
8	7.130	7.113	7.154	7.268	7.389
9	6.913		6.888		7.356
10	6.804		6.790		7.444
11	6.744		6.744		
12	6.760		6.770		
13	6.634		6.666		

RISERS LENGHT m/m

	A	A'	B	
	490	490	490	STANDARD
	360	430	490	ACCELERATED

10.9 CERTIFICATION SPECIMEN TEST

PEAK 4 21

para-test.com
paragliding by air turquoise
Air Turquoise SA
Rte du Pré-au-Comte 8 | CH-1844 Villeneuve
tel. +41 21 965 65 65 | mobile +41 79 202 52 30
info@para-test.com

NIVIUK

Class: **D**

In accordance with EN standards 926-2:2013 & 926-1:2006: **PG_0945.2015**

Date of issue (DMY): **12. 11. 2015**

Manufacturer: **Niviuk Gliders / Air Games S.L.**

Model: **Peak 4 21**

Serial number: **Peak 4 1-21**

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight (kg)	**90**	Range of speed system (cm)	**13.5**
Minimum weight in flight (kg)	**70**	Speed range using brakes (km/h)	**14**
Glider's weight (kg)	**5.1**	Range of trimmers (cm)	**0**
Number of risers	**2**	Total speed range with accessories (km/h)	**31**
Projected area (m2)	**17.95**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 24 months or every 100 flying hours
Harness brand	**Niviuk**	Warning! Before use refer to user's manual
Harness model	**Hamak M**	Person or company having presented the glider for testing: **None**
Harness to risers distance (cm)	**43**	
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
C	A	B	C	A	A	A	A	D	D	A	D	C	D	A	A	A	B	0	B	B	A	0	□

PEAK 4 23

para-test.com
paragliding by air turquoise
Air Turquoise SA
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tel. +41 21 965 65 65 | mobile +41 79 202 52 30
info@para-test.com

NIVIUK

Class: **D**

In accordance with EN standards 926-2:2013 & 926-1:2006: **PG_0946.2015**

Date of issue (DMY): **12. 11. 2015**

Manufacturer: **Niviuk Gliders / Air Games S.L.**

Model: **Peak 4 23**

Serial number: **Peak 4 1-23**

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight (kg)	**105**	Range of speed system (cm)	**13.5**
Minimum weight in flight (kg)	**85**	Speed range using brakes (km/h)	**14**
Glider's weight (kg)	**5.3**	Range of trimmers (cm)	**0**
Number of risers	**2**	Total speed range with accessories (km/h)	**31**
Projected area (m2)	**19.66**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 24 months or every 100 flying hours
Harness brand	**Supair**	Warning! Before use refer to user's manual
Harness model	**Access M**	Person or company having presented the glider for testing: **None**
Harness to risers distance (cm)	**43**	
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	D	D	A	C	B	D	A	A	D	D	0	A	A	A	0	□

PEAK 4 25

para-test.com
paragliding by air turquoise

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info@para-test.com

NIVIUK

Class: **D**

In accordance with EN standards 926-2:2013 & 926-1:2006: **PG_0947.2015**

Date of issue (DMY): **13. 11. 2015**

Manufacturer: **Niviuk Gliders / Air Games S.L.**

Model: **Peak 4 25**

Serial number: **Peak 4 1-24**

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight (kg)	115	Range of speed system (cm)	13.5
Minimum weight in flight (kg)	95	Speed range using brakes (km/h)	13
Glider's weight (kg)	5.5	Range of trimmers (cm)	0
Number of risers	2	Total speed range with accessories (km/h)	32
Projected area (m2)	20.94		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	ABS	every 24 months or every 100 flying hours
Harness brand	Niviuk	Warning! Before use refer to user's manual
Harness model	Hamak L	Person or company having presented the glider for testing: **Olivier Nef**
Harness to risers distance (cm)	43	
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	C	F	A	A	A	D	0	A	A	A	0	□

PEAK 4 27

para-test.com
paragliding by air turquoise

Air Turquoise SA
Rte du Pré-au-Comte 8 | CH-1844 Villeneuve
tel. +41 21 965 65 65 | mobile +41 79 202 52 30
info@para-test.com

NIVIUK

Class: **D**

In accordance with EN standards 926-2:2013 & 926-1:2006: **PG_0948.2015**

Date of issue (DMY): **13. 11. 2015**

Manufacturer: **Niviuk Gliders / Air Games S.L.**

Model: **Peak 4 27**

Serial number: **Peak 4 1-27**

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight (kg)	125	Range of speed system (cm)	13.5
Minimum weight in flight (kg)	105	Speed range using brakes (km/h)	14
Glider's weight (kg)	5.8	Range of trimmers (cm)	0
Number of risers	2	Total speed range with accessories (km/h)	31
Projected area (m2)	22.22		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	ABS	every 24 months or every 100 flying hours
Harness brand	Niviuk	Warning! Before use refer to user's manual
Harness model	Gingo 2 L	Person or company having presented the glider for testing: **None**
Harness to risers distance (cm)	43	
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	D	D	B	F	A	A	D	B	0	A	A	A	0	□

The importance of small details
niviuk.com