HIKO

User manual &
Technical data

AIVIUK BEYOND THE GLIDE

Progress with *total confidence*

CATEGORIES

PROGRESSION

CROSS-COUNTRY

WELCOME

We welcome you to our team and thank you for the trust you have placed in us by choosing a Niviuk paraglider. We would like you to share the enthusiasm with which we have created this paraglider and the importance and care with which we have developed the design and manufacture of this new model. All this, in order to be able to offer you the maximum pleasure in every flight under a Niviuk paraglider.

The new HIKO is the perfect compromise between passive safety and performance to commence your first long distance flights. It is an intermediate glider (mid EN B), situated between the Hook and Ikuma, expanding our range of paragliders.

Its intuitive handling and advanced technologies will allow you to fly with confidence and explore new horizons.

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

“The importance of small details to make great things happen”.

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

USER MANUAL

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

Whilst it provides information, it cannot be viewed as an instructional handbook and does not offer the training required to fly this type of paraglider.

Training can only be undertaken at a certified paragliding school and each country has its own system of licensing.

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

The information in this manual is for information purposes only and 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 HIKO manual.

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

CONTENTS

1. CARACTERISTICS

1.1 WHO IS IT DESIGNED FOR?

Progression: continue progressing in flying by improving your skills and gain confidence in every flight. The HIKO is perfect for those who have just finished their training.

Cross-Country: take your first steps into long distance flying with confidence, thanks to this intermediate EN B wing that will allow you to experience performance for the first time, but with safety and control.

1.2 CERTIFICATION

The HIKO has been submitted for the European EN and LTF certification.

All certification tests were performed at the Swiss testing house Air Turquoise.

All sizes passed the load, shock and flight tests.

The load test proved that the wing can withstand the stipulated 8G.

The shock test proved that the wing can resist 1000 daN of force.

The flight test resulted in the following certification of the HIKO for all sizes (20, 22, 24, 24, 26, 28 and 30):

EN B
LTF B

We recommend that only pilots who are familiar with gliders of this certification or above fly this paraglider.

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

We recommend pilots read the flight test report carefully, especially the comments of the test pilot. 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 size 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.

- Description of EN B class wing characteristics:

Paragliders with a high degree of passive safety and very forgiving flight characteristics. Gliders with high collapse resistance outside normal flight.

- Description of the skills required by the pilot to fly an EN B wing:

Designed for all pilots, including pilots at all levels of training and qualification.

For further information on the flight test and the corresponding certification, please see the final pages of this manual or see or visit the Downloads section.

1.3 IN-FLIGHT BEHAVIOUR

Niviuk developed this wing by adopting very specific goals: to offer the best possible features, excellent handling, and to make flying easier for the pilot.

Our other aims were to achieve optimal 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, with active piloting, take advantage of all favourable conditions.

The HIKO is an accessible and easy to handle wing for pilots in the progression stage, offering superior performance in its category. It also meets the needs of more experienced XC pilots. The HIKO offers a middle ground between training gliders (Koyot, Hook) and high performance EN B gliders such as the Ikuma.

The HIKO is very solid in all facets of flight. The glide is consistent, even when fully accelerated. The profile remains stable. Enjoy great comfort and passive safety in any situation, with special emphasis on pitch stability thanks to the profile shape. You can explore the sky with confidence.

The HIKO is manoeuvrable with the brakes and responds predictably to the pilot's inputs, making it very pleasant to fly and efficient in turns and thermals. Its handling is very intuitive, with nuanced and clear feedback about state of the air mass, quick to understand and very understandable.

It is light, light in flight and easy to fly, with exceptional behaviour in turbulence and a surprising range of speeds, resulting in an incredible glide.

1.4 TECHNOLOGIES, CONSTRUCTION, MATERIALS

The HIKO benefits from all the construction and assembly techniques used in our factory. It has all the current technology and accessories available to improve pilot comfort whilst increasing safety and performance.

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

RAM Air Intake - the system is characterised by the arrangement of the air inlets, to ensure optimal maintenance of internal pressure across the whole range of angles of attack.

The result? Having greater internal pressure means better tolerance of turbulence, greater consistency of the profile shape across the speed range; excellent handling at low speed is achieved by allowing the pilot to extend the braking limit, there is a lower risk of collapse and consequently, greater control and safety.

The application of RAM technology ensures that the internal pressure of the wing is optimal and that the profile maintains its ideal shape in all flight conditions.

TNT Titanium Technology - 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. Nitinol now features in all our wings.

The distribution of the Nitinol rods along the leading edge and top surface has been simplified. This ensures the lightness of the wing, while maintaining its durability and compactness when folded.

SLE Structured Leading Edge - SLE is the application of Nitinol rods in the leading edge. This technology provides increased strength and stability by maintaining the shape of the aerofoil throughout all phases of flight. This increases performance, efficiency and stability, absorbs turbulence better and makes the wing much more durable over time.

3DP Pattern Cut Optimization - this involves placing the fabric of each panel in one direction only, taking as a reference its location on the leading edge. It has been proved that, if the cloth pattern is correctly aligned to the direction of the load axes, the material deforms much less flight after flight, so the leading edge keeps its shape better and is much more durable over time. Over the years, the design of our paragliding and paramotoring wings has evolved a lot, with a positive and specific advancement of the leading edge.

3DL 3D Leading Edge - this means adjusting the material of the leading edge to avoid ballooning and the creases that form in this curved area of the wing. Specifically, the leading edge is divided into “sub-panels” sewn into each of the cells at the front of the glider. As a result, the tension of the leading edge cloth is perfectly uniform, increasing the performance and durability of the glider.

DRS Drag Reduction Structure - the DRS aims to reduce the adverse pressure gradient and drag by optimising the aerodynamic shape of the wing. Its application makes the airflow direction much more progressive at the trailing edge. This increases performance without reducing safety and control of the wing.

The mini-ribs are integrated directly into the trailing edge, with special slots to incorporate them into the wing seam. This results in a cleaner profile, eliminating external seams and protecting them from wear and tear when rubbing against the ground.

RSD Radical Sliced Diagonal - this involves a redesign of the internal structure of the wing. It incorporates independent and efficiently oriented diagonals, i.e. following the direction of the cloth. This improves strength, reduces the overall weight of the wing and avoids deformations.

Nowadays, in order to improve stress distribution and reduce the number of attachment points and lines, most wings already have these diagonals, connected from the attachment points to the adjacent profiles.

C2B System - manoeuvrability has been improved with the new C2B system that is integrated into the risers, and which allows a three-liner wing to be flown as if it were a two-liner. Steering with the C-risers automatically includes the B-risers.

Therefore, the angle of attack can be fully controlled over the entire speed range without deforming the aerofoil. As a result, the wing has a much more efficient, controlled and precise handling.

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

For the construction process of the HIKO 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 inspection.

The same fabric has been used as in the rest of the range, ensuring its guaranteed lightness, strength and durability without loss of colour.

The lineset is made of unsheathed Dyneema and sheathed and unsheathed Aramid.

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, COMPONENTS

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

- The Inner Bag, that allows you to keep your glider protected during storage and transport.

- An adjustable compression strap, which allows you to compress the Inner Bag as much as possible to reduce packing.
- A riser bag, to protect and pack them neatly.
- A repair kit with self-adhesive ripstop fabric.
- The Kargo 130 backpack for HIKO sizes 20, 22 and 24. This is not included in the scope of delivery but its purchase is recommended. It allows us to carry all the equipment comfortably and without space problems.
- The Kargo 160 backpack for HIKO sizes 26, 28 and 30. This is not included in the scope of delivery, but its purchase is recommended. It allows us to carry all the equipment comfortably and without space problems.

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 HIKO.

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

2.2 PROCEDURE

Take the paraglider out of the rucksack, open and unfold it on the ground with the lines positioned on the undersurface, oriented in the direction of inflation. Check the condition of the fabric and the lines for defects. Check the maillons are closed and connect the lines to the risers. Identify, and if necessary, untangle, the A, B and C-lines, the brake lines and corresponding risers. Make sure that there are no knots.

2.3 CONNECTING THE HARNESS

The HIKO risers are colour-coded.

- Right: green
- Left: red

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

Correctly connect the risers to the attachment points so that the risers and lines are correctly ordered and free of twists. Check that the IKS and carabiners are properly fastened and securely locked.

(!) WARNING! The HIKO has different riser lengths depending on the size. The differentials of the risers on sizes 20 and 22 are different from the others. In the rest of the sizes (24, 26, 28 and 30) the risers are the same and interchangeable, which is NOT the case in size 20 and 22.

2.4 HARNESS TYPE

The HIKO can be flown with all current harness types. If the harness features an adjustable chest strap, we recommend setting this to the distance specified in the certification report - this will vary depending on size. See the certification certificate.

Distance between the risers:
Size 20 – 40/44 cm
Size 22 – 40/44 cm
Size 24 – 40/44 cm
Size 26 – 44/48 cm
Size 28 – 44/48 cm
Size 30 – 48 cm

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, it 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 INSTALLATION

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.

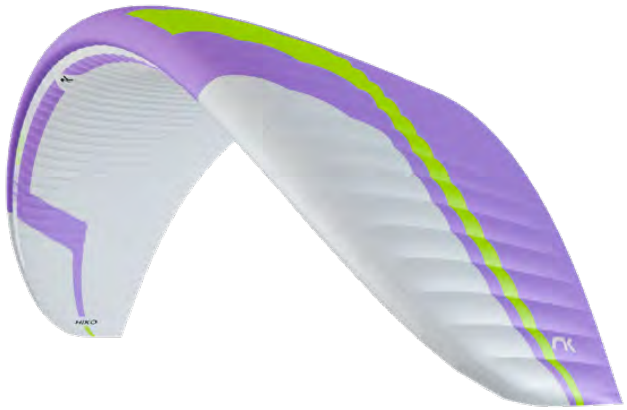
The HIKO includes a speed system with maximum travel depending on its size (see Full speed-bar). The speed system is engaged when the pilot pushes the speed-bar (not included as standard with this glider model) with their feet (see 2.5.1 Speed system assembly).

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

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

- Released speed-bar: the A, B and C-risers are aligned.
- Full speed-bar: the difference between the A and C-risers is 145 mm (Size 20 and 22) and 180 mm for all other sizes (24, 26, 28 and 30).

(!) PLEASE NOTE: the use of the speed system results in changes to the speed and reactions of the wing. For more information, please see the certification report.



2.5.1 SPEED SYSTEM ASSEMBLY

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

- You should use the type of speed-bar you consider appropriate, depending on the type of harness, personal preferences, etc.
- The speed-bar is detachable to facilitate its connection and/or disconnection to the risers as well as subsequent adjustment.
- To connect it to the harness, please follow the instructions of the harness manufacturer. The majority of harnesses have a speed system pre-installed.
- The standard connection is made by means of the Brummel hook where the two grooves face each other to interlock, securing their use and connection/disconnection. However, any safe connection system can be used.

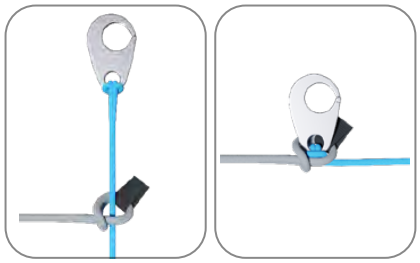
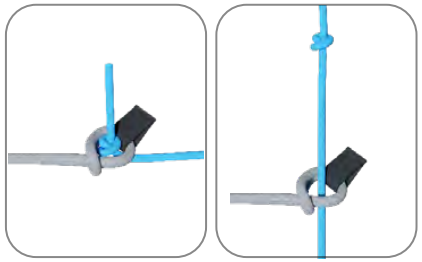


Diagram 1. Speed-bar connection by means of the Brummel hook.

Diagram 2. Speed-bar connection by means of kite loop (without Brummel hook).



1. A knot is tied in the speed-bar cord and passed through the connector of the webbing cord.

2. Tension is applied to both sides of the system until the knot tightens against the riser connector.

It should be noted that the connection procedure is exactly the same for the Brummel hooks as for the loops, and would in turn be applicable to other systems or connecting 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 you may need to replace them.

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

2.6 INSPECTION AND WING INFLATION ON THE GROUND

After your gear has been thoroughly checked and the weather conditions deemed favourable for flying, inflate your HIKO as many times as necessary to familiarise yourself with its behaviour. Inflating the HIKO 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 your flying style. It is advisable to fly with the original setting for a period of time to get used to the actual behaviour of the HIKO. In case it is necessary to modify the brake length, loosen the knot, slide the line through the brake handle to the desired point and re-tighten the knot firmly. Only qualified personnel should carry out this adjustment. You must ensure that the modification does not affect the trailing edge and slow the glider down without pilot input. Both brake lines should be symmetrical and the same length. We recommend using a clove hitch or bowline knot.

When changing the brake length, it is necessary to check that they do not engage when the speed-bar is used. When we accelerate, the glider rotates over the 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 section 2 UNPACKING AND ASSEMBLY to prepare your equipment.

3.3 FLIGHT PLAN

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

3.4 PRE-FLIGHT CHECK

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

3.5 WING INFLATION, CONTROL AND TAKEOFF

For launch, a smooth and progressive inflation is recommended. The HIKO is easy to inflate and does not require a great deal of physical effort. It has no tendency to overshoot, which allows a smooth inflation phase, giving way to a control phase with enough time to make the decision to accelerate and take off when the pilot wishes to do so.

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 HIKO 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 takeoff 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 HIKO lands excellently, it converts the wing speed into lift at your 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 HIKO 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.

Niviuk have designed the NKare Bag. This will assist you in quickly folding the paraglider, keeping the profile and integrity of the internal structures in perfect condition.

The NKare Bag will guide you through the folding process by allowing you to place the rods one on top of the other on the longitudinal axis to “concertina” pack the glider. Then you can easily make the sectional folds that each model requires. This folding system guarantees that both the cloth and the reinforcements of the internal structure of your HIKO remain in perfect condition.

4. IN FLIGHT

We recommend that you read the certification test report. The report contains all the necessary information on the HIKO 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 auspices of a licensed training outfit.

4.1 FLYING IN TURBULENCE

The HIKO 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 licensed training outfit. You must adapt your use of the brakes depending on the wing-loading and avoid over-steering.

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

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

Asymmetric collapse

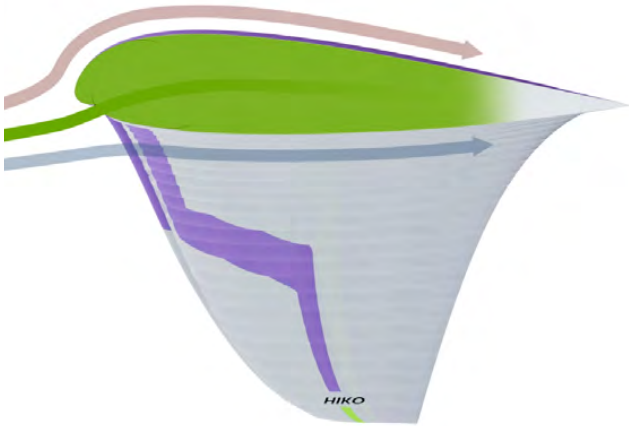
In spite of the HIKO's profile stability, strong turbulent air may cause the wing to collapse asymmetrically in very strong turbulence, especially if you do not fly actively and prevent the collapse. In this case the glider conveys a loss of pressure through the brake lines and the harness. To prevent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

Frontal collapse

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

Negative spin

A negative spin does not conform to the HIKO'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.



Parachutal stall

The possibility of entering or remaining in a parachutal stall have been eliminated from the HIKO. 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 HIKO 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%) 10 down until the stall point is reached and held there. The glider will first pitch rearward and then reposition itself overhead, rocking slightly, depending on how the manoeuvre is done.

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

To resume normal flight conditions, progressively and symmetrically release the brake line tension to regain air speed. When the wing reaches the overhead position, the brakes must be fully released.

The wing will then surge forward to regain full air speed. Do not brake excessively at this moment as the wing needs to accelerate to pull away from the stall configuration. If you have to control a possible frontal collapse, briefly pull both brake handles down to bring the wing back up and release them immediately while the glider is still in transition to reposition itself overhead.

Cravat

A cravat may happen after an asymmetric collapse, when the end of the wing is trapped between the lines. Depending on the nature of the tangle, this situation could rapidly cause the wing to spin. The corrective manoeuvres to use are the same as those applied in case of an asymmetric collapse: control the turn/spin by applying tension on the opposite brake and weight shift opposite to the turn. Then locate the 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 HIKO was designed to recover by itself in most cases. Do not try to over-correct it! Generally speaking, the reactions of the wing, which are caused by too much input, are due to the length of time the pilot continues to over– control the wing. You have to allow the glider to re-establish normal flying speed and attitude after any type of incident.

4.3 ACCELERATED FLIGHT

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

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

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

4.4 FLYING WITHOUT BRAKE LINES

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

4.5 LINE KNOT(S) IN FLIGHT

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

If inadvertently taking off with a knotted line, the glider drift will need to be compensated by weight-shifting to the opposite side and applying a slight brake pull to that side. Gently pull the brake line to see if the knot can be undone or try to locate the problem line. Try pulling it to see if the knot can be undone. Beware of trying to clear a knotted line or untangle a line in flight when close to the terrain. If the knot is too tight and cannot be undone, carefully and safely fly to the nearest landing zone. Be careful: do not pull too hard on the brake handles because there will be an increased risk of stalling the wing or entering a negative spin. Before attempting to clear a knot, make sure there are no other pilots flying in the vicinity. 11 Knowledge of different descent techniques could become vital in certain situations. The most suitable descent method will depend on the particular situation. To become familiar with the manoeuvres described below, we recommend practising within the environment of a licensed training outfit.

5. LOSING ALTITUDE

Knowledge of different descent techniques could become vital in certain situations. The most suitable descent method will depend on the particular situation. To become familiar with the manoeuvres described below, we recommend practising within the environment of a licensed training outfit.

5.1 BIG EARS

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

To perform the Big Ears manoeuvre, take outermost line on both A’-risers as high as you can and simultaneously, smoothly pull them outward and downward. The wingtips will fold in.

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

Keep the ears pulled in until you have lost the desired altitude.

Let go of the lines to re-inflate the tips automatically. If they do not, try progressively pulling one brake then the other. Asymmetric reopening is recommended in order to avoid compromising the angle of attack, particularly flying near the ground or in turbulent conditions.

5.2 SPIRAL DIVE

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

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

A paraglider flying at its maximum rotating speed can reach –20 m/s, or the equivalent of a 70 km/h vertical descent, and will stabilise in a spiral dive from 15m/s onwards. Good enough reasons to familiarise yourself with the manoeuvre and understand how to exit it.

To exit this manoeuvre, the inner brake handle (down side of the turn) must progressively be relaxed while momentarily applying tension to the outer brake handle opposite to the turn.

The pilot must also weight shift and lean towards the opposite side of the turn at the same time. The exit should be performed gradually and smoothly so that the changes in pressure and speed can be noted.

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

Practise these manoeuvres at sufficient altitude and carefully.

5.3 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 first!

6. SPECIAL METHODS

6.1 TOWING

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

It is important to use the brakes to correct the flight path alignment, especially in the first phase of the tow. 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 HIKO was tested by expert acrobatic pilots in extreme situations, it was not designed for it. We do not recommend using this glider for acrobatic flying!!!

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

7. CARE AND MAINTENANCE

7.1 MAINTENANCE

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

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

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. Thanks to these new technologies, paragliders are gaining more safety and performance, which requires greater care of the materials.

(!) IMPORTANT: it is critical to avoid any kind of impact or dragging the leading edge on the ground. This part is reinforced with very durable and strong Nitinol rods that can be easily replaced. Dragging and/or hitting the leading edge can cause serious damage to the fabric, which is much more complicated and costly to repair.

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

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

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

If you fly in sandy areas, avoid getting sand in the cells or down into the trailing edge. At the end of the flight, empty any sand that is in your wing. The openings at the end of the wingtips make this much easier.

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

7.2 STORAGE

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

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

Weight should not be laid on top of the equipment. It is very important to pack the wing correctly before storage.

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

7.3 CHECKS AND INSPECTIONS

The HIKO must be periodically serviced. An inspection must be scheduled every 100 flying hours or every two years whichever comes first (EN/LTF norm).

We strongly recommend that any repairs should be done in a specialist repair shop by qualified personnel.

This will guarantee the airworthiness and continued certification of your HIKO.

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

The HIKO is fitted with sheathed and unsheathed lines. Their durability conforms to unsheathed line standards. Their strength is guaranteed and their resistance to UV is one of the highest in this type of lines.

The unsheathed Aramid lines are made of a new waterproof coated material (Magix Pro Dry), which makes it easier to untangle knots and simplifies line sorting before flying.

However, to maintain the wing's standard performance, it is necessary to keep the trim constantly adjusted. Generally speaking, line lengths change as the glider is used. For this reason we recommend a trim check after approximately the first 30 hours of flight. The hours or actions to be taken to repair the lines may vary for each glider, depending on the conditions of each flying area, climatic conditions, temperature, humidity, type of terrain, wing loading, etc.

Thanks to the experience acquired and the thorough inspections that our R+D team carry out on our gliders, we have the necessary information to be able to know the real behaviour of the lines. With this knowledge we can keep our gliders in the optimum condition for more flights without any loss of performance due to use.

The most important detail to check and/or repair on the lines are the so called "loops" (knots). These loops must be released or readjusted according to the current line length.

Never adjust a paraglider according to the parameters of another paraglider. Each adjustment must be performed individually for each wing concerned, as a result of an analysis carried out by specialised and authorised personnel.

7.4 REPAIRS

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

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

Damaged lines must be repaired or exchanged immediately.

Please refer to the line plan at the end of this manual. We recommend any inspection or repair is performed by a Niviuk professional in our official workshop.

Any modification of the glider made in an external workshop will invalidate the guarantee of the product. Niviuk cannot be held responsible for any issues or damage resulting from modifications or repairs carried out by unqualified professionals or who are not approved by the manufacturer.

8. SAFETY AND RESPONSIBILITY

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

Incorrect use of this equipment may cause severe, life-changing injuries to the pilot, or even death. Manufacturers and dealers cannot be held responsible for your decisions, actions or accidents that may result from participating in this sport.

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

9. GUARANTEE

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

The warranty does not cover misuse of the equipment.

Any modification of the paraglider or its components invalidates the guarantee and its certification.

If you notice any defects in your harness, please contact Niviuk immediately for a more thorough inspection.

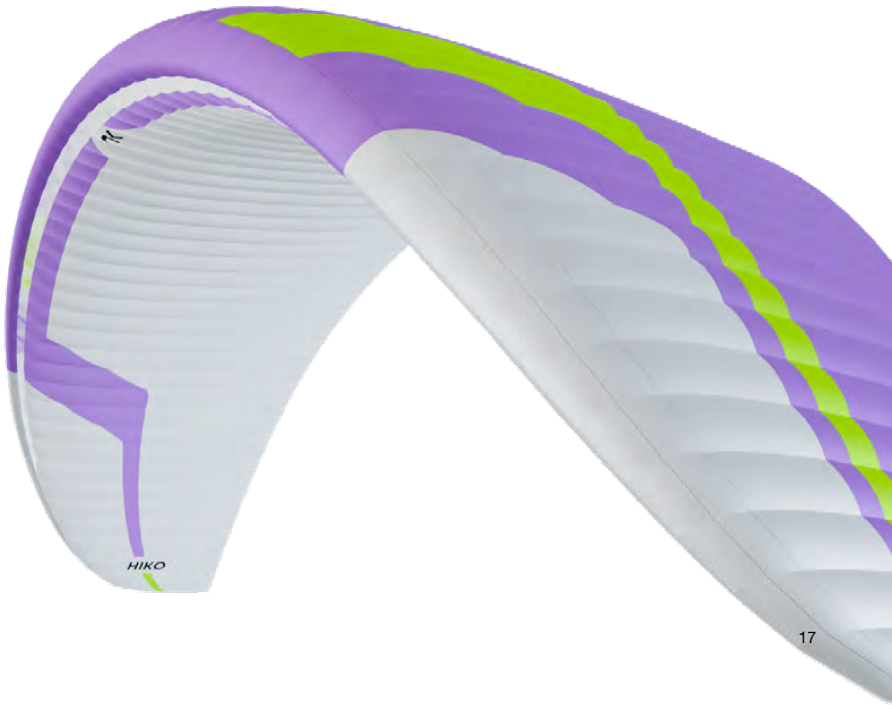
ANNEXES

10. ANNEXES

10.1 Technical specifications

			20	22	24	26	28	30
Cells	Number		55	55	55	55	55	55
Aspect Ratio	Flat		5,5	5,5	5,5	5,5	5,5	5,5
	Projected		4,18	4,18	4,18	4,18	4,18	4,18
Area	Flat	m2	20,5	21,8	23,8	25,8	27,8	30
	Projected	m2	17,51	18,62	20,33	22,04	23,75	25,63
Span	Flat	m	10,62	10,95	11,44	11,91	12,37	12,85
Chord	Max	m	2,38	2,45	2,56	2,66	2,77	2,87
Lines	Total	m	220	227	238	248	258	268
	Main		2-1/3/2	2-1/3/2	2-1/3/2	2-1/3/2	2-1/3/2	2-1/3/2
Risers	Number	3+1	A-A'/B/C	A-A'/B/C	A-A'/B/C	A-A'/B/C	A-A'/B/C	A-A'/B/C
	Speed-bar	mm	145	145	180	180	180	180
Glider weight		kg	4,02	4,23	4,59	4,88	5,10	5,43
Total weight in flight	Min-Max	kg	50-75	65-85	75-95	85-105	95-115	105-128
Certification			EN/LTF B	EN/LTF B	EN/LTF B	EN/LTF B	EN/LTF B	EN/LTF B

The total weight of the wing may differ ±2% due to variations in the weight of the fabric supplied by the manufacturers.



10.2 Colours

	UPPER	ROYAL BLUE	**LOWER**	WHITE
RIVER	**TOP 1**	WHITE	**BOTTOM 1**	ROYAL BLUE
	TOP 2	BLACK	**BOTTOM 2**	BLACK

	UPPER	SPECTRA GREEN	**LOWER**	WHITE
MOTMOT	**TOP 1**	DARK BRICK	**BOTTOM 1**	SPECTRA GREEN
	TOP 2	WHITE	**BOTTOM 2**	DARK BRICK

	UPPER	DARK BRICK	**LOWER**	WHITE
CLAY	**TOP 1**	LIME	**BOTTOM 1**	DARK BRICK
	TOP 2	WHITE	**BOTTOM 2**	LIME

	UPPER	PURPLE	**LOWER**	WHITE
LAVANDE	**TOP 1**	LIME	**BOTTOM 1**	PURPLE
	TOP 2	WHITE	**BOTTOM 2**	LIME

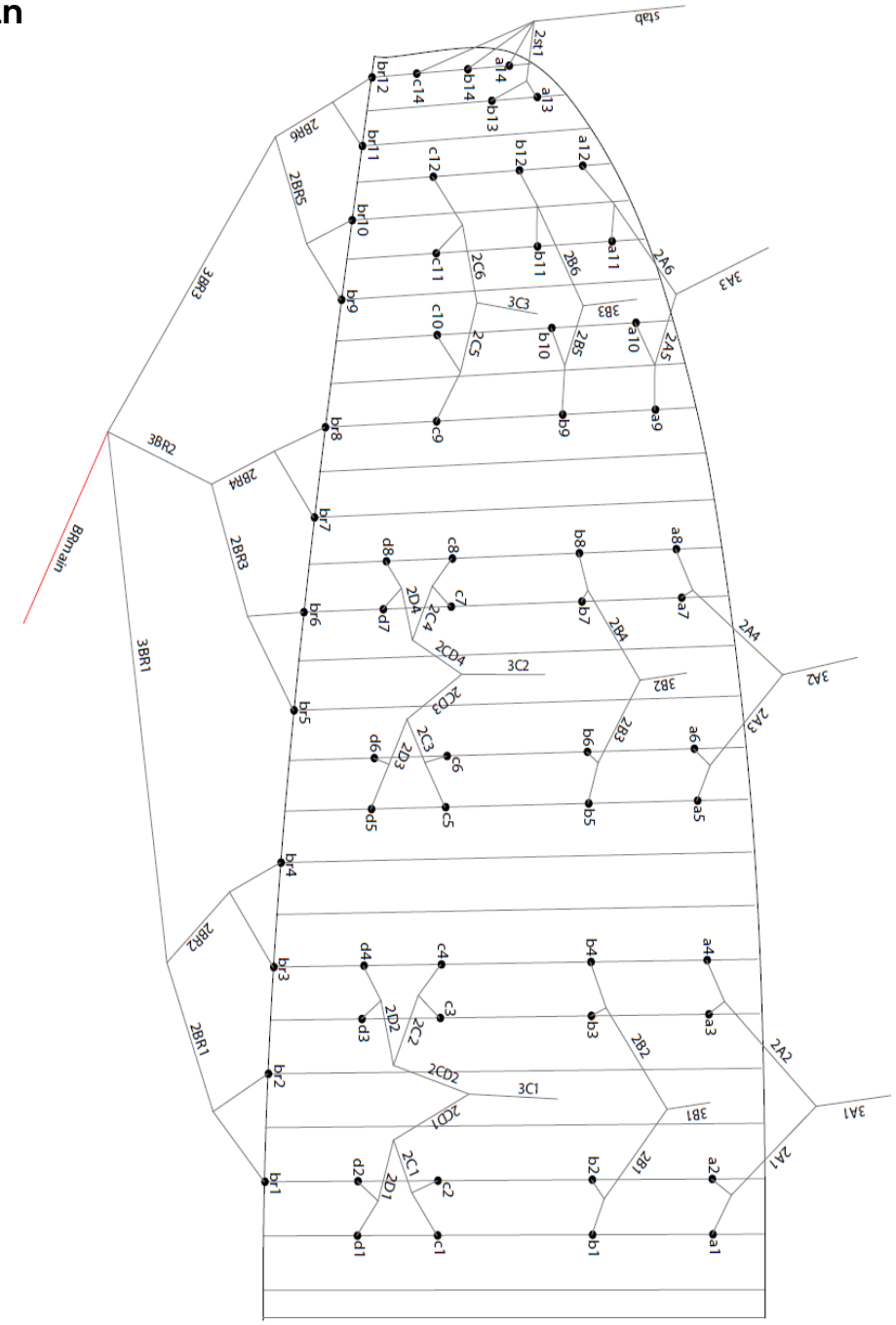
10.3 Materials

CANOPY	FABRIC CODE	SUPPLIER
UPPER SURFACE	HYPERAIRTEX-41 / HYPERAIRTEX-36	DOMINICO TEX CO (KOREA)
BOTTOM SURFACE	2044 32 PS	DOMINICO TEX CO (KOREA)
PROFILES	30 DFM	DOMINICO TEX CO (KOREA)
DIAGONALS	30 DFM	DOMINICO TEX CO (KOREA)
LOOPS	LKI - 12	KOLON IND. (KOREA)
REIFORCEMENT LOOPS	RIPSTOP FABRIC	DOMINICO TEX CO (KOREA)
TRAILING EDGE REIFORCEMENT	MYLAR	D-P (GERMANY)
RIBS REIFORCEMNET	LTN-0.8/0.5 STICK	SPORTWARE CO.CHINA
THREAD	SERAFIL 60	AMAN (GERMANY)

SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	A-8001/U 50	EDELRID (GERMANY)
UPPER CASCADES	A-8001/U 70	EDELRID (GERMANY)
UPPER CASCADES	DC - 40	LIROS GMHB (GERMANY)
UPPER CASCADES	DC - 60	LIROS GMHB (GERMANY)
UPPER CASCADES	DC - 100	LIROS GMHB (GERMANY)
UPPER CASCADES	TNL-80	TEIJIM LIMITED (JAPAN)
MIDDLE CASCADES	A-8001/U 50	EDELRID (GERMANY)
MIDDLE CASCADES	A-8001/U 70	EDELRID (GERMANY)
MIDDLE CASCADES	A-8001/U 90	EDELRID (GERMANY)
MIDDLE CASCADES	A-8001/U 130	EDELRID (GERMANY)
MIDDLE CASCADES	TNL-80	TEIJIM LIMITED (JAPAN)
MAIN	TNL-80	TEIJIM LIMITED (JAPAN)
MAIN	TNL-140	TEIJIM LIMITED (JAPAN)
MAIN	TNL-220	TEIJIM LIMITED (JAPAN)
MAIN	TNL-280	TEIJIM LIMITED (JAPAN)
MAIN BREAK	TARAX-240	EDELRID (GERMANY)
THREAD	SERAFIL 60	AMAN (GERMANY)

RISERS	FABRIC CODE	SUPPLIER
MATERIAL	3455	COUSIN (FRANCE)
COLOR INDICATOR	210D	TECNI SANGLES (FRANCE)
THREAD	V138	COATS (ENGLAND)
MAILLONS	3.5	ANSUNG PRECISION (KOREA)
PULLEYS	SB15	RONSTAN (AUSTRALIA)

10.4 Line plan



LINE REPLACEMENT

The use of new high performance materials in modern wings is now common. The advantages of using these materials in terms of performance are widely acknowledged as part of our sport's evolution. However, along with those technological advances come additional responsibilities which cannot be avoided. As a result, line inspection and replacement must be carried out more frequently. That increased frequency appears to be encouraging some pilots to try to perform line replacement themselves.

WE STRONGLY RECOMMEND ANY LINE REPLACEMENT IS PERFORMED BY AN AUTHORISED SPECIALIST ONLY.

Ultimately, if the pilot decides to perform any line replacement without professional oversight they therefore assume all responsibility. In this case, these guidelines will have to be followed.

BEFORE REMOVING ANY LINES, CHECK:

- That the line plan is correct according to the glider model and size.
- That the line kit is complete and correct.
- Never assume but always check each individual line for the correct specification.

AFTER CONFIRMING THAT ALL LINES ARE CORRECT:

- Fit the new line(s) WITHOUT removing the label.
- Once replaced, measure each line length to confirm the correct measurement.
- Inflate the wing to check for any irregularities.
- The line labels may then be removed but NOT BEFORE completion of the line replacement.

Niviuk strongly recommends for any line replacement to be carried out by an authorised professional only, and will not accept responsibility for any damage or injury caused as a result of incorrect re-assembly.

10.5 Riser plan

10.6 Line measurements by size

HIKO - 20

ref.	mat.	kg	color	mm
		A		
a1	DC	100	WHT	313
a2	DC	60	WHT	266
a3	DC	60	WHT	275
a4	DC	60	WHT	299
a5	DC	60	WHT	291
a6	DC	60	WHT	250
a7	DC	60	WHT	251
a8	DC	60	WHT	266
a9	8001/U	70	ORG	559
a10	8001/U	50	ORG	462
a11	8001/U	50	ORG	541
a12	8001/U	50	ORG	519
a13	8001/U	50	ORG	629
a14	8001/U	50	ORG	1302
2A1	8001/U	130	ORG	1867
2A2	8001/U	130	ORG	1824
2A3	8001/U	130	ORG	1713
2A4	**8001/U**	**90**	**ORG**	**1664**
2A5	8001/U	70	ORG	1224
2A6	8001/U	70	ORG	1057
2st1	8001/U	50	ORG	750
3A1	TNL	280	GREEN	3843
3A2	TNL	280	GREEN	3913
3A3	TNL	220	GREEN	3963

ref.	mat.	kg	color	mm
		B		
b1	DC	60	WHT	309
b2	DC	60	WHT	263
b3	DC	60	WHT	272
b4	DC	60	WHT	296
b5	DC	60	WHT	286
b6	DC	40	WHT	247
b7	DC	40	WHT	246
b8	DC	60	WHT	263
b9	8001/U	50	BLUE	539
b10	8001/U	50	BLUE	454
b11	8001/U	50	BLUE	507
b12	8001/U	50	BLUE	497
b13	8001/U	50	ORG	609
b14	8001/U	50	ORG	1303
2B1	8001/U	130	BLUE	1846
2B2	8001/U	130	BLUE	1801
2B3	8001/U	130	BLUE	1684
2B4	**8001/U**	**90**	**BLUE**	**1642**
2B5	8001/U	70	BLUE	1169
2B6	8001/U	70	BLUE	1040
3B1	TNL	280	BLUE	3781
3B2	TNL	220	BLUE	3865
3B3	TNL	220	BLUE	3968
stab	TNL	80	RED	3971

ref.	mat.	kg	color	mm
		C		
c1	DC	40	WHT	313
c2	DC	40	WHT	250
c3	DC	40	WHT	259
c4	DC	40	WHT	303
c5	DC	40	WHT	291
c6	DC	40	WHT	237
c7	DC	40	WHT	238
c8	DC	40	WHT	269
c9	8001/U	50	BLUE	541
c10	8001/U	50	BLUE	453
c11	8001/U	50	BLUE	506
c12	8001/U	50	BLUE	478
c13	8001/U	50	ORG	1366
2C1	8001/U	70	BLUE	516
2C2	8001/U	70	BLUE	497
2C3	8001/U	70	BLUE	481
2C4	**8001/U**	**70**	**BLUE**	**466**
2C5	8001/U	70	BLUE	1204
2C6	8001/U	70	BLUE	1074
2CD1	8001/U	90	BLUE	795
2CD2	8001/U	90	BLUE	774
2CD3	8001/U	70	BLUE	742
2CD4	8001/U	70	BLUE	713
3C1	TNL	280	BLUE	4401
3C2	TNL	220	BLUE	4414
3C3	TNL	140	BLUE	3985

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	314
d2	DC	40	WHT	256
d3	DC	40	WHT	267
d4	DC	40	WHT	302
d5	DC	40	WHT	294
d6	DC	40	WHT	236
d7	DC	40	WHT	254
d8	DC	40	WHT	263
2D1	8001/U	70	BLUE	604
2D2	8001/U	70	BLUE	578
2D3	8001/U	70	BLUE	561
2D4	8001/U	70	BLUE	519

ref.	mat.	kg	color	mm
		BRAKE		
br1	TNL	80	RED	578
br2	TNL	80	RED	282
br3	TNL	80	RED	515
br4	TNL	80	RED	517
br5	TNL	80	RED	530
br6	TNL	80	RED	400
br7	TNL	80	RED	411
br8	TNL	80	RED	473
br9	TNL	80	RED	423
br10	TNL	80	RED	356
br11	TNL	80	RED	289
br12	TNL	80	RED	371
2BR1	TNL	80	RED	906
2BR2	TNL	80	RED	555
2BR3	TNL	80	RED	762
2BR4	TNL	80	RED	708
2BR5	TNL	80	RED	510
2BR6	TNL	80	RED	561
3BR1	TNL	80	RED	2616
3BR2	TNL	80	RED	2229
3BR3	TNL	80	RED	2332
BRMAIN	TARAX	240	RED	2906
		KNOT POINT:		2706

HIKO - 22

ref.	mat.	kg	color	mm
		A		
a1	DC	100	WHT	322
a2	DC	60	WHT	275
a3	DC	60	WHT	283
a4	DC	60	WHT	309
a5	DC	60	WHT	300
a6	DC	60	WHT	258
a7	DC	60	WHT	259
a8	DC	60	WHT	275
a9	8001/U	70	ORG	576
a10	8001/U	50	ORG	476
a11	8001/U	50	ORG	557
a12	8001/U	50	ORG	535
a13	8001/U	50	ORG	648
a14	8001/U	50	ORG	1343
2A1	8001/U	130	ORG	1924
2A2	8001/U	130	ORG	1882
2A3	8001/U	130	ORG	1766
2A4	8001/U	90	ORG	1716
2A5	8001/U	70	ORG	1263
2A6	8001/U	70	ORG	1090
2st1	8001/U	50	ORG	773
3A1	TNL	280	GREEN	3980
3A2	TNL	280	GREEN	4055
3A3	TNL	220	GREEN	4108

ref.	mat.	kg	color	mm
		B		
b1	DC	60	WHT	319
b2	DC	60	WHT	271
b3	DC	60	WHT	280
b4	DC	60	WHT	305
b5	DC	60	WHT	295
b6	DC	40	WHT	255
b7	DC	40	WHT	254
b8	DC	60	WHT	271
b9	8001/U	50	BLUE	555
b10	8001/U	50	BLUE	468
b11	8001/U	50	BLUE	523
b12	8001/U	50	BLUE	513
b13	8001/U	50	ORG	628
b14	8001/U	50	ORG	1344
2B1	8001/U	130	BLUE	1903
2B2	8001/U	130	BLUE	1859
2B3	8001/U	130	BLUE	1736
2B4	8001/U	90	BLUE	1694
2B5	8001/U	70	BLUE	1205
2B6	8001/U	70	BLUE	1072
3B1	TNL	280	BLUE	3916
3B2	TNL	220	BLUE	4006
3B3	TNL	220	BLUE	4113
stab	TNL	80	RED	4117

ref.	mat.	kg	color	mm
		C		
c1	DC	40	WHT	323
c2	DC	40	WHT	259
c3	DC	40	WHT	266
c4	DC	40	WHT	312
c5	DC	40	WHT	299
c6	DC	40	WHT	246
c7	DC	40	WHT	241
c8	DC	40	WHT	279
c9	8001/U	50	BLUE	558
c10	8001/U	50	BLUE	468
c11	8001/U	50	BLUE	522
c12	8001/U	50	BLUE	493
c14	8001/U	50	ORG	1408
2C1	8001/U	70	BLUE	532
2C2	8001/U	70	BLUE	513
2C3	8001/U	70	BLUE	483
2C4	8001/U	70	BLUE	477
2C5	8001/U	70	BLUE	1242
2C6	8001/U	70	BLUE	1108
2CD1	8001/U	90	BLUE	820
2CD2	8001/U	90	BLUE	798
2CD3	8001/U	70	BLUE	754
2CD4	8001/U	70	BLUE	728
3C1	TNL	280	BLUE	4555
3C2	TNL	220	BLUE	4590
3C3	TNL	140	BLUE	4132

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	323
d2	DC	40	WHT	264
d3	DC	40	WHT	275
d4	DC	40	WHT	311
d5	DC	40	WHT	303
d6	DC	40	WHT	246
d7	DC	40	WHT	252
d8	DC	40	WHT	278
2D1	8001/U	70	BLUE	623
2D2	8001/U	70	BLUE	597
2D3	8001/U	70	BLUE	567
2D4	8001/U	70	BLUE	536

ref.	mat.	kg	color	mm
		BRAKE		
br1	TNL	80	RED	596
br2	TNL	80	RED	291
br3	TNL	80	RED	531
br4	TNL	80	RED	533
br5	TNL	80	RED	547
br6	TNL	80	RED	413
br7	TNL	80	RED	424
br8	TNL	80	RED	487
br9	TNL	80	RED	436
br10	TNL	80	RED	367
br11	TNL	80	RED	297
br12	TNL	80	RED	383
2BR1	TNL	80	RED	934
2BR2	TNL	80	RED	573
2BR3	TNL	80	RED	785
2BR4	TNL	80	RED	731
2BR5	TNL	80	RED	526
2BR6	TNL	80	RED	579
3BR1	TNL	80	RED	2696
3BR2	TNL	80	RED	2299
3BR3	TNL	80	RED	2408
BRMAIN	TARAX	240	RED	3007
		KNOT POINT:		2807

HIKO - 24

ref.	mat.	kg	color	mm
		A		
a1	DC	100	WHT	336
a2	DC	60	WHT	288
a3	DC	60	WHT	296
a4	DC	60	WHT	323
a5	DC	60	WHT	314
a6	DC	60	WHT	270
a7	DC	60	WHT	271
a8	DC	60	WHT	287
a9	8001/U	70	ORG	602
a10	8001/U	50	ORG	498
a11	8001/U	50	ORG	582
a12	8001/U	50	ORG	560
a13	8001/U	50	ORG	677
a14	8001/U	50	ORG	1403
2A1	8001/U	130	ORG	2010
2A2	8001/U	130	ORG	1968
2A3	8001/U	130	ORG	1845
2A4	8001/U	90	ORG	1794
2A5	8001/U	70	ORG	1319
2A6	8001/U	70	ORG	1139
2st1	8001/U	50	ORG	808
3A1	TNL	280	GREEN	4184
3A2	TNL	280	GREEN	4266
3A3	TNL	220	GREEN	4323

ref.	mat.	kg	color	mm
		B		
b1	DC	60	WHT	333
b2	DC	60	WHT	284
b3	DC	60	WHT	292
b4	DC	60	WHT	319
b5	DC	60	WHT	308
b6	DC	40	WHT	266
b7	DC	40	WHT	265
b8	DC	60	WHT	283
b9	8001/U	50	BLUE	580
b10	8001/U	50	BLUE	490
b11	8001/U	50	BLUE	547
b12	8001/U	50	BLUE	536
b13	8001/U	50	ORG	656
b14	8001/U	50	ORG	1404
2B1	8001/U	130	BLUE	1987
2B2	8001/U	130	BLUE	1944
2B3	8001/U	130	BLUE	1814
2B4	8001/U	90	BLUE	1771
2B5	8001/U	70	BLUE	1259
2B6	8001/U	70	BLUE	1121
3B1	TNL	280	BLUE	4117
3B2	TNL	220	BLUE	4215
3B3	TNL	220	BLUE	4326
stab	TNL	80	RED	4332

ref.	mat.	kg	color	mm
		C		
c1	DC	40	WHT	337
c2	DC	40	WHT	271
c3	DC	40	WHT	278
c4	DC	40	WHT	327
c5	DC	40	WHT	313
c6	DC	40	WHT	258
c7	DC	40	WHT	252
c8	DC	40	WHT	292
c9	8001/U	50	BLUE	583
c10	8001/U	50	BLUE	489
c11	8001/U	50	BLUE	545
c12	8001/U	50	BLUE	515
c14	8001/U	50	ORG	1472
2C1	8001/U	70	BLUE	555
2C2	8001/U	70	BLUE	537
2C3	8001/U	70	BLUE	504
2C4	8001/U	70	BLUE	499
2C5	8001/U	70	BLUE	1297
2C6	8001/U	70	BLUE	1157
2CD1	8001/U	90	BLUE	856
2CD2	8001/U	90	BLUE	835
2CD3	8001/U	70	BLUE	787
2CD4	8001/U	70	BLUE	761
3C1	TNL	280	BLUE	4785
3C2	TNL	220	BLUE	4825
3C3	TNL	140	BLUE	4343

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	338
d2	DC	40	WHT	276
d3	DC	40	WHT	287
d4	DC	40	WHT	325
d5	DC	40	WHT	316
d6	DC	40	WHT	257
d7	DC	40	WHT	263
d8	DC	40	WHT	290
2D1	8001/U	70	BLUE	650
2D2	8001/U	70	BLUE	624
2D3	8001/U	70	BLUE	592
2D4	8001/U	70	BLUE	561

ref.	mat.	kg	color	mm
		BRAKE		
br1	TNL	80	RED	623
br2	TNL	80	RED	305
br3	TNL	80	RED	554
br4	TNL	80	RED	557
br5	TNL	80	RED	571
br6	TNL	80	RED	432
br7	TNL	80	RED	443
br8	TNL	80	RED	510
br9	TNL	80	RED	455
br10	TNL	80	RED	384
br11	TNL	80	RED	310
br12	TNL	80	RED	400
2BR1	TNL	80	RED	975
2BR2	TNL	80	RED	599
2BR3	TNL	80	RED	819
2BR4	TNL	80	RED	765
2BR5	TNL	80	RED	549
2BR6	TNL	80	RED	606
3BR1	TNL	80	RED	2814
3BR2	TNL	80	RED	2403
3BR3	TNL	80	RED	2519
BRMAIN	TARAX	240	RED	3156
		KNOT POINT:		2956

HIKO - 26

ref.	mat.	kg	color	mm
		A		
a1	DC	100	WHT	350
a2	DC	60	WHT	300
a3	DC	60	WHT	307
a4	DC	60	WHT	336
a5	DC	60	WHT	326
a6	DC	60	WHT	281
a7	DC	60	WHT	282
a8	DC	60	WHT	299
a9	8001/U	70	ORG	627
a10	8001/U	50	ORG	518
a11	8001/U	50	ORG	606
a12	8001/U	50	ORG	583
a13	8001/U	50	ORG	705
a14	8001/U	50	ORG	1461
2A1	8001/U	130	ORG	2091
2A2	8001/U	130	ORG	2050
2A3	8001/U	130	ORG	1921
2A4	8001/U	90	ORG	1869
2A5	8001/U	70	ORG	1373
2A6	8001/U	70	ORG	1186
2st1	8001/U	50	ORG	842
3A1	TNL	280	GREEN	4380
3A2	TNL	280	GREEN	4469
3A3	TNL	220	GREEN	4529

ref.	mat.	kg	color	mm
		B		
b1	DC	60	WHT	346
b2	DC	60	WHT	296
b3	DC	60	WHT	304
b4	DC	60	WHT	332
b5	DC	60	WHT	321
b6	DC	40	WHT	278
b7	DC	40	WHT	275
b8	DC	60	WHT	295
b9	8001/U	50	BLUE	604
b10	8001/U	50	BLUE	510
b11	8001/U	50	BLUE	569
b12	8001/U	50	BLUE	558
b13	8001/U	50	ORG	683
b14	8001/U	50	ORG	1462
2B1	8001/U	130	BLUE	2068
2B2	8001/U	130	BLUE	2026
2B3	8001/U	130	BLUE	1888
2B4	8001/U	90	BLUE	1844
2B5	8001/U	70	BLUE	1311
2B6	8001/U	70	BLUE	1167
3B1	TNL	280	BLUE	4309
3B2	TNL	220	BLUE	4415
3B3	TNL	220	BLUE	4533
stab	TNL	80	RED	4539

ref.	mat.	kg	color	mm
		C		
c1	DC	40	WHT	351
c2	DC	40	WHT	282
c3	DC	40	WHT	289
c4	DC	40	WHT	340
c5	DC	40	WHT	326
c6	DC	40	WHT	268
c7	DC	40	WHT	262
c8	DC	40	WHT	304
c9	8001/U	50	BLUE	607
c10	8001/U	50	BLUE	509
c11	8001/U	50	BLUE	567
c12	8001/U	50	BLUE	537
c14	8001/U	50	ORG	1532
2C1	8001/U	70	BLUE	577
2C2	8001/U	70	BLUE	560
2C3	8001/U	70	BLUE	525
2C4	8001/U	70	BLUE	520
2C5	8001/U	70	BLUE	1351
2C6	8001/U	70	BLUE	1205
2CD1	8001/U	90	BLUE	891
2CD2	8001/U	90	BLUE	870
2CD3	8001/U	70	BLUE	819
2CD4	8001/U	70	BLUE	793
3C1	TNL	280	BLUE	5006
3C2	TNL	220	BLUE	5050
3C3	TNL	140	BLUE	4551

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	351
d2	DC	40	WHT	288
d3	DC	40	WHT	298
d4	DC	40	WHT	339
d5	DC	40	WHT	329
d6	DC	40	WHT	268
d7	DC	40	WHT	274
d8	DC	40	WHT	302
2D1	8001/U	70	BLUE	676
2D2	8001/U	70	BLUE	651
2D3	8001/U	70	BLUE	617
2D4	8001/U	70	BLUE	584

ref.	mat.	kg	color	mm
		BRAKE		
br1	TNL	80	RED	649
br2	TNL	80	RED	318
br3	TNL	80	RED	577
br4	TNL	80	RED	581
br5	TNL	80	RED	595
br6	TNL	80	RED	450
br7	TNL	80	RED	460
br8	TNL	80	RED	531
br9	TNL	80	RED	474
br10	TNL	80	RED	400
br11	TNL	80	RED	323
br12	TNL	80	RED	417
2BR1	TNL	80	RED	1.014
2BR2	TNL	80	RED	625
2BR3	TNL	80	RED	852
2BR4	TNL	80	RED	797
2BR5	TNL	80	RED	571
2BR6	TNL	80	RED	632
3BR1	TNL	80	RED	2928
3BR2	TNL	80	RED	2502
3BR3	TNL	80	RED	2626
BRMAIN	TARAX	240	RED	3299
		KNOT POINT:		3099

HIKO - 28

ref.	mat.	kg	color	mm
		A		
a1	DC	100	WHT	363
a2	DC	60	WHT	312
a3	DC	60	WHT	319
a4	DC	60	WHT	349
a5	DC	60	WHT	339
a6	DC	60	WHT	292
a7	DC	60	WHT	292
a8	DC	60	WHT	311
a9	8001/U	70	ORG	650
a10	8001/U	50	ORG	538
a11	8001/U	50	ORG	629
a12	8001/U	50	ORG	605
a13	8001/U	50	ORG	732
a14	8001/U	50	ORG	1517
2A1	8001/U	130	ORG	2170
2A2	8001/U	130	ORG	2129
2A3	8001/U	130	ORG	1993
2A4	8001/U	90	ORG	1941
2A5	8001/U	70	ORG	1426
2A6	8001/U	70	ORG	1232
2st1	8001/U	50	ORG	874
3A1	TNL	280	GREEN	4568
3A2	TNL	280	GREEN	4663
3A3	TNL	220	GREEN	4727

ref.	mat.	kg	color	mm
		B		
b1	DC	60	WHT	359
b2	DC	60	WHT	308
b3	DC	60	WHT	315
b4	DC	60	WHT	345
b5	DC	60	WHT	333
b6	DC	40	WHT	288
b7	DC	40	WHT	286
b8	DC	60	WHT	306
b9	8001/U	50	BLUE	627
b10	8001/U	50	BLUE	529
b11	8001/U	50	BLUE	591
b12	8001/U	50	BLUE	579
b13	8001/U	50	ORG	709
b14	8001/U	50	ORG	1518
2B1	8001/U	130	BLUE	2146
2B2	8001/U	130	BLUE	2104
2B3	8001/U	130	BLUE	1959
2B4	8001/U	90	BLUE	1915
2B5	8001/U	70	BLUE	1361
2B6	8001/U	70	BLUE	1212
3B1	TNL	280	BLUE	4494
3B2	TNL	220	BLUE	4608
3B3	TNL	220	BLUE	4732
stab	TNL	80	RED	4737

ref.	mat.	kg	color	mm
		C		
c1	DC	40	WHT	364
c2	DC	40	WHT	294
c3	DC	40	WHT	300
c4	DC	40	WHT	353
c5	DC	40	WHT	338
c6	DC	40	WHT	277
c7	DC	40	WHT	276
c8	DC	40	WHT	314
c9	8001/U	50	BLUE	630
c10	8001/U	50	BLUE	528
c11	8001/U	50	BLUE	589
c12	8001/U	50	BLUE	557
c14	8001/U	50	ORG	1590
2C1	8001/U	70	BLUE	598
2C2	8001/U	70	BLUE	582
2C3	8001/U	70	BLUE	559
2C4	8001/U	70	BLUE	544
2C5	8001/U	70	BLUE	1402
2C6	8001/U	70	BLUE	1251
2CD1	8001/U	90	BLUE	924
2CD2	8001/U	90	BLUE	904
2CD3	8001/U	70	BLUE	863
2CD4	8001/U	70	BLUE	832
3C1	TNL	280	BLUE	5218
3C2	TNL	220	BLUE	5247
3C3	TNL	140	BLUE	4753

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	365
d2	DC	40	WHT	299
d3	DC	40	WHT	309
d4	DC	40	WHT	352
d5	DC	40	WHT	342
d6	DC	40	WHT	276
d7	DC	40	WHT	295
d8	DC	40	WHT	307
2D1	8001/U	70	BLUE	701
2D2	8001/U	70	BLUE	676
2D3	8001/U	70	BLUE	652
2D4	8001/U	70	BLUE	606

ref.	mat.	kg	color	mm
		BRAKE		
br1	TNL	80	RED	673
br2	TNL	80	RED	330
br3	TNL	80	RED	598
br4	TNL	80	RED	603
br5	TNL	80	RED	617
br6	TNL	80	RED	468
br7	TNL	80	RED	477
br8	TNL	80	RED	551
br9	TNL	80	RED	492
br10	TNL	80	RED	416
br11	TNL	80	RED	335
br12	TNL	80	RED	433
2BR1	TNL	80	RED	1.052
2BR2	TNL	80	RED	649
2BR3	TNL	80	RED	884
2BR4	TNL	80	RED	829
2BR5	TNL	80	RED	593
2BR6	TNL	80	RED	656
3BR1	TNL	80	RED	3037
3BR2	TNL	80	RED	2598
3BR3	TNL	80	RED	2729
BRMAIN	TARAX	240	RED	3436
		KNOT POINT:		3236

HIKO - 30

ref.	mat.	kg	color	mm
		A		
a1	DC	100	WHT	377
a2	DC	60	WHT	324
a3	DC	60	WHT	331
a4	DC	60	WHT	363
a5	DC	60	WHT	352
a6	DC	60	WHT	303
a7	DC	60	WHT	303
a8	DC	60	WHT	323
a9	8001/U	70	ORG	676
a10	8001/U	50	ORG	559
a11	8001/U	50	ORG	654
a12	8001/U	50	ORG	628
a13	8001/U	50	ORG	760
a14	8001/U	50	ORG	1576
2A1	8001/U	130	ORG	2253
2A2	8001/U	130	ORG	2213
2A3	8001/U	130	ORG	2070
2A4	8001/U	90	ORG	2017
2A5	8001/U	70	ORG	1481
2A6	8001/U	70	ORG	1280
2st1	8001/U	50	ORG	908
3A1	TNL	280	GREEN	4767
3A2	TNL	280	GREEN	4869
3A3	TNL	220	GREEN	4938

ref.	mat.	kg	color	mm
		B		
b1	DC	60	WHT	373
b2	DC	60	WHT	320
b3	DC	60	WHT	327
b4	DC	60	WHT	359
b5	DC	60	WHT	346
b6	DC	40	WHT	300
b7	DC	40	WHT	297
b8	DC	60	WHT	319
b9	8001/U	50	BLUE	651
b10	8001/U	50	BLUE	550
b11	8001/U	50	BLUE	614
b12	8001/U	50	BLUE	601
b13	8001/U	50	ORG	736
b14	8001/U	50	ORG	1577
2B1	8001/U	130	BLUE	2228
2B2	8001/U	130	BLUE	2187
2B3	8001/U	130	BLUE	2035
2B4	8001/U	90	BLUE	1991
2B5	8001/U	70	BLUE	1414
2B6	8001/U	70	BLUE	1259
3B1	TNL	280	BLUE	4690
3B2	TNL	220	BLUE	4812
3B3	TNL	220	BLUE	4943
stab	TNL	80	RED	4948

ref.	mat.	kg	color	mm
		C		
c1	DC	40	WHT	378
c2	DC	40	WHT	305
c3	DC	40	WHT	311
c4	DC	40	WHT	367
c5	DC	40	WHT	351
c6	DC	40	WHT	288
c7	DC	40	WHT	287
c8	DC	40	WHT	326
c9	8001/U	50	BLUE	654
c10	8001/U	50	BLUE	549
c11	8001/U	50	BLUE	612
c12	8001/U	50	BLUE	579
c14	8001/U	50	ORG	1652
2C1	8001/U	70	BLUE	621
2C2	8001/U	70	BLUE	605
2C3	8001/U	70	BLUE	580
2C4	8001/U	70	BLUE	565
2C5	8001/U	70	BLUE	1457
2C6	8001/U	70	BLUE	1299
2CD1	8001/U	90	BLUE	960
2CD2	8001/U	90	BLUE	939
2CD3	8001/U	70	BLUE	896
2CD4	8001/U	70	BLUE	865
3C1	TNL	280	BLUE	5443
3C2	TNL	220	BLUE	5476
3C3	TNL	140	BLUE	4965

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	379
d2	DC	40	WHT	311
d3	DC	40	WHT	321
d4	DC	40	WHT	366
d5	DC	40	WHT	355
d6	DC	40	WHT	287
d7	DC	40	WHT	306
d8	DC	40	WHT	319
2D1	8001/U	70	BLUE	728
2D2	8001/U	70	BLUE	703
2D3	8001/U	70	BLUE	677
2D4	8001/U	70	BLUE	630

ref.	mat.	kg	color	mm
		BRAKE		
br1	TNL	80	RED	699
br2	TNL	80	RED	343
br3	TNL	80	RED	621
br4	TNL	80	RED	627
br5	TNL	80	RED	641
br6	TNL	80	RED	487
br7	TNL	80	RED	496
br8	TNL	80	RED	573
br9	TNL	80	RED	511
br10	TNL	80	RED	432
br11	TNL	80	RED	347
br12	TNL	80	RED	449
2BR1	TNL	80	RED	1.093
2BR2	TNL	80	RED	675
2BR3	TNL	80	RED	918
2BR4	TNL	80	RED	862
2BR5	TNL	80	RED	615
2BR6	TNL	80	RED	683
3BR1	TNL	80	RED	3153
3BR2	TNL	80	RED	2700
3BR3	TNL	80	RED	2838
BRMAIN	TARAX	240	RED	3582
		KNOT POINT:		3382

10.7 Total line length

HIKO - 20

LINES HEIGHT + RISER mm

	A	B	C	D	br
1	6561	6473	6567	6656	6833
2	6513	6427	6504	6598	6537
3	6480	6391	6473	6562	6419
4	6504	6415	6517	6597	6421
5	6457	6375	6472	6555	6254
6	6416	6336	6418	6497	6124
7	6371	6293	6375	6444	6081
8	6386	6310	6406	6453	6143
9	6289	6221	6280		5998
10	6194	6136	6192		5931
11	6107	6060	6115		5915
12	6085	6050	6082		5997
13	5892	5872	5883		
14	5819	5820			

RISERS LENGHT mm

A	A'	B	C	
530	530	530	530	STANDARD
380	380	430	530	ACCELERATED

HIKO - 22

LINES HEIGHT + RISER mm

	A	B	C	D	br
1	6770	6668	6774	6865	7060
2	6721	6622	6710	6806	6755
3	6686	6588	6676	6769	6634
4	6710	6614	6722	6805	6636
5	6662	6576	6672	6760	6465
6	6619	6536	6619	6703	6331
7	6572	6495	6582	6652	6288
8	6587	6513	6620	6678	6351
9	6486	6418	6484		6204
10	6387	6332	6394		6135
11	6295	6256	6314		6118
12	6272	6246	6280		6204
13	6073	6054	6067		
14	5999	6001			

RISERS LENGHT mm

A	A'	B	C	
530	530	530	530	STANDARD
380	380	430	530	ACCELERATED

HIKO - 24

LINES HEIGHT + RISER mm

	A	B	C	D	br
1	7069	6977	7078	7174	7405
2	7020	6928	7012	7112	7087
3	6987	6893	6980	7076	6960
4	7014	6920	7029	7114	6963
5	6966	6880	6976	7067	6786
6	6922	6838	6921	7008	6647
7	6875	6794	6884	6957	6604
8	6891	6812	6924	6984	6671
9	6792	6716	6779		6516
10	6690	6626	6685		6445
11	6595	6545	6601		6428
12	6573	6534	6571		6518
13	6370	6349	6364		
14	6292	6293			

RISERS LENGHT mm

A	A'	B	C	
530	530	530	530	STANDARD
350	350	410	530	ACCELERATED

HIKO – 26

LINES HEIGHT + RISER mm

	A	B	C	D	br
1	7358	7261	7368	7467	7717
2	7307	7211	7299	7404	7386
3	7274	7177	7268	7368	7256
4	7303	7205	7319	7409	7260
5	7255	7165	7265	7360	7075
6	7210	7122	7207	7299	6930
7	7162	7075	7170	7246	6885
8	7179	7095	7212	7274	6956
9	7073	6994	7060		6797
10	6966	6900	6962		6723
11	6868	6815	6874		6707
12	6845	6804	6839		6801
13	6629	6607	6618		
14	6547	6548			

RISERS LENGHT mm

A	A’	B	C	
530	530	530	530	STANDARD
350	350	410	530	ACCELERATED

HIKO – 28

LINES HEIGHT + RISER mm

	A	B	C	D	br
1	7640	7540	7648	7752	8025
2	7588	7489	7578	7686	7682
3	7555	7454	7548	7651	7547
4	7585	7484	7601	7694	7552
5	7536	7444	7553	7650	7362
6	7489	7399	7492	7584	7213
7	7440	7353	7445	7526	7167
8	7459	7373	7483	7538	7241
9	7347	7269	7337		7077
10	7237	7171	7235		7001
11	7135	7084	7145		6983
12	7111	7072	7108		7081
13	6889	6866	6877		
14	6804	6805			

RISERS LENGHT mm

A	A’	B	C	
530	530	530	530	STANDARD
350	350	410	530	ACCELERATED

HIKO – 30

LINES HEIGHT + RISER mm

	A	B	C	D	br
1	7935	7829	7945	8053	8354
2	7881	7776	7872	7985	7998
3	7849	7742	7841	7949	7858
4	7881	7774	7897	7994	7864
5	7831	7734	7848	7949	7668
6	7782	7688	7785	7881	7514
7	7732	7641	7738	7822	7467
8	7752	7663	7777	7835	7544
9	7638	7554	7627		7373
10	7523	7453	7522		7294
11	7418	7362	7427		7277
12	7392	7349	7389		7379
13	7159	7135	7147		
14	7071	7072			

RISERS LENGHT mm

A	A’	B	C	
530	530	530	530	STANDARD
350	350	410	530	ACCELERATED

10.8 Minimum strength of suspension lines

LINE REFERENCE	SIZE					
	20	**22**	**24**	**26**	**28**	**30**
TNL-80	23	26	30	33	36	40
TNL-140	45	51	57	63	69	77
TNL-220	69	79	88	97	107	119
TNL-280	87	99	110	122	133	149
8001U-50	18	20	22	25	27	30
8001U-70	20	23	26	28	31	35
8001U-90	34	38	43	47	52	58
8001U-130	40	45	51	56	62	69
DC-40	25	28	31	35	38	42
DC-60	37	41	46	51	56	62
DC-100	45	51	57	63	69	77

Minimum resistance values in daN

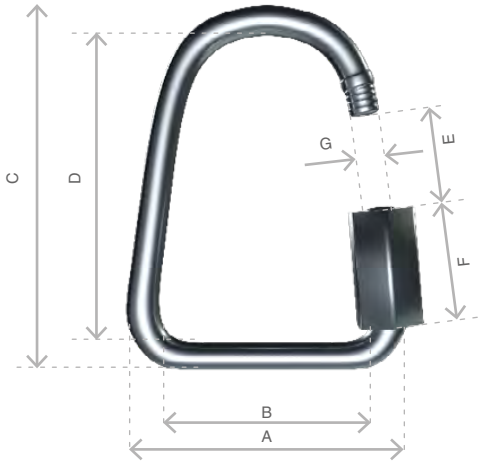
Based on the original experimental resistance values of each suspension line material obtained in certification tests, a correction factor is applied depending on the material and its aging, resulting in the reference values shown in the table.

10.9 Maillon & Pulley

DESCRIPTION MAILLON

MAILLON	DELTA
CODE	3.5
MATERIAL	STAINLESS STEEL
SIZE	3 mm
WEIGHT	5 G/PIECE
QUANTITY	8 PIECES
INSERTS	2 GREEN / 6 BLACK

TECHNICAL SPECIFICATIONS



DIMENSIONS	mm
A	22
B	14
C	37
D	29
E	5
F	12
G	4
LOAD	KG
WORKING LIMIT	110
BREAKING	550

DESCRIPTION MAILLON

MATERIAL	
AISI 304 STAINLESS STEEL	STANDARD

CLOSING APPLIED BY MANUAL & ENTIRE SCREWING OF THE NUT TO GUARANTEE THE HIGHEST SAFETY (NO THREAD SHOULD BE OBVIOUS)
SYSTEMATIC CONTROL OF MAILLON QUICK-LINKS BEFORE EVERY FLIGHT

DESCRIPTION PULLEY

PULLEY	20 mm
CODE	RF25109
MATERIALS	STAINLESS STEEL
	NYLON
	CARBON ACETAL
BEARING	DELRIN®
WEIGHT	14 G/PIECE

TECHNICAL SPECIFICATIONS

DIMENSIONS	mm
A	20
B	33
Ø	5 max
LOAD	kg
WORKING LIMIT	200
BREAKING	400

10.10 Certification

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NIVIUK

Classification: **B**

In accordance with standards: EN926-1:2015, EN926-2:2013+A1:2021 and NfL 2-565-20	PG_2447.2024
Date of issue (DMY):	10.10.2024
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Hiko 20
Serial number:	PHIKO20

Configuration during flight tests

Paraglider	
Maximum weight in flight [kg]	**75**
Minimum weight in flight [kg]	**50**
Glider's weight [kg]	**4**
Number of risers	**3+1**
Projected area [m²]	**17.51**

Accessories	
Range of speed system [cm]	**16.6**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**26**
Range of trimmers [cm]	**n/a**

Harness used for testing (max weight)	
Harness type	**ABS**
Harness brand	**Woody Valley srl**
Harness model	**Wani Light 2 M**
Harness to risers distance [cm]	**43**
Distance between risers [cm]	**44**

Inspections (whichever happens first)
every 100 hours of use or every 24 months

Person or company having presented the glider for testing: **None**

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

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NIVIUK

Classification: **B**

In accordance with standards: EN926-1:2015, EN926-2:2013+A1:2021 and NfL 2-565-20	PG_2436.2024
Date of issue (DMY):	10.10.2024
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Hiko 22
Serial number:	HIKO122

Configuration during flight tests

Paraglider	
Maximum weight in flight [kg]	**85**
Minimum weight in flight [kg]	**65**
Glider's weight [kg]	**4.2**
Number of risers	**3+1**
Projected area [m²]	**18.62**

Accessories	
Range of speed system [cm]	**16.3**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**26**
Range of trimmers [cm]	**n/a**

Harness used for testing (max weight)	
Harness type	**ABS**
Harness brand	**Niviuk**
Harness model	**Makan M**
Harness to risers distance [cm]	**41**
Distance between risers [cm]	**44**

Inspections (whichever happens first)
every 100 hours of use or every 24 months

Person or company having presented the glider for testing: **None**

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

The validation of this test report is given by the signature of the test manager on inspection certificate 91.20 // Rev 07 | 04.03.2022 // ISO | 91.21 // Page 1 of 1

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Classification: **B**

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Date of issue (DMY):	10.10.2024
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Hiko 24
Serial number:	OKUMA224

Configuration during flight tests

Paraglider

Maximum weight in flight [kg]	**95**
Minimum weight in flight [kg]	**75**
Glider's weight [kg]	**4.3**
Number of risers	**3+1**
Projected area [m²]	**20.33**

Accessories

Range of speed system [cm]	**19.4**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**26**
Range of trimmers [cm]	**n/a**

Harness used for testing (max weight)

Harness type	**ABS**
Harness brand	**Advance Thun AG**
Harness model	**Success 4 M**
Harness to risers distance [cm]	**43**
Distance between risers [cm]	**44**

Inspections (whichever happens first)
every 100 hours of use or every 24 months

Person or company having presented the glider for testing: **None**

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

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Classification: **B**

In accordance with standards: EN926-1:2015, EN926-2:2013+A1:2021 and NfL 2-565-20	PG_2434.2024
Date of issue (DMY):	10.10.2024
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Hiko 26
Serial number:	HIKO126

Configuration during flight tests

Paraglider

Maximum weight in flight [kg]	**105**
Minimum weight in flight [kg]	**85**
Glider's weight [kg]	**4.8**
Number of risers	**3+1**
Projected area [m²]	**22.04**

Accessories

Range of speed system [cm]	**19.4**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**26**
Range of trimmers [cm]	**n/a**

Harness used for testing (max weight)

Harness type	**ABS**
Harness brand	**Woody Valley srl**
Harness model	**Wani Light 2 L**
Harness to risers distance [cm]	**43**
Distance between risers [cm]	**48**

Inspections (whichever happens first)
every 100 hours of use or every 24 months

Person or company having presented the glider for testing: **None**

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

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Classification: **B**

In accordance with standards: EN926-1:2015, EN926-2:2013+A1:2021 and NfL 2-565-20	PG_2448.2024
Date of issue (DMY):	10.10.2024
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Hiko 28
Serial number:	PHIKO28

Configuration during flight tests

Paraglider

Maximum weight in flight [kg]	**115**
Minimum weight in flight [kg]	**95**
Glider's weight [kg]	**5.1**
Number of risers	**3+1**
Projected area [m²]	**23.75**

Accessories

Range of speed system [cm]	**19.4**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**26**
Range of trimmers [cm]	**n/a**

Harness used for testing (max weight)

Harness type	**ABS**
Harness brand	**Niviuk**
Harness model	**Makan L**
Harness to risers distance [cm]	**41**
Distance between risers [cm]	**48**

Inspections (whichever happens first)
every 100 hours of use or every 24 months

Person or company having presented the glider for testing: **None**

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

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Classification: **B**

In accordance with standards: EN926-1:2015, EN926-2:2013+A1:2021 and NfL 2-565-20	PG_2449.2024
Date of issue (DMY):	10.10.2024
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Hiko 30
Serial number:	PHIKO30

Configuration during flight tests

Paraglider

Maximum weight in flight [kg]	**128**
Minimum weight in flight [kg]	**105**
Glider's weight [kg]	**5.5**
Number of risers	**3+1**
Projected area [m²]	**25.63**

Accessories

Range of speed system [cm]	**19**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**26**
Range of trimmers [cm]	**n/a**

Harness used for testing (max weight)

Harness type	**ABS**
Harness brand	**Advance Thun AG**
Harness model	**Success 4 L**
Harness to risers distance [cm]	**43**
Distance between risers [cm]	**48**

Inspections (whichever happens first)
every 100 hours of use or every 24 months

Person or company having presented the glider for testing: **None**

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

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