ARTIK R 2

User manual &
Technical data



AIVIUK BEYOND THE GLIDE

The two-liner *revolution*

CATEGORIES

HIKE & FLY

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.

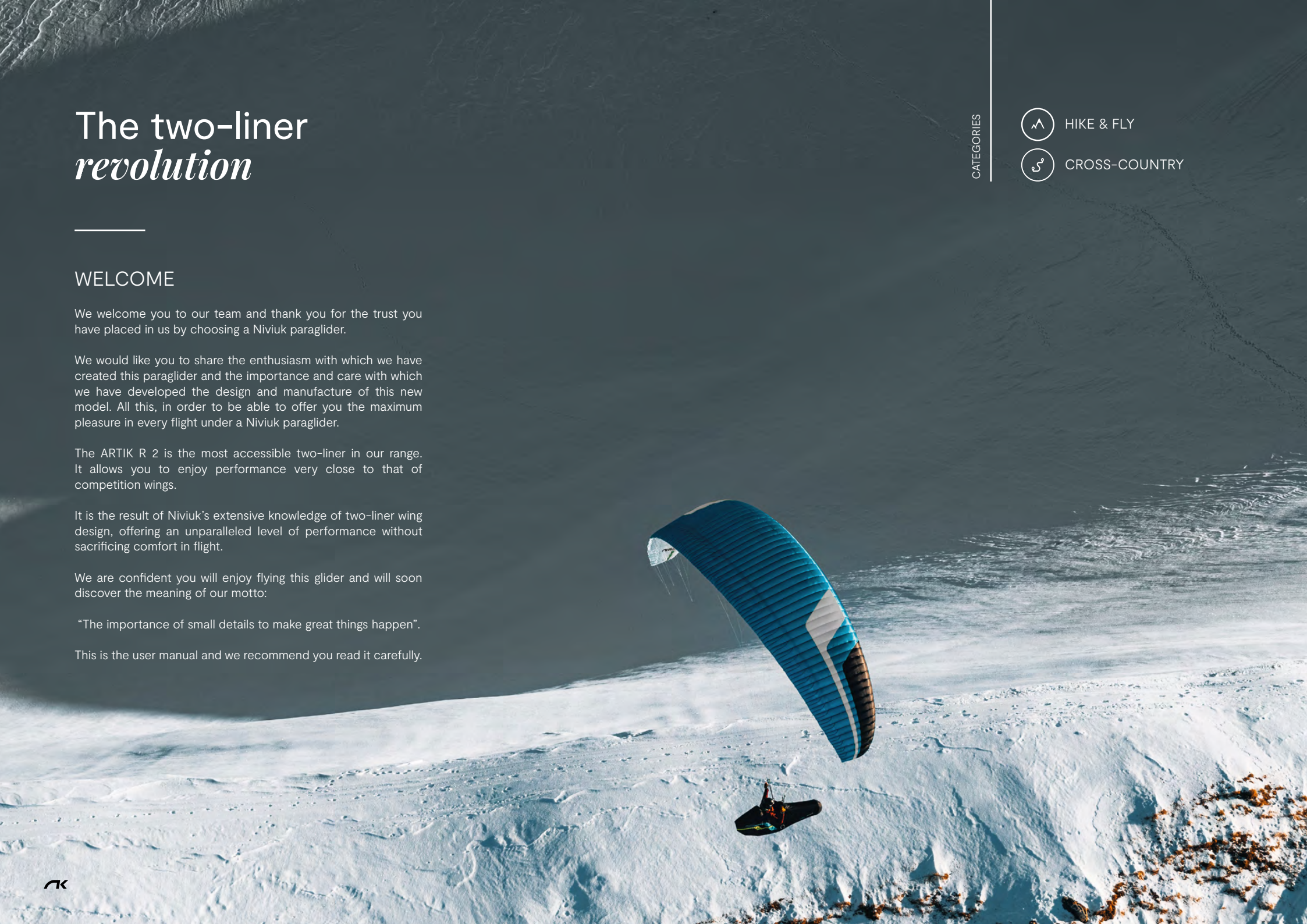
The ARTIK R 2 is the most accessible two-liner in our range. It allows you to enjoy performance very close to that of competition wings.

It is the result of Niviuk's extensive knowledge of two-liner wing design, offering an unparalleled level of performance without sacrificing comfort in flight.

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

Whilst it provides information on the wing, it cannot be viewed as an instructional handbook and does not offer the training required to fly this type of paraglider. Training can only be undertaken at a certified paragliding school and each country has its own system of licensing. Only the aeronautical authorities of respective countries can determine pilot competence.

The information in this manual is provided in order to warn you against adverse flying situations and potential dangers.

Equally, we would like to remind you that it is important to carefully read all the contents of your new ARTIK R 2 manual.

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

CONTENTS

01

CHARACTERISTICS 5

1.1 WHO IS IT DESIGNED FOR? 5
1.2 CERTIFICATION 5
1.3 IN-FLIGHT BEHAVIOR 6
1.4 TECHNOLOGIES, CONSTRUCTION, MATERIALS 6
1.5 ELEMENTS, COMPONENTS 7

02

UNPACKING AND ASSEMBLY 7

2.1 CHOOSING THE RIGHT LOCATION 7
2.2 PROCEDURE 7
2.3 CONNECTING THE HARNESS 7
2.4 HARNESS TYPE 7
2.5 SPEED-BAR 7
2.5.1 SPEED SYSTEM ASSEMBLY 8
2.5.2 CHANGING THE RISER CORDS 8
2.6 INSPECTION AND WING INFLATION ON THE GROUND 8
2.7 ADJUSTING THE BRAKES 8

03

THE FIRST FLIGHT 9

3.1 CHOOSING THE RIGHT LOCATION 9
3.2 PREPARATION 9
3.3 FLIGHT PLAN 9
3.4 PRE-FLIGHT CHECK 9
3.5 WING INFLATION, CONTROL AND TAKEOFF 9
3.6 LANDING 9
3.7 PACKING 9

04

IN FLIGHT 10

4.1 FLYING IN TURBULENCE 10
4.2 POSSIBLE CONFIGURATIONS 10
4.3 ACCELERATED FLIGHT 11
4.4 FLYING WITHOUT BRAKE LINES 11
4.5 LINE KNOT(S) IN FLIGHT 11

05

LOSING ALTITUDE 12

5.1 BIG EARS 12
5.2 B3 TECHNIQUE 12
5.3 SPIRAL DIVE 12
5.4 SLOW DESCENT TECHNIQUE 12

06

SPECIAL METHODS 13

6.1 TOWING 13
6.2 ACROBATIC FLIGHT 13

07

CARE AND MAINTENANCE 14

7.1 MAINTENANCE 14
7.2 STORAGE 14
7.3 CHECKS AND INSPECTIONS 14
7.4 REPAIRS 14

08

SAFETY AND RESPONSABILITY 15

09

GUARANTEE 15

10

ANNEXES 16

10.1 TECHNICAL SPECIFICATIONS 17
10.2 COLOURS 18
10.3 MATERIALS 19
10.4 LINE PLAN 20
10.5 RISER PLAN 21
10.6 LINE MEASUREMENTS BY SIZE 22
10.7 TOTAL LINE LENGTH 28
10.8 MINIMUM STRENGTH OF SUSPENSION LINES 30
10.9 MAILLON & PULLEY 31
10.10 CERTIFICATION 32

1. CARACTERISTICS

1.1 WHO IS IT DESIGNED FOR?

The ARTIK R 2 is ideal for cross-country flying. We developed numerous prototypes to achieve a high level of performance that is accessible and comfortable in real flying conditions. Explore new horizons with the ARTIK R 2.

It is also suitable for competitions. The new profile is more stable than the previous model. Its internal structure has been completely redesigned. The ARTIK R 2 stands out for its efficiency in thermals and its stability at high speed, making it ideal for your first steps in competition.

1.2 CERTIFICATION

The ARTIK R 2 has been submitted for the European EN 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 8 g.

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

The flight test resulted in the following certification of the ARTIK R 2 for all sizes (20, 21, 23, 24, 25 and 27):

EN C

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 C class wing characteristics:

Paragliders with moderate passive safety, potentially dynamic reactions to turbulence and pilot errors. The recovery to normal flight may require precise interventions by the pilot.

· Description of the pilot skills required for an EN C wing:

Designed for pilots familiar with recovery techniques, who fly actively and understand the implications of flying a glider with reduced passive safety.

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, 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.

Less drag, more performance: the two-liner design reduces the number of lines and therefore drag, thus improving performance. We have been able to reduce the lineset by 2%, despite the addition of 4 more cells, compared to the previous model.

Optimised accessibility: the ARTIK R 2 much more accessible and easier to fly. The ARTIK R 2 is light and responsive in thermals. Piloting with the B-risers is efficient, safe and precise.

Better passive safety: thanks to improvements in stability, a moderate 6.5 aspect ratio and Niviuk technologies applied in its design, the ARTIK R 2 offers increased passive safety.

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

1.4 TECHNOLOGIES, CONSTRUCTION, MATERIALS

The ARTIK R 2 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 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 on the leading edge has been simplified and optimised to maintain the glider's lightness, durability and compactness when packing.

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, achieving a cleaner profile, eliminating external seams and protecting them from wear and tear when in contact with 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 glider and avoids deformation.

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

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 ARTIK R 2 we use the same criteria, quality controls and manufacturing processes as in the rest of our range. From Olivier Nef's computer to fabric cutting, the operation does not allow for even a millimetre of error. The cutting of each wing component is performed by a rigorous, extremely meticulous, automated computer laser-cutting robotic arm.
This program also paints the guideline markers and numbers on each individual fabric piece, thus avoiding errors during this delicate process.

The jigsaw puzzle assembly is made easier using this method and optimises the operation while making the quality control more efficient. All Niviuk gliders go through an extremely thorough and detailed final inspection. The canopy is cut and assembled under strict quality control conditions facilitated by the automation of this process.

Every wing is individually checked with a final visual inspection.

The lines are made from unsheathed Aramid and Dyneema.

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 ARTIK R 2 is delivered with a series of accessories that will greatly assist you in the maintenance of your paraglider:

- A ZipNkare, the Niviuk bag that allows you to quickly and compactly fold your glider to keep it in perfect condition. Thanks to its reduced weight and ergonomic handle, you can carry your glider wherever you want as if it were a briefcase, whilst protecting it at all times.
- A repair kit with self-adhesive Ripstop tape.
- The ARTIK R 2 is delivered with the Niviuk Ergo handle, which allows the pilot more comfortable, ergonomic and efficient control, thanks to direct steering using the B risers.
- The Kargo 130 rucksack for sizes ARTIK R 2 20, 21 and 23. This is not included in the scope of delivery, but its purchase is recommended. It facilitates of all the equipment comfortably and with plenty of space.
- The Kargo 180 rucksack for sizes ARTIK R 2 24, 25 and 27. This is not included in the scope of delivery, but its purchase is recommended. It facilitates of all the equipment comfortably and with plenty of space.

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 ARTIK R 2.

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

2.2 PROCEDURE

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

2.3 CONNECTING THE HARNESS

The ARTIK R 2 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 ARTIK R 2 has risers with different lengths depending on the size. The differentials of the size 20 risers are different from the others. In the rest of the sizes (21, 23, 24, 25 and 27) the risers are the same and interchangeable, which is NOT the case for size 20.

2.4 HARNESS TYPE

The ARTIK R 2 can be flown with all current harness types. However, a harness with a pod is recommended as the wing is designed for flying with this type of harness. 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.

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 ARTIK R 2 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 and B-risers are aligned.
- Full speed-bar: the difference between the A and B-risers becomes:

Size 20 – 160 cm
Size 21 – 160 cm
Size 23 – 160 mm
Size 24 – 160 mm
Size 25 – 160 mm
Size 27 – 160 mm

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 of the speed-bar to the speed system is via Brummel hooks, where two slots in the hooks are interlocked, making their connection/disconnection easy. However, any connection system that is safe may be used.

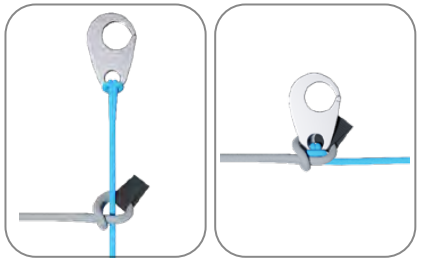


Diagram 1. Speed-bar connection by means of the Brummel hook.

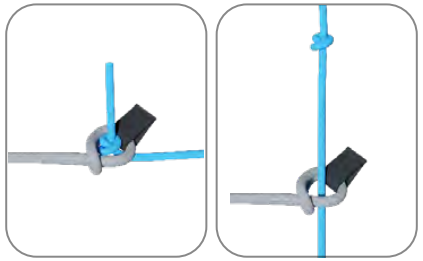


Diagram 2. Speed-bar connection by means of kite loop (without Brummel hook).

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 hook as for the kite loop, 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 ARTIK R 2 as many times as necessary to familiarise yourself with its behaviour. Inflating the ARTIK R 2 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 ARTIK R 2. 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 B-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 ARTIK R 2 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 ARTIK R 2 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 ARTIK R 2 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 ARTIK R 2 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.

The ARTIK R 2 comes standard with the ZipNkare, a bag that will guide you through the concertina folding process by allowing you to place the ribs one on top of the other on the longitudinal axis, and then allow you to easily make the required transverse folds.

This folding system guarantees that both the fabric and the reinforcements of the internal structure remain in perfect condition. In addition, through a zip closure, it becomes a much easier to transport briefcase. Watch the video tutorial to learn how to fold it correctly.



4. IN FLIGHT

We recommend that you read the certification test report. The report contains all the necessary information on the ARTIK R 2 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 ARTIK R 2 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 ARTIK R 2'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 ARTIK R 2 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 ARTIK R 2'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 ARTIK R 2's normal flight behaviour. Certain circumstances however, may provoke a negative spin (such as trying to turn when flying at very low air speed whilst applying a



lot of brake). It is not easy to give any specific recommendation about this situation other than quickly restoring the wing's default air speed and angle of attack by progressively reducing the tension on the brake lines. The normal wing reaction will be to have a lateral surge on the re-accelerated side with a rotation not greater than 360° before returning to default air speed and a straight flight path trajectory.

Parachutal stall

The possibility of entering or remaining in a parachutal stall have been eliminated from the ARTIK R 2.

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 ARTIK R 2 stalling during normal flight is very unlikely. It could only happen if you are flying at a very low air speed, whilst over-steering or performing dangerous manoeuvres in turbulent air.

To provoke a deep stall, the wing has to be slowed down to its minimum air speed by symmetrically pulling the brake lines all the way (100%) down until the stall point is reached and held there. The glider will first pitch rearward and then reposition itself overhead, rocking slightly, depending on how the manoeuvre 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 A-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 ARTIK R 2 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 ARTIK R 2'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'.

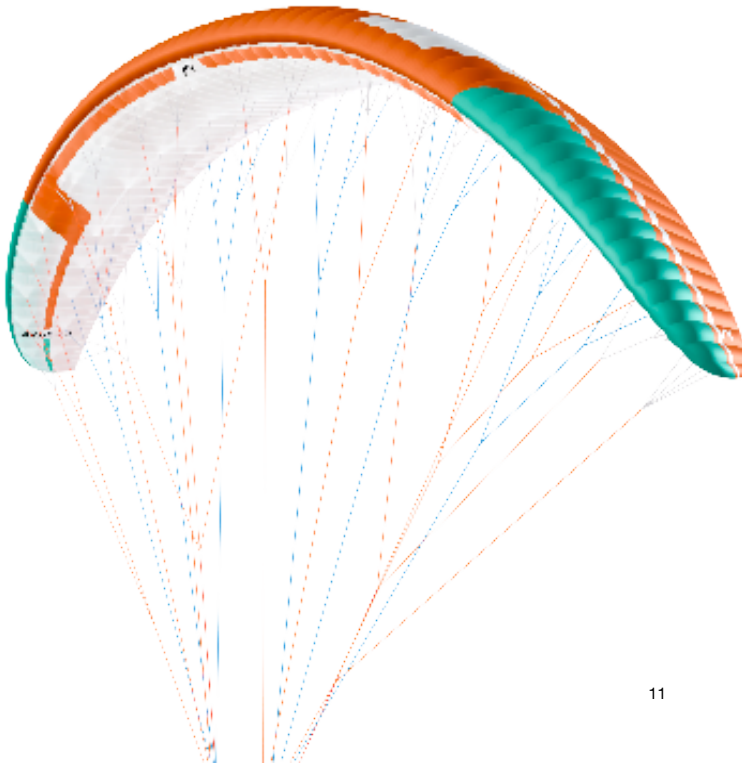
4.4 FLYING WITHOUT BRAKE LINES

If, for any reason at all, the ARTIK R 2's brake lines become disabled in flight, it will become necessary to pilot the wing gently using the B-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 B-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.



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 the innermost A’ line on each A-riser (the 4A3 line on the ARTIK R 2) 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 B3 TECHNIQUE

Even though you can use the classic ears technique, it causes great turbulences on the trailing edge. Moreover, using ears on wings with a high aspect ratio tends to “flap”, increasing these turbulences. It brings a speed loss that needs to be recovered by using the speed bar or releasing ears.

In 2009, the Niviuk Team pilots created a new manoeuvre for rapid descent - the B3 technique, which is performed with the 3C3 line. It was during the testing of a competition prototype that its characteristics (high aspect ratio and a new line distribution) did not allow Big Ears to be performed.

Some current two or three-liners are not very well suited to Big Ears because the risk is too high. Many advanced pilots want to have a fast and controlled descent technique, and this is when this new manoeuvre comes into play. For this reason, we recommend using the 3C3 line.

The B3 technique quickly increases the descent rate without causing the disadvantages described above. There is also no risk of stalling, as the descent takes place at a high speed at all times.

To perform this manoeuvre, locate the 3C3 line and do the same movement as you would do to make the ears: “pull” the line until the wingtips retract. At this point the glider will start to slow down and the wingtips will hang back. Then the speed will be increased slightly until it is stable again and a sink rate of 5 to 6 m/s will be achieved.

We advise you to use your speed-bar whenever you use this technique. You can control the direction by turning using weight-shift. At the first you will notice a decrease in the relative wind and a slight tilt towards the back of the sail, as if you were going backwards.

To exit the manoeuvre, let go of the lines as you would with Big Ears and you will feel the glider gently returning to its normal rate of descent.

The B3 Technique allows you to descend quickly without the risk of a cravat. It is very comfortable and offers a lot of ease in turns.

(!) PLEASE NOTE: We recommend practising this manoeuvre for the first time in gentle conditions and with sufficient height. It is a safe and controlled descent technique, which only needs a little training to be performed comfortably and efficiently.

5.3 SPIRAL DIVE

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

5.4 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 ARTIK R 2 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 ARTIK R 2 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 ARTIK R 2 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 ARTIK R 2.

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

Checking unsheathed lines

The ARTIK R 2 is fitted with 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.

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

Cells	Number		**20**	**21**	**23**	**24**	**25**	**27**
Aspect Ratio	Flat		68	68	68	68	68	68
	Projected		6,5	6,5	6,5	6,5	6,5	6,5
Area	Flat		5,02	5,02	5,02	5,02	5,02	5,02
	Projected	m2	19,6	21	22,5	24	25,5	27
Span	Flat	m2	16,76	17,97	19,26	20,54	21,83	23,11
Chord	Max	m	11,29	11,68	12,10	12,49	12,87	13,25
Lines	Total	m	2,19	2,26	2,34	2,42	2,49	2,57
	Main	m	183	190	197	203	210	216
Risers	Number		2-1/3	2-1/3	2-1/3	2-1/3	2-1/3	2-1/3
	Speed-bar	2+1	A-A'/B	A-A'/B	A-A'/B	A-A'/B	A-A'/B	A-A'/B
		mm	160	160	160	160	160	160
Glider weight	Min-Max	kg	4,0	4,2	4,5	4,8	4,9	5,4
Total weight in flight		kg	60-75	70-85	80-95	90-105	100-115	110-125
Weight in flight opt.			70	80	90	100	110	120
Certification			EN/LTF C	EN/LTF C	EN/LTF C	EN/LTF C	EN/LTF C	EN/LTF C

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



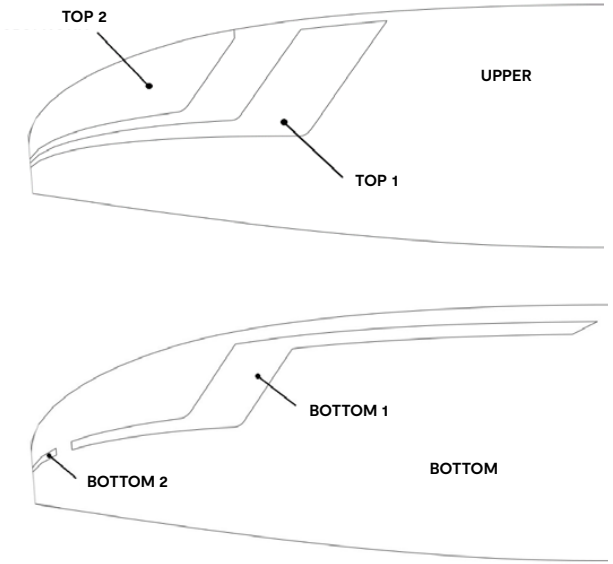
	UPPER	PINK	**LOWER**	WHITE
NEON	**TOP 1**	SPECTRA GREEN	**BOTTOM 1**	PINK
	TOP 2	WHITE	**BOTTOM 2**	SPECTRA GREEN



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



	UPPER	SLATE BLUE	**LOWER**	WHITE
GLACIER	**TOP 1**	WHITE	**BOTTOM 1**	SLATE BLUE
	TOP 2	BLACK	**BOTTOM 2**	BLACK



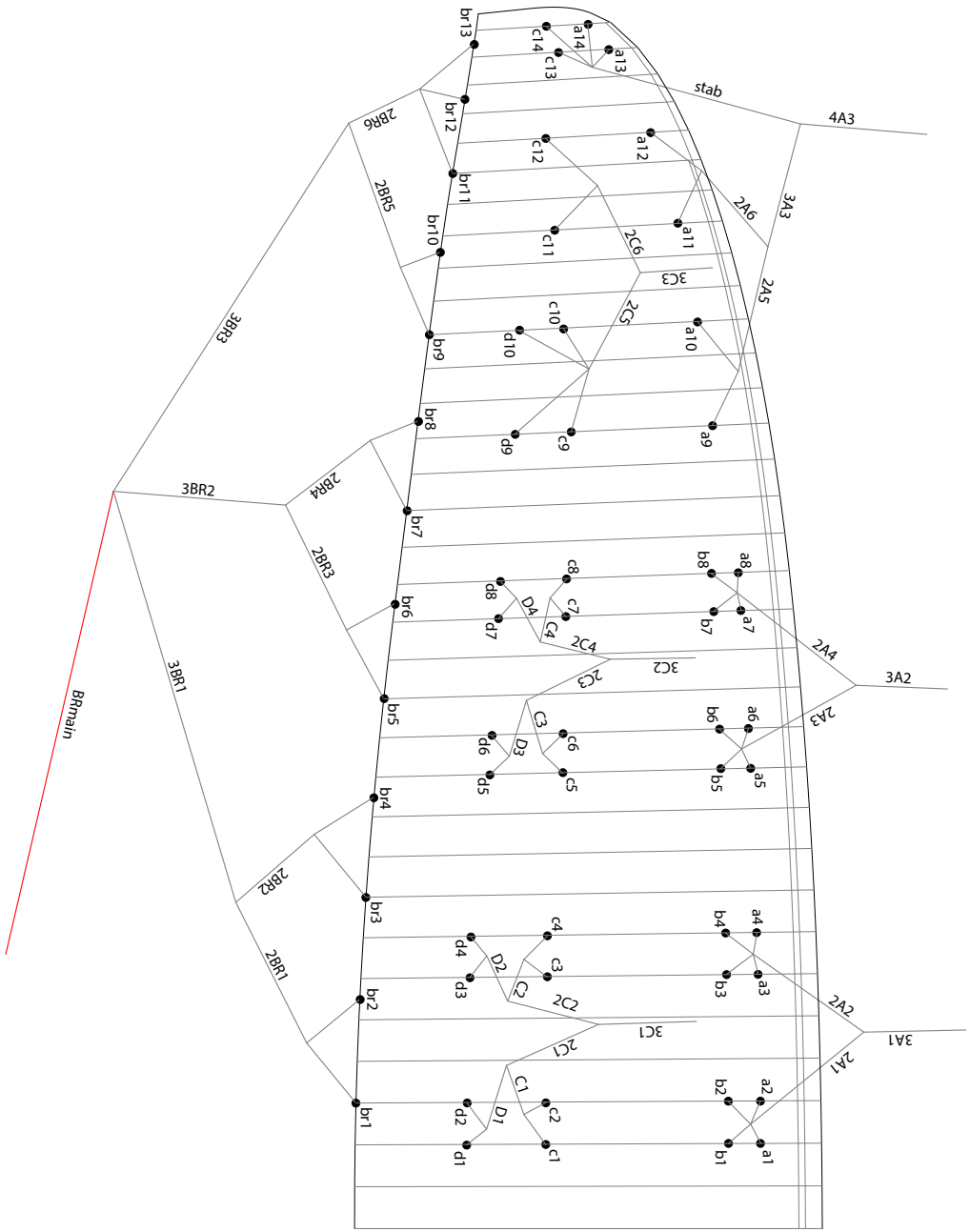
10.3 Materials

CANOPY	FABRIC CODE	SUPPLIER
UPPER SURFACE	HYPERAIRTEX-36	DOMINICO TEX CO (KOREA)
BOTTOM SURFACE	N10 / HYPERAIRTEX-36	PORCHER IND (FRANCE)
PROFILES	30 DFM / 2044 32 FM	DOMINICO TEX CO (KOREA)
DIAGONALS	30 DFM	DOMINICO TEX CO (KOREA)
LOOPS	LKI - 10	KOLON IND. (KOREA)
REIFORCEMENT LOOPS	RIPSTOP FABRIC	DOMINICO TEX CO (KOREA)
TRAILING EDGE REIFORCEMENT	MYLAR	D-P (GERMANY)
RIBS REIFORCEMNET	LTN-0.8 STICK	SPORTWARE CO.CHINA
THREAD	SERAFIL 60	AMAN (GERMANY)

SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	DC - 40	LIROS GMHB (GERMANY)
UPPER CASCADES	DC - 60	LIROS GMHB (GERMANY)
UPPER CASCADES	A-8001/U 50	EDELRID (GERMANY)
UPPER CASCADES	A-8001/U 70	EDELRID (GERMANY)
MIDDLE CASCADES	DC - 40	LIROS GMHB (GERMANY)
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	A-8001/U 190	EDELRID (GERMANY)
MAIN	A-8001/U 130	EDELRID (GERMANY)
MAIN	A-8001/U 190	EDELRID (GERMANY)
MAIN	A-8001/U 360	EDELRID (GERMANY)
MAIN BREAK	TARAX-200	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	RF25109	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

ARTIK R 2 - 20

ref.	mat.	kg	color	mm
		A		
a1	DC	60	WHT	382
a2	DC	60	WHT	351
a3	DC	60	WHT	351
a4	DC	60	WHT	370
a5	DC	60	WHT	356
a6	DC	60	WHT	323
a7	DC	60	WHT	325
a8	DC	60	WHT	330
a9	8001/U	90	ORG	1074
a10	8001/U	70	ORG	953
a11	8001/U	50	ORG	892
a12	8001/U	50	ORG	883
a13	DC	40	WHT	516
a14	DC	40	WHT	494
2A1	8001/U	190	ORG	1449
2A2	8001/U	190	ORG	1434
2A3	8001/U	190	ORG	1354
2A4	**8001/U**	**190**	**ORG**	**1307**
2A5	8001/U	130	ORG	1115
2A6	8001/U	90	ORG	1095
3A3	8001/U	190	ORG	2099
stab	8001/U	50	ORG	3418
3A1	8001/U	360	ORG	4278
3A2	8001/U	360	ORG	4324
4A3	8001/U	230	ORG	1579

ref.	mat.	kg	color	mm
		B		
b1	DC	60	ORG	358
b2	DC	60	ORG	326
b3	DC	60	ORG	325
b4	DC	60	ORG	347
b5	DC	60	ORG	334
b6	DC	60	ORG	300
b7	DC	60	ORG	303
b8	DC	60	ORG	313

ref.	mat.	kg	color	mm
		C		
c1	DC	60	WHT	278
c2	DC	40	WHT	246
c3	DC	40	WHT	247
c4	DC	60	WHT	266
c5	DC	60	WHT	260
c6	DC	40	WHT	228
c7	DC	40	WHT	234
c8	DC	40	WHT	240
c9	8001/U	50	BLUE	939
c10	8001/U	50	BLUE	832
c11	8001/U	50	BLUE	799
c12	8001/U	50	BLUE	813
c13	DC	40	WHT	526
c14	DC	40	WHT	531
C1	8001/U	70	BLUE	726
C2	8001/U	70	BLUE	709
C3	8001/U	70	BLUE	661
C4	**8001/U**	**70**	**BLUE**	**609**
2C1	8001/U	90	BLUE	804
2C2	8001/U	90	BLUE	**802**
2C3	8001/U	90	BLUE	764
2C4	8001/U	90	BLUE	766
2C5	8001/U	70	BLUE	1132
2C6	8001/U	70	BLUE	1100
3C1	8001/U	190	BLUE	4266
3C2	8001/U	190	BLUE	4310
3C3	8001/U	130	BLUE	3775

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	261
d2	DC	40	WHT	233
d3	DC	40	WHT	236
d4	DC	40	WHT	249
d5	DC	40	WHT	246
d6	DC	40	WHT	214
d7	DC	40	WHT	224
d8	DC	40	WHT	223
D9	8001/U	50	BLUE	1016
D10	8001/U	50	BLUE	901
D1	8001/U	50	BLUE	868
D2	8001/U	50	BLUE	847
D3	8001/U	50	BLUE	795
D4	8001/U	50	BLUE	730

ref.	mat.	kg	color	mm
		BRAKE		
br1	DC	40	WHT	780
br2	DC	40	WHT	585
br3	DC	40	WHT	637
br4	DC	40	WHT	700
br5	DC	40	WHT	686
br6	DC	40	WHT	516
br7	DC	40	WHT	563
br8	DC	40	WHT	631
br9	DC	40	WHT	594
br10	DC	40	WHT	478
br11	DC	40	WHT	696
br12	DC	40	WHT	701
br13	DC	40	WHT	791
2BR1	DC	40	WHT	873
2BR2	DC	40	WHT	723
2BR3	DC	40	WHT	671
2BR4	DC	40	WHT	562
2BR5	DC	40	WHT	673
2BR6	DC	40	WHT	399
3BR1	8001/U	50	ORG	2954
3BR2	8001/U	50	ORG	2839
3BR3	8001/U	50	ORG	2673
BRMAIN	TARAX	200	RED	2413
		KNOT POINT:		2213

ARTIK R 2 - 21

ref.	mat.	kg	color	mm
		A		
a1	DC	60	WHT	396
a2	DC	60	WHT	364
a3	DC	60	WHT	363
a4	DC	60	WHT	383
a5	DC	60	WHT	368
a6	DC	60	WHT	334
a7	DC	60	WHT	336
a8	DC	60	WHT	342
a9	8001/U	90	ORG	1112
a10	8001/U	70	ORG	986
a11	8001/U	50	ORG	924
a12	8001/U	50	ORG	914
a13	DC	40	WHT	534
a14	DC	40	WHT	512
2A1	8001/U	190	ORG	1500
2A2	8001/U	190	ORG	1485
2A3	8001/U	190	ORG	1401
2A4	8001/U	190	ORG	1354
2A5	8001/U	130	ORG	1154
2A6	8001/U	90	ORG	1133
3A3	8001/U	190	ORG	2173
stab	8001/U	50	ORG	3538
3A1	8001/U	360	ORG	4446
3A2	8001/U	360	ORG	4497
4A3	8001/U	230	ORG	1657

ref.	mat.	kg	color	mm
		B		
b1	DC	60	ORG	371
b2	DC	60	ORG	338
b3	DC	60	ORG	337
b4	DC	60	ORG	360
b5	DC	60	ORG	345
b6	DC	60	ORG	311
b7	DC	60	ORG	314
b8	DC	60	ORG	324

ref.	mat.	kg	color	mm
		C		
c1	DC	60	WHT	288
c2	DC	40	WHT	255
c3	DC	40	WHT	256
c4	DC	60	WHT	276
c5	DC	60	WHT	269
c6	DC	40	WHT	236
c7	DC	40	WHT	242
c8	DC	40	WHT	249
c9	8001/U	50	BLUE	972
c10	8001/U	50	BLUE	861
c11	8001/U	50	BLUE	827
c12	8001/U	50	BLUE	841
c13	DC	40	WHT	544
c14	DC	40	WHT	549
C1	8001/U	70	BLUE	752
C2	8001/U	70	BLUE	734
C3	8001/U	70	BLUE	684
C4	8001/U	70	BLUE	630
2C1	8001/U	90	BLUE	832
2C2	8001/U	90	BLUE	831
2C3	8001/U	90	BLUE	790
2C4	8001/U	90	BLUE	794
2C5	8001/U	70	BLUE	1172
2C6	8001/U	70	BLUE	1139
3C1	8001/U	190	BLUE	4436
3C2	8001/U	190	BLUE	4485
3C3	8001/U	130	BLUE	3930

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	270
d2	DC	40	WHT	241
d3	DC	40	WHT	244
d4	DC	40	WHT	257
d5	DC	40	WHT	255
d6	DC	40	WHT	221
d7	DC	40	WHT	232
d8	DC	40	WHT	231
D9	8001/U	50	BLUE	1051
D10	8001/U	50	BLUE	932
D1	8001/U	50	BLUE	898
D2	8001/U	50	BLUE	876
D3	8001/U	50	BLUE	822
D4	8001/U	50	BLUE	755

ref.	mat.	kg	color	mm
		BRAKE		
br1	DC	40	WHT	807
br2	DC	40	WHT	606
br3	DC	40	WHT	659
br4	DC	40	WHT	725
br5	DC	40	WHT	710
br6	DC	40	WHT	534
br7	DC	40	WHT	582
br8	DC	40	WHT	653
br9	DC	40	WHT	614
br10	DC	40	WHT	495
br11	DC	40	WHT	720
br12	DC	40	WHT	726
br13	DC	40	WHT	819
2BR1	DC	40	WHT	904
2BR2	DC	40	WHT	750
2BR3	DC	40	WHT	694
2BR4	DC	40	WHT	582
2BR5	DC	40	WHT	696
2BR6	DC	40	WHT	414
3BR1	8001/U	50	ORG	3056
3BR2	8001/U	50	ORG	2942
3BR3	8001/U	50	ORG	2772
BRMAIN	TARAX	200	RED	2505
		KNOT POINT:		2305

ARTIK R 2 - 23

ref.	mat.	kg	color	mm
		A		
a1	DC	60	WHT	409
a2	DC	60	WHT	377
a3	DC	60	WHT	376
a4	DC	60	WHT	397
a5	DC	60	WHT	381
a6	DC	60	WHT	346
a7	DC	60	WHT	348
a8	DC	60	WHT	354
a9	8001/U	90	ORG	1151
a10	8001/U	70	ORG	1021
a11	8001/U	50	ORG	956
a12	8001/U	50	ORG	946
a13	DC	40	WHT	553
a14	DC	40	WHT	530
2A1	8001/U	190	ORG	1552
2A2	8001/U	190	ORG	1538
2A3	8001/U	190	ORG	1450
2A4	**8001/U**	**190**	**ORG**	**1402**
2A5	8001/U	130	ORG	1195
2A6	8001/U	90	ORG	1173
3A3	8001/U	190	ORG	2249
stab	8001/U	50	ORG	3663
3A1	8001/U	360	ORG	4620
3A2	8001/U	360	ORG	4675
4A3	8001/U	230	ORG	1737

ref.	mat.	kg	color	mm
		B		
b1	DC	60	ORG	384
b2	DC	60	ORG	350
b3	DC	60	ORG	349
b4	DC	60	ORG	373
b5	DC	60	ORG	357
b6	DC	60	ORG	322
b7	DC	60	ORG	325
b8	DC	60	ORG	335

ref.	mat.	kg	color	mm
		C		
c1	DC	60	WHT	298
c2	DC	40	WHT	265
c3	DC	40	WHT	265
c4	DC	60	WHT	285
c5	DC	60	WHT	278
c6	DC	40	WHT	245
c7	DC	40	WHT	250
c8	DC	40	WHT	258
c9	8001/U	50	BLUE	1006
c10	8001/U	50	BLUE	892
c11	8001/U	50	BLUE	856
c12	8001/U	50	BLUE	871
c13	DC	40	WHT	563
c14	DC	40	WHT	569
C1	8001/U	70	BLUE	778
C2	8001/U	70	BLUE	760
C3	8001/U	70	BLUE	708
C4	**8001/U**	**70**	**BLUE**	**652**
2C1	8001/U	90	BLUE	860
2C2	8001/U	90	BLUE	**861**
2C3	8001/U	90	BLUE	818
2C4	8001/U	90	BLUE	822
2C5	8001/U	70	BLUE	1213
2C6	8001/U	70	BLUE	1180
3C1	8001/U	190	BLUE	4610
3C2	8001/U	190	BLUE	4663
3C3	8001/U	130	BLUE	4090

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	279
d2	DC	40	WHT	250
d3	DC	40	WHT	252
d4	DC	40	WHT	267
d5	DC	40	WHT	264
d6	DC	40	WHT	229
d7	DC	40	WHT	240
d8	DC	40	WHT	239
D9	8001/U	50	BLUE	1087
D10	8001/U	50	BLUE	964
D1	8001/U	50	BLUE	929
D2	8001/U	50	BLUE	907
D3	8001/U	50	BLUE	850
D4	8001/U	50	BLUE	781

ref.	mat.	kg	color	mm
		BRAKE		
br1	DC	40	WHT	834
br2	DC	40	WHT	627
br3	DC	40	WHT	681
br4	DC	40	WHT	750
br5	DC	40	WHT	735
br6	DC	40	WHT	554
br7	DC	40	WHT	602
br8	DC	40	WHT	677
br9	DC	40	WHT	636
br10	DC	40	WHT	513
br11	DC	40	WHT	744
br12	DC	40	WHT	751
br13	DC	40	WHT	848
2BR1	DC	40	WHT	935
2BR2	DC	40	WHT	777
2BR3	DC	40	WHT	717
2BR4	DC	40	WHT	604
2BR5	DC	40	WHT	720
2BR6	DC	40	WHT	430
3BR1	8001/U	50	ORG	3162
3BR2	8001/U	50	ORG	3045
3BR3	8001/U	50	ORG	2872
BRMAIN	TARAX	200	RED	2601
		KNOT POINT:		2401

ARTIK R 2 - 24

ref.	mat.	kg	color	mm
		A		
a1	DC	60	WHT	423
a2	DC	60	WHT	389
a3	DC	60	WHT	388
a4	DC	60	WHT	410
a5	DC	60	WHT	393
a6	DC	60	WHT	357
a7	DC	60	WHT	359
a8	DC	60	WHT	366
a9	8001/U	90	ORG	1189
a10	8001/U	70	ORG	1054
a11	8001/U	50	ORG	987
a12	8001/U	50	ORG	977
a13	DC	40	WHT	571
a14	DC	40	WHT	547
2A1	8001/U	190	ORG	1602
2A2	8001/U	190	ORG	1590
2A3	8001/U	190	ORG	1497
2A4	**8001/U**	**190**	**ORG**	**1448**
2A5	8001/U	130	ORG	1234
2A6	8001/U	90	ORG	1212
3A3	8001/U	190	ORG	2323
stab	8001/U	50	ORG	3783
3A1	8001/U	360	ORG	4789
3A2	8001/U	360	ORG	4848
4A3	8001/U	230	ORG	1814

ref.	mat.	kg	color	mm
		B		
b1	DC	60	ORG	396
b2	DC	60	ORG	362
b3	DC	60	ORG	360
b4	DC	60	ORG	385
b5	DC	60	ORG	369
b6	DC	60	ORG	333
b7	DC	60	ORG	336
b8	DC	60	ORG	347

ref.	mat.	kg	color	mm
		C		
c1	DC	60	WHT	307
c2	DC	40	WHT	274
c3	DC	40	WHT	273
c4	DC	60	WHT	295
c5	DC	60	WHT	288
c6	DC	40	WHT	253
c7	DC	40	WHT	258
c8	DC	40	WHT	266
c9	8001/U	50	BLUE	1039
c10	8001/U	50	BLUE	921
c11	8001/U	50	BLUE	884
c12	8001/U	50	BLUE	899
c13	DC	40	WHT	582
c14	DC	40	WHT	587
C1	8001/U	70	BLUE	803
C2	8001/U	70	BLUE	785
C3	8001/U	70	BLUE	731
C4	**8001/U**	**70**	**BLUE**	**674**
2C1	8001/U	90	BLUE	888
2C2	8001/U	90	BLUE	**891**
2C3	8001/U	90	BLUE	844
2C4	8001/U	90	BLUE	850
2C5	8001/U	70	BLUE	1252
2C6	8001/U	70	BLUE	1218
3C1	8001/U	190	BLUE	4777
3C2	8001/U	190	BLUE	4835
3C3	8001/U	130	BLUE	4245

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	288
d2	DC	40	WHT	258
d3	DC	40	WHT	260
d4	DC	40	WHT	276
d5	DC	40	WHT	272
d6	DC	40	WHT	237
d7	DC	40	WHT	248
d8	DC	40	WHT	247
D9	8001/U	50	BLUE	1122
D10	8001/U	50	BLUE	995
D1	8001/U	50	BLUE	959
D2	8001/U	50	BLUE	936
D3	8001/U	50	BLUE	878
D4	8001/U	50	BLUE	806

ref.	mat.	kg	color	mm
		BRAKE		
br1	DC	40	WHT	860
br2	DC	40	WHT	648
br3	DC	40	WHT	703
br4	DC	40	WHT	775
br5	DC	40	WHT	759
br6	DC	40	WHT	573
br7	DC	40	WHT	622
br8	DC	40	WHT	699
br9	DC	40	WHT	657
br10	DC	40	WHT	530
br11	DC	40	WHT	768
br12	DC	40	WHT	776
br13	DC	40	WHT	876
2BR1	DC	40	WHT	965
2BR2	DC	40	WHT	803
2BR3	DC	40	WHT	740
2BR4	DC	40	WHT	624
2BR5	DC	40	WHT	743
2BR6	DC	40	WHT	445
3BR1	8001/U	50	ORG	3264
3BR2	8001/U	50	ORG	3148
3BR3	8001/U	50	ORG	2970
BRMAIN	TARAX	200	RED	2693
		KNOT POINT:		2493

ARTIK R 2 - 25

ref.	mat.	kg	color	mm
		A		
a1	DC	60	WHT	436
a2	DC	60	WHT	401
a3	DC	60	WHT	399
a4	DC	60	WHT	423
a5	DC	60	WHT	405
a6	DC	60	WHT	368
a7	DC	60	WHT	370
a8	DC	60	WHT	377
a9	8001/U	90	ORG	1225
a10	8001/U	70	ORG	1087
a11	8001/U	50	ORG	1018
a12	8001/U	50	ORG	1007
a13	DC	40	WHT	589
a14	DC	40	WHT	564
2A1	8001/U	190	ORG	1650
2A2	8001/U	190	ORG	1639
2A3	8001/U	190	ORG	1543
2A4	**8001/U**	**190**	**ORG**	**1493**
2A5	8001/U	130	ORG	1272
2A6	8001/U	90	ORG	1249
3A3	8001/U	190	ORG	2395
stab	8001/U	50	ORG	3900
3A1	8001/U	360	ORG	4952
3A2	8001/U	360	ORG	5015
4A3	8001/U	230	ORG	1889

ref.	mat.	kg	color	mm
		B		
b1	DC	60	ORG	408
b2	DC	60	ORG	373
b3	DC	60	ORG	371
b4	DC	60	ORG	397
b5	DC	60	ORG	380
b6	DC	60	ORG	343
b7	DC	60	ORG	346
b8	DC	60	ORG	357

ref.	mat.	kg	color	mm
		C		
c1	DC	60	WHT	317
c2	DC	40	WHT	282
c3	DC	40	WHT	281
c4	DC	60	WHT	304
c5	DC	60	WHT	296
c6	DC	40	WHT	261
c7	DC	40	WHT	266
c8	DC	40	WHT	274
c9	8001/U	50	BLUE	1070
c10	8001/U	50	BLUE	949
c11	8001/U	50	BLUE	911
c12	8001/U	50	BLUE	927
c13	DC	40	WHT	599
c14	DC	40	WHT	605
C1	8001/U	70	BLUE	828
C2	8001/U	70	BLUE	809
C3	8001/U	70	BLUE	754
C4	**8001/U**	**70**	**BLUE**	**695**
2C1	8001/U	90	BLUE	914
2C2	8001/U	90	BLUE	**919**
2C3	8001/U	90	BLUE	870
2C4	8001/U	90	BLUE	877
2C5	8001/U	70	BLUE	1291
2C6	8001/U	70	BLUE	1256
3C1	8001/U	190	BLUE	4937
3C2	8001/U	190	BLUE	4999
3C3	8001/U	130	BLUE	4395

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	297
d2	DC	40	WHT	267
d3	DC	40	WHT	268
d4	DC	40	WHT	284
d5	DC	40	WHT	281
d6	DC	40	WHT	244
d7	DC	40	WHT	255
d8	DC	40	WHT	255
D9	8001/U	50	BLUE	1156
D10	8001/U	50	BLUE	1026
D1	8001/U	50	BLUE	988
D2	8001/U	50	BLUE	964
D3	8001/U	50	BLUE	904
D4	8001/U	50	BLUE	830

ref.	mat.	kg	color	mm
		BRAKE		
br1	DC	40	WHT	886
br2	DC	40	WHT	668
br3	DC	40	WHT	725
br4	DC	40	WHT	799
br5	DC	40	WHT	782
br6	DC	40	WHT	591
br7	DC	40	WHT	641
br8	DC	40	WHT	721
br9	DC	40	WHT	677
br10	DC	40	WHT	547
br11	DC	40	WHT	791
br12	DC	40	WHT	799
br13	DC	40	WHT	903
2BR1	DC	40	WHT	994
2BR2	DC	40	WHT	829
2BR3	DC	40	WHT	762
2BR4	DC	40	WHT	645
2BR5	DC	40	WHT	765
2BR6	DC	40	WHT	459
3BR1	8001/U	50	ORG	3363
3BR2	8001/U	50	ORG	3244
3BR3	8001/U	50	ORG	3062
BRMAIN	TARAX	200	RED	2782
		KNOT POINT:		2582

ARTIK R 2 - 27

ref.	mat.	kg	color	mm
		A		
a1	DC	60	WHT	448
a2	DC	60	WHT	413
a3	DC	60	WHT	411
a4	DC	60	WHT	435
a5	DC	60	WHT	417
a6	DC	60	WHT	379
a7	DC	60	WHT	380
a8	DC	60	WHT	388
a9	8001/U	90	ORG	1261
a10	8001/U	70	ORG	1118
a11	8001/U	50	ORG	1047
a12	8001/U	50	ORG	1037
a13	DC	40	WHT	606
a14	DC	40	WHT	580
2A1	8001/U	230	ORG	1698
2A2	8001/U	230	ORG	1688
2A3	8001/U	230	ORG	1588
2A4	**8001/U**	**190**	**ORG**	**1537**
2A5	8001/U	130	ORG	1309
2A6	8001/U	90	ORG	1286
3A3	8001/U	190	ORG	2464
stab	8001/U	90	ORG	4013
3A1	8001/U	470	ORG	5110
3A2	8001/U	360	ORG	5177
4A3	8001/U	230	ORG	1962

ref.	mat.	kg	color	mm
		B		
b1	DC	60	ORG	420
b2	DC	60	ORG	384
b3	DC	60	ORG	382
b4	DC	60	ORG	409
b5	DC	60	ORG	391
b6	DC	60	ORG	353
b7	DC	60	ORG	356
b8	DC	60	ORG	368

ref.	mat.	kg	color	mm
		C		
c1	DC	60	WHT	326
c2	DC	40	WHT	291
c3	DC	40	WHT	289
c4	DC	60	WHT	313
c5	DC	60	WHT	305
c6	DC	40	WHT	268
c7	DC	40	WHT	273
c8	DC	40	WHT	282
c9	8001/U	50	BLUE	1101
c10	8001/U	50	BLUE	977
c11	8001/U	50	BLUE	938
c12	8001/U	50	BLUE	954
c13	DC	40	WHT	617
c14	DC	40	WHT	623
C1	8001/U	90	BLUE	852
C2	8001/U	90	BLUE	833
C3	8001/U	70	BLUE	776
C4	**8001/U**	**70**	**BLUE**	**715**
2C1	8001/U	130	BLUE	940
2C2	8001/U	130	BLUE	946
2C3	8001/U	130	BLUE	895
2C4	8001/U	130	BLUE	902
2C5	8001/U	70	BLUE	1328
2C6	8001/U	70	BLUE	1293
3C1	8001/U	230	BLUE	5095
3C2	8001/U	230	BLUE	5161
3C3	8001/U	130	BLUE	4541

ref.	mat.	kg	color	mm
		D		
d1	DC	40	WHT	306
d2	DC	40	WHT	274
d3	DC	40	WHT	275
d4	DC	40	WHT	293
d5	DC	40	WHT	289
d6	DC	40	WHT	252
d7	DC	40	WHT	262
d8	DC	40	WHT	262
D9	8001/U	50	WHT	1189
D10	8001/U	50	WHT	1055
D1	8001/U	50	BLUE	1016
D2	8001/U	50	BLUE	992
D3	8001/U	50	BLUE	930
D4	8001/U	50	BLUE	854

ref.	mat.	kg	color	mm
		BRAKE		
br1	DC	40	WHT	911
br2	DC	40	WHT	687
br3	DC	40	WHT	745
br4	DC	40	WHT	822
br5	DC	40	WHT	805
br6	DC	40	WHT	608
br7	DC	40	WHT	659
br8	DC	40	WHT	742
br9	DC	40	WHT	697
br10	DC	40	WHT	563
br11	DC	40	WHT	813
br12	DC	40	WHT	822
br13	DC	40	WHT	929
2BR1	DC	40	WHT	1022
2BR2	DC	40	WHT	854
2BR3	DC	40	WHT	784
2BR4	DC	40	WHT	664
2BR5	DC	40	WHT	786
2BR6	DC	40	WHT	473
3BR1	8001/U	70	ORG	3459
3BR2	8001/U	70	ORG	3339
3BR3	8001/U	70	ORG	3154
BRMAIN	TARAX	200	RED	2869
		KNOT POINT:		2669

10.7 Total line length

ARTIK R 2 - 20

LINES HEIGHT mm

	A	B	C	D	br
1	6619	6595	6579	6704	6863
2	6588	6563	6547	6676	6668
3	6573	6547	6529	6656	6570
4	6592	6569	6548	6669	6633
5	6544	6522	6500	6620	6452
6	6511	6488	6468	6588	6282
7	6466	6444	6424	6535	6220
8	6471	6454	6430	6534	6288
9	6382		6353	6428	6196
10	6261		6246	6313	6080
11	6180		6183		6023
12	6171		6197		6028
13	6033		6043		6118
14	6011		6048		

RISERS LENGHT mm

A	A'	B	
500	500	500	STANDARD
355	400	500	ACCELERATED

ARTIK R 2 - 21

LINES HEIGHT mm

	A	B	C	D	br
1	6853	6828	6813	6944	7115
2	6821	6795	6780	6915	6914
3	6805	6779	6762	6895	6813
4	6825	6802	6782	6908	6879
5	6777	6754	6733	6860	6694
6	6743	6720	6700	6826	6518
7	6698	6676	6656	6774	6454
8	6704	6686	6663	6773	6525
9	6612		6579	6661	6430
10	6486		6468	6542	6311
11	6403		6405		6253
12	6393		6419		6259
13	6250		6260		6352
14	6228		6265		

RISERS LENGHT mm

A	A'	B	
500	500	500	STANDARD
335	380	500	ACCELERATED

ARTIK R 2 - 23

LINES HEIGHT mm

	A	B	C	D	br
1	7093	7068	7051	7186	7375
2	7061	7034	7018	7157	7168
3	7046	7019	7001	7138	7064
4	7067	7043	7021	7153	7133
5	7018	6994	6972	7103	6943
6	6983	6959	6939	7068	6762
7	6937	6914	6892	7014	6697
8	6943	6924	6900	7013	6772
9	6847		6814	6898	6673
10	6717		6700	6775	6550
11	6630		6635		6490
12	6620		6650		6497
13	6473		6483		6594
14	6450		6489		

RISERS LENGHT mm

A	A'	B	
500	500	500	STANDARD
335	380	500	ACCELERATED

ARTIK R 2 – 24

LINES HEIGHT mm

	A	B	C	D	br
1	7331	7304	7286	7423	7625
2	7297	7270	7253	7393	7413
3	7284	7256	7237	7375	7306
4	7306	7281	7259	7391	7378
5	7255	7231	7209	7340	7183
6	7219	7195	7174	7305	6997
7	7172	7149	7128	7250	6930
8	7179	7160	7136	7249	7007
9	7081		7049	7133	6906
10	6946		6931	7006	6779
11	6857		6862		6718
12	6847		6877		6726
13	6694		6705		6826
14	6670		6710		

RISERS LENGHT mm

	A	A'	B	
	500	500	500	STANDARD
	335	380	500	ACCELERATED

ARTIK R 2 – 25

LINES HEIGHT mm

	A	B	C	D	br
1	7549	7521	7502	7642	7868
2	7514	7486	7467	7612	7650
3	7501	7473	7452	7594	7542
4	7525	7499	7475	7610	7616
5	7474	7449	7425	7560	7413
6	7437	7412	7390	7523	7222
7	7389	7365	7343	7467	7155
8	7396	7376	7351	7467	7235
9	7298		7264	7348	7129
10	7160		7143	7218	6999
11	7068		7072		6936
12	7057		7088		6944
13	6900		6910		7048
14	6875		6916		

RISERS LENGHT mm

	A	A'	B	
	500	500	500	STANDARD
	335	380	500	ACCELERATED

ARTIK R 2 – 27

LINES HEIGHT mm

	A	B	C	D	br
1	7769	7741	7721	7865	8104
2	7734	7705	7686	7833	7880
3	7722	7693	7671	7816	7770
4	7746	7720	7695	7834	7847
5	7695	7669	7645	7783	7640
6	7657	7631	7608	7746	7443
7	7607	7583	7559	7687	7374
8	7615	7595	7568	7687	7457
9	7512		7480	7566	7349
10	7369		7356	7432	7215
11	7275		7284		7151
12	7265		7300		7160
13	7102		7113		7267
14	7076		7119		

RISERS LENGHT mm

	A	A'	B	
	500	500	500	STANDARD
	335	380	500	ACCELERATED

10.8 Minimum strength of suspension lines

LINE REFERENCE	SIZE					
	20	**21**	**23**	**24**	**25**	**27**
8001U-50	18	20	23	25	28	30
8001U-70	21	23	26	29	32	35
8001U-90	35	39	44	49	53	58
8001U-130	41	47	52	58	63	69
8001U-190	73	82	92	102	111	121
8001U-230	84	96	107	118	129	141
8001U-340	133	151	169	186	204	222
8001U-470	181	205	229	253	277	302
DC-40	25	29	32	36	39	42
DC-60	37	42	47	52	57	62

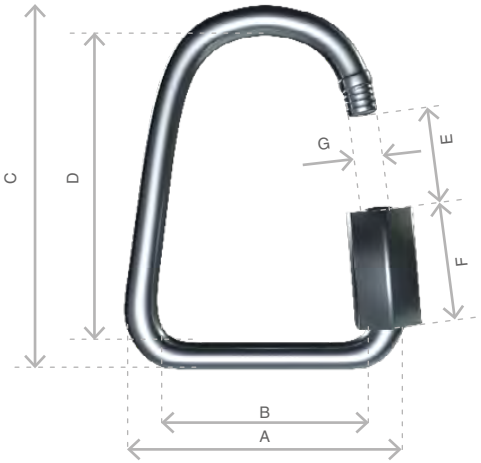
Minimum resistance values in daN

10.9 Maillon & Pulley

DESCRIPTION MAILLON

MAILLON	DELTA
CODE	3.5
MATERIAL	STAINLESS STEEL
SIZE	3 mm
WEIGHT	5 G/PIECE
QUANTITY	6 PIECES
INSERTS	2 GREEN / 4 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	9 G/PIECE

TECHNICAL SPECIFICATIONS



DIMENSIONS	mm
A	20
B	32
Ø	6 max
LOAD	KG
WORKING LIMIT	250
BREAKING	550

10.10 Certification

AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Compte 8 • CH-1844 Villeneuve • +41 (0)21 965 65 65

test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Classification: **C**

In accordance with standards: EN 926-1:2015, EN 926-2:2013+A1:2021 and NfL 2024-2-785	PG_2581.2025
Date of issue (DMY):	23.07.2025
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Artik R2 20
Serial number:	ARTIKR24.220

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight [kg]	**75**	Range of speed system [cm]	**14.4**
Minimum weight in flight [kg]	**60**	Speed range using brakes [km/h]	**13**
Glider's weight [kg]	**4.1**	Total speed range with accessories [km/h]	**31**
Number of risers	**2+1**	Range of trimmers [cm]	**n/a**
Projected area [m²]	**16.76**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 100 hours of use or every 24 months
Harness brand	**Supair s.a.s.**	
Harness model	**ALTIRANDO Lite 2 S**	Person or company having presented the glider for testing: **None**
Harness to risers distance [cm]	**40**	
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
C	**A**	**B**	**C**	**A**	**A**	**A**	**A**	**B**	**C**	**A**	**A**	**B**	**C**	**A**	**A**	**A**	**B**	**0**	**B**	**B**	**A**	**0**

AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Compte 8 • CH-1844 Villeneuve • +41 (0)21 965 65 65

test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Classification: **C**

In accordance with standards: EN 926-1:2015, EN 926-2:2013+A1:2021 and NfL 2024-2-785	PG_2554.2025
Date of issue (DMY):	24.06.2025
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Artik R2 21
Serial number:	ARTIKR24221

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight [kg]	**85**	Range of speed system [cm]	**16.1**
Minimum weight in flight [kg]	**70**	Speed range using brakes [km/h]	**13**
Glider's weight [kg]	**4.2**	Total speed range with accessories [km/h]	**31**
Number of risers	**2+1**	Range of trimmers [cm]	**n/a**
Projected area [m²]	**17.97**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 100 hours of use or every 24 months
Harness brand	**Niviuk**	
Harness model	**Makan M**	Person or company having presented the glider for testing: **None**
Harness to risers distance [cm]	**41**	
Distance between risers [cm]	**44**	

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

The validation of this test report is given by the signature of the test manager on inspection certificate 91.20 // Rev 08 | 02.02.2025 // ISO | 91.21 // Page 1 of 1

AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Compte 8 • CH-1844 Villeneuve • +41 (0)21 965 65 65

test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Classification: C

In accordance with standards: EN 926-1:2015, EN 926-2:2013+A1:2021 and NfL 2024-2-785	PG_2552.2025
Date of issue (DMY):	24.06.2025
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Artik R2 23
Serial number:	ARTIKR242231

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight [kg]	**95**	Range of speed system [cm]	**16.1**
Minimum weight in flight [kg]	**80**	Speed range using brakes [km/h]	**13**
Glider's weight [kg]	**4.5**	Total speed range with accessories [km/h]	**31**
Number of risers	**2+1**	Range of trimmers [cm]	**n/a**
Projected area [m²]	**19.26**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 100 hours of use or every 24 months
Harness brand	**Niviuk**	
Harness model	**Makan M**	Person or company having presented the glider for testing: **None**
Harness to risers distance [cm]	**41**	
Distance between risers [cm]	**44**	

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

AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Compte 8 • CH-1844 Villeneuve • +41 (0)21 965 65 65

test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Classification: C

In accordance with standards: EN 926-1:2015, EN 926-2:2013+A1:2021 and NfL 2024-2-785	PG_2555.2025
Date of issue (DMY):	24.06.2025
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Artik R2 24
Serial number:	ARTIKR24224

Configuration during flight tests

Paraglider		**Accessories**	
Maximum weight in flight [kg]	**105**	Range of speed system [cm]	**16.1**
Minimum weight in flight [kg]	**90**	Speed range using brakes [km/h]	**13**
Glider's weight [kg]	**4.7**	Total speed range with accessories [km/h]	**31**
Number of risers	**2+1**	Range of trimmers [cm]	**n/a**
Projected area [m²]	**20.54**		

Harness used for testing (max weight)		**Inspections** (whichever happens first)
Harness type	**ABS**	every 100 hours of use or every 24 months
Harness brand	**Niviuk**	
Harness model	**Makan M**	Person or company having presented the glider for testing: **None**
Harness to risers distance [cm]	**41**	
Distance between risers [cm]	**48**	

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

The validation of this test report is given by the signature of the test manager on inspection certificate 91.20 // Rev 08 | 02.02.2025 // ISO | 91.21 // Page 1 of 1

AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Compte 8 • CH-1844 Villeneuve • +41 (0)21 965 65 65

test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Classification: C

In accordance with standards: EN 926-1:2015, EN 926-2:2013+A1:2021 and NfL 2024-2-785	PG_2582.2025
Date of issue (DMY):	23.07.2025
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Artik R2 25
Serial number:	ARTIKR24.225

Configuration during flight tests

Paraglider

Maximum weight in flight [kg]	**115**
Minimum weight in flight [kg]	**100**
Glider's weight [kg]	**5**
Number of risers	**2+1**
Projected area [m²]	**21.83**

Accessories

Range of speed system [cm]	**16**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**31**
Range of trimmers [cm]	**n/a**

Harness used for testing (max weight)

Harness type	**ABS**
Harness brand	**Woody Valley srl**
Harness model	**NAOS XL**
Harness to risers distance [cm]	**45**
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
C	**A**	**B**	**C**	**A**	**A**	**A**	**A**	**B**	**C**	**A**	**A**	**A**	**C**	**A**	**A**	**A**	**B**	**0**	**B**	**A**	**A**	**0**

AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Compte 8 • CH-1844 Villeneuve • +41 (0)21 965 65 65

test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes

paragliding by air turquoise

NIVIUK

Classification: C

In accordance with standards: EN 926-1:2015, EN 926-2:2013+A1:2021 and NfL 2024-2-785	PG_2589.2025
Date of issue (DMY):	23.07.2025
Manufacturer:	Niviuk Gliders / Air Games S.L.
Model:	Artik R2 27
Serial number:	ARTIKR24.227

Configuration during flight tests

Paraglider

Maximum weight in flight [kg]	**125**
Minimum weight in flight [kg]	**110**
Glider's weight [kg]	**5.2**
Number of risers	**2+1**
Projected area [m²]	**23.11**

Accessories

Range of speed system [cm]	**16.6**
Speed range using brakes [km/h]	**13**
Total speed range with accessories [km/h]	**31**
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
C	**A**	**B**	**C**	**A**	**A**	**A**	**A**	**B**	**C**	**A**	**A**	**B**	**C**	**A**	**A**	**A**	**B**	**0**	**B**	**B**	**A**	**0**

The validation of this test report is given by the signature of the test manager on inspection certificate 91.20 // Rev 08 | 02.02.2025 // ISO | 91.21 // Page 1 of 1



Niviuk Paragliders
C/ Del Ter 6 - D
17165 La Cellera de Ter - Girona - Spain
+34 972 422 878 | info@niviuk.com
niviuk.com