

USER'S MANUAL SKIN P



SKIN P

Flying freely

WELCOME

We want to welcome you to our team and thank you for the confidence you gave to our glider product line.

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

Can a single surface glider offer the same features as a normal glider? Can it be as easy to handle, versatile and a fun mini-wing at the same time? Could it be the springboard for a new type of flying? The versatility of the SKIN P and its new design are going to surprise you.

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

This is the user's manual we recommend you to comprehensively read.

The **NIVIUK** Team.

USER'S MANUAL

Niviuk Gliders SKIN P

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

Please review and read the comprehensive content of the SKIN P manual.

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

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SUMMARY

WELCOME	2	4.1 FLYING IN TURBULENCE	9
USER'S MANUAL	2	4.2 POSSIBLE CONFIGURATIONS	9
1. CHARACTERISTICS	4	4.3 USING THE ACCELERATOR	10
1.1 WHO IS IT DESIGNED FOR?	4	4.4 FLYING WITHOUT BRAKE LINES	11
1.2 CERTIFICATION	4	4.5 LINE TANGLES IN FLIGHT	11
1.3 IN-FLIGHT BEHAVIOUR	4	5. LOSING HEIGHT	11
1.4 ASSEMBLY, MATERIALS	4	5.1 EARS	11
1.5 ELEMENTS, COMPONENTS	6	5.2 SPIRAL DIVE	12
2. UNPACKING AND ASSEMBLY	6	5.3 SLOW DESCENT TECHNIQUE	12
2.1 CHOOSE THE RIGHT LOCATION	6	6. SPECIAL METHODS	12
2.2 PROCEDURE	6	6.1 TOWING	12
2.3 HARNESS SETUP	6	6.2 ACROBATIC FLIGHT	12
2.4 TYPE OF HARNESS	6	7. CARE AND MAINTENANCE	12
2.5 ACCELERATOR ASSEMBLY	7	7.1 MAINTENANCE	12
2.6 INSPECTION AND WING		7.2 STORAGE	13
INFLATION ON THE GROUND	7	7.3 CHECKS AND CONTROLS	13
2.7 ADJUSTING THE BRAKE		7.4 REPAIRS	13
LINES AND TOGGLES	7	8. SAFETY AND RESPONSIBILITY	13
3. THE FIRST FLIGHT	8	9. GUARANTEE	14
3.1 CHOOSE THE RIGHT PLACE	8	10. TECHNICAL DATA	15
3.2 PREPARATION	8	10.1 TECHNICAL DATA	15
3.3 FLIGHT PLAN	8	10.2 MATERIALS DESCRIPTION	16
3.4 PRE-FLIGHT CHECK LIST	8	10.3 RISERS PLAN	17
3.5 WING INFLATION, CONTROL, AND TAKE-OFF	8	10.4 SUSPENSION PLAN	18
3.6 LANDING	8	10.5 DIMENSIONS SKIN P 16	19
3.7 FOLDING INSTRUCTIONS	8	10.6 DIMENSIONS SKIN P 18	19
4. IN FLIGHT	9	10.7 DIMENSIONS SKIN P 20	20



1. CHARACTERISTICS

1.1 WHO IS IT DESIGNED FOR?

The SKIN P targets adventurous Hike&Fly passionate mountaineer pilots, and those challenging distance crossings as their option. The glider's great flying ability does not compromise safety, and will let the pilot explore the landscape either from a bird's point of view or on foot while carrying very light and low volume gear.

We want to emphasize the fact that the SKIN P is not just a descent paraglider. Its excellent features enable it to thermal, glide and accelerate. It is an easy and accessible glider for all pilots with a minimal amount of flying experience.

Only regional qualified schools can certify pilots.

1.2 CERTIFICATION

The SKIN P's load test conducted by the laboratory Air-Turquoise in Switzerland, exceeded 8 G of force.

1.3 IN-FLIGHT BEHAVIOUR

Niviuk developed the SKIN P by adopting very defined guidelines: the objective was to seek utmost performance while minimizing gear weight and volume for easy transportation, harmonize sensations, facilitate piloting, and above all, maintain a very high wing safety level.

The glider profile was optimized to transmit maximum information in a very understandable and convenient way, helping the pilot focus on synchronizing feelings and technique.

The SKIN P's profile is solid. No unwanted surprises with sudden up or down motions even when pushing the speed-bar full-out during

acceleration. The glide remains high and stable. The turn is accurate, less physical and easy to activate without much needed amplitude. Each inflation is easily made, wind or not, and the glider has a great ability to takeoff from tight mountainous rough terrains. The landing is smooth and precise.

Flying the SKIN P quickly becomes very intuitive, with plenty of nuances and clear references to the state of the air mass. The glider will react to pilot input effectively even in turbulent conditions, and remain solid.

The wing reads the air mass effectively and cores thermal progressively. Easy to control in all flying conditions, passive by nature, it will further the pleasure of soaring and convey a blissful sense of pure freedom

It is light in flight, easy to handle, well behaved in turbulence and has a surprising speed range added to a superb glide.

1.4 ASSEMBLY, MATERIALS

The SKIN P has all the technological innovations used and found in other Niviuk gliders. The SLE, TNT and IKS technologies are part of its design and greatly enhance its performance level.

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

Titanium Technology (TNT).- A revolutionary technique developed using Nitinol to build the internal structure of the glider, brings a more uniform profile, and hence reduces the overall wing weight to gain efficiency in flight. The Nitinol provides the highest level of resistance against deformation, heat or breaks.

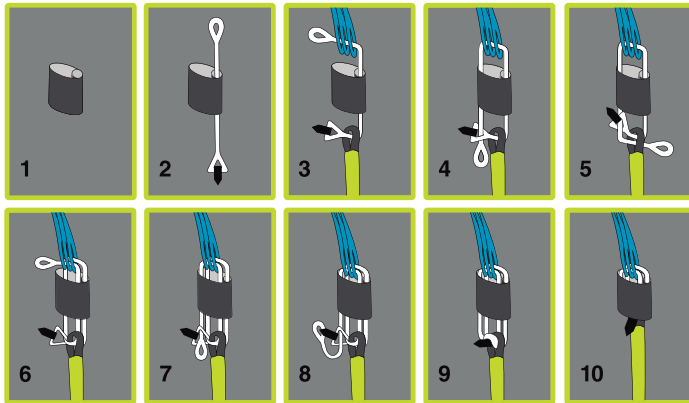
Using this technological advance, the glider is able to maintain its original features for a longer period of time.

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

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

Being 25 times lighter (0,2 g), this IKS model has a load bearing braking point of 1300 kg compared to the 800 kg of the classic maillon.

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



1. Locate the elastic sleeve's inner small diameter tube.

2. Push the IKS line through it.

3. Push now the IKS line through the lines and the riser. The reinforced end with the black tab should be located on the riser side.

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

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

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

7. Push the looped end downward through the elastic sleeve (not small diameter tube) first, and then through the loop with the reinforced end (black tab) once more.

8. Push the reinforced end loop (black tab) through the looped end to secure them together.

9. Pull tight to secure the knot and connection.

10. Check the entire assembly.

The SKIN P's line cascade layout uses Aramid Edelrid. The Aramid lines are not sheathed, thus directly exposed to potential abrasions. Consequently and in accordance with the EN certification recommended guiding rules, suspension lines must be inspected by a professional certified outfit every hundred (100) hours. These high performance materials require particular attention before each flight.

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

From Olivier's computer to fabric cutting, the operation is a zero

tolerance process. An automated computer laser-cutting robotic arm creates each of the many sections needed to complete the wing assembly. This program also paints the guideline markers and numbers each individual fabric piece.

The lines are semi-automatically cut to length and all the sewing is completed under the supervision of our specialists. The jigsaw puzzle assembly is rendered easier using this method and minimizes the operation while making the quality control more efficient.

All Niviuk Gliders go through an extremely thorough and efficient final inspection. Every line is checked and measured once the final assembly is concluded. Each wing is then individually inflated for the last visual check.

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

Niviuk Gliders are made of first materials Information about the various materials used to manufacture the wing can be reviewed on the last pages of this manual.

1.5 ELEMENTS, COMPONENTS

The SKIN P is delivered with a small fabric repair kit including self-adhesive ripstop matching the wing's colour scheme.

2. UNPACKING AND ASSEMBLY

2.1 CHOOSE THE RIGHT LOCATION

We recommend unpacking and assembling the wing on a training hill or a flat clear area without too much wind and obstacle free. Meeting those conditions will help with the necessary steps required to check and inflate the SKIN P.

We recommend for a qualified instructor to be present and supervise the entire procedure.

2.2 PROCEDURE

Take the paraglider out of the rucksack, open and unfold it on the ground with the lines positioned atop the underside (intrados) facing the sky. Display the wing in a crescent shape with the cells intakes pointing upwind as if you were to inflate it.

Check the condition of the fabric and the lines for abnormalities. The maillons, attaching the lines to the risers must be fully closed. Untangle all the lines if necessary as they must all be visible and obstruction free. Identify and separate the lines away from the A, B, C and D risers, the toggles and their corresponding risers.

2.3 HARNESS SETUP

Correctly connect the risers to the harness's carabiners. The risers and lines should not have any twists and be displayed in the right order. Check for the harness buckles to be fully locked and secured in place.

2.4 TYPE OF HARNESS

The SKIN P can be flown with most of the harnesses found on the market today, including the cocoon style models.

We strongly recommend adjusting the distance between the chest strap carabiners according to the settings used during the certification procedure. The distance will vary according to the size of the chosen harness model.

Incorrect chest strap adjustments can affect glider/harness behaviour and thus glider handling. Too wide a distance between the carabiners will provide greater feedback from the wing but less glider stability. Too narrow

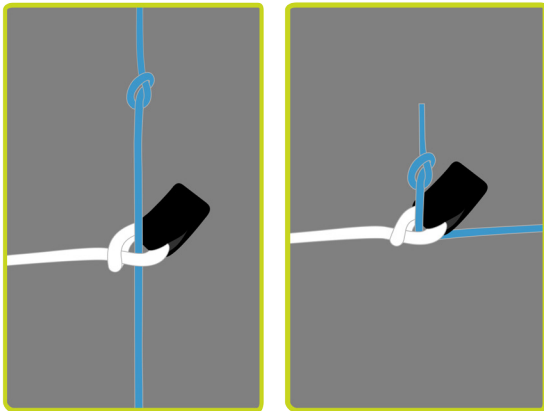
a distance will not bring as much feedback in addition to increasing the risk of experiencing a riser twist during a collapse.

In any case, it is appropriate to refer to the harness's instruction manual and the certification test report outlining the chest strap length adjustments used for these tests.

2.5 ACCELERATOR ASSEMBLY

The accelerator is not supplied with the equipment. The pilot engages the SKIN P's accelerator by pushing his feet on the speed-bar. The system is easy to install and must be properly adjusted before the flight.

The connection is made through a simple knot stopped by a lark's head loop which ensures the same safety level as when using crimped split-hooks, while reducing the weight of the accelerator - The length will be set according to the size of the pilot's legs length.



We recommend installing and adjusting the speed-bar/accelerator during a hang-test first: most schools have such equipment. If in doubt, seek advice from a qualified professional outfit.

2.6 INSPECTION AND WING INFLATION ON THE GROUND

Once all the gear is checked and deemed safe to use, inflate the SKIN P and ground handle it as much as possible to become familiar with the wing's behaviour. The wing will climb overhead easily. Very little energy is required, the wing climbs with minimal harness impute.

Gently holding the 'A' risers upward while moving upwind is all that is needed for a smooth progressive climb of the wing. Do not hesitate to familiarize yourself with various inflation techniques (forward and reversed). A soft pre-inflation is recommended to position the wing profile in the wind stream.

2.7 ADJUSTING THE BRAKE LINES AND TOGGLES

The lower brake lines length is pre-adjusted at the factory and identical to the ones used during the glider certification procedure. However, that length can be modified to the pilot's personal preference. We nevertheless, recommend keeping the default factory settings as is, and adapt yourself to the SKIN P's behaviour instead.

If you decide to change the length of the brake lines, untie the knot, slide the line through the brake link to the desired length, and strongly re-tie the knot. Qualified personnel should carry out this adjustment. Ensure that the adjustment does not slow down the glider without any pilot input. Both brake lines should be symmetrical and have the same lengths. The most recommended knots are the clove hitch knot or bowline knot.

When changing the brakes line lengths, make sure they do not gain tension while the accelerator/speed-bar is pushed. During the

acceleration the wing pitches down over the 'D' risers axis, and the trailing edge goes up. The brake lines length must be carefully adjusted taking the extra length into account during acceleration.

3. THE FIRST FLIGHT

3.1 CHOOSE THE RIGHT PLACE

The first flights with the SKIN P should be made in low wind speeds, on a training hill or obstacle free area. We recommend for a qualified instructor to be present and supervise the entire procedure.

3.2 PREPARATION

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

3.3 FLIGHT PLAN

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

3.4 PRE-FLIGHT CHECK LIST

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

3.5 WING INFLATION, CONTROL, AND TAKE-OFF

Smoothly and progressively inflate the wing (chapter 2.6 INSPECTION AND WING INFLATION ON THE GROUND). The SKIN P comes up easily,

without excessive handling energy and does not overfly the pilot. It is a straight forward exercise leaving enough time for the pilot to decide whether to accelerate and take off or not.

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

Setting up the wing on the ground before takeoff is especially important. Choose an appropriate location pointing into 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 SKIN P lands just as easily as any other paraglider would. Proper compliance with the different landing phases, will bring an even more accurate and safe return to the ground, including in nil wind conditions.

- Choosing the final landing trajectory.
- It is better to keep the wing flying at trim speed, hands up, during the last 3 to 4 seconds.
- Close to the ground, flaring decisively will bring a smooth landing with an effective horizontal velocity speed dissipation.
- A few steps will follow touchdown to a final stop.

It is not recommended to hand wrap the brake lines to slow the glider down more efficiently.

3.7 FOLDING INSTRUCTIONS

The SKIN P has a complex leading and trailing edge manufactured using a

variety of different materials. A correct folding method is very important to follow to extend the useful life of your paraglider. It should be arranged in an accordion-like shape, with the leading edge reinforcements flat and the Nitinol flexible rods stacked up atop one another. This method will keep the profile in its original shape and protect the integrity of the wing over time.

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

4. IN FLIGHT

4.1 FLYING IN TURBULENCE

The SKIN P has an excellent profile design made to withstand various weather conditions, hence enabling the pilot to take advantage of its stability for greater piloting efficiency. It reacts admirably in passive flight mode, thus offering a high level of safety in turbulent conditions. Nonetheless, the pilot always has to steer the wing and adapt his/her

We recommend for the pilot to anticipate every move, place himself in the air mass, and fly actively to make appropriate corrections with the right input amount. Oversteering is dangerous, all action must be adapted in a timely manner, amplitude and duration. The ultimate piloting goal is to keep the speed of the glider going. AIR SPEED = SAFETY
Do not hesitate to ask questions and advice to qualify certified personnel if in doubt.

4.2 POSSIBLE CONFIGURATIONS

To become familiar with those manoeuvres, we recommend practicing within the environment of a competent outfit. The pilot will have to constantly adapt his toggle impute relative to the load carried by the wing, and avoid over-steering.

It is important to realize that from one size to another, behaviour can vary, even under the same size wing: depending on minimum or maximum loading, the wing's reaction can vary.

In the report, you will find all the necessary information explaining how your new wing reacts with each test manoeuvres.

Having this information available is crucial, and will help you better understand how your wing will behave in real time flying situations to maximize your safety.

Asymmetrical collapse

In spite of having a very stable profile, heavy turbulent conditions may cause part of the wing to deflate asymmetrically with the brake lines and the harness transmitting a tension lose to the pilot. To prevent the collapse from happening, pulling the brake line on the compromised side of the wing will increase the angle of incidence. If the collapse does happen the SKIN P does not react violently; its turning motion becomes gradual and easy to control. Weight shift toward the opposite side of the compromised half wing, and keep a straight flight path as soon as possible. If necessary slightly slow the flying side down by braking lightly. The collapse will normally reopen by itself. If that does not happen, firmly pump the brake line on the collapsed side using the brake toggle. Repeat the motion until the deflation fully reopens. Do not over brake on the pressurized remaining flying side while correcting the compromised half of the wing.

Symmetrical collapse

During normal flying conditions, the SKIN P design makes symmetrical collapses quite improbable. The wing's profile was designed to handle wide variations of the angle of attack. A collapse could take place in heavy turbulent conditions, entering/exiting strong thermals or misusing the accelerator. Symmetrical collapses usually re-inflate without the glider turning; even pressure applied onto both brake lines with a rapid deep pumping action of the toggles will also quicken the re-inflation. Release

the brake lines tension (hands up) immediately to return to the default glider air speed and flying configuration.

Negative spin

This configuration goes beyond the SKIN P's normal flight behaviour. Unusual circumstances can however provoke this configuration such as trying to turn when flying at close to minimum air speed (heavy into the brakes). It is not easy to give any recommendations about this situation as it varies depending on the circumstances of the moment. Remember to restore the relative air speed over the wing by progressively reducing brake lines tension and let the wing regain its default wind speed. The wing's natural reaction would be to surge laterally with a turning radius no greater than 360° before returning to normal flight conditions.

Parachutal stall

Close to be an impossibility with the SKIN P.

Deep stall

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

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

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

Wing tangle

Beware when attempting to untangle a wing while flying near a mountainside or near other paragliders as you may lose control of the flight path trajectory and a collision could occur as a result.

Over handling

Most flying incidents are caused by incorrect pilot input, which could cascade into abnormal flying configurations. Over handling could lead a wing to violently react. The SKIN P was designed to return to a normal flight configuration by itself, do not try to over handle it.

Generally speaking, the following reactions of the wing are neither due to the input given nor its intensity, but rather by the length of time it is applied. The aircraft's should regain its default flying configuration and air speed without excessive corrections.

4.3 USING THE ACCELERATOR

The SKIN P was designed to sturdily fly through its entire speed range. It is useful to accelerate when flying in strong winds or in extreme katabatic air. When increasing the glider's air speed, its profile becomes more sensitive to turbulence and closer to a possible frontal collapse. A feeling of weakening internal cell pressure should be taken as a warning, and be counteracted by releasing the tension on the foot accelerator (speed-bar) in addition to braking slightly, pulling the brakes/toggles down, to increase the angle of attack while letting the glider regain its default air speed.

It is NOT recommended to accelerate near obstacles or in highly

turbulent air. If necessary to accelerate, flying actively while moderating the accelerator pressure and monitoring brake pressure will be the wisest course of action to take.

4.4 FLYING WITHOUT BRAKE LINES

If for any particular reason the SKIN P's brakes/toggles become disable and prevent steering, using the D-risers and body weight shifting will be the only recourse to reach the nearest LZ (Landing Zone) as soon as possible. Steering with the D-risers is easily done for not being under too much tension, however, one must be mindful not to over handle them to the point of causing a stall or negative turn. To land, the wing will come in at full air speed (hands up), then both 'D' risers will be pulled down evenly and symmetrically before touch down. This braking method is not as effective as when using the brake line toggles, and hence the wing will experience a higher than normal air speed, forcing the pilot to run faster upon touching down.

4.5 LINE TANGLES IN FLIGHT

The best way to avoid knotted lines and tangles is to inspect them before inflating the wing for take-off. If a problem is spotted in the line cascades overhead during the running phase, an immediate stop must take place to abort launch.

If the problem is discovered after takeoff, a possible drift of the wing could take place on the knotted side of the wing. The drift will have to be compensate by leaning toward the opposite side glider while applying a slight amount of brake to keep a straight flight path. A gentle pull of the brake line can be made in an attempt to loosen the tangle. If located elsewhere under the wing, and if the line(s) can be reached, gently pull a few times on it to see if the problem can be solved. Beware not to exert too much tension on the line(s), and risk stalling or initiating a negative turn as a result.

Before trying to remove a knot or line tangle while flying, always mind the possible presence of other pilots in the vicinity, and do not make the attempt to work on the problem while flying near obstacles. If the knot is too tight it will not be possible to loosen it; carefully fly to the nearest LZ (Landing Zone).

5. LOSING HEIGHT

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

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

5.1 EARS

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

To activate the 'Big ears' manoeuvre, pull the outer lines 3A3 connected to both 'A' risers outward, then downward, evenly, smoothly and simultaneously. The wingtips will fold in. Let go of the lines to reinflate them automatically. If they do not, gently pump them open asymmetrically and sequentially, not to alter the angle of attack, especially when flying near obstacles or flying in turbulent air.

5.2 SPIRAL DIVE

A more effective way to rapidly loose altitude. A wing can lose altitude

quite rapidly during a spiral dive. As a result, the (G force) can increase to the point of causing the pilot to consciousness (blackout). These are the reasons why it is best to enter this manoeuvre gradually. It is possible to eventually build the capacity to resist a certain amount of G force and fully appreciate and understand a spiral dive. Always and only practice at high altitude and with enough ground clearance.

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

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

To exit this manoeuvre, progressively release the brake/toggle located on the inside of the turn, and momentarily apply a slight amount of brake on the upper outer toggle. Weight shifting toward the outside of the turn must be performed at the same time, smoothly and gradually, while moderating and controlling any glider surge. Always to be practiced at high altitude and with enough ground clearance.

5.3 SLOW DESCENT TECHNIQUE

During a normal slow circling descent versus spiralling down at great speed, the stress exerted on the gear and the pilot will be kept at a minimum. The low speed turning technique is similar to climbing in a gentle thermal but circling downward instead to gradually lose altitude. Keeping the glider in calm katabatic air will promote an easy low speed descent and give time to the pilot to make a safe landing approach.

6. SPECIAL METHODS

6.1 TOWING

The SKIN P does not experience any problem whilst being towed. Only a qualified towing operator should be in charge of operating a certified paragliding winch. The towed wing is inflated the same way used during a mountain flight takeoff.

Any corrections should be made softly to stay away from a high angle of attack and prevent a possible spin or stall while under tow.

6.2 ACROBATIC FLIGHT

Although the SKIN P was tested by expert acrobatic pilots in extreme situations, it WAS NOT been designed for acrobatic flight manoeuvres. DO NOT USE THIS GLIDER for acrobatic manoeuvres. We consider acrobatic flight, any form of piloting reaching beyond the realm of standard easy going flight. To learn safely how to master acrobatic manoeuvres, instruction must be taken at a certified school, and under the guidance of a qualified instructor in a safe environment.

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

7. CARE AND MAINTENANCE

7.1 MAINTENANCE

Regular scheduled gear maintenance will ensure its continued performance.

Thorough pre-flight checks before taking off are not optional but rather mandatory.

If in doubt about the gear's integrity, frayed line, damaged ripstop, loose stitches, etc. Do not takeoff and have the wing inspected and repaired at

a certified outfit if necessary and as soon as possible.

If the wing lands leading edge first and impacts the ground while still fully or even partially inflated, fabric damage could ensue as a result.

The combination of sheathed and unsheathed suspension lines demands great care and attention to maintain the glider state at its highest degree of functionality.

The fabric and the lines do not need to be washed. If cleaning is needed, use a damp wet cloth. Do not use any caustic cleaning agents.

If the wing was in contact with salt water, wash it with fresh water and dry it away from harmful direct sunlight. Exposure to UV will prematurely age the gear. After landing, never keep the glider exposed to the sun's UV rays. It should be stowed away or covered immediately for protection.

If the wing is flown in a sandy environment and sand enters the caissons, dump it out before packing the glider away.

7.2 STORAGE

It is important for the wing to be correctly folded when stored. Stow the gear away in a cool, dry place, away from harmful agents. It is not advisable to store any flying equipment in the trunk of a vehicle left to bake in the sun, when temperatures inside a backpack possibly reaching 60°C. Weight should not be applied atop the equipment.

If the flying gear is stowed away in direct contact with organic materials (such as leaves or insects), a chemical reaction could take place and cause irreparable damage.

7.3 CHECKS AND CONTROLS

The SKIN P must be periodically serviced. An inspection must be

scheduled every 100 flying hours or every twenty four months whichever comes first (EN/LTF normative).

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

The SKIN P is partly built with unsheathed lines. Their durability falls within the load standards in that category. Their resistance against UV damage is among the highest for this type of material.

The combination of sheathed and unsheathed lines requires great attention in use and maintenance to keep the integrity of the SKIN P by following scheduled inspections. Even minute line length and strength variations, sheathed or not, will have a direct effect on glider performance.

7.4 REPAIRS

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

8. SAFETY AND RESPONSIBILITY

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

Wrong use of this equipment may cause severe injuries to the pilot, and even death. Manufacturers, dealers and representatives cannot be rendered responsible for any act or accident that may result out of practicing this sport.

This equipment cannot be used without prior training. Do not take advice or accept any informal training from anyone who is not properly qualified or certified as a flight instructor.

9. GUARANTEE

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

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

DISCLAIMER:

Paragliding is an activity requiring attention, specific knowledge and sound judgment. Beware! Learn your skills under the supervision and guidance of a certified school. Contract a personal insurance and become a licensed pilot. Be humble when evaluating your proficiency level in respect to weather conditions before deciding on whether or not to fly. Niviuk's liability coverage is for its product line only. Niviuk can not be rendered responsible for your own actions. Fly at your risk!

10. TECHNICAL DATA

10.1 TECHNICAL DATA

SKIN P			16	18	20
CELLS	NUMBER		39	39	39
	BOX		39	39	39
FLAT	AREA	m ²	16	18	20
	SPAN	m	9,38	9,95	10,5
	ASPECT RATIO		5,5	5,5	5,5
PROJECTED	AREA	m ²	13,5	15,2	16,9
	SPAN	m	7,46	7,92	8,34
	ASPECT RATIO		4,13	4,13	4,13
FLATTENING		%	15	15	15
CORD	MAXIMUM	m	2,11	2,24	2,37
	MINIMUM	m	0,44	0,46	0,49
	AVERAGE	m	1,71	1,81	1,9
LINES	TOTAL METERS	m	356	378	399
	HEIGHT	m	5,9	6,3	6,6
	NUMBER		388	388	388
	MAIN		3/3/4/2	3/3/4/2	3/3/4/2
RISERS	NUMBER	4	A/B/C/D	A/B/C/D	A/B/C/D
	TRIMS		NO	NO	NO
	ACCELERATOR	m/m	120	120	120
TOTAL WEIGHT	MINIMUM	kg	60	70	85
IN FLIGHT	MAXIMUM	kg	85	95	110
GLIDER WEIGHT		kg	1,6	1,8	1,9
CERTIFICATION		EN	EN-926-1	EN-926-1	EN-926-1

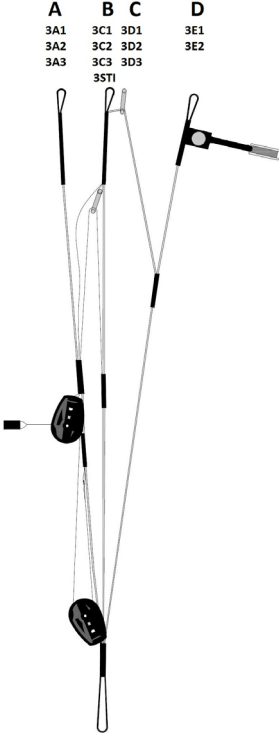
10.2 MATERIALS DESCRIPTION

CANOPY	FABRIC CODE	SUPPLIER
UPPER SURFACE	70000 E3H	PORCHER IND (FRANCE)
BOTTOM SURFACE	70000 E3H	PORCHER IND (FRANCE)
RIBS	70000 E91	PORCHER IND (FRANCE)
LOOPS	LKI - 10	KOLON IND. (KOREA)
REINFORCEMENT LOOPS	9017	PORCHER IND (FRANCE)
TRAILING EDGE REINFORCEMENT	MYLAR 20	D-P (GERMANY)
REINFORCEMENT RIBS	LTN-0.8 STICK	SPORTWARE CO (CHINA)
THREAD	SERAFIL 60	AMAN (GERMANY)

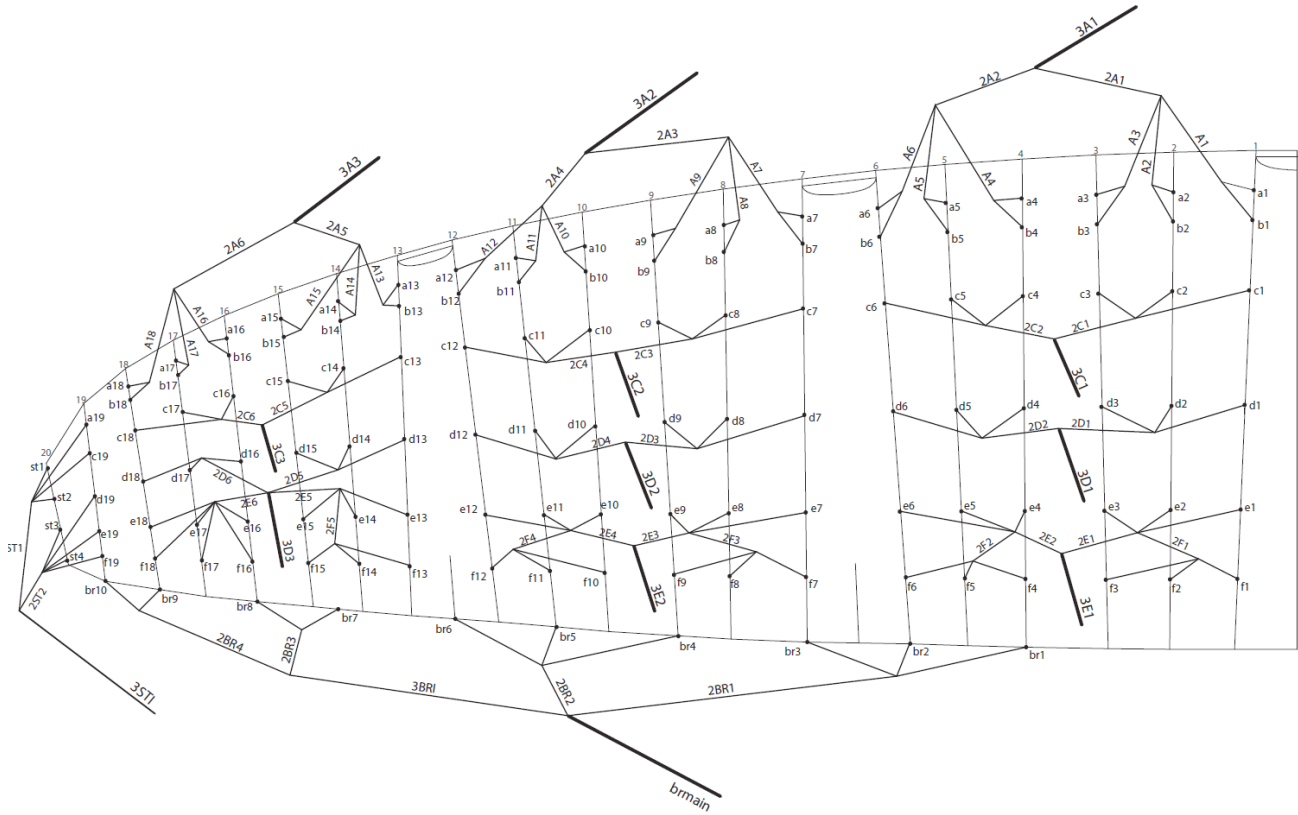
SUSPENSION LINES	FABRIC CODE	SUPPLIER
UPPER CASCADES	DC - 40	LIROS GMHB (GERMANY)
UPPER CASCADES	8000/U - 50	EDELRID (GERMANY)
UPPER CASCADES	8000/U - 70	EDELRID (GERMANY)
MIDDLE CASCADES	DC - 40	LIROS GMHB (GERMANY)
MIDDLE CASCADES	DC - 60	LIROS GMHB (GERMANY)
MIDDLE CASCADES	8000/U - 70	EDELRID (GERMANY)
MIDDLE CASCADES	8000/U - 90	EDELRID (GERMANY)
MIDDLE CASCADES	8000/U - 130	EDELRID (GERMANY)
MAIN	16560 - 240	TEIJIM LIMITED (JAPAN)
MAIN BREAK	TNL-280	TEIJIM LIMITED (JAPAN)
THREAD	SERAFIL 60	AMAN (GERMANY)

RISERS	FABRIC CODE	SUPPLIER
MATERIAL	10148	LIROS GMHB (GERMANY)
COLOUR INDICATOR	PAD	TECNI SANGLES (FRANCE)
THREAD	V138	COATS (ENGLAND)
PULLEYS	SERIE 20	RONSTAN (AUSTRALIA)

10.3 RISERS PLAN



10.4 SUSPENSION PLAN



10.5 DIMENSIONS SKIN P 16

LINES HEIGHT m/m							
	A	B	C	D	E	F	br
1	5470	5435	5391	5402	5441	5512	5770
2	5408	5374	5323	5335	5363	5397	5602
3	5394	5361	5314	5321	5342	5390	5573
4	5365	5332	5283	5283	5324	5368	5507
5	5367	5336	5282	5281	5318	5350	5418
6	5411	5381	5332	5325	5363	5431	5425
7	5346	5314	5275	5274	5321	5392	5359
8	5271	5242	5195	5199	5243	5275	5290
9	5246	5220	5174	5179	5226	5266	5251
10	5224	5198	5154	5158	5206	5242	5278
11	5208	5187	5141	5146	5198	5220	
12	5228	5210	5172	5172	5232	5283	
13	5151	5125	5094	5089	5109	5171	
14	5063	5043	5007	5016	5034	5067	
15	5006	4992	4957	4973	4993	5033	
16	4947	4933	4900	4917	4932	4968	
17	4895	4888	4855	4868	4883	4914	
18	4878	4877	4842	4846	4860	4885	
19	4715		4685	4697	4714	4740	
20	4654		4668	4681		4717	

RISERS LENGTH m/m					
	A	B	C	D	
	480	480	480	480	STANDARD
	360	390	435	480	ACCELERATED
	120	90	45	0	TRAVEL

10.6 DIMENSIONS SKIN P 18

LINES HEIGHT m/m							
	A	B	C	D	E	F	br
1	5831	5794	5746	5758	5801	5875	6152
2	5766	5730	5676	5688	5718	5754	5975
3	5753	5718	5667	5674	5698	5748	5946
4	5723	5688	5636	5636	5680	5726	5878
5	5726	5693	5636	5634	5673	5707	5785
6	5773	5742	5690	5681	5723	5794	5793
7	5705	5671	5630	5629	5679	5754	5725
8	5627	5596	5546	5551	5597	5630	5653
9	5601	5573	5525	5530	5579	5622	5613
10	5578	5551	5504	5508	5559	5597	5642
11	5562	5539	5491	5496	5550	5574	
12	5584	5564	5525	5524	5587	5640	
13	5502	5474	5442	5436	5458	5523	
14	5409	5387	5350	5359	5378	5413	
15	5349	5334	5296	5314	5335	5377	
16	5285	5271	5236	5255	5270	5308	
17	5231	5223	5189	5203	5219	5252	
18	5212	5212	5175	5180	5194	5221	
19	5041		5008	5020	5038	5066	
20	4975		4990	5004		5042	

RISERS LENGTH m/m					
	A	B	C	D	
	480	480	480	480	STANDARD
	360	390	435	480	ACCELERATED
	120	90	45	0	TRAVEL

10.7 DIMENSIONS SKIN P 20

LINES HEIGHT m/m

	A	B	C	D	E	F	br
1	6172	6133	6082	6094	6141	6220	6514
2	6104	6066	6009	6022	6055	6093	6329
3	6092	6054	6001	6008	6034	6087	6300
4	6061	6024	5969	5969	6016	6065	6229
5	6065	6031	5970	5968	6010	6046	6132
6	6116	6083	6028	6019	6063	6138	6142
7	6046	6010	5966	5965	6018	6097	6065
8	5964	5931	5878	5883	5932	5967	5994
9	5936	5907	5856	5861	5913	5958	5952
10	5913	5884	5835	5839	5892	5932	5984
11	5897	5872	5822	5827	5883	5908	
12	5920	5900	5858	5858	5923	5979	
13	5835	5805	5772	5767	5790	5860	
14	5735	5711	5671	5679	5695	5729	
15	5672	5656	5617	5636	5657	5701	
16	5606	5590	5555	5574	5590	5630	
17	5549	5541	5504	5519	5537	5572	
18	5529	5528	5490	5496	5511	5539	
19	5348		5314	5327	5346	5375	
20	5279		5295	5309		5349	

RISERS LENGTH m/m

A	B	C	D	
480	480	480	480	STANDARD
360	390	435	480	ACCELERATED
120	90	45	0	TRAVEL

