USER MANUAL

RAZOR BLADE

Englisch Rev. 2.0 Date: October 2024
Please read this user manual before starting your U-Turn RAZORBLADE for the first time.

U-TURN
SAFE FUN

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RAZOR
BLADE


BUILT ON HONOR
TURN
WE SHARE THE PASSION OF FLYING

The enthusiasm Takes Flight – WELCOME TO THE WORLD OF U-TURN.

FLYING IS A PRIVILEGE.

It creates moments of presence and happiness. U-Turn is dedicated to the passion of flying, living it not only every day but also striving to make it accessible to as many people as possible. U-Turn develops innovative products for paragliding and offers a full-service range.

OUR STATEMENT „SAFE FUN“ IS A COMMITMENT TO SAFETY.

U-Turn aims for the absolute highest level of passive safety, as our products are meant to inspire and bring joy. This also means that the products should support pilots even when conditions become more challenging. After all, the fun factor increases significantly when the risk factor decreases. For us, it's not about what's possible, but about maximum safety. We produce products with high technological standards, innovation, and design, ensuring lasting quality over time.

U-TURN HAS A CLEAR GOAL: „TO MAKE THE BEST EVEN BETTER“

We work tirelessly to improve and push ourselves to become better every day. We develop more ideas for increased safety, constantly rethink things, and find smart solutions. We take pride in our work, value uncompromising quality, and love our sport. Our products are crafted with the utmost care, as they are meant to provide long-lasting quality.

AT THE HEART OF WHAT WE DO IS THE INDIVIDUAL.

Responsible behavior towards employees and nature is as natural to us as it is towards each individual pilot. U-Turn maintains an authentic and transparent style. Lean structures enable dynamic action.

SAFE FUN BY U-TURN

Thank you for your trust.
We wish you many wonderful moments!

Fly safe & have fun

Become Part of the U-Turn Pilots Community: u-turn Paragliders

Thank You

The U-Turn team thanks you for purchasing your new U-Turn PARA-Kite. You've made an excellent choice! We wish you many enjoyable flights and smooth landings with your new U-Turn RAZORBLADE.
The U-Turn development team can proudly look back on many years of successful work in the field of aviation sports. With our in-house concepts, we are at the forefront of each developmental standard. The combination of the latest computer-aided design technology and the expertise of experienced test and competition pilots provides the perfect foundation for professional work.
Of course, we are guided by the demands that our customers place on U-Turn products. That's why we always welcome your active input in the form of suggestions and feedback. If you have any questions, please contact your U-Turn Competence Center or reach out to us directly.
To keep you informed about U-Turn's technical developments and innovations, we kindly ask that you complete and return the response form at the end to:

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Please study this operating manual thoroughly, as there is an obligation to familiarize yourself in detail with the air sports equipment and its operating instructions before first use. We have created this manual for you to make handling your U-Turn RAZORBLADE as safe and easy as possible.

The U-Turn RAZORBLADE

Our parakites are equipped with the innovative U-TURN MIXA system, which gives you full control over speed and glide performance using the brake handles. The U-TURN RAZOR-BLADE is highly versatile and ideal for soaring and speed-flying adventures.

Pilot Requirements:

The U-TURN RAZORBLADE uses a „reflex profile," which behaves significantly differently from conventional paraglider profiles. This means you will need to learn new skills and adapt your flying style! This wing is designed for experienced pilots who are already famili-ar with other paragliders, mini wings, and speed wings and who actively fly. Experience in handling disturbances such as wing collapses is also required. Assess your flight experi-ence realistically and choose our parakites according to your skill level, weather conditions, and local terrain.

Package Contents:

Your U-TURN RAZORBLADE comes with the following accessories:
RAZORBLADE wing
RAZORBLADE carry bag
RAZORBLADE cap
Manual
Self-adhesive repair patch

Important Notes for Your First Flight
Highest Quality Standards and Thorough Inspection of Your Para-Kite:

We place the maximum importance on precision and quality during the ma-nufacturing of our para-kites. Each wing undergoes multiple thorough ins-pections throughout the production process to ensure it meets the highest standards. After production, each individual kite is subjected to a detailed final inspection. During this final check, the lines are precisely measured and documented. The canopy and the MIXA speed system are also metic-ulously measured and recorded. This ensures that your RAZORBLADE is in optimal condition and ready for flight.

Despite our strict quality and safety standards, we ask that you inflate your RAZORBLADE yourself before the first flight and if possible test it on a practice hill. This not only ensures your safety but also gives you confidence in the flawless function of your wing.

Disclaimer and Waiver of Liability:

You confirm that you have fully read and understood this manual before your first flight, including all instructions and warnings. Third parties may only use your U-TURN RAZORBLADE after they have also read and understood the manual!

Release from Liability and Assumption of Risk:

Despite careful development and testing, the use of the U-TURN RAZORBLADE involves certain risks. These risks may result in injury or, in the worst case, death for both the user and third parties. By using the U-TURN RAZORBLADE, you agree to accept all known and unknown risks. The risks can be significantly reduced by following the warnings and guidelines in this manual and by using common sense.

Waiver of Claims:

By using the U-TURN RAZORBLADE, you agree, to the extent permitted by law, to waive all claims arising from the use of the U-TURN RAZORBLADE and its components. This also applies to future claims against U-TURN GmbH and all other involved parties.

You agree to indemnify U-TURN GmbH and all involved parties against any claims that may arise from the use of the U-TURN RAZORBLADE, including damages, injuries, or costs. This also applies in the event of death or permanent impairment and is binding on your heirs, relatives, and legal representatives.

U-TURN GmbH and all involved parties have made no further oral or written promises beyond the declarations contained in this manual.

You agree to indemnify U-TURN GmbH and all involved parties from any claims arising from loss, damage, injury, or costs incurred by you, your next of kin, relatives, or third-party users of the U-TURN RAZORBLADE through its use. This also includes the statutory and contractual liability of U-TURN GmbH and all third parties involved in the development and manufacture of the U-TURN RAZORBLADE.

In the event of death or disability, the provisions set forth here shall remain in effect and are binding on your heirs, relatives, executors, estate administrators, agents, and legal representatives.

U-TURN GmbH and all involved parties have made no further oral or written assurances and expressly deny having made any, other than those contained in this manual for the U-TURN RAZORBLADE.

Technical Data

RAZORBLADE	11,5	13	15	18	22	26
Recommended Start weight Empfohlenes Startgewicht	40-90 kg	45 - 100 kg	50 - 110 kg	60 -120 kg	70 - 130 kg	80 - 140 kg
Flat area Fläche ausgelegt	11,5m²	13m²	15m²	18m²	22m²	26m²
Projected area Fläche projiziert	9,824m²	11,106m²	12,817m²	15,382m²	18,804m²	22,226m²
Flat wingspan Spannweite ausgelegt	7,855m	8,429m	9,177m	10,186m	11,454m	12,658m
Projected wingspan Spannweite projiziert	6,422m	6,891m	7,502m	8,327m	9,363m	10,347m
Flat AR Streckung ausgelegt	5,4	5,5	5,65	5,8	6	6,2
Projected AR Streckung projiziert	4,198	4,275	4,391	4,507	4,662	4,817
Chord: center / wingtip Flügeltiefe: Mitte / Stabilo	1,75 m / 0,61 m	1,85m / 0,62 m	1,96 m / 0,66 m	2,12 m / 0,72 m	2,3 m / 0,78 m	2,46 m / 0,83 m
Bridle height Abstand Tragegurt-Kappe	6,14 m	6,41 m	6,68 m	6,98 m	7,28 m	7,59 m
Nr. of cells Zellenanzahl	52	52	52	52	52	52
Glider weight Gewicht	kg	kg	kg	kg	kg	kg
Bridle length Gesamt Leinenlänge	153 m	166 m	183 m	206 m	235 m	263 m
Line diameter Leinenduchmesser	0,6/ 0,8 /1,0/ 1,2 / 1,4 / 1,6/1,8 mm	0,6/ 0,8 /1,0/ 1,2 / 1,4 / 1,6/1,8 mm	0,6/ 0,8 /1,0/ 1,2 / 1,4 / 1,6/1,8 mm	0,6/ 0,8 /1,0/ 1,2 / 1,4 / 1,6/1,8 mm	0,6/ 0,8 /1,0/ 1,2 / 1,4 / 1,6/1,8 mm	0,6/ 0,8 /1,0/ 1,2 / 1,4 / 1,6/1,8 mm
U-TURN MIXA U-TURN MIXA	Yes Ja	Yes Ja	Yes Ja	Yes Ja	Yes Ja	Yes Ja
MIXA Number of risers MIXA Anzahl Traggurte	3+1	3+1	3+1	3+1	3+1	3+1

Line System:

The materials used in our parakite products have been carefully selected to ensure durability and safety. The U-TURN RAZORBLADE features a system with 3 A-lines, 4 B-lines, and 4 C-main lines, as well as a main brake line, all connected to the risers. The brake line is attached to the Mixa brake line via a „knot ladder." Any adjustments to the factory trim may only be performed by certified „Ass to Grass" partners.

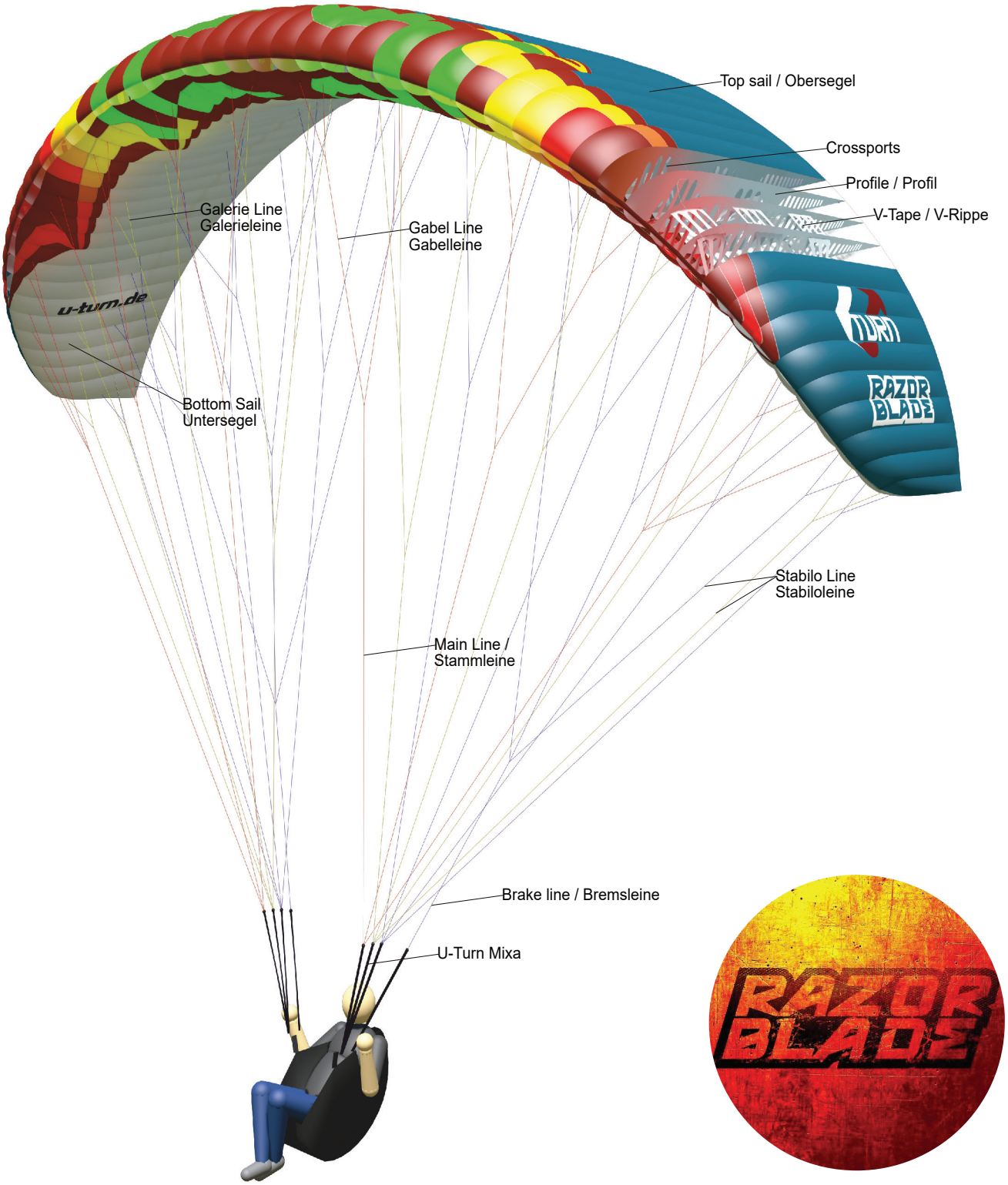
To facilitate handling, the lines are color-coded as follows: (Refer to the diagram on page 28)

Red: A-main lines (AR1, AR2, AR3)
Yellow: B-main lines (BR1, BR2, BR3, BR4)
Blue: C-main lines (CR1, CR2, CR3, CR4)
Orange: Brake line (KR)
The U-TURN RAZORBLADE is equipped with a U-Turn Mixa system on each side, which has 3 riser ends:
All A-lines are connected to the A-riser.
The B-lines and B-stabilo line are connected to the B-riser.
The C-lines and C-stabilo line are connected to the C-riser.
The brake line is attached to the end of the C-riser pulley via a clove hitch.

Failure to comply with one or more of the safety precautions can turn an enjoyable flight into a life-threatening event!

Device Description

Technical Overview



Risers / MIXA System

The MIXA system consists of a combination of pulleys attached to the B and C lines. It connects the control handles to the Mixa and allows you to fully control the U-TURN RAZORBLADE using only your hands, regulating speed and glide angle.

The B-lines move at a ratio of 1/6 relative to the brake travel.
The C-lines move at a ratio of 1/3 relative to the brake travel.
The wing's glide angle can be fully adjusted by altering the canopy's angle of attack using the MIXA system.

Your brake handles are connected to an elastic line, allowing for a quick and easy grip.

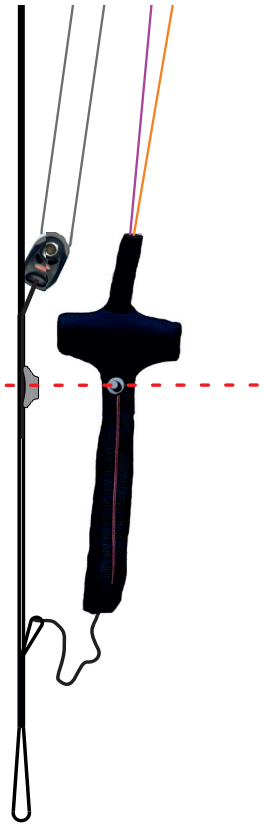
Important Notes:

Never let go of the brake handles during flight and always keep your hands in the loops.

Never change the adjustment of the main brake line—this should only be done by U-TURN or a certified „Ass to Grass" partner.

Never control the U-TURN RAZORBLADE solely by pulling on the main brake line. Always use the control loop / brake handles of your U-Turn Mixa system.

Brake Settings of the MIXA System:



Optimal Glide Position:
Keep the brake handles (not the loops) at the same height as the Fidlook brake release on the risers. Depending on the wing loading, this position may vary by approximately 1-3 cm up or down and is the position for the best glide.

Full-Speed Position:
Extend your arms and let the brakes glide fully upward until they are stopped by the respective pulley of the C riser. Ensure that your hands always remain in the brake loops during this process.

Minimum-Speed Position:
When you position the brake handles below the height of the Fidlock, you approach the stall point (flow separation, loss of lift). Never fly at minimal speed close to the ground to ensure safe altitude gain and a secure landing.

Safety Warning: Pilot Responsibility
Flying a parakite requires full concentration at all times. Please note that you fly your parakite at your own risk! As the pilot, you are responsible for checking the airworthiness of your parakite before each flight. Also, remember that your mental fitness has a significant impact on the safety of the flight.

Fliege den U-TURN RAZORBLADE nicht unter folgenden Bedingungen:

- Outside the minimum or maximum recommended takeoff weight
- In strong thermals
- In rain, snowfall, or extremely turbulent weather conditions
- In clouds or fog (visual flight is required)
- With insufficient flying experience
- As a powerkite on water (e.g., kitesurfing, kiteboarding, kitefoiling)
- When the wing is wet
- At temperatures below -30°C or above 50°C
- For acrobatic flights (flight maneuvers at an angle greater than 90 degrees)
- With more than one person (no tandem flights)

During production, the U-TURN RAZORBLADE undergoes strict quality controls and is re-checked before shipping. Please note that the laws of the respective country in which you are flying apply.

HARNESS

The U-TURN RAZORBLADE can be flown with all approved harnesses of type GH, harnesses without fixed cross-bracing or cross-straps. Please note that the relative brake travel and maneuverability of the parakite may vary depending on the harness used.

FLIGHT TECHNIQUES AND CHARACTERISTICS

PRE-FLIGHT CHECK AND MAINTENANCE

Check your equipment for possible defects before each flight.
Inspect your parakite carefully after long flights or periods of storage.
Check before takeoff:

- All seams on the harness, the attachment of the rescue device, and the risers
- Ensure that all connection points, line shackles, and carabiners are closed
- The knots on the brake lines (right and left)
- The position of the main brake line on the knot ladder of the mixa
- All lines from the risers to the parakite canopy
- All attachment points on the parakite canopy
- Upper and lower surfaces of the parakite canopy for damage and wear
- The interior, profiles, and cross connections
- The parakite for dryness

NEVER TAKE OFF IF YOU NOTICE ANY DAMAGE, EVEN IF IT'S MINOR! IF YOU OBSERVE ANY SIGNS OF DAMAGE OR SIGNIFICANT WEAR, PLEASE CONTACT YOUR COMPETENCE CENTER OR U-TURN DIRECTLY IMMEDIATELY.

LAYING OUT the RAZORBLADE

We recommend a briefing with our ASS to Grass partners.
First, inflate your U-TURN RAZORBLADE on a training field and learn to control it on the ground.
The sorting of the three color-coded line levels must be thorough. All lines from the risers to the parakite canopy must be free of knots, loops, or tangles.
Release any brake lines lying on the ground before takeoff if they are snagged on the surface. No lines should be under the parakite during takeoff. Tangled lines can often not be freed and can have fatal consequences!
Lay out the U-TURN RAZORBLADE so that the leading edge is distinctly curved. Ensure that no sand or other objects are in the parakite.
Make sure that the center of the parakite is the highest point, so that the middle A-lines are tensioned first during inflation. This allows the RAZORBLADE to fill evenly, enabling a controlled takeoff.

TAKEOFF, Forward

Check your laid-out parakite again for free lines before takeoff.
When performing a forward takeoff in low wind or light headwind, hold the A-risers in your hands for the launch.
At wind speeds of 5-8 km/h, you no longer need to hold the A-risers. Take the brake handles in your hands and ensure that the risers are resting on your arms. Keep your arms slightly out to the sides and as far back as possible to ensure that the brake handles are completely free.
Check the wind direction and airspace!
Start running; the RAZORBLADE will rise evenly and quickly above the pilot with sufficient pressure that you transfer through the harness to the canopy.
Once the parakite is filled and positioned above your head, check for any collapsed wing tips or tangled lines. Any collapsed cells can be opened by pumping on the affected side.
Make the final decision to accelerate or take off only when you are absolutely sure that the parakite is correctly and fully opened and that no tangled lines are visible!
As soon as you reach maximum running speed, increase the tension on the brakes until you take off.

Be sure to check out our tutorials on YouTube.

DO NOT PULL TOO MUCH ON THE BRAKE HANDLES; THE U-TURN RAZORBLADE REQUIRES A RELATIVELY HIGH TAKEOFF SPEED.

Otherwise, abort the launch immediately!
If you have a knot in the lines and cannot abort the launch, do not fly fast! Even a small knot in the brake or C-lines can prevent the reflex effect of the profile and make the RAZOR-BLADE unstable. This can lead to a collapse even without turbulence as soon as you go into the „Full Speed“ position. Knots or tangles in the lines can also affect the stall speed, so avoid landing in unfamiliar terrain in these cases. It's best to fly slowly with the brake lines pulled and look for a large, safe landing area.

REVERSE TAKEOFF

Hold the A-Strap: Take the A-tragegurt (A strap) in your hand. This will ensure that the U-TURN RAZORBLADE unfolds evenly.
Wind Conditions: If the wind is strong enough, you don't need to hold the A straps. Instead, you can keep the RAZORBLADE on the ground with the brake line pulled down and then release the brake grips upward while applying pressure with your hips. This will allow the RAZORBLADE to fill perfectly and come quickly above you.
If the Parakite Overshoots: If the parakite overshoots, you have two options:
Let it Overshoot: Allow it to overshoot without interrupting the process with your brake grips. The reflex profile will stop the parakite for you.
Immediate Stop: Alternatively, you can stop it immediately with a quick and deep pull on the brake grips.
Avoid slow raise: A slow pull on the brake grips is the worst thing you can do if the parakite overshoots while you are on the ground.

DO NOT HESITATE TO STOP IT; OTHERWISE, IT MAY COLLAPSE.

TURNING BEHAVIOR

The U-TURN RAZORBLADE has a unique turning behavior. You can perform shallow turns in the optimal glide position by shifting your weight. Let the outer brake go only as much as necessary. For steep turns, shift your weight and release the outer brake, preparing for a very steep turn at high flight speed.

WHEN FLYING CLOSE TO STALL SPEED, ONLY RELEASE THE OUTER BRAKE-HANDELS TO AVOID PUTTING YOUR RAZORBLADE INTO A SPIN! YOU WILL FEEL A THREATENING NEGATIVE ROTATION FROM THE HIGH PRESSURE ON THE CONTROL LINES AND SLIGHTLY TILTED WING TIPS. IF YOU NOTICE THIS, IMMEDIATELY RELEASE THE INNER BRAKES.

ACTIV FLYING

Active flying means that you keep your parakite in motion using the brake. Respond consciously and proactively to even the slightest disturbances in the air. Never release the brake lines in turbulent flying conditions!

Spiral dive

The U-TURN RAZORBLADE tends to enter a stable steep spiral dive and achieves exceptionally high descent rates. To initiate a steep spiral, proceed as follows: Stay close to the "Full-Speed Position," gently increase the brake pressure on the inside during a turn, and shift your weight in the same direction. Be careful not to pull the inner brake too hard to avoid a spin or an asymmetric stall on one side of the canopy.
The spiral begins when the paraglider tips significantly to the side and describes a steep curve. You can control the angle of inclination and the descent rate by further pulling or releasing the inner brake. We recommend keeping the outer brake in the Full-Speed Position to descend faster while being exposed to lower G-forces. The steep spiral is ideal for quickly shedding altitude.

Important Notes:

Rapid sink rates and the resulting G-forces can place significant physical strain on pilots, especially inexperienced ones, making it potentially dangerous. Therefore, execute steep spirals cautiously and gradually!
It can be helpful to engage your abdominal muscles during the steep spiral. Immediately abort the steep spiral if you begin to feel dizzy or weak. Ensure you have sufficient height above the ground when initiating the steep spiral. To avoid excessive swinging when exiting the spiral, gradually release the inner brake while applying the outer brake.
The brake pressure in a steep spiral is significantly higher than in normal flight.
Note: To exit a steep spiral with a sink rate exceeding 12 m/s, it may be necessary to brake the outer half of the parakite and/or shift your weight to the outside of the turn. Exiting the spiral may require several full rotations and will result in significant altitude loss. Never perform this maneuver at an altitude of less than 200 meters, as the maneuver should be completed by this height!

Rolling in the „Full Speed Position“

The most efficient way to lose altitude with a RAZORBLADE while minimizing G-forces is to perform a rolling motion through weight shifting while keeping the brakes in the „Full Speed Position.“ This technique significantly increases the descent rate compared to normal sinking at full speed.

Since the „Full Speed Position“ allows for a rapid altitude loss, descending with a parakite is much more efficient than with a conventional glider.

Note: that with a parakite, techniques like „ears,“ Big Ears, or B-Stall are not possible.

Therefore, we recommend flying in circles, performing small wingovers, or rolls for rapid altitude loss. When soaring, it’s advisable to fly out of the updraft area to descend more quickly and land safely. However, flying full circles near the ground can be dangerous.

Extreme Flight Maneuvers

The RAZORBLADE is not designed for extreme conditions and should only be flown by experienced and professional pilots who are familiar with such challenges.

Asymmetric Collapse

Although the U-TURN RAZORBLADE is designed for stability, an asymmetric collapse can occur in strong turbulence. In the „Full Speed Position,“ a parakite is more prone to such collapses, which can have serious consequences. When one side of the parakite collapses, the wing tends to tilt or turn quickly toward the collapsed side. To mitigate this, you can gently pull the brake on the open side to keep the parakite stable without causing a stall. If the collapse does not resolve despite using the brakes and shifting your weight, you can accelerate the reopening process by repeatedly pumping the brake on the collapsed side.

Symmetric Front Collapse

In the event of a symmetric front collapse, there is a risk that the parakite may take on a horseshoe shape. To avoid this, quickly and forcefully pull on the brake handles. This will allow the U-TURN RAZORBLADE to reopen quickly and return to stable flight.

KNOT OR LINE ENTANGLEMENT

In very turbulent air conditions or due to pilot error, part of the parakite may become entangled in the lines. In such a case, the pilot should attempt to stabilize the wing by gently braking on the open side. Without intervention, the wing can enter a stable spiral due to a knot!
To exit a knot, there are two approaches:
Empty the affected wing side through pumping movements.
Perform a full stall.

IF THESE MANEUVERS DO NOT WORK OR THE PILOT IS OVERWHELMED, THE RESCUE SHOULD BE DEPLOYED IMMEDIATELY!

Deepstall flight

A deepstall flight can occur when the material becomes porous due to heavy use (e.g., UV radiation) or when moisture is absorbed during rain. In this condition, the parakite does not accelerate and has a high sink rate.
To avoid deepstall flight with the U-TURN RAZORBLADE, keep the brakes in the „Full Speed Position.“

IF THE BRAKES ARE APPLIED DURING DEEPSTALL FLIGHT, THIS IMMEDIATELY LEADS TO A FULL STALL. AT LOW ALTITUDE, A DEEPSTALL FLIGHT SHOULD NOT BE ABORTED DUE TO THE PENDULUM EFFECT! THE PILOT SHOULD REMAIN IN THEIR HARNESS AND PREPARE FOR A LANDING WITH THE RESCUE PARACHUTE

NEGATIVE SPIN

The U-TURN RAZORBLADE enters a negative rotation when there is a one-sided stall.
In this case, the parakite spins vertically around its own axis, with the pivot point located within the wingspan. The inside of the wing flies backward. There are two main causes for a negative spiral:
A brake is pulled too hard and too far, for example, when initiating a steep spiral.
A brake is applied too firmly at low speed.

Ending an Unintentionally Initiated Negative Spin

If a negative spiral is unintentionally initiated, it should be terminated immediately. This involves releasing the brake that has been pulled too hard until the airflow is again evenly distributed on the inside of the wing. Generally, the RAZORBLADE will continue flying without noticeably losing altitude.

Caution: After a prolonged negative spiral, the wing tends to shoot forward on one side, which can lead to a dynamic collapse.

Wingover

By alternately flying left and right turns, the bank angle of the wing can be gradually increased. When performing wingovers with a high bank angle and at high altitude, the outer wingtip may lose pressure and feel soft. In this case, the bank angle should not be increased further, as this can lead to an impulsive collapse of the wing.

IMPORTANT:
Negative spirals and wingovers with more than 90° bank angle are classified as prohibited aerobatic maneuvers in Germany and should not be flown under normal conditions. Errors in executing a maneuver or overreactions by the pilot can have dangerous consequences, regardless of the type of wing.

Fullstall

A full stall with the U-TURN RAZORBLADE is initiated by pulling the brakes beyond the point referred to as the „minimum speed position.“ It is crucial to initiate the full stall slowly to prevent the wing from falling too far behind the pilot. If the RAZORBLADE does fly far behind the pilot, the brakes should not be released completely right away. Instead, they should be kept near the „minimum speed position“ until the wing is back above or in front of the pilot. This prevents an abrupt forward pitch of the wing.

Due to the special reflex design of the RAZORBLADE, it is especially important to stop such a forward pitch with a quick, firm pull on the brake handles. A gentle pull on the brakes, on the other hand, would accelerate the pitch and make a front collapse almost unavoidable.

Packing Instructions

Start in the middle of the paraglider and grab the second cell. Lay each cell on top of each other so that the leading edge reinforcements stay together. Then grab the trailing edge and repeat the process by folding each second chamber from the middle. Stack the folded chambers on top of each other and press the air out from the back toward the air inlets. Repeat this process on the other wing side. Lay both wing sides on top of each other and close the clips, starting at the trailing edge. Fold the bag toward the leading edge and close the zipper. Be careful not to pinch any lines or material in the zipper.

Note: All U-TURN paragliders with flexible Nitinol rods can be packed in any way as long as the leading edge is not damaged.

Tip for Extending the Lifespan of Your Paraglider:

Do not pack the paraglider too tightly. Handle the leading edge with care despite its robustness, and open the paraglider during prolonged storage to preserve it.

Descent Aids

The U-TURN RAZORBLADE is certified according to EN926-1 and has passed both shock and load tests (in progress). Note that the RAZORBLADE does not have DGAC certification (Direction Générale de l'Aviation Civile) for powered flight. Check local regulations to see if flights at high altitudes with the U-TURN RAZORBLADE are permitted.

Important Notes for Extreme Flight Maneuvers:

Always practice such maneuvers first under the supervision of a certified flight instructor as part of a safety training program. Ensure that the airspace below you is clear before beginning a flight maneuver. Always keep your paraglider in sight throughout the entire maneuver. Note that this manual is not a complete operating guide. Therefore, U-TURN recommends participating in safety training over water to learn extreme flight maneuvers safely.

Materials

The U-TURN RAZORBLADE is made from high-quality materials that have been carefully selected to ensure the optimal combination of durability, performance, and longevity. We are aware that the durability of the paraglider plays a crucial role in the satisfaction of the pilots.

Canopy and ribs

Top sail:	PARATEX SBS107PG (42g/m²)
Bottom sail:	PARATEX STA15 (32g/m²)
Ribs with Lines:	MJ-TEX 38 (38g/m²)
Ribs without lines:	MJ-TEX 32 (32g/m²)

Leading Edge and Top Surface Reinforcement:
Nitinol 1,0mm und 0,8mm

Lines

For the lines of the U-TURN RAZORBLADE, we have chosen LIROS PPSLS SUPER-Dyneema due to its outstanding durability. These lines provide high strength and a long lifespan.

A, B, C Main lines:	PPSLS 260, 200, 160
A, B, C Middle lines:	PPSLS 160, 125
A, B, C Top lines:	DC100, DC60, DC40
Brake lines:	PPSLS160, 125, 65

The U-TURN Speed MIXA System

The U-TURN Speed Mixa System consists of a 1000daN Super-Dyneema MINOS line from Edelrid. These lines provide an excellent combination of strength and flexibility. This line has been specifically designed to run over pulleys with high loads. The pulleys, with a diameter of 20 mm, are from Ronstan and are characterized by low rolling resistance, high load capacity, and low weight.

Recommendation Tables

Recommended Take-off Weight – Overview Table

Our overview table shows how dynamically the wing responds to the take-off weight and which experience level is required to fly the U-TURN RAZORBLADE in calm wind conditions. The table with the recommended take-off weight indicates how the wing loading affects the flight behavior of the wing. Here, you will learn what experience level is needed depending on the wing loading, especially in calm wind conditions.

RAZORBLADE wing loading table

Startgewicht (kg)	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140
RAZORBLADE 11.5	3,48	3,91	4,35	4,78	5,22	5,65	6,09	6,52	6,96	7,39	7,83										
RAZORBLADE 13.0		3,46	3,85	4,23	4,62	5,00	5,38	5,77	6,15	6,54	6,92	7,31	7,69								
RAZORBLADE 15.0			3,33	3,67	4,00	4,33	4,67	5,00	5,33	5,67	6,00	6,33	6,67	7,00	7,33						
RAZORBLADE 18.0					3,33	3,61	3,89	4,17	4,44	4,72	5,00	5,28	5,56	5,83	6,11	6,39	6,67				
RAZORBLADE 22.0							3,18	3,41	3,64	3,86	4,09	4,32	4,55	4,77	5,00	5,23	5,45	5,68	5,91		
RAZORBLADE 26.0									3,08	3,27	3,46	3,65	3,85	4,04	4,23	4,42	4,62	4,81	5,00	5,19	5,38

GESAMTGEWICHT VOR DEM START PRÜFEN: EIGENGEWICHT DES PILOTEN, PARAKITE, GURTZEUG, RETTUNG UND SCHUTZAUSRÜSTUNG

Calculation of Wing Loading

To calculate the wing loading of your current wing or parachute and compare it with the recommendation table, follow these steps:
Divide your take-off weight by the projected area of your wing.
Compare the calculated wing loading with the recommendations in the skill-level table below. Choose the appropriate RAZORBLADE size that matches your skills and requirements.

Note:
The U-TURN RAZORBLADE offers a wide speed range. Our parakites can be compared to paragliders or wings that are approximately 3-4 m² smaller. For example, the maximum speed of a 15 m² RAZORBLADE is comparable to that of an 11 m² speed flyer.

Comparison of Wing Loading: RAZORBLADE vs. Paraglider

Wingload	Flight Behavior
3.0 - 3.5	Comparable to the dynamic behavior of a paraglider
3.5 - 4.5	Comparable to the sporty behavior of a paraglider
4.5 - 5.5	Comparable to the behavior of a mini wing
5.5 - 6.5	Comparable to a classic speed flyer
> 6.5	Comparable to a very small speed flyer (7-8 m² or smaller)

Skill Level:
Experience in paragliding and/or speed flying is highly recommended. A certain level of flying experience is necessary for the safe operation of the U-TURN RAZORBLADE. Depending on the wing loading, the requirements for the pilot's skills and reaction speed increase. Advanced control over the wing is especially needed at higher wing loads.

Wind Speed Table Help

The U-TURN RAZORBLADE is distinguished by its ability to flexibly adjust the angle of attack through the U-Turn Mixa System. This gives it a significantly larger range of speed and glide angle compared to a conventional mini wing or paraglider, allowing it to be safely flown in various wind conditions.

The information in the following tables serves as recommendations for the use of your U-TURN RAZORBLADE. It is important to note that wind is not a constant factor. The speed varies, especially as the wind increases. Always ensure that you measure the wind speed at the top of the dune, slope, or cliff.

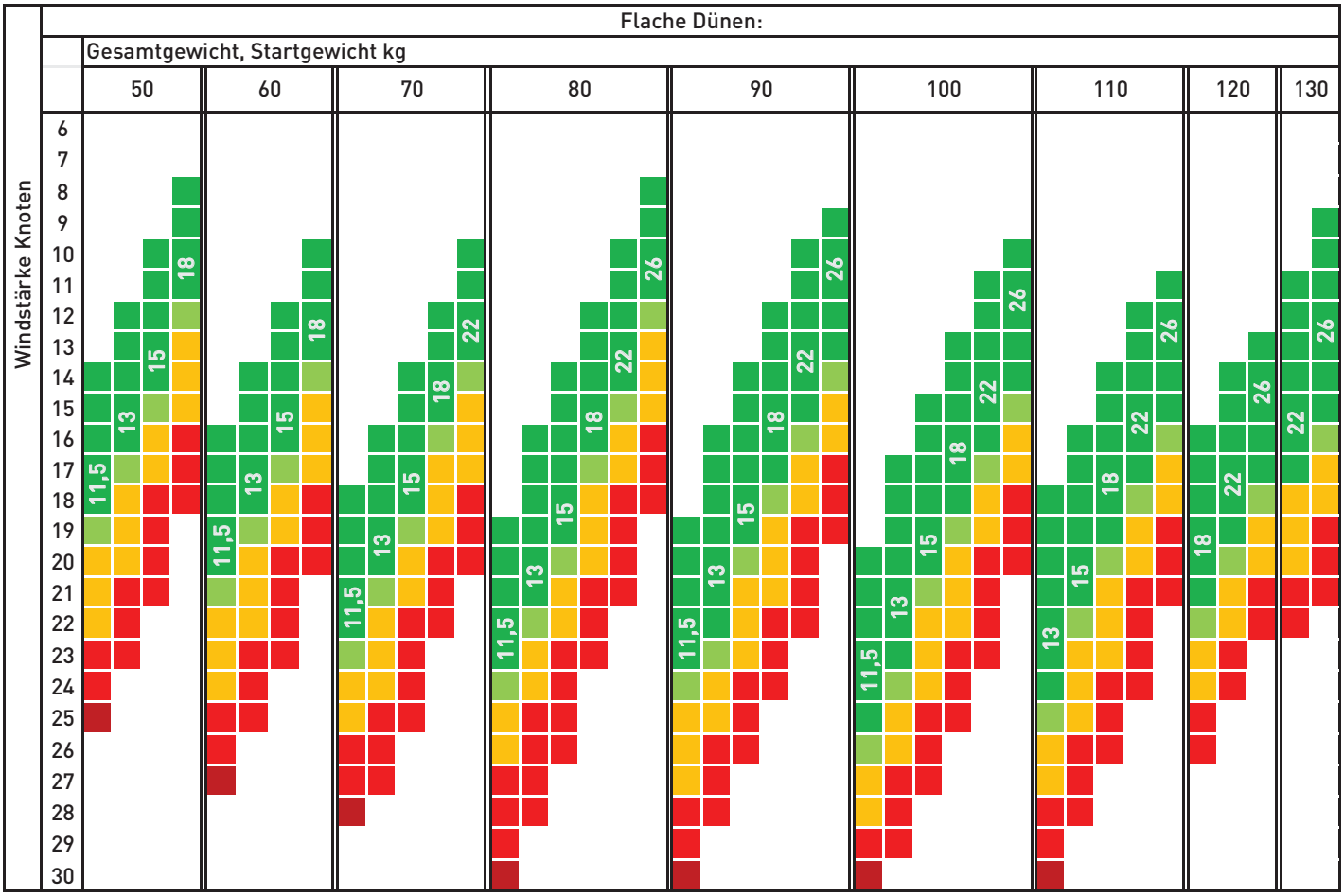
Explanation of Color Coding

Green:
This range indicates the lower limits of the recommended wind speeds. For example, a person with a takeoff weight of 80 kg typically requires about 9-11 knots of wind to fly the RAZORBLADE 22 safely.

Orange:
In the mid-range of use, wind fluctuations occur more frequently. In this area, you should fly cautiously, only if you are familiar with the surroundings and have a suitable weather forecast. Wind can show unpredictable changes here.

Red:
This area is reserved exclusively for experienced pilots. The indicated wind speeds often refer to gusts rather than the average wind speed. For example, an average wind of 25 knots may have gusts exceeding 30 knots. Flying in this area carries significant risks and requires advanced skills.

Important Notice:
The stronger the wind and the higher your takeoff weight, the more dynamic and faster your U-TURN RAZORBLADE will respond. This leads to more challenging flying conditions, making precise control and experience essential, especially at higher wind speeds.


Flache Dünen:
Gesamtgewicht, Startgewicht kg
50
60
70
80
90
100
110
120
130
Windstärke Knoten
6
7
8
9
10
11
12
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14
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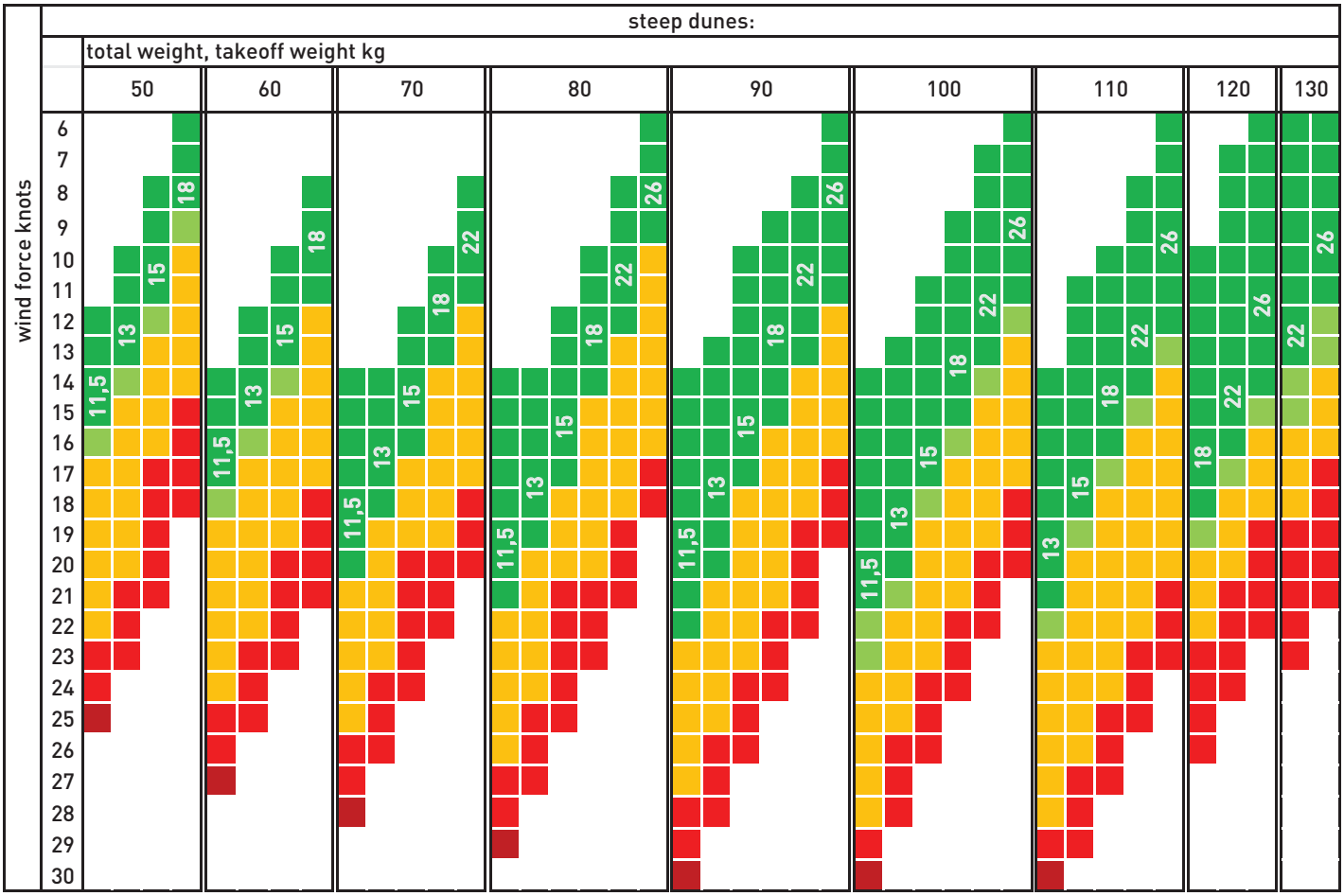
steep dunes:
total weight, takeoff weight kg
50
60
70
80
90
100
110
120
130
wind force knots
6
7
8
9
10
11
12
13
14
15
16
17
18
19
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21
22
23
24
25
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Care and Maintenance

With proper care, your wing can remain reliable and stable for many years. A well-maintained paraglider can be used significantly longer. Always remember: safety during flight depends on the flawless function of your wing.

Storage

Store your wing in a dry, cool, and dark place. Moisture should be allowed to evaporate completely before you store it. The ideal location is well-ventilated and maintains a constant temperature. Avoid storing the equipment while it is damp or in environments with high heat.

Cleaning

Friction and mechanical impacts can affect the material of your wing. The coated surfaces are largely dirt-repellent but can be cleaned with a soft, damp cloth or sponge if necessary. Do not use cleaning agents, soaps, or solvents. Thoroughly dry the wing before putting it away again.

Repair

For any major repairs, it is essential to consult a professional or the appropriate service center. Minor tears of up to five centimeters that do not involve seams can be repaired on your own using suitable adhesive tape. Replacement lines and other spare parts can be obtained directly from the manufacturer or through authorized dealers.

Line Maintenance

The lines are made from high-quality materials optimized for load-bearing. To avoid overstretching or damage, make sure not to overload them excessively. Also, repeated bending at the same points should be avoided, as this can impair their strength. If visible damage occurs, even if it only affects the outer sheath, an inspection by a professional is recommended. Lines can be replaced if necessary. Before replacing a line, ensure that its length is correct by comparing the damaged line with the corresponding line on the opposite side of the wing. After replacement, it is important to lay the wing on the ground to check the symmetry and tension of the lines before your next flight.

Tips for Material Care

Avoid Sunlight and Weather Exposure:
Do not leave your wing exposed to the sun or poor weather conditions for unnecessary lengths of time. The material can suffer and age more quickly.

Prevent Abrasion:

Ensure that the wing is not dragged over rough surfaces like stones or branches to avoid damage.

Gentle Storage:

Always pack the wing loosely and avoid sharp folds or excessive compression. This protects the material and extends its lifespan.

Remove Saltwater:

If the wing comes into contact with saltwater, rinse it thoroughly with fresh water and allow it to dry completely in the shade.

Avoid Dirt:

Keep the lines and material clean while laying out the wing. Small particles like sand or dust can damage the material and shorten the lines. Check that all lines are free of obstacles to prevent damage from accidental stepping.

Caution in Strong Winds:

In strong winds, parts of the wing may hit the ground hard, which can damage the fabric or tear seams. Regularly check the condition of the wing for such damage.

Avoid Nose Impacts:

After landing, do not allow the wing to fall on its nose, as this can damage the material at the leading edge.

Careful Retrieval After Tree Landings:

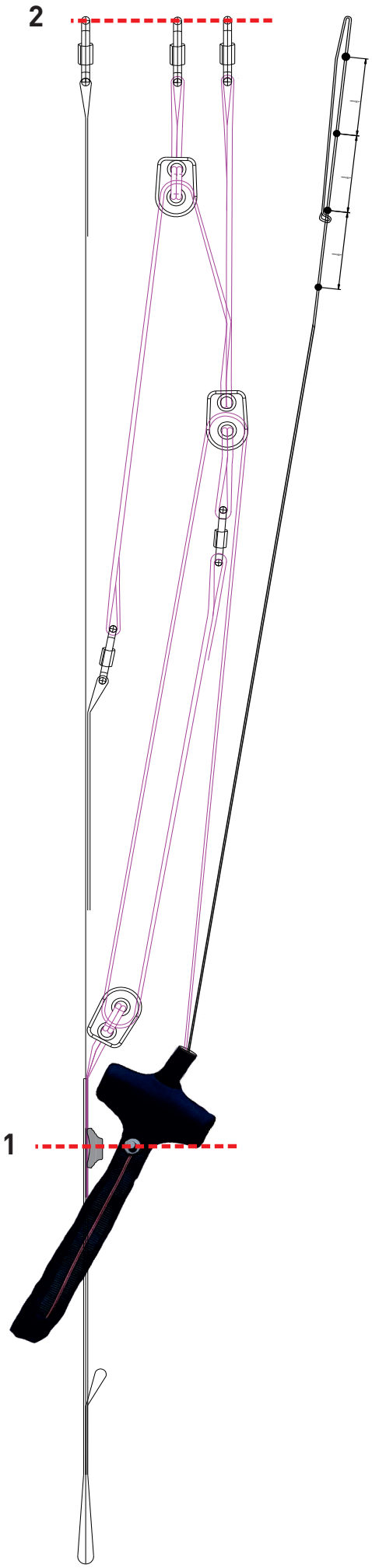
Never jerk the wing out of branches after a tree landing. Carefully remove leaves and twigs, and check the symmetry and length of the lines before your next flight.

Avoid Snow, Sand, or Stones in the Wing:

Ensure that no foreign objects like snow, sand, or stones get into the wing. These can affect flight behavior and slow down the wing. If this does happen, lift the wing at the trailing edge to open the air chambers downwards, allowing the wing to self-empty.

U-TURN MIXA Control-Info_

To check whether the U-TURN SPEED MIXA is functioning correctly, secure the brake handle to the Fidlock buckle (1). After that, all ends of the MIXA should have the same length (2).



Disposal

In the design and selection of materials for your parakite, great emphasis was placed on environmental compatibility and high quality standards. If your kite has reached the end of its useful life, remove all metal parts such as buckles and pulleys. The remaining components, such as lines, fabric, and straps, can be disposed of properly at a local recycling center. The metal parts should be delivered separately to an appropriate metal recycling center.

Alternatively, you can send your retired parakite back to us directly – we will handle the environmentally friendly disposal and recycling for you.

Maintenance Check

Safety is the top priority, and to ensure the optimal flight characteristics of your kite, regular maintenance checks are required. Your kite should undergo a safety check no later than 24 months, 200 flights, or 100 flight hours, whichever comes first. This check must be performed by the manufacturer or an authorized partner and confirmed with an official stamp.

If the check date is missed or performed by an unauthorized party, the warranty will be void, and the airworthiness of the kite will no longer be guaranteed.

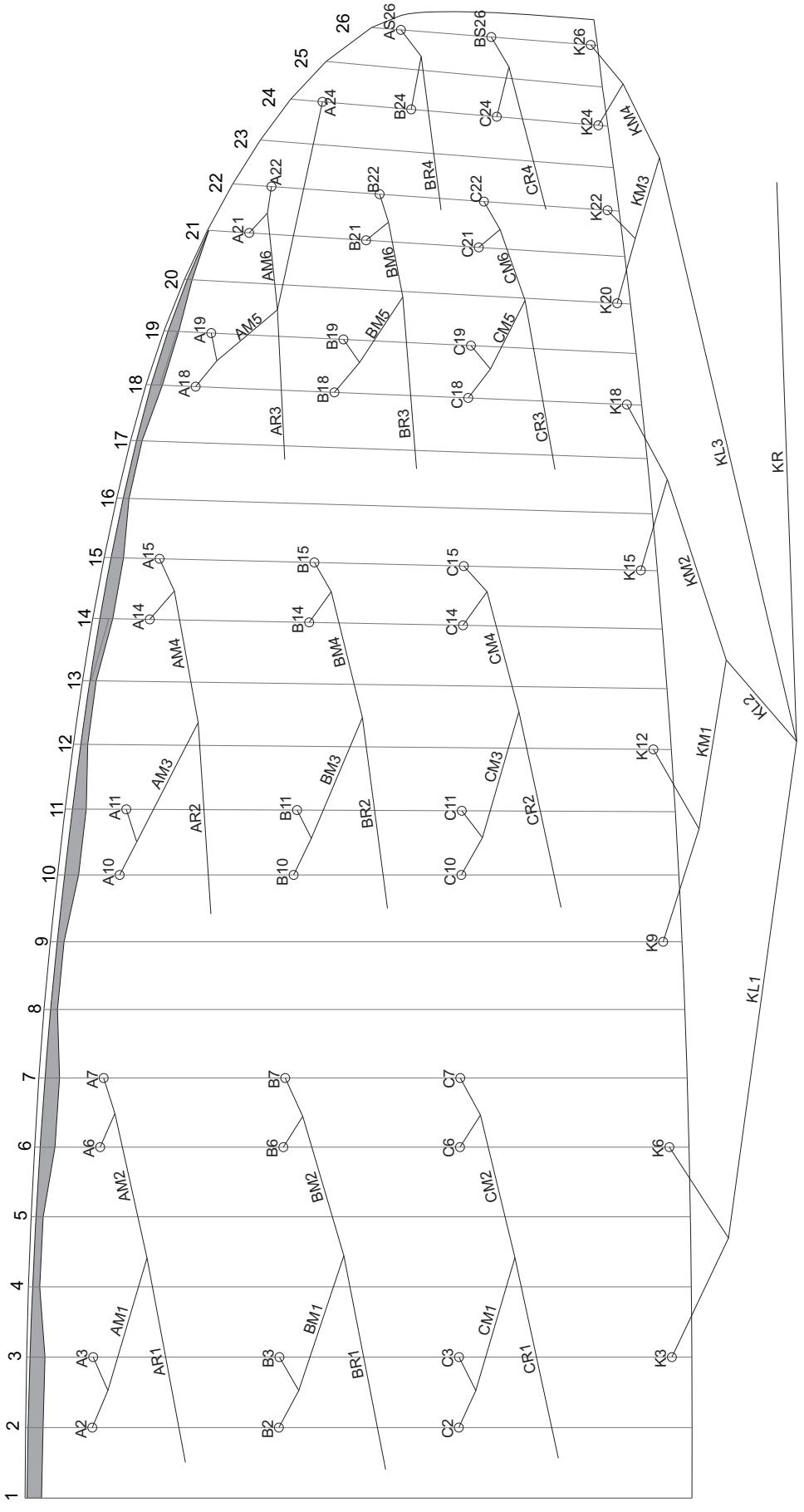
If the kite is subjected to intensive use, such as frequent flights in salt-laden air, on sand, or through extreme maneuvers, the maintenance check should be performed earlier or in addition to the regular schedule to ensure safety.

Changes to the Wing / Kite

Your kite has been precisely manufactured within narrow tolerance parameters to ensure the ideal balance between performance, handling, and safety. These parameters must not be altered under any circumstances, as this could significantly impair the flight characteristics.

Unauthorized modifications to the kite will result in the revocation of the type approval and all associated warranty and liability claims against the manufacturer.

Leinencode



U-Turn Info and Available Material Colors

All line plans can be requested from U-Turn at the following email address: info@u-turn.de.

Of course, U-Turn also offers custom colors. If you have questions regarding special color requests for your U-Turn RAZORBLADE, please contact your U-Turn Competence Center or reach out directly to U-Turn. We are happy to assist you!
Available colors:

NATURE AND ENVIRONMENTALLY FRIENDLY BEHAVIOR

With our environmentally friendly sport, we have already taken the first step towards ecological awareness—especially with our mountaineers, who prefer to hike to the launch site. However, we want to go further. This primarily means: Take your trash back with you, stay on marked paths, and avoid unnecessary noise. Help keep nature in balance and respect animals and their habitats.

CLOSING REMARK

Your U-TURN RAZORBLADE will bring you great joy for a long time if you treat and maintain it properly. Respect for the requirements and dangers of the RAZORBLADE is essential for successful and enjoyable moments. Also, take a look at the tutorials on U-TURN.DE... Respect your own limits. It's not about how stable the RAZORBLADE is, but how stable you can fly it as an active pilot.

WE WISH YOU A LOT OF FUN WITH YOUR RAZORBLADE AND HAPPY FLARING!

Your U-TURN Team

Waiver of Liability, Disclaimer of Claims

Hereby, you declare that before using the U-Turn RAZORBLADE, you have read and understood the entire manual of the U-Turn RAZORBLADE, including all instructions and warnings contained in this manual!

Furthermore, you agree to ensure that before allowing another person to use your U-Turn RAZORBLADE (who permanently or temporarily takes over the product from you), this other user has read and understood the entire user manual of the U-Turn RAZORBLADE, including all instructions and warnings contained in this manual.

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Datum, Ort Unterschrift des ersten
Piloten

---------- ----------

Datum, Ort Unterschrift des zweiten
Piloten

---------- ----------

Datum, Ort Unterschrift des dritten
Piloten

U-Turn GmbH assumes no responsibility, liability, and/or guarantee for checks, re-inspections, and repairs not conducted by them.

Repair Instruction Sheet

U-Turn GmbH
Im Neuneck 1
78609 Tuningen
Germany

Tel: +49 (0)7464 / 9891280
Fax +49 (0)7464 / 989128-28

Beipackzettel für Reparaturen und 2 Jahres Checks

Name:	Vorname:
Straße, Hausnummer:	PLZ, Ort:
Land:	Telefon:
E-Mail:	
Schirm Modell und Farbe:	Seriennummer:
Kommentar/Bemerkungen:	

☐ 2 Jahres Check

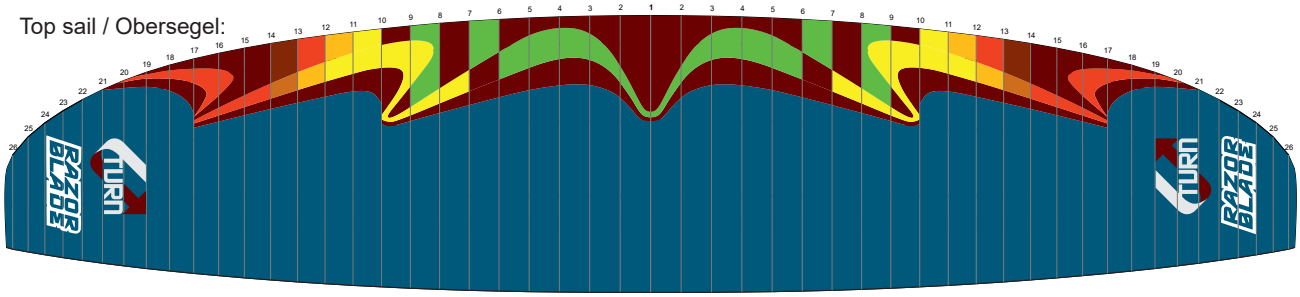
☐ Leinen Prüfung inkl. Festigkeitsprüfung

☐ Luftdurchlässigkeits-Prüfung

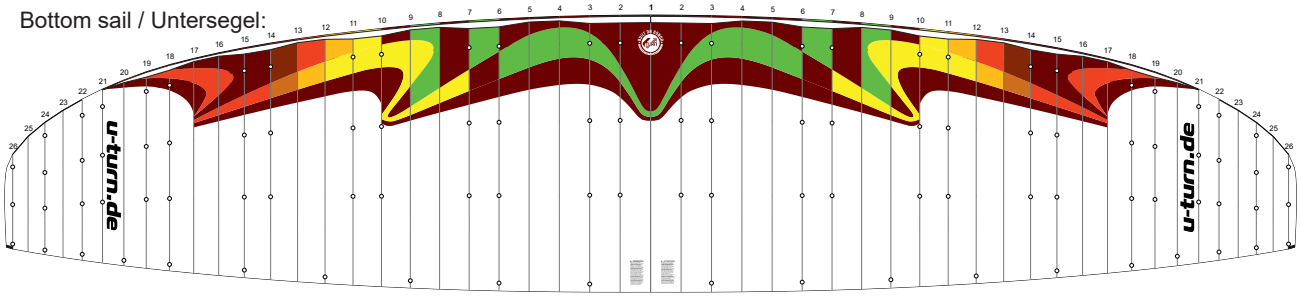
☐ Reparatur des eingezeichneten Schadens

☐ Rückruf bei Sichtung des Gleitschirms

Top sail / Obersegel:



Bottom sail / Untersegel:



Line Order Form

U-Turn GmbH
Im Neuneck 1
78609 Tuningen
Germany

Tel: +49 (0)7464/9891280
Fax: +49 (0)7464/989128-28

LINE ORDER SHEET / BESTELLFORMULAR FÜR LEINEN

Name	
Adress / Adresse	
E-mail	
Telephone Number / Telefon Nummer	
Paragliding name / Gleitschirm Name	
Size / Größe	
Other / Sonstiges	

Serial Number / Serien Nummer: _ _ _ _ ___ _ _ - _ _ _ _ - _ _ _ _

Line ID / Bezeichnung	Quantity/ Stückzahl	Line ID / Bezeichnung	Quantity/ Stückzahl

Risk Assumption

The use of the U-Turn RAZORBLADE carries certain risks of injury to the user of this product or third parties, including potential death. By using the RAZORBLADE, you agree to take on and accept all known and unknown, probable and improbable risks of injury. The dangers associated with this sport can be reduced by adhering to the warnings in the manual, as well as exercising due diligence as necessary in each situation. The inherent risks of this sport can be significantly minimized by following the maintenance guidelines outlined in this user manual and using common sense.

Liability Claim and Disclaimer

By entering into the purchase agreement for a U-Turn RAZORBLADE, you agree to the following points within the legal framework:
THE WAIVER OF ALL CLAIMS, IN ANY FORM WHAT SO EVER, that may arise from the use of the U-Turn RAZORBLADE and its components now or in the future against U-Turn GmbH and all other contracting partners.
The release of U-Turn GmbH and all other contracting partners from any claims regarding loss, damage, injury, or expenses that you, your immediate family members and relatives, or any other user of your U-Turn RAZORBLADE may incur as a result of using the U-Turn RAZORBLADE, including liability arising from law or contract on the part of U-Turn GmbH and all other contracting partners in the manufacture and processing of the U-Turn RAZORBLADE and all its components.
Upon the occurrence of death or incapacitation, all provisions set forth herein shall take effect and bind your heirs, immediate family members and relatives, estate and asset administrators, legal successors, and legal representatives. U-Turn GmbH and all other contracting partners have made no other oral or written representations and expressly deny that any have been made, except as stated herein and in the manual for the U-Turn RAZORBLADE.

Text: Text and graphics: Ernst Strobl, Lukas Schellenberg / Photos: Andreas Hörterer

Reply Card

U-Turn GmbH
Im Neuneck 1
D- 78609 Tuningen

Name :

Vorname:

Strasse:

PLZ/ Ort:

Telefon:

E-Mail:

Schirm-Modell:

Seriennummer:

Gekauft am:

Gekauft bei:

Eingeflogen von:

Meine Flugpraxis in Std:

Gleitschirmflieger/in seit:

Sonstiges:

☐ Ja, ich möchte den U-Turn News Letter per E-Mail bekommen

▶ jetzt registrieren


u-turn.de
SAFE FUN