



eternity

MANUAL

English Rev. 1.1 Effective: April 2017

Please read this manual
before you fly your new U-TURN ETERNITY
for the first time.





WE PACKED SAFETY LIGHT, SO YOUR ADVENTURES HAVE NO LIMITS.

Congratulations on your decision to get the new A class glider ETERNITY. We thank you for your trust in U-Turn and see ourselves confirmed in our pursue and development of uncompromising demand for quality. We wish you many enjoyable flights and great moments in the air.

Dialog is important to us, because we are constantly striving to optimize our products in terms of maximum functionality. We welcome active contributions in the form of suggestions and criticism. If you have any questions, we are happy to help anytime.

In order to stay informed on the newest technical developments and innovations by U-Turn, please register your ETERNITY here.

www.u-turn.de/product-registration

▶ REGISTER NOW



This manual is an important part of the glider.

Please read it carefully, because there is an **OBLIGATION** to deal with the glider and its special features. The manual is supposed to make the handling with the U-Turn ETERNITY as easy and safe as possible.

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THE EXITEMENT SHARES YOUR RIDE- WELCOME TO THE WORLD OF U-TURN.

FLYING IS A PRIVILEGE.

It creates moments of presence and of bliss. U-Turn is committed to the excitement of flying and is living this not just every day itself but also wants to make it accessible to as many people as possible. U-Turn develops innovative products for the sport of paragliding and is offering a full-service product range.

OUR STATEMENT "SAFE FUN" IS AN ACKNOWLEDGEMENT FOR SAFETY.

U-Turn is pursuing the absolute upper limit of passive safety, because the products should bring delight and joy. Part of that is also that the products support the pilot even when the conditions get more difficult. Because the fun factor considerably rises once the risk factor sinks. For us not only the doable counts, but the maximum of safety. Products with high technological aspirations, innovation and design with a quality, that shows durability over time.

U-TURN HAS A CLEAR GOAL "MAKE THE BEST, EVEN BETTER"

We are working tirelessly on improvements and progress and push ourselves to get better every day. To develop more ideas for more safety and constantly think things over and find intelligent solutions. Thereby we are proud of our work, appreciate uncompromising quality and love our sport. The products are produced with the utmost care, because they should generate long-ranging quality.

THE CENTER OF OUR ACTING IS THE INDIVIDUAL.

Acting responsibly towards our staff and nature is a given, just as it is to do so towards every single pilot. U-Turn is maintaining an authentic and transparent style. Slim structures enable dynamic operating.



Thank you for your confidence.
Have lots of great moments
Fly safe & have fun

Become a part of the U-Turn Community:

 U-TURN PARAGLIDERS

ETERNITY

SAFETY PACKED LIGHT

The ETERNITY is a middle A glider with optimized performance weight. The light wing is offering an enormous safety cushion with a sportive handling. That turns him into a perfect all-round talent for every adventure. Not only beginners will enjoy the ETERNITY - the mistake forgiving behavior will definitely bring sustainable flight fun for ambitious XC pilots and alpinists as well.

The new LTF A class wing was designed under the hard criteria of uncompromising passive safety and still the exact handling should not be cut short. Therefore the ETERNITY offers an easy start for students when first flying high, as well as extended fun moments for experienced pilots. The ETERNITY transforms control pulses precisely and combines A class appropriate tolerance with dynamics. The sweet-tempered flying behavior is encouraged through the light weight of the canopy among other things. The reactions are therefore subdued accordingly. The markedly outstanding glide- and rise ability is especially coming into effect in weak thermal lift and efficiently turns that into height. During the development especially much attention was paid to an easy start behavior. Through a multitude of constructive optimizations these were perfected. Particularly in difficult conditions the ETERNITY simplifies the start to every pilot. The light canopy rises reliably, even at zero wind with little effort required, over the pilot. Additionally the exceptional slow flight features of the wing are causing a low take off speed and much control time during the start.

The ETERNITY is based on the newest knowledge of the flow simulation. Chief designer Ernst Strobl developed a wing profile that combines a high tolerance spectrum with glide features full of buoyancy. Elaborate calculations of the High Pressure Crossport Design (DPCD) are not only providing the weight reduction but are also maximizing the transverse aeration of the cross ports. How efficiently this system works, is already manifested while the glider is rising. It provides a very fast pressure build up and gives the wing a balanced internal pressure during the flight. The 3D shaping and the optimized pre-tensioning of the wing as well as the Precision Profile Nose System (PPN) are enabling the perfect flow around the profile. Mini-ribs and the Brake Gathering System (BGS) are helping the profile to more form fidelity at the rear end and precisely transfer the control pulses to the wing. A very overseeable line concept with few main lines is providing an easy handling and a good overview during ground handling. The risers are equipped with the Pilot Assistant (PAS) where besides the color coding, icons are offering a better orientation on the line levels.

In the material mix also only high tech materials which meet the high expectation of the long term endurance were used. So selectively used material strengths of the top materials Dokdo 30 and 20 as well as Skytex 27 offer the optimized performance weight with very high durability and form fidelity. The used light material with double coating is clearly superior in the matter of porosity in comparison to heavy materials. That is now also confirmed by long term results and disproves the myth according to which heavier materials achieve better check results.

The ETERNITY offers safety with optimized performance weight. It is not only aimed at beginners, who want to start with small pack size and little weight, but the modern wing also guarantees sustainable fun for ambitious pilots. The size XL additionally has the tandem certification and therefore offers a light alternative for the double flight fun with matchless direct handling.

ETERNITY

Usage

The ETERNITY is only designed for solo usage. The ETERNITY is a light aircraft with a mass of less than 120 kg in the class of paragliders.

The ETERNITY is suitable as a training glider making it ideally suited for beginners as well as for advanced pilots. All sizes are certified according to LTF / EN A-.

CERTIFICATION:

test guideline: LTF 91/09 & EN 926-1:2006, 926-2:2013

test centre: EAPR GmbH, Marktstr. 11, D-87730 Bad Grönenbach

Motorised Paragliding

The U-Turn ETERNITY is ideally equipped for the motorised flight because of its outstanding rise features, its uncomplicated handling and the high trimmed speed. Please note that NO ACRO MANEUVERS are allowed in the motorised flight.

The extremely high area loading through the additional weight of the motor brings even the U-Turn ETERNITY to its load limits. The motor certification for the ETERNITY is in progress.

E-ascent help

The U-Turn ETERNITY is very suitable for e-ascent help because of its uncomplicated handling and high trimmed speed.



Winching

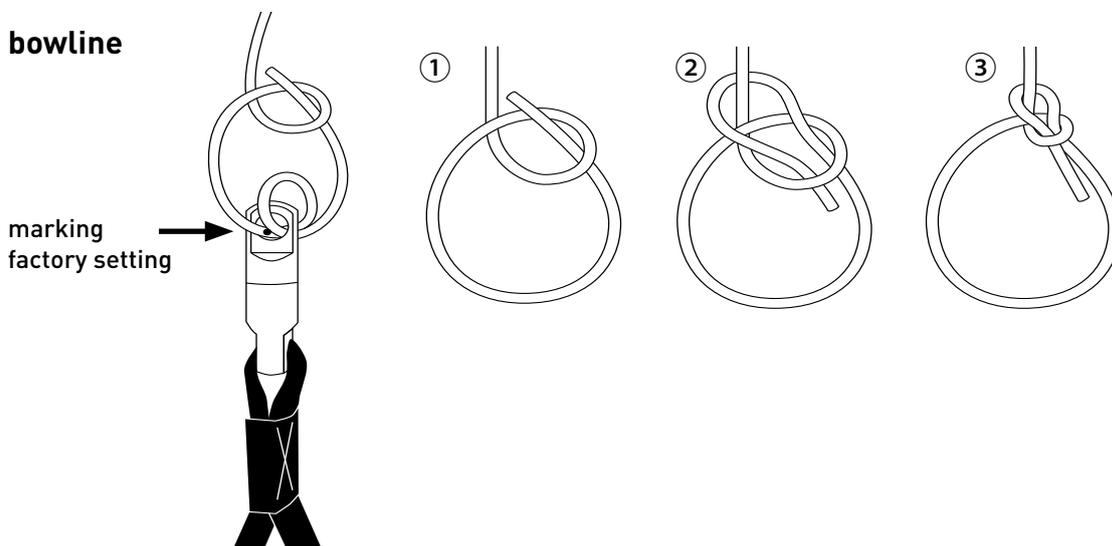
Because of its excellent start characteristics and its high trimmed speed, the U-Turn ETERNITY offers the best conditions for winching operations. Take the following points into account:

- Do not use a tow line tension over 100 kp with the U-Turn ETERNITY.
- If you are not operating at your usual winch, get acquainted with the local procedures. Every visitor on unfamiliar flying grounds needs to get a good briefing by a local pilot.
- Never winch the U-Turn ETERNITY with loads outside the permitted weight range.
- All involved persons, machines and accessories need to have the appropriate licenses, approvals or certification for winching. That applies to pilots, hoist operator, towing attachment, attachment points as well as all further machines and accessories for which a certificate of competence is required.

Base- and brakeline adjustment

The factory brake-line setting corresponds to 0-free travel plus 5 cm. It is recommended to adjust your brake line travel after the first flight to your personal preferences. Be aware not to adjust the brakes too short, otherwise the glider may fly with a little, but continuous applied brake pressure. This could be extremely dangerous during takeoff, flight and landing!

The afore mentioned factory brake setting allows for ample brake travel in extreme flight situations as well as for landing. At the same time it enables during flight at trim-speed a position of comfort for the pilots arms. In no case the setup A, B and C main lines should be changed before the wing has been flown in the original setup. Please also note that adjusting the height of the suspension to the hangpoints on the harness, changes the relative braking travel. When setting the adjustment it is to be made certain that both sides are symmetrical and that a permanent knot is used. The bowline works particularly well because of the fact that it weakens the lines the least with excellent slip resistance.



Safety precautions

We recommend the following precautions:

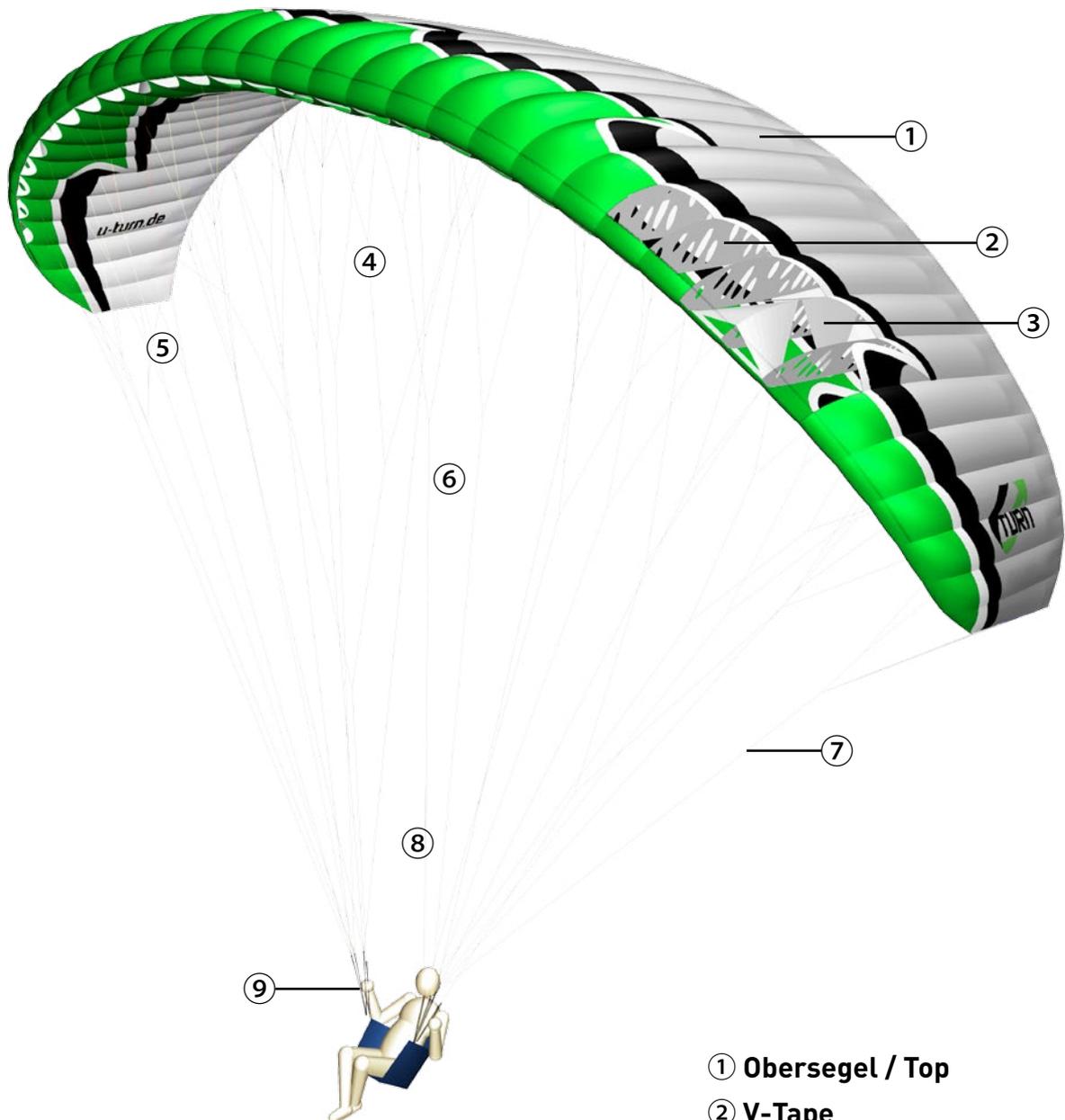
- Make your maiden flight in a familiar flying site and calm conditions.
- Test your U-Turn ETERNITY only over water.
- In a „dynamic flight“ not only you are exposed to G-loads but also the glider. Do not underestimate this!
- Only fly the ETERNITY with at least one reserve parachute.
- Observe and abide to the local aviation laws which rule in the respective country in question.
- Successful completion of appropriate training/schooling, having the needed knowledge as well as the actual flight experience are a prerequisite to operate your U-Turn ETERNITY.
- The use of suitable, certified and in the respective country approved accessories (helmet, harness, reserve) is a requirement for the use of the U-Turn ETERNITY.
- Before every take off execute a thorough inspection of your equipment (top sail, bottom sail, ribs, especially the lines, carabiners, buckles, cloth speed system etc.) A flight with a tear in a glider or lines can be life threatening.
- Always make sure that your flying gear is in good condition and all checks are done.
- Be aware that you as a pilot have to be in a physical and mental state to control each flight unimpaired. You have to concentrate completely on flying, in order to avoid potential distressing flight conditions. Most accidents are caused by pilot error.
- Never fly in close proximity to high voltage power lines, airports or motorways, over people or with lightning! You could endanger your life and the physical well being of yourself as well as third parties and at the same time act reckless and negligent. At no circumstance should the minimum distance fall below 50m at any given time. At airports this minimum distance to maintain is 5km.
- Inform yourself on the weather forecast and/or the predominating local weather conditions. Use the U-Turn ETERNITY only in wind strengths, in which you are able to control the wing to 100%. Do not use the U-Turn ETERNITY, in wind with a great gust factor. Never use the glider with approaching thunderstorms or if probability of those of the development of thunderstorms is high. If a thunderstorm is approaching land immediately!
- The flying of aerobatics is generally forbidden and is dangerous. Unforeseen flight orientations can occur, which can spill out of control, arising the danger of overload on pilot and equipment.



ATTENTION: Ignoring one or several safety precautions can lead to a leisurely fun flight turning into a fatal event!

EQUIPMENT DESCRIPTION

Short description



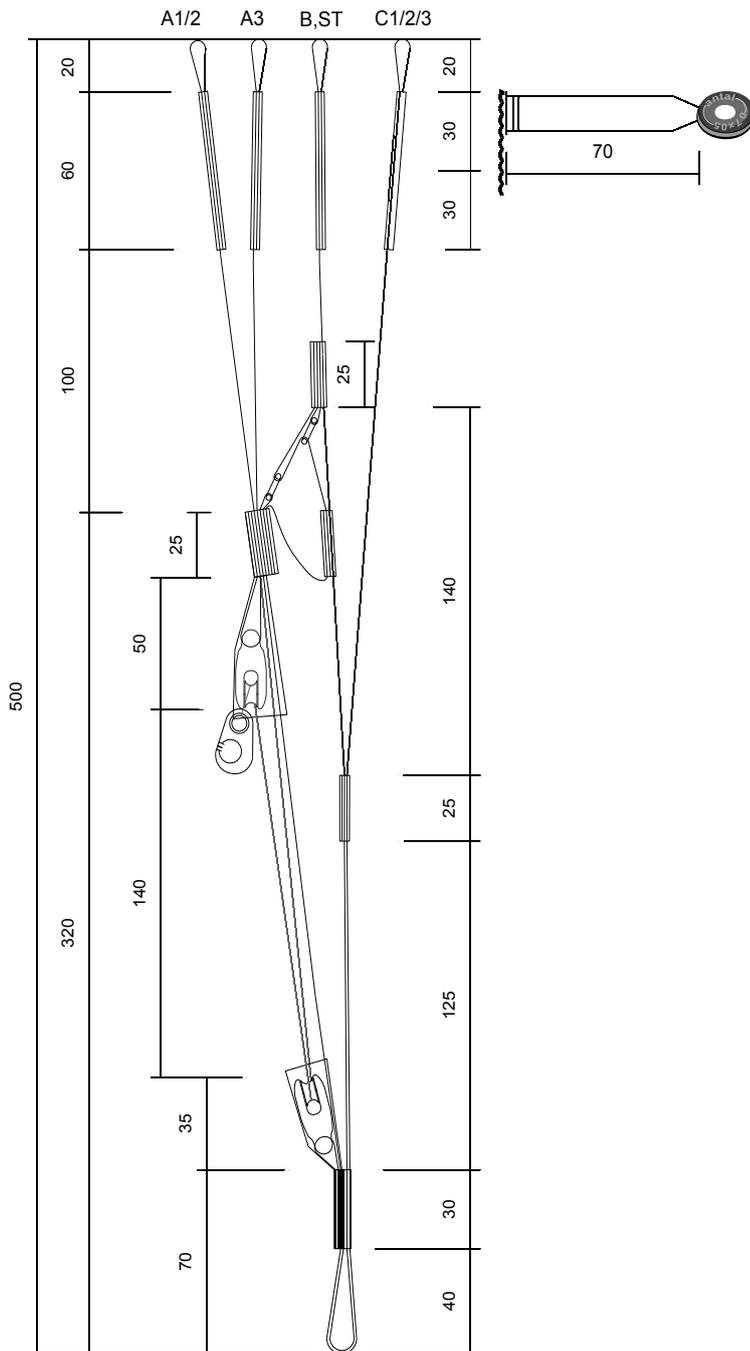
- ① Obersegel / Top
- ② V-Tape
- ③ Profilrippen / Profil ribs
- ④ Galerieleine / Galleryline
- ⑤ Untersegel / Bottom
- ⑥ Gabelleine / Gabelline
- ⑦ Stabiloleine / Stabiloline
- ⑧ Stammleine / Mainline
- ⑨ Tragegurte / Riser

Risers

The A- and B-risers have different colors to ensure positive identification at take off and during a B-stall decent. Other adjustable, removeable or variable mechanisms are nonexistent.

Number of risers: 3+1

The risers of the U-Turn ETERNITY consist of 22 mm High Tanacity Polyester Yarn from Techni Sangles, France.



Speed system

The U-Turn ETERNITY is equipped with a very effective foot actuated speed system. It increases the speed when applied up to approx. 18 km/h, depending on the wing size and pilot weight or surface loading.

Therefore it should not be activated in extreme flight situations or deactivated immediately when they are occurring. All extreme flight attitudes (e.g. collapses) happen at accelerated speed more dynamically. Since the maximum acceleration is part of the safety behavior of the glider, it can happen that with some harnesses the speed bar to full speed cannot be used.



ATTENTION: Through the modification the speed range in the accelerated flight is clearly higher and the reaction accordingly more dynamic. Only pilots with enough experience should make the modification

The speed system needs to be adjusted before the first flight. Therefore the connection lines of the foot extensor are being connected through the Brummel hooks with the speed system on the riser. To be able to undertake the right adjustment the harness should be hung up so you can sit in flying position. The attached risers are best held up by someone else. It should be adjusted in a way so that the pulleys are on top of each other and you have your legs stretched out. And you are also responsible to watch out that the speed system is adjusted symmetrically and not too short so the glider is not pre-accelerated in the flight.

THE FLIGHT

Flying experience

This manual is only focusing on the points of the technique of flying that are important for the U-Turn ETERNITY. It cannot and should not replace a profound flight training in an approved flying school! Without flight training and according experience paragliding is life-endangering!

Take off

After the paraglider is unpacked and laid out in the shape of a horseshoe, the following points are to be considered:

- The paraglider should be laid out in such way that when pulling up by the A-risers, the center lines are evenly and earlier tensioned than those towards the wing tips. This ensures an easy and symmetrical inflation at the launch.
- Take the wind direction in consideration when laying out the glider, so that when it is pulled up into the wind, both sides of the glider can rise symmetrically.
- Ensure the risers are without twists and the brake line runs freely through the pulleys to the trailing edge of the glider.
- No lines should pass underneath the sail. A line-over at take-off can have fatal consequences.
- Of course the 5-point check shouldn't be forgotten either.

In the 5-point check the following is checked:

1. Strapped (helmet, harness and carabiners are closed)
2. Suspended (risers aren't twistedly hung into the carabiner, speed system is mounted correctly, carabiners are closed)
3. Lines (A-lines on top, all lines are sorted, brake line runs freely through the pulleys)
4. Canopy (canopy lies in the shape of a horseshoe with opened leading edge at the launch)
5. Wind and airspace (wind appropriate for launch, airspace is empty)

The center of the U-Turn ETERNITY is marked by the U-Turn logo on the leading edge. It's sufficient to hold only the main A-risers. Since the U-Turn ETERNITY has little to no tendency to overshoot, it requires only minimal brake input during the launch. If needed, directional corrections with the brakes should be undertaken only if the wind is already overhead, since too much brake input could drop the glider back. The remaining risers should not be grabbed during take off. With an even pull, but overall light input only, the glider is to be inflated. Unlike other gliders, it is not necessary to inflate the U-Turn EMOTION with aggressive pulling or even fast running. That is also true when there is little to zero wind. Measured pulling up is the simplest and safest way to launch the U-Turn ETERNITY. Once the pilot made sure that the glider is overhead and fully inflated, the final decision is made whether to take off. After some dynamic steps the pilot takes off.

Turning

The U-Turn ETERNITY has a high agility and reacts to steering inputs directly and instantly. You can fly flat turns with little altitude loss by shifting your body weight. A combined steering technique of appropriate pull on the inner brake line and shift of body weight is the best way for a coordinated turn. The turn radius depends on the amount of pull on the brake line. At about 75 % of brake line travel, the U-Turn ETERNITY increases bank significantly and performs a fast steep turn that can be continued to a diving spiral.



ATTENTION: A rapid pull on the brakeline may cause a negative spin!

Active Flying

The U-Turn ETERNITY should be flown with light braking on both sides when there is turbulent air. An increase in angle of attack provides better stability. When entering heavy thermals or strong turbulences be careful that the canopy does not get behind you. To avoid that, release the brakes a bit to get an increase in speed when entering the updraft. If the canopy gets in front of you when leaving an updraft or entering a downdraft, the brakes have to be applied to counter that. Accelerated flight however is advisable when flying through downdraft zones. The U-Turn ETERNITY is naturally very stable due to its unique way of construction. Active flying in turbulent air (as described above) significantly increases the safety. Collapsing and deforming of the canopy can be avoided through active flying.

Landing

Start your landing preparation at sufficient altitude. Due to its excellent flaring characteristics the U-Turn ETERNITY is very easy to land, when the brake is applied in the right moment. After a straight final approach against the wind let the glider slide and get up in the harness early enough. According to the wind, the brakes have to be pulled firmly and dynamically, about one meter above the ground, beyond the stalling point OR - if there is a strong headwind - be careful with the amount of braking. Don't perform landings out of steep turns and big directional changes short prior to the landing to avoid PLF.



ATTENTION: During a strong wing take off attempt, ground handling and landing the leading edge can hit the ground with high speed. This is to be avoided because otherwise the ribs, the sewing or the fabric can be damaged!

RAPID DECENT

In any situation where you have to get down ASAP for different reasons e.g. thunderstorms, extreme updraft or other danger there are a couple of techniques to do so that are described in this following chapter.



ATTENTION: The described maneuvers stress your paraglider more than normal and should only be performed for practice or in a real emergency situation!



„Big Ears“

Both designated outer A2-risers (grab at or above the quick links) are being pulled down simultaneously for 15-20 cm to fold in the wing tips. The brake toggles are to be held in hand together with the pulled down A-lines. For additional stability and for an increased sinkrate the speedsystem should be actuated. The glider remains fully steerable by weightshifting and descents at an elevated sink rate (4-7m/sec, depending on how many cells are folded in) straight forward. Once the A-risers are released, the folded wingtips reinflate automatically, if not you may pump the brakes gently. Due to the high wingload "big earing" is a very stable flight condition even in turbulent conditions. Please be aware that you reduce the trimspeed during "big ears", but this can be compensated by applying the speedbar. "Big ears" in combination with weight shifting in order to get the spiral dive, will achieve the highest sink rate. This decent method is often taught in SIV training. Be mindful that this exposes the glider to extreme loads, should one need to use this maneuver we recommend an equipment inspection afterwards.

B-Stall

Another very efficient method is the B-stall. The B-stall is generally known as the easiest decent method. But caution, if done wrong, it is anything but harmless!

The B-stall allows a sink rate of 6 to over 9 m/sec. Check the airspace under and above you prior to initiating a B-stall. Also pay attention to sufficient height. To initiate you hold the two B-risers above the quick links. With the brakes in hand at all times, pull down the B-risers progressively and symmetrically down to the shoulder to about chest level. Hold this position. Your sail will stop, the wing will become partially empty and stabilize itself overhead. During this the wing will fall back a little, which must not tempt you to release the B-lines again. The glider would then shoot forward and oscillate vigorously. Only when the glider has stabilized overhead it is ok to exit the B-line stall. Therefore bring the B-risers swiftly and symmetrically back into their original position. We recommend not to simply let the risers snap shut as this puts an enormous load on fabric, sewings and lines. In the paragraph titled "advanced handling" you can read what to do if unexpectedly caught in a stall.



ADVANCED HANDLING

Even though the U-Turn ETERNITY has a very high aerodynamic stability it is possible that the glider gets into an extreme flight situation due to pilot errors or turbulent air. The best method to stay calm and react correctly is to take part in a flight safety course. The pilot will learn to manage extreme flight situation under professional supervision. Extreme flight maneuvers may only be executed in calm air and in sufficient height under professional supervision (e.g. safety training). Once again we mention that a rescue system is required by the law. The following extreme flight figures and flight maneuvers can either be caused intentionally, through turbulences or through pilot errors. Every pilot can get into these flight situations! All mentioned extreme flight figures and maneuvers are dangerous if performed without the appropriate knowledge, enough altitude or necessary introduction. A wrong execution of these described figures and maneuvers may have fatal consequences!

Spiral Dive

Like a normal turn, initiating the spiral dive is very easy with the U-Turn ETERNITY. The spiral dive leads to very good sink rates (up to 15-20 m/sec). To safely use the spiral dive when necessary it should be practised in calm conditions. You move down vertically within the airmass. Do not underestimate the G-forces that act upon the pilot when diving down in an efficient spiral. The glider has a strong nose-dive when the bank increases during the spiral dive. The behaviour is very dynamic and should be piloted through lessening the brake-line-pull on the inside of the turn resp. accordingly with the outside brake and should only be practised under professional supervision.



ATTENTION: If the initiation is too fast there is a danger of a spin, in this case release the brakes and try a smoother initiation.

Wingover

The pilot has to perform right and left turns with increasing bank until the desired angle is reached. Collapsing wintips are prevented by gently applying brake pressure in the up- and/or down-swing of the wingover. Normally there is no danger of collapsing wing tips with the U-Turn ETERNITY except for when there is a very high bank. With shifting the bodyweight while applying the brake it is possible to fly the highest possible wingovers.

Full Frontal

A negative AoA caused by turbulences of the simultaneous pull-down of the A-risers by the pilot, results in a frontal collapse of the leading edge. The U-Turn ETERNITY comes out of a frontstall by itself very quickly. Smooth and symmetric applying of the brake positively influences the re-opening of the canopy.

Collapses

Even with its high stability and very well responses in turbulences, strong turbulences can cause the canopy of the U-Turn ETERNITY to collapse. Usually that situation is not dangerous and clears itself automatically without any further input. To support the recovery, firmly apply the brakes on the affected side and simultaneously steer opposite on the open side. When a large part of the canopy collapses the counter steering is to be exercised in moderation in order not to completely interrupt the airflow to the positive side of the wing and spin the glider.

How to avoid collapses

Tips and tricks by U-Turn chief designer, test and competition pilot Ernst Strobl

Single side collapses, especially close to the ground, are the number one reason for accidents with paragliders. How to avoid them or how to handle the situation when it already happened, some tips and tricks from U-Turn test- and competition pilot Ernst Strobl:

The best way to avoid collapses upfront is the right choice of the paraglider. A lot of pilots fly a glider that is a little too hot to handle for them. So why don't you get a glider with a lower rating but in the end fly better and higher in the updrafts and have a lot more fun and by the way be safer, too. To optimize the feeling for your glider on the ground, try the following: Practice on the ground with the right wind at a suitable location. Slowly pull up the canopy and try to hold it up as long as possible without looking at it. That is a good way to improve the feeling for your glider and is a prerequisite for „active flying“ (the key to avoid collapses). Very important is also a close look at the terrain. Watch for obstacles that could cause turbulences (buildings, trees, ...). On certain days, for example a freshly mowed meadow as landing field, could cause a lot of thermal activity. Fly very alert on a thermal active day. Watch your canopy, collapses most of the time, announce themselves. Light braking in turbulences mostly avoids a collapse. You should have already practiced that on the ground. Should a collapse occur close to the ground don't always try to prevent a turn away. There is a danger when the braking on the open side is too strong, to lose the airflow on this side and stall the glider. Rather use the turn away motion to try to open the collapsed side. Apply smooth braking on the open side, depending on the size of the collapse, and maybe a little pumping action. Some canopies open a lot better when the brakes are fully applied once on the according side, but that depends on the brakelines adjustment and your armlength. Wrapped lines are cleared by braking the opposite side at enough altitude and pumping the affected side a couple of times. Watch out for a possible stall. If that does not clear the situation, try to pull down the outer lines as much as possible. If you are too low for that, stabilize the canopy on the opposite side avoid turning away, and leave the lines like they are. Instead of any - risky manoeuvres rather concentrate on the landing. In the end one more advice in order to have all kinds of situations under control. Visit a safety-training above water. There is no better way to practice the right behaviour than simulating a dangerous situation. Don't get caught off guard by your first collapse. In addition, during safety-training you can familiarize yourself with the particulars of your equipment and you gain confidence in your gliders as well as your own abilities.

Thus far the expert advice concerning collapses by Ernst Strobl.

Deep stall

The U-Turn ETERNITY is not stall sensitive. If in a stall, caused by overpulling on the brakes, the rear risers or a delayed B-stall exit, the release of the brakes or the rear risers, recovers the stall. Should the stall be caused by an extreme flight condition or configuration (i.e. takeoff weight too low), a symmetric forward push on the A-riser or step the speed system recovers the stall.



ATTENTION: Practicing stalls should be done with enough safe altitude. Never apply asymmetric brakes during a stall, it could cause a spin. If the EMOTION 2 is in deep stall, one should only release the brake if the glider is in front.

Fullstall

To initiate a full stall, pull both brakes without a wrap slowly to the point of stall. As soon as the point of stall is reached, hold both hands down. The glider falls back. At this point, under no circumstance should the hands let up or release the brakes. To recover from a full stall the canopy should be stabilized overhead and prefilled. For this slightly let up both brakes symmetrically. To exit completely, let up both brakes symmetrically and slowly in its entirety. With a correct symmetrical exit the glider returns swiftly, as soon as the glider shoots strongly forward, it must be checked by a brief brake input. An asymmetrical recovery is to be avoided, this could lead to falling into the glider.

Negative Turn

A negative turn/spin is initiated, when the pilot pulls the brake on one side fast and completely through to the point of stall while letting the other brake partly free. With a negative turn the glider turns relatively fast around its center, while the inside flies backwards. In order to exit a negative spin, the applied brake is released, where stalled side of the wing can pick up speed or one exits through a full stall, by braking the flying side into a stall as well.



ATTENTION: The Spin and the Fullstall are unpredictable and dangerous flight figures and should only be executed in a safety training under supervision and never be executed intentionally. There is danger of riser twist. With a riser twist the brake lines can get blocked.



ATTENTION: The glider has been overloaded. Fullstalls and negative turns/spins as a descent method are dangerous, because a wrong exit, regardless of glider type, can have fatal consequences.

Emergency Piloting

In any situation where normal steering is not possible, the U-Turn ETERNITY can be easily steered and landed with the back risers. Turns can be flown with weightshift, however be careful that the glider doesn't lock into a spiral.

Transport and storage

When transporting the glider don't expose it to any liquids. It has to be packed completely dry. Always store the ETERNITY away from UV radiation. Furthermore never store the wing together with acids or similar goods. A dry storage is of utmost importance!



ATTENTION: After a longer storage period the glider needs to be thoroughly checked.

Repairs

Basically only authorized service centers may execute repairs on paragliders. Small damages like tears or small holes up to a size of 2 x 2 cm, where a repair without special equipment is possible, the pilot may do by himself. The included self-sticky tape from the repair-kit is to be used for that. Tears or holes need to be fixed from both sides. Please take care that the repair tape sticks out at least 2cm beyond the damaged area on all sides. The self-sticky tape can be cut into the right form. Rounding off the corners prevents it from becoming detached.

MAINTENANCE AND CARE

Maintenance and care

Since U-Turn exclusively uses high-quality material, the U-Turn ETERNITY will be unrelievedly airworthy for many years at good care and maintenance. The aging of your U-Turn ETERNITY depends on the total flying time, the conditions in which you fly in, the amount of UV radiation it is exposed to and the intensity and quality of care. A couple of tips for maintenance and care:

Long lasting exposure to UV radiation and extreme acro maneuvers reduce the strength of every material over time.

- Do not leave your U-Turn ETERNITY out in the sun more than necessary, but put it back into the backpack after your flight.
- Consider the choice of terrain when choosing a take-off site to lay out your glider.
- Placing the opening reinforcements on top of each order prolongs the life time of your glider.
- Do not drag your glider on the ground and pack it on a patch of grass.

Please consider that:

- the lines need to be checked for damage regularly.
- the lines are not being bent unnecessarily and you don't step on the lines when laying out the glider.
- lines need to be checked after overloads (tree or water landings etc.) for their strength and correct length and exchanged if necessary.
- lines need to be checked for their correct length in case of changing inflight handling characteristics.
- the main brake lines aren't knotted too many times at the grip since every knot weakens the line.

To clean the canopy only use warm water and a soft sponge. Never apply any chemicals for cleaning, since they weaken the material and damage the coating. Store your glider at a dry and dark location away from any chemicals. After 24 months or 150 flight hours, whichever occurs first, your U-Turn ETERNITY has to be inspected by the manufacturer or importer. In case of extreme use we are glad to do that earlier. You know best about the condition of your glider.

Nature and environment-friendly behaviour

We ask you to perform our sport in a manner, that impacts nature and environment with minimum intensity. Please do not walk off marked paths, don't leave any waste, don't make noise uselessly and respect the sensitive biological equilibrium in the mountains. Especially at take-off areas maximum care for nature is necessary.

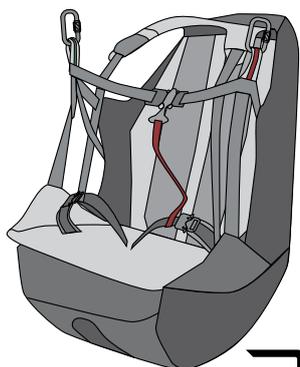
The synthetic materials your U-Turn glider is build of must be depolluted appropriately. At the end of its life-cycle please return your glider to U-Turn GmbH, we will take care of recycling and removal.

FLYING ACCESSORIES

Harness

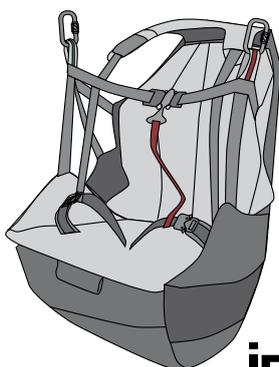
All certified harness systems with mounting at about breast height are compatible with the U-Turn ETERNITY. The lower the mounting point of the harness, the better you can steer the U-Turn ETERNITY by shifting your bodyweight.

Please keep in mind, that also your harness is exposed to extreme loads. U-Turn recommends the use of the very safe and comfortable U-Turn harness RX4, which matches the U-Turn ETERNITY perfectly. The height of the mounting also changes the relative brake distance. If you have any questions about the usage of your harness with the ETERNITY, ask your U-Turn dealer or directly contact U-Turn. We are happy to help!



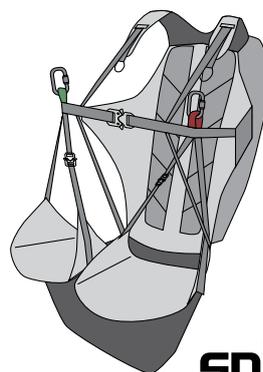
RX4

ALLROUND
HARNESS



inside

REVERSIBLE
HARNESS



spirit

LIGHTWEIGHT
REVERSIBLE
HARNESS

Suitable Rescue Systems

It is required by law and absolutely necessary for safe operation of your paraglider that you always carry a rescue system. When choosing your rescue system, watch out that it is approved and suitable for the intended takeoff weight.

With the innovative rescue systems of the BACKUP-series by U-Turn we offer light-weight, convenient and safe reserves with short opening times and minimum sink-rates.



X-CROSS

backup 115



RS-ROUNDSQUARE

backup 120

PRESUMPTION OF RISK

The usage of the U-Turn ETERNITY inherents certain dangers of bodily harm or even death of the user of this product or a third party. With the use of the ETERNITY you consent to all known and unknown risks and accept probable and improbable risks of injury. The dangers innate with the practice this kind of sport can be reduced by adhering to the warning notes in the manual, as well as the required attention to detail on each flight. The risks inherent to the sport can be reduced to a large degree, if one adheres to both the maintenance guidelines, which are listed in this operating manual, as well as using common sense.

Liability claim and renouncement of exclusion

With the completion of the purchase of a U-Turn ETERNITY you express your in consent with the following points of legal specifications:

THE RENOUNCEMENT EXCLUSION OF ALL LIABILITY CLAIMS,

deriving from the use of the U-Turn ETERNITY and or either compenents thereof, now or in the future, against the U-Turn GmbH and all other contracting parties.

Releasing U-Turn GmbH and all other contracting parties of all liability claims concerning loss, damage, injury or expenses that you, your next of kin, relatives or any other user of the U-Turn ETERNITY could suffer as a result of the usage of the EMOTION3. This includes but is not limited to lawful or contractual liability on behalf U-Turn GmbH and all other contracting parties as a result of the of production and processing the U-Turn ETERNITY and all its components. With the occurrence of death or disability, all directives stated here come into force and bind their beneficiaries, next of kin, trustees, legal successors and/or representatives. The U-Turn GmbH and all other contracting parties express no verbal or written representation and deny assertively that this was done with exception of what is specified here and in the manual of U-Turn ETERNITY.

Safety Advice and Liability

This glider complies with EAPR regulations, for the tested type, at time of delivery (see appendix). Any unauthorized alteration is followed by the expiration of the operating licence! The operation of the glider is at your own risk and the pilot needs to make sure that the aircraft is checked for its airworthyness before every flight. We also take it as a given that the pilot is in possession of the required certificate of qualification and that the given legal requirements are met. Use of the equipment is at your own risk! The manufacturer and the dealer don` t take any liability for accidents and possible consequential damages. Please consider all safety notes, cautions and warnings for safe flying.

RELEASE OF LIABILITY, RENOUNCEMENT OF ENTITLEMENT

Hereby you declare, that -prior to use of the U-Turn INFINITY 4- you have read and understood the U-Turn ETERNITY user manual in its entirety, including directions and warnings, which are included in this user manual.

Moreover you declare to carry responsibility - prior to granting the use of U-Turn ETERNITY to a third party - through transferring ownership temporary or permanently, for this other user to have read and understood the U-Turn ETERNITY user manual in its entirety, including directions and warnings, which are included in this user manual.

Place and date

Signature of the first pilot

Place and date

Signature of the second pilot

Place and date

Signature of the third pilot

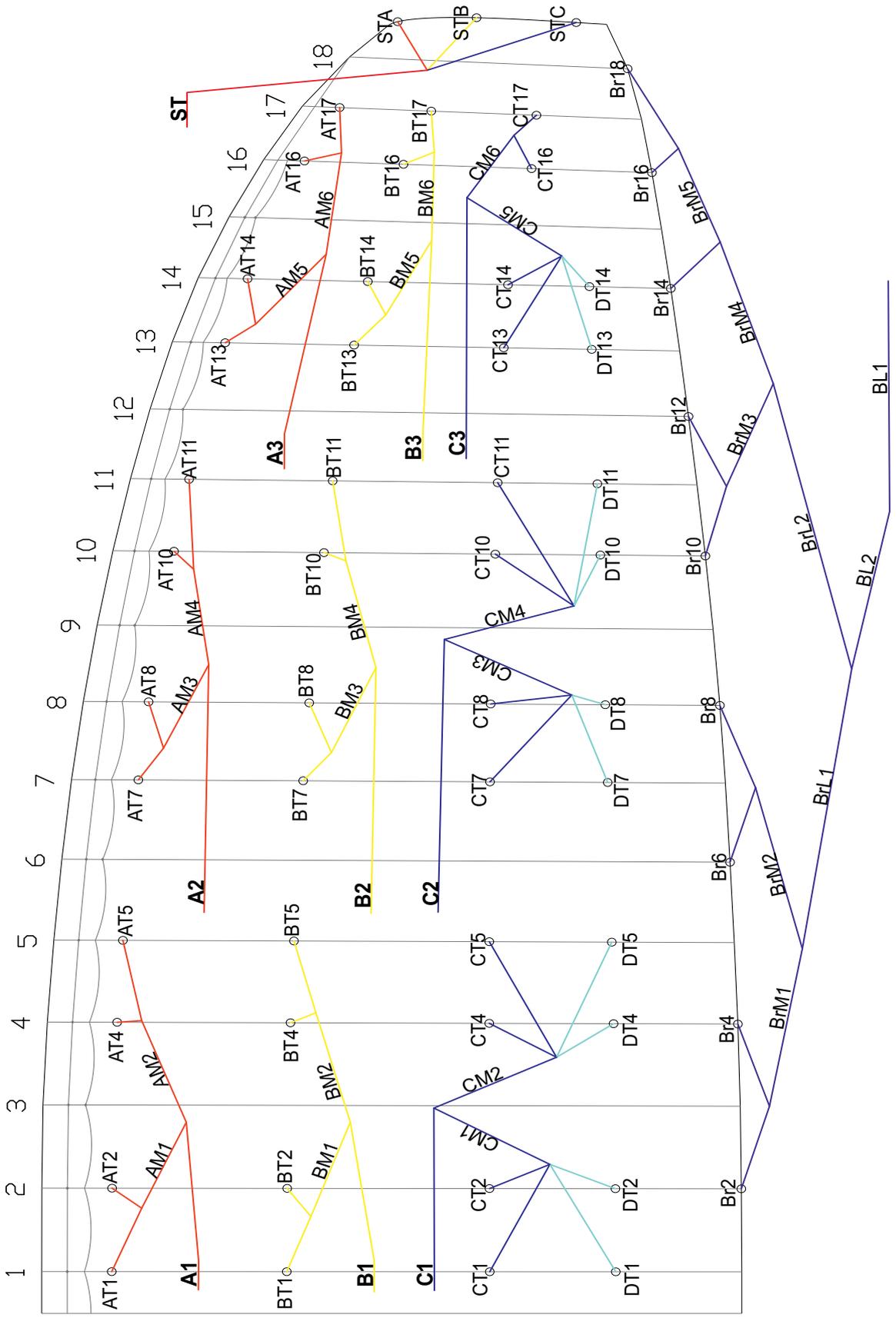
U-Turn does not take responsibility, liability and/or guarantee for inspections and repairs that are not performed by U-Turn.

TECHNICAL DATA U-TURN ETERNITY

	XS	S	SM	M	L	XL
Recommended Start weight **** Empfohlenes Startgewicht ****	60-75 kg	60-85 kg	80-95 kg	85-105 kg	100-120 kg	120-140 kg
Extended Start weight *** Erweitertes Startgewicht ***	60-80 kg	60-95 kg	80-110 kg	85-115 kg	100-130 kg	120-150 kg
Motor Start weight (LTF 23/05) Motor Startgewicht (LTF 23/05)	-	90-108 kg	108-130 kg	117-140 kg	125-150 kg	-
Flat area Fläche ausgelegt	23 m ²	25,5 m ²	28,5 m ²	30 m ²	31,5 m ²	35 m ²
Projected area Fläche projiziert	19,119 m ²	21,197 m ²	23,691 m ²	24,938 m ²	26,184 m ²	29,51 m ²
Flat wingspan Spannweite ausgelegt	10,724 m	11,292 m	11,937 m	12,247 m	12,55 m	13,323 m
Projected wingspan Spannweite projiziert	8,273 m	8,711 m	9,209 m	9,449 m	9,682 m	10,278 m
Flat AR Streckung ausgelegt	5	5	5	5	5	5
Projected AR Streckung projiziert	3,58	3,58	3,58	3,58	3,58	3,58
Chord: center / wingtip Flügelteufe: Mitte / Stabilo	2,550 m / 0,721 m	2,686 m / 0,769 m	2,849 m / 0,805 m	2,913 m / 0,823 m	3,008 m / 0,850 m	3,186 m / 0,901 m
V-trim V-Trim	- 37-39 km/h					
V-max V-Max.	52 + km/h					
Bridle height Abstand Tragegurt-Kappe	6,649 m	7,001 m	7,401 m	7,593 m	7,781 m	8,26 m
Nr. of cells Zellenanzahl	36	36	36	36	36	36
Glider weight Gewicht	4,7 kg	5,1 kg	5,5 kg	5,7 kg	5,9 kg	6,5 kg
Bridle length Gesamt Leinenlänge	243 m	256m	269m	279 m	286 m	304 m
Line diameter Leinendurchmesser	0,95 / 1,2 / 1,65 1,8 / 2,0 mm	0,95 / 1,2 / 1,65 1,8 / 2,0 mm	0,95 / 1,2 / 1,65 1,8 / 2,0 mm	0,95 / 1,2 / 1,65 1,8 / 2,0 mm	0,95 / 1,2 / 1,65 1,8 / 2,0 mm	0,95 / 1,2 / 1,65 1,8 / 2,0 mm
Speed system / trimmer Fuß Beschleuniger / Trimmer	Yes / No Ja / Nein					
Certification Zulassung	EN-A/LTF-A	EN-A/LTF-A	EN-A/LTF-A	EN-A/LTF-A	EN-A/LTF-A	EN-A/LTF-A
Certified standards and procedures Angewandte Testverfahren	LTF 91/09 & EN 926-1:2006, 926-2:2013					
Folding lines used for certification Faltleinen für Testflüge benutzt	No Nein	No Nein	No Nein	No Nein	No Nein	No Nein
Certification No. Zulassungsnummer	EAPR-GS-0355/15	EAPR-GS-0353/15	EAPR-GS-0352/15	EAPR-GS-0422/15	EAPR-GS-0351/15	EAPR-GS-0354/15

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LINE CODE ETERNITY



LINE PLAN U-TURN ETERNITY XS

All line plans can be requested at U-Turn via
the e-mail address info@u-turn.de.

U-TURN ETERNITY S

U-TURN ETERNITY SM

U-TURN ETERNITY M

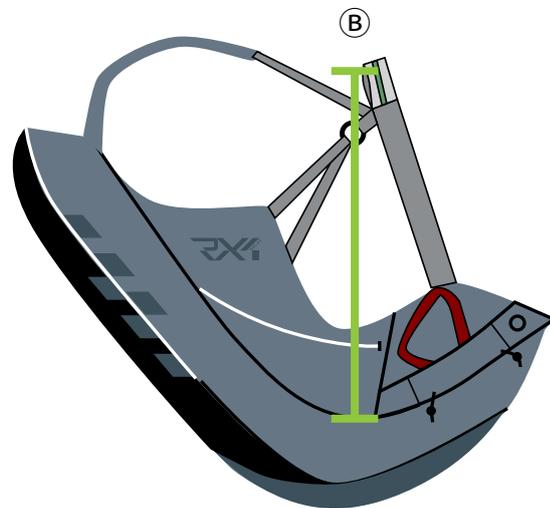
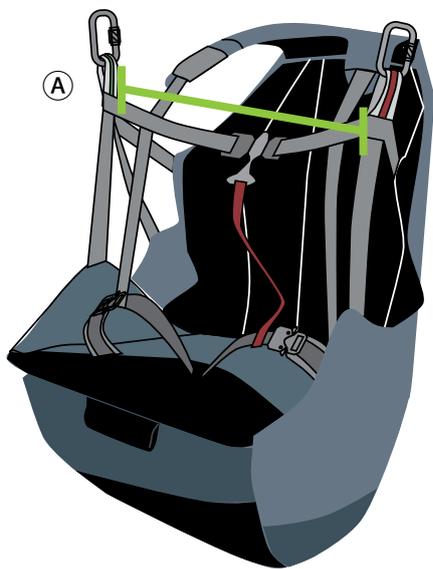
U-TURN ETERNITY L

U-TURN ETERNITY XL

REQUIREMENT FOR LTF/EN A-CERTIFICATION

Harness-Dimensions

Weight	A-dimension	B-dimension
< 50 kg	38 cm	38 cm
50-80 kg	42 cm	42 cm
> 80 kg	46 cm	46 cm



Control Travel

ETERNITY size	max. symmetrical control travel at max. weight
XS	> 55 cm
S	> 60 cm
SM	> 60 cm
M	> 65 cm
L	> 65 cm

INSTRUCTION LEAFLET FOR REPAIRS & 2-YEARLY-CHECK



Last name:

First name:

Street address:

ZIP code, city:

Country:

Phone number:

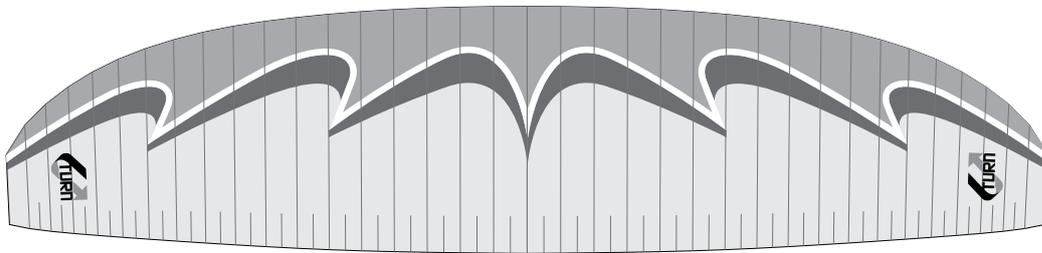
E-mail address:

Glider model and color:

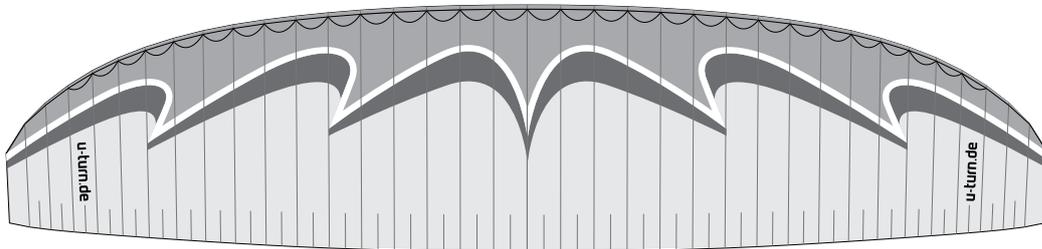
Serialnumber:

Comments/notes:

- | | |
|--|---|
| <input type="checkbox"/> 2-yearly-check | <input type="checkbox"/> Line check inkl. strength test |
| <input type="checkbox"/> Air permability check | <input type="checkbox"/> Repair of the marked damage |
| <input type="checkbox"/> Call-back at sighting of the glider | |



Obersegel / Top



Untersegel / Bottom



U-TURN GmbH
Im Neuneck 1
D-78609 Tuningen



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Tel. +49 (07464) 9891280



info@u-turn.de
www.u-turn.de

LINE ORDER FORM



Last name:	First name:
Street address:	ZIP code, city:
Country:	Phone number:
E-mail address:	
Glider model and color:	
Size:	
Serialnumber:	
Comment/notes:	

Line ID-code	quantity

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REPLY CARD



Last name:

First name:

Street address:

ZIP code, city:

Country:

Phone number:

E-mail address:

Product:

Serialnumber:

Date of purchase:

Purchased at:

Pilot since:

Number of flights per year:

Club:

Yes, i would liket to get informed on the newest activities and developments of U-Turn.



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