

Manual



THRILLER^{X3}

U-TURN

your airline...

English Rev. 1.2

!!! Please read the manual before you fly your new
U-Turn THRILLER X3 !!!

Copyright ©

2013 by U-Turn GmbH, all right preserved. No part of this publication may be reproduced or developed further on in any way without written approval of the U-Turn GmbH

Text: Stefan Preuss und Daniela Martin

Text and Graphics: Ernst Strobl

All technical details in this manual have been carefully checked by U-Turn. However we like to mention that we don't take any liability for possible mistakes, neither in legal responsibility, nor in liability cases that derive from mistakable details.

We preserve the right to change this manual in any way to achieve technical improvements.

Contents

U-Turn your airline	Page 1
Thank you	Page 2
The U-Turn THRILLER X3	Page 3-4
- Motorised Paragliding	Page 5
- Winching	Page 5
Safety Precautions	Page 6
General description	Page 7
- Baseline and brakeline adjustment	Page 7
- Lines and Risers	Page 7
- Trimming - Important information	Page 8
- Pressure Balance Valve	Page 8
- Risers	Page 9
- Riser-Info	Page 10
- Speed System	Page 11
- Stabulo Line Security Function	Page 12
- High Pressure Crossport Design	Page 12
- Range of Operation	Page 13
The Flight	Page 13
- Take off, Turning	Page 13
- Active Flying, Landing	Page 14
Extremely flight manoeuvres	Page 15
- Deep Stall, Fullstall	Page 15
- Negative Turn, Emergency Piloting	Page 15
Maintenance and Care	Page 16
Nature and environment friendly behavior	Page 16
Flight accessories	Page 17
- Harness	Page 16
- Suitable Rescue System	Page 16
Assumption of risk	Page 18
Liability claim / Exclusion renouncement	Page 18
Safety Advice and Liability	Page 18
Release of liability / Renouncement of requirement	Page 19
Technical Data U-Turn THRILLER X3	Page 20
Color-Info	Page 21
Table of are loading	Page 22

Material list U-Turn THRILLER X3	Page 23
Linecode-Info	Page 24
Lineplan U-Turn THRILLER X3	Page 25
Instruction leaflet for repairs and 2 annual check	Page 26
Line order sheet	Page 27
Business Reply Card	Page 28
Maintenance manual	Page 29
- Topic of the inspection and reinspection intervals	Page 30
- Who may inspect / test?	Page 30
- Individual personal prerequisites for the inspections	Page 30
- Necessary equipment and documentation	Page 30
During the inspection the following steps are to be taken in	Page 31
- Positive identification of the device	Page 31
- Inspection of the reserve parachute	Page 31
- Testing of the topsail, undersail, seams, reserve parachute of	Page 31
- holes and tears	Page 31
- Abrasion and deformaties	Page 31
- Testing of the ribs	Page 31
- Check of the tear resistance	Page 32
- Porosity of the canopy	Page 32
- Connection parts	Page 32
- Lines	Page 33
- Check of the line length and line attachments	Page 33
- Occassional check of trim and adjustment	Page 34
- Description of the material and technical data	Page 34
- miscellaneous	Page 34
- Completed check very important !!!	Page 35

U-Turn your airline

U-Turn GmbH was incorporated in 2002 by Thomas Vosseler and Ernst Strobl after some years of market analysis. Vosseler, hobby pilot and successful entrepreneur in the computer and software business, is the sales and marketing specialist, while Strobl is in charge as Head of Development.

The company grew fast in Germany and Austria, and in 2004 the international distribution started. Today U-Turn gliders and related products such as rescues, helmets or flight-wear are available all over the world. The company's headquarter is in Tuningen near the Black Forest and 30 minutes by car to the lake Constance.

U-Turn paragliders are in a class of their own. U-Turn doesn't compromise on safety, and uses the best quality components and hallmark flight characteristics. Congratulation on you purchase of U-Turn glider, as it is the brand for those who appreciate the difference.

The laws of physics are well defined. We aspire to achieve to possible within the framework of its laws. We admit this is ambitious but you will always find U-Turn at the cutting edge of technology. As Oscar Wilde once said in this very British understatement: "His taste is very basics; only always the best is good enough." The U-Turn team embodies this attitude: "We always want to deliver the best possible glider". Nothing more and most certainly nothing less. U-Turn staff takes notice of its customer wishes, so we appreciate any comments or feedback!

Please feel free to contact your competence center or U-Turn directly for any advice or direction.

Thank you

The U-Turn team would like to congratulate you on the purchase of your new U-Turn paraglider. You have made an excellent choice. We wish you long and enjoyable flights and many happy landings with you U-Turn THRILLER X3.

The research and Development team at U-Turn can proudly look back at many successful years in the flight sport industry. Our own concepts not only meet but exceed industry standards. The combination between the latest computer based technology and the know-how of experienced test pilots and professional competition pilots provides an excellent basis for quality. We certainly keep our customers need in mind, and always appreciate your input and constructive criticism. Should any questions occur, please don't hesitate to ask your U-Turn dealer or the U-Turn team.

In order to provide you with the latest information on technical development and innovations at U-Turn, we ask you to complete the questionnaire attached. Please mail it to the following address:

U-TURN GmbH
Paragliders and Kites
Im Neuneck 1
D- 78609 Tuningen
Germany
Tel. +49 (0) 7464 /9891280
Fax: +49 (0) 07464 /98912828
Internet: www.u-turn.de
E-mail: info@u-turn.de

Have fun and we wish you many flights on your new U-Turn THRILLER X3,
your U-Turn Team



Please study this manual extensively, there is an obligation toward this recreational aircraft and its user manual to inform yourself about its specific features prior to its first use.

We composed this handbook, in order to make the handling of your new U-Turn THRILLER X3 as safe and easy for you as possible.



U-Turn THRILLER X3

Powerful into new dimensions of acrobatic flying –that’s the promise of the new THRILLER X3 of U-TURN. With completely new designed cell openings and innovative valve technology. Nothing can get the THRILLER X3 out of puff. The Thriller X3 is a new dimension in for the stability in the acrobatic wings. In addition to its dynamic and the exact maneuverability the THRILLER X3 confirms its position as technology leader. With vigor we can say.

Infinity tumblings, sphere and all the other tricks: that’s all safe and easy to perform with the wings made by U-Turn chief designer Ernst Strobl. “But to progress with new tricks and give new impulses to the acro-scene a deep research for new progressive technology’s had to be done,” so the designer. The breakdown from all the world cup pilots led to one result: the wing has to fill quicker and has to maintain the internal pressure as long as possible under bad angels of attack and the cross ventilation had to be improved too.

Nine prototypes dozens of line sets, hundreds of test flights and thousands tricks later now the result: the THRILLER X3 of U-Turn. One can say: the most pressurized wing Strobl designed ever since. “The wing has totally new designed cell openings in the LE- now he inflates better and faster in all wind conditions,” so Strobl. However the wing keeps its internal pressure longer - the valves spread over the whole span make it possible. 14 of these pressure balance valves, 160*70mm in size, are fitted in-between the A’s and B’s in the Bottom sail. Combined with the proven valves of the Extended Aeration System in the topsail this gives a never unprecedented flight characteristic,” Strobl’s ideas were confirmed by the pilots.

The positions of the EAS-Valves in the topsail were adapted to the changed design to be optimal effective. Furthermore 4 Pressure Balance Valves close to the trailing edge were added in the bottom sail. “All valves open and close referring to the pressure in the sail automatically,” explains chief designer Ernst Strobl the perfectly balanced regulation system. Selvunderstanding the cross ports were redesigned too to align with the new system, which improves the pressure balancing significant. “Go-pro videos from the wing internal showing the exact work of the valves, even in crazy angels of attack“, so Strobl.

These profound technical changes give the THRILLER X3 of U-Turn a far better characteristic in tail sliding and the will to exit this maneuver, and the pilot gets an unambiguous stall warning. “The shape of the wing is totally different in flight now. E.g. when doing helicopters the wing is completely filled and pressurized”, so Strobl. With the common design one side has always a lack of pressure and load.

Like the predecessor the THRILLER X3 has the PPN and the PPN plus feature too. “New openings meant to modify the complete system, but which turned out to be not a problem. Extreme thin durable plastic reinforcements give a good starting and flight characteristic and they grant too that the THRILLER X3 keeps it for a long time.

More demanding for designers and test pilots were the optimal line design. “Here the individual preferences of each pro had to be discussed”, remembers Strobl. One preferred a very short line setup, the other saw the advantages in the longer one. “In the end we found a perfect compromise satisfying everyone” laughs the designer. The curvature of the THRILLER X3 is a bit higher. The number of attachments points and their position has been changed too. “All together a deep adjust ment had to be done.”

In this design step a new improvement was implemented too: „ We had so far a protection sleeve on the loop (Tube line Cover), this was mandatory to avoid the cutting effect occurring if of loaded kevlar lines are looped together This had the big disadvantage that the lines tangled up more easy and so the sorting became more difficult.” By the new way of load application a polyester or dyneema core is inserted in the line to spread the punctual load. So the lines can't tangle up any more and ease the line sorting.” This improves the treatment of possible cravats too. “This innovation is adapted from the BLACKLIGHT.”

What stays the same as before is the excellent finishing of the wing, the fine sizing and the reinforcements which make the THRILLER X3 to a very durable wing, though it is always under extreme loads. Each line attachment is reinforced with “Insignia Tape” (60g/m² self adhesive nylon fabric) in the bottom sail/ profile ribs and V-Tapes. Even the tension bands without line connection are reinforced on bottom sail and ribs with the tape because these are higher loaded too. To improve stability close to limit loading the V-tapes connections to the ribs are reinforced in this way too.

The result is a well balanced THRILLER X3 where in particular the the dynamics, directional stability and the rhythm capabilities stand out. The general characteristic of the THRILLER X3 rates Daniela Martin very satisfying: “the THRILLER X3 stands open and kind of neutral above one, and when you give the commands exact and well dosed the wing reacts like you want it direct without any delay”. Performing helico the X3 spins faster and is very easy to control.

The exact handling allows it too, to correct not perfectly entered tricks. “The Esfera/Sphere is far easier to perform with the X3 than ever before”, the testers found out. “On the other hand we have to say that you now have to correct in infinity tumble now and then,” says Strobl. The THRILLER is still directional stable but not so strickt as the predecessor. “ many pilots found the THRILLER 2k12, when flown close to the weight limit or above it to strict. We now changed the concept to a more even characteristic,” states the chief designer. With other words:” The THRILLER X3 has exact the ease the U-Turn acro wings stand for ever since, but which has been overlaid by a to strong direction stability,” so Daniele Martin.

As held with its predecessors the THRILLER X3 will be improved in a continuous process with the aim to transfer the improvements found under peak load to the serial wings- like it was in the past.

Motorised Paragliding

We do not recommend to fly the THRILLER X3 as a Powered paraglider wing.

Winching

Because of its excellent starting characteristics, the U-Turn THRILLER X3 is well suitable for winching operations. Take the following points into account:

- maximum linetension for winching is 120 kp
- if not operating at your usual winch, get acquainted with the local procedures and get a good briefing by a local pilot
- never winch the THRILLER X3 with loads outside the allowable weight range
- all involved persons, machines and accessories have to have the appropriate licenses, approval, certifications for winching



Safety Precautions

We recommend the following precautions:

- The U-Turn THRILLER X3 is not certified by DHV, AFNOR, DAEC, CEN, EN or any other institution.
- Make your maiden flight in a familiar flying site and calm conditons .
- Test your THRILLER X3 only over water.
- In a „dynamic flight“ are not only you exposed to high loads but also the glider. Please don`t under estimate this.
- Only fly the THRILLER X3 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 THRILLER X3.
- 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 THRILLER X3.
- Execute before every take off a thourough inspection of your equipment (topsail, undersail, ribs, especially the lines, carabiners, buckles, cloth speed system etc.) A flight with a tear in a glider or lines can be life threatening.
- 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 transmission lines, airports or motorways, over people or with lightning! You cold endanger your life and the physcial well being of yourself as well as third parties and at the same time act reckless and negligent. At nor circumstance should the minimum distance fall below 50m at any give 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 THRILLER X3 only in wind strengths, in which you are able to control the wing for 100%. Do not use the U-Turn THRILLER X3, 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. Land with thunderstorms approaching near 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.



Ignoring one or several safety precautions can lead to a leisurely fun flight,
turning into a fatal event.



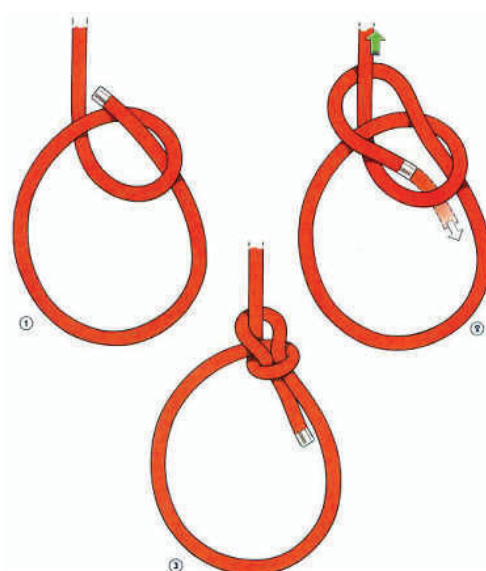
General description

Baseline 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.



Lines and risers

On the U-Turn THRILLER X3 we use Liros lines: LTC45, LTC65, LTC80, LTC120, and LTC 160 specially braided competition lines made of sheathless kevlar with Nanokoating as well as TSL 190, TSL 220, TSL 280, TSL 380 and DSL350 (TSL = Aramid core). Lines proven by their high tensile strength and are virtually immune to breaking. Their stretch resistance prevents a change in the flight characteristics by uneven lengthening after short period of use. The use of different line diameters allows a good correlation of uncompromised safety, between line tension and minimized line drag in flight.

Trimming - Important information

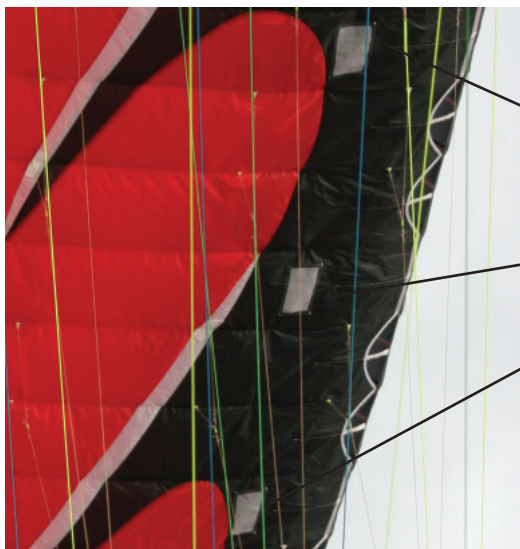
Due to the extremely high loads in ACRO maneuvers and the resulting line stretching, in complex tests we found out the stretches and considered this in manufacturing process of your U-Turn THRILLER X3. That means, that all U-TURN ACRO wings are trimmed too fast on delivery. Only by high loads like steeps spirals stretch the master lines on the ideal trim! Only after expanding the lines, the glider develops its full dynamics!!! Please make sure that you load both wing sides symmetrically!!!



When Flying the THRILLER X3 as acro competition wing we recommend to change the complete line set after 70 hours of use.
When flying the THRILLER X3 normal like any other wing the lineset should be changed every 150 hours or each 2 years.



Pressure Balance Valve



Bottom: Pressure Balance Valves
in the sizes 160x70 mm between the
A- und B- Line

Risers

A and B risers are coloured different, to ensure when starting or speed descent B-Stall a clear identification.

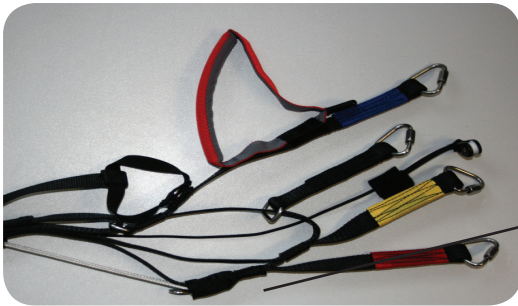
The risers of U-Turn THRILLER X3 are made of strong and stretch-poor pad belts, in order to secure a long-term, sturdy trim.



In Process

Speed System

The U-Turn THRILLER X3 is equipped with a very effective foot actuated speed system. It increase the speed when applied with to approx. 18km/h, depending upon wing size and pilot weight or surface loading.



foot actuated speed system

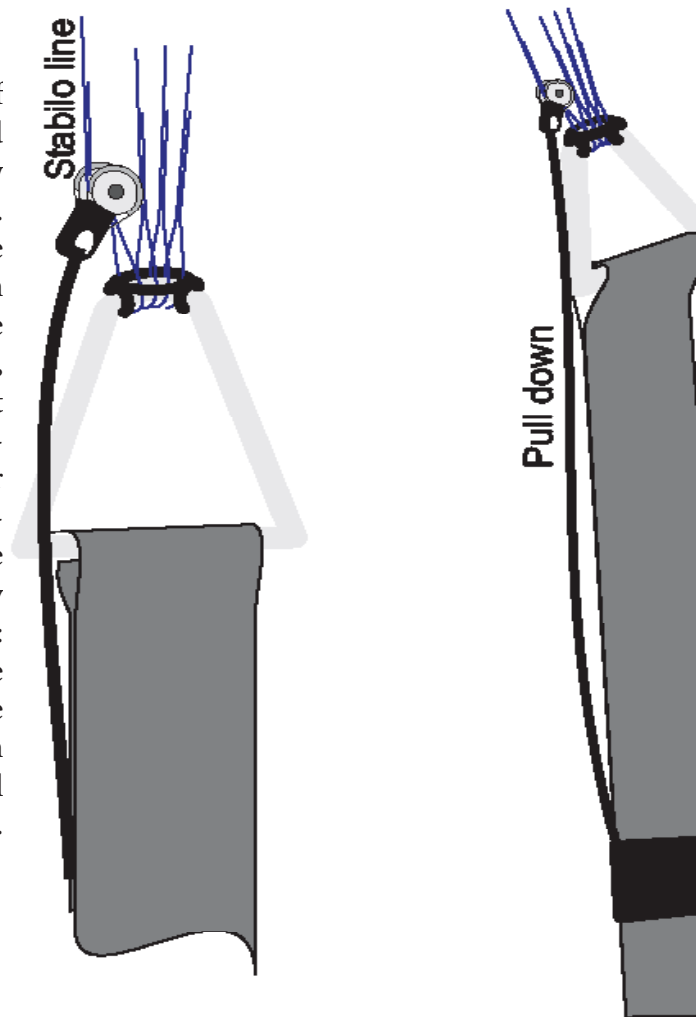


Therefore it should not be activated in exteme flight situations or deactivate immediately when their occuring. All exteme flight attitudes (e.g. a-collapses) happen at accelerated speed more dynamically. Since the maximum acceleratiion is part of the safety behavior of the glider, it can happen that with some harnesses the speed bar to full speed cannot be used.

Stabilo-Line-Security-Function

A further innovation concerns the repair of cravattes. Even best pilots are not protected against cravattes, for example if they train new figures or exiting Choreographies.

So far most cravattes end at the rescue parachute. Because of the high acceleration forces in dynamic flying, which constantly rise with less surface size of the glider. For a pilot, who is exposed to these high g-forces, it is not dependent on pilot skills and training conditions to find quickly the stabilo line. The repair of the cravatte actually is mostly not a problem, the challenge is in fast finding and the Stabilo line. With the „Stabilo LINE Security Function“ becomes now substantially simpler: The SLSF is a pulley, by which the Stabilo line is pulled and fastened with a rubber line to the B-Riser. When getting a cravatte the pilot can pull so the Stabilo line by grabbing and pull the loose rubber line and open the cravatte.



High Pressure Crossport Design (HPCD)

Crossports are of decisive importance for the cross ventilation of a paraglider, as only a wing with sufficient internal pressure can shape the profile optimally. With the High Pressure Crossport Design (HPCD), U-Turn has created the perfect conditions to ensure the ideal internal pressure in the canopy. During extensive test flights we have mainly ascertained that: 1. The inflation of the canopy and therefore the setup of impact pressure can be considerably optimized by means of differentiated crossports. 2. The effect of unintentional deflation in ambioned angles of attack or thermally demanding conditions can be moderated and controlled. At the same time the level of control commands increases, generally the feedback of the canopy becomes better. Handle, master.

Therefore, in order to optimize the cross ventilation in the canopy, U-Turn is using crossports of different sizes and different cross section. Different levels of pressure come up in the paraglider.

In accordance with the physical laws, they are constantly compensating each other in a quick sequence. The individually differentiated crossports have two effects: On the one hand, the tendency to unintentional discharge process is enabled by increased air inlet. Both steps are important for the stability of the wing.

Crossports in the modern U-Turn wings differ depending on whether the cells, where they are integrated, have line contact points or not. Depending on the calculation values, the openings are made larger or smaller - and also the shape of the openings varies from round to oval.

Where as the focus of the HPCD functionality for more powerful wings is on better stability against folding, clear feedback and better control, the category 1 paragliders from U-Turn have as particular design objective the minimized surging tendency.

Operation

This instruction manual only pays attention to those points of flying technique which are important for the U-Turn THRILLER X3. It is not meant to substitute a basic flying education in an approved flying school! If a flying education and the appropriate experience is missing, paragliding is dangerous to life. The U-Turn THRILLER X3 should be flown exclusively by experienced pilots.

The Flight

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 a 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 launch.
- Take into consideration the wind direction when laying out, so that when pulling up into the wind, both sides of the paraglider can rise symmetrically.
- Ensure the risers are without twists, and the brake lines run 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.
- The 5-point check shouldn't be forgotten of course.

The center of the glider in the U-Turn THRILLER X3 is marked by the U-Turn logo on the leading edge. It suffices to only hold the main A-risers in the hand. Since the U-Turn THRILLER X3 has only minor tendency to overshoot, it requires only minimal brake input during launch. If needed, directional corrections with the brakes should be undertaken only if the wing already is overhead, since too much brake input could drop the glider back. The other risers should, during take off, be left alone. 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 THRILLER X3 with aggressive pulling or even fast running.

This is also true with little or no wind. Measured pulling up is the simplest and safest way to launch the U-Turn THRILLER X3. Once the pilot is sure that the glider is overhead and fully inflated, the final decision is made whether to take off.

Turning

The U-Turn THRILLER X3 has a normal agility and reacts directly and instantly to steering inputs. You can fly flat turns with little altitude loss by shifting of bodyweight. A combination of appropriate pull on the inner brakeline and shift of bodyweight is the best way for a coordinated turn. Even with a gentle pull on one brake the THRILLER X3 tends to enter a sharp and steep dive which can be extended to a spiral dive.



WARNING : A rapid pull on the brakeline may cause a spin.

Active Flying

The U-Turn THRILLER X3 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 mindful of that the canopy does not get behind the pilot. 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 the pilot when leaving a updraft or entering a downdraft the brakes have to be applied to counter that. Accelerated flight however is advisable when flying through downdraft zone. The U-Turn THRILLER X3 is naturally very stable due to the way it's constructed and the built in AFS - System. Collapsing and deforming of the canopy can be avoided by active flying (as above mentioned) in turbulent air.

Landing

Start your landing preparation at sufficient altitude. Due to its excellent flaring characteristics, the THRILLER X3 is very easy to land. Glider in fairly normal to a straight- in final against the wind 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 ground, beyond the stalling point. 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 landing, to avoid PLF.



During a strong wind takeoff attempt, ground handling and landing the leading-edge can hit the ground with high speed. Avoid this! Otherwise the ribs, the sewings or the fabric can be damaged.



Extremely flight manoeuvres

Deep Stall

The U-Turn THRILLER X3 is not stall sensitive. If in a stall, caused by overpulling on the brakes, the rear risers or 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 to low), a symmetric forward push on the A-riser or step the speed system recovers the stall.



Warning: Practicing stalls should be done with enough safe altitude. Never apply asymmetrical brakes during a stall, it could cause a spin. If the THRILLER X3 is in deep stall, one should never release the brakes if the glider is behind the pilot.

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 up. The glider falls back. At 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 exist 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.

Negativ Turn

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



Note:

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



WARNING:

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

Emergency Piloting

In any situation where normal steering with the brakelines is not possible, the U-Turn THRILLER X3 can be steered with the back risers easily. Turns can be flown with weightshift, however be mindful that the glider doesn't lock into a spiral.

Maintenance and Care

Because U-Turn only uses high quality materials, your THRILLER X3 will be airworthy for many years if you take good care. The aging of your THRILLER X3 depends on the total flying time, the conditions 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 normal use stress the material

- Don't expose your glider to the sun when there is no need to
- Consider the choice of terrain where you lay out the glider for takeoff
- Asymmetrical and changing folding patterns prolong the lifetime of the material especially in the middle section

Please take following points into consideration

- regular check for damage
- no unnecessary bending
- lines after overloads (tree landing, water landing, etc.) for its strength and correct length to be checked and exchanged if necessary
- in case of changing inflight handling characteristics, the line have to be checked for their correct length
- don't tie the brakelines on the grips if not needed, it weakens the lines

To clean the canopy use warm water and a soft sponge.

If you use a detergent for hard stains, make sure that you rinse intensively afterwards. Never apply any chemicals for cleaning, they weaken the material and damage the coating. Store your glider at a dry and dark location away from any chemicals. After two years or 300 flight hours, whichever occurs first, your THRILLER X3 has to be inspected by the manufacturer, in case of extreme use we are glad to do that earlier. Only you know about the condition of your glider. Should there be a need for any repairs they are to be done by the manufacturer.

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 beside marked paths, don't leave any waste, please be not noisy and respect the sensitive biological equilibrium in the mountains. Especially at starting areas maximum care for nature is necessary.

The synthetic materials your U-Turn glider is built must be depolluted appropriately. Please send your U-Turn glider at the end of its life-cycle back to U-Turn. We will take care for recycling and removal.

Flight accessories

Harness

The THRILLER X3 is suitable with all acro harnesses. But we recommend to fly the THRILLER X3 with a double rescue harness. Remember that your harness is under extreme loads to. We strictly recommend to use acrobatics harnesses! Only these are designed to resist the high g-forces. Remember that the relative break travel changes with the carabiner height of the harness.

If you have any questions about the usage of your harness with the THRILLER X3, as your U-Turn dealer or directly contact U-Turn. We assist you in any possible way.

Suitable Rescue System

It is required by law and absolutely necessary for safe operation of your paraglider that you always carry a rescue system with you. When choosing a rescue system, watch out that it is approved and suitable for the intended takeoff weight. With the innovative rescue systems of the SECURE-series by U-Turn light-weight, convenient and safe reserves are available. The SECURE rescues offer extremely short opening times and low sink-rate.

We recommend the use of a second rescue system! In many acrobatic harnesses this option is already prepared.

Note: Please do not hesitate to throw your reserve! If you notice the glider is twisted twice and is impossible to control any more, throw your reserve! The earlier the smaller is the risk that the reserve is tangled in the glider.



Assumption of Risk

Flying the U-Turn THRILLER X3 is inherent with certain dangers of bodily harm or even death of the user of this product or third party equipment. With the use of the THRILLER X3 you assume all known and unknown risks and accept probable and improbable risks to 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 both to 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 sale of a U-Turn THRILLER X3 you express your consent with the following points of legal specifications:

THE RENOUNCEMENT EXCLUSION OF ALL LIABILITY CLAIMS deriving from the use the U-Turn THRILLER X3 and or either components thereof, now or in the future, against the U-Turn GmbH and all other contracting parties, that could arise.

Releasing U-Turn GmbH and all other contracting parties of all liability claims concerning loss, damage, injury or expenses to you, your next of kin, relatives or any other user of the U-Turn THRILLER X3 as a result could suffer. 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 THRILLER X3 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 denial expressly that this was done, with exception of what is specified in and in the manual the U-Turn THRILLER X3.

Safety Advice and Liability

The operation of the glider is at your own risk. The manufacturer and the dealer don't take any liability for accidents and follow on damages. Please consider all safety notes, cautions and warnings for safe flying. Further, we assume that the pilot has the necessary certifications and that the legal limitations are being followed. Use of the equipment is at your own risk. Follow the safety instructions for a safe flight.

Release of Liability, Renouncement of Entitlement

Hereby you declare, that you -prior to use of the U-Turn THRILLER X3- the U-Turn THRILLER X3 user manual in its entirety, including directions and warnings, which are included in this user manual, have read and understood. Moreover to carry responsibility - prior to granting the use by a third party of U-Turn THRILLER X3 - through transferring ownership temporary or permanently, for this other user to have read and understood the U-Turn THRILLER X3 user manual in its entirety, including directions and warnings, which are included in this user manual.

Date

Signature first Pilot

Date

Signature second Pilot

Date

Signature third Pilot

**U-Turn cannot be hold responsible for any 2-years-inspection and
any repairs not performed by U-Turn or an U-Turn authorized dealer.
Any checking or repairing performed by people not authorized by U-Turn will
cause denial of any warranty!**

Technical Data U-Turn THRILLER X3



Technical Data

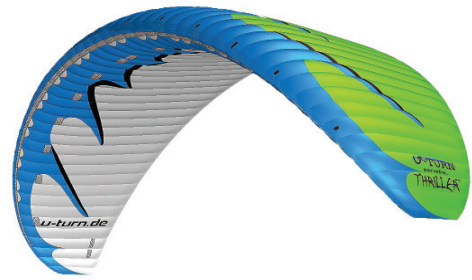
	15	16	17	18	19	20	21,5	23	24,5
Start Weight	50 - 100 kg	60 - 100 kg	70 - 105 kg	75 - 110 kg	80 - 110 kg	85 - 115 kg	90 - 120 kg	100 - 130 kg	110 - 140 kg
Fat Area	15 m²	16 m²	17 m²	18 m²	19 m²	20 m²	21,5 m²	23 m²	24,5 m²
Projected Area	13 m²	13,86 m²	14,73 m²	15,6 m²	16,46 m²	17,33 m²	18,6 m²	19,93 m²	21,23 m²
Fat Wingspan	9,18 m	9,48 m	9,77 m	10,05 m	10,33 m	10,6 m	10,99 m	11,36 m	11,73 m
Projected Wingspan	7,45 m	7,69 m	7,93 m	8,16 m	8,38 m	8,6 m	8,91 m	9,22 m	9,52 m
Fat AR	5,62	5,62	5,62	5,62	5,62	5,62	5,62	5,62	5,62
Projected AR	4,27	4,27	4,27	4,27	4,27	4,27	4,27	4,27	4,27
Chord: Center / Wingtip	2,006 / 0,388 m	2,072 / 0,401 m	2,135 / 0,413 m	2,197 / 0,426 m	2,258 / 0,437 m	2,316 / 0,448 m	2,402 / 0,465 m	2,484 / 0,480 m	2,564 / 0,497 m
V-Trim	~ 44 Km/h (75kg Start weight)	44 Km/h (75kg Start weight)	44 Km/h (95kg Start weight)	44 Km/h (100kg Start weight)	44 Km/h (110kg Start weight)	43 Km/h (110kg Start weight)	43 Km/h (120kg Start weight)	43 Km/h (130kg Start weight)	43 Km/h (130kg Start weight)
V-Max	55+ Km/h	55+ Km/h	55+ Km/h	55+ Km/h	55+ Km/h	55+ Km/h	55+ Km/h	55+ Km/h	55+ Km/h
Bridle height	6,834 m	7,038 m	7,242 m	7,446 m	7,65 m	7,854 m	8,16 m	8,466 m	8,772 m
Nr. of Cells	50	50	50	50	50	50	50	50	50
Glider Weight									
Bridle length	295 m	319 m	349 m	380 m	410 m	439 m	482 m	523 m	564 m
Line Diameter	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm	2,2 / 1,8 / 1,65 / 1,55 / 1,3 1,2 / 1,1 / 0,7 / 0,65mm
Speed System / Trimmer	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
Certification	non-scheduled	non-scheduled	non-scheduled	non-scheduled	non-scheduled	non-scheduled	non-scheduled	non-scheduled	non-scheduled
Certified standards and procedures	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team	Tested and Trimmed by U-Turn ACRO Team

Errors and omissions expected. Subject to change without notice. Reproduction in whole or in part without written permission of U-Turn GmbH is prohibited.

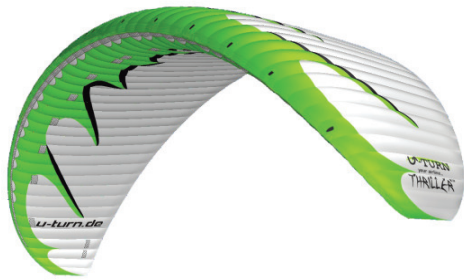
Color-Info



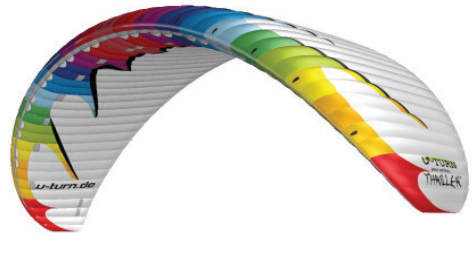
Color 1



Color 2



Color 3



Color 4

U-Turn GmbH offers special color designs too. If you got questions regarding the special color design of your THRILLER X3, please do not hesitate to contact your U-Turn competence center or directly us.

Table of area loading



Table of area loading

THRILLER^{x3}

Take off weight (kg)	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140
THRILLER X3 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	7,67	8,00	8,33	8,67	9,00	9,33
THRILLER X3 16.0	3,13	3,44	3,75	4,06	4,38	4,69	5,00	5,31	5,63	5,94	6,25	6,56	6,88	7,19	7,50	7,81	8,13	8,44	8,75
THRILLER X3 17.0	2,94	3,24	3,53	3,82	4,12	4,41	4,71	5,00	5,29	5,59	5,88	6,18	6,47	6,76	7,06	7,35	7,65	7,94	8,24
THRILLER X3 18.0	2,78	3,06	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	6,94	7,22	7,50	7,78
THRILLER X3 19.0	2,63	2,89	3,16	3,42	3,68	3,95	4,21	4,47	4,74	5,00	5,26	5,53	5,79	6,05	6,32	6,58	6,84	7,11	7,37
THRILLER X3 20.0	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75	6,00	6,25	6,50	6,75	7,00
THRILLER X3 21.5	2,33	2,56	2,79	3,02	3,26	3,49	3,72	3,95	4,19	4,42	4,65	4,88	5,12	5,35	5,58	5,81	6,05	6,28	6,51
THRILLER X3 23.0	2,17	2,39	2,61	2,83	3,04	3,26	3,48	3,70	3,91	4,13	4,35	4,57	4,78	5,00	5,22	5,43	5,65	5,87	6,09
THRILLER X3 24.5	2,04	2,24	2,45	2,65	2,86	3,06	3,27	3,47	3,67	3,88	4,08	4,29	4,49	4,69	4,90	5,10	5,31	5,51	5,71

the area loading table is intended to give you valuable hints on the behaviour in flight of the canopy under different stress conditions. The different colour indicate the following:

BLUE: A paraglider with this stress load is only conditionally suited for acro-figures.

GREY: All rhythmic figures can be performed as of this stress load, even the INFINITY Tumbling is possible with corresponding pilot experience and expertise.

GREEN: This medium to upper area is the ideal stress loading per unit area. The paraglider has the perfect balance between controllability and agility. All manoeuvres can be done with high dynamic precision.

ORANGE: The paraglider can develop an immense dynamic level if handled incorrectly, this level can only be handled and kept under control by professional pilots loading! Errors can very quickly lead to life endangering situations. U-Turn recommends to strictly avoid these levels of area stress.

RED: It is not allowed to do any acro-manoevres in this region of area stress loading.
The paraglider can reach such a high dynamic level which exceeds what the pilot and the material can withstand.
This can even lead to the pilot getting unconscious and the paraglider being destroyed.

Material list U-Turn THRILLER X3

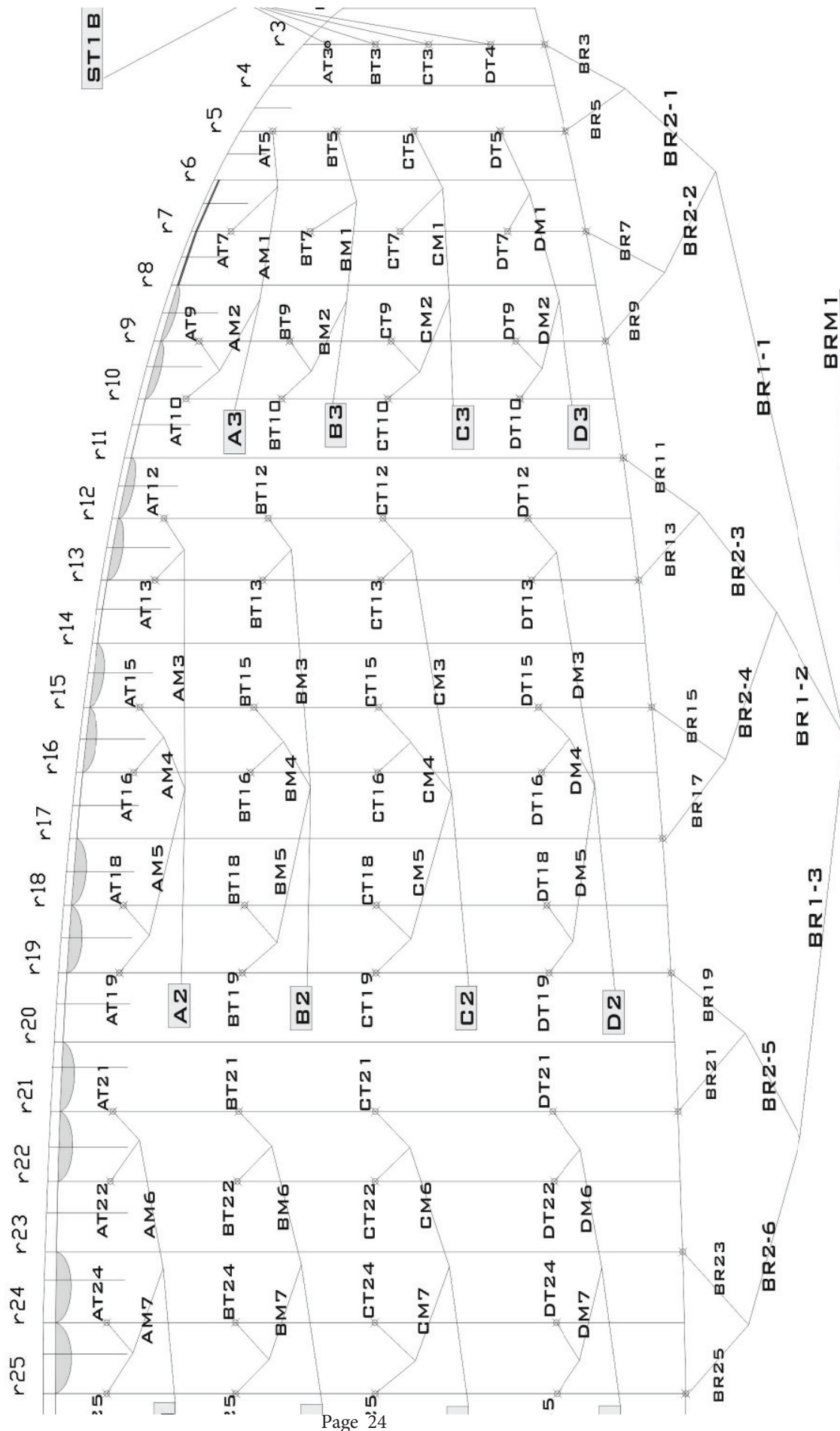
THRILLER^{x3}



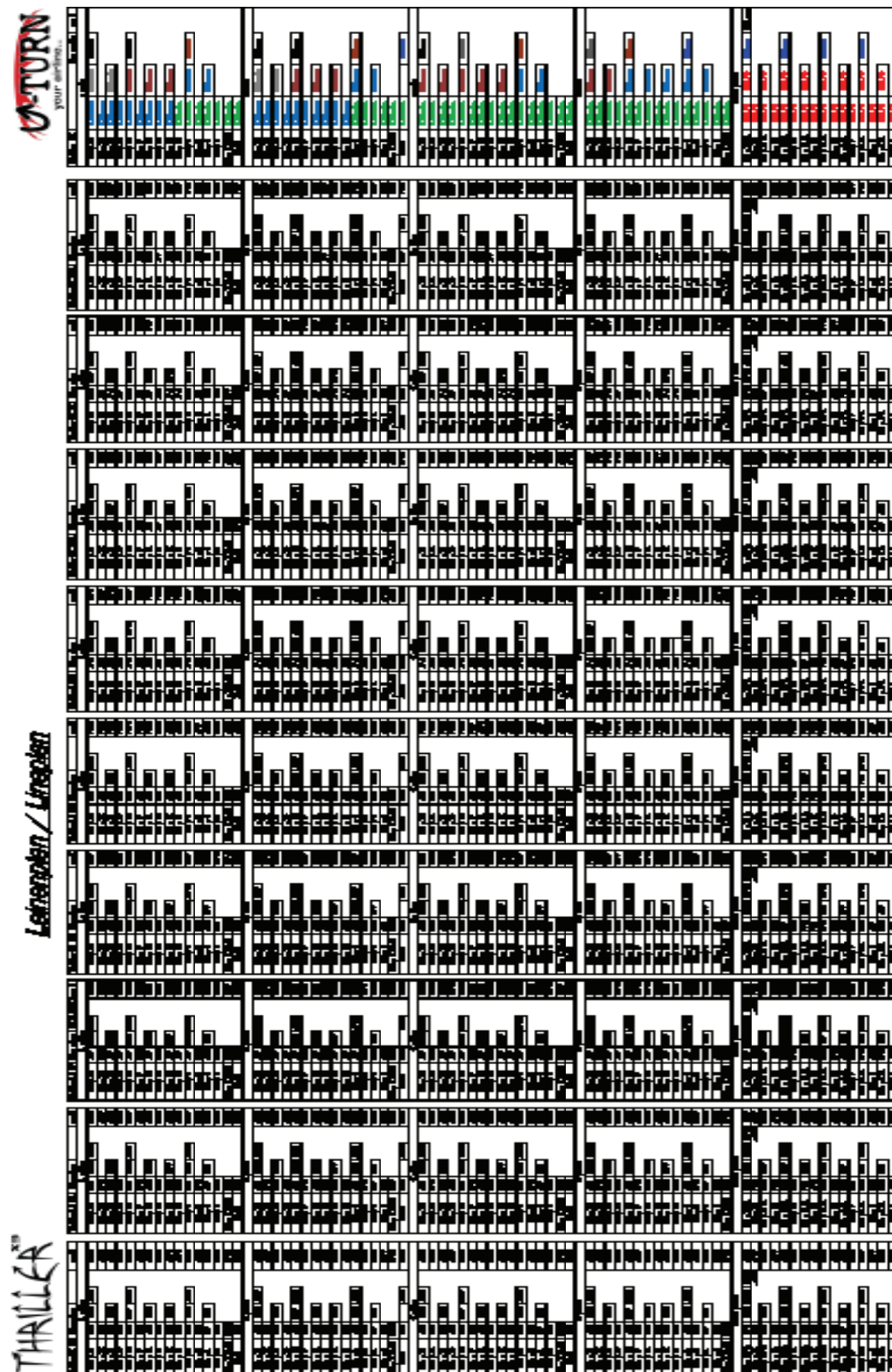
Material list

Marking of components	Detail	Producer
Attachment loops	Nylon	Aqua Dynamics
Accelerator lines	Nylon	Aqua Dynamics
Accelerator - brakeroll	Nylon	Aqua Dynamics
brake handhold	HT Polyester Yarn 22mm	Aqua Dynamics
brake handhold attachment	HT Polyester Yarn 22mm	Aqua Dynamics
brake handhold fixation	Magnet	Aqua Dynamics
Brakeline 2,3mm Ø	Dynema Lines	Aqua Dynamics
Lines: (detail please see line plan)	LTC ; TSL	LIROS, Rosenberger Tauwerke
belt direction	Stainless Steel	Aqua Dynamics
lines lock	Stainless Steel	Aqua Dynamics
Top	AQ-44-C (44-46 g/m ² ; PA 6.6 HAT)	Aqua Dynamics
Bottom	AQ-44-C (44-46 g/m ² ; PA 6.6 HAT)	Aqua Dynamics
V-Tape	AQ-44-C (44-46 g/m ² ; PA 6.6 HAT)	Aqua Dynamics
Profilenose reinforcement	PPN / PPN plus	Aqua Dynamics
Rips, Profile	AQ-44-C (44-46 g/m ² ; PA 6.6 HAT)	Aqua Dynamics
Riser	21 g/m / 1000 kg breaking strength	Güthe & Wolf, Germany
Reinforcement povit point B/C/D	AQ 240	Aqua Dynamics
sewing thread canopy	HT Polyester Yarn 150D/2	Amann & Söhne GmbH, Germany
sewing thread lines	HT Polyester Yarn 150D/3	Amann & Söhne GmbH, Germany

Line Code-Info



Lineplan U-Turn THRILLER X3



Instruction leaflet for repairs



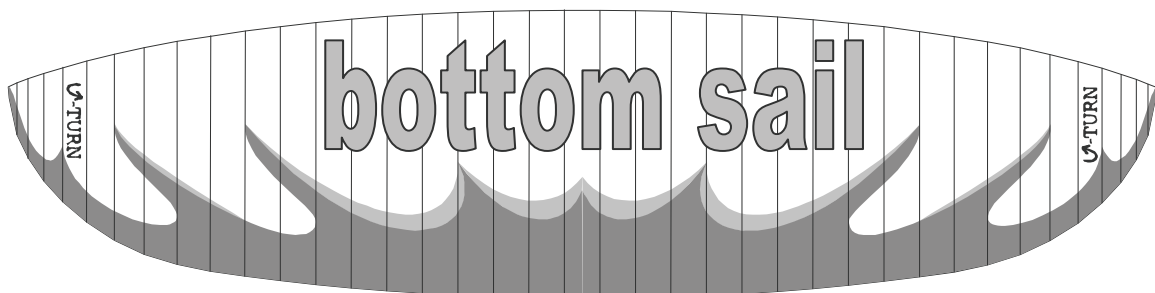
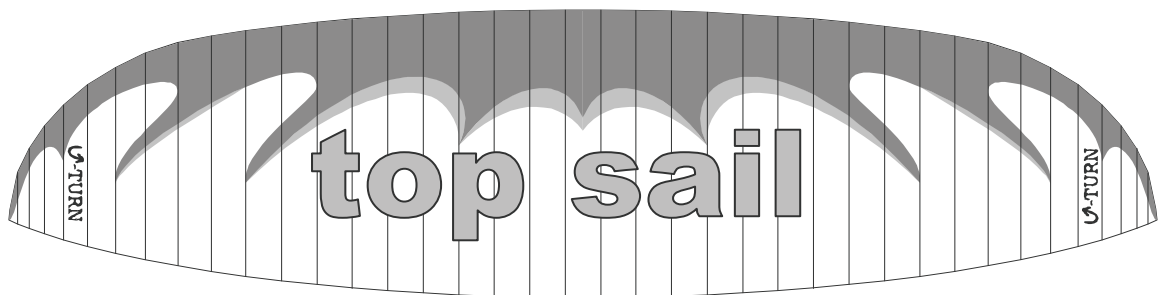
U-Turn GmbH
Im Neuneck 1
78609 Tuningen
Germany

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

Instruction leaflet for repairs and 2 annual Check

Name:	
Adress:	
Land:	Telephone Number:
E-Mail:	
Paraglider type and Color:	Serial number:
comments/notes:	

- | | |
|---|---|
| <input type="checkbox"/> 2 annual Check | <input type="checkbox"/> Line Check incl. strength test |
| <input type="checkbox"/> Air permeability check | <input type="checkbox"/> Repair of the marked damage |
| <input type="checkbox"/> Recall with sighting of the paraglider | |



Please, pretend the repair-destitute place in the top sail and / or bottom sail.

Line order sheet



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

Business Reply Card

U-Turn GmbH
Im Neuneck 1
D- 78609 Tuningen



Name : _____

First name: _____

Street: _____

Zip code/ City: _____

Telephone: _____

E-Mail: _____

Paraglider type: _____

Serial number: _____

Date of purchase: _____

DealershipP: _____

Tested by: _____

Flying hours: _____

Paraglider since: _____

Miscellaneous: _____

☐

Yes, I would like to get the newsletter by E-Mail



Maintenance manual

as developer and manufacturer for paragliders, harnesses and rescue parachutes

English Rev. 1.2

Copyright ©

2011 by U-Turn GmbH, all right preserved. No part of this publication may be reproduced or developed further on in any way without written approval of the U-Turn GmbH

Text: Stefan Preuss

Text and Graphics: Ernst Strobl

All technical details in this manual have been carefully checked by U-Turn. However we like to mention that we don't take any liability for possible mistakes, neither in legal responsibility, nor in liability cases that derive from mistakable details. We preserve the right to change this manual in any way to achieve technical improvements.

Topic of the inspection and reinspection intervals

Regular inspection according to aircraft inspection ordinance for standardized evaluated gliders. For school gliders after 1 year, aircraft for recreational use after 2 years. Tandem gliders for commercial purposes annually, non commercial use every 2 years to be inspected. The inspection shall take place in the aforementioned intervals, or no later than 150 hours. Ground handling needs to be included in the sum of flight hours. Generally speaking; in the case any abnormal flight behavior, the manufacturer should be informed and the canopy, if necessary, sent in for inspection.

Who may inspect/test?

Besides the manufacturer or the by him approved person or instance is authorized the owner of the glider to warrant the bi-annual inspection and only if in compliance with pre-requisites set forth.

Individual personal prerequisites for the inspections

Personal prerequisites for the inspection of individually owned solo gliders for recreational use only:

- Holder of a valid unrestricted license for paragliders or equivalent accredited license
- An adequate orientation in the operation by the manufacturer. For this a 3 month formation with the manufacturer is necessary
- If a glider was tested for personal use exclusively, then its use by a third party is not allowed

Individual personal prerequisites for the inspection of gliders, RG,GZ, used by third parties or for tandem purpose:

- A for the testing prescribed professional training
- A vocational activity in the production or maintenance of GS, RG, GZ or one of a technically similar nature. Of which 6 month within the last 24 in a manufacturing operation recreational free flight aircraft
- An at least 2 week, subject to charge, relevant training course at the operation of the manufacturer
- An applicable orientation for each type of device, which is to be refreshed annually.

Necessary equipment and documentation

- Gauge, preferably Kretschmer (brand) with manual
- Bettsometer with manual
- Maintenance directions by manufacturer
- Original materials and -spare parts, as well as original material-record for the device
- Assertion of airworthiness for the device
- Airports device identification tag (see manual)
- Line length table (see manual)
- Line length logs (if available)
- Inspection log (collecting main) to the documentation
- Lighttable for visual inspection of the reserve

During the inspection the following steps are to be taken in

Positive identification of the device:

Positive identification of the aircraft (Type, size, etc.) on the basis certification seal or placard.

- Are the pertinent manufacturer documents available?
- If certification seal and/ or placard are in place, are they readable and correct?
- If not so: Please obtain from manufacturer or dealer in question

The determined values / modification are to be noted in an inspection log!

Inspection of the reserve parachute

Before packing the reserve parachute this is to be checked by packer. If the parachute was deployed for a rescue, then it is subject to an inspection. If a folded reserve parachute is re-packed again a deployment check is to be staged, to be determined is if the force for deployment is between a minimum of 3kg and maximum of 6kg.

Testing of the topsail, undersail, seams, reserve parachute of

holes and tears

The topsail and undersail of both paragliders as well as reserve parachutes must, for each cell (paragliders) and each gore (parachutes), from the leading edge to the trailing edge, submitted to the following checks. If in one of the following attributes anomalies are discovered, the glider is to be sent in to the manufacturer for inspection.

- Check for holes smaller or larger tears, deformations and abraded areas
- Deficiencies in the coating, other aberrations in the canopy like e.g. old repairs
- With reserve parachutes a light-talbe is to be used for an inspection for holes, tears and deformations

Abrasison and deformaties

With large and critical abrasion and deformations, the entire cell panel in question must be replaced by the manufacturer. The determined values/modifications are to be noted in the testin log!

Testing of the ribs

Visual inspection of the chambers (from the leading to the trailing edge) whether the stitching in the seams, cell partition ribs and reinforcements are in good shape, thus without tears, deformations, abrasions or damage of the coating.

With torn ribs, defective, loose or missing stitching in the seams the glider must be returned the to the manufacturer or authorized inspection operation. The determined values/modifications are to be noted in the inpection log!

Check of the tear resistance

To be conducted with the Bettsometer at the following points (B.M.A.A. approved patent number GB2270768 Clive of bed Sails)

The test sequence is to be inferred from the operating instruction the Bettosometer.

- In both the top and undersail where the A-lines connect, push a needle-thick hole and check the tear resistance
- The limit value of the measurement is determined at 500g, and a tear width of fewer than 5mm.

The determined values / modifications are to be noted in the inspection log!

Porositycheck of the canopy

At all following measuring points the air porosity has to be more than at least 20 sec. (by Kretschmer). At smaller air permeability values the paraglider must be returned to the manufacturer.

Measuring points: The porosity measurements by the Kretschmer measuring method (please consider operating instruction) are to be conducted at the following points on the canopy check on both under and upper sail.

- Center cell approx. 20-30cm back from leading edge
- 3rd Cell off center both to the left/right approx. 20-30cm back from leading edge
- 10th Cell off center both to the left/right approx. 20-30 cam back from leading edge

The determined values / modifications are to be noted in the inspection log!

Connection parts

Check of the webbing and maillons

- are there abrasions, buckling, tears, strong signs of wear obvious?
- Is all the stitching fast and firm?
- Is the accelerator running free and intact?
- Are brake toggle attachments still firmly sewn on?
- Are the maillons corrosion free, are the sleeves of the gates free moving on the thread?

Measure under a load of 5 kg. The determined values are to be compared with the specifications from the EAPR-Technical data sheet. Allowable variations are to be inferred from the manufacturer directions. If the webbing or parts thereof are defective, spare parts are to be ordered from the manufacturer and replace the defective parts with original parts. The determined values/modification are to be note in the inspection log!

Lines

Test of the line tensile strength:

Line selection: select a middle, lower cascade of the A, B and a C- lines as well as if available a middle A and B upper cascade, and stress test for tensile strength testing device on their tensile strength.

Tension velocity of the tension cylinder: $v=30\text{cm/min}$

Tear/tensile strength values:

the determined values/modifications are to be noted in the inspection!

Attention: Each size (line diameter) is to be assigned a fixed value.

In case the lines cannot withstand the indicated load/stress or pass tensile strength test, all other lines must also be changed. If the checked lines fulfill the test criteria, only those are replaced by new lines. All replaced lines are to be marked in the proximity of the maillon (seam) with a black felt marker pen and noted in the inspection log with the date of the exchange and the logged of hours of flight time of the glider. During the next test for tensile strength an original line, neighbouring the replaced line is to be sampled. The various line diameters are allocated a minimal Sewing length!

Check of the line length and line attachments

Bottom cascade, upper cascades and brake lines for, breaks, abrasions, visual check. First the A-lines, then B. etc.

- Are all lines adequately sewn and attached to the line attachments?
- Is the sheathing of the lines even are exactly?
- Are all loops, knots, seams in good shape?
- Are there any abrasions present?

Measuring the line lengths:

- The lines must be measured with a load of 5 kg, in order to obtain comparable results. The relevant line lengths are in the technical data sheet of the user manual.
- The measurement takes place in accordance with DHV method, from the maillon to the canopy (inclusive attachment loop at the sail).
- The numbering takes place from the stabilo toward the center. Measuring the opposite facing of the wing can under same conditions also be conducted by a symmetry comparison.
- The results are again noted the inspection log and should be compared side by side to line lengths of the EAPR technical data sheet. The tolerance in deviation of these values should not exceed more than $\pm 1,5\text{cm}$
- If a line is defective, it is to be exchanged immediately. Please acquire the identification reference marking of the line from the line plan, order from the manufacturer and replace accordingly or have it replaced.

The determined values / modifications are to be noted in the inspection log!

Occasional check of trim and adjustment

Before a test flight a visual inspection of the canopy and lines is to be conducted with the glider laid out as well as pulled up inflated.

In particular attention should be paid to the length of the brake lines with the canopy inflated. Only if all doubts are cleared concerning faulty adjustment of the brake lines, a check flight may be conducted.

Description of the materials and technical data

See manual of your paraglider.

miscellaneous

- All measurement and repair work at paraglider and rescue system must be documented completely in the inspection log.
- When packing or repacking the reserve parachute, special attention is to be paid to the particular packing directions of the manufacturer! See rescue / reserve equipment manual.
- With the exchange of parts or component modules only original materials or original replacement parts may be used!
- With sewing work the original sewing pattern is to be kept, patching and thread material of same strength and quality as original!
- The inspection survey and/or test log must with be signed, complete with place and date!
- The period for recordkeeping is 4 years.

Completed check very important

Before you perform any checks and/or repairs yourself on your glider, we ask to read you the following pages carefully. You inform yourself hereby about prerequisites and conditions of a done in person bi-annual inspection.

- According to new DHV regulation, the customer (Glider-owner) can conduct the 2-yearly check of the canopy with the help of the inspection directions and all necessary testing equipment and documents in person on his own responsibility. In addition the wing does not have to be sent in to the manufacturer.
- The 2-yearly check may only be conducted by the glider owner personally, if he fulfills the prerequisites, or an inspection station authorized by the manufacturer. Inquire therefore with the manufacturer on authorized inspection stations.
- The owner of the canopy must be aware of the responsibility, which he takes with a self conducted 2-yearly check of the glider. The self performed 2-yearly check is only legally effective, if this is acknowledged after the check with date, name (in capitals) and signature on or beside the placard.
- Reserve equipment re-packing interval in accordance with DHV: Every 4 months a repacking is required. Allowed period of operation: 8 years, afterwards up to 12 years with an annual check
- About insurance-legal consequences of your self performed 2-yearly inspection you should inform with your insurer in a timely fashion.
- An inspection is valid only if the inspection log is completely filled out. Inform also about possible revisions of the inspection directions with the manufacturer before the inspection.
- **Important:** If the necessary efforts for the maintenance inspection cannot be carried out (required equipment and documents), should the canopy be sent in to the manufacturer.
- For paragliders, harnesses and reserve parachutes, which are checked, controlled, repaired, packed or repacked, test-flown and/or other maintenance work, by none U-turn authorized personnel forgo any guarantee and or warranty!
- All maintenance work must in be accordance with the maintenance specifications of the operation manual and the special maintenance directions of the manufacturer and the publications of the IHB to be conducted.
- With any abnormal appearances during the performance of maintenance is the technical manager to be informed, who has to decide on how to procede.
- With the replacement of parts or component modules only original materials or original party may be used!