

# INFINITY III AFS®



**U-TURN**  
your airline...

The INFINITY III with AFS is perfect for educational use

- Handbook - English Rev. 1.7

Stand: as of September 2012

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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.

You`ve got the stuff to fly!

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 your U-Turn INFINITY III.

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 of quality. We certainly keep our customers' needs 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:



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Please read the entire handbook carefully before using your U-Turn INFINITY III for the first time. We composed this handbook, in order to make the handling of your new U-Turn INFINITY III as safe and easy for you as possible.



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:.....

Dealership:.....

.....

Tested by:.....

Flying hours:.....

Paraglider since:.....

Miscellaneous:.....

.....

.....

.....



Yes, I would like to get the newsletter by email.

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## Introduction

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. Be happy you are flying a U-Turn glider, as it is the brand of those who appreciate the difference.

The laws of physics are well defined. We aspire to achieve to the 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 basic; 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 customers which is, so we appreciate any comments or feedback!

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

## General Description INFINITY III

INFINITY III - the alliance of speed and security. To that high end of DHV 1-2 from U-Turn with an aspect ratio of 5,2 with the achievement from the full one, offers with further developed AFS system however each quantity of reserves. What could be more beautiful than being with a paraglider on a XC-flight over a beautiful landscape? With the INFINITY III of U-Turn this experience of freedom and orientation by nature becomes now still a splendor more attractively. And faster. And more safe. The design of Ernst Strobl sets recently the yardsticks in the segment. With the aspect ratio of 5,2 the wing is full of performance, but owing to sophisticated construction technology and the system for automatic flight stabilization (AFS) with security of a DHV 1-2 glider. Exactly on the border between DHV 1-2 and DHV 2 the INFINITY III is placed. The canopy defines itself accurately that point, that from the interpolation of maximum achievement and safety requirement of the DHV 1-2-Niveaus result in. The enormous gliding performance also fully accelerated results to the outstanding characteristics of the canopy. This high end 1-2 wing and its long accelerator way to the fine dosage of the high velocity is typical for U-Turn. In addition a dynamic and an agility, which satisfies all your desires. That entire know-how from the development of the acro reference G-FORCE 360 is flown into the very dynamic, direct handling of the INFINITY III. Also very flat and close thermalling is provided and easy to manage accurately. The INFINITY III offers very small curve sinking. Differently expressed: With the thermal handling of INFINITY III the pilot recognizes certainly genes are present, normally reserved to higher classified wings. Regardless of the remarkable performance and the aspect ratio of 5,2 the INFINITY III possesses high natural stability. That's due primarily to that far refined AFS system. The dynamic basic design of the canopy makes it possible to increase the efficiency of the AFS - without danger to reduce fun or performance potential. The surface, which the AFS system affects, became 20% bigger on INFINITY III compared to INFINITY II. Without losses in the fine responding mode of the system the increase of the efficiency and thus far improved stability in turbulent air successfully was possible. The new glider possesses itself many hang up points, resulted by the large number of fork lines. Within the gallery the INFINITY III has approximately 40 centimeters long, breath-thin 0,6mm-Liros-lines. Thus the load per line is reduced and altogether load distributes better on the canopy. "The fork lines cost by their resistance minimum performance, but due to them I could design the wing with same folding stability however substantially more efficient, so that the losses are overcompensated several times by air resistance," describes Strobl.

## General Description INFINITY III

The INFINITY III is thus also in turbulent air extremely resistant to collapses. And should it threaten once to abandon the large green range, the canopy gives clearly feedback. With the choice of the material Strobl decided to use now that cloth in series, that for example during the Trans Speed Europe of MadMikeKüng under maximum permissible load convinced. After intensive tests with several prototypes in the different sizes was certain: "Neither when starting, in flight or in landing a still lighter material has brought improvements in practice", so Strobl. With the UV firmness and generally the mechanical stability is now used cloth of Porcher Marine however clearly superior. To secure the performance and the worthy of the glider for a long time, and addition also the easy launching, the INFINITY III is equipped with the Mylar fix system, known from the INFINITY II. The PPN system (precision profile nose) plastic reinforcement ensures long lasting stability at the leading edge, good performance and good launching characteristics in the long term too. "Our goal was it to bring a very high performance glider with the high security of a 1-2 on that market", U-Turn joint founder Thomas Vosseler is pleased to tell over the reached safety level. Thus is to be determined clearly: "The INFINITY III is well suitable for training despite its immense power reserves." The one who is after the flight examination more ambitious as with the DHV-1-BODYGUARD of U-Turn, should choose INFINITY III with AFS." Also the INFINITY II is DHV 1-2 glider, but substantially more closely at the level DHV 1. The INFINITY III is available in sizes XS\* (55-80 kg), S (65-100kg), M (85-120kg), L (100-130kg) and XL\* (115-160kg). The U-Turn logo got a new style and gives the canopy as well as that sporty silhouette a particularly dynamic appearance.

\*in the pipeline

 U-TURN

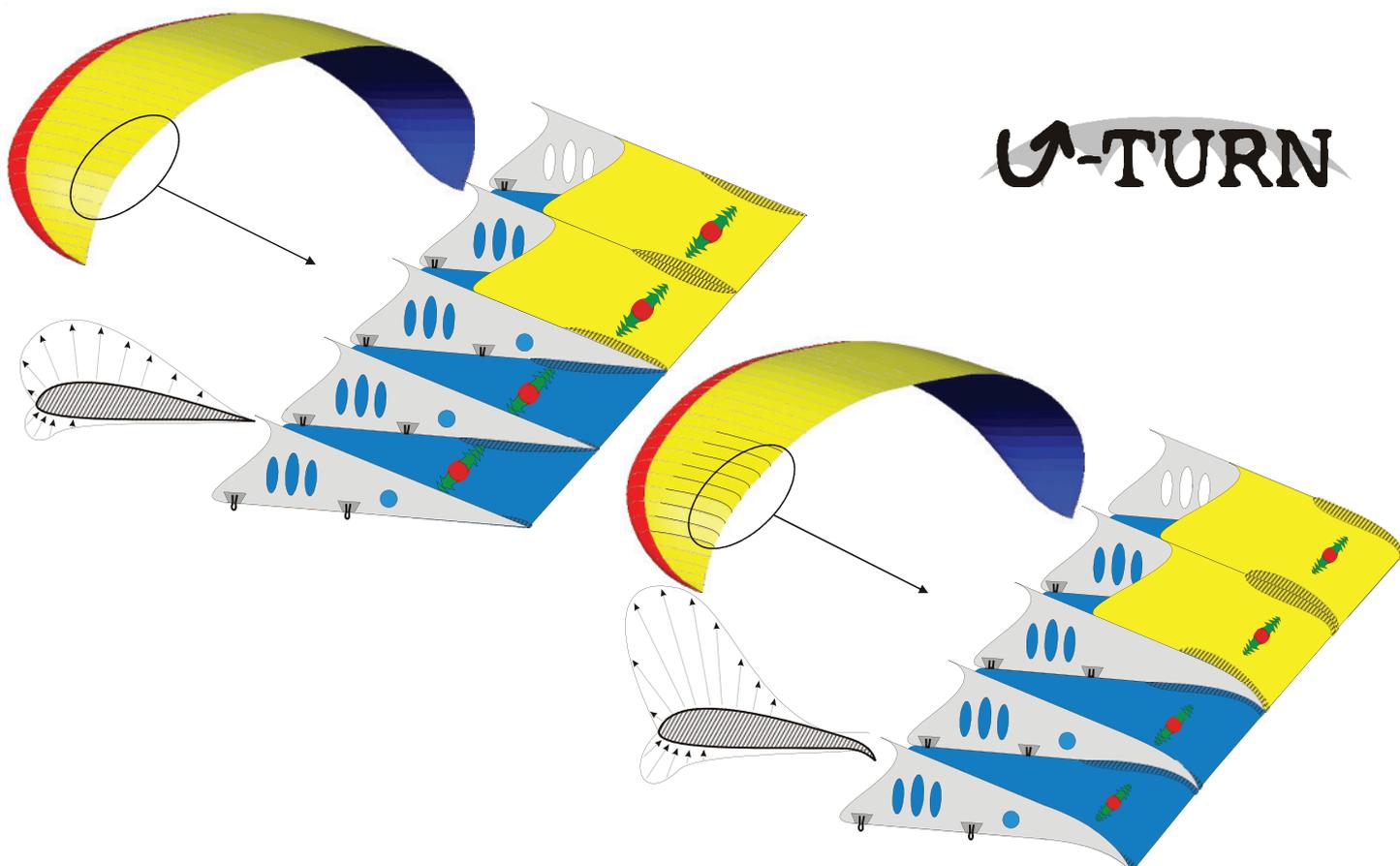
## Automatic flight stabilisation

With the AFS-system U-Turn provides an innovative feature. To fly safely means to fly actively - the system employed on the INFINITY III allows this to happen automatically to a certain level. The secret of the AFS-system is based on a pre-tensioning principle. In the area of the brake attachment points the undersurface is pre-tensioned. Whilst the sail is gliding through smooth air, there is enough pressure inside and the pre-tensioning is neutralised: The effect of internal pressure is more powerful than the pre-tensioning and the trailing edge stays aerodynamically perfect in the air like a conventional glider. When entering turbulent air with the INFINITY III the system adjusts immediately, even the slightest drop of internal pressure allows the system to react. The pre-tensioning at the trailing edge is effectively like pulling the brakes.

Ernst Strobl recalls the fine-tuning, „Our computer-based calculations were impressively confirmed during our tests“. The system is extremely responsive so that a top-quality manufacturing is key. U-Turn Cofounder Thomas Vosseler adds, „We guarantee a strongly supervised manufacturing process“.

The AFS works like the Electronic Stability Programs known in the automotive industry, you could call it an „ESP for the air“. It intervenes for the benefit of safety when an inexperienced pilot, or a pilot in trouble, enters turbulence and is unable to fly actively.

Experienced flight-instructors confirm, „This is a major step as far as safety is concerned. The main reason for accidents, the full collapse of the canopy, is minimized dramatically“. Even without AFS the INFINITY III would be a very safe glider says Strobl. Due to the extremely pulled down winglets and the resulting spread of the canopy the INFINITY III has far more than average resistance to collapses. The INFINITY III glides stably ahead even after an accelerated asymmetric collapse, a situation that may happen after leaving a thermal, even with 50% of the wing area collapsed. This is simply outstanding. The computer optimised wing layout leads to very good thermal lift and maximizes the stall characteristics, both improving safety.



## PPN Description

Two Systems, one Goal:  
Maximum Security through AFS and PPN

The INFINITY III opens a new chapter in paragliding security: the combination of the PPN-System (Precision Profile Nose) with the unique Automatic Flight Stabilisation system (AFS) provides for an unequalled folding resistance. The INFINITY III has thereby newly defined the state of the technology of the DHV/LTF 1-2 gliders' security-level.

PPN Technology stands for unprecedented stability and excelling take-off and flying qualities. PPN means Precision Profile Nose. For several years already synthetic rods have served as a replacement for nose-mylar in the cell walls of gliders by providing more stability to the stitched up areas of the cell-walls. U-Turn has taken another step by combining this technology with the Automatic Flight Stabilisation (AFS-System).

The synthetic rods in the profile nose sustain its stability, thereby optimizing the flow of wind along the profile. Even under extreme flying conditions the small rods of the PPN system keep the openings of the profile nose considerably wider open than has been the case up to now. The inner pressure is maintained palpably longer and with it the stability of the profile. And even if the inner pressure diminishes, the Automatic Flight Stabilisation kicks in and brakes as necessary. The interaction of these two systems provides the range of gliders with an unequalled folding resistance.

Since the material is not as susceptible to bending as the formerly used nose-mylar, the profile nose virtually retains its exact design shape for a glider lifetime if handled carefully. In order to provide the greatest possible protection when packing the glider, the INFINITY III is delivered as standard with the U-Turn Tube-Bag. Even on windy days one can carefully and single-handedly fold the INFINITY III and store it accordion fashion in this high-quality inner packsack. The Tube-Bag meets even the highest demands through its elaborate workmanship and numerous functional details and ensures that the INFINITY III maintains its excellent take-off and flight qualities for many years – an advantage that can favourably influence the resale value. The canopy has become lighter ever since the use of mylar reinforcements was abandoned. Handling advantages and the increase of performance caused by the reduced canopy weight can be attributed additionally to PPN-Technology.

INFINITY III has become more than ever an uncomplicated wing with a good deal of reserve capacity after having been equipped with this new technology. With its good-natured and forgiving behaviour, the INFINITY III is suitable for training, but at the same time, since it is an agile glider and a daring, thermal climber, it is also suitable for ambitious, first class pilots, who refuse to make any concessions to passive security during high performance. Of course the INFINITY III is equipped with high-quality Liros lines. The INFINITY III is available in sizes XS\* S, M, L and XL\* together with U-Turn's well known wide weight range.

\* without certification

## New Features

Along with these safety features the U-Turn INFINITY III also offers comfort features to enhance the fun of the sport. With the Easy Fix, the riser of the gliders are being fixed after the glider is folded. The Dirt-Outs on the flying terrain, make the removal of dirt and foliage in the canopy easier. In fact the U-Turn INFINITY III does not only set new safety standards, it also changes the way paragliders are constructed. Although the entire developmental process was dictated by safety, Ernst Strobl managed to create a piece of equipment that is guaranteed fun. With that in mind, the U-Turn INFINITY III is, without compromise, made to be safe, without compromising the joy of paragliding.

 **Important:** Having the necessary level of experience never substitutes the need to familiarize yourself with the glider before leaving the ground. Please carefully read the handbook and take advantage of the support your flight school, as well as U-Turn, offer.

Please always remember that aviation can potentially be dangerous and your safety lies in your own hands. We strongly encourage you to fly conservatively; this includes the choices you make concerning flight conditions as well as the choices you make during flight.

## General description - Material specifications

**INFINITY III** UROS®

### Materiallist

**U-TURN**  
your airline...

Marking of components	Material / product name	technical data / Dimension	Producer
		weight / strength	
Attachment loops	Nylon	7,2 g/m / Breaking load 110kg / 13mm spreads	Aqua Dynamiks
Accelerator lines	Nylon	Ø 4,0mm = Breaking load 350 daN	UROS
Accelerator - brakeroil	B2 Pulley3, Rolle		B2-Engineering, Sri Lanka
Accelerator lock	Brummelhook		B2-Engineering, Sri Lanka
brake attachments	Nylon	7,2 g/m / Breaking load 110kg / 13mm spreads	Aqua Dynamiks
brake handhold	High Tanacity Poliester Yarn 20mm	25 g/m / 1000 kg Breaking load	Güth und Wolf, Germany
brake handhold attachment	High Tanacity Poliester Yarn 20mm	25 g/m / 1000 kg Breaking load	Güth und Wolf, Germany
brake handhold fixation	Magnet		B2-Engineering, Sri Lanka
brake main line 2,3mm Ø	Dynema Lines DSL 300	2,3mm = 250daN	UROS
Lines: TSL 140/190/220/280 / TSL 380 und DSL 70,	Uros Lines		UROS, Rosenberger Tauwerke
belt redirection	Stainless Steel	8g / Ø 3,8mm / Breaking load 800kg	B2-Engineering, Sri Lanka
lines lock	Stainless Steel	12g / Ø 4,3mm / Breaking load 1000kg	B2-Engineering, Sri Lanka
Top sail - A - B - C	Skutex 40 / Dokdo 30DMF	40 g/m² / 40 g/m² / (PA 6.6 HT)	NCV, France; Dominico Tex
V-Tape	Dokdo 30DMF	40 g/m² (PA 6.6 HT)	Dominico Tex
Nose reinforcement	PPN Plastic		B2-Engineering, Sri Lanka
Rips, Profile	Dokdo 30DMF	40 g/m² (PA 6.6 HT)	Dominico Tex
Riser	Poliester / Aramid Yarn 20mm	31 g/m / 1900 kg Breaking load	Güth und Wolf, Germany
Undersail - A - B - C	Dokdo 30DMF	40 g/m² (PA 6.6 HT)	Dominico Tex
Reinforcement pivot point B/C/D	D 170	170 g/m²	Dominico Tex
sewing thread canopy	High Tanacity Poliester Yarn 150D/2	0,05 g/m² / 2,9 kg Breaking load	Amann & Söhne GmbH, Germany
sewing thread lines	High Tanacity Poliester Yarn 150D/3	0,083 g/m² / 3,2 kg Breaking load	Amann & Söhne GmbH, Germany

## Table of area loading

Start Weight (kg)	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	
<b>INFINITY III XS*</b>	2,2	2,4	2,6	2,8	3,0	3,2																	
<b>INFINITY III S</b>			2,4	2,6	2,8	3,0	3,2	3,4	3,5	3,7													
<b>INFINITY III M</b>							2,9	3,1	3,3	3,4	3,6	3,8	4,0	4,1									
<b>INFINITY III L</b>										3,1	3,3	3,4	3,6	3,7	3,9	4,0							
<b>INFINITY III XL*</b>												3,2	3,3	3,5	3,6	3,8	3,9	4,0	4,2	4,3	4,4		

\* in the pipeline

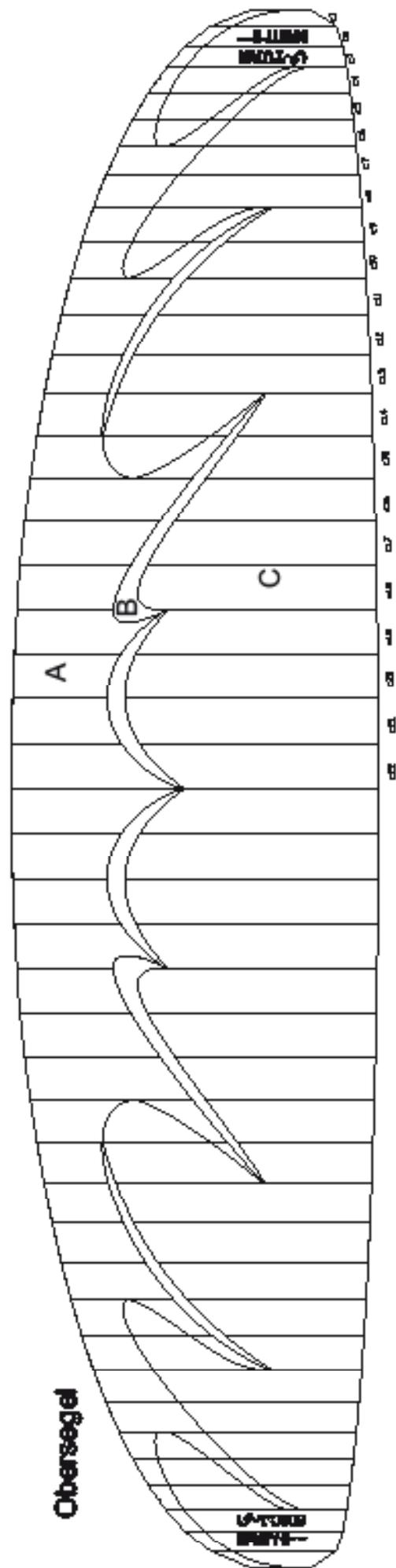
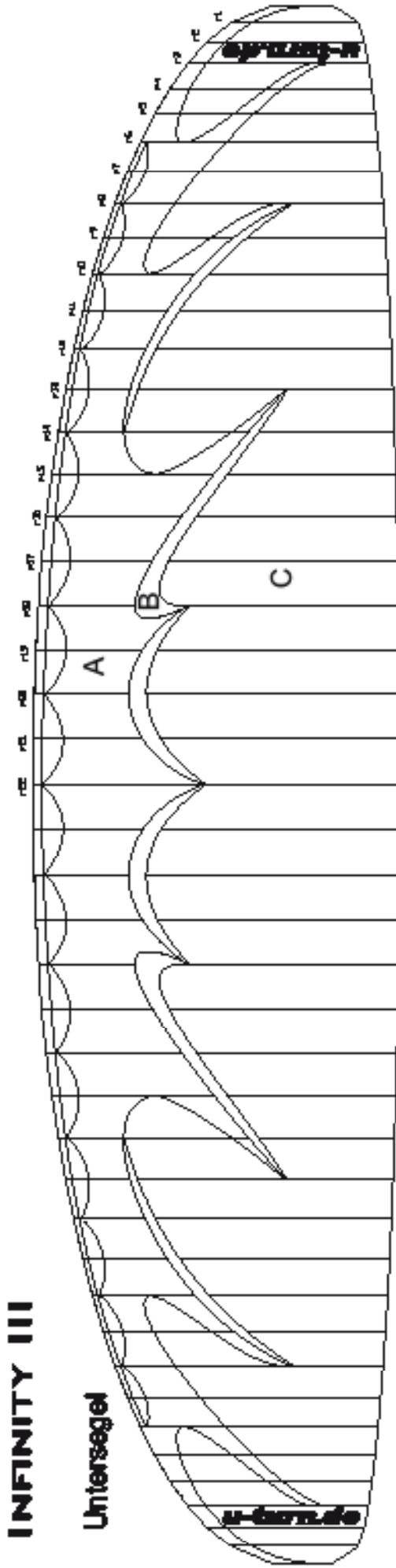
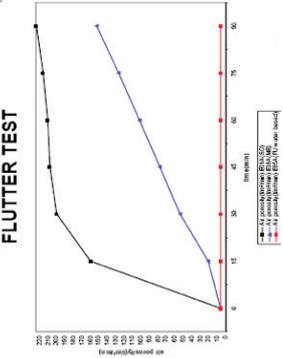
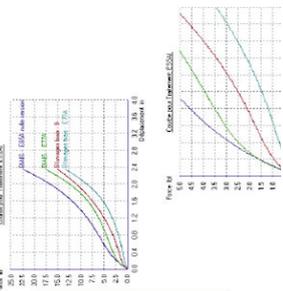
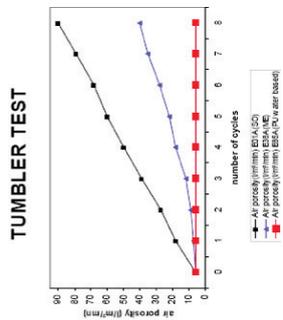


	XS*	S	M	L	XL*
<b>INFINITY III</b>					
Take off weight	55 - 80 kg	65 - 100 kg	85 - 120 kg	100- 130 kg	115- 160 kg
Wing area flat	24.7 m²	26.8 m²	29.0 m²	32.3 m²	36 m²
Wing area project	21.8 m²	23.7 m²	25.6 m²	28.6 m²	31.8 m²
Wing span flat	11.4 m	11.8 m	12.3 m	13.0 m	13.7 m
Wing span project	9.4 m	9.8 m	10.2 m	10.8 m	11.4 m
Aspect ratio flat	5.2	5.2	5.2	5.2	5.2
Aspect ratio project	4.0	4.0	4.0	4.0	4.0
Number of chambers	44	44	44	44	44
V-Trim	~38 Km/h				
V-Min	~22 Km/h	~21 Km/h	~20 Km/h	~20 Km/h	~20 Km/h
V-Max	~54 Km/h	~55 Km/h	~55 Km/h	~54 Km/h	~54 Km/h
Features	AFS, V-Tape, Tension Stripe				
Number of risers	Split A-Riser 5				
Number of lines storeys	2	2	2	2	2
Accelerator / Trimmer	Accelerator *	Accelerator LTF B	Accelerator LTF B	Accelerator LTF B	Accelerator LTF B
Certification					*

You will find further details regarding the construction and measurement of the U-Turn INFINITY III in the "Typenkennblatt" or, in case of equipment with example registration, in the "Luftsportgerätekennblatt" in accordance with paragraph four of the "Luftverkehrszulassung". (See attachments)  
 You can find possible technical changes in the attachment to this manual.

**Important:** any self inflicted changes to the construction that go beyond the allowed adjustment options, void the operating license and are potentially life threatening. Use of this paraglider is at your own risk. The producer and distributor cannot be held liable.

Which NCV Material Nylon we have used, you'll find it on page 5, Material List.



**INFINITY III**

**Untersegel**

**Obersegel**





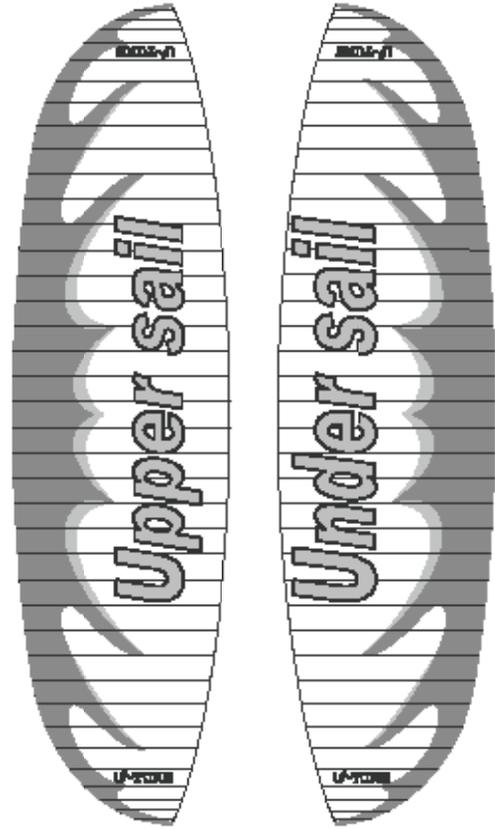
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Im Neuneck 1  
78609 Tuningen  
Germany

Tel: +49 (0)7464/9891280  
Fax: +49 (0)7464/98912628

***Instruction leaflet for repairs and 2 annual Check***

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

- 2 annual Check
- Line Check incl. strength test
- Air permeability check
- Repair of the marked damage
- Recall with sighting of the paraglider



Please, prepare the repair-destinats place in the upper sail and / or under sail

**LINE ORDER SHEET / BESTELLMFORMULAR 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



Infinity III line config. Rev1					
<i>A-Leinen</i>					
r21	TSL 140	TSL 380			
r19	TSL 140				
r17	TSL 140				
r15	TSL 140	TSL 280			
r13	TSL 140			LIRC6	
r11	TSL 140			LTC-0045	
r9	TSL 140	TSL 220		LTC-0065	
r7	TSL 140			LTC-0080	
r5	TSL 140			LTC-0120	
Stabi r3	DSL 70			LTC-0160	
Stabi	DSL 70			LTC-0200	
<i>B-Leinen</i>					
r21	TSL 140	TSL 380		TSL 140	
r19	TSL 140			TSL 190	110 kg
r17	TSL 140			TSL 220	121 kg
r15	TSL 140	TSL 280		TSL 280	139 kg
r13	TSL 140			TSL 380	195 kg
r11	TSL 140				
r9	TSL 140	TSL 220		DC 60	74 kg
r7	TSL 140			DC 100	110 kg
r5	TSL 140			DSL 70	85 kg
Stabi r3	DSL 70			PPSL 120	135 kg
Stabi	DSL 70	TSL 190		PPSL 160	165 kg
<i>C-Leinen</i>					
r21	TSL 140	TSL 280		PPSL 200	191 kg
r19	TSL 140			PPSL 275	248 kg
r17	TSL 140				
r15	DSL 70	TSL 220			
r13	DSL 70				
r11	DSL 70			Edelhid 8000U	
r9	DSL 70	TSL 220		050	
r7	DSL 70			070	
r5	DSL 70			090	
Stabi r3	DSL 70			130	
Stabi	DSL 70			190	
<i>D-Leinen</i>					
r21	TSL 140	TSL 280		230	
r19	TSL 140			Gin Linea	
r17	TSL 140			TGL 80	47kg
r15	DSL 70	TSL 220		TGL 140	79.2kg
r13	DSL 70			TGL 220	138.1kg
r11	DSL 70			TGL 280	156.1kg
r9	DSL 70	TSL 140		TGL 200	[Braka Line]
r7	DSL 70			TGL 400	181.9 kg
r5	DSL 70				
Stabi r3	DSL 70				
<i>Bremseleinen</i>					
r21	DSL 70	TSL 140	TSL 280		
r19	DSL 70				
r17	DSL 70				
r15	DSL 70	TSL 140			
r13	DSL 70				
r11	DSL 70				
r9	DSL 70				
r7	DSL 70	TSL 140			
r5	DSL 70				
r3	DSL 70				
r1	DSL 70				

# Line plan INFINITY III S

<i>A-Leinen</i>				
r21	2815	4575		7390
r19	2725			7300
r17	2745			7320
r15	2620	4660		7280
r13	2530			7190
r11	2540			7200
r9	2180	4995		7175
r7	2040			7035
r5	1915			6910
Stabi r3	1425			6775
Stabi	985			6335
<i>B-Leinen</i>				
r21	2820	4500		7320
r19	2725			7225
r17	2745			7245
r15	2810	4590		7200
r13	2530			7120
r11	2545			7135
r9	2185	4935		7100
r7	2040			6975
r5	1920			6855
Stabi r3	1340			6690
Stabi	975	5350		6325
<i>C-Leinen</i>				
r21	2815	4510		7325
r19	2725			7235
r17	2750			7260
r15	2805	4825		7290
r13	2530			7155
r11	2550			7175
r9	2160	4965		7125
r7	2040			7005
r5	1905			6870
Stabi r3	1325			6675
Stabi	1010			6360
<i>D-Leinen</i>				
r21	2830	4815		7445
r19	2530			7345
r17	2560			7375
r15	2425	4905		7390
r13	2335			7240
r11	2355			7260
r9	1980	5215		7195
r7	1845			7060
r5	1720			6935
Stabi r3	1390			6740
<i>Bremelleinen</i>				
r21	3100	3450	1500	8050
r19	2850		+300	7800
r17	2700			7650
r15	2880	3220		7580
r13	2700			7420
r11	2855			7375
r9	2895			7415
r7	2165	3620		7285
r5	2085			7205
r3	1980			7100
r1	1875			6995

# Line plan INFINITY III M

<i>A-Leinen</i>				
r21	2815	4575		7390
r19	2725			7300
r17	2745			7320
r15	2620	4660		7280
r13	2530			7190
r11	2540			7200
r9	2190	4995		7175
r7	2040			7035
r5	1915			6910
Stabi r3	1425			6775
Stabi	985			6335
<i>B-Leinen</i>				
r21	2820	4500		7320
r19	2725			7225
r17	2745			7245
r15	2810	4590		7200
r13	2530			7120
r11	2545			7135
r9	2185	4935		7100
r7	2040			6975
r5	1920			6855
Stabi r3	1340			6690
Stabi	975	5350		6325
<i>C-Leinen</i>				
r21	2815	4510		7325
r19	2725			7235
r17	2750			7260
r15	2805	4825		7290
r13	2530			7155
r11	2550			7175
r9	2160	4965		7125
r7	2040			7005
r5	1905			6870
Stabi r3	1325			6675
Stabi	1010			6360
<i>D-Leinen</i>				
r21	2830	4815		7445
r19	2530			7345
r17	2560			7375
r15	2425	4905		7390
r13	2335			7240
r11	2355			7260
r9	1990	5215		7195
r7	1945			7060
r5	1720			6935
Stabi r3	1390			6740
<b>Bremseleinen</b>				
r21	3100	3450	1500	8050
r19	2850		+300	7800
r17	2700			7650
r15	2880	3220		7580
r13	2700			7420
r11	2855			7375
r9	2895			7415
r7	2185	3620		7285
r5	2085			7205
r3	1980			7100
r1	1875			6995

# Line plan INFINITY III L

<i>A-Leinen</i>				
r21	3035	4930		7965
r19	2940			7870
r17	2960			7890
r15	2825	5030		7855
r13	2730			7780
r11	2740			7770
r9	2955	5390		7745
r7	2200			7590
r5	2085			7455
Stabi3	1540			7305
Stabi	1080			8825
<i>B-Leinen</i>				
r21	3040	4845		7885
r19	2940			7785
r17	2960			7805
r15	2815	4950		7785
r13	2730			7880
r11	2745			7805
r9	2935	5325		7860
r7	2200			7525
r5	2070			7395
Stabi3	1445			7210
Stabi	1050	5785		8815
<i>C-Leinen</i>				
r21	3035	4880		7895
r19	2940			7800
r17	2965			7825
r15	2810	4990		7800
r13	2730			7720
r11	2750			7740
r9	2930	5350		7880
r7	2200			7550
r5	2080			7410
Stabi3	1430			7105
Stabi	1090			8855
<i>D-Leinen</i>				
r21	2835	5210		8045
r19	2730			7940
r17	2780			7970
r15	2815	5310		7925
r13	2520			7830
r11	2540			7850
r9	2135	5625		7780
r7	1990			7615
r5	1880			7485
Stabi3	1525			7290
<b>Bremseleinen</b>				
r21	3340	3725	1590	8655
r19	3070		+300	8385
r17	2915			8230
r15	3090	3475		8155
r13	2915			7980
r11	2850			7915
r9	2900			7965
r7	2335	3885		7810
r5	2245			7720
r3	2135			7610
r1	2020			7495

## Lines and risers

We use DC60, DSL70, PPSL120, PPSL160, PPSL200 Lyros lines as well as PPSL275 with a special weaved Dyneema core. They have a high tear strength and are unlikely to bend. This stretch resistance denies changes in flight characteristics caused by different stretching after a short time of usage. An optimum of safety and strength in relation to drag is achieved by the use of different line diameters.

The whole line system consists of single elements that are sewed and looped on both ends. All suspension and brake lines are forked in the upper part. The different colour of the lines guarantee easy handling and control. All suspension lines are looped separately in rapidlinks and connected to the risers. The rapidlinks have collectorclips built in to prevent slipping of the lines. The main brakeline is looped through a reel at the D-riser with a colourmarking where a brakegriphas to be tied on.



The manufacturer setting is 0 travel plus 5cm. Shortening more than 5cm is not allowed and results in a „brake“ condition in flight which is extremely dangerous for takeoff, flight and landing. The basic setting provides sufficient braking action at landing and in extreme flight conditions besides a comfortable armposition in trimmed flight.



Please note that with the height of the harness mounting also the relative brakedistance changes. When adjusting the setting, both sides have to be symmetrically and a permanent knot has to be used. Optimum solution is the so called „Spierenstich“ knot with its high slide resistance and its little effect on the lines.

## Risers

The A- and B-risers have a different colour to ensure positive identification at take off and during a B-stall descent. The length of all risers has been chosen in a way to get easy access to all lines and lineshackles inflight for special manoeuvres.

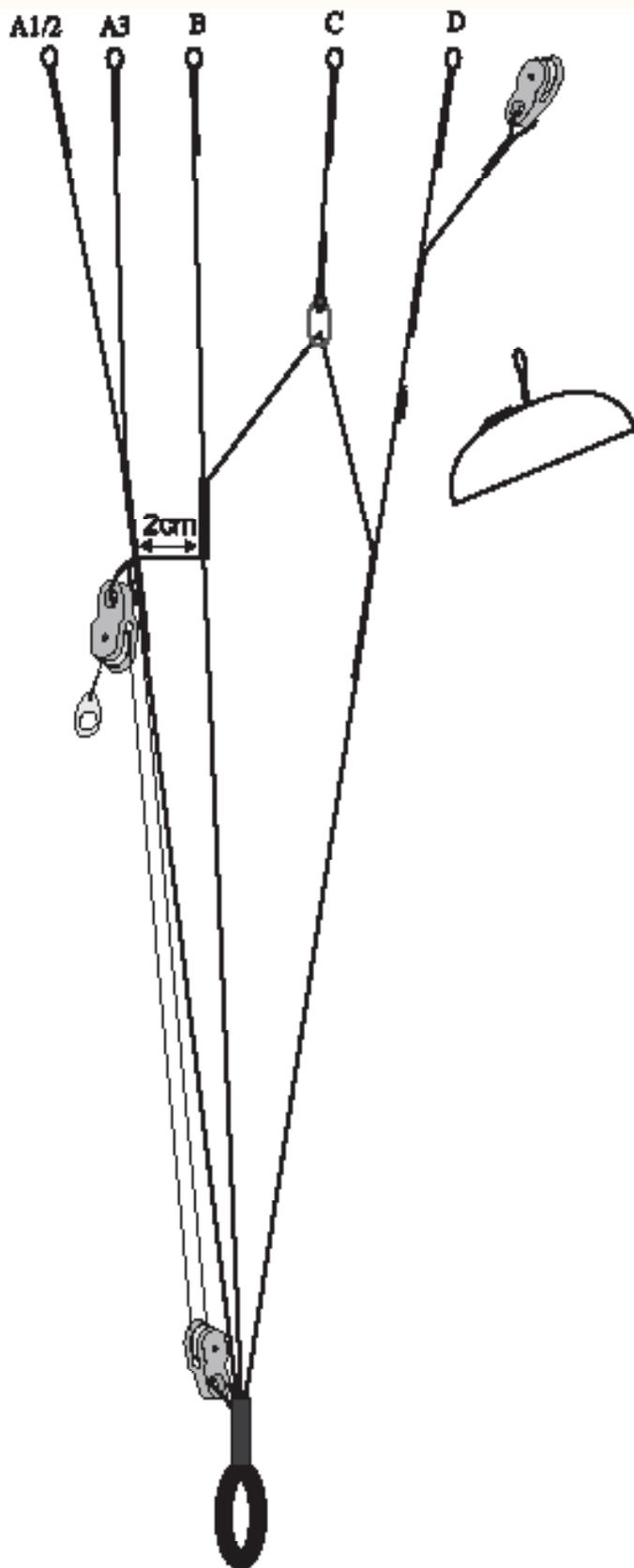
Made of rigid and stretch resistant Poyster-belts, the INFINITY III risers guarantee a long term, stable trim.

## Speed System

The INFINITY III is equipped with a very effective leg-actuated speedsystem that increases the speed btw. 13 and 17 km/h depending on model and pilots weight area load respectively. During extreme manoeuvres the speedsystem should not be activated, when entering an extreme manoeuvres it should be immediately deactivated. All extreme manoeuvres (i.e. stalls...) get more dynamically at higher speed. Because the maximal adjustment of the accelerator is related to the safety characteristics of the canopy it may happen, that - using certain harnesses - the broad accelerator adjustment is not available.

## Suitable Harness

All officially approved harness systems with mounting about the breast height are suitable for the INFINITY III (they have to be DHV rated GH). The lower the mounting, the better is the steering by shifting of the bodyweight. U-Turn recommends the new IQ4 harness for its highest level of safety and convenience. The positioning of the mounting also changes the relative brakedistance. If you have any questions about the usage of your harness with the INFINITY III, ask your U-Turn dealer or directly contact U-Turn. We assist you in any possible way.



**Riser length**

Riser A:	Riser B:	Riser C:	Riser D:
normal: 530 mm	normal: 530 mm	normal: 530 mm	normal: 530 mm
acceleration: 340 mm	acceleration: 380 mm	acceleration: 440 mm	acceleration: 530 mm

## 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 PROTECT-series by U-Turn light-weighted, convenient and safe reserves are available. The PROTECT rescues offer extremely short opening times and low sink-rates.

## Operation

 This instruction manual only pays attention to those points of flying technique which are important for the INFINITY III. 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.

## Field of Operation

The INFINITY III has been developed and tested for ordinary takeoffs, winching, and is also well suitable for motorized operations. An unauthorized or unapproved use of the INFINITY III, or operation out of its operational limits is improper and dangerous.

## Aerobatics

Aerobatics are illegal and dangerous. There is a danger of unpredictable flight conditions that could result in overstressing both material and pilot.

## Motorised Paragliding

 The U-Turn INFINITY III is suitable due to its outstanding starting characteristics, its far weight gradations and its unproblematic handling particularly well for the motorized paragliding. Please note that for the motorized use its own permission of the combination is necessary for engineunit and glider. If you intend to operate the INFINITY III motorized, please contact the motor manufacturer, U-Turn and the DULV (Deutscher Ultraleichtflug Verband) for official approval.

Use only approved motor / glider combinations and adhere to the regulations as well as the training requirements.

## Preflight Check

A careful pre flightcheck is absolutely mandatory. Double-check everything when you don't fly yourself and make sure the person flying your INFINITY III does the same. Also ensure that the pilot flying your INFINITY III, knows its operational limits and has the required license.

All lines, risers and the canopy have to be carefully checked for damage before every takeoff. Even in case of minor damages takeoff is not an option. After the glider is unpacked and layed on the ground in a halfcircle-shape, check following items:

- Lay down the canopy to draw on the middle line before the outer lines, when pulling up the glider with the A-risers, to get an easy and stable takoff.
- Set yourself up into the wind to get a symmetrical load on both sides when pulling up the canopy
- The risers may not be twisted to enable smooth looping of the brakelines.
- Make sure no lines are under the canopy to avoid a dangerous situation on takeoff.
- Preflight all other equipment after the check of the glider carefully.

## Take off

The U-Turn INFINITY III has a very easy take off.

It is important to evenly lay out the canopy with care. The middle of the glider is determined by the U-Turn INFINITY III logo at the leading edge. It is sufficient to only hold the A-main harnesses. Being that the U-Turn INFINITY III shows no tendencies to shooting forward it only needs to be slowed down minimally in the take-off phase. Necessary correction in direction using the brakes should only be performed once the canopy is above the pilot, otherwise the glider might fall back due to excessive braking.

The remaining harness should not be held during take off. The canopy will fill up with evenly distributed pull but altogether very light startimpulse. Unlike other gliders it is not necessary to fill the U-Turn INFINITY III with strong inflation motion or even several fast steps. This is also true for very little wind and even zero wind. The easiest and safest way to start the U-Turn INFINITY III is moderate inflate. Once the pilot ensures that the canopy is fully opened above him, the final decision for take off can be made. After several forceful steps they take off.

## Turning

The INFINITY III 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. The turn radius depends on the amount of pull on the brakeline.

At about 75% of brakeline travel, the INFINITY III increases bank significantly and performs a fast steep turn that can be continued to a diving spiral. The diving spiral has to be initiated and terminated slowly. The bank angle is controlled by increasing and decreasing the pull on the inner brakeline.



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

## Active Flying

The INFINITY III 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 thermics or strong turbulences watch out 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 an updraft or entering a downdraft the brakes have to be applied to counter that. Accelerated flight however is advisable when flying thru a downdraft zone. The INFINITY III is very stable overall, never the less is active flying a big flight safety factor. 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 INFINITY III is very easy to land. Glide 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 PIO's.



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.

## Winching

Because of its excellent starting characteristics, the INFINITY III is well suitable for winching operations. Take the following points into account:

- 
- maximum line tension for winching is 100kp.
  - if not operating at your usual winch, get acquainted with the local procedures and get a good briefing by a local pilot.
  - body position and pulling up the canopy does not differ from a normal takeoff. The canopy has to be completely over the pilot at takeoff. No early steering inputs to avoid falling back of the canopy or being pulled off with a non flyable glider. Never give the takeoff-command before you have total control over your glider. Don't turn too much during the takeoff-phase and before reaching the minimum safe altitude.
  - never winch the INFINITY III with loads outside the allowable weight range
  - all involved persons, machines and accessories have to have the appropriate licenses, approvals, certifications for winching.

## Advanced Handling

Even with its high stability and good flight characteristics it is possible that the INFINITY III gets into an extreme flight condition due to pilot mistakes or turbulent air. To be prepared for such situations and able to handle them in a calm and superior manner it is best to take part in a flight safety course. Advanced manoeuvres may only be flown at sufficient altitude, in calm air and with professional supervision (i.e. during a safety course). Once again we mention that a rescue system is required by the law.



The following extreme manoeuvres can be either caused intentionally, by pilots mistakes or by bad weather conditions. Every pilot can get in such a situation! All mentioned extreme manoeuvres are dangerous if they are performed without the appropriate knowledge or enough altitude or the necessary introduction. A wrong execution of these manoeuvres may have fatal consequences!

## Wingover

The pilot has to perform right and left turns with increasing bank until the desired angle is reached. Soft braking during up or down swing will prevent the wing ends from closing. Collapsing is only a factor when the bank angle is very high.

## Frontstall

A negative AoA caused by turbulences or the simultaneous pulldown of the A-risers by the pilot, results in a frontal collapse of the leading edge. The INFINITY III normally comes out of a frontstall by itself very quickly. Smooth and symmetric applying of the brakes assists the opening of the canopy positively.

## Stall

The INFINITY III 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 to low), a symmetric forward push on the A-risers or step the speed system recovers the stall.



**Warning:** Practicing stalls should be done with enough safe altitude. Never apply asymmetric brakes during a stall, it could cause a spin.

## Fullstall

To enter a fullstall pull both brakes full travel (ensure no twisted or wrapped lines). The canopy has to be stabilized before recovering the fullstall. Rise both brakes slowly and symmetrically to recover. If done right, the canopy overshoots a little forward without collapsing. Avoid an asymmetric recovery at all means. The dynamic forces drive the canopy to overreact and a collapse could occur.



**Caution:** Never release the brakes at the beginning of the recovery when the canopy tilts forward, the canopy may accelerate forward in a way that makes contact or even falling into the canopy possible.

The fullstall is a dangerous manoeuvre and should not be performed intentionally except during a flight safety course.

## Emergency Piloting

In any situation where normal steering with the brakelines is not possible, the INFINITY III can be steered with the back risers easily.

## Negative Turn

To enter a spin the pilot has to fully and quickly pull one of the brakelines when he is near the stallpoint. The glider rotates fast around its center while the inner wingtip flies backwards. For recovery just release the applied brake to let the glider accelerate.



**Warning:** The spin is a dangerous manoeuvres and should not be performed intentionally except during a flight safety course.

## Collapses



Even with its high stability and very good reaction in turbulences, strong turbulences can cause the INFINITY III to collapse. That situation is not really dangerous and clears itself automatically and not impulsively. To support the recovery, firmly apply brakes on the according side and simultaneously steer opposite on the open side. When a large part of the canopy is collapsed be careful and smooth when applying opposite steering to avoid a complete departure of airflow and entering a fullstall.

### How to avoid collapses

Single side collapses close to the ground are the number one reason for accidents with paragliders. To avoid them, or how to handle the situation when it 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:

Practise 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 towards 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 madow 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 themself. Light braking in turbulences mostly avoids a collapse. You should have already practised 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 brakeline 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 line as much as possible. If you are too low for that, stabilize the canopy on the opposite side to 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 glider as well as your own abilities.

Thus far the expert advise concerning collapses, by Ernst Strobl

## Rapid Descent

In any situation where you have to get down ASAP for different reasons (weather, extreme updraft, or other dangers), there are a couple of techniques that are described in this chapter.



**Caution:** The described manoeuvres stress your paraglider more than normal and should only be performed for practise or in a real emergency!

## Spiral Dive

Like a normal turn, it is very easy to get the INFINITY III into a spiral dive. The spiral dive gets you a descent rate up to 20 m/s. To be settled for the real thing, practise it in optimum conditions. The diving spiral gets the pilot down faster than other techniques and is therefore best suited for an emergency descent. They move down vertically within the airmass. Don't forget the G-forces when diving down, and take that into consideration before initiating a rapid descent.

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



**Warning:** Never fly a spiral dive while "big earing" the glider. It is illegal aerobatics and may overstress the both pilot and material. It is illegal aerobatics and may overstress the pilot and the material.

## Big Ears

Pull down on the outer A-risers one after the other (grab the line shackles) about 15-20cm to fold the wingtips. Hold the brakegrips together with the A-risers. The glider stays fully steerable and descends with 4-7m/s straight forward. If you release the A-risers, the folded cells open automatically.

Should there be any problem with the reopening, apply easy braking.

„Big earing“ is due to the high wingload a very stable flight condition and well suited for turbulent air. Be aware that you reduce the trimspeed, but that can be compensated by accelerating with your legs.

**Warning:** Don't fly extreme manoeuvres in this configuration, it is dangerous due to the danger of overstressing your glider. Fullstalls and spins are dangerous for a rapid descent because a wrong termination could have fatal consequences no matter what glidertype you are flying.



## B-Stall

Another very efficient method is the B-Stall. It allows for a rate of descent of 6 to over 9 meters per second. Check the airspace under and behind you prior to initiating a B-Stall. To imitate it you hold the two B-risers above the lines carabiner. While you hold the brakes in your hands at all times, pull them down progressively and symmetrically. Now you stay in this position. Your sail will stop, partially empty, and stabilize itself above your head. End the move by returning the risers symmetrically into their original position.

We recommend not to simply let the risers snap shut as this puts a lot of pressure on the material. In the paragraph titled "advanced handling" you can read what to do if you get caught unexpectedly in a stall.



ALL KINDS OF RAPID DESCENTS SHOULD BE PRACTISED IN SMOOTH AIR AND WITH ENOUGH ALTITUDE TO BE PREPARED FOR EXTREME SITUATIONS WHEN YOU NEED THEM



## Maintenance and Care

Because U-Turn only uses high quality materials, your INFINITY III will be airworthy for many years if you take good care. The aging of your INFINITY III 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.
- Assymetrical and changing folding patterns prolong the lifetime of the material especially in the middle section.

Please take following points into consideration:

- regular checks for damage
- no unnecessary bending
- lines after overloads (tree landings, water landings, etc.) for its strength and correct length to be checked and exchanged if necessary.
- in case of changing inflight handling characteristics, the lines 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 INFINITY III 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.



**U-Turn cannot be hold responsible for any 2-year 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!**



## Safety Advices and Liability

This glider complies with DHV, AFNOR (SHV and ACPUL) regulations, for the tested type, at time of delivery (see appendix).

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. Special emphasis on following points:



- stick to the rules and regs of the country you fly in
- required licenses and actual experience
- use only suitable, approved and certified accessories (helmet, harness, safety systems...)
- appropriate weather condition
- suitable terrain
- all required checks done and airworthiness of the glider
- personal shape of the pilot
- know your manual and stay within the published limits

## 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.

## Removal

The synthetic materials your U-Turn glider is build 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.