**UP TRANGO X L** 

Inflation/take-off

Type designation UP Trango X L

Type test reference no DHV GS-01-2765-23

Holder of certification UP International GmbH

Manufacturer UP International GmbH

**Classification** C

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

Trimmers No



BEHAVIOUR AT MIN WEIGHT IN BEHAVIOUR AT MAX **WEIGHT IN FLIGHT (125KG)** 





FLIGHT (100KG)

No release

Mario Eder No release

Rising behaviour Easy rising, some pilot correction is required

Special take off technique required No

Easy rising, some pilot correction is required

No

Yes

Landing

Special landing technique required No

Speeds in straight flight

В Yes

Trim speed more than 30 km/h Yes Speed range using the controls larger than 10 Yes

Minimum speed Less than 25 km/h

25 km/h to 30 km/h

Control movement

Symmetric control pressure Increasing Symmetric control travel Greater than 60 cm Increasing

50 cm to 65 cm

Pitch stability exiting accelerated flight

**Dive forward angle on exit** Dive forward less than 30°

Dive forward less than 30°

Nο

Pitch stability operating controls during

accelerated flight Collapse occurs No

Nο

Roll stability and damping

Collapse occurs No

Reducing

Stability in gentle spirals A

**Oscillations** Reducing

Tendency to return to straight flight Spontaneous exit

Spontaneous exit

Behaviour exiting a fully developed spiral dive B

Initial response of glider (first 180°) en : keine unmittelbare Reaktion Tendency to return to straight flight Spontaneous exit (g force decreasing, rate of turn decreasing)

en : keine unmittelbare Reaktion Spontaneous exit (g force decreasing, rate of turn decreasing)

Turn angle to recover normal flight Less than 720°, spontaneous recovery
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Less than 720°, spontaneous recovery

Symmetric front collapse	Α	A
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Change of course	Keeping course	Keeping course
Cascade occurs	No	No
Folding lines used	no	no
Jnaccelerated collapse (at least 50 % chord)	A	A
Entry	Rocking back less than 45°	Rocking back less than 45°
-	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Change of course	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	No	No
Folding lines used	no	no
Accelerated collapse (at least 50 % chord)	В	A
Entry	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in 3 s to 5 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Change of course	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	No	No
Folding lines used	no	no
Exiting deep stall (parachutal stall)	c	c
Deep stall achieved	 Yes	Yes
	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	•	Dive forward 0° to 30°
Change of course	Changing course less than 45°	Changing course less than 45°
Cascade occurs	No	No
High angle of attack recovery	С	c
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Cascade occurs	No	No
Recovery from a developed full stall	В	В
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
	No collapse	No collapse
Cascade occurs (other than collapses)	No	No
Rocking back		Less than 45°
Line tension	Most lines tight	Most lines tight
Small asymmetric collapse	A	A
		Less than 90°
Change of course until re-inflation	Less than 90°	Less than 30
Change of course until re-inflation Maximum dive forward or roll angle		Dive or roll angle 15° to 45°
_	Dive or roll angle 15° to 45°	
Maximum dive forward or roll angle Re-inflation behaviour Total change of course	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360°	Dive or roll angle 15° to 45°
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360°	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation)	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation)
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs Twist occurs	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation)
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs Twist occurs Cascade occurs Folding lines used	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No no	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No no
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs  Twist occurs Cascade occurs Folding lines used	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No no	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No no
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs Twist occurs Cascade occurs Folding lines used Large asymmetric collapse Change of course until re-inflation	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No No no  B  90° to 180°	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No no  B  90° to 180°
Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs  Twist occurs Cascade occurs Folding lines used	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No no  B  90° to 180° Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation) No No no

Collapse on the opposite side occurs	No (or only a small number of collapsed	No (or only a small number of
	cells with a spontaneous re inflation)	collapsed cells with a spontaneous re inflation)
Twist occurs	No	No
Cascade occurs	No	No
Folding lines used	no	no
Small asymmetric collapse accelerated	A	A
Change of course until re-inflation	Less than 90°	Less than 90°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	No	No
Cascade occurs		No
Folding lines used	no	no
ll anno assentatio callendo accelenated	ic	in.
Large asymmetric collapse accelerated	¦C	¦B
Change of course until re-inflation		90° to 180°
Maximum dive forward or roll angle	5	Dive or roll angle 15° to 45°
Re-Inflation behaviour	Inflates in less than 3 s from start of pilot action	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs		No
Cascade occurs		No
Folding lines used	no	no
Directional control with a maintained asymmetric collapse	А	А
Able to keep course	Yes	Yes
180° turn away from the collapsed side		Yes
possible in 10 s		Maria blaca FO 0/ af blaca areas above
Amount of control range between turn and stall or spin		control travel
Trim speed spin tendency	A	A
Spin occurs	±	No
opin occurs		110
Low speed spin tendency	A	A
Spin occurs	: No	No
Sp. 100000		
Recovery from a developed spin	В	В
Spin rotation angle after release	Stops spinning in 90° to 180°	Stops spinning in 90° to 180°
Cascade occurs		No
B-line stall	c	С
Change of course before release		
Behaviour before release	Changing course more than 45°	Changing course more than 45°
	Changing course more than 45° Remains stable without straight span	Remains stable without straight span
Recovery		Remains stable without straight
Recovery Dive forward angle on exit	Remains stable without straight span  Spontaneous in 3 s to 5 s	Remains stable without straight span
	Remains stable without straight span  Spontaneous in 3 s to 5 s  Dive forward 0° to 30°	Remains stable without straight span Spontaneous in less than 3 s
Dive forward angle on exit	Remains stable without straight span  Spontaneous in 3 s to 5 s  Dive forward 0° to 30°	Remains stable without straight span  Spontaneous in less than 3 s  Dive forward 0° to 30°
Dive forward angle on exit	Remains stable without straight span  Spontaneous in 3 s to 5 s  Dive forward 0° to 30°	Remains stable without straight span  Spontaneous in less than 3 s  Dive forward 0° to 30°
Dive forward angle on exit Cascade occurs	Remains stable without straight span  Spontaneous in 3 s to 5 s  Dive forward 0° to 30°  No	Remains stable without straight span Spontaneous in less than 3 s Dive forward 0° to 30° No
Dive forward angle on exit Cascade occurs Big ears	Remains stable without straight span  Spontaneous in 3 s to 5 s Dive forward 0° to 30° No  B  Dedicated controls	Remains stable without straight span Spontaneous in less than 3 s Dive forward 0° to 30° No
Dive forward angle on exit  Cascade occurs  Big ears  Entry procedure  Behaviour during big ears	Remains stable without straight span  Spontaneous in 3 s to 5 s Dive forward 0° to 30° No  B  Dedicated controls	Remains stable without straight span Spontaneous in less than 3 s Dive forward 0° to 30° No  B Standard technique
Dive forward angle on exit  Cascade occurs  Big ears  Entry procedure  Behaviour during big ears	Remains stable without straight span  Spontaneous in 3 s to 5 s Dive forward 0° to 30° No  B  Dedicated controls Stable flight Spontaneous in 3 s to 5 s	Remains stable without straight span Spontaneous in less than 3 s Dive forward 0° to 30° No  B  Standard technique Stable flight

Big ears in accelerated flight	A	Α
Entry proc	edure Dedicated controls	Standard technique
Behaviour during big	g ears Stable flight	Stable flight
Rec	covery Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle o	n exit Dive forward 0° to 30°	Dive forward 0° to 30°
Behaviour immediately after releasir accelerator while maintaining big	-	Stable flight
Alternative means of directional control	A	A
180° turn achievable i	<b>n 20 s</b> Yes	Yes
Stall or spin o	occurs No	No
Any other flight procedure and/or config	uration described in the user's manua	al

**UP TRANGO X M** 

Inflation/take-off

Type designation UP Trango X M

Type test reference no DHV GS-01-2764-23

Holder of certification UP International GmbH

Manufacturer UP International GmbH

**Classification** C

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

Trimmers No

BEHAVIOUR AT MIN WEIGHT IN BEHAVIOUR AT MAX FLIGHT (85KG)

**WEIGHT IN FLIGHT (110KG)** 



Mario Eder No release No release

Rising behaviour Easy rising, some pilot correction is required

Special take off technique required No

Easy rising, some pilot correction is

required No

No

Reducing

Landing

Special landing technique required No

В Speeds in straight flight

Trim speed more than 30 km/h Yes Yes Speed range using the controls larger than 10 Yes Yes

> Minimum speed 25 km/h to 30 km/h 25 km/h to 30 km/h

Symmetric control pressure Increasing Increasing Symmetric control travel 45 cm to 60 cm 50 cm to 65 cm

Pitch stability exiting accelerated flight

**Dive forward angle on exit** Dive forward less than 30° Dive forward less than 30°

Collapse occurs No

Pitch stability operating controls during accelerated flight

Collapse occurs No Nο

Roll stability and damping

**Oscillations** Reducing

Stability in gentle spirals A Tendency to return to straight flight Spontaneous exit Spontaneous exit

Behaviour exiting a fully developed spiral dive B

Initial response of glider (first 180°) Immediate reduction of rate of turn Tendency to return to straight flight Spontaneous exit (g force decreasing, rate of turn decreasing)

Immediate reduction of rate of turn Spontaneous exit (g force decreasing, rate of turn decreasing)

Turn angle to recover normal flight	720° to 1 080°, spontaneous recovery	720° to 1 080°, spontaneous recovery
Symmetric front collapse	В	В
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course	Keeping course	Keeping course
Cascade occurs	No	No
Folding lines used	no	no
Unaccelerated collapse (at least 50 % chord)	В	В
	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course	Keeping course	Keeping course
Cascade occurs	No	No
Folding lines used	no	no
Accelerated collapse (at least 50 % chord)	В	В
·	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit		Dive forward 30° to 60°
Change of course		Keeping course
Cascade occurs		No
Folding lines used	• • •	no
rolating titles used	110	110
Exiting deep stall (parachutal stall)	Α	A
Deep stall achieved	Yes	Yes
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Change of course	Changing course less than 45°	Changing course less than 45°
Cascade occurs	No	No
High angle of attack recovery	A	A
	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Cascade occurs	·	No
Recovery from a developed full stall	B	В
Dive forward angle on exit	<u> </u>	Dive forward 30° to 60°
_	No collapse	No collapse
Cascade occurs (other than collapses)	•	No
Rocking back		Less than 45°
<del>-</del>	Most lines tight	Most lines tight
Small asymmetric collapse	A	A
Change of course until re-inflation	L	Less than 90°
Maximum dive forward or roll angle		Dive or roll angle 15° to 45°
Re-inflation behaviour		Spontaneous re-inflation
Total change of course		Less than 360°
Collapse on the opposite side occurs		No (or only a small number of collapsed cells with a spontane re inflation)
Twist occurs	No	No
Cascade occurs	No	No
Cuscuae occurs		

Change of course until re-inflation 90° to 180°

Maximum dive forward or roll angle Dive or roll angle 45° to 60°

Re-inflation behaviour Spontaneous re-inflation

Total change of course Less than 360°

Spontaneous re-inflation
Less than 360°

Large asymmetric collapse

Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used	<b>I</b> no	no
_		
Small asymmetric collapse accelerated	A	A
<u> </u>	Locathan 000	Less than 90°
Change of course until re-inflation		
Maximum dive forward or roll angle	5	Dive or roll angle 15° to 45°
	r Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	s No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used	l no	no
Large asymmetric collapse accelerated	c	c
<u> </u>	. <del></del>	<u> </u>
Change of course until re-inflation		90° to 180°
Maximum dive forward or roll angle		Dive or roll angle 45° to 60°
Re-inflation behavious	r Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	5 No	No
Cascade occurs	s No	No
Folding lines used	<b>I</b> no	no
Directional control with a maintained asymmetric collapse	А	A
Able to keep course	e Yes	Yes
180° turn away from the collapsed side		Yes
possible in 10 s		
Amount of control range between turn and stall or spir		More than 50 % of the symmetric control travel
Trim speed spin tendency	A	A
<u> </u>	. N	N
Spin occurs	5 NO	No
Low speed spin tendency	A	A
<u> </u>	- NI -	NI-
Spin occurs	• NO	No
Recovery from a developed spin	A	A
L	.±	±
Spin rotation angle after release Cascade occurs		Stops spinning in less than 90° No
B-line stall	c	c
L		±
Change of course before release Behaviour before release	a Changing course less than 45° a Remains stable without straight span	Changing course less than 45° Remains stable without straight span
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exi		Dive forward 0° to 30°
Cascade occurs		No
Big ears	В	В
<u> </u>	. <del>.</del>	Standard technique
Entry procedure	Ctandard tochnique	Standard rechnique
	Standard technique	•
Behaviour during big ears	Stable flight	Stable flight
Recovery	s Stable flight y Spontaneous in 3 s to 5 s	Stable flight Spontaneous in 3 s to 5 s
	s Stable flight y Spontaneous in 3 s to 5 s	Stable flight
Recovery	s Stable flight y Spontaneous in 3 s to 5 s	Stable flight Spontaneous in 3 s to 5 s
Recovery	s Stable flight y Spontaneous in 3 s to 5 s	Stable flight Spontaneous in 3 s to 5 s

Entry procedure Standard technique
Behaviour during big ears Stable flight
Recovery Spontaneous in 3 s to 5 s
Dive forward angle on exit Dive forward 0° to 30°

**Behaviour immediately after releasing the** Stable flight accelerator while maintaining big ears

Standard technique Stable flight Spontaneous in 3 s to 5 s Dive forward 0° to 30° Stable flight

Alternative means of directional control A	Α
180° turn achievable in 20 s Yes	Yes
Stall or spin occurs No	No
Any other flight procedure and/or configuration described in the use	er's manual

**UP TRANGO X SM** 

Type designation UP Trango X SM Type test reference no DHV GS-01-2763-23 Holder of certification UP International GmbH

Manufacturer UP International GmbH

**Classification** C

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

Trimmers No



BEHAVIOUR AT MIN WEIGHT IN FLIGHT (75KG)

**BEHAVIOUR AT MAX** WEIGHT IN FLIGHT (100KG)



Josef Bauer

No release

No release

Inflation/take-off

Rising behaviour Easy rising, some pilot correction is

required

Easy rising, some pilot correction is

required No

Landing

Special landing technique required No

Special take off technique required No

Speeds in straight flight В

Trim speed more than 30 km/h Yes Yes Speed range using the controls larger than 10 Yes Yes

Minimum speed Less than 25 km/h 25 km/h to 30 km/h

Control movement

Symmetric control pressure Increasing Increasing 45 cm to 60 cm Symmetric control travel 40 cm to 55 cm

Pitch stability exiting accelerated flight

**Dive forward angle on exit** Dive forward less than 30° Dive forward less than 30°

> Collapse occurs No Nο

Pitch stability operating controls during

accelerated flight Collapse occurs No Nο

Roll stability and damping

**Oscillations** Reducing Reducing

Stability in gentle spirals A

Tendency to return to straight flight Spontaneous exit Spontaneous exit

Behaviour exiting a fully developed spiral dive B

Initial response of glider (first 180°) en : keine unmittelbare Reaktion Tendency to return to straight flight Spontaneous exit (g force decreasing, rate of turn decreasing)

Immediate reduction of rate of turn Spontaneous exit (g force decreasing, rate of turn decreasing)

Turn angle to recover normal flight	Less than 720°, spontaneous recovery	720° to 1 080°, spontaneous recovery
Symmetric front collapse	В	В
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course	Keeping course	Keeping course
Cascade occurs	No	No
Folding lines used	no	no
Unaccelerated collapse (at least 50 % chord)	В	В
	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	•	Dive forward 30° to 60°
Change of course		Keeping course
Cascade occurs		No
Folding lines used	no	no
Accelerated collabor (at least EO IV, shoul)	in .	B
	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	•	Dive forward 30° to 60°
_		
Cascade occurs	Entering a turn of less than 90°	Keeping course No
Folding lines used	• • • • • • • • • • • • • • • • • • • •	no
		1.
	<u>A</u>	¦A
Deep stall achieved		Yes
-	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit		Dive forward 0° to 30°
Change of course Cascade occurs	Changing course less than 45°	Changing course less than 45° No
cascade occurs	110	NO
High angle of attack recovery	c	A
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in less than 3 s
Cascade occurs	No	No
Recovery from a developed full stall	В	В
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Collapse	No collapse	No collapse
Cascade occurs (other than collapses)	No	No
Rocking back	Less than 45°	Less than 45°
Line tension	Most lines tight	Most lines tight
Small asymmetric collapse	¦B	A
Change of course until re-inflation	90° to 180°	Less than 90°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
Re-inflation behaviour		Spontaneous re-inflation
Total change of course		Less than 360°
Collapse on the opposite side occurs		No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	No	No
Cascade occurs	No	No
cuscude occurs		

Change of course until re-inflation 90° to 180°

Maximum dive forward or roll angle Dive or roll angle 15° to 45°

Re-inflation behaviour Spontaneous re-inflation

Total change of course Less than 360°

C

C

90° to 180°

Dive or roll angle 45° to 60°

Spontaneous re-inflation

Less than 360°

	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used	l no	no
Small asymmetric collapse accelerated	A	A
Change of course until we inflation	Loss than 000	Loca than 000
Change of course until re-inflation		Less than 90°
Maximum dive forward or roll angle		Dive or roll angle 15° to 45°
	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used		no
rolung mes used	1110	110
la consequential colleges accolegated	in.	ic
Large asymmetric collapse accelerated	¦B	¦C
Change of course until re-inflation	90° to 180°	90° to 180°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 45° to 60°
Re-inflation behavious	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
_	s No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	s No	No
Cascade occurs		No
Folding lines used	I NO	no
Directional control with a maintained asymmetric collapse	c	А
Able to keep course	Yes	Yes
180° turn away from the collapsed side	Yes	Yes
possible in 10 s	<b>;</b>	
Amount of control range between turn and stall or spir	,	More than 50 % of the symmetric control travel
Trim speed spin tendency	A	A
<u> </u>	1-1	
Spin occurs		No
Low speed spin tendency	;A	A
Spin occurs		No
Recovery from a developed spin	¦B	¦A
Spin rotation angle after release Cascade occurs		Stops spinning in less than 90° No
P-line stall	ic.	ic
B-line stall	C	c
Change of course before release Behaviour before release	Changing course less than 45° Remains stable without straight span	Changing course less than 45° Remains stable without straight span
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exi		Dive forward 0° to 30°
Cascade occurs		No.
Cascade Occurs		
Rig ears	ia.	B
Big ears	A	В
i	A Standard technique	Standard technique
i	Standard technique	<del>i</del>
Entry procedure Behaviour during big ears	Standard technique	Standard technique
Entry procedure Behaviour during big ears	s Standard technique s Stable flight r Spontaneous in less than 3 s	Standard technique Stable flight
Entry procedure Behaviour during big ears Recovery	s Standard technique s Stable flight r Spontaneous in less than 3 s	Standard technique Stable flight Spontaneous in 3 s to 5 s
Entry procedure Behaviour during big ears Recovery	s Standard technique s Stable flight r Spontaneous in less than 3 s	Standard technique Stable flight Spontaneous in 3 s to 5 s

**Entry procedure** Standard technique **Behaviour during big ears** Stable flight **Recovery** Spontaneous in less than 3 s

**Dive forward angle on exit** Dive forward 0° to 30°

Behaviour immediately after releasing the Stable flight accelerator while maintaining big ears

Standard technique Stable flight Spontaneous in 3 s to 5 s Dive forward 0° to 30° Stable flight

Alternative means of directional control A	Α
180° turn achievable in 20 s Yes	Yes
Stall or spin occurs No	No
Any other flight procedure and/or configuration described in the	user's manual

**UP TRANGO X S** 

Type designation UP Trango X S Type test reference no DHV GS-01-2762-23

Holder of certification UP International GmbH

Manufacturer UP International GmbH

**Classification** C

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

**Trimmers** No

BEHAVIOUR AT MIN WEIGHT IN BEHAVIOUR AT MAX

FLIGHT (65KG)

**Test pilots** 



Juliette Schönsee **Expert Harald Buntz** 



WEIGHT IN FLIGHT (85KG)



Josef Bauer

	No release	No release
Inflation/take-off	c	¦B
Rising behaviou	Easy rising, some pilot correction is required	Easy rising, some pilot correction is required
Special take off technique required	l Yes	No
Landing	A	A
Special landing technique required	l No	No
Speeds in straight flight	A	A
Trim speed more than 30 km/h	ı Yes	Yes
Speed range using the controls larger than 10 km/h		Yes
Minimum speed	Less than 25 km/h	Less than 25 km/h
Control movement	<u></u> c	c
Symmetric control pressure	Increasing	Increasing
Symmetric control trave	1 40 cm to 55 cm	45 cm to 60 cm
Pitch stability exiting accelerated flight	A	A
Dive forward angle on exit	Dive forward less than 30°	Dive forward less than 30°
Collapse occurs	s No	No
Pitch stability operating controls during accelerated flight	A	A
Collapse occurs	s No	No
Roll stability and damping	A	A
Oscillations	Reducing	Reducing
Stability in gentle spirals	A	A
Tendency to return to straight flight	: Spontaneous exit	Spontaneous exit
Behaviour exiting a fully developed spiral dive	В	В
Initial response of glider (first 180°)	en : keine unmittelbare Reaktion	en : keine unmittelbare Reaktion

**Tendency to return to straight flight** Spontaneous exit (g force decreasing, rate of turn decreasing)

**Turn angle to recover normal flight** Less than 720°, spontaneous recovery

Spontaneous exit (g force decreasing, rate of turn decreasing)

Less than 720°, spontaneous

		recovery
Symmetric front collapse	A	A
Entry	y Rocking back less than 45°	Rocking back less than 45°
	y Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exi		Dive forward 0° to 30°
_	e Entering a turn of less than 90°	Keeping course
Cascade occurs		No
Folding lines used	d no	no
Unaccelerated collapse (at least 50 % chord)	B	В
Entry	<b>y</b> Rocking back less than 45°	Rocking back less than 45°
	y Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exi		Dive forward 30° to 60°
	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs		No
Folding lines used	d no	no
Accelerated collapse (at least 50 % chord)	В	В
	y Rocking back less than 45°	Rocking back less than 45°
	y Spontaneous in 3 s to 5 s	Spontaneous in less than 3 s
Dive forward angle on exi		Dive forward 30° to 60°
_	e Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs		No
Folding lines used	d no	no
Exiting deep stall (parachutal stall)	В	В
Deep stall achieved	d Yes	Yes
	y Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exi	t Dive forward 30° to 60°	Dive forward 30° to 60°
	e Changing course less than 45°	Changing course less than 45°
Cascade occurs	s No	No
High angle of attack recovery	A	A
Recovery	y Spontaneous in less than 3 s	Spontaneous in less than 3 s
Cascade occur	s No	No
Recovery from a developed full stall	c	В
Dive forward angle on exi	<b>t</b> Dive forward 30° to 60°	Dive forward 30° to 60°
Collapse	e No collapse	No collapse
Cascade occurs (other than collapses	<b>)</b> No	No
Rocking back	k Greater than 45°	Less than 45°
Line tension	n Most lines tight	Most lines tight
Small asymmetric collapse	A	В
Change of course until re-inflation	1 Less than 90°	90° to 180°
Maximum dive forward or roll angle	e Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
Re-inflation behaviou	r Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	e Less than 360°	Less than 360°
	s No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	e No	No
Cascade occurs Folding lines use	s No	No

Change of course until re-inflation 90° to 180°

Maximum dive forward or roll angle Dive or roll angle 45° to 60°

Re-inflation behaviour Spontaneous re-inflation

Large asymmetric collapse

90° to 180° Dive or roll angle 45° to 60° Spontaneous re-inflation

Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)  Twist occurs No No Cascade occurs No Folding lines used no No Cascade occurs No Folding lines used no No Cascade occurs No Maximum dive forward or roll angle 15° to 45° Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360° Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re-inflation Twist occurs No Cascade occurs No Folding lines used no No Folding lines used no No Cascade occurs No Folding lines used no No Cascade occurs No Folding lines used no No Cascade occurs No Cascade occurs No Folding lines used no No Cascade occurs No Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360° Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360° Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re-inflation) Twist occurs No Collapse or roll angle 45° to 60° Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360° Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re-inflation) Twist occurs No (or only a small number of collapsed cells with a spontaneous re-inflation) Total change of course Less than 360° Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re-inflation) No Cascade occurs No No Cascade occurs No No Cascade occurs No No Able to keep course Yes Possible in 10 s Amount of control with a maintained Able to keep course Yes possible in 10 s Amount of control range between turn and More than 50 % of the symmetric control More than 50 % of t	Total shapes of course	Loca than 2600	Less than 360°
cells with a spontaneous re inflation)  Twist occurs No  Cascade occurs No  Folding lines used no  Change of course until re-inflation Less than 90°  Re-inflation behaviour. Spontaneous re-inflation  Total change of course Less than 30°  Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re-inflation  Total change of course Less than 30°  Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re-inflation on no  Cascade occurs No  Cascade occurs No  Folding lines used no  Large asymmetric collapse accelerated (c c.  Change of course until re-inflation 90° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Maximum dive forward or roll angle 190° to 180°  Re-inflation behaviour Spontaneous re-inflation  Total change of course Less than 30°  No (or only a small number of collapsed cells with a spontaneous re-inflation  Less than 30°  No (or only a small number of collapsed cells with a spontaneous re-inflation  Less than 30°  No (or only a small number of collapsed cells with a spontaneous re-inflation less than 3 on the cells with a spontaneous re-inflation less than 3 on the cells with a spontaneous re-inflation less than 3 on the cells with a spontaneous re-inflation less than 3 on the cells with a spontaneous re-inflation less than 3 on the cells with a spontane	_		
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Small asymmetric collapse accelerated   A   B			
Small asymmetric collapse accelerated   A			
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Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360° Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)  Twist occurs No Cascade occurs No Foldring lines used no No Re-inflation behaviour Spontaneous re inflation Total change of course until re-inflation 90° to 180° Maximum dive forward or roll angle Dive or roll angle 45° to 60° Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360° Collapse on the opposite side occurs No Cascade occurs No Cascade occurs No Folding lines used no No Cascade occurs No Cascade occurs No Folding lines used no Directional control with a maintained asymmetric collapse Able to keep course Yes possible in 10 s Amount of control range between turn and More than 50 % of the symmetric control More than 50 % of the symmetric control travel  Trim speed spin tendency A Spin occurs No Spin occurs No No Cascade occurs No No Cascade occurs No Dive forward angle after release Stops spinning in less than 90° Cascade occurs No Recovery from a developed spin Recovery Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward on the spin test than 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward on the spin test than 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward on the spin test than 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward on to 30° Dive forward on the spin test than 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than 3 s Dive forward on the spin test than	Change of course until re-inflation	Less than 90°	90° to 180°
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Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)  Twist occurs No No No Folding lines used no no no No No No Reading lines used no	Re-inflation behaviour	· Spontaneous re-inflation	Spontaneous re-inflation
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Large asymmetric collapse accelerated   C   C			
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Change of course until re-inflation 90° to 180°  Maximum dive forward or roll angle Dive or roll angle 45° to 60°  Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360°  Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous re inflation)  Twist occurs No Cascade occurs No Folding lines used no  Directional control with a maintained asymmetric collapse  Able to keep course Yes 180° turn away from the collapsed side Yes possible in 10 s  Amount of control range between turn and More than 50 % of the symmetric control for the stall or spin travel  Trim speed spin tendency  A  Spin occurs No No  Recovery from a developed spin  Recovers Remains stable without straight span Recovery Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30°  Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive forward 0° to 30° Dive	rolung mes used	110	110
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Total change of course Less than 360°  Collapse on the opposite side occurs No (or only a small number of collapsed collapsed cells with a spontaneous re inflation)  Twist occurs No	Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	Dive or roll angle 45° to 60°
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Amount of control range between turn and More than 50 % of the symmetric control More than 50 % of the symmetric control travel  Trim speed spin tendency  A  Spin occurs No  No  Low speed spin tendency  A  Spin occurs No  No  Recovery from a developed spin  A  Spin rotation angle after release Stops spinning in less than 90°  Cascade occurs No  No  B-line stall  C  Change of course before release Changing course more than 45°  Behaviour before release Remains stable without straight span  Recovery Spontaneous in less than 3 s  Dive forward angle on exit Dive forward 30° to 60°  Cascade occurs No  No  Big ears  A  Entry procedure Standard technique  Behaviour during big ears Stable flight  Recovery Spontaneous in less than 3 s  Dive forward angle on exit Dive forward 0° to 30°  Dive forward 0° to 30°  Dive forward on less than 3 s  Spontaneous in less than 3 s  Dive forward angle on exit Dive forward 0° to 30°	-		
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Spin occurs No  Recovery from a developed spin  Spin rotation angle after release Stops spinning in less than 90° Cascade occurs No  B-line stall  C  Change of course before release Changing course more than 45° Behaviour before release Remains stable without straight span Recovery Spontaneous in less than 3 s Dive forward angle on exit Dive forward 30° to 60° Cascade occurs No  Big ears  A  Entry procedure Standard technique Behaviour during big ears Stable flight Recovery Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30°  Standard technique Standard technique Stable flight Stable flight Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30°	Spin occurs		No
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Behaviour during big ears Stable flight  Recovery Spontaneous in less than 3 s  Dive forward angle on exit Dive forward 0° to 30°  Stable flight  Spontaneous in less than 3 s  Dive forward 0° to 30°  Dive forward 0° to 30°	<u> </u>	<u> </u>	i
Recovery Spontaneous in less than 3 s  Dive forward angle on exit Dive forward 0° to 30°  Dive forward 0° to 30°  Dive forward 0° to 30°	Entry procedure	Standard technique	Standard technique
<b>Dive forward angle on exit</b> Dive forward 0° to 30° Dive forward 0° to 30°	Behaviour during big ears	Stable flight	Stable flight
	Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Big ears in accelerated flight A A	Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
iong ears in accererated riight A A	Pig care in accelerated flight	ia.	I.A.
	by ears in accelerated flight	1 <b>A</b>	1 <b>A</b>

**Entry procedure** Standard technique **Behaviour during big ears** Stable flight

**Recovery** Spontaneous in less than 3 s

Dive forward angle on exit Dive forward 0° to 30° mmediately after releasing the Stable flight

Behaviour immediately after releasing the Stable flight accelerator while maintaining big ears

Standard technique Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight

Alternative means of directional control A	Α			
180° turn achievable in 20 s Yes	Yes			
Stall or spin occurs No	No			
Any other flight procedure and/or configuration described in the user's manual				