AIR TURQUOISE SA | PARA-TEST.COM

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Test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes



Flight test report: EN 926-2:2013 & NfL 2-565-20

Manufacturer	Skywalk GmbH & Co. KG	Certification number	F	PG_1883.2021		
Address Windeckstr. 4 83250 Marquartstein Germany		Flight test		15.11.2019		
Glider model	Spirit 75+	Classification	C	;		
Serial number	SX20 S 001	Representative	Ν	lone		
Trimmer	no	Place of test	V	'illeneuve		
Folding lines used	no	Tidoo or toot	·	monouvo		
Test pilot		Light pilot under Air Turquoise supervision		Claude Thurnheer		
Harness		Flugsau - XX-Lite	Δ	dvance - Success 4 M		
		40		44		
Harness to risers distance (cm) Distance between risers (cm)		40		4		
	` '		-			
Total weight in fligh	nt (kg)	50	9	5		
1. Inflation/Take-off		A Smooth apply and constant riging	۸	Smooth, easy and constant rising	۸	
Rising behaviour Special take off technique	roquired	Smooth, easy and constant rising No	A A	No	A	
2. Landing	required	A	^	NO		
Special landing technique required		No	Α	No	A	
3. Speed in straight flight		В	,,		Ė	
Trim speed more than 30 km/h		Yes	Α	Yes	Δ	
Speed range using the controls larger than 10 km/h		Yes	Α	Yes	Δ	
Minimum speed		25 km/h to 30 km/h	В	25 km/h to 30 km/h	В	
4. Control movement		С				
Max. weight in flight up	to 80 kg					
Symmetric control pressur		Increasing / greater than 55 cm	Α	not available	0	
Max. weight in flight 80 kg to 100 kg						
Symmetric control pressure / travel		not available	0	Increasing / 45 cm to 60 cm	C	
Max. weight in flight greater than 100 kg						
Symmetric control pressure / travel		not available	0	not available	0	
5. Pitch stability exiting	accelerated flight	A				
Dive forward angle on exit		Dive forward less than 30°	Α	Dive forward less than 30°	A	
Collapse occurs		No	Α	No	A	
6. Pitch stability operation flight	ng controls during accelerated	Α				
Collapse occurs		No	Α	No	A	
7. Roll stability and dam	ping	A				
Oscillations		Reducing	Α	Reducing	Δ	
8. Stability in gentle spir	rals	A				
Tendency to return to stra	<u> </u>	Spontaneous exit	Α	Spontaneous exit	Α	
	Illy developed spiral dive	Α				
Initial response of glider (f		Immediate reduction of rate of turn	A	Immediate reduction of rate of turn	A	
Tendency to return to stra		Spontaneous exit (g force decreasing, rate of turn decreasing)	Α	Spontaneous exit (g force decreasing, rate of turn decreasing)	Δ	
Turn angle to recover norr	mal flight	Less than 720°, spontaneous recovery	Α	Less than 720°, spontaneous recovery	Δ	
10. Symmetric front coll	apse	В				
Approximately 30 % cho	ord					
• • •						

Netrowny Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0 "to 30" Keeping A Div	_				_
Author of less than 90° Course	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Folding lines used	Dive forward angle on exit Change of course		Α		Α
A tests 150% chord	Cascade occurs	Not available	0	No	Α
Entity	Folding lines used	No	Α	No	Α
No.	At least 50% chord				
No.	Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Dive forward angle on exit / Change of course Author of less than 90" Author of less than 45" Author of less than 90" Author of less than		•	Α	•	Α
Felding lines used With accelerator Eithy Rocking back less than 45"	•	Dive forward 0° to 30° / Entering		Dive forward 0° to 30° / Entering	
Mith accelerator Entry	Cascade occurs	No	Α	No	Α
Mith accelerator Entry	Folding lines used	No	Α	No	Α
Recovery Consideration Recoking back less than 45" A Recoking back less than 45" A Recovery Cascade occurs No	-				
Recovery Dive forward angle on exit / Change of course Dive forward angle on exit / Change of course A Dive forward angle on exit / Change of course A No A Recovery Beep stall parachutal stall) Beep stall parachutal stall) Beep stall achieved A Recovery A Recovery A Recovery A Recovery Beep stall achieved A Recovery A Re		Rocking back less than 45°	Δ	Rocking back less than 45°	Δ
Dive forward angle on exit / Change of course Dive forward 0° to 30° / Entering a turn of less than 90° B cancel occurs No	•	<u> </u>		<u> </u>	
a turn of less than 90° Entering a turn of less than 90° A No A N	· ·	•		•	
Folding lines used 1.1. Exiting deep stall (parachutal stall) B 1.1. Exiting deep stall (parachutal stall) Deep stall achieved Recovery Spontaneous in less than 3 s A Yes Recovery Change of course Change of course until re-inflation / Maximum dive forward or voil angle of course Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change of course until re-inflation / Maximum dive forward or voil angle Change or course until re-inflation / Maximum dive forward or voil angle Change or course Cha		a turn of less than 90°		Entering a turn of less than 90°	
Deep stall achieved Yes					
Deep stall achieved	Folding lines used	No	Α	No	Α
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward angle on exit Dive forward 30" to 60" B Dive forward 50 to 60" B Change of course Changing course less than 45" A No A No A 12. High angle of attack recovery A Recovery Spontaneous in less than 3 s A Spontaneous than 3 s A Spontaneous relation A Spontaneous		В			
Dive forward angle on exit Dive forward 30" to 60" B Change of course Changing course less than 45" A Changing course less than 45" A Changing course less than 45" A Cascade cocurs No A No No A	Deep stall achieved	Yes	Α	Yes	Α
Change of course No No A No No A No No A No A No A No	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Cascade occurs	Dive forward angle on exit	Dive forward 30° to 60°	В	Dive forward 30° to 60°	В
Recovery Rec	Change of course	Changing course less than 45°	Α	Changing course less than 45°	Α
Recovery Sopontaneous in less than 3 s	Cascade occurs	No	Α	No	Α
Recovery from a developed full stall Cascade occurs No A No	12. High angle of attack recovery	A			
Cascade occurs No No No No No No No N		Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
13. Recovery from a developed full stall Dive forward 60° to 90° C Dive forward 60° to 90° C C Collapse No collapse No collapse A No collapse A No collapse A Rocking back Less than 45° A Less than 45° A Less than 45° A Line tension Most lines tight A Most lines tight A Most lines tight A Less than 45° A Less 45°	•	•	Α	•	Α
Dive forward angle on exit Collapse No collapse No collapse No collapse A Less than 45° A Line tension Most lines tight A Less than 45° A Most lines tight A Most lines tight A Less than 45° A Most lines tight A Most lines tight A Less than 45° A Most lines tight A Less than 45° A Most lines tight A Nost lines tight A Less than 45° A Most lines tight A No (or only a small number of collapsed cells with a spontaneous reinflation) Twist occurs Change of course until re-inflation / Maximum dive forward or roll angle of course Change of course Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous reinflation) A Spontaneous re-inflation A Spontaneous re-inflatio					, ,
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Cascade occurs (other than collapses) No Less than 45° A A Less than 45° A Less than 45° A Less than 45° A A Less than 45° A Less than 45° A Less than 45° A A Less than 45° A Less than 45° A Less than 45° A A A A A A A A A					
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Line tension Most lines tight A Most lines tight A					
Cascade occurs No No No No No No No N					
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Change of course until re-inflation / Maximum dive forward or roll angle langle Re-inflation behaviour Spontaneous re-inflation Total change of course Less than 360° Less than 360° A Ro (or only a small number of collapsed cells with a spontaneous re-inflation) A Ro (ascade occurs A Ro No Cascade occurs A Ro Spontaneous re-inflation A Ro No Cascade occurs A Ro Cascade occurs	•	С			
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Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous reinflation) Twist occurs No No A No No A No A No A No A No A No	Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α
Twist occurs No No A	Total change of course	Less than 360°	Α	Less than 360°	Α
Cascade occurs Folding lines used Large asymmetric collapse Change of course until re-inflation / Maximum dive forward or roll angle Re-inflation behaviour Total change of course 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) Twist 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) Twist 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) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation) A No (or only a small number of collapsed cells with a spontaneous re-inflation or only a small number of collapsed cells with a spontaneous re-inflation A No (or only a small number of collapsed cells with a spontaneous re-inflation A No (or only a small number of collapsed cells with a spontaneous re-inflation A No (or only a small number of collapsed cells with a spontaneous re-inflation A No (or only a small number of collapsed cells with a spontaneous re-inflation A No (or only a small number of re-inflation) A No (or o	Collapse on the opposite side occurs	collapsed cells with a spontaneous	Α	collapsed cells with a spontaneous	Α
Folding lines used Large asymmetric collapse Change of course until re-inflation / Maximum dive forward or roll angle of to 15°	Twist occurs	No	Α	No	Α
Large asymmetric collapse Change of course until re-inflation / Maximum dive forward or roll angle of to 15° to 15° Re-inflation behaviour Spontaneous re-inflation A Spontaneous re-inflation A Spontaneous re-inflation A Spontaneous re-inflation A 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 Cascade occurs No No No A No A No A No A No A No A No	Cascade occurs	No	Α	No	Α
Change of course until re-inflation / Maximum dive forward or roll angle roll	Folding lines used	No	Α	No	Α
roll angle 0° to 15° 15° to 45° Re-inflation behaviour Spontaneous re-inflation A Spontaneous re-inflation A Spontaneous re-inflation A Less than 360° A Less than 360° A Less than 360° A Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous reinflation) Twist occurs No A No (or only a small number of collapsed cells with a spontaneous reinflation) Twist occurs No A No	Large asymmetric collapse				
Total change of course Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous reinflation) Twist occurs No No No A No No Cascade occurs No No A Cascade occurs No No A No A No A No A No A No A Ro Cascade occurs No No A No A Cascade occurs No No A Folding lines used No Small asymmetric collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle roll angle A Less than 360° A Less than 360° A No A No A No A No A Less than 90° / Dive or roll angle 15° to 45° A Less than 90° / Dive or roll angle 15° to 45°	• .		Α		В
Collapse on the opposite side occurs No (or only a small number of collapsed cells with a spontaneous reinflation) Twist occurs No No A No (or only a small number of collapsed cells with a spontaneous reinflation) A No A No A No A No A No A No A Cascade occurs No No No A No A No A No A Small asymmetric collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle To the standard of the collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle 15° to 45° A Less than 90° / Dive or roll angle 15° to 45°	Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α
collapsed cells with a spontaneous reinflation) Twist occurs No No A No A No A No A Folding lines used No Small asymmetric collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle Collapsed cells with a spontaneous reinflation) A No A No A No A Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle 15° to 45° A Collapsed cells with a spontaneous reinflation) A No A No A Less than 90° / Dive or roll angle 15° to 45°	Total change of course	Less than 360°	Α	Less than 360°	Α
Cascade occurs No No A Small asymmetric collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle Change Cha	Collapse on the opposite side occurs	collapsed cells with a spontaneous	Α	collapsed cells with a spontaneous	Α
Folding lines used No A No A Small asymmetric collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle 15° to 45°	Twist occurs	No	Α	No	Α
Folding lines used No A No A No A Small asymmetric collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle 15° to 45° A Less than 90° / Dive or roll angle 15° to 45°	Cascade occurs	No	Α	No	Α
Small asymmetric collapse with fully activated accelerator Change of course until re-inflation / Maximum dive forward or roll angle Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle A 15° to 45°					
Change of course until re-inflation / Maximum dive forward or roll angle Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle A 15° to 45°	-			-	
	Change of course until re-inflation / Maximum dive forward or		Α		Α
	Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α

Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
Large asymmetric collapse with fully activated accelerator				, ,
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 45° to 60°	С	90° to 180° / Dive or roll angle 45° to 60°	С
Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α
Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
15. Directional control with a maintained asymmetric	A			
collapse				
Able to keep course	Yes	Α	Yes	Α
180° turn away from the collapsed side possible in 10 s	Yes	Α	Yes	Α
Amount of control range between turn and stall or spin	More than 50 % of the symmetric control travel	A	More than 50 % of the symmetric control travel	Α
16. Trim speed spin tendency	A			
Spin occurs	No	Α	No	Α
17. Low speed spin tendency	A			
Spin occurs	No	Α	No	Α
18. Recovery from a developed spin	A			
Spin rotation angle after release	Stops spinning in less than 90°	Α.	Stops spinning in less than 90°	Α .
Cascade occurs	No	Α	No	Α
19. B-line stall	A			
Change of course before release	Changing course less than 45°	Α.	Changing course less than 45°	A
Behaviour before release	Remains stable with straight span	Α.	Remains stable with straight span	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	Α .	Dive forward 30° to 60°	Α
Cascade occurs	No	Α	No	Α
20. Big ears	A		Otan dand to shairm	
Entry procedure	Standard technique	A	Standard technique	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
21. Big ears in accelerated flight	A Oten deed to shadows		Otan dand to shallow	
Entry procedure	Standard technique	A	Standard technique	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	Α	Stable flight	Α
22. Alternative means of directional control	A	Δ.	Voc	^
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	Α	No	Α
23. Any other flight procedure and/or configuration described in the user's manual	0 not available	0	not available	0
Procedure works as described	not available	0	not available	0
Procedure suitable for novice pilots	not available	0	not available	0
Cascade occurs	not available	0	not available	0

24. Comments of test pilot