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Test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes



Flight test report: EN 926-2:2013 & LTF 91/09

Manufacturer	Sol Paragliders	Certification number	F	PG_1637.2019		
Address Rua Walter Marquardt, 1180 cp 370 89259-565 Jaraguà do Sul, S.C. Brazil		Flight test		8.12.2019		
Glider model Sycross 2 M		Classification	E	В		
Serial number 21969		Representative	N	lone		
Trimmer	no	Place of test	V	/illeneuve		
Folding lines used	no					
Test pilot		Claude Thurnheer	А	Alain Zoller		
Harness		Icaro - Energy 2 L	Α	Advance - Success 4 L		
Harness to risers distance (cm)		43	4	44		
		44	-			
Distance between risers (cm)				46		
Total weight in flight	: (кд)	85	1	100		
1. Inflation/Take-off		В				
Rising behaviour		Smooth, easy and constant rising	A	Easy rising, some pilot correction is required	В	
Special take off technique required		No	А	No	A	
2. Landing		Α				
Special landing technique required		No	А	No	A	
3. Speed in straight flight		Α				
Trim speed more than 30 km/h		Yes	А	Yes	A	
Speed range using the controls larger than 10 km/h		Yes	A	Yes	A	
Minimum speed		Less than 25 km/h	А	Less than 25 km/h	A	
4. Control movement		Α				
Max. weight in flight up to						
Symmetric control pressure		not available	0	not available	0	
Max. weight in flight 80 kg	-					
Symmetric control pressure / travel		Increasing / greater than 60 cm	А	Increasing / greater than 60 cm	A	
Max. weight in flight greater than 100 kg			_		_	
Symmetric control pressure		not available	0	not available	0	
5. Pitch stability exiting accelerated flight			•			
Dive forward angle on exit		Dive forward less than 30°	A	Dive forward less than 30°	A	
Collapse occurs 6. Pitch stability operating flight	g controls during accelerated	No A	A	No	A	
Collapse occurs		No	А	No	А	
7. Roll stability and damping		A				
Oscillations		Reducing	А	Reducing	А	
8. Stability in gentle spirals		A				
Tendency to return to straight flight		Spontaneous exit	А	Spontaneous exit	А	
9. Behaviour exiting a full	y developed spiral dive	A				
Initial response of glider (first 180°)		Immediate reduction of rate of turn	А	Immediate reduction of rate of turn	А	
Tendency to return to straig	iht flight	Spontaneous exit (g force	А	Spontaneous exit (g force	А	
Turn angle to recover normal flight		decreasing, rate of turn decreasing) Less than 720°, spontaneous	А	decreasing, rate of turn decreasing) Less than 720°, spontaneous	A	
I urn angle to recover norm		recovery		recovery		

Approximately 20 % abord				
Approximately 30 % chord Entry	Rocking back less than 45°	А	Rocking back less than 45°	А
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit Change of course	Dive forward 0° to 30° Keeping	A	Dive forward 0° to 30° Keeping	A
	course		course	
Cascade occurs	No	А	No	А
Folding lines used	No		No	
At least 50% chord				
Entry	Rocking back less than 45°	А	Rocking back less than 45°	Α
Recovery	Spontaneous in 3 s to 5 s	В	Spontaneous in less than 3 s	Α
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	A	Dive forward 0° to 30° / Keeping course	A
Cascade occurs	No	А	No	А
Folding lines used	No		No	
With accelerator				
Entry	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	A	Dive forward 0° to 30° / Keeping course	A
Cascade occurs	No	А	No	A
Folding lines used	No		No	
11. Exiting deep stall (parachutal stall)	A		×.	
Deep stall achieved	Yes	A	Yes	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
Change of course Cascade occurs	Changing course less than 45° No	A A	Changing course less than 45° No	A A
12. High angle of attack recovery	A	A	NO	~
Recovery	A Spontaneous in less than 3 s	А	Spontaneous in less than 3 s	А
Cascade occurs	No	A	No	A
	110		110	
13 Recovery from a developed full stall	Δ			
13. Recovery from a developed full stall Dive forward angle on exit	A Dive forward 0° to 30°	А	Dive forward 0° to 30°	А
Dive forward angle on exit	Dive forward 0° to 30°	A A	Dive forward 0° to 30° No collapse	A A
Dive forward angle on exit Collapse		A A A	Dive forward 0° to 30° No collapse No	A A A
Dive forward angle on exit Collapse Cascade occurs (other than collapses)	Dive forward 0° to 30° No collapse	А	No collapse	А
Dive forward angle on exit Collapse	Dive forward 0° to 30° No collapse No	A A	No collapse No	A A
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back	Dive forward 0° to 30° No collapse No Less than 45°	A A A	No collapse No Less than 45°	A A A
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension	Dive forward 0° to 30° No collapse No Less than 45° Most lines tight	A A A	No collapse No Less than 45°	A A A
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse	Dive forward 0° to 30° No collapse No Less than 45° Most lines tight	A A A	No collapse No Less than 45°	A A A
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small asymmetric collapse Change of course until re-inflation / Maximum dive forward or	Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle	A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle	A A A
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small asymmetric collapse Change of course until re-inflation / Maximum dive forward or roll angle	Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15°	A A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15°	A A A A
 Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small asymmetric collapse Change of course until re-inflation / Maximum dive forward or roll angle Re-inflation behaviour 	Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation	A A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation	A A A A
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Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small 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	 Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No 	A A A A A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No	A A A A A A A A
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small 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 Twist occurs Cascade occurs	 Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No No 	A A A A A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No	A A A A A A A A
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 Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small 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 Twist occurs Fascade occurs Folding lines used Large asymmetric collapse Change of course until re-inflation / Maximum dive forward or roll angle 	Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No 90° to 180° / Dive or roll angle 15° to 45°	A A A A A A A A A B	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No 90° to 180° / Dive or roll angle 15° to 45°	A A A A A A A A B
 Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small 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 Twist occurs Cascade occurs Folding lines used Large asymmetric collapse Change of course until re-inflation / Maximum dive forward or roll angle Re-inflation behaviour 	 Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No Spontaneous re-inflation 	A A A A A A A A A A A A A A A A A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No No 90° to 180° / Dive or roll angle 15° to 45° Spontaneous re-inflation	A A A A A A A A A A A A A A A A A A A
 Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small 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 Twist occurs 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 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 until re-inflation / Maximum dive forward or roll angle 	Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No No No No No No No No No No No	A A A A A A A A A A A A A A A A A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No No 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	A A A A A A A A A A A A A A A A A A A
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Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension 14. Asymmetric collapse Small asymmetric collapse Small 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 Twist 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	 Dive forward 0° to 30° No collapse No Less than 45° Most lines tight B Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No 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 reinflation) No No No No (or only a small number of collapsed cells with a spontaneous reinflation) No (or only a small number of collapsed cells with a spontaneous reinflation) No (or only a small number of collapsed cells with a spontaneous reinflation) No No<td>A A A A A A A A A A A A A A A</td><td>No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No 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 reinflation)</td><td>A A A A A A A A A A A A A A A</td>	A A A A A A A A A A A A A A A	No collapse No Less than 45° Most lines tight Less than 90° / Dive or roll angle 0° to 15° Spontaneous re-inflation Less than 360° No (or only a small number of collapsed cells with a spontaneous reinflation) No No No 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 reinflation)	A A A A A A A A A A A A A A A

Change of course until re-inflation / Maximum dive forward or	Less than 90° / Dive or roll angle	А	Less than 90° / Dive or roll angle	А
roll angle	15° to 45°		15° to 45°	
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	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)	A	No (or only a small number of collapsed cells with a spontaneous reinflation)	A
Twist occurs	No	А	No	А
Cascade occurs	No	Α	No	А
Folding lines used	No		No	
Large asymmetric collapse with fully activated accelerator				
Change of course until re-inflation / Maximum dive forward or roll angle	90° to 180° / Dive or roll angle 15° to 45°	В	90° to 180° / Dive or roll angle 15° to 45°	В
Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	А
Total change of course	Less than 360°	А	Less than 360°	А
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous reinflation)	A	No (or only a small number of collapsed cells with a spontaneous reinflation)	A
Twist occurs	No	А	No	А
Cascade occurs	No	А	No	А
Folding lines used	No		No	
15. Directional control with a maintained asymmetric	Α			
collapse	Vac	٨	Vac	^
Able to keep course	Yes Yes	A	Yes	A
180° turn away from the collapsed side possible in 10 s		A		A A
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	A
16. Trim speed spin tendency	Α			
Spin occurs	No	Α	No	А
17. Low speed spin tendency	Α			
Spin occurs	No	А	No	А
18. Recovery from a developed spin	В			
Spin rotation angle after release	Stops spinning in less than 90°	Α	Stops spinning in 90° to 180°	В
Cascade occurs	No	Α	No	А
19. B-line stall	Α			
Change of course before release	Changing course less than 45°	А	Changing course less than 45°	А
Behaviour before release	Remains stable with straight span	A	Remains stable with straight span	А
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	А
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	А
Cascade occurs	No	Α	No	A
20. Big ears	В			
Entry procedure	Dedicated controls	Α	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Spontaneous in 3 s to 5 s	B	Spontaneous in 3 s to 5 s	B
Dive forward angle on exit	Dive forward 0° to 30° B	A	Dive forward 0° to 30°	A
21. Big ears in accelerated flight		۸	Dediested controls	^
Entry procedure	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A B	Stable flight	A
Recovery	Recovery through pilot action in less than a further 3 s	Б	Spontaneous in 3 s to 5 s	A
Dive forward angle on exit	Dive forward 0° to 30°	А	Dive forward 0° to 30°	А
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	A	Stable flight	А
22. Alternative means of directional control	Α			
180° turn achievable in 20 s	Yes	А	Yes	А
Stall or spin occurs	No	А	No	А
23. Any other flight procedure and/or configuration described in the user's manual	0			
Procedure works as described	not available	0	not available	0
Procedure suitable for novice pilots				
Cascade occurs	not available not available	0 0	not available not available	0 0

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24. Comments of test pilot