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test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes

Manufacturer



Certification number PG_2300.2023

Flight test report: EN 926-2:2013+A1:2021*

Mac Para Technology

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Address Televizní 2615			Flight test		09.01.2024	
	756 61 Roznov pod R	adhostem				
	Czech Republic					
Glider model	VERVE 27		Classification		С	
Serial number	4127-2528		Representative		None	
Trimmer			Place of test			
	no		Place of test		Villeneuve	
Folding lines used	yes					
Test pilot		Alexandre Jof	resa		Anselm Rauh	
root phot		Allohariaro cor	1000		, aloom radii	
Harness		Advance Thur	n AG Success 4 M		Niviuk Makan L	
Harness to risers di	stance [cm]	43			41	
Distance between ri	isers [cm]	48			48	
Total weight in fligh		100			117	
Total Weight in high	ır [r/g]	100			117	
1. Inflation/Take-off		В				
Rising behaviour		Easy rising, some pile	ot correction is required	В	Easy rising, some pilot correction is required	В
.		NI.			M.	
Special take off technique	required	No		Α	No	Α
2. Landing		Α				
Special landing technique	required	No		Α	No	Α
Special failuring technique	required	110			140	^
3. Speed in straight fligh	t	В				
Trim speed more than 30		Yes		Α	Yes	Α
Speed range using the con	ntrols larger than 10 km/h	Yes		Α	Yes	Α
Minimum speed		25 km/h to 30 km/h		В	25 km/h to 30 km/h	В
4. Control movement		С				
	to 80 kg					
Max. weight in flight up to 80 kg		not available		0	not available	0
Symmetric control pressure / travel		not available		U	not available	U
Max. weight in flight 80 k	ka to 100 ka					
		not available 0		0	not available	0
Symmetric control pressure / travel		not available		Ü	not available	Ü
Max. weight in flight great	ater than 100 kg					
Symmetric control pressure / travel		Increasing / 50 cm to	65 cm	С	Increasing / 50 cm to 65 cm	С
-,	-,	-			_	
5. Pitch stability exiting	accelerated flight	Α				
Dive forward angle on exit		Dive forward less that	n 30°	Α	Dive forward less than 30°	Α
Collapse occurs		No		Α	No	Α
0 Bit-1- (1 III)	an andual 1	A				
6. Pitch stability operating accelerated flight	ng controls during	Α				
=		No		Α	No	Α
Collapse occurs		.,0		Λ		^
7. Roll stability and dam	ping	Α				
Oscillations		Reducing		Α	Reducing	Α
8. Stability in gentle spir	als	Α				
Tendency to return to stra	ight flight	Spontaneous exit		Α	Spontaneous exit	Α
-						

Tendemory to return to straight flight Software services of the service of the services of	9. Behaviour exiting a fully developed spiral dive	В			
10. Symmetric front collapse	Initial response of glider (first 180°)	No immediate reaction	В	No immediate reaction	В
No. Symmetric front collapse C	Tendency to return to straight flight		Α		Α
Approximately 30 % chord Activity Rodeing basic less than 40° 4 Rocomptack less than 40° A Recovery Sportameous in less than 3 s A Sportameous in less than 3 s A Sportameous in less than 3 s A Dive forward anglis on exit Change of course Pow forward of 10 30° / Resping course A No A Cascade occurs Fooding basic less than 40° A No A Folding lines used Fooding basic less than 40° A Rocoregy basic less than 40° A Recovery Sportameous in less than 3 s A Rocoregy basic less than 40° A Polding lines used Yes A No A Cascade occurs Yes A No A Folding lines used Yes A No A Recovery Sportameous in less than 40° A Rocoreg back less than 40° A Recovery Sportameous in less than 3 s A Sportameous in less than 3 s A Cascade occurs No No No No No <td>Turn angle to recover normal flight</td> <td>720° to 1 080°, spontaneous recovery</td> <td>В</td> <td>720° to 1 080°, spontaneous recovery</td> <td>В</td>	Turn angle to recover normal flight	720° to 1 080°, spontaneous recovery	В	720° to 1 080°, spontaneous recovery	В
Sportaneous in less than 3 s	•	С			
Dive forward angle on exit Change of course No No No No No No No N	Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Cascade occurs	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Folding lines used Yes C Yes C Rocking back less than 45° A A Dive forward on the sit of than 3 s A Dive forward on the sit of than 3 s A Dive forward on the sit of than 3 s A Dive forward on the sit of than 3 s A Dive forward on the sit of than 3 s A Rocking back less than 45° A Rocking	Dive forward angle on exit Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
At least 50% chord Entry Rocking back less than 45° A Rocking back less than 45° A Sporttaneous in less than 3 a A Sporttaneous in less than 3 a A Dive forward on 10 30° / Keeping course keep Khan 3 a A Dive forward on 10 30° / Keeping course keep Khan 3 a A Dive forward on 10 30° / Keeping course keep Khan 3 a A Dive forward on 10 30° / Keeping course keep Khan 3 a A Dive forward on 10 30° / Keeping course keep Khan 3 a A Dive forward on 10 30° / Keeping course keep Khan 3 a A Dive forward on 10 30° / Keeping course keep Khan 3 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive forward on 10 30° / Keeping course keep Khan 4 a A Dive for	Cascade occurs	No	Α	No	Α
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 Folding lines used Yes C Yes A With accelerator Entry Rocking back less than 45" A Rocking back less than 45" A Recovery Spontaneous in less than 3 s A Rocking back less than 45" A Dive forward angle on exit / Change of course Dive forward 0" to 30" / Keeping course A No A Cascade occurs No A No A No A Cascade occurs No A Yes A Yes A Cascade occurs A Yes A Yes A A Recovery Point femous that set than 3 s A Yes A A Change of course Cascade occurs	Folding lines used	Yes	С	Yes	С
Dive forward angle on exit / Change of course Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course C Variance C Varian		Rocking back less than 45°	Α	Rocking back less than 45°	Α
Cascade occurs No	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	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
With accelerator Entry Rocking back less than 45° A Rocking back less than 45° A 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 30° to 80° / Keeping course B Dive forward 10° to 30° / Keeping course A Dive forward 30° to 80° / Keeping course B Dive forward 10° to 30° / Keeping course B Dive forward 30° to 80° / Keeping course B Dive for	Cascade occurs	No	Α	No	Α
Entry Recovery Recovery Spontaneous in less than 45° A 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 30° to 60° / Keeping course B A Rocking lines used No A No A No A No A Recovery A Recovery Spontaneous in less than 3 s A Dive forward 30° to 60° / Keeping course A Recovery A Spontaneous in less than 3 s A Dive forward 30° to 60° A Recovery A	Folding lines used	Yes	С	Yes	С
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 30° to 60° / Keeping course B Cascade occurs No A No	With accelerator				
Dive forward angle on exit / Change of course Dive forward 0° to 30° / Keeping course A Dive forward 30° to 60° / Keeping course B Cascade occurs No A No A No A Folding lines used Yes C Yes C 11. Exiting deep stall (parachutal stall) Deep stall achieved Yes A Yes A Yes A Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0° to 30° A Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Change of course Changing course less than 45° A No A 12. High angle of attack recovery Recovery No A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 3 s A No A 13. Recovery Spontaneous in less than 3 s A No A No A 13. Recovery from a developed full stall Dive forward 30° to 60° B Dive forward 30° to 60° B Dive forward 30° to 60° A B Collapse No collapse No collapse	Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Cascade occurs No No No A No No A No No A No Folding lines used Yes C Yes C Yes C T 11. Exiting deep stall (parachutal stall) Deep stall achieved Yes A Recovery Spontaneous in less than 3 s A Dive forward angle on exit Changing course less than 45° A Cascade occurs No No A T 12. High angle of attack recovery Recovery Spontaneous in less than 3 s A Spontaneous in less than 45° A No A No A T 13. Recovery from a developed full stall Dive forward 30° to 60° B Dive forward angle on exit No collapse No collapse A No collapse A No collapse A No collapse	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Folding lines used Yes C Yes C Yes C 11. Exiting deep stall (parachutal stall) Deep stall achieved Yes A Yes A Yes A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward angle on exit Dive forward 0° to 30° C Changing course C Changing course less than 45° A Dive forward 0° to 30° A Dive forward 0° to 30° A Changing course less than 45° A Changing course less than 45° A No 12. High angle of attack recovery Recovery A Spontaneous in less than 3 s A No Cascade occurs No No A	Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 30° to 60° / Keeping course	В
11. Exiting deep stall (parachutal stall) Deep stall achieved Yes A Yes A Recovery Spontaneous in less than 3 s A Dive forward angle on exit Dive forward 0° to 30° A Change of course Changing course less than 45° A Cascade occurs No A Cascade occurs B Cascade occurs A Cascade occurs B Cascade occurs B Cascade occurs A Cascade occurs B Cascade occurs B Cascade occurs B Collapse B Dive forward 30° to 60° B Dive forward 30° to 60° B Dive forward 30° to 60° B A No collapse A No collapse A	Cascade occurs	No	Α	No	Α
Deep stall achieved Yes A Yes A Yes A Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward on to 30° A Dive forward on to 30° A Dive forward on to 30° A Change of course Research A Cascade occurs No A No	Folding lines used	Yes	С	Yes	С
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 Change of course Changing course less than 45° A Changing course less than 45° A Cascade occurs No A No A No A 12. High angle of attack recovery A Spontaneous in less than 3 s A Cascade occurs No A No A Spontaneous in less than 3 s A Cascade occurs No A No A No A 13. Recovery from a developed full stall Dive forward 30° to 60° B Dive forward angle on exit No collapse A No collapse A	- · · · · · · · · · · · · · · · · · · ·		٨	V	A
Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A Change of course Changing course less than 45° A No A No A Spontaneous in less than 3 s A Spontaneous in less than 3 s A No A No A No Cascade occurs No No No A No B No Collapse					
Change of course Changing course less than 45° A Cascade occurs No A 12. High angle of attack recovery Recovery No Spontaneous in less than 3 s A Cascade occurs No A Spontaneous in less than 3 s A Cascade occurs No A 13. Recovery from a developed full stall Dive forward angle on exit Dive forward 30° to 60° B Collapse No collapse A Changing course less than 45° A No Ch					
Cascade occurs No A 12. High angle of attack recovery Recovery No Spontaneous in less than 3 s A Cascade occurs No No A No A No A No A Dive forward 30° to 60° B Collapse No collapse A No collapse A No collapse A No collapse					
12. High angle of attack recovery Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Cascade occurs No No A No A No B Dive forward angle on exit Dive forward 30° to 60° B No collapse A No collapse A No collapse	Change of course				
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Cascade occurs No A No A 13. Recovery from a developed full stall B Dive forward angle on exit Dive forward 30° to 60° B Collapse A No collapse A	Cascade occurs	No	Α	No	Α
13. Recovery from a developed full stall Dive forward angle on exit Dive forward 30° to 60° B Dive forward 30° to 60° B Dive forward 30° to 60° B A No collapse A			Α	Spontaneous in less than 3 s	Α
Dive forward angle on exit Dive forward 30° to 60° B Dive forward 30° to 60° B Collapse A No collapse A	Cascade occurs	No	Α	No	Α
			В	Dive forward 30° to 60°	В
Cascade occurs (other than collapses) No A No A	Collapse	No collapse	Α	No collapse	Α
	Cascade occurs (other than collapses)	No	Α	No	Α

Rocking back	Less than 45°	Α	Less than 45°	Α
Line tension	Most lines tight	Α	Most lines tight	Α
14. Asymmetric collapse	C			
Small asymmetric collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	Α	Less than 90° / Dive or roll angle 15° to 45°	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	Yes	С	Yes	С
Large asymmetric collapse				
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	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	Yes	С	Yes	С
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 15° to 45°	Α	Less than 90° / Dive or roll angle 15° to 45°	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	Yes	С	Yes	С
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 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	Yes	С	Yes	С
15. Directional control with a maintained asymmetric collapse	A			
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	Α	More than 50 % of the symmetric control travel	Α
16. Trim speed spin tendency	Α			
Spin occurs	No	Α	No	Α
17. Low speed spin tendency Spin occurs	A No	٨	No	Α
Spiri occurs		^	No	
18. Recovery from a developed spin	В			_
Spin rotation angle after release	Stops spinning in 90° to 180°	В	Stops spinning in 90° to 180°	В
Cascade occurs	No	Α	No	Α
19. B-line stall	0			
Change of course before release	not available	0	not available	0
Behaviour before release	not available	0	not available	0
Recovery	not available	0	not available	0
Dive forward angle on exit	not available	0	not available	0
Cascade occurs	not available	0	not available	0
20. Big ears	Α			
Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Behaviour during big ears	Stable flight	Α	Stable flight	Α
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
21. Big ears in accelerated flight	A			
Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Behaviour during big ears	Stable flight	Α	Stable flight	Α
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	Α	Stable flight	Α
22. Alternative means of directional control	A			
180° turn achievable in 20 s	Yes	Α	Yes	Α
Stall or spin occurs	No	Α	No	Α
23. Any other flight procedure and/or configuration described in the user's manual	A			
Procedure works as described	Yes	Α	Yes	Α
Procedure suitable for novice pilots	Yes	Α	Yes	Α
Cascade occurs	No	А	No	Α