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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	ufacturer Niviuk Gliders / Air Certification number Games S.L.			PG_1030.2016	
Address	C. Del Ter, 6 – Nave D 17165 La Cellera de Ter Girona Spain	Date of flight test		20. 05. 2016	
Glider model	Koyot 3 31	Classification		Α	
Serial number	Koyot 3 19-31	Representative		None	
Trimmer	no	Place of test		Villeneuve	
Folding lines used	no				
Test pilot		Berruex Gilles		Zoller Alain	
Harness		Niviuk - Hamak XL		Gin Gliders - Gingo 2 L	
Harness to risers distance (cm)		48		43	
Distance between	· · ·	44		46	
	<i>、</i> ,	110		135	
Total weight in flig	nt (kg)	110		155	
1. Inflation/Take-off		Α			
Rising behaviour		Smooth, easy and constant rising	Α	Smooth, easy and constant rising	А
Special take off technique	e required	No	А	No	А
2. Landing		Α			
Special landing technique	e required	No	А	No	А
3. Speed in straight flight		Α			
Trim speed more than 30 km/h		Yes	А	Yes	А
Speed range using the controls larger than 10 km/h		Yes	А	Yes	А
Minimum speed		Less than 25 km/h	Α	Less than 25 km/h	А
4. Control movement		Α			
Max. weight in flight up	to 80 ka				
Symmetric control pressure / travel		not available	0	not available	0
Max. weight in flight 80 kg to 100 kg					
Symmetric control pressure / travel		not available	0	not available	0
Max. weight in flight gre	eater than 100 kg				
Symmetric control pressure / travel		Increasing / greater than 65 cm	А	Increasing / greater than 65 cm	А
5. Pitch stability exiting		Α			
Dive forward angle on ex	it	Dive forward less than 30°	А	Dive forward less than 30°	А
Collapse occurs		No	А	No	А
6. Pitch stability operati flight	ing controls during accelerated	A			
Collapse occurs		No	А	No	А
7. Roll stability and dan	nping	Α			
Oscillations		Reducing	Α	Reducing	А
8. Stability in gentle spi		Α			
Tendency to return to stra		Spontaneous exit	A	Spontaneous exit	A
	ully developed spiral dive	A			
Initial response of glider (TIRST 180°)	Immediate reduction of rate of turn	A	Immediate reduction of rate of turn	A

Tendency to return to straight flightSpontaneous exit (g force decreasing), rate of turn decreasing)ASpontaneous exit (g force decreasing, rate of turn decreas decreasing)Turn angle to recover normal flightLess than 720°, spontaneous recoveryALess than 720°, spontaneous recovery10. Symmetric front collapseAApproximately 30 % chordAEntryRocking back less than 45° Spontaneous in less than 3 sADive forward angle on exit Change of courseDive forward 0° to 30° Keeping courseACascade occursNoANoFolding lines usedNoNoAt least 50% chordEntryRocking back less than 45° AARocking back less than 45°ANoFolding lines usedNoAAt least 50% chordEntryRocking back less than 45° AARocking back less than 45°ARocking back less than 45°	A A A A A A A
recoveryrecovery10. Symmetric front collapseAApproximately 30 % chordAEntryRocking back less than 45°ARecoverySpontaneous in less than 3 sADive forward angle on exit Change of courseDive forward 0° to 30° Keeping courseACascade occursNoAFolding lines usedNoNoAt least 50% chordAState State	A A A
Approximately 30 % chordEntryRocking back less than 45°ARocking back less than 45°RecoverySpontaneous in less than 3 sASpontaneous in less than 3 sDive forward angle on exit Change of courseDive forward 0° to 30° Keeping courseADive forward 0° to 30° Keeping courseCascade occursNoANoFolding lines usedNoNoNoAt least 50% chordASourceSource	A A
EntryRocking back less than 45°ARocking back less than 45°RecoverySpontaneous in less than 3 sASpontaneous in less than 3 sDive forward angle on exit Change of courseDive forward 0° to 30° Keeping courseADive forward 0° to 30° Keeping courseCascade occursNoANoFolding lines usedNoNoAt least 50% chordASpontaneous in less than 45°	A A
EntryRocking back less than 45°ARocking back less than 45°RecoverySpontaneous in less than 3 sASpontaneous in less than 3 sDive forward angle on exit Change of courseDive forward 0° to 30° Keeping courseADive forward 0° to 30° Keeping courseCascade occursNoANoFolding lines usedNoNoAt least 50% chordASpontaneous in less than 45°	A A
RecoverySpontaneous in less than 3 sASpontaneous in less than 3 sDive forward angle on exit Change of courseDive forward 0° to 30° Keeping courseADive forward 0° to 30° Keeping courseCascade occursNoANoFolding lines usedNoNoNoAt least 50% chordASpontaneous in less than 3 s	A A
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course course Cascade occurs No Folding lines used No At least 50% chord K	
Folding lines usedNoNoAt least 50% chordKK	A
At least 50% chord	
	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 A No	А
Folding lines used No No	
With accelerator	
Entry Rocking back less than 45° A 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 A No	А
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 Divertigence Divertigence A Divertigence	A
Dive forward 0° to 30° A Dive forward 0° to 30° Changing adverse lage than 45° A Changing adverse lage than 45°	A
Change of courseChanging course less than 45°AChanging course less than 45°Cascade occursNoANo	A A
12. High angle of attack recovery A	A
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s	А
Cascade occurs No A No	A
13. Recovery from a developed full stall A	
Dive forward of to 30° A Dive forward 0° to 30°	А
Collapse No collapse A No collapse	А
Cascade occurs (other than collapses) No A No	А
Rocking backLess than 45°ALess than 45°	А
Line tension Most lines tight A Most lines tight	А
14. Asymmetric collapse A	
Small asymmetric collapse	
Small asymmetric collapse Change of course until re-inflation / Maximum dive forward or $1 ess than 90^\circ$ / Dive or roll angle A less than 90° / Dive or roll angle	∩° ∆
Small asymmetric collapse 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 roll angle 0° to 15° to 15° to 15°	0° A
Change of course until re-inflation / Maximum dive forward or Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle	0° A A
Change of course until re-inflation / Maximum dive forward or roll angle 0° to 15° Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle to 15°	
Change of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 0° to 15°ALess than 90° / Dive or roll angle to 15°Re-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationSpontaneous re-inflation	A A A
Change of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 0° to 15°ALess than 90° / Dive or roll angle to 15°Re-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°Collapse on the opposite side occursNo (or only a small number of collapsed cells with aANo (or only a small number of collapsed cells with a	A A A
Change of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 0° to 15°ALess than 90° / Dive or roll angle to 15°Re-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°Collapse on the opposite side occursNo (or only a small number of collapsed cells with a spontaneous reinflation)ANo (or only a small number of collapsed cells with a spontaneous 	A A Js

Large asymmetric collapse

Change of course until re-inflation / Maximum dive forward or				
roll angle	Less than 90° / Dive or roll angle 15° to 45°	A	Less than 90° / Dive or roll angle 15° to 45°	A
Re-inflation behaviour	Spontaneous re-inflation	А	Spontaneous re-inflation	А
Total change of course	Less than 360°	А	Less than 360°	Α
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	
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 0° to 15° $$	Α	Less than 90° / Dive or roll angle 0° to 15° $$	A
Re-inflation behaviour	Spontaneous re-inflation	А	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	
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 15° to 45°	A	Less than 90° / Dive or roll angle 15° to 45°	A
Re-inflation behaviour	Spontaneous re-inflation	А	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
		A	No No	A
Cascade occurs	No	A		A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric	No No	A		A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse	No No A	A A A	No	
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course	No No A Yes	A	No Yes	A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s	No No A Yes Yes More than 50 % of the	A A	No Yes Yes More than 50 % of the symmetric	A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	No No A Yes Yes More than 50 % of the symmetric control travel	A A	No Yes Yes More than 50 % of the symmetric	A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency	No No A Yes Yes More than 50 % of the symmetric control travel A	A A A	No Yes Yes More than 50 % of the symmetric control travel	A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs	No No A Yes Yes More than 50 % of the symmetric control travel A No	A A A	No Yes Yes More than 50 % of the symmetric control travel	A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency	No No A Yes Yes More than 50 % of the symmetric control travel A No A	A A A	No Yes Yes More than 50 % of the symmetric control travel	A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency Spin occurs	No No A Yes Yes More than 50 % of the symmetric control travel A No A	A A A	No Yes Yes More than 50 % of the symmetric control travel	A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency Spin occurs 18. Recovery from a developed spin	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A	A A A A	No Yes Yes More than 50 % of the symmetric control travel No	A A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency Spin occurs 18. Recovery from a developed spin Spin rotation angle after release	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Sops spinning in less than 90°	A A A A	No Yes Yes More than 50 % of the symmetric control travel No Stops spinning in less than 90°	A A A A
Cascade occurs Folding lines used T5. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin G. Trim speed spin tendency Spin occurs T7. Low speed spin tendency Spin occurs 18. Recovery from a developed spin Spin rotation angle after release Cascade occurs	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No	A A A A	No Yes Yes More than 50 % of the symmetric control travel No Stops spinning in less than 90°	A A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency Spin occurs 18. Recovery from a developed spin Spin rotation angle after release Cascade occurs 19. B-line stall	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No A Changing course less than 45° Remains stable with straight	A A A A A A	No Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No	A A A A A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency Spin occurs 18. Recovery from a developed spin Spin rotation angle after release Cascade occurs 19. B-line stall Change of course before release Behaviour before release	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No A Changing course less than 45° Remains stable with straight span	A A A A A A	NoYes Yes More than 50 % of the symmetric control travelNoNoStops spinning in less than 90° NoChanging course less than 45° Remains stable with straight span	A A A A A A A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency Spin occurs 18. Recovery from a developed spin Spin rotation angle after release Cascade occurs 19. B-line stall Change of course before release Behaviour before release Recovery	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No A Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s	A A A A A A A A	No Yes Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No	A A A A A A A A
Cascade occurs Folding lines used 15. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin 16. Trim speed spin tendency Spin occurs 17. Low speed spin tendency Spin occurs 18. Recovery from a developed spin Spin rotation angle after release Cascade occurs 19. B-line stall Change of course before release Behaviour before release	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30°	A A A A A A A A A A A	No Yes Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30°	A A A A A A A A A A A A
Cascade occurs Folding lines used Folding lines used T5. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin f6. Trim speed spin tendency Spin occurs T7. Low speed spin tendency Spin occurs T8. Recovery from a developed spin Spin rotation angle after release Cascade occurs T9. B-line stall Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No A Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30°	A A A A A A A A A A	No Yes Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s	A A A A A A A A
Cascade occurs Folding lines used Folding lines used T5. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin Form speed spin tendency Spin occurs T7. Low speed spin tendency Spin occurs T8. Recovery from a developed spin Spin rotation angle after release Cascade occurs T9. B-line stall Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30°	A A A A A A A A A A A	No Yes Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30°	A A A A A A A A A A A A A
Cascade occurs Folding lines used Folding lines used T5. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin T6. Trim speed spin tendency Spin occurs T7. Low speed spin tendency Spin occurs T8. Recovery from a developed spin Spin rotation angle after release Cascade occurs T9. B-line stall Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs T0. Big ears Entry procedure	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No A Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30° No Dedicated controls	A A A A A A A A A A A A	No Yes Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30° No	
Cascade occurs Folding lines used Folding lines used IS. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin IG. Trim speed spin tendency Spin occurs IT. Low speed spin tendency Spin occurs IS. Recovery from a developed spin Spin rotation angle after release Cascade occurs I9. B-line stall Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs ID. Big ears Entry procedure Behaviour during big ears	No No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No A Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30° No A Dedicated controls Stable flight	A A A A A A A A A A A A A A	No Yes Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30° No	A A A A A A A A A A A A A A
Cascade occurs Folding lines used Folding lines used T5. Directional control with a maintained asymmetric collapse Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin T6. Trim speed spin tendency Spin occurs T7. Low speed spin tendency Spin occurs T8. Recovery from a developed spin Spin rotation angle after release Cascade occurs T9. B-line stall Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs T0. Big ears Entry procedure	No No A Yes Yes More than 50 % of the symmetric control travel A No A No A Stops spinning in less than 90° No A Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30° No Dedicated controls	A A A A A A A A A A A A	No Yes Yes More than 50 % of the symmetric control travel No No Stops spinning in less than 90° No Changing course less than 45° Remains stable with straight span Spontaneous in less than 3 s Dive forward 0° to 30° No	

21. Big ears in accelerated flight	Α			
Entry procedure	Dedicated controls	А	Dedicated controls	А
Behaviour during big ears	Stable flight	А	Stable flight	А
Recovery	Spontaneous in less than 3 s	А	Spontaneous in less than 3 s	А
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	Α	Yes	А
Stall or spin occurs	No	Α	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	not available	0	not available	0
Cascade occurs	not available	0	not available	0
24. Comments of test pilot				
Commente				

Comments