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Villeneuve

В

AIR TURQUOISE SA certified by

## Flight test report: EN

BUREAU VERITA:

Manufacturer Gin Gliders Inc. Certification number PG\_0782.2013 Address 285-1 Galdam-Ri, Mohyun-Date of flight test 03. 12. 2013

Myun, 449-855 YongIn-City,

Kyunggi-Do Korea

Kaoru Ogisawa Representative

Glider model **Carrera XS** 

Trimmer no

> Test pilot Dupont Philippe Thurnheer Claude Sup' Air - Access M Harness Sup air - Altiplume S

Place of test

Classification

Total weight in flight (kg	) 65		85	
1. Inflation/Take-off	Α			
Rising behaviour	Smooth, easy and constant rising	Α	Smooth, easy and constant rising	Α
Special take off technique required	No	Α	No	Α
2. Landing	Α			
Special landing technique required	No	Α	No	Α
3. Speed in straight flight	Α			
Trim speed more than 30 km/h	Yes	Α	Yes	Α
Speed range using the controls larger than 10 km/h	Yes	Α	Yes	Α
Minimum speed	Less than 25 km/h	Α	Less than 25 km/h	Α
4. Control movement	Α			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	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 / greater than 60 cm	Α
Max. weight in flight greater than 100 kg				
Symmetric control pressure / travel	not available	0	not available	0
5. Pitch stability exiting accelerated flight	Α			
Dive forward angle on exit	Dive forward less than 30°	Α	Dive forward less than 30°	Α
Collapse occurs	No	Α	No	Α
6. Pitch stability operating controls during accelerated flight	Α			
Collapse occurs	No	Α	No	Α
7. Roll stability and damping	Α			
Oscillations	Reducing	Α	Reducing	Α
8. Stability in gentle spirals	Α			
Tendency to return to straight flight	Spontaneous exit	Α	Spontaneous exit	Α
9. Behaviour in a steeply banked turn	В			
Sink rate after two turns	More than 14 m/s	В	More than 14 m/s	В
10. Symmetric front collapse	В			
Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in 3 s to 5 s	В
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
Cascade occurs	No	Α	No	Α
With accelerator				

Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	Spontaneous in 3 s to 5 s	В	Spontaneous in less than 3 s	A
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Entering	A	Dive forward 0° to 30° / Keeping	Α
Dive forward angle on exit? Onlinge of course	a turn of less than 90°		course	^
Cascade occurs	No	Α	No	Α
11. Exiting deep stall (parachutal stall)	A			
Deep stall achieved	Yes	Α	Yes	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
Change of course	Changing course less than 45°	Α	Changing course less than 45°	Α
Cascade occurs	No	Α	No	Α
12. High angle of attack recovery	Α			
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Cascade occurs	No	Α	No	Α
13. Recovery from a developed full stall	Α			
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
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	В			
With 50% collapse				
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°	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	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
With 75% collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	Α	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	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
With 50% collapse and 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	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
With 75% collapse and 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	Α
Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
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

Spin occurs	16. Trim speed spin tendency	Α			
Spin occurs   No	Spin occurs	No	Α	No	Α
18. Recovery from a developed spin   Spin rotation angle after release   Stops spinning in less than 90°   A Stops spinning in less than 90°   A No	17. Low speed spin tendency	Α			
Spin rotation angle after release   Stops spinning in less than 90°   A   Cascade occurs   No	Spin occurs	No	Α	No	Α
Cascade occurs   No   No   No   No   No   No   No   N	18. Recovery from a developed spin	Α			
19. B-line stall   Change of course before release   Changing course less than 45°   A Changing course less than 3 ×   A Changing course less than 45°   A Changing course less than 35°   A Dive forward 0° to 30°	Spin rotation angle after release	Stops spinning in less than 90°	Α	Stops spinning in less than 90°	Α
Change of course before release Behaviour before release Remains stable with straight span Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0 re to 30 o A No A	Cascade occurs	No	Α	No	Α
Remains stable with straight span Recovery through pilot action in less than 3 s Recovery Recovery Recovery through pilot action in less than 3 s Recovery Recovery through pilot action in less than 3 s Recovery Recovery through pilot action in less than a further 3 s Recovery Recovery through pilot action in less than a further 3 s Recovery Recovery through pilot action in less than a further 3 s Recovery Recovery Recovery through pilot action in less than a further 3 s Recovery Recovery Recovery Recovery Recovery Recovery Recovery Recovery Recovery through pilot action in less than a further 3 s Recovery Recovery Recovery Recovery through pilot action in less than a further 3 s Recovery Recovery Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action in less than a further 3 s Recovery through pilot action	19. B-line stall	Α			
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0° to 30° A Dedicated controls A Stable flight A Dive forward 0° to 30° A	Change of course before release	Changing course less than 45°	Α	Changing course less than 45°	Α
Dive forward angle on exit Cascade occurs No No A	Behaviour before release		Α	Remains stable with straight span	Α
Cascade occurs     No     A     No     A       20. Big ears     B     Entry procedure     Dedicated controls     A     Dedicated controls     A       Behaviour during big ears     Stable flight     A     Stable flight     A       Recovery     Recovery through pilot action in less than a further 3 s     B     Spontaneous in 3 s to 5 s     B       Dive forward angle on exit     Dive forward 0° to 30°     A     Dive forward 0° to 30°     A     Dive forward 0° to 30°     A       Entry procedure     Dedicated controls     A     Dedicated controls     A     Dedicated controls     A       Behaviour during big ears     Stable flight     A     Stable flight     A       Recovery     Recovery through pilot action in less than a further 3 s     B     Recovery through pilot action in less than a further 3 s     B       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     A     Dive forward 0° to 30°     A     Dive forward 0° to 30°     A       2. Behaviour exiting a steep spiral     A     A     Stable flight     A     Stable flight     A       Turn angle to recover normal flight     Spontaneous exit     A     A     Less than 720°, spontan	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
20. Big ears     B       Entry procedure     Dedicated controls     A     Dedicated controls     A       Behaviour during big ears     Stable flight     A     Stable flight     A       Recovery     Recovery through pilot action in less than a further 3 s     B     Spontaneous in 3 s to 5 s     B       Dive forward angle on exit     Dive forward 0° to 30°     A     Dive forward 0° to 30°     A       21. Big ears in accelerated flight     B     Entry procedure     Dedicated controls     A     Stable flight     A       Behaviour during big ears     Stable flight     A     Stable flight     A       Recovery     Recovery through pilot action in less than a further 3 s     B     Recovery through pilot action in less than a further 3 s     B       Dive forward angle on exit     Dive forward 0° to 30°     A     Dive forward 0° to 30°     A     Dive forward 0° to 30°     A       Behaviour immediately after releasing the accelerator while maintaining big ears     A     Stable flight     A     Stable flight     A       22. Behaviour exitting a steep spiral     A     Turn angle to recover normal flight     Spontaneous exit     A     Less than 720°, spontaneous exit     A       Turn angle to recover normal flight     Less than 720°, spontaneous exit     A     Less than 720°, spontaneous exit     A	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Entry procedure  Dedicated controls A Dedicated controls A Stable flight A Dive forward on the stable flight B Stable flight A Dedicated controls A Dedicated controls A Dedicated controls A Dedicated controls A Stable flight A Stable flig	Cascade occurs	No	Α	No	Α
Behaviour during big ears  Recovery  Recovery through pilot action in less than a further 3 s  Dive forward angle on exit  Dive forward 0° to 30° 0 A  Dedicated controls A  Behaviour during big ears  Recovery  Recovery through pilot action in less than a further 3 s  Dive forward 0° to 30° 0 A  Dive forward 0	20. Big ears	В			
Recovery Hrough pilot action in less than a further 3 s Dive forward angle on exit Dive forward 0° to 30° A Dedicated controls A Dive forward 0° to 30° A Dedicated controls A Dive forward 0° to 30° A Dedicated controls A Dive forward 0° to 30° A Div	Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Dive forward angle on exit  Dive forward 0° to 30°  Dedicated controls  Dedicated controls  Stable flight  A Dive forward 0° to 30°  A Stable flight  A Sta	Behaviour during big ears	Stable flight	Α	Stable flight	Α
21. Big ears in accelerated flight Entry procedure Dedicated controls A Dedicated controls A Stable flight A Dive forward angle on exit Behaviour immediately after releasing the accelerator while maintaining big ears  22. Behaviour exiting a steep spiral A Stable flight A Spontaneous exit A Spontaneous exit A Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous exit A Less than 720°, spontaneous exit A Less than 720°, spontaneous exit A Stable flight  23. Alternative means of directional control A Stable flight A Yes A No A No A No A No A No	Recovery		В	Spontaneous in 3 s to 5 s	В
Entry procedure  Dedicated controls  A Dedicated controls  A Behaviour during big ears  Stable flight  Recovery through pilot action in less than a further 3 s  Dive forward angle on exit  Dive forward angle on exit  Behaviour immediately after releasing the accelerator while maintaining big ears  22. Behaviour exiting a steep spiral  A Stable flight  A Stable	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Behaviour during big ears  Recovery Recovery through pilot action in less than a further 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward or to 30° A Deather file file A Decevery Dive forward or to 30° A Decevery Dive forward or to 30° A Dece	21. Big ears in accelerated flight	В			
Recovery through pilot action in less than a further 3 s  Dive forward angle on exit  Dive forward 0° to 30°  A Stable flight  A Stable flig	Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Dive forward angle on exit  Dive forward 0° to 30°  A Less than 720°, spontaneous exit  A Less than 720°, spontaneous recovery  Sink rate when evaluating spiral stability [m/s]  17  19  23. Alternative means of directional control  A Yes  A Yes  A No  Procedure works as described  Procedure works as described  Yes  A not available  O Cascade occurs  No  A not available  O Described of the available  O Described	Behaviour during big ears	Stable flight	Α	Stable flight	Α
Behaviour immediately after releasing the accelerator while maintaining big ears  22. Behaviour exiting a steep spiral  A  Tendency to return to straight flight  Spontaneous exit  A  Spontaneous exit  A  Spontaneous exit  A  Less than 720°, spontaneous recovery  Sink rate when evaluating spiral stability [m/s]  17  19  23. Alternative means of directional control  A  Stable flight  A  Spontaneous exit  A  Less than 720°, spontaneous recovery  19  23. Alternative means of directional control  A  Stable flight  A  Spontaneous exit  A  Less than 720°, spontaneous recovery  19  24. Alternative means of directional control  A  Stable flight  A  Stable flight  A  Spontaneous exit  A  Less than 720°, spontaneous recovery  19  23. Alternative means of directional control  A  Stable flight  A  Less than 720°, spontaneous recovery  19  25. A  Less than 720°, spontaneous A  Less than 720°, spontaneous A  Less than 720°, spontaneous recovery  A  Less than 720°, spontaneous reco	Recovery		В		В
maintaining big ears  22. Behaviour exiting a steep spiral A Tendency to return to straight flight Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] 17 19  23. Alternative means of directional control A Stall or spin occurs No A Stall or spin occurs No A A A A A A A A A A A A A A A A A A	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Tendency to return to straight flight  Spontaneous exit  A Spontaneous exit  A Less than 720°, spontaneous recovery  Sink rate when evaluating spiral stability [m/s]  17  19  23. Alternative means of directional control  180° turn achievable in 20 s  Stall or spin occurs  No  A No  A No  A No  A No  24. Any other flight procedure and/or configuration described in the user's manual  Procedure works as described  Yes  A not available  0  Procedure suitable for novice pilots  Cascade occurs  No  A No  A not available  0  25. Comments of test pilot		Stable flight	Α	Stable flight	Α
Turn angle to recover normal flight  Less than 720°, spontaneous recovery  Sink rate when evaluating spiral stability [m/s]  17  19  23. Alternative means of directional control  A  Stall or spin occurs  No  A  24. Any other flight procedure and/or configuration described in the user's manual  Procedure works as described  Yes  A  No  A  A  A  A  A  A  A  A  A  A  A  A  A	22. Behaviour exiting a steep spiral	Α			
recovery  Sink rate when evaluating spiral stability [m/s]  23. Alternative means of directional control  A  180° turn achievable in 20 s  Stall or spin occurs  No  A  24. Any other flight procedure and/or configuration described in the user's manual  Procedure works as described  Yes  A  A  No  A  No  A  No  A  A  No  A  Cascade occurs  No  No  A  No  Cascade occurs  No  A  No  Cascade occurs  No  A  No  Cascade occurs  No  A  No  A  No  A  No  A  No  A  No  A  No  Cascade occurs  No  A  No  A  No  A  No  A  No  A  No  A  No  Cascade occurs  No  A  No  A  No  A  No  Cascade occurs  No  A  No  A  No  A  No  A  No  Cascade occurs  No  A  No  A  No  A  No  Cascade occurs  No  Cascade occurs  No  No  Cascade occurs  Cascade occurs  No  Cascade occurs  C	Tendency to return to straight flight	Spontaneous exit	Α	Spontaneous exit	Α
23. Alternative means of directional control  180° turn achievable in 20 s  Yes  A  Yes  A  Stall or spin occurs  No  A  24. Any other flight procedure and/or configuration described in the user's manual  Procedure works as described  Yes  A  not available  0  Cascade occurs  No  A  A  Yes  A  No  A  No  A  Test  A  No  Cascade occurs  No  A  No  Cascade occurs  No  A  No  A  No  A  No  A  No  A  No  A  No  Cascade occurs  No  No  A  No  A  No  Cascade occurs  No  Cascade occurs	Turn angle to recover normal flight		Α		Α
180° turn achievable in 20 s Yes A Yes A Stall or spin occurs No A No A No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described Yes A not available O Procedure suitable for novice pilots Yes A not available O Cascade occurs No A not available O 25. Comments of test pilot	Sink rate when evaluating spiral stability [m/s]	17		19	
Stall or spin occurs  No A No A No A No A No A A A A A A A A	23. Alternative means of directional control	Α			
24. Any other flight procedure and/or configuration described in the user's manual       A         Procedure works as described       Yes       A not available       0         Procedure suitable for novice pilots       Yes       A not available       0         Cascade occurs       No       A not available       0         25. Comments of test pilot	180° turn achievable in 20 s	Yes	Α	Yes	Α
described in the user's manual  Procedure works as described Yes A not available 0  Procedure suitable for novice pilots Yes A not available 0  Cascade occurs No A not available 0  25. Comments of test pilot	Stall or spin occurs	No	Α	No	Α
Procedure suitable for novice pilots Yes A not available 0 Cascade occurs No A not available 0 25. Comments of test pilot		Α			
Cascade occurs No A not available 0  25. Comments of test pilot	Procedure works as described	Yes	Α	not available	0
25. Comments of test pilot	Procedure suitable for novice pilots	Yes	Α	not available	0
	Cascade occurs	No	Α	not available	0
Comments	25. Comments of test pilot				
	Comments				