

AIR TURQUOISE SA | PARA-TEST.COM

Route du Pré-au-Comté 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65

Test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes



Classification: **B**



In accordance with standards EN 926-2:2013, EN 926-1:2015 & LTF 91/09:

PG_1442.2019

Date of issue (DMY):

04.07.2019

Manufacturer:

Niviuk Gliders / Air Games S.L.

Model:

Hook 5 20

Serial number:

NIH520V1

Configuration during flight tests

Paraglider

Maximum weight in flight (kg)	70
Minimum weight in flight (kg)	55
Glider's weight (kg)	4.1
Number of risers	3
Projected area (m2)	17.06

Accessories

Range of speed system (cm)	13
Speed range using brakes (km/h)	15
Total speed range with accessories (km/h)	25
Range of trimmers (cm)	0

Harness used for testing (max weight)

Harness type	ABS
Harness brand	Supair
Harness model	Altiplume S
Harness to risers distance (cm)	41
Distance between risers (cm)	40

Inspections (whichever happens first)

every 24 months or every 100 flying hours
Warning! Before use refer to user's manual
Person or company having presented the glider for testing: **None**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
A	A	A	A	A	A	A	A	A	B	B	A	A	A	B	A	A	A	A	A	A	A	A	0

AIR TURQUOISE SA | PARA-TEST.COM

Route du Pré-au-Comté 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65

Test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes



Classification: **B**



In accordance with standards EN 926-2:2013, EN 926-1:2015 & LTF 91/09:

PG_1419.2018

Date of issue (DMY):

28.02.2019

Manufacturer:

Niviuk Gliders / Air Games S.L.

Model:

Hook 5 22

Serial number:

NIPS10220181

Configuration during flight tests

Paraglider

Maximum weight in flight (kg)	80
Minimum weight in flight (kg)	60
Glider's weight (kg)	4.3
Number of risers	3
Projected area (m2)	18.76

Accessories

Range of speed system (cm)	13
Speed range using brakes (km/h)	15
Total speed range with accessories (km/h)	25
Range of trimmers (cm)	0

Harness used for testing (max weight)

Harness type	ABS
Harness brand	Niviuk
Harness model	Konvers M

Inspections (whichever happens first)

every 24 months or every 100 flying hours
Warning! Before use refer to user's manual
Person or company having presented the glider for testing: **None**

Harness to risers distance (cm) **43**

Distance between risers (cm) **44**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A A A A A A A A B A A A A A A A A A A B A 0

AIR TURQUOISE SA | PARA-TEST.COM

Route du Pré-au-Comté 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65

Test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes



Classification: **B**



In accordance with standards EN 926-2:2013, EN 926-1:2015 & LTF 91/09:

PG_1420.2018

Date of issue (DMY):

28.02.2019

Manufacturer:

Niviuk Gliders / Air Games S.L.

Model:

Hook 5 24

Serial number:

V8

Configuration during flight tests

Paraglider

Maximum weight in flight (kg)	92
Minimum weight in flight (kg)	70
Glider's weight (kg)	4.6
Number of risers	3
Projected area (m2)	20.47

Accessories

Range of speed system (cm)	13
Speed range using brakes (km/h)	15
Total speed range with accessories (km/h)	25
Range of trimmers (cm)	0

Harness used for testing (max weight)

Harness type	ABS
Harness brand	Supair
Harness model	Evo XC 3 M

Inspections (whichever happens first)

every 24 months or every 100 flying hours
Warning! Before use refer to user's manual
Person or company having presented the glider for testing: **None**

Harness to risers distance (cm)	43
Distance between risers (cm)	44

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
A	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	B	A	A	0

AIR TURQUOISE SA | PARA-TEST.COM

Route du Pré-au-Comté 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65

Test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes



Classification: **B**



In accordance with standards EN 926-2:2013, EN 926-1:2015 & LTF 91/09:

PG_1421.2018

Date of issue (DMY):

28.02.2019

Manufacturer:

Niviuk Gliders / Air Games S.L.

Model:

Hook 5 26

Serial number:

NIPS10220182

Configuration during flight tests

Paraglider

Maximum weight in flight (kg)	105
Minimum weight in flight (kg)	82
Glider's weight (kg)	4.9
Number of risers	3
Projected area (m2)	22.17

Accessories

Range of speed system (cm)	16
Speed range using brakes (km/h)	15
Total speed range with accessories (km/h)	25
Range of trimmers (cm)	0

Harness used for testing (max weight)

Harness type	ABS
Harness brand	Gin Gliders
Harness model	Gingo 2 L
Harness to risers distance (cm)	43
Distance between risers (cm)	46

Inspections (whichever happens first)

every 24 months or every 100 flying hours
Warning! Before use refer to user's manual
Person or company having presented the glider for testing: None

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A A A A A A A A A B A A A A A A A A A A A A 0

AIR TURQUOISE SA | PARA-TEST.COM

Route du Pré-au-Comte 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65

Test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes



Classification: **B**



In accordance with standards EN 926-2:2013, EN 926-1:2015 & LTF 91/09:

PG_1422.2018

Date of issue (DMY):

30.11.-0001

Manufacturer:

Niviuk Gliders / Air Games S.L.

Model:

Hook 5 28

Serial number:

NIH528V1

Configuration during flight tests

Paraglider

Maximum weight in flight (kg)	120
Minimum weight in flight (kg)	95
Glider's weight (kg)	5.1
Number of risers	3
Projected area (m2)	23.88

Accessories

Range of speed system (cm)	15
Speed range using brakes (km/h)	15
Total speed range with accessories (km/h)	25
Range of trimmers (cm)	0

Harness used for testing (max weight)

Harness type	ABS
Harness brand	Ava Sport
Harness model	Acro 1 L

Inspections (whichever happens first)

every 24 months or every 100 flying hours
Warning! Before use refer to user's manual
Person or company having presented the glider for testing: **None**

Harness to risers distance (cm) **43**

Distance between risers (cm) **48**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A A A A A A A A B A A A A A A A A A B B A 0

AIR TURQUOISE SA | PARA-TEST.COM

Route du Pré-au-Comte 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65

Test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes



Classification: **B**



In accordance with standards EN 926-2:2013, EN 926-1:2015 & LTF 91/09:

PG_1423.2018

Date of issue (DMY):

30.11.-0001

Manufacturer:

Niviuk Gliders / Air Games S.L.

Model:

Hook 5 31

Serial number:

NIH531V1

Configuration during flight tests

Paraglider

Maximum weight in flight (kg)	135
Minimum weight in flight (kg)	110
Glider's weight (kg)	5.7
Number of risers	3
Projected area (m2)	26.44

Accessories

Range of speed system (cm)	15
Speed range using brakes (km/h)	15
Total speed range with accessories (km/h)	25
Range of trimmers (cm)	0

Harness used for testing (max weight)

Harness type	ABS
Harness brand	Ava Sport
Harness model	Acro 1 L

Inspections (whichever happens first)

every 24 months or every 100 flying hours
Warning! Before use refer to user's manual
Person or company having presented the glider for testing: **None**

Harness to risers distance (cm) **43**

Distance between risers (cm) **48**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A A A A A A A A B A A A A A A A A A B B A 0

Paragliders Shock- and sustained loading test

Inspection certificat number: PG_1420.2018

Test Report

Manufacturer data

Manufacturer name: Niviuk Gliders
 Representative: Dominique Cizeau
 Street: C. Del Ter, 6-Nave D
 Post code / place: 17165 La Cellera de Ter Girona
 Country: Spain

Sample data

Name: Hook 5
 Size: 24
 Maximum weight in flight [kg]: 92
 Serial number: OI471313
 Date of reception: 04.02.2019

Test data

Test Atmosphere AGL

Place of test:	Yverdon (airport)	-1.3	[°C]
Date of test:	05.02.2019	78	RH [%]
Inspector:	Alain Zoller	976.8	[hPA]
		0.1	Wind [m/s]

Shock loading test result ⁽¹⁾

Weak link used [daN]: 1000
 Visual inspection: No visible damage Results: **POSITIVE**
 Uncertainty k=2 [%] ⁽²⁾ 10

Weak link



Instruments	Validity	Manufacturer	s/n
Weak link	2020	Tost	n/a
Cable	2020	Rotex	n/a
Geos n° 11 Skywatch	08.05.2019	JDC elec.	22

Inspection certificate number: **PG_1420.2018**

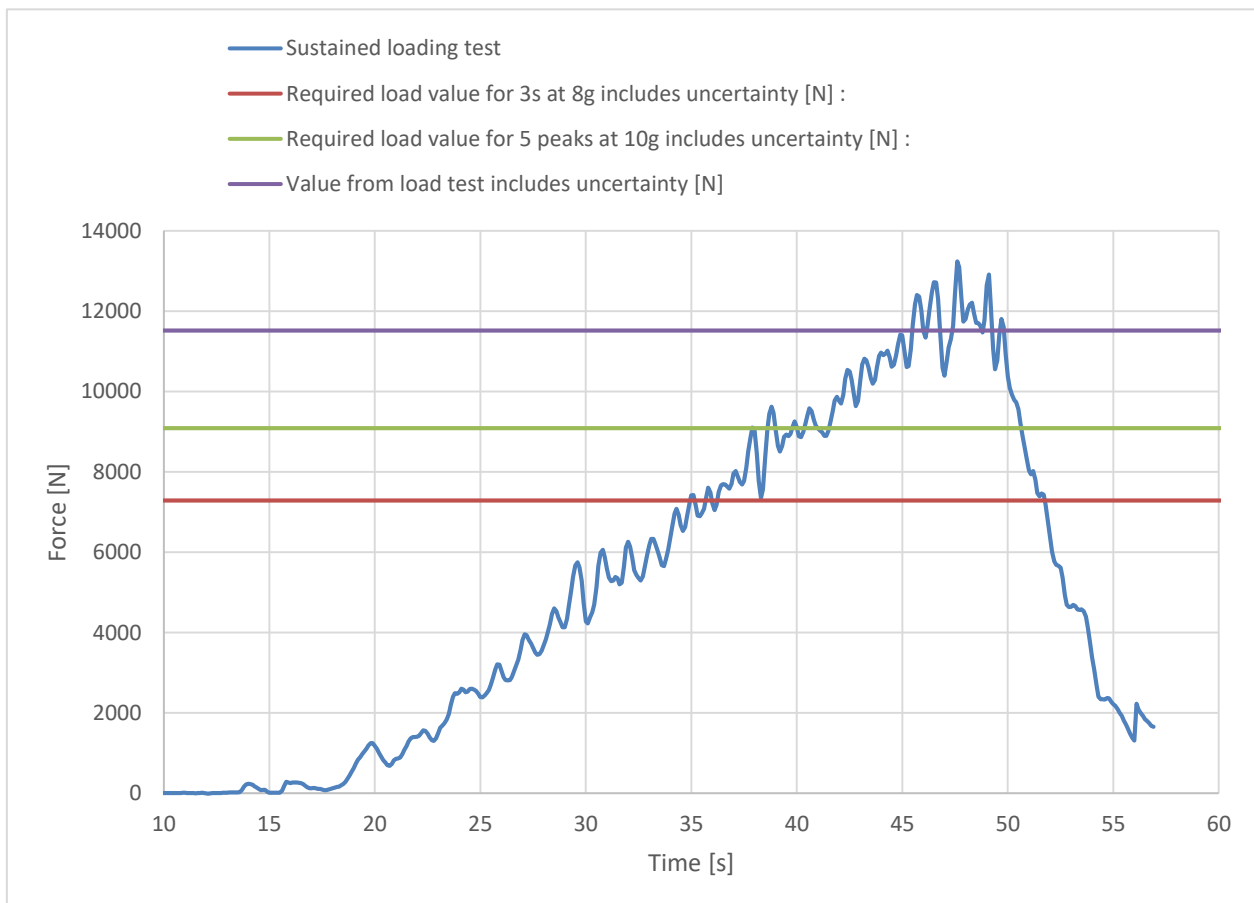
Sustained loading test results ⁽³⁾

Result : **POSITIVE**
Calculated max load value with 3 sec or five peaks [kg] : **146.73**

Required sustained loading test results ⁽⁴⁾

Required load value for 3s at 8g [N] : **7220.16**
Required load value for 5 peaks at 10g [N] : **9025.20**
Required load value for 3s at 8g includes uncertainty [N] : **7284.67**
Required load value for 5 peaks at 10g includes uncertainty [N] : **9089.71**
Uncertainty K=2 [%] : **0.487**

Graphic sustained loading diagram



Inspection certificate number: **PG_1420.2018****Detailed sustained loading test results**

Calculated cumulative duration at max load [s] : **3.1**

Calculated max load value duration of 3 sec. [N] : **1439.44**

Calculated max load value duration of 3 sec. [kg] : **146.73**

Calculated max load value with five peaks [N] : **1214.553373**

Calculated max load value with five peaks [kg] : **123.8076833**

Calculated max load value with 3 sec or five peaks [N] : **1439.44**

Calculated max load value with 3 sec or five peaks [kg] : **146.73**

Instruments	Manufacturer	Type nr.	S/N
Load sensor	HBM	1-S9M/50KN-1	31314652
Geos n°11 Skywatch	JDC	Geos n° 11	0022

The validation of this test report is given by the signature of the test manager on inspection certificate 71.8.1

Air Turquoise SA has thoroughly tested the sample of paraglider mentioned above and certifies its conformity with the standards **EN 926-1:2015 chapter 4.4, 4.5 | LTF NFL II-91/09 chapter 3**

(1) The paraglider is subjected to a shock load . Shock load is limited using a weak link according to the weight range of glider. The weak link breaks or 5 s has elapsed since the start of the shock load. The wing is then visually inspected for damage.

(2) Weak link value include the uncertainty for weight range test values / The uncertainty state is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor $k = 2$. The value of the measurand lies within the assigned range of values with a probability of 95%.

(3) The test specimen (sample) is attached to the electronic sensors on the tow vehicle.

A controller is positioned on the tow vehicle in order to operate the paraglider control lines to stabilize the wing.

The speed of the vehicle is increased as gradually as possible, enabling the controller to obtain satisfactory stabilisation of the flight path of the paraglider.

When the paraglider has stabilized, the speed is increased gradually until either:

- a) the measured load exceeds a load factor of eight times the maximum total weight in flight recommended by the manufacturer, for a minimum cumulative duration of 3 s; or
- b) five peaks separated by at least 0,3 s are obtained above ten times the maximum total weight in flight recommended by the manufacturer, in one run.

(4) The calculated value include the value minus the uncertainty / The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor $k = 2$. The value of the measurand lies within the assigned range of values with a probability of 95%.

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

Manufacturer	Niviuk Gliders / Air Games S.L.	Certification number	PG_1421.2018
Address	C. Del Ter, 6 ? Nave D 17165 La Celler de Ter Girona Spain	Flight test	19.11.2018
Glider model	Hook 5 26	Classification	B
Serial number	NIPS10220182	Representative	None
Trimmer	no	Place of test	Villeneuve
Folding lines used	no		
Test pilot		Claude Thurnheer	Alain Zoller
Harness		Niviuk - Access M	Gin Gliders - Gingo 2 L
Harness to risers distance (cm)		43	43
Distance between risers (cm)		44	46
Total weight in flight (kg)		82	105

1. Inflation/Take-off	A			
Rising behaviour	Smooth, easy and constant rising	A	Smooth, easy and constant rising	A
Special take off technique required	No	A	No	A
2. Landing	A			
Special landing technique required	No	A	No	A
3. Speed in straight flight	A			
Trim speed more than 30 km/h	Yes	A	Yes	A
Speed range using the controls larger than 10 km/h	Yes	A	Yes	A
Minimum speed	Less than 25 km/h	A	Less than 25 km/h	A
4. Control movement	A			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	not available	0	not available	0
Max. weight in flight 80 kg to 100 kg				
Symmetric control pressure / travel	Increasing / greater than 60 cm	A	not available	0
Max. weight in flight greater than 100 kg				
Symmetric control pressure / travel	not available	0	Increasing / greater than 65 cm	A
5. Pitch stability exiting accelerated flight	A			
Dive forward angle on exit	Dive forward less than 30°	A	Dive forward less than 30°	A
Collapse occurs	No	A	No	A
6. Pitch stability operating controls during accelerated flight	A			
Collapse occurs	No	A	No	A
7. Roll stability and damping	A			
Oscillations	Reducing	A	Reducing	A
8. Stability in gentle spirals	A			
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
9. Behaviour exiting a fully developed spiral dive	A			
Initial response of glider (first 180°)	Immediate reduction of rate of turn	A	Immediate reduction of rate of turn	A
Tendency to return to straight flight	Spontaneous exit (g force decreasing, rate of turn decreasing)	A	Spontaneous exit (g force decreasing, rate of turn decreasing)	A
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	A	Less than 720°, spontaneous recovery	A
10. Symmetric front collapse	B			
Approximately 30 % chord				

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	A	No	A
Folding lines used	No		No	
At least 50% chord				
Entry	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	Spontaneous in 3 s to 5 s	B	Spontaneous in 3 s to 5 s	B
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	A	No	A
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	A	No	A
Folding lines used	No		No	
11. Exiting deep stall (parachutal stall)				
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	Changing course less than 45°	A	Changing course less than 45°	A
Cascade occurs	No	A	No	A
12. High angle of attack recovery				
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				
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Collapse	No collapse	A	No collapse	A
Cascade occurs (other than collapses)	No	A	No	A
Rocking back	Less than 45°	A	Less than 45°	A
Line tension	Most lines tight	A	Most lines tight	A
14. Asymmetric collapse				
Small asymmetric collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	A	Less than 90° / Dive or roll angle 0° to 15°	A
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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
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	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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
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°	A	Less than 90° / Dive or roll angle 0° to 15°	A

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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
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	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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
15. Directional control with a maintained asymmetric collapse	A			
Able to keep course	Yes	A	Yes	A
180° turn away from the collapsed side possible in 10 s	Yes	A	Yes	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	A			
Spin occurs	No	A	No	A
17. Low speed spin tendency	A			
Spin occurs	No	A	No	A
18. Recovery from a developed spin	A			
Spin rotation angle after release	Stops spinning in less than 90°	A	Stops spinning in less than 90°	A
Cascade occurs	No	A	No	A
19. B-line stall	A			
Change of course before release	Changing course less than 45°	A	Changing course less than 45°	A
Behaviour before release	Remains stable with straight span	A	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°	A	Dive forward 0° to 30°	A
Cascade occurs	No	A	No	A
20. Big ears	A			
Entry procedure	Dedicated controls	A	Dedicated controls	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
21. Big ears in accelerated flight	A			
Entry procedure	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Spontaneous in 3 s to 5 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	A	Stable flight	A
22. Alternative means of directional control	A			
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	A	No	A
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				

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

Manufacturer	Niviuk Gliders / Air Games S.L.	Certification number	PG_1419.2018
Address	C. Del Ter, 6 ? Nave D 17165 La Celler de Ter Girona Spain	Flight test	20.11.2018
Glider model	Hook 5 22	Classification	B
Serial number	NIPS10220181	Representative	None
Trimmer	no	Place of test	Villeneuve
Folding lines used	no		
Test pilot		Philippe Dupont	Claude Thurnheer
Harness		Supair - Altiplume S	Niviuk - Konvers M
Harness to risers distance (cm)		43	43
Distance between risers (cm)		40	44
Total weight in flight (kg)		60	80

1. Inflation/Take-off	A			
Rising behaviour	Smooth, easy and constant rising	A	Smooth, easy and constant rising	A
Special take off technique required	No	A	No	A
2. Landing	A			
Special landing technique required	No	A	No	A
3. Speed in straight flight	A			
Trim speed more than 30 km/h	Yes	A	Yes	A
Speed range using the controls larger than 10 km/h	Yes	A	Yes	A
Minimum speed	Less than 25 km/h	A	Less than 25 km/h	A
4. Control movement	A			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	Increasing / greater than 55 cm	A	not available	0
Max. weight in flight 80 kg to 100 kg				
Symmetric control pressure / travel	not available	0	Increasing / greater than 60 cm	A
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°	A	Dive forward less than 30°	A
Collapse occurs	No	A	No	A
6. Pitch stability operating controls during accelerated flight	A			
Collapse occurs	No	A	No	A
7. Roll stability and damping	A			
Oscillations	Reducing	A	Reducing	A
8. Stability in gentle spirals	A			
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
9. Behaviour exiting a fully developed spiral dive	B			
Initial response of glider (first 180°)	Immediate reduction of rate of turn	A	Immediate reduction of rate of turn	A
Tendency to return to straight flight	Spontaneous exit (g force decreasing, rate of turn decreasing)	A	Spontaneous exit (g force decreasing, rate of turn decreasing)	A
Turn angle to recover normal flight	720° to 1 080°, spontaneous recovery	B	Less than 720°, spontaneous recovery	A
10. Symmetric front collapse	A			
Approximately 30 % chord				

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	A	No	A
Folding lines used	No		No	
At least 50% chord				
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	A	No	A
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	A	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	Changing course less than 45°	A	Changing course less than 45°	A
Cascade occurs	No	A	No	A
12. High angle of attack recovery	A			
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	A			
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Collapse	No collapse	A	No collapse	A
Cascade occurs (other than collapses)	No	A	No	A
Rocking back	Less than 45°	A	Less than 45°	A
Line tension	Most lines tight	A	Most lines tight	A
14. Asymmetric collapse	A			
Small asymmetric collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	A	Less than 90° / Dive or roll angle 0° to 15°	A
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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
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	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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
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°	A	Less than 90° / Dive or roll angle 15° to 45°	A

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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
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	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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
15. Directional control with a maintained asymmetric collapse	A			
Able to keep course	Yes	A	Yes	A
180° turn away from the collapsed side possible in 10 s	Yes	A	Yes	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	A			
Spin occurs	No	A	No	A
17. Low speed spin tendency	A			
Spin occurs	No	A	No	A
18. Recovery from a developed spin	A			
Spin rotation angle after release	Stops spinning in less than 90°	A	Stops spinning in less than 90°	A
Cascade occurs	No	A	No	A
19. B-line stall	A			
Change of course before release	Changing course less than 45°	A	Changing course less than 45°	A
Behaviour before release	Remains stable with straight span	A	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°	A	Dive forward 0° to 30°	A
Cascade occurs	No	A	No	A
20. Big ears	A			
Entry procedure	Dedicated controls	A	Dedicated controls	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
21. Big ears in accelerated flight	B			
Entry procedure	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Spontaneous in less than 3 s	A	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	Stable flight	A	Stable flight	A
22. Alternative means of directional control	A			
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	A	No	A
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				

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

Manufacturer	Niviuk Gliders / Air Games S.L.	Certification number	PG_1420.2018
Address	C. Del Ter, 6 ? Nave D 17165 La Celler de Ter Girona Spain	Flight test	20.11.2018
Glider model	Hook 5 24	Classification	B
Serial number	V8	Representative	None
Trimmer	no	Place of test	Villeneuve
Folding lines used	no		
Test pilot	Philippe Dupont	Alain Zoller	
Harness	Supair - Evo XC 3 M	Supair - Evo XC 3 M	
Harness to risers distance (cm)	44	43	
Distance between risers (cm)	40	44	
Total weight in flight (kg)	70	92	

1. Inflation/Take-off	A			
Rising behaviour	Smooth, easy and constant rising	A	Smooth, easy and constant rising	A
Special take off technique required	No	A	No	A
2. Landing	A			
Special landing technique required	No	A	No	A
3. Speed in straight flight	A			
Trim speed more than 30 km/h	Yes	A	Yes	A
Speed range using the controls larger than 10 km/h	Yes	A	Yes	A
Minimum speed	Less than 25 km/h	A	Less than 25 km/h	A
4. Control movement	A			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	Increasing / greater than 55 cm	A	not available	0
Max. weight in flight 80 kg to 100 kg				
Symmetric control pressure / travel	not available	0	Increasing / greater than 60 cm	A
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°	A	Dive forward less than 30°	A
Collapse occurs	No	A	No	A
6. Pitch stability operating controls during accelerated flight	A			
Collapse occurs	No	A	No	A
7. Roll stability and damping	A			
Oscillations	Reducing	A	Reducing	A
8. Stability in gentle spirals	A			
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
9. Behaviour exiting a fully developed spiral dive	A			
Initial response of glider (first 180°)	Immediate reduction of rate of turn	A	Immediate reduction of rate of turn	A
Tendency to return to straight flight	Spontaneous exit (g force decreasing, rate of turn decreasing)	A	Spontaneous exit (g force decreasing, rate of turn decreasing)	A
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	A	Less than 720°, spontaneous recovery	A
10. Symmetric front collapse	B			
Approximately 30 % chord				

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	A	No	A
Folding lines used	No		No	
At least 50% chord				
Entry	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in 3 s to 5 s	B
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	A	No	A
Folding lines used	No		No	
With accelerator				
Entry	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	Spontaneous in 3 s to 5 s	B	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	A	No	A
Folding lines used	No		No	
11. Exiting deep stall (parachutal stall)				
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	Changing course less than 45°	A	Changing course less than 45°	A
Cascade occurs	No	A	No	A
12. High angle of attack recovery				
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				
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Collapse	No collapse	A	No collapse	A
Cascade occurs (other than collapses)	No	A	No	A
Rocking back	Less than 45°	A	Less than 45°	A
Line tension	Most lines tight	A	Most lines tight	A
14. Asymmetric collapse				
Small asymmetric collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	A	Less than 90° / Dive or roll angle 0° to 15°	A
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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
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	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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
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°	A	Less than 90° / Dive or roll angle 0° to 15°	A

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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
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	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 re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
15. Directional control with a maintained asymmetric collapse	A			
Able to keep course	Yes	A	Yes	A
180° turn away from the collapsed side possible in 10 s	Yes	A	Yes	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	A			
Spin occurs	No	A	No	A
17. Low speed spin tendency	A			
Spin occurs	No	A	No	A
18. Recovery from a developed spin	A			
Spin rotation angle after release	Stops spinning in less than 90°	A	Stops spinning in less than 90°	A
Cascade occurs	No	A	No	A
19. B-line stall	A			
Change of course before release	Changing course less than 45°	A	Changing course less than 45°	A
Behaviour before release	Remains stable with straight span	A	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°	A	Dive forward 0° to 30°	A
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	Spontaneous in 3 s to 5 s	B	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
21. Big ears in accelerated flight	A			
Entry procedure	Dedicated controls	A	Dedicated controls	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	A	Stable flight	A
22. Alternative means of directional control	A			
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	A	No	A
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				

Line and Riser measurements report for flight test glider

Report number: **PG_1442.2019**Sample name: **Hook 5 20**Manufacturer: **Niviuk Gliders**S/N: **NIH520V1**

Total line length include riser and carabiner/connect [mm]

		A	B	C	D	E	Stab	Brakes
Center	1	6371	6270	6312	6421		5523	6425
	2	6315	6208	6260	6368		5528	6236
	3	6250	6204	6277	6382		5594	6158
	4	6173	6084	6133	6228			6097
	5	6108	6026	6088				5940
	6	5982	5936	6008				5877
	7	5901	5904	5991				5912
	8	5843	5899	6004				5869
	9	5620	5597					5744
	10							5644
Wing tip	11							5625
	12							
	13							
	14							
	15							
	16							
	17							
	18							

Measure total riser length with no carabiners/connect [mm]

Risers	Std	Acc
A	468	339
A'	466	337
B	464	378
C	468	468
D		
Acc	130	*[mm]
Trimmer	n/a	[mm]

*Travel range (distance between A and rear riser)

Line and Riser measurements report for flight test glider

Report number: **PG_1419.2018**Sample name: **Hook 5 22**Manufacturer: **Niviuk**S/N: **NIPS10220181**

Total line length include riser and carabiner/connect [mm]

		A	B	C	D	E	Stab	Brakes
Center	1	6659	6560	6608	6722		5814	6768
	2	6606	6502	6555	6666		5819	6568
	3	6535	6505	6590	6697		5891	6485
	4	6457	6384	6444	6543			6434
	5	6398	6319	6380				6270
	6	6266	6227	6297				6199
	7	6174	6194	6281				6241
	8	6117	6189	6298				6197
	9	5910	5888					6069
	10							5966
Wing tip	11							5951
	12							
	13							
	14							
	15							
	16							
	17							
	18							

Measure total riser length with no carabiners/connect [mm]

Risers	Std	Acc
A	467	333
A'	467	333
B	466	378
C	468	468
D		
Acc	130	*[mm]
Trimmer	n/a	[mm]

*Travel range (distance between A and rear riser)

Line and Riser measurements report for flight test glider

Report number: **PG_1420.2018**Sample name: **Hook 5 24**Manufacturer: **Niviuk**S/N: **V8**

Total line length include riser and carabiner/connect [mm]

		A	B	C	D	E	Stab	Brakes
Center	1	6954	6841	6907	7022		6084	7089
	2	6897	6784	6851	6966		6082	6880
	3	6833	6798	6887	6997		6161	6794
	4	6754	6671	6740	6837			6737
	5	6699	6608	6670				6568
	6	6563	6513	6590				6502
	7	6472	6473	6569				6544
	8	6410	6469	6586				6495
	9	6194	6166					6360
	10							6250
Wing tip	11							6244
	12							
	13							
	14							
	15							
	16							
	17							
	18							

Measure total riser length with no carabiners/connect [mm]

Risers	Std	Acc
A	466	334
A'	467	335
B	464	376
C	465	465
D		
Acc	130	*[mm]
Trimmer	n/a	[mm]

*Travel range (distance between A and rear riser)

Line and Riser measurements report for flight test glider

Report number: **PG_1421.2018**Sample name: **Hook 5 26**Manufacturer: **Niviuk**S/N: **NIPS10220182**

Total line length include riser and carabiner/connect [mm]

		A	B	C	D	E	Stab	Brakes
Center	1	7241	7124	7187	7312		6339	7397
	2	7185	7070	7137	7259		6339	7182
	3	7114	7078	7167	7280		6416	7096
	4	7039	6949	7011	7118			7035
	5	6971	6878	6943				6859
	6	6829	6782	6857				6783
	7	6735	6746	6835				6833
	8	6670	6747	6856				6785
	9	6441	6420					6648
	10							6535
Wing tip	11							6519
	12							
	13							
	14							
	15							
	16							
	17							
	18							

Measure total riser length with no carabiners/connect [mm]

Risers	Std	Acc
A	467	311
A'	467	311
B	466	361
C	468	468
D		
Acc	160	*[mm]
Trimmer	n/a	[mm]

*Travel range (distance between A and rear riser)

Line and Riser measurements report for flight test glider

 Report number: **PG_1422.2018**

 Sample name: **Hook 5 28**

 Manufacturer: **Niviuk**

 S/N: **NIH528V1**

Total line length include riser and carabiner/connect [mm]

		A	B	C	D	E	Stab	Brakes
Center	1	7473	7361	7431	7559		6524	7677
	2	7422	7305	7378	7509		6528	7450
	3	7395	7351	7449	7569		6607	7364
	4	7306	7208	7288	7397			7299
	5	7243	7147	7218				7114
	6	7090	7047	7127				7041
	7	6997	7010	7108				7091
	8	6932	7008	7131				7045
	9	6655	6638					6903
	10							6782
Wing tip	11							6762
	12							
	13							
	14							
	15							
	16							
	17							
	18							

Measure total riser length with no carabiners/connect [mm]

Risers	Std	Acc
A	465	314
A'	466	315
B	464	366
C	467	467
D		
Acc	150	*[mm]
Trimmer	n/a	[mm]

*Travel range (distance between A and rear riser)

Line and Riser measurements report for flight test glider

Report number: **PG_1423.2018**Sample name: **Hook 5 31**Manufacturer: **Niviuk**S/N: **NIH531V1**

Total line length include riser and carabiner/connect [mm]

		A	B	C	D	E	Stab	Brakes
Center	1	7835	7705	7785	7920		6873	8033
	2	7780	7645	7732	7860		6875	7800
	3	7711	7656	7763	7888		6959	7710
	4	7625	7516	7595	7712			7642
	5	7563	7443	7528				7451
	6	7406	7334	7435				7380
	7	7309	7305	7415				7426
	8	7243	7304	7434				7372
	9	6990	6964					7224
	10							7115
Wing tip	11							7101
	12							
	13							
	14							
	15							
	16							
	17							
	18							

Measure total riser length with no carabiners/connect [mm]

Risers	Std	Acc
A	467	314
A'	465	312
B	464	366
C	467	467
D		
Acc	150	*[mm]
Trimmer	n/a	[mm]

*Travel range (distance between A and rear riser)