

What must be done by the Test Laboratories and when

<p>1- In flight test at maximum weight only. Based on EN 926.2 rev 2005, but with a few less tests like flat spin. For details of test to be done, refer to CCC document, point 9.5. The riser configuration must be assessed. Pilot makes sure that the limiter is under tension when testing fully accelerated flight. Test report must be done.</p>
<p>2- Sustained and shock load test. Same as EN, except that for shock test the minimum is calibrated for failure at 6.67 times the top specimen's weight.</p>
<p>3- Line breaking strenght. 5000 cycles as for EN. Total of 14G total on A+B. To clarify, an exemple is given in Appendix A of CCC doc.</p>
<p>4- Measurement file. All information needed are provided by the manufacturers in what is called the Users' Manual. The measurements given by the manufacturer in whatever format are imported by the test laboratory in the CCC-Test-Template. The Test Laboratory check if manufacturer measurements are within the tolerances of the CCC tested glider. Inside the tolerances: the Test Laboratory confirms the data of the CCC-Test-Template. Outside the tolerances: the Test Laboratory informs the manufacturer. <u>They check together the differences, modify them or not, agree on the new data and add them in the CCC-Test-Template.</u>The</p>
<p>5- Lines and risers measurements. Test Laboratories make sure that Users' Manual information is within tolerances: +/-10mm (never more) for lines and +/-5mm for risers.</p>
<p>6- Folding lines measurements. See CCC doc point 9.3. Five measures to be done on the bottom + riser, to be compared to the values of low A + risers (same lenght with +/-1m tolerance). Make sure that attachments are at a minimum of 1% of profil and not further back than A.</p>
<p>7- Canopy measurements. Measure chords A, B and spans and apply formula (CCC doc point 7.5.1 to make sure that the aspect ratio is not over 7.90.</p>
<p>8- EN gliders. For gliders with aspect ratio higher than 7.0 (Enzo1, Enzo2, Boom9, IcePeak7 pro, Mercury Sport, Swing Core 1, 2, 3 etc.), risers have to be set with limiters. Measure the limiters.</p>
<p>9- Check the User's manual. Make sure that all needed informations are in it and that measures are within tolerances. <i>Deadlines are different for CCC and EN gliders</i></p>
<p>10- Report and documentation must be sent to CIVL president (see CCC doc point 5), including the template Excel file for gliders control, except for the video. civl-president@fai.org</p>

Deadlines

October 14
November 14
November 14
November 14
November 14
November 14
December 14
November 14 for CCC
December 14 for EN
November 14 for CCC
December 14 for EN

- 1- Laboratory keep all the test results, video, graphics etc. accessible to CIVL by request.
- 2- Laboratory send to the CIVL président the CCC certification document for each model with the Measurements data file in .pdf format.
- 3- The certification document and measurements data files are published asap on CIVL web site. No publication is mandatory on the test house
- 4- This applies to CCC and EN gliders alike.

web site.

Measurement request from test house for CCC certification

From 28/09/2014 to next revision

Brand		Test house name	
Model		CCC certification n°	
Size		Certification date	

AUTOMATIC CALCULATION
FILL UP THIS COLOR
DELATE & PASTE DRAWING OR PICTURE

Canopy dimensions

	from center		Tension	tolerances	4*span / (chord A+2.5*Chord B)
Full Span	X		3KG	2%	
1/2 Trailing Edge	X		3KG	1%	
Chord A	1		3KG	1%	1.1428571429
Chord B			3KG	1%	

If there are ambiguous aspects concerning extremities
paste here a picture or a drawing
showing the measurement extremities

Chord lenght, inlet position, tabs position measured from trailing edge.
(The tab A & B & C can be on different rib, take care to specify it)

On first lined rib with all lines (A,B,C,D) if not all tab on rib specify	Rib n° from center	Distance	Tension	tolerances	Manual
Chord			3KG	+/-10mm	
Top of inlet			3KG	+/-10mm	
Bottom of inlet			3KG	+/-10mm	
Tab Aa			3KG	+/-10mm	
Tab Ab			3KG	+/-10mm	
Tab B			3KG	+/-10mm	
Tab C			3KG	+/-10mm	

On first lined rib of Group 2 with all line (A,B,C,D) if not all tab on rib	Rib n° from center	Distance	Tension	tolerances	Manual
Chord			3KG	+/-10mm	
Top of inlet			3KG	+/-10mm	
Bottom of inlet			3KG	+/-10mm	
Tab Aa			3KG	+/-10mm	
Tab Ab			3KG	+/-10mm	
Tab B			3KG	+/-10mm	
Tab C			3KG	+/-10mm	

On last lined rib (stabilo) (from center)	Rib n° from center	Distance	Tension	tolerances	Manual
Chord			3KG	+/-10mm	
Tab A			3KG	+/-10mm	
Tab B			3KG	+/-10mm	
Tab C			3KG	+/-10mm	

Paste here a draw of:

Paste here a drawing of tabs position with ribs number
This drawing have to be provide by the manufacturer
See the example on Measurement sheet example

Absolute line length from bottom riser to canopy

LINED RIB NUMBER	Aa	Ab	Ba	Bb	C	BRAKES	Tension	tolerances
1							5KG	+/-10mm
2							5KG	+/-10mm
3							5KG	+/-10mm
4							5KG	+/-10mm
5							5KG	+/-10mm
6							5KG	+/-10mm
7							5KG	+/-10mm
8							5KG	+/-10mm
9							5KG	+/-10mm
10							5KG	+/-10mm
11							5KG	+/-10mm
12							5KG	+/-10mm
13							5KG	+/-10mm
14							5KG	+/-10mm
15							5KG	+/-10mm
16							5KG	+/-10mm
17							5KG	+/-10mm
18							5KG	+/-10mm
19							5KG	+/-10mm
20							5KG	+/-10mm
21							5KG	+/-10mm
22							5KG	+/-10mm
23							5KG	+/-10mm
24							5KG	+/-10mm

Paste here a drawing of rigging diagram with A, B, C & Brakes cascade
This drawing have to be provide by the manufacturer
See the example on Measurement sheet

Riser length

Erase the non-necessary cells

from bottom riser to top maillon on each branche	A	A'	B	B'	C	calculated At	Tension	tolerances	Attachment rod diameter in mm
Neutral							5KG	+/-5mm	

Full speed setting	Manual
A-B	+/-5mm
A'-B	+/-5mm

Full speed setting	Manual
B-B'	+/-5mm
C-B	+/-5mm

Total speed Range (Δ)	220 +/-5mm
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Paste here drawing of Risers in neutral and full speed setting:
This drawing have to be provide by the manufacturer
See the example on Measurement sheet example

Table of lines quality

Provide by manufacturer; should be adjusted with a diagram of lines

names

Other pictures & drawings requested from Test Laboratories

Paste here drawings of :

Tension bands

Diagonals and internal structure

Inlet shape

Mini rib position

Special innovation

**These drawings have to be provide by the
manufacture**

See the example on Measurement sheet example

Measurement request from test house for CCC cert

From 28/09/2014 to next revision

Brand	BUTTERFLY	Test house name	INTERN
Model	MAGIC FLOWER	CCC certification n°	IL 28
Size	SMALL MEDIUM	Certification date	2

Canopy dimensions

	Rib n° from center		Tension	Manual tolerances	Aspect ratio 4*span / (chord A+2.5
Full Span	x	12450	3KG	2%	6.8312757202
1/2 Trailing Edge	x	6490	3KG	1%	
Chord A		2340	3KG	1%	
Chord B		1980	3KG	1%	

Chord length. inlet position. tabs position measured from trailing edge.

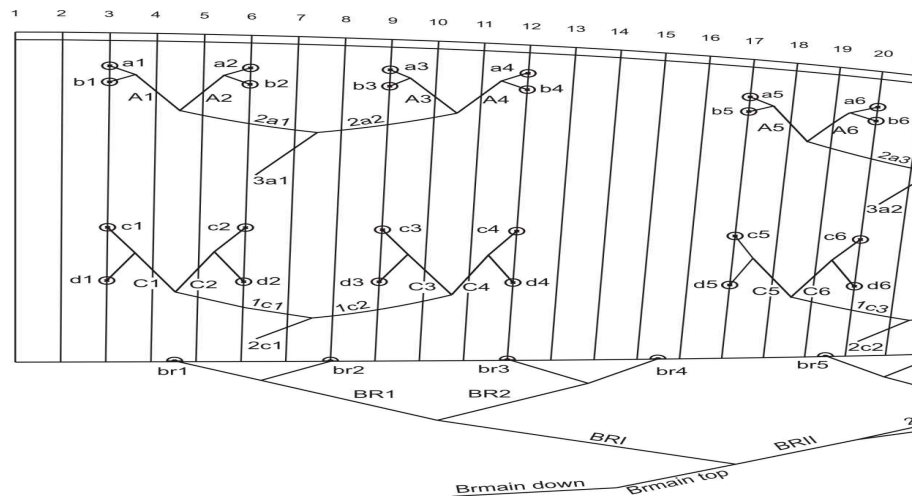
On first lined rib with all lines (A,B,C,D) if not all tab on rib specify	Rib n° from center	Distance	Tension	Manual tolerances
Chord	3	2098	3KG	+/-10mm
Top of inlet	3	1938	3KG	+/-10mm
Bottom of inlet	3	1915	3KG	+/-10mm
Tab Aa	4	1825	3KG	+/-10mm
Tab Ab	4	1722	3KG	+/-10mm
Tab B	3	839	3KG	+/-10mm
Tab C	4	489	3KG	+/-10mm

On first lined rib of Group 2 with all line (A,B,C,D) if not all tab on rib	Rib n° from center	Distance	Tension	Manual tolerances
Chord	26	1328	3KG	+/-10mm
Top of inlet	26	1224	3KG	+/-10mm
Bottom of inlet	26	1209	3KG	+/-10mm
Tab Aa	26	1386	3KG	+/-10mm
Tab Ab	26	1284	3KG	+/-10mm
Tab B	26	741	3KG	+/-10mm
Tab C	26	358	3KG	+/-10mm

On last lined rib (stabilo) (from center)	Rib n° from center	Distance	Tension	Manual tolerances
Chord	41	716	3KG	+/-10mm
Tab A	41	625	3KG	+/-10mm
Tab B	41	287	3KG	+/-10mm
Tab C			3KG	+/-10mm

Absolute line length from bottom riser to canopy

LINED RIB NUMBER	A	B	C	D	BRAKES	Tension
1	7545	7510	7494	7593	7609	5KG
2	7419	7382	7357	7468	7610	5KG
3	7381	7344	7330	7469	7611	5KG
4	7430	7396	7428	7558	7612	5KG
5	7314	7287	7284	7419	7613	5KG
6	7201	7174	7164	7299	7614	5KG
7	7155	7129	7133	7262	7615	5KG
8	7190	7168	7212	7312	7616	5KG
9	6984		6969		7617	5KG
10	6895		6895		7618	5KG
11	6823		6859		7619	5KG
12	6805		6890			5KG
13	6740		6807			5KG
14	6724		6803			5KG

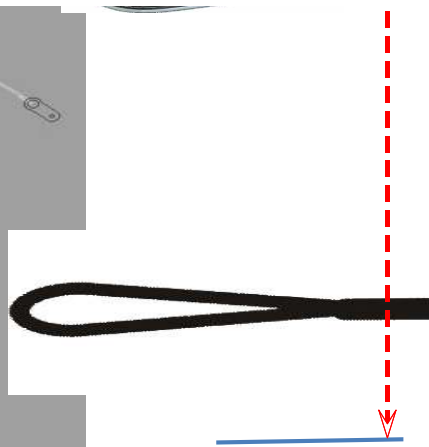


Riser length

from bottom riser to top maillon on each branche	A1	A2	B	calculated $\Delta t (= A1-B)$	Tension	Manual tolerances
Neutral	490	490	470	20	5KG	+/-5mm

if B is longer than the shortest A, the value should be negative





Provide by manufacture; should be adjust with diagram line
(diameter/strength, matériel reference, inside or outside reinforcement)

b Upper line	
Number from center	Supplier Reference
b1	DC-040
b2	8000-45
b3	8000-45
b4	8000-45
b5	8000-45
b6	8000-45
b7	8000-45
b8	DC-040

	Number fr
	C
	C
	C
	C
	C
	C
	C
	1c
	1c

a 2nd cascade				
Number from center	Supplier Reference	Supplier name	Upper reinforcem	Lower reinforcem
2a1	8000-060	EDELRID (	yes	yes
2a2	8000-060	EDELRID (	yes	yes
2a3	8000-060	EDELRID (	yes	yes
2a4	12240	cousin	yes	yes
2a5	12240	cousin	yes	yes
2a6	12240	cousin	yes	yes

Number from
1c
1c
1c
1c
1c
1c

A main				
Number from center	Supplier Reference	Supplier name	Upper reinforcem	Lower reinforcem
2c1	12950-405	cousin	yes	yes
2c2	16560-240	cousin	yes	yes
2c3	12240-115	cousin	yes	yes

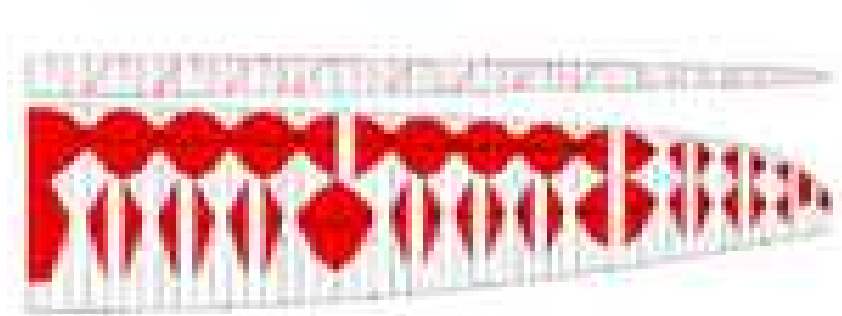
Number from
2c1
2c2
2c3

Brake Upper line		
Number from center	Suplier Reference	Supplier name
br1	8000-45	cousin
br2	8000-45	cousin
br3	8000-45	cousin
br4	8000-45	cousin
br5	8000-45	cousin
br6	8000-45	cousin
br7	8000-45	cousin
br8	8000-45	cousin
br9	8000-45	cousin
br10	8000-45	cousin
br11	8000-45	cousin

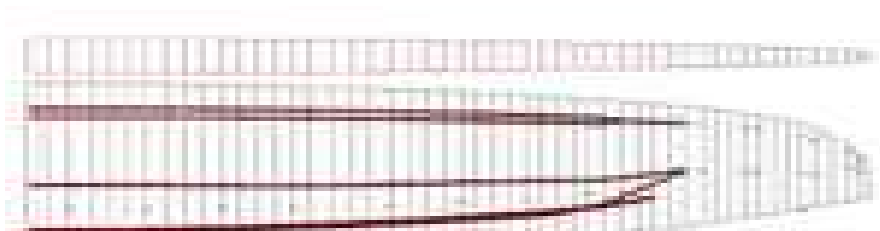
Brake Medium high line		
Number from	Suplier Reference	Supplier name
BR1	12240-115	cousin
BR2	12240-115	cousin
BR3	12240-115	cousin
BR4	12240-115	cousin
BR5	12240-115	cousin

Brake Medium low line		
Number from	Suplier Reference	Supplier name
BR1	12240-115	cousin
BR11	12240-115	cousin
2BR1	12240-116	cousin

Other pictures & drawings requested from test House



DIAGONALS





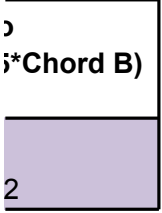
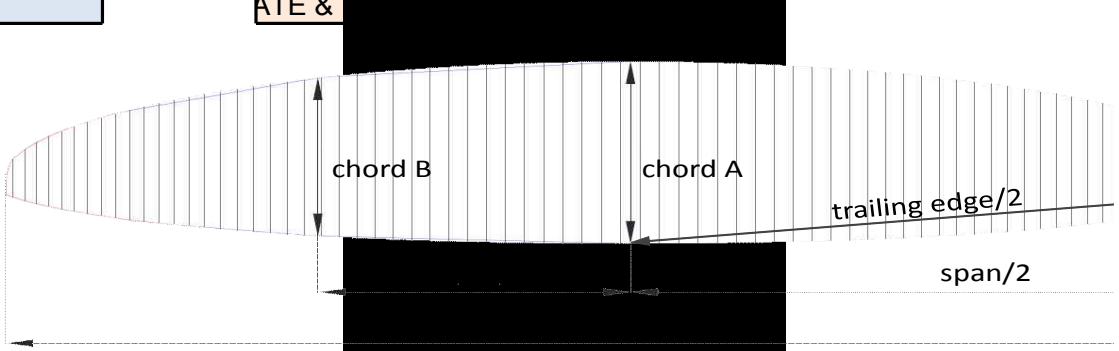
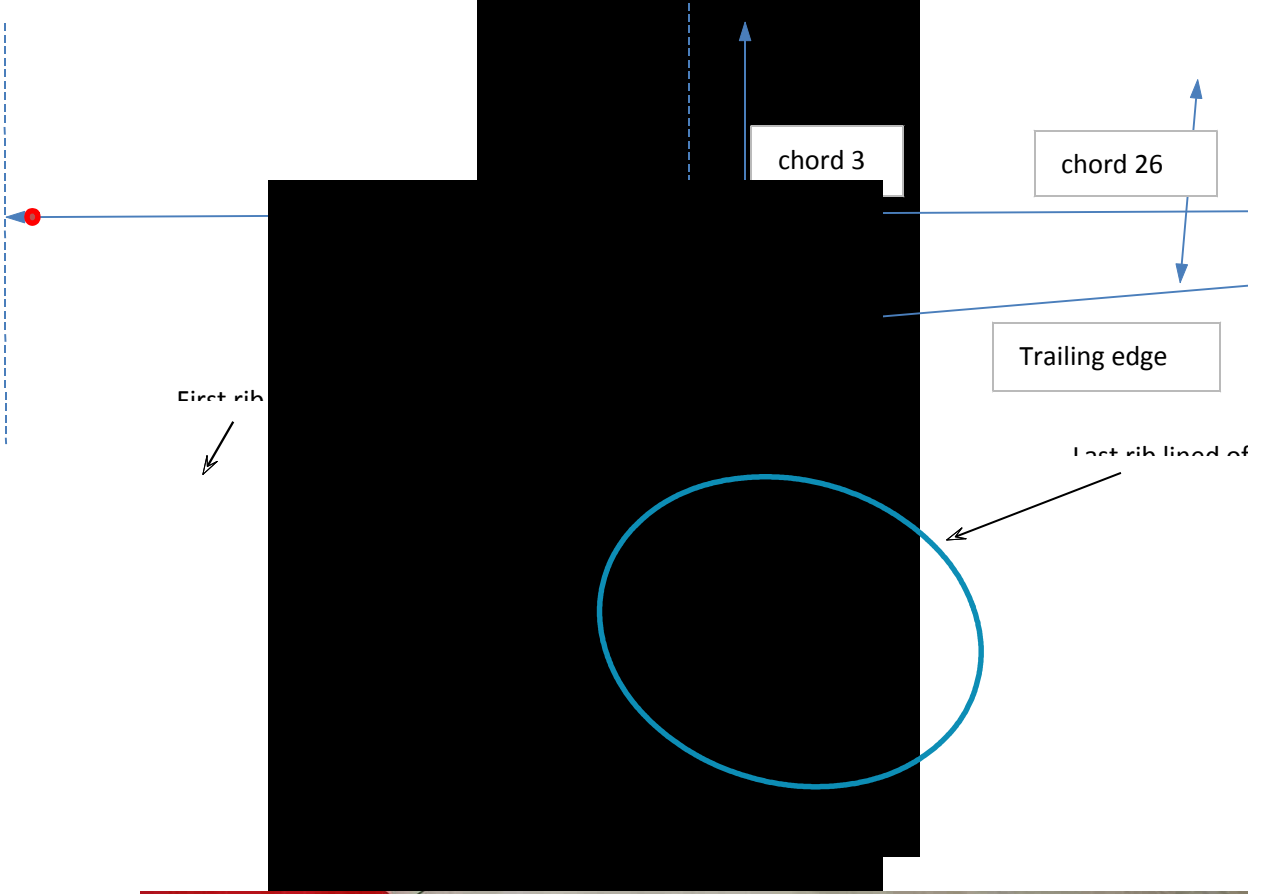
TENSION BAND



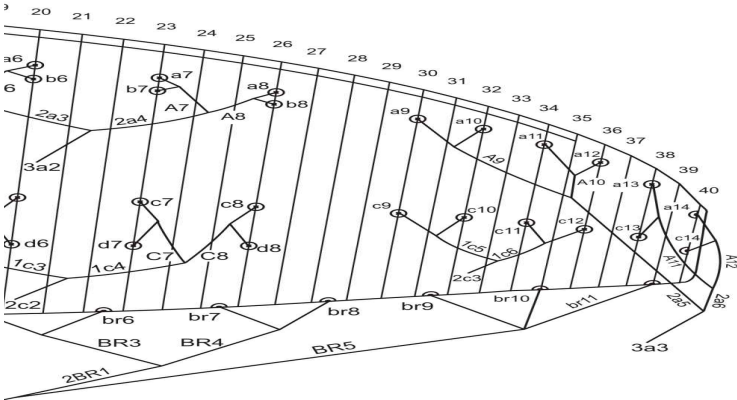
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AUTOMATIC CALCULATION
FILL UP THIS COLOR
DATE & PASTE DRAWING OR PHOTO



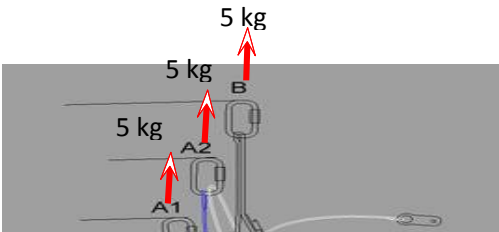
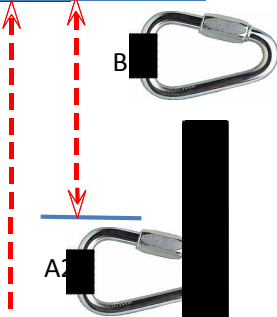
Manual
tolerances
+/-10mm
+/-10mm
+/-10mm
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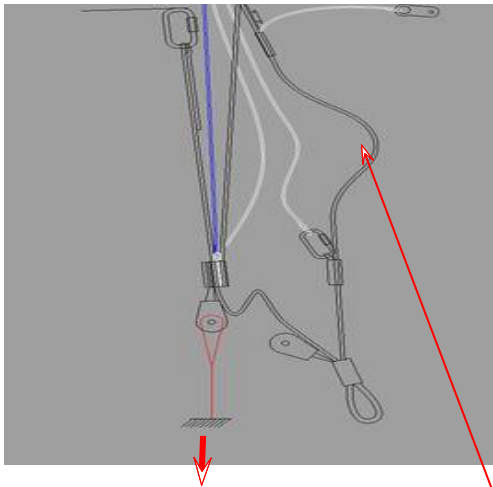
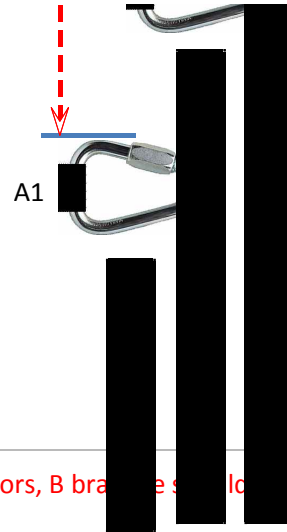


Attachment rod diameter in mm
8

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ue
:

Full speed setting		Manual
tolerances		
B-A1 (Δa)	200	+/-5mm
B-A2	100	+/-5mm
Total speed Range (Δ	220	+/-5mm





because of limitors, B br...e s...l...ck when you take the measurement

Supplier name
LIROS
EDELRID
EDELRID
EDELRID
EDELRID
EDELRID
EDELRID
LIROS

C Upper line			
Number from center	Supplier Reference	Supplier name	
C1	8000-45	EDELRID	
C2	8000-45	EDELRID	
C3	8000-45	EDELRID	
C4	8000-45	EDELRID	
C5	8000-45	EDELRID	
C6	8000-45	EDELRID	
C7	8000-45	EDELRID	
C8	8000-45	EDELRID	
C9	8000-45	EDELRID	
C10	8000-45	EDELRID	
C11	8000-45	EDELRID	
C12	8000-45	EDELRID	
C13	8000-45	EDELRID	
C14	8000-45	EDELRID	

Number from center
b1
b2
b3
b4
b5
b6
b7
b8

C first cascade				
Number from center	Supplier Reference	Supplier name	Upper reinforcement	Lower reinforcement
1	DC-040	LIROS	no	yes
2	8000-45	EDELRID	no	yes
3	8000-45	EDELRID	no	yes
4	DC-040	LIROS	no	yes
5	DC-040	LIROS	no	yes
6	8000-45	EDELRID	no	yes
7	8000-45	EDELRID	no	yes
8	DC-040	LIROS	no	yes
25	DC-041	LIROS	no	yes
26	DC-042	LIROS	no	yes

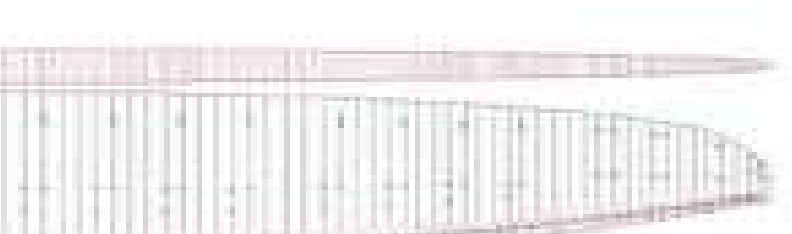
c 2nd cascade				
com center	Supplier Reference	Supplier name	Upper reinforcem	Lower reinforcem
c1	12240	cousin	yes	yes
c2	12240	cousin	yes	yes
c3	12240	cousin	yes	yes
c4	12240	cousin	yes	yes
c5	12240	cousin	yes	yes
c6	12240	cousin	yes	yes

B main			
Supplier Reference	Supplier name	Upper reinforcem	Lower reinforcem
16560-240	cousin	yes	yes
16560-241	cousin	yes	yes
12240-115	cousin	yes	yes

Brake main line		
Number from	Suplier Reference	Supplier name
TOP	12240-115	cousin
DOWN	TNL-281	TEYJIM

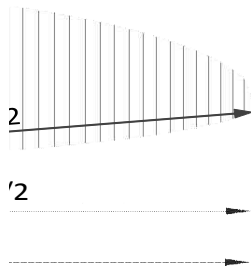
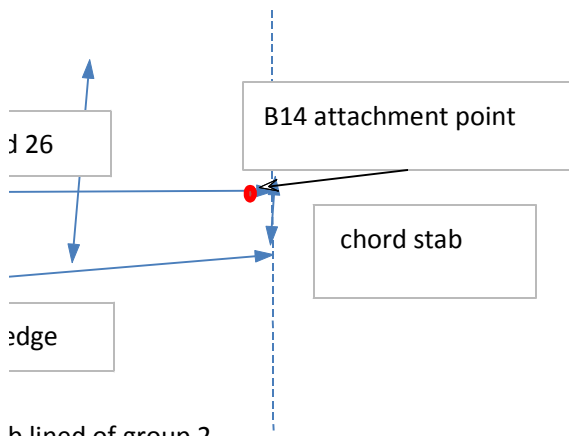
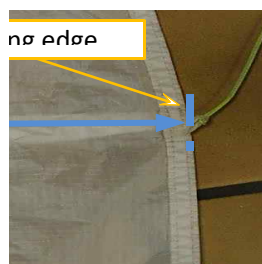


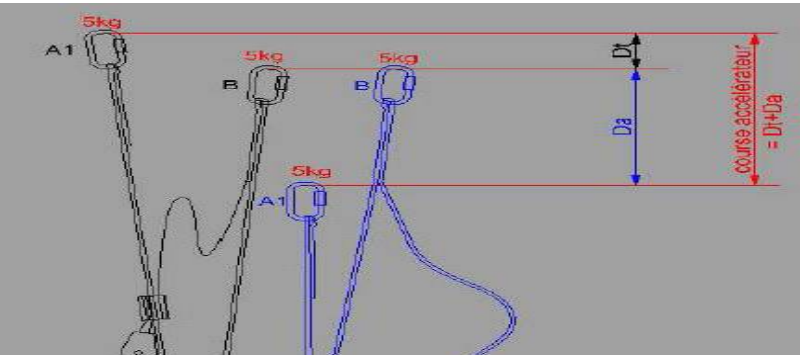
INLET SHAPE

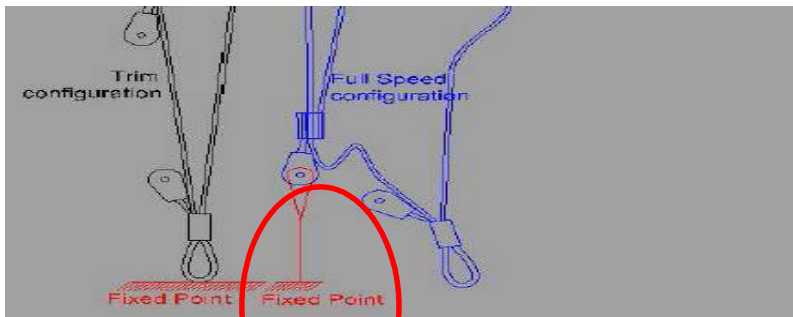




MINI RIBS







you take the delta

For full speed measurement, the top pulley of the speed bar is attached to a fixed point so that all limiters straps are in full tension. The bottom loop of the risers is not attached. See explanation picture on the right.

d Upper line		
om center	Supplier Reference	Supplier name
1	DC-040	LIROS
2	8000-45	EDELRID
3	8000-45	EDELRID
4	8000-45	EDELRID
5	8000-45	EDELRID
6	8000-45	EDELRID
7	8000-45	EDELRID
8	DC-040	LIROS

