



MAMBO

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Davinci Products Inc.
53 Sinchon-gil, Okcheon-myeon, Yangpyeong-gun, Gyeonggi-do, South Korea. (12505)
Tel. +82(0)10-9799-3472 Fax. +82(0)10-9799-3472
sales@dv-gliders.com , info@flydavinci.com

Congratulations!

Thank you for choosing the MAMBO.
The Perfect Machine for XC, Serious Contender in SRS competition.

We are thrilled to introduce the MAMBO, one of the most comfortable glider designed for pilots who aspire to excel in cross-country (XC) flying. This glider is engineered to offer a perfect balance of safety and performance, making it the ideal choice for XC enthusiasts. Key Features of MAMBO.

MAMBO was born with a special profile devised during Davinci's OPERA2 design process. The dynamically optimized profile shape is designed to minimize air resistance during acceleration and maximize lift and lifting effects. The profile's intake hole is located a little further back and is designed to reduce air resistance during acceleration, increase recovery in a stall, and greatly increase collapse resistance. This is Davinci's new profile concept design that cannot be found in any other paraglider.

-Flight characteristics

MAMBO has a very stable profile design during flight and the firm pressure of the internal air layer provided by SN, SN+, and SSS provides a very stable and solid feeling during full acceleration and thermalling. Despite this, the glider's handling is very light and direct. You can intuitively create the turning and movement you want.

-Performance

As a true two-liner wing, the MAMBO's performance is remarkable. The acceleration increased by the operation of the light speed bar is not inferior to that of other competition-class gliders. In fact, much faster speeds can be achieved in the speed bar range. Glide performance is similar to MOMBO due to improved floating characteristics, but the profile characteristics, high internal pressure, and pressure distribution technology allow pilots to feel stable even at maximum acceleration.

-stability

All Davinci models are equipped with Davinci's only systems, SN and SN+, and in particular, the newly developed MAMBO adds SSS(Smart Snake System), the final destination for additional stability and quick recovery, for the first time. SSS is like the longitudinal and horizontal framework of the profile. The shape memory alloy(Nitinol wire) is positioned in the shape of a snake, so it always maintains the shape of the profile and provides quick recovery performance in case of collapse.

-DAVINCI GLIDERS TEAM-

WARNING!

THIS IS NOT TRAINING MANUAL. ATTEMPTING TO FLY THIS OR ANY OTHER PARAGLIDER WITHOUT PROPER INSTRUCTION FROM A CERTIFIED PROFESSIONAL INSTRUCTOR IS EXTREMELY DANGEROUS TO YOURSELF AND BYSTANDERS.

DAVINCI GLIDERS are carefully manufactured and inspected at the factory. Please use the glider only as described in this manual.

Do not make any modifications to the glider.

As with any sport – without taking the necessary safety precautions, paragliding can be dangerous.

INDEX

1. Technical DATA	3		
2. Materials DATA	4	11.2 Frontal collapse	9
3. Introduction and Pilot Target	5	11.3 Full stall	
4. Harness		11.4 Deep stall	
		11.5 Asymmetrical stall	
5. Risers	6	11.6 B stall	10
6. Lines		11.7 Cravat	
7. Accelerator system		12. Descent Techniques	
		12.1 Big ears	
8. Pre-flight check	7		
9. Take-Off		12.2 Spiral dive	11
9.1 Tow launch		13. Landing	
		14. SIV and Collapse lines	
10. In flight characteristics	8		
11. Deflations		15. Packing your MAMBO	12
11.1 Asymmetric collapse		16. Maintenance and cleaning	
		17. Caring tips	
		18. Warrantee	13
		19. Respecting nature and environment	

1. Technical DATA

MAMBO			XS	S	M	L
CELLS	NUMBER		67	67	67	67
	CLOSED		12	12	12	12
FLAT	AREA	m ²	20.7	22.6	24.5	26.5
	SPAN	m	11.7	12.2	12.7	13.2
	ASPECT RATIO		6.6	6.6	6.6	6.6
PROJECTED	AREA	m ²	17.1	18.6	20.2	21.9
	SPAN	m	8.97	9.37	9.75	10.14
	ASPECT RATIO		4.7	4.7	4.7	4.7
FLATTENING		%	17.5	17.5	17.5	17.5
CORD	MAX	m	2.17	2.27	2.36	2.46
	MIN	m	1.77	1.85	1.93	2.00
LINES	HEIGHT	m	6.76	7.06	7.35	7.64
	MAIN		3/3			
RISERS	NUMBER	3	A,A'/B			
	TRIMS		No	No	No	No
	ACCELERATOR	mm	155	170	170	170
WEIGHT RANGE	MIN-MAX	KG	65 - 85	70 - 95	85 - 105	95 - 120
CERTIFICATION	EN-926-1/2 LTF	KG	EN-C	EN-C	EN-C	EN-C
GLIDER WEIGHT		KG	4.5	4.7	5.5	5.6

2. Materials DATA

CANOPY		FABRIC CODE	SUPPLIER
UPPER SURFACE		MJ 32MF	Myeongjin TEX
BOTTOM SURFACE		E3H	PORCHER INDUSTRIES
PROFILES	Supported	MJ 32 HF	PORCHER INDUSTRIES Myeongjin TEX
	Unsupported	MJ 32 HF	
DIAGONALS		MJ 32 HF	PORCHER INDUSTRIES
LEADING EDGE REINFORCEMENT		2.5/1.8 Plastic pipe	

SUSPENSION LINES		FABRIC CODE	SUPPLIER
UPPER CASCADES		8000U-130/90/70/50	EDELRID
		9200-30	
MIDDLE CASCADES		8000U-190/130/90/70	EDELRID
MAIN		8000U-360/190/130/70	EDELRID
		TNL 180	DAVINCI

RISERS		FABRIC CODE	SUPPLIER
MATERIAL		12MM Zero stretch polyester webbing	GUTH&WOLF GMBH
PULLEYS		Ronstan ball bearing	Ronstan

3. Introduction and Pilot Target

The MAMBO is the result of a dedicated effort of Davinci R&D team. A totally new and innovative design that has never been seen before, you can experience high stability, handling, and effective/maximum lift force in thermal, as well as glide ratio.

The MAMBO was born to realize the desire of the pilot to fly faster, higher and farther. Based on the 2liner system, MAMBO is the best glider with minimum air resistance and best glide ratio from CFD optimized analysis.

You can make a new records with your MAMBO.

-LTF and EN certification

The MAMBO is certified during official testing as LTF /EN-C.
The glider has been type-tested for "one-seated" use only.

-Suitability for expert pilots

The MAMBO is not suitable for beginner or intermediate pilots, aerobatics, training or tandem flights.

-For the MAMBO it has minimum of 50cm symmetrical travel length at maximum total-load.

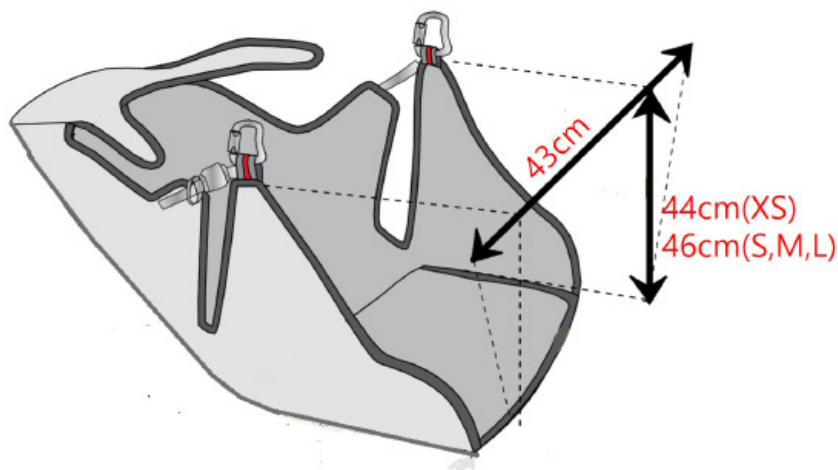
It would be dangerous to use the brake travel according to those numbers, because it is not practicable to measure the brake travel during flight, and in turbulences the stall might occur with less brake travel. If you want to use the whole brake travel of your glider safely, it is necessary to do many intended spins and full stalls to get a feeling for the stall behaviour.

4. Harness

The MAMBO is certified for harnesses in Group GH(without rigid cross-bracing).

The suspensiion points of the chosen harness should ideally have a caraviner distance of approximately 43cm and a height of 44cm for S size, 46cm for M, ML, L sizes.

We recommend adjusting the harness in a very similar way to the test adjustment. Excessive cross-bracing increases the risk of twisting the risers. A looser setting will result in a tendency to lean towards the collapsed side. Lower hang points reduce the roll-stability of your harness and can slow down the reopening of asymmetric collapses. Higher hang points (+2 up to +4 cm) have no influence on inflight safety and can therefore be tolerated.



5. Risers

The MAMBO has been designed with 2 risers system. The A1 riser is covered with RED webbing, to allow for easy identification. The A risers are split into two, the smaller riser - holding only the outermost A line - is A2 and has been designed this way to make applying big ears easily. They also feature ergonomic wooden handles for efficient B-riser control. The Difference of riser length should be no more than ± 5 mm. The MOMBO has no trimmer.

	Standard (without biner) [mm]	Trim opened [mm]	Travel length [mm]
A1	475	310	165
A2	475	390	85



6. Lines

They come in different diameters of Kevlar and Dyneema lines. They must to be inspected every 100 hours or 12months maximum.

In case of Brake lines, it was cut a little longer, so every pilot can adjust it according to his personal taste.

But you must always leave 10cm before the brakes line starts acting in order to avoid trailing edge deformation when the wing is fully accelerated. In case the brake handle comes loose during flight or any brake lines is cut you can use the B riser softly for directional control instead of brake line.

7. Accelerator system

MAMBO is equipped with a accelerator system.

The profile of MAMBO has been designed to fly stable through its entire speed range.

It is useful to accelerate when flying in strong winds or in extreme descending air. For fitting and positioning the speed bar consult the instructions of the harness manufacturer.

Before every flight check that the speed bar works freely and that the lines are long enough to ensure that it is not engaged permanently.

The use of the accerlerator system reduces the angle of attack and the canopy may be more sensitive to collapses therefore do not use near the ground or in turbulent air and in case you are hit by turbulence remove your feet off the speed bar as quickly as possible. Always far away from the ground when using the speed bar. We therefore do not advise to use the speed bar near the ground.

You have to adjust the harness to the speed system so you can use all the speed travel.

To do so you have to be seated in the ground meanwhile you are in your harness and adjust the lines by pulling up the risers with tension. Another person help to do this is recommended. Make sure also that the speed bar is not pulling down the risers when you are not using it. Once all the gear is rigged you have to test the whole speed travel in calm air.

8. Pre-flight check

To know yourself with the glider it is a good idea to perform practice inflations and ground handling in advance. You should have no difficulties flying the MAMBO for the first time in suitable conditions, but as with all new equipment.

When you have the new glider, the below points should be inspected.

- Check the lines are clear and not twisted.
- Connection points between the glider and harness.
- Check that the brake handles are correctly attached and that each line runs freely through the pulley.
- All harness buckles are closed.
- The Karabiners are fully closed and not damaged.
- The sewing, condition of the lines and connection of the lines are right
- Internal damage to ribs and diagonal ribs.
- Damage to the top and bottom panels and seams between panels.

9. Take-Off

To get the right wing shape for the take-off, pull the brake until the canopy shows at the perfect banana shape on the flat ground. While inflating the MAMBO, you should hold both of the A risers on your hands. Smoothly and gradually inflate the wing with stretched.

We recommend that you do not pull risers too forward or down, which could cause a collapse of the leading edge, but simply follow them until the glider reaches its angle of flight.

It is important that the centre of gravity of your body stay in front of your feet during the inflation of the glider to constantly load the risers. A controlled inflation allows you to check the canopy and lines during the last phase as it comes up and thus avoids the need to use brakes. Depending on the wind conditions or the slope, an adequate use of brakes can help you to take-off quicker.

9.1 Tow launch

The MAMBO was designed as a foot launchable solo paraglider only. The MAMBO may be tow-launched. It is the pilot's responsibility to use suitable harness attachments and release mechanisms and to ensure that they are correctly trained on the equipment and system employed.

10. In flight characteristics

MAMBO has the best stable glide performance in a normal position with no any brakes.

The minimum sink rate is achieved by applying approx. 15% of the brakes. When using more than 30% of the brakes, the aerodynamics and the performance of the glider are likely to deteriorate and the effort to manoeuvre will increase quickly. In case of extremely high brake pressure there is a great risk of a stall. Which occurs at a full brake travel (100% of the brakes) 65cm. In normal flying conditions the optimal position for the brakes, in terms of performance and safety, is within the top third level of the braking range.

Alternative Steering : In the unlikely event, that a brake line releases from the brake handle, or breaks, or the brake-lines are tangled up, the glider is manoeuvrable using the B riser(rear-risers). By pulling gently on the rear-risers, it is possible to steer the glider and land safely. Don't pull the rear-risers too much, to avoid a deep stall.

11. Deflations

In spite of the MAMBO has great stability of the flight, strong turbulence or piloting error may cause a portion of the wing suddenly to be a deflation. it is a EN-D glider therefore active piloting is recommended in case of an asymmetric or frontal collapse. Active piloting will reduce the loss of altitude and a change of direction.

11.1 Asymmetric collapse

Asymmetric collapse usually happens when the pilot has not foreseen this possible reaction of the wing.

To prevent the collapse from happening, pull the brake line corresponding to the compromised side of the wing, this will increase the angle of incidence. If the collapse does happen, the MAMBO will not react violently, the turn tendency is very gradual and it is easily controlled. Lean your body towards the side that is still flying in order to counteract the turn and to maintain a straight course, if necessary slightly slow down the same side. The collapse will normally open by itself but if that does not happen, pull completely on the brake line on the side, which has collapsed (100%). Do this with a firm movement. You may have to repeat this operation to provoke the re-opening. Take care not to over-brake on the side that is still flying (turn control) and when the collapse has been solved; remember to let the wing recover its flying speed.

Bring both brakes down symmetrically to speed up the reopening of the paraglider, and then raise your hands back up immediately.

11.2 Frontal collapse

The profile of the MAMBO has been designed to widely tolerate extreme changes in the angle of attack. A symmetric collapse may occur in heavy turbulent conditions, on entry or exit of strong thermals or lack of adapting the use of the accelerator to the prevailing air conditions. Symmetrical collapses usually re-inflate without the glider turning, but you can symmetrically apply the brake lines with a quick deep pump to quicken the re-inflation. Release the brake lines immediately to recover optimum flight speed.

11.3 Full stall

Full stall can occur when you fully pull the both brakes enough long time. This means that the wing loses its forward momentum. Also weather conditions can cause a full stall. This is a serious deviation from normal flight and can be difficult to manage. If a stall occurs at less than 100 m above the ground, throw your reserve parachute.

To recover to the normal flight you must release both brakes. After this usually comes a front dive with a possible front deflation. An asymmetric recovery (one control released faster than the other) from a full-stall can cause a big dynamic collapse. The full-stall is a hazardous manoeuvre and as such outside the scope of this manual. You should practice and learn this manoeuvre only on a SIV course under professional instructor.

11.4 Deep stall

It is possible for gliders to enter a state of deep stall. This can be caused by several situations including; flying the glider when wet; very old glider; or after a front/symmetric deflation.

When you meet this situation you should fully raise up the both brakes and push the A-risers forwards or use the speed bar symmetrically to regain normal flight.

11.5 Asymmetrical stall

It can take place when you pull one of the brakes too hard, or while spiraling at a small speed in turbulence you increase the angle of attack. Rotation in the asymmetrical stall is called negative spiral. This is one of the most dangerous flying situations. In order to get out of asymmetrical stall, just release the brakes. There may follow side thrust forward with a following wing collapse.

11.6 B stall

Traditional B-line stalls are not possible with 2 liners glider like MAMBO. Pulling the B lines firmly will result in a full stall. Do not do it.

11.7 Cravat

If the tip of your wing gets stuck in the lines, this is called a cravat. Due to the large amount of drag, cravats can turn your wing into a spiral dive very quickly. This can be disorientating and difficult to control if allowed to develop. To recover from a cravat immediately, anticipate the movement of the wing, first stabilise the direction of your wing with outside brake and weight shift. Once you have control of the rotation and sink rate, apply strong deep pumps of the brake on the cravated side whilst weight shifting away from the cravat. It is important to lean away from the cravat otherwise you risk spinning or deepening the spiral. The aim is to empty the air out of the wing tip whilst it is unloaded. Correctly done, this action will clear the cravat. If it is a very large cravat and the above options have not worked, then a full stall is another option. This should not be attempted unless you know what you are doing and have a large amount of altitude. Remember, if the rotation is accelerating and you are unable to re-open the wing or control the decent rate, you should throw your reserve parachute whilst you still have enough altitude.

12. Descent Techniques

12.1 Big ears

Sink rate can be decreased in a controlled way by folding both wing tips. While holding the brakes you should symmetrically pull the A-main-3. When you try big ears, reaching -3 or -4 m/s, speed reduces slightly between 3 and 5 km/h and piloting becomes limited. The angle of attack and the wing loading also increases.

In order to return to the normal flight, you should release the A-risers and pull the brake short times until wing tips regain pressure.

Spiraling is not permitted with big ears, because of the increased load on the remaining lines so that they can be physically deformed.

We recommend the pilot to re-inflate asymmetrically, to avoid unnecessary change on the angle of attack, more so if you are flying near the ground or flying in turbulence.

12.2 Spiral dive

The MAMBO is a manoeuvrable wing which responds to any input easily. To initiate the spiral, apply one brake progressively to about 35% and hold it in its position. The speed of rotation will increase progressively as well as the pressure on the brake and the centrifugal force that is perceived. The angle or the speed of rotation can be decreased or increased by releasing or pulling the brake by several length step by step. Once mastered the spiral allows you to descend by more than 10 m/s. Movements which are extremely abrupt or badly synchronized or very quick initiation of the spiral can result in an asymmetrical collapse or a spin. CAUTION: A deep spiral is no harmless manoeuvre. The kinetic energy obtained must be reduced by slow releasing of the inside brake.

13. Landing

We recommend to land with trimmers to the normal slow position. Don't use the sharp turns or radical maneuvers. The MAMBO is a high speed glider, any action on the brakes may cause significant reactions.

When you are 1-2m over the ground, you should face into wind and standing upright and ready to run. Finally you may pull the brakes smoothly for minimize vertical speed.

Don't hit the ground by your overtake the glider.

If you in windy condition, as soon as you touch the ground you have to turn around to face the glider and move towards it during full pulling break symmetrically.

14. SIV and Collapse lines

The MOMBO was certified with the use of collapse lines, therefore if you wish to induce collapses during SIV training, collapse lines must first be installed correctly. Collapse lines are available as an optional extra and should be added to the wing before inducing collapses.

The folding line is mounted on a separate folding line attachment point of MOMBO, and each folding length is separately indicated in the manual.

Be sure to attach to both sides of the canopy for symmetric deflations. Davinci Gliders would like to remind you that SIV manoeuvres should be learnt under the supervision of a qualified instructor and always used with caution. We strongly recommend expert tuition over water with all the necessary safety precautions in place. Only attempt SIV with this wing if you have previous SIV experience with a high aspect ratio wing. Ensure that you fully understand the correct and safe use of this equipment before attempting SIV.

15. Packing your MAMBO

Spread the MAMBO completely out on the ground. Separate the lines to the each side. The MAMBO must be folded cell to cell to keep the plastic reinforcement at the leading edge lie flat on each other and don't get bent. Try to pack your MAMBO as loosely as the rucksack allows, because every fold weakens the fabric.

Avoid packing the glider where it is wet or abrasive conditions(sand, asphalt pavement, concrete).

We recommend when you don't use the MAMBO for a long time, store MAMBO lay on the flat table or bottom without any bending plastics.

Always use the protective bag to avoid direct contact with the harnesses and buckles of any friction between the blade and the rucksack.

16. Maintenance and cleaning

Cleaning should be carried out with only pure water. If the glider comes in contact with salt water, clean thoroughly with fresh water. Do not use solvents of any kind, as this may remove the protective coatings and destroy the fabric.

17. Caring tips

- Do not expose your glider to the sun any longer than necessary
- Keep it away from water and other liquids
- Do not let the front edge hit the ground
- Keep your glider away from fire
- Do not put anything heavy on your glider, do not pack it in a rucksack too tightly.
- Regularly inspect the canopy, lines, risers and harness. If you find any defects, contact your dealer or the manufacturer. Do not attempt to repair the paraglider by yourselves.
- If you detect a damaged line, inform the dealer or manufacturer about the line number according to the line plan
- Keep your MAMBO in a bag in a dry well-ventilated place under neutral temperature and humidity conditions
- If you do not use the glider, then once a month you should unpack it, ventilate it well, and then pack it back in the bag

18. Warrantee

The producer guarantees the correctness of the declared characteristics and the paraglider's normal performance for two years after the purchase date. The producer conducts special, and after warranty repairs and maintenance at the owners' request for an extra price.

We recommend to inspect your paraglider (including checking suspension line strength, line geometry, riser geometry and permeability of the canopy material) one time at two years, or every 100 hours of flying time (whichever comes first); Those inspection must be made by manufacturer, importer, distributor, dealer or other authorised persons. The checking must be proven by a stamp on the certification sticker on the glider as well in the manual book.

There are not necessary spare items except the rubber ring to fix the main lines on the riser triangle carabiner. The rubber rings will be offered by us in the repair kit offering with the glider. You can exchange it by yourself when it has been disappeared or wears off. After you exchange the lubber ring, you must check again the triangle carabiner on the riser has been locked well before you fly.

19. Respecting nature and environment

Finally, we would ask each pilot to take care of nature and our environment. Respect nature and the environment at all times but most particularly at take-off and landing places. Respect others and paraglider in harmony with nature.

Do not leave marked tracks and do not leave rubbish behind. Do not make unnecessary noise and respect sensitive biological areas.

The materials used on a paraglider should be recycled. Please send old Davinci gliders back to us Davinci Gliders offices. We will undertake to recycle the glider.

Checked line sheet(with riser)

The measured values at the lower surface of the tailing edge, cll depth and spacing of the articulation points were determined under tensile load of 50N.

XS size

	A	B	C	D	Brake
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					

Checked line sheet(with riser)

The measured values at the lower surface of the tailing edge, cll depth and spacing of the articulation points were determined under tensile load of 50N.

The length difference is not more than ± 10 mm.

S size

	A	B	C	D	Brake
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					

Checked line sheet(with riser)

The measured values at the lower surface of the tailing edge, cll depth and spacing of the articulation points were determined under tensile load of 50N.

M size

	A	B	C	D	Brake
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					

Checked line sheet(with riser)

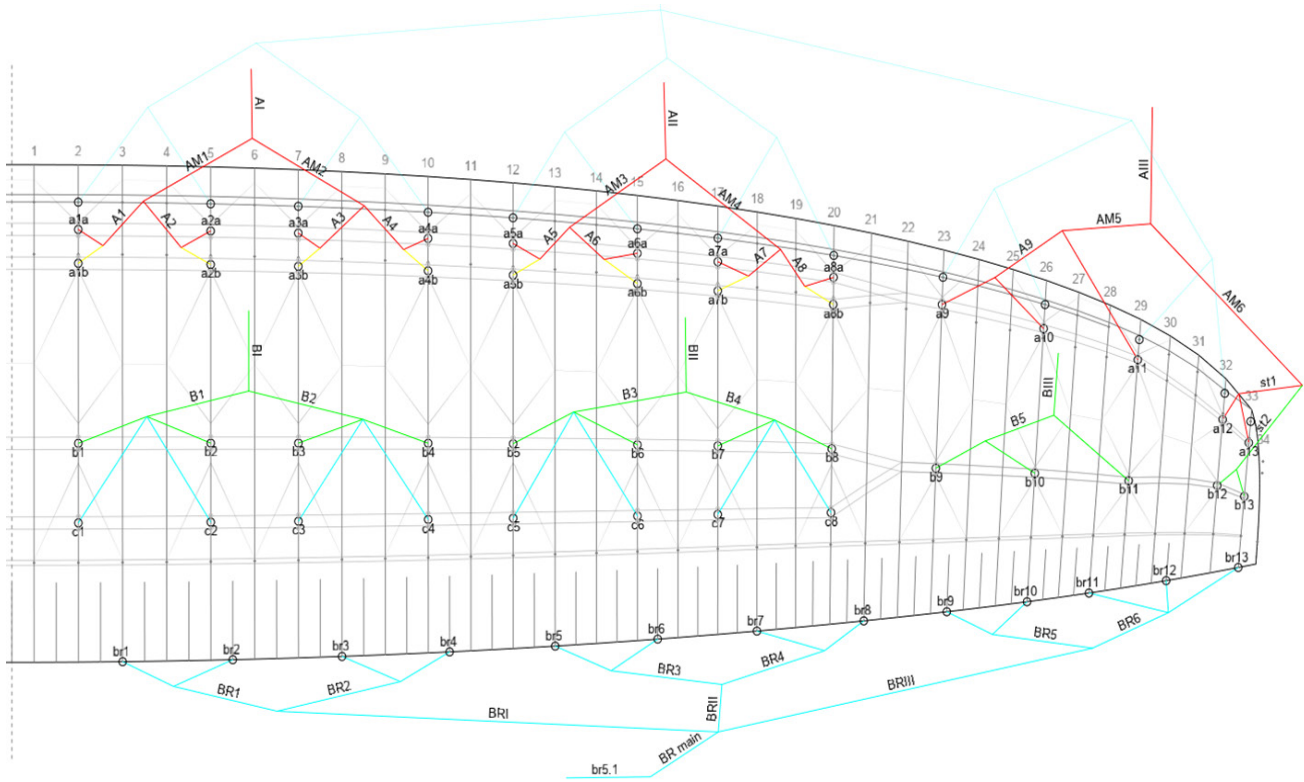
The measured values at the lower surface of the tailing edge, cll depth and spacing of the articulation points were determined under tensile load of 50N.

L size

	A	B	C	D	Brake
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					

Name	Line type	Name	Line type	Name	Line type	Name	Line type	Name	Line type
a1	8000U-090	a1b	8000U-090	b1	8000U-050	c1	8000U-050	br1	9200-030
a2	8000U-090	a2b	8000U-090	b2	8000U-050	c2	8000U-050	br2	9200-030
a3	8000U-090	a3b	8000U-090	b3	8000U-050	c3	8000U-050	br3	9200-030
a4	8000U-090	a4b	8000U-090	b4	8000U-050	c4	8000U-050	br4	9200-030
a5	8000U-070	a5b	8000U-090	b5	8000U-050	c5	8000U-050	br5	9200-030
a6	8000U-070	a6b	8000U-070	b6	8000U-050	c6	8000U-050	br6	9200-030
a7	8000U-070	a7b	8000U-070	b7	8000U-050	c7	8000U-050	br7	9200-030
a8	8000U-070	a8b	8000U-070	b8	8000U-050	c8	8000U-050	br8	9200-030
a9	8000U-070			b9	8000U-050			br9	9200-030
a10	8000U-090			b10	8000U-050			br10	9200-030
a11	8000U-050			b11	8000U-050			br11	9200-030
a12	8000U-050			b12	8000U-050			br12	9200-030
a13	8000U-050			b13	8000U-050			br13	9200-030
A1	8000U-130			B1	8000U-090	st1	8000U-070	BR1	8000U-050
A2	8000U-090			B2	8000U-090	st2	8000U-070	BR2	8000U-050
A3	8000U-090			B3	8000U-090			BR3	8000U-050
A4	8000U-090			B4	8000U-090			BR4	8000U-050
A5	8000U-070			B5	8000U-070			BR5	8000U-050
A6	8000U-070							BR6	8000U-050
A7	8000U-070								
A8	8000U-070							BRI	8000U-070
A9	8000U-090							BRII	8000U-070
								BRIII	8000U-070
AM1	8000U-190								
AM2	8000U-190							br main	8000U-130
AM3	8000U-190							br5.1	TNL180
AM4	8000U-130								
AM5	8000U-130								
AM6	8000U-090								
AI	8000U-360			BI	8000U-190				
AII	8000U-360			BII	8000U-190				
AIII	8000U-190			BIII	8000U-070				

Line Plan



Overall view

