
freedom 2
Flow
PARAGLIDERS

WELCOME

"Flow is a term used to describe the complete (body-mind-soul) feeling of being so totally engaged in an activity that there is a sense of complete immersion in the experience. Self-conscious thoughts give way to feeling at one with the activity and the environment, and time is no longer an ever-present consideration."

The experience of flying a paraglider is what inspires us. The pure, focused concentration, the feeling of complete immersion with the environment, and the intrinsic pleasure in the activity itself are all sure signs of the flow experience.

Thank you for flying Flow Paragliders. We recommend that you **read this manual before the first flight**. This manual is designed to help you to quickly familiarize with this beautiful glider.



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General Information

User manual for Freedom2 XS, S, M and L.

This manual offers all the necessary information that will familiarise you with the main characteristics of your **FREEDOM2**. Although this manual informs you about your glider, it does not offer the instruction requirements necessary for you to be able to pilot this type of wing. Flying instruction can only be taught at a paragliding school recognized by the flying federation of your country. Nevertheless, we remind you that it is important that you carefully read all the contents of the manual for your new Freedom2.

The Freedom2 has been **certified as EN B**, having met all the requirements of EN 926-2 / 2022 and LTF NFL II 91/09.

Please note that any changes to the paraglider will invalidate the result of the certification. Correct usage of the glider is the pilot's responsibility. The manufacturer and distributor do not accept liability for loss or damage as a result of the misuse of this paraglider. It is the pilot's responsibility to comply with legal regulations and to maintain the airworthiness of the aircraft.



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PILOT'S PROFILE

Freedom2 is fun and exciting paraglider with class-leading performance designed as a safe mid to high end EN-B class glider. It has numerous technological advancements that are of easy operation to extract its full potential.

Freedom2 is a beginner/ intermediate type glider, especially designed for pilots looking to progress safely and consolidate their flying skills; either chasing their first long-distance XC flights or honing their competency at their local hill.

The Freedom2 is a EN B and has a high level of passive safety nonetheless "active flying" is required when flying this glider, especially in thermic air. It should not be used as a school glider.

Despite Freedom2 being an EN-B glider, we have used the technology learnt from our high performance 2-liners, like the XCRacer and Spectra2 and combined them in an accessible package. The Freedom2 is a hybrid 3 to 2 liner where we used the best of both technologies in one glider. Freedom2 has its race pedigree on an obedient platform allowing increased levels of safety and glider control.

On cascade one and two we have a traditional 3 liner layout and on the outermost cascade, we have a 2-liner layout. To combine those 2 distinct line-layouts we designed a sophisticated yet simple to use risers.

Freedom2's efficient and easy to use riser setup brings the connection Pilot / glider to the EN-B class, only experienced on 2-liners before.

The ergonomic C handles will help the pilot feel more connected to the glider while gliding at speed. Freedom2 risers allow the pilot to fly the glider while on bar, changing AoA rather than distorting the profile. The result is a more enjoyable and efficient exercise and less need to come off the bar to use the brakes in severe turbulence.

We opted to use a pitch stable air-foil translating to a much more enjoyable experience. Which gives to the package a glider which is less prone to collapses and oscillations, so the pilot is let to concentrate on what is more important, to read the conditions and fly with a freer mind.

New "A-attachment points" offering better structural integrity and geometrical support to the leading edge. Increasing stability not only at trim but especially at speed when the profile is at extreme angles of attack. This ultimately translates to a more enjoyable and comfortable flying experience.

The combination of all the design solution and technology results in a glider which is both a dream to fly but with an excellent level of true performance of its class and it's a GAME CHANGING glider for the EN B class. Special attention was also given on the handling, especially the turn ability whilst circling in thermals. For us at Flow paragliders we are delighted by how the glider behaves and it is hands down one of the most pleasant gliders we've ever flown, simply a joy to fly.

Please note that any changes to the paraglider will invalidate the result of the certification. Correct usage of the glider is the pilot's responsibility. The manufacturer and distributor do not accept liability for loss or damage as a result of the misuse of this paraglider. It is the pilot's responsibility to comply with legal regulations and to maintain the airworthiness of the aircraft.



SPECIFICATIONS

freedom 2	XS	S	M	L
FLAT AREA	22.40 m2	24.00 m2	26.00 m2	27.50 m2
PROJECTED AREA	19.10 m2	20.47 m2	22.12 m2	23.45 m2
FLAT WINGSPAN	11.35 m	11.74 m	12.23 m	12.57 m
PROJECTED SPAN	9.21 m	9.53 m	9.92 m	10.20 m
ASPECT RATIO	5.75	5.75	5.75	5.75
PROJECTED AR	4.44	4.44	4.44	4.44
MAX CHORD	2.48	2.57	2.68	2.75
NUMBER OF CELLS	60	60	60	60
GLIDER WEIGHT	4.5 kgs	4.75 kgs	4.9 kgs	5.2 kgs
TAKE OFF WEIGHT	60-80 kgs	70-95 kgs	85-108 kgs	105-122 kgs
CERTIFICATION	LTF/EN B	LTF/EN B	LTF/EN B	LTF/EN B



TAKE-OFF, FLIGHT, AND FLYING TECHNIQUES

Freedom2 should be flown as a normal paraglider. However, there are several points listed below which should help you to familiarize with your new paraglider.

Freedom2 was designed as a foot launchable solo paraglider and can also 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.

Before Take-off

- Check that the lines are not damaged or tangled.
- Check that the risers are not damaged or twisted.
- Check that the brake handles are correctly attached and that each line runs freely through the pulley
- Check if the quick links connection between lines to the risers are undamaged and tightened.
- Check if the speed system works freely and that the lines are long enough.
- Check the canopy for rips or tears. Also, inspect the internal structure (ribs, diagonals) and seams.

Take-off

Lay the paraglider out with the leading edge in a horseshoe shape. Hold the A risers close to the quick links and move forward until the lines get stretched. You should now be perfectly centred with your wing. With no wind or light headwind, with lines stretched, The Freedom2 inflates rapidly and rises over your head easily. 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 stays 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 a quick check on the brakes helps the wing to overshoot. Depending on the wind conditions or the slope, an adequate use of brakes can help you to take-off quicker.

Landing

Because of the exceptional glide for this type of glider, high caution is recommended in the stages of approaching and landing. The Freedom2 is a reasonably fast glider, and precision on with brakes inputs is required, especially when near the ground. It is therefore recommended to execute the first flights in a familiar environment and under easy conditions. With negative steering, there is more time for the manoeuvres to be performed steadily, which results in reducing the pendulum movements of the paraglider. Reminder: Negative steering involves applying the brakes symmetrically by about 25% of the maximum range to slow the paraglider and a simultaneous turning by means of releasing the outside brake. Speeding up just prior to landing allows a more effective flare and therefore a gentler landing.

Turning

Freedom2 was designed to perform well in turns. Negative steering (see above) on one hand slows the paraglider in certain phases of the flight and on the other hand reduces excessive rolling during turn reversals. It is not only designed to turn (with approx. 25% brake) but also to fly slowly in order to help identify the areas of lift and to keep the paraglider flatter to minimize the sink rate in a turn (with 15% brake). Symmetrical brake-input at 20-25 % enables you to keep your wing under control – to brake further when pitching and to release when the canopy banks up.

RAPID DESCEND

Techniques

In order to descend, the paraglider must fly away from the areas of lift. In case any problems occur, the following techniques might be used to increase the sink rate.

- ***Spiral Drive**:* The Flow Freedom2 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 centimetres. 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: Spiral Dives should be executed with care. To exit the spiral dive, the kinetic energy must be converted to potential energy by slowly releasing the inside brake.

- *B-line Stall:* Due to the hybrid 3-2 line layout, B–line stall is not an efficient and stable descent manoeuvre on the Freedom2, therefore not recommended.

- *Big Ears*: Big ears is a moderate descent method, 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.

  Push on the accelerator to restore the wing's horizontal speed and the angle of attack. To activate ears, take the line ***amain3*** and simultaneously, smoothly pull them outward and downward. The wingtips will fold in. Let go of the lines and the ears will re-inflate automatically. If they do not re-inflate, gently pull on one of the brake lines first and then on the opposite side. For directional control while using the Big Ears, use weight shift.

  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.

PERFORMANCE & USE OF BRAKES

Use of Brakes

Freedom2 best glide is at a trim speed (no brakes) – about 39 km/h. 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.

Use of Speed Bar

Flow Freedom2 is equipped with a speed system. The profile of Freedom2 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. Use of the speed bar increases the maximum speed of the paraglider by up to 30% of the trim speed. However, it does

reduce the angle of attack making the likelihood of having collapses higher than at trim speed. We therefore do not advise to use the speed bar near the ground.

C Riser Steering – ergonometric handles

Freedom2 can be flown efficiently on rear riser handles. When gliding using the speed bar, the C handles can be used to steer the glider and control the pitch to a more efficient glide. The C handles can also be used to catch deflations and for directional control while gliding at speed.

We recommend using the C handles every time when gliding at speed (when gliding using the speed system).

We do not recommend controlling the glider with the C handles when at trim speed. (only in case of failure of brake lines)

ASSYMETRIC & FRONTAL COLLAPSES

Despite the tests proving Freedom2 recovers on its own after collapses, it is a EN B glider therefore active piloting is recommended in real life, in case of an asymmetric or frontal collapse. Active piloting will reduce the loss of altitude and a change of direction.

Asymmetric Collapse

Despite the great stability of the profile of the Freedom2, heavy turbulent conditions may cause part of the wing to collapse asymmetrically. This usually happens when the pilot has not foreseen this possible reaction of the wing. To prevent the collapse from happening (or the catch the collapse before it occurs), pull the brake line quickly and firmly corresponding to the affected side of the wing, this will increase the angle of attack and pressurize the wing and most cases, if the reaction is swiftly, the collapse can be prevented.

If the collapse does happen, the Freedom2 will not react violently, the turn tendency is very gradual, and it is easily controlled. Most of the time, asymmetric collapses are uneventful, and it will reopen quickly without the pilot's input.

In case it doesn't reopen instantly, the correct procedure is the following: Lean your body towards the side that is still flying to counteract the turn and to maintain a straight course, if necessary, slightly slow down the opened side by applying brake. The collapse will normally open by itself but if that does not happen, pump the side that is closed by using the brakes. 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. When the collapse has been solved; remember “hands-up” to let the wing recover its flying speed.
Another great technique is to bring both brakes down symmetrically, quickly and swiftly, to speed up the reopening of the paraglider, and then raise your hands back up immediately.

Frontal (Symmetric) Collapse

The profile of the Freedom2 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. Symmetrical collapses usually re-inflate without the glider turning, but you can symmetrically apply the brake with a quick deep pump to quicken the re-inflation. Release the brake lines immediately to recover optimum flight speed.

FULL STALL

Certain behaviour or 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. Main causes of a full stall:

- A poorly timed or an extensive use of brakes when the air speed of the wing is reduced.
- Soaked or heavily drenched leading edge (from rain or a cloud) can result in a stall due to an uneven airflow over the leading edge.

Whatever the cause, a full stall can be either symmetrical or a in a configuration of a spin.

Your first reaction should be to fully raise both hands. This normally allows the glider to return to normal flight but If nothing happens after a few seconds, apply the speed bar to encourage the wing to regain normal flight. Ensure the glider has returned to normal flight (check your airspeed) before using the brakes again.

FLYING WITHOUT BRAKES

If a brake line or pulley breaks, it is possible to fly the Freedom2 using the C-risers (rear riser). The movements must be well controlled as the deformation of the wing, due to the traction on the C-risers, is greater than that produced by using the brakes.

CRAVATS

If your wingtip 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, by applying opposite (outside) brake and weight shift. Once you have control of the rotation and sink rate, and you are flying in a straight line or gentle turn, you'll have 2 options:

1. Pull the stabilo line, the bright orange line, to clear the cravate.
2. 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 should 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.

SIV

All manoeuvres should be carried out under supervision of experienced paragliding instructors, above water and with a rescue boat. We highly recommend to all pilots.

ADJUSTMENT OF THE HARNESS

For test flights, the pilots used ABS harnesses with the following set-up:

SIZE	Distance from seat board	Distance between hang points
FREEDOM2 XS	43cm	44cm
FREEDOM2 S	43cm	46cm
FREEDOM2 M	43cm	46cm
FREEDOM2 L	43cm	46cm

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.



MAINTENANCE & CHECKS

Freedom2 is built semi-lightweight long lasting and yet robust ripstop, it is a fragile flying equipment and extra care should be taken. Special attention to its maintenance should also be observed and as any flying aircraft it should be technically periodically checked to ensure proper airworthiness.

Maintenance Tips

The life of your paraglider therefore depends largely on the care which you maintain and use it. To maximize life span of your wing, respect the following rules:

- Avoid dropping the canopy on its top on its leading-edge during inflation or landing.
- Avoid dragging it across the ground when moving it.
- Avoid exposing your glider unnecessarily to sunlight.
- Choose a packing technique that doesn‘t damage the plastic rods and that doesn‘t crease the internal structure excessively. A concertina type bag is the ideal bag for folding the Freedom2.

- Always use the protective bag to avoid direct contact with the harnesses and buckles of any friction between the paragliding ripstop and the rucksack.
- Never store your paraglider when it is damp.

If immersed in sea water rinse immediately with fresh water. Do not use any detergents. Dry your paraglider away from direct light in a dry and well-aired place.

Empty any foreign bodies from your paraglider regularly, for example sand, stones or animal or vegetable matter which may eventually decay. Twigs, sand, pebbles, etc may damage the materials and ripstop in successive folds. Organic debris of vegetable and animal origin (insects) can promote mould growth.

Periodic Inspections

The paraglider has undergone a series of tests during the production process and consequent flight tests before the delivery. It is delivered with a standard brake setting same to the one used during the testing. Periodic Checks & Repairs: for safety reasons, it is recommended that the paraglider is checked after 24 months, or after 100 hours. Whichever comes first. If anytime, however, there is a change in its behaviour your paraglider should be checked immediately. The person performing the check should inform you about the condition of your glider and if some parts will need to be checked or changed before the next normal service check period.

WARRANTY

Flow paragliders' warranty covers any material defects or any production fault for two years or 250 hours since the date of purchase.
The guarantee does not cover:

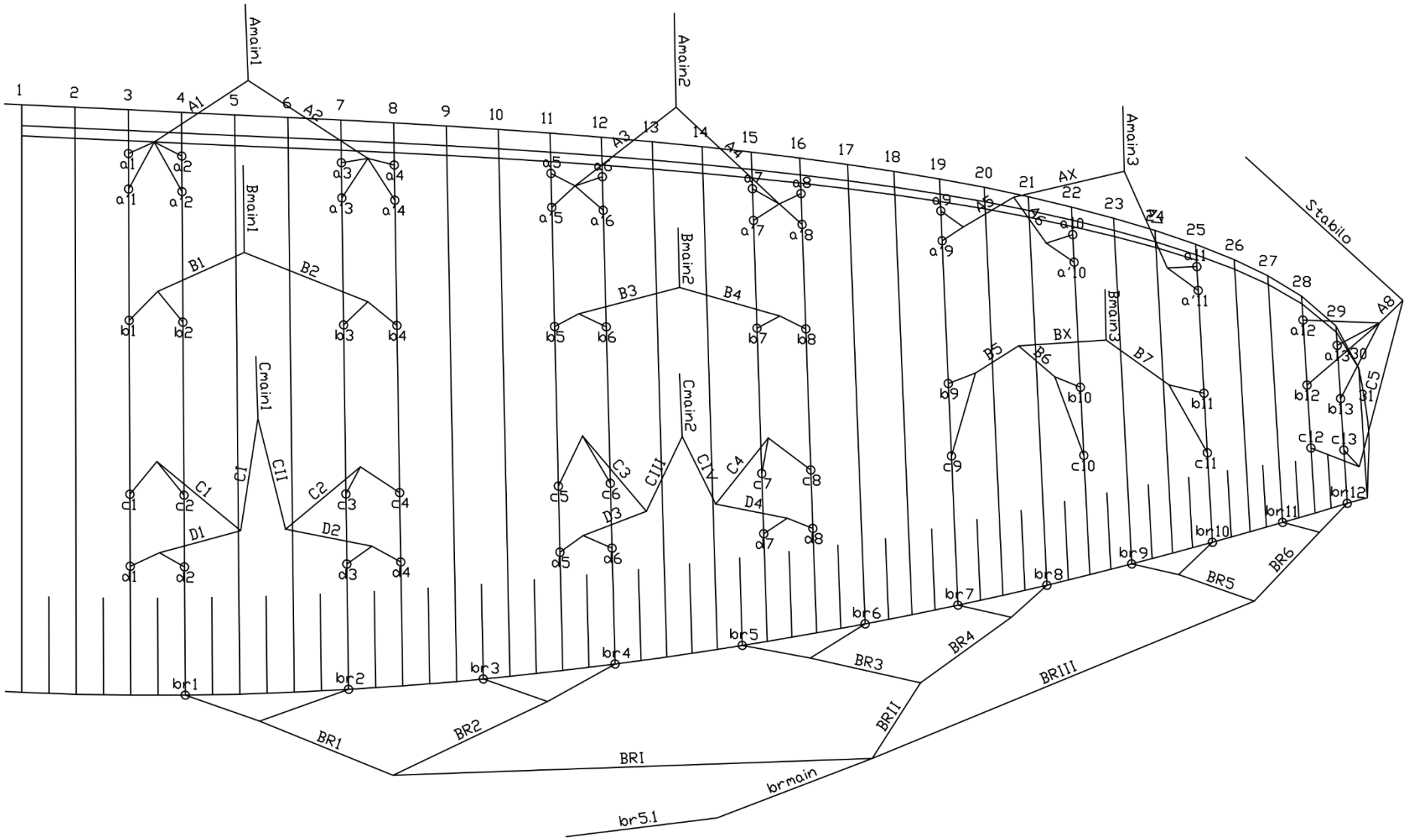
- Damage caused by misuse
- Neglecting the regular maintenance
- Overloading or misuse of the glider
- Damage caused by inappropriate landings

SUMMARY

Safety is the single most important thing in our sport. We recommend to always be alert of the weather, fly as regularly as you can and ground handle as much as possible. Practicing ground handling will keep your skills alive and will support your quick reactions and feel of the glider especially when conditions at launch aren't perfect or the site is difficult.
Please always respect the weather! Monitor the conditions and the forecast closely and understand which conditions are right for your level of flying or for flying in general. Lots of pilots get hurt due to misjudging weather conditions and we don't want you to be one of them.

We would also like to emphasise respecting our beautiful nature and wildlife is paramount, please look after your flying sites keeping pristine and sustainable. If you need to dispose the wing, please don't dispose of it in the normal household waste but in an environmentally responsible way. If you are unsure, please contact your local council.

LINE PLAN


Amain1
Amain2
Amain3
Bmain1
Bmain2
Bmain3
Cmain1
Cmain2
Stabilo
A1
A2
A3
A4
AX
AB
B1
B2
B3
B4
BX
B5
B6
B7
C1
CI
CII
C2
CIII
CIV
C3
C4
C5
D1
D2
D4
BR1
BR2
BRI
BRII
BRIII
BR3
BR4
BR5
BR6
brmain
br5.1

RISER DIAGRAM

Size XS, S

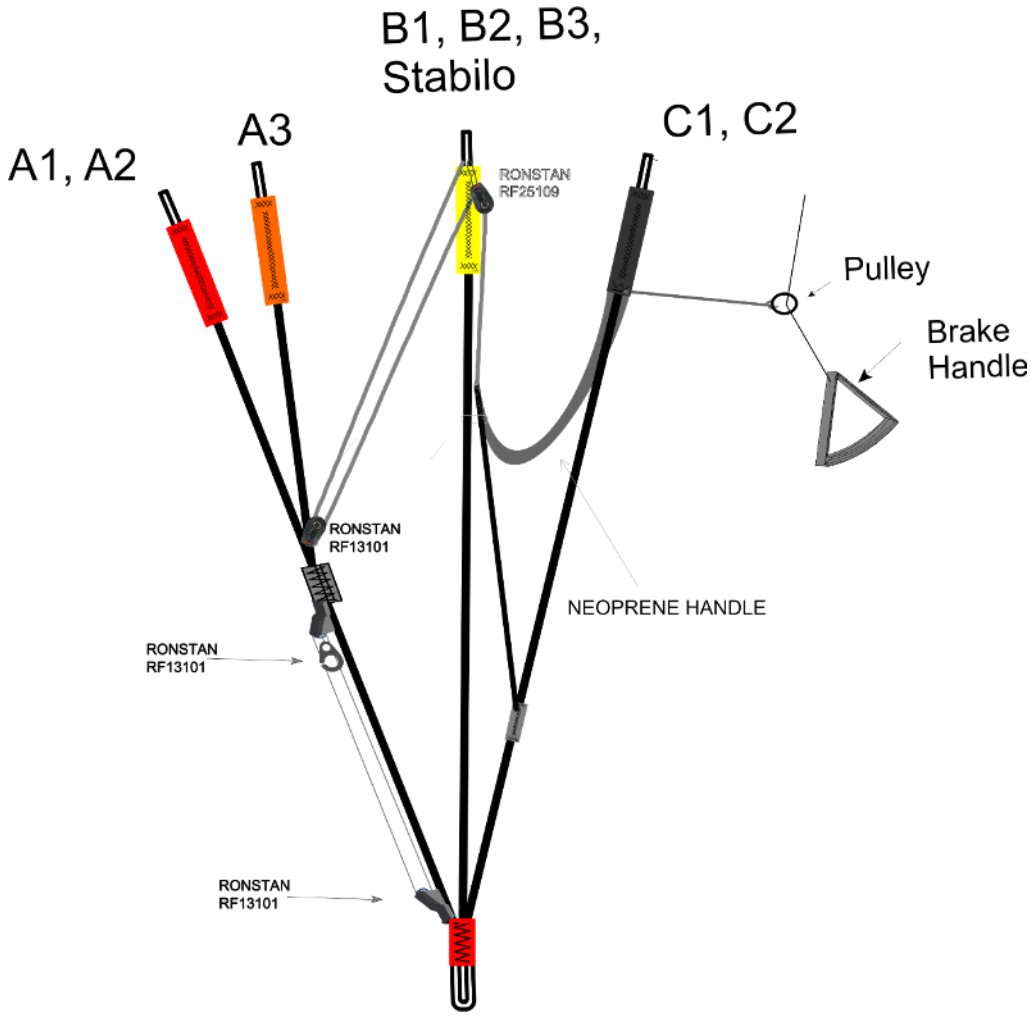
NON-ACCELERATED		*ACCELERATED*	
A	530mm	A	382mm
A1	530mm	A1	382mm
B	530mm	B	434mm
C	530mm	C	530mm

*Difference should not be more than +/- 5mm

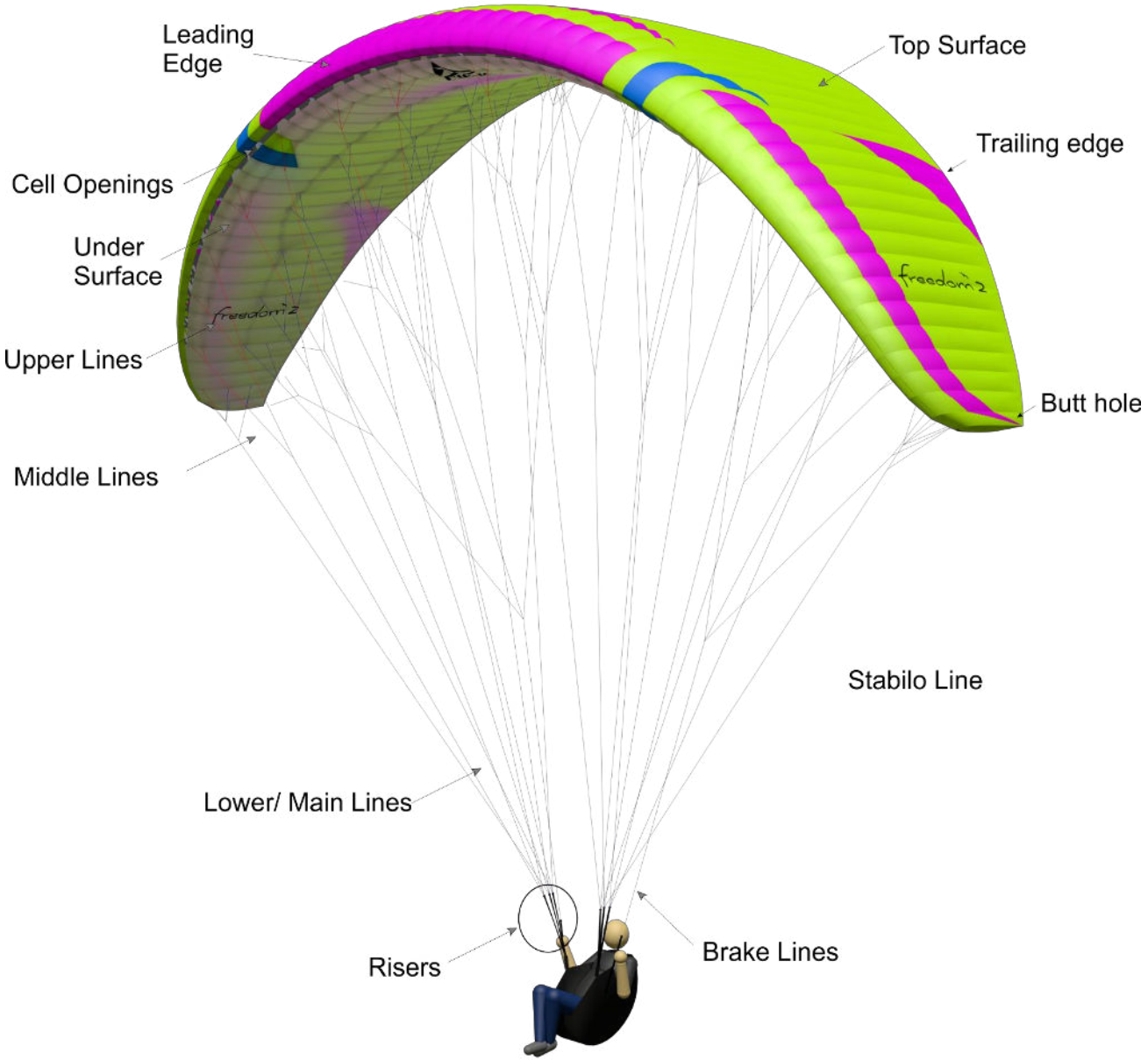
Size M, L

NON-ACCELERATED		*ACCELERATED*	
A	530mm	A	365mm
A1	530mm	A1	365mm
B	530mm	B	424mm
C	530mm	C	530mm

*Difference should not be more than +/- 5mm



OVERALL ILLUSTRATION



MATERIALS

CANOPY	FABRIC CODE	SUPPLIER
Upper surface – Leading Edge	Porcher Skytex 38g	Porcher Industries - France
Upper surface	Porcher Skytex 32g	Porcher Industries - France
Bottom Surface	Porcher Skytex 32g	Porcher Industries - France
Internals	Porcher Skytex 32g	Porcher Industries - France
Leading Edge Reinforcement	2.5/1.8/ Nylon rods	Porcher Industries - France
Thread	210D/3, 420D/3	Coats Thread - Thailand
SUSPENTION LINES	**FABRIC CODE**	**SUPPLIER**
Upper Cascades	Liros DC 35,DC 60	LIROS GmbH - Germany
Middle Cascades	Edelrid 8000U /130/090/070/050kg	EDELRID – Germany
	Liros PPSLS 65/125	LIROS GmbH - Germany
Main Lines	Liros PPSLS 180/125/65	LIROS GmbH - Germany
RISERS	**FABRIC CODE**	**SUPPLIER**
Shackles	Maillon Rapide	ANSUNG PRECISION - Korea
Riser Webbing	12mm zero stretch polyester webbing	Guth&Wolf GmbH - Germany
Pulleys	Pulleys Ronstan ball bearing	Ronstan - Australia

In case of any doubts regarding the information in the manual contact your FLOW PARAGLIDERS dealer.
For spare parts or information in how to obtain them get in contact with us directly or with your local dealer.

Flow Paragliders PTY LTD – 7/249 Scottsdale Drive, Robina QLD 4226, Australia – info@flowparagliders.com.au

OVERALL LINE MEASUREMENTS

The overall length (riser lines + mid lines + upper lines) must be checked under 5Kgs (50 N) of tension. The difference between the measured length and the original length should not exceed +/- 10mm. The changes that could appear are a slight shrink on the C's and/or a slight stretch on the A's and B'S The consequences of these changes can include a slower trim speed, difficult inflation etc.

Dimensions given in the user's manual was checked by the testing laboratory
*Measurements in mm

F2 LIGHT XS

	A	A'	B	C	D	Brake
1	6966	6906	6836	6926	7028	7091
2	6939	6874	6808	6890	6992	6924
3	6900	6836	6772	6846	6943	6755
4	6915	6855	6791	6865	6954	6822
5	6849	6794	6723	6792	6884	6588
6	6805	6744	6678	6740	6829	6489
7	6733	6676	6616	6666	6750	6411
8	6734	6688	6624	6667	6730	6468
9	6621	6570	6525	6618		6346
10	6449	6430	6372	6470		6297
11	6357	6323	6312	6386		6282
12	6143		6188	6316		6366
13	6114		6203	6305		

FREEDOM2 S

	A	A'	B	C	D	Brake
1	7202	7165	7058	7148	7253	7326
2	7164	7126	7029	7110	7218	7103
3	7126	7086	6992	7062	7168	6927
4	7146	7110	7012	7078	7177	6974
5	7064	7029	6937	7004	7102	6734
6	7019	6983	6889	6949	7047	6621
7	6948	6901	6828	6872	6960	6539
8	6951	6913	6837	6873	6940	6588
9	6816	6794	6736	6830		6469
10	6652	6631	6575	6678		6426
11	6554	6540	6519	6592		6409
12	6342		6386	6508		6501
13	6312		6395	6495		

FREEDOM2 M

	A	A'	B	C	D	Brake
1	7523	7483	7384	7465	7568	7647
2	7483	7438	7356	7429	7530	7405
3	7443	7398	7309	7376	7477	7230
4	7463	7418	7334	7399	7489	7270
5	7378	7338	7242	7320	7418	7032
6	7330	7290	7196	7275	7363	6907
7	7258	7213	7128	7192	7278	6815
8	7258	7222	7138	7193	7259	6858
9	7130	7095	7015	7110		6727
10	6953	6928	6850	6960		6677
11	6839	6819	6780	6853		6645
12	6576		6627	6765		6731
13	6540		6632	6751		

FREEDOM2 L

	A	B	C	D	E	Brake
1	7736	7707	7588	7677	7794	7907
2	7695	7664	7558	7637	7756	7656
3	7661	7628	7518	7592	7705	7483
4	7681	7649	7542	7614	7719	7520
5	7600	7569	7470	7546	7655	7286
6	7552	7518	7422	7488	7595	7161
7	7468	7435	7349	7406	7509	7065
8	7470	7446	7356	7410	7485	7100
9	7348	7327	7247	7354		6962
10	7169	7158	7077	7192		6893
11	7057	7054	7004	7084		6875
12	6818		6863	7005		6959
13	6784		6874	6993		
14						

LINE TYPE and individual line lengths (for Freedom2 XS, S, M and L) *Measurements in mm

Size XS

Name	Length	Colour	Line Type
a1	295	Red	DC 60
a2	257	Red	DC 60
a3	281	Red	DC 60
a4	298	Red	DC 60
a5	283	Red	DC 60
a6	239	Red	DC 60
a7	255	Red	DC 60
a8	258	Red	DC 60
a9	244	Red	DC 60
a10	229	Red	DC 60
a11	241	Red	DC 60
a12	353	Red	DC 60
a13	324	Red	DC 60
a'1	260	Red	DC 60
a'2	217	Red	DC 60
a'3	239	Red	DC 60
a'4	261	Red	DC 60
a'5	249	Red	DC 60
a'6	203	Red	DC 60
a'7	218	Red	DC 60
a'8	231	Red	DC 60
a'9	211	Red	DC 60
a'10	207	Red	DC 60
a'11	226	Red	DC 60
A1	1970	Red	8000U-130
A2	1910	Red	8000U-130
A3	1890	Red	8000U-130
A4	1800	Red	8000U-130
A5	750	Red	8000U-90
A6	600	Red	8000U-90
A7	1420	Red	8000U-90
A8	250	Red	8000U-50
AX	930	Red	8000U-130
Amain1	4198	Red	PPSL 275
Amain2	4160	Red	PPSL 275
Amain3	4180	Red	PPSLS 180

Name	Length	Colour	Line Type
b1	266	Blue	DC 60
b2	238	Blue	DC 60
b3	242	Blue	DC 60
b4	261	Blue	DC 60
b5	263	Blue	DC 60
b6	218	Blue	DC 60
b7	226	Blue	DC 60
b8	234	Blue	DC 60
b9	565	Blue	DC 60
b10	472	Blue	DC 60
b11	602	Blue	DC 60
b12	398	Blue	DC 60
b13	412	Blue	DC 60
B1	2020	Blue	8000U-130
B2	1980	Blue	8000U-130
B3	1950	Blue	8000U-130
B4	1880	Blue	8000U-90
B5	510	Blue	8000U-90
B6	450	Blue	8000U-50
B7	930	Blue	8000U-50
BX	670	Blue	8000U-130
Bmain1	4040	Blue	PPSLS 180
Bmain2	4000	Blue	PPSLS 180
Bmain3	4270	Blue	PPSLS 125
Stabilo	5030	Orange	PPSLS 65

Name	Length	Colour	Line Type
c1	281	Blue	DC 60
c2	245	Blue	DC 60
c3	271	Blue	DC 60
c4	290	Blue	DC 60
c5	287	Blue	DC 60
c6	235	Blue	DC 60
c7	241	Blue	DC 60
c8	242	Blue	DC 60
c9	658	Blue	DC 35
c10	570	Blue	DC 35
c11	676	Blue	DC 35
c12	275	Blue	DC 35
c13	265	Blue	DC 35
C1	610	Blue	8000U-130
C2	600	Blue	8000U-130
C3	590	Blue	8000U-130
C4	570	Blue	8000U-130
C5	500	Blue	8000U-50
CI	1360	Blue	8000U-130
CII	1300	Blue	8000U-130
CIII	1360	Blue	8000U-130
CIV	1300	Blue	8000U-130
Cmain1	4165	Blue	PPSLS 180
Cmain2	4045	Blue	PPSLS 180

Name	Length	Colour	Line Type
d1	353	Blue	DC 35
d2	317	Blue	DC 35
d3	338	Blue	DC 35
d4	349	Blue	DC 35
d5	309	Blue	DC 35
d6	254	Blue	DC 35
d7	275	Blue	DC 35
d8	255	Blue	DC 35
D1	640	Blue	DC 60
D2	630	Blue	DC 60
D3	660	Blue	DC 60
D4	620	Blue	DC 60
br1	757	Orange	DC 60
br2	525	Orange	DC 60
br3	528	Orange	DC 60
br4	592	Orange	DC 60
br5	504	Orange	DC 60
br6	404	Orange	DC 60
br7	387	Orange	DC 60
br8	443	Orange	DC 60
br9	338	Orange	DC 60
br10	289	Orange	DC 60
br11	264	Orange	DC 60
br12	348	Orange	DC 60
BR1	1410	Orange	PPSLS 65
BR2	1240	Orange	PPSLS 65
BR3	1140	Orange	PPSLS 65
BR4	1080	Orange	PPSLS 65
BR5	1030	Orange	PPSLS 65
BR6	1040	Orange	PPSLS 65
BRI	2460	Orange	PPSLS 65
BRII	2420	Orange	PPSLS 65
BRIII	2453	Orange	PPSLS 65
brmain	1360	Orange	PPSLS 125
br5.1	1115	Yellow	10-200

Size S

Name	Length	Colour	Line Type
a1	314	Red	DC 60
a2	275	Red	DC 60
a3	298	Red	DC 60
a4	316	Red	DC 60
a5	312	Red	DC 60
a6	265	Red	DC 60
a7	306	Red	DC 60
a8	309	Red	DC 60
a9	253	Red	DC 60
a10	233	Red	DC 60
a11	268	Red	DC 60
a12	376	Red	DC 60
a13	342	Red	DC 60
a'1	277	Red	DC 60
a'2	233	Red	DC 60
a'3	254	Red	DC 60
a'4	276	Red	DC 60
a'5	274	Red	DC 60
a'6	225	Red	DC 60
a'7	264	Red	DC 60
a'8	275	Red	DC 60
a'9	223	Red	DC 60
a'10	214	Red	DC 60
a'11	254	Red	DC 60
A1	2040	Red	8000U-130
A2	1980	Red	8000U-130
A3	1950	Red	8000U-130
A4	1830	Red	8000U-90
A5	780	Red	8000U-90
A6	630	Red	8000U-90
A7	1450	Red	8000U-90
A8	250	Red	8000U-50
AX	960	Red	8000U-130
Amain1	4350	Red	PPSLS 275
Amain2	4310	Red	PPSLS 275
Amain3	4340	Red	PPSLS 180

Name	Length	Colour	Line Type
b1	295	Blue	DC 60
b2	265	Blue	DC 60
b3	268	Blue	DC 60
b4	288	Blue	DC 60
b5	293	Blue	DC 60
b6	248	Blue	DC 60
b7	281	Blue	DC 60
b8	287	Blue	DC 60
b9	579	Blue	DC 60
b10	459	Blue	DC 60
b11	618	Blue	DC 60
b12	416	Blue	DC 60
b13	430	Blue	DC 60
B1	2070	Blue	8000U-130
B2	2030	Blue	8000U-130
B3	2050	Blue	8000U-130
B4	1950	Blue	8000U-90
B5	530	Blue	8000U-90
B6	490	Blue	8000U-90
B7	970	Blue	8000U-90
BX	700	Blue	8000U-130
Bmain1	4200	Blue	PPSLS 180
Bmain2	4100	Blue	PPSLS 180
Bmain3	4430	Blue	PPSLS 125
Stabilo	5220	Orange	PPSLS 65

Name	Length	Colour	Line Type
c1	281	Blue	DC 60
c2	245	Blue	DC 60
c3	279	Blue	DC 60
c4	297	Blue	DC 60
c5	288	Blue	DC 60
c6	234	Blue	DC 60
c7	284	Blue	DC 60
c8	284	Blue	DC 60
c9	673	Blue	DC 35
c10	561	Blue	DC 35
c11	695	Blue	DC 35
c12	295	Blue	DC 35
c13	287	Blue	DC 35
C1	650	Blue	8000U-130
C2	630	Blue	8000U-130
C3	630	Blue	8000U-130
C4	560	Blue	8000U-130
C5	500	Blue	8000U-50
CI	1410	Blue	8000U-130
CII	1350	Blue	8000U-130
CIII	1400	Blue	8000U-130
CIV	1340	Blue	8000U-130
Cmain1	4320	Blue	PPSLS 180
Cmain2	4200	Blue	PPSLS 180

Name	Length	Colour	Line Type
d1	332	Blue	DC 35
d2	297	Blue	DC 35
d3	317	Blue	DC 35
d4	327	Blue	DC 35
d5	326	Blue	DC 35
d6	270	Blue	DC 35
d7	306	Blue	DC 35
d8	285	Blue	DC 35
D1	710	Blue	DC 60
D2	700	Blue	DC 60
D3	690	Blue	DC 60
D4	630	Blue	DC 60
br1	795	Orange	DC 60
br2	567	Orange	DC 60
br3	571	Orange	DC 60
br4	620	Orange	DC 60
br5	537	Orange	DC 60
br6	421	Orange	DC 60
br7	398	Orange	DC 60
br8	452	Orange	DC 60
br9	344	Orange	DC 60
br10	303	Orange	DC 60
br11	279	Orange	DC 60
br12	370	Orange	DC 60
BR1	1460	Orange	PPSLS 65
BR2	1280	Orange	PPSLS 65
BR3	1170	Orange	PPSLS 65
BR4	1110	Orange	PPSLS 65
BR5	1070	Orange	PPSLS 65
BR6	1070	Orange	PPSLS 65
BRI	2550	Orange	PPSLS 65
BRII	2500	Orange	PPSLS 65
BRIII	2520	Orange	PPSLS 65
brmain	1410	Orange	PPSLS 125
br5.1	1115	Yellow	10-200

Size M

Name	Length	Colour	Line type
a1	331	Red	DC 60
a2	291	Red	DC 60
a3	323	Red	DC 60
a4	342	Red	DC 60
a5	343	Red	DC 60
a6	294	Red	DC 60
a7	308	Red	DC 60
a8	310	Red	DC 60
a9	239	Red	DC 35
a10	230	Red	DC 35
a11	271	Red	DC 35
a12	399	Red	DC 35
a13	364	Red	DC 35
a'1	291	Red	DC 60
a'2	245	Red	DC 60
a'3	275	Red	DC 60
a'4	298	Red	DC 60
a'5	301	Red	DC 60
a'6	250	Red	DC 60
a'7	264	Red	DC 60
a'8	276	Red	DC 60
a'9	205	Red	DC 35
a'10	207	Red	DC 35
a'11	254	Red	DC 35
A1	2120	Red	8000U-130
A2	2050	Red	8000U-130
A3	2020	Red	8000U-130
A4	1930	Red	8000U-130
A5	870	Red	8000U-90
A6	700	Red	8000U-90
A7	1530	Red	8000U-90
A8	250	Red	8000U-90
AX	980	Red	8000U-130
Amain1	4550	Red	PPSLS 275
Amain2	4500	Red	PPSLS 275
Amain3	4530	Red	PPSLS 180

Name	Length	Colour	Line type
b1	294	Blue	DC 60
b2	264	Blue	DC 60
b3	266	Blue	DC 60
b4	287	Blue	DC 60
b5	292	Blue	DC 60
b6	245	Blue	DC 60
b7	257	Blue	DC 60
b8	264	Blue	DC 60
b9	599	Blue	DC 35
b10	493	Blue	DC 35
b11	649	Blue	DC 35
b12	440	Blue	DC 35
b13	454	Blue	DC 35
B1	2180	Blue	8000U-130
B2	2140	Blue	8000U-130
B3	2150	Blue	8000U-130
B4	2070	Blue	8000U-130
B5	560	Blue	8000U-90
B6	500	Blue	8000U-90
B7	1010	Blue	8000U-90
BX	730	Blue	8000U-130
Bmain1	4380	Blue	PPSLS 180
Bmain2	4290	Blue	PPSLS 180
Bmain3	4630	Blue	PPSLS 125
Stabilo	5460	Orange	PPSLS 65

Name	Length	Colour	Line type
c1	291	Blue	DC 60
c2	253	Blue	DC 60
c3	286	Blue	DC 60
c4	307	Blue	DC 60
c5	299	Blue	DC 60
c6	242	Blue	DC 60
c7	269	Blue	DC 60
c8	269	Blue	DC 60
c9	697	Blue	DC 35
c10	598	Blue	DC 35
c11	729	Blue	DC 35
c12	326	Blue	DC 35
c13	316	Blue	DC 35
C1	680	Blue	8000U-130
C2	660	Blue	8000U-130
C3	650	Blue	8000U-130
C4	610	Blue	8000U-130
C5	500	Blue	8000U-50
CI	1470	Blue	8000U-130
CII	1410	Blue	8000U-130
CIII	1470	Blue	8000U-130
CIV	1400	Blue	8000U-130
Cmain1	4510	Blue	PPSLS 180
Cmain2	4390	Blue	PPSLS 180

Name	Length	Colour	Line type
d1	336	Blue	DC 35
d2	299	Blue	DC 35
d3	327	Blue	DC 35
d4	339	Blue	DC 35
d5	331	Blue	DC 35
d6	272	Blue	DC 35
d7	294	Blue	DC 35
d8	272	Blue	DC 35
D1	750	Blue	DC 60
D2	730	Blue	DC 60
D3	720	Blue	DC 60
D4	680	Blue	DC 60
br1	920	Orange	DC 60
br2	675	Orange	DC 60
br3	693	Orange	DC 60
br4	731	Orange	DC 60
br5	584	Orange	DC 60
br6	461	Orange	DC 60
br7	449	Orange	DC 60
br8	490	Orange	DC 60
br9	370	Orange	DC 60
br10	319	Orange	DC 60
br11	318	Orange	DC 60
br12	403	Orange	DC 60
BR1	1520	Orange	PPSLS 65
BR2	1330	Orange	PPSLS 65
BR3	1290	Orange	PPSLS 65
BR4	1210	Orange	PPSLS 65
BR5	1130	Orange	PPSLS 65
BR6	1100	Orange	PPSLS 65
BRI	2650	Orange	PPSLS 65
BRII	2600	Orange	PPSLS 65
BRIII	2670	Orange	PPSLS 65
brmain	1500	Orange	PPSLS 125
br5.1	1115	Yellow	10-200

Size L

Name	Length	Colour	Line Type
a1	325	Red	DC 60
a2	283	Red	DC 60
a3	291	Red	DC 60
a4	311	Red	DC 60
a5	320	Red	DC 60
a6	271	Red	DC 60
a7	287	Red	DC 60
a8	292	Red	DC 60
a9	234	Red	DC 60
a10	221	Red	DC 60
a11	282	Red	DC 60
a12	422	Red	DC 60
a13	388	Red	DC 60
a'1	299	Red	DC 60
a'2	255	Red	DC 60
a'3	263	Red	DC 60
a'4	286	Red	DC 60
a'5	293	Red	DC 60
a'6	245	Red	DC 60
a'7	258	Red	DC 60
a'8	272	Red	DC 60
a'9	213	Red	DC 60
a'10	210	Red	DC 60
a'11	269	Red	DC 60
A1	2197	Red	8000U-130
A2	2153	Red	8000U-130
A3	2107	Red	8000U-130
A4	2011	Red	8000U-130
A5	872	Red	8000U-90
A6	703	Red	8000U-90
A7	1572	Red	8000U-90
A8	250	Red	8000U-50
AX	1040	Red	8000U-130
Amain1	4690	Red	PPSL 275
Amain2	4646	Red	PPSL 275
Amain3	4679	Red	PPSLS 180

Name	Length	Colour	Line Type
b1	292	Blue	DC 60
b2	262	Blue	DC 60
b3	263	Blue	DC 60
b4	286	Blue	DC 60
b5	298	Blue	DC 60
b6	249	Blue	DC 60
b7	259	Blue	DC 60
b8	266	Blue	DC 60
b9	618	Blue	DC 60
b10	486	Blue	DC 60
b11	664	Blue	DC 60
b12	467	Blue	DC 60
b13	479	Blue	DC 60
B1	2252	Blue	8000U-130
B2	2213	Blue	8000U-130
B3	2219	Blue	8000U-130
B4	2141	Blue	8000U-130
B5	572	Blue	8000U-90
B6	534	Blue	8000U-90
B7	1045	Blue	8000U-90
BX	757	Blue	8000U-130
Bmain1	4521	Blue	PPSLS 180
Bmain2	4426	Blue	PPSLS 180
Bmain3	4780	Blue	PPSLS 125
Stabilo	5629	Orange	PPSLS 65

Name	Length	Colour	Line Type
c1	290	Blue	DC 60
c2	253	Blue	DC 60
c3	295	Blue	DC 60
c4	317	Blue	DC 60
c5	315	Blue	DC 60
c6	257	Blue	DC 60
c7	272	Blue	DC 60
c8	272	Blue	DC 60
c9	720	Blue	DC 35
c10	597	Blue	DC 35
c11	747	Blue	DC 35
c12	361	Blue	DC 35
c13	346	Blue	DC 35
C1	702	Blue	8000U-130
C2	682	Blue	8000U-130
C3	665	Blue	8000U-130
C4	636	Blue	8000U-130
C5	500	Blue	8000U-50
CI	1523	Blue	8000U-130
CII	1453	Blue	8000U-130
CIII	1516	Blue	8000U-130
CIV	1447	Blue	8000U-130
Cmain1	4652	Blue	PPSLS 180
Cmain2	4529	Blue	PPSLS 180

Name	Length	Colour	Line Type
d1	388	Blue	DC 35
d2	350	Blue	DC 35
d3	379	Blue	DC 35
d4	392	Blue	DC 35
d5	343	Blue	DC 35
d6	282	Blue	DC 35
d7	306	Blue	DC 35
d8	283	Blue	DC 35
D1	715	Blue	DC 60
D2	706	Blue	DC 60
D3	739	Blue	DC 60
D4	694	Blue	DC 60
br1	971	Orange	DC 60
br2	720	Orange	DC 60
br3	744	Orange	DC 60
br4	781	Orange	DC 60
br5	599	Orange	DC 60
br6	473	Orange	DC 60
br7	461	Orange	DC 60
br8	498	Orange	DC 60
br9	379	Orange	DC 60
br10	322	Orange	DC 60
br11	299	Orange	DC 60
br12	382	Orange	DC 60
BR1	1570	Orange	PPSLS 65
BR2	1374	Orange	PPSLS 65
BR3	1367	Orange	PPSLS 65
BR4	1280	Orange	PPSLS 65
BR5	1170	Orange	PPSLS 65
BR6	1171	Orange	PPSLS 65
BRI	2731	Orange	PPSLS 65
BRII	2681	Orange	PPSLS 65
BRIII	2777	Orange	PPSLS 65
brmain	1555	Orange	PPSLS 125
br5.1	1115	Yellow	10-200