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# BASE 2 LITE OWNER'S MANUAL

Solo paraglider | EN / LTF B

## Welcome to Bruce Goldsmith Design

BGD is a world leader in the design and production of paragliders. For many years Bruce Goldsmith and his team have been developing products with world-beating performance for pilots who want the best. We apply our competitive knowledge to design top quality products that combine the highest performance with the safe handling our customers value and respect. BGD pilots appreciate our quality and reliability. BGD's world-class status is based on the skills and expertise we have developed in combining aerodynamic design with cloth and materials technology. All BGD products are developed and made with the same skill and attention to good design that are synonymous with the ultimate performance and precision required by paragliders.

## Congratulations on your purchase of the BGD BASE 2 LITE

The BASE 2 LITE is a lightweight cross-country paraglider with the perfect balance of performance, handling, comfort and safety that make it totally confidence inspiring. It offers good feedback and direct, precise handling. It is a high performance sports intermediate wing and is not suitable for beginners.

The BASE 2 LITE has been designed to a high standard of safety and stability, but it will only retain these characteristics if it is properly looked after. This manual has been prepared to give you information and advice about your paraglider. If you ever need any replacement parts or further information, please do not hesitate to contact your nearest BGD dealer or contact BGD directly.

Please read this manual carefully from the first to the last chapter to ensure you get the best out of your paraglider.

# Introduction

## Limitations

The BASE 2 LITE is a single-seat paraglider. It is not intended for tandem use or for aerobatic manoeuvres. It is suitable for winching. Both pilot and winch operator should have the necessary training and qualifications for winching, and the winch system should be certified for paraglider use.

This paraglider must not:

1. Be flown outside the certified weight range
2. Have its trim speed adjusted by changing the length of risers or lines
3. Be flown in rain or snow
4. Be towed with a tow-line tension in excess of 200kg

## Test flight and Warranty

All information about the BGD warranty can be found on the Warranty page of our website. In order to enjoy the full benefits you must complete the warranty registration form on the website ([www.flybgd.com](http://www.flybgd.com))

It is your dealer's responsibility to test fly the paraglider before you receive it, to check the trim settings are correct. The record of this is in the service booklet at the end of this manual – please check that this has been completed.

The warranty may be void if the test flight has not been completed by the dealer.

## Weight Range

Each wing size is certified for a certain weight range. The weight refers to the 'overall take-off weight'. This means the weight of the pilot, the glider, the harness and all other equipment carried with you in flight. We generally recommend your paraglider is flown in the middle of the weight range.

If you mainly fly in weak conditions you might wish to fly towards the lower end of the weight range to benefit from a better sink rate. In the lower half of the weight range the turning agility will be lower and the glider will be more damped. In strong turbulence the wing will have a greater tendency to deform or collapse with a lower wing loading.

If you prefer dynamic flight characteristics, want better speed or fly in strong conditions you might choose to fly higher in the weight range. If you fly in the upper half of the weight range agility and speed will be higher and you will have greater stability in turbulence, but there will be reduced self-damping in turns and after collapses.

## Modifications

Any modifications to your glider, e.g. changing the line lengths or the speed system, can cause a loss of airworthiness and certification. We recommend that you contact your dealer or BGD directly before performing any kind of modifications.

## Brake line lengths

The length of the brake lines is set at the factory so that the trailing edge is not deformed at all when brakes are not applied. There should be around 7cm slack in the brake lines, before they take effect on the canopy. It should not be necessary to shorten the brake lines. However, it is possible that shrinkage can occur. If necessary, the brake lines can be lengthened by adjusting the knots.

In order to save weight, the BASE 2 LITE does not have swivels on the brake handles. Pilots are advised to make sure the brake lines are not shortened by twisting up, and should frequently untwist the brake lines.

## Harness

The paraglider was tested with a 'GH' (without diagonal bracing) type harness. The GH category includes weight-shift harnesses as well as ABS style (semi-stable) harnesses.

The harness complies with the EN standard harness dimensions, which are:

- Seat board width: 42cm.

The horizontal distance between the attachment points of the paraglider risers (measured from the centre-line of the karabiners) must be:

- 38cm for pilots under 50kg
- 42cm for pilots from 50-80kg
- 46cm for pilots above 80kg

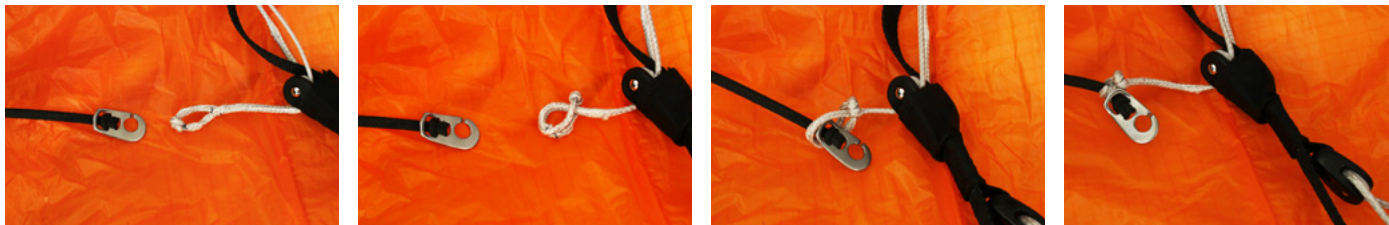
# Preparation

## Connecting the speedbar

The BASE 2 LITE comes with accelerator risers and can be flown with or without a speedbar attached. The speedbar should be connected and adjusted following the instructions in your harness manual to ensure correct routing of the lines.

The weight-optimised speed system does not have Brummel hooks attached to the accelerator system, but there is a loop sewn in, and the accelerator line can be attached to the speed bar using a classic larks head knot. If your speed bar has Brummel hooks you can attach to the accelerator line using this knot without removing the Brummel hook.

### LARKS HEAD KNOT



When attaching the speed bar lines, make sure the accelerator and the speedbar lines run freely and are not caught around anything including reserve handle, risers or lines.

To adjust the speedbar to the correct length, sit in your harness and ask an assistant to hold the risers up in their in-flight position. The speedbar length can be adjusted, by moving the knots, so that the bar sits just beneath your harness seat. You should be able to hook your heels into the bar, and to attain full bar extension (the two pulleys touching) when you push your legs out. Once you have set the bar up in this way on the ground, a test flight in calm air can be useful to fine-tune the length, ensuring it is even on both sides.

## On launch

1. Select a suitable take-off area determined by wind and terrain, clear of any obstacles that may catch in the lines or damage the canopy.
2. Take your paraglider to the top of the take-off area, and allow the canopy to unroll itself down the hill if on a slope. This should leave the paraglider with the bottom surface facing upwards, the openings at the downwind/uphill end of the take-off area, and the harness at the trailing edge at the upwind side.
3. Unroll the canopy to each side so that the leading edge openings form a semicircular shape, with the trailing edge drawn together to form an arc. The harness should be drawn away from the canopy until the suspension lines are just tight.

## Pre-flight inspection

Your paraglider is designed to be simple to inspect and maintain but a thorough pre-flight procedure is mandatory on all aircraft. The following pre-flight inspection procedure should be carried out before each flight.

1. Whilst opening the paraglider check the outside of the canopy for any tears where it could have been caught on a sharp object or even have been damaged whilst in its bag. Visually inspect the risers for any signs of damage.
2. Check the lines for signs of damage, twists or knots. Divide the suspension lines into groups, each group coming from one riser. By starting from the harness and running towards the canopy remove any tangles or twists in the lines. Partially inflating the canopy in the wind will help to sort out the lines.
3. Ensure the brakes are clear and free to move. Check the knot which attaches the brake handles to the brake lines. Avoid having too many knots, as there is a risk the knots could become stuck in the brake pulleys. Both



brakes should be the same length and this can be checked by having an assistant hold the upper end of the brake lines together whilst you hold the brake handles. The brake lines should be just slack with the wing inflated when the brakes are not applied.

4. Always check the buckles and attachments on the harness. Ensure the two main attachment maillons/ karabiners from the harness to the main risers, and the individual shackles which attach the risers to the lines, are tightly done up.
5. Before getting in to the harness you should be wearing a good helmet. Check the parachute container is correctly closed and the handle is secure. Put on the harness ensuring all the buckles are fastened and that it is well adjusted for comfort.

Your paraglider is now ready for flight

# Flight Characteristics

This manual is not intended as an instruction book on how to fly your paraglider. You should be a qualified pilot, but the following comments describe how to get the best from your wing.

## Take-off

The wing is easy to inflate in light or stronger winds and will quickly rise overhead to the flying position. It will launch easily using either the forward launch technique (best for light winds) or reverse launch (best for stronger winds).

### Forward Launch

Stand facing into wind with your back to the canopy and all the A-lines taut behind you, then take one or two steps back (do not walk all the way back to the canopy). Take an A-riser in each hand (the A-risers are marked with red cloth to make them easier to find) and begin your launch run pulling gently and smoothly on the A-risers. As soon as the canopy starts to rise off the ground stop pulling so hard on the A-risers but put pressure on all the risers evenly through the harness. Maintaining gentle pressure on the A-risers helps in very calm conditions. Have your hands ready to slow up the canopy with the brakes if it starts to accelerate past you.

### Reverse Launch

In winds over 10km/h it is recommended to do a reverse launch and inflate the canopy whilst facing it, using the A-risers. Releasing pressure on the A-risers when it is at about 45° will help to stop it overshooting. The stronger the wind and the greater the pressure on the A-risers, the more quickly the canopy will rise. In stronger winds taking a step towards the glider as it rises can take some of the energy out of the glider and it will be less likely to overshoot.

## Straight Flight

Your paraglider will fly smoothly in a straight line without any input. At the maximum in-flight weight, without the accelerator it will fly at approximately the trim speed shown in the Specifications table.

## Turning

Your wing does not require a strong-handed approach to manoeuvring. For a fast turn smoothly apply the brake on the side to which the turn is intended. The speed with which the brake is applied is very important. If a brake is applied fairly quickly the canopy will do a faster banking turn, but care must be taken not to bank too severely. To attain a more efficient turn at minimum sink, apply some brake to the outside wing to slow the turn and prevent excessive banking. The glider flies very well like this, but care must be taken not to over-apply the brakes, as this could result in a spin. The wing will turn far more efficiently if you weight-shift into the turn in the harness. Remember that violent brake application is dangerous and should be avoided.

## Active piloting

The objective of active piloting is to get the glider to fly smoothly through the air with a stable position above your head, and controlled angle of incidence. Active piloting means flying in empathy with your paraglider, guiding it through the air and being aware of feedback from the wing. If the air is smooth the feedback can be minimal but in turbulence feedback is continuous and needs to be constantly checked.

In order to get the best performance from your wing, it is best to control it through small brake inputs and weightshift rather than constantly being present on the brakes. A small brake movement early is more efficient than a big input later. The more you let the glider fly at trim speed, the better performance you will get out of it.

Your paraglider is resistant to collapse without any pilot action, but flying actively will increase the safety margin. Active piloting can make your flying experience safer and more enjoyable, and it becomes instinctive in good pilots.

## Thermalling

To attain the best climb rate your wing should be thermalled using a mild turn, as described above, keeping banking to a minimum. In strong thermals a tighter banking turn can be used to stay closer to the thermal's core. Remember

that weight-shifting in the harness will make the turn more efficient and reduce the amount of brake required.

Care must be taken not to apply so much brake as to stall. This is easy to avoid as the brake pressure increases greatly as you approach the stall point. Only fly near the stall point if you have enough height to recover (at least 100m).

## Speed System

Launching and general flying is normally done without using the accelerator. A pilot flying at the maximum in-flight weight should be able to reach the top speed noted in the specifications table when using the accelerator system.

Full speed is achieved when the two pulleys on each A-riser touch. Do not go beyond this point by using excessive force to attempt to make the glider go faster as this may result in the glider collapsing.

When you come off the bar it is also important to do so smoothly and progressively, to manage the pitch. It is possible for paragliders to front-collapse if the bar is released too quickly.

We recommend you only fly in conditions where you can progress into wind with no speed-bar applied, so that you have the extra airspeed in reserve should you need it.

### IMPORTANT:

1. Practise using the speed system in normal flying and get fully used to using half speed-bar before you use the full speed-bar.
2. The speed increase is achieved by reducing the angle of attack, which means the canopy has slightly more collapse tendency. Take care when flying fast in rough or turbulent conditions as deflations are more likely to occur at speed.

- Remember that your glide deteriorates at higher speeds.  
Best glide is achieved when the risers are level and the brakes are off, or with a little accelerator applied (up to 25% speed).

The dyneema line that connects the speed system in the risers is designed to have a small amount of slack in it. This is done intentionally in order to obtain the correct riser lengths when accelerated.

The amount of slack in this line varies between the different sizes of the BASE 2 LITE, and determines the B riser length when fully accelerated.

This line can be adjusted for length or replaced where it is looped on the maillon of the B-riser.

**Riser lengths (mm) when fully accelerated:**

	A	B	C
XS	340	370	460
S	380	420	500
M	380	430	500
ML	380	430	500

Check the component parts of the speed system regularly for signs of wear and tear, and ensure that the system always works smoothly.

## C-steering



FIG. 1: Keeping the brake in your hand, grasp the C-steering handle with your fingers

The BASE 2 LITE is designed with an effective and light C-steering system that allows you to actively pilot the wing without using the brakes which is particularly useful when flying accelerated.

The risers are equipped with a 'speed riser'. This is an extra riser that is attached to the back of the speed system. This speed riser is also attached to the front of the C steering handle. The idea is to balance the load on the C steering handle giving you more control over the glider when using the C-steering.

To fly with the C-steering system, keep hold of the brakes, and grasp the C-steering handle with your fingers as shown in FIG. 1.

The C-steering system allows you to make small pitch adjustments when gliding, especially on speed. The C-steering can also be used to control direction, but you must take care not to accidentally stall the glider as the range is much less than on the brakes.

## Rapid descent procedures

### Big Ears

The wingtips of your paraglider can be folded in to increase its sink rate. The Big Ear facility allows you to descend quickly without substantially reducing the forward speed of your glider. (B-line stalls also allow for fast descent, but they result in greatly reduced forward speed).

To engage Big Ears, lean forward in the harness and grasp the outer A-lines, or the maillons of the 'Baby-A' risers, keeping hold of both brake handles if possible. Pull the outer A-lines or Baby-A risers out and down at least 30cm so as to collapse the tips of the glider. It is very important that the other A-lines are not affected when you do this as pulling these could cause the leading edge to collapse. Steering with Big Ears in is possible by weight-shifting. When you let go of the outer A-lines or the Baby A risers, the Big Ears will come out on their own. A pump on the brakes can speed this up if necessary.

Before using Big Ears in earnest you should practise with plenty of ground clearance in case a leading-edge collapse occurs. Always keep hold of both brakes in order to retain control. Putting your hands through the brake handles so they remain on your wrists is a good method of doing this.

### **B-Line Stall**

This is a fast descent method and is a useful emergency procedure. With both hands through the brake handles, take hold of the top of the B-risers, one in each hand, and pull them down by 10-15cm. This will stall the canopy and its forward speed will drop to zero. Make sure you have plenty of ground clearance because the descent rate can be over 10m/sec.

To increase the descent rate pull harder on the B-risers. When you release the B-risers the canopy will automatically start flying again, normally within two seconds. Sometimes the canopy will turn gently when it exits from the B-line stall. It is normally better to release the B-risers fairly quickly rather than slowly, as the latter may result in the canopy entering deep stall. Always release the risers symmetrically, as an asymmetric release from a B-line stall may result in the glider entering a spin.

B-line stalls are useful if you need to lose a lot of height quickly, perhaps to escape from a thunderstorm. They should not be performed with less than 100m of ground clearance (see also Chapter 5).

### **Spiral Dive**

A normal turn can be converted into a spiral dive by continuing to apply one brake. The bank angle and speed of the turn will increase as the spiral is entered. Be careful to enter the spiral gradually and with control, as too quick a brake application can cause a spin or a high G spiral.

Spiral dives are one of the most dangerous manoeuvres in paragliding and the high G-force and quick loss of altitude can easily catch pilots out. A mistake in judging these factors can lead to a very serious accident, so spirals must be treated with great respect. Pilots are advised to practise spiral dives under close supervision or during an SIV course.



To pull out of a steep spiral dive, release the applied brake gradually and/or apply opposite brake gradually. A sharp release of the brake can cause the glider to surge and dive as the wing converts speed to lift. Always be ready to damp out any dive with the brakes. Also be ready to encounter turbulence when you exit from a spiral because you may fly through your own wake, which can cause a collapse.

**CAUTION:** Spiral dives can cause loss of orientation or black-out and they take some time to exit from. This manoeuvre must be exited in time, and with sufficient height.

## Landing

Landing is very straightforward. When landing in light winds, flare in the normal way from an altitude of around 2m. It may sometimes help to take wraps on the brakes to make the flare more effective. Strong-wind landings require a different technique. If you use the brakes to flare in a strong wind the wing tends to convert this energy to height, which can be a problem. The best method is to take hold of the rear-risers at the maillons just before landing, and collapse the canopy using these when you have landed. The glider will collapse very quickly using this method.

After landing, the B-risers can also be used to collapse the canopy, although it is more difficult to control the collapsed canopy on the ground with the B-risers.

# Recovery Techniques

## Stalls

Stalls are dangerous and should not be practised in the course of normal flying. Stalls are caused by flying too slowly. Airspeed is lost as brake pressure increases and as the canopy approaches the stall point it will start to descend vertically and finally begin to collapse. Should this occur it is important that the pilot releases the brakes at the correct moment. The brakes should never be released when the wing has fallen behind the pilot; the brakes should be released fairly slowly, to prevent the forward dive of the canopy from being too strong. A pre-release of the brakes and the reconstruction of the full span is recommended to avoid the tips getting cravatted during the recovery. Pilots are advised never to attempt this manoeuvre unless under SIV instruction. This manual is not intended to give instruction in this or any other area.

### Deep Stall (or Parachutal Stall)

Your paraglider has been designed so that it will not easily remain in a deep stall. However, if it is incorrectly rigged or its flying characteristics have been adversely affected by some other cause, it is possible that it could enter this situation. In the interests of safety all pilots should be aware of this problem, and know how to recover from it. The most common way to enter deep stall is from a flying too slowly, from a B-line stall or even from big ears. When in deep stall the pilot will notice the following:

1. Very low airspeed.
2. Almost-vertical descent (like a round canopy), typically around 5m/s.
3. The paraglider appears quite well inflated but does not have full internal pressure. It looks and feels a bit limp.

Recovery from deep stall is quite simple: The normal method is to simply initiate a mild turn. As the canopy starts to turn it will automatically revert to normal flight, but it is very important not to turn too fast as this could induce a spin. The second method is to pull gently on the A-risers. This helps the airflow to re-attach to the leading edge, but be

careful not to pull down too hard as this will induce a front collapse.

If the deep stall is particularly stubborn and the previous methods do not work then a full stall will solve the problem. To do this apply both brakes fairly quickly, as if to do a strong stall, then immediately release both brakes and damp out the forward surge in the normal way. The canopy will swing behind you then automatically reinflate and surge forward in front of you before returning to normal flight. It is the surge forward that exits the canopy from deep stall.

## Spins

Spins are dangerous and should not be practised in the course of normal flying. Spins occur when the pilot tries to turn too fast. In a spin the pilot, lines and canopy basically stay vertical and rotate around a vertical axis. Your glider will resist spinning, but if a spin is inadvertently induced you should release the brake pressure but always be ready to damp out any dive as the glider exits the spin. Failure to damp the dive on exiting the spin may result in an asymmetric deflation.

## Symmetric Front Collapse

It is possible that turbulence can cause the front of the wing to symmetrically collapse, though active piloting can largely prevent this from occurring accidentally.

During the early stages of a front collapse the pilot should apply brake symmetrically on both sides for a maximum of one second. This will push the air from the back of the canopy towards the front, stopping the collapse from becoming deep. Make sure the brakes are fully released during the later stages of the collapse, or this may induce a full stall. The glider will normally recover on its own as long as the pilot keeps the brakes up. If the glider does not recover on its own it may be necessary to make a second pump on the brakes.

A pilot can reproduce the effect during an SIV course by taking hold of both the A-risers and pulling down sharply on them, then immediately releasing. Make sure that you pull all four A-risers at the same time, two risers in each hand

(make sure to include the baby-A risers). The glider will automatically recover on its own from this situation in around three seconds. During this recovery period it is advisable not to apply the brakes as this could stall the wing.

## Asymmetric Front Collapse

Your paraglider is very resistant to deflations; however if the canopy collapses on one side due to turbulence, you should first of all control the direction of flight by countering on the opposite brake. Most normal collapses will immediately reinflate on their own and you will hardly have time to react before the wing reinflates automatically. The act of controlling the direction will tend to reinflate the wing. However, with more persistent collapses it may be necessary to pump the brake on the collapsed side using a long, strong, smooth and firm action. Normally one or two pumps of around 80cm will be sufficient. Each pump should be applied in about one second and smoothly released. In severe cases it can be more effective to pump both brakes together to get the canopy to reinflate. Be careful not to stall the wing completely if this technique is used.

## Releasing a trapped tip (cravat)

Following a severe deflation it is possible for a wingtip to become trapped in the glider's lines (cravat). If this occurs then first of all use the standard method of recovery from a tip deflation as described in Asymmetric Front Collapse above. If the canopy still does not recover then pull the rear risers to help the canopy to reinflate. Pulling the stabilo line is also a good way to remove cravats, but remember to control your flight direction as your number-one priority. If you are very low then it is much more important to steer the canopy into a safe landing place or even throw your reserve.

NOTE: Test pilots have tested the model well beyond the normal flight envelope, but such tests are carried out in a very precise manner by trained test pilots with a back-up parachute, and over water. Stalls and spins on any paragliders are dangerous manoeuvres and are not recommended.

## Loss of brakes

In the unlikely event of a brake line snapping in flight, or a handle becoming detached, the glider can be flown by gently pulling the rear risers for directional control.

# Storage and servicing

## Storage

If you have to pack your canopy away wet, do not leave it for more than a few hours in that condition. As soon as possible dry it out, but do not use direct heat sources as it is inflammable!

Always store the canopy in a dry, warm place. Ideally this should be in the temperature range of 5°C to 13°C. Never let your canopy freeze, particularly if it is damp.

Your paraglider is made from high quality nylon which is treated against weakening from ultraviolet radiation. However, UV exposure will still weaken the fabric and prolonged exposure to harsh sunlight can severely compromise the safety of your canopy. Therefore once you have finished flying, put your wing away. Do not leave it laying in strong sunshine unnecessarily. If you are concerned about any aspect of the integrity of your paraglider please contact your nearest BGD dealer or talk to BGD directly.

Do not treat your canopy with chemical cleaners or solvents. If you must wash the fabric, use warm water and a little soap. If your canopy gets wet in sea water, wash it with warm water and carefully dry it.

## Small Repairs

Small tears in the top or bottom surface (not normally the ribs) of a canopy can be repaired with a patch of self-adhesive ripstop nylon. Tears no longer than 100mm can be repaired in this way providing they are not in high-stress areas. If you have any doubt about the airworthiness of your canopy please contact your dealer or BGD directly.

## Servicing / Inspection

It is important to have your glider regularly serviced. Your wing should have a thorough check / inspection every 24 months or every 150 flight hours, whichever occurs first. This check must be made by the manufacturer, importer, distributor or other authorised persons.

### Releasing loops on the rear lines



*Left: loops on maillons; Right: loops released*

All BGD gliders are rigged from new with loops on the maillons of the C lines (and D lines if any) plus the stabi line. The loops are there so that they can be released to compensate for any shrinkage of the back lines as the glider gets older.

BGD recommends releasing the loops after 100 hours or 1 year, whichever comes first, or earlier if the pilot feels the glider does not come up as easily on launch.

When the first line check is done, normally at 2 years, the loops should already have been released, and this should be verified and fine-tuned by the check centre.

Please print out the service pages from this manual, fill in the number of flights and hours flown in the Service Record, and send together with your glider when it goes for inspection or servicing. The manufacturer will only accept responsibility for paraglider lines and repairs which we have produced and fitted or repaired ourselves.

## Environmental protection and recycling

Our sport takes place in the natural environment, and we should do everything to preserve our environment. A glider is basically made of nylon, synthetic fibres and metal. At the end of your paraglider's life, please remove all metal parts and put the different materials in an appropriate waste/recycling plant.



# Technical Data

## Materials

The BASE 2 LITE is made from the following quality materials:

Top surface	Porcher Skytex 32g/m <sup>2</sup> and 27g/m <sup>2</sup>
Bottom surface:	Porcher Skytex 27g/m <sup>2</sup>
All ribs	Porcher Skytex 27g/m <sup>2</sup> hard
Nose reinforcing	Ratioparts detailed
Risers	Rivori 12mm nylon
Maillons	Maillon Rapide 3.5D Delta shackles + inserts
Pulleys	Spenger Ronstan P18
Top lines	Edelrid 8000U series (unsheathed)
Middle lines	Edelrid 8000U series (unsheathed)
Lower lines	Edelrid 8000U series (unsheathed)
Brakes	DC60 & DC100
Brake line KL1	Liros DSL350

Spare parts can be obtained directly from BGD or through our network of registered BGD repair shops.

For a full list check [www.flybgd.com](http://www.flybgd.com)

## Specifications

	<b>XS</b>	<b>S</b>	<b>M</b>	<b>ML</b>
Linear scaling factor	0.92	0.96	1	1.04
Projected area (m <sup>2</sup> )	17.8	19.5	21.2	22.9
Flat area (m <sup>2</sup> )	21	23	25	27
Glider weight (kg)	3.5	3.7	3.9	4.1
Total line length (m)	204	224	243	262
Height (m)	6.9	7.2	7.5	7.8
Number of main lines	3/4/3	3/4/3	3/4/3	3/4/3
Cells	57	57	57	57
Flat aspect ratio	5.7	5.7	5.7	5.7
Projected aspect ratio	4.4	4.4	4.4	4.4
Root chord (m)	2.4	2.5	2.6	2.7
Flat span (m)	11.1	11.6	12.1	12.6
Projected span (m)	8.8	9.2	9.6	10.0
Certified weight range (kg)	55 - 75	65 - 85	75 - 95	88 - 108
Trim speed (km/h)	39	39	39	39
Top speed (km/h)	55	55	55	55
Min. sink (m/s)	1	1	1	1
Best glide	10.5	10.5	10.5	10.5
Certification	EN+LTF: B	EN+LTF: B	EN+LTF: B	EN+LTF: B

## Overview of glider parts



## Risers



The riser set does not have trimmers, or any other adjustable or removable device.

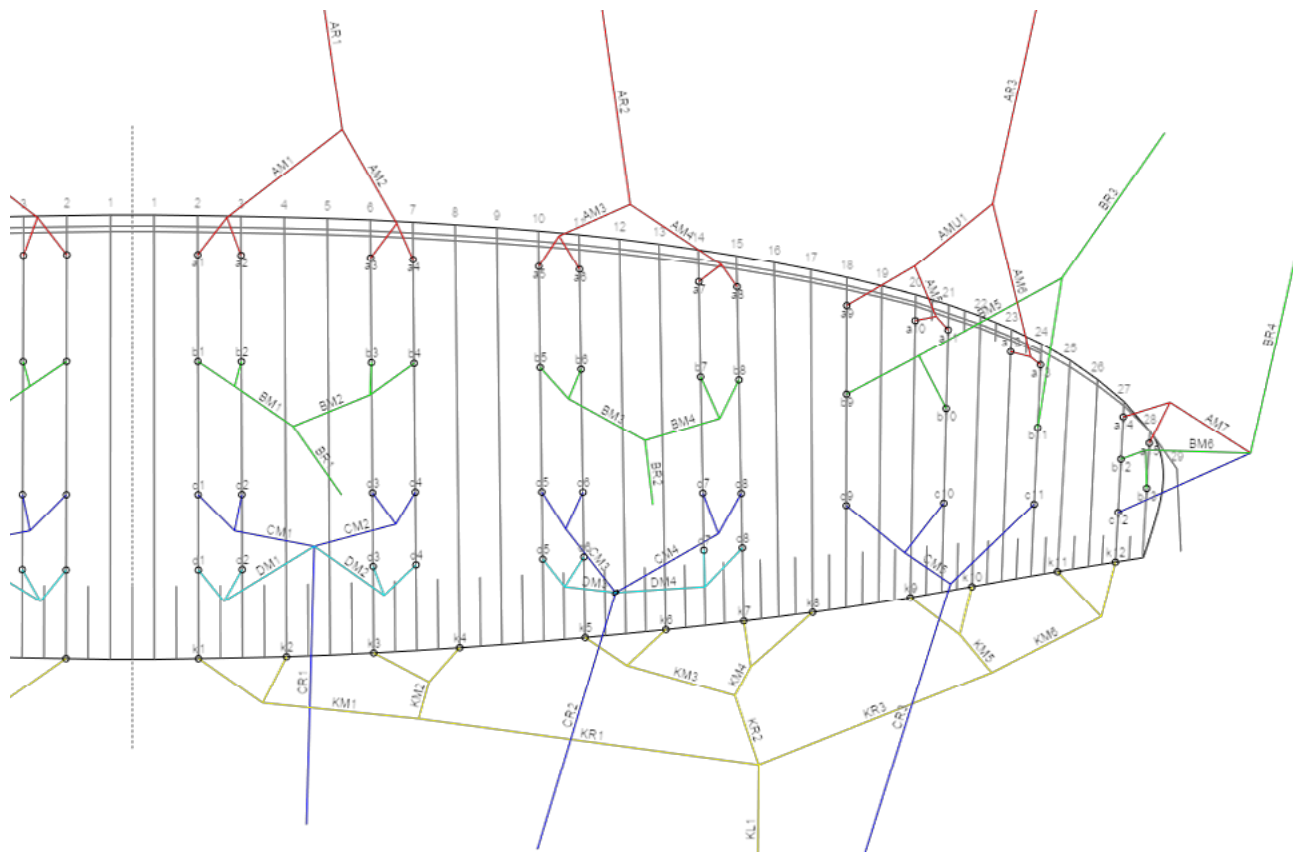
## Brake and accelerator travel

Size	Riser length (mm)*	Accelerator travel (mm)	Brake range (cm)**
<b>XS</b>	450	120	60
<b>S</b>	500	120	63
<b>M</b>	500	120	65
<b>ML</b>	500	120	67

\*Actual riser lengths may differ by not more than 5mm

\*\* Maximum symmetrical control travel at maximum weight in flight

## Line Plan



## Line Length Checks

All measures are in mm, with 50N line tension, the tension being slowly and gradually applied before taking the measurement.

The lengths are measured from the lower surface of the canopy and include the risers.

As part of the EN certification process, the test team check the lengths of the suspension lines, control lines and risers given in the manual against the sample glider, after the test flights have been carried out. The difference in line lengths between the manual and the sample may be no more than 10mm. The measured lengths are in the appendix.

## Size XS

	A	B	C	D	K
1	6886	6768	6863	6990	7308
2	6842	6734	6803	6930	7030
3	6788	6695	6765	6878	6859
4	6799	6697	6796	6905	6797
5	6712	6649	6711	6805	6575
6	6667	6588	6648	6740	6402
7	6583	6513	6574	6663	6329
8	6577	6527	6591	6662	6381
9	6451	6388	6460		6263
10	6360	6270	6341		6212
11	6335	6216	6283		6226
12	6262	6079	6233		6338
13	6238	6122			
14	6058				
15	6030				

Bridle check ▲  
Single line lengths ►

A		B		C		D		K	
a1	296	b1	659	c1	669	d1	318	k1	573
a2	252	b2	625	c2	609	d2	258	k2	295
a3	278	b3	280	c3	262	d3	275	k3	480
a4	289	b4	282	c4	293	d4	302	k4	418
a5	315	b5	295	c5	306	d5	298	k5	478
a6	270	b6	234	c6	243	d6	233	k6	305
a7	282	b7	261	c7	255	d7	256	k7	319
a8	276	b8	275	c8	272	d8	255	k8	371
a9	1435	b9	1499	c9	1342			k9	329
a10	293	b10	1381	c10	1223			k10	278
a11	268	b11	1993	c11	2043			k11	201
a12	273	b12	289	c12	700			k12	318
a13	249	b13	332						
a14	317								
a15	289								
AM1	2133	BM1	2280	CM1	1099	DM1	1577	KM1	1085
AM2	2053	BM2	2586	CM2	1408	DM2	1508	KM2	729
AM3	2270	BM3	1479	CM3	1401	DM3	1503	KM3	862
AM4	2172	BM4	1375	CM4	1315	DM4	1403	KM4	775
AM5	1057	BM5	671	CM5	882			KM5	715
AM6	2132	BM6	260	CR3	3761			KM6	806
AM7	213	BR3	3738	CR1	4623			KR1	2927
AR1	3980	BR4	5053	CR2	4531			KR2	2512
AR2	3652	BR1	3352					KR3	2496
AMU1	1159	BR2	4398					KL1	2721
AR3	3380								

Technical data



## Size S

	A	B	C	D	K
1	7252	7144	7240	7360	7712
2	7207	7104	7175	7298	7426
3	7154	7055	7124	7244	7250
4	7166	7060	7157	7273	7188
5	7080	6986	7073	7174	6984
6	7034	6939	7009	7108	6842
7	6950	6858	6933	7030	6754
8	6943	6856	6952	7029	6776
9	6809	6742	6816		6658
10	6714	6617	6691		6631
11	6688	6554	6628		6607
12	6598	6453	6619		6716
13	6574	6490			
14	6429				
15	6380				

Bridle check ▲  
Single line lengths ►

A		B		C		D		K	
a1	304	b1	305	c1	317	d1	327	k1	589
a2	259	b2	265	c2	252	d2	265	k2	303
a3	286	b3	287	c3	269	d3	282	k3	493
a4	298	b4	292	c4	302	d4	311	k4	431
a5	325	b5	302	c5	316	d5	308	k5	496
a6	279	b6	255	c6	252	d6	242	k6	374
a7	294	b7	280	c7	265	d7	267	k7	385
a8	287	b8	278	c8	284	d8	266	k8	387
a9	1514	b9	1583	c9	1418			k9	352
a10	310	b10	1458	c10	1293			k10	345
a11	284	b11	2111	c11	2171			k11	236
a12	292	b12	320	c12	749			k12	345
a13	268	b13	357						
a14	344								
a15	295								
AM1	2189	BM1	2559	CM1	1506	DM1	1614	KM1	1115
AM2	2109	BM2	2488	CM2	1438	DM2	1543	KM2	749
AM3	2351	BM3	2224	CM3	1455	DM3	1562	KM3	900
AM4	2250	BM4	2116	CM4	1366	DM4	1459	KM4	801
AM5	1115	BM5	721	CM5	945			KM5	786
AM6	2247	BM6	266	CR3	3938			KM6	851
AM7	220	BR3	3918	CR1	4905			KR1	3102
AR1	4237	BR4	5350	CR2	4789			KR2	2662
AR2	3881	BR1	3760					KR3	2594
AMU1	1233	BR2	3943					KL1	2839
AR3	3542								

Technical data

## Size M

	A	B	C	D	K
1	7569	7451	7554	7679	8037
2	7522	7410	7487	7615	7740
3	7469	7359	7436	7561	7559
4	7482	7365	7471	7592	7495
5	7393	7293	7383	7489	7263
6	7346	7244	7316	7420	7133
7	7259	7161	7238	7339	7043
8	7252	7159	7257	7338	7047
9	7114	7040	7117		6923
10	7014	6910	6987		6914
11	6988	6850	6922		6871
12	6907	6728	6895		6984
13	6882	6740			
14	6715				
15	6653				

Bridle check ▲  
Single line lengths ►

A		B		C		D		K	
a1	317	b1	319	c1	331	d1	341	k1	614
a2	270	b2	278	c2	264	d2	277	k2	317
a3	298	b3	299	c3	281	d3	294	k3	515
a4	311	b4	305	c4	316	d4	325	k4	451
a5	339	b5	315	c5	330	d5	321	k5	518
a6	292	b6	266	c6	263	d6	252	k6	388
a7	307	b7	292	c7	277	d7	279	k7	400
a8	300	b8	290	c8	296	d8	278	k8	404
a9	1579	b9	1651	c9	1478			k9	367
a10	323	b10	1521	c10	1348			k10	358
a11	297	b11	2208	c11	2264			k11	247
a12	305	b12	352	c12	809			k12	360
a13	280	b13	364						
a14	352								
a15	290								
AM1	2281	BM1	2667	CM1	1568	DM1	1681	KM1	1162
AM2	2200	BM2	2595	CM2	1500	DM2	1610	KM2	783
AM3	2451	BM3	2318	CM3	1516	DM3	1629	KM3	938
AM4	2347	BM4	2207	CM4	1424	DM4	1521	KM4	836
AM5	1162	BM5	752	CM5	985			KM5	819
AM6	2352	BM6	293	CR3	4131			KM6	887
AM7	282	BR3	4109	CR1	5135			KR1	3244
AR1	4437	BR4	5558	CR2	5016			KR2	2790
AR2	4070	BR1	3940					KR3	2720
AMU1	1285	BR2	4135					KL1	2970
AR3	3717								

Technical data

## Size ML

	A	B	C	D	K
1	7863	7727	7848	7979	8368
2	7815	7688	7779	7912	8060
3	7760	7647	7728	7858	7872
4	7774	7654	7765	7890	7807
5	7682	7581	7673	7783	7578
6	7633	7530	7604	7712	7431
7	7543	7444	7523	7628	7338
8	7536	7442	7544	7627	7355
9	7395	7318	7398		7227
10	7292	7183	7263		7206
11	7264	7115	7196		7172
12	7170	7001	7180		7290
13	7145	7041			
14	6976				
15	6923				

Bridle check ▲  
Single line lengths ►

A		B		C		D		K	
a1	330	b1	627	c1	344	d1	355	k1	639
a2	282	b2	588	c2	275	d2	288	k2	331
a3	310	b3	311	c3	292	d3	306	k3	535
a4	324	b4	318	c4	329	d4	338	k4	470
a5	353	b5	328	c5	343	d5	334	k5	539
a6	304	b6	277	c6	274	d6	263	k6	402
a7	319	b7	304	c7	288	d7	290	k7	414
a8	312	b8	302	c8	309	d8	289	k8	421
a9	1641	b9	1716	c9	1537			k9	382
a10	337	b10	1581	c10	1402			k10	371
a11	309	b11	2289	c11	2354			k11	257
a12	317	b12	348	c12	812			k12	375
a13	292	b13	388						
a14	374								
a15	321								
AM1	2370	BM1	2461	CM1	1628	DM1	1746	KM1	1207
AM2	2287	BM2	2697	CM2	1560	DM2	1674	KM2	815
AM3	2546	BM3	2409	CM3	1575	DM3	1692	KM3	974
AM4	2439	BM4	2294	CM4	1480	DM4	1581	KM4	869
AM5	1207	BM5	781	CM5	1023			KM5	851
AM6	2434	BM6	288	CR3	4315			KM6	921
AM7	239	BR3	4293	CR1	5356			KR1	3379
AR1	4631	BR4	5840	CR2	5234			KR2	2912
AR2	4250	BR1	4114					KR3	2841
AMU1	1335	BR2	4319					KL1	3096
AR3	3886								

Technical data

# Service Booklet

## Test Flight Record

Model

Size

Serial Number

Colour

Date of test flight

Company signature and stamp

## Service Record

**Service No 1:**

Date :

Stamp - Signature :

No flights :

Type of service :

**Service No 2:**

Date :

Stamp - Signature :

No flights :

Type of service :

**Service No 3:**

Date :

Stamp - Signature :

No flights

Type of service :

## Owner Record

Pilot No 1

First name

Family name

Street

City

Post code

Country

Telephone

Email:

## Owner Record

Pilot No 2

First name

Family name

Street

City

Post code

Country

Telephone

Email:

## Closing Words

Your paraglider is an advanced, stable glider that promises many hours of safe and enjoyable flying, provided you treat it with care and always respect the potential dangers of aviation.

Please always remember that flying can be dangerous and your safety depends on you. With careful treatment your wing should last for many years. It has been tested to current international airworthiness standards, and these represent the current knowledge concerning the safety of a paraglider. However, there are still many unknowns, for example the effective lifespan of the current generation of gliders and how much material material ageing is acceptable without affecting the airworthiness. There are natural forces that can seriously threaten your safety, regardless of the quality of construction or the condition of your glider. Your security is ultimately your responsibility. We strongly recommend that you fly carefully, adapt to the weather conditions and keep your safety in mind.

Flying in a club or a school with experienced pilots is highly recommended.

We recommend that you fly with a standard harness with back protection and a reserve parachute. Always use good equipment and an approved helmet.

See you in the sky!

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# Appendix

## EN line measurements

The tables below show the line measurements for the test wings, as measured by the test house during the certification procedure. These figures relate to the Bridle Check Tables in section 7.

**Size XS**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>K</b>
1	6882	6760	6863	6990	7300
2	6839	6732	6802	6930	7021
3	6784	6688	6762	6877	6852
4	6798	6691	6793	6902	6795
5	6705	6641	6702	6795	6585
6	6663	6583	6641	6734	6399
7	6580	6507	6567	6654	6328
8	6572	6520	6585	6656	6394
9	6450	6390	6455		6272
10	6358	6272	6339		6202
11	6332	6219	6283		6235
12	6256	6070	6230		6347
13	6234	6114			

**Size S**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>K</b>
1	7247	7143	7238	7357	7711
2	7204	7099	7171	7293	7430
3	7152	7050	7120	7238	7256
4	7162	7056	7153	7267	7196
5	7076	6984	7068	7169	6987
6	7029	6939	7007	7105	6852
7	6945	6859	6929	7025	6761
8	6942	6856	6949	7024	6782
9	6808	6750	6807		6658
10	6712	6626	6682		6631
11	6687	6561	6625		6608
12	6596				6711
13	6572				

## Size M

	A	B	C	D	K
1	7564	7445	7559	7686	8023
2	7516	7407	7493	7622	7727
3	7462	7360	7445	7565	7550
4	7478	7366	7479	7594	7485
5	7390	7291	7380	7488	7272
6	7345	7244	7316	7422	7122
7	7257	7153	7237	7339	7031
8	7251	7150	7254	7334	7053
9	7113	7047	7127		6927
10	7011	6917	6998		6899
11	6986	6859	6934		6878
12	6903				6990
13	6878				

## Size ML

	A	B	C	D	D
1	7862	7724	7862	7991	8358
2	7811	7680	7792	7922	8051
3	7758	7642	7741	7867	7867
4	7774	7652	7778	7900	7809
5	7679	7583	7680	7791	7588
6	7633	7533	7612	7721	7430
7	7543	7450	7532	7637	7340
8	7535	7445	7549	7638	7366
9	7393	7333	7406		7234
10	7290	7195	7268		7204
11	7263	7120	7202		7182
12	7162	6999	7188		7295
13	7136	7040			