

MANUAL



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CURE 2 OWNER'S MANUAL

Solo paraglider | EN / LTF C

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 CURE 2

The CURE 2 is a performance paraglider, certified LTF/EN-C. It is ideal for cross-country pilots looking for performance with low stress and is suitable for those stepping up from the EN-B class. It is not suitable for beginners. The CURE 2 has a new structure and profile, with 74 cells. It has a high top speed with excellent glide at speed and good stability in wind and turbulence. The new-design risers have a light and efficient C-steering system.

The CURE 2 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.

2. INTRODUCTION

Limitations

The CURE 2 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.

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 record 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 lines

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.

Harness

The paraglider has been 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

3. PREPARATION

Connecting the speedbar

Your paraglider 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. Connect the Brummel hooks on the speedbar to those on the risers' speed system, ensuring the lines run freely and are not caught around anything (reserve handle, risers or lines).

To adjust the speedbar length, sit in your harness and ask an assistant to hold the risers up in their in-flight position. The speedbar length should 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.

4. 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

The CURE 2 is a fast paraglider with a top speed of 60 km/h. This means it has a full 20km/h of acceleration on the speed bar (the 'delta'). This is almost double what you would find on a typical paraglider where 10-12 km/h is more typical.

Having more speed available on the speed-bar means that you need to manage the speed. You cannot simply stamp on the speed-bar and go to full speed without managing the pitch. The same goes for releasing the speed-bar.

The best technique to use when you accelerate is to speed up in two steps. Apply the first bar and the glider will surge forward slightly. If you hold first bar on for a few seconds then the glider will start to move back overhead. As this happens, press the second stage of the speed-bar. Then the surge forward will exactly counter the backwards movement of the wing. This careful pitch management improves the efficiency of the glide as well as keeping the glider stable overhead.

When you come off the bar it is also important to do so in a smooth and progressive way, to manage the pitch. It is possible for many paragliders to front-collapse if the bar is released too quickly.

Get fully used to using half speed-bar before you use the full speed-bar.

IMPORTANT:

1. Practise using the speed system in normal flying.
2. Be careful flying fast in rough or turbulent conditions as deflations are more likely to occur at speed. The speed increase is achieved by reducing the angle of attack, so the canopy has slightly more collapse tendency.
3. Remember that your glide deteriorates at higher speeds. Best glides are achieved when the risers are level and the brakes are off.

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

C-steering

The CURE 2 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. When you pull the C-riser, 33% of the force acts on the B-riser too. This setup reduces the steering pressure compared to acting on the B risers with 50%.

To fly with the C-steering system, keep hold of the brakes, and place your fingers either side of the C-riser, as shown in FIG. 1. You can apply pressure to the C-risers 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.

C-steering



FIG. 1: To use the C-steering system, place your fingers either side of the C-riser and grasp the C-handle. Applied pressure acts on the C- and B-risers in a 3:1 ratio.

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 around 50cm. 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 downward spiral is continued. Be careful to enter the spiral gradually, as too quick a brake application can cause a spin or an over-the-nose spiral.

If you increase the descent rate of the spiral to over 16m/s or initiate an over-the-nose spiral, the glider may require input to recover. In this case you should apply some outside brake and steer the glider out of the turn.

If you make a sudden brake application during the spiral entry the glider can yaw around and enter an over-the-nose spiral where the nose of the glider ends up pointing at the ground and it picks up speed very quickly. This technique is very similar to SAT entry technique, and like the SAT it is an aerobatic manoeuvre which is outside the normal safe flight envelope. Please do not practise this manoeuvre unless supervised by a qualified SIV instructor, as it can be dangerous.

Care should be taken when exiting from any spiral dive. To pull out of a steep spiral dive, release the applied brake gradually 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 (black out) AND 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.

5. 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. A pilot can reproduce the effect by taking hold of both the A-risers and pulling down sharply on them. 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.

6. 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.

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.

7. TECHNICAL DATA

Materials

The CURE 2 is made from the following quality materials:

Top surface CCB:	Porcher Skytex 38g/m ²
Top surface back:	Porcher Skytex 32g/m ²
Bottom surface LE:	Porcher Skytex 32g.m ²
Bottom surface:	Porcher Skytex 27g/m ²
Ribs:	Porcher Skytex 32g/m ² Hard
Nose reinforcing:	Ratioparts
Risers:	12mm Rivori black nylon webbing
Pulleys:	Spenger Ronstan P18
Top lines:	Edelrid 8000U series (unsheathed)
Middle lines:	Edelrid 8000U series (unsheathed)
Lower lines:	Edelrid 8000U series (unsheathed)
Brakes:	Liros DC60 & DC100

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

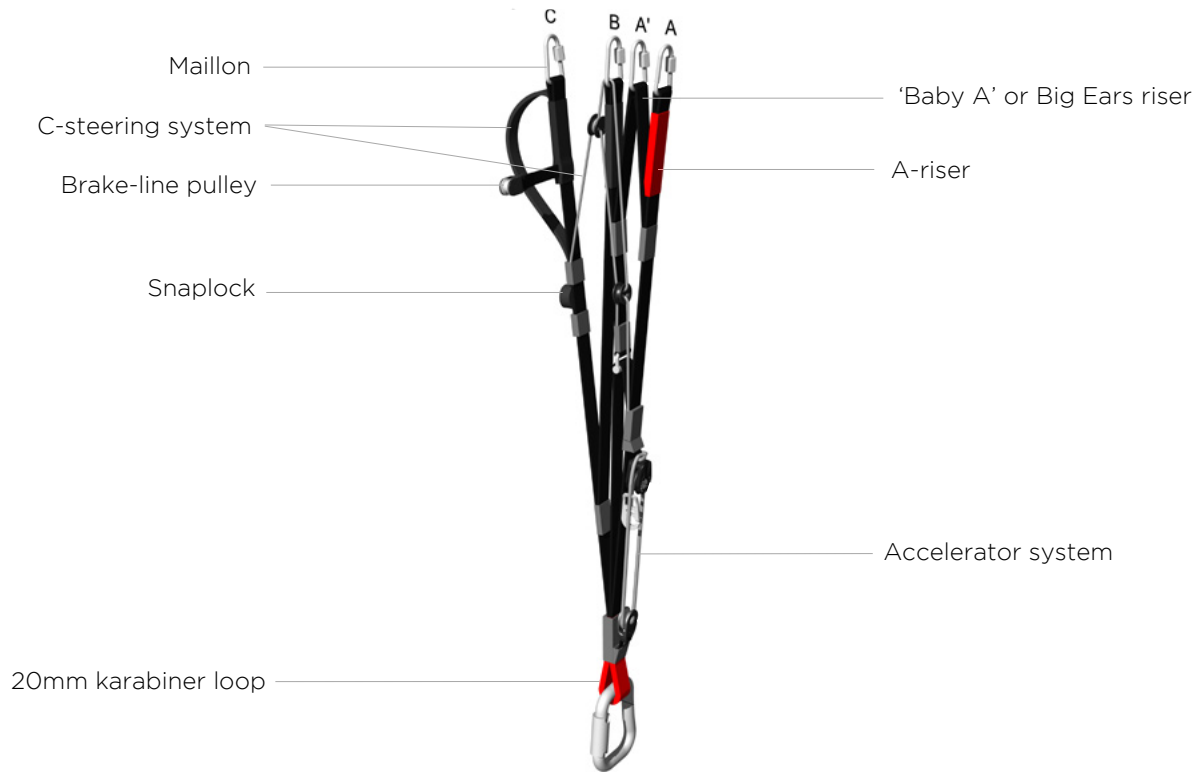
Specifications

	XS	S	M	ML	L
Linear scaling factor	0.93	0.97	1	1.04	1.08
Projected area (m ²)	16.9	18.1	19.4	20.8	22.6
Flat area (m ²)	20.0	21.5	23.0	24.6	26.8
Glider weight (kg)	4.6	4.8	5.0	5.3	5.6
Total line length (m)	218	234	250	268	292
Height (m)	7.0	7.2	7.46	7.7	8.1
Number of main lines	3/4/3				
Cells	74				
Flat aspect ratio	6.4				
Projected aspect ratio	4.8				
Root chord (m)	2.2	2.3	2.3	2.4	2.5
Flat span (m)	11.4	11.8	12.2	12.7	13.2
Projected span (m)	9.0	9.4	9.7	10.0	10.5
Certified weight range (kg)	56 - 75	65 - 85	75 - 95	85 - 107	98 - 122
Ideal weight range (kg)	64 - 73	73 - 83	83 - 93	93 - 105	105 - 120
Trim speed (km/h)	39				
Top speed (km/h)	60				
Min. sink (m/s)	1				
Best glide	11				
Certification	EN+LTF: C				

Overview of glider parts



Risers (S)



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

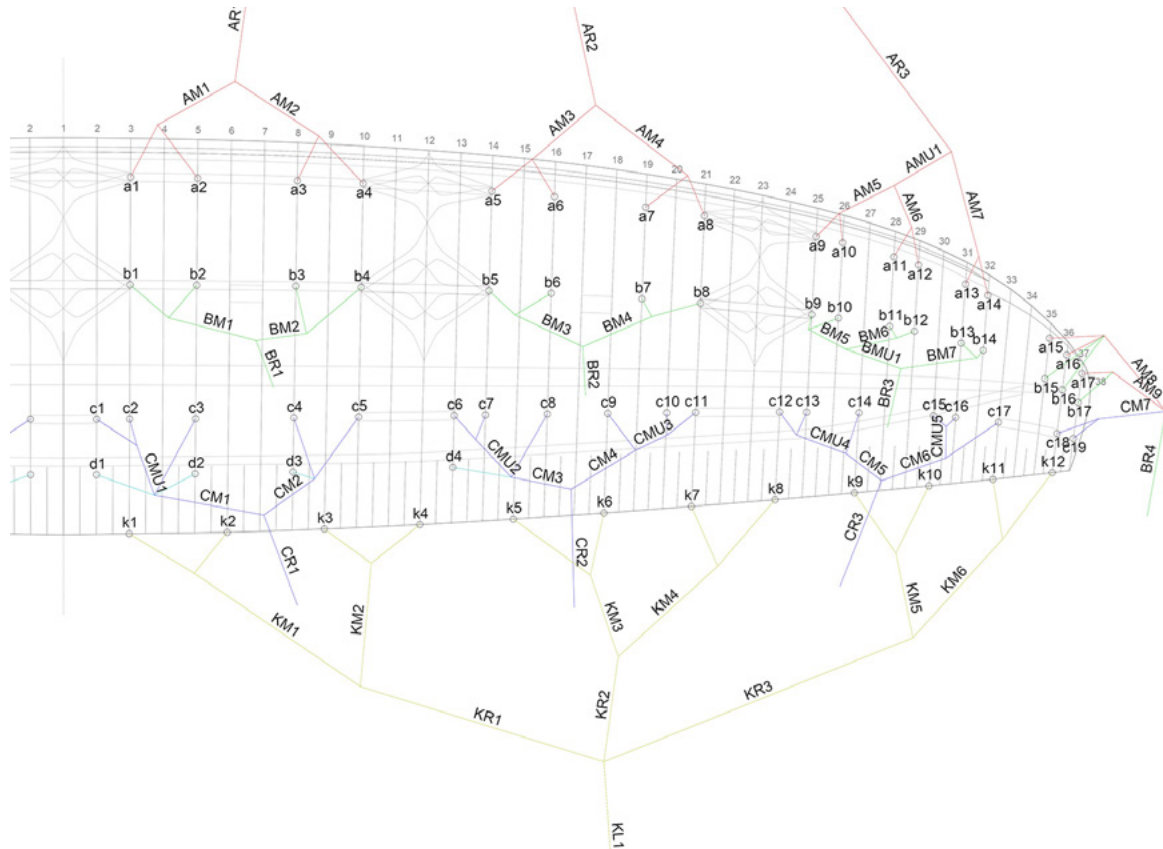
Brake and accelerator travel

Size	Riser length (mm)*	Accelerator travel (mm)	Brake range (cm)**
XS	460	130	55
S	500	150	58
M	500	150	60
ML	500	150	62
L	500	150	65

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

** Maximum symmetric control travel at maximum weight in flight

Line Plan



Line length checks

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

The lengths are measured from the lower surface of the canopy to the inside edge of the maillon connecting them to the risers.

During the EN certification process, the test team has checked 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 length between the manual and the sample may be no more than 10mm.

The actual measurements for the samples tested during EN certification can be found in the Appendix of this manual.

Size XS

	A	B	C	D	K
1	6960	6860	7057	7142	7327
2	6884	6806	6973	7010	7036
3	6846	6776	6901	6983	6853
4	6874	6778	6867	6947	6850
5	6780	6722	6912		6684
6	6709	6648	6868		6488
7	6649	6591	6799		6428
8	6650	6597	6725		6531
9	6526	6487	6688		6407
10	6482	6443	6693		6367
11	6413	6381	6729		6410
12	6402	6376	6629		6560
13	6364	6352	6556		
14	6357	6354	6470		
15	6194	6188	6427		
16	6137	6173	6432		
17	6113	6161	6478		
18			6293		
19			6285		

Bridle check ▲
Single line lengths ►

A		B		C		D		K	
a1	706	b1	978	c1	263	d1	922	k1	650
a2	631	b2	926	c2	179	d2	791	k2	360
a3	655	b3	660	c3	681	d3	693	k3	511
a4	684	b4	663	c4	576	d4	954	k4	509
a5	622	b5	652	c5	622			k5	547
a6	552	b6	579	c6	251			k6	352
a7	604	b7	590	c7	183			k7	378
a8	606	b8	597	c8	731			k8	482
a9	266	b9	237	c9	754			k9	408
a10	223	b10	194	c10	223			k10	369
a11	227	b11	197	c11	260			k11	201
a12	217	b12	193	c12	213			k12	352
a13	213	b13	164	c13	141			KM1	1153
a14	207	b14	167	c14	549			KM2	819
a15	342	b15	336	c15	159			KM3	919
a16	286	b16	322	c16	164			KM4	833
a17	219	b17	265	c17	528			KM5	535
AM1	1248	BM1	1685	c18	237			KM6	746
AM2	1186	BM2	1921	c19	579			KR1	2773
AM3	1473	BM3	1334	CMU1	579			KR2	2467
AM4	1359	BM4	1266	CM2	1164			KR3	2713
AM5	936	BM5	839	CMU2	628			KL1	2744
AM6	863	BM6	774	CMU3	541				
AM7	1372	BM7	1245	CMU4	500				
AM8	212	BR1	3711	CMU5	323				
AM9	258	BR2	4249	CM7	409				
AR1	4524	BMU1	474	CM1	1092				
AR2	4203	BR4	5157	CM3	819				
AMU1	551	BR3	4455	CM5	629				
AR3	4293			CM6	659				
				CR1	4648				
				CR2	4693				
				CR3	4807				
				CM4	759				

Size S

	A	B	C	D	K
1	7249	7145	7350	7442	7607
2	7171	7089	7263	7306	7306
3	7131	7059	7188	7278	7119
4	7162	7062	7154	7245	7117
5	7066	7006	7201		6946
6	6993	6930	7156		6744
7	6932	6873	7085		6681
8	6933	6879	7010		6789
9	6801	6763	6971		6660
10	6756	6718	6978		6618
11	6684	6654	7014		6662
12	6674	6649	6910		6817
13	6634	6624	6834		
14	6627	6626	6745		
15	6462	6456	6700		
16	6403	6440	6706		
17	6377	6427	6752		
18			6563		
19			6554		

Bridle check ▲
Single line lengths ►

A	B	C	D	K		
a1	732	b1	1014	c1 274	d1 963	k1 674
a2	655	b2	960	c2 187	d2 828	k2 374
a3	677	b3	684	c3 707	d3 723	k3 529
a4	709	b4	688	c4 597	d4 996	k4 528
a5	645	b5	676	c5 645		k5 567
a6	573	b6	601	c6 260		k6 366
a7	626	b7	612	c7 190		k7 392
a8	628	b8	619	c8 759		k8 501
a9	276	b9	246	c9 781		k9 424
a10	232	b10	202	c10 232		k10 383
a11	235	b11	205	c11 269		k11 209
a12	226	b12	201	c12 221		k12 365
a13	221	b13	170	c13 146		KM1 1193
a14	215	b14	173	c14 569		KM2 851
a15	355	b15	349	c15 165		KM3 952
a16	297	b16	334	c16 171		KM4 863
a17	227	b17	275	c17 547		KM5 554
AM1	1291	BM1	1745	c18 253		KM6 772
AM2	1229	BM2	1991	c19 245		KR1 2881
AM3	1525	BM3	1381	CMU1 600		KR2 2568
AM4	1409	BM4	1313	CM2 1206		KR3 2823
AM5	969	BM5	869	CMU2 650		KL1 2852
AM6	894	BM6	802	CMU3 561		
AM7	1421	BM7	1290	CMU4 518		
AM8	220	BR1	3860	CMU5 335		
AM9	267	BR2	4422	CM7 423		
AR1	4704	BMU1	490	CM1 1129		
AR2	4374	BR4	5364	CM3 847		
AMU1	570	BR3	4636	CM5 652		
AR3	4466			CM6 682		
				CR1 4832		
				CR2 4882		
				CR3 4999		
				CM4 786		

Size M

	A	B	C	D	K
1	7512	7400	7606	7712	7931
2	7432	7342	7517	7572	7620
3	7392	7313	7440	7543	7427
4	7424	7317	7407	7510	7426
5	7322	7257	7457		7249
6	7246	7178	7411		7040
7	7183	7120	7337		6975
8	7184	7127	7259		7087
9	7046	7003	7221		6954
10	7000	6956	7227		6910
11	6921	6884	7265		6956
12	6910	6879	7157		7116
13	6865	6854	7078		
14	6858	6856	6988		
15	6684	6678	6940		
16	6623	6662	6946		
17	6597	6649	6995		
18			6790		
19			6781		

Bridle check ▲
Single line lengths ►

A		B		C		D		K	
a1	757	b1	1049	c1	283	d1	1004	k1	699
a2	678	b2	993	c2	194	d2	865	k2	389
a3	701	b3	707	c3	732	d3	756	k3	547
a4	734	b4	712	c4	618	d4	1039	k4	547
a5	668	b5	700	c5	669			k5	587
a6	593	b6	622	c6	270			k6	379
a7	648	b7	633	c7	197			k7	406
a8	650	b8	641	c8	786			k8	519
a9	285	b9	255	c9	809			k9	439
a10	240	b10	209	c10	240			k10	396
a11	244	b11	212	c11	279			k11	217
a12	234	b12	208	c12	229			k12	378
a13	229	b13	176	c13	151			KM1	1233
a14	223	b14	179	c14	590			KM2	882
a15	367	b15	361	c15	171			KM3	985
a16	307	b16	346	c16	177			KM4	893
a17	235	b17	285	c17	567			KM5	573
AM1	1335	BM1	1803	c18	262			KM6	798
AM2	1272	BM2	2060	c19	254			KR1	2989
AM3	1577	BM3	1427	CMU1	620			KR2	2667
AM4	1457	BM4	1358	CM2	1248			KR3	2932
AM5	1002	BM5	899	CMU2	673			KL1	2958
AM6	924	BM6	829	CMU3	580				
AM7	1470	BM7	1335	CMU4	535				
AM8	227	BR1	4010	CMU5	346				
AM9	276	BR2	4593	CM7	438				
AR1	4883	BMU1	507	CM1	1166				
AR2	4543	BR4	5567	CM3	875				
AMU1	589	BR3	4815	CM5	674				
AR3	4640			CM6	705				
				CR1	5022				
				CR2	5076				
				CR3	5199				
				CM4	814				

Size ML

	A	B	C	D	K
1	7754	7639	7862	7961	8176
2	7670	7581	7769	7816	7856
3	7630	7552	7690	7791	7657
4	7663	7556	7656	7754	7657
5	7564	7499	7709		7476
6	7485	7418	7659		7261
7	7422	7358	7585		7194
8	7423	7364	7503		7311
9	7281	7241	7464		7173
10	7232	7193	7470		7128
11	7157	7123	7509		7174
12	7145	7118	7400		7339
13	7104	7092	7319		
14	7096	7094	7225		
15	6919	6912	7175		
16	6856	6896	7182		
17	6828	6881	7232		
18			7027		
19			7018		

Bridle check ▲
Single line lengths ►

A	B	C	D	K		
a1	784	b1	1085	c1 294	d1 1032	k1 723
a2	701	b2	1029	c2 201	d2 888	k2 404
a3	725	b3	732	c3 759	d3 776	k3 566
a4	759	b4	737	c4 639	d4 1067	k4 567
a5	691	b5	724	c5 693		k5 607
a6	613	b6	644	c6 279		k6 393
a7	671	b7	656	c7 206		k7 420
a8	673	b8	663	c8 814		k8 538
a9	296	b9	264	c9 838		k9 455
a10	248	b10	217	c10 249		k10 411
a11	253	b11	220	c11 289		k11 225
a12	242	b12	216	c12 237		k12 391
a13	238	b13	183	c13 157		KM1 1275
a14	231	b14	186	c14 611		KM2 914
a15	381	b15	374	c15 177		KM3 1019
a16	319	b16	359	c16 184		KM4 925
a17	244	b17	295	c17 587		KM5 594
AM1	1380	BM1	1863	c18 271		KM6 826
AM2	1316	BM2	2131	c19 263		KR1 3101
AM3	1631	BM3	1477	CMU1 642		KR2 2773
AM4	1508	BM4	1405	CM2 1293		KR3 3047
AM5	1036	BM5	930	CMU2 696		KL1 3070
AM6	956	BM6	857	CMU3 600		
AM7	1521	BM7	1380	CMU4 554		
AM8	235	BR1	4165	CMU5 358		
AM9	285	BR2	4771	CM7 453		
AR1	5068	BMU1	524	CM1 1206		
AR2	4720	BR4	5780	CM3 905		
AMU1	610	BR3	5001	CM5 698		
AR3	4819			CM6 730		
				CR1 5205		
				CR2 5262		
				CR3 5391		
				CM4 842		

Size L

	A	B	C	D	K
1	8088	7967	8198	8302	8552
2	8002	7908	8103	8152	8219
3	7962	7878	8020	8126	8014
4	7997	7884	7986	8091	8016
5	7892	7822	8042		7825
6	7810	7738	7992		7601
7	7744	7676	7914		7533
8	7746	7684	7830		7656
9	7597	7556	7788		7509
10	7548	7506	7795		7462
11	7468	7433	7836		7510
12	7456	7429	7723		7683
13	7412	7401	7639		
14	7405	7403	7540		
15	7221	7214	7490		
16	7155	7196	7495		
17	7125	7181	7547		
18			7333		
19			7323		

Bridle check ▲
Single line lengths ►

A	B	C	D	K		
a1	818	b1	1132	c1 307	d1 1077	k1 755
a2	733	b2	1075	c2 212	d2 928	k2 423
a3	757	b3	763	c3 793	d3 809	k3 590
a4	793	b4	770	c4 667	d4 1114	k4 593
a5	722	b5	756	c5 724		k5 634
a6	641	b6	673	c6 292		k6 411
a7	700	b7	684	c7 215		k7 438
a8	703	b8	693	c8 851		k8 562
a9	308	b9	276	c9 874		k9 475
a10	260	b10	227	c10 260		k10 429
a11	264	b11	230	c11 302		k11 235
a12	253	b12	227	c12 248		k12 409
a13	248	b13	192	c13 165		KM1 1329
a14	242	b14	195	c14 638		KM2 957
a15	398	b15	391	c15 187		KM3 1062
a16	333	b16	374	c16 192		KM4 967
a17	255	b17	309	c17 613		KM5 619
AM1	1438	BM1	1942	c18 284		KM6 861
AM2	1374	BM2	2224	c19 275		KR1 3247
AM3	1700	BM3	1539	CMU1 669		KR2 2908
AM4	1573	BM4	1466	CM2 1350		KR3 3194
AM5	1081	BM5	970	CMU2 726		KL1 3214
AM6	997	BM6	894	CMU3 626		
AM7	1586	BM7	1440	CMU4 578		
AM8	246	BR1	4367	CMU5 374		
AM9	297	BR2	5000	CM7 472		
AR1	5310	BMU1	547	CM1 1257		
AR2	4948	BR4	6054	CM3 944		
AMU1	636	BR3	5241	CM5 728		
AR3	5052			CM6 761		
				CR1 5450		
				CR2 5513		
				CR3 5649		
				CM4 879		

8. 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:

9. 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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10. 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 M

	A	B	C	D	K
1	7518	7398	7611	7722	7928
2	7438	7350	7525	7581	7615
3	7394	7307	7450	7551	7428
4	7430	7313	7413	7518	7428
5	7322	7258	7465		7258
6	7248	7178	7411		7051
7	7190	7117	7342		6986
8	7190	7125	7264		7096
9	7044	7006	7226		6949
10	6999	6959	7232		6898
11	6928	6888	7270		6954
12	6918	6886	7142		7110
13	6871	6857	7066		
14	6860	6858	6991		
15	6686	6677	6940		
16	6625	6663	6948		
17	6597	6646	6995		
18			6786		
19			6777		