MANUAL

EPIC FREESTYLE

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BRUCE GOLDSMITH DESIGN

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EPIC FREESTYLE OWNER'S MANUAL

Solo paraglider | EN / LTF B

Welcome

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 EPIC FREESTYLE!

The EPIC FREESTYLE is a safe, forgiving and energetic paraglider for pilots who want to learn glider-handling skills, freestyle and acro manoeuvres. Like the original EPIC, it is also a good all-round wing for talented beginners after traning or a second glider, for thermalling and first XCs.

This manual contains information and advice about your paraglider. For further information or parts, please contact your nearest BGD dealer or BGD directly.

Introduction

Limitations

The EPIC FREESTYLE is a solo paraglider. It is not designed for flying tandem.

It is suitable for towing and for paramotor use. A paramotor riser set with trimmers can be purchased from the BGD online shop. We recommended that a professional should mount the new riser set.

For your safety, do not:

1. Fly outside the certified weight range
2. Change the length of risers or lines in order to adjust trim speed
3. Fly in rain or snow
4. Perform spiral dives with big ears or asymmetric collapses. The high G loading on fewer lines could overload and break the lines.

Test flight and Warranty

Information about the BGD warranty can be found on the Warranty page of our website. In order to benefit from it, you must complete the warranty registration form.

It is your dealer´s responsibility to test fly the paraglider before you receive it, to check the trim settings are correct. The waranty may be void if the test flight has not been completed by the dealer.

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Weight Range

Each 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.

The higher in the weight range you fly, the more dynamic and agile the glider will be. It will also be slightly faster.

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 making 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.

Harness Dimensions

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 / Pre-Flight Checks

Connecting the speedbar

The EPIC FREESTYLE comes with accelerator risers and can be flown with or without a speedbar attached.
When attaching the speedbar, follow the instructions in your harness manual to ensure correct routing of the 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 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. Make sure it is the same on both sides.

Preparation on launch

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. 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, with the bottom surface facing upwards. Draw out the wing tips to each side so that the leading edge openings form a semi-circular shape at the uphill / downwind end of the take-off area. The harness should be drawn away from the canopy at the downhill / upwind end until the suspension lines are just tight.

Pre-flight inspection

Your paraglider is simple to inspect and maintain but a 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 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 are to help you get the best from your wing.

Launch

The EPIC FREESTYLE is easy to inflate in light or stronger winds and will quickly rise overhead to the flying position. It can be launched using either forward (best for light winds) or reverse (best for stronger winds) launch techniques.

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 identify) and begin your launch run, keeping gentle pressure on the A-risers. As soon as the canopy starts to rise off the ground, apply pressure to all the risers through your 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 though 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 bar before you use the full speedbar travel.

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.

3. 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 in order to obtain the correct riser lengths when accelerated. The amount of slack in this line varies with wing size and determines the B riser length when fully accelerated. The length of this line can be adjusted where it is looped on the maillon of the B-riser. It can also be replaced if necessary.

The component parts of the speed system should be regularly checked for signs of wear, and to ensure the system works smoothly.

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.

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 though your own wake, which can cause a collapse.

Do not perform spiral dives with big ears or asymmetric collapses. The high G loading on fewer lines could overload and break the lines.

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 deep stall. 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. During the early stages of a front collapse the pilot should apply the brakes 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 Collapse

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 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, 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 try 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 glider well beyond the normal flight envelope, but these 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.

Maintenance

Packing

The paraglider can either be packed in the classic way or the Concertina method can be used. Concertina packing helps to prolong the life of the paraglider, therefore BGD recommends using a Concertina packing bag.

With a standard inner pack
Sort the lines and place them on the spread-out canopy. Fold the paraglider canopy in sections from the stabilo towards the centre. Then roll/fold the two halves together from the trailing edge towards the leading edge and push the air remaining out of the canopy. Take care not to fold or bend the plastic reinforcements in the leading edge.

With a concertina pack sack
Place the paraglider in a bundle on the concertina bag. Fold the trailing edge frst, cell-to-cell, and secure it in the concertina pack sack with the strap. Take care not to drag the leading edge over the ground during this process. Then fold the leading edge cell-to-cell, so that all the plastics are next to each other. Turn the glider on its side and close the second strap of the Concertina Bag around the glider. Now squeeze the rest of the air out of the canopy and close the zip. Finally, fold the bag into three pieces so that the leading edgeplastics, are not bent.

Storage and Care

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

We recommended storing your glider loosely packed, in a dry place out of direct sunlight. Avoid extremes of temperature – do not leave it for long periods in a hot car in summer, or let it 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 glider. Once you have finished flying, put your wing away. Do not leave it in strong sunshine unnecessarily.

Never drag or slide the glider over concrete or other hard surface as this can cause abrasion damage to the sail.

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 fresh water and carefully dry it.

Small Repairs

Small tears (up to around 10cm) in the top or bottom surface (not normally the ribs) of a canopy can be repaired with a patch of self-adhesive ripstop nylon, providing they are not in high-stress areas. If you have any doubt about the airworthiness of your glider please contact your dealer or BGD directly.

Left: loops on maillons; Right: loops released

Lines

Releasing loops on the rear lines
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 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 one 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.

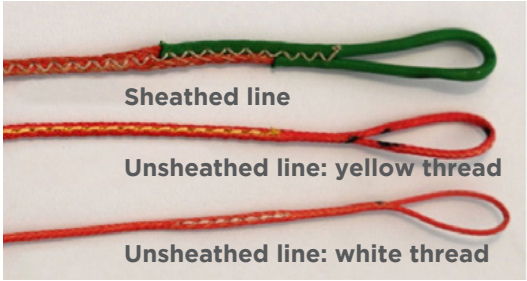
Mounting Replacement Lines
If you need to replace lines on your glider, we recommended that a professional should mount the new lines. The airworthiness of your glider, and your safety, depends on it being done correctly.

You can identify the line(s) you need to replace from the line layout diagram for your wing. Download the latest version here: https://flybgd.com/lines

Replacement lines can be ordered from the Accessories section of www.flybgd.com. Check that the lines you have received correspond with the line plan and that it matches your glider.

The quickest way to remove the old lines is to cut them off. However, don't cut the old lines off if you have not received the new ones or you may end up not being able to fly! Sometimes only a part lineset is needed (eg excluding top lines or brakes) so take care not to cut any lines that need to be retained.

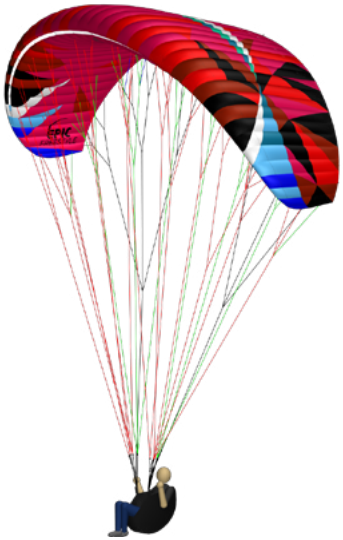
Correct alignment of lines
It is important that the lines are mounted the correct way up.

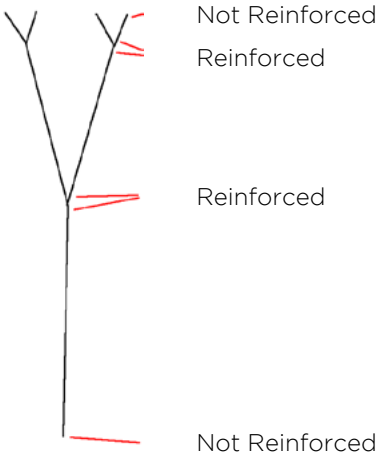


Sheathed lines have no internal reinforcing. They can be mounted either way up

Microlines have internal reinforcing at one end, which is marked with yellow thread.

The non-reinforced end of a microline is marked with white thread.





On unsheathed lines, the reinforced end (yellow thread) is the line junction end. The non-reinforced end attaches to the glider attachment point or maillon.

Alignment of attachment points

Lines should be placed symmetrically on the tab, except where the tab is inclined. The A tabs are inclined backwards on all BGD gliders to align with the direction of pull of the line. So when assembling the lines, the A tab should be angled back, and the B, C and D tabs should be perpendicular to the undersurface of the wing.

Larksfoot attachments

All lines are connected to other lines or to tabs with lark's foot junctions. Make sure that these are joined correctly with interlocked junctions and not looped junctions.

Interlocked junction – correct

Looped junction – incorrect

Interlocked junction – correct

Looped junction – incorrect

After rigging the wing, always do a full dimensional check of the lines, and inflate it to ensure that everything is correct before flying.

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 lines and repairs which we have produced and fitted or repaired by an approved service centre.

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.

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Technical Data

Materials

The EPIC FREESTYLE is made from the following quality materials:

Top surface:	Porcher Skytex 38g/m^2
Bottom surface:	Porcher Skytex 38g/m^2
Internal structure:	Porcher Skytex hard finish 40g/m^2
Nose reinforcing:	Plastic wire 2.3mm and 2.7 mm
Risers:	13 mm black Kevlar/nylon webbing
Top lines:	Liros DC
Middle lines:	Liros DSL – sheathed Dyneema
Lower lines:	Liros TSL 190/280
Brakes:	Liros DSL70

Spare parts can be obtained directly from BGD or though our network of registered BGD repair shops. Click the 'location' icon at www.flybgd.com

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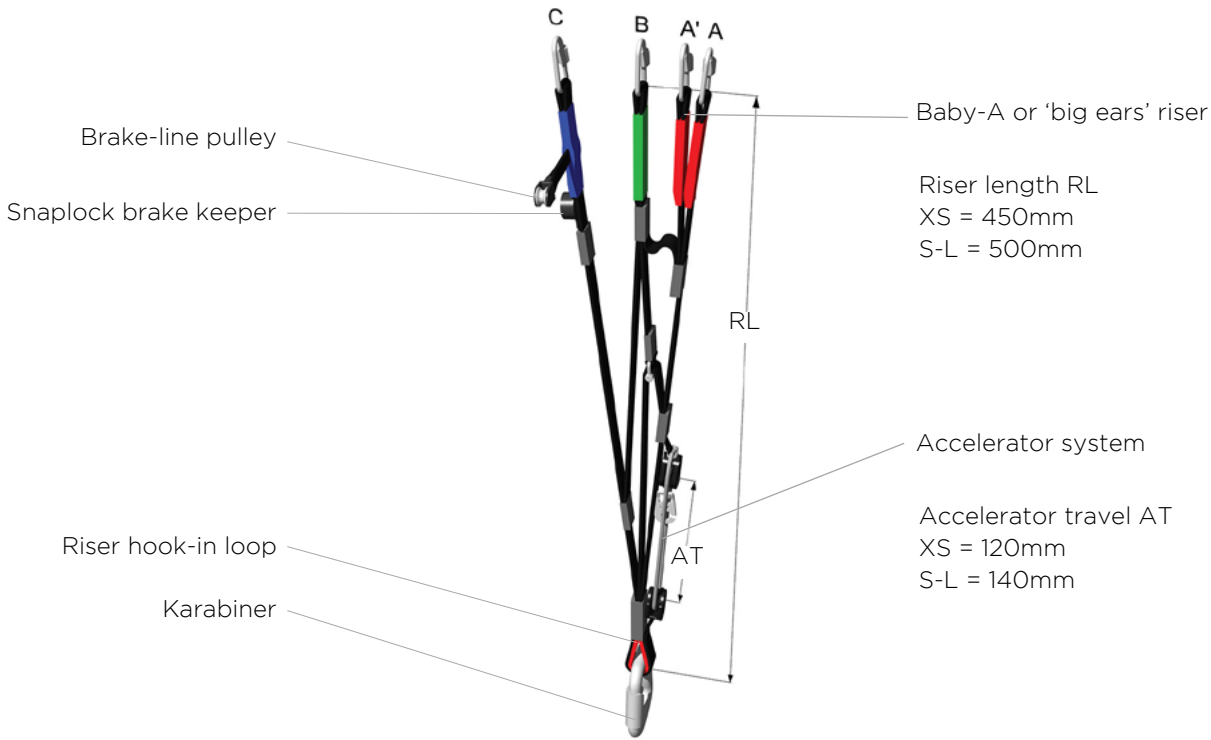
Specifications

	XS	S	M	ML	L
Linear scaling factor	0.96	1	1.04	1.08	1.12
Projected area (m^2)	17.86	19.56	21.24	22.81	24.54
Flat area (m^2)	21.00	23.00	24.97	26.83	28.85
Glider weight (kg)	4.2	4.6	4.9	5.1	5.4
Total line length (m)	210	230	250	268	289
Height (m)	6.7	6.979	7.3	7.5	7.8
Number of main lines A/B/C	3/4/3	3/4/3	3/4/3	3/4/3	3/4/3
Cells	42/80	42/80	42/80	42/80	42/80
Flat aspect ratio	5.01	5.01	5.01	5.01	5.01
Projected aspect ratio	3.602	3.602	3.602	3.602	3.602
Root chord (m)	2.58	2.70	2.81	2.91	3.02
Flat span (m)	10.26	10.73	11.18	11.59	12.02
Projected span (m)	8.02	8.39	8.75	9.07	9.40
In-flight weight range (kg)	50-65	60-80	75-95	90-110	105-125
Trim speed (km/h)	38	38	38	38	38
Top speed (km/h)	50	50	50	50	50
Min sink (m/s)	1	1	1	1	1
Best glide	9	9	9	9	9
Certification	EN/LTF-B	EN/LTF-B	EN/LTF-B	EN/LTF-B	EN/LTF-B

Overview of Glider Parts

BRUCE GOLDSMITH DESIGN

Risers



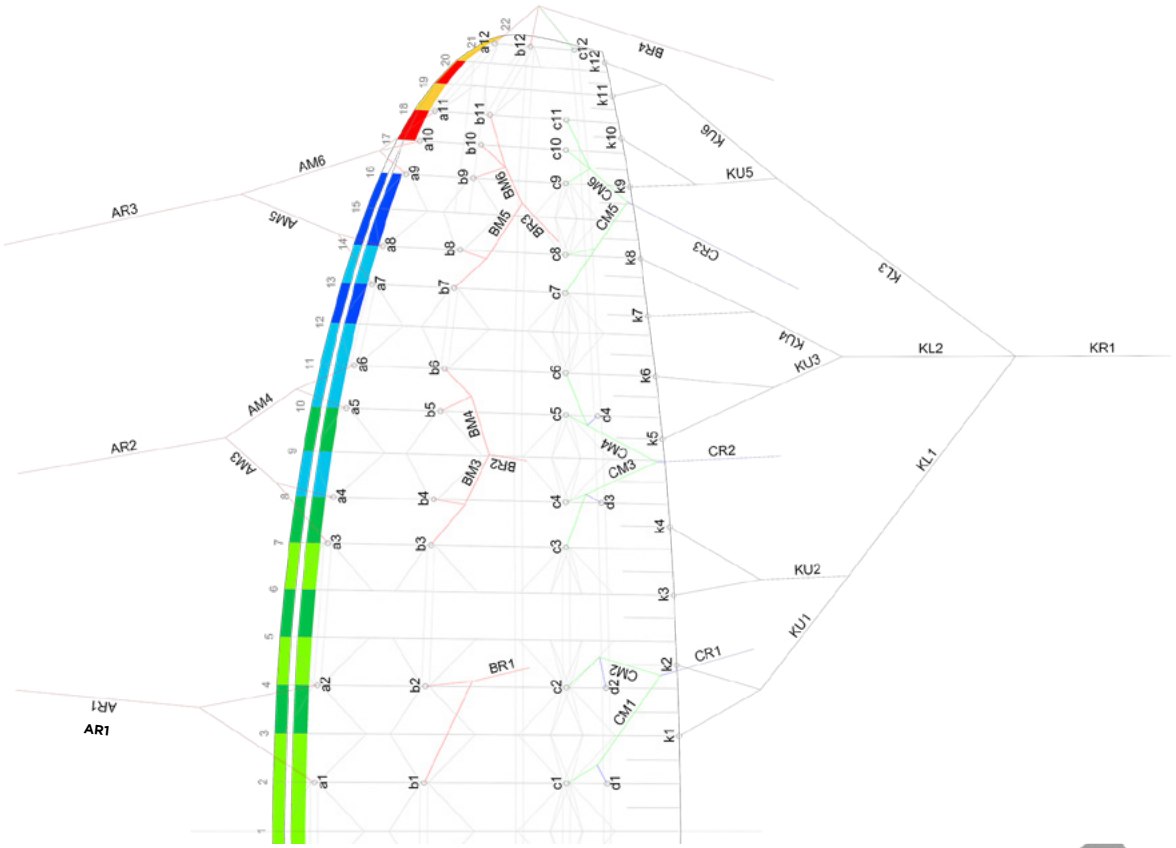
The riser set does not have trimmers, or any other adjustable or removable device.

BRUCE GOLDSMITH DESIGN

Brake Ranges and Accelerator Travel

Size	Accelerator range	Brake range min weight	Brake range Max weight
XS	12cm	> 55cm	> 55cm
S	14cm	> 55cm	> 60cm
M	14cm	> 55cm	> 60cm
ML	14cm	> 60cm	> 65cm
L	14cm	> 65cm	> 65cm

Line Plan


AR1
AR2
AR3
AM3
AM4
AM5
AM6
BR1
BR2
BR3
BR4
BM3
BM4
BM5
BM6
CM1
CM2
CM3
CM4
CM5
CM6
CR1
CR2
CR3
KU1
KU2
KU3
KU4
KU5
KU6
KL1
KL2
KL3
KR1

Line Lengths

The latest line lengths and diagrams can be downloaded from https://flybgd.com/lines.

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.

BRUCE GOLDSMITH DESIGN

Line length checks

Size XS

	A	B	C	D	K
1	6604	6534	6646	6713	6747
2	6572	6501	6615	6679	6616
3	6581	6515	6627	6653	6526
4	6549	6481	6585	6639	6516
5	6544	6484	6582		6403
6	6581	6529	6625		6323
7	6453	6447	6555		6298
8	6400	6386	6489		6352
9	6313	6316	6417		6257
10	6235	6268	6389		6216
11	6232	6277	6394		6152
12	5905	5908	5987		6100

Size S

	A	B	C	D	K
1	6942	6862	6982	7054	7038
2	6910	6829	6951	7021	6902
3	6921	6848	6956	6988	6810
4	6887	6813	6916	6973	6801
5	6881	6816	6913		6684
6	6920	6863	6955		6600
7	6785	6766	6885		6575
8	6729	6702	6816		6631
9	6637	6627	6741		6531
10	6555	6576	6711		6487
11	6550	6586	6717		6419
12	6200	6205	6291		6364

Size M

	A	B	C	D	K
1	7207	7119	7260	7330	7357
2	7174	7085	7229	7296	7217
3	7189	7108	7238	7265	7122
4	7154	7071	7193	7251	7114
5	7149	7076	7191		6994
6	7189	7125	7238		6907
7	7049	7024	7163		6881
8	6991	6958	7091		6941
9	6894	6880	7013		6835
10	6809	6827	6982		6789
11	6804	6837	6988		6719
12	6440	6439	6522		6661

Size ML

	A	B	C	D	K
1	7473	7388	7528	7604	7600
2	7440	7354	7497	7570	7456
3	7457	7384	7516	7546	7359
4	7421	7347	7469	7532	7352
5	7417	7352	7468		7229
6	7460	7403	7516		7139
7	7317	7308	7438		7112
8	7257	7240	7363		7174
9	7159	7160	7282		7065
10	7072	7106	7250		7017
11	7068	7117	7256		6943
12	6726	6729	6818		6883

Size L

	A	B	C	D	K
1	7745	7660	7800	7875	7921
2	7711	7626	7768	7841	7774
3	7729	7653	7781	7810	7675
4	7692	7615	7733	7797	7669
5	7688	7621	7732		7542
6	7732	7674	7783		7448
7	7583	7567	7702		7422
8	7520	7495	7625		7486
9	7417	7412	7541		7371
10	7326	7355	7508		7321
11	7320	7366	7514		7245
12	6938	6938	7026		7182

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 and include the risers.

BRUCE GOLDSMITH DESIGN

Individual Line Lengths

Size XS

Rib	A-lines			B-lines			C-lines			D-lines	Rib	Brakes			
2	1355	4723		1344	4667		678	759	**4702**	747	r 3	898	1151		
4	1322			1310			659	747		725	r 4.5	767			
7	562			555			672				r 6	719	1109	2000	
8	529	1200	4295	521	1070	4370	630	1186	**4262**	699	r 7.5	709			
10	483			472			594			653	r 9.5	707			
11	521	1241		517	1122		637	1219			r 11	626	839	2159	2699
13	542			535			543				r 12.5	587			
14	489	1889		474	1066		477	909			r 14	641	853		
16	594		3502	573		4326	581		**4597**		r 16	462	656		
17	517	1697		526	896		553	732			r 17.5	421			
18	513			535			558				r 19	321	692	2440	
21	1109			1112	**4286**		1191				r 20.5	269			

red has loop on maillon

BRUCE GOLDSMITH DESIGN

Individual Line Lengths

Size S

Rib	A-lines			B-lines			C-lines			D-lines	Rib	Brakes			
2	1419	4980		1406	4917		707	800	**4953**	781	r 3	940	1204		
4	1387			1373			687	789		759	r 4.5	804			
7	589			581			700				r 6	752	1164	2116	
8	555	1257	4532	546	1120	4608	660	1278	**4456**	734	r 7.5	743			
10	506			494			623			685	r 9.5	740			
11	545	1300		541	1175		665	1312			r 11	656	878	2288	2778
13	568			560			567				r 12.5	615			
14	512	1979		496	1116		498	950			r 14	671	894		
16	623		3700	600		4553	608		**4846**		r 16	484	687		
17	541	1776		549	937		578	765			r 17.5	440			
18	536			559			584				r 19	336	723	2582	
21	1157			1162	**4508**		1248				r 20.5	281			

red has loop on maillon

BRUCE GOLDSMITH DESIGN

Individual Line Lengths

Size M

Rib	A-lines			B-lines			C-lines			D-lines	Rib	Brakes			
2	1478	5201		1464	5131		743	824	**5176**	815	r 3	979	1253		
4	1445			1430			722	813		792	r 4.5	839			
7	613			605			733				r 6	782	1215	2223	
8	578	1309	4739	569	1165	4813	688	1292	**4696**	762	r 7.5	774			
10	527			514			649			711	r 9.5	771			
11	568	1355		563	1224		696	1329			r 11	683	914	2408	2902
13	592			583			591				r 12.5	640			
14	534	2061		516	1162		519	989			r 14	699	932		
16	648		3873	625		4757	633		**5066**		r 16	504	715		
17	563	1850		572	976		602	797			r 17.5	458			
18	558			582			608				r 19	350	753	2713	
21	1216			1215	**4714**		1298				r 20.5	293			

red has loop on maillon

BRUCE GOLDSMITH DESIGN

Individual Line Lengths

Size ML

Rib	A-lines			B-lines			C-lines			D-lines	Rib	Brakes			
2	1530	5405		1517	5337		766	856	**5389**	844	r 3	1015	1298		
4	1497			1483			745	846		820	r 4.5	871			
7	635			627			759				r 6	810	1262	2321	
8	599	1355	4929	590	1208	5015	712	1340	**4900**	791	r 7.5	803			
10	546			533			672			738	r 9.5	799			
11	589	1404		584	1270		720	1379			r 11	709	947	2517	2966
13	613			604			614				r 12.5	663			
14	553	2135		536	1205		539	1027			r 14	725	966		
16	671		4036	648		4967	657		**5280**		r 16	523	742		
17	584	1919		594	1013		625	828			r 17.5	475			
18	580			605			631				r 19	363	780	2834	
21	1254			1257	**4942**		1346				r 20.5	303			

red has loop on maillon

BRUCE GOLDSMITH DESIGN

Individual Line Lengths

Size L

Rib	A-lines			B-lines			C-lines			D-lines
2	1588	5629		1573	5563		799	885	**5589**	876
4	1554			1539			777	875		851
7	659			650			788			
8	621	1406	5137	612	1252	5227	740	1388	**5088**	819
10	566			552			698			764
11	610	1457		606	1317		748	1429		
13	636			626			635			
14	574	2215		555	1249		558	1063		
16	697		4208	672		5169	680		**5487**	
17	605	1989		615	1049		647	857		
18	600			625			654			
21	1307			1306	**5111**		1395			

Rib	Brakes			
r 3	1052	1345		
r 4.5	905			
r 6	839	1311	2424	
r 7.5	833			
r 9.5	828			
r 11	735	982	2632	3100
r 12.5	688			
r 14	752	1002		
r 16	542	769		
r 17.5	492			
r 19	377	808	2960	
r 20.5	314			

red = loop on maillon

BRUCE GOLDSMITH DESIGN

Service Booklet

Test Flight Record

Model	
Size	
Serial Number	
Colour	
Date of test flight	
Company signature and stamp	

BRUCE GOLDSMITH DESIGN

Services Record

Service No 1

Date

Nº flights

Type of Service

Notes

Stamp / Signature

Service No 2

Date

Nº flights

Type of Service

Notes

Stamp / Signature

Service No 3

Date

Nº flights

Type of Service

Notes

Stamp / Signature

Service No 4

Date

Nº flights

Type of Service

Notes

Stamp / Signature

Service No 5

Date

Nº flights

Type of Service

Notes

Stamp / Signature

Service No 6

Date

Nº flights

Type of Service

Notes

Stamp / Signature

BRUCE GOLDSMITH DESIGN

Owners Record

Pilot No 1

First name	
Family name	
Street	
City	
Post code	
Country	
Telephone	
Email:	

BRUCE GOLDSMITH DESIGN

Pilot No 2

First name	
Family name	
Street	
City	
Post code	
Country	
Telephone	
Email:	

BRUCE GOLDSMITH DESIGN

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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