MANUAL

DIVA 2

Version 1.7 November 2024

BRUCE GOLDSMITH DESIGN

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BRUCE GOLDSMITH DESIGN

DIVA 2 OWNER'S MANUAL

Solo paraglider | EN D

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 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 DIVA 2
The DIVA 2 is a high performance paraglider designed for XC flying and competitions. It is a very fast and stable two-liner with exceptional glide performance. Although it is relatively easy to fly, it is not suitable for begonner or intermediate pilots – it should only be flown by very experienced pilots.

As with all aircraft, regular maintenance and checks are mandatory. Proper care will ensure your new glider keeps its original safety and performance and lasts for many years.

This manual contains information on how to look after your paraglider, as well as techniques to get the best out of it in the air. If you ever need replacement parts or further information, please do not hesitate to contact your nearest BGD dealer or contact BGD directly.

Quick Summary

The DIVA 2 is a 2-liner design. The following things should be noted in particular:

1. You should **launch** using the main A risers (marked red) without the separate AR3 lines. The risers should be grasped above the low-friction ring.

2. For a **rapid descent** you should **spiral dive**, or perform Big Ears using the outside B-line (CR3). B-Line stall is not appropriate for two-liners.

3. The DIVA 2 is a high-performance glider and should be treated with care. We do not recommend performing SIV manoeuvres on the DIVA 2.

Introduction

Limitations

The DIVA 2 is a solo 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.

The DIVA 2 is not recommended for paramotor use.

Size	S	M	ML	L
EN certification	D	D	D	D
Suitable for towing?	Yes			
Suitable for paramotor?	No			

This paraglider should not:

- Be flown outside the certified weight range
- Have its trim speed adjusted by changing the length of risers or lines
- Be flown in rain or snow

- 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. To benefit from the warranty, you must complete the warranty registration form on the website (www.flybgd.com)

It is your dealer's responsibility to test fly a new paraglider before you receive it in order to verify the trim settings. The waranty may be void if the test flight has not been completed.

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, higher speed or you 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.

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 has a Seat board width of 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

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. Unfold the glider with the bottom surface facing upwards and the leading edge downwind. Open the wingtips to each side so that the leading edge openings form a semicircular shape, with the trailing edge slightly drawn together to form an arc. The harness should be drawn away from the trailing edge 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.

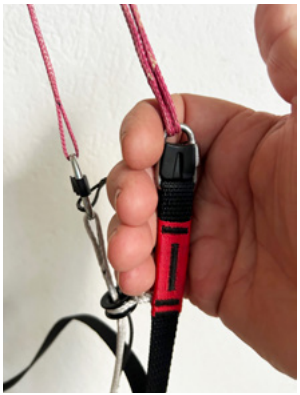
Your paraglider is now ready for flight.

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 should be inflated using the main A risers only, without the AR3 line, as shown in the image. The main A-riser is marked with red material. Grasp this above the low-friction ring. The glider will rise smoothly overhead to the flying position and can be launched 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 a main A-riser in each hand and begin your launch run putting pressure gently and smoothly on the A-risers. As soon as the canopy starts to rise off the ground, let go of the A-risers but maintain pressure on the risers 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 main 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.

Turning

The glider 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 turn will be far more efficient 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 weightshifting 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 DIVA 2 comes with accelerator risers and can be flown with or without a speed bar attached. The speed bar should be connected and adjusted following the instructions in your harness manual to ensure correct routing of the lines.

Attaching the speed system in a fully-faired harness

When attaching the speed system in a fully-faired harness, make sure that the new line is attached in a similar way to the old line that you removed. It should be looped around both pieces of webbing holding the pulley.

Correct: Speed bar looped around both sections of webbing

Incorrect: Speed bar looped around one piece of webbing only. High risk of breaking!

If it is looped around a single piece of webbing only, the pulley is likely to break. A pulley which breaks for this reason will not be covered by the BGD warranty.

The speed bar should be set to such a length that the A-risers are not inadvertently being pulled when the bar is not applied. You should be able to hook your heels into the bar, and to attain full bar extension when you push your legs out.

To adjust the speed bar to the correct length, sit in your harness and ask an assistant to hold the risers up in their in-flight position. The length can be adjusted by moving the knots, so that the bar sits just beneath your harness seat. 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. Launching and general flying is normally done without using the accelerator.

Full speed is achieved when the two pulleys on each A-riser touch. The speed-bar limiter will be under tension at this point. Using excessive force or pushing beyond this will not make the glider go faster!

When you come off the bar it is important to do so smoothly and progressively, to manage the pitch. It is possible for any paraglider 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.

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).

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

Rear-riser Steering

The DIVA 2 has T-handles on the rear risers that can be used to make pitch adjustments or control the direction when gliding, without using the brakes. Take care not to accidentally stall the glider as the range is much less than on the brakes. We recommend you keep hold of the brakes (no wraps) when using the T-handles.

Rapid descent procedures

B-Line stall is not appropriate for two-liners.

Big Ears
Big Ears can be performed on the Diva 2 by pulling on CR3 line (the outside B line). It is important to grasp the line high, around 10cm above the top of the riser, and not to pull the riser itself. B-ears are very stable and easy to pull, and are an effective rapid descent method.

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.

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.

Recovery Techniques

Line knots

Flying a glider with knots in the lines will affect its airworthiness – checking for knots should always be part of your pre-flight checks. If you do notice a knot in your glider's lines after you have pulled the canopy up, if you can safely abort the launch, then do so. If you are already airborne, you should avoid accelerating the glider and avoid deep brake inputs. Use weightshift or minimal brake inputs to steer the glider to a safe landing place as soon as possible.

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.

Stalls

Full Stall

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 reconstruction of the full span is recommended to avoid the tips getting cravatted during the recovery. Pilots are advised not to attempt this manoeuvre unless under SIV instruction.

An intentional full stall with the DIVA should always be performed in two steps, to prevent the tips from touching each other as the glider falls back into the stall. First, apply deep brake until the glider stops flying. The tips will peel back and the glider will feel as if it is in deep stall. Release the brakes smoothly and quickly until you fall back underneath the glider, then immediately reapply the brakes to the backfly position.

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.

When in deep stall the pilot will notice the following:

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

To recover from deep stall, the first reaction is simply to put your hands up. This should allow the glider to retun to normal flight. If the glider does not resume normal flight, pulling gently on the A-risers will help the airflow to re-attach to the leading edge. Be careful not to pull down too hard as this will induce a front collapse.

If the above 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 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 and 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.

Asymmetric Collapse

Your paraglider is very resistant to deflations; however, if the canopy collapses on one side due to turbulence, your first reaction should be to control the direction of flight by countering on the opposite brake. The act of controlling the direction will likely 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.

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.

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 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. Their tests are carried out in a very precise manner with a back-up parachute, and over water. Stalls and spins on any paragliders are dangerous manoeuvres and should not be practised in the course of normal flying.

Storage, repairs and servicing

Storage and care

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

Always store the canopy in a dry, warm place. Ideally this should be in the temperature range of 5°C to 25°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 out in strong sunshine unnecessarily.

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.

Packing

The DIVA 2 should be concertina-packed with the leading edge supports neatly stacked. Avoid bending or folding the supports. A concertina bag (available on the BGD eshop) makes this process very easy!

Small Repairs

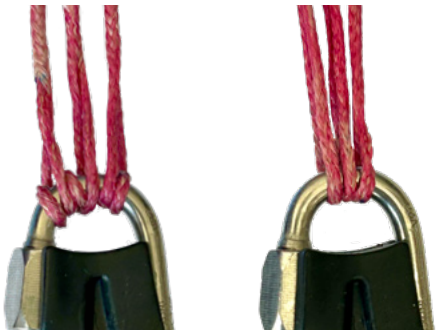
Small tears in the top or bottom surface (not normally the ribs) of a canopy can be repaired with a patch of self-adhesive ripstop nylon. Tears up to around 10cm can be repaired in this way as long as they are not in high-stress areas.

Servicing / Inspection

The dimensions of the lines can change during the first part of their life; high performance gliders are especially sensitive to trim changes, we therefore recommend having a **performance trim check** after the first 30 hours of use to keep your Diva2 within intended tolerances. We recommend changing the entire line-set after 200 hours of use.

It is important to have your glider regularly serviced. Your wing should have a thorough check / inspection every 24 months or every 100 flight hours, whichever occurs first. This should be done by a qualified professional. If you fly more than 100 hours per year, then the wing should be inspected annually.

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 repairs carried out by an approved service centre, and lines which we have produced and which have been fitted by an approved service centre. A list of approved service centres can be found on our website.



Left: with loops; Right: no loops

If you are concerned about any aspect of the integrity or airworthiness of your paraglider please contact your BGD dealer or talk to BGD directly.

Releasing loops on the rear lines
All BGD gliders are rigged from new with loops on the maillons or softlinks of the rear lines and 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 on the DIVA 2 when the performance trim check is done, or earlier if the pilot feels the glider does not come up as easily on launch.

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. The line lengths are in this manual, and the latest versions of the line length checksheets for all models can be downloaded here: https://tinyurl.com/BGDlines

Replacement lines can be ordered from the Accessories section of the BGD website. Check that the lines you have received correspond with the latest update of the line checksheet from the dropbox. Also check the line layout on the glider corresponds with the line layout diagram.

The quickest way to remove the old lines is to cut them off. Sometimes only a partial line-set is needed (eg excluding top lines or brakes) so take care not to cut any lines that need to be retained.

It is important that lines are fitted the right way up (see diagram on the following page). Unsheathed micro lines are reinforced at one end, which is marked by a yellow thread. This end is the line-junction end. The non-reinforced end is marked with white thread and should be attached to the glider tab or the maillon. Sheathed lines have no additional reinforcement and can be mounted either way up.

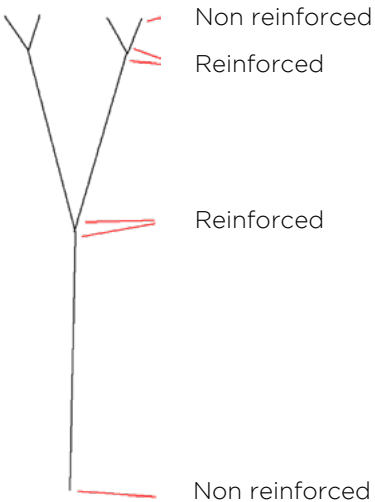
Alignment on the tabs
Lines should be symmetrically placed on the tab, except for the A tabs, which are inclined backwards to align with the direction of pull of the line. When assembling the lines, A tabs should be angled back, and the other tabs should be perpendicular to the canopy undersurface.

Loops
A risers: new lines should be mounted without loops; The Stabi and rear risers should have a single loop.

Correct alignment of micro lines

Yellow thread denotes the reinforced end of a micro line.

White thread denotes the non-reinforced end of a micro line.



Lark's Foot Junctions

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

Interlocked junction – correct

Looped junction – incorrect

Interlocked junction – correct

Looped junction – incorrect

Pre-flight checks
After replacing lines, always inflate the wing to make sure everything is correct before flying.

Environmental protection and recycling

Our sport takes place in the natural environment, and it is our responsibility to do what we can 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 appropriate waste/recycling facilities.

Technical Data

Materials

The DIVA 2 is made from the following quality materials:

Top surface	Double-coated Porcher Skytex 27g/m² and 32g/m² (leading edge)
Bottom surface	Double-coated Porcher Skytex 27g/m² and 32g/m² (leading edge)
Ribs	Porcher Skytex 32g/m² hard white
Trailing edge mini ribs	Porcher Skytex 32g/m² hard
Diagonal Ribs	Porcher Skytex 32g/m² hard white
CS straps	Porcher Skytex 32g/m² hard white
Plastic reinforcing	2.0mm black Perlon and 1.5mm white nylon wire
Risers	Rivori 12mm black nylon
Maillons	Maillon Rapide 3.0D Delta shackles with inserts
Pulleys	Sprenger / Harken
Upper, middle & lower lines	Edelrid 8000U series
Brakes	Liros DC60 and DC100
Brake line KL1	Liros PPSL200

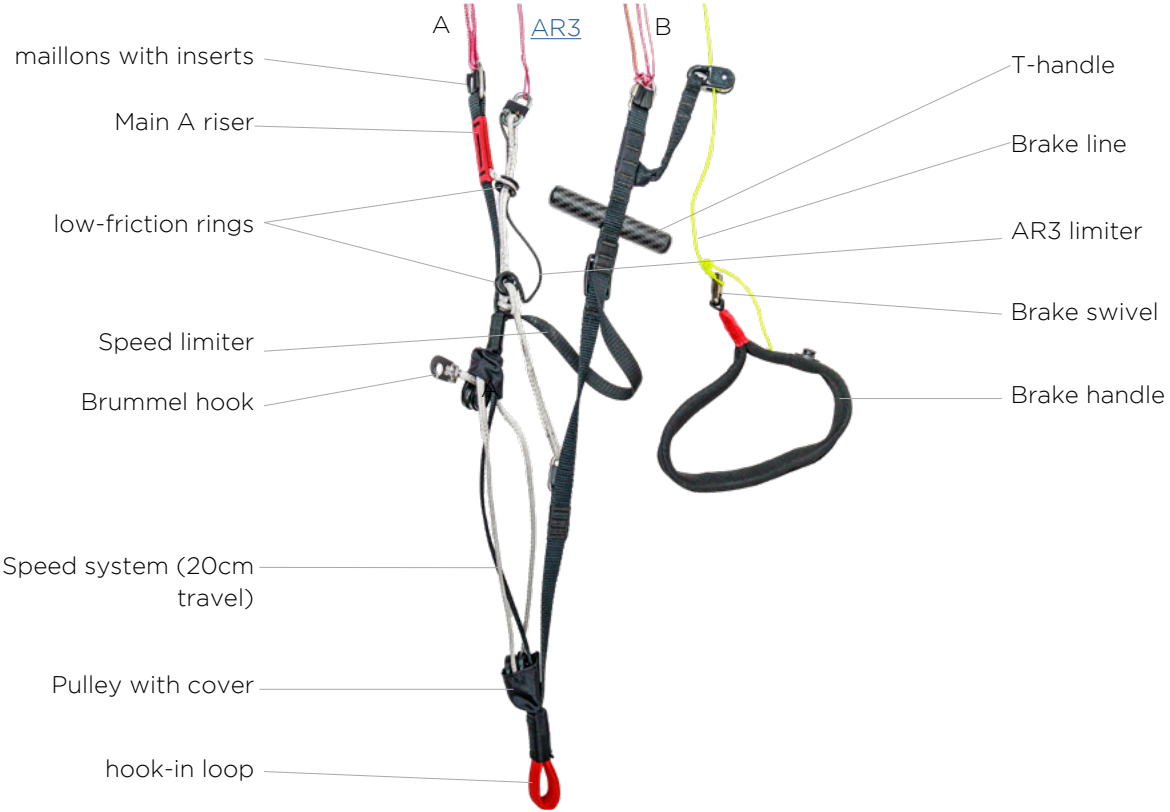
Spare parts can be obtained directly from BGD or though our network of registered BGD repair shops. For a full list see www.flybgd.com

Specifications

	S	M	ML	L
Linear scaling factor	1	1.04	1.06	1.1
Projected area (m^2)	17.6	18.9	19.7	21.4
Flat area (m^2)	21	22.5	23.5	25.5
Glider weight (kg)	5.20	5.39	5.52	5.84
Number of main lines	3/3	3/3	3/3	3/3
Cells	86	86	86	86
Flat aspect ratio	7	7	7	7
Root chord (m)	2.16	2.23	2.28	2.38
Flat span (m)	12.1	12.6	12.8	13.4
Certified weight range (kg)	75 - 90	80 - 100	88 - 108	100 - 120
Recommended weight range (kg)	80 - 90	90 - 100	100 - 108	108 - 120
Certification	EN: D	EN: D	EN: D	EN: D

Glider overview diagram

Risers



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

Riser lengths and brake & accelerator travel

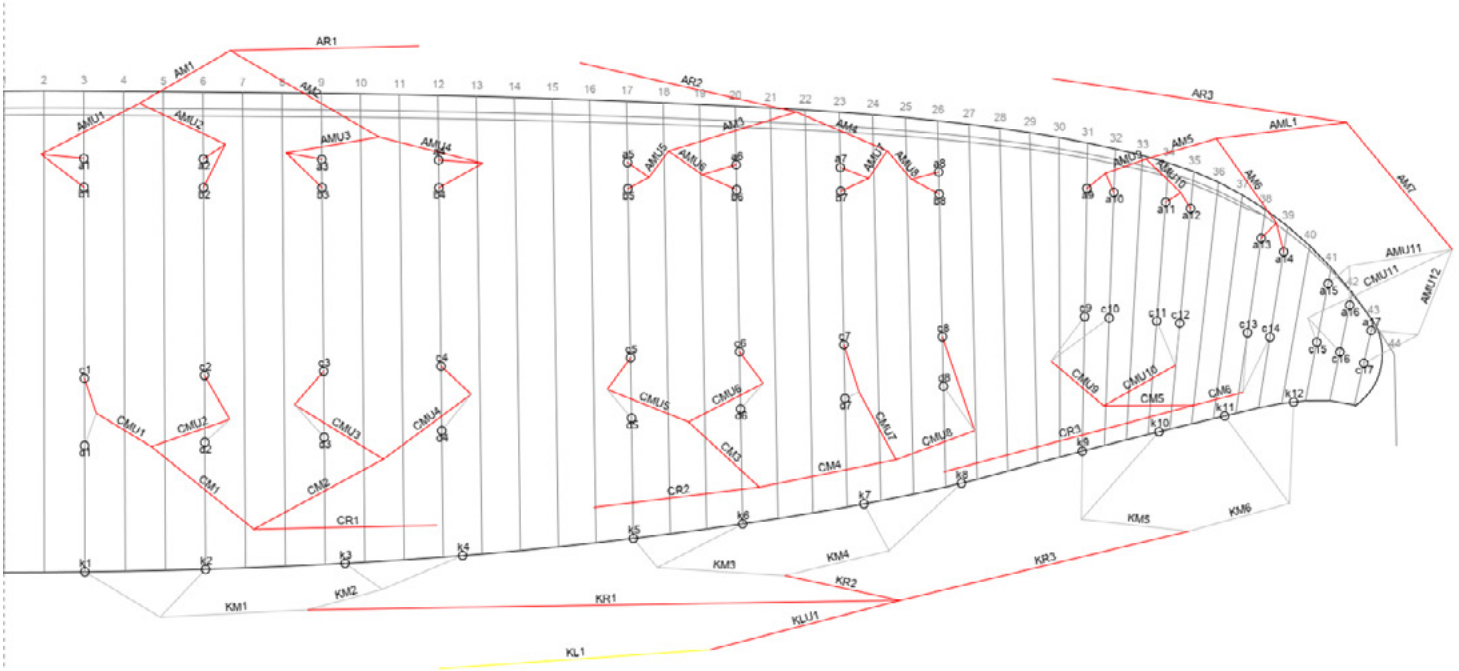
Size	Riser length (mm)*	Accelerator travel (mm)	Brake range (cm)**
S	500	200	63
M	500	200	65
ML	500	200	67
L	500	200	69

*Actual riser lengths may differ by not more than 5mm
** Maximum symmetrical control travel at maximum weight in flight

Individual Riser lengths for a fully accelerated glider (mm)

	A	AR3	B
S	300	370	500
M	300	370	500
ML	300	370	500
L	300	370	500

Line Layout


AR1
AR2
AR3
AM1
AM2
AM3
AM4
AM5
AML1
AM7
AMU1
AMU2
AMU3
AMU4
AMU5
AMU6
AMU7
AMU8
AMU9
AMU10
AMU11
AMU12
CMU1
CMU2
CMU3
CMU4
CMU5
CMU6
CMU7
CMU8
CMU10
CMU11
CM1
CM2
CM3
CM4
CM5
CM6
CR1
CR2
CR3
KM1
KM2
KM3
KM4
KM5
KM6
KR1
KR2
KR3
KLU1
KL1

a1	AMU1	AM1	AR1	
a2	AMU2	AM1	AR1	
a3	AMU3	AM2	AR1	
a4	AMU4	AM2	AR1	
a5	AMU5	AM3	AR2	
a6	AMU6	AM3	AR2	
a7	AMU7	AM4	AR2	
a8	AMU8	AM4	AR2	
a9	AMU9	AM5	AML1	AR3
a10	AMU9	AM5	AML1	AR3
a11	AMU10	AM5	AML1	AR3
a12	AMU10	AM5	AML1	AR3
a13	AM6	AML1	AR3	
a14	AM6	AML1	AR3	
a15	AMU11	AM7	AR3	
a16	AMU11	AM7	AR3	
a17	AMU12	AM7	AR3	

b1	AMU1	AM1	AR1	
b2	AMU2	AM1	AR1	
b3	AMU3	AM2	AR1	
b4	AMU4	AM2	AR1	
b5	AMU5	AM3	AR2	
b6	AMU6	AM3	AR2	
b7	AMU7	AM4	AR2	
b8	AMU8	AM4	AR2	
c1	CMU1	CM1	CR1	
c2	CMU2	CM1	CR1	
c3	CMU3	CM2	CR1	
c4	CMU4	CM2	CR1	
c5	CMU5	CM3	CR2	
c6	CMU6	CM3	CR2	
c7	CMU7	CM4	CR2	
c8	CMU8	CM4	CR2	
c9	CMU9	CM5	CR3	
c10	CMU9	CM5	CR3	
c11	CMU10	CM5	CR3	
c12	CMU10	CM5	CR3	
c13	CM6	CR3		
c14	CM6	CR3		
c15	CMU11	AM7	AR3	
c16	CMU11	AM7	AR3	
c17	AMU12	AM7	AR3	

d1	CMU1	CM1	CR1	
d2	CMU2	CM1	CR1	
d3	CMU3	CM2	CR1	
d4	CMU4	CM2	CR1	
d5	CMU5	CM3	CR2	
d6	CMU6	CM3	CR2	
d7	CMU7	CM4	CR2	
d8	CMU8	CM4	CR2	
k1	KM1	KR1	KLU1	KL1
k2	KM1	KR1	KLU1	KL1
k3	KM2	KR1	KLU1	KL1
k4	KM2	KR1	KLU1	KL1
k5	KM3	KR2	KLU1	KL1
k6	KM3	KR2	KLU1	KL1
k7	KM4	KR2	KLU1	KL1
k8	KM4	KR2	KLU1	KL1
k9	KM5	KR3	KLU1	KL1
k10	KM5	KR3	KLU1	KL1
k11	KM6	KR3	KLU1	KL1
k12	KM6	KR3	KLU1	KL1

Line Lengths

The latest version of the line layouts and line lengths for all BGD wings can be downloaded from Dropbox.

All measures are in mm, and were measured with 50N line tension which was slowly and gradually applied.

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

As part of the EN certification process, the lengths of the suspension lines, control lines and risers for the sample glider were checked against the manual measurements, after the test flights were 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 S

	A	B	C	D	K
1	7127	7112	7065	7157	7579
2	6972	6952	6923	7023	7271
3	6928	6908	6880	6974	7030
4	6984	6970	6915	7001	7033
5	6838	6819	6792	6871	6777
6	6706	6690	6660	6737	6602
7	6636	6623	6597	6664	6464
8	6661	6653	6624	6680	6538
9	6429		6402		6392
10	6404		6369		6394
11	6346		6318		6426
12	6341		6325		6578
13	6271		6270		
14	6271		6278		
15	6232		6268		
16	6228		6275		
17	6235		6307		

Bridle check (mm) ▲
Single line lengths (mm) ▶

a1	205		AM1	864		c13	132		d6	656
a2	204		AM2	764		c14	140		d7	668
a3	202		AM3	764		c15	156		d8	682
a4	195		AM4	516		c16	163		k1	650
a5	183		AM5	1839		c17	396		k2	342
a6	172		AM7	3103		CMU1	363		k3	509
a7	159		AML1	1108		CMU2	347		k4	512
a8	156		AR1	4855		CMU3	340		k5	535
a9	184		AR2	4633		CMU4	350		k6	390
a10	158		AR3	1897		CMU5	327		k7	418
a11	223		b1	189		CMU6	305		k8	461
a12	218		b2	183		CMU7	294		k9	513
a13	210		b3	180		CMU8	296		k10	545
a14	209		b4	180		CMU9	608		k11	292
a15	218		b5	163		CM6	1766		k12	443
a16	214		b6	156		CMU10	549		KM1	1234
a17	321		b7	146		CMU11	595		KM2	826
AMU1	697		b8	147		CM1	915		KM3	1025
AMU2	541		c1	785		CM2	852		KM4	859
AMU3	599		c2	659		CM3	737		KM5	647
AMU4	661		c3	685		CM4	662		KM6	902
AMU5	749		c4	710		CM5	1245		KR1	2922
AMU6	626		c5	690		CR1	4501		KR2	2414
AMU7	815		c6	579		CR2	4532		KR3	2429
AMU8	844		c7	601		CR3	3860		KLU1	1619
AMU9	895		c8	626		d1	877		KL1	1119
AM6	2541		c9	183		d2	758			
AMU10	771		c10	149		d3	779			
AMU11	494		c11	157		d4	795			
AMU12	394		c12	164		d5	768			

Size M

	A	B	C	D	K
1	7378	7362	7315	7412	7836
2	7216	7195	7168	7273	7525
3	7173	7151	7122	7222	7276
4	7232	7216	7159	7251	7274
5	7084	7065	7031	7114	7009
6	6946	6931	6893	6975	6832
7	6876	6862	6829	6900	6691
8	6902	6894	6857	6917	6774
9	6661		6631		6621
10	6634		6595		6622
11	6574		6542		6657
12	6569		6549		6804
13	6497		6493		
14	6497		6502		
15	6457		6495		
16	6454		6503		
17	6461		6536		

Bridle check (mm) ▲
Single line lengths (mm) ▶

a1	213		AM1	895		c13	138		d6	681
a2	212		AM2	793		c14	146		d7	694
a3	210		AM3	791		c15	162		d8	709
a4	203		AM4	536		c16	170		k1	676
a5	190		AM5	1903		c17	412		k2	355
a6	178		AM7	3213		CMU1	376		k3	529
a7	166		AML1	1148		CMU2	360		k4	532
a8	162		AR1	5043		CMU3	351		k5	556
a9	191		AR2	4820		CMU4	362		k6	404
a10	164		AR3	1986		CMU5	339		k7	432
a11	232		b1	196		CMU6	316		k8	479
a12	226		b2	190		CMU7	304		k9	533
a13	217		b3	187		CMU8	306		k10	564
a14	217		b4	186		CMU9	629		k11	304
a15	227		b5	169		CM6	1827		k12	460
a16	223		b6	162		CMU10	567		KM1	1280
a17	334		b7	152		CMU11	617		KM2	857
AMU1	722		b8	153		CM1	947		KM3	1062
AMU2	560		c1	814		CM2	883		KM4	893
AMU3	620		c2	683		CM3	763		KM5	671
AMU4	685		c3	709		CM4	686		KM6	936
AMU5	776		c4	735		CM5	1289		KR1	3024
AMU6	648		c5	715		CR3	4016		KR2	2500
AMU7	843		c6	600		CR1	4678		KR3	2521
AMU8	874		c7	623		CR2	4713		KLU1	1737
AMU9	927		c8	649		d1	911		KL1	1109
AM6	2631		c9	190		d2	787			
AMU10	798		c10	154		d3	809			
AMU11	512		c11	163		d4	826			
AMU12	408		c12	170		d5	798			

Size ML

	A	B	C	D	K
1	7526	7510	7470	7569	8034
2	7362	7340	7320	7428	7707
3	7317	7295	7276	7377	7454
4	7380	7364	7314	7407	7457
5	7232	7212	7182	7267	7188
6	7091	7075	7041	7125	7003
7	7019	7006	6976	7049	6859
8	7046	7038	7005	7066	6939
9	6801		6770		6786
10	6774		6734		6787
11	6714		6680		6823
12	6709		6686		6984
13	6635		6629		
14	6635		6639		
15	6594		6633		
16	6591		6641		
17	6598		6675		

Bridle check (mm) ▲
Single line lengths (mm) ▶

a1	218		AM1	912		c13	141		d6	696
a2	217		AM2	810		c14	150		d7	709
a3	214		AM3	807		c15	166		d8	724
a4	208		AM4	547		c16	174		k1	690
a5	195		AM5	1943		c17	421		k2	363
a6	182		AM7	3280		CMU1	384		k3	541
a7	169		AML1	1172		CMU2	368		k4	544
a8	166		AR1	5155		CMU3	358		k5	568
a9	195		AR2	4931		CMU4	370		k6	413
a10	168		AR3	2040		CMU5	346		k7	440
a11	237		b1	201		CMU6	322		k8	489
a12	231		b2	194		CMU7	310		k9	544
a13	222		b3	191		CMU8	312		k10	575
a14	222		b4	191		CMU9	642		k11	310
a15	232		b5	173		CM6	1865		k12	470
a16	228		b6	165		CMU10	579		KM1	1306
a17	341		b7	156		CMU11	630		KM2	875
AMU1	736		b8	157		CM1	966		KM3	1084
AMU2	572		c1	831		CM2	903		KM4	913
AMU3	631		c2	697		CM3	779		KM5	685
AMU4	699		c3	725		CM4	701		KM6	956
AMU5	792		c4	751		CM5	1316		KR1	3086
AMU6	662		c5	730		CR3	4112		KR2	2554
AMU7	861		c6	613		CR1	4787		KR3	2575
AMU8	892		c7	636		CR2	4823		KLU1	1808
AMU9	945		c8	663		d1	930		KL1	1109
AM6	2686		c9	194		d2	804			
AMU10	815		c10	158		d3	826			
AMU11	523		c11	167		d4	843			
AMU12	417		c12	173		d5	815			

Size L

	A	B	C	D	K
1	7837	7820	7782	7885	8390
2	7667	7644	7627	7740	8050
3	7621	7598	7582	7688	7786
4	7686	7669	7623	7721	7791
5	7535	7514	7487	7575	7508
6	7389	7372	7340	7428	7314
7	7314	7300	7274	7350	7164
8	7341	7333	7305	7368	7249
9	7091		7060		7092
10	7062		7022		7094
11	6999		6966		7133
12	6994		6972		7302
13	6918		6912		
14	6916		6922		
15	6875		6917		
16	6872		6925		
17	6879		6959		

Bridle check (mm) ▲
Single line lengths (mm) ▶

a1	228	AM1	949	c13	147	d6	726
a2	227	AM2	845	c14	156	d7	740
a3	224	AM3	840	c15	173	d8	755
a4	217	AM4	570	c16	181	k1	720
a5	204	AM5	2024	c17	439	k2	380
a6	191	AM7	3419	CMU1	400	k3	564
a7	177	AML1	1221	CMU2	385	k4	569
a8	173	AR1	5388	CMU3	373	k5	593
a9	204	AR2	5159	CMU4	386	k6	429
a10	175	AR3	2150	CMU5	360	k7	458
a11	248	b1	210	CMU6	336	k8	512
a12	242	b2	203	CMU7	323	k9	567
a13	233	b3	200	CMU8	326	k10	599
a14	231	b4	199	CMU9	669	k11	323
a15	242	b5	181	CM6	1944	k12	491
a16	238	b6	173	CMU10	603	KM1	1362
a17	356	b7	163	CMU11	658	KM2	914
AMU1	767	b8	164	CM1	1005	KM3	1131
AMU2	597	c1	867	CM2	942	KM4	952
AMU3	657	c2	727	CM3	811	KM5	713
AMU4	728	c3	756	CM4	731	KM6	998
AMU5	825	c4	784	CM5	1372	KR1	3217
AMU6	690	c5	762	CR3	4305	KR2	2663
AMU7	897	c6	639	CR1	5004	KR3	2691
AMU8	929	c7	664	CR2	5046	KLU1	1957
AMU9	986	c8	692	d1	970	KL1	1109
AM6	2799	c9	203	d2	839		
AMU10	849	c10	165	d3	862		
AMU11	545	c11	175	d4	881		
AMU12	434	c12	181	d5	850		

Service Booklet

Service No 1

Date
N° flights
Type
Notes

Stamp / Signature

Service No 2

Date
N° flights
Type
Notes

Stamp / Signature

Service No 3

Date
N° flights
Type
Notes

Stamp / Signature

Service No 4

Date
N° flights
Type
Notes

Stamp / Signature

Service No 5

Date
N° flights
Type
Notes

Stamp / Signature

Service No 6

Date
N° flights
Type
Notes

Stamp / Signature

BRUCE GOLDSMITH DESIGN

Owner Record

Pilot No 1

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

BRUCE GOLDSMITH DESIGN

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 will give you many hours of safe and enjoyable flying, provided you treat it with care and always respect the potential dangers of aviation.

Please 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 always 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.

Have fun, and see you in the sky!

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www.flybgd.com

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.

Size S

	A	B	C	D	K
1	7141	7119	7080	7172	7542
2	6985	6958	6938	7037	7234
3	6940	6913	6894	6988	6993
4	6994	6974	6929	7014	6996
5	6849	6826	6804	6882	6710
6	6716	6696	6671	6748	6565
7	6646	6629	6609	6676	6427
8	6670	6659	6636	6692	6470
9	6434		6418		6325
10	6408		6384		6357
11	6351		6333		6359
12	6346		6340		6510
13	6276		6284		
14	6275		6292		
15	6236		6277		
16	6232		6284		
17	6239		6316		