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# BLIZZARD Owner's Manual

DGAC certified paraglider for use with paramotor or trike

## 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 BLIZZARD

The BLIZZARD is a progression wing for paramotoring. It is ideal for pilots who have completed their in-school flight training, and who are ready to take their flying to the next level. It is easy to launch and fly and has excellent stability, and its performance and speed will be appreciated by pilots who are ready for longer, further cross-country flights.

The Blizzard flies equally well with a trike or with foot launch. In fact all the DGAC flight tests for the size 29 were done at the maximum weight, with a trike.

Your wing 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. Please read it carefully to ensure you get the best out of your new wing.

If you need replacement parts or further information, please contact your nearest BGD dealer.

# Precautions

This glider is not intended to be used for aerobatic manoeuvres.

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 200 kg

\*A wet canopy is much more likely to enter a parachural or full stall (see chapter 5). If you fly into a rain shower, you should immediately go and land somewhere safe, steering the canopy gently and avoiding manoeuvres such as Big Ears which can make it more likely to stall.

## Modifications

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

## Warranty

In order to benefit from the BGD warranty, you are required to complete the warranty form on the website. It is your dealer's responsibility to test fly a new paraglider before you receive it. Failure to test-fly a new paraglider may invalidate the warranty.

# Preparation

## Riser set-up

The **risers** on the Blizzard can be adapted to the height of the hangpoints of your paramotor frame/harness.

For a paramotor with **low hangpoints** the standard positions can be used for the brake attachment and the TST line as shown in the riser image on the following page.

For a paramotor with **high hangpoints** you will need to do the following:

1. Take the brake lines and TST lines off the two handles they are knotted to.
2. Remove the brake leg which is attached to the upper webbing loop on the D riser and move it to the lower position on the D riser. ●
3. Put the brake handle back on, and make sure that you lengthen the brake lines by the distance between the loops (20cm).
4. Thread the TST line through the lower friction ring instead of the upper one. ●
5. Tie the TST handle back on also extended the TST line by the correct amount.
6. The brake and TST lines should be long enough to allow the extension of the lines. If they are not you will either need to get longer lines, or the line can be extended at the top where it does not run through any rings or pulleys.



### Blizzard risers

Trimmer



Tip steering TST system



## 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. Open out your paraglider so that the bottom surface is facing upwards, with the openings at the downwind end of the take-off area and the power unit / harness at the trailing edge at the upwind side.
3. Unfold the canopy to each side so that the leading edge openings form a semicircular shape, with the trailing edge drawn together as the centre of the arc. The power unit / harness should be distanced from the canopy so that the suspension lines are just tight.
4. Prepare and check your power unit according to the manufacturer's instructions.
5. Connect the wing to the paramotor or trike, ensuring the risers are connected the right way round and that the maillons or karabiners are correctly closed.

### Pre-flight inspection

Your paraglider is designed to be as simple as possible 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 out the paraglider check the canopy for any tears.
2. Check that the lines are not twisted or knotted. 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. It is particularly important that 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 they could become stuck in the brake pulleys. Both brakes should be the same length and this can be checked by asking an assistant to hold the upper end of the brake lines together while you hold the brake handles. The brake lines should be just slack with the wing inflated when the brakes are not applied. After checking the brake lines lay them on the ground.

4. Always check the riser maillons and the attachment points to the paramotor frame or trike. The use of a safety strap is strongly recommended. Before getting into the harness you should be wearing a suitable helmet. Put on the harness ensuring all the buckles are secure and properly adjusted for comfort.
5. Ensure the trimmers set to position 1, as pictured.



Your paraglider is now ready for flight.

Take care to protect yourself and other people from the propeller. Always start your motor up at a safe distance away from other people. The blades can pick up and fire out debris which could injure people several metres away. Remember there are inherent risks with petrol, oil and volatile or flammable materials.



# Flight Characteristics

This manual is not intended as an instruction book on how to fly your paraglider. You should be a qualified pilot or under suitable supervision, but the following comments will help you to get the best from your wing.

## 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, the paramotor or trike and all other equipment carried with you in flight.

We recommend your paraglider is flown in the middle of the weight range.

If you fly in the lower half of the weight range the turning agility will be lower and the glider will be more damped, but it will have a slightly increased tendency to collapse in strong turbulence. If you mainly fly in weak conditions you might choose to fly towards the lower end of the weight range.

If you fly in the upper half of the weight range you will have greater agility and speed, and greater stability in turbulence, but your wing will be less damped in turns and after collapses. If you prefer a dynamic flight characteristic you should choose to fly higher in the weight range.

You should never fly a paramotor in strong turbulence or violent winds.

## Take-off

The paraglider is easy to inflate in light or stronger winds and will quickly rise overhead to the flying position.



The best inflation technique is to hold one A-riser in each hand. Take the brakes in your hands, and lay the risers over your arms. Hold the A and Baby A risers together at the maillons as shown in the picture.

We recommend launching with the trimmers set to position 1, as pictured on page 8.

Never try to launch if the wing is not perfectly inflated above your head and you do not have full control of pitch and roll.

## Initial Climb

Once in the air you should continue to fly into wind while gaining altitude. Leave the trimmers in the take-off position to get the best climb rate.

Do not attempt to increase your climb rate by braking, as using the brakes combined with the engine's thrust can increase the angle of attack to the point where the wing can stall. In addition, this high angle of attack can result in a big dive if the motor suddenly dies, which could be dangerous if you are near the ground.

Do not initiate a turn until you have enough height and speed to do so.

## Trimmers and Speed bar

The trimmers allow easy fast cruising. After take-off, once you have gained a safe altitude, you can open up the trimmers progressively to increase your speed. The speed bar can be used at the same time for a significant increase in speed.

### **Important note on using the trimmers**

Trimmers should be pulled backwards or down when applied. The trimmer should not be pulled to the side or in towards the pilot, as this will cause the webbing to rub on the trimmer buckle causing premature wear on the trimmer. Take care to avoid this issue especially when flying with a trike.

Both trimmers and speed bar increase the speed of the paraglider and activate the reflex system. Even with the trimmers open and the speed bar fully applied, the brakes can be used without causing a front collapse. However, whenever the trimmers are open to more than about half, or half-speedbar is applied, it is better to use tip steering instead of brakes as it retains the reflex profile and allows you to turn without losing speed.

In turbulent air it can be useful to have the trimmers open to better absorb turbulence, but it is safer not to apply full speedbar at the same time, to avoid a frontal collapse. To reduce fuel consumption or to fly in thermals, the trimmers should be closed, pulled down to their maximum.

Maximum speed is with the trimmers released and the speedbar pushed out fully so that the pulleys touch. Do not push the speedbar beyond this limit in an attempt to attain a higher speed. To fly at full-bar the speed stirrup should be applied gradually until 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.

The Blizzard has roller-cam trimmers, which are smooth to operate and reduce wear on the webbing. Nonetheless, it is important to regularly check the wear on the trimmers and that the system is functioning cleanly with no sticking points. If they are showing signs of wear, the trimmers should be replaced. This can be done by the pilot.

## **Turning**

Your first turns should be gradual and progressive. The initial action to change direction should be the movement of your weight in the harness towards the side of the intended turn. Then gently relax the pressure on the outer brake, and gently apply pressure to the inner brake until you attain the desired bank angle.

To adjust your speed and turning-circle size, coordinate your weightshift with pressure on the outer brake. How your glider reacts to weightshift will depend on the type of paramotor setup you use, for instance with a trike no weightshift at all is possible.

Remember that to violently apply high force on the brakes is dangerous and should be avoided. Never initiate a turn if you are flying slowly, as you risk the glider entering a spin.

## Tip Steering System (TST)

The tip steering system can be used to turn without slowing the glider. This is the usual way to turn when you have the trimmers released. It can also be used in conjunction with the brakes to adjust the characteristics of the turn.

## Unintended Oscillations

In certain circumstances, a pilot can induce unintended oscillations. This can be due to a combination of the engine/propeller and pilot's weightshift and / or action on the brakes. To stop unintended oscillations you should reduce the power, ensure that you are seated centrally and not accidentally applying weightshift, and that you are not acting on the brakes. Once the oscillations have stabilised you can gently reapply power.

## Landing

Set the trimmers to the closed position and set up your approach downwind of the landing field. When your height above the field is around 40m and you are in a good position to land in your intended landing spot, switch the engine off\* and make your final approach, keeping your hands up to keep plenty of energy in the wing until you are about a metre above the ground. Flare, braking slowly and gradually to slow down the wing until you are close to the stall point and able to land on your feet.

\*If you land with the engine running there is a considerable risk of rotational propeller damage (eg lines passing

through the propeller, or even injury).

## Active Piloting

Active piloting means flying in empathy with your paraglider. This means guiding the glider through the air and controlling the movements of the wing, especially in thermals and turbulence. If the air is smooth the wing does not need much input from the pilot, but in turbulent air a continual action of the pilot on the brakes and in the harness is necessary. These reactions are instinctive in experienced pilots. It is essential to maintain contact with the paraglider by a light pressure on the brakes. This allows you to feel the decreases in the wing's internal pressure which often precede collapses. Remember, you should not fly a paramotor in windy or turbulent conditions.

## Rapid Descent Techniques

### Big Ears

The 'baby A-riser' allows the wing tips of the paraglider to be folded in simply and easily to increase its sink rate. Applying big ears allows you to descend quickly without substantially reducing the forward speed of the canopy (in contrast with the B-line stall, which substantially reduces the canopy's forward speed). To engage big ears, lean forward in the harness and grasp the baby A-risers, one in each hand, at the maillons, keeping hold of both brake handles if possible. Pull the risers out and down at least 30cm to collapse the tips of the glider. It is very important that the other A-lines are not affected when you do this, as this could cause the leading edge to collapse. Steering with big ears in is possible by weightshifting. If the big ears do not come out quickly on their own, a gentle pump on the brakes will speed things up.

Before using big ears in earnest, it is essential to practise beforehand with plenty of ground clearance in case a leading edge collapse occurs. Always keep hold of both brakes in order to retain control.

### B-Line Stall

This fast descent method is a useful emergency procedure. Keeping hold of both brake handles, grasp the top of

the B-risers, one in each hand, and pull them down by around 10-15cm. This will stall the canopy and forward speed will drop to zero. Make sure you have plenty of ground clearance because the descent rate can be over 10 m/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 usually better to release the B-risers fairly quickly rather than slowly, as doing so slowly may result in the canopy entering deep stall. Always release the risers symmetrically, as an asymmetric release from a B-line stall may cause the glider to enter a spin.

This manoeuvre is useful if you need to lose a lot of height quickly, perhaps when escaping from a thunderstorm. It should not be performed with less than 100m of ground clearance (see also also Recovery Techniques).

## Spiral Dive

A normal turn can be converted into a strong 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.

BGD gliders are designed and tested to recover automatically from normal spirals with a descent rate inferior to 16 m/s, without pilot input. If the pilot increases the descent rate of the spiral to over 16 m/s or initiates what is known as an over-the-nose spiral, the glider may require pilot input to recover. In this case all the pilot needs to do is to apply some outside brake and steer the glider out of the turn.

The over-the-nose spiral is a spiral dive where the glider points almost directly at the ground. It will enter this if you make a sudden brake application during the spiral entry so that the glider yaws around. The nose of the glider points 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 these manoeuvres without proper supervision, as they 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 potential dive with the brakes. Also be ready to encounter turbulence when you exit from a spiral because you may fly through your own wake turbulence, which can cause a collapse.

CAUTION: Spiral dives can cause loss of orientation (black out) and some time is needed to exit this manoeuvre. This manoeuvre must be exited in time and with sufficient height!

# Recovery Techniques

All of the following manoeuvres can be dangerous, and should only be practised in a secure environment, such as an SIV course.

## Stalls

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 brake and the reconstruction of the full span is recommended to avoid the tips getting cravatted during the recovery.

### 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 of ending up in deep stall is from 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 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 previous methods do not work then a full stall will solve the problem. To do this apply both brakes again 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

A spin can occur if 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.

## Symmetric Front Collapse

It is possible that turbulence can cause the front of the wing to symmetrically collapse, although 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, but if the canopy does collapse 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 wing 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 your paraglider 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

## Storage

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.

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 flammable!

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.

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 of up to 100mm can be repaired in this way providing they are not in a high-stress area.

## Lines

### Releasing line loops



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

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

We recommend 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.

Line lengths are checked as part of a glider service. When the first service is carried out, normally at two years, the loops should already have been released, and this should be verified and fine-tuned by the check centre.

### Replacing 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://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 line layout diagram, and that this matches the line layout of your wing.

The quickest way to remove the old lines is to cut them off. (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 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 mounted the correct way up (see diagram on the following page). Microlines have internal reinforcing in one end, marked by yellow thread. This must be put on 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 reinforcing and can be mounted either way up.

### **Tab Alignment**

Lines should be symmetrically placed 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 tabs should be angled back, and the B, C and D tabs should be perpendicular to the undersurface.

### **Line Loops**

New lines should be mounted on the maillons without loops on the A and B risers. The Stabi line and the C risers should have a single loop on the maillon.

### **Maillon Inserts**

The maillons have black plastic inserts to stop them coming undone accidentally and the lines falling off. Always ensure these are correctly installed after rigging the glider. If they are lost then use a locktight to secure the maillon closed. New inserts can be ordered at [www.flybgd.com](http://www.flybgd.com).

### **Check before flying**

After rigging, always do a full dimensional line check of the wing, and also inflate the wing to check everything is correct before flying.

**Correct alignment of microlines**



Sheathed lines have no additional reinforcement and can be mounted either way up



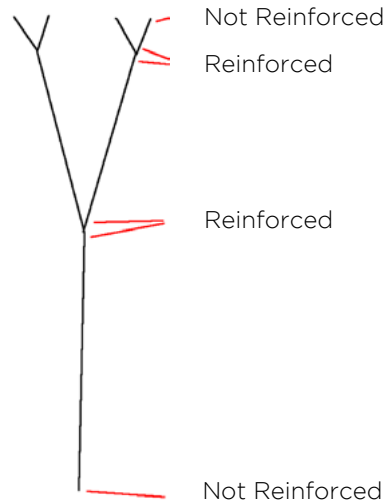
yellow thread

Yellow thread marks the reinforced end of a microline



white thread

White thread marks the non-reinforced end of a microline



### Lark's Foot junctions

Lines are connected to other lines or to tabs with lark's foot junctions. Make sure these are joined correctly with an interlocked junction and not a looped junction.



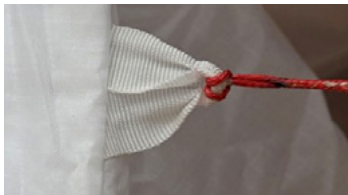
Interlocked junction - correct



Looped junction - incorrect



Interlocked junction - correct



Looped junction - incorrect

## 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.

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

## 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 span, please remove all metal parts and put the different materials in an appropriate waste/recycling plant.



# Technical data

## Materials

### Sail

Top surface	Porcher Skytex 38 g/m <sup>2</sup>
Bottom surface	Porcher Eazyfly 38 g/m <sup>2</sup>
Internal structure	Porcher Skytex 38 hard white
Nose reinforcing	Ratioparts

### Risers

Webbing	Rivori
Maillons	Rapide MRD103.5
Pulleys	Allen A2020pti3 (20mm)

### Lines

Upper	Liros PPSL & DSL
Middle	Liros PPSL & DSL
Lower	Liros PPSL & DSL
Brakes	Liros DSL 70 (upper / middle), 110 (Lower)
Brake Line KL1	Liros DSL350

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

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

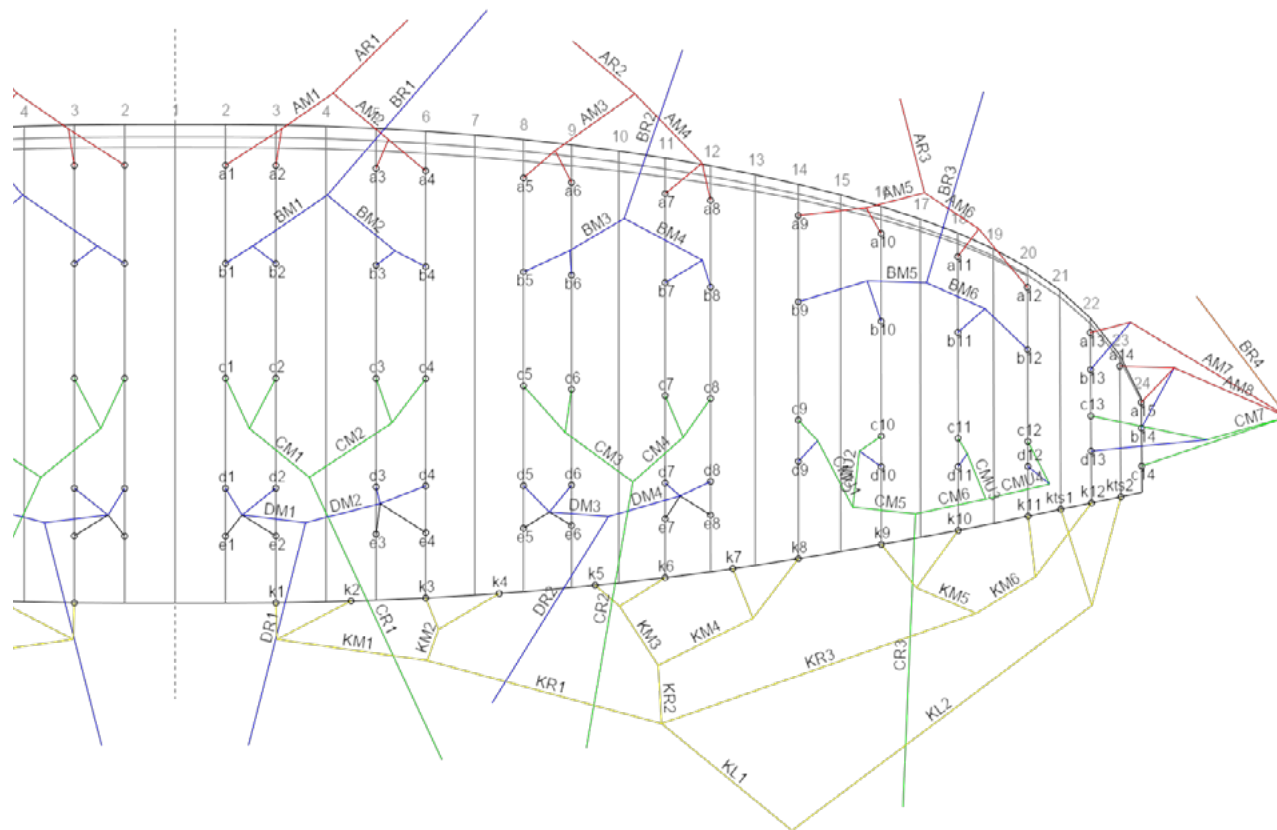
## Specifications

	20	23	26	29
Projected area (m <sup>2</sup> )	17.2	19.7	22.3	24.9
Flat area (m <sup>2</sup> )	20	23	26	29
Glider weight (kg)	4.8	5.2	5.7	6.2
Number of main lines	3/4/3/2	3/4/3/2	3/4/3/2	3/4/3/2
Cells	46	46	46	46
Flat aspect ratio	5.0	5.0	5.0	5.0
Projected aspect ratio	3.6	3.6	3.6	3.6
Central chord (m)	2.5	2.7	2.8	3.0
Flat span (m)	10.0	10.7	11.4	12.0
Projected span (m)	7.7	8.2	9.0	9.3
Weight range PPG (kg)	60-120	70-130	85-160	100-200
Minimum speed (km/h)	25	25	25	25
Trim speed (km/h)	37-47	37-47	37-47	37-47
Top speed (km/h)	54	54	54	54
Certification	DGAC	DGAC	DGAC	DGAC

## Overview of glider parts



# 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 and include the risers and maillons.

## Bridle check, size 20

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>K</b>	<b>TST</b>
1	6061	5958	6011	6103	6194	6259	5419
2	6028	5922	5959	6046	6143	6119	5190
3	6000	5895	5931	6024	6118	6021	
4	6011	5908	5960	6062	6150	6040	
5	5993	5894	5949	6051	6131	5908	
6	5971	5870	5915	6009	6087	5798	
7	5952	5862	5916	6011	6079	5774	
8	5966	5883	5956	6049	6105	5856	
9	5924	5859	5936	5981		5790	
10	5876	5819	5899	5941		5733	
11	5821	5783	5866	5903		5703	
12	5737	5723	5816	5855		5752	
13	5558	5537	5577	5648			
14	5443	5436	5499				
15	5395						

## Individual line lengths, size 20

<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>K</b>	
a1	426	b1	489	c1	354	d1	614	k1	495
a2	393	b2	453	c2	302	d2	557	k2	355
a3	441	b3	464	c3	314	d3	563	k3	425
a4	452	b4	477	c4	343	d4	601	k4	444
a5	440	b5	462	c5	319	d5	550	k5	451
a6	418	b6	438	c6	285	d6	508	k6	341
a7	366	b6	415	c7	263	d7	436	k7	336
a8	380	b8	436	c8	303	d8	474	k8	418
a9	1536	b9	1358	c9	542	d9	587	k9	442
a10	1488	b10	1318	c10	522	d10	564	kts1	598
a11	1135	b11	902	c11	441	d11	478	kts2	369
a12	1051	b12	842	c12	255	d12	294	k10	385
a13	434	b13	411	c13	343	d13	414	k11	306
a14	553	b14	544	c14	1196			k12	355
a15	505					DM1	1049		
AM1	2325	BM1	2081	CM1	1573	DM2	1021	KM1	880
AM2	2249	BM2	2043	CM2	1533	DM3	999	KM2	712
AM3	2127	BM3	1789	CM3	1384	DM4	1073	KM3	742
AM4	2160	BM4	1804	CM4	1407	DR1	3919	KM4	723
AM5	1323	BM5	1080	CMU1	569	DR2	3981	KM5	577
AM6	1621	BM6	1459	CMU2	552			KM6	626
AM7	828			CMU3	469	e1	705	KL2	4814
AM8	594	BR1	2863	CMU4	605	e2	654	KR1	2855
AR1	2787	BR2	3116	CM7	936	e3	657	KR2	2686
AR2	2903	BR3	2893	CR1	3565	e4	689	KR3	2742
AR3	2540	BR4	3777	CR2	3726	e5	630	KL1	2037
				CM5	1119	e6	586		
				CM6	1250	e7	504		
				CR3	3190	e8	530		

## Bridle check, size 23

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>K</b>	<b>TST</b>
1	6487	6385	6446	6547	6644	5854	5570
2	6452	6346	6392	6487	6591	5614	5530
3	6425	6319	6364	6464	6567	6496	
4	6438	6334	6396	6506	6600	6517	
5	6422	6320	6384	6494	6581	6376	
6	6399	6295	6349	6450	6534	6259	
7	6378	6287	6350	6452	6525	6234	
8	6395	6310	6394	6493	6552	6324	
9	6353	6288	6375	6423		6253	
10	6301	6245	6336	6381		6193	
11	6244	6207	6300	6340		6163	
12	6154	6142	6246	6287		6216	
13	5967	5944	5986	6062			
14	5845	5836	5902				
15	5792						



## Individual line lengths, size 23

<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>K</b>	
a1	458	b1	526	c1	380	d1	659	k1	531
a2	423	b2	487	c2	326	d2	599	k2	382
a3	473	b3	498	c3	337	d3	604	k3	456
a4	486	b4	513	c4	369	d4	646	k4	477
a5	473	b5	496	c5	342	d5	590	k5	484
a6	450	b6	471	c6	307	d6	546	k6	367
a7	392	b6	445	c7	282	d7	469	k7	360
a8	409	b8	468	c8	326	d8	510	k8	450
a9	1648	b9	1458	c9	582	d9	630	k9	474
a10	1596	b10	1415	c10	561	d10	606	kts1	653
a11	1218	b11	969	c11	474	d11	514	kts2	413
a12	1128	b12	904	c12	275	d12	316	k10	414
a13	467	b13	442	c13	369	d13	445	k11	329
a14	595	b14	584	c14	1283			k12	382
a15	542					DM1	1124		
AM1	2488	BM1	2232	CM1	1687	DM2	1096	KM1	943
AM2	2411	BM2	2194	CM2	1648	DM3	1071	KM2	765
AM3	2278	BM3	1917	CM3	1485	DM4	1150	KM3	794
AM4	2315	BM4	1935	CM4	1511	DR1	4243	KM4	776
AM5	1417	BM5	1158	CMU1	610	DR2	4312	KM5	617
AM6	1738	BM6	1565	CMU2	592			KM6	672
AM7	888			CMU3	503	e1	756	KL2	5194
AM8	638	BR1	3102	CMU4	648	e2	703	KR1	3058
AR1	3018	BR2	3380	CM7	1003	e3	707	KR2	2881
AR2	3148	BR3	3144	CR1	3860	e4	740	KR3	2945
AR3	2763	BR4	4093	CR2	4037	e5	677	KL1	2225
				CM5	1201	e6	630		
				CM6	1341	e7	542		
				CR3	3466	e8	569		

## Bridle check, size 26

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>K</b>	<b>TST</b>
1	6904	6785	6845	6953	7056	7207	6266
2	6868	6746	6788	6890	7001	7050	6004
3	6839	6719	6762	6868	6977	6940	
4	6855	6735	6796	6914	7013	6963	
5	6836	6722	6785	6902	6995	6815	
6	6812	6696	6747	6855	6944	6691	
7	6793	6689	6752	6859	6937	6665	
8	6810	6714	6798	6903	6966	6760	
9	6766	6689	6778	6829		6687	
10	6711	6644	6736	6784		6624	
11	6649	6604	6697	6739		6593	
12	6553	6535	6640	6684		6651	
13	6349	6323	6366	6447			
14	6218	6207	6277				
15	6161						

## Individual line lengths, size 26

<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>K</b>	
a1	487	b1	559	c1	405	d1	701	k1	565
a2	451	b2	520	c2	348	d2	638	k2	408
a3	503	b3	530	c3	359	d3	643	k3	485
a4	519	b4	546	c4	393	d4	689	k4	508
a5	503	b5	528	c5	365	d5	628	k5	516
a6	479	b6	502	c6	327	d6	581	k6	392
a7	418	b6	474	c7	301	d7	499	k7	384
a8	435	b8	499	c8	347	d8	543	k8	479
a9	1754	b9	1550	c9	620	d9	671	k9	505
a10	1699	b10	1505	c10	597	d10	645	kts1	684
a11	1296	b11	1031	c11	505	d11	547	kts2	422
a12	1200	b12	962	c12	293	d12	337	k10	442
a13	498	b13	470	c13	393	d13	474	k11	350
a14	634	b14	621	c14	1364			k12	408
a15	577					DM1	1193		
AM1	2648	BM1	2370	CM1	1789	DM2	1166	KM2	814
AM2	2567	BM2	2333	CM2	1752	DM3	1137	KM3	843
AM3	2423	BM3	2037	CM3	1575	DM4	1223	KM4	825
AM4	2465	BM4	2058	CM4	1606	DR1	4538	KM5	655
AM5	1509	BM5	1231	CMU1	648	DR2	4616	KM6	716
AM6	1850	BM6	1664	CMU2	629			KL2	5575
AM7	945			CMU3	534	e1	804	KR1	3249
AM8	678	BR1	3331	CMU4	689	e2	749	KR2	3064
AR1	3246	BR2	3630	CM7	1065	e3	752	KR3	3135
AR2	3387	BR3	3380	CR1	4132	e4	788	KL1	2400
AR3	2978	BR4	4387	CR2	4325	e5	721		
				CM5	1276	e6	670		
				CM6	1424	e7	577		
				CR3	3718	e8	606		

## Bridle check, size 29

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>K</b>	<b>TST</b>
1	7285	7157	7222	7338	7448	7643	6651
2	7247	7117	7163	7273	7390	7477	6380
3	7219	7090	7135	7251	7366	7360	
4	7235	7109	7173	7299	7404	7386	
5	7218	7095	7163	7290	7388	7229	
6	7193	7068	7124	7240	7336	7099	
7	7174	7061	7129	7244	7327	7072	
8	7192	7088	7179	7292	7358	7174	
9	7144	7063	7157	7211		7098	
10	7086	7015	7114	7164		7032	
11	7022	6975	7074	7118		7000	
12	6922	6903	7013	7060		7061	
13	6708	6680	6726	6812			
14	6570	6558	6631				
15	6509						

## Individual line lengths, size 29

<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>K</b>	
a1	515	b1	590	c1	428	d1	740	k1	598
a2	477	b2	550	c2	369	d2	675	k2	432
a3	532	b3	559	c3	379	d3	680	k3	512
a4	548	b4	578	c4	417	d4	728	k4	538
a5	532	b5	559	c5	386	d5	664	k5	545
a6	507	b6	532	c6	347	d6	614	k6	415
a7	442	b6	501	c7	318	d7	527	k7	405
a8	460	b8	528	c8	368	d8	575	k8	507
a9	1852	b9	1638	c9	655	d9	709	k9	534
a10	1794	b10	1590	c10	632	d10	682	kts1	736
a11	1369	b11	1089	c11	534	d11	578	kts2	465
a12	1269	b12	1017	c12	310	d12	357	k10	468
a13	527	b13	497	c13	416	d13	502	k11	370
a14	671	b14	657	c14	1441			k12	431
a15	610					DM1	1259		
AM1	2793	BM1	2499	CM1	1887	DM2	1232	KM1	1057
AM2	2710	BM2	2463	CM2	1849	DM3	1201	KM2	860
AM3	2556	BM3	2148	CM3	1661	DM4	1292	KM3	889
AM4	2602	BM4	2172	CM4	1695	DR1	4818	KM4	872
AM5	1592	BM5	1298	CMU1	684	DR2	4904	KM5	691
AM6	1953	BM6	1758	CMU2	664			KM6	757
AM7	998			CMU3	564	e1	850	KL2	5908
AM8	716	BR1	3543	CMU4	727	e2	792	KR1	3429
AR1	3454	BR2	3861	CM7	1125	e3	795	KR2	3236
AR2	3607	BR3	3599	CR1	4388	e4	833	KR3	3314
AR3	3175	BR4	4664	CR2	4596	e5	762	KL1	2567
				CM5	1346	e6	710		
				CM6	1504	e7	610		
				CR3	3956	e8	641		

# Service Record

## Services

### Service No 1

Date  Stamp / Signature

N° flights

Type of Service

Notes

### Service No 2

Date  Stamp / Signature

N° flights

Type of Service

Notes

### Service No 3

Date  Stamp / Signature

N° flights

Type of Service

Notes

### Service No 4

Date  Stamp / Signature

N° flights

Type of Service

Notes

### Service No 5

Date  Stamp / Signature

N° flights

Type of Service

Notes

### Service No 6

Date  Stamp / Signature

N° flights

Type of Service

Notes

## Owner Record

### Pilot No 1

First name

Family name

Street

City

Post code

Country

Telephone

Email:

## Owner Record

Pilot No 2

First name

Family name

Street

City

Post code

Country

Telephone

Email:



# Closing Words

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

Please always remember that flying can be dangerous and your safety depends on you. With careful treatment your wing should last for many years. It has been tested under current international airworthiness standards, and these represent the current knowledge concerning the safety of a glider. However, there are still unknown issues, for example the effective lifespan of the current generation of gliders and how much material material ageing is acceptable before airworthiness is affected. 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, a reserve parachute and an approved helmet.

See you in the sky!

BGD GmbH  
Am Gewerbepark 11, 9413 St. Gertraud, Austria  
Tel: +43 (0) 4352 20477  
e-mail: [sales@flybgd.com](mailto:sales@flybgd.com)  
[www.flybgd.com](http://www.flybgd.com)