

# MANUAL

ANDA



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**BGD**  
BRUCE GOLDSMITH DESIGN

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# ANDA OWNER'S MANUAL

Lightweight solo paraglider | EN / LTF A

## 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 BGD ANDA!**

The ANDA is a very safe lightweight paraglider, designed for hike-and-fly, mountain flying and site-flying or even cross-country. Its inherent safety and ease of use are beginner-friendly but it is made from lightweight materials and, as with all lightweight wings, it should be treated with care and not dragged around.

The ANDA has an extended weight range. This means it can be flown at a higher wing loading than "standard", for hike-and-fly, strong-wind soaring or for carrying extra equipment. It is certified EN / LTF A in the Standard and the Extended weight ranges.

This manual contains information and advice about your paraglider. For further information or parts, please contact your nearest BGD dealer (click the 'location' symbol on the website), or BGD directly.

# Introduction

## Limitations

The ANDA is a very easy and safe paraglider to fly. It is suitable for all levels of pilots, and can be used for training (under the correct supervision). It should be noted that, as with all lightweight gliders, it should be handled carefully and not subject to excessive abrasion. Don't "drag it around"!

It is a solo paraglider, and is not designed for flying tandem.

We have not yet tested the suitability of the ANDA for towing and it is not certified for paramotor use.

Size	XS	S	M	ML	L
<b>Free flying</b>	A	A	A	A	A
<b>Towing</b>	Not yet tested				
<b>Paramotor</b>	Not yet certified				

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

All 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 on [www.flybgd.com](http://www.flybgd.com) (find it in the Help menu).

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

## Weight Range

Each wing size is certified for a certain weight range. The weight refers to the 'overall take-off weight'. This means the weight of the pilot, the glider, the harness and all other equipment carried in flight.

**The ANDA has an extended weight range.** This means it can be flown at a higher wing loading than "standard", useful if you want to carry extra equipment to camp in the mountains etc. It is certified EN/LTF A in the standard and extended weight ranges with the inherent safety this implies, but it will have slightly different flight characteristics:

**In the standard weight range** you will have a good sink rate and thermalling ability, turns will be easy and predictable with the ability to float and turn flat in weak conditions.

**In the extended weight range** the wing loading is higher so the glider will be faster and more dynamic. Handling will be more reactive and it will be hard to stay up in weak conditions. This is typically used for mountain descents or soaring in higher winds.

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

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

### Lark's Head Knot



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

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

air can be useful to fine-tune the length, ensuring it is even on both sides.

## 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. This should leave the paraglider with the bottom surface facing upwards, the openings at the downwind/uphill end of the take-off area, and the harness at the trailing edge at the upwind side.

Unroll the canopy to each side so that the leading edge openings form a semi-circular shape, with the trailing edge drawn together to form an arc. The harness should be drawn away from the canopy until the suspension lines are just tight.

## Pre-flight inspection

Your paraglider is 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 describe how to get the best from your wing.

## Launch

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

It can be launched easily 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 find) and begin your launch run pulling gently and smoothly on the A-risers. As soon as the canopy starts to rise off the ground stop pulling so hard on the A-risers but put pressure on all the risers evenly through the harness. Maintaining gentle pressure on the A-risers helps in very calm conditions. Have your hands ready to slow up the canopy with the brakes if it starts to accelerate past you.

### Reverse Launch

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

## Straight Flight

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

## Turning

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

## Active piloting

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

In order to get the best performance from your wing, it is best to control it 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 (see also Chapter 5).

### **Spiral Dive**

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

Spiral dives are one of the most dangerous manoeuvres in paragliding and the high G-force and quick loss of altitude can easily catch pilots out. A mistake in judging these factors can lead to a very serious accident, so spirals must be

treated with great respect. Pilots are advised to practise spiral dives under close supervision or during an SIV course.

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

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 an 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 first, 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 edge plastics, 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.

## Lines



This video: <https://vimeo.com/782625749> explains how to use softlinks.

### 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.

*Left: loops present; Right: loops released* 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.

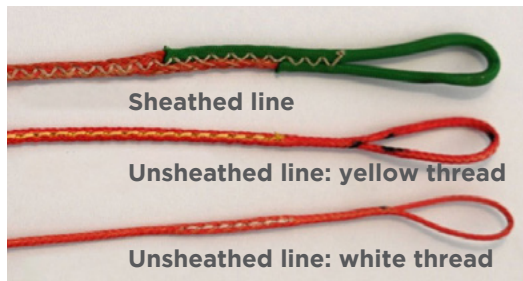
You can identify the line(s) you need to replace from the line layout diagram for your wing. Download the latest version here: <https://tinyurl.com/BGDlines>

Replacement lines can be ordered from the Accessories section of [www.flybgd.com](http://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

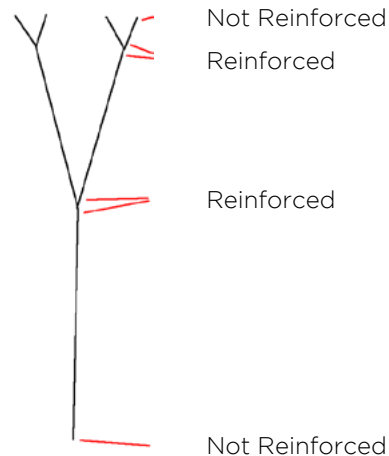
It is important that the lines are mounted the correct way up.



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.

# Technical Data

## Materials

The ANDA is made from the following quality materials:

Top surface	Porcher Skytex 27g/m <sup>2</sup>
Top leading edge central cells	Porcher Skytex 32g/m <sup>2</sup>
Bottom surface	Porcher Skytex 27g/m <sup>2</sup>
All ribs	Porcher Skytex 27g/m <sup>2</sup> hard
Risers (A and B)	12mm Kevlar-reinforced nylon
Risers (Baby-A and C)	Dyneema
Connectors	Softlinks
Pulleys	Spenger pulleys / low-friction rings
Top lines	Edelrid Pro Dry, unsheathed kevlar 8001U
Middle lines	Edelrid Pro Dry, unsheathed kevlar 8001U
Lower lines	Edelrid Pro Dry, unsheathed kevlar 8001U
Brakes KL1	PPSL (sheathed)

Spare parts can be obtained directly from BGD or through our network of registered BGD repair shops. Click the 'location' icon at [www.flybgd.com](http://www.flybgd.com)

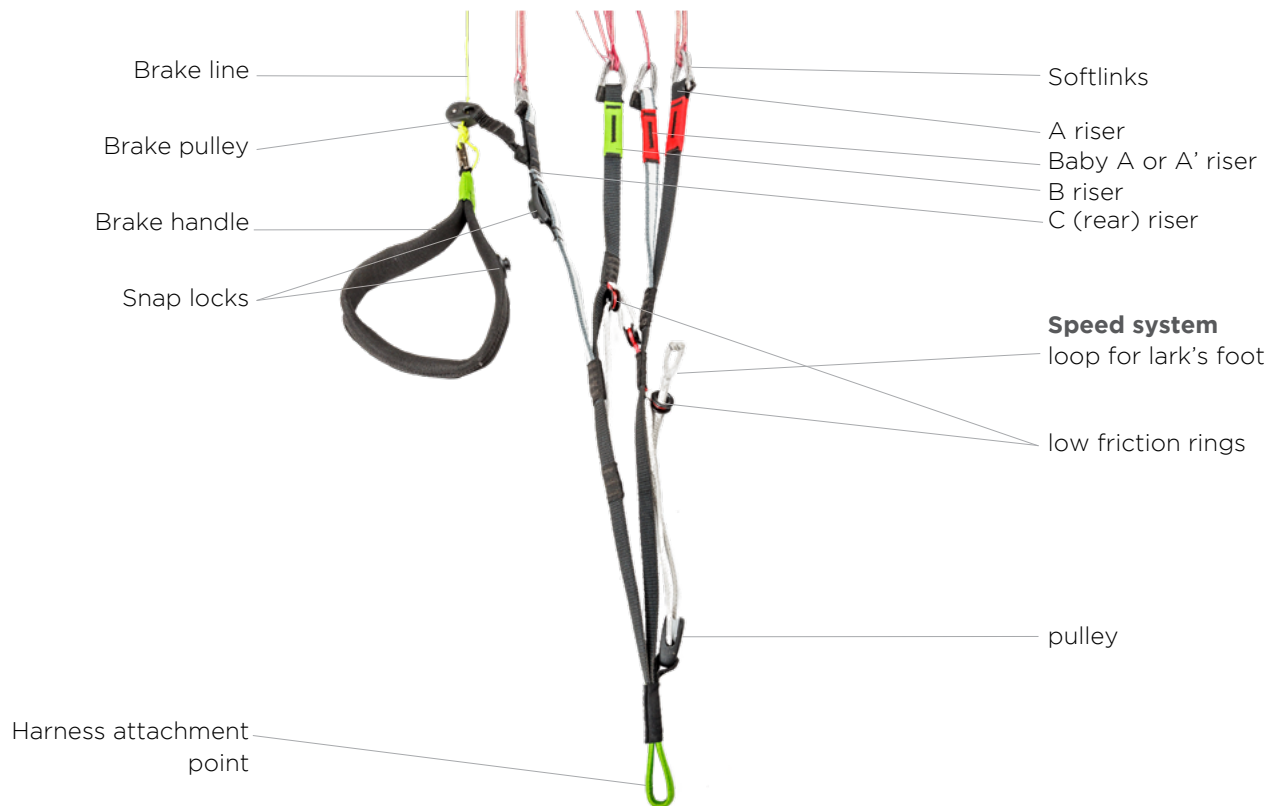
## Specifications

	<b>XS</b>	<b>S</b>	<b>M</b>	<b>ML</b>	<b>L</b>
Linear scaling factor	0.96	1.00	1.04	1.08	1.12
Projected area (m²)	17.7	19.7	21.0	24.5	26.3
Flat area (m²)	21.0	23.0	25.0	27.0	29.0
Glider weight (kg)	2.78	2.99	3.22	3.36	3.54
Total line length (m)	227	233	244	254	263
Height (m)	6.7	7.0	7.1	7.5	7.8
Number of main lines	3/4/3	3/4/3	3/4/3	3/4/3	3/4/3
Cells	37	37	37	37	37
Flat aspect ratio	4.8	4.8	4.8	4.8	4.8
Projected aspect ratio	3.6	3.6	3.6	3.6	3.6
Root chord (m)	2.63	2.74	2.85	2.96	3.07
Flat span (m)	10.1	10.5	10.9	11.4	11.8
Projected span (m)	7.9	8.2	8.6	8.9	9.2
Standard weight range (kg)	50 - 70	65 - 80	75 - 95	85 - 108	100 - 125
Extended weight range (kg)	70 - 80	80 - 90	95 - 105	108 - 117	125 - 130
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: A	EN+LTF: A	EN+LTF: A	EN+LTF: A	EN+LTF: A

## Overview of Glider Parts



## Risers



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

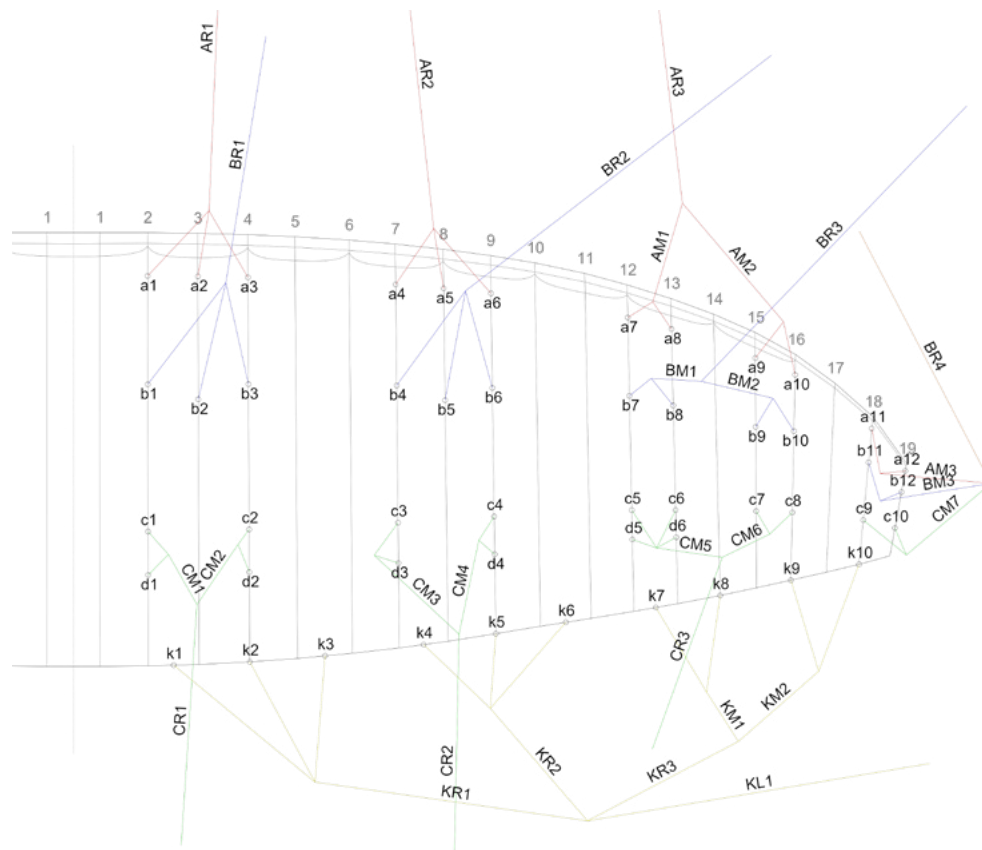
## Brake and Accelerator Travel

Size	Riser length (mm)*	Accelerator travel (mm)	Brake range (cm)**
<b>XS</b>	450	140	65
<b>S</b>	500	140	70
<b>M</b>	500	140	75
<b>ML</b>	500	140	80
<b>L</b>	500	140	85

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

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

## Line Plan



## Line Lengths

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

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

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

## Size XS

	A	B	C	D	K
1	6174	6091	6178	6257	6468
2	6149	6064	6165	6241	6284
3	6162	6076	6170	6246	6235
4	6155	6072	6158	6220	6098
5	6139	6056	6126	6170	5977
6	6150	6070	6050	6091	5984
7	6112	6051	5955		5946
8	6056	5998	5939		5847
9	5924	5896	5733		5784
10	5864	5856	5638		5807
11	5600	5599			
12	5445	5478			

Bridle check ▲

Single line lengths ►

A	B	C	D	K
a1 1548	b1 1547	c1 845	d1 924	k1 1410
a2 1523	b2 1519	c2 839	d2 915	k2 1226
a3 1536	b3 1532	c3 639	d3 715	k3 1177
a4 1465	b4 1454	c4 633	d4 695	k4 1284
a5 1449	b5 1438	c5 712	d5 756	k5 1163
a6 1460	b6 1452	c6 636	d6 677	k6 1170
a7 465	b7 409	c7 481		k7 753
a8 414	b8 357	c8 465		k8 654
a9 424	b9 356	c9 493		k9 490
a10 364	b10 316	c10 398		k10 513
a11 423	b11 413			
a12 268	b12 292			
AR1 4139	BR1 4058	CM1 877		KR1 2811
AR2 4203	BR2 4132	CM2 870		KR2 2567
AM1 2034	BM1 1554	CM3 669		KM1 792
AM2 1890	BM2 1450	CM4 663		KM2 893
AM3 383	BM3 390	CM5 732		KR3 2157
AR3 3131	BR3 3606	CM6 791		KL1 2213
	BR4 4316	CM7 449		
		CR1 3985		
		CR2 4391		
		CR3 4208		

## Size S

	A	B	C	D	K
1	6509	6425	6511	6594	6825
2	6484	6399	6500	6580	6633
3	6497	6411	6507	6586	6581
4	6490	6408	6494	6560	6439
5	6474	6392	6460	6505	6311
6	6486	6405	6379	6423	6320
7	6448	6381	6279		6280
8	6395	6327	6263		6178
9	6249	6215	6048		6112
10	6185	6174	5949		6137
11	5903	5904			
12	5743	5780			

Bridle check ▲  
Single line lengths ►

A	B	C	D	K
a1 1619	b1 1619	c1 884	d1 967	k1 1476
a2 1594	b2 1589	c2 879	d2 959	k2 1284
a3 1607	b3 1605	c3 669	d3 748	k3 1233
a4 1533	b4 1522	c4 663	d4 729	k4 1345
a5 1517	b5 1505	c5 747	d5 792	k5 1217
a6 1529	b6 1520	c6 666	d6 710	k6 1226
a7 487	b7 428	c7 504		k7 788
a8 434	b8 375	c8 488		k8 686
a9 445	b9 373	c9 516		k9 513
a10 381	b10 332	c10 417		k10 538
a11 443	b11 433			
a12 298	b12 323			
AR1 4353	BM1 1626	CM1 918		KR1 2940
AR2 4423	BM2 1517	CM2 912		KR2 2686
AM1 2128	BM3 408	CM3 700		KM1 828
AM2 1978	BR1 4270	CM4 693		KM2 936
AM3 400	BR2 4349	CM5 766		KR3 2260
AR3 3303	BR3 3797	CM6 827		KL1 2354
	BR4 4542	CM7 470		
		CR1 4192		
		CR2 4621		
		CR3 4426		

## Size M

	A	B	C	D	K
1	6777	6687	6783	6869	7092
2	6753	6659	6771	6854	6894
3	6767	6675	6780	6862	6841
4	6761	6674	6768	6836	6694
5	6745	6657	6736	6783	6562
6	6759	6672	6652	6698	6571
7	6713	6655	6548		6532
8	6659	6598	6531		6425
9	6517	6485	6305		6357
10	6451	6445	6200		6383
11	6155	6157			
12	5990	6028			

Bridle check ▲  
Single line lengths ►

A	B	C	D	K
a1 1686	b1 1687	c1 922	d1 1008	k1 1538
a2 1662	b2 1658	c2 917	d2 1000	k2 1340
a3 1676	b3 1675	c3 698	d3 780	k3 1287
a4 1596	b4 1587	c4 692	d4 760	k4 1402
a5 1580	b5 1570	c5 779	d5 826	k5 1270
a6 1594	b6 1585	c6 695	d6 741	k6 1279
a7 507	b7 447	c7 526		k7 823
a8 453	b8 391	c8 509		k8 716
a9 464	b9 389	c9 540		k9 535
a10 398	b10 346	c10 435		k10 561
a11 462	b11 452			
a12 297	b12 323			
AR1 4559	BR1 4469	CM1 957		KR1 3064
AR2 4633	BR2 4556	CM2 950		KR2 2802
AM1 2217	BM1 1695	CM3 729		KM1 863
AM2 2062	BM2 1581	CM4 723		KM2 976
AM3 417	BM3 427	CM5 798		KR3 2359
AR3 3467	BR3 3986	CM6 862		KL1 2466
	BR4 4758	CM7 490		
		CR1 4391		
		CR2 4840		
		CR3 4643		

## Size ML

	A	B	C	D	K
1	7047	6952	7054	7144	7396
2	7021	6923	7045	7131	7189
3	7037	6939	7054	7140	7134
4	7031	6940	7042	7113	6981
5	7015	6924	7012	7061	6844
6	7029	6940	6925	6972	6854
7	6988	6923	6816		6815
8	6928	6862	6797		6704
9	6780	6746	6561		6635
10	6712	6701	6451		6662
11	6408	6408			
12	6238	6276			

Bridle check ▲  
Single line lengths ►

A	B	C	D	K
a1 1753	b1 1753	c1 958	d1 1048	k1 1600
a2 1727	b2 1723	c2 954	d2 1040	k2 1393
a3 1743	b3 1740	c3 725	d3 811	k3 1338
a4 1659	b4 1648	c4 720	d4 791	k4 1457
a5 1643	b5 1632	c5 810	d5 859	k5 1320
a6 1657	b6 1648	c6 723	d6 770	k6 1330
a7 527	b7 465	c7 548		k7 856
a8 471	b8 407	c8 529		k8 745
a9 482	b9 405	c9 562		k9 557
a10 414	b10 360	c10 452		k10 584
a11 481	b11 470			
a12 311	b12 338			
AR1 4757	BR1 4662	CM1 993		KR1 3183
AR2 4835	BR2 4755	CM2 988		KR2 2911
AM1 2304	BM1 1760	CM3 758		KM1 896
AM2 2143	BM2 1643	CM4 751		KM2 1015
AM3 434	BM3 443	CM5 830		KR3 2453
AR3 3625	BR3 4165	CM6 895		KL1 2584
	BR4 4965	CM7 509		
		CR1 4582		
		CR2 5050		
		CR3 4848		

## Size L

	A	B	C	D	K
1	7307	7203	7301	7393	7687
2	7281	7174	7292	7381	7473
3	7299	7191	7300	7388	7418
4	7297	7196	7288	7360	7259
5	7278	7178	7260	7310	7119
6	7294	7196	7169	7218	7131
7	7252	7175	7057		7090
8	7194	7114	7038		6975
9	7039	6993	6792		6903
10	6969	6947	6679		6932
11	6635	6634			
12	6460	6501			

Bridle check ▲  
Single line lengths ►

A	B	C	D	K
a1 1819	b1 1817	c1 993	d1 1086	k1 1658
a2 1793	b2 1787	c2 989	d2 1079	k2 1444
a3 1811	b3 1805	c3 752	d3 841	k3 1389
a4 1724	b4 1710	c4 747	d4 820	k4 1509
a5 1705	b5 1692	c5 840	d5 890	k5 1369
a6 1721	b6 1710	c6 749	d6 798	k6 1381
a7 548	b7 482	c7 568		k7 888
a8 490	b8 422	c8 549		k8 773
a9 501	b9 420	c9 582		k9 577
a10 431	b10 374	c10 469		k10 606
a11 499	b11 487			
a12 324	b12 354			
AR1 4955	BR1 4852	CM1 1028		KR1 3297
AR2 5040	BR2 4952	CM2 1023		KR2 3018
AM1 2392	BM1 1825	CM3 784		KM1 929
AM2 2224	BM2 1703	CM4 777		KM2 1053
AM3 450	BM3 459	CM5 859		KR3 2544
AR3 3784	BR3 4338	CM6 927		KL1 2698
	BR4 5163	CM7 527		
		CR1 4761		
		CR2 5245		
		CR3 5042		

# Service Booklet

## Test Flight Record

Model

Size

Serial Number

Colour

Date of test flight

Company signature and stamp

## Service Record

**Service No 1:**

Date :

Stamp - Signature :

No flights :

Type of service :

**Service No 2:**

Date :

Stamp - Signature :

No flights :

Type of service :

**Service No 3:**

Date :

Stamp - Signature :

No flights

Type of service :

## Owner Record

Pilot No 1

First name

Family name

Street

City

Post code

Country

Telephone

Email:

**Pilot No 2**

First name

Family name

Street

City

Post code

Country

Telephone

Email:

## Closing Words

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

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

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

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

See you in the sky!

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