MANUAL

ANDA



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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
Free flying	A	A	A	A	A
Towing	Not yet tested				
Paramotor	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

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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 (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 waranty 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 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 though your own wake, which can cause a collapse.

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

CAUTION: Spiral dives can cause loss of orientation or black-out and they take some time to exit from. This manoeuvre must be exited in time, and with sufficient height.

Landing

Landing is very straightforward. When landing in light winds, flare in the normal way from an altitude of around 2m. It may sometimes help to take wraps on the brakes to make the flare more effective.

Strong-wind landings require a different technique. If you use the brakes to flare in a strong wind the wing tends to convert this energy to height, which can be a problem. The best method is to take hold of the rear-risers at the maillons just before landing, and collapse the canopy using these when you have landed. The glider will collapse very quickly using this method.

After landing, the B-risers can also be used to collapse the canopy, although it is more difficult to control the collapsed canopy on the ground with the B-risers.

Recovery Techniques

Stalls

Stalls are dangerous and should not be practised in the course of normal flying. Stalls are caused by flying too slowly. Airspeed is lost as brake pressure increases and as the canopy approaches the stall point it will start to descend vertically and finally begin to collapse. Should this occur it is important that the pilot releases the brakes at the correct moment. The brakes should never be released when the wing has fallen behind the pilot; the brakes should be released fairly slowly, to prevent the forward dive of the canopy from being too strong. A pre-release of the brakes and the reconstruction of the full span is recommended to avoid the tips getting cravatted during the recovery. Pilots are advised never to attempt this manoeuvre unless under SIV instruction. This manual is not intended to give instruction in this or any other area.

Deep Stall (or Parachutal Stall)
Your paraglider has been designed so that it will not easily remain in a deep stall. However, if it is incorrectly rigged or its flying characteristics have been adversely affected by some other cause, it is possible that it could enter deep stall. In the interests of safety all pilots should be aware of this problem, and know how to recover from it. The most common way to enter deep stall is from a flying too slowly, from a B-line stall or even from big ears. When in deep stall the pilot will notice the following:

1. Very low airspeed.

2. Almost-vertical descent (like a round canopy), typically around 5m/s.

3. The paraglider appears quite well inflated but does not have full internal pressure. It looks and feels a bit limp.

Recovery from deep stall is quite simple: The normal method is to simply initiate a mild turn. As the canopy starts to turn it will automatically revert to normal flight, but it is very important not to turn too fast as this could induce a spin.

The second method is to pull gently on the A-risers. This helps the airflow to re-attach to the leading edge, but be careful not to pull down too hard as this will induce a front collapse.

If the deep stall is particularly stubborn and the previous methods do not work then a full stall will solve the problem. To do this apply both brakes fairly quickly, as if to do a strong stall, then immediately release both brakes and damp out the forward surge in the normal way. The canopy will swing behind you then automatically reinflate and surge forward in front of you before returning to normal flight. It is the surge forward that exits the canopy from deep stall.

Spins

Spins are dangerous and should not be practised in the course of normal flying. Spins occur when the pilot tries to turn too fast. In a spin the pilot, lines and canopy basically stay vertical and rotate around a vertical axis. Your glider will resist spinning, but if a spin is inadvertently induced you should release the brake pressure but always be ready to damp out any dive as the glider exits the spin. Failure to damp the dive on exiting the spin may result in an asymmetric deflation.

Symmetric Front Collapse

It is possible that turbulence can cause the front of the wing to symmetrically collapse, though active piloting can largely prevent this from occurring. During the early stages of a front collapse the pilot should apply the brakes symmetrically on both sides for a maximum of one second. This will push the air from the back of the canopy towards the front, stopping the collapse from becoming deep. Make sure the brakes are fully released during the later stages of the collapse, or this may induce a full stall. The glider will normally recover on its own as long as the pilot keeps the brakes up. If the glider does not recover on its own it may be necessary to make a second pump on the brakes.

A pilot can reproduce the effect during an SIV course by taking hold of both the A-risers and pulling down sharply on them, then immediately releasing. Make sure that you pull all four A-risers at the same time, two risers in each hand (make sure to include the baby-A risers). The glider will automatically recover on its own from this situation in around

three seconds. During this recovery period it is advisable not to apply the brakes as this could stall the wing.

Asymmetric Collapse

If the canopy collapses on one side due to turbulence, you should first of all control the direction of flight by countering on the opposite brake. Most collapses will immediately reinflate on their own and you will hardly have time to react before the wing reinflates automatically. The act of controlling the direction will tend to reinflate the wing. However, with more persistent collapses it may be necessary to pump the brake on the collapsed side using a long, smooth and firm action. Normally one or two pumps of around 80cm will be sufficient. Each pump should be applied in about one second and smoothly released. In severe cases it can be more effective to pump both brakes together to get the canopy to reinflate. Be careful not to stall the wing completely if this technique is used.

Releasing a trapped tip (cravat)

Following a severe deflation it is possible for a wingtip to become trapped in the glider's lines (cravat). If this occurs then first try the standard method of recovery from a tip deflation as described in Asymmetric Front Collapse above. If the canopy still does not recover then pull the rear risers to help the canopy to reinflate. Pulling the stabilo line is also a good way to remove cravats, but remember to control your flight direction as your number-one priority. If you are very low then it is much more important to steer the canopy into a safe landing place or even throw your reserve.

NOTE: Test pilots have tested the glider well beyond the normal flight envelope, but these tests are carried out in a very precise manner by trained test pilots with a back-up parachute, and over water. Stalls and spins on any paragliders are dangerous manoeuvres and are not recommended.

Loss of brakes

In the unlikely event of a brake line snapping in flight or a handle becoming detached, the glider can be flown by gently pulling the rear risers for directional control.

Maintenance

Packing

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

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

Storage and Care

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

We recommended storing your glider loosely packed, in a dry place out of direct sunlight. Avoid extremes of temperature – do not leave it for long periods in a hot car in summer, or let it freeze, particularly if it is damp.

Your paraglider is made from high quality nylon which is treated against weakening from ultraviolet radiation.

However, UV exposure will still weaken the fabric, and prolonged exposure to harsh sunlight can severely compromise the safety of your glider. Once you have finished flying, put your wing away. Do not leave it in strong sunshine unnecessarily.

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

Do not treat your canopy with chemical cleaners or solvents. If you must wash the fabric, use warm water and a little soap. If your canopy gets wet in sea water, wash it with warm fresh water and carefully dry it.

Small Repairs

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

Lines



Left: loops present; Right: loops released

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.

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.

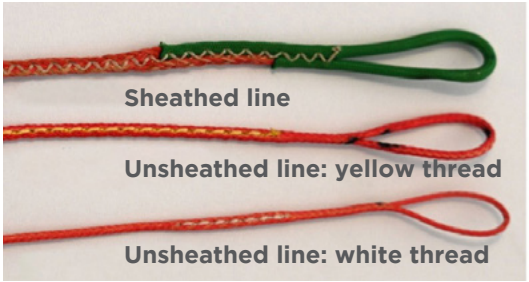
Mounting Replacement Lines
If you need to replace lines on your glider, we recommended that a professional should mount the new lines. The airworthiness of your glider, and your safety, depends on it being done correctly.

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. 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.

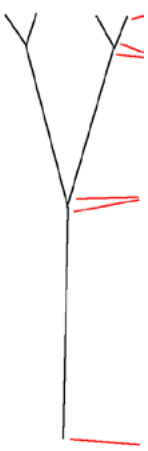


Sheathed lines have no internal reinforcing. They can be mounted either way up

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^2
Top leading edge central cells	Porcher Skytex 32g/m^2
Bottom surface	Porcher Skytex 27g/m^2
All ribs	Porcher Skytex 27g/m^2 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 though our network of registered BGD repair shops. Click the 'location' icon at www.flybgd.com

Specifications

	XS	S	M	ML	L
Linear scaling factor	0.96	1.00	1.04	1.08	1.12
Projected area (m^2)	17.7	19.7	21.0	24.5	26.3
Flat area (m^2)	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



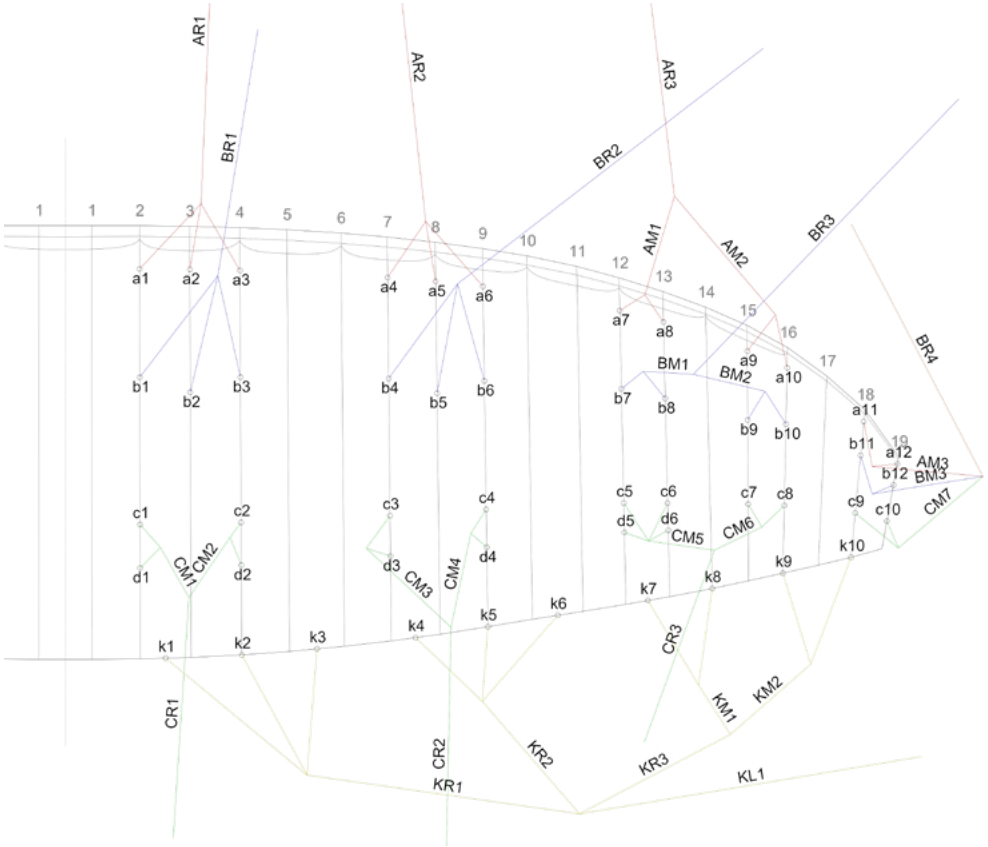
The riser set does not have trimmers, or any other adjustable or removable device.

Brake and Accelerator Travel

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

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

Line Plan


AR1
AR2
AR3
BR1
BR2
BR3
BR4
AM1
AM2
AM3
BM1
BM2
BM3
1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12
b1 b2 b3 b4 b5 b6 b7 b8 b9 b10 b11 b12
c1 c2 c3 c4 c5 c6 c7 c8 c9 c10
d1 d2 d3 d4 d5 d6
CM1 CM2 CM3 CM4 CM5 CM6 CM7
k1 k2 k3 k4 k5 k6 k7 k8 k9 k10
CR1 CR2 CR3
KR1 KR2 KR3
KM1 KM2
KL1

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.

BRUCE GOLDSMITH DESIGN

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				

BRUCE GOLDSMITH DESIGN

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			

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				

Bridle check ▲
Single line lengths ▶

BRUCE GOLDSMITH DESIGN

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				

BRUCE GOLDSMITH DESIGN

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	

BRUCE GOLDSMITH DESIGN

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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