MANUAL

ADAM 2
MOTOR

Version 1.4 October 2024

BRUCE GOLDSMITH DESIGN

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Contents

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ADAM 2 MOTOR Owner's Manual

Solo paraglider for free-flight and paramotor use: EN / LTF A

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 ADAM 2 MOTOR

The ADAM 2 MOTOR is a safe and fun wing, suitable for beginners and perfectly adapted for paramotoring. It is a hybrid wing, which means it can be used for free flight and for paramotoring. This manual refers to the ADAM 2 MOTOR, which is delivered with paramotor risers with trimmers. The only difference between the ADAM 2 and the ADAM 2 MOTOR is the risers.

In order to ensure your wing retains its original flight characteristics, it should be properly looked after. Please read this manual from the first to the last chapter to ensure you get the best out of it.

Do not hesitate to contact your nearest BGD dealer if you need advice or information about your paraglider, or any replacement parts.

Introduction

The ADAM 2 MOTOR is suitable for beginners. It can be flown with or without a motor.

The MOTOR version is supplied with paramotor risers which have trimmers. The EN/LTF A certification for free flight is valid only when it is flown within the 'in-flight weight range for free flight' with the trimmers in their fully closed (slow) position. If the trimmers are at any other setting, it is no longer EN / LTF certified.

When using the paramotor risers, the brake line lengths should be adjusted to suit the hangpoints (high, low, trike). See Preparation.

We recommend setting the trimmers to position 2 for take-off.

Safety Notes

Your 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 strong turbulence, violent winds, rain or snow. A wet canopy is much more likely to enter a parachutal or full stall. 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.

4. Be towed with a tow-line tension in excess of 200kg.

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

6. When using the PPG riser-set, only the brake line lengths should be adjusted. No other changes or modifications should be performed without first consulting your BGD dealer, as they may invalidate the warranty or certification.

7. Brakes should not be used when trimmers and speed bar are both applied. It is safe to use the brakes with the trimmers (and no speed bar) at all trimmer settings.

   Trimmers + brakes = OK
   Trimmers + speed bar + brakes - No!

Warranty

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

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

Preparation

Riser set-up

The risers on the ADAM 2 Motor can be adapted to the height of the **hangpoints** of your paramotor frame/harness. The risers are delivered ready for use with a low-hanpoint machine. For a paramotor with high hangpoints you will need to move the brake leg to the lower position, as shown:

1. Take the brake lines off the 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. Tie the brake handle back on, and lengthen the brake lines by the distance between the loops (20cm). If they are not long enough, you will either need to get longer lines, or the line can be extended at the top where it does not run though any rings or pulleys.

Brake Line lengths

There should be enough slack in the brake lines so that in flight with 'hands up' the glider's trailing edge is not deflected either at trim speed or accelerated. The brakes have a knot at the handle so the pilot can check the brakes are long enough and adjust them if necessary.

For free-flight gliders 5-10cm slack is usual; for paramotor wings it can be as much as 15cm. When your dealer test-flies a brand new wing, it is one of the things they check. New gliders will be delivered with the correct brake length which is also the certified length.

However, as a glider ages the brake lines can shrink; even the presence of multiple twists in the brake lines can effectively shorten them. You should make it a habit to check for this and untwist the brake lines on launch or lengthen them at the knot. Avoid over-shortening the brake lines.

When your glider is serviced, brake line shrinkage will be spotted but it is also a good idea as a pilot to check from time to time that when you fly hands up, you can see a slight 'bow' or 'slack' in the brake lines and there is no deflection of the trailing edge.

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. Unroll the canopy with the bottom surface facing upwards, the openings at the downwind end of the take-off area, and the harness at the trailing edge at the upwind side.

3. Unroll the canopy to each side so that the leading edge openings form a semicircular shape, with the trailing edge drawn together at the centre of the arc. The harness should be drawn away from the canopy until the suspension lines are just tight.

4. Prepare and check your paramotor according to the manufacturer's instructions.

5. Connect the wing to the paramotor, making sure there are no twists in the risers, and that the maillons or karabiners are correctly closed.

Pre-flight Checks

A thorough pre-flight procedure is mandatory on all aircraft. The following should be carried out before each flight.

1. Whilst opening out the paraglider check the outside of the canopy for any tears..

2. Check that the lines are not twisted or knotted. Divide the suspension lines into six 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. 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 whilst the pilot holds 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 buggy. It is strongly recommended to use a safety strap.

5. Before getting into the harness you should be wearing a good helmet. Put on the harness ensuring all the buckles are secure adjusted for comfort.

6. Check that the trimmers are set to position 2, the position recommended for take-off, and maillons at the same height.

Take care to protect yourself and other people from the propeller. Always start your motor up at a safe distance from other people. If it touches the ground it can fire objects into the air 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. You should be a qualified pilot or under suitable supervision, but the following comments describe how to get the best from your paraglider.

Weight range

Each size of paraglider is certified for a certain weight range. The weight refers to the 'overall take-off weight'.

The '**Free flight (EN / LTF A) weight range**' is the weight of the pilot, paraglider, harness and other equipment carried when free-flying. The paraglider is EN/LTF certified for this weight range.

The '**Paramotor weight range**' allows for all of the above, plus the paramotor and a full tank of fuel.

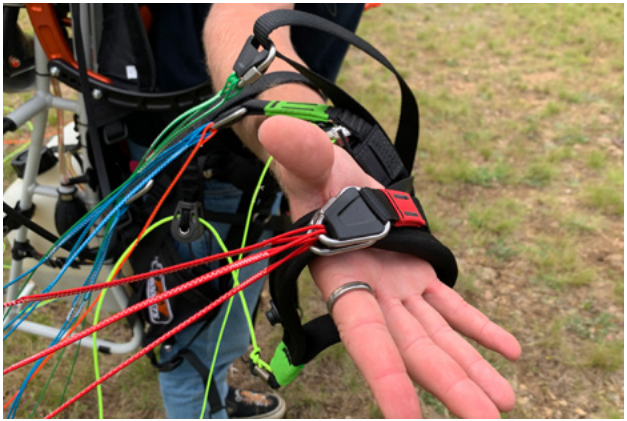
We recommend flying in the middle of the weight range.

If you fly in the lower half of the weight range, the glider's turning agility decreases and it will be more damped. In strong turbulence the wing will have a slightly increased tendency to deform and to collapse than with a higher wing loading. Only fly lightly loaded if you fly in aerologically stable conditions, such as in the morning or evening.

If you fly in the upper half of the weight range, agility and stability in turbulence will increase, and speed will increase slightly. The self-damping will decrease in turns, as well as after collapses.

Take-off

We recommend setting the trimmers to position 2 for take-off.



Your wing 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. Hold the brakes in your hands and rest the risers on your arms. Hold the A risers and Baby A together at the links as shown in the image. Never try to launch if the wing is not fully inflated and above your head, and if you do not have full control of pitch and / or roll.

Initial climb

Once in the air, you should continue to face into the wind while you gain altitude. Leave the trimmers in the take-off position (mark 2) to attain 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 sufficient height and speed to do so. 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 these 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.

Trimmers and Speed Bar

The PPG risers have trimmers and an accelerator system (speed bar), which can be used to increase the speed. The standard trimmer setting is fully closed (maillons level), which is the slowest position. For best fuel consumption or to fly in thermals, the trimmers should be closed.

After take-off, once you have gained a safe altitude if you want to increase your speed you can open up the trimmers, keeping your hands up, or apply the speed bar.

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.
To increase speed using the speed bar, pressure should be applied gradually to the bar. Do not use excessive force to attempt to go beyond the point where the pulleys touch, as this may result in the glider collapsing. Using the speed system can affect the pilot´s balance in the harness and it may be necessary to make some adjustments to the harness.

Using speed bar is not as comfortable as using trimmers but is safer, because in the event of unexpected turbulence the pilot can react immediately by releasing the bar.

We recommend you fly in conditions where you can penetrate into wind without having to use the accelerator or fully opening the trimmers, which gives you a safety margin of extra speed should you need it.

Glide deteriorates slightly and the glider is slightly more susceptible to collapses with trimmers open or the speed bar applied.

We do not recommend pilots to fly with full accelerator and trimmers fully open at the same time at low altitude.

The ADAM 2 MOTOR 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.

Using brakes when accelerated

It is safe to use the brakes at all trimmer settings. Brakes should not be used when trimmets and speed bar are both applied.

Trimmers + brakes = OK
Trimmers + speed bar + brakes - No!

Turning

Your first turns should be gradual and progressive. The first 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.

Remember that to violently apply pressure 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.

Landing

Set the trimmers to the closed position (maillons aligned) and set up your approach downwind of the landing field. When your height above the field is around 40m, slow the motor down and glide in the direction of your intended

landing point. If you are sure to be able to reach your landing place, you should switch the engine off ready for landing. If you land with the engine running there is a considerable risk of rotational propeller damage, (lines passing through the propeller, or even injury).

If you are likely to arrive short of your intended landed spot, power up, gain some height and make your approach again.

When you are on your final approach with your engine off, maintain your speed (hands up) to keep plenty of energy in the wing until you are about 1-2 metres 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.

Active Piloting

Active Piloting is a tool that will help you fly with greater safety and enjoyment. It means flying in empathy with your paraglider, guiding it through the air and being aware of feedback from the wing, especially in thermals and turbulence. If the air is smooth the feedback can be minimal but in turbulence feedback is continuous and needs to be constantly assessed by the pilot. This becomes instinctive in good pilots.

Rapid Descent Techniques

Always keep hold of both brakes in order to retain control of your glider when doing Big Ears or B-Line stalls. We do not recommend putting your hands through the brake handles, as this makes it harder to recover from a deep stall situation. There is a risk of deep stall occurring with both Big Ears and B-Line Stall.

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. It allows you to descend quickly without substantially reducing the forward speed of the canopy (B-lining 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 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 this could cause the leading edge to collapse. Steering by weightshifting is possible with big ears in. If the big ears do not come out quickly on their own, a gentle pump on the brakes will speed things up. Before using the big ears facility in earnest it is essential to practise beforehand with plenty of ground clearance in case a leading edge collapse occurs.

B-Line Stall

This fast descent method is a useful emergency procedure. Keeping hold of the brake handles, take hold of the top of the B-risers, one in each hand, and pull them down by around 30cm. 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 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 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 result in the glider entering 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.

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 from normal spirals with a descent rate less than 16m/s, automatically without pilot input. If the pilot increases the descent rate of the spiral to over 16m/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 special type of 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 ends up pointing at the ground, after which 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 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 though 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.

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

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 through 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 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:

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

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 change 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 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

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 paraglider will resist spinning, but if a spin is inadvertently induced the pilot should release the brake pressure but always be ready to damp out any dive as the glider exits the spin. If the pilot does not damp the dive on exiting the spin the glider may have 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 accidentally. A pilot can reproduce the effect by taking hold of both the A-risers and pulling down sharply on them. The wing will automatically recover on its own from this situation in around 3 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; however if the canopy collapses on one side due to turbulence, the pilot 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 80 cm 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)

It should be difficult to trap the tip so that it will not come out quickly. However, following a very severe deflation any canopy could become tied up in its own lines. 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 such 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.

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.

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 www.flybgd.com. 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.

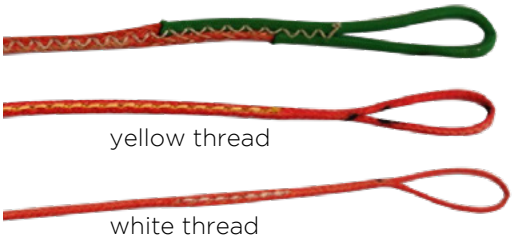
Tab Alignment
Lines should be symmetrically placed on the tab, except where the tab is inclined. The A tabs are inclined backwards on all BGD gliders, to align with the direction of pull of the line. So when assembling the lines, the A tabs should be angled back, and the B, C and D tabs should be perpendicular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

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.

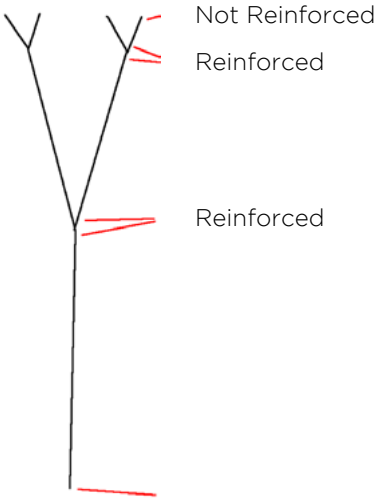
Correct alignment of microlines



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

Yellow thread marks the reinforced end of a microline

White thread marks the non-reinforced end of a microline



Connecting lines

All the lines are connected to other lines or to tabs with lark's foot junctions. Make sure that 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, please remove all metal parts and put the different materials in an appropriate waste/recycling plant.

Technical data

Materials

The ADAM 2 MOTOR is made from the following quality materials:

Sail	
Top surface	Dominico D30 42g/m^2
Bottom surface:	Porcher Eazyfly 40g/m^2
Internal Structure	Porcher Skytex hard finish 40g/m^2
Nose reinforcing	Plastic wire
Risers	
Webbing	20mm Kevlar/Nylon webbing
Maillons	Maillon Rapide 3.5D Delta shackles + inserts
Pulleys	Sprenger Allen
Lines	
Top lines	Liros PPSL
Middle lines	Liros PPSL
Lower lines	Liros PPSL
Brakes	Liros DSL

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

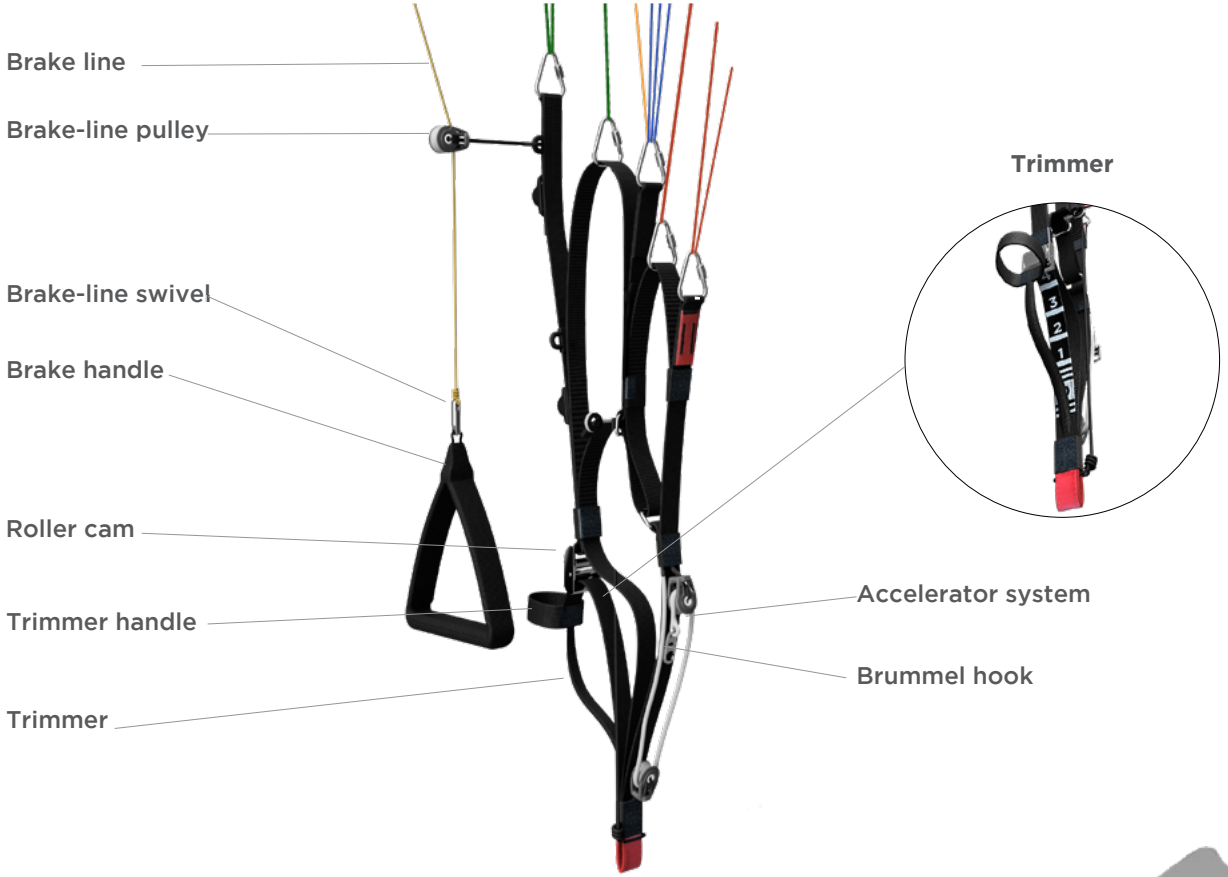
Specifications

	XS	S	M	ML	L
Linear scaling factor	0.96	1.00	1.04	1.08	1.12
Projected area (m^2)	17.9	19.7	21.4	23.1	24.8
Flat area (m^2)	21	23	25	27	29
Glider weight (kg)	4.1	4.4	4.75	4.96	5.4
Total line length (m)	212	232	252	272	293
Number of main lines			3/4/3		
Cells			36		
Flat aspect ratio			4.8		
Projected aspect ratio			3.4		
Root chord (m)	2.6	2.7	2.9	3.0	3.1
Flat span (m)	10.0	10.5	11.0	11.4	11.8
Projected span (m)	7.9	8.2	8.6	8.9	9.2
Free-flight weight range (kg)	50 - 65	60 - 80	75 - 95	88 - 108	100 - 125
PPG weight range (kg)	65 - 95	75 - 105	90 - 120	103 - 133	115 - 150
Trim speed (km/h)	35	36	38	39	39
Top speed (km/h)	48	50	51	50	50
Min. sink (m/s)			1		
Best glide			8.5		
Certification (free flight)			EN+LTF: A		
DGAC registration (paramotor)			Yes		
Max. engine power (HP / kW)	27 / 20	27 / 20	27 / 20	37 / 27	37 / 27
Suitable for towing			Yes		

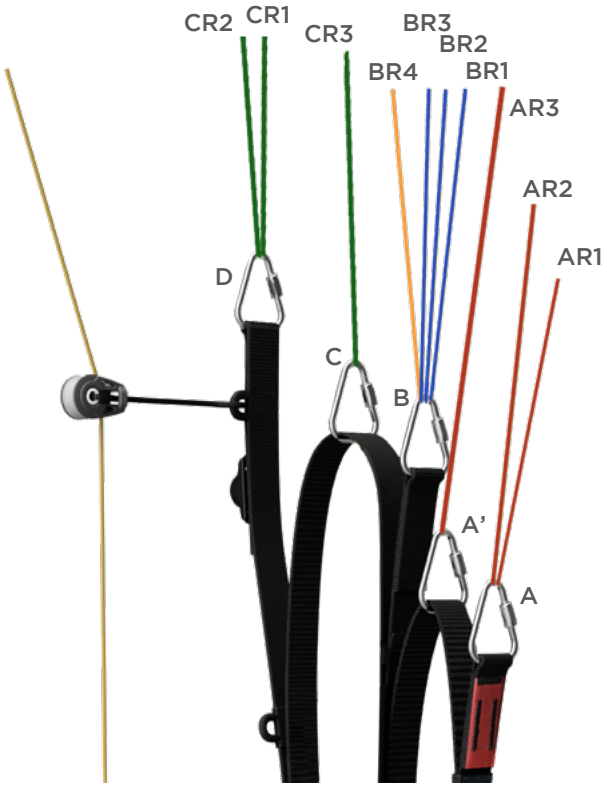
Overview of glider parts

BRUCE GOLDSMITH DESIGN

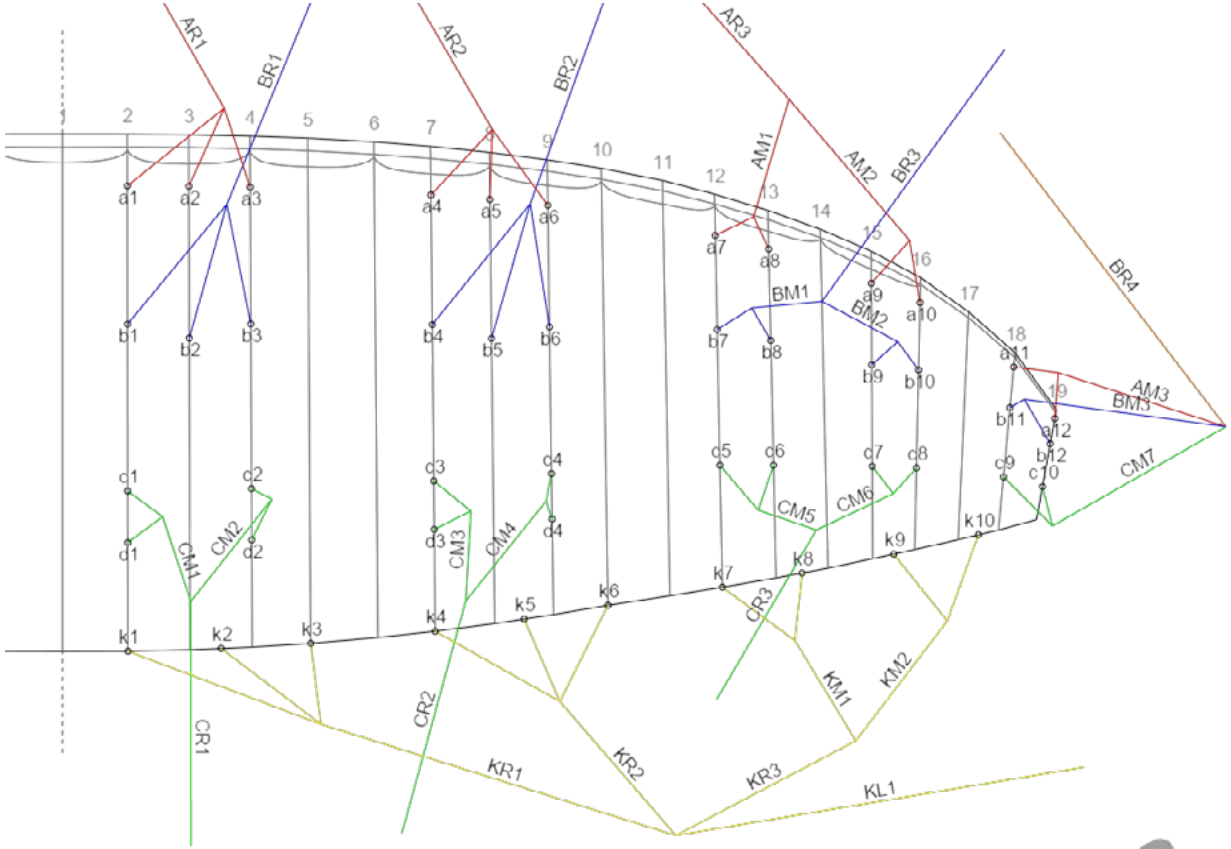
ADAM 2 Motor Risers



Lines / Risers



Line Plan


AR1
BR1
AR2
BR2
AR3
AM1
AM2
BR3
BR4
BM1
BM2
AM3
BM3
CM1
CM2
CM3
CM4
CM5
CM6
CM7
CR1
CR2
CR3
KM1
KM2
KR1
KR2
KR3
KL1
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
k1
k2
k3
k4
k5
k6
k7
k8
k9
k10

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.

Compliance of the test sample's suspension lines, control lines and risers with the dimensions given in the user's manual are checked by the testing laboratory after the test flights have been completed.

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	6462	6358	6420	6530	6789
2	6451	6347	6409	6518	6521
3	6422	6324	6398	6491	6485
4	6409	6310	6375	6471	6534
5	6380	6289	6378	6458	6312
6	6377	6298	6412	6491	6228
7	6277	6196	6261		6170
8	6178	6108	6145		6181
9	6150	6090	6115		6029
10	6022	6004	6099		5978
11	5972	5973	6098		5900
12	5752	5766	5908		5889
13	5557	5621	5785		

Bridle check ▲
Single line lengths ▶

A		B		C		D		K	
a1	363	b1	368	c1	344	d1	407	k1	671
a2	352	b2	357	c2	333	d2	395	k2	403
a3	385	b3	382	c3	375	d3	397	k3	372
a4	372	b4	367	c4	352	d4	377	k4	421
a5	365	b5	353	c5	326	d5	348	k5	418
a6	362	b6	362	c6	360	d6	381	k6	344
a7	1956	b7	1680	c7	1608			k7	360
a8	392	b8	400	c8	408			k8	361
a9	364	b9	382	c9	378			k9	375
a10	389	b10	340	c10	296			k10	314
a11	339	b11	309	c11	295			k11	297
a12	382	b12	394	c12	1172			k12	286
a13	178	b13	240	c13	1049				
AR1	5610	BR1	5502	CM1	711	DM1	753	KM1	804
AM1	2404	BM1	1995	CM2	1349	DM2	1415	KM2	754
AM2	2381	BM2	1987	CM3	1378	DM3	1431	KM3	1197
AMU1	1471	BMU1	1198	CM4	1089			KM4	1123
AM4	2441	BM4	2096	CM5	1155			KM5	868
AM5	640	BR4	4263	CR1	4898			KM6	807
AM6	648	BR2	3469	CR2	4207			KR1	2754
AR2	3154	BR3	3085	CR3	4180			KR2	2082
AM3	1131	BM3	949					KR3	2181
AR3	2710							KL1	2567

Size S

	A	B	C	D	K
1	6799	6693	6762	6874	7147
2	6789	6682	6750	6862	6877
3	6761	6659	6740	6833	6841
4	6748	6645	6718	6815	6891
5	6719	6624	6720	6801	6650
6	6715	6634	6757	6837	6572
7	6612	6536	6618		6515
8	6510	6445	6496		6519
9	6476	6426	6466		6369
10	6340	6327	6430		6304
11	6289	6295	6429		6224
12	6065	6080	6230		6213
13	5887	5953	6101		

Bridle check ▲
Single line lengths ▶

A		B		C		D		K	
a1	379	b1	386	c1	361	d1	427	k1	715
a2	369	b2	375	c2	349	d2	415	k2	445
a3	403	b3	400	c3	392	d3	415	k3	390
a4	390	b4	385	c4	370	d4	397	k4	440
a5	383	b5	369	c5	341	d5	364	k5	438
a6	379	b6	379	c6	378	d6	400	k6	360
a7	2046	b7	1766	c7	1701			k7	375
a8	411	b8	419	c8	427			k8	379
a9	382	b9	400	c9	397			k9	393
a10	406	b10	356	c10	310			k10	328
a11	355	b11	324	c11	309			k11	311
a12	400	b12	413	c12	1227			k12	300
a13	187	b13	251	c13	1098				
AR1	5891	BR1	5779	CM1	742	DM1	787	KM1	909
AM1	2514	BM1	2086	CM2	1411	DM2	1480	KM2	873
AM2	2491	BM2	2080	CM3	1442	DM3	1499	KM3	1250
AMU1	1539	BMU1	1262	CM4	1157			KM4	1178
AM4	2554	BM4	2193	CM5	1208			KM5	908
AM5	670	BR4	4488	CR1	5148			KM6	845
AM6	704	BR2	3655	CR2	4426			KR1	2810
AR2	3325	BR3	3255	CR3	4400			KR2	2194
AM3	1183	BM3	993					KR3	2300
AR3	2863							KL1	2720

Size M

	A	B	C	D	K
1	7095	6979	7059	7182	7486
2	7084	6969	7048	7170	7267
3	7052	6946	7039	7140	7118
4	7041	6932	7015	7120	7171
5	7010	6911	7017	7107	6920
6	7007	6923	7053	7138	6798
7	6896	6823	6917		6740
8	6782	6722	6779		6789
9	6753	6702	6744		6633
10	6612	6592	6691		6534
11	6561	6560	6690		6479
12	6331	6354	6510		6466
13	6148	6220	6374		

Bridle check ▲
Single line lengths ▶

A		B		C		D		K	
a1	396	b1	402	c1	376	d1	445	k1	551
a2	385	b2	392	c2	365	d2	433	k2	332
a3	419	b3	417	c3	410	d3	434	k3	407
a4	408	b4	402	c4	386	d4	414	k4	460
a5	399	b5	385	c5	358	d5	385	k5	457
a6	396	b6	397	c6	394	d6	416	k6	335
a7	2124	b7	1855	c7	1790			k7	348
a8	428	b8	437	c8	447			k8	397
a9	399	b9	417	c9	412			k9	411
a10	424	b10	371	c10	324			k10	312
a11	373	b11	339	c11	323			k11	326
a12	413	b12	434	c12	1305			k12	313
a13	191	b13	261	c13	1169				
AR1	6161	BR1	6044	CM1	766	DM1	819	KM1	1136
AM1	2620	BM1	2166	CM2	1472	DM2	1548	KM2	912
AM2	2597	BM2	2161	CM3	1502	DM3	1564	KM3	1301
AMU1	1596	BMU1	1323	CM4	1210			KM4	1230
AM4	2652	BM4	2269	CM5	1245			KM5	948
AM5	721	BR4	4680	CR1	5398			KM6	879
AM6	759	BR2	3840	CR2	4638			KR1	2940
AR2	3486	BR3	3424	CR3	4602			KR2	2303
AM3	1230	BM3	1017					KR3	2415
AR3	3014							KL1	2846

Size ML

	A	B	C	D	K
1	7361	7242	7322	7444	7751
2	7351	7232	7311	7432	7461
3	7321	7213	7302	7404	7420
4	7309	7199	7278	7384	7477
5	7276	7177	7282	7371	7217
6	7273	7188	7322	7410	7131
7	7164	7089	7192		7070
8	7053	6990	7059		7079
9	7017	6969	7026		6913
10	6872	6857	6971		6840
11	6817	6822	6970		6757
12	6575	6591	6755		6744
13	6382	6454	6614		

Bridle check ▲
Single line lengths ▶

A		B		C		D		K	
a1	411	b1	418	c1	391	d1	463	k1	775
a2	401	b2	408	c2	380	d2	451	k2	485
a3	436	b3	434	c3	426	d3	451	k3	422
a4	424	b4	419	c4	402	d4	431	k4	479
a5	415	b5	401	c5	370	d5	396	k5	475
a6	412	b6	412	c6	410	d6	435	k6	389
a7	2217	b7	1922	c7	1862			k7	403
a8	446	b8	455	c8	464			k8	412
a9	415	b9	434	c9	431			k9	427
a10	441	b10	387	c10	337			k10	354
a11	386	b11	352	c11	336			k11	339
a12	434	b12	448	c12	1331			k12	326
a13	203	b13	273	c13	1190				
AR1	6421	BR1	6296	CM1	804	DM1	853	KM1	983
AM1	2721	BM1	2257	CM2	1526	DM2	1602	KM2	950
AM2	2696	BM2	2252	CM3	1562	DM3	1624	KM3	1353
AMU1	1666	BMU1	1374	CM4	1270			KM4	1278
AM4	2766	BM4	2375	CM5	1309			KM5	983
AM5	725	BR4	4909	CR1	5616			KM6	915
AM6	762	BR2	4004	CR2	4839			KR1	3064
AR2	3645	BR3	3572	CR3	4813			KR2	2405
AM3	1279	BM3	1073					KR3	2519
AR3	3148							KL1	2936

Size L

	A	B	C	D	K
1	7633	7502	7590	7715	8019
2	7622	7492	7578	7703	7711
3	7592	7479	7571	7675	7669
4	7579	7465	7546	7655	7728
5	7546	7443	7551	7643	7469
6	7542	7455	7593	7683	7369
7	7424	7354	7464	0	7307
8	7311	7251	7326	0	7327
9	7279	7230	7292	0	7147
10	7130	7112	7235	0	7080
11	7072	7076	7233	0	6995
12	6821	6837	7007	0	6981
13	6620	6695	6861	0	0

Bridle check ▲
Single line lengths ▶

A		B		C		D		K	
a1	427	b1	433	c1	406	d1	480	k1	823
a2	416	b2	423	c2	394	d2	468	k2	515
a3	453	b3	450	c3	442	d3	467	k3	438
a4	440	b4	435	c4	417	d4	447	k4	497
a5	430	b5	416	c5	384	d5	411	k5	492
a6	426	b6	428	c6	426	d6	451	k6	402
a7	2296	b7	1993	c7	1930			k7	417
a8	462	b8	472	c8	481			k8	427
a9	430	b9	451	c9	447			k9	443
a10	458	b10	401	c10	350			k10	366
a11	400	b11	365	c11	348			k11	352
a12	451	b12	465	c12	1380			k12	338
a13	211	b13	284	c13	1234				
AR1	6672	BR1	6541	CM1	833	DM1	883	KM1	907
AM1	2818	BM1	2337	CM2	1581	DM2	1659	KM2	898
AM2	2794	BM2	2333	CM3	1619	DM3	1683	KM3	1402
AMU1	1727	BMU1	1424	CM4	1316			KM4	1325
AM4	2867	BM4	2461	CM5	1356			KM5	1019
AM5	751	BR4	5107	CR1	5837			KM6	948
AM6	789	BR2	4169	CR2	5034			KR1	3273
AR2	3797	BR3	3722	CR3	5009			KR2	2504
AM3	1325	BM3	1112					KR3	2624
AR3	3283							KL1	3053

Service Record

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 new paraglider 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, since there are still many unknown issues, for example the effective lifespan of the current generation of gliders and how strong the material aging can be accepted without affecting the airworthiness. There are natural forces that can 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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www.flybgd.com

Appendix

EN line measurements

The tables below show the line measurements for the test wings, as measured by the test house during the certification procedure. These figures relate to the Bridle Check Tables.

Size XS

	A	B	C	D	K
1	6462	6358	6420	6530	6789
2	6451	6347	6409	6518	6521
3	6422	6324	6398	6491	6485
4	6409	6310	6375	6471	6534
5	6380	6289	6378	6458	6312
6	6377	6298	6412	6491	6228
7	6277	6196	6261		6170
8	6178	6108	6145		6181
9	6150	6090	6115		6029
10	6022	6004	6099		5978
11	5972	5973	6098		5900
12	5752	5766	5908		5889
13	5557	5621	5785		

Size S

	A	B	C	D	K
1	6791	6688	6762	6878	7141
2	6781	6678	6751	6864	6880
3	6763	6660	6733	6828	6834
4	6746	6646	6710	6810	6890
5	6718	6621	6715	6794	6661
6	6715	6629	6748	6829	6565
7	6612	6533	6620		6507
8	6506	6441	6499		6524
9	6477	6423	6468		6363
10	6342	6326	6431		6313
11	6293	6292	6429		6229
12	6063	6078	6230		6218
13	5885	5945	6100		

Size M

	A	B	C	D	K
1	7085	6977	7060	7183	7479
2	7083	6971	7049	7172	7259
3	7049	6947	7040	7142	7116
4	7039	6933	7017	7124	7168
5	7007	6910	7017	7109	6931
6	7006	6924	7051	7137	6792
7	6897	6823	6920		6728
8	6791	6718	6770		6799
9	6760	6695	6735		6627
10	6613	6587	6687		6544
11	6564	6551	6686		6488
12	6324	6347	6508		6477
13	6140	6211	6372		

Size L

	A	B	C	D	K
1	7633	7502	7590	7715	8019
2	7622	7492	7578	7703	7711
3	7592	7479	7571	7675	7669
4	7579	7465	7546	7655	7728
5	7546	7443	7551	7643	7469
6	7542	7455	7593	7683	7369
7	7424	7354	7464	0	7307
8	7311	7251	7326	0	7327
9	7279	7230	7292	0	7147
10	7130	7112	7235	0	7080
11	7072	7076	7233	0	6995
12	6821	6837	7007	0	6981
13	6620	6695	6861	0	0

Size ML

	A	B	C	D	K
1	7360	7239	7318	7442	7749
2	7351	7228	7310	7430	7455
3	7319	7211	7301	7405	7410
4	7308	7198	7276	7386	7470
5	7276	7175	7281	7370	7223
6	7272	7183	7320	7411	7122
7	7167	7091	7194		7064
8	7051	6987	7056		7086
9	7016	6967	7022		6905
10	6878	6855	6970		6847
11	6821	6819	6968		6766
12	6577	6590	6753		6754
13	6380	6450	6610		