MANUAL

LUNA 2
TO THE MOON AND BACK

Version 1.4 June 2019

BRUCE GOLDSMITH DESIGN

Contents

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LUNA 2 Owner's Manual

DGAC certified paraglider for use with paramotor or trike. Reference: BGD 1387038764

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 LUNA 2

The LUNA 2 is made for powered paragliding, and offers the perfect blend of comfort, performance and speed creating the ideal choice for intermediate pilots up to competition racers.

Your new paraglider has been designed to a high standard of safety and stability, but it will only retain these characteristics if it is properly looked after. This manual has been prepared to give you information and advice about your paraglider. If you ever need any replacement parts or further information, please do not hesitate to contact your nearest BGD dealer or contact BGD directly.

Please read this manual carefully from the first to the last chapter to ensure you get the best out of your new wing.

2. Introduction

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

This paraglider must not:

1. Be flown outside the certified weight range
2. Have its trim speed adjusted by changing the length of risers or lines
3. Be flown in rain or snow*
4. Be towed with a tow-line tension in excess of 200 kg

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

It is your dealer´s responsibility to test fly the paraglider before you receive it. The test flight record is in Section 8 of this manual. Please be sure that this has been completed by your dealer.

Failure to test fly a new paraglider may invalidate any warranty.

In order to enjoy full benefits of the BGD warranty, you are required to complete the warranty form on the website.

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

However, the length of the brake lines should be adjusted according to whether it is being flown with high or low hangpoints, or trikes.

3. Preparation

1. Select a suitable take-off area determined by wind and terrain, clear of any obstacles that may catch in the lines or damage the canopy.

2. Open out your paraglider so that the bottom surface is facing upwards, with the openings at the downwind end of the take-off area and the harness at the trailing edge at the upwind side.

3. Unfold the canopy to each side so that the leading edge openings form a semicircular shape, with the trailing edge drawn together as the centre of the arc. The 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 chassis, ensuring the risers are connected the right way round and that the maillons or karabiners are correctly closed.

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

Pre-flight inspection

Your paraglider is designed to be as simple as possible to inspect and maintain but a thorough pre-flight procedure is mandatory on all aircraft. The following pre-flight inspection procedure should be carried out before each flight.

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

have been caught on a sharp object or even have been damaged whilst in its bag.

2. Check that the lines are not twisted or knotted. Divide the suspension lines into groups, each group coming from one riser. By starting from the harness and running towards the canopy remove any tangles or twists in the lines. Partially inflating the canopy in the wind will help to sort out the lines.

3. It is particularly important that the brakes are clear and free to move. Check the knot which attaches the brake handles to the brake lines. Avoid having too many knots, as 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 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. Before getting into the harness you should be wearing a good crash helmet. Put on the harness ensuring all the buckles are secure and properly adjusted for comfort.

5. Ensure the trimmers are fully closed and maillons at the same height – the position recommended for take-off.

Your paraglider is now ready for flight.

4. Flight Characteristics

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

Weight range

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

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

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

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

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

Take-off

Your paraglider is easy to inflate in both 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. The best launch characteristics are obtained with the trimmers in the fully closed position, maillons aligned, unless the wind at launch is more than about 10km/h, in which

case we recommend that the trimmers be partially released for launch.

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

Initial Climb

Once in the air you should continue to fly into wind while gaining altitude. Leave the trimmers in the take-off (closed) position to get the best climb rate. Do not attempt to increase your climb rate by braking, as using the brakes combined with the engine's thrust can increase the angle of attack to the point where the wing can stall. In addition, this high angle of attack can result in a big dive if the motor suddenly dies, which could be dangerous if you are near the ground.

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

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.

Straight flight and trimmers

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

To reduce fuel consumption or to fly in thermals, the trimmers should be closed, pulled down to their maximum.

It is important to regularly check the wear on the trimmers and that the system is functioning cleanly with no sticking points. If they are showing signs of wear, the trimmers should be replaced. This can be done by the pilot.

Turning

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

*If you land with the engine running there is a considerable risk of rotational propeller damage, (lines passing through the propeller, or even injury).

Active Piloting

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

which often precede collapses. Remember, you should not fly a paramotor in windy or turbulent conditions.

Rapid Descent Techniques

Big Ears
The 'baby A-riser' allows the wing tips of the paraglider to be folded in simply and easily to increase its sink rate. This big ear facility does not mean you should fly in stronger winds, but 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 is possible by weightshifting 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. 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 fast descent method 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 around 50 cm. This will stall the canopy and forward speed will drop to zero. Make sure you have plenty of ground clearance because the descent rate can be over 10 m/sec. To increase the descent rate pull harder on the B-risers. When you release the B-risers the canopy will automatically start flying again, normally within two seconds. Sometimes the canopy will turn gently when it exits from the B-line stall. It is 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 (see also also Chapter 5).

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

The over-the-nose spiral is a 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!

Speed with the accelerator and the use of trimmers

Your powered paraglider is equipped with risers that have both trimmers and an accelerator system.

Launching and general flying is normally done without using the accelerator. The accelerator can be used when higher speed is important.

The trimmers allow easy fast cruising. The standard trimmer setting is fully closed, which is the slowest position.

Both trimmers and speedbar increase the speed of the paraglider and also slightly degrade the glide angle, which makes the wing slightly more susceptible to collapses. For this reason they should not be used in strong thermals or turbulent conditions. The best glide angle is attained at trim speed, with hands up and without the use of the accelerator bar.

We recommend that you choose to fly in conditions where the wing can move forwards into wind without the need for trimmers or speedbar. In this way you have a safety margin.

Maximum speed is with the trimmers released and the speedbar pushed out fully so that the pulleys touch. Do not push the speedbar beyond this limit in an attempt to attain a higher speed.

To fly at full-bar the speed stirrup should be applied gradually until the two pulleys on each A-riser touch. Do not go beyond this point by using excessive force to attempt to make the glider go faster as this may result in the glider collapsing.

We do not recommend pilots to fly with full speedbar applied and trimmers open at the same time.

5. Recovery Techniques

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

Stalls

Stalls are caused by flying too slowly. Airspeed is lost as brake pressure increases and as the canopy approaches the stall point it will start to descend vertically and finally begin to collapse. Should this occur it is important that the pilot releases the brakes at the correct moment. The brakes should never be released when the wing has fallen behind the pilot; the brakes should be released fairly slowly, to prevent the forward dive of the canopy from being too strong. A pre-release of the brake and the reconstruction of the full span is recommended to avoid the tips getting cravatted during the recovery.

Deep Stall (or Parachutal Stall)
Your paraglider has been designed so that it will not easily remain in a deep stall. However, if it is incorrectly rigged or its flying characteristics have been adversely affected by some other cause, it is possible that it could enter this situation. In the interests of safety all pilots should be aware of this problem, and know how to recover from it. The most common way 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 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 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 accidentally. A pilot can reproduce the effect by taking hold of both the A-risers and pulling down sharply on them. The glider will automatically recover on its own from this situation in around three seconds. During this recovery period it is advisable not to apply the brakes as this could stall the wing.

Asymmetric Front Collapse

Your paraglider is very resistant to deflations; however 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 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)

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

NOTE: Test pilots have tested your paraglider well beyond the normal flight envelope, but 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.

6. Storage and Servicing

Storage

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 inflammable!

Always store the canopy in a dry, warm place. Ideally this should be in the temperature range of 5°C to 13°C. Never let your canopy freeze, particularly if it is damp.

Your paraglider is made from high quality nylon which is treated against weakening from ultraviolet radiation. However, UV exposure will still weaken the fabric and prolonged exposure to harsh sunlight can severely compromise the safety of your canopy. Therefore once you have finished flying, put your wing away. Do not leave it laying in strong sunshine unnecessarily. If you are concerned about any aspect of the integrity of your paraglider please contact your nearest BGD dealer or talk to BGD directly.

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 no longer than 100 mm can be repaired in this way providing they are not in a high-stress area. If you have any doubt about the airworthiness of your canopy please contact your dealer or BGD directly.

Servicing / Inspection

It is important to have your glider regularly serviced. Your BGD 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.

Environmental protection and recycling

Our sport takes place in the natural environment, and we should do everything to preserve our environment. A glider is basically made of nylon, synthetic fibres and metal. At the end of your paraglider's life span, please remove all metal parts and put the different materials in an appropriate waste/recycling plant.

7. Technical data

Materials

The LUNA 2 is made from the following quality materials:

Top surface:	Dominico Dokdo-N30DMF
Bottom surface:	Porcher Ezzyfly 38g/m^2
Internal structure:	Porcher Skytex 40g
Nose reinforcing:	Plastic wire 2.4mm and 2.7 mm
Risers:	21mm nylon
Top lines:	Liros DSL 70
Middle lines:	Liros TSL 140
Lower lines:	Liros TSL 140
Brakes:	Liros DSL 70 yellow

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

	20	23	26	
Projected area	17.34	19.94	22.54	m^2
Flat area	20.0	23.00	26.0	m^2
Glider weight	5.5	6.0	6.6	kg
Height	6.8	7.3	7.77	m
Number of main lines	3/4/3/2	3/4/3/2	3/4/3/2	
Cells	52	52	52	
Flat aspect ratio	5.35	5.35	5.35	
Projected aspet ratio	3.83	3.83	3.83	
Central chord	2.433	2.609	2.774	m
Flat span	10.14	10.87	11.56	m
Projected span	8.15	8.74	9.30	m
All-up weight PPG	80-120	90-140	105-160	kg
Trim speed*	26	26	26	km/h
Trimmers-open speed*	39-55	39-55	39-55	km/h
Accelerator speed*	65	65	65	km/h
Certification	DGAC	DGAC	DGAC	

*Straight and level flight with motor

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Overview of glider parts

PPG Risers

Baby-A or 'big ears' riser

Brake-line pulleys

Accelerator system
+135mm

Trim +85mm

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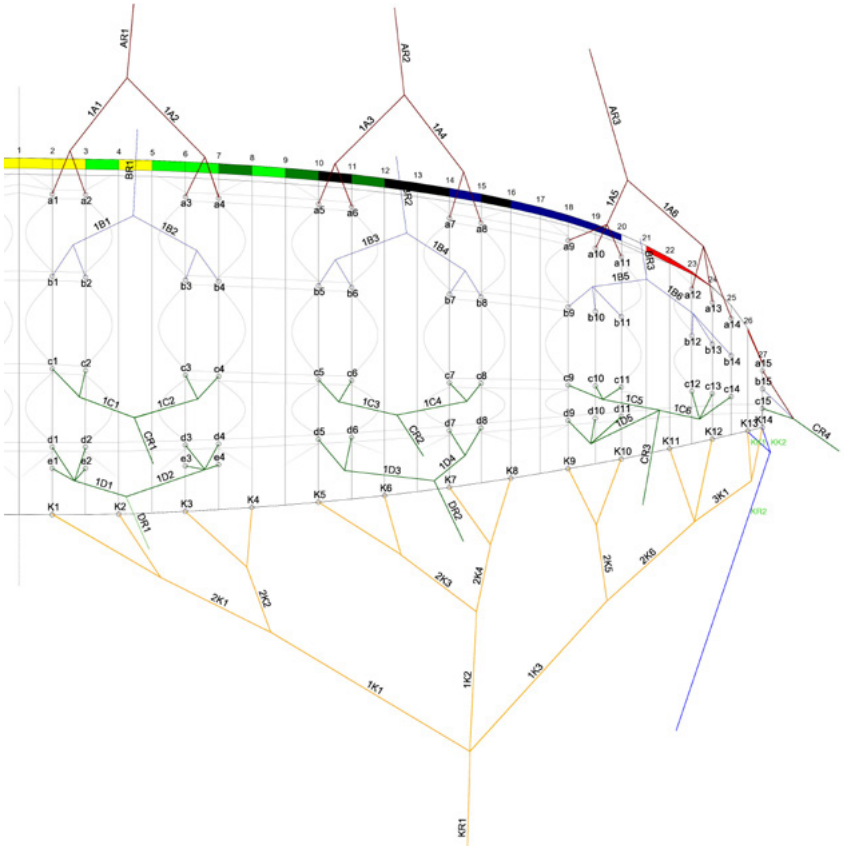
Line Plan



Line length checks

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

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

During the EN certification process, the test team has checked 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 length between the manual and the sample may be no more than 10mm.

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Line lengths

Size 20

	A	B	C	D	E	K
1	6744	6679	6792	6928	6978	5709
2	6702	6648	6766	6903	6955	5519
3	6668	6613	6734	6866	6916	5377
4	6674	6619	6740	6870	6918	5308
5	6647	6603	6728	6850	527	6554
6	6620	6578	6698	6817	527	6435
7	6588	6552	6671	6778	527	6369
8	6598	6565	6680	6781	527	6369
9	6523	6504	6608	6675	527	6308
10	6473	6459	6556	6619	527	6265
11	6454	6443	6538	6590	527	6183
12	6340	6340	6416	527	527	6100
13	6300	6292	6357	527	527	6058
14	6301	6276	6314	527	527	6053
15	6112	6103	6163	527	527	

Size 23

	A	B	C	E	D	K
1	7215	7152	7275	7428	7482	7580
2	7183	7120	7248	7402	7458	7378
3	7150	7087	7218	7365	7419	7227
4	7156	7093	7226	7370	7421	7155
5	7130	7078	7215	7344		7014
6	7102	7052	7184	7309		6888
7	7069	7026	7157	7268		6818
8	7080	7041	7167	7272		6820
9	7000	6974	7086	7159		6757
10	6946	6926	7034	7098		6712
11	6925	6909	7011	7067		6628
12	6802	6798	6884			6542
13	6759	6746	6820			6497
14	6760	6730	6774			6493
15	6501	6510	6545			

Size 26

	A	B	C	D	E	K
1	7698	7633	7762	7922	7979	8091
2	7665	7599	7733	7895	7954	7877
3	7631	7565	7703	7856	7914	7718
4	7639	7573	7712	7862	7916	7643
5	7612	7557	7703	7837	52	7494
6	7582	7530	7670	7800	52	7362
7	7548	7503	7640	7756	52	7289
8	7560	7519	7652	7761	52	7293
9	7476	7450	7565	7640	52	7227
10	7419	7398	7512	7576	52	7181
11	7397	7380	7485	7543	52	7095
12	7266	7263	7352	52	52	7006
13	7221	7207	7284	52	52	6959
14	7222	7190	7235	52	52	6955
15	6944	6958	6987	52	52	

Individual line lengths

Rib	A-lines			
2	a1	1A1		
3	a2			
5	a3			AR1
6	a4	1A2		
10	a5			
11	a6	1A3		
14	a7			AR2
15	a8	1A4		
18	a9			
19	a10	1A5		
20	a11			AR3
23	a12			
24	a13	1A6		
25	a14			
27	a15			

B-lines		
b1	1B1	
b2		
b3		BR1
b4	1B2	
b5		
b6	1B3	
b7		BR2
b8	1B4	
b9		
b10	1B5	
b11		
b12		BR3
b13	1B6	
b14		
b15		

C-lines		
c1		
c2	1C1	
c3		CR1
c4	1C2	
c5		
c6	1C3	
c7		CR2
c8	1C4	
c9		
c10	1C5	
c11		CR3
c12		
c13	1C6	
c14		
c15		CR4

D-lines		
d1		
d2	1D1	
d3		DR1
d4	1D2	
d5		
d6	1D3	
d7		DR2
d8	1D4	
d9		
d10	1D5	
d11		

E-lines
e1
e2
e3
e4

Rib	Brakes				
2	k1				
4	k2	2K1	1K1		
6	k3				
8	k4	2K2			
10	k5				
12	k6	2K3	1K2		
14	k7				KR1
16	k8	2K4			
18	k9				
20	k10	2K5			
22	k11				
24	k12	2K6	1K3		
26	k13			3K1	
27	k14				

Tip Steering	
KK1	KR2
KK2	

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Individual line lengths

Size 20

Rib	A-lines		
2	526	2863	
3	484		
5	502		2831
6	508	2811	
10	511		
11	484	2126	
14	470		3486
15	480	2108	
18	815		
19	765	1548	
20	746		3635
23	570		
24	530	1610	
25	531		
27	221		

B-lines		
510	2840	
479		
498		2804
504	2786	
506		
481	2107	
466		3465
479	2096	
804		
759	1664	
743		
558		3511
510	1746	
494		
212		

C-lines		
517		
491	2914	
507		2836
513	2867	
517		
487	2133	
479		3553
488	2114	
729		
677	1824	
659		3530
580		
521	1780	
478		
272		5300

D-lines		
522		
497	3003	
511		2878
515	2952	
529		
496	2190	
489		3605
492	2158	
853		
797	1767	
768		

E-lines
572
549
561
563

Rib	Brakes				
2	1455				
4	1265		927		
6	1422			2306	
8	1353		628		
10	1214				
12	1095		1179		2500
14	1038			1761	
16	1038		1170		
18	836				
20	793		1292		
22	750				
24	667		1253	1780	
26	169	456			
27	164				

Tip steering	
465	5271
381	

BRUCE GOLDSMITH DESIGN

Individual line lengths

Size 23

Rib	A-lines			
2	553	3070		
3	521			
5	540		3073	
6	546	3018		
10	549			
11	521	2281		
14	506		3781	
15	517	2263		
18	875			
19	822	1663		
20	801		3942	
23	613			
24	570	1728		
25	571			
27	649			

B-lines		
548	3043	
516		
536		3042
542	2989	
544		
517	2259	
501		3756
515	2250	
863		
815	1786	
798		
600		3805
548	1873	
532		
657		

C-lines		
556		
529	3124	
545		3076
553	3077	
556		
525	2287	
515		3852
525	2270	
911		
859	1826	
836		3830
624		
560	1910	
514		
694		5330

D-lines		
561		
535	3222	
549		3135
554	3170	
569		
534	2349	
526		3915
530	2316	
917		
856	1895	
825		

E-lines
615
591
603
605

Rib	Brakes				
2	1561				
4	1359		993		
6	1524			2467	
8	1452		677		
10	1302				
12	1176		1263		
14	1112			1890	2660
16	1114		1257		
18	897				
20	852		1386		
22	802				
24	716		1352	1915	
26	181	490			
27	177				

Tip steering	
499	5703
410	

BRUCE GOLDSMITH DESIGN

Individual line lengths

Size 26

Rib	A-lines		
2	588	3263	
3	555		
5	574		3298
6	582	3210	
10	584		
11	554	2424	
14	538		4055
15	550	2406	
18	932		
19	875	1768	
20	853		4228
23	652		
24	607	1837	
25	608		
27	1062		

B-lines		
583	3234	
549		
570		3265
578	3179	
578		
551	2401	
533		4028
548	2392	
919		
867	1898	
849		4083
639		
583	1990	
566		
1074		

C-lines		
591		
563	3320	
579		3302
588	3274	
592		
559	2431	
547		4130
559	2414	
1082		
1029	1826	
1002		4108
664		
596	2030	
547		
1107		5330

D-lines		
597		
570	3424	
584		3364
590	3371	
605		
568	2497	
559		4198
564	2462	
975		
911	2014	
878		

E-lines
654
629
642
644

Rib	Brakes				
2	1661				
4	1447		1054		
6	1620			2618	
8	1545		722		
10	1384				
12	1252		1341		
14	1181			2011	2858
16	1185		1339		
18	953				
20	907		1474		
22	851				
24	762		1444	2042	
26	192	523			
27	188				

Tip steering	
536	6107
441	

BRUCE GOLDSMITH DESIGN

8. 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 :

BRUCE GOLDSMITH DESIGN

Owner Record

Pilot No 1

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

BRUCE GOLDSMITH DESIGN

Owner Record

Pilot No 2

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

9. 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 internationally under current 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 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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