VERSION 2 September 2025

MANUAL

TYPHOON

BRUCE GOLDSMITH DESIGN

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TYPHOON

TYPHOON Owner's Manual

Solo paramotor wing

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 TYPHOON

The TYPHOON is an intermediate glider for powered paragliding. It is suitable for pilots who have completed their training in school, and is the perfect wing to accompany them on their paramotoring journey with pleasure and safety.

It 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 wing. If you ever need any replacement parts or further information, please do not hesitate to contact your nearest BGD dealer or contact BGD directly.

QUICK SUMMARY

The TYPHOON risers have trimmers, a speedbar and tip steering system.

Trimmers

We recommend launching and landing with the trimmers in the fully closed (0) position. The best fuel consumption is achieved with the trimmers closed.

Speed bar + trimmers

It is safe to use full speedbar and fully open trimmers at the same time

Brakes + trimmers

The Typhoon has a good tolerance to the use of brakes with trimmers open, nevertheless in thermic or turbulent air we recommend not to use the brakes if the trimmers are open more than half way.

Inspection

Your wing should have a thorough check / inspection every 24 months or every 150 flight hours, whichever comes first.

INTRODUCTION

Intended use

The TYPHOON is a solo paramotor wing. It is not intended for tandem use or aerobatic manoeuvres. It should 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 flown in strong turbulence or violent winds

**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.*

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 wing 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 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.

Modifications

Any modification, e.g. change of line lengths or changes to the speed system, can cause a loss of airworthiness and certification. We recommend 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 the glider is being flown with high or low hangpoints, or a trike.

Test flight and warranty

All information about the BGD warranty can be found on the Warranty page of our website. To benefit from the warranty, you must complete the warranty registration form on the website.

It is your dealer´s responsibility to test fly the paraglider before you receive it in order to verify the trim settings. The warranty may be void if the test flight has not been comleted by the dealer.

Line knots

Flying a glider with knots in the lines will affect its airworthiness and checking for knots should always be part of your pre-flight checks. If you do notice a knot in your glider's lines after you have pulled the canopy up, if you can safely abort the launch, then do so.

If you are already airborne, you should avoid accelerating the glider and avoid deep brake inputs. Use weightshift or minimal brake inputs to steer the glider to a safe landing place as soon as possible.

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Glider overview

TYPHOON

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Risers

Brakes

1) Brake line
2) Brake pulley
3) Brake handle

Tip Steering (TST)

4) TST line
5) TST handle

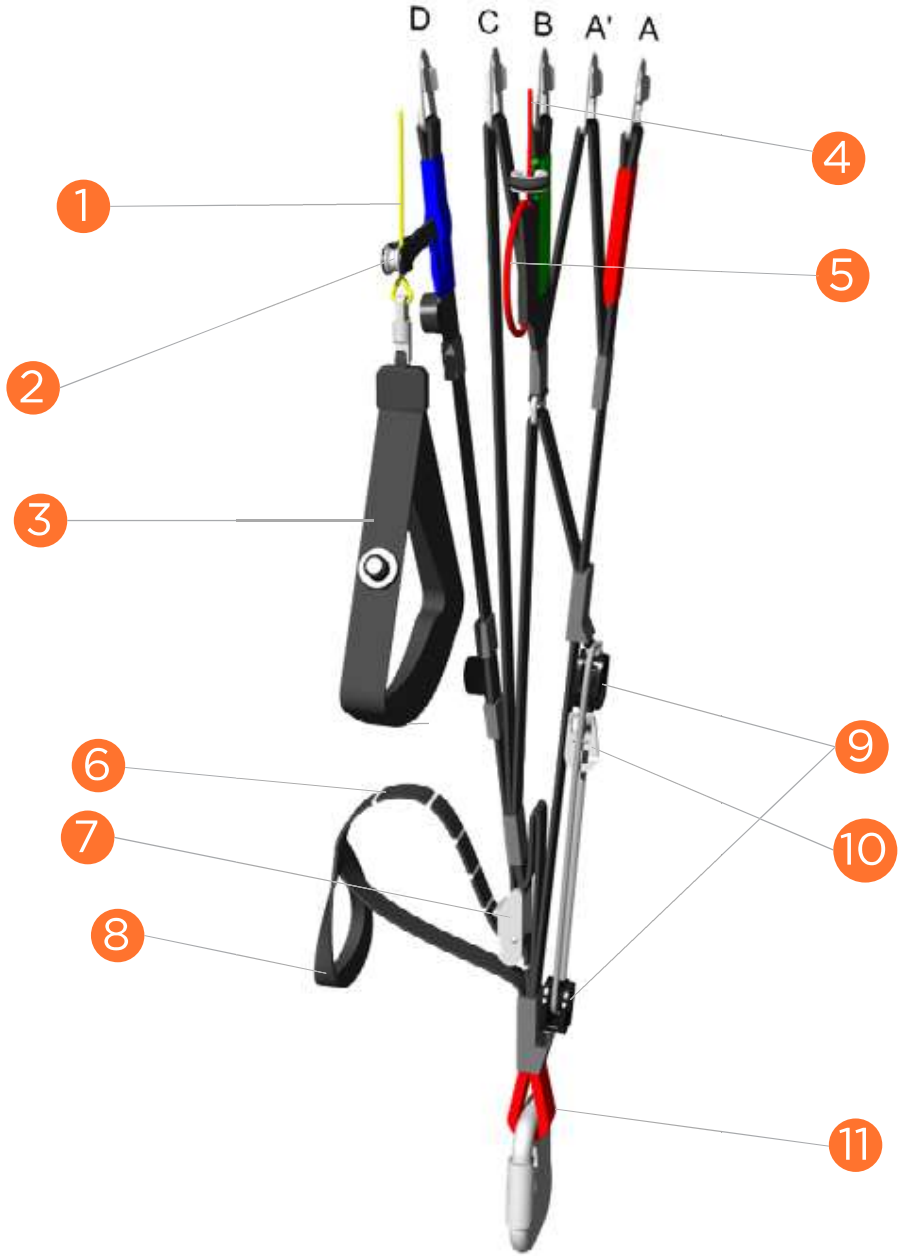
Trimmer

6) Trimmer webbing
7) Trimmer buckle
8) Trimmer handle

Speed System

9) Speed system pulleys
10) Brummel hook

11) Hook-in loop



PREPARATION

Connecting the speed bar

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

To adjust the speed bar to the correct length, sit in your harness and ask an assistant to hold the risers up in their in-flight position. The speedbar line 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 attain full bar extension (the two pulleys touching) when you push your legs out. Once you have set the length on the ground, a test flight in calm air can be useful to fine-tune it, ensuring it is even on both sides.

Laying out and connecting to motor/chassis

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 the glider so that the bottom surface is facing upwards, with the openings at the downwind end of the take-off area and the harness and motor 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 to form an 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

Propeller safety: 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 wing 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 glider check the outside of the canopy for any tears where it may have been caught on a sharp object or even 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. 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 or too large a knot, as there is a risk the knots could get caught 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.

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 into the harness you should be wearing a good crash helmet. Put on the harness ensuring all the buckles are secure and properly adjusted or comfort.
6. Ensure the trimmers are fully closed and maillons at the same height – the position recommended for take-off.

Your paramotor wing is now ready for flight.

FLIGHT CHARACTERISTICS

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

Take-off

We recommend having the **trimmers fully closed** for launching. Never try to launch if the wing is not perfectly inflated above your head and you do not have full control of pitch and roll.

Initial Climb

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

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

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

Turning with the brakes

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

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

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

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. They should be adjusted for your paramotor set-up (high/low hangpoints or trike).

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.

It is 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.

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.

Tip Steering System, TST.

The Tip steering system can be used to turn without slowing the glider.

It should be used instead of brakes for turning when the trimmers are released half way or more, or more than half speed-bar is applied. Tip-steering retains the wing's reflex profile and allows you to turn without losing speed. Tip Steering can also be used in conjunction with the brakes to adjust the characteristics of a turn.

The length of the TST lines should be adjusted according to your paramotor set-up.

Flying accelerated

The trims and accelerator increase the speed of the glider and activate the reflex system. When the wing is accelerated, it is more sensitive to turbulence and closer to a possible front collapse. Whenever more than half of the trims are open, course corrections must be made using the TST so as not to affect the reflex profile. The same principle applies when using the accelerator.

It is not recommended to fly accelerated in turbulent conditions or near obstacles. Flying in turbulent conditions should be reserved for expert pilots.

Trimmers

When the trimmers are closed (position 0), the wing is trimmed slowly; when they are completely open, it is trimmed fast.

The best trim position for take-off and landing, and the most effective position for thermal flying and reducing fuel consumption, is completely closed.

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

Note on using the trimmers

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

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.

Speed Bar

To increase speed using the accelerator, pressure must be applied gradually to the accelerator. To fly at full-bar the speed bar should be applied gradually until the two pulleys on each A-riser touch. Do not exceed this point by using excessive force to try to make the paraglider go faster, as this can cause the paraglider to collapse.

Maximum speed is with the trimmers released and the speed bar pushed out fully so that the pulleys touch.

Using the speed bar is not as comfortable as using the trimmers, but it is safer because, in the event of unexpected turbulence, the pilot can react immediately by releasing the bar. If you are flying in turbulence or thermal conditions where brakes may be necessary, it is safer to avoid opening the trimmers completely.

Active Piloting

Active piloting means flying in empathy with your wing. 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 glider 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.

Unintended Oscillations

In certain circumstances, a pilot can induce unintended oscillations. This can be due to a combination of the engine/propeller and pilot's weightshift and / or action on the brakes. To stop 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.

Rapid Descent Techniques

Big Ears

The 'baby A-riser' allows the wing tips of the glider 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. (By contrast, B-line stalls substantially reduce 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 it 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.

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 10-15cm. This will stall the canopy and forward speed will drop to zero. Make sure you have plenty of ground clearance because the descent rate can be over 10 m/s.
To increase the descent rate pull harder on the B-risers. When you release the B-risers the canopy will automatically start flying again, usually within two seconds.
Sometimes the canopy will turn gently when it exits from a B-line stall. It is better to release the B-risers fairly quickly, as releasing them 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 to escape 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 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 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, gradually release the inner brake or gradually apply opposite brake. Releasing the brake too abruptly 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 plenty of time and with sufficient height!

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).

RECOVERY TECHNIQUES

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 paramotor wing 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 glider 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.

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 wing 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 paramotor wing well beyond the normal flight envelope. 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.

STORAGE, REPAIRS & SERVICING

Storage and care

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 25°C. Never let your canopy freeze, particularly if it is damp.

Your wing 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.

Cleaning

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.

Trimmers

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.

Lines

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 are there so that they can be released to compensate for any shrinkage of the back lines as the glider gets older.

Left: loops on maillons
Right: loops released

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 two 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 re-commended 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://flybgd.com/lines. Replacement lines can be ordered from the Accessories section of the BGD website. Check that the new lines correspond with the latest update of the line sheet. Also check the line layout on the glider corresponds with the line layout in the manual. 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 fitted the right way up. Unsheathed lines are reinforced at one end, marked by a yellow thread. This is 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 reinforcement 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. 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 Junctions

All lines are connected to other lines or to tabs with lark's foot junctions. Make sure that these are joined correctly with interlocked and not looped junctions.

Loops on rear risers

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.

Interlocked junction

Looped junction

Maillons

The maillons have black plastic inserts to stop them coming undone accidently and the lines falling off. Always install them correctly after rigging the glider. If they are lost then use a locktight to secure the maillon closed. Order new inserts on: flybgd.com.

Interlocked junction

Line Check

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

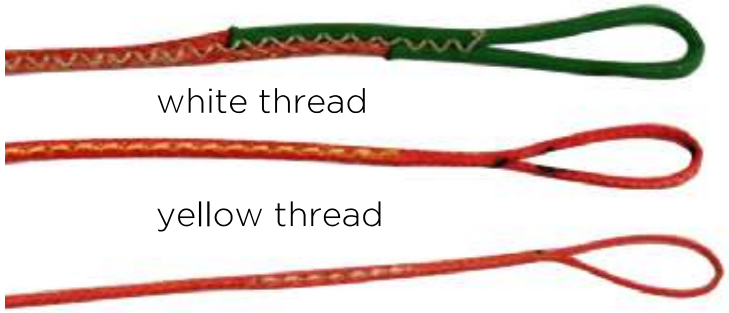
Looped junction

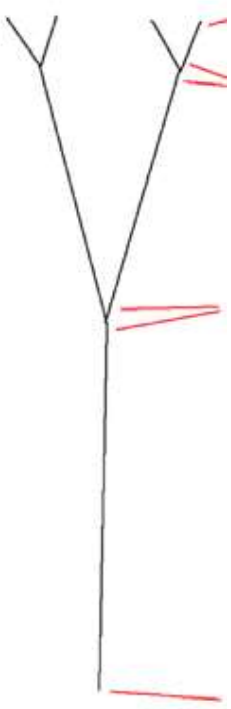
Correct alignment of lines

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

On unsheathed lines, yellow thread marks the reinforced end

On unsheathed lines, white thread marks the non-reinforced end





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

Servicing / Inspection

It is important to have your glider regularly serviced. Your wing should have a thorough check / inspection every 24 months or every 150 flight hours, whichever occurs first. This check must be made by the manufacturer, importer, distributor or other authorised persons.

Please print out the service pages from this manual, fill in the number of flights and hours flown in the Service Record, and send together with your glider when it goes for inspection or servicing. The manufacturer will only accept responsibility for paraglider lines and repairs which we have produced and fitted or repaired ourselves.

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

Environmental protection and recycling

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

TECHNICAL DATA

Materials

The TYPHOON is made from the following quality materials:

Top surface:	Porcher Skytex 27 Classic II 29g/m^2
Bottom surface:	MJ Tex 32 g/m^2
Internal structure:	Porcher Skytex 40 g/m^2 hard
Nose reinforcing:	Perlon 2mm / fishing line 1.5mm
Risers:	20 mm Kevlar / nylon
Top lines:	Liros DSL 70
Middle lines:	Liros TSL 140
Lower lines:	TSL 380, TSL28, TSL190
Brakes:	Liros DSL 70 yellow

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

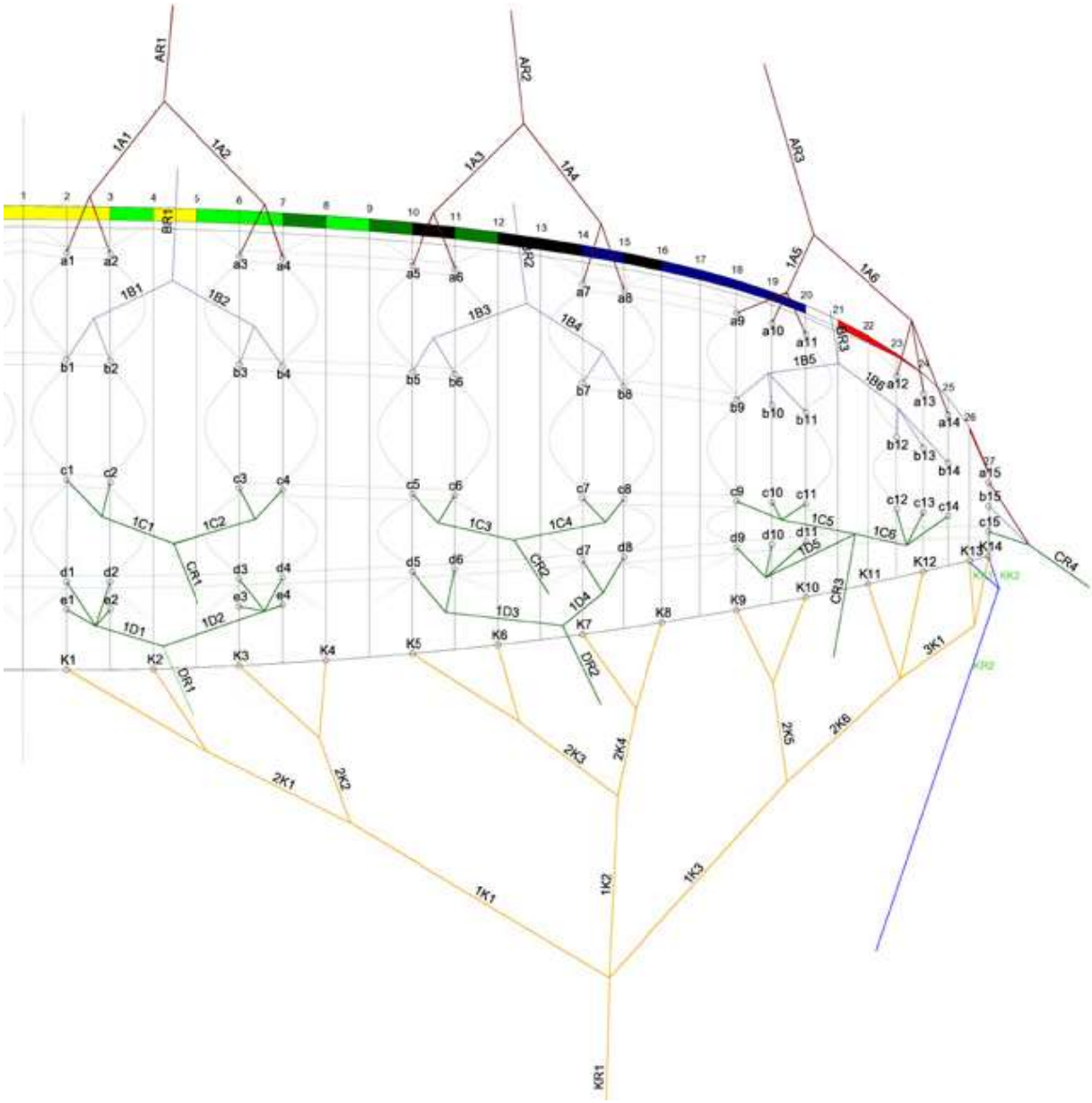
For a full list check www.flybgd.com

Specifications

	20	23	26
LINEAR SCALING FACTOR	0.93	1	1.06
PROJECTED AREA (M^2)	17.3	19.9	22.5
FLAT AREA (M^2)	20	23	26
GLIDER WEIGHT (KG)	4.8	5.2	5.7
NUMBER OF MAIN LINES (A/B/C)		3/4/3/2	
CELLS		52	
FLAT ASPECT RATIO		5.14	
ROOT CHORD (M)	2.4	2.6	2.8
FLAT SPAN (M)	10.1	10.9	11.6
PROJECTED SPAN (M)	8.2	8.7	9.3
MIN SPEED (KM/H)	25	27	27
TRIM SPEED (KM/H)		45	
SPEED TRIMMERS OPEN (KM/H)	55	56	55
TOP SPEED (KM/H)	65	67	65
MAX POWER (KW / HP)	20 / 27	27 / 36	27 / 36
PPG WEIGHT RANGE (KG)	80-120	90-140	100-160
DGAC REGISTRATION		Yes	

Speeds are at maximum all-up weight

Line Plan


AR1
AR2
AR3
1A1
1A2
1A3
1A4
1A5
1A6
BR1
BR2
BR3
1B1
1B2
1B3
1B4
1B5
1B6
1C1
1C2
1C3
1C4
1C5
1C6
CR1
CR2
CR3
CR4
1D1
1D2
1D3
1D4
1D5
DR1
DR2
2K1
2K2
2K3
2K4
2K5
2K6
3K1
1K1
1K2
1K3
KR1

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.

Line lengths are for a flown glider. 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.

BRUCE GOLDSMITH DESIGN

Size 20

Bridle check

	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	

TYPHOON

BRUCE GOLDSMITH DESIGN

Size 20

Single line lengths

A		B		C		D/E		K	
a1	526	b1	510	c1	517	d1	522	K1	1455
a2	484	b2	479	c2	491	d2	497	K2	1265
a3	502	b3	498	c3	507	d3	511	K3	1422
a4	508	b4	504	c4	513	d4	515	K4	1353
a5	511	b5	506	c5	517	d5	529	K5	1214
a6	484	b6	481	c6	487	d6	496	K6	1095
a7	470	b7	466	c7	479	d7	489	K7	1038
a8	480	b8	479	c8	488	d8	492	K8	1038
a9	815	b9	804	c9	729	d9	853	K9	836
a10	765	b10	759	c10	677	d10	797	K10	793
a11	746	b11	743	c11	659	d11	768	K11	750
a12	570	b12	558	c12	580			K12	667
a13	530	b13	510	c13	521	1D1	3003	K13	169
a14	531	b14	494	c14	478	1D2	2952	K14	164
a15	221	b15	212	c15	272	1D3	2190		
						1D4	2158	2K1	927
1A1	2863	1B1	2840	1C1	2914	1D5	1767	2K2	628
1A2	2811	1B2	2786	1C2	2867			2K3	1179
1A3	2126	1B3	2107	1C3	2133	DR1	2878	2K4	1170
1A4	2108	1B4	2096	1C4	2114	DR2	3605	2K5	1292
1A5	1548	1B5	1664	1C5	1824			2K6	1253
1A6	1610	1B6	1746	1C6	1780	e1	572		
						e2	549	1K1	2306
AR1	2831	BR1	2804	CR1	2836	e3	561	1K2	1761
AR2	3486	BR2	3465	CR2	3553	e4	563	1K3	1780
AR3	3635	BR3	3511	CR3	3530				
				CR4	5300			3K1	456
KK1	465								
KK2	381								
KR2	5271								

TYPHOON

Size 23

Bridle check

	A	B	C	D	E	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			

BRUCE GOLDSMITH DESIGN

Size 23

Single line lengths

A		B		C		D/E		K	
a1	553	b1	548	c1	556	d1	561	K1	1561
a2	521	b2	516	c2	529	d2	535	K2	1359
a3	540	b3	536	c3	545	d3	549	K3	1524
a4	546	b4	542	c4	553	d4	554	K4	1452
a5	549	b5	544	c5	556	d5	569	K5	1302
a6	521	b6	517	c6	525	d6	534	K6	1176
a7	506	b7	501	c7	515	d7	526	K7	1112
a8	517	b8	515	c8	525	d8	530	K8	1114
a9	875	b9	863	c9	911	d9	917	K9	897
a10	822	b10	815	c10	859	d10	856	K10	852
a11	801	b11	798	c11	836	d11	825	K11	802
a12	613	b12	600	c12	624			K12	716
a13	570	b13	548	c13	560	1D1	3222	K13	181
a14	571	b14	532	c14	514	1D2	3170	K14	177
a15	649	b15	657	c15	694	1D3	2349		
						1D4	2316	2K1	993
1A1	3070	1B1	3043	1C1	3124	1D5	1895	2K2	677
1A2	3018	1B2	2989	1C2	3077			2K3	1263
1A3	2281	1B3	2259	1C3	2287	DR1	3135	2K4	1257
1A4	2263	1B4	2250	1C4	2270	DR2	3915	2K5	1386
1A5	1663	1B5	1786	1C5	1826			2K6	1352
1A6	1728	1B6	1873	1C6	1910	e1	615		
						e2	591	1K1	2467
AR1	3073	BR1	3042	CR1	3076	e3	603	1K2	1890
AR2	3781	BR2	3756	CR2	3852	e4	605	1K3	1915
AR3	3942	BR3	3805	CR3	3830				
				CR4	5330			3K1	490
KK1	499								
KK2	410								
KR2	5703								

TYPHOON

Size 26

Bridle check

	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	

BRUCE GOLDSMITH DESIGN

Size 26

Single line lengths

A		B		C		D/E		K	
a1	588	b1	583	c1	591	d1	597	K1	1661
a2	555	b2	549	c2	563	d2	570	K2	1447
a3	574	b3	570	c3	579	d3	584	K3	1620
a4	582	b4	578	c4	588	d4	590	K4	1545
a5	584	b5	578	c5	592	d5	605	K5	1384
a6	554	b6	551	c6	559	d6	568	K6	1252
a7	538	b7	533	c7	547	d7	559	K7	1181
a8	550	b8	548	c8	559	d8	564	K8	1185
a9	932	b9	919	c9	1082	d9	975	K9	953
a10	875	b10	867	c10	1029	d10	911	K10	907
a11	853	b11	849	c11	1002	d11	878	K11	851
a12	652	b12	639	c12	664			K12	762
a13	607	b13	583	c13	596	1D1	3424	K13	192
a14	608	b14	566	c14	547	1D2	3371	K14	188
a15	1062	b15	1074	c15	1107	1D3	2497		
						1D4	2462	2K1	1054
1A1	3263	1B1	3234	1C1	3320	1D5	2014	2K2	722
1A2	3210	1B2	3179	1C2	3274			2K3	1341
1A3	2424	1B3	2401	1C3	2431	DR1	3364	2K4	1339
1A4	2406	1B4	2392	1C4	2414	DR2	4198	2K5	1474
1A5	1768	1B5	1898	1C5	1826			2K6	1444
1A6	1837	1B6	1990	1C6	2030	e1	654		
						e2	629	1K1	2618
AR1	3298	BR1	3265	CR1	3302	e3	642	1K2	2011
AR2	4055	BR2	4028	CR2	4130	e4	644	1K3	2042
AR3	4228	BR3	4083	CR3	4108				
				CR4	5330			3K1	523
KK1	536								
KK2	441								
KR2	6107								

TYPHOON

CLOSING WORDS

Your paraglider will give you 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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