

# *Griffin*



G I N

**WARNING:**

Like any extreme sport, speedflying/paragliding involves unpredictable risks which may lead to injury or death. By choosing to fly, you assume the sole responsibility for those risks. You can minimize the risks by having the appropriate attitude, training and experience and by properly understanding, using and maintaining your equipment. Always seek to expand your knowledge and to develop self-reliance. If there is anything you do not understand, consult with your local dealer as a first point of contact, with the GIN importer in your country or with Gin Gliders directly.

Because it is impossible to anticipate every situation or condition that can occur while speedflying/paragliding, this manual makes no representation about the safe use of the wing under all conditions. Neither Gin Gliders nor the seller of GIN equipment can guarantee, or be held responsible for, the safety of yourself or anyone else.

Many countries have specific regulations or laws regarding speedflying/paragliding activity. It's your responsibility to know and observe the regulations of the region where you fly.

This equipment should be launched from the ground by pre-inflating the canopy before launch. It must never be used for parachuting, BASE jumping, D-bagging or any other kind of jumping.

You must wear a helmet as well as all other standard safety equipment required for paragliding and speedflying. It is strongly recommended to be an experienced paraglider pilot and to do additional learning in a specialised speed flying school. When speedflying, always choose a safe, open area enabling you to keep a wide safety margin. Do not practice speed flying in the vicinity of obstacles, cliffs, rocks or any other hazards.

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The information in this manual is provided for guidance only and is subject to change without notice. This manual is not intended as a comprehensive assembly, use, service, repair or maintenance manual. Please see your dealer for all assembly, service, repairs or maintenance. Your dealer may also be able to refer you to classes, clinics or articles on paraglider use, service, repair or maintenance.

# Thank you...

..for choosing Gin Gliders. We are confident you'll enjoy many rewarding experiences in the air with your GIN Griffin..

This manual contains important safety, performance and maintenance information. Read it before your first flight, keep it for reference, and please pass it on to the new owner if you ever re-sell your paraglider.

Any updates to this manual, or relevant safety information, will be published on our website: [www.gingliders.com](http://www.gingliders.com). You can also register for email updates via our website.

Happy flying and safe landings,  
GIN Team

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# Introduction

## About Gin Gliders

### *Dream*

In forming Gin Gliders, designer and competition pilot Gin Seok Song had one simple dream: to make the best possible paragliding equipment that pilots all over the world would love to fly—whatever their ambitions.

At Gin Gliders, we bring together consultant aerodynamicists, world cup pilots, engineers and paragliding school instructors, all with one goal: creating better paragliders.

### *Touch*

We're a "hands-on" company that puts continuous innovation and development at the centre of everything we do.

At our purpose-built R&D workshop at head office in Korea, we are able to design, manufacture, test-fly and modify prototypes all in a matter of hours. Our international R&D team is on hand both in Korea and at locations worldwide. This guarantees that your equipment has been thoroughly tested to cope with the toughest flying conditions.

Our own production facilities in East Asia ensure the quality of the finished product and also the well-being of our production staff. Our facilities are independently certified to AS9100C (Aerospace standard) and also to ISO 9001:2008.

### *Believe*

We believe that the product should speak for itself. Only by flying can the pilot understand the wing and develop trust and confidence in it. From this feeling comes safety, comfort, performance and fun. The grin when you land should say it all!

## Manual

We recommend that you familiarise yourself with your new paraglider by reading this Manual before your first flight. This will allow you to acquaint yourself its new functions, to learn the best way to fly the paraglider in various situations, and explain how to get the best out of your paraglider. Information in this Manual on design of the paraglider, technical data and illustrations are subject to change. We reserve the right to make changes without prior notification.

The Manual complies with the EN airworthiness and forms part of the certification. There are a total of four important parts to the Manual, which give the following information:

1. Manual (this document):  
Instructions on getting started and using the paraglider
2. Inspection Information:  
General instructions and guidance on carrying out the regular inspection of paragliders
3. Glider details:  
Pilot details , proof of ownership and inspections and repairs overview

This Manual was current at the time of going to print. This Manual can be downloaded from GIN's website prior to print.

## Gin Gliders Homepage

Gin Gliders has a comprehensive website, which provides additional information about the Griffin, any updates to the Manual and many other issues related to paragliding. GIN's website is the first port of call for GIN's worldwide following:

**[www.gingliders.com](http://www.gingliders.com)**

On Gin Gliders website, you will find an extensive range of accessories for your paraglider, useful products for pilots, as well as additional information and accessories for your Griffin.

You will also find links there to other services and websites:

- [Gin Gliders Shops](#)
- [Facebook, Twitter & youtube](#)

These websites and their content are provided for your use. The content of Gin Gliders websites has been made available for your use on an "as is" and "as available" basis. Gin Gliders reserves the right to alter the websites at any time or to block access to them.

## Gin Gliders and the environment

Protection of the environment, safety and quality are the three basic values of Gin Gliders and these have implications on everything we do. We also believe that our customers share our environmental awareness.

### **Respect for nature and the environment**

You can easily play a part in protection of the environment by practising our sport in such a way that there is no damage to nature and the areas in which we fly. Keep to marked trails, take your rubbish away with you, refrain from making unnecessary noise and respect the sensitive biological equilibrium of nature. Consideration for nature is required even at the launch site!

Paragliding is, of course, an outdoor sport – protect and preserve our planet's resources.

### **Environmentally-friendly recycling**

Gin Gliders gives consideration to the entire lifecycle of its paragliders, the last stage of which is recycling in an environmentally-friendly manner. The synthetic materials used in a paraglider must be disposed of properly. If you are not able to arrange appropriate disposal, Gin Gliders will be happy to recycle the paraglider for you. Send the glider with a short note to this effect to the address given in the appendix.

# Safety

**WARNING: the safety advices and instructions contained in this Manual must be followed in all circumstances. Failure to do so shall render invalid the certification and/or result in loss of insurance cover, and could lead to serious injuries or even death.**

## Safety advice

Paragliding demand a high level of individual responsibility. Prudence and risk-awareness are basic requirements for the safe practice of the sport, for the very reason that it is so easy to learn and practically anyone can do so. Carelessness and overestimating one's own abilities can quickly lead to critical situations. A reliable assessment of conditions for flying is particularly important. Paragliders are not designed to be flown in turbulent weather. Most serious accidents with paragliders are caused by pilots misjudging the weather for flying.

In Germany, paragliders are subject to the guidelines for air sports equipment and must not under any circumstances be flown without a valid certification. Independent experimentation is strictly prohibited. This Manual does not replace the need to attend training at a paragliding school.

The Manual must be passed on to any new owner if the paraglider is sold. It is part of the certification and belongs with the paraglider.

Observe the other specific safety advice in the various sections of this Manual.

## Safety notices

Safety notices are issued when defects arise during use of a paraglider which could possibly also affect other gliders of the same model. The notices contain instructions on how the affected gliders can be inspected for possible faults and the steps required to rectify them.

Gin Gliders publishes on its website any technical safety notices and airworthiness instructions which are issued in respect of GIN products. The paraglider owner is responsible for carrying out the action required by the safety notice.

Safety notices are issued by the certification agencies and also published on the relevant websites. You should therefore visit on a regular basis the safety pages of the certification agencies and keep up-to-date with new safety notices which cover any products relating to paragliding.

## Liability, warranty exclusion and operating limitations

Use of the paraglider is at the pilot's own risk!

The manufacturer cannot be held liable for any personal injury or material damage which arises in connection with Gin Gliders paragliders. The certification and warranty shall be rendered invalid if there are changes of any kind (incl. paraglider design or changes to the brake lines beyond the permissible tolerance levels) or incorrect repairs to the glider, or if any inspections are missed (annual and 2-yearly check).

Pilots are responsible for their own safety and must ensure that the airworthiness of the glider is checked prior to every flight. The pilot should launch only if the paraglider is airworthy. In addition, when flying outside of Germany, pilots must observe the relevant regulations in each country.

The glider may only be used if the pilot has a licence which is valid for the area or is flying under the supervision of an approved flying instructor. There shall be no liability on the part of third parties, in particular the manufacturer and the dealer.

### Liability and warranty exclusion

In terms of the warranty and guarantee conditions, the paraglider may not be flown if any of the following situations exists:

- the inspection period has expired, or the inspection has been carried out by the pilot him/herself or by an unauthorised inspector
- the pilot has incorrect or inadequate equipment (reserve, protection, helmet etc)
- the glider is used for winch-launching with a winch which has not been inspected or by non-licensed pilots and/or winch operators
- the pilot has insufficient experience or training

### Operating limitations

The paraglider must be operated only within the operating limits. These are exceeded, if one or more of the following points are complied:

- the take-off weight is not within the permissible weight range
- the glider is flown in rain or drizzle, cloud, fog and / or snow
- the canopy is wet
- there are turbulent weather conditions or wind speeds on launch higher than 2/3 of the maximum flyable airspeed of the glider (varies according to the total take-off weight)
- air temperature below -10°C and above 50°C
- the glider is used for aerobatics/extreme flying or flight manoeuvres at an angle greater than 90°
- there have been modifications to the canopy, lines or risers which have not been approved

## Glider categories and guidelines

**WARNING: The descriptions of flight characteristics contained in this Manual are all based on experiences from the test flights, which were carried out under standardised conditions. The classification is merely a description of the reactions to these standard tests.**

The complexity of the paraglider system means that it is not possible to give any more than a partial description of the glider's flight behaviour and reactions to disturbances. Even a small alteration in individual parameters can result in flight behaviour which is markedly modified and different from the description given.

### **EN/LTF certification**

The Griffin received EN-C classification in the final classification by the licensing body.

### **Description of flight characteristics**

"Paraglider with a moderate level of passive safety and potentially dynamic reactions to turbulence and pilot errors. Recovery to normal flight may require precise pilot input."

### **Target group and recommended flying experience**

"Pilots with extensive flying experience of at least approx. 75 hours airtime per year, who are wanting to achieve peak performance, e.g. in cross-country flying, or who simply appreciate direct handling and very good properties in thermal flying."

### **Description of pilot skills required**

"Designed for pilots well-practised in techniques to recover from abnormal flying conditions, who fly regularly, "actively", and who understand the possible implications of flying a paraglider with reduced passive safety."

### **Suitability for training**

The Griffin is generally not suitable for use as a training glider.

## Before the first flight

**WARNING: Your instructor, dealer or a specialist must test-fly and inspect the paraglider before your first flight. The test-flight must be recorded on the paraglider information label. Any changes or improper repairs to this paraglider shall render invalid the certification and warranty.**

### Harness

The Griffin is certified for use with all harnesses with variable cross-bracing (GH type). Practically all modern harnesses are GH type harnesses. Older harnesses with fixed cross-bracing (GX type) are not certified and should not be used. Check with the manufacturer of the harness or your paragliding instructor if in doubt whether your harness is a GH or GX type harness.

It's important for your comfort and safety to fly with a suitable harness that is properly adjusted. When choosing a harness, remember that the height of the attachment points (i.e. distance from the carabiners to the seat plate) affects the sensitivity of the glider and the relative brake travel. The lower (shorter) the attachment points, the more sensitive the glider is to weightshift.

The adjustment of the harness chest strap controls the distance between karabiners and affects the handling and stability of the glider. Excessive tightening the chest strap increases stability but also the risk of twists following glider collapse, and it also increases the frequency of getting collapses due to poor feedback from the glider. The risk of twisting is also strongly affected by the seating position of pilot. Flying in a laid back (reclined) position makes it much more difficult to react in time to prevent riser twisting. With the chest strap in a more closed position the glider also has more tendency to maintain a stable spiral, lengthening of the chest strap gives more feedback from the glider but decreases stability.

GIN gliders are developed with GIN harnesses, which have an attachment point of approximately 40-48cm (depending on size and model). EN/LTF certification test flights are also carried out with this setting. Adjust your chest strap so that the distance between the carabiners is approximately 46cm. Lighter pilots may fly with a slightly narrower setting. A rule of thumb is to set the width of your chest strap to that of your shoulders.

Your dealer will be able to offer individual advice regarding harnesses.

**CAUTION: Don't adjust your leg and shoulder straps too tightly. If you do, you may have difficulty sitting back into your harness after take-off.**

**If you fly with a cocoon harness in a reclined position, be sure to quickly get into an upright position in any turbulence or extreme situations. If you don't, you may experience a reduction in control travel or an increased risk of riser twists.**

### Reserve

It is a mandatory requirement to carry an approved reserve for use in emergency situations where the paraglider fails and recovery is not possible, for example after colliding with another aerial sports craft. In choosing a reserve, you should be careful that you remain within the specified take-off weight. The reserve is fitted according to the manufacturer's instructions.

### Weight range

Be sure to fly your glider within the certified weight range given in the Technical Specification section. The Griffin has an incredibly wide weight range (55 kg to 105 kg). Depending on your body weight, you may be flying the Griffin at either moderate or extremely high wing loadings.

The reactions are quite different at the upper- or lower weight range. If you fly at a high wing- loading, the glider shows dynamic flight behaviour with fast reactions. This may be an advantage in strong wind conditions, but considerable pilot skill is required. The dynamics are reduced somewhat in the middle and lower part of the weight range. But as the Griffin is a mini-wing, the wing is still dynamic compared to a standard paraglider.

**IMPORTANT: The higher the wing- loading at which you fly, the more dynamic and demanding the reactions of the glider.**

### Overload

The EN 926-2:2013 describes the weight measurement with: "All weights are subject to an acceptable tolerance of  $\pm 2\text{kg}$ ". Therefore a slight overload of the wing would be within EN tolerances. However, flying over the maximum weight further increases the dynamic flight behaviour. In small bubbles, the wing has more horizontal momentum and less tendency towards lifting. A test flight is always recommended if in doubt.

**TIP: Check your total flying weight by standing on weighing scales with all your equipment packed into your rucksack.**

**Remember that ballast can also be used to adjust wing loading to the conditions.**

### First flight

Carry out your first flights only during stable weather, and in a familiar area or on a training slope. You should steer gently and carefully to begin with so that you can become accustomed to the reactions of the glider without stress.

# Flying the Griffin

## Preparation for launch

Check the condition of your paraglider and other flying equipment before every flight. Lay out your wing on its top surface in an arc. Make sure that the centre of the wing is higher than the tips. Prepare for launch by checking the following:

- Is the glider fabric free from tears or other damage?
- Are the lines free from knots, tangles or other damage?
- Are the maillons connecting the lines and risers closed and secured?
- Are your carabiners in good condition?
- Are the risers in good condition?
- Is your harness in good condition?
- Is your speed system correctly connected?
- Is your rescue correctly installed in your harness?
- Is your rescue handle secure and rescue pin in?

### Pre-flight check

Check the following before every take-off:

- Is your personal equipment in order? (harness and helmet straps done up, reserve handle secure and pin in, carabiners done up)
- Are you holding the 'A' risers and brake handles?
- Is the wing arranged in an arc with the leading edge open and into wind?
- Is the wind strength and direction suitable?
- Is the airspace and visibility clear?

**TIP: Always follow a consistent method of preparation and pre-flight checks each time you fly.**

## General warnings and advice

Before flying, check the following:

- Are you in good physical and mental condition?
- Are you familiar and compliant with all applicable laws and regulations in your area?
- Are you within the certified weight range?
- Do you have the necessary insurance cover?
- Are you briefed thoroughly about the site, airspace and expected weather conditions of the day?
- Is your equipment and choice of site suitable for your level of experience?
- Do you have a suitable helmet, gloves, boots, eyewear and adequate clothing?

- Are you carrying some form of identification, in case of an accident? Take along a radio and mobile phone if possible.
- Do you fully understand how to safely fly your new wing? If not, have your instructor or dealer explain anything you are not sure about.

## Launching

The Griffin has smooth and progressive inflation characteristics with no tendency to hang back or shoot forwards. However, since the Griffin is a small glider, the takeoff speed will be higher than that of a normal glider. It is therefore not recommended to launch in in backwind situations or when the take-off area is not free of obstacles.

### Forward launch (nil to light winds)

Lean forward positively and guide the 'A' risers smoothly upwards in an arc, keeping your elbows bent and hands at the level of the shoulders. The Griffin will inflate easily—there is no need to aggressively pull or push the risers. As the glider comes above your head, make sure that the canopy is correctly inflated and that there are no knots or tangles in the lines. Check that the airspace and visibility are clear. If everything is in order, move forward decisively off the take-off.

### Reverse launch (light to strong winds)

Take the brakes and turn around to face the wing. Pass one set of risers over your head as you turn. Make sure the lines are free from knots or tangles. Check that the airspace and visibility are clear. Gently pull up the glider in an arc with the 'A' risers. When the glider is overhead, brake it gently if necessary, turn around and launch.

#### TIPS:

- If the glider comes up slightly off-centre, make small corrections by moving towards the lower side.
- In stronger winds, be prepared to take a couple of steps towards the canopy as it inflates and rises.
- Launch the wing by pulling upwards in an arc, not towards you.
- Practice ground-handling regularly to improve your take-off skills!

## Landing

Remember the following general points to make a good landing:

Observe the wind direction and strength, and any hazards in, or near, the landing area.

Fly a proper landing circuit and plan your final approach well in advance.

Actively choose a spot on the ground in the landing field to aim for. Adopt an upright position in your harness by sliding your legs forward, ready to make contact with the ground.

Make your final approach as straight as possible. Fly at around trim speed (keep just enough tension on the brakes to keep contact with the wing, a little more tension in turbulent air). Once you come within a metre of the ground, brake progressively to maintain a level flight path.

In nil or light winds, flare positively to reduce your ground speed to a minimum. Again: high wing-loading leads to higher ground speed. Make sure you always land into the wind. In nil wind situations, be prepared to run fast. In stronger winds, use only the minimum amount of flare necessary to sufficiently minimize your vertical and horizontal speed. If you flare too hard in strong winds, the glider will climb rapidly upwards and backwards, and you may get injured.

In strong winds, turn to face your wing as soon as your feet touch the ground. Immediately stall the glider as rapidly as possible with the brakes or rear risers. Be prepared to run towards your wing.

**TIP: The Griffin has good basic speed, good glide and excellent energy retention. Give yourself enough space and bleed off speed gradually before flaring.**

**CAUTION: Although the Griffin is remarkably maneuverable even in the lower half of the brake range, do not be tempted to make an excessively slow landing approach. Strong gusts and/or a steep wind gradient may cause any glider to suddenly lose altitude, or even stall.**

**CAUTION: Never let the leading edge crash to the ground, you risk damaging the seams and/or internal structure.**

**Ground handling (especially on rough surfaces) will accelerate the ageing process of your wing.**

**WARNING: Never perform steep turns near the ground. This may cause the pilot to pendulum dangerously.**

## In-flight characteristics

### Normal flight

“Trim speed” (brakes fully released) is the best glide speed in still air.

Minimum sink speed on the Griffin is achieved by light braking. In a normal flying position (knees parallel to the ground and your body slightly reclined), your hands should be holding the brakes at a level between your eyes and your shoulders. Use this speed for thermalling and ridge soaring.

Stall speed is approached by bringing your hands towards your hips. Notice the decreased wind noise and a significant increase in brake pressure. Be sure not to allow your glider to enter a stall.

### Accelerated flight

The speed system causes the glider to accelerate by lowering the angle of attack. Apply the speed system by pushing the speed bar progressively with your feet. Use your speed bar when gliding in sinking air, headwinds and crosswinds. The stability of the Griffin does not degrade significantly at speeds of up to half bar.

**TIP: During your first few flights, familiarize yourself with your glider's speed range and corresponding brake positions and pressures.**

**CAUTION: Don't use full bar near the ground or in turbulence. Although the wing is stable at this speed, higher aerodynamic forces mean that any collapses that do occur could be more significant and require more height for recovery.**

**CAUTION: Never apply brakes when using the speed bar.**

### Turning

Make your first turns gradual and progressive. Also remember that your harness and its set-up has an influence of the turning behaviour of the wing.

Enter a turn with good airspeed, weightshift and then apply the brake. Once established in the turn, regulate your speed and turn radius with weightshift and the outer brake.

**CAUTION:** Always check for clear airspace before initiating a turn.

### Active flying

Practice active flying to eliminate collapses in all but the most turbulent conditions. Keep tension on the brakes approximately equal to the weight of your arms. This allows you to stay relaxed and sensitively feel the internal pressure in the wing through the brakes. If you feel a loss of pressure in one or both sides of the wing, quickly apply the appropriate brake(s) to regain pressure. Release the brake promptly as soon as normal pressure is resumed.

If you miss the above timing and get a collapse, be sure to first raise your hands and release the brakes before considering any other corrective actions.

The Griffin has excellent pitch stability. Nonetheless, in turbulence or during manoeuvres, the glider may pitch. If the glider pitches in front of you, apply brake to slow it down. If the glider drops behind you, ease off the brakes to allow it to speed up. The objective is to reduce the pendulum effect by adjusting the speed of your glider so that glider and pilot are travelling at the same speed.

The same general principles also apply when gliding on bar.

**TIP: The further in front of you the glider pitches, the larger the brake input required, but for a shorter duration.**

**CAUTION: Never release the brakes when the glider is behind you but accelerating forwards.**

### C-riser control

Minor course and pitch corrections work well when using the C risers for steering. However, we recommend that the pilot makes most of the corrections with the speed-bar as this is safer.

**CAUTION: C riser control should not be used in strong turbulence. In this case, release the speed bar and fly the glide actively with the brakes.**

**Use small inputs during C-riser control to reduce the risk of stalling the wing**

## Rapid descent techniques

Learn and practice the techniques in this section under qualified supervision. Big ears and spiral dives are generally the most common methods of descent. Big ears can achieve a moderate rate of descent with the advantage of forward speed and manoeuvrability.

Spiral dives attain higher rates of descent, but the G-forces can be significant and the manoeuvre is more technically demanding. 'B-stalls' have little or no advantages compared to the other methods of descent and therefore are not recommended in normal situations.

### Big ears

To enter big ears, pull down firmly the outermost A lines on each side of the wing one-by-one until the wingtips fold under. The glider can then be steered by weightshift. Do not use the brakes unless you intend to exit big ears.

Once in big ears, you can increase your sink rate and forward speed by applying the speed bar. Always apply the speed bar AFTER entering big ears, never before.

To exit big ears, release both A lines at the same time. Apply brake progressively one side at a time to help re-inflation. Be careful not brake too deeply on both sides at the same time as this could cause a stall.

**WARNING: Uncontrolled re-openings after rapid descent techniques, collapses, extreme manoeuvres or during ground-handling may place additional stress on your glider.**

**WARNING: Do not attempt to release big ears near the ground.**

**TIP: Always try to avoid the need to use these descent techniques. Thoroughly check the conditions before launch, and pay close attention to how the day develops.**

### Spiral dives

Before entering a spiral, make sure you have adequate height for recovery. To enter the spiral dive, weight shift and progressively apply the inside brake until the glider enters the spiral. As the glider accelerates into the spiral, centre your weight and control your rate of descent with weightshift and outer brake.

To exit the spiral, check your weight is centred (or slightly towards the outside) and progressively release the inside brake. As the glider starts to exit the spiral, you may also choose to reduce the pendulum moment by briefly re-applying the inside brake.

The Griffin fulfils the EN spiral dive requirements and has no tendency to remain in a stable spiral dive under normal conditions. However, in certain cases, such as spirals with excessive sink rates or wrong harness settings, pilot action may be required. In such cases, exit the spiral by weightshifting to the outside and progressively applying the outside brake.

**WARNING: The high G-forces experienced in steep or prolonged spirals may result in disorientation or even loss of consciousness. Spirals with descent rates above 10 m/s are not recommended.**

**WARNING: Do not attempt to enter a spiral dive while in big ears. This places excessive forces on the paraglider and may result in structural failure.**

**CAUTION: Frequent steep spirals may cause premature aging of your wing.**

### **B-Stall**

Although it is not recommended for normal situations, the B-stall does not present particular difficulties.

To enter a B-stall, symmetrically pull down the B risers. This action may require considerable effort. To exit the manoeuvre, release the B-risers smoothly and symmetrically. Be sure to allow the glider to resume normal flight before making any other actions.

## Incidents in flight

**WARNING: Due to the reduced surface of the glider, small cravates, deep stalls and other problems lead to very high sink rates. In such cases, don't hesitate to deploy your rescue immediately.**

### Asymmetric collapses

Use active flying techniques to virtually eliminate collapses in normal flying conditions. Nevertheless, if you do get a collapse, stabilize your weight in your harness and do not allow yourself to fall to the collapsed side. Control your course with weightshift and a little outside brake. The deflation should re-inflate spontaneously.

If the deflation does not re-inflate spontaneously, apply brake on the closed side in a smooth, progressive pumping action. Be sure not to apply too much brake too slowly as this may risk a stall. Remember that a partly collapsed wing has a reduced surface area and thus a higher stall speed.

**CAUTION: After a large collapse, an instinctive reaction to the body falling is to attempt to hold something. This can result in the pilot unintentionally applying brake, which prevents proper recovery. Always make sure you have fully released the brakes (including any wraps taken) after any incident. Let the glider fly.**

### Symmetric collapses

Symmetric (frontal) collapses will normally re-open without pilot input. Assist this process if necessary with a symmetric application of the brakes. Take care not to apply too much brake for too long as this may stall the wing.

**IMPORTANT: If you get a collapse while in accelerated flight, release the speed bar immediately. Then apply the normal procedure for unaccelerated asymmetric collapses.**

### Cravattes

A cravatte occurs when a wing tip becomes stuck between the glider lines, for example, following a bad take-off preparation. On the Griffin, a cravatte is unlikely to occur. If you do get a cravatte, first control your direction. Do this by using weightshift and enough counter-brake to stop the turn, but not too much to risk a stall of the opposite side. Then pull down the stabilo line (STB-see line plan) until it becomes tight. This normally frees the cravatte. If not, the last resort to attempt recovery is to make a full stall (symmetric or asymmetric). Do not attempt this unless you have the necessary skill, training and experience to perform this manoeuvre safely.

**WARNING: Do not hesitate to throw your reserve parachute if the rotation in a cravatte is increasing uncontrollably or if you are at low altitude.**

**CAUTION: Always remain aware of other aircraft and terrain when dealing with a problem on your wing.**

### **Rear riser steering**

If, for any reason, you are unable to use the brakes to steer the glider, you can also use the rear risers. Take care to use only small inputs. Pulling the rear risers too hard may cause a stall.

### **Flying with a wet paraglider**

Never fly with a wet paraglider or in the rain. Doing so increases the risk of a deep (parachutal) stall. If you do get caught out, never use big ears. Fly with the minimum of brake and head for the landing immediately. Apply moderate speed bar for an additional safety margin.

### **Deep stall**

A deep (parachutal) stall is only likely to occur in exceptional circumstances, such as if the glider is flown when wet, if the lines are significantly out-of-trim or if the glider is flown in extreme turbulence.

In a deep stall, the canopy may be open, but is descending vertically with little or no forward speed.

To exit a deep stall, fully release both brakes and allow the glider to return to normal flight. If the glider remains in the deep stall, put your hands on the A-risers and push forwards, or apply your speed bar.

**CAUTION: Never apply the brakes, including any wraps taken, in a deep stall.**

**WARNING: During any incident in flight, always monitor your altitude. If you have any doubt that you have sufficient height for recovery, deploy your reserve without hesitation. "If low, then throw".**

## Other modes of flight

### SIV / Safety training

Perform any SIV / safety training with care. Due to the advanced design features of the paraglider, collapses incorrectly induced by the pilot may have more significant consequences than collapses which may occur in the course of normal flight (due to turbulence etc.).

### Material stress

During a safety training course, avoid subjecting the materials of your paraglider to excessive stress. Uncontrolled flight positions may occur which are outside the manufacturer limits of the paraglider. This may cause a general deterioration in flight characteristics, premature ageing, or even structural failure.

**WARNING: Be sure to perform any simulated collapses correctly. In particular, full speed asymmetric collapses performed incorrectly may result in unpredictable collapse behaviour and impulsive re-opening. This behaviour may require considerable pilot skill to manage safely.**

### Aerobatics

Your Griffin is not intended to be used for aerobatics (acro). By engaging in such an activity, you voluntarily assume an increased risk of injury or death. Aerobatics may also cause premature ageing of the materials and in the worst case, structural failure.

Wingovers up to 90 degrees angle of bank may be performed by pilots with the appropriate training.

**WARNING: Uncoordinated wingovers can result in large asymmetric collapses or cravattes. Always make sure you have sufficient ground clearance and the necessary skill and experience before attempting such manoeuvres.**

### Towing

The Griffin is suitable for towing and the procedure for a towing is similar in its initial stages to a forwards launch. After the canopy has been pulled up to its highest point, the pilot rises from the ground by the tension of the tow line. Under no circumstances should the "start" command be given before the glider is completely under control. Major changes to direction should be avoided during the launch phase and before reaching a safe altitude. After having left the ground, the pilot will be slowly towed in a flat angle up to the safe altitude of 50 m. During this phase, the pilot must remain ready to run and must not sit back in the harness, so that it is possible to land safely in the event that the winch or tow rope fails. Ensure that the glider is flown with open brakes so that the angle of attack is not increased further by the brakes.

On a winch launch, the glider should if possible be steered only by weight-shifting. Brisk, forceful steering input with the brakes can be used to help correct direction, without braking the glider too much and stalling it.

You are responsible for ensuring that your towing operations are safe and in accordance with any applicable tow regulations. Make sure you have appropriate tow training and use a suitable harness attachment and release mechanism. Always use an approved tow system and qualified tow operator.

**TIP: Make sure your wing is overhead at the start of your tow. Be careful not to over-control the wing as it reacts differently to control inputs when on tow.**

Towing requires special training and special regulations must be observed. These are:

- The pilot must have completed the appropriate training and hold a licence.
- The winch and release must have a certificate of compliance which covers the towing of paragliders.
- The winch operator must have undertaken training which includes the towing of paragliders.
- The Griffin may not be towed with a towline tension of more than 90 daN.
- The paraglider must not under any circumstances be towed by motor vehicle or motor boat etc if you do not have the appropriate towing equipment and a suitable winch operator.

**WARNING: The most common cause of stall on winch is releasing the A-risers too early while the glider is rising. The pilot should ensure that the canopy is above him before the “start” command is given.**

**Any changes to direction using the brakes should not be carried out until the canopy is already above the pilot, as too much brake can cause the glider to fall down again or be towed in a non-flyable condition.**

#### Attaching the towline release system

The optimal attachment point for the towline release should be as close as possible to the system’s centre of gravity. On a paraglider the ideal attachment point is level with the harness attachment point or directly on the risers. It is not essential to use a suitable tow adaptor, but it is recommended and provides the pilot with greater safety during the towing phase.

**WARNING: If you are using a front-mounted reserve system, it is important to ensure before first launch that it can be deployed without any obstruction. If this is not the case, then only a webbing release system should be used.**

**WARNING: If a webbing release system is used, there is an increased risk of lockout. This means that the glider does not fly towards the winch and control pressure by the pilot is not sufficient to correct this. You should therefore check regularly the position**

**and alignment of the glider to the pilot during towing, as the towing rope hangpoint located well in front of the pilot encourages the glider to turn, and this may not be detected.**

**NOTICE: Gin Gliders recommends that pilots use an appropriate tow adaptor, which gives greater safety margins during towing.**

### **Paramotoring**

The Griffin is not intended for paramotoring. Details of GIN wings suitable for motorized flight can be found in the paramotoring section of our website, <http://gingliders.com>

### **Tandem paragliding**

The Griffin is not intended for tandem paragliding.

# Storing, care, maintenance and repairs

## Storing the paraglider

### Packing the paraglider

It is very important to pack the glider carefully in order to ensure the longevity of the leading edge reinforcements. Fold up the Griffin as shown in the diagrams below. The leading edge reinforcements (Mylar and Rigid-System) on the front edge are placed on top of each other to avoid bending or misshaping them. This method of packing ensures that the leading edge is treated carefully, which will increase the glider's life, performance and launch behaviour.

If the reinforcements have been bent or misshapen, they distort more easily during flight, creating an altered air inflow which can lead to a loss in performance and changes in flight behaviour. The leading edge reinforcements also perform an important function on launch. Therefore, the less they have been bent, the more easily the glider will inflate and launch.

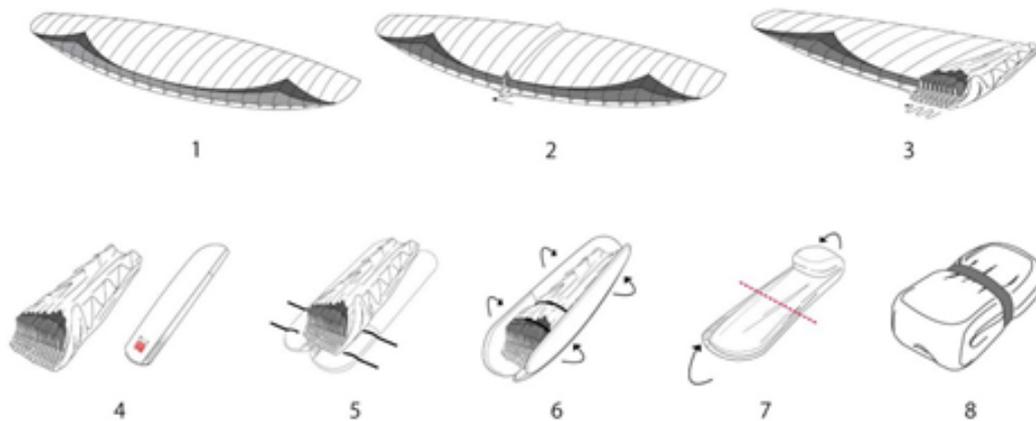


Fig.: Packing the Griffin

1. Spread out the paraglider completely on a smooth surface. Do not drag the paraglider across any rough surfaces such as gravel or asphalt. This may damage the seams and surface coating.
- 2.-3. All the ribs on one side are placed one on top of one another, so that the leading edges are not bent.
4. Then continue as in the second step, placing the leading edges of the other side on top of the next until you reach the tip of the glider. Place the concertina bag underneath the glider which has been folded together, so that the ribs are all lying along the length of the concertina bag.
5. The glider is now folded up along its length, and the leading edges are on top of each other without having being bent. Fasten the straps near the leading edges, so that they do not slip, and the straps in the middle and at the end of the glider.

6. Do up the zip, making sure that none of the lines or fabric is caught in the zip.
7. Fold up the glider along its length, with the first fold below the leading edge reinforcements. Pay particular care not to bend any of the rigid reinforcements!
8. Fold the glider again. Then place the compression strap around the glider and fasten it by pulling gently. Make sure that the glider is only loosely folded and is not bent or compressed excessively.

### Rucksack

All GIN gliders are delivered with a durable ripstop Codura® rucksack with 160L capacity. The rucksack should be packed carefully to achieve maximum comfort. First, place the glider inside the harness and then put the top of harness in the bottom of the rucksack with the glider side next to the back of the rucksack. Finally, tighten the internal and external compression straps and adjust the shoulder and waist straps to ensure the equipment stays firmly in place when walking. There are also two storage pockets for accessories.

An XXL rucksack is available as an optional extra for pilots that require it.

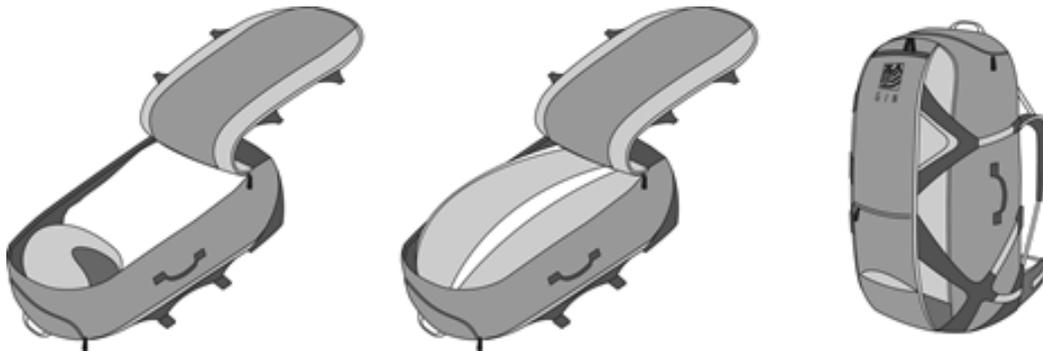


Fig.: Packing the rucksack

### Storing and transporting the glider

Even if your paraglider was completely dry when it was packed up after the final flight of the season, for long-term storage you should if possible take it out of the backpack and spread out the canopy a little in a clean, dry place away from direct light. If you do not have the space to do this, then open the backpack, internal bag and belt as much as possible and avoid compressing it. It must be stored at a temperature between 10° and 25° C and in relative humidity between 50 and 75%. Make sure too that the paraglider is not stored in a place where animals such as mice or cats could use it as a place to sleep.

Do not store the paraglider near any chemicals. Petrol, for example, causes the material to disintegrate and can cause considerable damage to your paraglider. When your equipment is in the car boot, keep it as far away as possible from any spare petrol cans or oil containers.

The Griffin should not be exposed to extreme heat (e.g. in the boot of the car during summer). The heat may cause any moisture present to be pressed through the fabric, thereby damaging the coating. High temperatures accelerate the process of hydrolysis,

particularly when combined with moisture, which damages fibres and coating. Do not store your paraglider near radiators or other heat sources. Always transport your glider in the special concertina bag and use the backpack provided for the rest of the equipment.

## Care

The materials used in the Griffin have been carefully selected for maximum durability and performance. Nevertheless, following the guidelines below will keep your paraglider airworthy and will ensure a long period of continuous safe operation. Excessive wear is caused by careless ground handling and packing, unnecessary exposure to UV light, chemicals, heat and moisture.

### Ground handling

The following should be avoided:

- Don't ground handle or take-off on abrasive surfaces.
- To move the paraglider to another spot, don't drag it across the ground. Pick it up and carry it.
- Violent shocks to the upper surface (e.g. when the canopy crashes to the ground leading edge first whilst ground handling). This stresses the seams and can even cause the cell to explode.
- Don't repeatedly inflate the glider and allow it to crash back down. Step towards the wing as it comes down to take the force out of this action.
- Dragging the glider along the ground.
- Stepping on the lines or canopy. The Kevlar line inside the sheath can take lots of pulling force without stretching, but is sensitive to bending with small radius.
- Opening your wing in strong winds without first untangling the lines.
- Don't sit on your rucksack when your glider is packed inside.

### Fabric

Care is essential to ensure that the fabric and glider remain durable and retain their qualities. The glider should therefore be protected from unnecessary UV light. Do not unpack your glider until immediately before flight and pack it up straight after landing. Modern paraglider fabrics have better protection against the sun, but UV rays in particular are still one of the decisive factors in how the fabric ages. The colours will fade first and then the coating and fibres will begin to age.

When choosing a place to launch, try to find somewhere which is smooth and free of stones and sharp objects. Do not stand on the glider. This weakens the fabric, especially if it is on a hard or stony surface. Pay attention to the behaviour of spectators at the launch site, especially children: do not hesitate to draw their attention to the sensitive nature of the fabric.

When you are packing up your glider, make sure that there are no insects trapped inside. Many insects produce acids when they decompose, which can cause holes in the fabric. Grasshoppers make holes by biting through the fabric and also excrete a dark

liquid which stains. Keep animals away when you are packing up. Insects are not attracted by any particular colours, contrary to what is commonly believed.

If the glider gets wet or damp, it should be dried as soon as possible in a well-ventilated room (but out of the sun). It may take several days before the canopy has dried completely because the fibres absorb water. Mould may form if the paraglider is stored wet and the fibres may rot, particularly when it is warm. This can make the paraglider unsuitable for flying within a short time.

A brand-new glider will often be compressed when delivered. This is solely for the initial delivery and the glider should not be compressed in such a way again. Do not pack your glider too tightly after use and, even though it is very comfortable, never sit on the backpack with the glider inside.

If salt water gets on the glider, it should be rinsed immediately in fresh water (refer to the section "Cleaning").

### **Lines**

The Griffin has various different high-quality and accurately manufactured lines which have been selected according to the load and area of use. You should also protect the lines from unnecessary UV light because, as with the fabric, UV light in particular will weaken the lines.

Dyneema lines, which are used in the area of the top brake lines, for example, are very temperature-sensitive and can be permanently damaged at temperatures above 75° C. Therefore your glider should never be stored in a hot car especially during summer.

Be careful that there is no abrasion caused to the coating on the lines by rubbing, particularly when ground-training with crossed risers.

Do not walk on the lines after the glider has been spread out and watch out for spectators or skiers who may inadvertently go over the lines.

When you are packing up the glider, be careful to avoid putting any unnecessary kinks in the lines and use only the overhand knot or bowline knots described for the brake lines.

### **Rigid construction**

Various forms of plastic rods are used in the Griffin (rigid construction), which create the leading edge's shape and the canopy's stability. To ensure that the plastic rods keep their shape, it is important that you pack the glider as described in the section "Packing the paraglider".

The plastic rods on the Griffin can all be replaced through small pockets. If you notice that a plastic rod has been damaged or misshapen because of incorrect use, this can be replaced by Gin Gliders or a Gin Gliders authorised workshop.

### **Cleaning**

If you do have to clean the glider, use only lukewarm fresh water and a soft sponge. Use a weak soap solution for stubborn stains, and then rinse it out carefully and thoroughly. Leave the glider to dry in a place which is well-ventilated and in the shade.

Do not under any circumstances use chemicals, brushes, rough cloths, high-pressure cleaners or steamers to clean the glider, as these can damage the fabric coating and weaken it. The glider becomes porous and loses breaking strength.

Do not under any circumstances put the glider in the washing machine. Even if washing powder is not used, the glider would be badly damaged by the mechanical action of the machine. Do not put the canopy into a swimming pool - chlorine will damage the fabric. If you have no choice but to rinse the glider, e.g. following a landing in the sea, gently wash it down inside and out with fresh water. Frequent rinsing accelerates the aging process.

## Maintenance

### Type designation

GIN gliders have an exact identification on the underside of the wingtip or on the centre rib, which is obligatory for all paragliders. The information required is set out in the airworthiness requirements.

It is helpful to provide the type designation of the paraglider if you are contacting your Gin Gliders dealer with any queries or ordering replacement parts or accessories, to ensure accurate identification.

### Inspection periods

Failure to observe the inspection periods shall render invalid the certification and warranty. A properly completed logbook with details of all flying and training will help you to comply with these periods.

A qualified professional should perform a formal maintenance inspection no later than 36 months after the first flight or after 150 hours (including ground handling), whichever is sooner. Subsequent inspections should be carried out every 24 months or 150 hours, whichever is sooner.

Ground handling time must be at least doubled when calculating the total hours of use because of the increased wear and tear on the glider. If you ground handle frequently or fly in harsh conditions, we recommend an annual check. It's your responsibility as a pilot to ensure that your wing is airworthy at all times.

Inspection must be made not only of the fabric, but also of the lines and all other parts of the glider. The maintenance instructions, available on our homepage [www.gingliders.com](http://www.gingliders.com), have to be observed.

A full inspection will give you peace of mind and extend your glider's lifetime. Additional inspections should be performed by a qualified person following a crash or violent landing on the leading edge, or if you note a deterioration of performance or behaviour. You should also check for any damage to your lines, sail, risers and connectors before each flight.

### Validity of inspection

It is very important that your glider is serviced at the required intervals throughout its entire life. In order to benefit from Gin Gliders warranty:

- you must have your paraglider inspected by Gin Gliders or an inspection agent authorised by Gin Gliders
- the documentation and the result of the inspection must be clearly identifiable (date and place / name of the inspector) and be entered near the glider information/certification sticker.

## Repairs

### Gin Gliders workshops

All repairs and servicing should be carried out by a Gin Gliders authorised workshop or directly by Gin Gliders. Gin Gliders workshops have trained staff, original Gin Gliders parts and the necessary know-how, all of which will ensure top quality.

Major repairs at the Griffin, such as replacing panels, should only be carried out by the distributor or manufacturer.

### Small repairs to the glider

Very small holes in the sail can be repaired with the sticky back tape provided with your glider. Damaged lines should be replaced by your GIN dealer. Before fitting a replacement line, check it for length against its counterpart on the other side of the wing. When a line has been replaced, always inflate the glider on flat ground to check that everything is in order before flying.

**IMPORTANT: Do not attempt to perform repairs unless you have the knowledge, experience, materials and tools needed to do the job properly.**

**WARNING: Always replace damaged lines. A damaged line can cause loss of control of the glider.**

### GIN quality and service

We take pride in the quality of our products and are committed to putting right any problems affecting the safety or function of your equipment and which are attributable to manufacturing faults. Your GIN dealer is your first point of contact if you have any problems with your equipment. If you are unable to contact your dealer or GIN importer, contact Gin Gliders directly via our website.

# Dimensions, illustrations, technical and EN/LTF data

## Introducing the Griffin

The Griffin is a dedicated miniwing aimed at experienced para-alpinists and ambitious hike 'n fly pilots. Easy to launch, fast and with good performance, the Griffin is able to launch in difficult places and conditions. The wide certified weight range means that the wing is suitable for a range of pilots. At lower wing loadings, less experienced pilots will find the handling accessible. At higher wing loadings, more experienced pilots will find the wing fast, dynamic and fun...

### Delivery

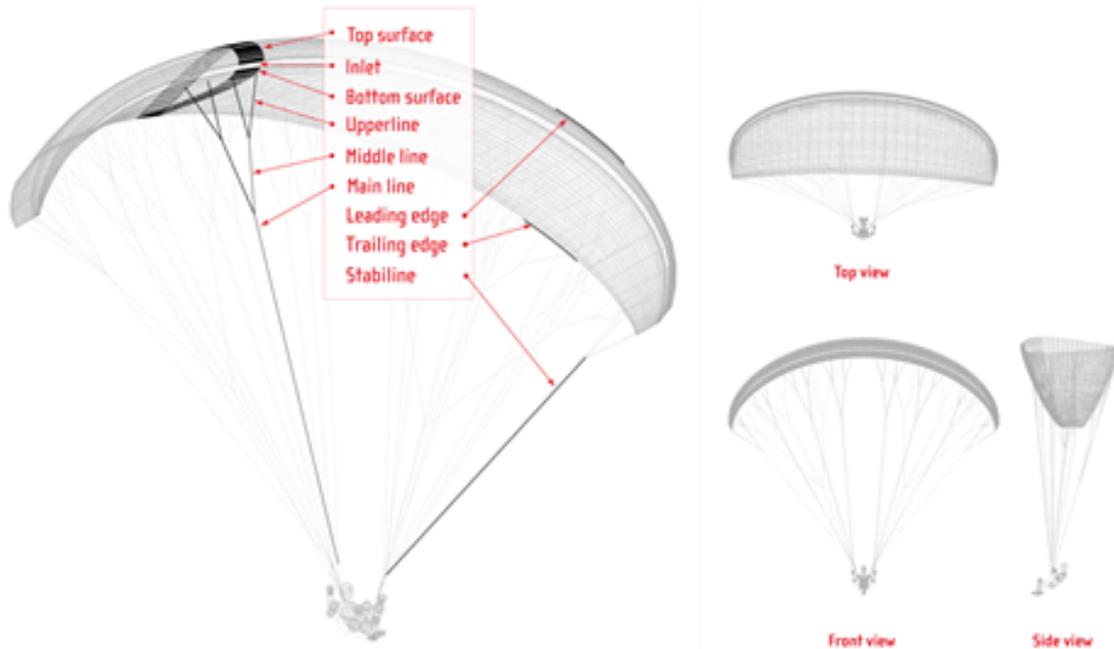
Make sure your dealer has checked and test-flown the glider. Your glider will be delivered to you with the original trim settings which correspond to the tested configuration. Do not make any modifications, such as changing the risers or altering the line lengths. This would invalidate the certification and is potentially dangerous.

**NOTE: Your glider may have been delivered with some lines looped on the maillons, this is to allow the glider to be re-trimmed during a professional check at the recommended service interval.**

### Manufacturing

All GIN gliders are produced in the company's own facilities using the most modern techniques. Highly skilled staff take extreme care during the entire manufacturing process. Stringent quality control is made after each step, and all materials that go into each wing can be traced. These measures guarantee that pilots fly with the assurance that their wing meets the most exacting safety standards.

## Overall illustration

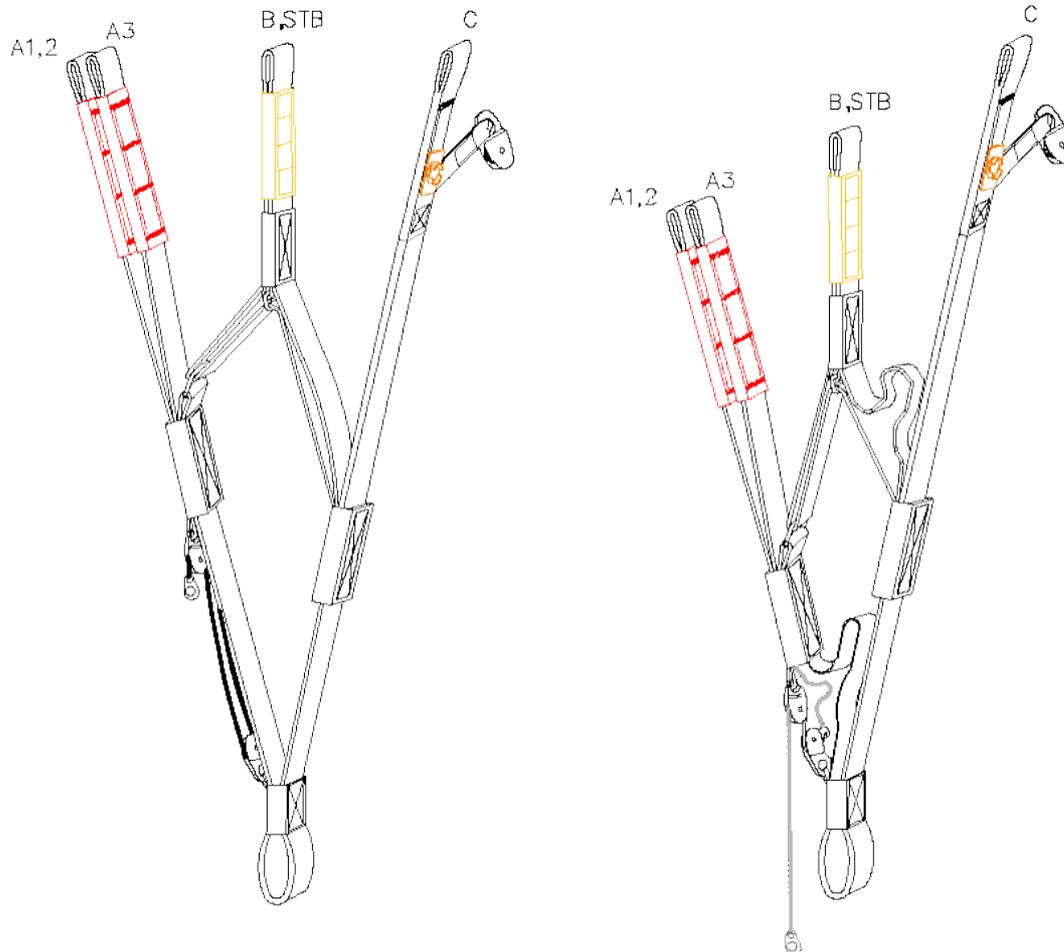


## Technical data

<b>Size</b>	<b>16</b>
Area (flat) [m <sup>2</sup> ]	16.00
Area (projected) [m <sup>2</sup> ]	13.89
Span (flat) [m]	8.76
Span (projected) [m]	7.07
Aspect ratio (flat)	4.8
Aspect ratio (projected)	3.59
Cells	36
Glider weight [kg]	2.3
Weight in flight [kg]	55-105
EN/LTF	C

## Riser and speed system

### Riser diagram



### Riser lengths

Riser	A	B	C
Length at trim speed (mm)	500	500	500
Length at full speed (mm)	350	400	500

## Speed System

The speed system accelerates the wing by progressively shortening the risers towards the front.

Make sure that the speed system lines are routed properly through your harness and attached to the risers using the Brummel hooks. Perform any adjustments symmetrically while on the ground. Adjust the speed system so that the maximum speed is attained ("pulley-to-pulley" on the riser) when your legs are fully extended. Ask a friend to hold the risers in the flying position while you are seated in your harness on the ground.

## Line system, brakes and line plan

### Line system

The Griffin has A, B and C line levels, which fork two or three times from the bottom (riser) to the top (canopy) and which are divided into "Main", "Lower-Middle", "Higher-Middle" and "Top" lines. The individual line levels are connected with one another using the "handshake knot" (special hoop technology).

With the brake lines, the individual levels are bundled at the end with the main brake line. This runs through the brake ring attached to the riser and is knotted at the brake loop of the control handle. There is a mark on the main brake line which allows the control handle to be correctly positioned.

The main lines are all attached to Maillon quick links. They are fed through special elastic rings and attached to prevent the lines from slipping and to ensure that they sit in the correct position.

### Brake line adjustment

#### Factory setting

The brake lines of the Griffin are set to the length that was used for the EN certification test flights. These line lengths have been finely tuned by the GIN test pilots, and it should not be necessary to adjust them.

The brake line length is tuned so that there is slack in the brake lines when the glider is in fully accelerated flight. Therefore, the brakes are quite slack at trim speed, and to take up that slack in soaring flight, it is common to fly with half a wrap on the brakes and hold the handles on the knot. However, care should be taken to release the wraps in any extreme situation.

If you do need to make adjustments to suit your harness, body and flying style, we strongly recommend that you test fly the glider after every 2 cm of adjustment. There should be a minimum of 10 cm of free brake travel when the glider is flown hands-off. This prevents the brakes being applied unintentionally when the speed system is fully engaged. We recommend a double sheepshank or a bowline knot for the brake handle attachment as shown in the diagram.

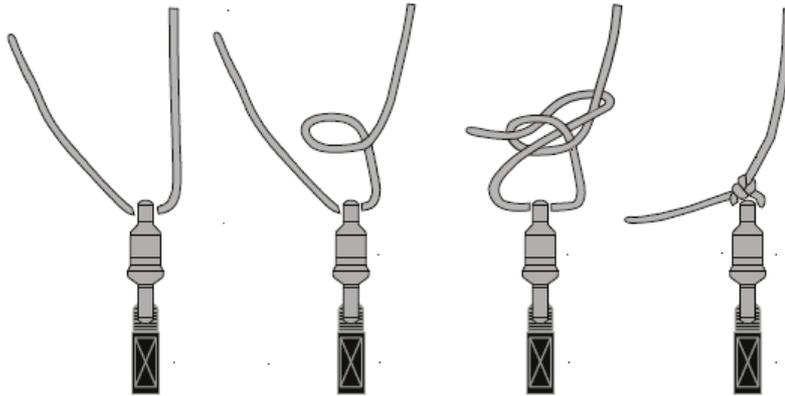


Fig.: Bowline knot

**WARNING: Loose, unsuitable or incorrectly tied brake line knots can cause the main brake line to loosen and then lead to loss of control of the glider.**

#### Incorrect adjustment

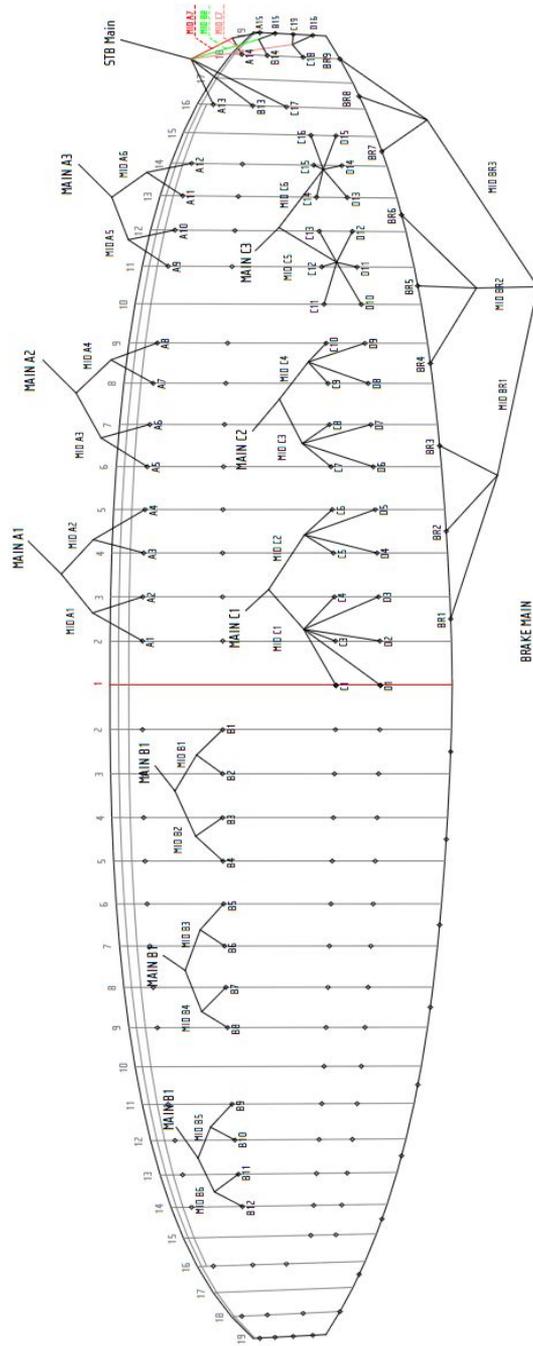
If the brake lines are too long, the paraglider reacts slowly and is difficult to land. The brake lines can be adjusted during flight by wrapping them around your hands which will improve the flight characteristics. Adjust the brake lines to the correct length after you have landed.

If the brakes are shortened, care must be taken that the paraglider is not slowed down in trim and accelerated flight. If the brake lines are too short, the following risks could arise:

- there could be an early stall
- the paraglider does not launch well and there is a risk of deep stall
- the paraglider exhibits dangerous behaviour in extreme flying
- the trailing edge of the paraglider is braked in accelerated flight which, in an extreme case, could cause a frontal collapse
- other safety issues may arise and performance may deteriorate

**CAUTION: If you do shorten the brake lines, make sure there is enough free brake travel that the trailing edge is not braked (deformed) when the glider is fully accelerated. There should be at least 10cm of free brake travel when the glider is own "hands-off".**

# Line layout



## Materials

### Canopy fabric

---

Upper surface leading edge	Porcher Skytex 32g/m <sup>2</sup> water repellent
Upper surface	Porcher Skytex 27g/m <sup>2</sup> water repellent
Lower surface	Porcher Skytex 27g/m <sup>2</sup> water repellent
Ribs	Porcher Skytex 27g/m <sup>2</sup> water repellent

### Lines

---

Upper	Liros DC60 Dyneema
Middle	Liros PPSL 120, 160 Dyneema
Main / brake	Liros PPSL 120, 160, 200 Dyneema / GIN TGL 280 Aramid

### Riser (standard)

---

Cousin 12mm Aramid & Dyneema

### Riser (light)

---

Liros 5/6mm Dyneema

### Line shackle (standard)

---

Stainless steel 3.85mm

### Line shackle (light)

---

Dyneema soft shackle

### Canopy thread

---

Amann & Söhne - Mill Faden 1500/3  
Polyester bonded

## Final words...

Most of us today live in a dependent society where we are regulated and protected. Individuals rarely are afforded opportunities to develop the self-responsibility that is the foundation of safety in extreme sports such as paragliding.

Most accidents are caused by getting into situations that are too demanding for your level of experience. This happens if you lack fundamental understanding, are incapable of assessing the risk or simply do not pay sufficient attention to your surroundings or your own state of mind.

To stay safe, the best you can do is to increase your understanding, skill and experience at a rate you can manage safely. There is no substitute for self-responsibility and good judgement.

In the end, paragliding offers a unique opportunity to learn to take control of your own destiny. Memento mori, carpe diem!

Fly safely, and...E N J O Y!

GIN Team

# Appendix

## Glider details

Size:	Colour:	Serial number:
Check flight (date): _____		
Mark and signature: _____		

### Pilot details / Proof of ownership

1. Owner	
Name:	
Address:	
Phone:	
Email:	
2. Owner	
Name:	
Address:	
Phone:	
Email:	
3. Owner	
Name:	
Address:	
Phone:	
Email:	





## Addresses

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