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MANUAL

Kiss 2



BRUCE GOLDSMITH DESIGN

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KISS 2 OWNER'S MANUAL

Lightweight mountain paraglider with parakite option | EN A/B/C

Welcome

Welcome to BGD, a world leader in the design and production of paragliders. For many years Bruce Goldsmith and team have been developing products with world-class performance for pilots who want the best. We apply our competitive knowledge to designing 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 KISS 2

The KISS 2 is a lightweight paraglider with risers that can convert to parakite mode. It has excellent roll stability and certification test results in paraglider mode, and in larger sizes / lower wing loadings it is suitable for low airtime pilots. It is EN and LTF certified in paraglider mode. The homologation does not apply in parakite mode since the test procedures cannot be carried out in this mode.

As with all aircraft, regular maintenance and checks are mandatory. Proper care will ensure your new glider keeps its original characteristics and lasts for many years.

This manual contains information on how to look after your paraglider and how to get the best out of it in the air. If you ever need replacement parts or advice, do not hesitate to contact your nearest BGD dealer or contact BGD directly.

QUICK SUMMARY

1. The KISS 2 is delivered with risers in the standard **paraglider (PG)** set-up. It can be converted between standard and **parakite (PK)** modes very quickly and easily in two steps. This can be done on launch and requires pliers.
2. The certification applies in paraglider mode only, not in the parakite configuration as the EN flight tests cannot be performed in PK mode. The load tests apply to both configurations.
3. Flying in PK mode requires a different set of piloting reflexes from conventional paragliding. We recommend becoming familiar with the system gradually, starting in controlled conditions and allowing time to develop the appropriate responses. We recommend using PK mode primarily in smooth, predictable and laminar conditions.
4. The KISS 2 is exceptionally light and packable. We chose D10 fabric for its very low weight, but it needs to be treated with care. Avoid dragging the wing over rough surfaces or exposing it to unnecessary abrasion.

Recommended checks and inspections

Trim check	Every 100 hours
Release loops on rear lines	If trim check shows it is necessary
Full inspection	Every 2 years or 150 hours
Change the line set	If line strength check is failed

INTRODUCTION

Intended use

The KISS 2 is a **solo** paraglider. It is not intended for tandem use or for aerobatic manoeuvres. It is suitable for a wide range of pilot skill levels. It has an optional **PK mode**, which gives the pilot access to the full speed range through the brakes instead of using a speed bar.

It is exceptionally light and packable. We chose D10 fabric for its very low weight, but it needs to be treated with care. Avoid dragging the wing over rough surfaces or exposing it to unnecessary abrasion.

Winching

It is suitable for winching in PG mode. Both the pilot and the winch operator should have the necessary training and qualifications for winching, and the winch system should be certified for paraglider use.

Paramotoring

The KISS 2 has not yet been tested for paramotor use.

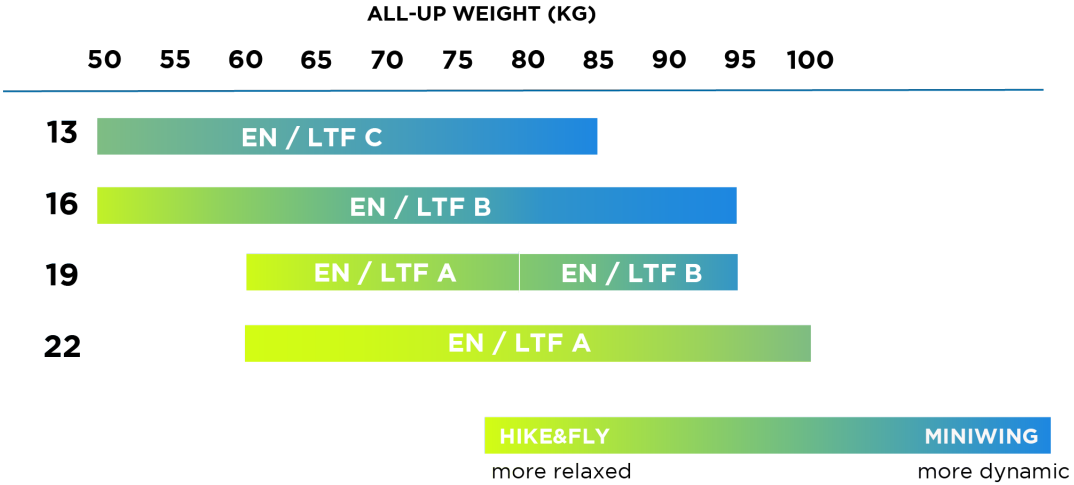
Suitable for ...	
Tandem	No
Towing	Yes (PG mode)
Paramotor	Not yet tested

Weight range

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

Wing loading affects the speed and handling of all paragliders You should choose the size of KISS 2 that is adapted to your abilities and preferences

In PG mode, in bigger sizes or lower wing loadings the KISS 2 is a relaxed hike-and-fly wing you can thermal and soar. In smaller sizes or higher wing loadings it is more dynamic and requires some piloting experience.



Kiss 2

Parakite Mode

In Parakite mode, the entire speed range is accessed through the brakes, and the speed bar should not be used. Flying in hands-up position is the equivalent of full speed bar.

the KISS 2 has a moderate top speed. Its PK mode offers an accessible introduction to parakiting and expands your flying options in stronger winds. Be aware that flying in PK mode requires a different set of piloting reflexes from conventional paragliding. We recommend becoming familiar with the system gradually, starting in controlled conditions and allowing time to develop the appropriate responses.

We recommend using PK mode primarily in smooth, predictable and laminar conditions. It can be used for flying fast, for example when descending from a steep mountain or flying in windy coastal conditions.

You should launch with some brake applied.

You can thermal in light winds in parakite mode, but the brake pressure is quite high so even though it is safe, it is not the most comfortable use of parakite mode.

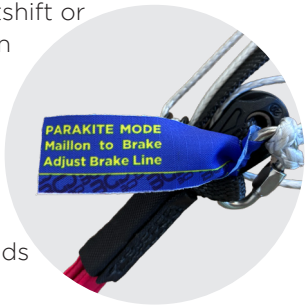
The KISS 2 is very resistant to collapses, but if you do have a collapse when flying in parakite mode, the automatic reaction of a paraglider pilot might be to go hands-up. In parakite mode, this is full speed. You need to develop and practise the correct reactions for handling a collapse in parakite mode.

If you have not flown a parakite before, we recommend spending some time groundhandling first in order to get used to the differences, before committing to flying this way.

Safe Operation

For your safety:

1. Do not fly outside the certified weight range.
2. Do not adjust the trim speed by changing the length of risers or lines.
3. Do not fly in rain or snow. A wet canopy is much more likely to enter a parachutal or full stall. If you fly into a rain shower, you should immediately go and land somewhere safe, steering the canopy gently and avoiding manoeuvres such as Big Ears which can make a stall more likely.
4. Do not fly in strong turbulence or violent winds.
5. Do not perform spiral dives with big ears or asymmetric collapses. The high G-loading on fewer lines could overload and break the lines.
6. Do not fly with knots in the lines. Flying a glider with knots in the lines will affect its airworthiness. 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.
7. Converting between standard and parakite modes is a two-step procedure. Always ensure that both steps are performed on both risers. Do not attempt to fly with one standard and one parakite riser, or without adjusting the brake lengths (the 2nd step of the conversion) to match the riser set-up. A blue tag on the maillon reminds pilots of the two steps. See p14.



Brake Line lengths

It is very important that the brake line lengths match the riser set-up: shorter setting for PG mode; longer in PK mode. It is dangerous to fly in parakite mode without lengthened brake lines.

In standard paraglider mode, 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 when accelerated. The brakes have a knot at the handle so the pilot can adjust them if necessary.

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 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.

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.

Harness dimensions

The KISS 2 was tested with a 'GH' (without rigid cross- bracing) type harness. The GH category includes weightshift harnesses as well as ABS style (semi-stable) harnesses.

The EN standard harness dimensions are a seat board width of 42cm.

The horizontal distance between the attachment points of the paraglider risers (measured from the centre line of the karabiners) should be:

- Total flight weight < 80 kg: karabiner distance 40 +/- 2 cm, height 40 +/- 1 cm
- Total flight weight 80 - 100 kg: karabiner distance 44 +/- 2 cm, height 42 +/- 1 cm
- Total flight weight over 100 kg: karabiner distance 48 +/- 2 cm, height 44 +/- 1 cm

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.

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 completed by the dealer.

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GLIDER OVERVIEW

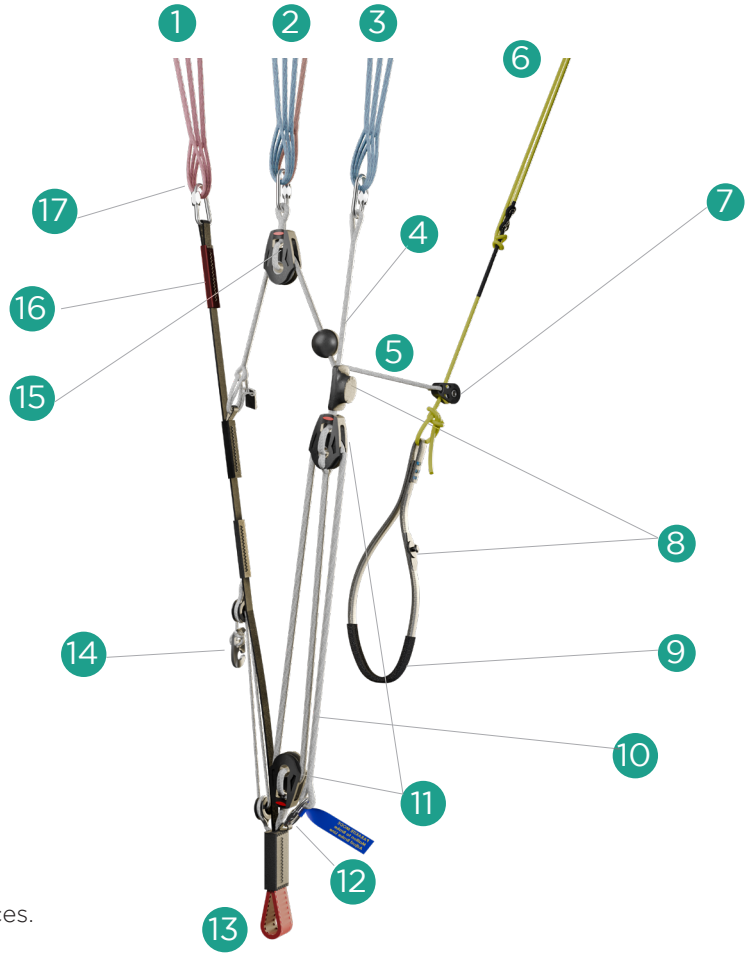


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RISERS

Shown in standard PG mode.

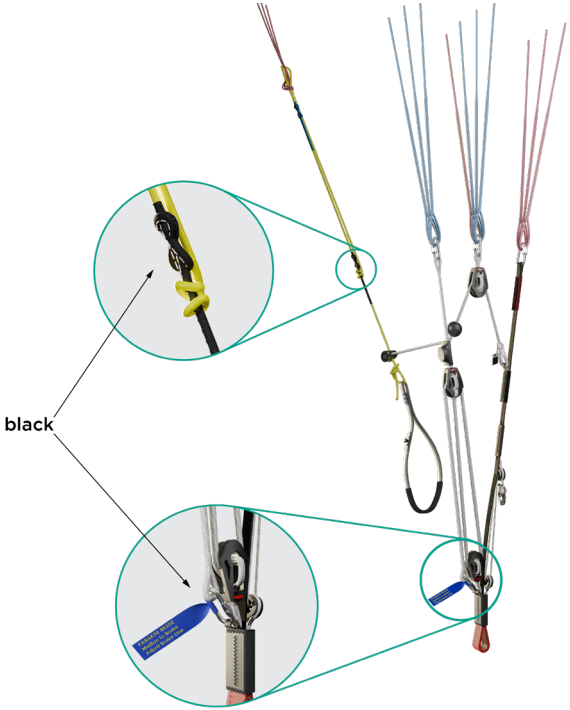
1) A riser / A lines
2) B riser / B lines
3) C riser / C lines
4) B-Limiter
5) Brake leg
6) Brake line
7) Brake pulley
8) Snaplock
9) Brake handle
10) Speed system line
11) Speed system pulleys
12) Maillon
13) Main hangpoint
14) Brummel hook
15) B-riser pulley
16) Red webbing A-riser
17) Maillon



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

PARAGLIDER & PARAKITE MODES

PARAGLIDER (PG) MODE



PARAKITE (PK) MODE



Converting between PG and PK modes

To convert the KISS 2 risers between paraglider and parakite modes is a **two-step** process which can be performed on take-off. You will need pliers for the maillons.

It is essential that both steps are carried out. The glider will be unstable in parakite MODE if the brakes are too short!

PG mode	PK mode
Speed system connected to risers	Speed system connected to brake handle
Brake lines short	Brake lines long

Watch the video of Tyr performing the conversion:



https://youtu.be/xkybZwZ7iuk

How to adjust the length of the brake lines

When switching between PG and PK modes, the brake line lengths must be adjusted.

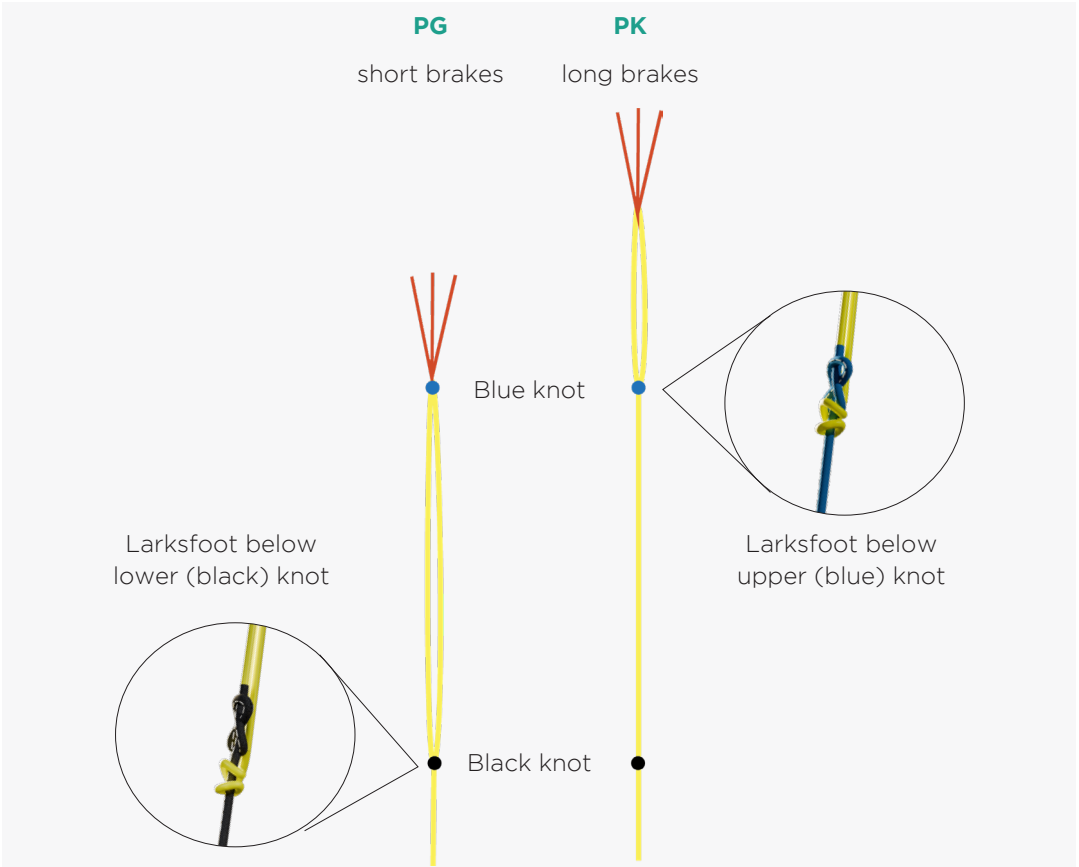
There is a loop at the top of the brake lines for this purpose. The size of the loop is set by moving a larksfoot between two blocking knots. Changing the size of the loop changes the brake lengths.

The lower knot is **black** – this is the position for **PG mode** (shorter brakes)

The upper knot is **blue** – this is the position for **PK mode** (longer brakes)

After adjusting the brake lengths, ensure the upper (red) brake lines sit centrally in the yellow brake-line loop, with even tension on both sides.

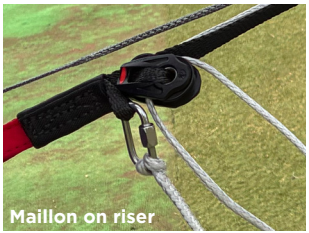
Brake lengths in PG and PK Modes

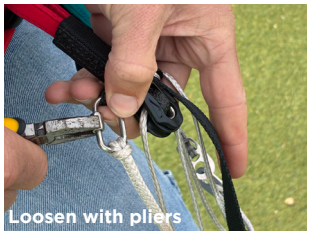


Step by Step: Converting from PG to PK mode

1. Connect speed system to brake handle

Undo the maillon that attaches the speed system to the riser set, and attach it to the loop at the top of the brake handle. Tighten the maillon gently with pliers to avoid it coming undone accidentally.


Maillon on riser

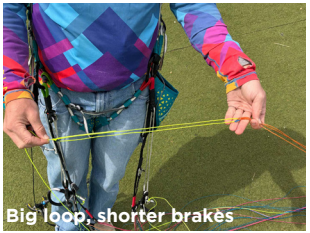

Loosen with pliers


Maillon on brake handle

2. Lengthen the brake lines

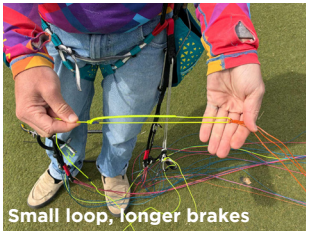
Loosen the larksfoot on the brake line, and slide it up the line to stop below the upper (blue) knot. This shortens the loop, lengthening the brake line.

You will need to slightly loosen the upper (red) brake lines and slide them around the yellow brake-line loop so that they sit centrally and tension is even on both sides.


Big loop, shorter brakes


Slide larksfoot up


Larksfoot below upper knot
Slide upper lines to centre of loop


Small loop, longer brakes

Converting from PK to PG mode

Reverse the steps on the previous page.

1. Connect the speed system to the risers

Disconnect the maillon on the speed system from the brake handle loop, and reattach it to the loop at the base of the risers. Use pliers to tighten.

2. Shorten the brake lines by moving the larksfoot to sit below the lower (black) knot. Ensure the upper brake lines sit centrally in the loop, with even tension on both sides.

PREPARATION

The KISS 2 has accelerator risers. It can be flown with or without a speed bar attached. When flying in parakite mode, the speed system can remain attached to the Brummel hooks to keep it out of the way, but the bar should not be used in flight.

Setting up the speed system

The Kiss 2 risers have Brummel hooks to connect the speed system. The speed system should be routed and adjusted following the instructions in your harness manual.

The length of the speed system should be adjusted by moving the knots on the line at the harness end. To check the length is correct, sit in your harness and ask someone to hold the risers up in their in-flight position. The speed system should be set to such a length that the A-risers are not being pulled when the bar is not applied. You should be able to hook your heels into the bar and attain full extension when you push your legs out.

Once you have set the speed system up in this way on the ground, a test flight in calm air is advisable to fine-tune the length, ensuring it is even on both sides.

Laying out

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.

Open out the glider, drawing the wingtips away from the centre to form an arc facing into wind, with the undersurface facing up and the leading edge higher up the slope than the trailing edge. Draw the harness away from the canopy until the suspension lines are just taut.

Pre-flight checks

The following pre-flight inspection procedure should be carried out before each flight.

1. Whilst opening the paraglider check the outside of the canopy for any tears where it could have been caught on a sharp object or even have been damaged whilst in its bag. Visually inspect the risers for any signs of damage.
2. Ensure both risers are correctly set up in either PG or PK mode, and that left and right risers are in the same mode. Check the brake lengths are at the right settings (short for PG mode, long for PK mode).
3. Ensure the risers are not twisted, and check the lines for signs of damage, twists or knots and no line-overs (lines which have passed over the canopy). Partially inflating the canopy in the wind can help to sort out the lines.
4. Ensure the brakes are clear and free to move. Check the knot which attaches the brake handles to the brake lines. Avoid having too many knots, as there is a risk they could become stuck in the brake pulleys. Both brakes should be the same length – check by asking an assistant to hold the upper end of the brake lines together whilst you hold the brake handles. The brake lines should be just slack with the wing inflated when the brakes are not applied.
5. Always check the attachments on the harness. Ensure the two main maillons / karabiners from the harness to the risers, and the individual shackles which attach the risers to the lines, are undamaged and are tightly closed.
6. Before getting into the harness you should be wearing a good helmet. Check the parachute container is correctly closed and the handle is secure. Put on the harness ensuring all the buckles are fastened and that it is well adjusted for comfort.

Your paraglider is now ready for flight.

FLIGHT CHARACTERISTICS

This manual is not intended as an instruction book on how to fly your paraglider but these tips will help ensure you get the best from your wing.

Take-off

The KISS 2 is easy to inflate in light or stronger winds and will quickly rise overhead to the flying position.

It can be launched easily using either forward (best for light winds) or reverse (best for stronger winds) launch techniques

Forward Launch
Stand facing into wind with your back to the canopy and all the A-lines taut behind you, then take one or two steps back (do not walk all the way back to the canopy). Take an A-riser in each hand and begin your launch by moving forwards smoothly, with gentle pressure on the A-risers (pushing gently on them rather than pulling them down). Once the canopy starts to rise off the ground, you can release your hands and maintain pressure on all the risers evenly through the harness. Maintaining gentle pressure on the A-risers helps in very calm conditions.

In PG mode: be ready to slow the canopy with the brakes if it starts to accelerate past you. Then release the brakes and run smoothly to launch.

In PK mode: apply around 50% brake, to slow the glider down to a speed at which you can launch. (Remember hands-up is full speed).

Reverse Launch
In winds over 10km/h it is recommended to do a reverse launch and inflate the canopy whilst facing it, using the A-risers. Releasing pressure on the A-risers when the glider is

at about 45° will help to stop it overshooting. The stronger the wind and the greater the pressure on the A-risers, the more quickly the canopy will rise. In stronger winds, taking a step towards the glider as it rises can take some of the energy out of the sail and it will be less likely to overshoot.

In PG mode: be ready to slow the canopy with the brakes if it starts to accelerate past you. Then release the brakes and run smoothly to launch.

In PK mode: apply around 50% brake, to slow the glider down to a speed at which you can launch. (Remember hands-up is full speed)

Straight Flight

Your paraglider will fly smoothly in a straight line without any input.

Turning

Your wing does not require a strong-handed approach to manoeuvring. For a fast turn smoothly apply the brake on the side to which the turn is intended. The speed with which the brake is applied is very important. If a brake is applied fairly quickly the canopy will do a faster banking turn, but care must be taken not to bank too severely. The wing will turn far more efficiently if you weightshift into the turn in the harness. To attain a more efficient turn at minimum sink, apply some brake to the outside wing to slow the turn and prevent excessive banking. Care must be taken not to over-apply the brakes, as this could result in a spin. Remember that violent brake application is dangerous and should be avoided.

Active piloting

The objective of active piloting is to get the glider to fly smoothly through the air with a stable position above your head, and controlled angle of incidence. Active piloting means flying in empathy with your paraglider, guiding it through the air and being aware of

feedback from the wing. If the air is smooth the feedback can be minimal but in turbulence feedback is continuous and needs to be constantly checked.

In order to get the best performance from your wing it is best to control it though small brake inputs and weightshift rather than constantly being present on the brakes. A small brake movement early is more efficient than a big input later. The more you let the glider fly at trim speed, the better performance you will get out of it.

Your paraglider is resistant to collapses without any pilot action, but flying actively will increase the safety margin. Active piloting can make your flying experience safer and more enjoyable, and it becomes instinctive in good pilots.

Thermalling

To attain the best climb rate your wing should be thermalled using a mild turn as described above, keeping banking to a minimum. In strong thermals a tighter banking turn can be used to stay closer to the thermal´s core. Remember that weightshifting in the harness will make the turn more efficient and reduce the amount of brake required. Care must be taken not to apply so much brake as to stall. The brake pressure increases greatly as you approach the stall point. Only fly near the stall point if you have enough height to recover (at least 100m).

Using the speed system

You should not use the speed bar in PK mode. Hands-up is the equivalent of full speed bar. Attempting to go faster by pushing the bar will not make the glider faster, and may result in a frontal deflation.

In PG mode: Launching and general flying is normally done without using the accelerator. To accelerate the glider, push with your feet on the speed bar. Full speed is achieved when the two pulleys on each A-riser touch. Using excessive force or pushing beyond this

will not make the glider go faster! When you come off the bar it is important to do so smoothly and progressively, to manage the pitch. It is possible for any paraglider to front-collapse if the bar is released too quickly.

We recommend you only fly in conditions where you can progress into wind with no speed-bar applied, so that you have the extra airspeed in reserve should you need it.

IMPORTANT:

1. Practise using the speed system in normal flying and get fully used to using half bar before you use full bar.
2. The speed increase is achieved by reducing the angle of attack, which means the canopy has slightly more collapse tendency.Take care when flying fast in rough or turbulent conditions as deflations are more likely to occur at speed.
3. Remember that your glide deteriorates at higher speeds. Best glide is achieved when the risers are level and the brakes are off, or with a little accelerator applied (up to 25% speed).

Check the component parts of the speed system regularly for signs of wear and tear, and ensure that the system always works smoothly.

Rapid descent procedures

B-Line Stall

This is a fast descent method and 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 10-15cm. This will stall the canopy and its forward speed will drop to zero. Make sure you have plenty of ground clearance because the descent rate can be over 10m/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 the B-line stall. It is normally better to release the B-risers fairly quickly rather than slowly, as the latter may result in the canopy entering deep stall. Always release the risers symmetrically, as an asymmetric release from a B-line stall may result in the glider entering a spin.

B-line stalls are useful if you need to lose a lot of height quickly, perhaps to escape from a thunderstorm. They should not be performed with less than 100 m of ground clearance.

Big Ears

The wingtips of your paraglider can be folded in to increase its sink rate. The Big Ear facility allows you to descend quickly without substantially reducing the forward speed of your glider. (B-line stalls also allow for fast descent, but they result in greatly reduced forward speed).

The Kiss 2 has quite high internal pressure. To engage Big Ears, lean forward in the harness and grasp the outer A-lines high, around 10cm above the top of the riser, keeping hold of both brake handles. Pull them out and down at least 30cm so as to collapse the tips of the glider. It is very important that the other A-lines are not affected when you do this as pulling these could cause the leading edge to collapse. Steering with Big Ears in is possible by weight-shifting. When you let go of the outer A-lines the Big Ears will come out on their own. A pump on the brakes can speed this up if necessary.

Before using Big Ears in earnest you should practise with plenty of ground clearance in case a leading-edge collapse occurs.

Spiral Dive

A normal turn can be converted into a spiral dive by continuing to apply one brake. The bank angle and speed of the turn will increase as the spiral is entered. Be careful to enter the spiral gradually and with control, as too quick a brake application can cause a spin

or a high G spiral.

Spiral dives are one of the most dangerous manoeuvres in paragliding and the high G-force and quick loss of altitude can easily catch pilots out. A mistake in judging these factors can lead to a very serious accident, so spirals must be treated with great respect. Pilots are advised to practise spiral dives under close supervision or during an SIV course.

To pull out of a steep spiral dive, release the applied brake gradually and/or apply opposite brake gradually. A sharp release of the brake can cause the glider to surge and dive as the wing converts speed to lift. Always be ready to damp out any dive with the brakes. Also be ready to encounter turbulence when you exit from a spiral because you may fly through your own wake, which can cause a collapse.

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

Landing

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

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

RECOVERY TECHNIQUES

Test pilots have tested the glider 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 paraglider are dangerous manoeuvres and are not recommended.

Line knots

Flying a glider with knots in the lines will affect its airworthiness – 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.

Loss of brakes

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

Stalls

Full Stall

Stalls are caused by flying too slowly. Airspeed is lost as brake pressure increases and as the canopy approaches the stall point it will start to descend vertically and finally begin to collapse. Should this occur it is important that the pilot releases the brakes at the correct moment. The brakes should never be released when the wing has fallen behind the pilot;

the brakes should be released fairly slowly, to prevent the forward dive of the canopy from being too strong. A pre-release of the brakes and reconstruction of the full span is recommended to avoid the tips getting cravatted during the recovery.

Pilots are advised not to attempt this manoeuvre unless under SIV instruction.

Deep Stall (or Parachutal Stall)
Your paraglider has been designed so that it will not easily remain in a deep stall. However, if it is incorrectly rigged or its flying characteristics have been adversely affected by some other cause, it is possible that it could enter this situation. In the interests of safety all pilots should be aware of this problem, and know how to recover from it.

When in deep stall the pilot will notice the following:

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

To recover from deep stall, the first reaction is simply to put your hands up. This should allow the glider to retun to normal flight. If the glider does not resume normal flight, pushing the speed bar or pulling gently on the A-risers will help the airflow to reattach to the leading edge. Be careful not to pull down too hard as this will induce a front collapse.

Spins

Spins are dangerous and should not be practised in the course of normal flying. Spins occur when the pilot tries to turn too fast. In a spin the pilot, lines and canopy basically stay vertical and rotate around a vertical axis. Your glider will resist spinning, but if a spin is inadvertently induced you should release the brake pressure and 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.

Asymmetric Collapse

Your paraglider is very resistant to deflations; however, if the canopy collapses on one side due to turbulence, your first reaction should be to control the direction of flight by countering on the opposite brake. The act of controlling the direction will likely reinflate the wing. However, with more persistent collapses it may be necessary to pump the brake on the collapsed side using a long, strong, smooth and firm action. Normally one or two pumps of around 80cm will be sufficient. Each pump should be applied in about one second and smoothly released. In severe cases it can be more effective to pump both brakes together to get the canopy to reinflate. Be careful not to stall the wing completely if this technique is used.

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.

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

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 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.

GLIDER CARE

Packing

The KISS 2 can be packed down very small for hike-and-fly. It can be folded using either the classic method, or concertina packed.

Do not store the glider compressed for long periods – folding it more loosely for storage will prolong its lifespan.

Classic method
Sort the lines and place them on the spread-out canopy. Fold the paraglider in sections from the wingtips towards the centre. Then roll/fold the two halves together from the trailing edge towards the leading edge and push the remaining air out of the canopy. Avoid folding or bending the plastic reinforcements in the leading edge.

Concertina packing
Always start with a bunched glider. Do not lay it out first, as this would mean pulling it across the ground when you gather the leading edge, risking damage from abrasion.

Stack the leading edge plastics together, creating a single 'pile' from tip to tip (do not fold it in the middle). Turn the pile onto its side so the plastics are laid flat, and secure with a strap while you concertina-fold the rest of the glider. Push the air out, from the trailing edge towards the leading edge, and then fold the glider into sections to fit the bag. A concertina packing bag can make this easier.

Storage and care

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

Always store the glider 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 paraglider is made from high quality nylon which is treated against damage 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.

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

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, rinse it with fresh water and carefully dry it.

Small Repairs

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

Servicing / Inspection

It is important to have your glider regularly serviced. We recommend having the trim checked every 100 hours. The loops on the rear lines should be released if the trim check shows it is necessary.

Your glider should have a full inspection every 2 years or 150 hours' flight time, whichever comes first. A full check includes a thorough inspection of all components and includes visual and condition inspection, permeability of the canopy material (porosity), line strength, canopy strength, line geometry and line measurements including the risers. The results must be documented. If a line strength check is failed, the entire line set should be changed.

BGD will only accept responsibility for repairs carried out by an approved service centre, and lines which we have produced and which have been fitted by an approved service centre. A list of approved service centres can be found on our website.

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

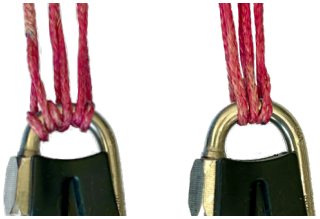
Environmental protection and recycling

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.

SERVICING LINES

Releasing loops on the rear lines

BGD gliders are rigged from new with loops on the maillons of the rear lines and 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. The loops on the rear lines should be released if the trim check shows that it is necessary.



Left: with loops; Right: no loops

Installing replacement lines

If you need to replace lines on your glider, we recommend that a professional should install 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. You can download the latest version from 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, but 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.

Correct alignment of micro lines

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.

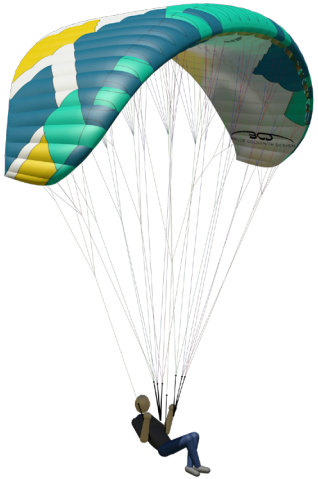
The non-reinforced end is marked with white thread and should be attached to the glider tab or the maillon.

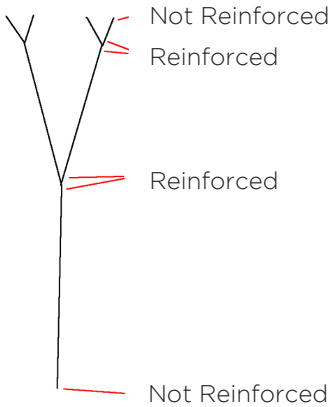
Sheathed lines have no additional reinforcement and can be mounted either way up.



Yellow thread denotes the reinforced end of a micro line

White thread denotes the non-reinforced end of a micro line..





Alignment of attachment points

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 other 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.



Interlocked – correct



Looped – incorrect



Interlocked – correct



Looped – incorrect

Loops on rear lines

New lines must be installed on the maillons without loops, for the A and B risers.

The Stabi line and the C risers should have a single loop on the maillon.

Line Check

After replacing 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.

TECHNICAL DATA

Materials

The KISS 2 is made from the following quality materials:

TOP SURFACE	Dominico Dokdo D10 (25g/m^2)
SURFACE LEADING EDGE	Dominico Dokdo D10 (25g/m^2)
BOTTOM SURFACE	Dominico Dokdo D10 (25g/m^2)
INTERNAL STRUCTURE	Porcher Skytex hard finish 27g/m^2
REINFORCING	Plastic wire
TOP LINES	Edelrid Magix Pro Dry 8001U
MIDDLE LINES	Edelrid Magix Pro Dry 8001U
LOWER LINES	Edelrid Magix Pro Dry 8001U

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

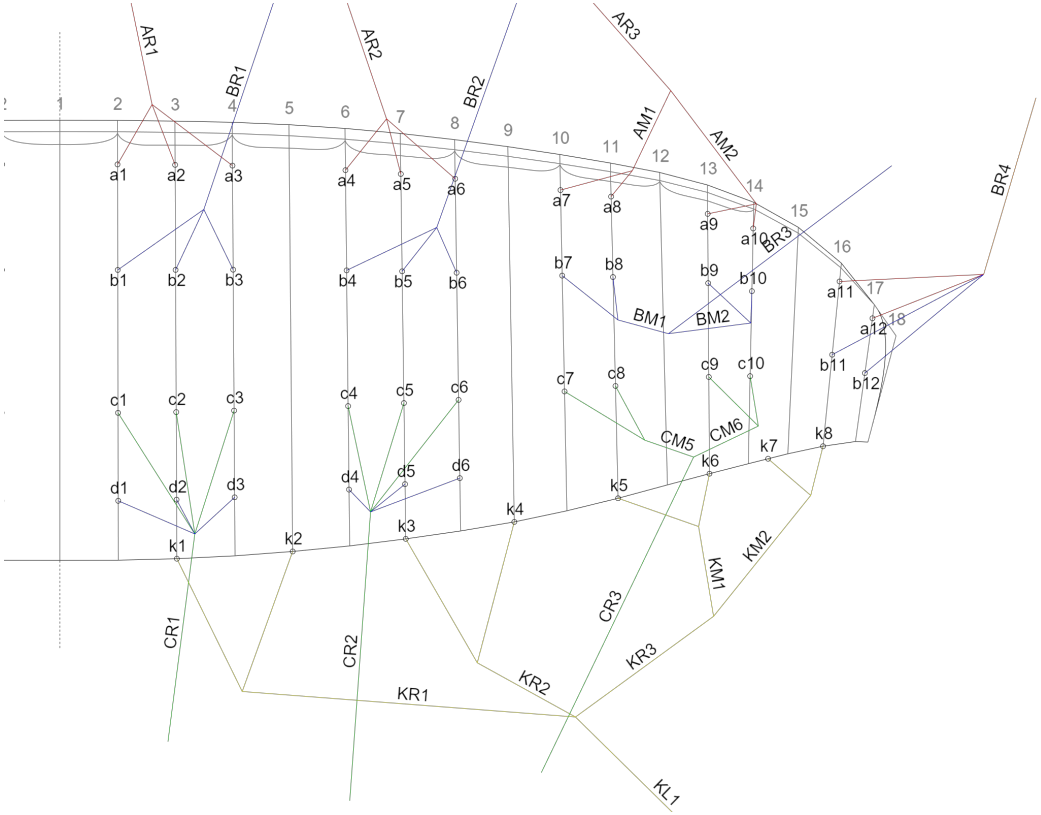
Specifications

	13	16	19	22
LINEAR SCALING FACTOR	0.9	1	1.1	1.17
PROJECTED AREA (M^2)	11.1	13.6	16.2	18.7
FLAT AREA (M^2)	13	16	19	22
GLIDER WEIGHT (KG)	1.8	2.1	2.4	2.6
NUMBER OF MAIN LINES (A/B/C)	3/4/3			
CELLS	34			
FLAT ASPECT RATIO	4.7			
ROOT CHORD (M)	2.1	2.3	2.5	2.7
FLAT SPAN (M)	7.8	8.6	9.4	10
CERTIFIED WEIGHT RANGE (KG)	50-85	50-95	60-95	60-100
CERTIFICATION (EN/LTF)	C*	B	A/B	A*

** pending certification*

Size 19 is certified EN/LTF-A for 60-80kg, EN-/LTF-B for 80-95kg

Line Layout


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

Riser lengths, speedbar and brake travel

Size	Riser lengths at trim speed (mm)	Accelerator travel (mm)	Brake travel (cm) Max. weight PG mode
13	550	135	
16	550	135	61
19	550	135	70
22	550	135	

Riser lengths are measured with 5kg load. Actual riser lengths may differ by not more than 5mm

Brake travel is maximum symmetrical control travel at maximum weight in flight.

Line length checks

All measures are in millimetres, 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.

The latest line lengths and diagrams can be downloaded from https://flybgd.com/lines.

BRUCE GOLDSMITH DESIGN

Bridle check sheet

Rib													
2	a1	a1	AR1	RA		b1	BR1	RB		c1	CR1	RC	
3	a2	a2	AR1	RA		b2	BR1	RB		c2	CR1	RC	
4	a3	a3	AR1	RA		b3	BR1	RB		c3	CR1	RC	
6	a4	a4	AR2	RA		b4	BR2	RB		c4	CR2	RC	
7	a5	a5	AR2	RA		b5	BR2	RB		c5	CR2	RC	
8	a6	a6	AR2	RA		b6	BR2	RB		c6	CR2	RC	
10	a7	a7	AM1	AR3	RA	b7	BM1	BR3	RB	c7	CM5	CR3	RC
11	a8	a8	AM1	AR3	RA	b8	BM1	BR3	RB	c8	CM5	CR3	RC
13	a9	a9	AM2	AR3	RA	b9	BM2	BR3	RB	c9	CM6	CR3	RC
14	a10	a10	AM2	AR3	RA	b10	BM2	BR3	RB	c10	CM6	CR3	RC
16	a11	a11	BR4	RB		b11	BR4	RB					
17	a12	a12	BR4	RB		b12	BR4	RB					

Rib				
2	d1	CR1	RC	
3	d2	CR1	RC	
4	d3	CR1	RC	
6	d4	CR2	RC	
7	d5	CR2	RC	
8	d6	CR2	RC	
3	k1	KR1	KL1	
5	k2	KR1	KL1	
7	k3	KR2	KL1	
9	k4	KR2	KL1	
11	k5	KM1	KR3	KL1
13	k6	KM1	KR3	KL1
15	k7	KM2	KR3	KL1
16	k8	KM2	KR3	KL1

BRUCE GOLDSMITH DESIGN

Size 16

Bridle check

	A	B	C	D	K
1	5179	5093	5173	5350	5375
2	5137	5061	5134	5310	5252
3	5167	5071	5146	5316	5119
4	5165	5069	5138	5300	5062
5	5136	5048	5113	5265	4988
6	5169	5065	5129	5269	4859
7	5147	5075	5138		4810
8	5117	5049	5101		4833
9	5031	4973	5008		
10	4993	4947	4987		
11	4741	4796			
12	4649	4757			

Kiss2_16_V5_rev2_Lines_Manual

BRUCE GOLDSMITH DESIGN

Size 16

Single line lengths

a1	972	b1	1354	c1	1344	d1	1520
a2	929	b2	1321	c2	1304	d2	1480
a3	959	b3	1331	c3	1316	d3	1486
a4	916	b4	1275	c4	1298	d4	1459
a5	887	b5	1253	c5	1272	d5	1424
a6	919	b6	1269	c6	1288	d6	1428
a7	450	b7	396	c7	715	k1	926
a8	419	b8	370	c8	678	k2	802
a9	405	b9	359	c9	478	k3	854
a10	366	b10	333	c10	456	k4	796
a11	806	b11	860	CM5	1215	k5	753
a12	713	b12	821	CM6	1321	k6	623
AM1	1510	BM1	1496	CR1	3261	k7	648
AM2	1438	BM2	1430	CR2	3271	k8	670
AR1	3635	BR1	3166	CR3	2646		
AR2	3675	BR2	3221			KM1	889
AR3	2625	BR3	2618			KM2	815
		BR4	3365			KR1	2440
						KR2	2255
						KR3	1341
						KL1	1954

Kiss2_16_V5_rev2_Lines_Manual

BRUCE GOLDSMITH DESIGN

Size 19

Bridle check

	A	B	C	D	K
1	5646	5552	5639	5831	5786
2	5603	5518	5598	5789	5681
3	5637	5531	5613	5797	5521
4	5636	5534	5607	5782	5464
5	5605	5513	5579	5746	5413
6	5643	5531	5598	5751	5275
7	5619	5541	5609		5217
8	5589	5515	5568		5233
9	5495	5432	5467		
10	5454	5404	5443		
11	5177	5237			
12	5076	5194			

Kiss2_19_V5_rev3_Lines_Manual

BRUCE GOLDSMITH DESIGN

Size 19

Single line lengths

a1	1060	b1	1477	c1	1467	d1	1659
a2	1015	b2	1442	c2	1426	d2	1617
a3	1049	b3	1455	c3	1441	d3	1625
a4	1000	b4	1391	c4	1418	d4	1592
a5	968	b5	1369	c5	1389	d5	1556
a6	1005	b6	1387	c6	1408	d6	1561
a7	491	b7	432	c7	782	k1	1000
a8	459	b8	405	c8	740	k2	895
a9	442	b9	393	c9	523	k3	932
a10	400	b10	364	c10	498	k4	875
a11	881	b11	941	CM5	1325	k5	823
a12	779	b12	898	CM6	1441	k6	684
AM1	1647	BM1	1632	CR1	3603	k7	723
AM2	1570	BM2	1561	CR2	3620	k8	739
AR1	4014	BR1	3501	CR3	2941		
AR2	4063	BR2	3569			KM1	981
AR3	2919	BR3	2912			KM2	885
		BR4	3726			KR1	2651
						KR2	2454
						KR3	1479
						KL1	2080

Kiss2_19_V5_rev3_Lines_Manual

CLOSING WORDS

Paragliding is a wonderful sport, and we hope you enjoy many hours of flights and adventures with your new paraglider.

Please keep in mind that paragliding is a potentially dangerous activity. We work hard to make all our equipment as safe as it can be, but your safety always comes down to you. You should have the correct training before using this equipment, and flying in a club or a school with experienced pilots is highly recommended.

Use equipment and fly in conditions that are appropriate to your skill level. Check the weather forecast but don't always rely on it. Actual conditions might not be as forecast, and can change fast.

It is important to look after your equipment. The UV in direct sunlight degrades materials, whether in flight or on the ground. By minimising your equipment's exposure to sunlight and always keeping it dry, you can maximise its lifespan. It is important to have your paraglider serviced at regular intervals.

Your security is ultimately your responsibility. Please fly carefully keeping your safety in mind, and have fun!

See you in the sky!

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